

LEARN ROADS

A Software for Pavement Design & Rate Analysis of Road Items

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LEARN RATE ANALYSIS OF ROAD ITEMS

[RATE ANALYSIS](#)

Note : To view Various Files & other Programs of ROADS software, you should install Macromedia Flash Player on your computer. This plug-in is available on Internet free of cost.

Program Limitations :

Labour productivity not only varies with the place, but also depends up on:

Application of Machinery to help labour.

Condition of Machinery.

Degree of training.

Availability of Labour.

Attitude of Unions regarding Productivity.

Attitude of management towards Labour.

Following of Local practice.

Daily Wage or Contract Labour.

Male or Female, Heavy Or Light Work & General Physique / Health of the Labour.

Considering the above variables the assumed labour productivity will be always approximate.






The machinery / Plant depreciated costs will have a major bearing on arriving unit cost for Equipments. Similarly inducting latest type of Plant or Equipment in the project will also affect rate analysis.

Material Coefficients are affected by on site quality & quantity control.

Overhead costs / Administrative Costs are affected by availability of trained Engineers in that area, Managerial competency & ability, including project planning, execution, labour & cost control.

The Rate Analysis performed using this software shall be judged by the contractor in light of above factors, before finalizing the Road Tender.

RATE ANALYSIS OF ROADS ITEMS

-  [Creation of File](#)
-  [Changing of Existing File](#)
-  [Perform Rate Analysis](#)
-  [Copy Existing File](#)
-  [Delete Existing File](#)

CREATION OF FILE

- When a user opens the ROADS software, following screen is displayed.

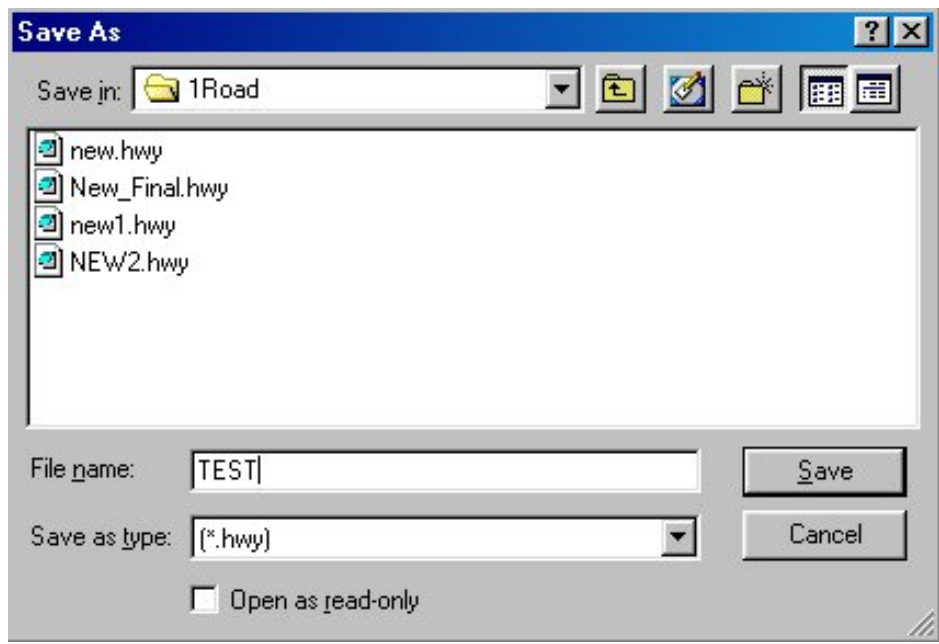


- When Rate Analysis option is clicked following menu appears.



● Create a new directory, in which you would like to save your rate analysis files. I have created a new directory (Folder) called as " 1Road ".

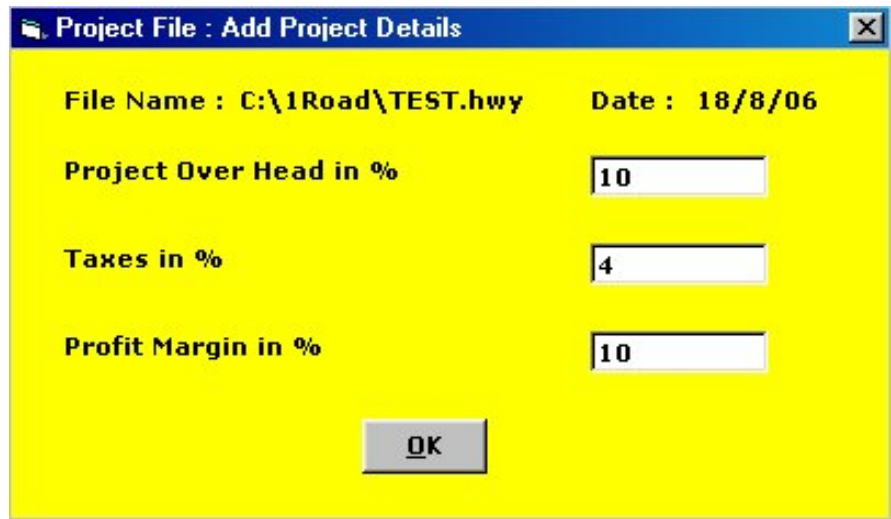
When you click the " Create New File " option, a new window will appear. Give a file name to your project & save in the desired directory. I have given the file name as " TEST " & have saved it in " 1Road " folder.



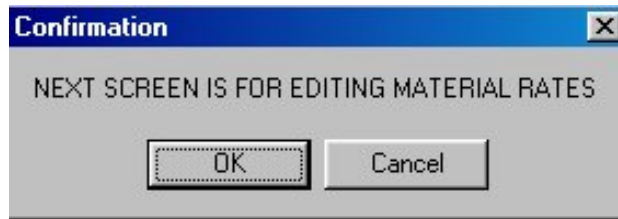
● When your file is saved, a new window will appear, asking for following details. A user can fill in the required parameters. If you do not want to Enter any one parameter, just leave it blank or enter 0.0.

Note : If you change your mind later, you can always go to " Change Existing File " option and fill these parameters. I have entered the following info.

- Project O. H. = 10 %.
 - Taxes = 4 %.
 - Profit Margin = 10 %.
- After completing entries, press " OK " button.



● Now a new screen will appear, declaring " Next Screen is for Material Rates ". If you press the " OK " button, next screen will appear. If you click the " Cancel " button, program will return to its original screen.



● All the materials used in the program are listed in the following window. A user can select & enter the material rate for the required item in the small window at the bottom of screen. Automatically the rate will appear above in the listing window. If you do not want to Enter any one Rate, just leave it blank.

Note : If you change your mind later, you can always go to " Change Existing File " option and fill these Rates. Once the rates are entered in this window, all the respective rate analysis items will have these rates. Moreover if you have forgotten to enter rate of any particular item, then that particular item rate will be shown as Blank in the rate analysis. Press " Update " & then " Exit " Button to proceed further.

DISPLAY/EDIT MATERIAL RATES

File Name : C:\1Road\TEST.hwy

Date : 18/8/06

Item_ID	Item Description	Unit	Rate
M001	Boulder 150 mm and below	M3	
M002	Stone 150-200 mm	M3	
M003	300 mm Boulder for Pitching	M3	
M004	Coarse sand at Mixing Plant	M3	
M005	Coarse sand at Site	M3	
M006	Fine sand at Site	M3	
M007	Moorum at Site	M3	
M008	Gravel/Quarry spall at Site	M3	
M009	Granular Material or hard murrum for GSB works at Site	M3	
M010	Granular Material or hard murrum for GSB works at Mixing Plant	M3	
M011	Fly ash conforming to IS: 3812 at Plant	M3	
M012	Filter media as per MoRT&H Specs	M3	
M013	Close graded Granular sub-base Material 53 to 9.5 mm	M3	
M014	Close graded Granular sub-base Material 37.5 to 9.5 mm	M3	
M015	Close graded Granular sub-base Material 26.5 to 9.5 mm	M3	
M016	Close graded Granular sub-base Material 9.5 to 4.75 mm	M3	
M017	Close graded Granular sub-base Material 9.5 to 2.36 mm	M3	
M018	Close graded Granular sub-base Material 4.75 to 2.36 mm	M3	
M019	Close graded Granular sub-base Material 4.75 mm to 75 micron	M3	
M020	Close graded Granular sub-base Material 2.36 mm	M3	
M021	Stone dust finer than 3 mm with >10 % passing 0.075 sieve	M3	
M022	Coarse graded Granular sub-base Material 2.36 mm & below	M3	
M023	Coarse graded Granular sub-base Material 4.75 mm to 75 micron	M3	
M024	Coarse graded Granular sub-base Material 4.75 mm to 2.36 mm	M3	
M025	Coarse graded Granular sub-base Material 9.5 to 4.75 mm	M3	
M026	Coarse graded Granular sub-base Material 26.5 to 4.75 mm	M3	

EXIT

UPDATE

PRINT

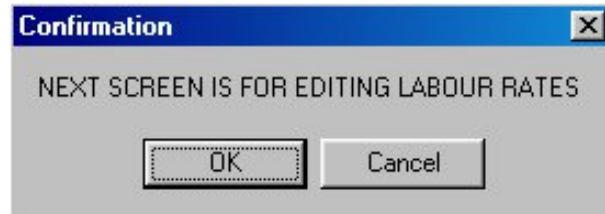
Edit Material Rates : Boulder 150 mm and below

Material Rate :

EXIT UPDATE PRINT
Edit Material Rates : Boulder 150 mm and below

Material Rate :

- Now a new screen will appear, declaring " Next Screen is for Labour Rates ". If you press the " OK " button, next screen will appear. If you click the " Cancel " button, program will return to its original screen.



- All the Categories of Labour used in the program are listed in the following window. A user can select & enter the labour rate for the required item in the small window at the bottom of screen. Automatically the rate will appear above in the listing window. If you do not want to Enter any one Rate, just leave it blank.

Note : If you change your mind later, you can always go to " Change Existing File " option and fill these Rates. Once the rates are entered in this window, all the respective rate analysis items will have these rates. Moreover if you have forgotten to enter rate of any particular Labour, then that particular Labour rate will be shown as Blank in the rate analysis. Press " Update " & then " Exit " Button to proceed further.

DISPLAY/EDIT LABOUR RATES

Item_ID	Item Description	Unit	Rate
L01	Blacksmith (IInd class)	Day	250
L02	Blacksmith (Ist class)/ Welder/ Plumber/ Electrician	Day	250
L03	Blaster (Stone cutter)	Day	180
L04	Carpenter I Class	Day	250
L05	Chiseller	Day	180
L06	Driller	Day	250
L07	Diver	Day	180
L08	Fitter	Day	250
L09	Mali/Gardener	Day	180
L10	Mason (IInd class)	Day	180
L11	Mason (Ist class)	Day	250
L12	Mate / Supervisor	Day	350
L13	Labour/Mazdoor	Day	180
L14	Labour/Mazdoor/Dresser (Semi Skilled)	Day	180
L15	Labour/Mazdoor/Dresser/Sinker (Skilled)	Day	180
L16	Medical Officer	Day	350
L17	Operator(grouting)	Day	250
L18	Painter I class	Day	250
L19	Para medical personnel	Day	350

EXIT

UPDATE

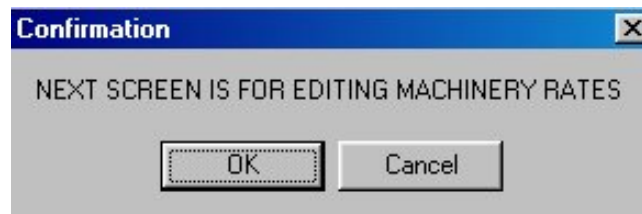
PRINT

Edit Labour Rates : Blacksmith (IInd class)

Labour Rate :

250

- Now a new screen will appear, declaring " Next Screen is for Machinery Rates ". If you press the " OK " button, next screen will appear. If you click the " Cancel " button, program will return to its original screen.



- All the Categories of Machinery used in the program are listed in the following window. A user can select & enter the Machinery / Equipment / Plant rate for the required item in the small window at the bottom of screen. Automatically the rate will appear above in the listing window. If you do not want to Enter any one Rate, just leave it blank.

Note : If you change your mind later, you can always go to " Change Existing File " option and fill these Rates. Once the rates are entered in this window, all the respective rate analysis items will have these rates. Moreover if you have forgotten to enter rate of any particular Equipment, then that particular Equipment rate will be shown as Blank in the rate analysis.

DISPLAY/EDIT MACHINERY RATES

File Name : C:\1Road\TEST.hwy

Item_ID	Item Description	Unit	Rate
PM001	Air Compressor	Hour	250
PM002	Batching and Mixing Plant 30 M3 cap	Hour	1500
PM003	Batching and Mixing Plant 15/20 M3 cap	Hour	1250
PM004	Bitumen Pressure Distributor	Hour	700
PM005	Bitumen Boiler oil fired	Hour	175
PM006	Concrete Paver Finisher + 40 HP Motor	Hour	2000
PM007	Concrete Pump of 45/30 M3 cap	Hour	200
PM008	Concrete Bucket 1.0 M3 cap	Hour	15
PM009	Concrete Mixer 0.4/0.28 M3 cap	Hour	175
PM010	Concrete Mixer 1.0 M3 cap	Hour	200
PM011	Crane 80 ton cap	Hour	900
PM012	Crane 35 ton cap	Hour	600
PM013	Crane 3 ton cap	Hour	300
PM014	Dozer D - 80 - A 12	Hour	2500
PM015	Dozer D - 50 - A 15	Hour	1500
PM016	Emulsion Pressure Distributor	Hour	550
PM017	Front End loader 1 M3 bucket cap	Hour	600
PM018	Generator 125 KVA	Hour	
PM019	Generator 63 KVA	Hour	
PM020	GSB Plant 50 M3 cap	Hour	700
PM021	Hotmix Plant/120 TPH cap	Hour	15200
PM022	Hotmix Plant/100 TPH cap	Hour	11200
PM023	Hotmix Plant/60-90 TPH cap	Hour	9000
PM024	Hotmix Plant/40 -60 TPH cap	Hour	7200
PM025	Hydraulic Chip Spreader	Hour	1800
PM026	Hydraulic Excavator of 1 M3 bucket cap	Hour	900

EXIT

UPDATE

PRINT

Edit Equipment Rates : Air Compressor

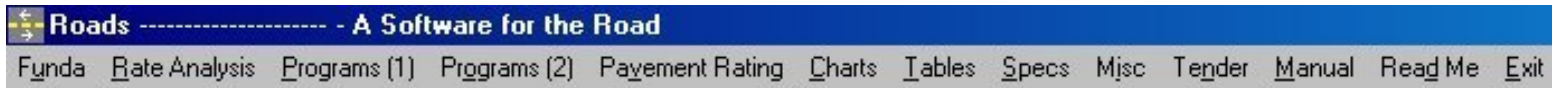
Machinery Rate :

- Press " Update " & then " Exit " Button to return to original screen, as File Creation is over.

RATE ANALYSIS OF ROADS ITEMS

CHANGING OF EXISTING FILE

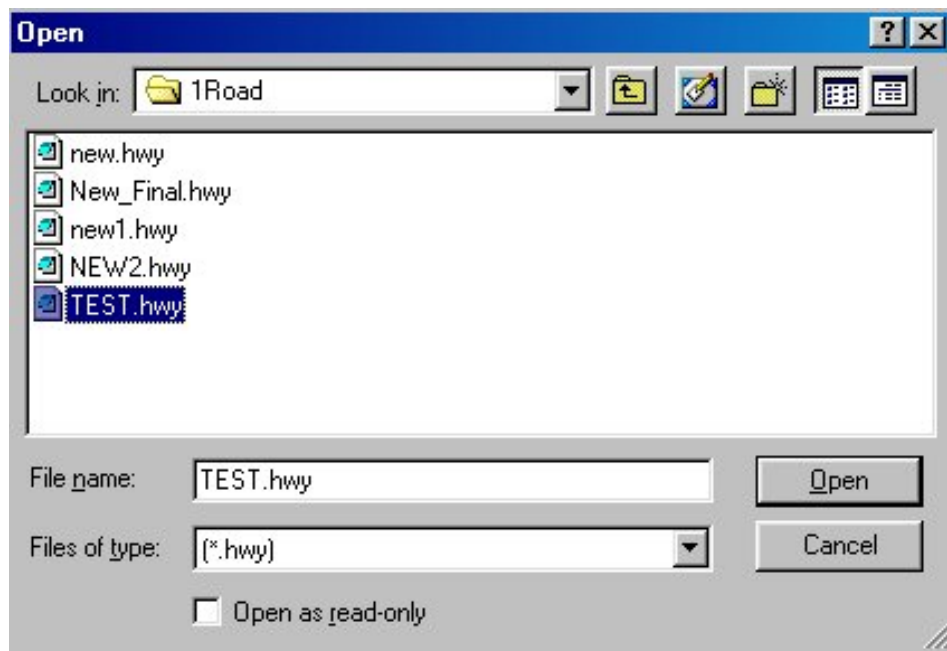
- When a user opens the ROADS software, following screen is displayed.



- When Rate Analysis option is clicked following menu appears.



- When you click the " Change Existing File " option, a new window will appear. Select the file name in the desired directory which you want to change. I have selected the file name as " TEST " which was earlier saved in " 1Road " folder.



● When your file is opened, a new window will appear, asking for Editing of project details.

From now on the procedure is same as explained in " Create New File " option.

RATE ANALYSIS OF ROADS ITEMS

PERFORM RATE ANALYSIS

- When a user opens the ROADS software, following screen is displayed.



- When Rate Analysis option is clicked following menu appears.



- When you click the " Perform Rate Analysis " option, a new window will appear. Select the file name in the desired directory which you want for Rate Analysis. I have selected the file name as " new.hwy " which was earlier saved in " 1Road " folder.



● When your file is opened, a new window will appear, displaying complete Rate Analysis Menu from Chapter 1 to 16.

Select the Chapter you want Perform Rate Analysis.

I have selected Chapter 5, " Bases & Surface Courses ". Double Click this option.

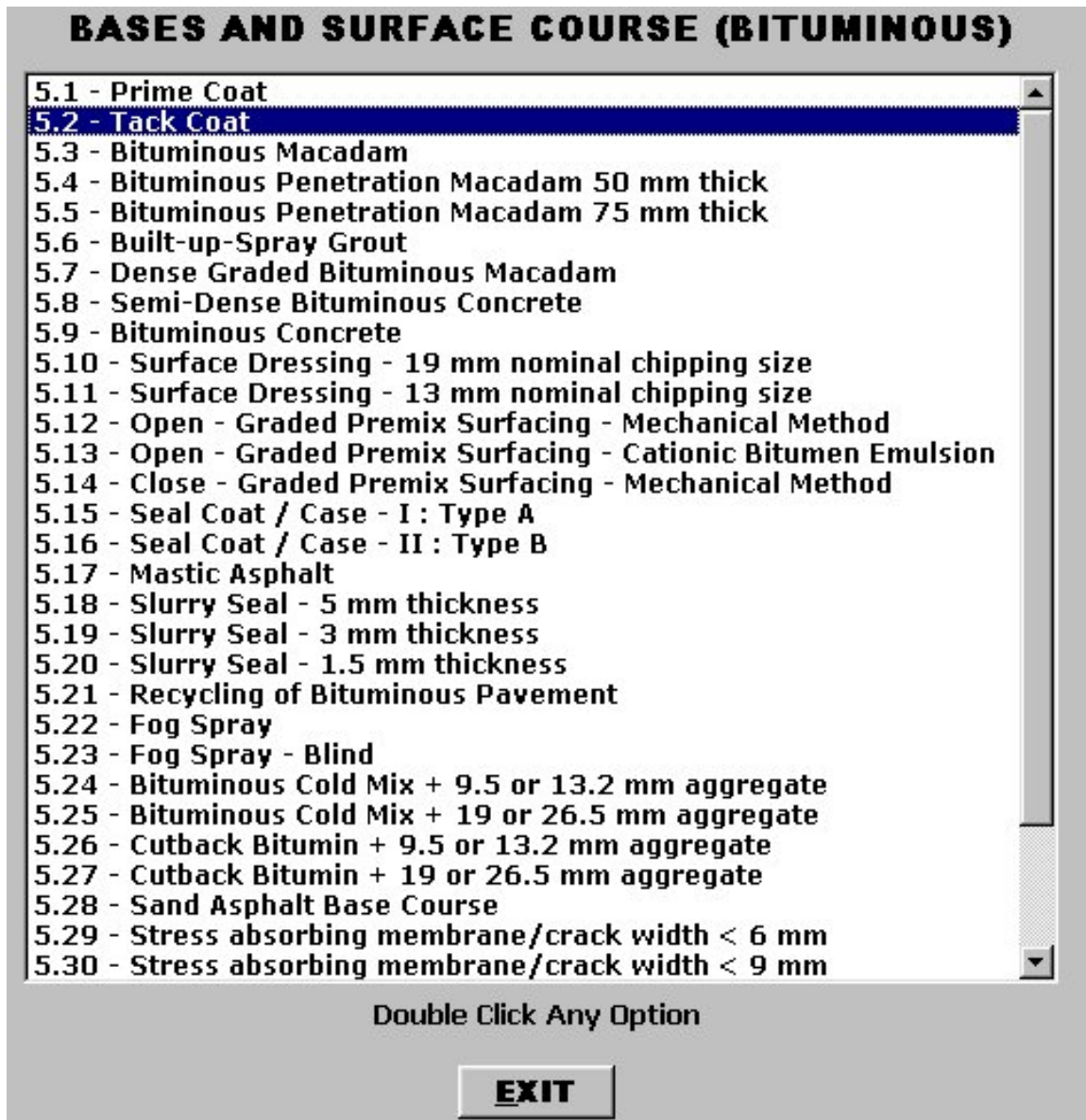
RATE ANALYSIS MENU

CHAPTER-1 CARRIAGE OF MATERIALS
CHAPTER-2 SITE CLEARANCE
CHAPTER-3 EARTH WORK, EROSION CONTROL AND DRAINAGE
CHAPTER-4 SUB-BASES, BASES (NON- BITUMINOUS) AND SHOULDERS
CHAPTER-5 BASES AND SURFACE COURSES (BITUMINOUS)
CHAPTER-6 CEMENT CONCRETE PAVEMENTS
CHAPTER-7 GEOSYNTHETICS AND REINFORCED EARTH
CHAPTER-8 TRAFFIC SIGNS, MARKINGS & OTHER ROAD APPURTENANCES
CHAPTER-9 PIPE CULVERTS
CHAPTER-10 MAINTENANCE OF ROADS
CHAPTER-11 HORTICULTURE
CHAPTER-12 FOUNDATIONS
CHAPTER-13 SUB-STRUCTURE
CHAPTER-14 SUPER-STRUCTURE
CHAPTER-15 RIVER TRAINING AND PROTECTION WORKS
CHAPTER-16 REPAIR AND REHABILITATION

Double Click Any Option

EXIT

● Following Menu is displayed, listing complete items under chapter 5.
Now double click on any option to display its Rate Analysis.
I have selected & double clicked on " Tack Coat " Item.



● Following Rate Analysis Screen is displayed. It gives Specs, Labour & Material default Coefficients & Rates. You can change any parameter if required.
Click " Rate " Button to get Rate Analysis of this item.

CHAPTER 5 - BASES AND SURFACE COURSES (BITUMINOUS)

5.2 - Tack Coat

Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg/M2 on the prepared bituminous / granular surface cleaned with mechanical broom.

File Name : <input type="text" value="new.hwy"/>	Date: <input type="text" value="August 18, 2006"/>
Project / Reference No. / Item Designation <input style="width: 100%;" type="text"/>	
DESCRIPTION	QUANTITY UNIT RATE AMOUNT
Labour: (Details Per <input type="text" value="3500.0"/> M2)	
Supervisor	<input type="text" value="0.08"/> Day <input type="text" value="350"/> <input type="text"/>
Labour	<input type="text" value="2.0"/> Day <input type="text" value="180"/> <input type="text"/>
Machinery:	
Mechanical broom @ 1250 M2/hr	<input type="text" value="2.80"/> Hour <input type="text" value="300"/> <input type="text"/>
Air compressor 250 cfm	<input type="text" value="2.80"/> Hour <input type="text" value="250"/> <input type="text"/>
Emulsion pressure distributor @ 1750 M2/hr	<input type="text" value="2.0"/> Hour <input type="text" value="700"/> <input type="text"/>
Material:	
Bitumen emulsion @ 0.2 kg/M2	<input type="text" value="0.70"/> Ton <input type="text" value="770"/> <input type="text"/>
Sub Total:	<input type="text"/>
Sundries & Contingencies	<input type="text" value="3"/> % <input type="text"/> <input type="text"/>
Electricity	<input type="text" value="1.5"/> % <input type="text"/> <input type="text"/>
Taxes (Contract / Sales etc.)	<input type="text" value="5"/> % <input type="text"/> <input type="text"/>
Over Head	<input type="text" value="10"/> % <input type="text"/> <input type="text"/>
Profit Margin	<input type="text" value="10"/> % <input type="text"/> <input type="text"/>
Cost Per 3500 M2 of Tack Coat	<input type="text"/>
<input type="button" value="Print"/>	Rate: Rs / M2 <input type="text"/> <input type="button" value="Clear"/>

● Edit Current Rates / Quantity (if required) for Labour, Material, Machinery, Taxes, Over Head, Profit etc. & Click Rate Button above.

● You can use " Print " button to print this sheet.

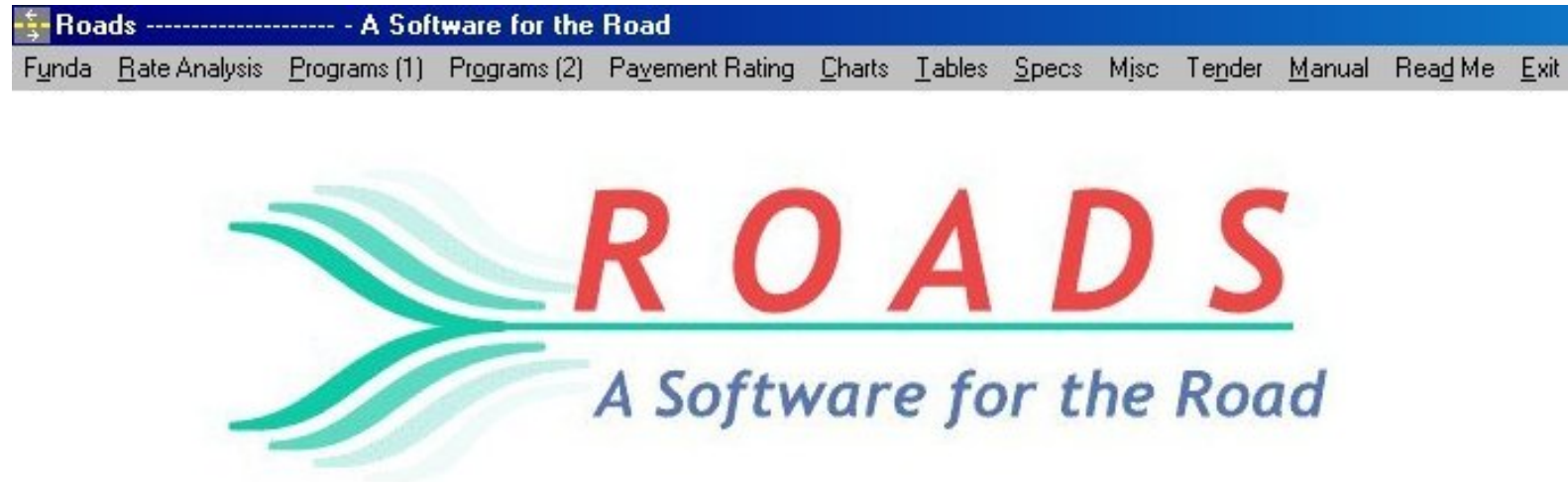
Alternately a user can select the complete page by right clicking of mouse, select all & then copy. Now go to an editor of your choice such as word, again right click & paste. Once you are in " WORD ", you can edit, save or print this page.

Click " Exit " button to leave this option.

RATE ANALYSIS OF ROADS ITEMS

COPYING OF EXISTING FILE

- When a user opens the ROADS software, following screen is displayed.



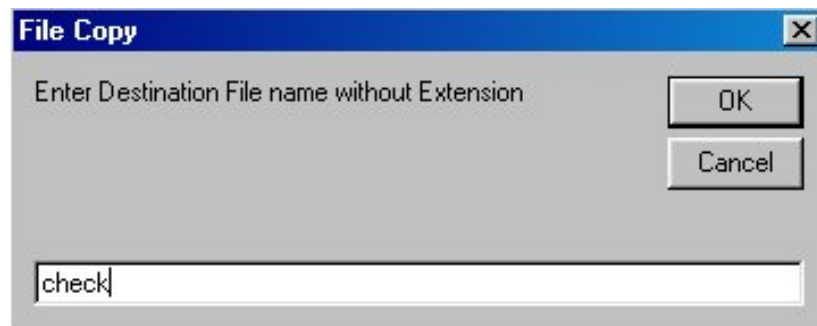
- When Rate Analysis option is clicked following menu appears.



- When you click the " Copy Existing File " option, a new window will appear. Select the file name in the desired directory which you want to copy. I have selected the file name as " new " which was earlier saved in " 1Road " folder.



● When your file is opened, a new window will appear, asking for " Destination File Name Without Extension " .



● I want to copy " new " file into file name " check ". Hence new file name is given as " check . Click " OK " button. Note that copying is taking place in default folder.



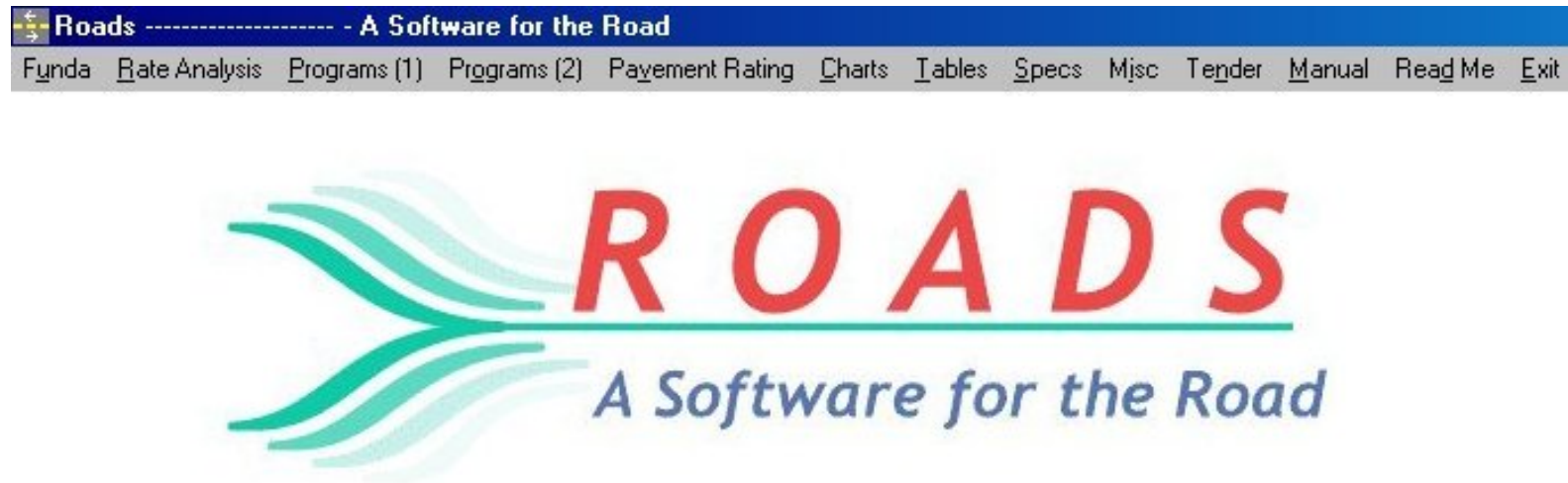
● A new message is displayed informing user that file copying is over.

Click " OK " button to exit this option.

RATE ANALYSIS OF ROADS ITEMS

DELETE EXISTING FILE

- When a user opens the ROADS software, following screen is displayed.



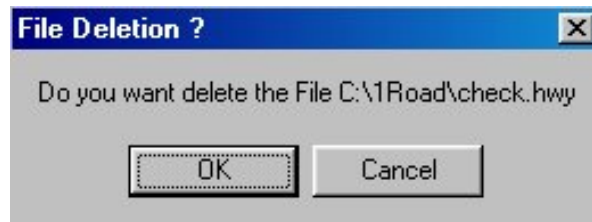
- When Rate Analysis option is clicked following menu appears.



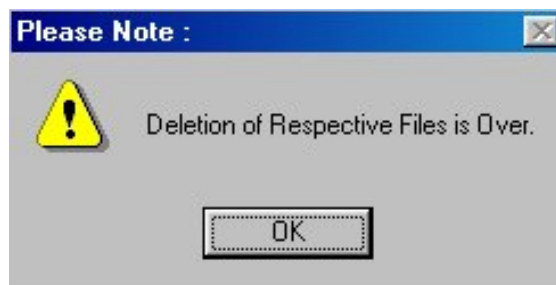
- When you click the "Delete Existing File" option, a new window will appear. Select the file name in the desired directory which you want to delete. I have selected the file name as "check" which was earlier saved in "1Road" folder.



- When your file is opened, a new window will appear, asking for " Confirmation " .



- If you are sure than you can click " OK " button else click " Cancel " to abort deletion.



- A new message is displayed informing user that file deletion is over, if you have clicked " OK " button in confirmation window.

Click " OK " button to exit this option.

OTHER SOFTWARES:

SUPER CIVIL CD - Single Point Solution To Your Civil Engineering Needs

SUPER RATE ANALYSIS - Rate Analysis Of 1299 Nos. Of Civil Engineering Items

2D FRAME ANALYSIS - Discover The Beauty Of Structural Analysis

R C F - A Software for Analysis, Design, Estimation & Costing of RCC Floors

S S F - Analysis, Design, Estimation & Costing of Steel Buildings, revised as per IS 800 : 2007

Q T Y - Quantity Estimation & Cost, Project Control

SUPER REAL VALUATION - A Software For Immovable Properties

ROAD ESTIMATE - Quantity Estimation & Cost, Project Control For Road

ELECTRIC COST - Costing, Project Control & MDS For Electrical Projects

HVAC COST - Costing, Project Control & Design For HVAC Engineers

BILLING JI - A Database Management Software For General Billing

RA BILL - A Database Management Software For Item Rate Contract Billing

BUILDERS BILL - A Database Management Software for Billing of Lump sum Contracts

BID ANALYSIS - A Software For Technical & Commercial Tender Analysis

RAFT FOUNDATION - Analysis, Design, Estimation, Costing & Drawing of RCC Raft Foundation

STEEL_2007 - Limit State design of Steel as per IS 800 : 2007

SITE CONTROL - A Management Software for Resource Control At Site.

DESIGN & DRAWING CONTROL - A DBM Software for Control of Design & Drawing Manhours.

COMPOSITE - A Software for Analysis, Design, Costing & Drawing of Composite Floor Buildings

INSTA COST - A Software for Estimating Project Cost & Tender SOQ Instantly

FLAT SLAB - A Software for Analysis, Design, Estimation, Costing & Drawings of Flat Slabs

FLAT RAFT - A Software for Analysis, Design, Estimation, Costing & Drawings of Rigid RCC Flat Rafts

OPTIMIZE BAR - A Software for Optimization of Reinforcements from Existing Bar Bending Schedule

OPTIMIZE STEEL - A Software for Optimization of Steel Sections from Existing Fabrication Drawing

AutoQty - A Software for Automatic Quantity & Cost Estimation from AutoCAD Drawings