PROVAL — Evaluation Pack

This evaluation pack will assist you in assessing ***PROVAL*** prior to purchasing a full user licence. (The cost of the pack will be credited against the cost of any ***PROCON*** software licence purchased within the following 90 days.)

Any commercial use of the evaluation system, or attempt to copy, transfer, adapt or reproduce the code, displays, or ideas contained within the program, contravenes the licence purchase agreement and will cause material damage to ***PROCON Construction Systems.***

The evaluation program has a number of restrictions and capacity limitations. These are:—

- It is useable for ***90 days*** only.
- Each job you enter may be accessed only ***SIX*** times.
- Report ***header*** cannot be changed.
- ***Capacity*** is limited to the tutorial size.
- ***Digitiser*** use can only be simulated.

Install the evaluation system on your hard disk by placing the program disk in drive A, then change to drive A by typing [A][:] [Enter]. Then type [I][N][S][T][A][L][L] [Enter] and follow the directions.

Part B — Tutorial

Preamble

If you have not yet installed **PROVAL** on your harddisk, read **Getting Started** in ***Appendix 1***.

If you have not viewed the **PROCON** "slide show" **DEMONSTRATION** program describing **PROVAL**, you may wish to look at it *before* starting the tutorial.

Running the Demo

When you install **PROVAL**, the demonstration is automatically copied to your harddisk. To run it just type **CD \PROCON** and press [Enter] to change to the directory, type **DEMO** and press [Enter]. If the demonstration has been removed—or you wish to install it on another machine—place the program or demonstration disk in **drive A**, type [A][:] and press [Enter] to change to that drive. Then type **DEMO**, press [Enter], and follow the instructions.

The Tutorial

The tutorial assumes that the program is installed on **drive C:** and that you are using the directories created by the installation program. If this is not the case, you must interpret the following instructions appropriately. The tutorial introduces **PROVAL** and covers all the basic functions you will need to *Set up a Job*, calculate a *Valuation*, and produce *Subcontract Liability Statements*. More advanced facilities can be explored when the need arises.

It is assumed that you understand the terminology of *Job Costing and Valuation,* have some knowledge of the *practical aspects* of contract administration, and have at least some basic acquaintance with the computer and operating system. If you are not familiar with the terminology of contract *Bills of Quantities*, *Schedules of Rates,* or *Subcontract Liabilities*, you should read ***Appendix 3*** before continuing.

If you have already used other **PROCON** software packages—such as the **PROBID Cost Estimating & Tendering System**, the **PROBILL Contract Billing System**, the **PROCOST Job Costing System,** or the **PROPLAN Project Scheduling System**— you will be able to cover the early material very quickly, as the user interaction with each program is similar.

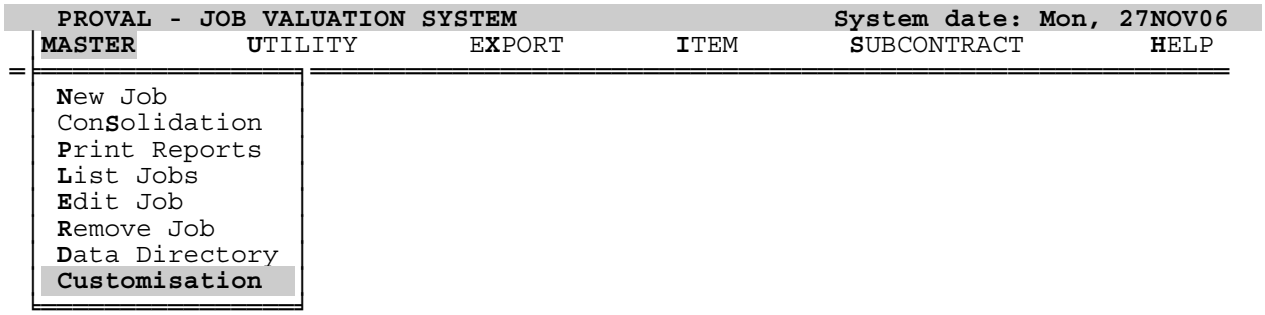
The tutorial is designed to illustrate *principles* so the examples are deliberately non-specialist in nature. This does not mean that **PROVAL** is not applicable to more specialised types of work—it is just that the tutorial must be comprehensible to a wide range of users.

Starting PROVAL

If you are running ***PROVAL*** from **Windows**, click on the ***PROVAL*** desktop icon. (If you are working from the command line, type **CD \PROVAL\SYS** and press Enter to change to the **system** directory. Then type **PROVAL** and press Enter.) The program logo appears with some system information and then…

Menu System

The ***PROVAL*** header line and menu system appear. The **Master menu** is currently active. It looks like this:–



PROVAL is menu driven. The menus are "intelligent" and try to suggest the most appropriate continuation to you at all times. Currently this is the **Customisation** option—which allows you to *choose a printer, define cost types, set currency formats,* and change other program parameters to suit your preferences.

Selecting from Menus

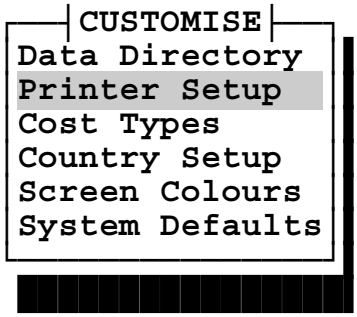
You do not have to accept a suggested menu option. An alternative choice may be made from the same menu in several different ways:–

- by keying the ***highlighted letter*** shown for the ***desired choice***, or…
- by keying the ***number*** of the ***desired choice***, or…
- by ***moving the highlight*** to the ***choice*** and pressing Enter.

Spacebar or ↓ move the highlight *down*. (If the keyboard does not have a separate cursor keypad, make sure Num Lock is off.) ↑ moves the highlight up. (The highlight "rolls around" if you go beyond the *top* or *bottom* selections.) PgUp and PgDn move directly to the *first* or *last* choice.

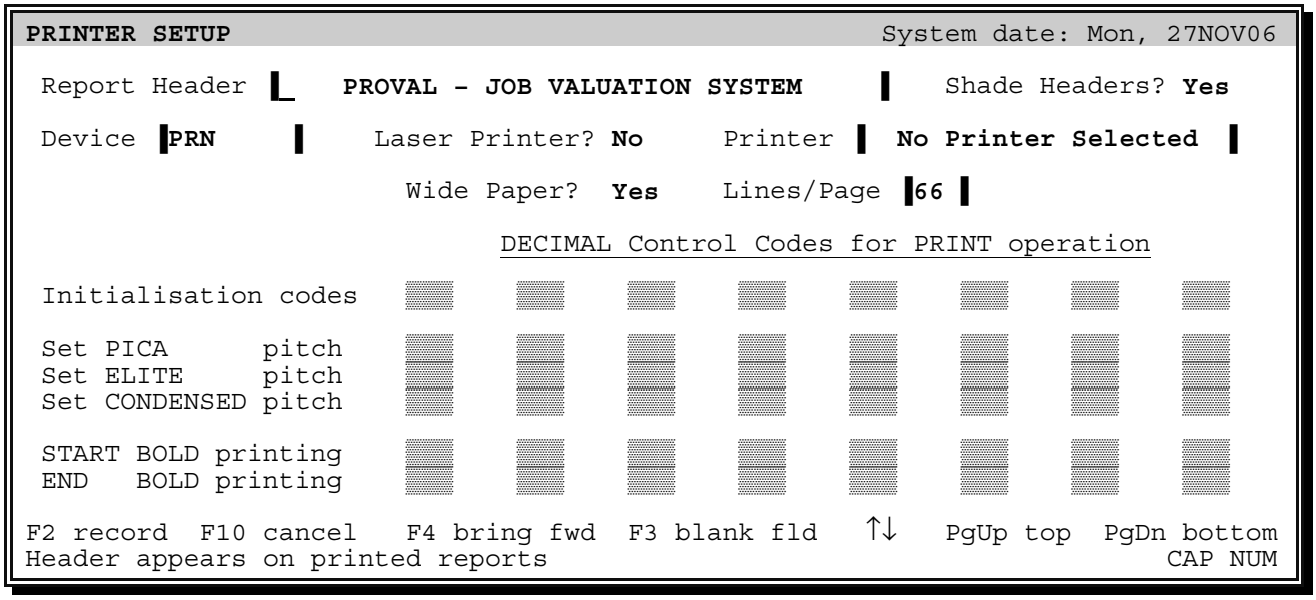
Customising PROVAL

Hit [C] for **Customisation** and this selection list *("picklist")* appears:–



PROVAL is almost "ready to run" as installed, so the **Customisation** options are not examined in great depth in the tutorial. *(**Appendix 8** in **Part D** of the manual covers* **Customisation** *in detail.)*

However, you should at least provide ***PROVAL*** with some information on your printer and define your own *cost types*. Use the [↑] and [↓] arrow keys to move the highlight to **Printer Setup**. Press [Enter] to select it. The following screen appears:–



The first *box* (called a "field") is for the standard **Report Header**. Other fields allow you to specify the **type of printer** and **size of paper** you are using. While you may not *have* to change most of these values, we will practice *moving through the fields*, *requesting help* and *editing field contents*.

Moving from Field to Field

Move around the screen—as you did with the menu—using [↓], [↑], [PgUp] and [PgDn]. The [Enter]—or [Tab]—key moves the cursor to the *next field*. Fields are originally solid white but open up and show "sidebars" once accessed. To catch your attention, the active field (the one containing the cursor) has highlighted sidebars.

Field Information Messages

As you move from field to field, you will notice that specific information appears on the bottom line. Press PgUp to return to the first field—the **Report Header.**

Help System—F1

F1 is always the ***HELP*** key. Press it to obtain help with the current field. A window of information on the **Report Header** field appears in the centre of the screen. The *help system* explains that the **Report Header** appears on all printed reports and suggests that—in commercial versions of the program—you might use your organisation or department name here.

The *help system* allows you to **list** *key assignments* and *help topics*, **find** *help topics,* or **follow** a *hypertext chain* through the screens, etc. For more details hit F5 while still within *help* and enter the keyword "**HELP**"—or see **Getting Help** on ***page C–5.***

The Esc ape key ***CANCELS*** a function, so press it to remove the help window and return to the **Report Header** field.

Field Editing

Spend a minute to familiarise yourself with text entry. To make editing as easy as possible, input is in a special "word processor" mode. ← and → move the cursor *one character* left or right.

End moves to the *end of any text in the field*. If the cursor is already at the end of the text—or the field is blank—it moves to the *right edge of the field*. If pressed again, it moves to the *last field*. Home returns the cursor to the *left margin*. If pressed a second time, it moves to the *first field* on the screen.

Del ete *removes* the character under the cursor and moves text back to close the gap. Bksp—usually marked with a large left arrow—moves the *cursor and text to the left*—overwriting any character there. Ins ert toggles between *overstrike* and *insert* mode. The cursor is a full block—like this —in insert mode.

Caps Lock can be toggled, enabling *upper case* characters to be typed without using the Shift keys. While it is engaged, a small **CAP** is shown in the bottom right corner of the screen and the cursor changes to a half block—like this .

Experiment with the edit keys. If you change a field, hit Esc ape to *restore its original contents*. Newly entered—or changed—text is *"highlighted"* (bright yellow on a colour monitor) to draw your attention to amendments. If you change several fields, you can use F10—the ***CANCEL*** key—to restore the complete screen.

Single Character Fields

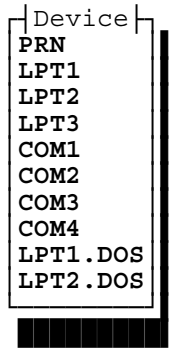
Press [Enter] to move to the **Shade Headers?** field. (This field setting determines whether the title line on reports is *background shaded*. Shading can improve the appearance of reports but not all printers do it effectively. More on this later…)

When a *single character field* offers several alternatives, use the [Spacebar] to roll through the choices and hit [Enter]—or just the *first letter* of your choice. (Upper or lower case responses are accepted so don't worry about [Shift] or [Caps Lock].) Your selection *expands* to "**Yes**" or "**No**" and the cursor moves on to the next field.

Selection Lists—[F6]

The **Device** field allows you to change the *print destination*. You could change this setting by typing in the new value. However, typing is *tedious* and *error prone*. As there are only a limited number of valid entries it is better to get ***PROVAL*** to list them.

To do this hit [F6]—the ***SELECT*** key (or the *left* mouse button). A small *picklist* opens near the field and lists all valid choices for this field. It looks like this:–



Hit [Esc]ape to *remove* the list *without* changing the field's contents. (The setting should always be left at **PRN** if your printer is connected to the standard parallel port—or if a serial port has been configured to emulate the parallel port.)

> Don't know what a device is? It really doesn't matter. ***PROVAL*** can direct reports to printers on different "devices" or "ports". **PRN** almost always works and is usually the *best* setting…

Press [Enter] (or the *right* mouse button) to move on to the **Laser Printer?** field.

Laser Printers

Hit [F6] to pop up a *picklist.*

> A *trivial* list when there are only *two* choices! But it illustrates the point that a picklist is *always* available from fields offering a limited range of choices…

You may choose from these simple lists in several ways. The *first letter* of a choice—from the highlight down—selects it. (So you can still select **Yes** by pressing [Y].)

The highlight can be moved with [↓] and [↑]. ([←] and [→] reposition the window itself.) Pressing [Enter]—or the *right* mouse button—transfers your choice into the field and removes the window. [Esc]ape—or pressing the *left* and *right* mouse buttons together—cancels the function.

If you are using an **HP Laserjet** compatible printer, select [Y]es. Fields appear for the printer's **Paper Size**—usually the same as the **tray size**—and to indicate whether it supports **Scalable Fonts**.

If you have to change the paper tray size, hit [F6] to list the various paper size options and choose a paper size. Leave the **Scalable Fonts?** field set to [Y]es unless you have an older laser printer. Then skip forward to ***Recording a Screen***. ***PROVAL*** directly manages laser printers to relieve you of printer control worries…

Printer Selection Field

If you set the **Laser Printer?** field to "`No`" the cursor moves on to the **Printer** field. *Press* [F6]—the ***SELECT*** key—to pop up a *picklist* of pre-defined printers.

> You *can* provide ***PROVAL*** with all the page size and control code information for your printer by directly entering it in fields in the lower portion of this screen. However, selecting from a list is much easier. (If you *do* wish to provide these details yourself—perhaps because you have an unusual printer, or wish to add some special enhancements to reports—see ***Printer Setup***, ***page D–24*** for more information on these fields*).*

The list is too long to show *all* printers—even on a `50` line display. This is shown by an arrow at the *top* and *bottom* of the *right side* of the "frame". Scroll through the list with the cursor keys. (The rectangular "scroll bar" shows the relative position of the current choice in the list by its position between the top and bottom of the frame. The figure at the *top left* of the window is the total number of choices in the selection list.) If you type the first few characters of a printer's name, the list sorts alphabetically and the highlight advances to the first choice matching the characters entered.

> This list is actually "user definable". You could change it or even delete it and create your own list covering only the printers your organisation uses. The list of *devices* mentioned earlier is another example. **User Defined lists** are discussed in more detail later…

Select a printer. (If your printer is not included in the list, choose one of the `EPSON` printers. Most dot matrix printers can emulate the `EPSON FX` or `LQ` printer.) Lower fields are filled with the correct information for the printer you have chosen.

Recording a Screen—[F2]

Press [F2]—the ***RECORD*** key—to save the changes made to this screen.

IMPORTANT! Screen changes are *not* saved until you hit [F2] to *RECORD* them!

A prompt appears:– "Print **a Test Sheet? (Y/N)**". Switch your printer *on* and respond [Y]es. The printer will print a *test page* that should look like this:–

```
Report Header:      PROVAL - JOB VALUATION SYSTEM
Shaded Title:              J O B   D A T A

Device: PRN out to Star Micronics XR-1520

Lines/Page = 66 for a Page Length of 11.00"

|---------1"--------2"          PICA, Symset: ▒┌┘▒└╖▓½¼ƒπ, BOLD
|----------1"----------2"       ELITE, Symset: ▒┌└▒└╖▓½¼ƒπ, BOLD
|--------------1"-------------2" CONDENSED, Symset: ▒┌┘▒└╖▓½¼ƒπ, BOLD
```

(Laser printer output is slightly different.) Check that the pitch setting commands are producing approximately the correct pitch, that the characters in the symbol set match those shown, and that the shaded header is legible. Confirm the settings are correct by answering [Y]es to the prompt. (If the printout shows the codes are *not* correct, select [N]o to return to the screen. See ***Printer Setup***, ***page D–24*** for more information.)

PROVAL returns to the **Master menu**. Select **Customisation** and then **Cost Types**.

Defining Cost Types

The **Cost Types** definition screen appears.

```
COST TYPES                                          System date: Mon, 27NOV06

Enter a description for cost types you wish defined. Leave other fields blank

                          Cost Type 1 |Labour     |
                          Cost Type 2 |Equipment  |
                          Cost Type 3 |Material   |
                          Cost Type 4 |Subcontract|
                          Cost Type 5 |Markup     |
                          Cost Type 6 |           |
                          Cost Type 7 |           |
                          Cost Type 8 |           |
                          Cost Type 9 |           |

F2 record  F10 cancel   F4 bring fwd  F3 blank fld   ↑↓   PgUp top  PgDn bottom
Description, (e.g. Labour, Plant)                                        NUM
```

The screen has *nine* identical fields. (Each field may contain a "**cost type**" description, *Labour*, *Plant*, *Equipment*, *Transport*, *Shop Labour*, etc. The descriptions can reflect industry or job specific cost breakdowns—perhaps into separate classes of labour, or owned versus rented equipment, or "fixed" versus "variable" material.)

What is **Markup**? Industry terminology varies but "**Markup**" usually refers to the amount a Contractor adds to his net cost estimate to cover general overheads and provide a "profit" on the job. Sometimes the term "**Spread**" is used for this, However, **Spread** usually includes Job overheads and these overheads may be covered by specific items in a valuation system.

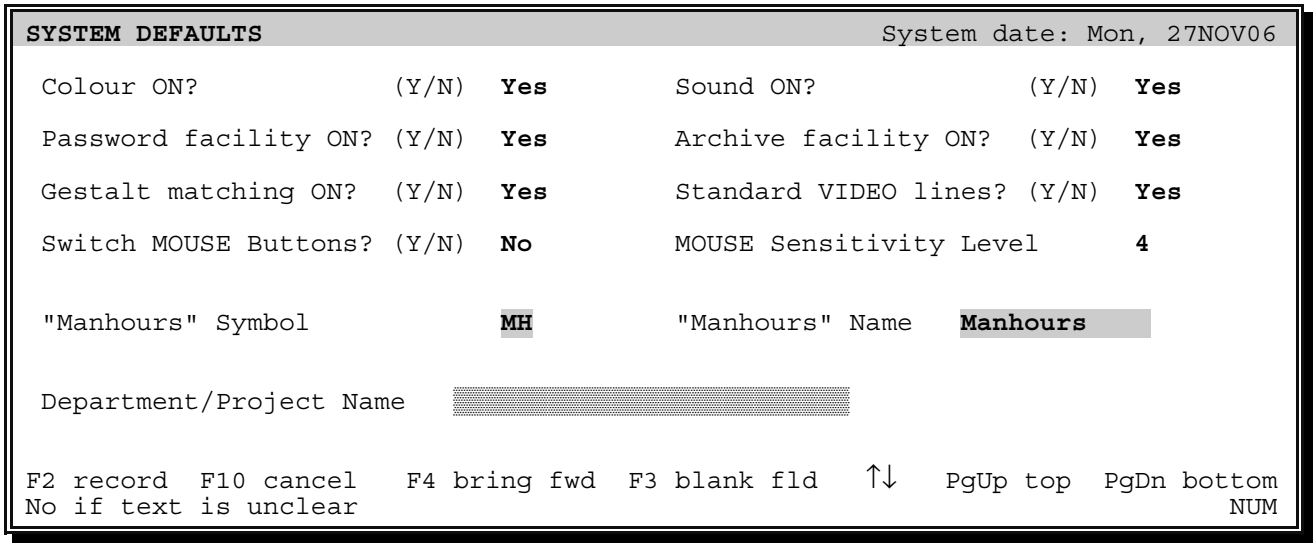
Default descriptions are provided for five types, but you can amend these or define your own. Let's make some minor changes to see how this is done.

Amend the second field to read **`Plant`** and the **`Subcontract`** field to read just **`Sub`**. Press F2 to ***RECORD*** the changes to the screen.

PROVAL returns to the **Master menu**. Select **Customisation** and then **System Defaults** from the picklist that appears.

Changing System Defaults

The **System Defaults** screen looks like this:–



(***System defaults***, ***page D–35*** explains all these fields in detail. In the tutorial, we will leave most at their default values.) Press PgDn to move to the last field—the **Department/Project Name** field.

Department or Project Name

Sensible defaults avoid the need to key the same information into every new job. For instance, assume all users come from one branch—*Northern Regions Division*.

Enter:– "**`Northern Regions Division`**". (A "beep" indicates that the cursor is at the end of the field.) Press F2 to ***RECORD*** the changes. The **Master menu** returns.

Creating a Job

Initial Setup 15JUN94

Hit [N] to select **New Job**. A prompt appears for the "**New Job Name**". (***Page A/1*** of ***Appendix A—Valuation Budget*** in ***Part D*** of the Manual—contains a sample valuation structure for a small job. Please refer to that now.)

Job Name & Password

Type in the job name

KALLAMOOLOOLA CITY – M25 FREEWAY

and press [Enter]. (The name appears on reports—so the full name should be given.) The **Password** option in **System defaults** was left *on* so you are prompted to enter a *password*. Leave the field *blank* and press [Enter].

A password restricts access to the job. Any word or phrase *could* be used. You would then be required to provide the password each time you accessed the job. Passwords should only be used if they are properly secured and there is no danger of forgetting them!

Job Details Screen

The **Job Details** screen then appears for entry of some *general job details*.

```
Job Details                                          System date: Mon, 27NOV06

 Department or Project Code  NO     Department     Northern Regions Division

 Job Number                         Round Extended Amounts to Dollar

 Round Manhour Rates to 3 places    Round Extended Manhours to 1 places


 Total Item Value     $


 Subcontracts Value   $

 Job Name  KALLAMOOLOOLA CITY - M25 FREEWAY        Password

     ADD Mode   Alt Notepad   Alt Jotter   Alt = PROCALC   Alt - Calendar
F2 record  F10 cancel   F4 bring fwd  F3 blank fld   ↑↓   PgUp top  PgDn bottom
Identify overall department OR project responsible                        NUM
```

Change the **Department code** to **NR**—for **Northern Region**—and move down to the **Job Number** field and enter **N06/12345**. Bypass the next three fields and enter **13600000** in the **Total Item Value** field.

Numeric Fields

The **Total Item Value** field only accepts *numeric* input. Other keys just produce warning beeps. Entry is "free form" and whole dollars may be entered without cents. Values may be *left* or *right justified* and spaces can be used to "set off" the thousands.

Before moving on to the other fields, let's assume that there are a few *job details* you would also like to record. There are no specific fields for *general text* but you can use one of the ***PROVAL*** "tools". Press Alt N and…

NOTEPAD— Alt N *or* F11

A ***NOTEPAD*** appears over the primary screen. It allows you to attach *"free form"* notes to records. (The visible window is only part of the available ***NOTEPAD***.) Text is entered in much the same way as in single line fields. Hit F1 for ***HELP*** on the extended editing and formatting functions. Then Esc ape from ***HELP*** and enter the following notes:–

```
Job duration expected to be 90 weeks.
Site offices required for 92 weeks.
```

The ***NOTEPAD*** can be used for many purposes—as a reminder of *special costing provisions;* to record *problems encountered;* as a convenient way of appending *"tickler notes"* to reports sent to people involved in the *job*—or as a *job diary,* or *"aide memoire"*.

Press F2 to save the ***NOTEPAD*** and close the window.

Subcontracts Value

Move to the **Subcontracts Value** field and enter `3900000`. (These budget figures are all optional and play no part in any calculation of valuations.)

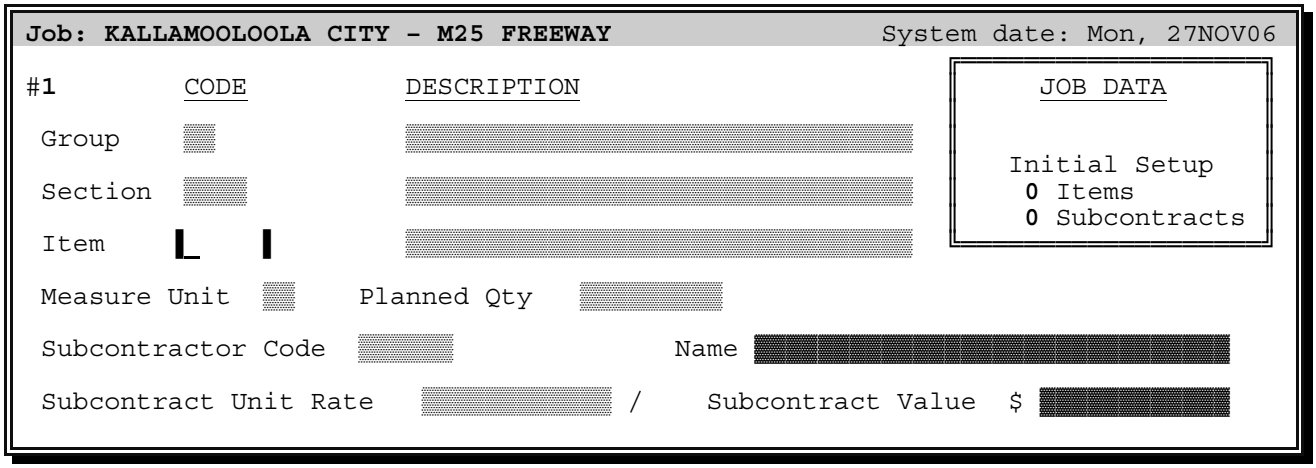
Press F2 to ***RECORD*** the **Job Details** screen. (If you press Enter with the cursor in the last field, you will be queried "`Proceed? (Y/N)`". Answering Y es to this prompt also ***RECORD***s the screen.) ***PROVAL*** will move directly to **Add Items** mode—as it assumes that this is the next logical step.

PROVAL *can* be configured to automatically read in a standard list of *items* and *subcontract definitions* every time a new *job* is created (See ***Appendix 8—Customising PROVAL***.) However, the tutorial assumes that this has *not* been done and so we will have to create this detail as we go…

Item Entry

Add Items Mode

The **Item entry** screen looks like this:–



Group Codes

Before entering items you should give some thought to the way in which they will be *subtotalled* and *sorted*. ***PROVAL*** allows you to organise **items** into **sections** and, in turn, sections into **groups**.

Subtotals will be given at both *section* and *group* level. **Groups**, **sections** and **items** may be sorted *alphabetically by code*. It is therefore important that you use a logical structure and coding scheme for groups, sections and items. ***Page A/1*** of ***Appendix A*** in ***Part D*** is the *Valuation Budget* for this job. (It is not meant to be a good example of consistent item numbering—but it does illustrate some of the coding schemes you may encounter in practice.) This budget has a *natural structure* so we should follow it. The **`STORM DRAINAGE`**, **`EXCAVATION`**, **`ROADWORKS`** and **`SITE OVERHEADS`** divisions are logical *groups* which may be further subdivided into *sections*.

Press [Home] to move the cursor to the *first field*—the **Group code**. Enter **`04`** and press [Enter] to move to the **Group description** field. Key in **`STORM DRAINAGE`**.

Section Codes

Press [Enter] again to move down to the **Section** line. Enter the **section code** **`2000`** and the **section description** **`Pipelaying`**.

> Obviously, when this is sensible—*and* produces correctly sorted groups and sections, you should follow the numbering given in the cost plan or budget documents. (When keying in group, section, or item codes, be careful to distinguish between **`0`** and **`O`**, **`1`**, **`l`** and **`I`**, etc.).

Item Codes

Move down and enter the **item code** `A40`. Press Enter to move to the **description** field and enter `Install 300mm Class III Pipe`.

Group, *section,* and *item* codes may use any **alphanumeric** character. *Case* and *position* are both significant. Be sure the item code is "right justified" in the five character field like this, ▌`A40`▌ rather than ▌`A40 `▌, and has not been entered as ▌` a40`▌. (If the item code is *not* right justified, return to the code field and hit Shift F4—the ***RIGHT JUSTIFY*** command.)

Measure Unit

Enter the **Measure Unit**—"`LM`" (an abbreviation for *Linear Metres)*.

Note that the **Measure Unit** field is another "must fill" or mandatory field. You *must* provide *some* entry here or the program will prevent you from leaving the field.

Planned Quantity

Enter the **Planned Quantity** of `2280`. (Quantities can be in *any* position in the field.) ***PROVAL*** saves quantities in the format you enter. Move down to the **Subcontractor Code**.

Subcontractor Code

Leave the **Subcontractor Code** and **Subcontract Unit Rate** fields blank.

PROVAL allows you to specify a **Subcontractor** who will be performing some of the work under any item. However, this item has no **Subcontract** component.

More Field Editing

Unless your typing is unusually good, you will have found it difficult to type all this without some mistakes. To help you move around the fields and correct errors, try some of these edit commands:–

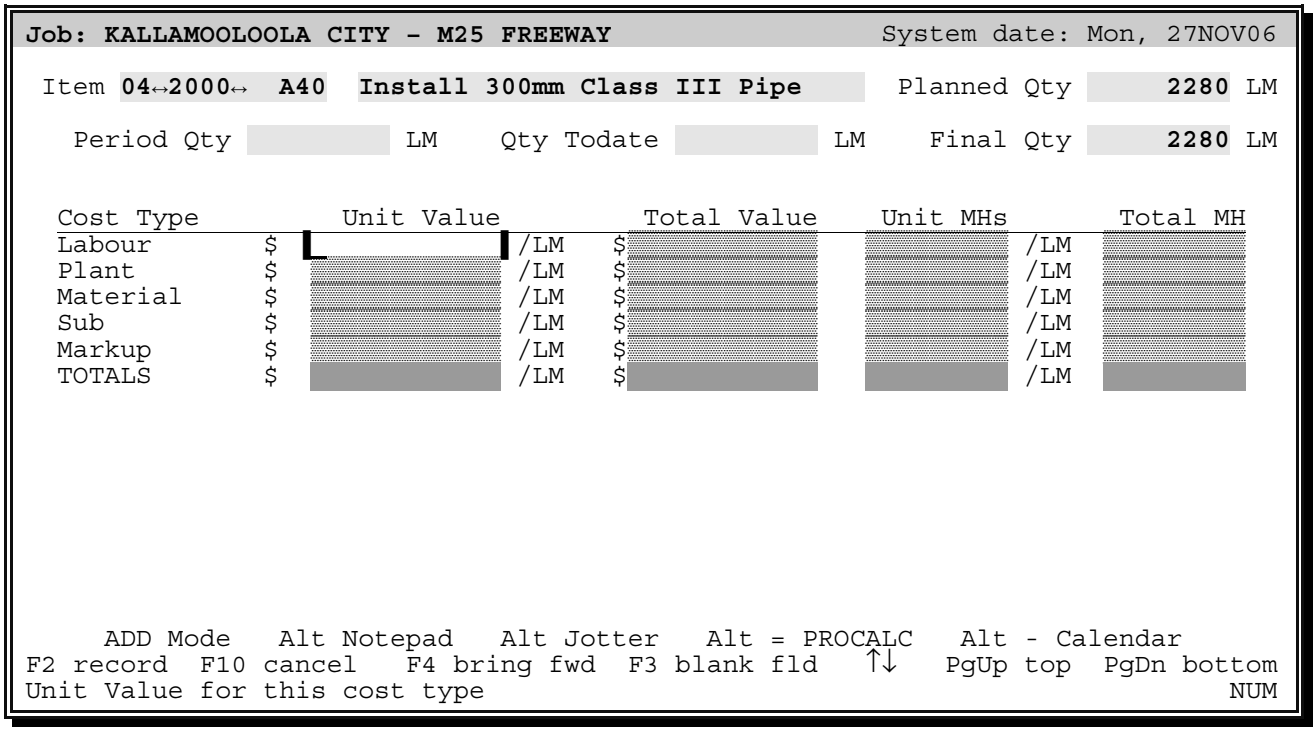
Ctrl with ← or → jumps to the *previous* or *next* "word" in the field.

Shift F7 converts a character to *lower case* while Shift F8 makes it *UPPER case*. Shift F9 *switches* the case of the character. In each instance, the cursor moves on to the next character, so *holding down one of these key combinations* quickly changes the case of *complete words or phrases*.

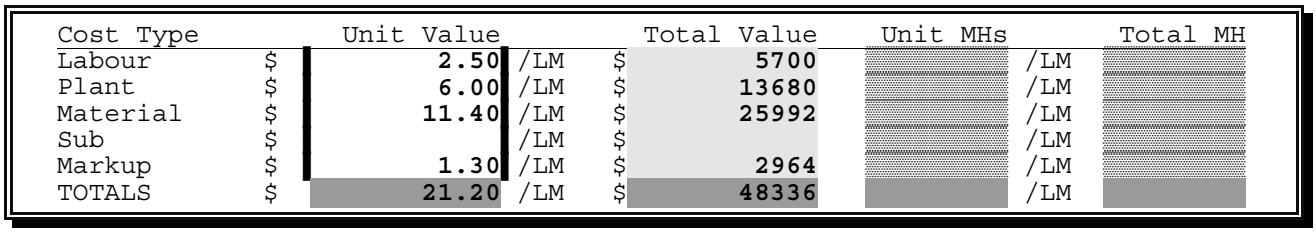
Ctrl End—or Ctrl Enter—*deletes all text* from the cursor *to the end of the field*.

Item Budget Entry

Press F2 to ***RECORD*** the screen. The **Budget Entry** screen appears. It looks like this:–



Enter a **Unit Value** of `2.50` for the **Labour** cost. Press Enter twice—or ↓—to move down to the **Plant Unit Value** field and enter `6.00`. Enter the value for the **Material** cost type and the **Markup** unit value. The completed unit value block should look like this:–



A "**Unit Value**" is the budget rate for that cost type. Check the data—correcting it if necessary by moving around with ↑ and ↓, and editing the fields. Note that extensions and totals are calculated and displayed when you leave each **Unit Value** field so always check these figures against the budget for the item.

PROVAL also allows you to produce "**Manhour**" valuations. As this facility is optional—and will only be used by some contractors—it is not covered in the tutorial. (Of course, "**Manhours**" is just a resource that can be redefined to suit your needs. Mining contractors may be more interested in valuations of "**Litres**" of diesel fuel).

Press F2 to ***RECORD*** the screen. The item is saved—with a distinctive sound—and the fields blanked for entry of the next item. Many fields for the second item are similar to the first, so you should be able to "short cut" some of the repetitive typing…

Bringforward Command—F4

Press F4. In ***ADD*** mode, this copies fields from the previous item. (If pressed in the *first* field, ***all*** fields are "brought forward". In subsequent fields only the current field is copied.)

> ***BRINGFORWARD*** is particularly handy when entering *repetitive* items. Editing a "template" is both *quicker* and *less error prone* than re-keying data. If you are interrupted, it also serves as a "bookmark" reminding you of your position in a list of items. (Note: ***BRINGFORWARD*** does *not* copy forward any ***NOTEPAD*** or ***PROCALC*** sheets attached to the previous record.)

Amend the item details to read:– `A41` `Install 600mm Class III Pipe`, with a **Planned Quantity** of `1745`.

Make sure the item code is *right justified* and that the *quantity* and *Job Values* are correct. To attach a note to the item, key Alt N (or F11) and type in:–

```
Includes connection to Eastview Street drainage outfall
```

Press F2 (or Alt N or F11) to ***RECORD*** the note.

Record Number & NOTEPAD Indicator

The record number—`#2` `N`—appears at the *top left* of the screen. The "`N`" indicates that this item has a ***NOTEPAD*** entry. (If your display is set for `50` lines, the text remains visible in the lower part of the screen.) Now hit F2 again to ***RECORD*** the item.

In the **Budget Entry** screen, amend the **Unit Values** to `3.60`, `10.15`, and so on, for the **Labour**, **Plant**, **Material** etc., cost types. Press F2 again to ***RECORD*** the screen.

Press F4 to ***BRINGFORWARD*** the *previous* item details. Hit F8 to ***INCREMENT*** the item code `A41` to `A42`. Press Enter to move to the **Item description** and change the pipe diameter to read `900mm`. Amend the quantity and hit F2 to ***RECORD*** the screen and move to the **Budget Entry** screen.

Amend the **Labour Unit Value** to `8.27`. Press ↓ to move down to the **Plant Unit Value** field. We could just enter the value of `$17.17/LM` but figures like this are sometimes calculated from other data, so let's see how ***PROVAL*** can help us with calculations…

PROCALC Formula Evaluator—Alt = or Shift F12

PROVAL has a built-in *arithmetic expression evaluator*—***PROCALC***—with capabilities far surpassing any desktop calculator, and more flexibility and convenience than any spreadsheet. Alt = produces an input field into which *arithmetic formulae* may be

entered. Formulae can include *parentheses*, *user variables*, *trigonometric*, *power*, *logarithmic, logical*, *date/time*, and other expressions, as well as specific "takeoff" functions. (As usual, F6 *lists* all the functions and will transfer your selection into the calculation field.) As a simple example, let's calculate the *tonnage of ballast in a conical stockpile*. Height is **13.500m**, angle of repose **35** degrees and the loose density is **1600 Kgs/m3**. Type in:–

```
H=13.50:A=35:D= 1600/1000: D × H × ACIRC(2 * H/TAN(RAD(A)))/3
```

and press Enter to switch to full screen mode and show the result of **8408.07** tonnes.

Let's quickly look at a few examples of the types of calculations that can be performed—and documented—in ***PROCALC***. Hit Alt R estore. A picklist of previously saved, multi-line ***PROCALC*** "template sheets" appears. (The installation program copied these sample files into the **system** directory.) Select **EXAMPLE.PCL**. Page through the screens and key Alt P to print the full file. Hit Esc ape to exit from ***PROCALC*** …

PROCALC field version— Alt C *or* F12

When the cursor is in a *numeric* field—**quantity**, **unit value**, **unit rate,** or whatever—you can access a *"field specific"* version of ***PROCALC*** with Alt C (or F12). *Key* Alt C in the **Plant Unit Value** field and type in:–

```
(124.00[Excavator/Hr] + 82.00[Loader/Hr])/12.0[LM/Hour]
```

Comments within PROCALC **[ ] or { }**

Text within square brackets (or curly braces) is treated as a *comment* and is ignored in all calculations. However, it can be *invaluable* in documenting the **rationale** and **assumptions** behind a calculation.

PROCALC Formula Flag ***ƒ***

Use Alt C to close the window. The calculated unit cost of **17.1666…/LM** appears in the **Plant Unit Value** field. A small *'formula flag'—**ƒ**—*appears to the *left* of the field—indicating a formula is *"tied"* to it.

Just as there is a *general* ***PROCALC*** facility as well as a *field specific* version, there is also a *general* ***NOTEPAD*** facility (the ***JOTTER***—accessed with Alt J) and a *record specific* version (accessed with Alt N).

Sensible use of "tied" ***PROCALC*** formulae help in documenting cost plans and progress. They also make it easier to amend calculations by changing just one parameter.

Enter all unit values for this item and press F2 to ***RECORD*** the screen. Now start on the **Concrete Structures** section—using a section code of **6000**…

> If all this typing doesn't appeal to you—*and* you are confident you *fully* understand the key commands involved—you may take a shortcut by using a copy of the tutorial project provided by the installation program. To do this, Esc ape to the menu system. Hit Ctrl Home to "shell" to **DOS**, and type **COPY \PROVAL\TUTE*.* \PROVAL\DATA**. Then type **EXIT** and press Enter to return to the menus. Hit Alt I to move to the **Item menu** and A to return to ***ADD*** mode. Carefully read the following section on auto-incrementing item codes and resume the tutorial at the sub-heading ***Switching Modes*** on ***page B–16.***

Auto-increment Codes— F5

The items in the **Rock Excavation** section have codes with a *uniform increment* of "**10**"—running from **A400** through **A410**, **A420**, etc. To save time when entering a sequential set of item codes, after entering the code for the *second* item in the section—**A410**—hit F5 to toggle on an *"**auto-increment**"* mode.

An *increment*—equal to the *difference* between the *numeric portions* of the **current** and **previous** item codes—is shown to the right of the field as "δ**10**". From then on, the code is *automatically incremented* for each new item. When you hit F4 to ***BRINGFORWARD*** all fields from the last item, the cursor skips directly to the *item description* field.

> The increment may be *fractional*, e.g., **1.00**, **1.20**, **1.40**. Auto-incrementing works only with **item** codes—not **section** or **group** codes. (Of course, F8 acts as a single increment key in *item*, *group,* or *section* code fields.)

Complete the **Rock Excavation** items and *hit* F5 to turn auto-increment *off*. Then enter the rest of the items.

Switching Modes— F9

Press F9—the mode ***SWITCH*** key. A one line "menu" appears at the bottom of the screen offering choices of:–

Progress items, **A**dd items, **C**hange, **D**elete or **B**rowse.

with a default of **Browse** indicated by the reverse video highlighting and displayed letter "**B**". You can always *select the default* by pressing Enter, return to the *original mode* by pressing Esc ape or *select another mode* by pressing the **first letter of your choice**—or move the highlight and press Enter as usual. *Press* Enter for the default—**Browse**.

Switching "modes" is an alternative to exiting and making a choice from the main menu system. Despite the route followed, the destination is the same!

Browse Mode

Browse mode is a convenient *passive* way of viewing records. Home and End move to the *first* and *last* record respectively, while the arrow keys (and F7–F8) move *backwards* and *forwards* through the records. If you go past the first or last record, the record number "wraps around".

Record Date Stamping

The **Record Changed** field at the bottom right is maintained by ***PROVAL***—it "date stamps" items when they are *created* or *modified*. "Date stamping" helps you keep track of changes.

Move to any item in group **04**, *hit* F5, key in **10b** and Enter to search for that item. That record becomes the new point for browsing. Repeat the process but key in item code **Z42**.

> This is certainly *not* the quickest way to *find* an item. **Change** mode is more convenient and also allows you to edit the item. But more on that later…

Gestalt Pattern Matching

Item **Z**42 doesn't exist so ***PROVAL*** has shown **A**42! It *searched* for the item but couldn't find it. Knowing you thought it *did* exist, (you are in **Browse** mode not **Add** mode) ***PROVAL*** assumed that you had mistyped the code. It decided that—most likely—you meant to type **A42** and hit a Z instead of an A.

> This "Gestalt" capability is used throughout ***PROVAL*** (unless turned *off* in the **Customisation**, **System defaults** screen) and makes finding *codes* and *keywords,* etc., easier. For example, key F1 for ***HELP*** and F5 to find a keyword. Enter "**ESTTT**". ***PROVAL*** guesses you meant "**GESTALT MATCHING**" and provides help on that topic.

Suppose you want to *amend* an item? Perhaps *change* the **quantity** or **description**? Esc ape from ***HELP*** and *hit* F9—the mode ***SWITCH*** key—then C for **Change items**.

Change Mode

The displayed item is the one last viewed in **Browse** mode. Move the cursor to the *item description*, edit it in some way, and *press* F2 to ***RECORD*** the change. Amendments are as simple as that!

Changing Codes

To change the *item code* itself—or its *group* or *section* code—just amend the entry and press F2 to ***RECORD*** the change.

If the code change would cause duplication, ***PROVAL*** will veto it. Codes *must be unique*—although the *same* **item code** may be used in different **sections**—just as the same **section code** may be used in more than one **group**. (A full **group-section-item** code is required to *uniquely* identify each item.)

Paging thru Items—F7-F8

Reverse any "experimental" changes you have made. In **Change** mode, you may still move through the items. Move the cursor to the *group*, *section,* or *item* code field. (PgUp returns to the first field.) F7 and F8 will "page" through the items.

Delete Mode

Delete mode is like **Change** mode but, *before* deleting a record, you will be asked to confirm that you really do wish to delete the record.

If you have reached this point without *at least* one interruption you must work in a very quiet office! Usually *telephone calls*, *emails*, *visits*, and other distractions will disturb your concentration. When these relate to the **current** item, the ***NOTEPAD*** provides a logical and convenient way to record the details. However, the current item would not be the appropriate place to attach general information. Fortunately, ***PROVAL*** has a similar facility for non-record specific "notes"…

JOTTER—Alt J or Shift F11

Alt J will "popup" a ***JOTTER*** which is specific to the *current contract* or—if no job is being worked on—just the ***PROVAL*** installation. Get rid of your paper scratch pads and use the ***JOTTER*** while working through the tutorial! Record *telephone messages*, use it as an "aide-memoire", etc.

Timestamping Notes—Alt T

Alt T inserts the *time and date* in the ***JOTTER*** or ***NOTEPAD*** text so you may "timestamp" telephone messages, records of field work, etc.

CALENDAR— Alt - *or* Shift F10

While exploring these "system-wide" facilities, also take a look at the built-in ***CALENDAR***. Alt - will popup a calendar for the *current month*. (This is accessible even from inside the ***JOTTER***—all ***PROCON*** tools can be overlaid one on another.) The arrow keys allow you to move through the *months* and *years.*

Printing Reports

Select **Print Reports** from the **Master menu**. A *report request screen* appears. The cursor drops to the **Report Name** field. (Ignore the fields on the line above this for the moment.) Hit F6 for this picklist of *standard reports*:–

```
12──────┤REPORTS├──────
JOB DATA
VALUE LISTING
PERIOD VALUE
VALUE TODATE
MEASURE INPUT
MANHOURS LISTING
PERIOD MANHOURS
CUMULATIVE MANHOURS
SUBCONTRACT LISTING
SUBCONTRACT FINAL LIABILITY
SUBCONTRACT PERIOD LIABILITY
SUBCONTRACT LIABILITY TODATE
```

Requesting Reports

Select **VALUE LISTING** and press Enter to move to the **More Reports?** field. Hit Yes. The screen will look like this:–

```
Job: KALLAMOOLOOLA CITY - M25 FREEWAY                System date: Mon, 27NOV06

                    Printer: Scalable font Laserjet

  Batchfile Name                    Report No 1

  Report Name VALUE LISTING                  More Reports?  Yes

  Selection Mask                             Sort the Report?  Yes

  Consolidate Completed Items?  No           Suppress Items Not Started?  No

  Summary Only?  No                          Video, Printer or File?  Print

  Orientation?  Automatic                     Number of Copies 1

  Pause between Pages?  No

  Show NOTEPAD text?  No                     Show PROCALC lines?  No
```

Note: This screen varies with the settings in **Customisation**. **Printer Setup**. (For example, if you are not using a *laser* printer, **Print Pitch** and **Header each Page?** fields will appear…)

Hit [F2] to ***RECORD*** the report request. (You could print one report and request more later, but it is more convenient to specify and print a *set of reports* as a "batch".) Select **JOB DATA**, leave the **More Reports?** choice set to [N]o, and press [F2] again. ***PROVAL*** prints the two reports.

Check the **VALUE LISTING** against the figures given on ***page 1*** of ***Appendix B***. If any item quantities *or values* are incorrect, return to **Change Items** mode and correct them before proceeding further.

Report Formatting Options

Return to the **Print Reports** screen. Report content may be *restricted* and the items may be *sorted*—or left in their original order. Reports sort by *item code* within **sections** and by *section code* within **groups**. *Groups* sort by **group code** and *page breaks* occur on each new group. (See ***Appendix** B* in ***Part D*** for some sample reports.) The other field choices are described in detail under ***Print Reports***, ***page C–30*** in ***Part C*** of the manual. Normally you would accept most of the default values.

Print a **MEASURE INPUT** report. The *Measure Input* is a *worksheet* or *"turnaround"* document designed to simplify the task of **recording** progress.

Exit to DOS—[Esc] *and* [Y] *or just* [Ctrl][End]

It is time to cover program *exit* and *entry* procedures. Press [Esc]. A prompt appears asking you to confirm that you *do* wish to exit. Hit [Y]es. The **DOS** prompt reappears.

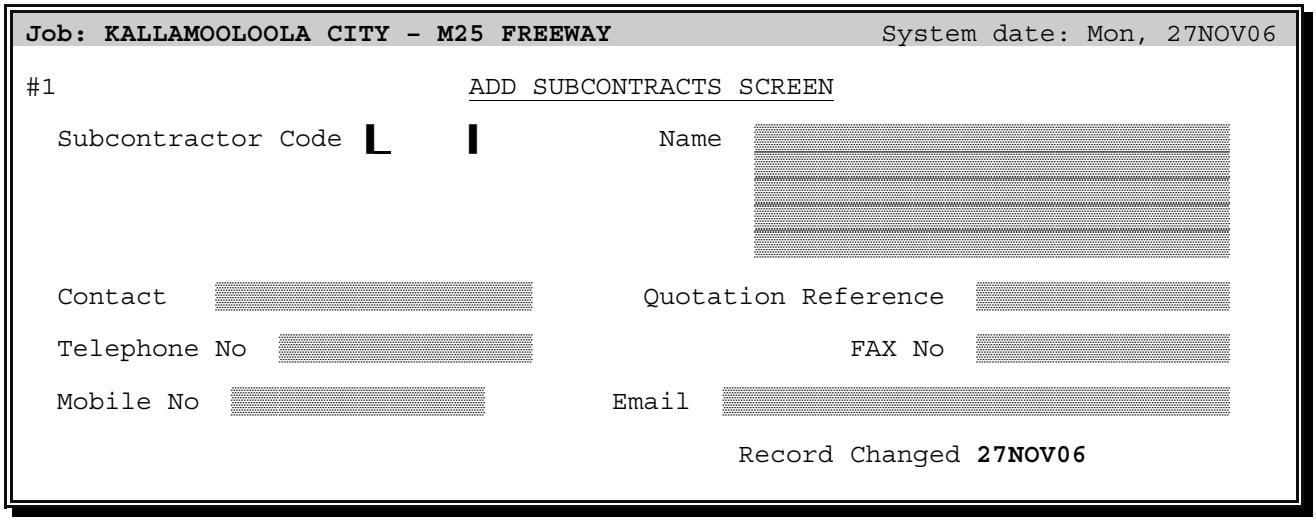
Queries of this type may be answered *positively* with [Y], [y] or [1], or *negatively* with [N], [n], [0] or [Esc]. The default reply may also be "toggled" with the arrow keys, the [Spacebar] or the mouse. (You may also exit directly to **DOS** with [Ctrl][End] or [Alt][F4]. Confirmation is not required.)

Subcontract Entry

Re-run the program by clicking on the desktop icon—or typing **PROVAL** from the command line and pressing [Enter]. (***PROVAL*** automatically reloads the job you were working on when you exited.) Select **Add Subcontracts** from the **Subcontracts menu**.

Add Subcontracts Mode

The **Subcontract entry** screen looks like this:–



Page A/2 of ***Appendix A*** in ***Part D*** contains a list of a few Subcontracts that will be used in the tutorial.

Subcontract Code

Enter the **Subcontractor Code** `RDB20`. Press Enter to move to the **Name** field and enter `ACME DRILLING SERVICES PTY LTD`. Enter the **Subcontractor's Address** as given on ***Page A/2*** of ***Appendix A***.

The other fields are for optional—but useful—information about the subcontractor. Enter as many of them as you wish.

Before saving this subcontract record, access the ***NOTEPAD*** and add this comment about the subcontractor's quotation:–

```
Exclusions from the ACME Quotation.
General Contractor to supply:-
1. All magazine security
2. All site safety flagmen.
```

Alt N (or, if you prefer, F11) accesses the ***NOTEPAD***. F2 saves the notes and exits to the **Subcontract screen**. F2 ***saves*** or ***accepts*** a screen. So would Alt N here. ***PROVAL*** accepts the same command to ***access***—and make a ***positive*** (i.e., data preserving) exit from a function.

Press F2 to ***RECORD*** the **Subcontract** record. Enter the data for the next Subcontractor `EX000`, and save the record. Exit from the **Subcontracts screen** and select **Print Reports** from the **Master menu**. Print a detailed `SUBCONTRACT LISTING` report. (See ***Page B/1*** of ***Appendix B***).

Assigning Subcontractors to Items

Select **Change Items** from the **Item menu**. Use ↓ to move down to the **Item Code** field and press F6—the ***SELECT*** key—to select the `Drilling Establishment` item.

Press [↓] twice to move down to the **Subcontractor Code** field. Hit [F6] for a list of subcontractors. Select **ACME DRILLING SERVICES**.

You can, of course, just type in the code for the subcontractor, or use [F7] and [F8] to page through the list of defined **Subcontractors**. You can even define **Subcontractors** "on the fly" from this field by hitting [Alt][S] to jump through to the **Subcontract screen**.

Move down to the **Subcontract Unit Rate** field. Enter a rate of **3500.00**. (See ***Page A/2*** of ***Appendix A*****).** Press [F2] to ***RECORD*** the **changes**.

Use the same Subcontractor on the next item—**Drill & Blast**—with a unit rate of **$1.18/m3**. Save the item and the screen should look like this:-

```
Job: KALLAMOOLOOLA CITY - M25 FREEWAY                System date: Mon, 27NOV06
#1        CODE          DESCRIPTION                       JOB DATA
Group     |05|          |EXCAVATION                |
Section   |  1|         |Rock Excavation           |      Initial Setup
Item      | A410|       |Drill & Blast             |      17 Items
                                                          2 Subcontracts
Measure Unit |m3|   Planned Qty |432000 | m3      Record Changed 27NOV06
Subcontractor Code |RDB20 |            Name ACME DRILLING SERVICES PTY LTD
Subcontract Unit Rate |        1.18| /m3  Subcontract Value  $        509760
```

The next two items have been subcontracted to **FRENETIC BROS EXCAVATION**. Enter the appropriate details for these items from ***Page A/2*** of ***Appendix A***.

Exit from the **Items screen** and select **Print Reports** from the **Master menu**. Print **SUBCONTRACT LISTING** and **SUBCONTRACT FINAL LIABILITY** reports. (See ***Page B/1*** of ***Appendix B***).

Then hit [Ctrl][End] or [Alt][F4].to exit ***PROVAL***.

Progress Reporting

First Valuation 21DEC06

The job has now started, so you have *progress* to report and *variations* to add. The first **MEASURE INPUT** document (***Page 4*** of ***Appendix B*** in ***Part D*** of the Manual) shows these handwritten notations for the Valuation to **21 December 2006**. *Re-run* the program by typing **PROVAL** and pressing [Enter]. (***PROVAL*** automatically reloads the job you were working on when you exited.) Select **Progress Items** from the **Item menu**.

Tip: Go there *quickly* when you know where you are going! [Alt][I] moves *directly* to the **Item menu** and [P] selects **Progress**.

Valuation Date

A small window appears with a prompt for: **THIS Update Date**. Key in **21DEC06**.

Dates may be entered in several different ways. One is the "International" format using entries like **25SEP07** or **9jan06**. ***PROVAL*** has sophisticated date validation that allows wide latitude in entry, (e.g., **9 Jan 06**, **9JAN2006**, **09jan 06** will all be accepted as valid), while invalid dates such as **29FEB07**, **31NOV07**, etc., will *not* be accepted and you will be alerted by an error message. Dates may also be entered in **d/m/y**, **m/d/y** or **y/m/d** *numeric* format if you prefer—depending upon the numeric date setting in **Customisation**, **Country Setup**—they will still be displayed in International format.

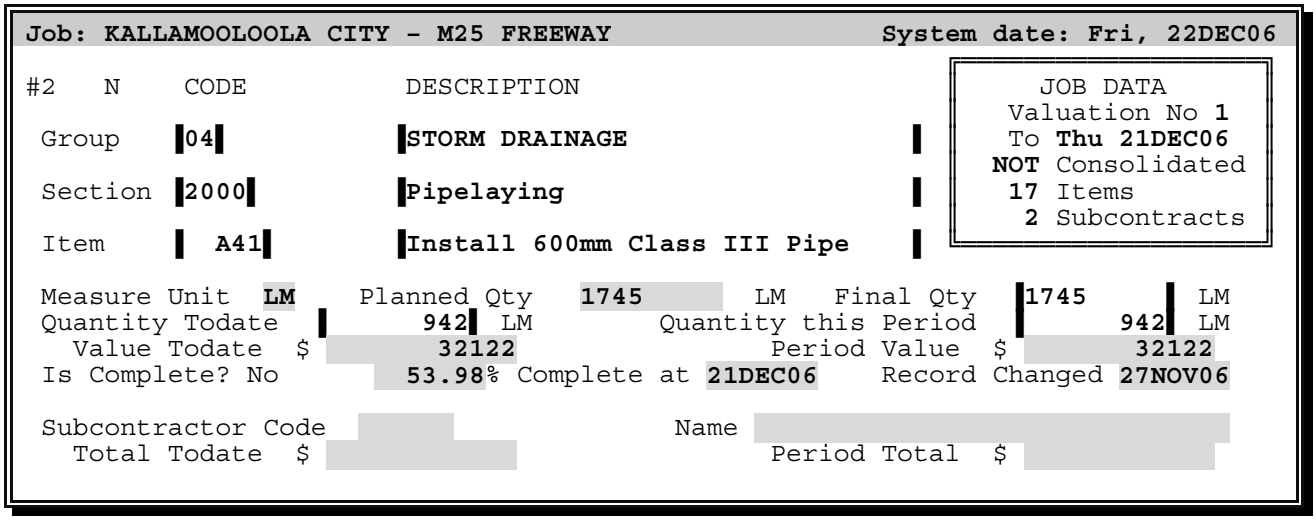
Progress Items Mode

Press Enter. You are now in **Progress Item** mode. ***PROVAL*** displays the *last* item you were working on.

Hit F8 twice to "*roll around"* to the *second* item—**04–2000– A41.**

You "find" an existing item by entering the full code; "paging" through the records with F7–F8; moving to the **item code** field and using F6 to pop up a *picklist*; or entering part of the code and hitting F5 to force a Gestalt "**best match**"…

Press Enter twice to move down to the **Quantity Todate** field. Key in a "quantity" of **942** and press Enter. (See the annotated **MEASURE INPUT** document on ***Page 4*** of ***Appendix B***.) The screen will look like this:–



Progress quantities may be entered as *cumulative* or *period* quantities. Given one figure, ***PROVAL*** calculates and displays the other. Press F2 to ***RECORD*** the progress and hit F8 to move forward to the next item—**A42 Install 900mm Class III Pipe**. Enter a **Quantity Todate** of **420** and ***RECORD*** the item.

The next two items do not have entries against them in the **MEASURE INPUT** document, so they should be skipped. (Do *not* enter a zero progress quantity against

work that has not started! The date an item was last "progressed" is shown on the **MEASURE INPUT** document. This provides a useful update history and you should *not* interfere with this—or waste time—by updating items that have not changed. The Valuation date is not necessarily the same as the date on which the item was changed. That date is shown on the screen.)

Completed Items

The next progressed item—**Drilling Establishment**—is now *"complete"*. Move to this item and *press* [PgDn] to drop to the **Is Complete?** field. *Hit* the [Spacebar] to toggle the choice to *Yes*, and [F2] to ***RECORD*** the item. Note that the **Quantity Todate** and **Quantity this Period** fields automatically "fill-in" with the **Final Quantity**. Press [F8] to move forward to the **Drill & Blast** item.

PROCALC field version—[Alt][C] or [F12]

Press [Enter] twice-or [↓]-to move to the **Quantity Todate** field and use [Alt][C] (or [F12]) to access the *field specific version* of ***PROCALC***. Press [↑] to open up a multi-line window and type in *at least the last line* of the following details:–

```
[Road X-Section dimensions are:
[ ____|<------- 39.5m ------>|
[      \                    /
[ 6.2m  \                  / Area=(39.5+33.3)/2x6.2
[ ____   \________________/
[         |<---- 33.3m ---->|
[-----------------------------------------------
[21 Dec 06 - Complete from Sta 863+31.225 to Sta 867+52.475
 (867 52.475 - 863 31.225) x (39.5 + 33.3)/2 x 6.2 [depth]
```

Text preceded with "**[**" is treated as a *comment*—until the end of the line or until "closed" with "**]**". (So, if you don't want to bother typing in *all* the detail, just enter the last line—the other lines are just documentation!) Illustrating the rationale behind the calculation in this way is quicker—and more professional—than hiding these details away in a notebook.

Press [F2] to ***RECORD*** the ***PROCALC*** screen and *tie* it to the *source field*. The calculated total—**95067.7**—is transferred back into the *quantity* field. As this is an artificially precise figure for an *interim* quantity, round it to **95070**. (This does *not* change the details saved in ***PROCALC***.) ***RECORD*** the item.

Progress the **Load Haul & Place** item and move on to the **Earth Excavation**. This item has progress and also a changed **Final Quantity**. Move to this field and enter **834500**. Enter the progress quantity and record the item. (Entering this *final quantity* ensures that ***PROVAL*** can correctly project the *final contract value*.)

Finish progressing the remainder of the contract items and then hit [F9] to ***SWITCH*** to **Browse** mode to check the figures you have entered.

Press Esc ape to return to the menus. Select **Print Reports** from the **Master menu** and print a **MEASURE INPUT** document with the ***NOTEPAD*** and ***PROCALC*** details included. (See ***Page*** *7* of ***Appendix B***). Check the new **MEASURE INPUT** document against the annotations on the old document to confirm that all *quantities* and *additions* have been *correctly* entered. There is no point in printing more reports until this is done! The worksheet is then put aside and used to record progress quantities for the *next* period. (Consequently, it is often called a "turnaround" document.)

Valuation Reports

Print a **VALUE TODATE** report and a **SUBCONTRACT LIABILITY TODATE** report. (See ***Page*** *9* and ***Page*** *11* of ***Appendix B*** in ***Part D).***

SUBCONTRACT LIABILITY reports should be the *only* basis on which ***Progress Payments*** are made to subcontractors. As these reports are synchronized with the calculation of valuations, it ensures that both current and projected liabilities to subcontractors are recognised as they occur. This discipline is vitally important as variations will occur on both the head contract and subcontracts. Frequently the prime contractor fails to properly account for these liabilities during the progress of the job-leading to over optimistic profit projections that are not corrected until the closing stages of the job.

More Progress

Second Valuation 24JAN07

Go to the next **MEASURE INPUT** document (***Page*** *7* of ***Appendix B***—*Valuation No* **2** to **24 January 2007**.) Further progress has been recorded. The entries are *quantities todate*. (You can record *period quantities* if you prefer—providing you are consistent.) Restart ***PROVAL*** if necessary. To prepare for the next Valuation you must *clear* all the previous period quantities.

Amending Progress Quantities

Before this is done it is important to ensure that the *old* period quantities are correct. What if an error has been discovered in this Valuation and needs to be corrected? As this is common in practice let's experiment with an example. Perhaps the **Earth Excavation** quantity should have been **347,100** cubic metres instead of **247,100**? How do you *correct* this error? If you enter a *period quantity* of **100000** cubic metres or a *quantity todate* of **347100** cubic metres, surely ***PROVAL*** will interpret it as **additional** progress on the item, and compute at least one of the quantities incorrectly (remember that one of the two quantities is always redundant—it must be *derived* from the other to maintain the integrity of the accumulation procedure.) Let's see what happens. Select **Progress Items** from the **Item menu** and press Enter when prompted for the new Valuation Date. ***This Is Most Important***! By using the

same date of `21DEC06` you are indicating that this is *not* a new Valuation—you are just editing the last period's data.

Move the cursor down to the **item code** field and hit [F6] for a picklist. Lets *force* ***PROVAL*** to search through the text in the list for a "best match" for something like "`Earth`". Hit [F5] and type "**erth**" into the **Search for** dialogue box. The `Earth Excavation` item will be highlighted. Press [Enter] to select it, and then amend the hours in the **Quantity Todate** field.

PROVAL will understand that this is a correction and not additional progress. You may change either of the quantities and the other will be adjusted appropriately when you exit from the field. The easiest way to examine this effect is with the ***DECREMENT*** and ***INCREMENT*** keys—[F7] and [F8]. They will subtract—or add—***one*** to the quantity in the current field and update the other. When you have finished with this experiment restore the quantity to its original value of `247100` and ***RECORD*** the item. Return to the menus.

Consolidation

Go to the **Master menu** and select **ConSolidation**. You will be asked if you wish to make *archive copies* of the data files. Reply [Y]es. (Having archive copies on the data directory allows you to restore the status of the job files at the last valuation.) When prompted, confirm that you wish to proceed with the consolidation by replying [Y]es. The period quantities are removed and ***PROVAL*** returns to the **Item menu.**

Select **Progress Items** from the **Item menu** to start Valuation No `2` for `January`. Amend the valuation date field to `24JAN07`.

Start progressing the items using the figures from ***Page*** *7* of ***Appendix B***.

Note that some pipe quantities show *one decimal place*—an indication that some detailed measurement has been completed—and a reflection of the order of accuracy claimed for the measurements. ***PROVAL*** accepts and retains the exact format of quantities entered by the user—including the computationally non-significant zero in `905.0`. Hence the format can match the contract document or suggest accuracy of measurement.

If you look at the "marked up" `MEASURE INPUT` document you will notice that some items are now shown as ***complete***—including the `900mm Pipe` item. Setting the item to *"Complete"* would normally set the **Quantity Todate** equal to the **Final Quantity**. However, in this instance ***PROVAL*** recognises that the **Quantity Todate** is *already greater* than the **Final Quantity**, so it increases the **Final Quantity** accordingly.

Once you have completed all entries, select **Print Reports** and print a `MEASURE INPUT` document. (See ***Page*** *12* of ***Appendix B***). Check it against the old document and then print the other reports.

A timesaving hint: [Alt][P] takes you straight to the **Print Reports** screen from any of the menus, This is quicker than selecting **Master Menu**, **Print Reports**.

Suppress Unstarted Items

When printing the **VALUATION TODATE**, elect to **Suppress unstarted items**. This—and the option to **Consolidate completed items**—can reduce the *size* and *complexity* of large documents and make it easier to focus on just those items requiring attention.

Now that you have completed the tutorial, read the ***Part C—Reference*** section for more detailed information on ***PROVAL***'s capabilities.

Valuation Budget

Project: KALLAMOOLOOLA CITY – M25 FREEWAY

Total Item Value: $13,600,000

Total Subcontract Value: $3,900,000

Item	Description	Quantity	Labour	Plant	Material	Sub	Markup	Total	Amount
Group 04 - STORM DRAINAGE									
Section 2000 - Pipelaying									
A40	Install 300mm Class III Pipe	2280 LM	2.50	6.00	11.40		1.30	21.20	48,336
A41	Install 600mm Class III Pipe	1745 LM	3.60	10.15	18.27		2.08	34.10	59,505
	Item Note: "Includes connection to Eastview Street drainage outfall"								
A42	Install 900mm Class III Pipe	610 LM	8.27	17.17	30.29		3.62	59.35	36,204
	Calc Sheet for Plant: (124.00[Excavator/Hr] + 82.00[Loader/Hr])/12.0[LM/Hour]								
Section 6000 - Concrete Structures									
10a	Concrete Catchbasins, Type A2	285.6 m3	16.40	6.90	122.40		9.47	155.17	44,317
	Calc Sheet for Quantity: 204 [Catchbasins] @ 1.40 [m3/ea]								
10b	Concrete Culverts, 30MPa	547.2 m3	9.15	4.10	122.40		8.81	144.46	79,049
Group 05 - EXCAVATION									
Section 1 - Rock Excavation									
A400	Drilling Establishment	1 LS	8000.00			3500.00	747.00	12247.00	12,247
A410	Drill & Blast	432000 m3				1.18	0.08	1.26	544,320
A420	Load, Haul & Place	432000 m3				4.59	0.30	4.89	2,112,480
Section 2 - Unclassified Excavation									
100	Earth Excavation	803000 m3				1.72	0.11	1.83	1,469,490
Group 12 - ROADWORKS									
Section A - Granular Road Bases									
1.1	Type B Granular Subbase	238000 m3	0.26	0.77	4.34		0.35	5.72	1,361,360
1.2	Type A Granular Base	134600 m3	0.41	1.33	7.60		0.60	9.94	1,337,924
	; Takeoff quantities for Type A Granular Base								
	162933.3 {m2} @ 150[mm]/1000 ; Access Ramps 150mm depth								
	12.6[Kms] x 1000 x 16.2[m Wide] @ 200[mm]/1000 ; Road 4								
	16.2[Kms] x 1000 x 21.4[m Wide] @ 200[mm]/1000 ; Road 10								
Section B - Road Pavements									
16.1	Concrete Pavement, 200mm	114000 m2	2.43	5.16	24.34		2.08	34.01	3,877,140
	Calc Sheet for Material Cost: (200[mm]/1000) @ 117[$/m3] * 104% [Wastage]								
16.4	Asphalt Pavement, Class 2	27000 Tn	1.68	2.67	67.60		4.68	76.63	2,069,010
Group OH - SITE OVERHEADS									
100	Setup Site Offices	100 %	126.55	200.40	1293.00		105.30	1725.25	172,525
102	Remove Site Offices	1 LS	7450.00	8502.00			1036.45	16988.45	16,988
420	Site Telecoms	92 Wk		104.00			6.71	110.71	10,185
500	Site Administrative Staff	90 Wk	2360.00	749.00	376.00		226.00	3711.00	333,990
TOTALS			706668	1174208	6997265	3877300	829628	13585069	13,585,069

Subcontractors

Subcontractor Code: RDB20
ACME DRILLING SERVICES PTY LTD
P.O. Box A7862
Cloisters Square
PERTH WA 6001
Contact: Harold Aikens Tel: (08) 9590 2511 Email: hakins@acmedrill.com.au

Item No	Item Description	Measure Unit	Contract Quantity	Unit Price	Total Amount
05-1-100	Magazine Setup on site	LS	1	3500.00	3,500
05-1-110	Rock Drilling & Blasting	m3	432,000	1.18	509,760
TOTAL SUBCONTRACT VALUE					513,260

Exclusions from the ACME Quotation.
General Contractor to supply:-
1. All magazine security
2. All site safety flagmen.

Subcontractor Code: EX000
FRENETIC BROS EXCAVATION LTD
2842 Great Eastern Highway
KALGOORLIE
WA 6430
Contact: George Frenetic Mobile: 0402 874 820 Email: gkf@frenbros.com

Item No	Item Description	Measure Unit	Contract Quantity	Unit Price	Total Amount
05-1-120	Rock Mucking	m3	432,000	4.59	1,982,880
05-2-100	Earth Excavation	m3	803,000	1.72	1,381,160
TOTAL SUBCONTRACT VALUE					3,364,040

JOB DATA REPORT at 27 Nov 06

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J O B D A T A # #

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY**

Department or Project Code: NR Department: Northern Regions Division

Job Number: **N06/12345** Total Item Value: $ **13600000.00**
Subcontracts Value: $ **3900000.00**

Round Extended Amounts to **Dollar**

Round Manhour Rates to **3** places Round Extended Manhours to **1** places

17 Items 2 Subcontracts

Job duration expected to be 90 weeks.
Site offices required for 92 weeks.

SUBCONTRACTOR LISTING report at 27 Nov 06

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S U B C O N T R A C T L I S T I N G # #

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Code	Subcontractor Name	Contact	Tel/FAX/Mob/Email	Quotation Ref	Changed
EX000	FRENETIC BROS EXCAVATION LTD 2842 Great Eastern Highway KALGOORLIE WA 6430	George Frenetic	M:0402 874 820 E:gkf@frenbros.com		27NOV06
RDB20	ACME DRILLING SERVICES PTY LTD P.O. Box A7862 Cloisters Square PERTH WA 6001	Harold Aikens	T:(08) 9590 2511 E:hakins@acmedrill.com.au		27NOV06

Exclusions from the ACME Quotation.
General Contractor to supply:-
1. All magazine security
2. All site safety flagmen.

2 Subcontracts

This report simply lists all the defined Subcontractors

Initial VALUE LISTING at 27 Nov 06 - Page 1 of 4

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VALUE LISTING

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: **04** **STORM DRAINAGE**

Item No	Item Description	Final Quantity	UNIT RATE/TOTAL Total	Labour	Plant	Material	Sub	Markup
	Section: 2000 **Pipelaying**							
A40	Install 300mm Class III Pipe	2280 LM	21.20/LM	2.50	6.00	11.40		1.30
			48336	5700	13680	25992		2964
A41	Install 600mm Class III Pipe	1745 LM	34.10/LM	3.60	10.15	18.27		2.08
			59505	6282	17712	31881		3630
	Includes connection to Eastview Street drainage outfall.							
A42	Install 900mm Class III Pipe	610 LM	59.35/LM	8.27	17.17	30.29		3.62
			36204	5045	10474	18477		2208
	Section: 2000 3 Items		144044	17027	41865	76350		8802
	Section: **6000** **Concrete Structures**							
10a	Concrete Catchbasins Type A2	285.6 m3	155.17/m3	16.40	6.90	122.40		9.47
			44317	4684	1971	34957		2705
	204 [Catchbasins] @ 1.40 [m3/ea] = 285.6							
10b	Concrete Culverts, 30MPa	547.2 m3	144.46/m3	9.15	4.10	122.40		8.81
			79049	5007	2244	66977		4821
	Section: 6000 2 Items		123365	9691	4214	101935		7525
	Group: 04 5 Items		267409	26717	46080	178285		16327

Initial VALUE LISTING - Page 2 of 4

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VALUE LISTING

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: 05 **EXCAVATION**

Item No	Item Description	Final Quantity	UNIT RATE/TOTAL Total	Labour	Plant	Material	Sub	Markup
	Section: 1 **Rock Excavation**							
A400	Drilling Establishment	1 LS	12247.00/LS	8000.00			3500.00	747.00
			12247	8000			3500	747
A410	Drill & Blast	432000 m3	1.26/m3				1.18	0.08
			544320				509760	34560
A420	Load Haul & Place	432000 m3	4.89/m3				4.59	0.30
			2112480				1982880	129600
	Section: 1 3 Items		2669047	8000			2496140	164907
	Section: 2 **Unclassified Excavation**							
100	Earth Excavation	803000 m3	1.83/m3				1.72	0.11
			1469490				1381160	88330
	Section: 2 1 Item		1469490				1381160	88330
	Group: 05 4 Items		4138537	8000			3877300	253237

The VALUE LISTING report is the fundamental budget breakdown

Initial VALUE LISTING - Page 3 of 4

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VALUE LISTING

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** **Sorted**

Group: **12 ROADWORKS**

Item No	Item Description	Quantity	Final Total	Labour	Plant	Material	Sub	Markup
	Section: **A Granular Road Bases**							
1.1	Type B Granular Subbase	238000 m3	5.72/m3	0.26	0.77	4.34		0.35
			1361360	61880	183260	1032920		83300
1.2	Type A Granular Base	134600 m3	9.94/m3	0.41	1.33	7.60		0.60
			1337924	55186	179018	1022960		80760
	; Takeoff quantities for Type A Granular Base							
	162933.3 {m2} @ 150[mm]/1000 ; Access Ramps 150mm depth = 24440.00							
	12.6[Kms] x 1000 x 16.2[m Wide] @ 200[mm]/1000 ; Road 4 = 40824.00							
	16.2[Kms] x 1000 x 21.4[m Wide] @ 200[mm]/1000 ; Road 10 = 69336.00							
	TOTAL = 134600.00							
	Section: A 2 Items		2699284	117066	362278	2055880		164060
	Section: **B Road Pavements**							
16.1	Concrete Pavement, 200mm	114000 m2	34.01/m2	2.43	5.16	24.34		2.08
			3877140	277020	588240	2774760		237120
16.4	Asphalt Pavement, Class 2	27000 Tn	76.63/Tn	1.68	2.67	67.60		4.68
			2069010	45360	72090	1825200		126360
	Section: B 2 Items		5946150	322380	660330	4599960		363480
	Group: 12 4 Items		8645434	439446	1022608	6655840		527540

Initial VALUE LISTING - Page 4 of 4

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VALUE LISTING

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** **Sorted**

Group: **OH OVERHEADS**

Item No	Item Description	Quantity	Final Total	Labour	Plant	Material	Sub	Markup
100	Setup Site Offices	100 %	1725.25/%	126.55	200.40	1293.00		105.30
			172525	12655	20040	129300		10530
102	Remove Site Offices	1 LS	16988.45/LS	7450.00	8502.00			1036.45
			16988	7450	8502			1036
420	Site Telecoms	92 Wk	110.71/Wk		104.00			6.71
			10185		9568			617
500	Site Administrative Staff	90 Wk	3711.00/Wk	2360.00	749.00	376.00		226.00
			333990	212400	67410	33840		20340
	4 Items		533689	232505	105520	163140		32524
	Group: OH 4 Items		533689	232505	105520	163140		32524
	JOB TOTALS - 17 Items		13585069	706668	1174208	6997265	3877300	829628

MEASURE INPUT Worksheet for Period Ending 21 Dec 06 - Page 1 of 4

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MEASURE INPUT

Job: KALLANOOLOOLA CITY - M25 FREEWAY — Updated on **_22DEC06__** by **___NJK_____**

Group: 04 STORM DRAINAGE

Item No	Item Description	Final Quantity	Quantity Todate <<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: **2000 Pipelaying**							
A40	Install 300mm Class III Pipe	2280 LM	_____ LM	0.00%	1	27NOV06		_____
A41	Install 600mm Class III Pipe	1745 LM	**___942____** LM	0.00%	2	27NOV06		**Manhole _K99-K46_**
	Includes connection to Eastview Street drainage outfall.							
A42	Install 900mm Class III Pipe	610 LM	**___420____** LM	0.00%	3	27NOV06		**_Manhole_K23-K27_**
	Section: **2000 3 Items**							
	Section: **6000 Concrete Structures**							
10a	Concrete Catchbasins Type A2	285.6 m3	_____ m3	0.00%	4	27NOV06		_____
	204 [Catchbasins] @ 1.40 [m3/ea] = 285.6							
10b	Concrete Culverts, 30MPa	547.2 m3	_____ m3	0.00%	5	27NOV06		_____
	Section: **6000 2 Items**							
	Group: **04 5 Items**							

MEASURE INPUT Worksheet - Page 2 of 4

Printed 1:55pm 27NOV06 — PROVAL - JOB VALUATION SYSTEM — Page 2

MEASURE INPUT

Job: **KALLANOOLOOLA CITY - M25 FREEWAY** — Sorted

Group: **05 EXCAVATION**

Item No	Item Description	Final Quantity	Quantity Todate <<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: **1 Rock Excavation**							
A400	Drilling Establishment	1 LS	**_____1___** LS	0.00%	6	27NOV06		**___Complete____**
A410	Drill & Blast	432000 m3	**_95,070___** m3	0.00%	7	27NOV06		_____
A420	Load Haul & Place	432000 m3	**_36,480___** m3	0.00%	8	27NOV06		_____
	Section: **1 3 Items**							
	Section: **2 Unclassified Excavation**							
100	Earth Excavation	803000 m3	**_247,100___** m3	0.00%	9	27NOV06		**_Final=834500_**
	Section: **2 1 Item**							
	Group: **05 4 Items**							

The MEASURE INPUT report is a worksheet used to collect progress data

MEASURE INPUT Worksheet - Page 3 of 4

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MEASURE INPUT

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — Sorted

Group: **12** **ROADWORKS**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: **A** **Granular Road Bases**								
1.1	Type B Granular Subbase	238000 m3		78,900 m3	0.00%	10	27NOV06		
1.2	Type A Granular Base	134600 m3		m3	0.00%	11	27NOV06		
	; Takeoff quantities for Type A Granular Base								
	162933.3 {m2} @ 150[mm]/1000 ; Access Ramps 150mm depth			= 24448.00					
	12.6[Kms] x 1000 x 16.2[m Wide] @ 200[mm]/1000 ; Road 4			= 40824.00					
	16.2[Kms] x 1000 x 21.4[m Wide] @ 200[mm]/1000 ; Road 10			= 69336.00					
				TOTAL = 134600.00					
	Section: **A** **2 Items**								
	Section: **B** **Road Pavements**								
16.1	Concrete Pavement, 200mm	114000 m2		m2	0.00%	12	27NOV06		
16.4	Asphalt Pavement, Class 2	27000 Tn		Tn	0.00%	13	27NOV06		
	Section: **B** **2 Items**								

Group: **12** **4 Items**

MEASURE INPUT Worksheet - Page 4 of 4

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MEASURE INPUT

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — Sorted

Group: **OH** **OVERHEADS**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
100	Setup Site Offices	100 %		95 %	0.00%	14	27NOV06		
102	Remove Site Offices	1 LS		LS	0.00%	15	27NOV06		
420	Site Telecoms	92 Wk		3.0 Wk	0.00%	16	27NOV06		
500	Site Administrative Staff	90 Wk		3.7 Wk	0.00%	17	27NOV06		
	4 Items								

Group: **OH** **4 Items**

JOB TOTALS - **17 Items**

SUBCONTRACTOR FINAL LIABILITY report at 27 Nov 06

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SUBCONTRACT FINAL LIABILITY

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Subcontract Order No: NR/N06/12345/0002/SUB

EX000 FRENETIC BROS EXCAVATION LTD
2842 Great Eastern Highway
KALGOORLIE
WA 6430

Mobile No: 0402 874 820
Email: gkf@frenbros.com

Gp-	Sec	-Item	Item Description	Unit Rate	Final Quantity	Final Value
05	1	A420	Load Haul & Place	4.59/m3	432000 m3	1982880
05	2	100	Earth Excavation	1.72/m3	803000 m3	1381160
SUBCONTRACT TOTAL						3364040

SUBCONTRACTOR FINAL LIABILITY report Page 2 of 2

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SUBCONTRACT FINAL LIABILITY

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Subcontract Order No: NR/N06/12345/0001/SUB

RDB20 ACME DRILLING SERVICES PTY LTD
P.O. Box A7862
Cloisters Square
PERTH WA 6001

Contact: Harold Aikens
Telephone No: (08) 9590 2511
Email: hakins@acmedrill.com.au

Gp-	Sec	-Item	Item Description	Unit Rate	Final Quantity	Final Value
05	1	A400	Drilling Establishment	3500.00/LS	1 LS	3500
05	1	A410	Drill & Blast	1.18/m3	432000 m3	509760
SUBCONTRACT TOTAL						513260

Exclusions from the ACME Quotation.
General Contractor to supply:-
1. All magazine security
2. All site safety flagmen.

The SUBCONTRACT FINAL LIABILITY report is a projection of total liability

MEASURE INPUT Worksheet for Period Ending 24 Jan 07 - Page 1 of 4

Printed 1:22pm 22DEC06 PROVAL - JOB VALUATION SYSTEM Page 1
Valuation to 21DEC06 *** MEASURE INPUT *** **Valuation No 1**
Job: KALLANOOLOOLA CITY - M25 FREEWAY Updated on **_25JAN07_** by **__NJK_____**

Group: 04 STORM DRAINAGE

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>		Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: 2000 Pipelaying									
A40	Install 300mm Class III Pipe	2280 LM		**___905.0___**	LM	0.00%	1	27NOV06		**Manhole_K73-K77__**
A41	Install 600mm Class III Pipe	1745 LM	942 LM	**___1721____**	LM	53.98%	2	22DEC06		**Manhole _K33-K64__**
	Includes connection to Eastview Street drainage outfall.									
A42	Install 900mm Class III Pipe	610 LM	420 LM	**___621.7___**	LM	68.85%	3	22DEC06		**____Complete____**
	Section: 2000 3 Items									
	Section: 6000 Concrete Structures									
10a	Concrete Catchbasins Type A2	285.6 m3		**___116.2___**	m3	0.00%	4	27NOV06		**__83 @ 1.40____**
	204 [Catchbasins] @ 1.40 [m3/ea] = 285.6									
10b	Concrete Culverts, 30MPa	547.2 m3		_____	m3	0.00%	5	27NOV06		_____
	Section: 6000 2 Items									
	Group: 04 5 Items									

MEASURE INPUT Worksheet Period Ending 24 Jan 07 - Page 2 of 4

Printed 1:22pm 22DEC06 PROVAL - JOB VALUATION SYSTEM Page 2
Valuation to 21DEC06 *** MEASURE INPUT *** **Valuation No 1**
Job: KALLANOOLOOLA CITY - M25 FREEWAY **Sorted**

Group: 05 EXCAVATION

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>		Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: 1 Rock Excavation									
A400	Drilling Establishment	1 LS	1 LS	_____	LS	100.00%	6	22DEC06	Yes	_____
A410	Drill & Blast	432000 m3	95070 m3	**_252,100__**	m3	22.01%	7	22DEC06		_____
	[Road X-Section dimensions are:									
	[____|<-------- 39.5m ---------->|								
	[\ /									
	[6.2m \ / Area=(39.5+33.3)/2x6.2									
	[____ _____/									
	[|<----- 33.3m ------>|								
	[----------									
	[21 Dec 06 - Complete from Sta 863+31.225 to Sta 867+52.475									
	(867 52.475 - 863 31.225) x (39.5 + 33.3)/2 x 6.2 [depth] = 95067.70									
A420	Load Haul & Place	432000 m3	36480 m3	**_139,800__**	m3	8.44%	8	22DEC06		_____
	Section: 1 3 Items									
	Section: 2 Unclassified Excavation									
100	Earth Excavation	834500 m3	247100 m3	**_680,400__**	m3	29.61%	9	22DEC06		_____
	Section: 2 1 Item									
	Group: 05 4 Items									

MEASURE INPUT Worksheet Period Ending 24 Jan 07 - Page 3 of 4

Printed 1:22pm 22DEC06 — PROVAL - JOB VALUATION SYSTEM — Page 3
Valuation to 21DEC06 — *** MEASURE INPUT *** — **Valuation No 1**
Job: KALLAMOOLOOLA CITY - M25 FREEWAY — **Sorted**

Group: **12** **ROADWORKS**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
	Section: **A** **Granular Road Bases**								
1.1	Type B Granular Subbase	238000 m3	78300 m3	**181,100** m3	32.90%	10	22DEC06		
1.2	Type A Granular Base	134600 m3		***13,670*** m3	0.00%	11	27NOV06		

; Takeoff quantities for Type A Granular Base
162933.3 {m2} @ 150[mm]/1000 ; Access Ramps 150mm depth = 24440.00
12.6[Kms] x 1000 x 16.2[m Wide] @ 200[mm]/1000 ; Road 4 = 40824.00
16.2[Kms] x 1000 x 21.4[m Wide] @ 200[mm]/1000 ; Road 10 = 69336.00
TOTAL = 134600.00

	Section: **A** **2 Items**								
16.1	Concrete Pavement, 200mm	114000 m2		m2	0.00%	12	27NOV06		
16.4	Asphalt Pavement, Class 2	27000 Tn		Tn	0.00%	13	27NOV06		
	Section: **B** **2 Items**								

Group: **12** **4 Items**

MEASURE INPUT Worksheet Period Ending 24 Jan 07 - Page 4 of 4

Printed 1:22pm 22DEC06 — PROVAL - JOB VALUATION SYSTEM — Page 4
Valuation to 21DEC06 — *** MEASURE INPUT *** — **Valuation No 1**
Job: KALLAMOOLOOLA CITY - M25 FREEWAY — **Sorted**

Group: **OH** **OVERHEADS**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp	Rec No	Last Update	Item Complete	REMARKS
100	Setup Site Offices	100 %	95 %	**100** %	95.00%	14	22DEC06		
102	Remove Site Offices	1 LS		LS	0.00%	15	27NOV06		
420	Site Telecoms	92 Wk	3 Wk	***7.2*** Wk	3.26%	16	22DEC06		
500	Site Administrative Staff	90 Wk	3.7 Wk	***7.9*** Wk	4.11%	17	22DEC06		

4 Items

Group: **OH** **4 Items**

JOB TOTALS - **17 Items**

VALUE TODATE to 21 Dec 06 - Page 1 of 4

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Valuation to 21DEC06 — ***** VALUE TODATE ***** — **Valuation No 1**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: 04 STORM DRAINAGE

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete	VALUE TODATE Labour	Plant	Material	Sub	Markup
	Section: 2000 Pipelaying										
A40	Install 300mm Class III Pipe	2280 LM	48336	LM		0.00%					
A41	Install 600mm Class III Pipe	1745 LM	59505	942 LM	32122	53.98%	3391	9561	17210		1959
	Includes connection to Eastview Street drainage outfall.										
A42	Install 900mm Class III Pipe	610 LM	36204	420 LM	24927	68.85%	3473	7211	12722		1520
	Section: 2000 3 Items		144044		57049	39.61%	6865	16773	29932		3480
	Section: 6000 Concrete Structures										
10a	Concrete Catchbasins Type A2	285.6 m3	44317	m3		0.00%					
	204 [Catchbasins] @ 1.40 [m3/ea] = 285.6										
10b	Concrete Culverts, 30MPa	547.2 m3	79049	m3		0.00%					
	Section: 6000 2 Items		123365			0.00%					
	Group: 04 5 Items		267409		57049	21.33%	6865	16773	29932		3480

VALUE TODATE to 21 Dec 06 - Page 2 of 4

Printed 3:46pm 22DEC06 — PROVAL - JOB VALUATION SYSTEM — Page 2
Valuation to 21DEC06 — ***** VALUE TODATE ***** — **Valuation No 1**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: 05 EXCAVATION

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete	VALUE TODATE Labour	Plant	Material	Sub	Markup
	Section: 1 Rock Excavation										
A400	Drilling Establishment	1 LS	12247	1 LS	12247	100.00%	8000			3500	747
A410	Drill & Blast	432000 m3	544320	95070 m3	119788	22.01%				112183	7606
	[Road X-Section dimensions are:										
	[____|<-------- 39.5m --------->|									
	[\ /										
	[6.2m \ / Area=(39.5+33.3)/2x6.2										
	[____ _____/										
	[|<----- 33.3m ------>|									
	[----------										
	[21 Dec 06 - Complete from Sta 863+31.225 to Sta 867+52.475										
	(867 52.475 - 863 31.225) x (39.5 + 33.3)/2 x 6.2 [depth] = 95067.70										
A420	Load Haul & Place	432000 m3	2112480	36480 m3	178387	8.44%				167443	10944
	Section: 1 3 Items		2669047		310422	11.63%	8000			283126	19297
	Section: 2 Unclassified Excavation										
100	Earth Excavation	834500 m3	1527135	247100 m3	452193	29.61%				425012	27181
	Section: 2 1 Item		1527135		452193	29.61%				425012	27181
	Group: 05 4 Items		4196182		762615	18.17%	8000			708138	46478

The VALUE TODATE report is the fundamental progess valuation statement

VALUE TODATE to 21 Dec 06 - Page 3 of 4

Printed 3:46pm 22DEC06 — PROVAL - JOB VALUATION SYSTEM — Page 3
Valuation to 21DEC06 — *** VALUE TODATE *** — **Valuation No 1**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: 12 ROADWORKS

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete	VALUE TODATE Labour	Plant	Material	Sub	Markup
	Section: A Granular Road Bases										
1.1	Type B Granular Subbase	238000 m3	1361360	78300 m3	447876	32.90%	20358	60291	339822		27405
1.2	Type A Granular Base	134600 m3	1337924			0.00%					
	; Takeoff quantities for Type A Granular Base										
	162933.3 {m2} @ 150[mm]/1000 ; Access Ramps 150mm depth				=	24440.00					
	12.6[Kms] x 1000 x 16.2[m Wide] @ 200[mm]/1000 ; Road 4				=	40824.00					
	16.2[Kms] x 1000 x 21.4[m Wide] @ 200[mm]/1000 ; Road 10				=	69336.00					
					TOTAL =	134600.00					
	Section: A 2 Items		2699284		447876	16.59%	20358	60291	339822		27405
	Section: B Road Pavements										
16.1	Concrete Pavement, 200mm	114000 m2	3877140	m2		0.00%					
16.4	Asphalt Pavement, Class 2	27000 Tn	2069010	m2		0.00%					
	Section: B 2 Items		5946150			0.00%					
	Group: 12 4 Items		8645434		447876	5.18%	20358	60291	339822		27405

VALUE TODATE to 21 Dec 06 - Page 4 of 4

Printed 3:46pm 22DEC06 — PROVAL - JOB VALUATION SYSTEM — Page 4
Valuation to 21DEC06 — *** VALUE TODATE *** — **Valuation No 1**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** — **Sorted**

Group: OH OVERHEADS

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete	VALUE TODATE Labour	Plant	Material	Sub	Markup
100	Setup Site Offices	100 %	172525	95 %	163899	95.00%	12022	19038	122835		10004
102	Remove Site Offices	1 LS	16988	LS		0.00%					
420	Site Telecoms	92 Wk	10185	3 Wk	332	3.26%		312			20
500	Site Administrative Staff	90 Wk	333990	3.7 Wk	13731	4.11%	8732	2771	1391		836
	4 Items		533689		177962	33.35%	20754	22121	124226		10860
	Group: OH 4 Items		533689		177962	33.35%	20754	22121	124226		10860
	JOB TOTALS - 17 Items		13642714		1445502	10.60%	55977	99185	493980	708138	88222

The VALUE TODATE also shows the projected final quantity and value

SUBCONTRACT LIABILITY to 21 Dec 06 – Page 1 of 2

Printed 3:47pm 22DEC06 PROVAL - JOB VALUATION SYSTEM Page 1
Valuation to 21DEC06 ### SUBCONTRACT LIABILITY TODATE ### Valuation No 1
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Subcontract Order No: NR/N06/12345/0002/SUB

EX000 FRENETIC BROS EXCAVATION LTD
2842 Great Eastern Highway
KALGOORLIE
WA 6430

Mobile No: 0402 874 820
Email: gkf@frenbros.com

Gp-	Sec	-Item	Item Description	Unit Rate	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete
05	1	A420	Load Haul & Place	4.59/m3	432000 m3	1982880	36480 m3	167443	8.44%
05	2	100	Earth Excavation	1.72/m3	834500 m3	1435340	247100 m3	425012	29.61%
SUBCONTRACT TOTAL						3418220		592455	17.33%

SUBCONTRACT LIABILITY to 21 Dec 06 –Page 2 of 2

Printed 3:47pm 22DEC06 PROVAL - JOB VALUATION SYSTEM Page 1
Valuation to 21DEC06 ### SUBCONTRACT LIABILITY TODATE ### Valuation No 1
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

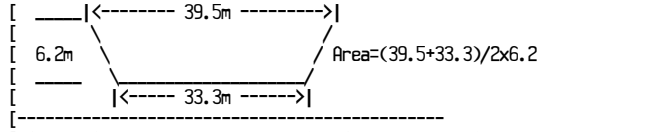
Subcontract Order No: NR/N06/12345/0001/SUB

RDB20 ACME DRILLING SERVICES PTY LTD
P.O. Box A7862
Cloisters Square
PERTH WA 6001

Contact: Harold Aikens
Telephone No: (08) 9590 2511
Email: hakins@acmedrill.com.au

Gp-	Sec	-Item	Item Description	Unit Rate	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete
05	1	A400	Drilling Establishment	3500.00/LS	1 LS	3500	1 LS	3500	100.00%
05	1	A410	Drill & Blast	1.18/m3	432000 m3	509760	95070 m3	112183	22.01%

[Road X-Section dimensions are:



[21 Dec 06 - Complete from Sta 863+31.225 to Sta 867+52.475
(867 52.475 - 863 31.225) x (39.5 + 33.3)/2 x 6.2 [depth] = 95067.70

SUBCONTRACT TOTAL						513260		115683	22.54%

Exclusions from the ACME Quotation.
General Contractor to supply:-
1. All magazine security
2. All site safety flagmen.

The SUBCONTRACT LIABILITY TODATE shows the gross liability to each subcontractor

MEASURE INPUT Summary Worksheet - Page 1 of 4

Printed 1:13pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 1

***** M E A S U R E I N P U T S U M M A R Y *****

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Updated on _____ by _____

Group: **04** **STORM DRAINAGE**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>		Percent Comp
	Section: **2000** **Pipelaying**					
A40	Install 300mm Class III Pipe	2280 LM	905 LM	_____	LM	39.69%
A41	Install 600mm Class III Pipe	1745 LM	1721 LM	_____	LM	98.62%
A42	Install 900mm Class III Pipe	621.7 LM	621.7 LM	_____	LM	100.00%
	Section: **2000** **3 Items**					
	Section: **6000** **Concrete Structures**					
10a	Concrete Catchbasins Type A2	285.6 m3	116.2 m3	_____	m3	40.69%
10b	Concrete Culverts, 30MPa	547.2 m3		_____	m3	0.00%
	Section: **6000** **2 Items**					
	Group: **04** **5 Items**					

This MEASURE INPUT SUMMARY is a more compact version of the detailed report

MEASURE INPUT Summary Worksheet - Page 2 of 4

Printed 1:13pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 2

***** M E A S U R E I N P U T S U M M A R Y *****

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **05** **EXCAVATION**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>		Percent Comp
	Section: **1** **Rock Excavation**					
A400	Drilling Establishment	1 LS	1 LS	_____	LS	100.00%
A410	Drill & Blast	432000 m3	252100 m3	_____	m3	58.36%
A420	Load Haul & Place	432000 m3	139800 m3	_____	m3	32.36%
	Section: **1** **3 Items**					
	Section: **2** **Unclassified Excavation**					
100	Earth Excavation	834500 m3	680400 m3	_____	m3	81.53%
	Section: **2** **1 Item**					
	Group: **05** **4 Items**					

MEASURE INPUT Summary Worksheet - Page 3 of 4

Printed 1:13pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 3

*** MEASURE INPUT SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 12 ROADWORKS

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp
	Section: A Granular Road Bases				
1.1	Type B Granular Subbase	238000 m3	181100 m3	_____ m3	76.09%
1.2	Type A Granular Base	134600 m3	23670 m3	_____ m3	17.59%
	Section: A 2 Items				
	Section: B Road Pavements				
16.1	Concrete Pavement, 200mm	114000 m2		_____ m2	0.00%
16.4	Asphalt Pavement, Class 2	27000 Tn		_____ Tn	0.00%
	Section: B 2 Items				
	Group: 12 4 Items				

MEASURE INPUT Summary Worksheet - Page 4 of 4

Printed 1:13pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 4

*** MEASURE INPUT SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **OH OVERHEADS**

Item No	Item Description	Final Quantity	Quantity Todate	<<< UPDATED >>>> <<< QUANTITY >>>	Percent Comp
100	Setup Site Offices	100 %	100 %	_____ %	100.00%
102	Remove Site Offices	1 LS		_____ LS	0.00%
420	Site Telecoms	92 Wk	7.2 Wk	_____ Wk	7.83%
500	Site Administrative Staff	90 Wk	7.9 Wk	_____ Wk	8.78%
	4 Items				
	Group: **OH** **4 Items**				
	JOB TOTALS - **17 Items**				

VALUE TODATE Summary - Page 1 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 1
Valuation to 24JAN07 * V A L U E T O D A T E S U M M A R Y *** Valuation No 2**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 04 STORM DRAINAGE

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete
	Section: 2000 Pipelaying					
A40	Install 300mm Class III Pipe	2280 LM	48336	905 LM	19186	39.69%
A41	Install 600mm Class III Pipe	1745 LM	59505	1721 LM	58686	98.62%
Section: 2000 - Subtotal for 1 Completed Item			36898		36898	100.00%
	Section: 2000 3 Items		144738		114770	79.29%
	Section: 6000 Concrete Structures					
10a	Concrete Catchbasins Type A2	285.6 m3	44317	116.2 m3	18031	40.69%
Section: 6000 - Subtotal for 1 Unstarted Item			79049			0.00%
	Section: 6000 2 Items		123365		18031	14.62%
Group: 04	5 Items		268103		132801	49.53%

VALUE TODATE Summary - Page 2 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 2
Valuation to 24JAN07 * V A L U E T O D A T E S U M M A R Y *** Valuation No 2**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 05 EXCAVATION

Item No	Item Description	Final Quantity	Final Value	Quantity Todate	Value Todate	Percent Complete
	Section: 1 Rock Excavation					
A410	Drill & Blast	432000 m3	544320	252100 m3	317646	58.36%
A420	Load Haul & Place	432000 m3	2112480	139800 m3	683622	32.36%
Section: 1 - Subtotal for 1 Completed Item			12247		12247	100.00%
	Section: 1 3 Items		2669047		1013515	37.97%
	Section: 2 Unclassified Excavation					
100	Earth Excavation	834500 m3	1527135	680400 m3	1245132	81.53%
	Section: 2 1 Item		1527135		1245132	81.53%
Group: 05	4 Items		4196182		2258647	53.83%

VALUE TODATE Summary - Page 3 of 4

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Printed 3:01pm 25JAN07          PROVAL - JOB VALUATION SYSTEM                    Page 3
Valuation to 24JAN07 ***  V A L U E   T O D A T E   S U M M A R Y  ***   Valuation No 2
Job: KALLAMOOLOOLA CITY - M25 FREEWAY                                        Sorted
================================================================================================
  Group:   12    ROADWORKS
 Item                                      Final        Final     Quantity      Value  Percent
  No   Item Description                  Quantity        Value      Todate    Todate  Complete
================================================================================================
     Section:      A    Granular Road Bases
  1.1  Type B Granular Subbase          238000 m3      1361360   181100 m3    1035892   76.09%
  1.2  Type A Granular Base             134600 m3      1337924    23670 m3     235280   17.59%
------------------------------------------------------------------------------------------------
     Section:      A    2 Items                        2699284                1271172   47.09%

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

     Section:      B    Road Pavements
Section:     B - Subtotal for 2 Unstarted Items       5946150                           0.00%
------------------------------------------------------------------------------------------------
     Section:      B    2 Items                        5946150                           0.00%

================================================================================================
  Group:   12     4 Items                            8645434                1271172   14.70%
================================================================================================
```

VALUE TODATE Summary - Page 4 of 4

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Printed 3:01pm 25JAN07          PROVAL - JOB VALUATION SYSTEM                    Page 4
Valuation to 24JAN07 ***  V A L U E   T O D A T E   S U M M A R Y  ***   Valuation No 2
Job: KALLAMOOLOOLA CITY - M25 FREEWAY                                        Sorted
================================================================================================
  Group:   OH    OVERHEADS
 Item                                      Final        Final     Quantity      Value  Percent
  No   Item Description                  Quantity        Value      Todate    Todate  Complete
================================================================================================
  100  Setup Site Offices                 100 %          172525      100 %     172525  100.00%
  420  Site Telecoms                       92 Wk           10185     7.2 Wk        797    7.83%
  500  Site Administrative Staff           90 Wk          333990     7.9 Wk      29317    8.78%
Section:       - Subtotal for 1 Unstarted Item            16988                           0.00%
------------------------------------------------------------------------------------------------
                      4 Items                           533689                 202639   37.97%

================================================================================================
  Group:   OH     4 Items                            533689                 202639   37.97%
================================================================================================


JOB TOTALS - 17 Items                               13643408                3865259   28.33%
================================================================================================
```

The SUMMARY reports are generally more compact

PERIOD VALUE Summary - Page 1 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 1
Valuation to 24JAN07 *** PERIOD VALUE SUMMARY *** **Valuation No 2**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **04** **STORM DRAINAGE**

Item No	Item Description	Period Value	PERIOD VALUE Labour	Plant	Material	Sub	Markup
Section: 2000 -	Subtotal for 1 Completed	11971	1668	3463	6109		730
Section: 2000	Pipelaying	57721	6735	16800	30659		3527
Section: 6000 -	Subtotal for 1 Unstarted Item						
Section: 6000	Concrete Structu	18031	1906	802	14223		1100
Group: 04	5 Items	75752	8641	17602	44882		4627

PERIOD VALUE Summary - Page 2 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 2
Valuation to 24JAN07 *** PERIOD VALUE SUMMARY *** **Valuation No 2**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **05** **EXCAVATION**

Item No	Item Description	Period Value	PERIOD VALUE Labour	Plant	Material	Sub	Markup
Section: 1 -	Subtotal for 1 Completed Item						
Section: 1	Rock Excavation	703093				659534	43558
Section: 2	Unclassified Exc	792939				745276	47663
Group: 05	4 Items	1496032				1404810	91221

PERIOD VALUE Summary - Page 3 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 3
Valuation to 24JAN07 *** PERIOD VALUE SUMMARY *** **Valuation No 2**
Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **12** **ROADWORKS**

Item No	Item Description	Period Value	PERIOD VALUE Labour	Plant	Material	Sub	Markup
Section: A	Granular Road Base	823296	36433	110637	626044		50182
Section: B -	Subtotal for 2 Unstarted Items						
Section: B	Road Pavements						
Group: 12	4 Items	823296	36433	110637	626044		50182

PERIOD VALUE Summary - Page 4 of 4

Printed 3:01pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 4

Valuation to 24JAN07 ***** P E R I O D V A L U E S U M M A R Y ***** **Valuation No 2**

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: **OH OVERHEADS**

Item No	Item Description	Period Value	PERIOD VALUE Labour	Plant	Material	Sub	Markup
Section:	- Subtotal for 1 Unstarted	24677	10545	4585	8044		1504
Group:	OH 4 Items	24677	10545	4585	8044		1504
JOB TOTALS - 17 Items		2419756	55618	132824	678970	1404810	147535

MANHOUR TODATE Summary - Page 1 of 4

Printed 3:08pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 1

*** MANHOURS TODATE SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 04 STORM DRAINAGE

Item No	Item Description	Final Quantity	Final MHs	Quantity Todate	MHs Todate	Percent Complete
	Section: 2000 Pipelaying					
A40	Install 300mm Class III Pipe	2280 LM	323.8	905 LM	128.5	39.69%
A41	Install 600mm Class III Pipe	1745 LM	317.6	1721 LM	313.2	98.62%
A42	Install 900mm Class III Pipe	621.7 LM	251.2	621.7 LM	251.2	100.00%
	Section: 2000 3 Items		892.5		692.9	77.63%
	Section: 6000 Concrete Structures					
10a	Concrete Catchbasins, Type A2	285.6 m3	194.2	116.2 m3	79.0	40.69%
10b	Concrete Culverts, 30MPa	547.2 m3	202.5			0.00%
	Section: 6000 2 Items		396.7		79.0	19.92%
	Group: 04 5 Items		1289.2		771.9	59.88%

MANHOUR TODATE Summary - Page 2 of 4

Printed 3:08pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 2

*** MANHOURS TODATE SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 05 EXCAVATION

Item No	Item Description	Final Quantity	Final MHs	Quantity Todate	MHs Todate	Percent Complete
	Section: 1 Rock Excavation					
A400	Drilling Establishment	1 LS	324.2	1 LS	324.2	100.00%
A410	Drill & Blast	432000 m3		252100 m3		58.36%
A420	Load, Hail & Place	432000 m3		139800 m3		32.36%
	Section: 1 3 Items		324.2		324.2	100.00%
	Section: 2 Unclassified Excavation					
100	Earth Excavation	834500 m3		680400 m3		81.53%
	Section: 2 1 Item					********
	Group: 05 4 Items		324.2		324.2	100.00%

Manhour Valuations can also be produced in PROVAL

MANHOUR TODATE Summary - Page 3 of 4

Printed 3:08pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 3

*** MANHOURS TODATE SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: 12 ROADWORKS

Item No	Item Description	Final Quantity	Final MHs	Quantity Todate	MHs Todate	Percent Complete
	Section: A Granular Bases					
1.1	Type B Granular Subbase	238000 m3	3808.0	181100 m3	2897.6	76.09%
1.2	Type A Granular Base	134600 m3	2961.2	23670 m3	520.7	17.59%
	Section: A 2 Items		6769.2		3418.3	50.50%
	Section: B Road Pavements					
16.1	Concrete Pavement, 200mm	114000 m3	12540.0			0.00%
16.4	Asphalt Pavement, Class 2	27000 Tn	1971.0			0.00%
	Section: B 2 Items		14511.0			0.00%
	Group: 12 4 Items		21280.2		3418.3	16.06%

MANHOUR TODATE Summary - Page 4 of 4

Printed 3:08pm 25JAN07 PROVAL - JOB VALUATION SYSTEM Page 4

*** MANHOURS TODATE SUMMARY ***

Job: **KALLAMOOLOOLA CITY - M25 FREEWAY** Sorted

Group: OH SITE OVERHEADS

Item No	Item Description	Final Quantity	Final MHs	Quantity Todate	MHs Todate	Percent Complete
100	Setup Site Offices	100 %	508.2	100 %	508.2	100.00%
102	Remove Site Offices	1 LS	295.7			0.00%
420	Site Telecoms	92 Wk		7.2 Wk		7.83%
500	Site Administrative Staff	90 Wk	9776.7	7.9 Wk	858.2	8.78%
	4 Items		10580.6		1366.4	12.91%
	Group: OH 4 Items		10580.6		1366.4	12.91%
	JOB TOTALS - 17 Items		33474.2		5880.8	17.57%