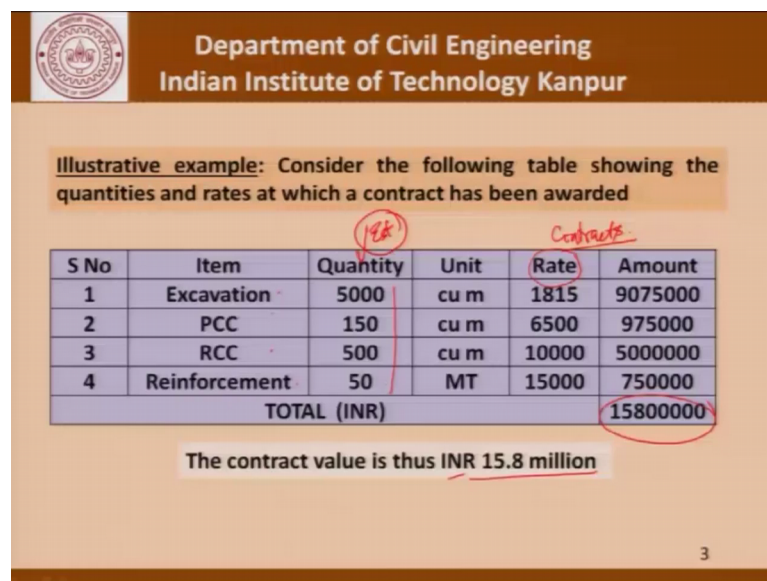


Principles of Construction Management
Prof. Sudhir Misra
Department of Civil Engineering
Indian Institute of Technology, Kanpur

Lecture - 10
Running account bills

[FL] and welcome once again to these lectures on Principles of Construction Management. And in this lecture we will talk about Running account bills.

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Illustrative example: Consider the following table showing the quantities and rates at which a contract has been awarded

S No	Item	Quantity	Unit	Rate	Amount
1	Excavation	5000	cu m	1815	9075000
2	PCC	150	cu m	6500	975000
3	RCC	500	cu m	10000	5000000
4	Reinforcement	50	MT	15000	750000
TOTAL (INR)					15800000

The contract value is thus INR 15.8 million

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So, in the last class in fact, we had talked about the fact that construction projects run for a long period of time there is reason to make sure that the contractor is paid for the project or parts of the project as they are completed. So, what we will do today is take an illustrative example and we will see how these partial payments are made and the fact that these partial payments are at the end of it just kind of advances which need to be settled at the time of the final bill. These partial payments are called running account bills and that is what is the title of our discussion today.

So, now let us consider the following table showing the quantities and rates at which a contract has been awarded. So, for example, there are only four items that we are considering here excavation, PCC, RCC and reinforcement. Being measured in cubic meters for excavation PCC and RCC and reinforcement is measure let us say in metric tons and the estimated quantities, now these are the estimated quantities. When the

project was conceived it was decided or it was worked out that these will be the approximate quantities for these particular items. Of course, the more rigorous the exercise in carrying out the estimates the more accurate these estimates will be and that is something which we have already done. However, as far as the rates are concerned these are not the estimates, but they are the actual contract rates that is these are the rates which have been quoted by the contractor at which or to whom the contract has been given.

So, if we take this quantity and rate multiplication and then try to add it up what we find is this number here. So, this is the actual contract value that is let us say if we are talk of Indian rupees we are talk of 15.8 million or 1.58 crores. So, that is the value or that is the amount at which this job has been awarded to the contractor which estimated that the quantities of these four items will be here.

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The following conditions are made in the contract

1. The total contract value will be paid as per four running bills for a project starting on 1st January, 2016.
2. Mobilization advance (MA) will be paid to the contractor @ 5% of the contract value. It is recoverable in 2 equal installments beginning with the second running account bill.
3. Steel is to be provided to the contractor by the client at a fixed rate of Rs. 7500/- per MT.
4. Payment of reinforcement work is to be made considering the reinforcement provided in drawings. However, up to 0.5% wastage is allowed at the time of final material reconciliation. In case the wastage exceeds this limit, penal recovery @ of Rs. 15000/- per MT is to be affected.

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Now, moving forward if the following conditions are made in the contract please remember that we are not talking of the contract we have not circulated a detailed contract, but we are trying to give you bits and pieces of information that are normally contained in a contract document. Let us say then the total contract value will be paid as four running bills of course, when we say 4 running bills we are talking of 2 running account bills and a final bill.

So, the payment is being made in 4 installments for the project starting let us say on first January of 2016 mobilization advance will be paid to the contractor at the rate of 5 percent of the contract value and it is recoverable in two equal installments beginning with the second RA bill. So, mobilization advance as we have talked earlier is the certain amount of money which is paid to the contractor to help him mobilize, to buy some initial equipment, to buy some initial materials and so on and get the project started. Now this of course, is not a grant it is an advance which is given and therefore, it is recoverable in two equal installments. In this case there is a provision that the mobilization advance will be let us say 5 percent of the contract value and it will be recovered in equal installments beginning with the second RA bill. In the first RA bill there is no recovery for mobilization advance because it can be argued that in the first RA bill the amount of work done will be not sufficient so as to be able to recover a mobilization advance.

Let us also assume that the steel is to be provided to the contractor by the client at a fixed rate of 7500 rupees per metric ton. So, this we have talked about saying that critical items such as steel or sometimes even cement they are supplied to the contractor by the client to ensure quality that is one part of it and also protect the contractor against fluctuations in the cost of these critical items. So, in this particular case let us assume that the steel is being provided to the contractor by the client at a fixed rate of 7500 per metric ton. I would emphasize once again that all these conditions have to be very clearly laid out in the contract document. So, when the contractor is bidding for a particular item the contractor really knows what are the conditions.

So, for example, in this case the steel is to be made available to him he should know that the steel will be available to him at 7500 and he does not have to bother about any fluctuations in the market price of steel. Payment of reinforcement work is to be made considering the reinforcement work provided in the drawings; however, up to 0.5 percent of wastage is allowed at the time of final material reconciliation, in case wastage exceeds this limit penal recovery at the rate of 15000 per metric ton is to be effected. Now this 0.5 percent of wastage being allowed is the percentage of what is it the amount of steel issue or is it the amount of steel actually consumed at site; obviously, it has to be the amount of steel which is actually consumed at site. Also it is very clearly stated in this condition that the payment will be made for reinforcement provided in the drawings

which means that if there are any laps, chairs and so on that will not be counted as separate payment.

On similar lines there can be a condition in the contract that the excavation will be paid for the amount which is really needed as per the drawings. So, in the example that we were doing in the last class and we have been discussing in this course as a matter of fact the boundary will we have talked of an excavation of this nature where we do the excavation do the PCC and then either we do the brickwork or we do RCC footing on this. We can say that we will pay excavation only for this geometry.

In certain cases it might become essential to do an excavation of this shape which means that this would be the additional amount of excavation that is done in order to be able to carry out this work safely, but in the contract it could be provided that the excavation will be paid only for the excavation that is required as per drawing. Unless the slope is given in the drawing and there is a provision in the contract to pay for this excavation this excavation shall not be paid or shall not be payable. These are the kind of fine points that one must remember one must read the document very carefully in order that you are able to execute a document.

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The following conditions are made in the contract

- 5. Performance guarantee is to be retained @ 10% of the work and will be paid only after 2 years after the completion of the project. (FT) period
- 6. Income Tax is to be deducted at source @ 10% of gross amount payable. Defect Liability
- 7. 5, 20, 15 and 5 MT of reinforcing steel has been issued to the contractor on 4 February, 2016, 4 March, 2016, 1 June, 2016 and 1 September, 2016 respectively. 45MT

5


Continuing with the conditions in the contract performance guarantees to be retained at the weight of 10 percent and will be paid only after two years of completion of work. So, there is a provision for a 10 percent recovery or as ten percent retention of money to be

paid after 2 years of completion of the work. So, this brings me to a very interesting point. For a construction project what should be the defect liability period. What we are talking about in this particular clause here is basically saying that. So, long as the project is within the defect liability period if there are some places observed where certain amount of repair is required which can be attributed to the bad workmanship or whatever it is during the construction work then the client can use these funds if the contractor does not do it on its own.

Now, what should be the defect liability period for a construction contract this I am leaving it to you as a food for thought and also ask you to please go through some examples of construction contracts and find out what is the defect liability period which is laid out in those contracts. Income tax is to be deducted at source at the rate of 10 percent of the gross amount payable. So, in several countries India especially income tax is deducted at source or at least a part of the income tax is deducted at source and finally, the contractor makes a claim for these income tax payments at the time of filing his income tax return at the end of the financial year. So, a certificate to this effect that a 10 percent reduction has been made and that amount deposited with the income tax department is issued to the contractor by the client and the contractor uses it at the time of his settlement of accounts for the financial year.

We also give you the condition that 5, 20 15, and 5 metric tons of reinforcing steel has been issued to the contractor on 4th February 2016, 4th March 2016, 1st June 2016 and 1st September of 2016 respectively. So, what we are giving in this information is that a total of 20 and 20, 40 and 5, 45. So, basically the information being given to you is 45 metric tons of steel is issued to the contractor at these dates. When it comes to a final reconciliation of materials this amount or these dates will also become important as we will see.

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The cumulative progress (in respective quantities of the work) is shown below

ITEM	31.3.16	30.6.16	30.9.16	31.12.16
Excavation (5000)	3000	4500	4800	5050
PCC (150)	15	120	135	151
RCC (500)	5	200	380	495
Reinforcement (50)	1	19	37	40

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Handwritten notes: "Closing project" with a red arrow pointing to the 31.12.16 column, and a red line under the Reinforcement (50) row.

So, coming to the progress of the work and the partial payments to be made the cumulative progress in respect of quantities of work is shown below. So, what this table shows is that on 31 3 16 which is 3 months after the commencement of the contract these are let us say the quantities of work that have been completed.

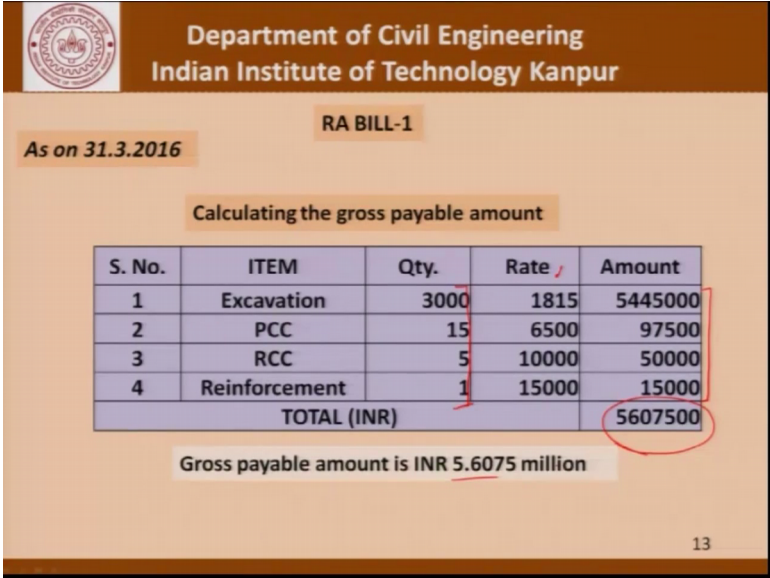
Now, for the sake of reference these numbers have also been included which are the estimated numbers now if these are the quantities of work that have been completed we can always find out the value of the work, but that is something which we will do later let us try to see what happens in the next 3 months. At the end of June that is 31st June of 2016 let us see the cumulative work. So, please remember that we are talking of cumulative work we are not talking of differential work we are not talking of the work done between 31st March and thirtieth June when we say 4500 we basically say that 3000 had been done earlier and 4500 has been done now.

So, if we really want to get involved with the differential amount of work which has been done then we can; obviously, subtract these items and get the numbers. Moving on this is the amount of work that has been done at the end of September and this is the amount of work that is done at the end of December and that is the closing of the project. So, at this point we are saying that the project is completed. So, if we compare these numbers what should these be compared with, they should be compared with the original estimates to

find out how accurate our estimates work. So, this is something which we will discuss in the subsequent slides as well, but just keep it at the back of your mind.

Now, how do you prepare the running account bills which is the partial payment to be made to the contractor on 31st March or 30th June or whatever it is.

(Refer Slide Time: 12:07)




The slide is titled "Department of Civil Engineering Indian Institute of Technology Kanpur" and "RA BILL-1". It is dated "As on 31.3.2016". The main heading is "Calculating the gross payable amount". Below this is a table with 5 columns: S. No., ITEM, Qty., Rate, and Amount. The table lists four items: Excavation (Qty. 3000, Rate 1815, Amount 5445000), PCC (Qty. 15, Rate 6500, Amount 97500), RCC (Qty. 5, Rate 10000, Amount 50000), and Reinforcement (Qty. 1, Rate 15000, Amount 15000). The total amount is 5607500. Below the table, it states "Gross payable amount is INR 5.6075 million". The slide number 13 is in the bottom right corner.

S. No.	ITEM	Qty.	Rate	Amount
1	Excavation	3000	1815	5445000
2	PCC	15	6500	97500
3	RCC	5	10000	50000
4	Reinforcement	1	15000	15000
TOTAL (INR)				5607500

Gross payable amount is INR 5.6075 million

So, as far as the RA bill number one that is the bill that is to be paid at the end of March is concerned we first calculate the gross amount payable. Now what is the gross amount payable? These were the quantities and I am leaving it to you to verify that these are the quantities which were there in the table, these are the rates at which we have agreed to pay and these become the amounts for each of these quantities. So, we come up with this number here which is the gross payable amount which is 5.6075 million Indian rupees or 56,07,500 rupees.

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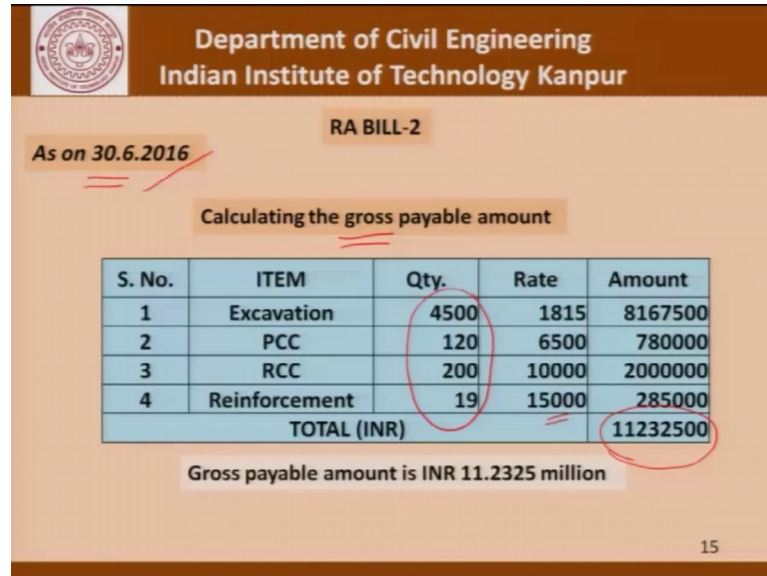
 Department of Civil Engineering Indian Institute of Technology Kanpur			
RA BILL-1			
As on 31.3.16	RA Bill No 1	Amount (INR)	Remarks
	Work Done	5607500	
	Gross payable	5607500	
Recoveries	Income Tax	560750	10% gross payable
	MA	0	No recovery in 1 st RA bill
	Steel	7500	Pay and recover only 1 MT of steel, though 25 MT is issued till date
	Perf. Guarantee	560750	10% of work
	Other	0	
	Total	(-) 1129000	
	Net payable	4478500	
	Paid in previous RA	0	
	Net payable in this RA	4478500	

Now, let us look at the detail of this RA bill. Work done is this much this is the number which we arrived at last time this is the gross payable that is fine. So, this is the gross amount of money which is payable. What should be the recoveries, what are the kind of deductions that have to be made. First of all let us talk of income tax which is as per our conditions ten percent of the gross amount payable which is this value here. Mobilization advance is not being recovered in the first RA bill and therefore, we have a 0 here is still only 7500 is being recovered because we are paying and recovering only for one metric ton of steel though 25 has been issued till date. So, if you go back to the information given to you, you will realize that as on 31 3 2016, 25 metric tons of steel has been issued to the contractor because he is doing some bar bending keeping some reinforcement (Refer Time: 13:50) and so on which is not yet completed.

So, what we are paying the contractor is 1 ton of reinforcement work and therefore, we are recovering only for that amount of work that is how we are recovering for one ton that is 7500 and we are talking for performance guarantee which is 10 percent of the work which in this case is the same as the income tax. There are no additional recoveries and therefore, there is a total recovery of this much which is the sum of these numbers here. What does this tell us is that the net payable at this stage is this amount minus this amount which turns out to be this. Have you made any previous payments to the contractor? No and therefore, the net payable amount as far as this RA bill is concerned

is here that is we are talking of a payment of what in Indian systems would be called as 44,78,500 which is 4.4785 million rupees.

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Department of Civil Engineering
Indian Institute of Technology Kanpur

RA BILL-2

As on 30.6.2016

Calculating the gross payable amount


S. No.	ITEM	Qty.	Rate	Amount
1	Excavation	4500	1815	8167500
2	PCC	120	6500	780000
3	RCC	200	10000	2000000
4	Reinforcement	19	15000	285000
TOTAL (INR)				11232500

Gross payable amount is INR 11.2325 million

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So, moving on to the second RA bill we are looking at the gross quantities which have been calculated on or up to 30th of June. So, if we do that again using the same rates as we used this is the gross amount of work which has been done. But when we are talking of the second RA bill or a bill subsequent to the first one we must remember that these quantities actually include the quantities for which some payment has already been made and that is something which should be reflected when we are working out the details. So, the gross amount payable is 11.2325 million rupees or 1,12,32,500 rupees that is the gross payable amount at the end of the second RA bill.

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 Department of Civil Engineering Indian Institute of Technology Kanpur			
RA BILL-2			
As on 30.6.16	RA Bill No 2	Amount (INR)	Remarks
	Work Done	11232500	
	Gross payable	11232500	
Recoveries	Income Tax	1123250	10% gross payable
	MA	395000	2.5% of CV
	Steel	142500	Pay and recover only 19 MT of steel, though 40 MT is issued till date
	Perf. Guarantee	1123250	10% of work
	Other	0	
	Total	(-) 2784000	
	Net payable	8448500	
	Paid upto previous RA	4478500	
	Net payable in this RA	3970000	

So, now when we working out the details the work done is this much the gross payable is. So, much the income tax is 10 percent again it is the same thing as the previous one.

Here we are recovering the mobilization advance to the tune of 2.5 percent of the contract value we are assuming of course, that the 5 percent which was possible for the contractor to has been taken and it is being recovered by the client in two installments in the second and the third RA bill. So, in this case we are making the first installment recovery which is 2.5 percent of the contract value.

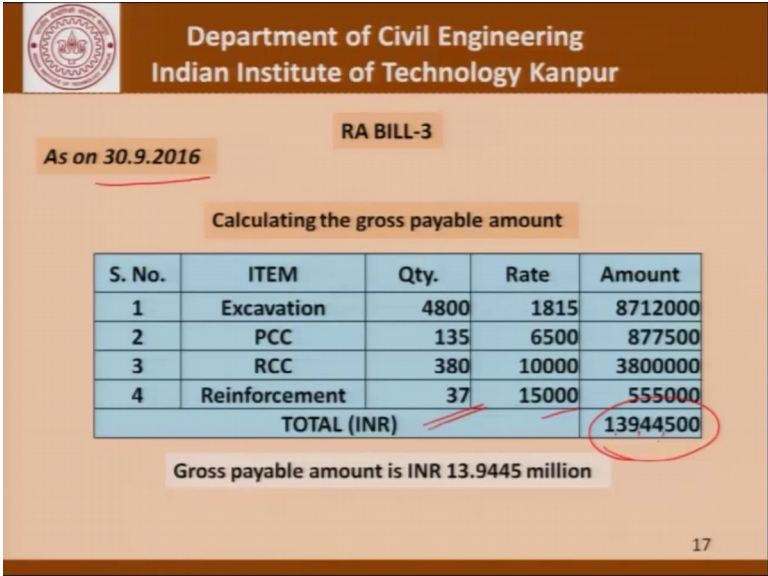
Again coming to steel here we are paying for nineteen metric tons we are recovering for nineteen metric tons even though 40 metric tons of steel has been issued to the contract until date again performance guarantee that it is the same as income tax it is just 10 percent of the work and therefore, the total recoveries are this much which is the sum of these numbers here. So, the net amount payable as far as the work is concerned is given here it is 84,48,500 out of which please remember that this amount has already been paid to the contractor in the previous bill. Therefore the net amount payable as far as this running bill is concerned or this running account bill is concerned is the difference of these two which is this number here. So, this is the principle of preparing a running account bill.

So, we try to find out what is the work done at a point in time then go forward what is the gross amount of work done that has been done till this point in time, find out the total

payable amount here and just deduct the amount here because at the end of it, it does not matter whether one quantity is one way or another, but we must make sure that the payments have been properly accounted for. Of course, when we are recovering the income tax when you are recovering 10 percent of the income tax here which is let us say 11,23,250 we must remember that we have already recovered a certain amount of income tax before.

So, when it comes to actually depositing the income tax in the income tax department or in the government we do not have to deposit this amount now, but the same principle that applied here will be applied to this and we need to deposit the difference of this amount and the amount which has already been deposited. So, that is something which is simple enough to understand and I hope you now know how the running bills have to be calculated. So, now, let us move forward and go to the third running bill which is for work done till 30th September.

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Department of Civil Engineering
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As on 30.9.2016

RA BILL-3

Calculating the gross payable amount

S. No.	ITEM	Qty.	Rate	Amount
1	Excavation	4800	1815	8712000
2	PCC	135	6500	877500
3	RCC	380	10000	3800000
4	Reinforcement	37	15000	555000
TOTAL (INR)				13944500


Gross payable amount is INR 13.9445 million

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Remember that we are working with the schedule that every 3 months there is a running bill which is being prepared. It depends on the contract there could be contracts where running bills are due every month there could be contracts where running days are being made at the end of 6 months.

This is the gross quantities of work this is the rates and we get to this gross amount payable which is 1,39,44,500 which is 13.9445 million rupees and we go through the same exercise as we have done earlier.


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 Department of Civil Engineering Indian Institute of Technology Kanpur			
RA BILL-3			
As on 30.9.16	RA Bill No 3	Amount (INR)	Remarks
	Work Done	13944500	
	Gross payable	13944500	
Recoveries	Income Tax	1394450	10% gross payable
	MA	395000	2.5% of CV
	Steel	277500	Pay and recover only 37 MT of steel, though 45 MT is issued till date
	Perf. Guarantee	1394450	10% of work
	Other	0	
	Total	(-) 3461400	
	Net payable	10483100	
	Paid upto previous RA	8448500	
	Net payable in this RA	2034600	

We try to find out the cross amount payable write the different recoveries again for steel we are basically recovering only the amount which is being paid for and we determine the money payable in the third running account bill.

Now as far as paid up to the previous running bill is concerned I am leaving it to you to find out where we get this number from. Obviously, this number is the sum of the amounts paid in the second and the first running account bills.

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Department of Civil Engineering
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Final bill

31.12.2016

Calculating the gross payable amount

S. No.	ITEM	Qty.	Rate	Amount
1	Excavation	5050	1815	9165750
2	PCC	151	6500	981500
3	RCC	495	10000	4950000
4	Reinforcement	40	15000	600000
TOTAL (INR)				15697250


Gross payable amount is INR 15.69725 million

1.58

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So, coming to the final bill here is what we have the final quantities and we get this value which is the value of the work completed. So, with these quantities the work has been finalized. So, if we look at these numbers we find that the gross amount payable is 15.69725 million which is 1,56,97,250 rupees which is a little bit a deviation from the original estimate which was 1.58 crores.

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Recoveries for reinforcement in the final bill

Quantity of steel issued to contractor till date: 45 MT
Quantity of steel used in the project : 40 MT

Therefore, the contractor should return 5 MT steel (at maximum) at the end.
However, there is a permissible wastage of 0.5% i.e. 0.2 MT

Accordingly, apart from recovering 0.2 MT @ 7500 per MT, penalty may have to be imposed on 4.8 MT @ 15000 per MT if the wastage is more than 0.2MT


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Now looking at the recoveries as far as this bill is concerned here is where we need to become careful and try to see total material reconciliation in its proper form. So, for we

had been paying for a certain amount of steel work done and recovering for that amount of steel regardless of the fact that a different amount of steel had been issued to the contractor.

So, in this case now what we see is that the quantity issued to the contractor is 45 metric tons, the quantity used in the project is 40 metric tons. So, now, with this we know that the contractor must return 5 metric tons of steel at the end of the project. However, there is a permissible wastage of 0.5 percent of the steel used which is 0.2 metric tons. Now if that happens then apart from recovering 0.2 metric tons at the rate of 7500 which is the normal rate at which steel is being recovered a penalty may have to be imposed for 4.8 metric tons at the penal rate of 1500 for the wastage that is in excess of 0.2 metric tons.

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 Department of Civil Engineering Indian Institute of Technology Kanpur			
	Final Bill	Amount (INR)	Remarks
	Work Done	15697250	
	Gross payable	15697250	
Recoveries	Income Tax	1569725	
	MA	0	
	Steel	301500	Pay and recover for 40.2 MT, (Issue is 45 MT) (40MT used and wastage allowed = 0.2 MT)
	Perf. Guarantee	1569725	
	Penalty (Steel recovery at penal rate)	72000	Assuming that the wastage is more than 0.5% of total steel (0.2MT) Therefore, penalty = $4.8 \times 15000 = 72000$
	Total	3512950	
	Net payable	12184300	* Assuming that no steel is returned
	Paid upto previous RA	10483100	
	Net payable in final bill	1701200	

Now, if that happens then we have a quantity added here which says that this is the amount of work done income tax mobilization advance, there is no mobilization advance left we have already recovered it in two installments in the second and the third bills the steel being recovered is for 40.2 metric tons issue is 45 tons and that is something which we will deal with later 40 metric tons used and paid as per drawings and allowed wastage of 0.2 metric tons as we have discussed a performance guarantee and a penal recovery for 4.8 metric tons of steel.


Now, this amount; obviously, does not have to be for all the 4.8 if the contractor has actually returned a certain amount of steel. So, for example, if the contractor returns to

metric tons of steel then the penal recovery will be only for 4.8 minus 2 which is 2.8 metric tons. One thing I would like to caution you is the fact that when the steel is being returned it cannot be just bits and pieces of steel bars and therefore, even though we did not write it in this example here. There will be a provision that whatever steel is being returned to the client and the contractor wants to claim it as a proper return then it should have a certain minimum length and it should be in good condition so that it can be used for some other work at a later date. If that does not happen what will be deemed is that some scrap is being returned and that scrap may have to be treated differently and we have not discussed that issue, so I just wanted to raise it and draw your attention to the fact that all this 4.8 is the extreme case of recovery in certain cases there may be certain amount of return and there may be a certain amount of scrap which is returned and so on which will have to be dealt with in an appropriate manner.

So, as far as the extreme case is concerned if you are recovering all the 4.8 metric tons of steel at the penal rate of 1500 then we are recovering 72000 for penal recovery of steel and we have this as the amount which is net payable to the contractor at the final settlement. Now this is the amount which is already being paid to the contractor this was the net amount which is payable and so on. So, when we make a final settlement for this project by paying 17,01,200 rupees to the contractor please remember that this performance guarantee what we are holding back is also actually to be paid back to the contractor at the end of the defect liability period and that is what we have already talked about.

So, with this let us now try to understand or look at some of the other issues that arise when we have gone through this example - comparison of estimated and actual quantities.

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Comparison of estimated and actual quantities

S. No.	ITEM	Estimated Qty.	Actual Qty.	Deviation in quantities(%)
1	Excavation	5000	5050	+
2	PCC	150	151	+
3	RCC	500	495	-
4	Reinforcement	50	40	-

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So, this table here lists the estimated quantities for the 4 items excavation, PCC, RCC and the reinforcement work. In cubic meters, cubic meters, cubic meters and metric ton and these are the actual items for which the payment has been made. We find that they are; obviously, not exactly the same there is it is very difficult to ensure that in a item rate contract where we are talking about quantities being actually measured at site the actual quantities to be exactly the same as estimated quantities.

So, I am leaving it to you to complete this table and find out what is the percentage deviations from the estimates. Obviously, what will happen is that here we are having a deviation in the plus site that is the actual quantity is a little more than the estimated quantity and the same is the case here in the case of reinforced concrete we are a little minus the difference has reason to a large extent as far as reinforcement work is concerned with an estimated quantity of 50 tons the actual quantity is only 40 tons and that is something which could be a matter that the engineers at the client side have to figure out or have to find out what went wrong as to why that estimate was so high. The reason for that would be that if an estimate of 50 tons is made the client would have made arrangements to procure all the 50 tons especially in a contract like this where the steel is to be supplied to the contractor by the client whereas, the actual quantity of steel used is 40 tons.

Now, what happens is that the client is possibly stuck with the excess supply of steel which has been procured and not used. So, that is something which can be taken an objection too. So, that is what is the reason why we must be very careful when we estimate our quantities. Of course, there is an obvious way of addressing this and see how the project is progressing. So, there is an estimate for 50 tons the clients need not procure all this steel in one go if you see from our own example only 45 metric tons was even issued to the contractor. So, if we have not bought all the 50 tons as a client then we are not doing to badly except that issues relating to the difference between these two quantities will still need to be resolved.

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CONCEPT OF FRONT LOADING

Consider the rates of another contractor B as given below

S No	Item	Qty	Unit	Rates		Amount (INR)	
				A	B	A	B
1	Excavation	5000	cu m	1815	2100	9075000	10500000
2	PCC	150	cu m	6500	6000	975000	900000
3	RCC	500	cu m	10000	7500	5000000	3750000
4	Reinforcement	50	MT	15000	13000	750000	650000
TOTAL						15800000	15800000

Note that the contract value of both the contractors is same


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So, now continuing with our discussion as far as preparation of running bills and so on is concerned let me also introduce to you the concept of front loading.

Now, what is front loading? Let us consider the rates of another contractor B as given below. So, this was our estimated quantities and that is what we have been talking about. This is the guy to whom we gave the contract at these rates suppose there was another bid by a contractor B where the difference was that in excavation the rate was quoted to be higher and; obviously, what has been done as an illustrative example in order to keep these two numbers the same these rates have been reduced a little bit. So, what we find is that even though the value of the contract as proposed in the two cases is the same the


differences in the rates of excavation and others. Now what is the implication of this as far as running bills is concerned or as far as the cash flow is concerned?

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 Department of Civil Engineering Indian Institute of Technology Kanpur				
RA BILL-1 for B				
As on 31.3.2016				
Calculating the gross payable amount				
S. No.	ITEM	Qty.	Rate	Amount
1	Excavation	3000	2100	6300000
2	PCC	15	6000	90000
3	RCC	5	7500	37500
4	Reinforcement	1	13000	13000
TOTAL (INR)				6440500

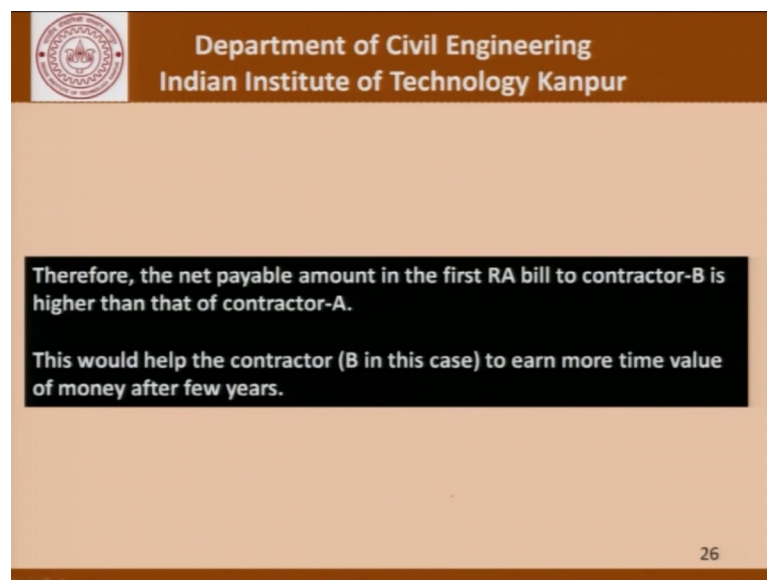
If we look at the first running account bill in the case of B where we are working with 2100 and 600 and so on and so forth we find that the gross amount payable is 6440500 and if we go through this analysis which is the details of the running account bill, we find that the net amount payable is 51, 44,900.

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 Department of Civil Engineering Indian Institute of Technology Kanpur			
RA BILL-1 for B			
As on 31.3.16	RA Bill No 1	Amount (INR)	Remarks
	Work Done	6440500	
	Gross payable	6440500	
Recoveries	Income Tax	644050	10% gross payable
	MA	0	
	Steel	7500	Pay and recover only 1 MT of steel, though 25 MT is issued till date
	Perf. Guarantee	644050	10% of work
	Other	0	
	Total	(-)1295600	
	Net payable	5144900	
	Paid in previous RA	0	
	Net payable in this RA	5144900	

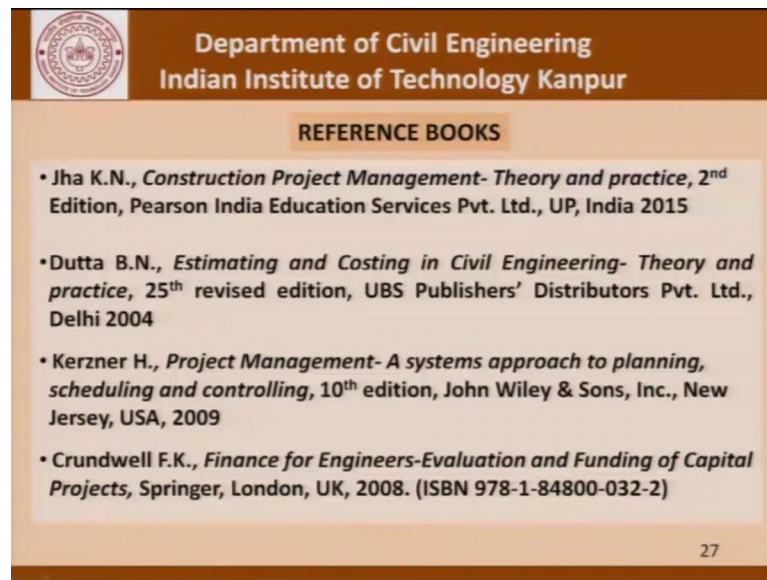
I am leaving it to you to actually compare this amount with the amount that was paid in the earlier case; obviously, this amount will turn out to be higher. Now what this shows is that by increasing the cost of excavation slightly the contractor has ensured that more additional money comes to the contractor early in the project even though the total amount of money that will be received by the contractor at the end of the project is the same. Now what is the difference in the two cases and that is something which we will talk about in possibly the next classes where we are talking of the time value of money. If we have a certain amount of money today we are able to invest it earn some interest on it and it grows into a certain other amount of money over a period of time.

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So, therefore, the net payable amount in the first RA bill to the contractor B is higher than that to contractor A and this would help the contractor B in this case to earn more time value of money after a few years.

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So, with this we come to an end of our discussion today where we have gone through preparing running account bills for a project over a period of 1 year 3 running bills and 1 final bill and I hope you have a better understanding of how partial payments can be made and how they have to be adjusted when making subsequent payments.

With these reference books you will probably have a better idea you can see some more examples and related concepts. I look forward to seeing you again in the next class.

Thank you.