
Asteel 2 Operation Reference



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Introduction

About This Guide

This guide will describe all aspects of Asteel 2.

For information on installing Asteel 2 and Asteel 3D, see the Asteel Installation Guide.

An example of creating a simple job in Asteel 2 is provided in the Asteel 2 Tutorial.

CHAPTER 1

Asteel Concepts

This chapter describes several key concepts of Asteel 2. These concepts are described here to make the rest of the documentation more easily understandable.

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Jobs

A job is a collection of drawings being done for a specific fabricator. A drawing is information that defines a set of details. Drawings are described in more detail in subsequent paragraphs of this section.

Each job has a group of setup options that control various aspects of the job, such as the units of measure and reference elevations. Other job setup options define default values to be used throughout the job unless specifically overridden, such as the base plate weld type, the shop bolt type, and the defaults for the number of rows of holes to use based on the nominal depth of the member.

Part of the job setup consists of connection types that have been customized for use on the job. These are connections that can be used repeatedly within the job. Connection types are described in more detail in subsequent paragraphs of this section.

Each job is identified by a unique job number. The job number consists of a two-digit year number and a three-digit sequence number, separated by a dash. For example, 02-100 would be the one-hundredth job performed in 2002. All input and output for a given job is associated with the job number.

The Current Job

Asteel 2 keeps track of what is referred to as the current job, and uses its job number as the default on any screen that allows you to specify a job. The current job is the last job that had its job setup or drawing information saved.

For example, when you set up a new job and save it, it becomes the current job. When you go to enter drawing data, Asteel 2 will assume that this is the job to which the drawings belong. The current job is only used a default – the job number can always be changed if you want to work on a different job.

Note that saving a job setup or saving a drawing are the only actions that will set the current job number. Other functions, such as processing sheets, do not affect the value of the current job number.

Drawings

The most important data contained in jobs is the drawings. Drawings in Asteel 2 consist of data files that describe a group of details parametrically rather than visually. That is, Asteel 2 stores the information for drawings and details in the form of fields that define the various dimensions, elevations, connection types, etc. as opposed to a vector-based visual format.

This field-based approach makes it possible for Asteel 2 to perform operations based on the logical meaning of the data rather than its visual representation. For example, once a beam end connection has been defined, you can refer to that beam end by the piecemark of the beam when you're defining the column that the beam frames into, and Asteel 2 will automatically generate the framing connection at the column.

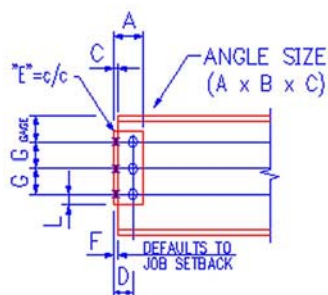
Each drawing can contain information that describes one or more details. All details on a given drawing are of the same type, such as beams, columns, etc. The number of details on the drawing and their position on the actual plotted sheet are determined by a drawing layout option. The layout option specifies the number and arrangement of the details, the paper size, the paper orientation (portrait or landscape), and whether the title block is on the side or at the bottom of the sheet.

Data is entered for a drawing by selecting a type of drawing to work with (beams, columns, etc), then selecting the job number and the drawing number.

To convert a drawing from Asteel 2's field-based format into an AutoCAD drawing, you perform a step referred to as processing sheets. See the discussion on Processing Sheets in subsequent paragraphs of this section for more information about how Asteel 2 drawing data gets converted into AutoCAD drawings.

Connection Types

An Asteel 2 connection type is a parameterized representation of a physical connection. The parameters, or options, of a connection allow you to configure the most commonly adjusted aspects of the connection. For example, the connection below shows a typical bolted clip-angle connection with its defined options. The options are identified by letters. In the example below, option C represents the thickness of the angle:



The example above illustrates what is called a base connection type. A connection type can be customized by changing the values of its options, such as the angle size and the spacing of the holes, to produce a unique instance of the connection, but the fundamental characteristics of the connection type remain the same. For example, no matter what values you specify for the connection in the example, it will still be a bolted clip-angle connection.

Base connection types are identified by the overall category of their use, such as beam ends or column framing, plus an identifying number. Examples of base connection types include beam end type 26, base plate type 1, etc. Customized instances of these base types (i.e.: types whose option values have been changed) are identified by a suffix letter, such as beam end type 26A, beam end type 26B, etc). The base types are defined by Asteel 2. The customized instances are set up by the user for each job.

Although Asteel 2 may provide many configurable options for a given connection type, default values exist for most options, so you only have to specify the options that you want to change. See the discussion on Default Values in subsequent paragraphs of this section for more information about how default values get applied.

Asteel 2 automatically creates a set of standard connections for each new job. These connections can be used as-is or customized as described above. Likewise, you can create your own libraries of standard connections and import them into jobs.

There is no requirement to define all the connections for a job before work can begin. Connections can be created at the beginning of a job or added as they are needed.

OnlineDocs provides more detailed information on the connection types and the associated options provided by Asteel 2.

For more detailed information on customizing, saving, and copying connection types, see the section on Connection Setup and the discussion on Copying Job Setup Information in the File and Job Utilities section.

Fabricators

Asteel 2 allows you to define fabricators and associate certain preferences and standards with them by specifying various fabricator options. Fabricator options include how to draw stub dimensions, how to detail channels, and what type of marking systems to use for generating main and fitup material piecemarks. Fabricator options also define what information goes in the title blocks of the sheets and where that information is printed on the sheet.

Each job in Asteel 2 is associated with a fabricator. The fabricator options supply some default values to be used by the job. These defaults may be overridden by job setup options or by specific connection options. See the discussion on Default Values in subsequent paragraphs of this section for more information about how default values get applied.

For more detailed information on the options available for fabricators and how to configure them, see the section on Fabricator Setup.

Processing Sheets

As noted previously in the discussion on drawings, Asteel 2 stores the information for drawings and details in the form of fields that define the various dimensions, elevations, connection types, etc. To convert the drawings from this format into AutoCAD drawings, you have to perform a step referred to as processing sheets.

The output of processing sheets is a set of DXF files that has one DXF file per Asteel 2 drawing. These DXF files can then be imported into AutoCAD and plotted.

Although the main point of processing sheets is to create AutoCAD drawings, other actions occur during this same step. Piecemarks are assigned to main material that didn't have an explicit mark assigned during data entry. Piecemarks are assigned to fitup material, and the definition of the fitup material is stored so that the same piecemark can be used again for identical pieces if the material marking system being used supports that feature. CNC data is generated for fabrication equipment, production control data is generated for external production control systems, and the drawing status is updated for each drawing that is processed.

Drawing Status

All drawings have a status that indicates whether the latest changes made to the Asteel 2 drawing data has been processed into AutoCAD files. Drawings that have never been processed will have a status of New. The same is true for drawings that have been processed and then edited but not processed again. Note that 'drawing' refers to the Asteel 2 data entry files, not an AutoCAD drawing.

Many of the screens in Asteel 2, such as the screen that allows you to process the sheets, will separate drawings based on their status so that you can quickly select drawings based on their status.

Local Jobs and Server Jobs

By default, all job data, such as the detail data, is stored on the system (i.e.: PC) on which you are running the software. This is sometimes referred to as the local system or as a standalone system. Jobs on such a system are sometimes called local jobs or non-server jobs. Job data can also be stored on a shared file server that is available to more than one user. Jobs on this type of system are referred to as server jobs.

The following paragraphs describe the differences between local jobs and server jobs.

The data for local jobs resides on the local PC and can only be accessed from that system. A user running the software on another system cannot view or edit the job data on the local system. If you are running a job locally and a user on a different PC wants to work with that job data, you have to transfer the files you want to share to a backup disk using the Asteel 2 backup utility. The other user then has to restore the files to their system using the Asteel 2 restore utility so they can view and edit the data. This method is suitable for small, infrequent exchanges of data, but would prove cumbersome for large-scale collaboration, such as might be required if a team of several detailers and checkers were working on the same job at once.

The data for server jobs resides on a shared network drive on a system that is available to multiple users. Each user has their own copy of the software loaded on their own system, but the users share the job data from the centralized copy on the server. When a user wants to edit the detail data, Asteel 2 will copy the data from the server to the user's local system, where it will be modified. When the user saves the changes, Asteel 2 will copy the changed data back to the server so that all users will have access to the most recent changes. The process of downloading and uploading between the server and the local system is transparent to the user.

The jobs being processed on a given PC can be a mix of local jobs and server jobs. Each job has an option for specifying the server drive to use for the job data. The server drive for a job must be either blank or a drive letter that is mapped to a shared network drive. If the server drive is blank, the job data is stored on the local system. If the server drive is entered, the job data is stored on the specified drive.

Multiple servers can be used within a single installation. For example, the data for some jobs can be stored on one system while data for other jobs can be stored on another system. Each of these systems would have their own shared network drive. Multiple servers might be useful in situations with high workloads where it would increase throughput to spread the load across multiple systems.

Additional information about specifying the server drive for a job is provided in the section on Job Setup.

Feet-Inch-Sixteenth (FIS) Dimensions

Most dimensions in Asteel 2 are specified as feet-inch-sixteenth (FIS) dimensions. FIS dimensions are entered as a string of one to three integers separated by spaces, such as '1 2 3' (the quote marks are not actually typed when the dimensions are entered). The first number is the number of feet in the dimension, the second number is the number of inches, and the third is the number of sixteenths. If only one number is supplied, it is interpreted as feet. If two numbers are supplied, they are interpreted as feet and inches. Thus, leading zeroes are required to specify a value that is just inches and sixteenths or just sixteenths. The following examples illustrate these points:

Input	Value
1	1'
1 6	1'-6
1 6 4	1'-6 ¼
0 6 0	0'-6
0 0 4	¼

FIS notation is used for input because it is much easier to type than the architectural format in the right-hand column of the examples shown above, and because it is easier to remember and shorter to type than decimals of an inch or decimals of a foot.

In rare cases, a dimension may be expected in decimal feet or decimal inches, but the overwhelming majority of dimensions entered in Asteel 2 are in FIS format.

Default Values

Although Asteel 2 provides a lot of options for controlling how the program operates and how details are produced, you will typically have to specify only a very few of these options, if any. This is because Asteel 2 has several levels of default values that are applied. These levels include the fabricator, the job, and the connection type.

If no value is specified for an option, Asteel 2 will check to see if there is a default for the option at the current level, if not, Asteel 2 will try to apply a default from a higher level. For example, if a given option for a connection, such as the center-to-center for a set of holes, isn't specified for a given connection, Asteel 2 will use the default value for that connection type, if one exists. If no default value exists for the connection type, Asteel 2 will try to use a default from job setup. If there is no job default, Asteel 2 will try to use a fabricator default. If there is no fabricator default, Asteel 2 will use its own default.

CHAPTER 2

Common Characteristics of the User Interface

This chapter describes some of the common characteristics of the user interface for Asteel 2.

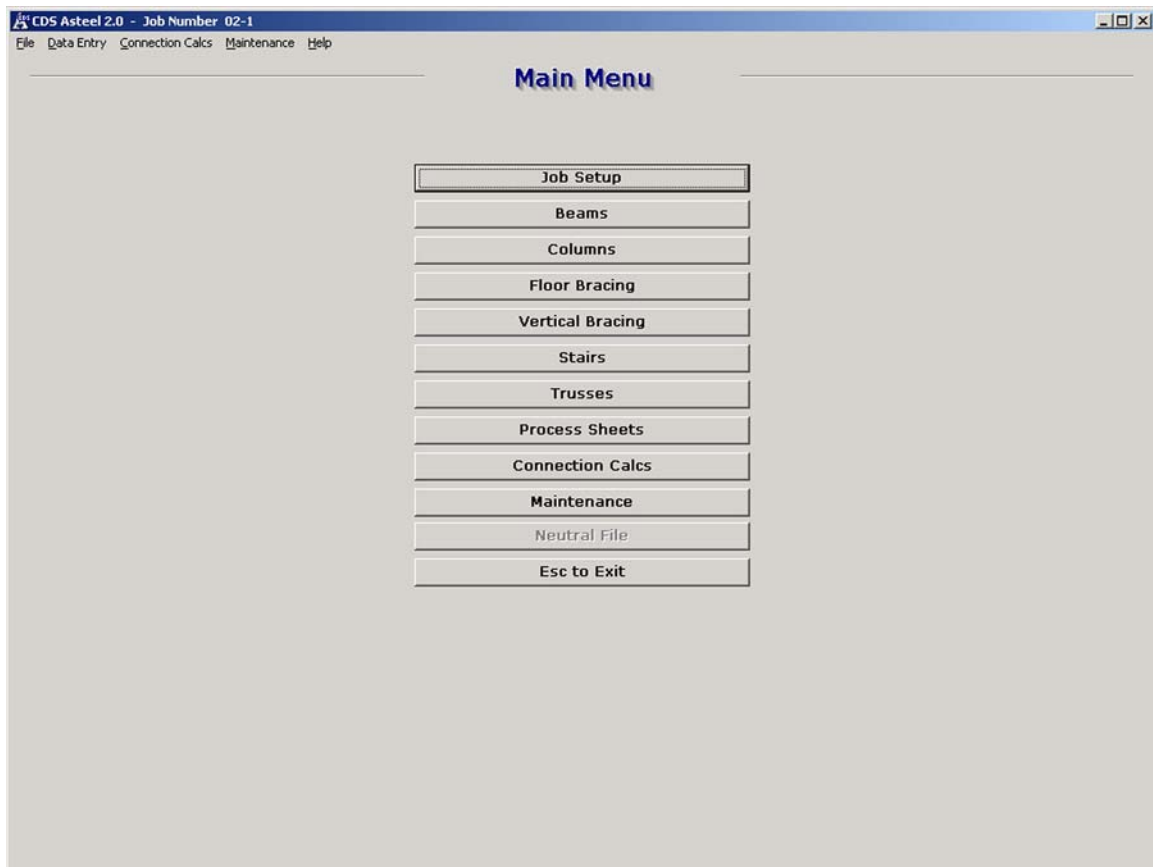
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Menu Screens And Menu Bars

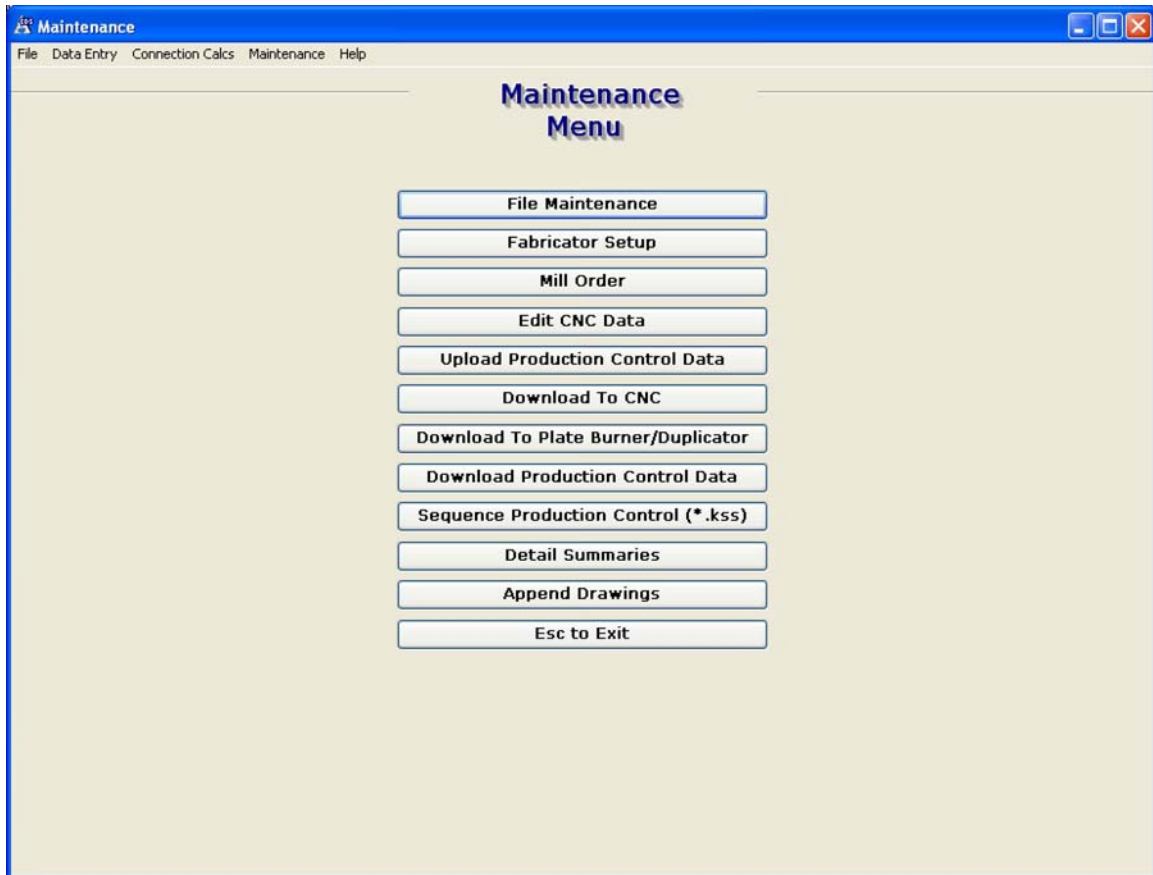
Asteel 2 provides two mechanisms for invoking the various features of the program. These mechanisms are Asteel 2 menu screens and a standard Windows menu bar of pull-down options. The Asteel 2 menu screens are screens that have the options listed on the screen on large Windows button controls. The Windows menu bar is a set of pull-down menus similar to that used by most Windows-based programs.

The example below shows the Asteel 2 main screen, which is an Asteel 2 menu screen:



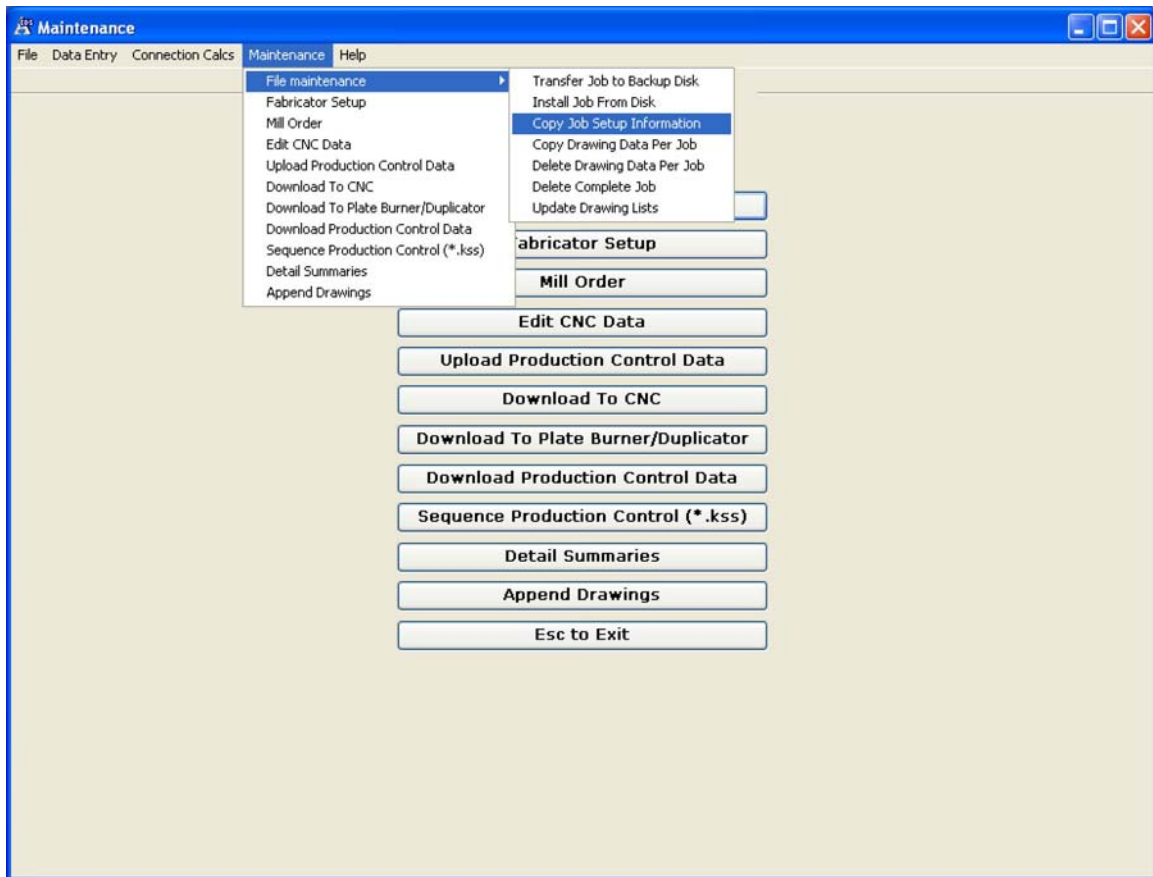
You can navigate through the Asteel 2 screens by clicking these buttons with the mouse or by using the tab key to position the cursor over the button and pressing enter.

Some of the options on a menu screen may lead to another menu screen. For example, clicking on the Maintenance button of the main screen takes you to the Maintenance Menu screen shown below:



The menu screens are included to provide a user interface that is consistent with previous versions of the program that were DOS-based. However, Asteel 2 also provides an alternative method for activating features. This method uses standard Windows pull-down menus. The top of the window contains a menu bar which can be used to go directly from one function to another without having to go through any other screens.

The example below shows how to use the pull-down menus to go directly to the Copy Job Setup feature from the main Asteel 2 screen:



All features that are available from the Asteel 2 menu screens are also available from the Windows menu bar.

Closing Asteel Screens

Asteel 2 displays one screen at a time. When you close one screen, Asteel 2 will show you the screen that was active before the screen that you just closed. Closing successive windows will continue to take you back until you reach the main Asteel 2 screen. Closing the Asteel 2 main menu will end the program.

For example, if you go from the main screen to the maintenance screen and then from the maintenance screen into fabricator setup, closing the fabricator screen will take you back to the maintenance screen. Closing that screen will take you back to the main screen.

Asteel 2 provides several ways to close a screen. All screens can be closed by using any of the following methods:

- pressing the escape key (Esc) on the keyboard

- clicking the close icon in the window control menu
- selecting the Close option from the pull-down File menu
- if the screen is a menu screen, it will also have a button labeled 'Esc to Exit'. Clicking this button is the same as pressing the escape key.

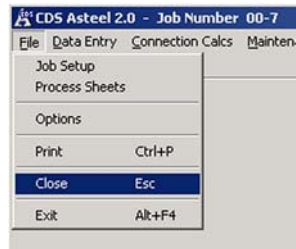
Pressing the escape key is self-explanatory. Using the window control menu and the File/Close option are described below.

The window control menu is a set of one or more icons in the upper-right corner of the screen, inside the title bar at the very top of the screen. A typical window control menu is shown below:



Pressing the close icon in the window control menu will close the current screen. The close icon is the icon to the far right (the box with the 'X' in it).

The File pull-down menu contains a Close option. The File menu is shown below:



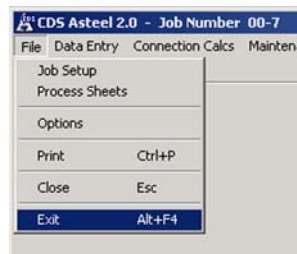
Selecting the Close option from the File menu will close the current screen.

Ending the Program

Asteel 2 provides several ways to end the program, including closing the Asteel 2 main menu, using the pull-down File menu, and using a predefined keystroke combination. These methods are described below.

One way to end the program is to close all the screens until you get back to the Asteel 2 main menu, and then close the main screen. Obviously, this method is the least direct.

Another way to end the program is by following the Windows convention of selecting the Exit option from the File menu, as shown below:



Note that the Exit option has 'Alt-F4' next to it. This means that the keystroke combination of holding down the Alt key and pressing the F4 function key performs the same function as the File/Exit option.

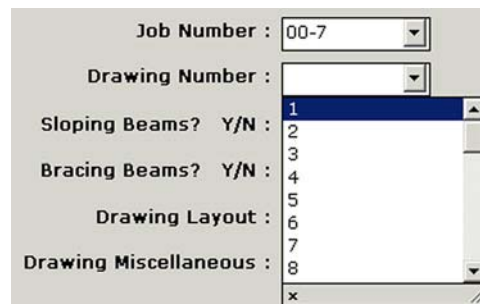
Dropdown Lists

To simplify data entry and help avoid erroneous input, Asteel 2 uses dropdown lists wherever possible. For example, the drawing screens provide lists for selecting a job number, a drawing number, and a detail number, as shown below:

A screenshot of the 'Beam Drawing Information' screen in the CDS Asteel 2.0 application. The window title is 'CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry'. The menu bar includes File, Data Entry, Connection Calcs, Maintenance, and Help. The 'Drawing' tab is selected, with sub-tabs for Beam Description, Bracing Left End, Bracing Right End, and Beam Framing. The main area contains a form with the following fields: 'Job Number' (dropdown menu showing '00-7'), 'Detail Number' (dropdown menu), 'Drawing Number' (dropdown menu), 'Sloping Beams? Y/N' (checkbox), 'Bracing Beams? Y/N' (checkbox), 'Drawing Layout' (text field), and 'Drawing Miscellaneous' (text field). Below the form are two buttons: 'Save' and 'Esc to Exit'. At the bottom of the window is a toolbar with 11 buttons: F1 Next Screen, F2 Prev Screen, F3 Copy Prev, F4 End Copy, F5 Help, F6 Copy All Of End, F7 Clear line, F8 Delete Line, F10 Clear All, and F11 Copy All Of Prev.

The dropdown lists in Asteel 2 are populated with entries based on the values that are valid at the time. In the example above, the job number list contains only those entries for jobs that exist on the system, so it isn't possible to enter an incorrect job number. Likewise, the drawing number list contains only drawings that exist for the selected job and that are of the type that can be edited by the screen you're on. The example above shows a beam data entry screen, so the list contains only beam drawings. The same is true for the list of details. If the selected drawing is in a two-beam format, the detail list will contain only entries for detail numbers one and two.

All dropdown lists in Asteel 2 allow you to select an entry from the list by expanding the list and then using the keyboard arrow and enter keys or the mouse to scroll through the list and select an entry. To expand a dropdown list, click the downward arrow in the gray box to the right of the list. The list will expand as shown below:



The grip at the bottom right of the dropdown list allows you to size the list. The "X" in the bottom left corner allows you to close the list.

Most of the dropdown lists will also allow you to select an entry by typing into the edit control at the top of the list. As you type, entries that match the text you're typing will be selected.

Tab Controls

A common user interface technique used by many of the screens in Asteel 2 is something called a tab control. Tab controls look like the tabs used in hanging folders in desk drawers, and they are used to provide quick and easy access to a series of screens that are related to one another, such as screens of job setup data, drawing data entry, or fabricator setup. The tabs are at the top of the screen, just under the Windows menu bar. The example below shows the tab controls for the job setup screen:



When you click on a tab, the associated page of data is brought to the front. The example below shows the data associated with the Title Block tab of the job setup screen.

The screenshot shows the 'CDS Asteel 2.0 - Job Number 00-5 - Job Setup' window with the 'Title Block' tab selected. The 'Title Block' section contains the following fields:

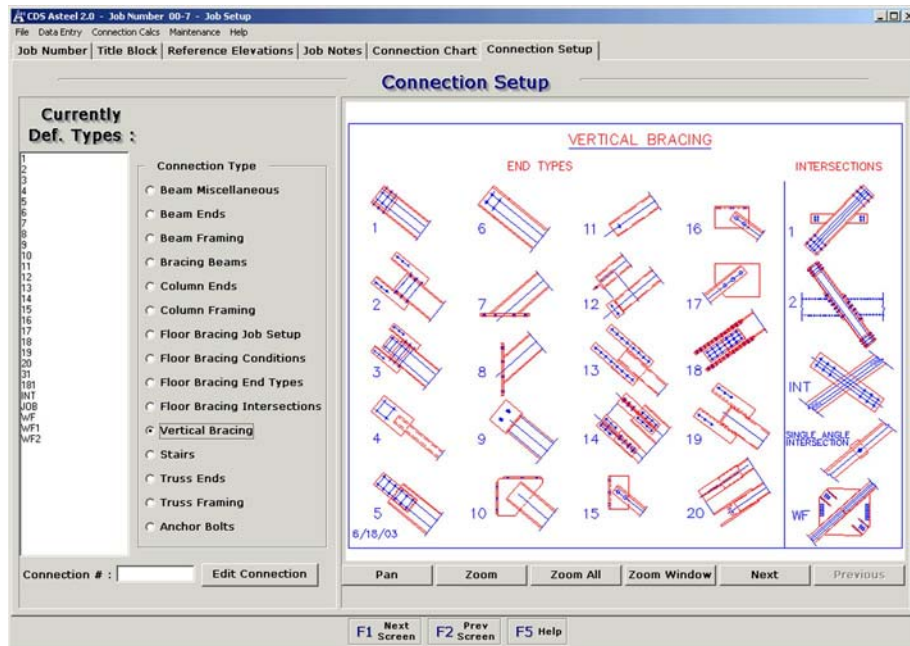
- Fabricator: SFSC
- CUST JOB #: 21682
- JOB: SCE&G CO.
- LOCATION: AIKEN COUNTY, S.C.
- REFERENCE: PIPE RACK
- CUSTOMER: DUKE/FLUOR DANIEL
- REMARKS:
- STEEL: A-36, UN
- WELDS: E70XX
- PAINT1: HOT DIP GALVANIZED
- PAINT2:

The 'General Defaults' section contains the following fields:

- Short Slots at Shear: Y
- UDL/2 Factor Composite 8m: 1
- UDL/2 Factor Non-Composite 8m: 1
- Ship Loose Floor Bracing: N
- Steel Material: A36
- Hole Size 16's: 13
- Connection: 3
- Stiffener Thickness: 0 0 6
- Setback: 0 0 3
- Units (I/M): 1
- Shop Bolts: A325N
- Field Bolts: A325N
- Base Plate Weld: 2
- Show Capacities: N
- Server Drive: [None]

At the bottom, there are three buttons: 'F1 Next Screen', 'F2 Prev Screen', and 'F5 Help'.

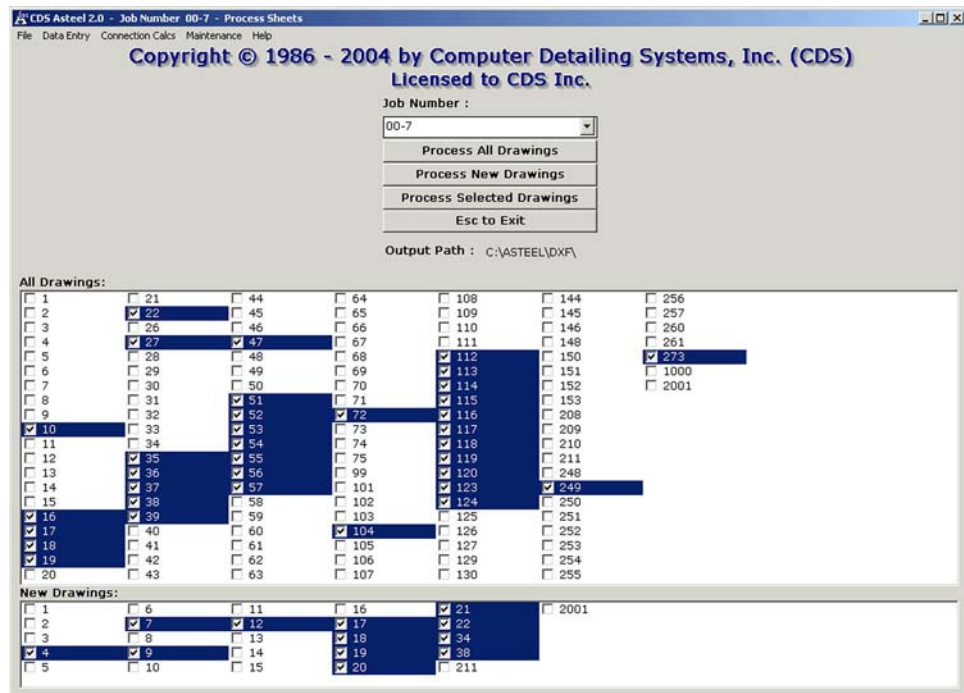
If you click on the Connection Setup tab, the screen will change to the connection setup data, as shown below.



Similar tab controls are on the fabricator setup and drawing data entry screens, and they all function the same way.

Multiple-Selection Lists

Several screens in Asteel 2 allow you to select multiple items at once for the same action. These screens all use an interface called a multiple-selection list. Multiple-selection lists are used by screens such as those that copy connections, copy drawings, delete drawings, and process sheets. The example below shows the screen for processing sheets:

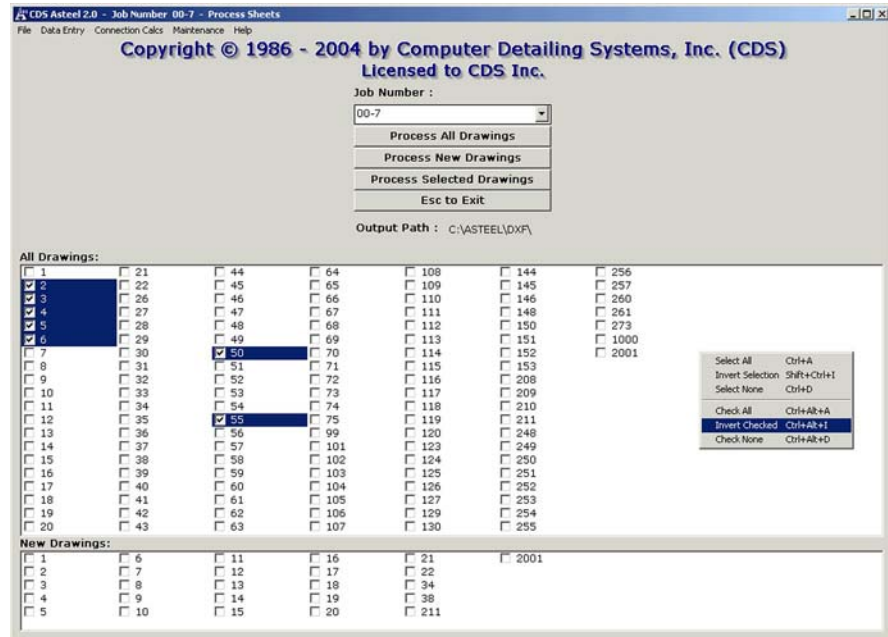


In the example above, there are two lists, one showing all drawings and one showing just the new drawings. Any combination of entries can be selected from either list. In the example above, several ranges of sheets have been selected as well as several individual sheets. List items that are selected will have a check in the box next them.

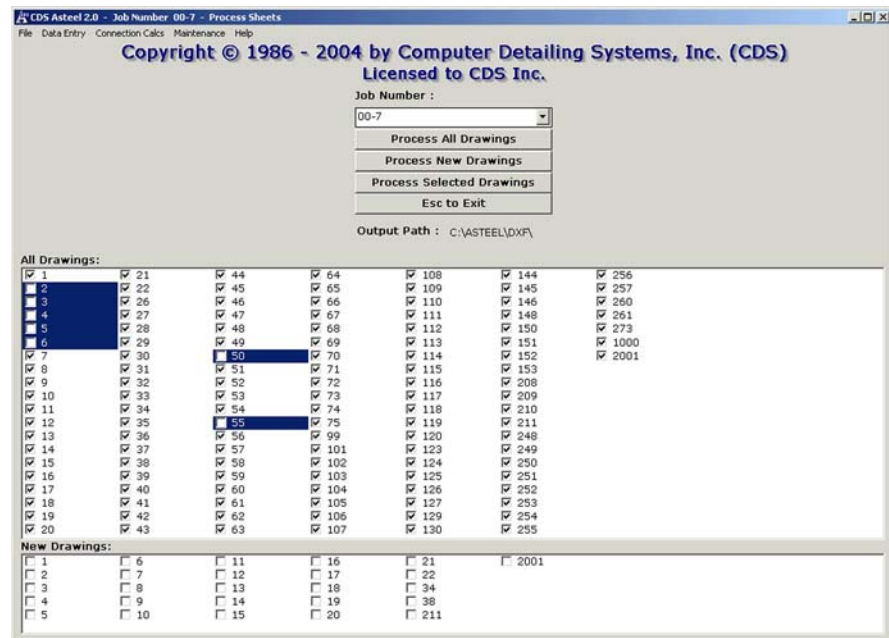
All multiple-selection lists in Asteel 2 look and act the same way with respect to how you select entries. An entry is selected by checking the box to the left of the entry. Individual entries can be selected by clicking their checkbox with the mouse, or by using the tab or arrow keys to position over the checkbox and then pressing the spacebar to select the entry. Ranges of entries can be specified by selecting one entry and then holding down the Shift key as you select the second entry. In most cases, these simple methods of selecting items from the list will be used, but Asteel 2 also supports other methods for selecting items, as described in the following paragraphs.

Aside from clicking on entries to select or de-select them, all multiple-selection lists also support a pop-up context menu that can be accessed by clicking the right-hand mouse button while the cursor is in the list. The context menu in a multiple-selection list allows you to quickly modify the entire selection within the list. You can use this menu to select all the entries in the list, de-select all the entries in the list, or invert all the selections in the list (de-select everything that's selected and select everything that isn't selected). Keyboard short-cuts are also defined for each of these functions. For example, you can use control-A to select all of the entries. The keyboard shortcuts are displayed on the context menu.

As an advanced example of using a multiple-selection list, assume you want to process all the sheets in the screen below except for 2-6, 50, and 55. There are several ways to do this, but only one is described here. You can select the sheets you don't want to process by clicking on sheet 2 and then holding the Shift key and clicking on sheet 6 (selecting the whole range at once), then clicking on 50, then clicking on 55. After selecting the sheets you don't want to process, use the right mouse button to get the pop-up menu, and select Invert Checked, as shown below.



Now, everything except 2-6, 50, and 55 is selected.



Hints And Help

All screens in Asteel 2 provide context sensitive help for the screen and individual pop-up hints for each data entry field on the screen. The help for a screen is accessed by pressing the F5 function key while the screen is being displayed. The example below shows the help topic for the job setup title block screen:

Asteel
File Edit Bookmark Options Help

Find Help Topics Back Print Options << >>

Title Block Screen

Title Block Fields

Fabricator
Enter a fabricator code to be used for this job. This code determines the layout for the shop bill and title block information as well as defaults used during detailing. All fabricators available on your system will be displayed in the drop-down list.

Title Block Fields
Enter the data that will appear in the title block on the actual detail sheet. These fields refer to custom fields defined on the [Initial Fabricator Coordinates screen](#). These fields can vary from fabricator to fabricator.

General Defaults Fields

Short Slots at Shear tabs
Enter "Y" to use slotted sheartabs or "N" to not. Defaults to "Y".

UDL/2 Factor Composite BM
You may enter any factor required by the design of a specific job (defaults to a factor of "1").

UDL/2 Factor Non-Composite BM
You may enter any factor required by the design of a specific job (defaults to a factor of "1").

Ship Loose Floor Bracing
Enter "Y" to assign separate shipping marks for floor bracing gusset plate assemblies. Enter "N" to ship the brace and the gusset plate assembly under a single shipping mark.

Steel Material
Enter the grade of steel used for this job. You may also select one from the drop-down list. This value is the grade of steel used as the default on the job. You can override this value by entering a steel grade for individual details.

Hole Size 16's
Enter the default hole size for this job as a number in 16ths. For example, enter "13" for a job using 13/16 hole size.

Connection
The value in this field indicates the number of rows to be used for all clip angle connections throughout the job. Enter "1" for maximum, "2" for minimum, or "3" to specify. If you choose to specify, enter the number of rows on the [Connection Chart screen](#). You may override this value on individual connections. The default value for this field is "3".

Individual pop-up hints for data entry fields can be displayed by placing the mouse cursor over the field and leaving it there for about 1 second. The hint will be displayed in a pop-up box next to the field. The hint will disappear automatically after a few seconds. The example below shows the hint for the Connection option on the job setup screen:

General Defaults

Steel Material : A36 Units (I/M) : I

Hole Size 16's : 13 Shop Bolts : A325N

Connection : 3 Field Bolts : A325N

Stiffener Thickness : 0 This tells Asteel which connection chart to use for the default number of rows for beam end connections. 1 = Maximum, 2 = Minimum or 3 = User Specify On Connection Chart Screen.

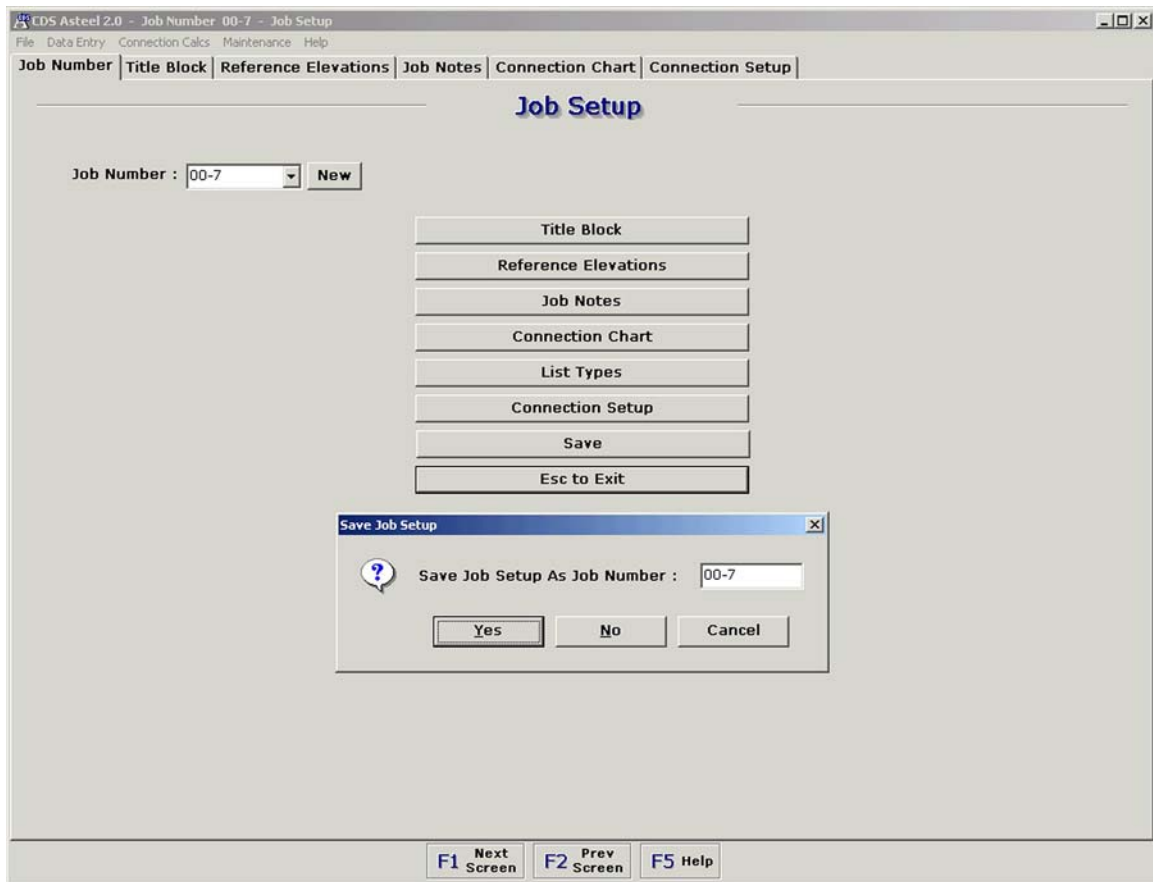
Setback : 0 0 3 Show Capacities : N

Server Drive : [None]

Save-As Capability

When you edit information such as a fabricator setup, a job setup, a drawing, or a connection setup, Asteel 2 will allow you to save it under its original name or with a new name. This is similar to the save-as feature of common programs such as word processors. This save-as feature provides an easy mechanism for cloning an object in cases where you need a nearly-identical copy of something and don't want to enter all the information again manually.

For example, if you've done a job for a particular fabricator before and now you have a second job for that same fabricator, you may want to start with the job setup for the first job and just change the things that need to be different for the second job. You can go into the job setup for the first job, change the data as required for the second job, then when you go to save the data, enter the new job number. The example below shows the save-job dialog as it appears after editing job 00-7:



To save the changes to a new job, you can change the job number in the save dialog. The new job will be created automatically.

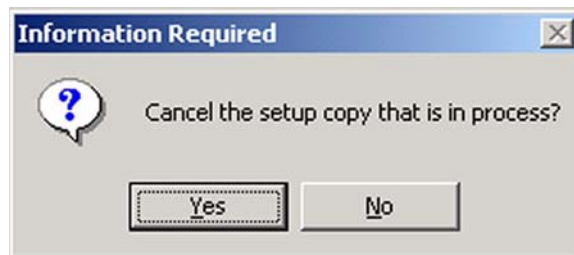
This same save-as capability is available for other data, including fabricator setup, connection setup, and drawings.

Canceling Operations

Some Asteel 2 operations have the potential to be relatively time-intensive, such as processing several hundred sheets at one time or backing up a large job. Asteel 2 provides a way to cancel these operations in mid-process, similar to the way that Windows allows you to cancel a large copy operation. Asteel 2 operations that can be cancelled will display a dialog that has a Cancel button on it. The example below shows the dialog that is displayed when you copy job setup information from one job to another:



The cancel dialog will remain on the screen until the operation completes or until the operation is cancelled. If the operation completes, the dialog will close automatically. If the cancel button is pressed, Asteel 2 will prompt you to confirm that you want to cancel the operation. An example of this confirmation prompt is shown below:



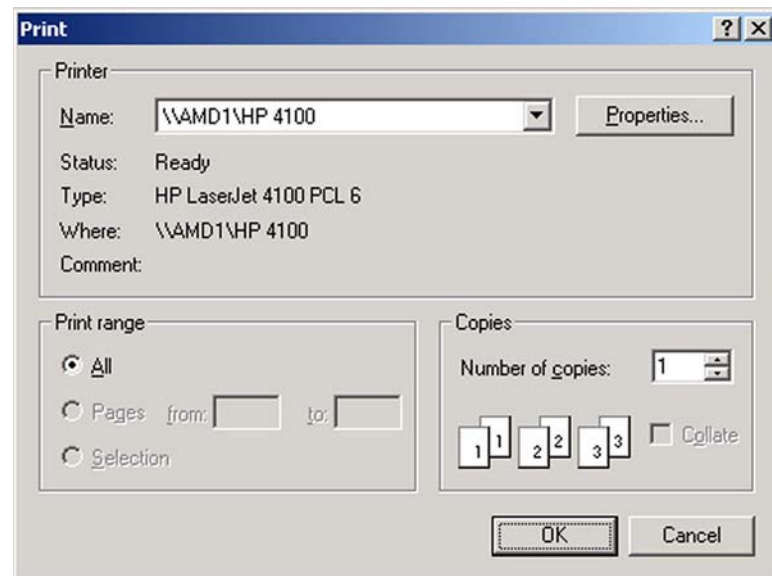
Clicking the Yes button will terminate the operation in progress. Clicking the No button will resume the operation rather than canceling it.

Previewing And Printing Reports

All reports in Asteel 2 use the same basic methods for displaying and printing the report. These reports include the list of connection types defined for a job, the mill order report, and the connection calculations.

All reports are displayed on the screen first to allow the user to preview them before they are sent to a printer. The preview mode provides tools for navigating through the pages of the report. These tools are described in subsequent paragraphs.

When a report is requested, Asteel 2 will display the printer dialog shown below:



This dialog allows you to select the destination printer for the report. Although all reports in Asteel 2 are previewed on the screen first, the report generator needs to know which printer will be used so that the preview version will match the printed version.

Clicking the Ok button will generate the report and display it in preview mode as shown in the example below:

Page 1 of 19

[[KHT\HP LaserJet 4100 PCL 6]]

The first three icons from the left control zooming of the report. The possible zoom modes are zoom to fit, 100%, and zoom to width. Zoom to fit will display an entire page on the screen, as shown below:

NO.	DESCRIPTION	SIZE	LENGTH	QUAN	PIECE MARK
1		C10 x 15.3	18'-3 3/4	1	102B5
2		W16 x 31	19'-10 1/8	1	62AB1
3		W16 x 40	19'-10 1/8	1	7B2
4		WT5 x 11	10'-6 9/16	20	MULTIPLE

The next four controls on the toolbar allow you to navigate through the pages of the report:



From left to right, these tools perform the following functions: go the first page, go to the page previous to the current page, go the page after the current page, and go to the last page.

The next two controls allow you to control printing of the report:



The control on the left allows you to control printer settings such as which printer to use, and the control on the right actually prints the report.

The last two controls are related to saving and loading the report definition:



These controls are provided automatically by the report view, but will generally not be used.

CHAPTER 3

Detailing Operations

This section describes the features that are most directly related to creating details and managing the standards that are used to create them.

In broad terms, you define fabricators in Asteel 2 and specify various options regarding how those fabricators prefer to see details, such as where stub dimensions are drawn from. Next, you define a job, where a job is a collection of drawings being done for a fabricator. Jobs contain additional defaults and preferences, such as default bolt types, default hole sizes, etc. After defining the job, you may want to define some connection types. This step is not always required, since Asteel 2 has many built-in connection types. Detail data is then entered into data entry screens to define the specific beams, columns, etc. on each drawing. Finally, the detail data is processed by Asteel 2 and converted into AutoCAD DXF files, which can then be viewed and printed in AutoCAD.

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Connection Setup

Overview of Connection Types

Asteel 2 supports the concept of connection types. A connection type defines a specific connection method, such as a bolted clip-angle. Each connection type has user-definable options that control various dimensions and other features of the connection. For example, in the case of a bolted clip-angle connection, these would include options to specify the angle size, number of rows of holes, bolt size, etc.

Connection types are identified by a combination of the connection category and a connection number. The connection category indicates the intended application of the connection, such as beam ends or beam framing. The connection number is a numeric identifier that uniquely identifies a type within a category. For example, beam end type 27 is a bolted connection, and beam end type 28 is a welded connection.

The base connection types are defined by Asteel 2 and are described in OnlineDocs. These base types can be configured by the user via connection setup to meet the requirements of a specific job.

Connection setup is the process of taking the base types provided by Asteel 2 and filling in the options to create the specific connections needed for a given job. These specific connections are saved with unique suffixes to distinguish them from one another. For example, you could take beam end type 27 (the base type), configure it with options that specified 3 rows of holes at 3 inch spacing, and save it as beam end type 27A. If you needed the same connection with 4 inch spacing, you could configure that and save it as beam end type 27B.

Whenever a new job is created, a set of default connection setups are copied into that job. These connections can be used as-is or they can be modified, and new connection types can be added to them.

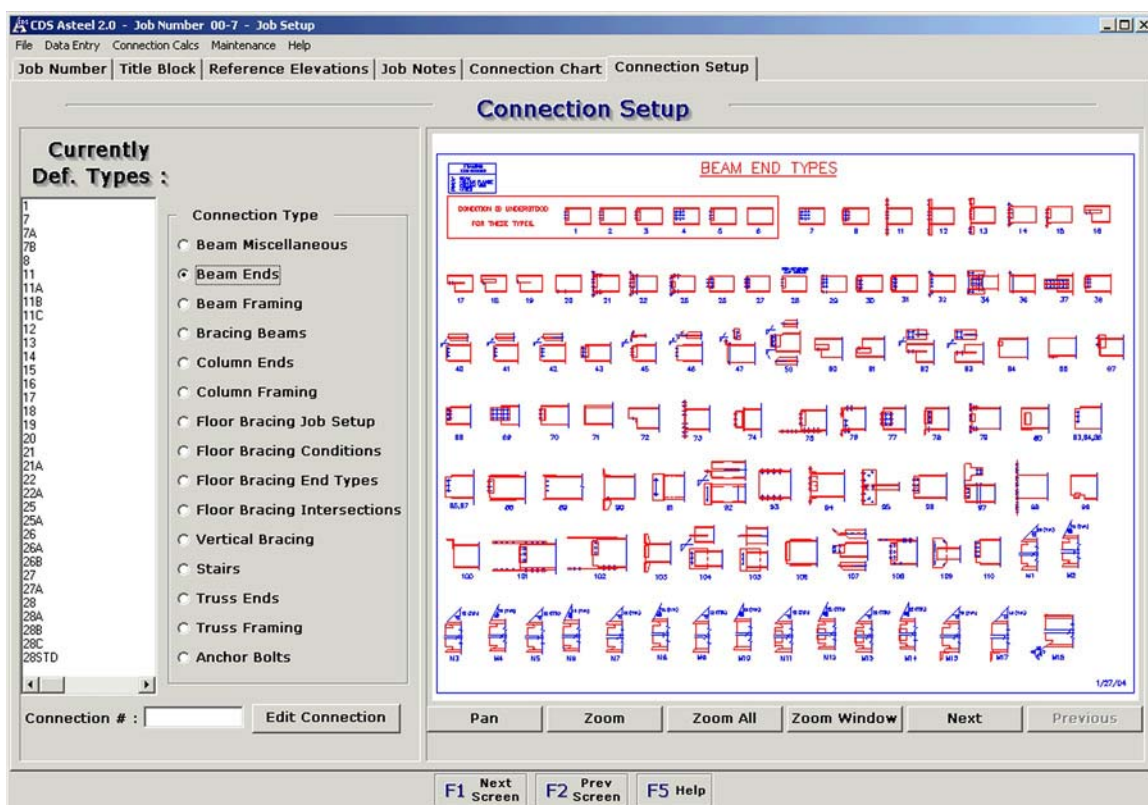
The following paragraphs provide additional information on how to create, modify, and store connection setups.

The Connection Setup Screens

Select Job Setup from the main menu. The Job Setup screen will be displayed:



Click on the Connection Setup button or the Connection Setup tab to display the Connection Setup screen:



This screen allows you to create or edit the connections for a job. You can see all the defined connections for the job by type (beam ends, etc) and then examine individual connection setups along with the documentation for the connection type.

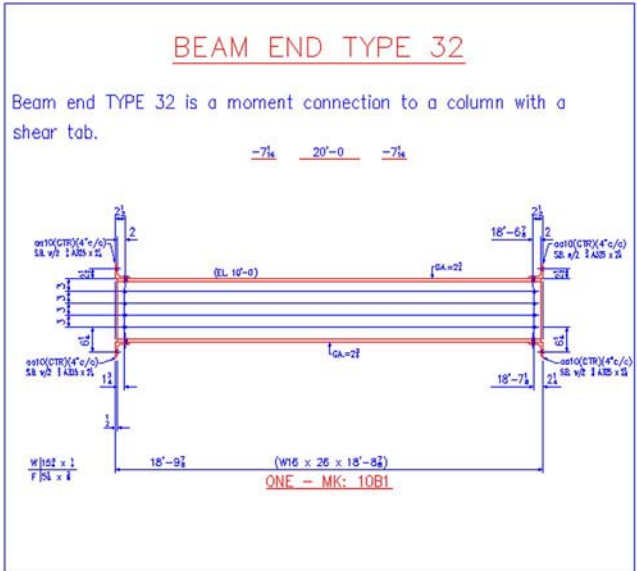
This screen is divided into two panels, where the panel on the left is used to specify the connection to be created or edited, and the panel on the right is used to view the documentation for the type of connection being edited or created.

The Connection Type radio buttons are used to select the overall category of connections you want to work with, such as beam ends. Once you select a category, the Currently Defined Types box on the far left will be loaded with any connections of that type that have already been set up for the job, and the documentation window on the far right will be loaded with the wall chart for that category. In the example above, the list of defined connections is showing all the beam-end types that exist for the current job, and the documentation window is showing a chart of all the base beam end connection types defined in Asteel 2.

The documentation window can be panned and zoomed by using the scrollbars on the sides of the window and the zoom buttons at the bottom of the window. If there is more than one page of documentation for the current type, the next and previous buttons can be used to move forward and backward through those pages.

This screen allows you to specify the values for the configurable options associated with the connection type. The options are identified by the option letters A-U as shown above. Connections generally use only a portion of the available option letters. The options used by a given connection are defined in the documentation for that type. The documentation is displayed when the connection is edited.

Clicking the Next button will display the option sheet documentation:



CDS Asteel 2.0 - Job Number 00-5 - Job Setup

File Data Entry Connection Cals Maintenance Help

Job Number Title Block Reference Elevations Job Notes Connection Chart Connection Setup

Connection Setup

Beam Ends

Letter	Entry
A	0 4 0
B	0 4 0
C	0 0 8
D	0 2 8
E	0 2 8
F	N
G	
H	0 4 0
I	0 2 4
J	
K	
L	
M	
N	
P	
Q	
R	
S	
T	
U	

Type :

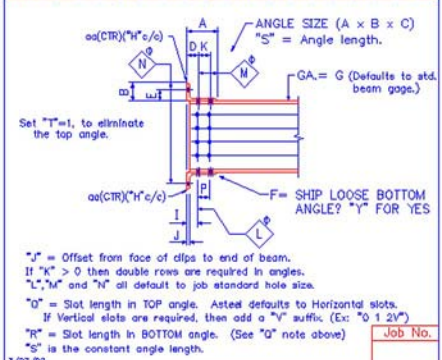
32

Save

Cancel

BEAM END TYPE 32 OPTIONS

TYPE	ANGLE SIZE (A x B x C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)	(R)	(S)	(T)
32	4" 4" 1/2"	2 1/2"	2 1/2"	N			4"	2 1/2"	1"								
32A																	
32B																	
32C																	
32D																	
32E																	
32G																	
32H																	
32J																	
32K																	



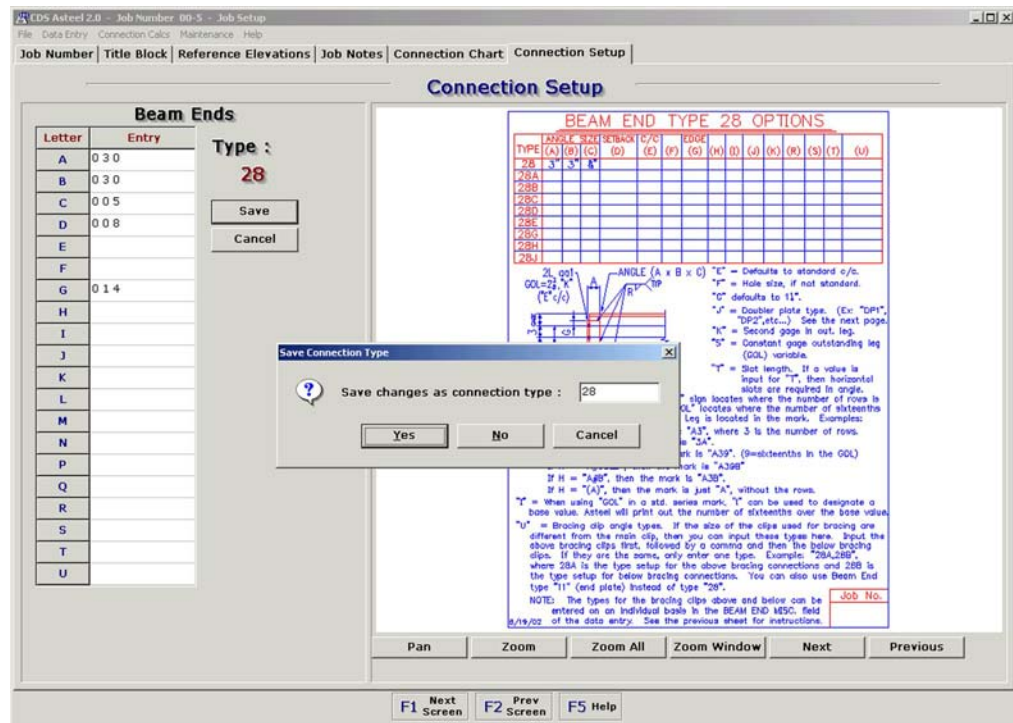
Job No.

In this example, the documentation shows that options A, B, and C are used to specify the angle size. Looking at the option values specified in the left-hand panel of the screen, we see that the current connection is set up to use a 4x4x1/2 angle.

The meaning of a given option varies from type to type. For example, in another connection type, option A may be used to indicate a weld radius or a plate thickness rather than an angle leg size.

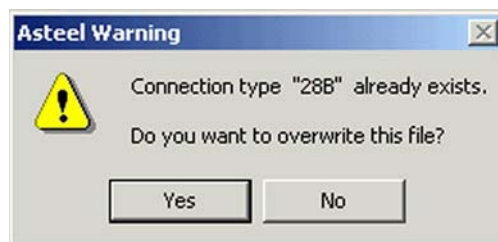
Saving a Connection

When you click the Save button, or if you use the escape key to exit the connection setup screen, Asteel 2 will prompt you to save the current connection. This prompt is shown below.



You can save the connection and exit, exit without saving, or cancel the exit and resume editing the connection setup. Notice that the connection type is editable, allowing you to save the connection as a new type. This “save-as” feature allows you to create a new connection type quickly from an existing one without re-entering all the data. This is useful in cases where you have two connections that are similar but not identical.

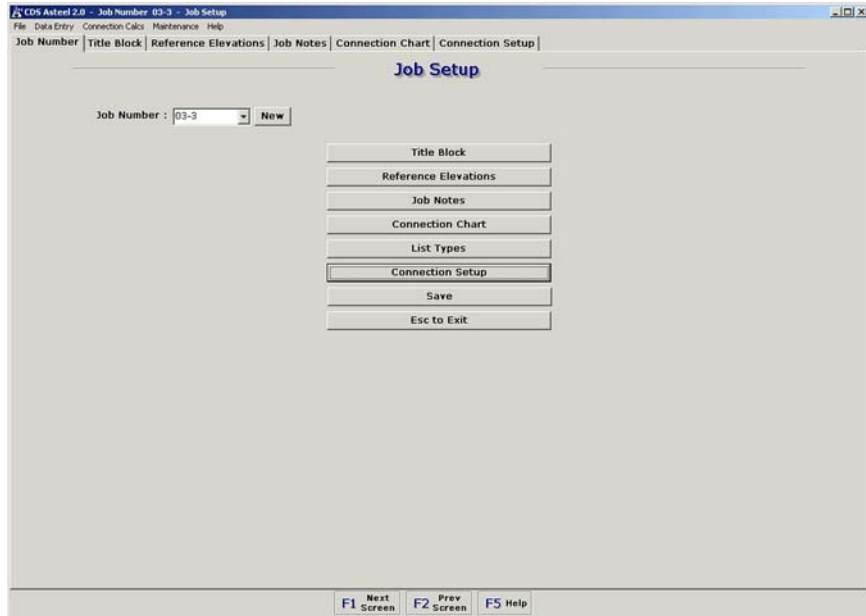
For example, if you wanted a connection just like the beam end type 28 above, but using a 3/8ths inch angle instead of a 5/16ths angle, you could edit the type above, change the angle thickness, and save it under 28B. If a connection already exists for the name you specify, Asteel 2 will prompt you to indicate whether you want to overwrite the existing connection. This prompt is shown below.



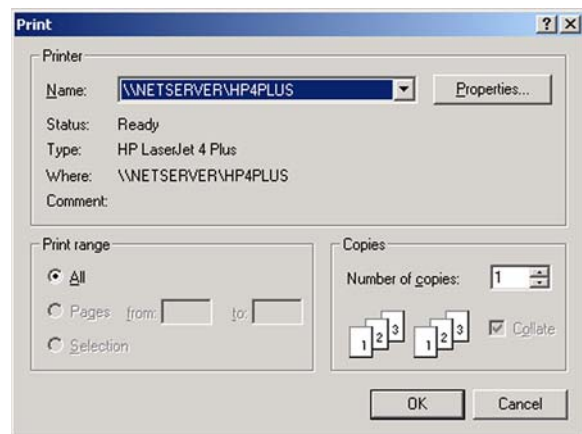
The concept of being able to save data under a new name is used in several places in Asteel 2, including job setup, fabricator setup, and all the detail data entry screens.

Listing the Connection Types Defined for a Job

To view or print a list of the connection types that have been defined for a job, click the Job Setup button from the main menu. The Job Setup menu will be displayed:



Click the List Types button. The Print dialog will be displayed:



This dialog is displayed even though the list will be sent to the screen first. This is because the connection list is a formatted report that is first previewed on the screen and can then be sent to the printer if desired.

When you click the Ok button on the Print dialog, the connection list report is displayed on the screen:

Defined Connection Types For Job# : 03-3						
BEAM END TYPES :						
BE1	BE2	BE3	BE4	BE5	BE6	BE7
BE8	BE11	BE11A	BE12	BE13	BE14	BE15
BE16	BE17	BE18	BE19	BE20	BE21	BE21A
BE22	BE22A	BE25	BE25A	BE26	BE26A	BE26B
BE27	BE28	BE28STD	BE29	BE29A	BE30	BE31
BE32	BE34	BE36	BE36A	BE37	BE38	BE40
BE41	BE42	BE43	BE45	BE46	BE47	BE50
BE60	BE61	BE62	BE63	BE64	BE65	BE67
BE68	BE69	BE70	BE71	BE72	BE73	BE74
BE75	BE76	BE77	BE78	BE79	BE79A	BE80
BE83	BE84	BE85	BE86	BE87	BE88	BE89
BE90	BE91	BE92	BE93	BE94	BE95	BE96
BE97	BE98	BE99	BE100	BE101	BE102	BE103
BE104	BE105	BE106	BE107	BE981	BECC	BEM1
BEM2	BEM3	BEM4	BEM5	BEM5A	BEM6	BEM7
BEM8	BEM9	BEM10	BEM11	BEM12	BEM13	BEM14
BEM15	BEM17	BEM18				
BEAM FRAMING TYPES :						
BF2	BF6	BF7	BF8	BF8A	BF9	BF11
BF12	BF14	BF15	BF20	BF21	BF22	BF23
BF24	BF25	BF26	BF27	BF28	BF29	BF30
BF31	BF32	BF32A	BF33	BF34	BF34A	BF35
BF35A	BF36	BF36A	BF38	BF38A	BF39	BF40
BF41	BF42	BF44	BF50	BF50A	BF51	BF52
BF53	BF54	BF55	BF61	BF62	BF63	BF63A
BF64	BF65	BF66	BF67	BF68	BF69	BF70
BF71	BF72	BF73	BF74	BF75	BF76	BF77
BF78	BF79	BF80	BF81	BF82	BF83	BF84
BF85	BF86	BF87	BF88	BF89	BF90	BF91
BF92	BF93	BF94	BF95	BF96	BF97	BF98
BF100	BF101	BF102	BF103	BF104	BF104A	BF104A1
BF104B	BF104C	BF104D	BF104E	BF104F	BF104G	BF104H

You can use the toolbar above the report to zoom in or out, navigate through the pages, or send the report to the printer. Refer to the section on Common Characteristics of the User Interface for additional information on using the toolbar on the report preview screens.

Job Setup

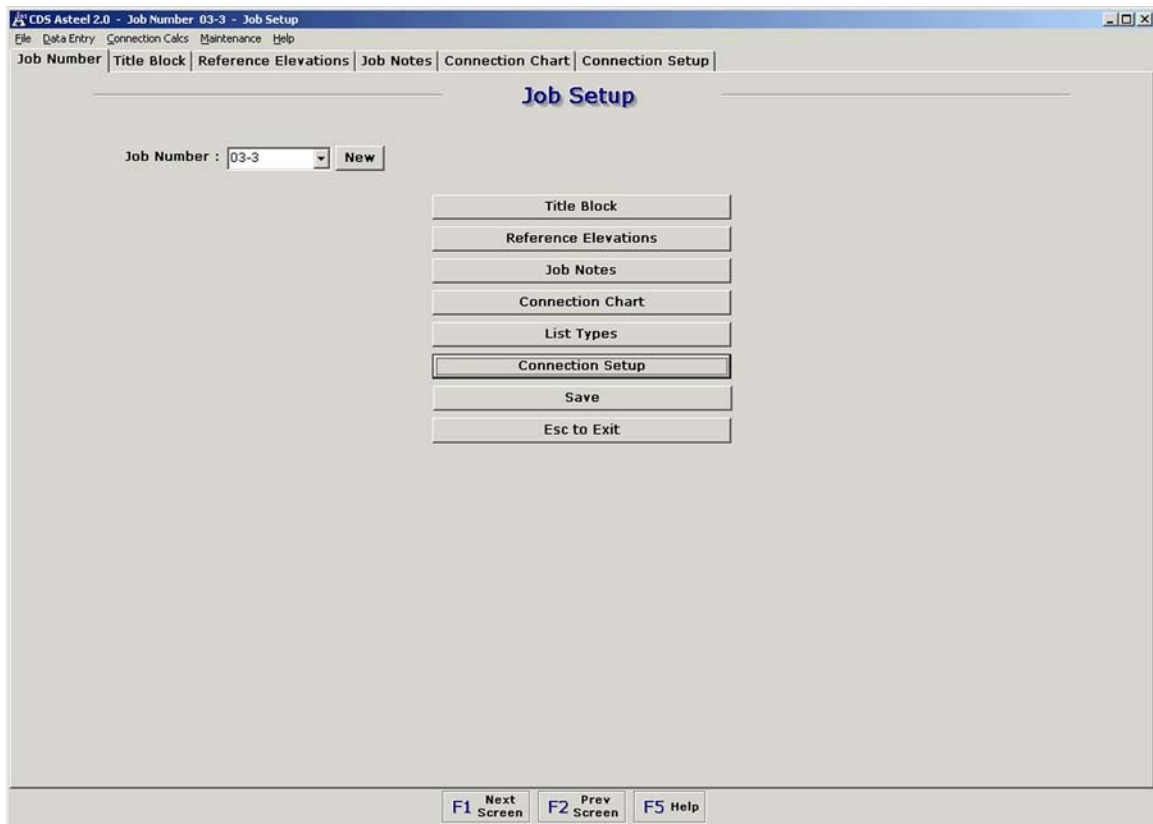
The previously-described process of setting up connection types for a job is part of an overall job setup process. The job setup also includes the following:

- title block information
- a set of general options and defaults
- reference elevation definitions
- a list of default rows of holes for various beam depths
- job notes that will appear in the title block

All of this setup information is entered through the job setup screen. The following paragraphs describe the options that are entered through the job setup screen.

Accessing Job Setup

To access the job setup information, click the Job Setup button from the Asteel 2 main menu, or use the pull-down menu bar at the top of the screen to select File / Job Setup. The Job Setup screen will be displayed:



This screen allows you to create new jobs or edit existing jobs, and it provides access to all of the job setup functions.

Creating a New Job

To Create a new job, click the New button to the left of the dropdown list of jobs on the main job setup screen. You will be prompted to save the current job, then the New Job dialog will be displayed:

The screenshot shows the 'Create New Job' dialog box. It has a title bar with the text 'Create New Job' and a close button. The dialog contains four input fields: 'Job Number' (a text box), 'Fabricator' (a dropdown menu with 'CDS' selected), 'Units (I/M)' (a text box with 'I' entered), and 'Server Drive' (a dropdown menu with '[None]' selected). At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

Enter the job number, select a fabricator from the dropdown list, and enter the units of measure to be used by the job (imperial or metric). If this is a server job, then select the appropriate server from the Server Drive list. Click the Ok button to create the job.

The new job will have default values assigned for many of its setup options, and a standard set of connections will be created and available for use within the job.

The following paragraphs describe how to modify the job setup data. See the section on Connection Setup for additional information about configuring connections for a job.

Titleblock and General Defaults

Click the Title Block button or the Title Block tab on the Job Setup screen. The Title Block and General Defaults screen will be displayed:

The screenshot shows the 'CDS Asteel 2.0 - Job Number 03-3 - Job Setup' window. The 'Title Block' tab is active, displaying a form with the following fields:

- Fabricator: CDS (dropdown)
- CUST JOB # : []
- JOB FOR : []
- LOCATION : []
- CONTRACTOR : []
- ARCHT/ENGR : []
- ELECTRODES : []
- SHOP PAINT : []
- SURFAC PRP : []
- JOB EXCEPT : []
- STEEL MATL : []
- SHOP BOLTS : []
- FIELD BOLT : []

The 'General Defaults' tab is also visible, showing the following fields:

- Short Slots at Sheartab : Y
- UDL/2 Factor Composite Bm : 1
- UDL/2 Factor Non-Composite Bm : 1
- Ship Loose Floor Bracing : N
- Steel Material : A36 (dropdown)
- Hole Size 16's : 13
- Connection : 3
- Stiffener Thickness : 0 0 6
- Setback : 0 0 8
- Units (I/M) : I
- Shop Bolts : A325N
- Field Bolts : A325N
- Base Plate Weld : 1
- Show Capacities : N
- Server Drive : [None] (dropdown)

At the bottom of the window are three buttons: F1 Next Screen, F2 Prev Screen, and F5 Help.

This screen allows you to enter information that will appear in the title blocks of the sheets for this job and to specify the general defaults to be used by the job.

The screen is divided into two areas. The upper part of the screen allows you to specify the fabricator for the job and enter fabricator-specific title block information.

Note that the title block information may change as the fabricator changes:

The screenshot shows the 'CDS Asteel 2.0 - Job Number 03-3 - Job Setup' window with the 'Title Block' tab selected. The window has a menu bar (File, Data Entry, Connection Calcs, Maintenance, Help) and a tab bar (Job Number, Title Block, Reference Elevations, Job Notes, Connection Chart, Connection Setup). The 'Title Block' section includes a 'Fabricator' dropdown set to 'CONCORD' and several input fields: CUST JOB #, PROJECT, CUSTOMER, PAINT 1, PAINT 2, and REF. The 'General Defaults' section contains various settings: Short Slots at Sheartab (Y), UDL/2 Factor Composite Bm (1), UDL/2 Factor Non-Composite Bm (1), Ship Loose Floor Bracing (N), Steel Material (A36), Hole Size 16's (13), Connection (3), Stiffener Thickness (0 0 6), Setback (0 0 8), Units (I/M) (I), Shop Bolts (A325N), Field Bolts (A325N), Base Plate Weld (1), Show Capacities (N), and Server Drive ([None]). At the bottom are buttons for F1 Next Screen, F2 Prev Screen, and F5 Help.

The lower part of the screen contains the general defaults and options for the job. These options are described below. Most of these options can be overridden for individual details or individual connections.

Short Slots at Sheartab

This option defines whether slots are allowed or not.

UDL/2 Factor Composite BM / UDL/2 Factor Non-Composite BM

These options define loading factors to be used in engineering calculations for composite and non-composite beams.

Ship Loose Floor Bracing

This option defines whether to assign separate shipping marks for floor bracing gusset plate assemblies (Y) or ship the brace and the gusset plate assembly under a single shipping mark (N).

Steel Material

This option defines the default steel type for the job. Note that this applies to fitup material as well as main material. It is recommended that you set the default to A36 here and then override the main material type on a beam-by-beam basis on individual sheets.

Hole Size 16's

This option defines the default hole size for this job in 16ths of an inch.

Connection

This option defines how the default number of rows of holes for a clip angle will be calculated if the number of rows isn't specified for a connection. The possible values are:

Option	Result
1	use the maximum number of rows possible
2	use the minimum number of rows possible
3	use the default values specified for the beam depth (see Connection Chart)

Stiffener Thickness

This option defines the default stiffener thickness for the job. The default is 3/8 inch (0 0 6").

Setback

This option defines the setback distance for beams from the face of clip angles to the end of the beam. The setback distance is normally 1/2 inch (0 0 8). You may want to make the setback distance 1/4 inch (0 0 4) for galvanized jobs.

Units (I/M)

This option defines the unit of measure for the job. Valid entries are "I" for imperial or "M" for metric units.

Shop Bolts

This option defines the type of bolt to use for shop bolts on this job (defaults to "A325N").

Field Bolts

This option defines the type of bolt to use for field bolts on this job (defaults to "A325N").

Base Plate Weld

This option defines the default weld type to be used for column base plates (defaults to "1"). Note that tubes and pipes always weld all around. Possible values are:

Option	Result
1	Weld 1/2 depth at web and one side of each flange
2	Weld all around
3	Weld 1/2 depth at web on one side and one side of each flange
4	Weld one side of each flange
5	Weld both sides of the web and penetration welds at both flanges
6	Weld one side of each flange and 2/3 depth on both sides of the web
7	Weld both sides of each flange and both sides of the web

Show Capacities

This option defines whether connection capacities are to be shown on the details. Weak connections will be flagged with an asterisk. Possible values are:

Option	Result
Y	show capacities
N	do not show capacities
W	show capacities only for weak connections

Server Drive

This option defines a shared network drive that will be used as a file server to store the data for the job. Storing the job on a server drive allows multiple people to work on the same job and share files. It can also be used to provide a centralized storage facility for all jobs, making backups easier and more reliable.

When a job is assigned to a server drive, data is copied from the server to your local system when you say you want to edit it. After you edit the data and save it, it is copied back to the server.

If you are working in a standalone system (not networked to other systems, or in a network but not wanting to share files), set the server drive to None.

If you are working in a network and want to share the job files with other people on the network, set the server drive to one of the drives in the dropdown list. Note that only those drives that have been shared to the network are included in the dropdown list. CD drives, ZIP drives, and floppy drives cannot be used as server drives and are not included in the dropdown list even if they have been shared.

Additional information on server drives, server jobs, and local jobs is provided in the prior section on Asteel Concepts.

Reference Elevations

Click the Reference Elevations button or the Reference Elevations tab on the Job Setup screen. The Reference Elevations screen will be displayed:

CDS Asteel 2.0 - Job Number 00-7 - Job Setup

File Data Entry Connection Calcs Maintenance Help

Job Number Title Block **Reference Elevations** Job Notes Connection Chart Connection Setup

Reference Elevations

A	200' 11 0	U		AO		BI	
B	206 6 0	V	VARIES	AP		BJ	
C	210 11 0	W		AQ		BK	
D	218 0 0	X		AR		BL	
E	153 0 0	Y		AS		BM	
F	170 0 0	Z		AT		BN	
G	185 6 0	AA		AU		BO	
H	220 0 0	AB		AV		BP	
I	223 6 0	AC		AW		BQ	
J	229 0 0	AD		AX		BR	
K	235 0 0	AE		AY		BS	
L	211 2 8	AF		AZ		BT	
M	191 10 12	AG		BA		BU	
N	214 6 13	AH		BB		BV	
O	204 1 12	AI		BC		BW	
P		AJ		BD		BX	
Q		AK		BE		BY	
R		AL		BF		BZ	
S		AM		BG		CA	
T		AN		BH		CB	

F1 Next Screen F2 Prev Screen F5 Help

This screen allows you to create references to be used to indicate particular elevations. These references can be used in details wherever an elevation is required.

In the example shown above, reference elevation A is defined as 200'-11. The reference 'A' can then be used in any elevation fields in the data entry screens and will be interpreted as 200'-11 when the data is processed.

Elevation references can also be used in expressions, such as 'A+2' to indicate an elevation that is above or below a reference elevation by a fixed amount. Using the elevations defined in the example shown above, the expression 'A+2' is equivalent to 202'-11. Likewise, the expression 'A-2' is equivalent to 198'-11. Expressions that omit the sign, such as 'A2 1 0', assume a positive sign, so the expression 'A2 1 0' is equivalent to 201'-0 using the elevations defined above.

If you change the value of a reference elevation, the new value will affect sheets that are processed after the change.

Job Notes

Click the Job Notes button or the Job Notes tab on the Job Setup screen. The Job Notes screen will be displayed:

The screenshot shows the 'Job Notes' screen in the CDS Asteel 2.0 software. The window title is 'CDS Asteel 2.0 - Job Number 03-3 - Job Setup'. The menu bar includes 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. The tab bar shows 'Job Number', 'Title Block', 'Reference Elevations', 'Job Notes' (selected), 'Connection Chart', and 'Connection Setup'. The main area is titled 'Job Notes' and contains six text input fields labeled 'Line1' through 'Line6'. Below these is a 'Text Size' option with a dropdown menu. At the bottom are three buttons: 'F1 Next Screen', 'F2 Prev Screen', and 'F5 Help'.

This screen allows you to specify note text to be printed in the title block area of the sheets for the job. Up to six lines of note text that can be specified. These notes will appear on every drawing.

The text size option controls the size of the note text. The possible values are:

Option	Result
1	normal size text
2	large text

The location of the note text on the drawings is controlled by the fabricator setup. See the section on fabricator setup for additional information about how to specify the coordinates of the note text.

Connection Chart (Default Number of Rows Based on Size)

Click the Connection Chart button or the Connection Chart tab on the Job Setup screen. The Connection Chart screen will be displayed:

Nominal Beam Depth	Number Of Rows
3" or 75mm	1
4" or 100mm	1
5" or 130mm	1
6" or 150mm	1
7" or 180mm	1
8" or 200mm	2
9" or 230mm	2
10" or 250mm	2
12" or 310mm	3
13" or 345mm	3
14" or 360mm	3
15" or 380mm	3

Nominal Beam Depth	Number Of Rows
16" or 410mm	4
18" or 460mm	5
20" or 500mm	5
21" or 530mm	6
24" or 610mm	7
27" or 690mm	7
30" or 760mm	8
33" or 840mm	9
36" or 920mm	10
40" or 1000mm	10
44" or 1120mm	10

At the bottom of the window are three buttons: F1 Next Screen, F2 Prev Screen, and F5 Help.

This screen allows you to define the default number of rows of holes for each nominal beam depth. This option is used in conjunction with the Connection option in the Title Block and General Defaults screen defined previously.

The connection chart is used to determine the number of rows of holes for a connection only in cases where BOTH of the following conditions are true:

- the number of rows is not specified in the data entry for the connection
- the Connection option in the General Defaults job setup screen is set to indicate that the connection chart should be used

Entering Detail Data

Each type of detail that can be produced has a corresponding set of data entry screens that allow you to enter the pertinent information about that detail. Asteel 2 provides data entry screens for beams, columns, floor bracing, vertical bracing, stairs, and trusses.

The data for a detail is associated with a drawing number. A given drawing can have one or more details, but all the details on a given drawing must be of the same type, such as beams.

For each of these drawing types, there is a main drawing screen that defines the overall drawing format, such as paper size and number of details. For each detail on the drawing, there are one or more screens that define the detail.

The detail screens always include a main description screen that provides basic data, such as the member size, shape, length, and end connections. There may also be additional type-specific screens that define items such as column framing connections, beam bracing connections, or truss chord members.

The following sections provide an overview of the characteristics that are common to all the data entry screens and then define the data entry screens available for each type of drawing.

Common Characteristics

Overview

All detail data entry screens have a similar look and feel. The beam data entry screen is shown below as an example:

All detail data entry screens have a drawing tab and a description tab, and may have other tabs specific to the drawing type, such as the bracing tabs shown on the beam screen above, or top and bottom chord member tabs for trusses. The tabs automatically adjust based on the current data. For example, if the bracing-beams indicator in the example above is set to No, the tabs for left- and right-end bracing won't be shown.

All data entry screens have a button menu at the bottom of the screen. Like the tabs at the top of the screen, the functions provided by the button menu may vary based on the current context, such as which detail is active and which tab is being displayed.

Some data entry screens have pop-up context menus (right mouse-click menus). These menus vary based on the section of the screen the mouse is in (i.e.: the context) when the right mouse button is clicked.

All data entry screens use the same method for navigating through the details on the drawing.

The following paragraphs describe these common characteristics of the data entry screens.

The Drawing Tab

The drawing tab, as shown in the preceding example, is the first tab displayed when a drawing is loaded. It allows you to select a job, a drawing in that job, the layout of the drawing, and a detail on that drawing. The general format of the drawing tab is the same for all member types, with minor exceptions for beams and trusses. The job number, drawing number, and detail number are all drop-down lists, so you can go directly from one job to another, from one drawing to another, or from one detail to another.

The drawing list contains only those drawings of the selected drawing type within the selected job. Likewise, the details list contains only those details that are valid for the selected sheet layout.

The Description Tab

The description tab generally allows you to specify the member shape and size, its length, end connections, and other information about the item being detailed. The layout of the description tab is specific to the type of detail being created (beam, column, etc).

The layout of each description tab is described in later sections on specific data entry screens.

The Button Menu

All drawing data entry screens have a button menu at the bottom of the screen, similar to the one shown in the screen segment below. This button menu is from the beam data entry screen:



The functions on the menu can be invoked by clicking on the associated button with the mouse or by pressing the associated function key.

These functions are enabled or disabled based on the data entered and on what tab is currently displayed. Like the tab controls at the top of the screen, the buttons and their associated functions change based on the type of screen to which they are attached, but the concept is the same on all screens.

The following paragraphs describe the functions available through the button menus of the data entry screens.

F1: Next Screen

This function will cause the next tab page to be displayed. If you are on the last tab of a detail, this function will cause the description tab of the next detail to be displayed. If you are on the last tab of the last detail of the drawing, you will be prompted to save the drawing.

F2: Previous Screen

This function will cause the previous tab page to be displayed. If you are on the first tab of a detail, this function will cause the last tab of the previous detail to be displayed. If you are on the first tab of the first detail of the drawing, this function will cause the drawing tab to be displayed.

F3: Copy Previous

This function will copy the value of the field the cursor is in from the previous detail of the drawing into the current detail of the drawing.

For example, if the cursor is in the member size field on detail 2, this function will copy the member size from detail 1 into the member size field for detail 2.

F4: End Copy / Line Copy

This function is labeled End Copy on some screens and Line Copy on others. These functions operate similarly to the F3 Copy Previous function.

End Copy is available on screens such as the beam description screen shown below, where the screen contains data that describes both ends of a member:

Beam Information

Quantity	W.P. to W.P.	Member Size	Left End Elevation	Right End Elevation
1B2	20 0 0	W16 x 40	A	
		Detail Length : 16	Steel : A36	Remarks :
		Camber :	Composite or Non-Composite : NC	
Miscellaneous :				

Beam Ends

Left End

Type : 11E Condition : 3

Size or Minus : W12 x 40

Elev. Difference :

Edge Distance :

Gage :

Rows : ● Spacing

Top Block :

Bottom Block :

Miscellaneous :

Right End

Type : 11E Condition : 3

Size or Minus : W12 x 40

Elev. Difference :

Edge Distance :

Gage :

Rows : ● Spacing

Top Block :

Bottom Block :

Miscellaneous :

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear Line F8 Delete Line F10 Clear All F11 Copy All Of Prev

End Copy copies a field value from the data for the opposite end of the same member. For example, if the cursor is in the connection type field for the right end of a beam, this function will copy the connection type from the left end into the connection type field for the right end.

Line Copy is available on screens such as the beam framing screen shown below, where there are multiple lines of identically formatted data:

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 48 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing Beam Description Beam Framing

Beam Framing

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	0 2 11	B	0 4 0						
Line 2	15 5 11	W		2		0 4 0			
Line 3	0 0 0	55BLF							
Line 4	0 0 0	55BLN							
Line 5	0 0 0	55BRF							
Line 6	0 0 0	55BRN							
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 Line Copy F5 Help F6 Copy All of Line F7 Clear line F8 Delete Line F10 Clear All F11 Copy All Of Prev

Line Copy copies a field value from the line above. For example, if the cursor is in the connection type field on line 2, Line Copy will copy the connection type from line 1 into the connection type field on line 2.

F5: Help

This function displays help for the current screen.

F6: Copy All of End / Copy All of Line

Like End Copy / Line Copy, these functions are labeled differently and operate differently depending on the type of screen being displayed.

Like End Copy, Copy All of End is available on screens such as the beam description screen, where the screen contains data that describes both ends of a member.

Copy All of End copies all field values from the data for the opposite end of the same member. For example, if the cursor is in any field for the right end of a beam, this function will copy all of the fields from the left end data into the fields for the right end. The copied data can then be modified if necessary. This feature provides a fast method of creating an identical or nearly-identical end by cloning the other end.

Like Line Copy, Copy All of Line is available on screens such as the beam framing screen, where there are multiple lines of identically formatted data.

F7: Clear Line

CDS Asted 2.0 - Job Number 09-7 - Beam Data Entry - Drawing Number 48 - Detail Numbers

File Data Entry Connection Calc's Maintenance Help

Drawing | Beam Description | Beam Framing

Beam Framing

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	22 11	B	0 4 0						
Line 2	15 5 11	W		2		0 4 0			
Line 3	0 0 0	558LF							
Line 4	0 0 0	558LN							
Line 5	0 0 0	558RF							
Line 6	0 0 0	558RN							
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 Line Copy F5 Help F6 Copy All of Line F7 Clear line F8 Delete Line F9 Clear All F10 Copy All Of Prev

CPS Asteel 2.0 Job Number 09-7 - Beam Data Entry - Drawing Number 48 - Detail Number 1

Efile Data Entry Connection Calc Maintenance Help

Drawing | Beam Description | Beam Framing

Beam Framing

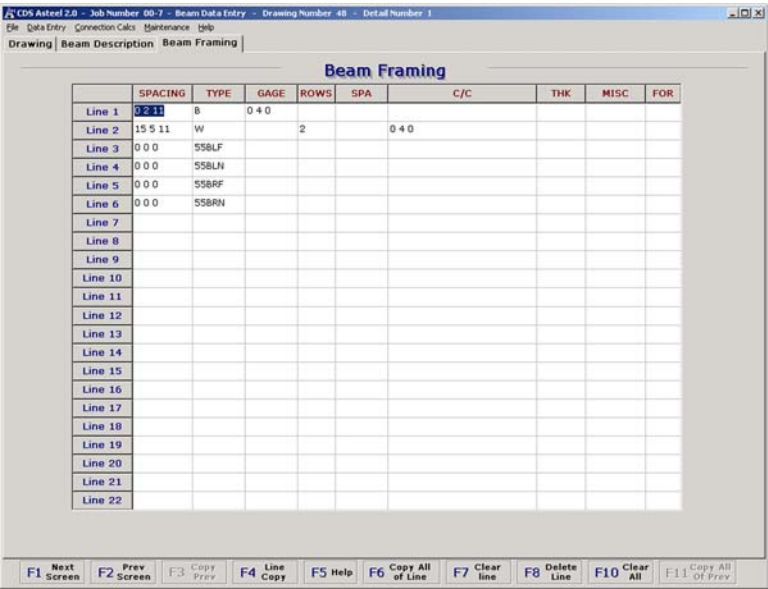
	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	0 2 11	B	0 4 0						
Line 2	15 S 11	W		2		0 4 0			
Line 3									
Line 4	0 0 0	55BLN							
Line 5	0 0 0	55BRF							
Line 6	0 0 0	55BRN							
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

F1 Next Screen F2 Prev Screen F3 Copy Print F4 Line Copy F5 Help F6 Copy All of Line F7 Clear line F8 Delete Line F10 Clear All F11 Copy All of Print

Blank lines are not the same as deleted lines. See the description of the beam framing screen for information about the significance of blank lines. See the description of the Delete Line function below for information about how to delete lines.

F8: Delete Line

This function is available on screens such as the beam framing screen, where there are multiple lines of identically formatted data. This function erases all the fields in the current line and moves all the rows below it up one row. For example, assume you have a beam with the following framing connections:



Putting the cursor on line 3 and invoking the Delete Line function will produce the following:

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	0 2 11	B	0 4 0						
Line 2	15 5 11	W		2	0 4 0				
Line 3	0 0 0	SSBLN							
Line 4	0 0 0	SSBRF							
Line 5	0 0 0	SSBRN							
Line 6									
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

Deleted lines are not the same as blank lines. See the description of the beam framing screen for information about the significance of blank lines. See the description of the Clear Line function for information about how to create a blank line rather than deleting the line.

F10: Clear All

This function will clear all fields for the current screen or for the entire detail. Asteel 2 will prompt you to indicate whether you want to clear the screen or the detail. For example, invoking Clear All from the beam framing screen displays the dialog shown below:

You can use the radio buttons to indicate whether you want to clear only the current screen (in this example, the data on the framing tab), or the entire detail (all data on all tabs – in this example, the description and framing).

F11: Copy All of Previous

This function will copy all of the fields from the previous detail into the current screen. For example, if the beam framing for detail 2 is being displayed, invoking Copy All of Previous will cause all the data from the beam framing fields for detail 1 to be copied into the framing fields for detail 2.

Navigating Across the Detail Data

Each drawing in Asteel 2 may have multiple details on it, based on the drawing layout. In general, the number of details available on the drawing is specified by the layout number. For example, drawing layout number 2 can have up to two details. Note that the layout does not indicate how many of these details are actually used – it just indicates how many can potentially be used.

The example below shows a beam drawing data entry form that has room for two details (the drawing layout is 2):

The screenshot shows the 'Beam Drawing Information' form in the CDS Asteel 2.0 application. The form is titled 'Beam Drawing Information' and contains the following fields:

- Job Number : 00-7
- Drawing Number : 7
- Detail Number : 1
- Sloping Beams? Y/N : N
- Bracing Beams? Y/N : Y
- Drawing Layout : 2
- Drawing Miscellaneous :

Below the fields are two buttons: 'Save' and 'Esc to Exit'.

The bottom of the window shows a toolbar with the following function keys:

- F1 Next Screen
- F2 Prev Screen
- F3 Copy Prev
- F4 End Copy
- F5 Help
- F6 Copy All Of End
- F7 Clear Line
- F8 Delete Line
- F10 Clear All
- F11 Copy All Of Prev

The data tabs, such as the beam description tab, bracing left end tab, etc., each display data for a single detail at a time. The detail whose data is displayed is based on the current detail number in the detail number control on the drawing tab. This detail is called the current detail or the active detail. In the example above, detail number 1 is active. The active detail number is always displayed in the title bar of the screen, as are the drawing number and job number.

Asteel 2 provides several ways for you to move through the data for the active detail or to move between details on a drawing. These methods are described in the following paragraphs.

You can go directly to a detail by selecting it from the list of details or by typing the detail number into the detail number control on the drawing tab. When you move the cursor to another field (either by clicking another field with the mouse or by using the tab key), the active detail will be changed.

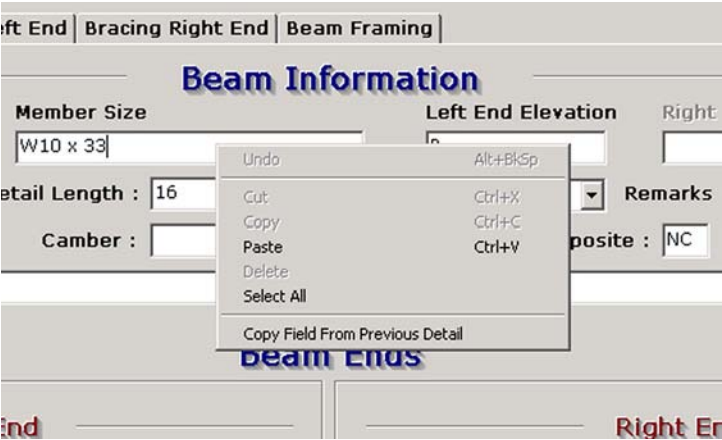
You can use the Next Screen and Previous Screen function keys or buttons defined at the bottom of the screen. These functions cycle through the screens for a detail sequentially, then move to the next or previous detail. More detailed information on the Next Screen and Previous Screen functions is provided in the preceding section on the Button Menu.

You can go directly to a screen for a particular group of data for a detail, such as the framing data, by clicking on the corresponding tab at the top of the screen.

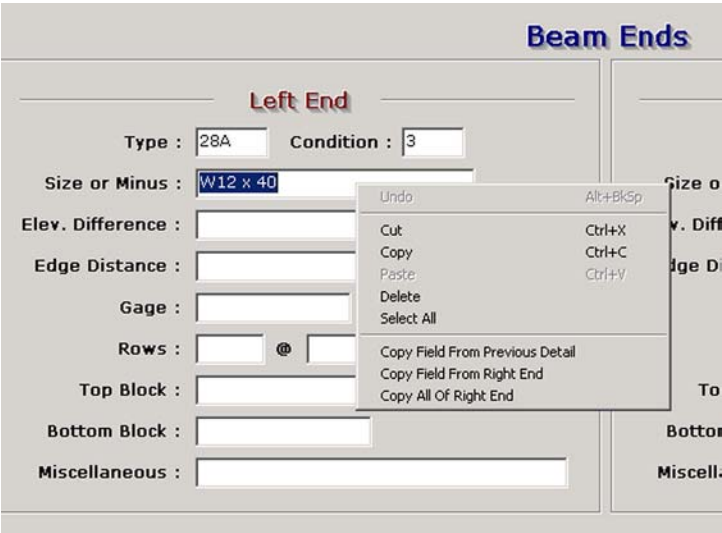
Pop-Up Context Menus

The data entry screens support the concept of pop-up context menus, sometimes referred to simply as pop-up menus or context menus. Pop-up menus are activated by clicking the right mouse button. The choices on the menu are based on the context (i.e.: what field the cursor is in when the menu is activated). The pop-up menus generally provide the same features as the button menus at the bottom of the screen plus additional editing features.

An example of a pop-up menu on the beam data entry form is shown below. The cursor was in the member size field at the top of the screen when the right mouse button was clicked:



The pop-up menu is different if it is activated with the cursor in one of the fields for the beam ends (i.e.: a different context). In this context, the menu contains options for copying data from the connection at the other end of the beam:



Beams

The following paragraphs describe the tab screens of the beam data entry screen and the fields on each screen.

Beam Drawing Tab

The screenshot shows the 'Beam Drawing Information' tab in the 'CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry' window. The window has a menu bar with 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. Below the menu bar is a tabbed interface with 'Drawing', 'Beam Description', 'Bracing Left End', 'Bracing Right End', and 'Beam Framing'. The 'Drawing' tab is active, displaying the 'Beam Drawing Information' form. The form contains the following fields and controls:

- Job Number :** A drop-down menu showing '00-7'.
- Detail Number :** A drop-down menu.
- Drawing Number :** A drop-down menu.
- Sloping Beams? Y/N :** A radio button control.
- Bracing Beams? Y/N :** A radio button control.
- Drawing Layout :** A radio button control.
- Drawing Miscellaneous :** A text input field.
- Save** and **Esc to Exit** buttons.

At the bottom of the window is a function key bar with buttons for F1 Next Screen, F2 Prev Screen, F3 Copy Prev, F4 End Copy, FS Help, F6 Copy All Of End, F7 Clear Line, F8 Delete Line, F10 Clear All, and F11 Copy All Of Prev.

This screen allows you to select the job, drawing number, and detail you want to work with. You can also specify the sheet layout (how many details and how they're positioned) and whether the beams on the sheet are sloping and/or have end or midpoint bracing.

The following paragraphs provide additional information about the features of the drawing tab.

Job Number

The Asteel 2 job number is entered in this field. Use the format YY-NNN where YY is the last two digits of the year and NNN is a number from 1 to 999. For example, you would enter 02-1 for the first job in 2002. You can quickly switch between job numbers by selecting one from the drop-down list.

You cannot create new job numbers by typing a new number into this field. To create a new job, use the New button from the job setup screen or save an existing job as a new job number. These processes are described under the sections on job setup and the save-as feature, respectively.

Drawing Number

Drawing numbers may be up to four characters long and must begin with a number. For example, 100, 14A, and 1A1 are all valid drawing numbers, but M12 is not. You can quickly switch between drawing numbers by selecting one from the drop-down list. The drawings in the list include only those drawings that are defined for the currently-selected job.

You can enter a new drawing number into the edit control at the top of the list to create a new drawing.

Sloping Beams? Y/N

Enter "Y" in this field if the sheet has sloping beams.

Because of the differences between the way sloping and non-sloping beam details are laid out on a sheet, you may not have sloping and non-sloping beams on the same sheet.

Bracing Beams? Y/N

Enter "Y" in this field if the sheet has bracing beams. Additional bracing data entry screens will be displayed.

Drawing Layout

Enter the drawing layout format. Valid formats are 1, 2, 3, 4, or 6. The format usually corresponds to the number of details on the sheet. For example, entering 6 in this field will allow you to input 6 beam details. In addition, an X suffix may be added to formats 1 and 2 to get additional framing connection fields (i.e. 1X and 2X).

The maximum number of details per sheet is normally 6 for non-sloping beams and 4 for sloping beams. Sections and moment connection details can further reduce the number of beams that can be detailed on a sheet. Refer to the online documentation for section locations for the various drawing layouts.

Drawing Miscellaneous

This field may be used to enter the detailer's initials, which will be placed in the title block of the sheet.

Detail Number

You can quickly switch between details by selecting one with this drop-down list. The choices in the list are based on the drawing layout. For example, if you picked a 4-beam layout, there will be no entries in the list for selecting details 5 or 6.

Save

Click Save to save the drawing.

Esc to Exit

Click Esc to Exit to return to the previous menu screen. If you have made any changes to the drawing then you will be asked if you want to save your changes.

Beam Description Tab

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 10 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing **Beam Description** Bracing Left End Bracing Right End Beam Framing

Beam Information

Quantity <input type="text" value="181"/>	W.P. to W.P. <input type="text" value="20 0 0"/>	Member Size <input type="text" value="W10 x 33"/>	Left End Elevation <input type="text" value="8"/>	Right End Elevation <input type="text"/>
<input type="text"/>	<input type="text"/>	Detail Length : <input type="text" value="16"/>	Steel : <input type="text" value="A36"/>	Remarks : <input type="text"/>
<input type="text"/>	<input type="text"/>	Camber : <input type="text"/>	Composite or Non-Composite : <input type="text" value="NC"/>	
Miscellaneous : <input type="text" value="P1"/>				

Beam Ends

Left End

Type : Condition :

Size or Minus :

Elev. Difference :

Edge Distance :

Gage :

Rows : @ Spacing

Top Block :

Bottom Block :

Miscellaneous :

Right End

Type : Condition :

Size or Minus :

Elev. Difference :

Edge Distance :

Gage :

Rows : @ Spacing

Top Block :

Bottom Block :

Miscellaneous :

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear line F8 Delete Line F10 Clear All F11 Copy All Of Prev

This screen allows you to specify the overall description of the beam, such as its length and shape, and to specify data related to the ends and connections of the beam, such as the connection types and what they are framing into.

The following paragraphs provide additional information on the features of the Beam Description tab.

Quantity or Pc. Mark/Qty.

The first fields on the screen will be labeled either "Quantity" or "Pc. Mark/Qty." and will be entered slightly differently based on the marking system selected under the Main Material Piece Mark Option on the Fabricator Setup screen.

The default marking system allows you to enter just the quantity. All other marking systems require you to enter the piecemark and the quantity.

For the default marking system, the marks are specified as a quantity followed by a mark, with no intervening character. For example, 2B1 would indicate a quantity of 2 for a mark B1.

For all other marking systems, the marks are specified as a mark followed by a quantity, with a forward slash separating the mark from the quantity. For example, B1/2 would indicate a quantity of 2 for a mark B1.

Up to three quantities/marks can be specified per detail.

For the default marking system, Asteel 2 will generate marks for quantities that are entered without a mark. Both marked and unmarked quantities may be combined on the same sheet. Additional information about how Asteel 2 assigns these marks, and potential hazards of combining marked and unmarked quantities within a job, is provided in the following paragraphs.

When Asteel 2 generates a mark for you, it simply counts the number of marks used so far, adds one to that value, and assigns that as the next mark. When Asteel 2 counts the number of marks used, it includes marks that it generates itself plus marks specifically entered by you. For example, if you entered only a quantity for one beam, then 1B7 for the second beam, then only a quantity for the third beam, the third beam would receive a mark of B3.

Note that the mark numbers for unmarked quantities are regenerated when sheets are reprocessed, so mark numbers may change based on changes to the data entry for the sheets, and this may yield unexpected results. For example, assume you entered a quantity of 2 on the first beam and a mark/quantity of 1B2 for a second beam. Asteel 2 will generate a mark/quantity of 2B1 for the first beam. If you then go back and split the first beam into two beams, each with a quantity of one, you will have 2 beams marked B2 after you process the sheets (the first quantity will get mark B1, the second quantity will get mark B2, and the third beam was specifically assigned a mark of B2).

In general, it is recommended that you try to avoid mixing marked and unmarked quantities, for the reasons described above.

As-shown and opposite-hand notation can be specified by adding a left/right suffix to the mark. For example, one each of B1 (AS) & B2 (OH) would be entered as "1B1R" in the first field and "1B1L" below it.

W.P. to W.P.

Up to three work point to work point dimensions can be specified per detail. Pair the dimension with the quantity/mark on the same row. If all of the marks have the same work point to work point, specify the dimension next to the first mark and leave the remaining fields blank.

You cannot specify multiple work points for beams with framing connections or sloping beams.

A maximum of three beams may be combined on the same detail and all three must be the same shape and size.

Member Size

Enter the shape followed by the size of the member. W, C, MC, M, HP, TM, S, TS, P, L, HSS and G (plate girder) are valid shapes. If you enter a size without the shape, a W shape is assumed. Here are some examples of shapes and sizes:

Size	Input
W14 x 22	14 22
WT7 x 13	WT7 13
C8 x 11.5	C8 11.5
MC12 x 10.6	MC12 10.6
M5 x 18.9	M5 18.9
HP14 x 117	HP14 117
TM40 x 480	TM40 480
S12 x 35	S12 35
HSS10 x 8 x 1/2	HSS10 8 8
HSS7.5 x .375	HSS7.5 6
Round HSS size	
TS6 x 6 x .25	TS6 6 4
5 inch standard pipe	PS5
5 inch extra strong	PX5
5 inch double extra strong	PXX5

<u>Size</u>	<u>Input</u>
Angle 4 x 3.5 x .3125	L4 3.5 5
G36 x 20 x 1.5 x 2.75	G36X20X1.5X2.75

The size can be entered with or without an 'x' between the nominal depth and the pound-per-foot. For example, "W14 22" will be interpreted as "W14x22".

Left End Elevation

Elevations may be input as a dimension, a reference elevation, or an expression involving both a reference elevation and a dimension. The following examples assume a reference elevation exists specifying A as 200'-0:

<u>Elevation</u>	<u>Input</u>
200'-0	A
202'-0	A+2 0 0
202'-0	A2
198'-0	A-2

Right End Elevation

The right end elevation field is accessible to sloping beam details only. The slope is determined from the elevation difference and work point to work point.

The format of the right end elevation is identical to that of the left end elevation.

Detail Length

The detail length specifies the actual length in inches that the beam detail will occupy on the sheet. The default is 9 inches for 3, 4, and 6 beam layouts and 16 inches for 1 and 2 beam layouts. You may specify any value from 2 to 23 for the detail length, but Asteel 2 will not accept detail length layout combinations that cause details to extend beyond the sheet boundaries or interfere with other details on the sheet.

The length must also be long enough to accept the web/flange framing connections. Each framing connection requires 1.5 inches, so a 9-inch detail would accommodate up to 5 framing connections and 14 framing connections would require at least 22.5 inches detail length.

You can move the left end of a beam by adding a comma and the distance you want the beam moved. For example, entering "9,1" would make the detail 9 inches long and move the left end 1 inch to the right. Entering "12,-2" would make the detail 12 inches long and move the left end 2 inches to the left.

Steel

The steel type defaults to the type specified for the steel material option on the Title Block screen. You can change the default steel type by selecting one from the drop-down list here. This information is used for the calculation of end connection capacities.

Remarks

Remarks entered here will be noted both on the detail next to the member size and in the shop bill under the remarks column.

You may also add a location reference for each piece mark in this field. You must prefix the location reference with the piece mark number.

For example, if you enter "1=E-4, F-4" in this field, "[E-4, F-4]" will appear beside the piece mark on the detail. If you enter "1=E-4, F-4; 2=G-5, H-5" in this field, "[E-4, F-4]" will appear beside the first piece mark and "[G-5, H-5]" will appear next to the second piece mark.

Make sure you separate each location reference with a semi-colon. You can combine remarks and location references by separating them with a semi-colon.

Camber

Specify a camber here if necessary. The camber will be noted both on the detail next to the member size and in the shop bill under the remarks column.

Composite or Non-Composite

Enter "C" for composite or "NC" for non-composite beams. The default is non-composite. This information is used when calculating end capacities.

Miscellaneous

This space is used to specify the following options:

<u>Option</u>	<u>Description</u>
---------------	--------------------

Option	Description
NAIL	Shows nailer hole punching in the top flange of a beam. For example, "NAIL=2 6 0" specifies holes every 2'-6 inches for the length of the beam. You can also specify the distance from the left end at which the holes are to start. For example, "NAIL=2 6 0,6 0 0" places holes every 2'-6 inches beginning 6' from the left end of the beam.
SPA	The SPA is similar to the NAIL option, except that it does not draw holes. It can be used to layout items that occur at regular intervals. An additional option allows you to specify the number of spaces by entering the number and an @ symbol before the dimensions. For example, "SPA=4@2 0 0, 4 0 0" would specify 4 spaces at 2'-0 intervals starting at 4'-0 from the left end.
SECT	Draws a section of the beam to be used by the detailer.
GIRT	Causes beams to be treated as girts (i.e. pull dimensions from the bottom flange).
TYPES	Refer to the Beam Miscellaneous section in OnlineDocs for a description of the different types available and the format to enter.
TOEUP	Channel option to detail looking at the toes of the flanges. This is useful if you want to override the channel option on the Fabricator Setup screen.
TOEDOWN	Channel option to detail looking at the back of the channel. This is useful if you want to override the channel option on the Fabricator Setup screen.
P-1	This code is used with bracing beam midspan types. It informs Asteel 2 that there is only one work point (one brace). See the Bracing Beam Midspan Types section of OnlineDocs for more information.
P-2	This code is used with bracing beam midspan types. It informs Asteel 2 that there are two work point (and two plates). See the Bracing Beam Midspan Types section of OnlineDocs for more information.
LF	This code is used to set the UDL/2 factor on an individual basis. The default UDL/2 factor is set on the title block screen. Example input: "LF=2.0".

Beam End Fields

There are identical sets of fields for the left and right ends of the beam. The connection type, condition and size or minus dimension must be specified for each beam. This is all Asteel 2 needs to complete the detail. Asteel 2 will calculate the number of rows, the dimension from the top of steel to the first row (gage), minus dimensions, edge distances and blocks as required. The end connections may be customized to suit odd conditions by using the other spaces provided. Anything entered in these spaces will override Asteel 2 calculations and any job defaults that may apply.

The beam end fields are described below.

Type

The type field defines what end connection to use, such as a clip angle connection, a moment connection with prepared flanges, or a butt-plate connection.

Additional information on the available beam end types is provided in OnlineDocs.

Condition

This field specifies what the end of the beam is framing to. The following conditions are available:

Condition	Description
1	Framing to a beam web
2	Framing to a column flange
3	Framing to a column web
5	Minus dimension

Not all conditions are appropriate for all types. Additional information on the conditions that are valid for each type is provided in OnlineDocs.

Note that a beam framing to the web of a channel on the toes side is considered condition 1.

The condition for types 1 through 6 is understood and does not need to be entered.

Size or Minus

A size or minus dimension must be entered here. For conditions 1 through 3, a size is required. For condition 5, a minus dimension is required.

End types 1 through 3 require a size. End types 4 through 6 require a minus dimension.

Elev. Difference

An elevation difference is appropriate for condition 1 only (beam to beam). The difference is entered as a positive or negative number depending on whether the beam you are framing to is above or below the beam you are describing.

For example, if the beam you are framing to is 2 1/2 inches above, enter "0 2 8" here. If no difference is entered, Asteel 2 assumes the beams are at the same elevation.

Edge Distance

The edge distance field is used to specify the distance from the edge of the beam to the nearest hole in the web or flange, depending on the end type. If no edge distance is specified, it defaults to 1 1/2 inches for 3/4 inch bolts and 1 3/4 inches for 7/8 inch bolts.

Gage

This is the dimension from the top of steel to the first row of the end connection. The default value is 3 inches for beams with a "k" dimension of 1 3/4 inches or less, while 4 1/2 inches is used for larger beams.

At beam to beam connections, Asteel 2 will adjust the gage to match the nearest gage line of the beam you are framing to. For example, if an elevation difference of "0 2 8" is specified in the elevation difference field, Asteel 2 would use a gage of 3 1/2 inches matching up with the 6 inch gage line of the other beam. You may override the calculated gage by specifying the gage desired.

Rows

Enter the number of rows in the connection. If you leave this field blank, the number of rows based on the connection type is automatically calculated.

For clip angle connections, the program uses the maximum, minimum or a specified number of rows based on the connection option on the Title Block screen. Shear tab connections always use the maximum number of rows. You may override these default values by specifying the number of rows here.

Spacing

Enter the spacing between the rows (defaults to 3 inches).

Top or Bottom Block

While you can manually enter a block, Asteel 2 will automatically calculate blocks on beam to beam connections. Asteel 2 will also cut down the flange width when framing to column webs if required.

You may specify a block to be used by entering the length of the block followed by the depth of the block. For example, "0 3 8,0 1 8" would be a 3 1/2 long by 1 1/2 deep block. If only a length is specified the depth will default to the beam's "k" dimension. Note that block lengths are always measured from the face of the clip angles even though the plotted detail may tie up the blocks from the end of the shaft.

You may cut the flange to a certain width by entering the length of the cut followed by the total width of the flange with a "W" on the end. For example, to cut a flange to 2" wide by 3" long, you would input "0 3 0,0 2 0W". To cut the flange to a certain width on the near or far side only, use an "N" or "F" suffix respectively in place of the "W". For example, to cut a flange to 2" wide by 3" long on the near side only, you would input "0 3 0,0 2 0N".

You may strip the flanges by entering the length of the strip followed by "N" (near side), "F" (far side) or "0 0 0" (near side and far side) separated by a comma. For example, a 4" near side strip would be input as "0 4 0,N". If both the near and far sides are required then input "0 4 0,0 0 0". You can change the terminology on the detail to "CUT NOT CHIP" instead of "STRIP" by adding a "C" suffix ("0 4 0,NC" for example).

When using beam end types M1-M8 or M11-M14 with condition 2 or 3, you can specify an additional setback of the prepared flange by entering the length followed by the suffix "M". For example, a block that is 3" long would be input as "0 3 0M". The depth is calculated depending on the chosen weld access type. This option would be used when field welding the moment connection to a stiffener in a column web for example.

There is a notch option. See the beam end miscellaneous field.

Miscellaneous

This space allows the detailer to specify a variety of different end connection options. Note that multiple options are separated by commas (example: "2=0 3 8,3=0"). Specify end connection options as follows:

Option	Description	Input
1	Cut bottom flange only. When framing to a column web, the beam flanges will be cut to fit between the column flanges. Useful when only the bottom flange needs to be cut, at the roof for example. You can disable cutting both flanges entirely by inputting "1=NA".	1=B
2	Change c/c distance on clip angles. Asteel 2 uses a standard center-to-center on clip angles as specified by the fabricator. If a special case requires a different c/c, you can specify it using option 2.	2=0 2 8

Option	Description	Input
3	Change clip angle setback. The clip angle setback is the distance from the face of the clip angles to the end of the beam. Asteel 2 normally sets this distance to 1/2 inch. Option 3 allows you to change the setback as necessary.	3=0 0 6
5	Bolt clip angle at specified gage. Option 5 allows you to bolt clip angle connections instead of welding them. The length of the angle leg will be increased if required.	5=0 1 12
6	Change vertical edge distance on clip angles.	6=0 1 8
8	Sloping beam cut. Beam ends on sloping beams may be cut square or beveled depending on the type and amount of slope. This option is used to specify the type of cut for sloping beams. Enter "8=S" for a square cut or "8=B" for a bevel cut.	8=S
9	Code "9" is used for blocks on architecturally exposed steel. This code allows you to set a constant clearance for blocks. This value is applied to the length and the depth of the block. For example, a code of "9=0 0 2" will block the beam 1/8" BEYOND the flange of the beam being framed to and it will block the beam 1/8" BELOW the flange of the beam being framed to. It will also cut the block square.	9=0 0 2
10	Code "10" allows you to have a lift hole in the beam end. The value entered after the code is the distance from the end of the beam to the hole. The distance from the top of the flange down to the lift hole is always at the first row in the end connection. For example, a code of "10=0 6 0" will put a lift hole 6 inches from the beam end and down at the first row in the end connection.	10=0 6 0
R	Specifies an end reaction in kips.	R=75
NOTCH	Asteel 2 will notch instead of block (only available at top block when framing to a beam at a lower elevation).	NOTCH

Beam Bracing Left/Right End Tab

These screens allow you to specify bracing connections above and below the ends of the beam. The fields on the right end bracing screen are identical to those for left end bracing. The bracing screens will not be available (i.e.: the tabs will be hidden) if you did not enter a “Y” for the Bracing Beams prompt on the drawing tab.

The following paragraphs provide additional information on the features of the Bracing Left End and Bracing Right End screens.

Type

Enter the type number of the bracing connection at this end of the beam.

Bracing types are set up using options sheets found in the bracing beam types section of OnlineDocs.

Bracing types are assigned unique type numbers, as opposed to beam end types where the numbers are predefined and set. You may use any number or number-letter combination, such as 1, 2, 3, 1A, 1B, etc. It is common practice to start with type 1. When you setup a bracing type, be sure NOT to use N, F, R, or L in the type name (i.e. 40N, 40F, etc.). N, F, R, and L are reserved to indicate Near side, Far side, Right, and Left respectively.

You can specify the thickness of the gusset plate by adding a suffix to the type name. Asteel 2 will set the plate thickness according to the following table of suffixes:

Suffix	Thickness
A	1/2 inch
B	5/8 inch
C	3/4 inch
D	7/8 inch
E	1 inch

The last letter of the type name determines the plate thickness. For example, if you enter "1A", Asteel 2 will use a type 1 bracing connection with a 1/2 inch gusset plate. If you enter "3AD", Asteel 2 will use a type 3A bracing connection with a 7/8 inch gusset plate.

Rows

Enter the number of rows on the brace.

Spacing

Enter the spacing between the rows (defaults to 3 inches).

Base

Enter the horizontal component of the slope. This field is used in conjunction with the rise field to determine the bevel of the bracing connection.

When using the sloping bracing beam format, the Base and Rise dimensions are always the beam's left or right end work points. At midspan bracing, use the Left/Right end work point to determine the Rise (not the midpoint).

Rise

Enter the vertical component of the slope. This field is used in conjunction with the base field to determine the bevel of the bracing connection.

When using the sloping bracing beam format, the Base and Rise dimensions are always the beam's left or right end work points. At midspan bracing, use the Left/Right end work point to determine the Rise (not the midpoint).

A Dim

Enter the distance from the top of the beam to the first hole of the beam end connection that is above the beam.

A Rows

Enter the number of rows above the beam.

A Spacing

Enter the spacing between the rows above the beam (defaults to 3 inches).

B Dim

Distance from the last hole of the beam end connection to the first hole below the beam.

B Rows

Enter the number of rows below the beam.

B Spacing

Enter the spacing between the rows below the beam (defaults to 3 inches).

Beam Framing Tab

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1									
Line 2									
Line 3									
Line 4									
Line 5									
Line 6									
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

This screen allows you to define the type and location of connections framing to the web or flanges of the beam.

Framing connections that are less than 1'-6 apart will always be drawn to scale. This allows for combined connections, such as shared holes in the web for opposing clip angle connections. It also allows more connections on a standard 9-inch beam detail.

The required detail length (see the Beam Description screen) is determined by adding up the total spacing with spaces less than 1'-6 being drawn to a 1 inch = 1 foot scale and spaces greater than 1'-6 being drawn at 1.5 inches maximum. Asteel 2 will produce a warning message if you try to input too many framing locations or set the detail length such that it would cause an interference with another detail.

Asteel 2 allows you to specify whether the stub dimension lines are drawn above or below the beam. First, enter the data for framing connections for which the stub dimension lines are to be drawn below the beam. Then, leave a blank line and enter the data for the above beam connections. Sloping beam and six beam layout sheets do not support this option and are unaffected by it.

The following paragraphs provide additional information on the features of the Framing screen.

Spacing

The location of each framing connection is specified using the spacing field. The first space is from the work point at the left end, as specified under the W.P. to W.P. field on the Beam Description screen, to the first connection. The space for each subsequent connection is measured from the previous connection (unless a blank line is inserted – see below). For example, a beam with a W.P. to W.P. of 20'-0" has three beams framing to it at equal spacing. The first space would be input as 5'-0" (Asteel 2 will subtract the minus dimension). The location of the other two beams would be defined by two more 5'-0" spaces (Asteel 2 calculates the last space).

If a blank line is inserted between two framing connections, the spacing to the second framing connection is taken from the centerline of the member that the beam frames into at the left end, the same as for the first framing connection. Note that this mechanism can only be used once with a set of framing connections. The second time that Asteel 2 encounters a blank framing line, Asteel 2 assumes it has reached the end of the framing connections.

Type

Enter the framing connection type. Refer to the Beam Framing section in OnlineDocs for a description of the types available. Each type has a schedule that allows you to customize it. When you setup a type on the Job Setup screen, be sure NOT to use N, F, R, or L in the type name (i.e. 40N, 40F, etc.). N, F, R, and L are reserved to indicate Near side, Far side, Right, and Left respectively.

The default type is W (web punching).

Gage

The function of the gage field varies, but for most types enter the dimension from the top of the beam to the first row of holes in the connection. This dimension defaults to 3 inches for web punching, tab plates and many other types of connections. It may also be the dimension between the holes when using flange hole connections (type T and B). Refer to the Beam Framing section in OnlineDocs for descriptions of the available types and how the gage field is used for each.

Rows

Enter the number of rows for the connection. If a web connection type is being used and zero rows are specified, Asteel 2 will mark the space for future detailing by hand. Refer to the Beam Framing section in OnlineDocs for descriptions of the available types.

Spa

Enter the spacing between the rows (defaults to 3 inches).

C/C

Enter the center to center of the framing connection. For most types, Asteel 2 will default to the job standard C/C. Multiple C/C lists the dimension to first, second, and third rows. Refer to the Beam Framing section in OnlineDocs for a description of how C/C is used for each type.

Thk

This field is normally used to specify stiffener plate or tab plate thickness. The default thickness is 3/8" (see the Title Block screen). Refer to the Beam Framing section in OnlineDocs for a description of how Thk is used for each type.

Misc

The miscellaneous field is normally used to enter the offset dimension for types which use tab plates (types 20, 21, 22, 23, 40, 41, and 42). Refer to the Beam Framing section in OnlineDocs for a description of how the miscellaneous field is used for each type.

For

This field allows a framing connection to be specified as belonging to one of multiple marks. The beam detail will enclose the specified framing connection and label the enclosure with the requested mark. For example, if a detail has marks 2B3 and 2B4 and you enter B4 in the For field of a framing connection, Asteel 2 encloses that connection and labels it "B4 ONLY".

Columns

The following paragraphs describe the tab screens of the column data entry screen and the fields on each screen.

Column Drawing Tab

The screenshot shows the 'Column Drawing Information' tab within the 'CDS Asteel 2.0 - Job Number 00-7 - Column Data Entry' window. The window has a menu bar with 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. Below the menu bar are three tabs: 'Drawing' (selected), 'Column Description', and 'Column Framing'. The main area contains a form with the following fields:

- Job Number :** A dropdown menu showing '00-7'.
- Detail Number :** A dropdown menu.
- Drawing Number :** A dropdown menu.
- Drawing Layout :** A text input field.
- Drawing Exceptions :** A text input field.

Below the form are two buttons: 'Save' and 'Esc to Exit'. At the bottom of the window is a toolbar with the following function keys:

- F1 Next Screen
- F2 Prev Screen
- F3 Copy Prev
- F4 End Copy
- F5 Help
- F6 Copy All Of End
- F7 Clear line
- F10 Clear All
- F11 Copy All Of Prev

The drawing screen for columns functions identically to that of beams with the exception that the sloping and bracing beam flags do not appear because they do not apply. Also, the drawing layout list has different options.

Column Description Tab

This screen allows you to specify the overall column description, such as the member shape and size, and to specify the base and cap plate information.

The following paragraphs provide additional information on the features of the Column Description screen.

Quantity or Pc. Mark/Qty.

This field operates identically to the same field on the beam description tab of the beam data entry screen.

Column Size

Enter the shape followed by the size of the member. W, C, MC, M, HP, TM, S, TS, P, L, HSS and G (plate girder) are valid shapes. If you enter a size without the shape, a W shape is assumed. Here are some examples of shapes and sizes:

Size	Input
W14 x 22	14 22
WT7 x 13	WT7 13

Size	Input
C8 x 11.5	C8 11.5
MC12 x 10.6	MC12 10.6
M5 x 18.9	M5 18.9
HP14 x 117	HP14 117
TM40 x 480	TM40 480
S12 x 35	S12 35
HSS10 x 8 x 1/2	HSS10 8 8
HSS7.5 x .375	HSS7.5 6
Round HSS size	
TS6 x 6 x .25	TS6 6 4
5 inch standard pipe	PS5
5 inch extra strong	PX5
5 inch double extra strong	PXX5
Angle 4 x 3.5 x .3125	L4 3.5 5
G36 x 20 x 1.5 x 2.75	G36X20X1.5X2.75

The size can be entered with or without an 'x' between the nominal depth and the pound-per-foot. For example, "W14 22" will be interpreted as "W14x22".

When using a tube, the first dimension you enter in the size field will always show on the "A" face.

Face

Default face is A; however, B or C may be used.

Mark

Enter the plan orientation. You can specify any cardinal direction by entering the character "N", "S", "E", "W" or any combination thereof. Otherwise any phrase may be used to describe the columns mark. Combinations may also be used for multiple piece marks. For example, you can enter "SW@C1, E@C2".

Grid

Enter a grid designation. It will be placed on the line with the size near the bottom of the shaft.

Remarks

Enter any remarks about the detail. Remarks will be placed next to the column size on the detail and in the remarks column in the shop bill. For example, you could enter "NO PAINT" here.

Steel

The steel type defaults to the type specified for the steel material option on the Title Block screen. You can change the default steel type by selecting one from the drop-down list here.

Miscellaneous

To change the size of the column for drawing purpose, use the following codes:

Input	Description
Y1=2	Raise the bottom of the column 2 inches.
Y2=-3	Lower the top of the column 3 inches.
Y4=1	Raise the base plate 1 inch.
Y1=2;Y2=-3	Top and bottom combination.
X=.5 (1/2 inch)	Increase the distance between column faces A-B and B-C by 1/2 inch.
X2=.5	Increase the distance between column faces A-B by 1/2 inch.
X3=.75	Increase the distance between column faces B-C by 3/4 inch.

To get a section view for use by the detailer, enter SECT.

To specify the end cut notation for the column base or cap, input the column end (BASE or CAP) followed by one of the following codes:

Code	Result
1	cut square
2	mill
3	finish

For example, BASE=1;CAP=2 would cut the bottom end square and mill the top end.

When you input multiple codes, separate them with a semicolon (;).

Column End Fields

Type

Enter the column end type in this field. If no type is entered, then that end of the column will be blank (square end). If column end type 1 is entered and a plate is required, then you need to supply the dimensions of the plate using the letter fields (A, B, C, D) located below the elevation field. If nothing is input in these fields, then no plate will be shown.

Most of the column end types require a size to follow the type number. Sizes are input after the type number with a space between each dimension. For example, "2, 14 211" would be input for a column end type 2 splicing into a W14 x 211 column.

Most of the column end types have a schedule following each example that allows you to customize the type. Diagrams of plate configurations for each type are shown in OnlineDocs under Column End Types.

You may reference a base or cap plate that has already been setup by entering the piece mark of the column where the plate was setup in the type field. The piece mark is all that is needed.

Elevation

An elevation is mandatory unless a plate mark is given with a correct elevation. The base elevation must be less than the cap elevation.

This field is entered identically to the beam end elevations. See the Beam Description screen for additional information.

A through D

See the column end type 1 documentation in OnlineDocs under Column End Types for complete information on these fields.

Hole Size

Enter the plate hole size. This field defaults to the hole size from the Job Information screen.

Thickness

Enter the endplate thickness. This field is mandatory for type 1.

Bevel

Base plates and cap plates may be skewed relative to the column shaft. Enter the rise in inches relative to 12 plus A, B, C, or D to indicate orientation of the cap or base plate to the column face. See the column end type 1 example in OnlineDocs for more information.

To draw...	Input
To draw a set square	No Input
To draw a 3 inch rise at face A	0 3 0A
To draw a 3 inch rise at face B	0 3 0B
To draw a 3 inch rise at face C	0 3 0C
To draw a 3 inch rise at face D	0 3 0D

Exception

The exception field allows for several options. Separate options with a semicolon (;).

Input	Description
LAYOUT	If a layout of the cap plate is required, enter the word LAYOUT in the Exception field under the cap plate heading.
MK=	A standard mark can be given for a BASE and/or CAP plate in the Exception field. Prefix the mark with an "MK=". For example: "MK=stdmk".
AB=	Anchor bolt connection reference. To reference an anchor bolt connection type, prefix the type with "AB=". For example: "AB=1A".

Column Framing Tab

CDS Asteel 2.0 - Job Number 00-7 - Column Data Entry - Drawing Number 26 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing Column Description Column Framing

Column Framing

	BM SZ or PC MK	ELEVATION	TYPE	GAGE	ROWS	SPCG	HOLES	C/C	ADIM	ROWS	SPCG	BDIM	ROWS	SPCG
A	21B1R	200 11 0												
B	15B1L	200 11 0												
C														
A	22B5R	206 6 0												
B	16B3L													
C														
A	22B5R	210 11 0												
B	16B4R	210 11 0												
C														
A	9B1R	218 0 0												
B	19B1L	218 0 0												
C														
A														
B														
C														
A														
B														
C														
A														
B														
C														
A														
B														
C														

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 Line Copy F5 Help F6 Copy All of Line F7 Clear line F10 Clear All F11 Copy All Of Prev

This screen allows you to define the type and location of connections framing to the web or flanges of the column.

The following paragraphs provide additional information on the features of the Column Framing screen.

BM SZ or PC MK

Enter either the beam size or a piece mark.

If you enter a piece mark, add an L or R suffix to specify the Left or Right end of the beam. For example, a piece mark reference to the right end of beam 5B1 would be "5B1R". A piece mark is mandatory unless an elevation is given.

Piece mark reference elevations must be less than the cap elevation and greater than the base elevation. Refer to OnlineDocs for additional information.

Elevation

An elevation is mandatory unless a piece mark is given. The framing elevation must be less than the cap elevation and greater than the base elevation.

Elevations are entered identically to those on the Beam Description screen. See the Beam Description screen for additional information.

Type

This field describes the kind of connection at this elevation. Refer to OnlineDocs under the Column Framing Types section for a description of the different types available and the format to enter.

Gage

Enter the dimension down from the elevation to the first row of holes. If the gage to the first row is different from the job standard, then enter the dimension. Otherwise, leave the field blank.

Rows

Enter the number of rows below the elevation line. Types with blank or 0 rows will mark an elevation for future hand detailing.

Spcg

Enter the spacing between the rows (defaults to 3 inches).

Holes

Enter the hole size in number of sixteenths. This defaults to the hole size from the job setup. For example, a hole size of 1 5/16 would be input as "21".

C/C

Enter the horizontal dimension between the rows. The default is set to the standard gage of the column face or referenced piece mark.

ADim (above)

Enter the dimension above the elevation line to the first row of holes going up.

Rows (above)

Enter the number of rows above the elevation line.

Spcg (above)

Enter the spacing of rows above the elevation line (defaults to 3 inches).

BDim (below)

The dimension from the last row at the current connection to the first row below this connection.

Rows (below)

Enter number of rows below the connection.

Spcg (below)

Enter the spacing between the rows below the connection. This spacing has no default - you must enter a dimension.

Floor Bracing

The following paragraphs describe the tab screens of the floor bracing data entry screen and the fields on each screen.

Floor Bracing Drawing Tab

The screenshot shows the 'CDS Asteel 2.0 - Job Number 00-7 - Floor Bracing Data Entry' window. The 'Drawing' tab is selected, and the 'Floor Brace Description' sub-tab is active. The main area is titled 'Floor Bracing Drawing Information' and contains the following fields:

- Job Number : 00-7 (dropdown menu)
- Detail Number : (dropdown menu)
- Drawing Number : (dropdown menu)
- Drawing Layout : (text input field)
- Drawing Exceptions : (text input field)

Below the input fields are two buttons: 'Save' and 'Esc to Exit'.

The bottom of the window features a toolbar with the following function keys:

- F1 Next Screen
- F2 Prev Screen
- F3 Copy Prev
- F4 End Copy
- F5 Help
- F6 Copy All Of End
- F10 Clear All
- F11 Copy All Of Prev

The drawing screen for floor bracing functions identically to that of columns, except that the drawing layout list has different options.

Floor Bracing Description Tab

This screen allows you to specify the overall brace description, such as the brace size and how it's oriented, and to specify the brace end information, such as the end connection types.

The following paragraphs provide additional information on the features of the Floor Bracing Description screen.

Quantity or Pc. Mark/Qty.

This field functions identically to the corresponding field on the beam description tab of the beam data entry screen.

Brace Size

List the type of brace and the size. Enter a space between each dimension in the size. Here are some examples:

Shape and size	Input
ANGLE 4 x 4 x 3/8	L4 4 6
ANGLE 4 x 4 x 3/8 (near side of plate)	L4 4 6N

Shape and size	Input
WT 5 x 11 (far side of plate)	WT5 11
WT 5 x 11 (near side of plate)	WT5 11N
DL 4 x 4 x 3/8	DL4 4 6
DLV 4 x 4 x 3/8	DLV4 4 6
W 8 x 10 (flange shown)	8 10
W 8 x 10 (flange shown - near side)	8 10N
W 8 x 10 (rotated - web shown)	8 10R
TS 6 x 6 x 1/4	TS6 6 4
PIPE 4 inch standard	PS4
PIPE 4 inch extra strong	PX4
PIPE 4 inch double extra strong	PXX4
Channel (far side of plate)	C6 8.2
Channel (near side of plate)	C6 8.2N

Position

The position tells whether the brace will be drawn with a positive or negative slope. Position "1" draws the brace with a positive slope (/) and "2" draws the brace with a negative slope (\).

Gage

For WT or double angle ("DL") braces, the gage is the C/C between holes.

For angle braces ("L"), the gage is the distance from the back of the angle to the holes. When detailing an angle brace, you may add another gage to this field to have another row of holes. Separate the gages with a comma (example: "0 2 0,0 2 8").

Rows

Enter the number of rows on each end of the brace. Asteel 2 assumes that there are the same number of rows at the right end as there are at the left end. However, you may input a different number at each end. The number of rows at the left end is input first followed by a comma and the number at the right end. For example, "3,0" indicates 3 rows at the left end and a shop welded plate at the right end.

Spacing

Enter the spacing between rows at each end of the brace (defaults to 3"). Asteel 2 assumes that the spacing is the same at the right end as at the left end. However, you may input a different spacing at each end. The spacing at the left end is input first followed by a comma and the spacing at the right end. For example, "0 3 0,0 6 0" indicates 3 inch spacing at the left end and 6 inch spacing at the right end.

Load

Enter the load on the brace in kips (example: "15"). This will produce a load symbol at each end of the brace with the reaction in each direction.

Base

Enter the horizontal dimension of the brace bay from the left work point to the right work point. This dimension should always be greater than or equal to the rise dimension, so that the brace does not exceed a 45 degree angle.

Rise

Enter the vertical dimension of the brace bay from the left work point to the right work point. This dimension should never exceed the base dimension, so that the brace does not exceed a 45 degree angle. If the rise is input as "0 0", the brace will be detailed flat.

Remarks

Enter any remark that you want to be noted in the shop bill under the remarks column. You may also add a location reference for each piece mark in this field. You must prefix what you want the reference to show with the number of the mark. For example, entering "1=E-4,F-4" in this field will label the first mark "[E-4,F-4]" beside the piece mark on the detail. You can combine multiple remarks and location references with a semi-colon (;).

Miscellaneous

This space is used to specify the following options. These codes can be combined by separating them with a semi-colon (;).

Option	Description
1	The detail length can be increased by using the code "1=" followed by the number of inches to increase the base. For example, entering "1=2" in this field would increase the base length by 2 inches.

Option	Description
2	The bolt size can be changed by adding the code "2=" followed by the size of the bolt. This will change the plate and brace edge distances on this particular brace, if necessary. For example, entering "2=0 1 0" will set the bolt size to 1 inch for this brace.
3	The gusset plate thickness can be changed by adding the code "3=" followed by the thickness required. This will change the thickness on this particular detail (both left and right end). For example, entering "3=0 0 8" will set the gusset plate thickness to 1/2 inch for this brace.
9 or STITCH	The number of stitch plates used on double angle braces ("DLV " or "DL") can be input by using the code "9=" followed by the number of plates you want. For example, "9=1" in this field would add only one stitch plate to the brace. You may also use the code "STITCH=" instead of "9=". Asteel 2 will use 2 plates as a default, when they are necessary.
FILL	The type of filler (spacer) plate can be changed or added in this space. Do this by using the code "FILL=" followed by the type you want to use (see variable "J" on the Floor Bracing Job Setup Sheet in OnlineDocs). For example, "FILL=5" will use the tack welded filler plate for this particular brace.
STEEL	The steel type can be changed by entering "STEEL=50" for ASTM A572 high strength steel or "STEEL=A992" for ASTM A992 specific steel.
CLIPL	The edge distance for the left end gusset plate, if it is clipped (see variable "H" on the Floor Bracing Job Setup Sheet in OnlineDocs). For example, entering "CLIPL=0 1 8" will clip the left end gusset plate at 1-1/2".
CLIPR	The edge distance for the right end gusset plate, if it is clipped (see variable "H" on the Floor Bracing Job Setup Sheet in OnlineDocs). For example, entering "CLIPR=0 1 8" will clip the right end gusset plate at 1-1/2".

Floor Bracing End Fields

Minus

The minus dimension is the offset of the brace from the work point to the first hole in the brace or the offset from the work point to the edge of the brace (refer to the Floor Bracing Job Setup Sheet in the Floor Bracing section of OnlineDocs). You can enter this dimension or Asteel 2 can calculate it using the Clear fields below (clearances). You must enter either the clearances or a minus dimension.

This dimension should be entered preceded by a minus sign. For example, a minus dimension of 8 inches is input as "-0 8 0".

For types 11,12 and 13, no minus dimension is necessary because they are standard connections.

Quantity

Use this option only when floor bracing is shipped loose. Enter the number of ends desired and Asteel 2 will bill out this number. This number overrides the number of braces. For example, if there were 3 braces and "5" was entered in this field, Asteel 2 will bill out 5 ends. See the note at the top of this documentation concerning detailing gusset plate assemblies without the brace.

Type

Enter the type of connection used at the end of the brace. See the Floor Bracing End Types section in OnlineDocs for examples of each type available.

When using types 2 and 3, the size of the column being framed around must be input after the type. For example, if type 2 was framed around a W12 x 26 column, the input would be "2,12 26". A comma is required between the type and the column size and only a space between the column dimensions.

Cond

There is a horizontal and vertical condition for each end of the brace. Refer to the Floor Bracing Conditions section of OnlineDocs for more information.

All framing types require conditions except type 4, which has no plate.

Clear

Enter the clearance between the brace and the work line. The horizontal clearance is from the horizontal work line and the vertical clearance is from the vertical work line. Asteel 2 uses these dimensions to find the minus dimension if it was not already entered. You must enter either the clearances or a minus dimension.

Dim X

Enter the dimension from the work point to the first hole of the connection (vertical or horizontal). This dimension is not needed when using end type 4.

Rows

Enter the number of rows in the connection being used (vertical and horizontal). The spacing between the rows is entered in the field to the right of the "@" sign. Asteel 2 defaults the spacing to 3".

Offset

Enter the dimension from the work line to the connection at both the horizontal and vertical connections. If condition 1 is used, then the offset is from the work line to the holes in the connection. You can also include the edge distance for condition 1 by adding a comma and the edge distance to the offset. For example, 0 2 0,0 1 4 specifies an offset of 2 inches with an edge distance of 1 1/4 inches. If conditions 2 through 8 are used, the offset is from the work line to the edge of the clip angle.

Angle

Enter the angle required for the brace if necessary. The angle is input just like the brace. For example, if an angle with dimensions 3 x 3 x 1/4 is used, the input would be L3 3 4. There is an angle option for types 11, 12, and 13. Refer to the Floor Bracing Ends section of OnlineDocs for more information.

For condition 1 (open holes), the thickness of a shim may be entered in the Angle field (see "Floor Bracing Type 1" documentation).

Gage

Enter the gage of the angle used above. If there is no angle at this connection, this dimension may be left blank.

Detailing the Connection Without the Brace

You can detail the connection assembly without the brace by following these steps:

- 1** Enter "0" in the Quantity or Pc. Mark/Qty. field (see the brace description screen below).
- 2** Enter the brace size, gage, rows, base and rise.
- 3** Enter the number of assemblies in the quantity field for the end.

Floor Bracing Additional Brace Tab

Floor Bracing Information Fields

You must input the Floor Bracing Job Setup Sheet before you input individual floor bracing drawings. The Floor Bracing Job Setup Sheet can be found in the Floor Bracing Overview section in OnlineDocs.

If you input a floor bracing end types 6 or 7 on the right end of the Floor Brace Description screen, the Additional Brace tab will appear. The fields on that tab are described below.

2nd Brace Size

List the type of brace and the size.

2nd Gage

For WT or double angle ("DL") braces, the gage is the C/C between holes.

For angle braces ("L"), the gage is the distance from the back of the angle to the holes. When detailing an angle brace, you may add another gage to this field to have another row of holes. Separate the gages with a comma (example: "0 2 0,0 2 8").

Rows

Enter the number of rows on the brace.

The field to the right of the "@" sign is the spacing field. Enter the spacing between rows (defaults to 3").

2nd Base

Enter the horizontal dimension of the brace bay from the left work point to the right work point. This dimension should always be greater than or equal to the rise dimension, so that the brace does not exceed a 45 degree angle.

2nd Rise

Enter the vertical dimension of the brace bay from the left work point to the right work point. This dimension should never exceed the base dimension, so that the brace does not exceed a 45 degree angle. If the rise is input as "0 0 0", the brace will be detailed flat.

2nd Miscellaneous

The 2nd Miscellaneous space is not used at this time.

2nd Remarks

Enter any remark that you want to be noted in the shop bill under the remarks column. You may also add a location reference for each piece mark in this field. You must prefix what you want the reference to show with the number of the mark. For example, entering "1=E-4,F-4" in this field will label the first mark "[E-4,F-4]" beside the piece mark on the detail. You can combine multiple remarks and location references with a semi-colon (;).

2nd Minus

The minus dimension is the offset of the brace from the work point to the first hole in the brace or the offset from the work point to the edge of the brace (refer to the Floor Bracing Job Setup Sheet in OnlineDocs in the Floor Bracing section). You can enter this dimension or Asteel 2 can calculate it using the Clear fields below (clearances). You must enter either the clearances or a minus dimension.

This dimension should be entered preceded by a minus sign. For example, a minus dimension of 8 inches is input as "-0 8 0".

Floor Bracing End Fields

Cond

There is a horizontal and vertical condition for each end of the brace. Refer to OnlineDocs in the Floor Bracing Conditions section for more information.

All framing types require conditions except type 4, which has no plate.

Clear

Enter the clearance between the brace and the work line. The horizontal clearance is from the horizontal work line and the vertical clearance is from the vertical work line. Asteel 2 uses these dimensions to find the minus dimension if it was not already entered. You must enter either the clearances or a minus dimension.

Dim X

Enter the dimension from the work point to the first hole of the connection (vertical or horizontal). This dimension is not needed when using end type 4.

Rows

Enter the number of rows in the connection being used (vertical and horizontal). The spacing between the rows is entered in the field to the right of the "@" sign. Asteel 2 defaults the spacing to 3".

Offset

Enter the dimension from the work line to the connection at both the horizontal and vertical connections. If condition 1 is used, then the offset is from the work line to the holes in the connection. You can also include the edge distance for condition 1 by adding a comma and the edge distance to the offset. For example, 0 2 0,0 1 4 specifies an offset of 2 inches with an edge distance of 1 1/4 inches. If conditions 2 through 8 are used, the offset is from the work line to the edge of the clip angle.

Angle

Enter the angle required for the brace if necessary. The angle is input just like the brace. For example, if an angle with dimensions 3 x 3 x 1/4 is used, the input would be L3 3 4. There is an angle option for types 11, 12, and 13. Refer to OnlineDocs under the Floor Bracing Ends section for more information.

Gage

Enter the gage of the angle used above. If there is no angle at this connection, this dimension may be left blank.

Vertical Bracing

The following paragraphs describe the tab screens of the vertical bracing data entry screen and the fields on each screen.

Vertical Bracing Drawing Tab

The screenshot shows the 'Vertical Bracing Drawing Information' screen within the 'CDS Asteel 2.0 - Job Number 00-7 - Vertical Bracing Data Entry' application. The window has a menu bar with 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. Below the menu bar, there are two tabs: 'Drawing' and 'Vertical Brace Description', with 'Drawing' currently selected. The main area of the screen is titled 'Vertical Bracing Drawing Information' in blue text. It contains a form with the following fields: 'Job Number' (a dropdown menu showing '00-7'), 'Detail Number' (a dropdown menu), 'Drawing Number' (a dropdown menu), 'Drawing Layout' (a text input field), and 'Drawing Exceptions' (a text input field). Below the form, there are two buttons: 'Save' and 'Esc to Exit'. At the bottom of the window, there is a status bar with several function key shortcuts: F1 Next Screen, F2 Prev Screen, F3 Copy Prev, F4 End Copy, F5 Help, F6 Copy All Of End, F10 Clear All, and F11 Copy All Of Prev.

The drawing screen for vertical bracing functions identically to that of columns, except that the drawing layout list has different options.

Vertical Bracing Description Tab

This screen allows you to specify information about the brace itself, such as the brace size. It also allows you to specify information about the brace ends, such as their elevations and connection types, and to specify the intersection of the two brace members.

The following paragraphs provide additional information on the features of the Vertical Bracing Description screen.

Quantity or Pc. Mark/Qty.

This field operates identically to the corresponding field on the beam description tab of the beam data entry screen.

Brace Size

List the type of brace and the size. Enter a space between each dimension in the size. Here are some examples:

Shape and size	Input
ANGLE 4 x 4 x 3/8	L4 4 6
ANGLE 4 x 4 x 3/8 (toed away)	L4 4 6F

Shape and size	Input
WT 5 x 11 (web far side)	WT5 11
WT 5 x 11 (toed up)	WT5 11U
WT 5 x 11 (toed down)	WT5 11D
WT 5 x 11 (web near side)	WT5 11N
DL 4 x 4 x 3/8	DL4 4 6
DLV 4 x 4 x 3/8	DLV4 4 6
W 8 x 10 (web shown)	8 10
W 8 x 10 (flange shown)	8 10F
TS 6 x 6 x 1/4	TS6 6 4
PIPE 4 inch standard	PS4
PIPE 4 inch extra strong	PX4
PIPE 4 inch double extra strong	PXX4

Position

The position tells whether the brace will be detailed with a positive or a negative slope. Position 1 has a positive slope (/). Position 2 has a negative slope (\).

Rows

The number of rows on each end of the brace. Asteel 2 assumes that there is the same number at the right end as there is at the left end. However, you may input a different number at each end. The number of rows at the left end is input first followed by a comma and the number at the right end. For example, "3,2" would indicate three rows at the left end and 2 rows at the right end.

Spacing

The spacing between rows on each end of the brace. Asteel 2 assumes that the spacing is the same at the right end as at the left end. However, you may input a different number at each end. The spacing between rows at the left end is input first followed by a comma and the spacing at the right end. For example, "0 3 0,0 6 0" indicates three inch spacing between rows at the left end and six inch spacing between rows at the right.

Gage

The distance between holes on a WT brace or the distance from the edge of an angle to the holes on an angle (L) brace. For angle braces, you may add another gage to this field to have another row of holes. The second gage should be preceded by a comma. For example, "0 1 12,0 3 0" would indicate the first gage to be 1 3/4 inches and the second gage to be 3 inches.

Base

The horizontal dimension of the brace bay from the left work point to the right work point. If "0 0 0" is entered in this field, the brace will be detailed vertically.

Rise

The vertical dimension of the brace bay from the left work point to the right work point.

Misc.

This space is used to specify the following options. These codes can be combined by separating them with a semi-colon (;).

Option	Description
LEN	The detail length can be set using the code "LEN=" followed by the drawn length of the base in inches. For example, entering "LEN=10" in this field will make the drawn length 10 inches.
FILL	The type of filler or stitch plate can be changed or added by using the code "FILL=" followed by the type you want to use. For example, "FILL=7" will use the tack welded filler plate for this particular brace. See the Vertical Bracing Job Setup sheet "K" variable for a description of the filler plate types.
CP	To get a closure plate on the end of a tube brace (TS or HSS), use the code "CP=" followed by the thickness of the closure plate. For example, "CP=0 0 4" will use a 1/4 inch closure plate at each end of the brace.
9	The number of filler or stitch plates used on double angle braces ("DLV" or "DL") can be input by using the code "9=" followed by the number of plates needed. For example, "9=4" in this field would use 4 filler plates. The default is two plates.

Remarks

Enter any remark that you want to be noted in the shop bill under the remarks column. You may also add a location reference for each piece mark in this field. You must prefix what you want the reference to show with the number of the mark. For example, entering "1=E-4,F-4" in this field will label the first mark "[E-4,F-4]" beside the piece mark on the detail. You can combine multiple remarks and location references with a semi-colon (;).

Steel

The steel type defaults to the type specified for the steel material option on the Title Block screen. You can change the default steel type by selecting one from the drop-down list here.

Vertical Bracing Intersection Fields

The fields displayed in the brace intersection area of the screen will vary based on what you enter in the intersection type. The valid intersection types are 1, 2, and INT. The screen segments below show the fields for each of these intersection types.

For intersection type INT or type 1, the brace intersection area is formatted as shown below:

The screenshot shows a dialog box titled "Brace Intersection". It contains the following fields: "Type" (set to INT), "Elevation" (empty), "Minus Left" (empty), "Minus Right" (empty), "Gage" (empty), "Thickness" (empty), "Offset" (empty), "Rows" (three rows, each with a value field, a "@" symbol, and a value field), and "Edge" (empty).

For intersection type 2, the brace intersection area is formatted as shown below:

The screenshot shows a dialog box titled "Brace Intersection". It contains the following fields: "Type" (set to 2), "Elevation" (empty), "Gage" (empty), "A Dim" (empty), "B Dim" (empty), "Flange Gage" (empty), "Rows" (three rows, each with a value field, a "@" symbol, and a value field), and "Edge" (empty).

The following paragraphs describe the brace intersection fields.

Type

See the Intersection Examples and Options section of OnlineDocs for information on available types.

Elevation

Enter the elevation where the intersection occurs in this field.

The following fields will be shown when you input an intersection type 1 or an intersect type "INT". See the documentation for these types in OnlineDocs for more information.

Minus Left

The dimension from the work point of the intersection to the first hole in the left plate.

Rows

The number of vertical rows in the left plate. The spacing of these rows can be input in the field following the "@" sign.

Minus Right

The dimension from the work point of the intersection to the first hole in the right plate.

Rows

The number of vertical rows in the right plate. The spacing of these rows can be input in the field following the "@" sign.

Gage

The distance from the work point down to the first hole in the plates.

Rows

The number of rows in the beam web framing to intersection type. The spacing of these rows can be input in the field following the "@" sign.

Thickness

The thickness of the plates.

Edge

The edge distance required on the plates.

Offset

The offset is the distance the plate is offset from the center line (beam half-web thickness).

The following fields will be shown when you input an intersection type 2. See the documentation for these types in OnlineDocs for more information.

Gage

The distance from the elevation down to the first hole on each side of the intersection. The left and right gage dimensions are separated with a comma.

Rows

The number of rows in the beam web framing to the intersection.

A Dim

Use this field if rows are required above the elevation line. This is the dimension from the elevation line to the first row above. The left and right A DIM dimensions are separated with a comma.

Rows

If rows are required above the elevation line, then this is where the number of rows is entered.

B Dim

Use this field if rows are required below the main beam web rows. This is the dimension from the last row of the main connection to the first row below. The left and right B DIM dimensions are separated with a comma.

Rows

If rows are required below the main connection, then this is where the number of rows is entered.

Flange Gage

C/C of the rows in the brace flanges.

Vertical Bracing End Fields**Type**

This field is where the type of end connection on the brace is input. These types are described in the Vertical Bracing Ends section.

Minus

The minus dimension is the offset from the work point to the first hole in the end of the brace. This dimension is input with a minus sign preceding it. For example, a minus dimension of 8 inches is input as "-0 8 0".

Web Rows

Enter the number of rows in the web. In the field following the "@" sign, you can enter the spacing for these rows (defaults to 3 inches).

Gage (Web Rows)

The distance between holes on a WT brace or the distance from the edge to the holes on an angle (L) brace. For angle braces, you may include an additional gage to indicate another row of holes. The second gage should be preceded by a comma. For example, "0 1 12,0 3 0" would indicate the first gage to be 1 3/4 inches and the second gage to be 3 inches.

Flange Rows

Enter the number of rows in the flange. In the field following the "@" sign, you can enter the spacing for these rows (defaults to 3 inches).

Gage (Flange Rows)

The distance between holes on a WT brace or the distance from the edge of an angle to the holes on an angle (L) brace. For angle braces, you may include an additional gage to indicate another row of holes. The second gage should be preceded by a comma. For example, "0 1 12,0 3 0" would indicate the first gage to be 1 3/4 inches and the second gage to be 3 inches.

Top Elevation

The elevation for the upper work point of the brace. The position the brace is in will determine which elevation to input in this field. For example, if position 1 is used, then the left end elevation should be in the bottom elevation field and the right end elevation should be in the top elevation field.

Bottom Elevation

The elevation for the lower work point of the brace. The position the brace is in will determine which elevation to input in this field. For example, if position 1 is used, then the left end elevation should be in the bottom elevation field and the right end elevation should be in the top elevation field.

Top Piece Mark

Not applicable at this time.

Bottom Piece Mark

Not applicable at this time.

Top Horizontal Clearance

You may enter a horizontal clearance in one of two ways. You can either enter the dimension or enter the beam size. The beam size along with the work point location that you input using the Vertical Bracing Job Setup sheet (see option "A") will be used to determine the location of the gusset plate and the brace.

Bottom Horizontal Clearance

See the Top Horizontal Clearance field above.

Top Vertical Clearance

You may enter a vertical clearance in one of two ways. You can either enter the dimension or enter the column size. The column size along with the work point location that you input using the Vertical Bracing Job Setup sheet (see option "A") will be used to determine the location of the gusset plate and the brace.

When using a column size as the vertical clearance, indicate which face the brace is framing to by adding a "2," prefix if the brace is framing to the column or a "3," prefix if the brace is framing the column web.

Bottom Vertical Clearance

See the Top Vertical Clearance field above.

Stairs

The following paragraphs describe the tab screens of the stair data entry screen and the fields on each screen.

Stair Drawing Tab

The screenshot shows the 'Stair Drawing Information' tab in the CDS Asteel 2.0 software. The window title is 'CDS Asteel 2.0 - Job Number 00-7 - Stair Data Entry'. The menu bar includes 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. The tab bar at the top shows 'Drawing', 'Stair Description', 'Left End Framing', and 'Right End Framing'. The main area is titled 'Stair Drawing Information' and contains the following fields:

- Job Number : 00-7 (dropdown menu)
- Detail Number : (dropdown menu)
- Drawing Number : (dropdown menu)
- Drawing Layout : (text input field)
- Drawing Exceptions : (text input field)

Below the input fields are two buttons: 'Save' and 'Esc to Exit'. At the bottom of the window is a function key bar with the following buttons: F1 Next Screen, F2 Prev Screen, F3 Copy Prev, F4 End Copy, F5 Help, F6 Copy All Of End, F7 Clear line, F8 Delete Line, F10 Clear All, and F11 Copy All Of Prev.

The drawing screen for stairs functions identically to that of columns, except that the drawing layout list has different options.

Stair Description Tab

Stair Information

Quantity	W.P. to W.P.	Member Size	Left End Elevation	Right End Elevation
281	8'4.0	C10 x 15.3	224'3.0	218'1.4
		Detail Length : 8	Steel : A36	Remarks :
		Camber :	Composite or Non-Composite : NC	
Miscellaneous :				

Stair Ends

Left End

Type : 28AF Condition : 1

Size or Minus : MC18 x 45.8

Elev. Difference : -0'1.4

Edge Distance :

Gage : 0'4.4

Rows : 2 @ 0'3.0 Spacing

Top Block :

Bottom Block :

Miscellaneous :

W.P. to W.P. : 3'5.0

Size : C10 x 15.3

Right End

Type : 28AF Condition : 1

Size or Minus : W12 x 40

Elev. Difference : -0'1.4

Edge Distance :

Gage : 0'4.4

Rows : 2 @ 0'3.0 Spacing

Top Block :

Bottom Block :

Miscellaneous :

W.P. to W.P. : 5'11.8

Size : C10 x 15.3

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear line F8 Delete Line F10 Clear All F11 Copy All Of Prev

The Stair Description screen is identical to the Beam Description screen with the exception that each stair end has two additional fields at the bottom to describe the length and member size of the end segments of the stair.

The following paragraphs provide additional information on the features of the Stair Description screen.

Quantity or Pc. Mark/Qty.

This field operates identically to the corresponding field on the beam description tab of the beam data entry screen.

W.P. to W.P.

Enter the horizontal dimension of the stringer from the left work point to the right work point. This value, along with the tread spacing (refer to the Stair Job Setup Sheet in the Stairs section of OnlineDocs) determines the number of treads required.

Up to three work point to work point dimensions can be specified per detail. Pair the dimension with the quantity/mark on the same row. If all of the marks have the same work point to work point, specify the dimension next to the first mark and leave the remaining fields blank.

Member Size

Enter the size of the main member of the stringer. For example, C10x15.3 is input as "C10 15.3".

Left End Elevation

Enter the elevation of the left work point. This, along with the right elevation, determines the direction of the stringer. If the left elevation is greater than the right elevation, the stringer slopes down. Otherwise, the stringer slopes up.

Elevations are entered identically to the way beam end elevations are entered. See the Beam Description page for additional information about how to specify elevations

Right End Elevation

Enter the elevation of the right work point. This, along with the left elevation, determines the direction of the stringer. If the left elevation is greater than the right elevation, the stringer slopes down. Otherwise, the stringer slopes up.

Elevations are entered identically to the way beam end elevations are entered. See the Beam Description page for additional information about how to specify elevations

Detail Length

The detail length is the actual plotted horizontal length, in inches, between the left and right work points. The detail length defaults to 6 inches for the 4 stringer format, 8 inches for the 2 stringer format and 12 inches for the 1 stringer format.

Steel

The steel type defaults to the type specified for the steel material option on the Title Block screen. You can change the default steel type by selecting one from the drop-down list here. This information is used for the calculation of end connection capacities.

Remarks

Remarks entered here will be noted both on the detail next to the member size and in the shop bill under the remarks column.

Camber

Specify a camber here if necessary. The camber will be noted both on the detail next to the member size and in the shop bill under the remarks column.

Composite or Non-Composite

Enter "C" for composite or "NC" for non-composite stringers. The default is non-composite. This information is used when calculating end capacities.

Miscellaneous

The tread spacing can be set in this field. Enter the spacing dimension with an "ST=" prefix (example: ST=0 11 0).

The framing connections to the stringer can also be entered in the field, by prefixing with an "FR=" (see the "Stair Examples and Options" folder in OnlineDocs for examples).

Stair End Fields**Type**

Enter the type of connection used at the end of the stringer (or horizontal segment). Types 1, 2, 3, and 5 are the same as the corresponding beam end type. For more end types, see the Stair Examples and Options section in OnlineDocs.

Condition

Enter the condition. The condition describes what the stringer is framing to. The condition is assumed for types 1,2,3,and 5 so nothing needs to be input in these cases. A condition 5 must be input for types S1 and S2.

The valid conditions are:

Condition	Framing to...
1	Beam web
2	Column flange
3	Column web
5	Minus dimension

Size or Minus

For conditions 1, 2 and 3, enter the size of the member that the stringer is framing to. For condition 5 (types S1 and S2), enter a minus dimension.

Elev. Difference

The elevation difference is used in different ways depending on the end type that is being used. It usually specifies the distance from the horizontal work line to the top/bottom of the member or segment. Refer to the Stairs section of OnlineDocs for more information on how to use this field.

Edge Distance

The edge difference is used in different ways depending on the end type that is being used. It usually specifies the distance from the vertical work line to the edge of the member or segment. Refer to the Stairs section of OnlineDocs for more information on how to use this field.

Gage

This is the distance from the horizontal work line down to the first hole of the end connection, unless otherwise indicated for a particular end connection type.

Rows

Enter the number of rows desired for the end connection.

Spacing

Enter the spacing between the rows (defaults to 3 inches).

Top Block

Blocks are calculated when the stringer frames to a beam. You may specify a block to be used by entering the length of the block followed by the depth of the block. For example, a 3 1/2 inch long by 1 1/2 inch deep block would be input as "0 3 8,0 1 8". Block lengths are always measured from the face of the clip angles. If only a length is given then the depth will default to the larger beams k dimension.

Bottom Block

See the Top Block description.

Miscellaneous

A variety of different end connection options may be input in this field.

When using a four stair layout, the actual length of the segment will be three inches. You may specify the length by entering the length (in inches) with an "LEN=" prefix. For example, enter "LEN=9" for a nine inch segment.

Refer to the example end connections in the Stair Examples and Options section of OnlineDocs for more information.

W.P. to W.P.

This space indicates the length (from work point to work point) of the segment at the end of the stringer. Asteel 2 determines if there is a segment or not by checking this field for a value.

Size

The size of the segment member. This will usually be the size of the main member.

Stair Left/Right End Framing Tab

Stair framing functions identically to beam framing, with the exception that stairs have one set of framing for the left segment and another for the right segment. The left framing screen is shown below:

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	8.40	9	0.48	2				-0.02	
Line 2									
Line 3									
Line 4									
Line 5									
Line 6									
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									

See the section on Beam Framing for information on how the framing screens work.

Trusses

The following paragraphs describe the tab screens, the fields on each screen, and the menu button functions for the truss data entry screen.

Truss Drawing Tab

The truss drawing screen is shown below:

This screen allows you to specify the job and drawing number that you want to work with, just like other drawing types. The drawing tab for trusses also allows you to specify the piecemark and/or quantity, and to indicate that the current drawing describes one segment of a truss that is being spliced.

The following paragraphs provide additional information on the features of the Truss Drawing screen.

Job Number

The Asteel 2 job number is entered in this field. Use the format YY-NNN where YY is the last two digits of the year and NNN is a number from 1 to 999. For example, you would enter 02-1 for the first job in 2002. You can quickly switch between job numbers by selecting one from the drop-down list. You cannot create new job numbers from this field.

Drawing Number

Drawing numbers may be up to four characters long and must begin with a number. For example, 100, 14A, and 1A1 are all valid drawing numbers, but M12 is not. You can quickly switch between drawing numbers by selecting one from the drop-down list.

Piece Mark

The piece mark for the truss is given in this field. The sheet number is not required and will be added as a prefix or suffix per the fabricator's standards. Multiple piece marks may be entered separated by commas.

Quantity

Enter the quantity for this piece mark.

Camber

Enter the camber for this truss.

Drawing Layout

The only drawing layout currently available for trusses is a single truss layout. Asteel 2 will automatically enter the number "1" in this field.

Drawing Miscellaneous

This field may be used to enter the detailer's initials which will then be printed in the title block for this sheet.

Spliced Truss Fields

The following fields refer to a spliced truss. If this truss is not spliced, then ignore the rest of the fields on this screen.

Total point to point

Enter the work point to work point distance for the entire truss, not just the spliced part that is being detailed.

Start point of this portion of the truss

Enter the start work point for the spliced portion of the truss being detailed.

Truss Panel Point Layout Tab

Panel Point Layout

Top Chord	
	ELEVATION
T1	
T2	
T3	
T4	
T5	
T6	
T7	
T8	
T9	
T10	
T11	
T12	
T13	
T14	
T15	
T16	
T17	
T18	

Bottom Chord	
	ELEVATION
B1	
B2	
B3	
B4	
B5	
B6	
B7	
B8	
B9	
B10	
B11	
B12	
B13	
B14	
B15	
B16	
B17	
B18	

F1 Next Screen F2 Prev Screen F3 Copy Space F4 Line Copy F5 Help F6 Copy All Of Line F7 Clear line F8 Delete Line F10 Clear All

This screen allows you to enter the work points for the top and bottom chords. There may be as many as twenty-nine points for each chord. All that is required is a space dimension and an elevation.

The following paragraphs provide additional information on the features of the Truss Panel Point Layout screen.

Space

For the first panel point, the space is the dimension from the left end work line which will always be point T1 or B1. For all other panel points, the space is from the previous panel point.

Elevation

The actual panel point elevation is entered here. Only the first and last panel point elevations are required for each chord, Asteel 2 will calculate the intermediate elevations. If all the points are at the same elevation then only the first elevation is required.

Truss Top / Bottom Members Tab

The screenshot shows the 'CDS Asteel 2.0' software window. The title bar indicates 'Job Number: 00-7' and 'Drawing Number: 20'. The menu bar includes 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. The 'Data Entry' menu is open, showing options: 'Drawing', 'Panel Point Layout', 'Top/Bottom Members', 'Vertical Members', 'Diagonal Members', 'Top Ends', 'Bottom Ends', 'Top Framing', and 'Bottom Framing'. The 'Top/Bottom Members' tab is selected, displaying two sections: 'Top Chord Members' and 'Bottom Chord Members'. Each section contains a table with columns: 'FROM', 'TO', 'SIZE', 'POSITION', 'GAGE', and 'MISC'. The 'Top Chord Members' table has rows labeled 'Line 1' through 'Line 8'. The 'Bottom Chord Members' table also has rows labeled 'Line 1' through 'Line 8'. At the bottom of the window is a function key bar with buttons: 'F1 Next Screen', 'F2 Prev Screen', 'F3 Copy Chord', 'F4 Line Copy', 'F5 Help', 'F6 Copy All Of Line', 'F7 Clear line', 'F8 Delete Line', and 'F10 Clear All'.

This screen allows you to define the top and bottom chord members of the truss. Each member is located along the length of the chord with the From and To fields. There may be as many as eight different top or bottom chord members.

The following paragraphs provide additional information on the features of the Truss Top/Bottom Members screen.

From

The panel point where this member starts is entered in this field. Input the point with a "T" prefix to specify a top chord point or a "B" prefix to specify a bottom chord point. For example, enter "T1" or "B6".

To

The panel point where this member ends is entered in this field. Input the point with a "T" prefix to specify a top chord point or a "B" prefix to specify a bottom chord point. For example, enter "T1" or "B6".

Size

Enter the size of the chord member.

Position

Enter the number of the orientation for the member. Refer to the Top and Bottom Chord Member Positions sheet in OnlineDocs under Trusses for more information.

Gage

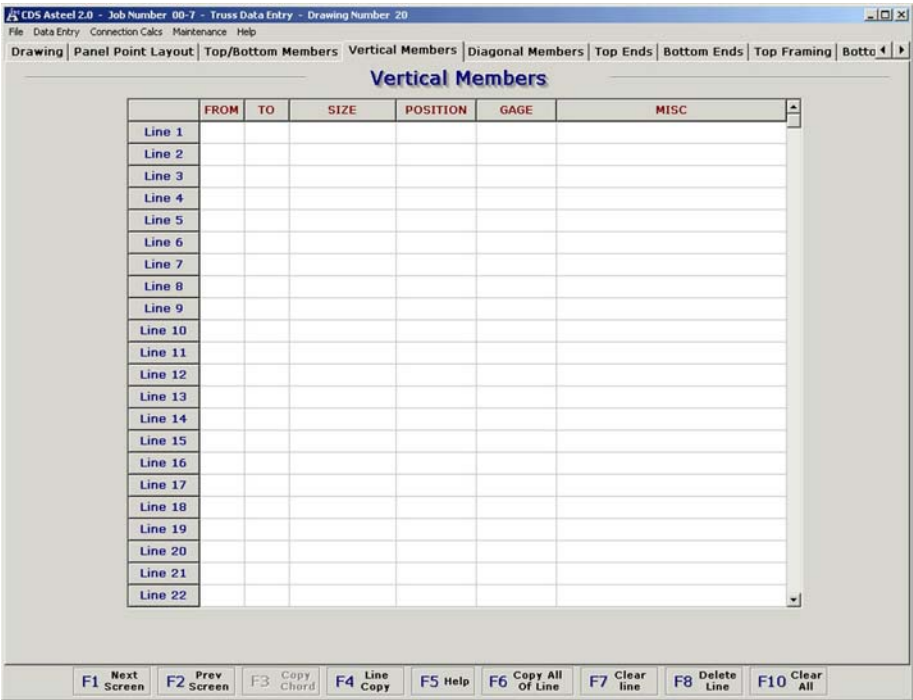
For top chord members, this is the dimension from the top of the top chord member to the work line for the top chord.

For bottom chord members, this is the dimension from the bottom of the bottom chord to the work line for the bottom chord.

Misc

This field is not available at this time.

Truss Vertical Members Tab



This screen allows you to define the vertical members of the truss. There may be as many as twenty-nine vertical members.

The following paragraphs provide additional information on the features of the Truss Vertical Members screen.

From

The panel point where this member starts is entered in this field. Input the point with a "T" prefix to specify a top chord point or a "B" prefix to specify a bottom chord point. For example, enter "T1" or "B6".

To

The panel point where this member ends is entered in this field. Input the point with a "T" prefix to specify a top chord point or a "B" prefix to specify a bottom chord point. For example, enter "T1" or "B6".

Size

Enter the size of the chord member.

Position

Enter the number of the orientation for the member. Refer to the Vertical Member Positions sheet in OnlineDocs under Trusses for more information.

Gage

Locates the member with respect to the work line. The following table describes where this dimension is taken.

Member type	Description
W shapes, tubes and pipes	The gage is the distance from the work line to the center line of the member. If a negative value is input for the gage, then the member will be offset to the left of the center line.
WT shapes	For positions 1 and 2, the gage is taken from the face of the flange. If a negative value is input for the gage, then the member will be offset to the left of the center line. For positions 3 and 4, the work line will always be the WT center line.
Angles	The gage is always taken from the face of the outstanding leg. For double angles near and far side, the gage is the gusset plate thickness.

Misc

This field is not available at this time.

Truss Diagonal Members Tab

CDS Asteel 2.0 - Job Number 00-7 - Truss Data Entry - Drawing Number 20

File Data Entry Connection Calcs Maintenance Help

Drawing Panel Point Layout Top/Bottom Members Vertical Members Diagonal Members Top Ends Bottom Ends Top Framing Botto

Diagonal Members

	FROM	TO	SIZE	POSITION	GAGE	MISC
Line 1						
Line 2						
Line 3						
Line 4						
Line 5						
Line 6						
Line 7						
Line 8						
Line 9						
Line 10						
Line 11						
Line 12						
Line 13						
Line 14						
Line 15						
Line 16						
Line 17						
Line 18						
Line 19						
Line 20						
Line 21						
Line 22						

F1 Next Screen F2 Prev Screen F3 Copy Chord F4 Line Copy F5 Help F6 Copy All Of Line F7 Clear line F8 Delete Line F10 Clear All

This screen operates identically to the Truss Vertical members screen.

Truss Top/Bottom Ends Tab

CDS Asteel 2.0 - Job Number 00-7 - Truss Data Entry - Drawing Number 11

File Data Entry Connection Calcs Maintenance Help

Drawing Panel Point Layout Top/Bottom Members Vertical Members Diagonal Members Top Ends Bottom Ends Top Framing Botto

Top Chord End Connections

Left End

Type : Condition :

Size or Minus :

Elev. Difference :

Edge Distance :

Gage :

Rows : ☒ Spacing

Top Block :

Bottom Block :

Miscellaneous :

Right End

Type : Condition :

Size or Minus :

Elev. Difference :

Edge Distance :

Gage :

Rows : ☒ Spacing

Top Block :

Bottom Block :

Miscellaneous :

F1 Next Screen F2 Prev Screen F3 Copy End F4 Copy Chord F5 Help F6 Copy All Of End F7 Clear line F8 Delete Line F10 Clear All

This screen allows you to specify the end connections of the top chord of the truss. The Bottom Ends Tab is not shown because it is identical to the Top Ends Tab (above).

The following paragraphs provide additional information on the features of the Truss Ends screens.

Type

The type field defines what the end connection will look like. Refer to the Truss End Types section in OnlineDocs for a listing of the different types available.

Condition

This field specifies what the end of the truss is framing to. The following conditions are available:

Condition	Framing to...
1	Beam web
2	Column flange
3	Column web
5	Minus dimension

Not all conditions are appropriate for all types. See the Truss End Types section of OnlineDocs for the allowed conditions for each end type.

Size or Minus

A size or minus dimension must be entered here. For conditions 1 through 3, a size is required. For condition 5, a minus dimension is required.

Elev. Difference

This field is not available at this time.

Edge Distance

This field is not available at this time.

Gage

The gage is normally the distance from the top of steel to the first hole in an end connections, but this field has many functions depending on the end type. Refer to OnlineDocs for a description of truss end types.

Rows

Enter the number of rows in the connection.

Spacing

Enter the spacing between the rows (defaults to 3 inches).

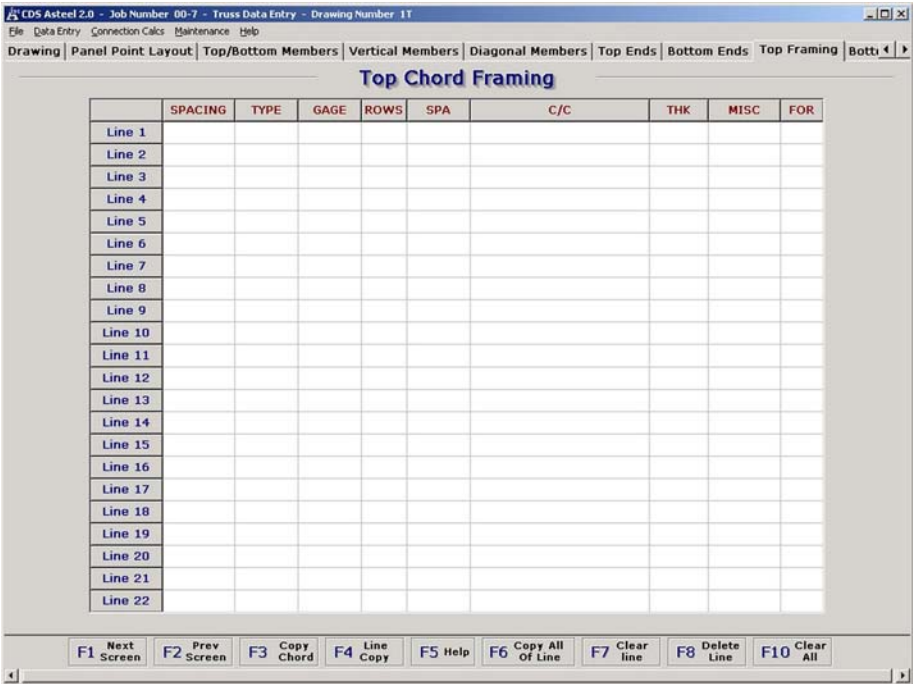
Top or Bottom Block

This field is not available at this time.

Miscellaneous

Refer to the specific end type description in for this field.

Truss Top/Bottom Framing Tab



This screen allows you to specify the framing connections along the top chord of the truss. The Bottom Framing Tab is not shown because it is identical to the Top Framing Tab (above).

The following paragraphs provide additional information on the features of the Truss Framing screens.

Spacing

The location of each framing connection is specified using the spacing field. The first space is from the work point at the left end of the truss to the first connection. The space for each subsequent connection is measured from the previous connection.

Type

See the type examples in OnlineDocs for more information on the use of this field. Many of these examples will have a schedule that allows you to customize a certain type. These customized types need to be input using the Job Setup screen before being used.

Gage

See the type examples in OnlineDocs for more information on the use of this field.

Rows

See the type examples in OnlineDocs for more information on the use of this field.

Spa

See the type examples in OnlineDocs for more information on the use of this field.

C/C

See the type examples in OnlineDocs for more information on the use of this field.

Thk

See the type examples in OnlineDocs for more information on the use of this field.

Misc

See the type examples in OnlineDocs for more information on the use of this field.

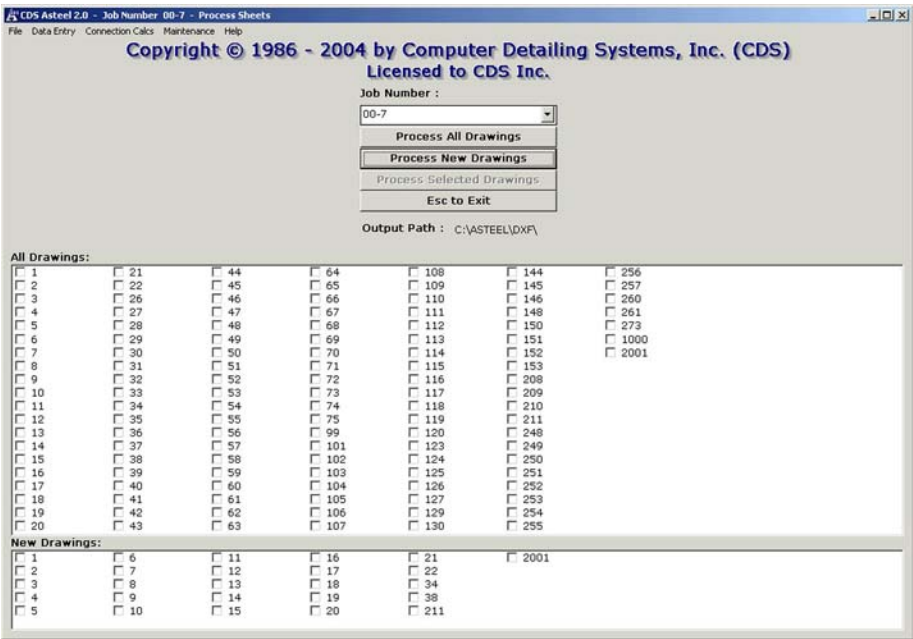
For

See the type examples in OnlineDocs for more information on the use of this field.

Processing the Detail Data Into AutoCAD Files

Once the detail data has been entered into the data entry screens, it needs to be processed by Asteel 2 to convert it into AutoCAD DXF files.

Click the Process Sheets button from the Asteel 2 main menu. The Process Sheets screen will be displayed:

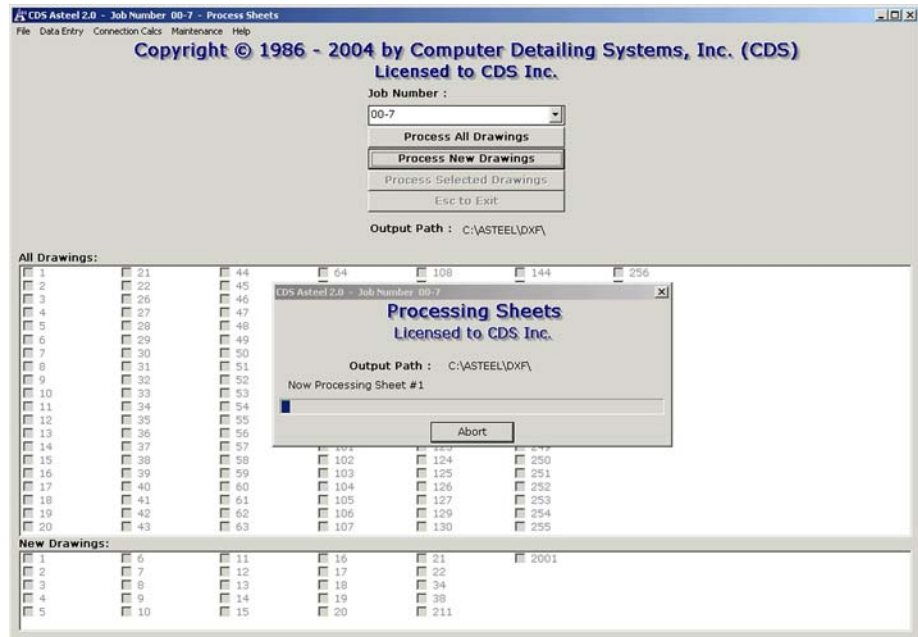


This screen allows you to select the drawings to be processed and have them converted into DXF files. There are two lists of drawings. The top list contains all the drawings created so far for the job. The bottom list contains new drawings and drawings that have been edited since the last time they were processed.

You can click the Process All Drawings button or the Process New Drawings button to process the corresponding list of drawings, or you can select individual drawings from one or both lists by checking the checkbox next to the drawing numbers and then clicking the Process Selected Drawings button.

Additional information on techniques for selecting groups of items from lists such as the drawing lists shown above is provided in the section on Common Characteristics of the User Interface.

When one of the Process buttons (all, new, or selected) is clicked, Asteel 2 will process the drawings. The Processing Sheets dialog will appear. A status bar at the bottom of the dialog shows the percentage of the drawings that have completed processing, and a message line identifies the current drawing being processed:



You can click the Abort button to terminate the process at any time. This will cancel the process immediately. The last file being processed will be incomplete.

The DXF files are placed in the output directory shown on the screen. This directory can be changed through the Asteel 2 Options screen. See the section on Additional Asteel Features for a description of the Asteel 2 Options screen.

Online Help and Documentation

Asteel 2 provides two different facilities that can be accessed for immediate assistance with questions. These facilities are context sensitive help and OnlineDocs.

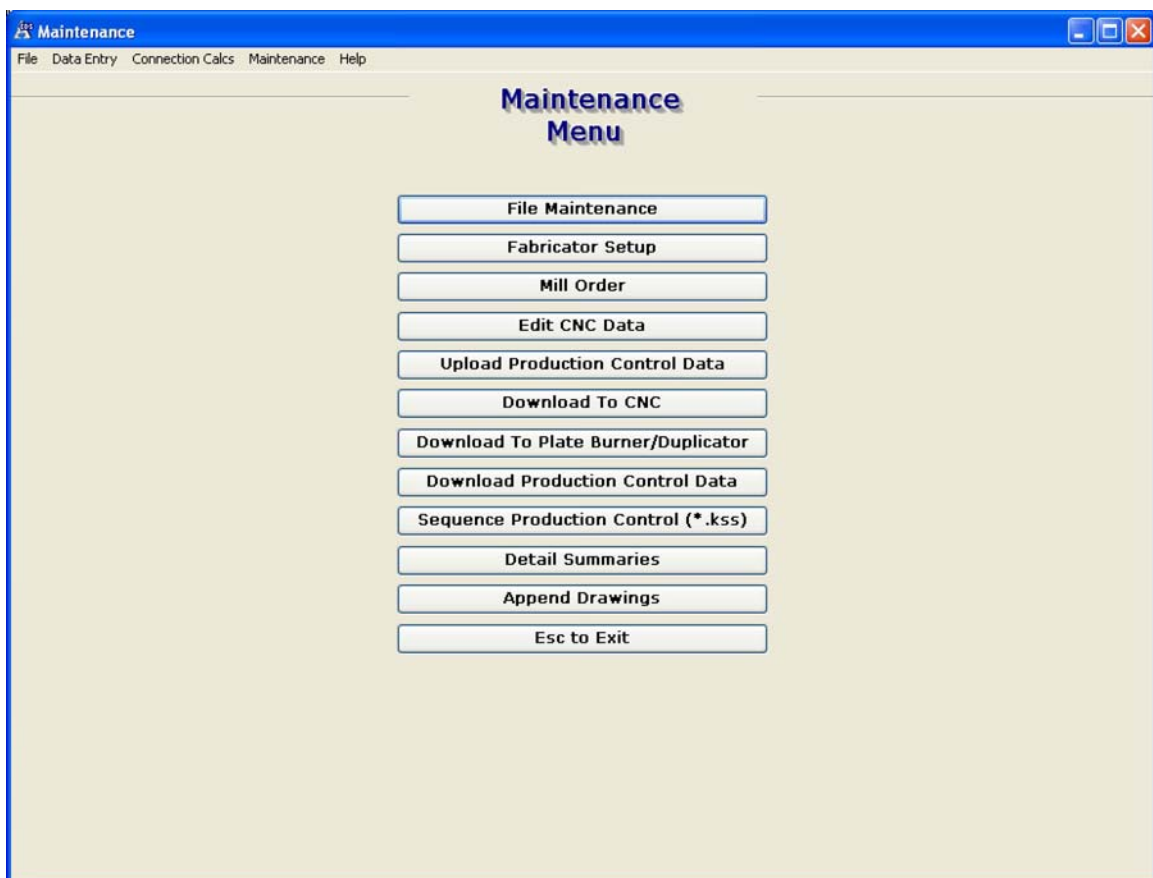
The help system describes all the screens and data fields in Asteel 2. It is a context-sensitive, Windows-standard help system. When help is requested, the help topic for that screen is displayed. The help topic for a screen describes all the fields and controls available on that screen. Help can be requested either by pressing the F5 function key or by pressing the Help button on the bottom menus used by most screens.

OnlineDocs describes how to use the connection types that come with Asteel 2. This includes descriptions of the configurable options for each connection and what the defaults are for those options. The information in OnlineDocs is the same as that displayed in connection setup, but OnlineDocs allows you to more easily search the connections. OnlineDocs also allows you to print out the documentation for one, many, or all of the connections.

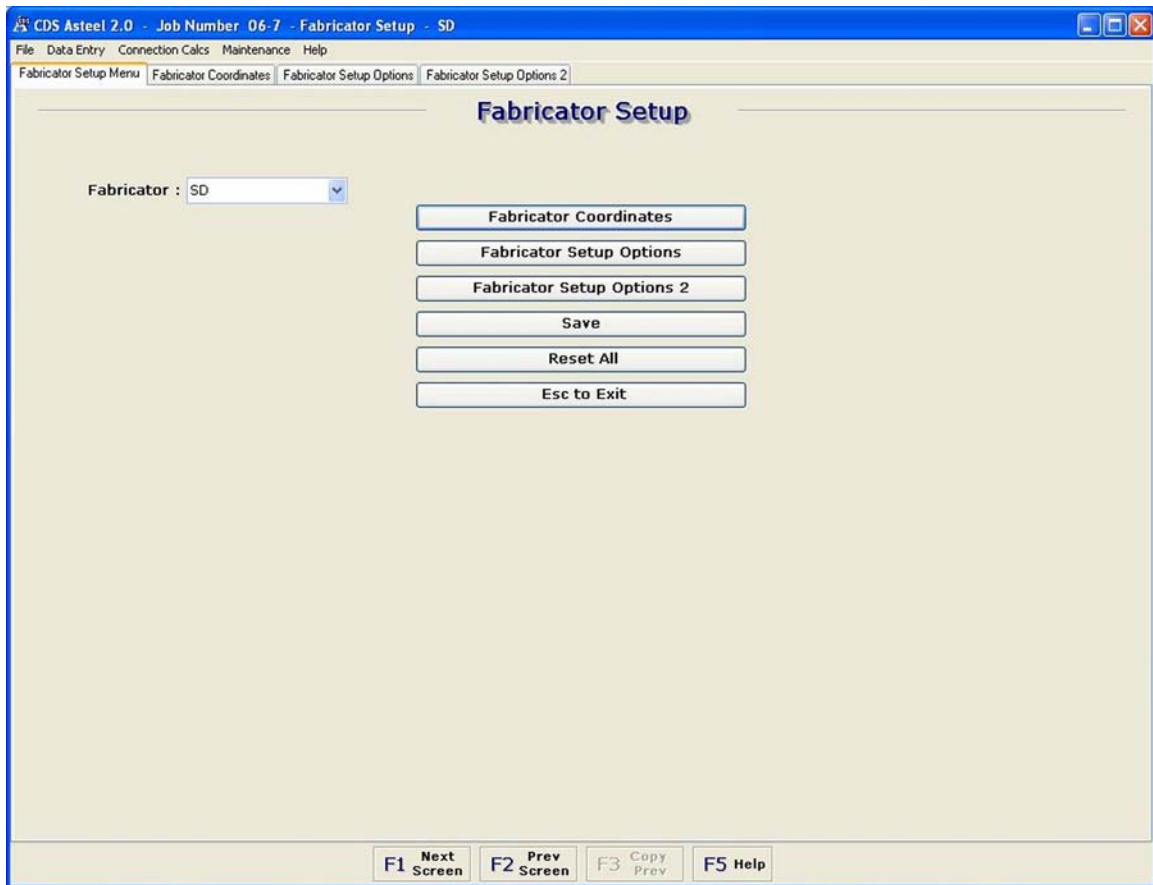
Fabricator Setup

Accessing Fabricator Setup

One of the most important features of Asteel 2 is its ability to consider the detailing preferences for particular fabricators in the jobs that you do. These preferences are specified in the Fabricator Setup. From the Asteel 2 main menu, click the Maintenance button. The Maintenance screen will be displayed:



Click the Fabricator Setup button. The Fabricator Setup screen will be displayed:



This screen allows you to modify an existing fabricator or enter a new fabricator. To modify an existing fabricator, choose that fabricator from the dropdown list. To create a new fabricator, type the new fabricator code into the edit box of the dropdown list (you will get a message that says the fabricator does not exist and be given the option to create a new fabricator).

Once you have selected an existing fabricator or entered a new fabricator code, you can specify the coordinates at which the title block and shopbill information prints on the drawings, and you can specify fabricator setup options.

The following paragraphs describes each of these features in more detail.

Fabricator Coordinates

Click the Fabricator Coordinates button or the Fabricator Coordinates tab on the Fabricator Setup screen. The Fabricator Coordinates screen will be displayed:

CDS Asteel 2.0 - Job Number 06-7 - Fabricator Setup - SD

File Data Entry Connection Calcs Maintenance Help

Fabricator Setup Menu Fabricator Coordinates Fabricator Setup Options Fabricator Setup Options 2

Fabricator Coordinates

Titleblock Coordinates

Prompt	Horiz Coord	Vert Coord	Horiz Adjust	Vert Adjust
JOB FOR	29.3334	1.5938		
LOCATION	29.3334	1.3854		
CONTRACTOR	29.3334	1.1771		
ELECTRODES	31.7500	0.7396		
SHOP PAINT	31.0000	0.5313		
SURFAC PRP	29.0000	0.5313		
JOB EXCEPT	30.2500	0.1146		
STEEL MATL	29.0000	0.7397		
	0.0000	0.0000		
	0.0000	0.0000		
	0.0000	0.0000		

Made By Horiz Coord: 29.9167 Vert Coord: 0.9688

Cust Job#	Horiz Coord	Vert Coord
	31.8021	0.0729
Drawing #	33.0000	0.0729
Details Of	30.0000	1.8229
Job Notes	30.7500	5.0521
Hole Size	27.6375	2.4457
Field Bolt Size	0.0000	0.0000
Date	29.0000	0.9688

Shop Bill Horizontal Coordinates

Prompt	Horiz Coord	Horiz Adjust
Block Insert	0.0001	
Ship Mark	26.9167	
Mark	31.2917	
Ship Quantity	27.5417	
Quantity	27.5417	
Shape	28.0313	
Size	28.3959	
Feet	30.1250	
Inches	30.6667	
Weight	0.0000	
Remarks	32.9167	
Miscellaneous	0.0000	

Shop Bill Vertical Coordinates

Prompt	Vert Coord	Vert Adjust
Vert Start	21.2709	
Vert Increment	0.2500	

Fill Adjustment Fields With...

HOLE SIZE => Height : X : Y Ratio : Format :

F1 Next Screen F2 Prev Screen F3 Copy Prev F5 Help

This screen allows you to specify where information is printed in the shop bill and title block on the drawings.

The features of this screen are described in the following paragraphs.

Overview of Prompts and Coordinates

In the Title Block area of Job Setup, there are prompts for information that a given fabricator wants to have printed on each sheet in the job. These prompts vary from fabricator to fabricator. The custom prompts in fabricator setup provide the mechanism for specifying what the prompts say and where the data entered in Job Setup actually prints on the sheet.

Each prompt has an X and Y coordinate defining where the text will be placed on the detail sheet. The bottom-left side of the detail sheet has a coordinate of 0,0. The top-right side of the detail sheet has a coordinate of 33.75,22.75.

As an example, you could add a Contractor prompt by typing the word "Contractor" without quotes in one of the Prompt fields. Then when you go to the Title Block screen under job setup for a job that uses this fabricator, you will see a prompt labeled "Contractor" and you would type in the contractor's name there. The value you enter in job setup will be printed in the title block on all the sheets for the job. The value will be printed at the coordinates specified in the fabricator coordinates screen

Aside from entering the absolute X and Y values for the location of a field, you can adjust them using the horizontal and vertical adjustment fields. Type a value into the horizontal and/or vertical adjustment field for a prompt and click the Apply button to adjust the X and Y coordinates by the specified amount(s). You can individually adjust each location or adjust several fields at one time. You can also collectively shift all the fields at once by using the Fill Adjustment Fields With button. When you click the Fill Adjustment Fields With button, Asteel 2 will display the following dialog:



If you enter a value for a horizontal adjustment and/or vertical adjustment, those values will be loaded into the corresponding adjustment fields on the coordinate screen. For example, if you enter 1 for a horizontal adjustment and 2 for a vertical adjustment and then click the Ok button, the coordinate screen will appear as shown below:

CDS Asteel 2.0 - Job Number 06-7 - Fabricator Setup - SD

File Data Entry Connection Calcs Maintenance Help

Fabricator Setup Menu Fabricator Coordinates Fabricator Setup Options Fabricator Setup Options 2

Fabricator Coordinates

Titleblock Coordinates

Prompt	Horiz Coord	Vert Coord	Horiz Adjust	Vert Adjust
JOB FOR	29.3334	1.5938	1.0000	2.0000
LOCATION	29.3334	1.3854	1.0000	2.0000
CONTRACTOR	29.3334	1.1771	1.0000	2.0000
ELECTRODES	31.7500	0.7396	1.0000	2.0000
SHOP PAINT	31.0000	0.5313	1.0000	2.0000
SURFAC PRP	29.0000	0.5313	1.0000	2.0000
JOB EXCEPT	30.2500	0.1146	1.0000	2.0000
STEEL MATL	29.0000	0.7397	1.0000	2.0000
	0.0000	0.0000	1.0000	2.0000
	0.0000	0.0000	1.0000	2.0000
	0.0000	0.0000	1.0000	2.0000

Made By SDCo/ 29.9167 0.9688 1.0000 2.0000

Prompt	Horiz Coord	Vert Coord	Horiz Adjust	Vert Adjust
Cust Job#	31.8021	0.0729	1.0000	2.0000
Drawing #	33.0000	0.0729	1.0000	2.0000
Details Of	30.0000	1.8229	1.0000	2.0000
Job Notes	30.7500	5.0521	1.0000	2.0000
Hole Size	27.6375	2.4457	1.0000	2.0000
Field Bolt Size	0.0000	0.0000	1.0000	2.0000
Date	29.0000	0.9688	1.0000	2.0000

Shop Bill Horizontal Coordinates

Prompt	Horiz Coord	Horiz Adjust
Block Insert	0.0001	1.0000
Ship Mark	26.9167	1.0000
Mark	31.2917	1.0000
Ship Quantity	27.5417	1.0000
Quantity	27.5417	1.0000
Shape	28.0313	1.0000
Size	28.3959	1.0000
Feet	30.1250	1.0000
Inches	30.6667	1.0000
Weight	0.0000	1.0000
Remarks	32.9167	1.0000
Miscellaneous	0.0000	1.0000

Shop Bill Vertical Coordinates

Prompt	Vert Coord	Vert Adjust
Vert Start	21.2709	2.0000
Vert Increment	0.2500	2.0000

Fill Adjustment Fields With... Apply

HOLE SIZE => Height : 0.2500 X : Y Ratio : 1.0000 Format :

Clear All Reset

F1 Next Screen F2 Prev Screen F3 Copy Prev F5 Help

Custom Prompts

There are eleven possible custom prompts. The prompt name you type here will be shown on the Title Block screen in Job Setup. If you leave a prompt name blank, it will not appear in the Title Block screen.

Made By

The Made By prompt is typically used to describe the detailing company. For example, Southern Detailing Company would enter "SDCo/".

Predefined Prompts

There are seven predefined data items that Asteel 2 can include in the drawings if desired. These items are entered as part of the job setup or during data entry for the drawings. The predefined fields include the customer job number, drawing number, details-of, job notes, hole size, field bolt size, and date.

The data for each default prompt is generated automatically by Asteel 2. You can suppress the customer job number, field bolt size, and date text from appearing on your drawings by either leaving both X and Y coordinates blank or entering 0's for both X and Y.

Hole Size

The default hole size for the job will print as a fraction in the title block of each sheet. The following options control the appearance of the hole size fraction:

Height

This option defines the height of the hole size fraction in inches.

X:Y Ratio

This option defines the width-to-height ratio of the hole size fraction.

Format

This option defines the format of the hole size fraction. The hole size can be printed as either a stacked fraction (numerator over denominator with no slash between the numbers) or a side-by-side fraction (numerator to the left of denominator with a forward slash between the numbers). If you enter a forward slash, the hole size will print as a side-by-side fraction. If you leave the option blank, the hole size will print as a stacked fraction.

Shop Bill Horizontal Coordinates

The Shop Bill X Coordinates section prompts you for the X coordinates of shop bill data. The output of some prompts can be suppressed by either leaving the X coordinate blank or entering a 0.

The shop bill prompts are Block Insert, Ship Mark, Mark, Ship Quantity, Quantity, Shape, Size, Feet, Inches, Weight, Remarks and Miscellaneous.

Block Insert Point

The block insertion point specifies the X coordinate of an entire line of shopbill data, as opposed to the individual column coordinates described above. This system is used whenever shopbill attribute data is enabled. This option does not apply to most fabricators.

Shop Bill Vertical Coordinates

These options define the Y Start coordinate and the Y Increment of the shop bill.

The Y Start coordinate defines the starting Y coordinate where the first shop bill line will be output.

The Y Increment defines the spacing between shop bill lines.

Clear All Button

This button will blank out all of the fields on the screen.

Apply Button

This button will apply the adjustments to the fabricator. The X and/or Y values of each field are adjusted by their corresponding X and Y adjustment values.

Reset Button

This button will reload the last fabricator coordinate data that was saved for this fabricator.

Fabricator Setup Options

Click the Fabricator Setup Options button or the Fabricator Setup Options tab on the Fabricator Setup screen. The Fabricator Setup Options screen will be displayed:

CDS Asteel 2.0 - Job Number 06-7 - Fabricator Setup - SD

File Data Entry Connection Calcs Maintenance Help

Fabricator Setup Menu Fabricator Coordinates Fabricator Setup Options Fabricator Setup Options 2

Fabricator Setup Options

Stub Dimension Options

☐ Stub From Face Of Clip

☐ Stub From End Of Member

Stub Holes Options

☐ Stub Leading Holes In Hole Group

☐ Stub All Holes In Hole Group

☐ Stub First And Last Holes

Main Material Piece Mark Options

☒ (SB1, SB2, SB3) Mark To Follow Drawing Number

☐ (A5, B5, C5) Drawing Number To Follow Mark

☐ (SA, SB, SC) Mark To Follow Drawing Number

☐ (B1, B1A, B1B) Mark To Follow Drawing Number

☐ Custom

Channel Options

☐ Channels Detailed Looking At The Back

☐ Channels Detailed Looking At The Toes Of The Flanges

Fit Up Material Shop Mark Options

Plates	Angles	Misc.	Carry Marks
<input checked="" type="checkbox"/> pa1, pb1, pc1	aa1, ab1, ac1	ma1, mb1, mc1	Yes
<input type="checkbox"/> pa, pb, pc	aa, ab, ac	ma, mb, mc	No
<input type="checkbox"/> a1, b1, c1	a1, b1, c1	a1, b1, c1	Yes
<input type="checkbox"/> pa1, pb1, pc1	aa1, ab1, ac1	ma1, mb1, mc1	No
<input type="checkbox"/> 1a, 1b, 1c	1a, 1b, 1c	1a, 1b, 1c	Yes
<input type="checkbox"/> a, b, c	a, b, c	a, b, c	No
<input type="checkbox"/> pb1a, pb1b, pb1c	ab1a, ab1b, ab1c	mb1a, mb1b, mb1c	Yes
<input type="checkbox"/> p1a, p1b, p1c	a1a, a1b, a1c	m1a, m1b, m1c	Yes
<input type="checkbox"/> f1a, f1b, f1c			
<input type="checkbox"/> A1, B1, C1	A1, B1, C1	A1, B1, C1	No
<input type="checkbox"/> a1, b1, c1	a1, b1, c1	a1, b1, c1	No
<input type="checkbox"/> p1, p2, p3	a1, a2, a3	m1, m2, m3	Yes
<input type="checkbox"/> p101, p102, p103	A101, A102, A103	M101, M102, M103	Yes
<input type="checkbox"/> p1, p2, p3	a1, a2, a3	m1, m2, m3	No
<input type="checkbox"/> Custom <input type="text"/>			

☐ Do Not Use BAR Marks

Standard C/C Gage For Framed Beam Connections

Enter C/C Dimension (ex. 0 4 0) :

F1 Next Screen F2 Prev Screen F3 Copy Prev F5 Help

This screen allows you to specify the fabricator's preferences with respect to detailing practices and standards.

The features of this screen are described in the following paragraphs.

Stub Dimension Options

This option defines where stub dimensions will be drawn from. The default option is to stub from the end of the member.

Stub Holes Options

This option defines what holes in a group will be stubbed. The default option is to stub just the leading holes in a hole group.

Main Material Piece Mark Options

This option defines the piece mark style the fabricator uses for main material. The first style is the default.

The Custom field allows for mark options not shown on this screen. The Custom option allows for future expansion. Currently, the following custom piecemark style is valid:

Input	Beam Mark	Column Mark
5	11A1,11B1,11C1	11A1,11B1,11C1

Channel Options

This option defines the channel option this fabricator uses. The default option has channels detailed looking at the back. The channel option can be changed on an individual basis by entering "TOEUP" or "TOEDOWN" in the Miscellaneous field on the beam that you want to change (see the Beam Description screen).

Fit Up Material Shop Mark Options

This option defines the piece mark style the fabricator uses for fit up material. The first style is the default.

There is a check box at the bottom that allows you to disable the use of bar marks.

The Custom field allows for mark options not shown on this screen. The following table shows a list of custom mark options that can be input in the Custom field.

Input	Plates	Angles	Misc.	Carry Marks?
14	p1,p2,p3	a1,a2,a3	m1,m2,m3	Yes
15	pa,pb,pc	ma,mb,mc	ma,mb,mc	No
16	A1,B1,C1	A1,B1,C1	A1,B1,C1	Yes
17	P1,P2,P3	A1,A2,A3	M1,M2,M3	Yes
18	1a,1b,1c	1a,1b,1c	1a,1b,1c	No
20	PA1,PB1,PC1	AA1,AB1,AC1	MA1,MB1,MC1	Yes
21	Main mark + a,b,c	Main mark + a,b,c	Main mark + a,b,c	No
22	1pa,1pb,1pc	1aa,1ab,1ac	1ma,1mb,1mc	Yes
99	cp? at columns and p? for beams	cp? at columns and p? for beams	cp? at columns and p? for beams	Yes

Standard C/C Gage For Framed Beam Connections

This option defines the standard center-to-center for framed beam connections. This C/C will be used on all jobs using this fabricator code.

You can change the C/C for an individual job by entering it on the Connection Setup screen. Select "Beam Ends" under Connection Type. Edit the type "CC". Option "A" can be used to override the fabricator standard C/C.

Fabricator Setup Options 2

Click the Fabricator Setup Options 2 button or the Fabricator Setup Options 2 tab on the Fabricator Setup screen. The Fabricator Setup Options 2 screen will be displayed:

Erection Clearances

	Left End	Right End
Beam-To-Beam		
Beam-To-Column Flange		
Beam-To-Column Web		
All Bracing Beams		

Column Elevations Reference

☒ Column Elevations Reference Top Of Base Plate
☐ Column Elevations Reference Bottom Of Base Plate

Miscellaneous Options

☐ Show Stub Mark
☐ Combine feet and inches in the shop bill.
☐ Combine feet and inches in the shop bill for the 1A format.

Block Options

☐ Round block length up to the next 1/2 inch.
☐ Round block depth up to the next 1/4 inch.

Block clearance (default is 3/4 inch):

Minimum block length:

Minimum block depth:

F1 Next Screen F2 Prev Screen F3 Copy Prev F5 Help

This screen allows you to specify fabricator's preferences with respect to detailing practices and standards.

The features of this screen are described in the following paragraphs.

Erection Clearances

Enter the default erection clearances to use in various situations. If no fabricator default is specified, Asteel 2 will use a 1/16th clearance on the right end only. Erection clearances can also be set for a job using the BECC job setup option sheet. Additional information on the BECC option sheet is provided in OnlineDocs.

Column Elevations Reference

This option defines where the column elevations will be referenced.

Miscellaneous Options

Check "Show Stub Mark" to display a stub mark showing where stub dimensions are referenced from.

Check "Combine feet and inches in the shopbill" to combine these two columns into a single column in the shopbill output.

Check "Combine feet and inches in the shopbill for the 1A format" to combine these two columns into a single column in the shopbill output just for the 1A format.

Block Options

These options allow you to set fabricator specific defaults for blocks.

Saving the Fabricator Setup

You can save the fabricator setup at any time by clicking the Save button on the main Fabricator Setup screen. If you are on one of the other fabricator setup screens, such as the options or coordinates screens, you can press the escape key, click the Exit button, or click the Fabricator Setup Menu tab to get back to the main setup screen.

When you attempt to exit the fabricator setup, Asteel 2 will ask if you want to save the changes:



You can edit a set of fabricator options and save them under a new fabricator name. This is a quick way to create a new fabricator that is similar (or identical) to another. This is also an easy way to provide multiple sets of slightly different options for the same actual fabricator. For example, you can have fabricator codes of CDS1, CDS2, and CDS3, all of which actually apply to the same physical fabricator, but have different options based on different requirements.

CHAPTER 4

File and Job Utilities

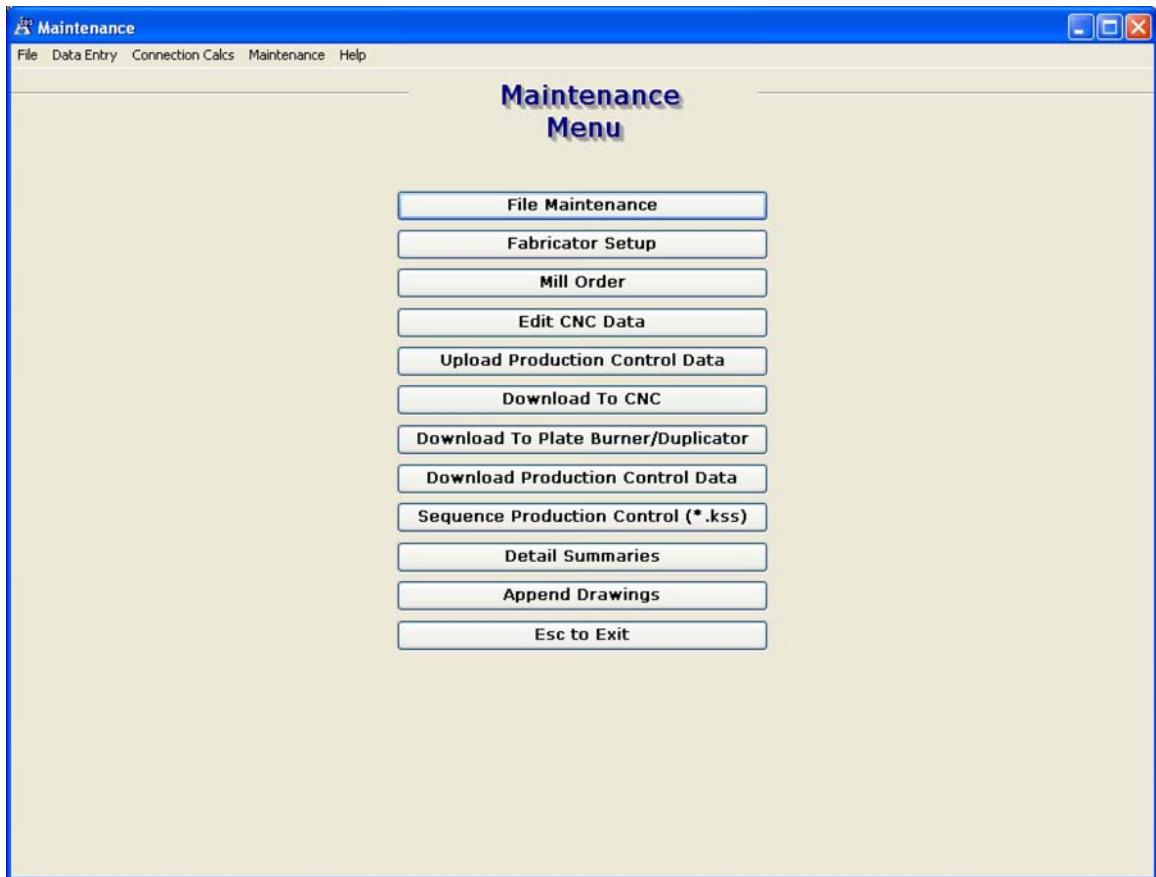
This section describes Asteel 2 features that are more related to maintenance functions than to the direct creation of details.

In This Chapter

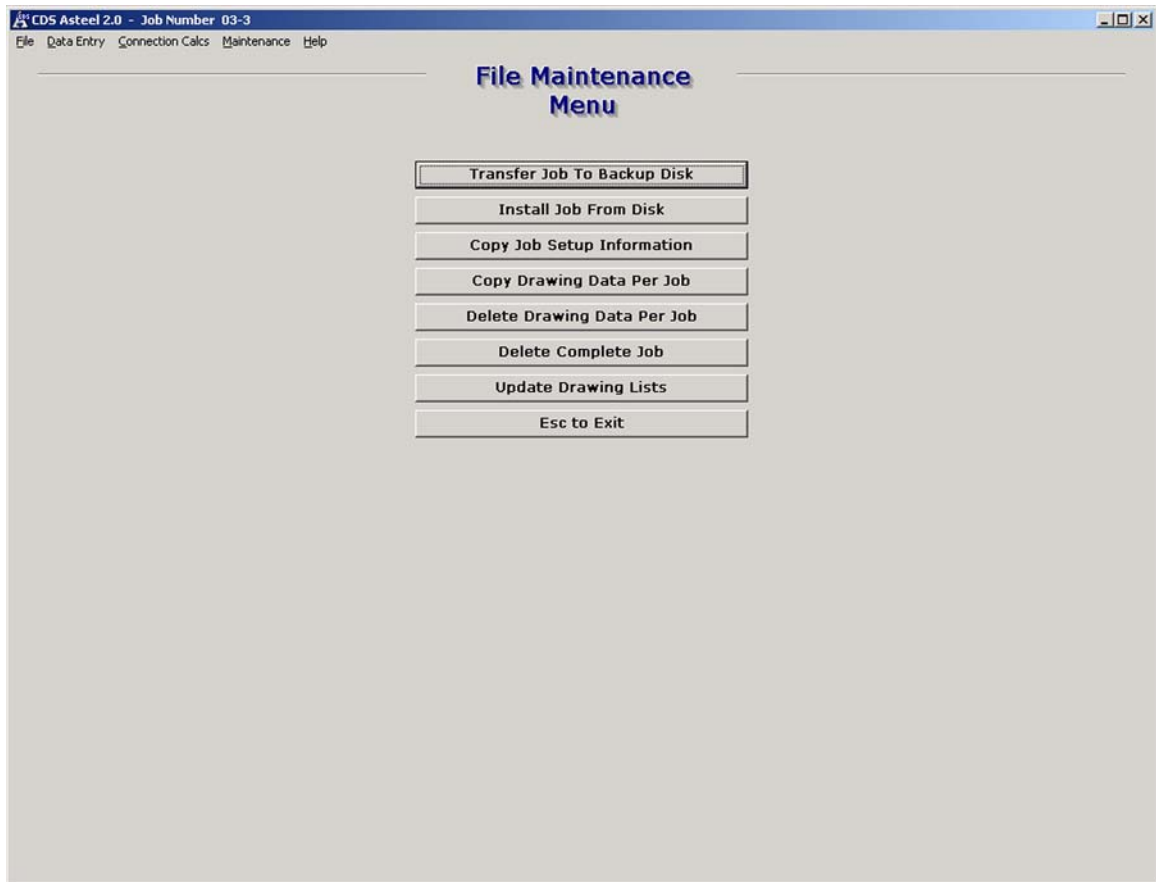
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Deleting Entire Jobs	172

Accessing File Maintenance

All of these features are accessed via the File Maintenance menu. From the Asteel 2 main menu, click the Maintenance button. The Maintenance screen will be displayed:



Click the File Maintenance button. The File Maintenance screen will be displayed:



Alternatively, you can use the pull-down menus at the top of the screen to go directly to any of these functions.

Backing Up and Restoring Jobs

Asteel 2 provides a mechanism for backing up and restoring single jobs. This is not meant to be a replacement for regular system backups, which are an essential part of good system management practices. The Asteel 2 backup and restore features simply provide a means to easily transfer a job from one system to another or backup a job before some major change is made to it such that the effects of the change can be reversed easily if they are not desirable.

The Asteel 2 backup utility compresses certain job files together and only backs up those files that cannot be generated by Asteel 2 when the job is restored. For example, DXF files are not backed up, because they can be regenerated from the data entry files. This makes the size of the backup as small as possible.

Backups can be performed to any disk that is writable, including floppies, hard drives, and ZIP drives.

Backups can span multiple disks. Asteel 2 will prompt for additional disks during backup and restore if they are required.

Backing Up a Job

Click the Transfer Job To Backup Disk button on the File Maintenance menu. The Transfer Job to Backup Disk Screen will be displayed:

CDS Asteel 2.0 - Job Number 00-7 - Transfer Job To Backup Disk

File Data Entry Connection Calcs Maintenance Help

Transfer Job To Backup Disk

Job Number:

Backup To :

Backup Type

☒ Brief
☐ Full

All Drawings:

<input type="checkbox"/> 2	<input type="checkbox"/> 25	<input type="checkbox"/> 47	<input type="checkbox"/> 69	<input type="checkbox"/> 95	<input type="checkbox"/> 123
<input type="checkbox"/> 3	<input type="checkbox"/> 26	<input type="checkbox"/> 48	<input type="checkbox"/> 70	<input type="checkbox"/> 99	<input type="checkbox"/> 124
<input type="checkbox"/> 4	<input type="checkbox"/> 27	<input type="checkbox"/> 49	<input type="checkbox"/> 71	<input type="checkbox"/> 100	<input type="checkbox"/> 125
<input type="checkbox"/> 5	<input type="checkbox"/> 28	<input type="checkbox"/> 50	<input type="checkbox"/> 72	<input type="checkbox"/> 102	<input type="checkbox"/> 126
<input type="checkbox"/> 6	<input type="checkbox"/> 29	<input type="checkbox"/> 52	<input type="checkbox"/> 73	<input type="checkbox"/> 103	<input type="checkbox"/> 127
<input type="checkbox"/> 7	<input type="checkbox"/> 30	<input type="checkbox"/> 53	<input type="checkbox"/> 74	<input type="checkbox"/> 104	<input type="checkbox"/> 129
<input type="checkbox"/> 7A	<input type="checkbox"/> 31	<input type="checkbox"/> 54	<input type="checkbox"/> 75	<input type="checkbox"/> 105	<input type="checkbox"/> 130
<input type="checkbox"/> 8	<input type="checkbox"/> 32	<input type="checkbox"/> 55	<input type="checkbox"/> 76	<input type="checkbox"/> 106	<input type="checkbox"/> 144
<input type="checkbox"/> 9	<input type="checkbox"/> 33	<input type="checkbox"/> 56	<input type="checkbox"/> 77	<input type="checkbox"/> 107	<input type="checkbox"/> 145
<input type="checkbox"/> 10	<input type="checkbox"/> 34	<input type="checkbox"/> 57	<input type="checkbox"/> 78	<input type="checkbox"/> 108	<input type="checkbox"/> 146
<input type="checkbox"/> 12	<input type="checkbox"/> 35	<input type="checkbox"/> 58	<input type="checkbox"/> 79	<input type="checkbox"/> 109	<input type="checkbox"/> 148
<input type="checkbox"/> 14	<input type="checkbox"/> 36	<input type="checkbox"/> 59	<input type="checkbox"/> 80	<input type="checkbox"/> 110	<input type="checkbox"/> 150
<input type="checkbox"/> 15	<input type="checkbox"/> 37	<input type="checkbox"/> 60	<input type="checkbox"/> 85	<input type="checkbox"/> 111	<input type="checkbox"/> 151
<input type="checkbox"/> 16	<input type="checkbox"/> 38	<input type="checkbox"/> 61	<input type="checkbox"/> 86	<input type="checkbox"/> 112	<input type="checkbox"/> 152
<input type="checkbox"/> 17	<input type="checkbox"/> 39	<input type="checkbox"/> 62	<input type="checkbox"/> 87	<input type="checkbox"/> 113	<input type="checkbox"/> 153
<input type="checkbox"/> 18	<input type="checkbox"/> 40	<input type="checkbox"/> 62A	<input type="checkbox"/> 88	<input type="checkbox"/> 114	
<input type="checkbox"/> 19	<input type="checkbox"/> 41	<input type="checkbox"/> 63	<input type="checkbox"/> 89	<input type="checkbox"/> 115	
<input type="checkbox"/> 20	<input type="checkbox"/> 42	<input type="checkbox"/> 64	<input type="checkbox"/> 90	<input type="checkbox"/> 116	
<input type="checkbox"/> 21	<input type="checkbox"/> 43	<input type="checkbox"/> 65	<input type="checkbox"/> 91	<input type="checkbox"/> 117	
<input type="checkbox"/> 22	<input type="checkbox"/> 44	<input type="checkbox"/> 66	<input type="checkbox"/> 92	<input type="checkbox"/> 118	
<input type="checkbox"/> 23	<input type="checkbox"/> 45	<input type="checkbox"/> 67	<input type="checkbox"/> 93	<input type="checkbox"/> 119	
<input type="checkbox"/> 24	<input type="checkbox"/> 46	<input type="checkbox"/> 68	<input type="checkbox"/> 94	<input type="checkbox"/> 120	

New Drawings:

<input type="checkbox"/> 3	<input type="checkbox"/> 12	<input type="checkbox"/> 29	<input type="checkbox"/> 36	<input type="checkbox"/> 43	<input type="checkbox"/> 47	<input type="checkbox"/> 69	<input type="checkbox"/> 76	<input type="checkbox"/> 80
<input type="checkbox"/> 4	<input type="checkbox"/> 26	<input type="checkbox"/> 30	<input type="checkbox"/> 40	<input type="checkbox"/> 44	<input type="checkbox"/> 48	<input type="checkbox"/> 70	<input type="checkbox"/> 77	<input type="checkbox"/> 85
<input type="checkbox"/> 8	<input type="checkbox"/> 27	<input type="checkbox"/> 31	<input type="checkbox"/> 41	<input type="checkbox"/> 45	<input type="checkbox"/> 49	<input type="checkbox"/> 72	<input type="checkbox"/> 78	<input type="checkbox"/> 86
<input type="checkbox"/> 9	<input type="checkbox"/> 28	<input type="checkbox"/> 35	<input type="checkbox"/> 42	<input type="checkbox"/> 46	<input type="checkbox"/> 68	<input type="checkbox"/> 75	<input type="checkbox"/> 79	<input type="checkbox"/> 87

This screen allows you to select which job to backup, which drawings within that job to backup, and what type of backup to perform.

The layout of the screen is similar to that used by the Process Sheets screen. The top list shows all sheets in the job, and the bottom list shows those sheets that have had data entered but have not yet been processed into AutoCAD drawings.

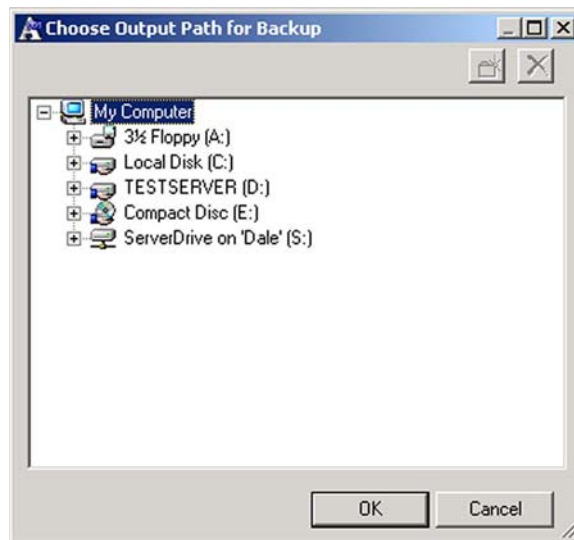
Select a job from the dropdown list. The drawing lists will be populated with the drawings for the selected job.

Select a backup type using the radio buttons to the right of the job number. The backup type can be either brief or full. A brief backup only copies the files necessary to recreate the complete job. A brief backup should only take a few minutes and requires little space. Note that all sheets must be reprocessed after restoring a brief backup. A full backup copies all files related to the job. A full backup can take a long time to complete and requires much more disk space than a brief backup. You do not have to reprocess any sheets after restoring a full backup.

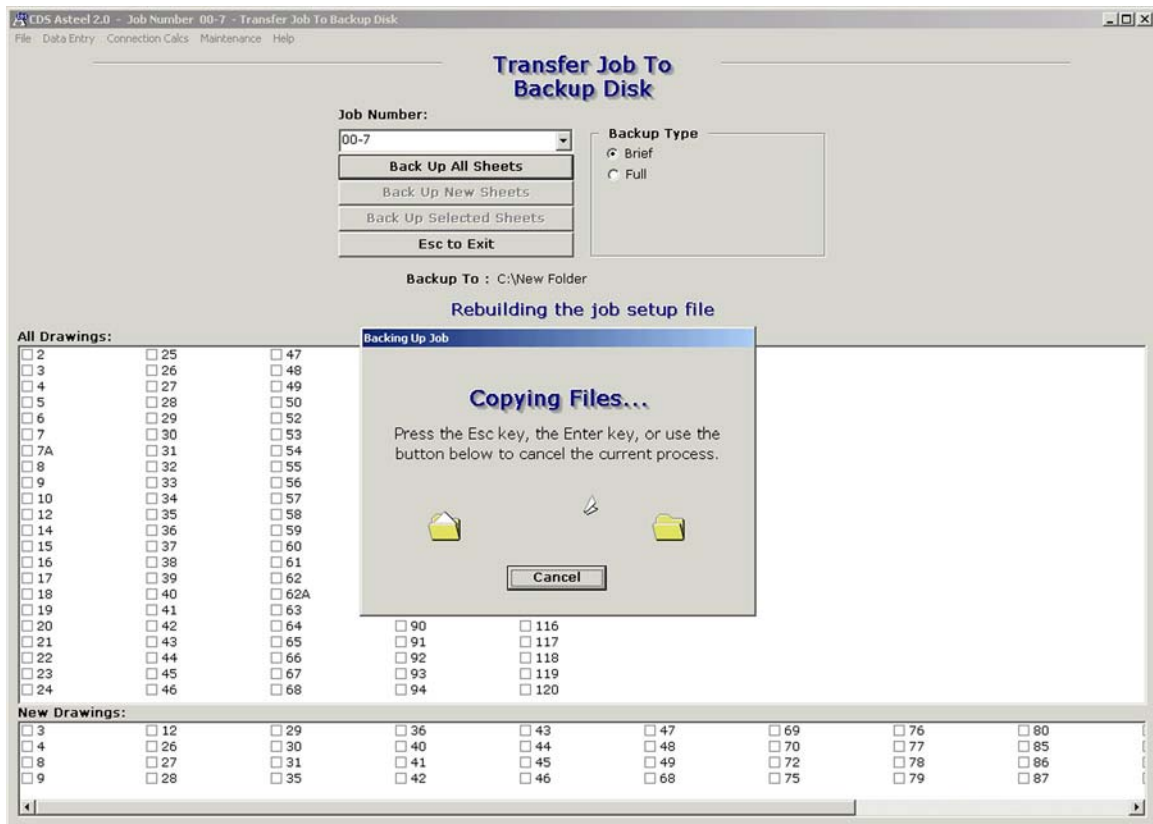
You can use the Back Up All Sheets or Back Up New Sheets buttons to easily back up the entire job or just the newest drawings, or you can pick specific drawings to back up and then use the Back Up Selected Sheets button. The Back Up Selected Sheets button will not be enabled until you select one or more drawings from the lists. You can specify any combination of sheets from either list.

Additional information on selecting items from lists such as these drawing lists is provided in the section on Common Characteristics of the User Interface.

To initiate the backup, click the Back Up All Sheets button, the Back Up New Sheets button, or the Back Up Selected Sheets button. The Output Path dialog will be displayed:



This dialog allows you to select the destination of the backup files. Select the desired output path and click the Ok button. The Copying Files dialog will be displayed:



Note the status line in the middle of the screen. Asteel 2 will display the name of each file as it is copied.

The Copying Files dialog allows you to terminate the backup while it is in progress. To terminate the backup, click the Cancel button in the Copying Files dialog. Canceling a backup results in an incomplete backup that should not be used to restore the job.

When the backup completes, the Copying Files dialog will close automatically.

Restoring a Job

Click the Install Job From Disk button on the File Maintenance screen. The Install Job From Disk screen will be displayed:

CDS Asteel 2.0 - Job Number 03-3 - Install Job From Disk

File Data Entry Connection Calcs Maintenance Help

Install Job From Disk

Job Number:
99-19

Install From:

Install Drawings: <Y/N> ☒ Y

Install Titleblock: <Y/N> ☒ Y

Install Connection Setup: <Y/N> ☒ Y

Install Subassembly Marks: <Y/N> ☒ Y

Install Job

Esc to Exit

This screen allows you to select the job number and the parts of that job to be restored. Use the dropdown list to select the job to be restored. You can select the parts of the job to be restored using the yes/no fields under the job number. These fields are described below.

Drawings

This option indicates whether to restore the data you entered in the sheet data entry screens for beams, columns, etc.

Title Block

This option indicates whether to restore the data you entered in the title block and general defaults screens of job setup.

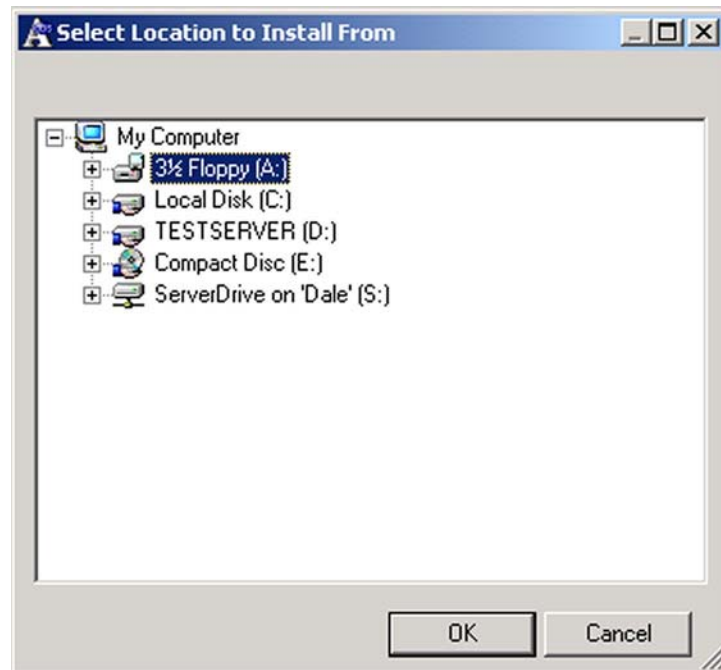
Connection Setup

This option indicates whether you want to restore the data you entered in the connection setup screens in job setup.

Subassembly Marks

This option indicates whether you want to restore the piecemark data for plates, angles, and miscellaneous fitup material. The piecemark data defines the marks that have been assigned to unique plates, etc. Restoring the piecemark data allows subsequent sheets to use the same mark for a piece if it is identical to a previously-used piece. This only affects jobs that use a subassembly marking system that carries marks (i.e.: system where the same piece will have the same mark on all sheets). If the job is not set up to carry marks, restoring the piecemark data has no effect.

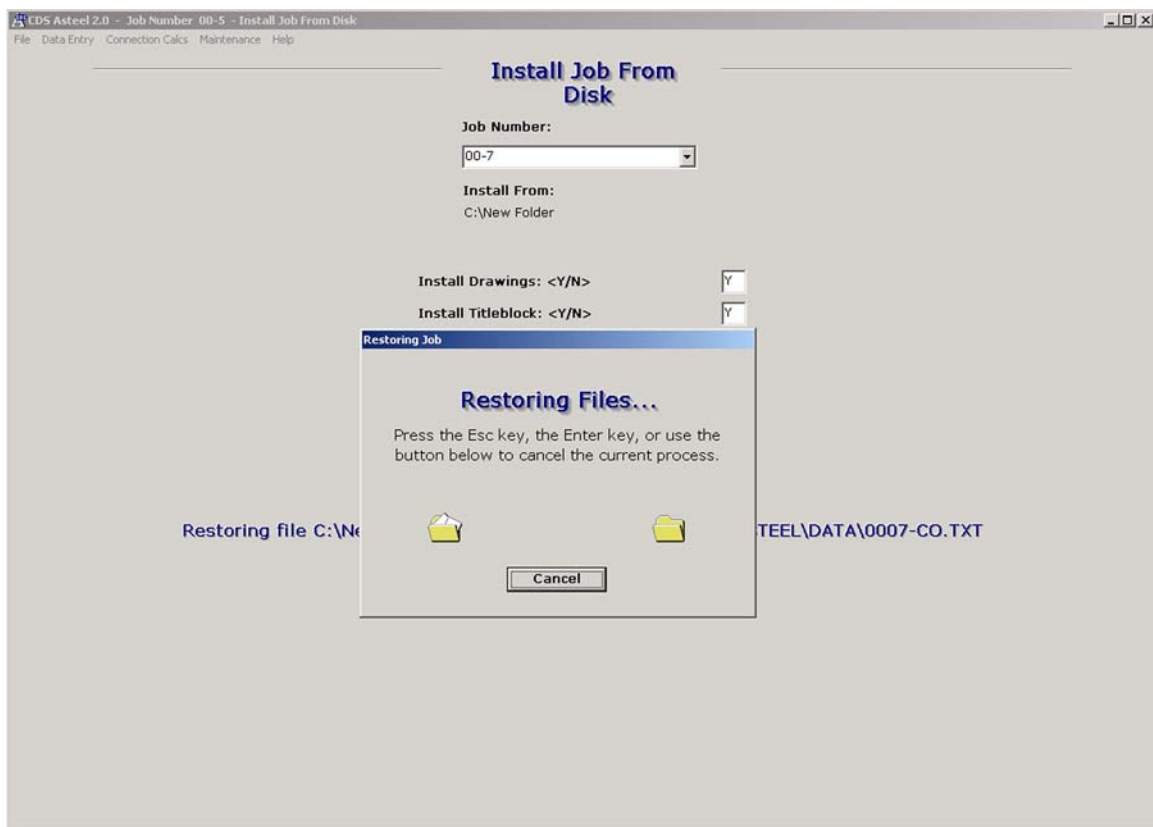
Select the restore options you want, then click the Install Job button. The input location dialog will be displayed:



This dialog lets you select the location of the backup files that you want to restore. Select the location of the input and click the Ok button. If the input location is a removable drive, you will be prompted to insert the first disk:



Put the first (or only) disk of the backup set into the drive and click the Ok button. The Restoring Files dialog will be displayed:



This dialog allows you to cancel the restore operation, similar to the way the Copying Files dialog allows you to cancel a backup. Canceling a restore will result in an incomplete restore and the job may be corrupted.

When the restore completes, the Restoring Files dialog will close automatically.

Copying Job Setup Information

This feature allows you to copy connection setups from one job to another or within the same job.

From the File Maintenance screen, click the Copy Job Setup Information button. The Copy Job Setup screen will be displayed:

This function will copy every connection from the source job to the destination job. The copied connections will be assigned the same name in the destination job as they have in the source job. Existing connections in the destination job that have the same name as a connection being copied will be overwritten. Existing connections in the destination job that do not have the same name as a connection being copied will not be affected.

This function is only enabled when the source and destination jobs are different.

Copy Selected Connections

This function will copy only the selected connections from the source job to the destination job. This function is only enabled when one or more connections have been selected from the connection list.

When you click the Copy Selected Connections button, the Set Connection Names screen will be displayed:

Set Connection Names

Source Job: 00-5

Destination Job: 00-7

Connections

Source	Destination
BE26	
BE26A	BE26A
BE26B	BE26B
BE27	BE27
BE28	BE28
BE28B	BE28B
BE28STD	BE28STD
BE29	BE29
BE29A	BE29A
BE30	BE30
BE31	BE31
BE32	BE32
BE34	BE34
BE36	BE36
BE36A	BE36A
BE37	BE37
BE38	BE38
BE40	BE40
BE41	BE41
BE42	BE42
BE43	BE43
BE45	BE45
BE46	BE46

Ok Cancel

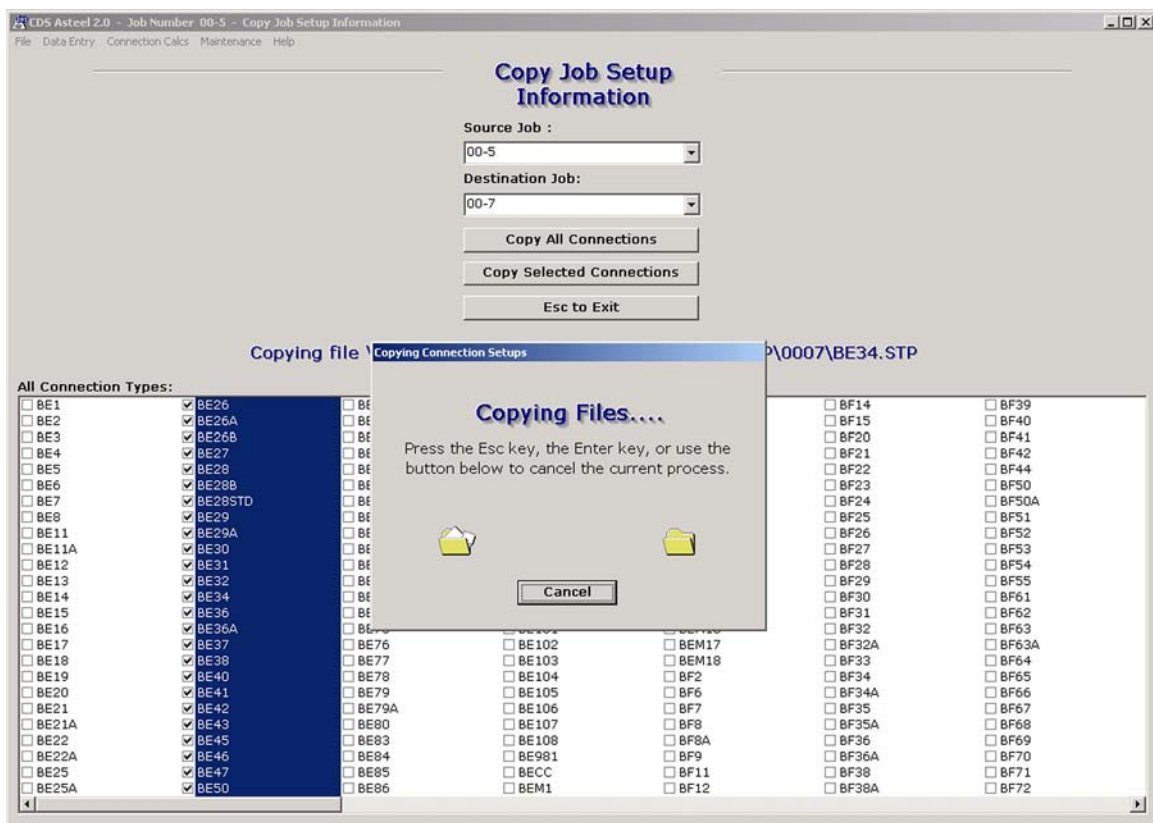
This screen allows you to change the names that the connections will be assigned in the destination job.

If you are copying connections from one job to a different job, the destination connection name will default to the source connection name, but you are allowed to change it. Existing connections in the destination job that have the same name will be overwritten.

If you are copying connections within a single job (i.e.: the source and destination jobs are the same), you will be forced to assign a new name to each destination connection. Existing connections with the same names will be overwritten.

Destination connection names must be of the same base type as their corresponding source connections. That is, the destination names must match the source names up to the unique suffixes. For example, you can copy beam end type 6A to beam end type 6B. You can't copy a connection to a different category, such as copying a beam end connection to a column end connection. Likewise, you can't copy a connection to a different base type within a category, such as copying a beam end of type 6 to a beam end of type 7.

After setting the destination connection names, click the Ok button. The Copying Files dialog will be displayed:



This dialog allows you to cancel the copy function. When the copy completes, the Copying Files dialog will close automatically.

Copy Drawings

Asteel 2 provides two methods for copying drawings. You can use the File Maintenance utilities to copy drawings from one job to another or within the same job, or you can use the save-as feature of the data entry screens to save a drawing under a new name within the same job.

The following paragraphs provide additional information on these two methods of copying drawings.

Copy Drawings via the File Maintenance Menu

This feature allows you to copy drawing data from one job to another or within the same job. The copied drawings can have the same name as the originals, or they can be renamed. The Copy Drawings feature is very similar to the Copy Job Setup feature.

From the File Maintenance screen, click the Copy Drawing Data Per Job button. The Copy Drawing Data Per Job screen will be displayed:

Copy Drawing Data Per Job

Source Job : 99-19

Destination Job: 03-3

Copy All Drawings

Copy Selected Drawings

Esc to Exit

All Drawings:

<input type="checkbox"/> 11	<input type="checkbox"/> 63	<input type="checkbox"/> 86	<input type="checkbox"/> 118	<input type="checkbox"/> 141	<input type="checkbox"/> 166	<input type="checkbox"/> 189	<input type="checkbox"/> 221
<input type="checkbox"/> 12	<input type="checkbox"/> 64	<input type="checkbox"/> 87	<input type="checkbox"/> 119	<input type="checkbox"/> 142	<input type="checkbox"/> 167	<input type="checkbox"/> 195	<input type="checkbox"/> 222
<input type="checkbox"/> 13	<input type="checkbox"/> 65	<input type="checkbox"/> 88	<input type="checkbox"/> 120	<input type="checkbox"/> 143	<input type="checkbox"/> 168	<input type="checkbox"/> 196	<input type="checkbox"/> 223
<input type="checkbox"/> 14	<input type="checkbox"/> 66	<input type="checkbox"/> 89	<input type="checkbox"/> 121	<input type="checkbox"/> 144	<input type="checkbox"/> 169	<input type="checkbox"/> 197	<input type="checkbox"/> 224
<input type="checkbox"/> 15	<input type="checkbox"/> 67	<input type="checkbox"/> 90	<input type="checkbox"/> 122	<input type="checkbox"/> 145	<input type="checkbox"/> 170	<input type="checkbox"/> 198	<input type="checkbox"/> 225
<input type="checkbox"/> 16	<input type="checkbox"/> 68	<input type="checkbox"/> 91	<input type="checkbox"/> 123	<input type="checkbox"/> 146	<input type="checkbox"/> 171	<input type="checkbox"/> 199	<input type="checkbox"/> 226
<input type="checkbox"/> 17	<input type="checkbox"/> 69	<input type="checkbox"/> 92	<input type="checkbox"/> 124	<input type="checkbox"/> 147	<input type="checkbox"/> 172	<input type="checkbox"/> 200	<input type="checkbox"/> 227
<input type="checkbox"/> 18	<input type="checkbox"/> 70	<input type="checkbox"/> 93	<input type="checkbox"/> 125	<input type="checkbox"/> 148	<input type="checkbox"/> 173	<input type="checkbox"/> 201	<input type="checkbox"/> 228
<input type="checkbox"/> 19	<input type="checkbox"/> 71	<input type="checkbox"/> 94	<input type="checkbox"/> 126	<input type="checkbox"/> 149	<input type="checkbox"/> 174	<input type="checkbox"/> 202	<input type="checkbox"/> 229
<input type="checkbox"/> 20	<input type="checkbox"/> 72	<input type="checkbox"/> 95	<input type="checkbox"/> 127	<input type="checkbox"/> 150	<input type="checkbox"/> 175	<input type="checkbox"/> 203	<input type="checkbox"/> 230
<input type="checkbox"/> 21	<input type="checkbox"/> 73	<input type="checkbox"/> 96	<input type="checkbox"/> 128	<input type="checkbox"/> 151	<input type="checkbox"/> 176	<input type="checkbox"/> 204	<input type="checkbox"/> 231
<input type="checkbox"/> 22	<input type="checkbox"/> 74	<input type="checkbox"/> 97	<input type="checkbox"/> 129	<input type="checkbox"/> 152	<input type="checkbox"/> 177	<input type="checkbox"/> 205	<input type="checkbox"/> 232
<input type="checkbox"/> 23	<input type="checkbox"/> 75	<input type="checkbox"/> 98	<input type="checkbox"/> 130	<input type="checkbox"/> 153	<input type="checkbox"/> 178	<input type="checkbox"/> 206	<input type="checkbox"/> 233
<input type="checkbox"/> 24	<input type="checkbox"/> 76	<input type="checkbox"/> 99	<input type="checkbox"/> 131	<input type="checkbox"/> 155	<input type="checkbox"/> 179	<input type="checkbox"/> 207	<input type="checkbox"/> 236
<input type="checkbox"/> 25	<input type="checkbox"/> 77	<input type="checkbox"/> 100	<input type="checkbox"/> 132	<input type="checkbox"/> 156	<input type="checkbox"/> 180	<input type="checkbox"/> 208	<input type="checkbox"/> 237
<input type="checkbox"/> 31	<input type="checkbox"/> 78	<input type="checkbox"/> 102	<input type="checkbox"/> 133	<input type="checkbox"/> 157	<input type="checkbox"/> 181	<input type="checkbox"/> 209	<input type="checkbox"/> 239
<input type="checkbox"/> 34	<input type="checkbox"/> 79	<input type="checkbox"/> 103	<input type="checkbox"/> 134	<input type="checkbox"/> 159	<input type="checkbox"/> 182	<input type="checkbox"/> 210	<input type="checkbox"/> 240
<input type="checkbox"/> 56	<input type="checkbox"/> 80	<input type="checkbox"/> 104	<input type="checkbox"/> 135	<input type="checkbox"/> 160	<input type="checkbox"/> 183	<input type="checkbox"/> 211	<input type="checkbox"/> 241
<input type="checkbox"/> 57	<input type="checkbox"/> 81	<input type="checkbox"/> 105	<input type="checkbox"/> 136	<input type="checkbox"/> 161	<input type="checkbox"/> 184	<input type="checkbox"/> 212	<input type="checkbox"/> 242
<input type="checkbox"/> 58	<input type="checkbox"/> 82	<input type="checkbox"/> 114	<input type="checkbox"/> 137	<input type="checkbox"/> 162	<input type="checkbox"/> 185	<input type="checkbox"/> 213	<input type="checkbox"/> 243
<input type="checkbox"/> 60	<input type="checkbox"/> 83	<input type="checkbox"/> 115	<input type="checkbox"/> 138	<input type="checkbox"/> 163	<input type="checkbox"/> 186	<input type="checkbox"/> 218	<input type="checkbox"/> 244
<input type="checkbox"/> 61	<input type="checkbox"/> 84	<input type="checkbox"/> 116	<input type="checkbox"/> 139	<input type="checkbox"/> 164	<input type="checkbox"/> 187	<input type="checkbox"/> 219	<input type="checkbox"/> 245
<input type="checkbox"/> 62	<input type="checkbox"/> 85	<input type="checkbox"/> 117	<input type="checkbox"/> 140	<input type="checkbox"/> 165	<input type="checkbox"/> 188	<input type="checkbox"/> 220	<input type="checkbox"/> 246

This screen allows you to specify what job and what drawings are being copied, and what job they are being copied into.

Select the source and destination jobs, and then either click the Copy All Drawings button or select some drawings from the listbox and click the Copy Selected Drawings button. In both cases, the Set Drawing Names screen is displayed:

The screenshot shows the 'Set Drawing Names' dialog box. At the top, the title bar reads 'CDS Asteel 2.0 - Job Number 03-3 - Copy Job Data Files'. The dialog has two input fields: 'Source Job' with the value '99-19' and 'Destination Job' with the value '03-3'. Below these is a section titled 'Drawings' containing a table with two columns: 'Source' and 'Destination'. The 'Source' column lists drawing numbers from 11 to 60. The 'Destination' column is currently empty for all rows. At the bottom of the dialog are 'Ok' and 'Cancel' buttons.

Source	Destination
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
31	
34	
56	
57	
58	
60	

Like the destination connection names in Copy Job Setup, the destination drawing names will be blank if you're copying within the same job, and will default to the source name if you're copying from one job to another. Existing drawings having the same names will be overwritten.

Click the Ok button. The Copying Files dialog will be displayed while the drawings are being copied and will close automatically when the copy is complete. See Copying Job Setup information or Backing Up Jobs for a description of the Copying Files dialog.

Copying Drawings via the Save-As Feature

All data entry screens for beams, columns, etc. allow you to change the name of the drawing when you save it. This is similar to the file/save-as feature available in most Windows programs. This feature is very convenient in cases where one drawing in a job is very similar to another. You can pull up the first drawing, edit it, and save it under a new name. The first drawing is left unchanged.

The following paragraphs describe this process in more detail.

Assume you have a beam as shown below:

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 62 - Detail Number 1

File Data Entry Connection Calcs Maintenance Neutral File Help

Drawing Beam Description Bracing Left End Bracing Right End Beam Framing

Beam Information

Quantity	W.P. to W.P.	Member Size	Left End Elevation	Right End Elevation
181	20 0 0	W12 x 40	0	
		Detail Length : 16	Steel : 50	Remarks :
		Camber :	Composite or Non-Composite : NC	

Miscellaneous :

Beam Ends

Left End

Type : 111 Condition : 3

Size or Minus : W12 x 58

Elev. Difference :

Edge Distance :

Gage :

Rows : @ Spacing

Top Block :

Bottom Block :

Miscellaneous :

Right End

Type : 111 Condition : 3

Size or Minus : W12 x 58

Elev. Difference :

Edge Distance :

Gage :

Rows : @ Spacing

Top Block :

Bottom Block :

Miscellaneous :

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear line F8 Delete Line F10 Clear All F11 Copy All Of Prev

Assume the bracing and framing for this beam are as shown below:

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 62 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing Beam Description Bracing Left End Bracing Right End Beam Framing

Left End Bracing

Above

Type :

Rows : @ Spacing

Base :

Rise :

A Dim :

A Rows : @ Spacing

Below

Type : 1

Rows : 2 @ Spacing

Base : 20 0 0

Rise : 17 11 0

B Dim : 0 5 0

B Rows : 2 @ 0 4 0 Spacing

Right End Bracing

Above

Type :

Rows : @ Spacing

Base :

Rise :

A Dim :

A Rows : @ Spacing

Below

Type : 1

Rows : 2 @ Spacing

Base : 20 0 0

Rise : 17 11 0

B Dim : 0 5 0

B Rows : 2 @ 0 4 0 Spacing

Beam Framing

	SPACING	TYPE	GAGE	ROWS	SPA	C/C	THK	MISC	FOR
Line 1	3 0 0	D2RF	0 4 0	3		1 0 0,3,0 3 0			
Line 2	10 0 0	W	0 4 0	3		1 0 0,3,0 3 0			
Line 3	10 0 0	D2LF	0 4 0	3		1 0 0,3,0 3 0			
Line 4									
Line 5									
Line 6									
Line 7									
Line 8									
Line 9									
Line 10									
Line 11									
Line 12									
Line 13									
Line 14									
Line 15									
Line 16									
Line 17									
Line 18									
Line 19									
Line 20									
Line 21									
Line 22									

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 Line Copy F5 Help F6 Copy All of Line F7 Clear line F8 Delete Line F10 Clear All F11 Copy All Of Prev

Now assume that you need another drawing similar to this one, but the sizes of the member and the members it frames to are different. Rather than enter all the information for the second drawing from scratch, you can start with the first drawing and save it under a new name. This process is described below.

Click the Beams button on the Asteel 2 main menu. The Beams Data Entry screen will be displayed:

Beam Drawing Information

Job Number : 00-7 Detail Number :

Drawing Number :

Sloping Beams? Y/N :

Bracing Beams? Y/N :

Drawing Layout :

Drawing Miscellaneous :

Save

Esc to Exit

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy **F5 Help** F6 Copy All Of End F7 Clear Line F8 Delete Line F10 Clear All F11 Copy All Of Prev

Use the dropdown lists to select the job number and drawing that you want to make a copy of. In this example, the job is 00-7 and the drawing is 62. The remaining fields are loaded by Asteel 2 from the data in the drawing file:

Beam Drawing Information

Job Number : 00-7 Detail Number : 1

Drawing Number : 62

Sloping Beams? Y/N : N

Bracing Beams? Y/N : Y

Drawing Layout : 2

Drawing Miscellaneous :

Save

Esc to Exit

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy **F5 Help** F6 Copy All Of End F7 Clear Line F8 Delete Line F10 Clear All F11 Copy All Of Prev

Click the Beam Description tab. The main beam description will be displayed:

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 62 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing Beam Description Bracing Left End Bracing Right End Beam Framing

Beam Information

Quantity	W.P. to W.P.	Member Size	Left End Elevation	Right End Elevation
181	20 0 0	W12 x 40	0	
		Detail Length : 16	Steel : A36	Remarks :
		Camber :	Composite or Non-Composite : NC	

Miscellaneous :

Beam Ends

Left End		Right End	
Type : 113	Condition : 3	Type : 113	Condition : 3
Size or Minus : W12 x 58		Size or Minus : W12 x 58	
Elev. Difference :		Elev. Difference :	
Edge Distance :		Edge Distance :	
Gage :		Gage :	
Rows : @ Spacing		Rows : @ Spacing	
Top Block :		Top Block :	
Bottom Block :		Bottom Block :	
Miscellaneous :		Miscellaneous :	

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear Line F8 Delete Line F10 Clear All F11 Copy All of Prev

Change the member size to W16x31 and the size of the members the ends frame into to W12x65:

CDS Asteel 2.0 - Job Number 00-7 - Beam Data Entry - Drawing Number 62 - Detail Number 1

File Data Entry Connection Calcs Maintenance Help

Drawing Beam Description Bracing Left End Bracing Right End Beam Framing

Beam Information

Quantity	W.P. to W.P.	Member Size	Left End Elevation	Right End Elevation
181	20 0 0	W16 x 31	0	
		Detail Length : 16	Steel : A36	Remarks :
		Camber :	Composite or Non-Composite : NC	

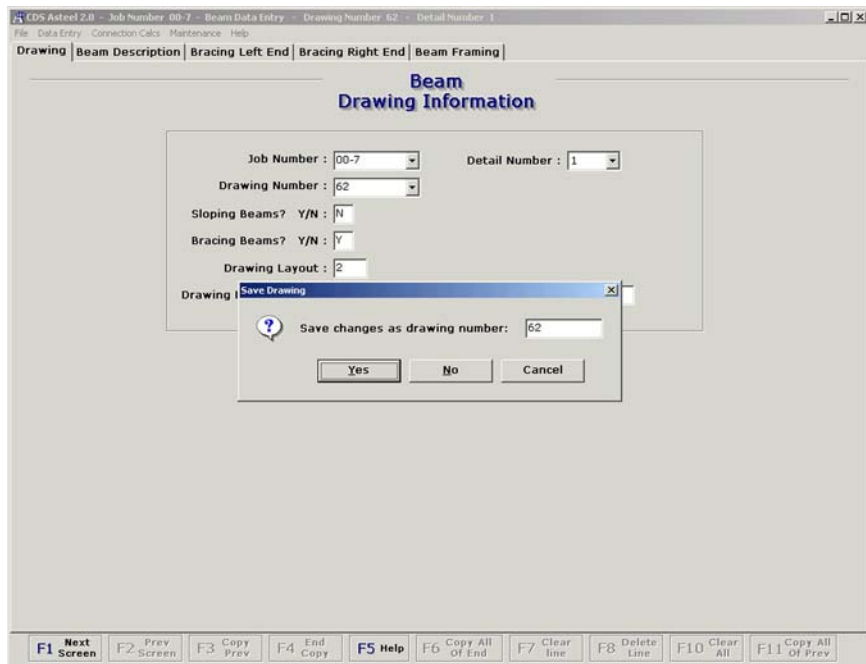
Miscellaneous :

Beam Ends

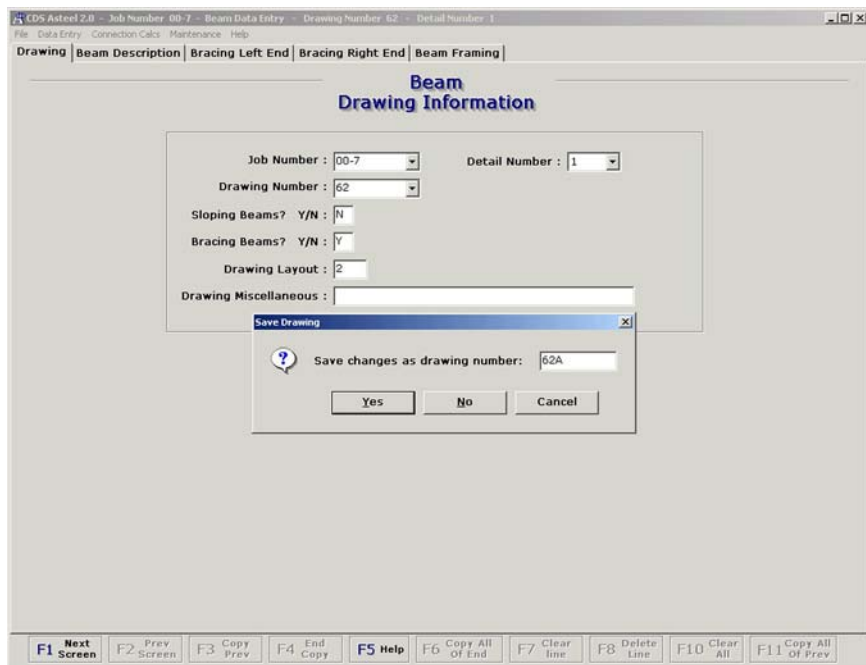
Left End		Right End	
Type : 113	Condition : 3	Type : 113	Condition : 3
Size or Minus : W12 x 65		Size or Minus : W12 x 58	
Elev. Difference :		Elev. Difference :	
Edge Distance :		Edge Distance :	
Gage :		Gage :	
Rows : @ Spacing		Rows : @ Spacing	
Top Block :		Top Block :	
Bottom Block :		Bottom Block :	
Miscellaneous :		Miscellaneous :	

F1 Next Screen F2 Prev Screen F3 Copy Prev F4 End Copy F5 Help F6 Copy All of End F7 Clear Line F8 Delete Line F10 Clear All F11 Copy All of Prev

Press the escape key. The save-as dialog will be displayed:



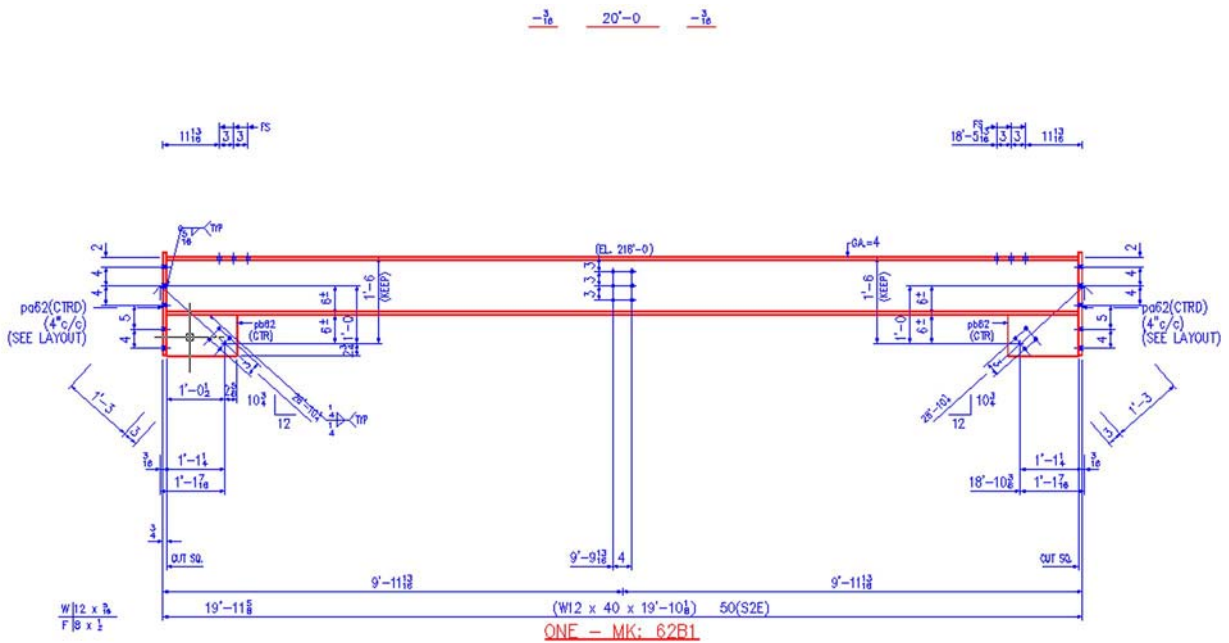
Type a new drawing number, for example 62A, over the drawing number displayed in the Save Drawing dialog:



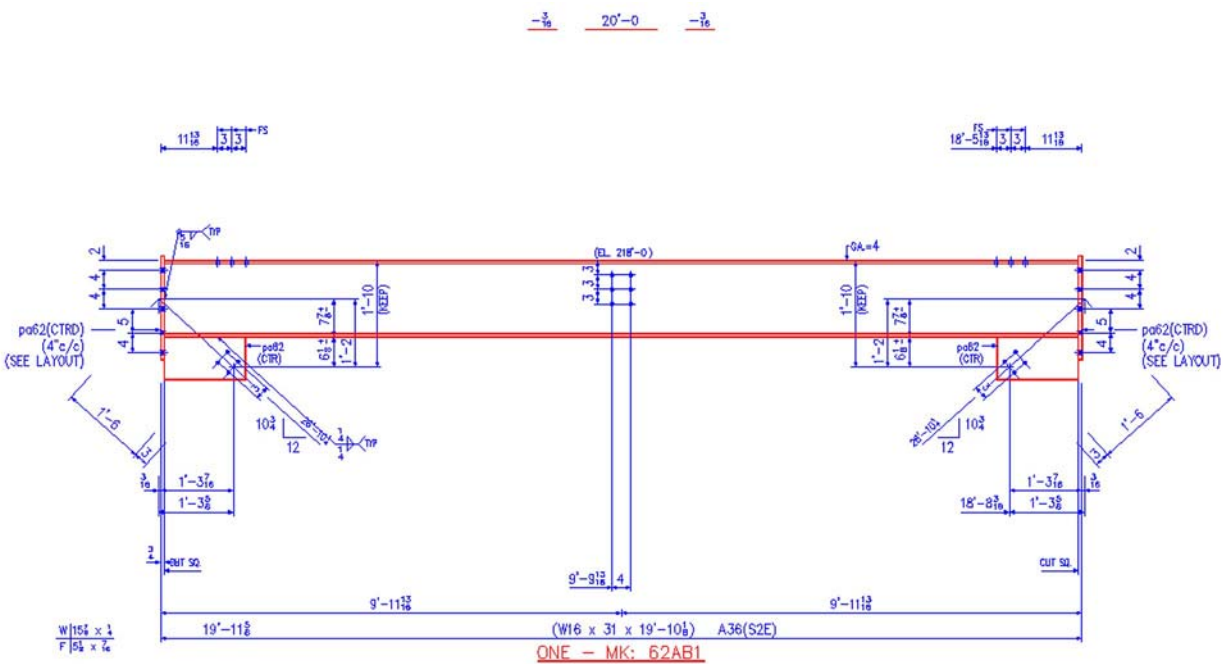
Click the Yes button to save the drawing under the new name.

The details produced for these two drawings are shown on the following page. Note that although all that changed in the data entry was the member size, all the dependent dimensions have been changed in the detail.

The detail produced for drawing 62 is :



The detail produced for drawing 62A is:



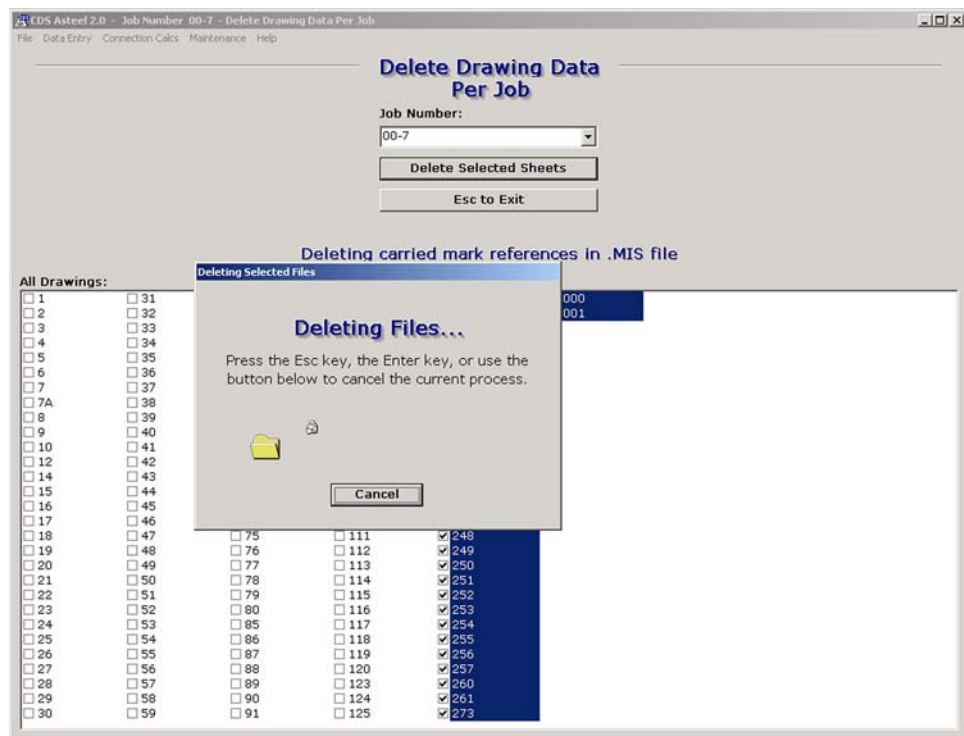
Deleting Drawings

Asteel 2 provides a mechanism for deleting drawing files from jobs. All drawings are sent to the Windows Recycle Bin so that they can be recovered if they are deleted by accident.

To delete drawings, click the Delete Drawing Data Per Job button on the File Maintenance screen. The Delete Drawing Data Per Job screen will be displayed:



Click the Yes button to begin deleting the files. The Deleting Files dialog is displayed.

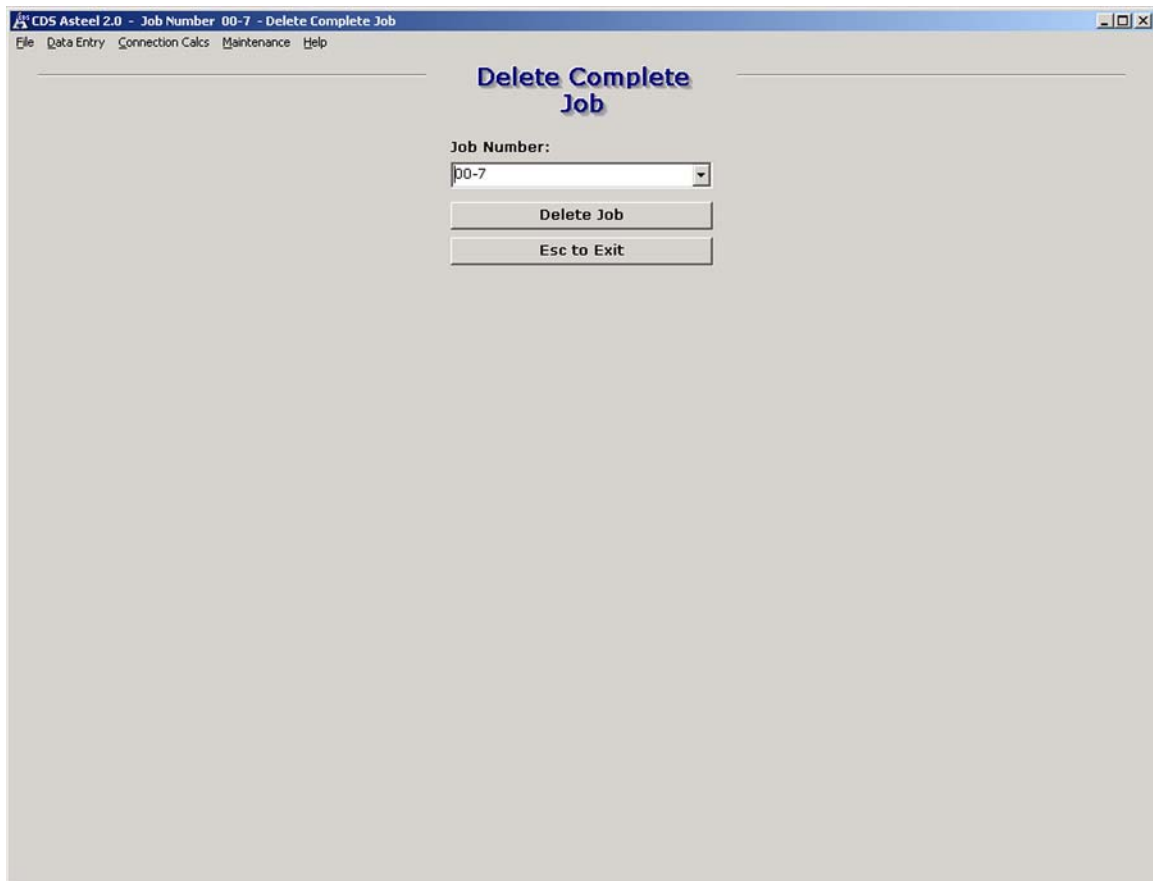


You can cancel the delete at any time. The Deleting Files dialog will close automatically when the delete operation is complete.

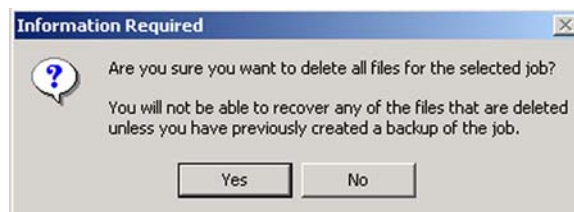
Deleting Entire Jobs

Asteel 2 provides a mechanism for removing an entire job from the system. The files are NOT sent to the Windows Recycle Bin, so you will not be able to recover them unless you have made a previous backup.

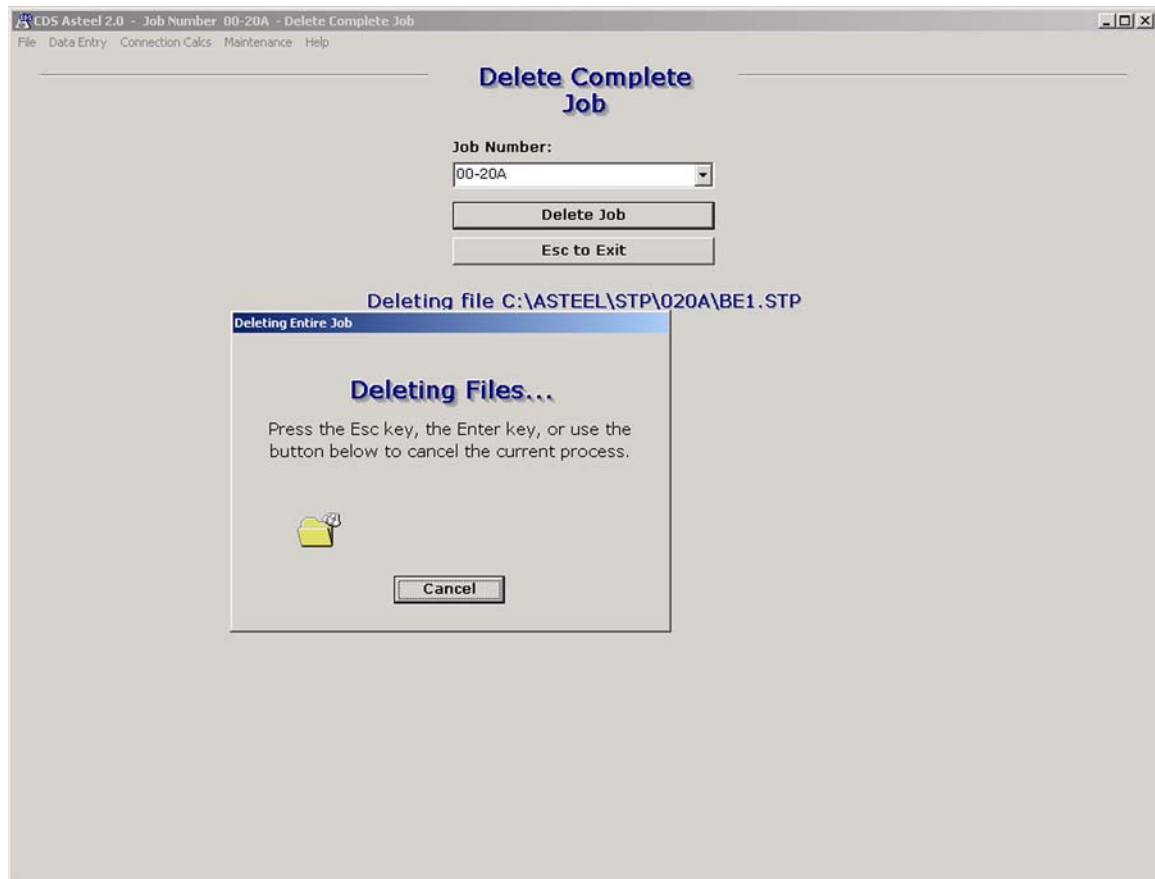
To delete jobs from the system click the Delete Complete Job button on the File Maintenance screen. The Delete Complete Job screen will be displayed:



Use the dropdown list to select the job to be deleted, then click the Delete Job button. You will be prompted to confirm the delete operation:



Click the Yes button to begin the delete. The Deleting Files dialog will be displayed:



You can cancel the delete at any time, but the job may be in a corrupted state. Setup information and other critical data may have already been deleted. The Deleting Files dialog will close automatically when the delete operation is complete.

Additional Asteel Features

This section describes Asteel 2 features that are more related to ancillary functions than to the direct creation of details. These features include:

- generating mill orders
- generating engineering data for connections
- editing and downloading CNC and production control data
- creating detail summary sheets
- appending drawings

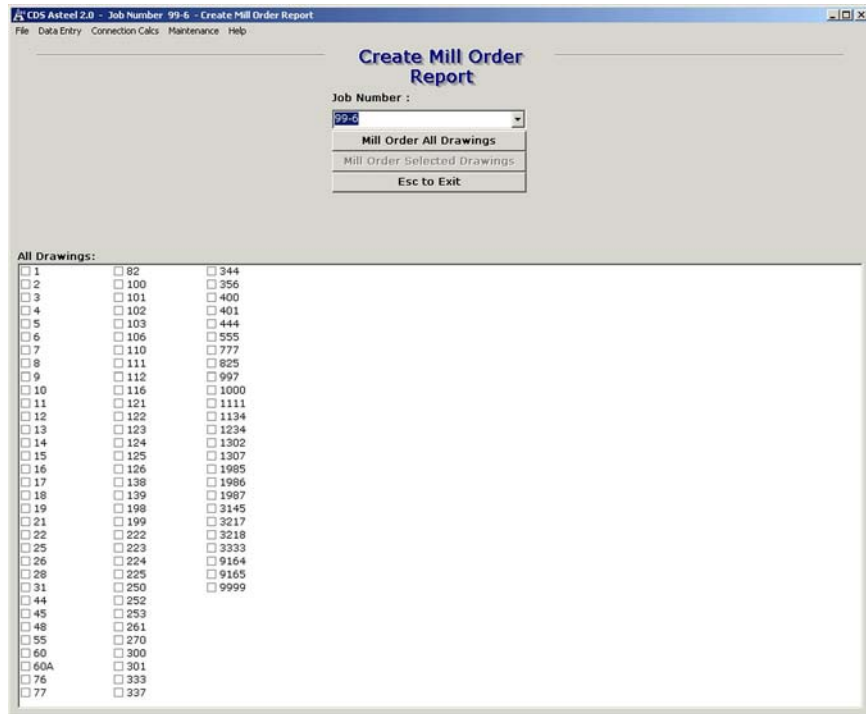
The following paragraphs describe these features in more detail.

In This Chapter

Generating Mill Orders	175
Connection Calculations	178
Editing CNC Data	187
Creating CNC Files for Fabrication Equipment.....	197
Production Control Data	203
Detail Summaries	215
Sequence Production Control.....	217
Append Drawings.....	217
Configurable Asteel Options.....	219

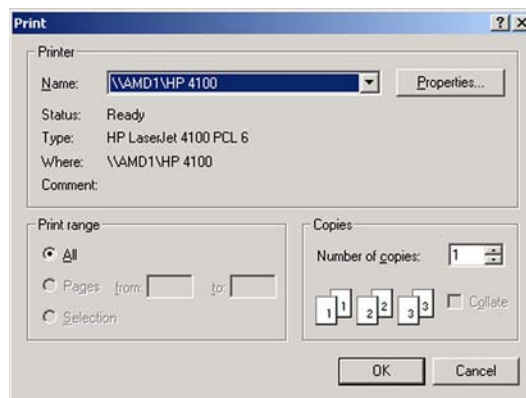
Generating Mill Orders

From the Maintenance screen, click the Mill Order button. The Create Mill Order Report screen will be displayed:



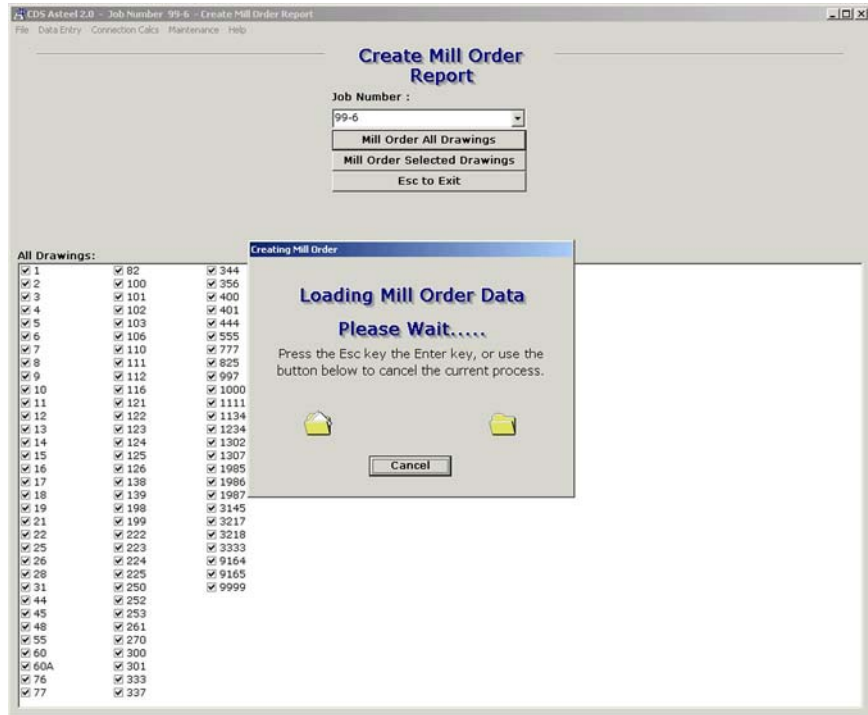
This screen allows you to select drawings from a job and generate a mill order for the selected drawings. The mill order will include materials for only those sheets that have been processed.

Use the dropdown list to select the job, then either click the Mill Order All Drawings button or select some drawings from the listbox and click the Mill Order Selected Drawings button. In both cases, the printer dialog will be displayed:



The report will be formatted such that it can be printed on the selected printer, but it will not be automatically sent to the printer. The report will always be displayed on the screen first.

Click the Ok button. The Loading Mill Order Data dialog will be displayed:

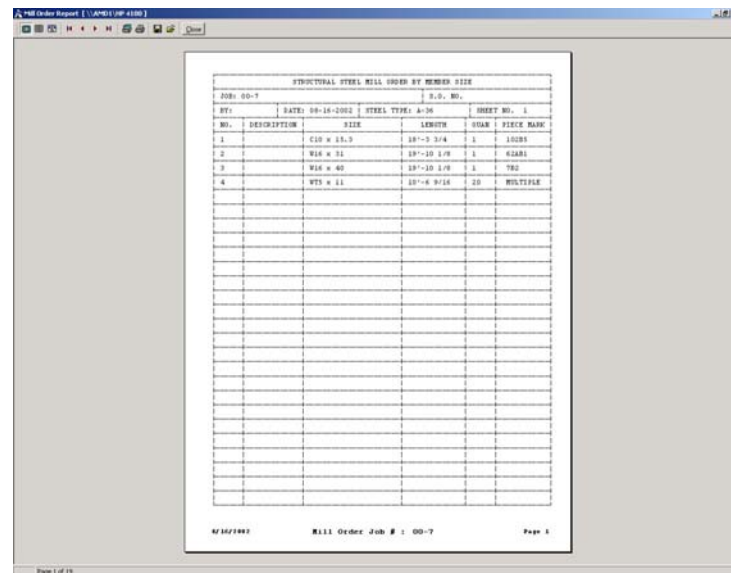


This dialog allows you to cancel the report before it finishes generating. The dialog will close automatically when the report has been generated.

When the report has been generated, it will be displayed on the screen:

[illegible]

You can use the toolbar controls at the top of the screen to zoom the report:

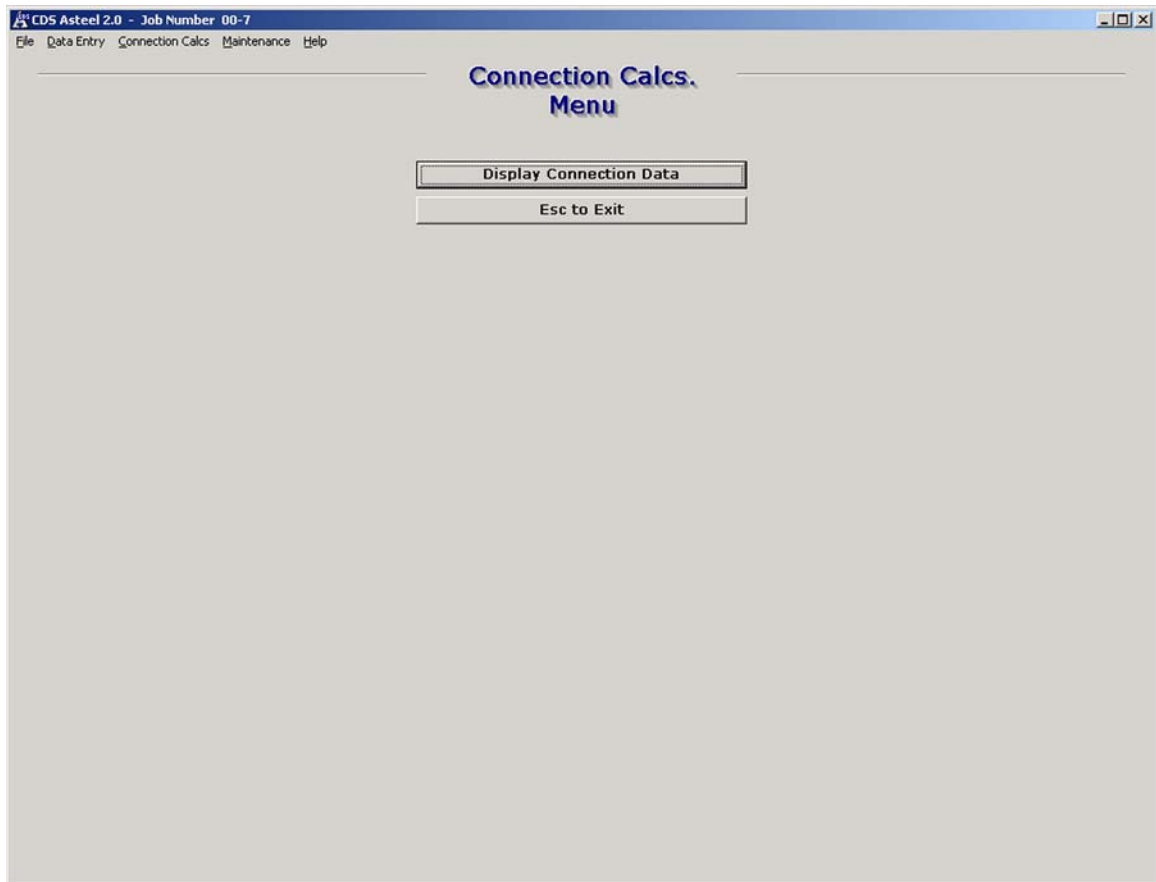


The toolbar also contains controls that allow you to page through the report and print it

Additional information on previewing and printing Asteel 2 reports is provided in the section on Common Characteristics of the User Interface.

Connection Calculations

The Connection Calculations function provides engineering data for the connections used in a job and flags weak connections so they can be changed. From the Asteel 2 main menu, click the Connection Calcs button. The Connection Calcs screen will be displayed:



Currently, there is only the one option, but additional options are planned for this menu. Click the Display Connection Data button. The connection data screen will be displayed:

CDS Asteel 2.0 - Job Number 00-5 - Display Connection Data

File Data Entry Connection Calcs Maintenance Help

Job Number : 00-5

Connections To List

☐ Weak ☒ All ☐ Select Choose

Pc Mark	Size	V or UDL/2 x 1 or Reaction	Connection Capacity	End
6B1	W10 x 33	19.44	42.22	LEFT
6B1	W10 x 33	19.44	42.22	RIGHT
6B2	W10 x 33	19.44	50.52	LEFT
6B2	W10 x 33	19.44	50.52	RIGHT
7B1	W10 x 33	19.44	42.22	LEFT
7B1	W10 x 33	19.44	42.22	RIGHT
7B2	W16 x 40	35.94	97.66	LEFT
7B2	W16 x 40	35.94	97.66	RIGHT
8B1	W16 x 40	28.75	97.66	LEFT
8B1	W16 x 40	28.75	97.66	RIGHT
8B2	W10 x 33	31.11	42.22	LEFT
8B2	W10 x 33	31.11	25.25	RIGHT
8B4	W10 x 33	31.11	50.52	LEFT
8B4	W10 x 33	31.11	42.22	RIGHT
9B1	W12 x 40	57.66	37.88	LEFT
9B1	W12 x 40	57.66	50.52	RIGHT
9B2	W12 x 40	41.52	37.88	LEFT
9B2	W12 x 40	41.52	50.52	RIGHT
9B4	W10 x 33	28	25.25	LEFT
9B4	W10 x 33	28	35.32	RIGHT
10B1	W10 x 33	24.3	42.22	LEFT
10B1	W10 x 33	24.3	25.25	RIGHT
10B2	W10 x 33	40.93	18.02	LEFT
10B2	W10 x 33	40.93	18.02	RIGHT
10B3	W10 x 33	56.43	18.02	LEFT
10B3	W10 x 33	56.43	18.02	RIGHT
14B1	W10 x 33	38.88	25.25	LEFT
14B1	W10 x 33	38.88	42.22	RIGHT
14B2	W10 x 33	38.88	18.02	LEFT
14B2	W10 x 33	38.88	18.02	RIGHT
15B1	W16 x 40	22.46	64.86	LEFT
15B1	W16 x 40	22.46	64.86	RIGHT
15B2	W16 x 40	28.75	64.86	LEFT
15B2	W16 x 40	28.75	64.86	RIGHT
15B3	W10 x 33	15.55	42.22	LEFT
15B3	W10 x 33	15.55	42.22	RIGHT

Print List Print Details Esc to Exit

Pc Mark : Size : Grade : C/NC :

Span : UDL/2 :

Left End Right End

Framing To : Rel. Elevation : Reaction Given : Bolt Diameter : Bolt Type : No. Rows : Clip Angle Size : Top Blk. (LxD) : Bot. Blk. (LxD) : Weld Size (E70xx) :

Beam

Shear g/n : Block Shear : bend / Buck : Weld : Bolts :

Clip Angles

Shear g/n : Bearing @ Edge : Bearing @ Spac. : Conn. Capacity :

This screen allows you to select the job and types of connections to examine, and to view the engineering data for selected connections. You can only view connection data from flat beam sheets that have been processed. You cannot view connection data from sloping beams at this time.

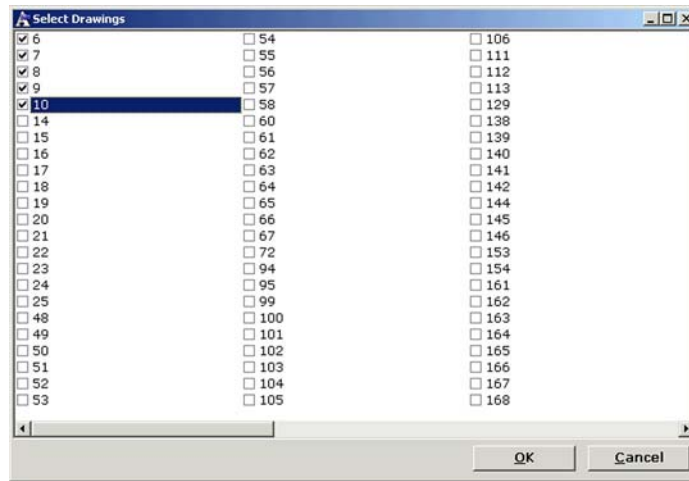
The screen is divided into a left section and a right section. The left section controls what connections you want to see, and the right section contains the data for a single connection that has been selected.

You can select the job whose connections you want to work with by using the dropdown list of jobs in the upper left corner of the screen.

You can select the type of connections to be displayed by using the Connections to List control next to the job number. By default, all connections for the job are listed, but you can restrict the list to show only weak connections or connections that are on specific drawings.

To list only weak connections, click the Weak radio button. The connection list will be filtered such that it includes only those connections that cannot support their calculated loads.

To list only connections on specific drawings, click the Select radio button in the Connections to List Control, then click the Choose button. The Select Drawings dialog will be displayed:



This dialog allows you to select the specific connections to be included in the list of connections.

Select the drawings whose connections you want to work with by clicking the checkbox next to the drawing number. Click the Ok button to return to the Connection Data screen.

Once the connections you want to work with are loaded into the connection list, you can view the engineering data for each connection by choosing it from the list. When you select a connection from the list, the right side of the screen is populated with the data for that connection:

CDS Asteel 2.0 - Job Number 00-5 - Display Connection Data

File Data Entry Connection Calcs Maintenance Help

Job Number : 00-5

Connections To List
☐ Weak ☒ All ☐ Select Choose

Pc Mark	Size	V or UDL/2 x 1 or Reaction	Connection Capacity	End
681	W10 x 33	19.44	42.22	LEFT
681	W10 x 33	19.44	42.22	RIGHT
682	W10 x 33	19.44	50.52	LEFT
682	W10 x 33	19.44	50.52	RIGHT
781	W10 x 33	19.44	42.22	LEFT
781	W10 x 33	19.44	42.22	RIGHT
782	W16 x 40	35.94	97.66	LEFT
782	W16 x 40	35.94	97.66	RIGHT
881	W16 x 40	28.75	97.66	LEFT
881	W16 x 40	28.75	97.66	RIGHT
882	W10 x 33	31.11	42.22	LEFT
882	W10 x 33	31.11	25.25	RIGHT
884	W10 x 33	31.11	50.52	LEFT
884	W10 x 33	31.11	42.22	RIGHT
981	W12 x 40	57.66	37.88	LEFT
981	W12 x 40	57.66	50.52	RIGHT
982	W12 x 40	41.52	37.88	LEFT
982	W12 x 40	41.52	50.52	RIGHT
984	W10 x 33	28	25.25	LEFT
984	W10 x 33	28	35.32	RIGHT
1081	W10 x 33	24.3	42.22	LEFT
1081	W10 x 33	24.3	25.25	RIGHT
1082	W10 x 33	40.93	18.02	LEFT
1082	W10 x 33	40.93	18.02	RIGHT
1083	W10 x 33	56.43	18.02	LEFT
1083	W10 x 33	56.43	18.02	RIGHT
1481	W10 x 33	38.88	25.25	LEFT
1481	W10 x 33	38.88	42.22	RIGHT
1482	W10 x 33	38.88	18.02	LEFT
1482	W10 x 33	38.88	18.02	RIGHT
1581	W16 x 40	22.46	64.86	LEFT
1581	W16 x 40	22.46	64.86	RIGHT
1582	W16 x 40	28.75	64.86	LEFT
1582	W16 x 40	28.75	64.86	RIGHT
1583	W10 x 33	15.55	42.22	LEFT
1583	W10 x 33	15.55	42.22	RIGHT

Print List Print Details Esc to Exit

Pc Mark : 1581 Size : W16 x 40 Grade : 50 KSI C/NC : NC

Span : 32 UDL/2 x 1 : 22.46

	Left End	Right End
Framing To :	W12 x 40	W12 x 40
Rel. Elevation :	0	0
Reaction Given :	0	0
Bolt Diameter :	.875	.875
Bolt Type :	A-325N	A-325N
No. Rows :	3	3
Clip Angle Size :	3.5 x 3.5 x .3756	3.5 x 3.5 x .3756
Top Blk. (LxD) :	0 x 0	0 x 0
Bot. Blk. (LxD) :	0 x 0	0 x 0
Weld Size (E70xx) :	.312	.312
Beam		
Shear g/n :	97.66	97.66
Block Shear :	0	0
bend / Buck :	0	0
Weld	64.86	64.86
Bolts	75.78	75.78
Clip Angles		
Shear g/n :	74.34	74.34
Bearing @ Edge :	81.71	81.71
Bearing @ Spac. :	167.46	167.46
Conn. Capacity :	64.86	64.86

You can get two different reports from the connection calculations screen: a summary report and a detailed report.

The summary report lists each piecemark and its size, and shows the load and connection capacity at each end. Weak connections are highlighted by using red letters, underlining, and italics.

The summary report is generated by clicking the Print List button under the connection list. An example of the summary report is shown below:

All Connections Report				
PC. MK.	SIZE	V or UDL/2 OR REACTION	CONNECTION CAPACITY	END
6B1	W10 x 33	19.44	42.22	LEFT
6B1	W10 x 33	19.44	42.22	RIGHT
6B2	W10 x 33	19.44	50.52	LEFT
6B2	W10 x 33	19.44	50.52	RIGHT
7B1	W10 x 33	19.44	42.22	LEFT
7B1	W10 x 33	19.44	42.22	RIGHT
7B2	W16 x 40	35.94	97.66	LEFT
7B2	W16 x 40	35.94	97.66	RIGHT
8B1	W16 x 40	28.75	97.66	LEFT
8B1	W16 x 40	28.75	97.66	RIGHT
<u>8B2</u>	<u>W10 x 33</u>	<u>31.11</u>	<u>42.22</u>	<u>LEFT</u>
<u>8B2</u>	<u>W10 x 33</u>	<u>31.11</u>	<u>25.25</u>	<u>RIGHT</u>
8B4	W10 x 33	31.11	50.52	LEFT
8B4	W10 x 33	31.11	42.22	RIGHT
<u>9B1</u>	<u>W12 x 40</u>	<u>57.66</u>	<u>37.88</u>	<u>LEFT</u>
<u>9B1</u>	<u>W12 x 40</u>	<u>57.66</u>	<u>50.52</u>	<u>RIGHT</u>
9B2	W12 x 40	41.52	37.88	LEFT
9B2	W12 x 40	41.52	50.52	RIGHT
9B4	W10 x 33	28	25.25	LEFT
9B4	W10 x 33	28	35.32	RIGHT
10B1	W10 x 33	24.3	42.22	LEFT
10B1	W10 x 33	24.3	25.25	RIGHT
<u>10B2</u>	<u>W10 x 33</u>	<u>40.93</u>	<u>18.02</u>	<u>LEFT</u>
<u>10B2</u>	<u>W10 x 33</u>	<u>40.93</u>	<u>18.02</u>	<u>RIGHT</u>
<u>10B3</u>	<u>W10 x 33</u>	<u>56.43</u>	<u>18.02</u>	<u>LEFT</u>

The detailed connection calculation report lists two piecemarks per page. The detailed report contains much more information than the summary report.

Like the summary report, the detailed report includes the member size and load information, but also includes additional information about the member, such as its steel type, whether it is a composite beam, and the UDL/2 factor used in the calculations.

For each end, the report includes information such as the member size being framed to, information about the connection configuration, such as the angle size, bolt type and size, weld size, number of rows of holes, and specific reaction value used, if any. The various capacities of the beam and the clip angle are listed separately, such as shear strength, bending and buckling, etc. The weakest of these capacities is used as the overall connection capacity.

Connections whose overall capacity is lower than the UDL/2 value (or the specified end reaction) are stamped as weak. Generally, the UDL/2 value is used in the comparison, but a specific end reaction can be entered on the data entry screen for the detail. Additional information is provided in the section on Entering Detail Data. See the beam end miscellaneous field for an example of how to enter a specific end reaction value.

The detailed report is generated by clicking the Print Details button under the connection list. An example of the detailed connection report is shown below:

11/15/02 All Connections For Job # 00-5 Page 1

Piece Mark : 6B1		UDL/2 x 1 : = 19.44	
Size = W10 x 33		Steel = (50 KSI)	
CorNC = NC		Span = 20	
Left End		Right End	
Framing To : W12 x 40	Rel. El. = 0	Framing To : W12 x 40	Rel. El. = 0
Reaction Given	= 0	Reaction Given	= 0
Bolt Diameter	= .875	Bolt Diameter	= .875
Bolt Type	= A-325N	Bolt Type	= A-325N
No. of Rows	= 2	No. of Rows	= 2
Clip Angle Size	= 3.5 x 3.5 x .3756	Clip Angle Size	= 3.5 x 3.5 x .3756
Top Block (L x D)	= 0 x 0	Top Block (L x D)	= 0 x 0
Bot. Block (L x D)	= 0 x 0	Bot. Block (L x D)	= 0 x 0
Weld Size (E70xx)	= .312	Weld Size (E70xx)	= .312
Beam :		Beam :	
Shear g/n	= 56.43	Shear g/n	= 56.43
Block Shear	= 0	Block Shear	= 0
Bend/Buck	= 0	Bend/Buck	= 0
Weld	= 42.22	Weld	= 42.22
Bolts	= 50.52	Bolts	= 50.52
Clip Angles :		Clip Angles :	
Shear g/n	= 47.38	Shear g/n	= 47.38
Bearing @ Edge	= 54.47	Bearing @ Edge	= 54.47
Bearing @ Spac	= 111.64	Bearing @ Spac	= 111.64
Conn. Capacity	= 42.22	Conn. Capacity	= 42.22
Piece Mark : 6B2		UDL/2 x 1 : = 19.44	
Size = W10 x 33		Steel = (50 KSI)	
CorNC = NC		Span = 20	
Left End		Right End	
Framing To : W12 x 40	Rel. El. = 0	Framing To : W12 x 40	Rel. El. = 0

10% Page 1 of 32

The full-page layout for this report is shown below.

11/15/02 All Connections For Job # 00-5 Page 1

Piece Mark : @1		UDL/2 x 1 : = 19.44	
Size = W10 x 33		Steel = (50 KSI)	CorNC = NC Span = 20
Left End		Right End	
Framing To : W12 x 40 Rel. E1. = 0		Framing To : W12 x 40 Rel. E1. = 0	
Reaction Given = 0		Reaction Given = 0	
Bolt Diameter = .875		Bolt Diameter = .875	
Bolt Type = A-325W		Bolt Type = A-325W	
No. of Rows = 2		No. of Rows = 2	
Clip Angle Size = 3.5 x 3.5 x .3756		Clip Angle Size = 3.5 x 3.5 x .3756	
Top Block (L x D) = 0 x 0		Top Block (L x D) = 0 x 0	
Bot. Block (L x D) = 0 x 0		Bot. Block (L x D) = 0 x 0	
Weld Size (E70xx) = .312		Weld Size (E70xx) = .312	
Beam :		Beam :	
Shear g/n = 56.43		Shear g/n = 56.43	
Block Shear = 0		Block Shear = 0	
Bend/Buck = 0		Bend/Buck = 0	
Weld = 42.22		Weld = 42.22	
Bolts = 50.52		Bolts = 50.52	
Clip Angles :		Clip Angles :	
Shear g/n = 47.38		Shear g/n = 47.38	
Bearing @ Edge = 54.47		Bearing @ Edge = 54.47	
Bearing @ Spac = 111.64		Bearing @ Spac = 111.64	
Conn. Capacity = 42.22		Conn. Capacity = 42.22	
Piece Mark : @2		UDL/2 x 1 : = 19.44	
Size = W10 x 33		Steel = (50 KSI)	CorNC = NC Span = 20
Left End		Right End	
Framing To : W12 x 40 Rel. E1. = 0		Framing To : W12 x 40 Rel. E1. = 0	
Reaction Given = 0		Reaction Given = 0	
Bolt Diameter = .875		Bolt Diameter = .875	
Bolt Type = A-325W		Bolt Type = A-325W	
No. of Rows = 2		No. of Rows = 2	
Clip Angle Size = 0 x 0 x .3756		Clip Angle Size = 0 x 0 x .3756	
Top Block (L x D) = 0 x 0		Top Block (L x D) = 0 x 0	
Bot. Block (L x D) = 0 x 0		Bot. Block (L x D) = 0 x 0	
Weld Size (E70xx) = 0		Weld Size (E70xx) = 0	
Beam :		Beam :	
Shear g/n = 56.43		Shear g/n = 56.43	
Block Shear = 0		Block Shear = 0	
Bend/Buck = 0		Bend/Buck = 0	
Weld = 0		Weld = 0	
Bolts = 50.52		Bolts = 50.52	
Clip Angles :		Clip Angles :	
Shear g/n = 0		Shear g/n = 0	
Bearing @ Edge = 0		Bearing @ Edge = 0	
Bearing @ Spac = 0		Bearing @ Spac = 0	
Conn. Capacity = 50.52		Conn. Capacity = 50.52	

Additional information on previewing and printing Asteel 2 reports is provided in the section on Common Characteristics of the User Interface.

Editing CNC Data

When the data entered for the details is processed into AutoCAD files, Asteel 2 produces CNC files that can be used to fabricate the physical members. Asteel 2 provides an editing feature to allow you to make changes to the automatically-produced CNC data. Note that changing the CNC data has no effect on the details. This feature only affects the actual CNC data that is downloaded to the fabrication equipment.

The Edit CNC Data Screen

Click the Edit CNC Data button on the Maintenance screen. The Edit CNC Data screen will be displayed:

Edit CNC Data

Job Number : 07-903 Drawing Number : 99 Piece Mark : 35B1

Part Information
 Quantity : 1
 Length : 18 8 14
 Shape : W14 x 22

Member Dimensions
 Depth : 1 1 12 Web Thk : 0 0 4 Flange : 0 5 0 Flange Thk : 0 0 5

Tooling
 Web : 0 0 13
 Bottom Flange : 0 0 13
 Top Flange : 0 0 13

#	Abs - X - Dim	Incr. - X - Dim	Rev. - X - Dim	Gage	Function	Hole Size	Slot Length	Slot Rotation
1	0 1 12	0 1 12	18 7 2	0 3 0	WEB-H	0 0 13	0 0 0	0
2	0 1 12		18 7 2	0 6 0	WEB-H	0 0 13	0 0 0	0
3	0 1 12		18 7 2	0 9 0	WEB-H	0 0 13	0 0 0	0
4	18 7 3	18 5 7	0 1 11	0 3 0	WEB-H	0 0 13	0 0 0	0
5	18 7 3		0 1 11	0 6 0	WEB-H	0 0 13	0 0 0	0
6	18 7 3		0 1 11	0 9 0	WEB-H	0 0 13	0 0 0	0

Action Buttons:
 Add Pc Mark
 Delete Pc Mark
 Delete Drawing
 Save
 Esc to Exit

Toolbar:
 F2 Delete Line F3 Insert Line F4 Copy Prev F5 Help F7 Print F8 Sort F10 Save

This screen allows you to review and edit the CNC data for a given piecemark on a drawing.

The screen is divided into three main areas. The listboxes at the top of the screen allow you to identify the piece whose CNC data is to be edited. The area directly beneath the listboxes describes the piece whose CNC data is to be edited and the hole sizes to be used. The grid beneath the piece description lists the operations that will be performed on the piece.

A menu bar at the bottom allows quick access to editing functions, and the buttons on the bottom right allow access to adding and deleting piecemark CNC data and deleting all CNC data for a drawing or drawings.

The following paragraphs describe the fields and features of this screen in more detail.

Selecting the Piece to Edit

The top area of the screen contains listboxes that are used to specify the piece to be edited. This area of the screen is shown below:



Job Number : 00-5 Drawing Number : 35 Piece Mark : 35D1

These listboxes function similarly to those on the data entry screens. The job number listbox is populated with jobs that exist on the system. When a job is selected, the drawing list is populated with drawings that have been processed for that job. When a drawing is selected, the piecemark list is populated with piecemarks defined on that drawing. Finally, when a piecemark is selected, the member description, tooling, and list of operations will be populated with the data for the piece.

The Member Description and Tooling Area

The area of the screen between the listboxes and the grid of CNC operations contains information that describes the member being edited and the tooling to be used. This area is separated into three panels, which are labeled Part Information, Member Dimensions, and Tooling. This area of the screen is shown below:



Part Information	Member Dimensions				Tooling
Quantity : 1	Depth	Web Thk	Flange	Flange Thk	Web : 0 0 15
Length : 3 7 14	0 3 0	0 0 4	0 3 0	0 0 4	Bottom Flange : 0 0 15
Shape : L3X3X1/4					Top Flange : 0 0 15

The following paragraphs describe the fields in this part of the Edit CNC screen.

The quantity, length, and shape are taken from the detail data entry screen. In general, these values will be left as-is, but it is possible to change them.

The member depth, web thickness, flange width, and flange thickness are taken from the member shape/size database. These values are based on the shape entered in the Part Information area. These dimensions cannot be changed.

The tooling information defines the hole diameters for holes in the web and the bottom and top flanges. This hole diameter is initially set to the job standard hole diameter defined in the title block and general defaults screen of job setup. These diameters cannot be changed.

Additional information on the job standard hole diameter and other general defaults is provided in the section on Job Setup.

The List of CNC Operations

The grid that occupies the majority of the screen contains entries that define the CNC operations to be performed on the current piece. An operation is defined as a single hole or mark to be made in the piece. This area of the screen is shown below:

#	Abs - X - Dim	Incr. - X - Dim	Rev. - X - Dim	Gage	Function	Hole Size	Slot Length	Slot Rotation
1	0 1 12	0 1 12	18 7 2	0 3 0	WEB-H	0 0 13	0 0 0	0
2	0 1 12		18 7 2	0 6 0	WEB-H	0 0 13	0 0 0	0
3	0 1 12		18 7 2	0 9 0	WEB-H	0 0 13	0 0 0	0
4	18 7 3	18 5 7	0 1 11	0 3 0	WEB-H	0 0 13	0 0 0	0
5	18 7 3		0 1 11	0 6 0	WEB-H	0 0 13	0 0 0	0
6	18 7 3		0 1 11	0 9 0	WEB-H	0 0 13	0 0 0	0

Each row in the grid defines a single operation. The following paragraphs describe each of the fields in the grid rows.

#

This is the operation line number. This number is used by the editor when you insert a new line. The line number allows you to specify where to insert the line.

Abs - X - Dim

This is the absolute distance from the left end of the member to the current hole or mark. The values for absolute x, incremental x, and reverse x are all inter-related. If you change one of them, Asteel 2 will calculate (or re-calculate) the other two.

Incr. - X - Dim

This is the incremental distance from the last hole or mark on the left to the current hole or mark. The values for absolute x, incremental x, and reverse x are all inter-related. If you change one of them, Asteel 2 will calculate (or re-calculate) the other two.

Rev. - X - Dim

This is the absolute distance from the right end of the member to the current hole or mark. The values for absolute x, incremental x, and reverse x are all inter-related. If you change one of them, Asteel 2 will calculate (or re-calculate) the other two.

Gage

For web holes or marks, this is the distance from the top of the flange to the hole or mark. Positive values indicate distance down from the top of the flange.

For flange holes or marks, this is the distance from the centerline to the hole or mark. Positive values indicate distance from the centerline toward the near side. Negative values indicate distance from the centerline toward the far side.

Function

This indicates whether a hole or a mark should be made, and whether the hole or mark is on the web, on the bottom flange, or on the top flange. This field can have one of the following values:

WEB-H	web hole
WEB-L	web mark
BF-H	bottom flange hole
BF-L	bottom flange mark
TF-H	top flange hole
TF-L	top flange mark

Hole Size

This is the diameter for the hole or slot.

Slot Length

This is the slot length for the slot.

Slot Rotation

This is the rotation of the slot.

Editing an Operation

You can click on any field (other than the line number) in the list of operations and edit it directly.

The absolute, incremental, and reverse X dimensions are inter-related. When you change one of these dimensions, Asteel 2 will automatically change the other two. The change occurs when you tab out of the field or use the mouse to click into another field.

The value for the function field must match one of the defined function codes. See the previous section on the List of CNC Operations for a list of valid function codes.

Note that you can use the Copy Previous function from the button menu at the bottom of the screen to copy the value of a field from the row above it. This feature is similar to the Line Copy feature on framing screens. Additional information on the Line Copy feature is provided in the section on beam framing data entry screens.

Inserting a New Operation

To insert a new operation, click the Insert Line button at the bottom of the screen. The Insert Line dialog will be displayed. This dialog is shown below.

Line #	Abs-X-Dim	Inc-X-Dim	Rev-X-Dim	Gage	Function	Hole Dia	Slot Length	Slot Rotation
3	0 1 12			0 9 0	WEB-H	0 0 13	0 0 0	0

OK Cancel

Enter the line number where you want this operation inserted. The line number must be between 1 and the number of lines in the grid plus 1. If there is already an operation at that line number, the existing operation and any operations below it will be moved down. Enter one of the X dimensions (absolute, incremental, or reverse). Asteel 2 will calculate the other two X dimensions. Enter a gage, select a function code from the dropdown list, and enter a hole diameter. The Slot Length and Slot Rotation fields are optional.

Once you click the OK button, the new line is added to the list at the line number you specified, and any existing lines below it are moved down.

Sorting the Operations

The Sort function allows you to reorder the CNC data in the list. Entries will be sorted by function code, then by X-dimension, then by gage.

The CNC data is automatically sorted when the CNC data is loaded into the editor. The Sort button is just there to allow sorting in the middle of an editing session.

Adding a New Piecemark

You can add a new piecemark by clicking the Add Piecemark button on the right side of the screen. When you press this button, the following dialog appears:



This dialog allows you to create the new piecemark either as a blank piecemark or as a copy of an existing piece. A blank piecemark will have no quantity, length or shape entries.

To create a copy of an existing piecemark, click the Add Piecemark button, then drop down the list of existing marks and select one, as shown below:



Enter the mark you want this data copied to into the New Pc. Mark field as shown below and click the OK button.

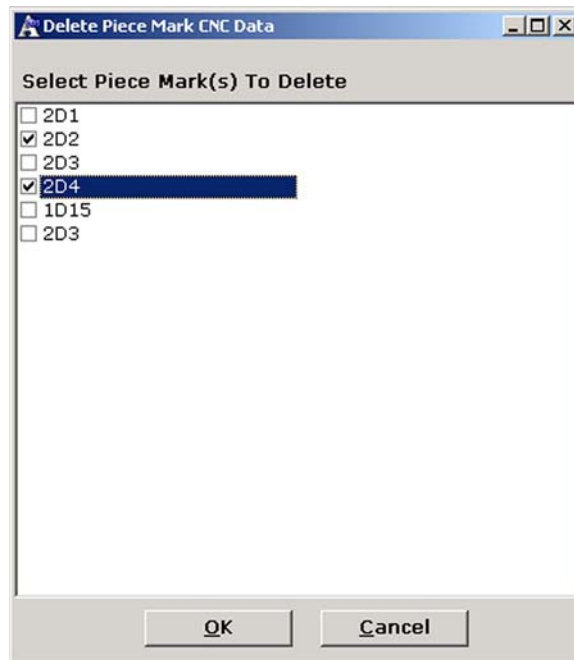


Note that this function does not add a piecemark to the actual detail data. It only affects the CNC data associated with the details.

Once the CNC data has been edited, you can reprocess the sheets to recreate the CNC data, but any changes made via the CNC editor will be lost.

Deleting the Operations for a Piecemark

To delete the CNC data for one or more piecemarks on a drawing, click the Delete Piecemark button. The Delete Piecemark CNC Data dialog will be displayed:



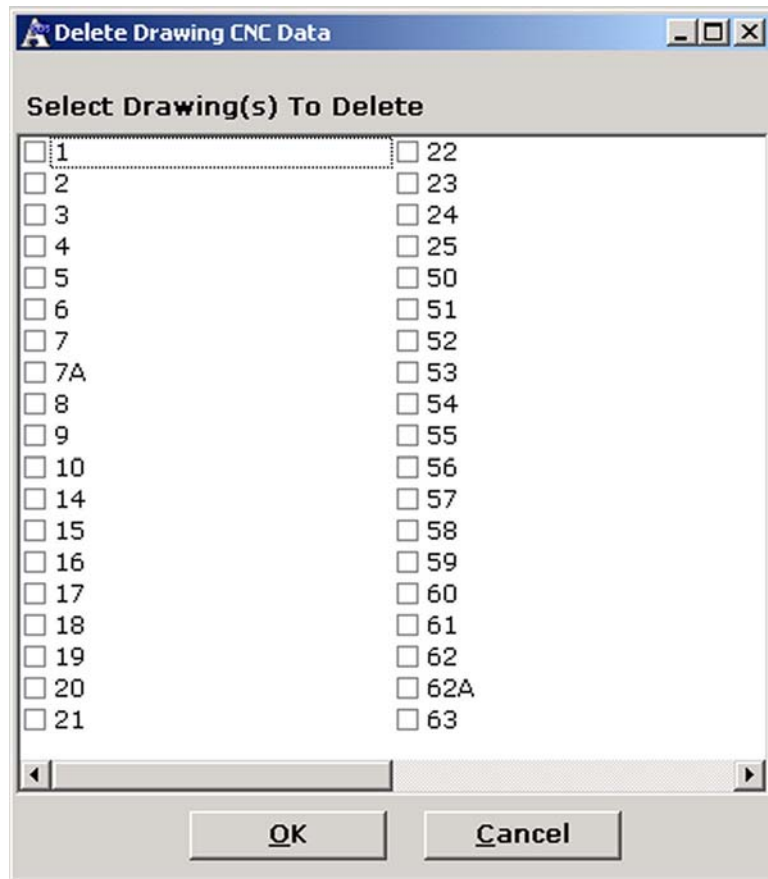
Click in the checkboxes next to the piecemarks to select the piecemarks whose CNC data is to be deleted. When you click the OK button, you will be prompted to confirm the deletion of the data. If you confirm the deletion, the CNC data for the selected piecemarks will be deleted.

Note that this function does not delete the actual detail data. It only deletes the CNC data associated with the details.

Once the CNC data has been deleted, you can reprocess the sheets to recreate the CNC data, but any changes made via the CNC editor will be lost.

Deleting All Operations for a Drawing

The Delete Drawing button functions similarly, allowing you to delete the CNC data for one or more drawings within the currently-selected job. The Delete Drawing CNC dialog is shown below.



Note that this function does not delete the actual drawing data. It only deletes the CNC data associated with the drawings.

Once the CNC data has been deleted, you can reprocess the sheets to recreate the CNC data, but any changes made via the CNC editor will be lost.

Printing the CNC Data for a Piecemark

The Print button at the bottom of the screen will produce a report of the CNC data for the current piecemark. An example of this report is shown below.

[\\KHT\HP LaserJet 4100 PCL 6]					
CNC Data Job # : 00-5 Drawing # : 35					
Piece Mark : 35D1					
Quantity : 1					
Shape : L3X3X1/4 (0 3 0 x 0 0 4 x 0 3 0 x 0 0 4)					
Length : 3 7 14					
Tooling :					
Web : 0 0 15		Bottom Flange : 0 0 15		Top Flange : 0 0 15	
ITEM #	ABS-X-DIM	INCR-X-DIM	GAGE	FUNCTION	HOLE DIAMETER
1	0 1 8	0 1 8	0 1 12	WEB-H	0 0 15
2	3 3 6	3 1 14	0 1 12	WEB-H	0 0 15
3	3 6 6	0 3 0	0 1 12	WEB-H	0 0 15
4	0 4 8	-3 1 14	0 1 12	TF-H	0 0 15
5	0 4 8		0 1 12	TF-H	0 0 15

Page 1 of 1

This report has all the same features as other Asteel 2 reports, including zooming, scrolling, printing selected pages, etc. Additional information on zooming, scrolling, and printing reports is provided in the section on Common Characteristics of the User Interface.

Creating CNC Files for Fabrication Equipment

The CNC data produced by Asteel 2 when drawings are processed is stored in a single internal format that needs to be converted to a vendor-specific format for the fabrication equipment that will actually produce the part. Separate converters are provided for drills and punches versus plate burners and duplicators.

Creating CNC Files for Specific Drill/Punch Equipment

Click the Download To CNC button from the Maintenance menu. The Download to CNC screen will be displayed:

This screen allows you to specify the drawings for which drill/punch data is to be created and the format it is to be created in.

Use the radio buttons at the top of the screen to select the file format of the output. Use the list of drawings to select specific drawings and click the Download Selected Drawings button, or click the Download All Drawings button to include all drawings.

The dialogs displayed when you click one of the download buttons vary based on the output format. Some formats produce a single file that contains all the CNC data, and some formats produce multiple files. Also, some formats require information that is not known to Asteel 2, such as a customer contract number.

If the selected file format produces more than one file, you will be prompted to specify the output directory. If the selected format produces a single file, you will be prompted to specify the file name and location. If the selected format requires additional information not known to Asteel 2 you will be prompted for that information. This prompt varies based on the output file format.

The following screenshots show the various tabs of the DSTV Configuration Options screen. This screen is displayed when you click the ellipses button next to the DSTV option. This screen allows you to customize DSTV output and save that DSTV configuration for use at a later time.

DSTV Configuration Options

Configuration : Default (Ficcp)

Output Lines Output Files Additional Options

Line 1 - Start = ST ☒ 9 Line Format ☐ 10 Line Format

Line 2 - File name = ** File.nc1

Line 2 - Order Identification = User Identification (Some Building)

Line 3 - Drawing Identification = Drawing Number (125)

Line 4 - Phase Identification = Sequence (A, B, etc)

Line 5 - Piece Identification = Piece Mark (125B1)

Line 6 - Steel Quality = Steel Grade (A36)

Line 7 - Quantity = Quantity (1)

Line 8 - Profile = Member Size ("W14 x 22")

Line 9 - Code Profile = Profile Code (I, U, L, M, etc)

Profile Codes

W14 x 22 : I	WT4 x 9 : T	C8 x 11.5 : U	HSS6 x 4 x 1/4 : M
M5 x 18.9 : I	MT2.5 x 9.45 : T	MC 9 x 23.9 : U	TS6 x 4 x 1/4 : M
HP8 x 36 : I	ST 3 x 6.25 : T	L3 x 3 x 1/4 : L	HSS8.625 x 3/8 : RO
S6 x 12.5 : I			Pipe : RO
			Plate : B

Exclude from downloads

<input type="checkbox"/> W	<input type="checkbox"/> MT	<input type="checkbox"/> HSS
<input type="checkbox"/> M	<input type="checkbox"/> ST	<input type="checkbox"/> TS
<input type="checkbox"/> HP	<input type="checkbox"/> C	<input type="checkbox"/> Round HSS
<input type="checkbox"/> S	<input type="checkbox"/> MC	<input type="checkbox"/> Pipe
<input type="checkbox"/> WT	<input type="checkbox"/> L	<input type="checkbox"/> Plate

OK Save Delete Cancel

Configuration

The Configuration drop down menu shows all available DSTV configurations saved on the local machine. To create a new configuration, type the name of the configuration into the Configuration drop down menu and adjust options accordingly. When you are ready to save the configuration, click the Save button. The new configuration will now be available to use. Note that you can also delete existing configurations by clicking the Delete button.

Lines

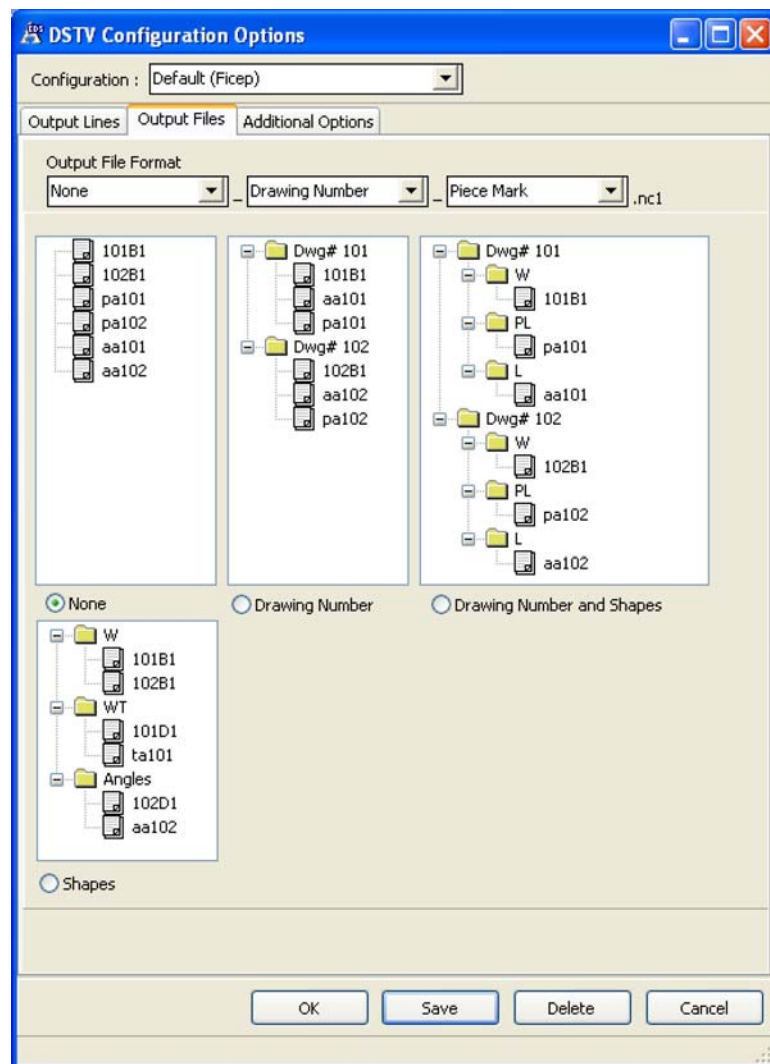
You can configure exactly what goes into DSTV output by using the Lines options. Two formats are available: nine line format and ten line format. For each line, there is a drop down list allowing you to specify what type of data will be output for that line.

Profile Codes

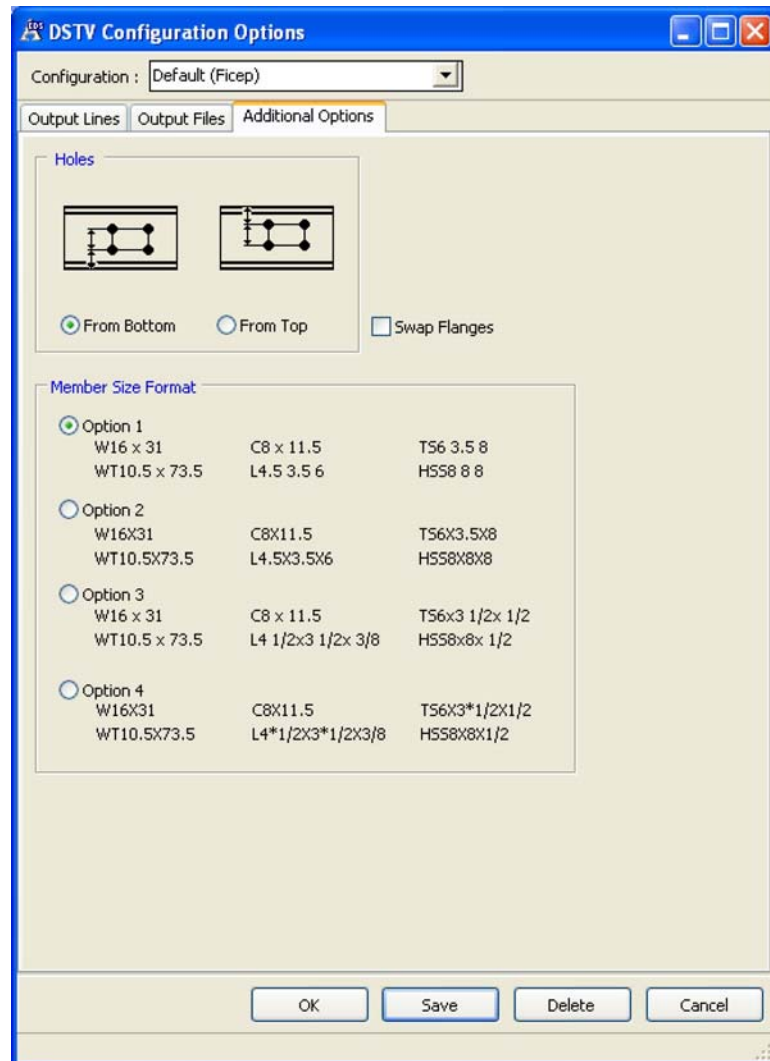
Profile Codes allow you to specify the alphanumeric character used for certain shape types. For example, "I" is the default profile code for W shapes in DSTV output but here you can change "I" to anything.

Exclude from downloads

Check the shape types that you want to exclude from DSTV downloads.



The Output Files tab has options on how the DSTV files will be output on your system. For example, you can configure the output filename format as well as the directory structure the output will have.



Holes

The Holes option allows you to specify if holes will be dimensioned from the top of the beam or the bottom.

Swap Flanges

Check to swap the flanges.

Member Size Format

This options allows for a number of member size output formats.

Creating CNC Files for Specific Plate Burner/Duplicator Equipment

Click the Download to Plate Burner/Duplicator button from the Maintenance menu. The Download to Plate Burner/Duplicator screen will be displayed:

Download To Plate Burner/Duplicator

Job Number : 00-7

Download All Drawings
Download Selected Drawings
Esc to Exit

Output Path :

Download Type
☒ Shop Data Systems
☐ Controlled Automation

All Drawings:

<input type="checkbox"/> 1	<input type="checkbox"/> 55	<input type="checkbox"/> 117
<input type="checkbox"/> 2	<input type="checkbox"/> 56	<input type="checkbox"/> 118
<input type="checkbox"/> 3	<input type="checkbox"/> 57	<input type="checkbox"/> 119
<input type="checkbox"/> 4	<input type="checkbox"/> 58	<input type="checkbox"/> 120
<input type="checkbox"/> 5	<input type="checkbox"/> 59	
<input type="checkbox"/> 6	<input type="checkbox"/> 60	
<input type="checkbox"/> 7	<input type="checkbox"/> 61	
<input type="checkbox"/> 7A	<input type="checkbox"/> 62	
<input type="checkbox"/> 8	<input type="checkbox"/> 62A	
<input type="checkbox"/> 9	<input type="checkbox"/> 63	
<input type="checkbox"/> 10	<input type="checkbox"/> 64	
<input type="checkbox"/> 14	<input type="checkbox"/> 65	
<input type="checkbox"/> 15	<input type="checkbox"/> 66	
<input type="checkbox"/> 16	<input type="checkbox"/> 67	
<input type="checkbox"/> 17	<input type="checkbox"/> 100	
<input type="checkbox"/> 18	<input type="checkbox"/> 101	
<input type="checkbox"/> 19	<input type="checkbox"/> 102	
<input type="checkbox"/> 20	<input type="checkbox"/> 103	
<input type="checkbox"/> 21	<input type="checkbox"/> 104	
<input type="checkbox"/> 22	<input type="checkbox"/> 105	
<input type="checkbox"/> 23	<input type="checkbox"/> 106	
<input type="checkbox"/> 24	<input type="checkbox"/> 110	
<input type="checkbox"/> 25	<input type="checkbox"/> 111	
<input type="checkbox"/> 50	<input type="checkbox"/> 112	
<input type="checkbox"/> 51	<input type="checkbox"/> 113	
<input type="checkbox"/> 52	<input type="checkbox"/> 114	
<input type="checkbox"/> 53	<input type="checkbox"/> 115	
<input type="checkbox"/> 54	<input type="checkbox"/> 116	

This screen operates in the same manner as the screen for producing the drill/punch data. You must process and produce detail summaries for a drawing before you can generate plate burner/duplicator data for that drawing. Select the output format and the drawings to be used. You will be prompted to specify the output directory. The standard Downloading Files dialog will be displayed while the files are being created, and it will close automatically when all files have been created.

Production Control Data

Creating Production Control Data

Asteel 2 provides a mechanism for creating production control data from processed drawings. Production control data is used by third-party management systems to order and manage materials required for the production of the pieces.

Click the Download Production Control Data button from the Maintenance screen. The Download Production Control Data screen will be displayed:

Download Production Control Data

Job Number : 00-7

Download All Drawings
Download Selected Drawings
Esc to Exit

Download Type

☐ Cives
☐ Fab / Trol (KISS)
☐ ROMAC
☒ Structural Material Manager (EJE)

Output Path : C:\...\Bobby\Desktop\00-7_08-16-02.imp

Download Complete

All Drawings:

<input type="checkbox"/> 1	<input type="checkbox"/> 55	<input type="checkbox"/> 117
<input type="checkbox"/> 2	<input type="checkbox"/> 56	<input type="checkbox"/> 118
<input type="checkbox"/> 3	<input type="checkbox"/> 57	<input type="checkbox"/> 119
<input type="checkbox"/> 4	<input type="checkbox"/> 58	<input type="checkbox"/> 120
<input type="checkbox"/> 5	<input type="checkbox"/> 59	
<input type="checkbox"/> 6	<input type="checkbox"/> 60	
<input type="checkbox"/> 7	<input type="checkbox"/> 61	
<input type="checkbox"/> 7A	<input type="checkbox"/> 62	
<input type="checkbox"/> 8	<input type="checkbox"/> 62A	
<input type="checkbox"/> 9	<input type="checkbox"/> 63	
<input type="checkbox"/> 10	<input type="checkbox"/> 64	
<input type="checkbox"/> 14	<input type="checkbox"/> 65	
<input type="checkbox"/> 15	<input type="checkbox"/> 66	
<input type="checkbox"/> 16	<input type="checkbox"/> 67	
<input type="checkbox"/> 17	<input type="checkbox"/> 100	
<input type="checkbox"/> 18	<input type="checkbox"/> 101	
<input type="checkbox"/> 19	<input type="checkbox"/> 102	
<input type="checkbox"/> 20	<input type="checkbox"/> 103	
<input type="checkbox"/> 21	<input type="checkbox"/> 104	
<input type="checkbox"/> 22	<input type="checkbox"/> 105	
<input type="checkbox"/> 23	<input type="checkbox"/> 106	
<input type="checkbox"/> 24	<input type="checkbox"/> 110	
<input type="checkbox"/> 25	<input type="checkbox"/> 111	
<input type="checkbox"/> 50	<input type="checkbox"/> 112	
<input type="checkbox"/> 51	<input type="checkbox"/> 113	
<input type="checkbox"/> 52	<input type="checkbox"/> 114	
<input type="checkbox"/> 53	<input type="checkbox"/> 115	
<input type="checkbox"/> 54	<input type="checkbox"/> 116	

This screen operates in a manner similar to the CNC download screens: select the job and the output format (download type), select the drawings from which the production control data is to be extracted, and press one of the download buttons. You will be prompted to specify the name and location of the output file, then a Downloading Files dialog will be displayed until the files have been created.

Uploading Production Control Data

Asteel 2 provides a utility for "uploading" production control data from an AutoCAD drawing. This allows the user to edit the Bill of Material in AutoCAD and produce a production control file that includes the changes.

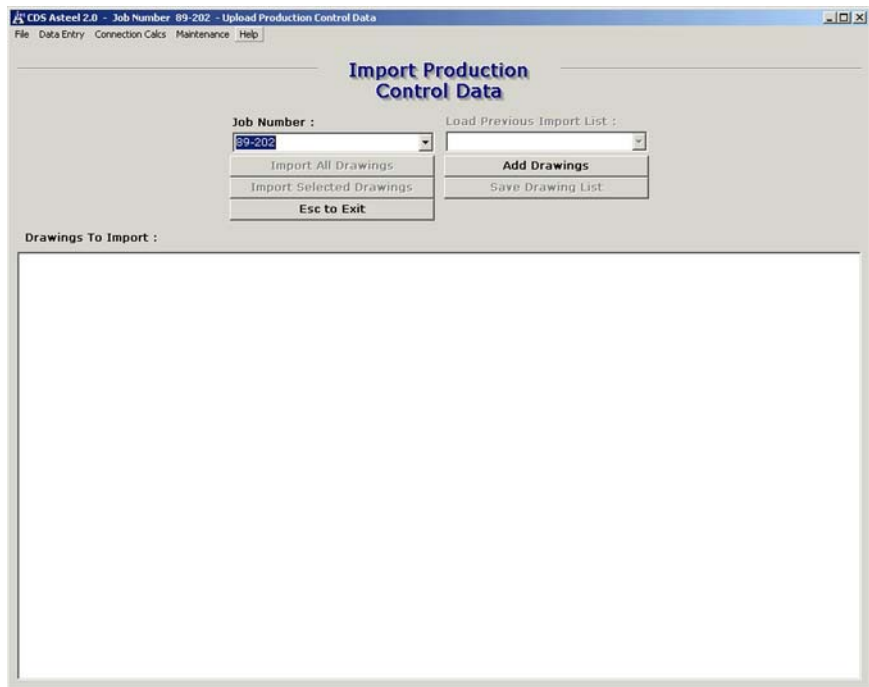
In order to use this utility:

- 1** Go to Job Setup from the main menu.
- 2** Go to Connection Setup.
- 3** Select Beam Ends.
- 4** Type or select "CC" as the connection number.
- 5** Set the "U" variable to "1".

After the "U" variable is set to "1", the Bill of Material information will be output with block attributes making it easy for the user to edit using AutoCAD commands. Once the sheet is edited and saved as a dxf or dwg file, the user can upload the drawing with all the changes and create the production control data.

To import/upload the production control data:

- 1** Under the "Maintenance" menu in Asteel 2, select "Upload Production Control Data". This option will not be shown unless the above "U" variable is set to "1".
- 2** Click on "Add Drawings" or "Load Previous Import List" to get a list of drawings.
- 3** Select the drawings you want uploaded from the list or click on "Import All Drawings".
- 4** After this is complete, select "Download Production Control Data" from the "Maintenance" menu to create the production control files.



Editing Bill of Material Attributes in AutoCAD

The Asteel 2 Bill of Material Attributes feature is used to modify shopbill data that was produced by Asteel 2. This will allow the user to download the production control data directly from the AutoCad drawing, thus assuring that the data is correct. The process to create production control files is as follows:

- 1 Edit the AutoCad drawing using the attributes.
- 2 Save the AutoCad drawing.
- 3 Upload the data.
- 4 Download the production control.

This document explains how to use the block attribute command in AutoCAD to edit the Bill of Material.

Each entry in the Bill of Material is a block with attributes. These attributes can be modified with the “attedit” command in AutoCad. The user may add additional lines to the BOM by copying existing entries and editing.

The “DETAIL ID” attribute keeps track of which detail is being edited and what type of entry is being edited. It is very important that this attribute is correct. When a sheet is processed with Asteel 2, this attribute is set automatically. The following examples should help explain what goes in the “DETAIL ID” attribute.

The “DETAIL ID” attribute for SHIPPING pieces is the number of the detail on the sheet prefixed with an “S” (examples: “S1”, “S2”, “S3”, etc...).

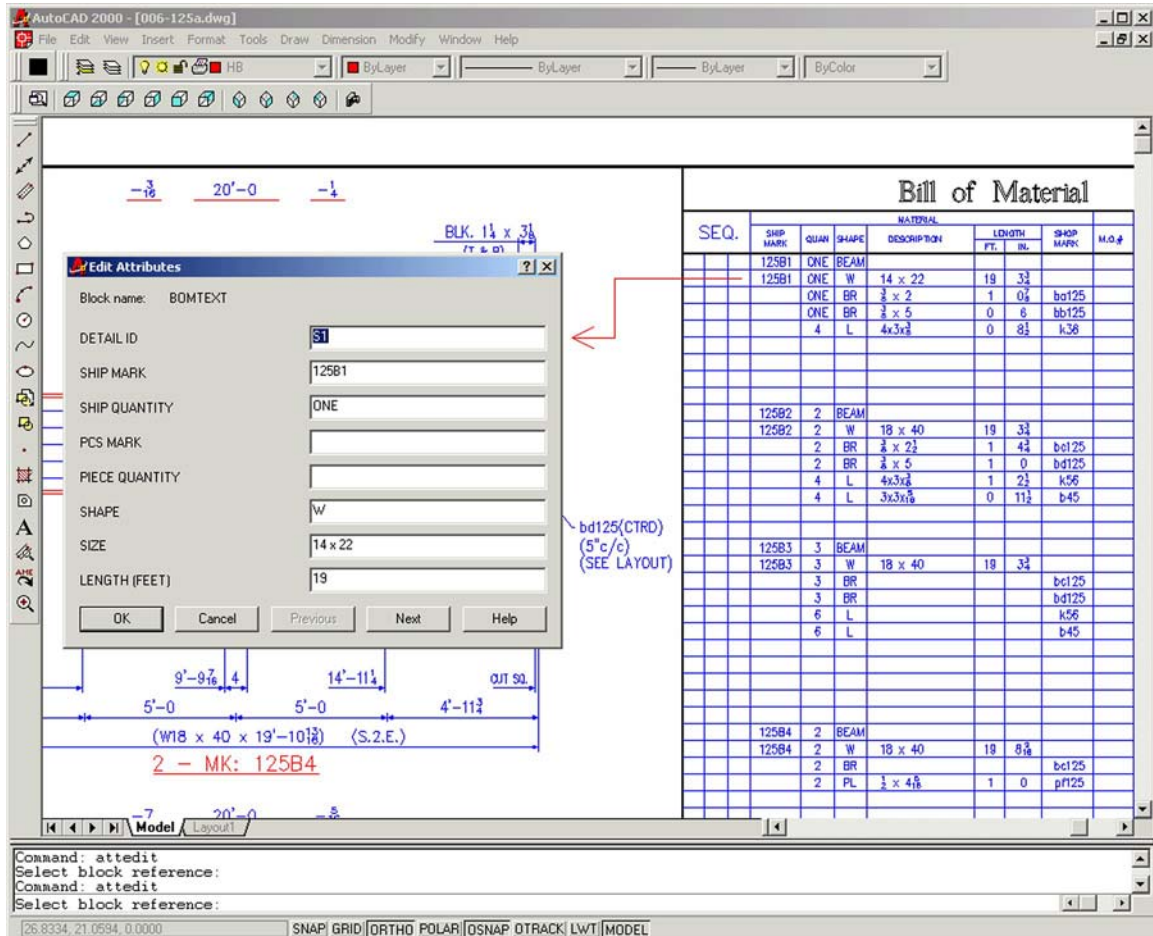
The “DETAIL ID” attribute for ASSEMBLY pieces is just the number of the detail on the sheet (NO PREFIX).

NOTES:

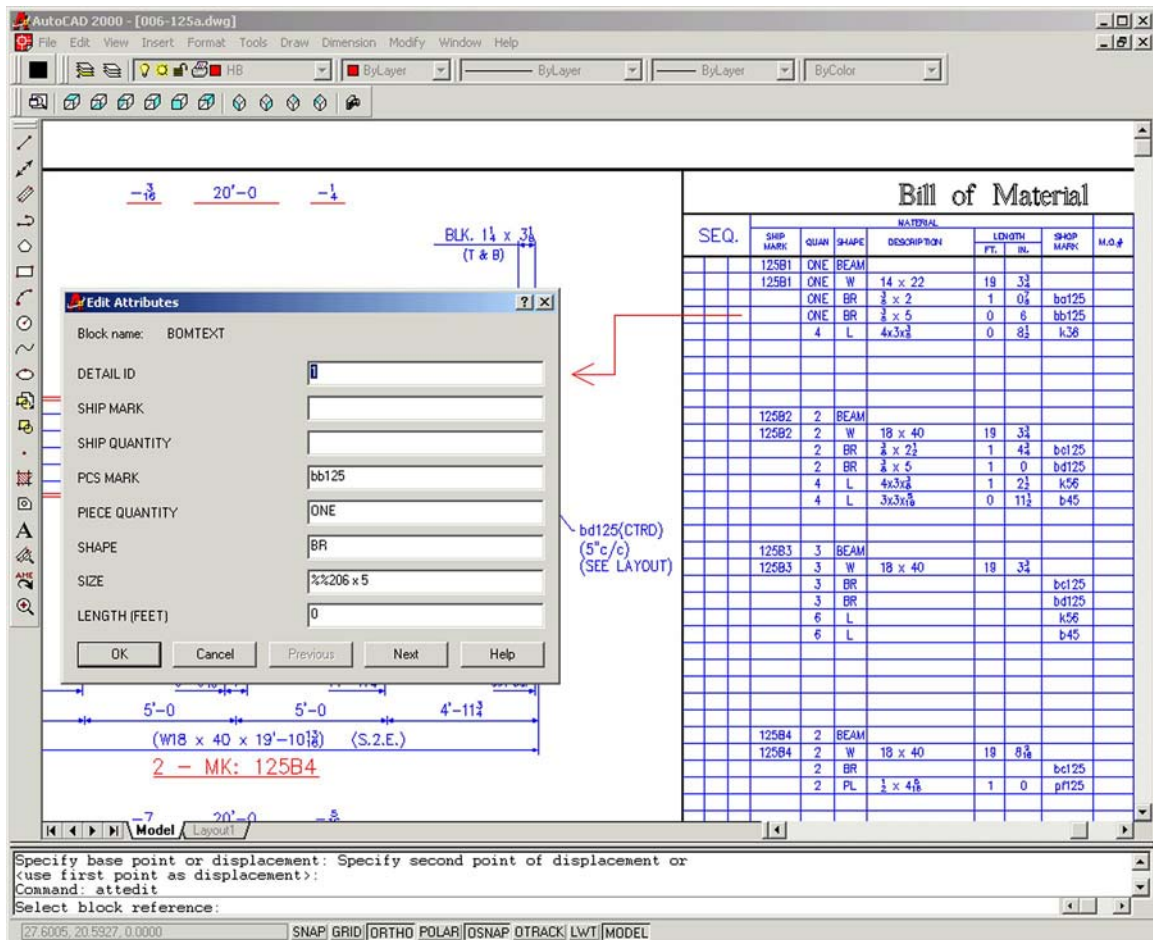
- DO NOT create a new sheet from an existing sheet. Use Asteel 2 to create the new sheet and then cut and paste from the original to the new sheet.
- DO NOT insert another drawing into the drawing you are currently editing. You can cut and paste objects from one drawing to another.
- DO NOT use “%%d” or “%%p” symbols in descriptions. Use CDSFRAC for fractions.
- DO NOT use the letter “O” for zero.
- DO NOT use the letter “I” for one.
- DO NOT clear entries by using empty spaces.
- DO NOT leave empty unused attribute blocks in the drawing.
- DO make sure that the Asteel 3D Modeler is CLOSED before you start editing block attributes.
- DO make sure you fill in the QUANTITY for an item in the proper field of the block attribute (SHIP QUANTITY or PIECE QUANTITY).
- DO make sure you change the detail ID if you copy a shopbill entry from one detail to another.
- DO make sure the steel grade goes in the STEEL GRADE field and NOT in the REMARKS field.

Single Detail Editing

This example is of a shipping mark. The “DETAIL ID” field for a shipping mark must be prefixed with an “S” (Shipping) and followed by the detail number.



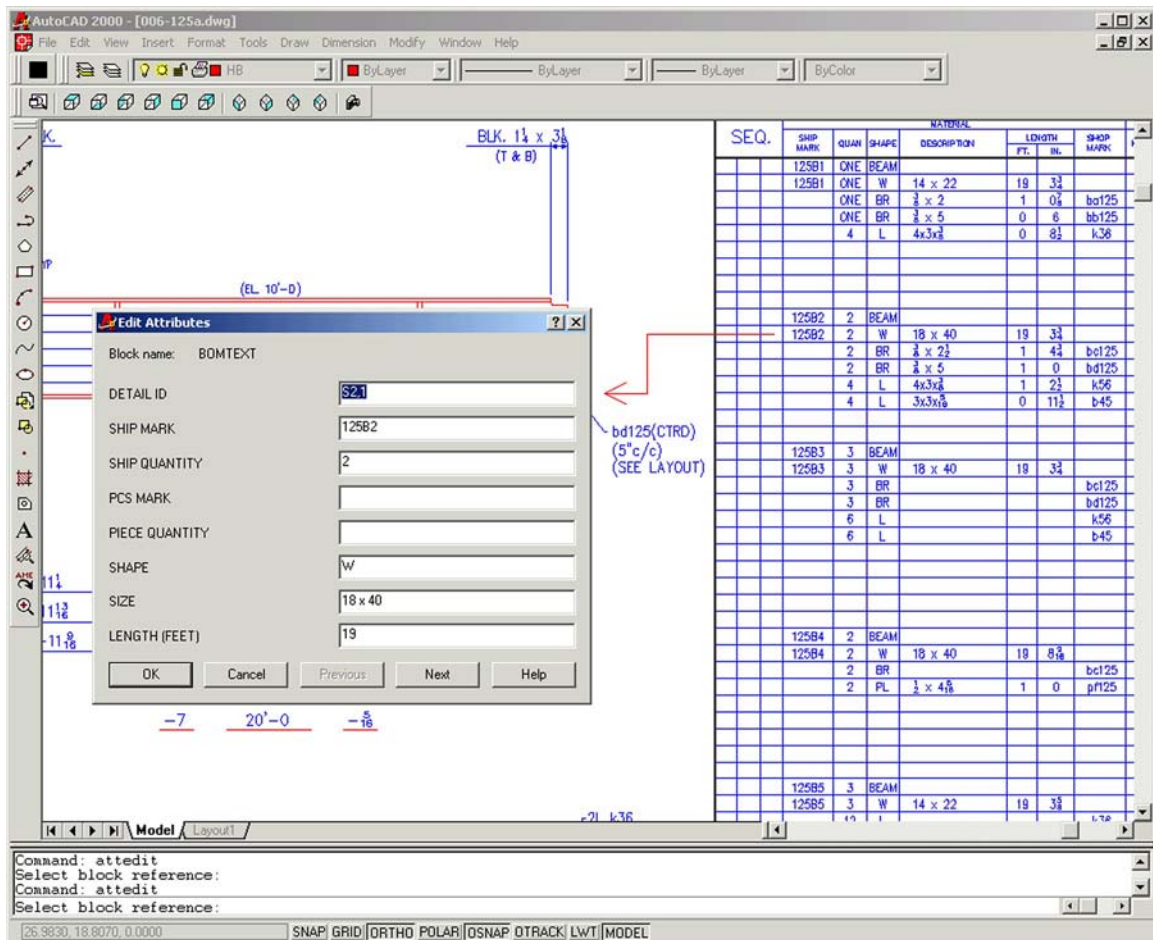
This example is of a fit-up piece. The “DETAIL ID” field contains the detail number.



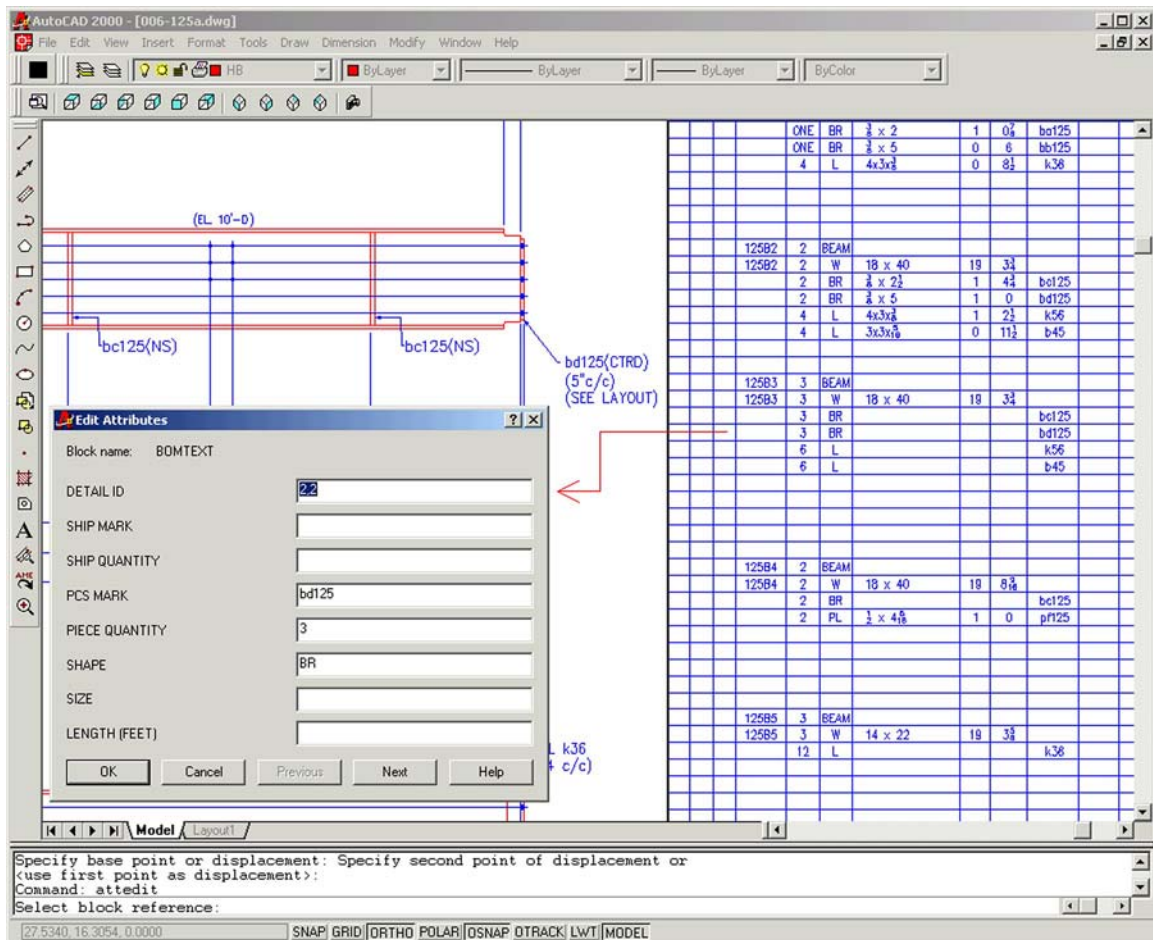
Combination Detail Editing

If the Bill of Material contains combination details, then the “DETAIL ID” field must include detail number and which detail the block is associated, separated by a comma.

The following is an example of a shipping mark, 125B2, which is in combination with 125B3. The detail number is “2”, it is a shipping mark and it is the first detail in the combination, so the “DETAIL ID” would be “S2,1”.

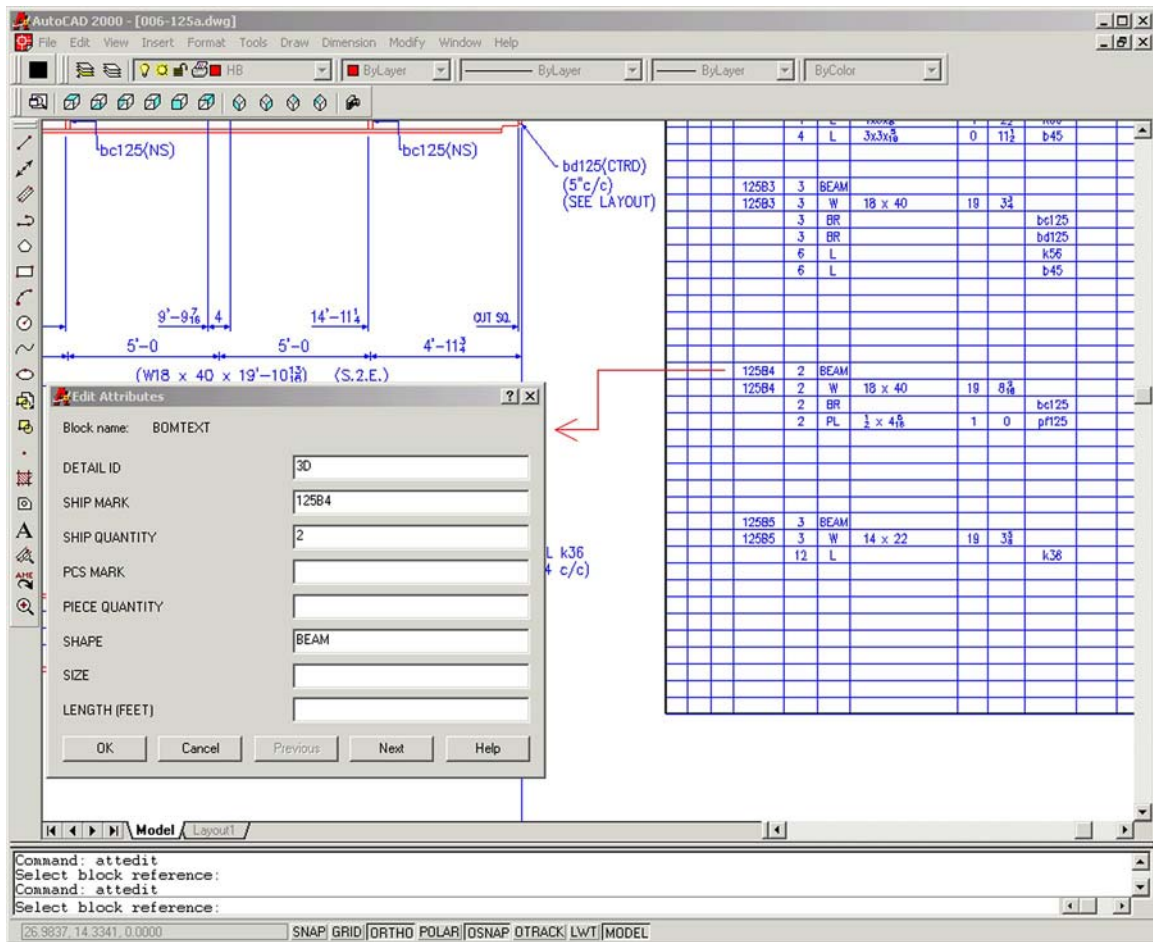


The following is an example of a fit-up piece on a combination detail. (125B3 is in combination with 125B2) The detail number is "2" and it is the second detail in the combination, so the "DETAIL ID" is "2,2".



Description Entry

If there is an entry in the Bill of Material that has nothing to do with a detail or a fit-up piece, then add a “D” suffix to the detail number in the “DETAIL ID” field. The following example is on detail number “3”, so the entry would be “3D”.



Examples showing the Detail ID:

NORMAL DETAIL: (Detail #1 on the drawing)

Detail ID	Quantity	Shape	Description	Ft	In	Mark
S1	ONE	W	18 x 55	20	0	8B1
1	2	PL	3/8 x 5	0	8 1/2	pa8
1	4	L	3 x 3 x 5/16	1	5 1/2	aa8
1	8		3/4 A325	0	2 1/2	mad

DETAIL WITH A DESCRIPTION ENTRY: (Detail #2 on the drawing)

Detail ID	Quantity	Shape	Description	Ft	In	Mark
2D	ONE		BEAM			
S2	ONE	W	18 x 55	20	0	8B2
2	2	PL	3/8 x 5	0	8 1/2	pa8

Detail ID	Quantity	Shape	Description	Ft	In	Mark
2	4	L	3 x 3 x 5/16	1	5 1/2	aa8
2	8		3/4 A325	0	2 1/2	mad

DOUBLE ANGLE DETAIL: (Detail #3 on the drawing)

Detail ID	Quantity	Shape	Description	Ft	In	Mark
S3	ONE					8D3
3	2	PL	3/8 x 2 1/2	0	5	pb8
3	2	L	4 x 4 x 3/8	25	11 1/8	ab8
3	2		3/4 A325	0	2 1/2	mad

FRAME: (Detail #4 on the drawing)

Detail ID	Quantity	Shape	Description	Ft	In	Mark
S4	ONE		FRAME			8F4
4	4	PL	3/8 x 2 1/2	0	6	pc8
4	10	L	4 x 4 x 3/8	25	0	ac8

COMBINATION DETAIL: (Detail #5 on the drawing)

Detail ID	Quantity	Shape	Description	Ft	In	Mark
S5,1	ONE	W	18 x 55	20	0	8B5AS
S5,2	2	W	18 x 55	20	0	8B5OH

The following entry is for 8B5AS ONLY:

5,1	4	PL	3/8 x 2 1/2	0	6	pc8
-----	---	----	-------------	---	---	-----

The following entry is for both 8B5AS and 8B5OH:

5,1,2	6	L	4 x 4 x 3/8	1	6	ad8
-------	---	---	-------------	---	---	-----

Uploading Production Control

Once the Bill of Material is edited and the drawing is saved, the user can use Asteel 2 to create production control files.

- 1 Under the “Maintenance” menu in Asteel 2, select “Upload Production Control Data”.
- 2 Click on “Add Drawings” or “Load Previous Import List” to get a list of drawings.
- 3 Select the drawings you want uploaded from the list or click on “Import All Drawings”

After this is complete, select “Download Production Control Data” from the “Maintenance” menu to create the production control files.

The screenshot shows the 'Import Production Control Data' dialog box in the CDS Asteel 2.0 application. The window title is 'CDS Asteel 2.0 - Job Number 99-6 - Upload Production Control Data'. The menu bar includes 'File', 'Data Entry', 'Connection Calcs', 'Maintenance', and 'Help'. The dialog has a title bar and standard window controls. The main area is titled 'Import Production Control Data' in blue. It contains two columns of controls. The left column has a 'Job Number' dropdown set to '99-6', followed by buttons for 'Import All Drawings', 'Import Selected Drawings', and 'Esc to Exit'. The right column has a 'Load Previous Import List' dropdown, followed by buttons for 'Add Drawings' and 'Save Drawing List'. Below these controls is a section titled 'Drawings To Import :'. It contains a list box with one entry: 'C:\Asteel\DXF\006-125.dwg'. The list box has a small square icon to its left.

Job Number : 99-6

Load Previous Import List :

Import All Drawings

Import Selected Drawings

Esc to Exit

Add Drawings

Save Drawing List

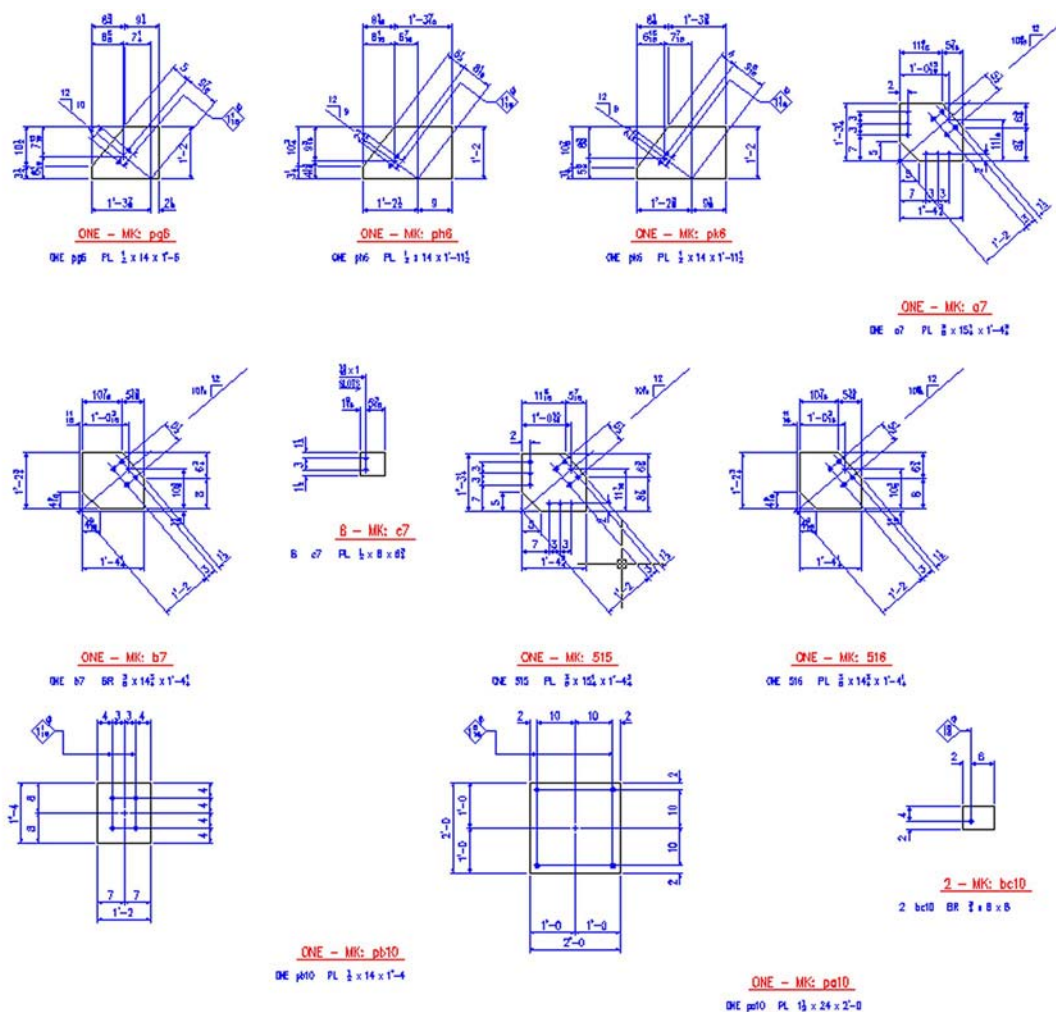
Drawings To Import :

- ☐ C:\Asteel\DXF\006-125.dwg

Detail Summaries

The detail summaries are drawings that show the unique pieces of fitup material defined for the job or for a selected set of drawings within a job. Each summary sheet contains material of the same type, such as angles, ordered by piecemark. Summary sheets can be produced for angles and plates.

The example below shows a summary sheet for plates:



Creating Detail Summaries

The following paragraphs describe how to create detail summary sheets in Asteel 2.

Click the Detail Summaries button on the Maintenance screen. The Detail Summaries screen will be displayed:

Detail Summaries

Job Number : 00-7

Download All Drawings
Download Selected Drawings
Esc to Exit

Download What?

☐ Angles
☐ Plates
☒ Miscellaneous
☐ All

Output Path :

All Drawings:

<input type="checkbox"/> 1	<input type="checkbox"/> 31	<input type="checkbox"/> 59	<input type="checkbox"/> 110	<input type="checkbox"/> 209
<input type="checkbox"/> 2	<input type="checkbox"/> 33	<input type="checkbox"/> 60	<input type="checkbox"/> 111	<input type="checkbox"/> 210
<input type="checkbox"/> 3	<input type="checkbox"/> 34	<input type="checkbox"/> 61	<input type="checkbox"/> 112	<input type="checkbox"/> 248
<input type="checkbox"/> 4	<input type="checkbox"/> 35	<input type="checkbox"/> 62	<input type="checkbox"/> 113	<input type="checkbox"/> 249
<input type="checkbox"/> 5	<input type="checkbox"/> 36	<input type="checkbox"/> 63	<input type="checkbox"/> 114	<input type="checkbox"/> 250
<input type="checkbox"/> 6	<input type="checkbox"/> 37	<input type="checkbox"/> 64	<input type="checkbox"/> 115	<input type="checkbox"/> 251
<input type="checkbox"/> 7	<input type="checkbox"/> 38	<input type="checkbox"/> 65	<input type="checkbox"/> 116	<input type="checkbox"/> 252
<input type="checkbox"/> 8	<input type="checkbox"/> 39	<input type="checkbox"/> 66	<input type="checkbox"/> 117	<input type="checkbox"/> 253
<input type="checkbox"/> 9	<input type="checkbox"/> 40	<input type="checkbox"/> 67	<input type="checkbox"/> 118	<input type="checkbox"/> 254
<input type="checkbox"/> 10	<input type="checkbox"/> 41	<input type="checkbox"/> 68	<input type="checkbox"/> 119	<input type="checkbox"/> 255
<input type="checkbox"/> 11	<input type="checkbox"/> 42	<input type="checkbox"/> 69	<input type="checkbox"/> 120	<input type="checkbox"/> 256
<input type="checkbox"/> 12	<input type="checkbox"/> 43	<input type="checkbox"/> 70	<input type="checkbox"/> 123	<input type="checkbox"/> 257
<input type="checkbox"/> 13	<input type="checkbox"/> 44	<input type="checkbox"/> 71	<input type="checkbox"/> 124	<input type="checkbox"/> 260
<input type="checkbox"/> 14	<input type="checkbox"/> 45	<input type="checkbox"/> 72	<input type="checkbox"/> 125	<input type="checkbox"/> 261
<input type="checkbox"/> 15	<input type="checkbox"/> 46	<input type="checkbox"/> 73	<input type="checkbox"/> 126	<input type="checkbox"/> 273
<input type="checkbox"/> 16	<input type="checkbox"/> 47	<input type="checkbox"/> 74	<input type="checkbox"/> 127	<input type="checkbox"/> 1000
<input type="checkbox"/> 17	<input type="checkbox"/> 48	<input type="checkbox"/> 75	<input type="checkbox"/> 129	
<input type="checkbox"/> 18	<input type="checkbox"/> 49	<input type="checkbox"/> 99	<input type="checkbox"/> 130	
<input type="checkbox"/> 19	<input type="checkbox"/> 50	<input type="checkbox"/> 101	<input type="checkbox"/> 144	
<input type="checkbox"/> 20	<input type="checkbox"/> 51	<input type="checkbox"/> 102	<input type="checkbox"/> 145	
<input type="checkbox"/> 21	<input type="checkbox"/> 52	<input type="checkbox"/> 103	<input type="checkbox"/> 146	
<input type="checkbox"/> 22	<input type="checkbox"/> 53	<input type="checkbox"/> 104	<input type="checkbox"/> 148	
<input type="checkbox"/> 26	<input type="checkbox"/> 54	<input type="checkbox"/> 105	<input type="checkbox"/> 150	
<input type="checkbox"/> 27	<input type="checkbox"/> 55	<input type="checkbox"/> 106	<input type="checkbox"/> 151	
<input type="checkbox"/> 28	<input type="checkbox"/> 56	<input type="checkbox"/> 107	<input type="checkbox"/> 152	
<input type="checkbox"/> 29	<input type="checkbox"/> 57	<input type="checkbox"/> 108	<input type="checkbox"/> 153	
<input type="checkbox"/> 30	<input type="checkbox"/> 58	<input type="checkbox"/> 109	<input type="checkbox"/> 208	

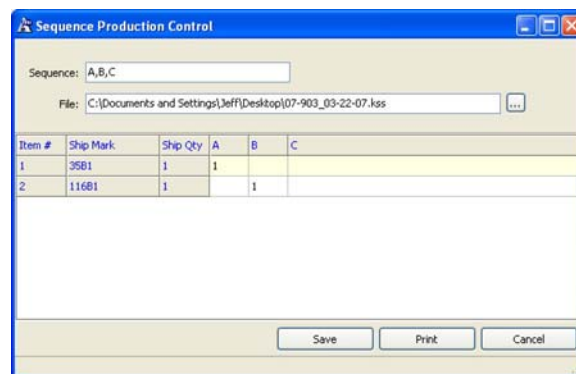
This screen allows you to select drawings and generate summary sheets for the material used in those drawings. The fitup material for a sheet cannot be summarized unless the sheet has been processed. Additional information is provided in the section on Processing the Detail Data Into AutoCAD Files.

This screen operates in a manner similar to the download CNC and production control screens. You select the job and the type of pieces to be summarized (download what), then select the drawings from which the summary data is to be extracted, and press one of the download buttons. A Downloading Files dialog will be displayed until the files have been created.

Asteel 2 will create individual DXF files for each piece of material summarized. The name of each of these files is the piece mark (e.g.: "pa1.dxf" or "aa3.dxf"). These files are located in the \ASTEEL\SUMMARY\<job>\DXF directory.

These individual piecemark files are added one by one to a summary sheet until that sheet is full, then a new summary sheet is started. The summary sheets are named "bar1.dxf", "bar2.dxf", etc. for the plates and bars, "ang1.dxf", "ang2.dxf", etc. for the angles and "mis1.dxf", "mis2.dxf" for miscellaneous material. The completed summary sheets are located in the same directory as the individual piecemark files (\ASTEEL\SUMMARY\<job>\DXF).

Sequence Production Control



The Sequence Production Control screen allows you to adjust the sequence of kss production control files.

Sequence

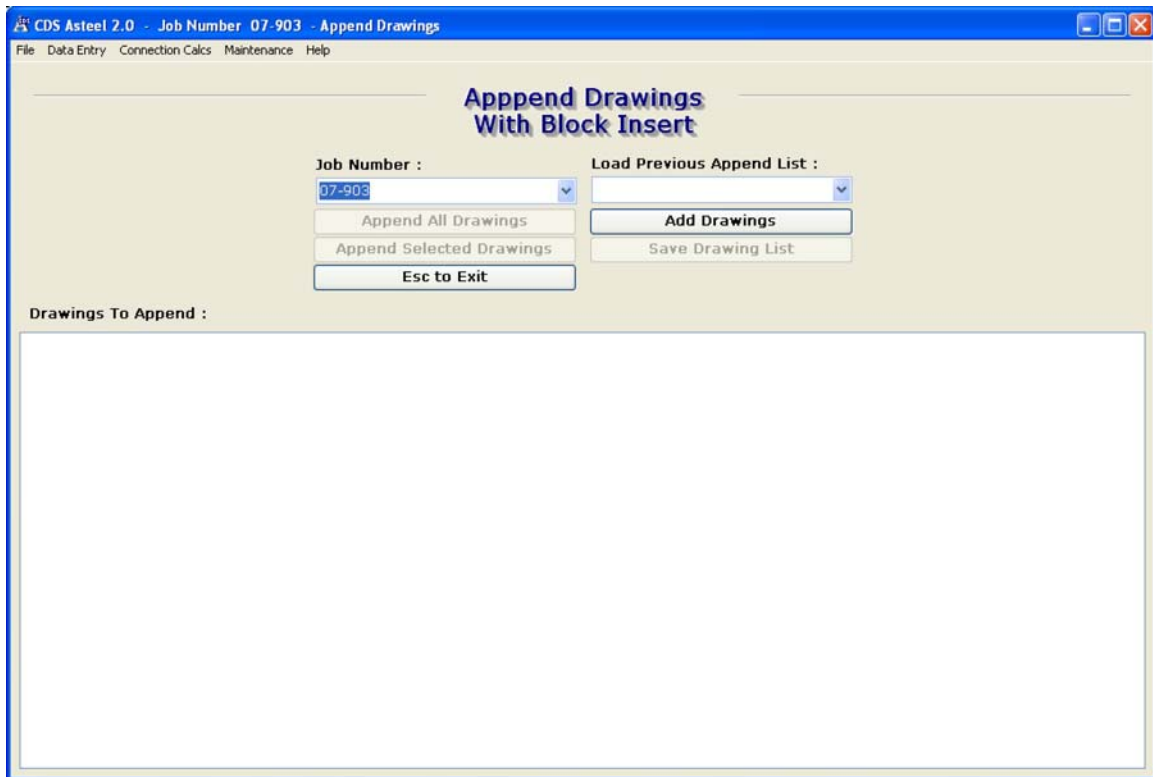
Enter the sequences to be used in the Sequence field. Each sequence must be separated by a comma. Each sequence will be represented by a column in the grid at the bottom of the screen. For example, if you input sequences "A,B,C" then columns for A, B and C will appear in the grid.

File

The kss file that is currently loaded is displayed in the File field. To load a kss file, click the ellipses button and navigate to the kss file you wish to modify.

Once you input your desired sequences and load the file, you can adjust the sequence for each member that exists in the kss file. Once you are finished making adjustments, you can save the kss file by clicking the Save button. You can also print the kss file by clicking Print.

Append Drawings



The Append Drawings screen allows you to insert a drawing into one or more other drawings. For example, you could insert a titleblock drawing into one or more detail drawings. A version of AutoCAD must be installed on the system and it must be full blown AutoCAD - not AutoCAD LT.

Job Number

The Job Number has no function on this screen other than saved drawing lists are stored in a path specified by the job number.

Append All Drawings

Inserts a drawing that you select into all of the drawings in the "Drawings To Append" list box.

Append Selected Drawings

Inserts a drawing that you select into all of the drawings that are checked in the "Drawings To Append" list box.

Load Previous Append List

Loads the "Drawings To Append" list box with a previously saved list of drawings. You save lists by using the "Save Drawing List" button.

Add Drawings

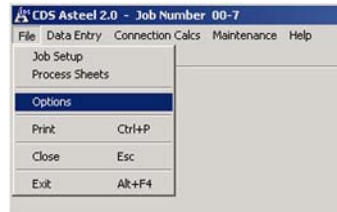
Click "Add Drawings" to add drawings into the "Drawings To Append" list box. A drawing will be inserted into these drawings that you select.

Save Drawing List

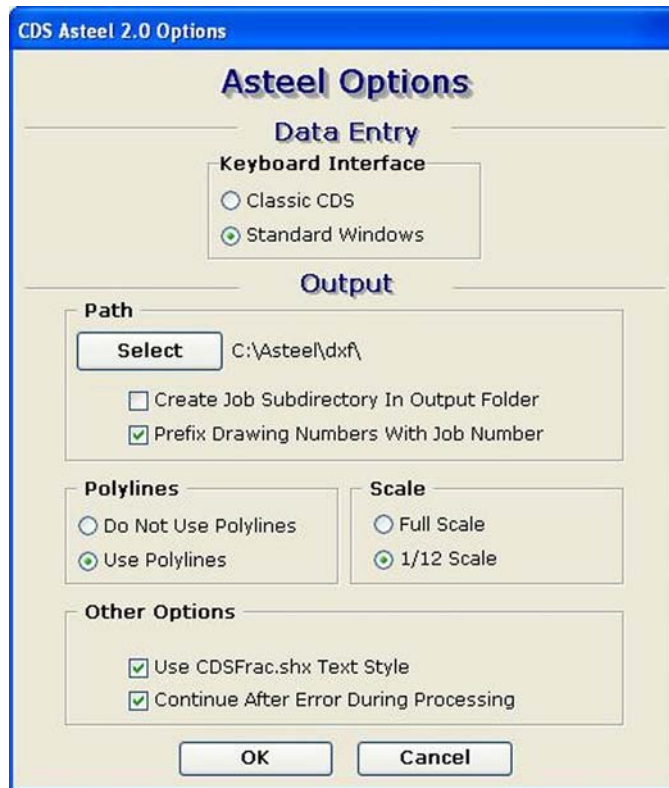
Saves a list of all drawings that are displayed in the "Drawings To Append" list box. This list can be loaded later on by using "Load Previous Append List".

Configurable Asteel Options

Several aspects of the behavior of the Asteel 2 program can be controlled through configurable options. These options are accessed from the pull-down File menu at the top of the screen, as shown below:



When you select the Options entry from this menu, the Asteel 2 Options screen will be displayed:



This screen allows you to set the configurable options of Asteel 2.

The following paragraphs describe the options that can be set from this screen.

Keyboard Interface

The Keyboard Interface option controls whether Asteel 2 responds to keystrokes using standard Windows behavior or as CDS responded. For example, CDS used the Enter key to navigate through fields like the Tab key does in Windows. Also, CDS used the up and down arrows to navigate between fields, while Asteel 2 uses the arrows (when the cursor is in a listbox) to select values from the list.

Path

Several aspects of the DXF output can be configured using this option screen. These options include the output path for the DXF file and whether subdirectories are created for jobs and whether job numbers are included in the DXF file names. The output path for the DXF files generated by Process Sheets can be configured by pressing the Select button next to the path name.

If the Create Job Subdirectory In Output Folder checkbox is checked, a separate directory will be created for each job. These directories will be created under the main directory that was selected by pressing the Select button. If job subdirectories are not enabled, all DXF files go into the main directory.

If the Prefix Drawing Numbers With Job Number checkbox is checked, the DXF filenames will be constructed from the last three digits of the short job number plus the drawing number. For example, job number 00-11, drawing number 222 would be written to a file named 011-222.dxf. If the checkbox is not checked, the same drawing would be written to a file named 222.dxf. Note that if you do not include the job number in the DXF file names, you should generally use separate subdirectories for each job. Otherwise, the DXF file for drawing 1 of job 1 will be overwritten by the DXF file for drawing 1 from job 2.

Polylines

Change the Polylines option to allow or disallow polylines in the DXF output.

Scale

Change the Scale option to draw details to scale or at 1/12 scale.

Other Options

If "Use CDSFrac.shx Text Style" is checked, dimension text will use the CDSFrac font. This font allows you to edit fractions as one entity instead of separate entities.

If you want to use this option you must copy the file "cdsfrac.shx" from the \asteel\system\ folder into your AutoCAD fonts folder.

The following table shows the fraction codes used in CDSFrac.

Fraction	Code
1/16	%%201
1/8	%%202
3/16	%%203
1/4	%%204
5/16	%%205
3/8	%%206
7/16	%%207
1/2	%%208

Fraction	Code
9/16	%%209
5/8	%%210
11/16	%%211
3/4	%%212
13/16	%%213
7/8	%%214
15/16	%%215

In addition to the above fraction codes, there are several additional codes available in cdsfrac.shx. The following table shows these codes.

Symbol	Code
Degree symbol	%%127
+/-	%%128
Round hole symbol	%%129
Back to back angles of unequal legs (LLV)	%%146
Back to back angles of unequal legs (LLH)	%%147
Plate symbol	%%148

If "Continue After Error During Processing" is checked, then Asteel 2 will not stop processing sheets when an error occurs. See the Process Sheets screen for more details.

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