|| Jai Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY, Chickballapur

Department of Civil Engineering

CO-PO and CO-PSO Mapping

Name of the staff: Dr. Sidde Gowda & Chetan G N

Subject: Quantity Surveying and Contracts Management **Sub code:** 18CV71 **Semester: VII**

Course Objectives: This course will enable students to:

1. Estimate the quantities of work and, develop the bill of quantities and arrive at the Cost of Building and other civil engineering works
2. To find quantity of earth in embankment and cutting required for formation in road works
3. Understand detail specifications and to analyse rates for various items of work
4. Understand and apply the concept of Valuation for Properties
5. Understand, Apply and Create the Tender and Contract document.

Course Outcomes: After a successful completion of the course, the student will be able to:

CO1	Prepare detailed and abstract estimate for buildings and other civil engineering works.
CO2	Estimate the quantities of earth in embankment and cutting for formation in road works
CO3	To explain specifications and to analyze the rates per standard units for various items of building works
CO4	Prepare valuation report for buildings.
CO5	Interpret Contract documents of domestic and international construction works

Programme Specific Outcomes (PSO's)

After Successful completion of B.E programme in Civil Engineering, the students will be able to:

PSO1: Apply Civil Engineering knowledge in analysis, design, laboratory investigations and construction aspects.

PSO2: Solve problems in various fields of Civil Engineering with appropriate construction materials and technology.

	CO-PO Mapping												CO-PSO Mapping	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	-	-	-	-	-	2	-	-	-	1	2	2
CO2	2	2	-	-	-	-	-	2	-	-	-	1	2	2
CO3	1	2	-	1	-	-	-	2	-	-	-	1	2	2
CO4	1	2	-	1	-	-	-	2	-	1	2	1	2	1
CO5	1	-	-	1	-	-	-	2	-	1	2	1	2	1
Avg.	1.4	2	-	1	-	-	-	2	-	1	2	1	2	1.6
1: Slightly 2: Moderately 3: Substantially														

Justification:

CO1- Apply the basic knowledge of mathematics and science for prepare detailed estimation of buildings by using the Schedule rate book for rates of each item .

CO2-Apply the knowledge of mathematics and science to estimate the quantities of earth embankment and also deals with problems associated in earth embankment calculations as per IS Code specification

CO3 - Apply the simple concepts of Mathematics and also deals the very complex problems in rate analysis of various building items through the help of IS Code Specification.

CO4 -Use the Very simple concepts of mathematics and Identify valuation reports of various buildings to Design the solution for valuation related issues as per the code specification for long life usage and documents the same

CO5 – Apply the fundamental concepts in engineering specialization to interpret the documents related international construction works along with ethical principal.

Name & Signature of Committee

1. Dr. Sidde gowda
2. Arun Kumar C J
3. Chetan G N

Signature of HOD

SJCIT/NBA/ COURSE/ 2019-20	S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Civil Engineering

Course Information

Programme Name:	Civil Engineering						
Academic Year:	2019-20	Semester:	8	Section:	A & B	Subject Type:	
Course Title:	QUANTITY SURVEY AND CONSTRUCTION MANGEMENT						
Course Instructor Name:	CHETAN G N /Dr.G Siddegowda					Class Strength:	
Subject Code:	17CV81	Course No:	1	Course ID:	C411	98	

Scheme of Teaching & Marks

Contact Hr/Week:	4	Lecture Hours (Hr.):	3	Tutorials (Hr.):	1
Max.CIE Marks:	40	Max. SEE Marks:	60	Total Max.Marks:	100
Min.CIE Marks:	19	Min.SEE Marks:	21	Total Min.Marks:	40
Final CIE (IA) Marks:	40	Assignment Marks:	10	Test Marks:	30

Threshold Values for Attainment Calculation							Final CO Attainment (Percentage Contribution, %)			
Attainment level	3	%	2	%	1	%	CIE	40	SEE	50
Internal Assessment	>=	70	>=	60	>=	50				
SE Examination	>=	60	>=	50	>=	40	-		CES	10

Statements of Course Outcomes		No.of CO's	5	Target(%)
C411.1	Prepare detailed and abstract estimate for buildings and other civil engineering works			60
C411.2	Estimate the quantities of earth in embankment and cutting for formation in road works			60
C411.3	To explain specifications and to analyse the rates per standard units for various items of building works			60
C411.4	Prepare Valuation report for Buildings.			60
C411.5	Interpet Contract document's of domestic and internatinol constrction works			60

Semester End Exam. (SEE) Target(%)	75	Course End Survey(CES) Target (%):	75

CO-PO Mapping Table (In the scale of 3)

CO/PO	1	2	3	4	5	6	7	8	9	10	11	12
C411.1	2	2						2				1
C411.2	2	2						2				1
C411.3	1	2		1				2				1
C411.4	1	2		1				2		1	2	1
C411.5	1			1				2		1	2	1
Total	7	8		3				10		2	4	5

CO-PSO Mapping Table

CO/PSO	1	2	3	4
C411.1	2	2		
C411.2	2	2		
C411.3	2	2		
C411.4	2	1		
C411.5	2	1		
Total	10	8		

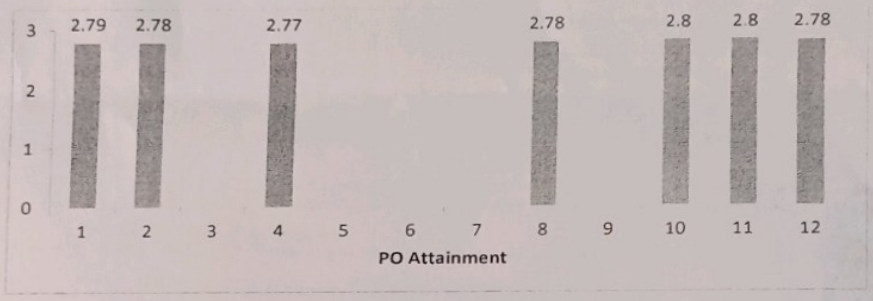
SJCIT/NBA/ CO-PO-PSO REPT/ 2020-2021	S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Civil Engineering						
Course Title	QUANTITY SURVEY AND CONSTRUCTION MANGEMENT					Course Code	C410
Subject Code	17CV81	Semester	8	Section	A & B	Emp.ID	940
Faculty Name	CHETAN G N /Dr.G Siddegowda					No.students	98

Summary of CO attainments of Sub: 17CV81 Based on (AVERAGE-TYPE-1) Academic Year:2020-2021

CO	CID_CO	CIE			SEE			CES			TOT_Attainment		
		S_AT	T_ST	ATN	S_AT	T_ST	ATN	S_AT	T_ST	ATN	ATN	%	Status
CO1	C411.1	282	98	2.9	265	98	2.7	247	92	2.7	2.8	93	YES
CO2	C411.2	292	98	3	265	98	2.7	241	92	2.6	2.8	94	YES
CO3	C411.3	278	98	2.8	265	98	2.7	233	92	2.5	2.7	91	YES
CO4	C411.4	285	98	2.9	265	98	2.7	247	92	2.7	2.8	93	YES
CO5	C411.5	292	98	3	265	98	2.7	240	92	2.6	2.8	94	YES

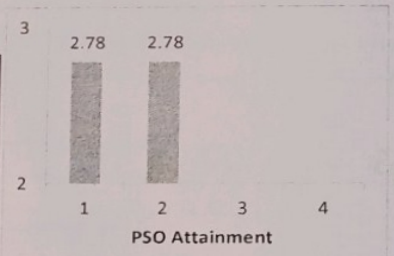
Summary of PO attainments of Sub: 17CV81 Based on (AVERAGE-TYPE-1) Academic Year:2020-2021

PO Number	1	2	3	4	5	6	7	8	9	10	11	12
Direct ATNT(D)	2.8	2.79		2.79				2.8		2.81	2.81	2.8
Indirect ATNT(ID)	2.63	2.63		2.6				2.62		2.65	2.65	2.62
Total-ATNT	2.79	2.78		2.77				2.78		2.8	2.8	2.78
ATNT TO SCALE	1.3	1.85		0.92				1.85		1.93	1.87	0.93



Summary of PSO attainments in Year:2020-2021

PSO Number	1	2	3	4
Direct ATNT(D)	2.8	2.8		
Indirect ATNT(ID)	2.62	2.61		
Total-ATNT	2.78	2.78		
ATNT TO SCALE	1.85	1.48		



→ All the co's are attained & Target I kept is 60% & I Reached 90% on this course,

→ next coming year I will Reached above 90%.

5/10/21

05/10/2021

|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust ®

SJC INSTITUTE OF TECHNOLOGY

Chickballapur – 562 101

Estd: 1986

Department of Civil Engineering

LESSON PLAN

SUBJECT TITLE	QUANTITY SURVEYING AND CONTRACT MANAGEMENT		
SUBJECT TYPE	CORE		
SUBJECT CODE	18CV71		
ACADEMIC YEAR	2021-2022 (ODD SEMESTER)	BATCH	2018
SCHEME	CBCS – 18 Scheme		
SEMESTER & SECTION	7th A		
IA MARKS	40	*EXAM MARKS*	80
NUMBER OF LECTURE HOURs/WEEK	04	*TOTAL NUMBER OF LECTURE HOURS*	50
FACULTY NAME	Mr.Chetan G N	*NO. OF TIMES HANDLED*	03

COURSE LEARNING OBJECTIVES: This course will enable students to

Estimate the quantities of work and develop the bill of quantities and arrive at the cost of building and other civil engineering works
To find quantity of earth in embankments and cutting required for formation in road works
Understand detail specification and to analyses rates for various items of works
Understand, Apply and create the tender and Contract documents

Course Outcomes: At the end of this course, students are able to:

CO1	Prepare detail and abstract estimation for building and other civil engineering works
CO2	Estimate the quantities of earth in embankment and cutting for formation in road works
CO3	To explain specification and to analyse the rates per standard units for variation items of the building work
CO4	Prepare valuation report for buildings
CO5	Interpret contract documents of domestic and international construction works

COURSE OUTCOMES	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2						2				1	2	2
CO2	2	2						2				1	2	2
CO3	1	2		1				2				1	2	2
CO4	1	2		1				2		1	2	1	2	1
CO5	1			1				2		1	2	1	2	1
AVG	1.6	2		1				2		1	2	1	2	1.6

Note: Justification of CO-PO mapping

DELIVERY PLAN WITH DETAILS

MODULE – 1

Lecture No.	Topic	Mode of Delivery (PlsTick √)				Date of Delivery	COs Covered
		1	2	3	4		
1	study of various drawing attached with estimates,	√				4/10/2	CO1
2	important terms, units of measurements, abstract,	√				4/10/21	CO1
3	Types of estimates.	√				7/10/21	CO1
4	Estimation of building by Short wall and long wall method – centre line method	√				7/10/21	CO1
5	Estimation of building by Short wall and long wall method – centre line method	√				8/10/21	CO1
6	Estimation of building by Short wall and long wall method – centre line method	√				9/10/21	CO1
7	Estimation of building by Short wall and long wall method – centre line method	√				14/10/21	CO1
8	Estimate of R.C.C structures including Slab, beam, column, footings	√				13/10/21	CO1
9	Estimate of R.C.C structures including Slab, beam, column, footings	√				18/10/21	CO1
10	Estimate of R.C.C structures including Slab, beam, column, footings	√				18/10/21	CO1
Textbook : and chapter :							
Signatures	Faculty: 1/11/21	#HOURS				Allotted	Taken
	HoD: 1/11/21					10	10
Remarks	module-1 is completed						

MODULE – 2

Lecture #	Topic	Mode of Delivery (PlsTick √)				Date of Delivery	COs Covered
		1	2	3	4		
1	Estimate of Steel truss	√				25/10/	CO_2
2	Estimate of Steel truss	√				25/10	CO_2
3	slab culvert	√				26/10	CO_2
4	slab culvert	√				26/10	CO_2
5	manhole and septic tanks	√				29/10/21	CO_2
6	manhole and septic tanks	√				29/10/21	CO_2
7	manhole and septic tanks	√				30/10	CO_2
8	Computation of volume of earthwork fully in banking, cutting, partly cutting and partly Filling by mid-section,	√				10/11/21	CO_2
9	cutting, partly cutting and partly Filling by, trapezoidal	√				15/11/21	CO_2
10	Prismoidal Methods	√				22/11	CO_2

Textbook : and chapter:				
Signatures	Faculty: 1/12/21	#HOURS	Allotted	Taken
	HoD: 1/12/21		10	10
Remarks	module-2 is completed			

MODULE – 3

Lecture #	Topic	Mode of Delivery (Pls Tick √)				Date of Delivery	COs Covered
		1	2	3	4		
1	**Specification for Civil Engineering Works:** Objective of writing specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads	√				26/11	CO3
2	specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads	√				28/11	CO3
3	specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads	√				29/11	CO3
4	specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads	√				29/11	CO3
5	specifications essentials in specifications, general and detail specifications of different items of works in buildings and roads	√				10/12	CO3
6	**Analysis of Rates :** Factors Affecting Cost of Civil Works , Concept of Direct Cost , Indirect Cost and Project Cost,	√				1/12	CO3
7	Rate analysis and preparation of bills, Data analysis of rates for various items of Works,	√				3/12	CO3
8	Rate analysis and preparation of bills, Data analysis of rates for various items of Works,	√				10/12	CO3
9	Sub-structure components, Rate analysis for R.C.C. slabs,	√				17/12	CO3
10	columns and beams	√					

Textbook : and chapter :				
Signatures	Faculty: 1/1/21	#HOURS	Allotted	Taken
	HoD: 1/1/21		10	
Remarks	module-3 is completed			

MODULE – 4

Lecture #	Topic	Mode of Delivery (PlsTick √) 1	2	3	4	Date of Delivery	COs Covered
1	**Contract Management-Tender and its Process:** Invitation to tender, Prequalification,		√			20/12	CO4
2	administrative approval & Technical sanction.		√			20/12	CO4
3	Bid submission and Evaluation process.		√			22/12	CO4
4	letter of acceptance and notice to proceed.		√			24/12	CO4
5	Contract Formulation: Letter of intent, Award of contract,		√			24/12	CO4
6	Contract Formulation: Letter of intent, Award of contract,		√			24/12	CO4
7	Features / elements of standard Tender document		√				
8	(source: PWD / CPWD / International Competitive Bidding – NHAI / NHEPC / NPC		√			31/12	CO4
9	Law of Contract as per Indian Contract act 1872, Types of Contract, Joint venture.		√			3/1/22	CO4
10	**Contract Forms:** FIDIC contract Forms, CPWD, NHAI, NTPC, NHEPC		√			5/1/22	CO4

Textbook: and chapter :

Signatures	**Faculty:** 19/1/21	**#HOURS**	**Allotted**	**Taken**
	HoD: 19/1/21		10	
Remarks	module-4 is completed			

MODULE – 5

Lecture #	Topic	Mode of Delivery (PlsTick √) 1	2	3	4	Date of Delivery	COs Covered
1	**Contract Management-Post award :**Basic understanding on definitions, Performance security, Mobilization and equipment advances,		√			7/1/22	CO5
2	Secured Advance, Suspension of work, Time limit for completion, Liquidated damages and bonus, measurement and payment,		√			7/1/22	CO5
3	additions and alterations or variations and deviations, breach of contract,		√			10/1/22	CO5
4	Escalation, settlement of account or final payment, claims, Delay's and Compensation		√			10/1/22	CO5
5	Disputes & its resolution mechanism, Contract management and administration.		√			10/1/22	CO5
6	**Valuation:** Definitions of terms used in valuation process, Purpose of valuation,		√			12/1/22	CO5

7	Cost, Estimate, Value and its relationship, Capitalized value.		√				
8	Freehold and lease hold and easement, Sinking fund,		√			12/1/22	CO5
9	depreciation–methods of estimating depreciation, Outgoings, Process and methods of valuation		√			12/1/22	CO5
10	: Rent fixation, valuation for mortgage, valuation of land		√			24/1/22	CO5
			√			24/1/22	CO5

Textbook: and chapter :

Signatures	**Faculty:** chaitra 19/1/22	**#HOURS**	**Allotted**	**Taken**
	HoD: 19/1/2022		10	
Remarks	module-5 is completed.			

Textbook : and chapter :

Datta B.N., "Estimating and costing", UBSPD Publishing House, New Delhi.
2. B.S. Patil, "Civil Engineering Contracts and Estimates", Universities Press.
3. M. Chakraborthi; "Estimation, Costing and Specifications", Laxmi Publications.
4. MORTH Specification for Roads and Bridge Works – IRC New Delhi.

Reference Books:

1. Kohli D.D and Kohli R.C, "Estimating and Costing", 12 th Edition, S.Chand Publishers, 2014.
2. Vazirani V.N and Chandola S.P, "Estimating and costing", Khanna Publishers, 2015.
3. Rangwala, C. "Estimating, Costing and Valuation", Charotar Publishing House Pvt. Ltd., 2015.
4. Duncan Cartlidge , "Quantity Surveyor's Pocket Book", Routledge Publishers, 2012.
5. Martin Brook, "Estimating and Tendering for Construction Work", A Butterworth-Heinemann publishers,2008.
6. Robert L Peurifoy , Garold D. Oberlender , " Estimating Construction Costs" – 5ed , Tata McGraw-Hill ,New Delhi.
7. David Pratt, "Fundamentals of Construction Estimating" – 3ed, Edition.
8. PWD Data Book, CPWD Schedule of Rates (SoR). and NH SoR – Karnataka FIDIC Contract forms.

(Note: Mode of Delivery: 1:Black Board 2:PPT 3:Video 4:Demo/Hands-on)

QUANTITY SURVEYING AND CONTRACT MANAGEMENT (17CV81)

MODULE-4

Contract Management-Tender and its Process: Invitation to tender, Prequalification, administrative approval & Technical sanction. Bid submission and Evaluation process. Contract Formulation: Letter of intent, Award of contract, letter of acceptance and notice to proceed. Features / elements of standard Tender document (source: PWD / CPWD / International Competitive Bidding – NHAI / NHEPC / NPC).

Law of Contract as per Indian Contract act 1872, Types of Contract, Joint venture.

Contract Forms: FIDIC contract Forms, CPWD, NHAI, NTPC, NHEPC

Law of contract as per Indian contract act 1872

- This act contains description of contract.
- This act was passed by British India.
- This act came into force on september,1,1872.
- This act applicable in all state of India except Jammu & Kashmir.
- Not applicable in J&K because central government have on authority to take legal decision of J&K.(Only authority of external affairs, defence, finance and communication)

Agreement

Every promise or set of promise forming consideration for each other.

Offer + Acceptance = Agreement

{2(a)} {2(b)} {2(e)}

Contract

An agreement which is enforceable by law.

Agreement + Enforceability by Law = Contract

AGREEMENT	Contract
Offer + Acceptance	Agreement + its legal enforceability
May create social or legal obligation	Creates only legal obligations between the parties.
All agreement do not become contracts	All contracts are based on agreements

Essential Elements of Valid contract

- There must be two parties.
- There must be legal relationship between parties.
- Both parties are freely concern.
- Both parties must be competent.
- There must be consideration.
- Consideration must be lawful.
- Objective of contract must be lawful.
- Contract must be in written and registered form.

OFFER & ACCEPTANCE (AGREEMENT)

One person offers and other accept it.
Offer and Acceptance should be according to requirements.

"A" offers his house to "B" for 50 lac and "B" accepts the offer.
"A" advertise in newspaper his house for sale, is not an offer.

LAWFUL CONSIDERATION (RETURN)

Offer and Acceptance have some consideration (Give & Take).
Consideration be lawful, legal and real.
"A" offers his house to "B" for 50 lac and "B" accepts the offer.
Here: Price is consideration for "A" and house for "B"

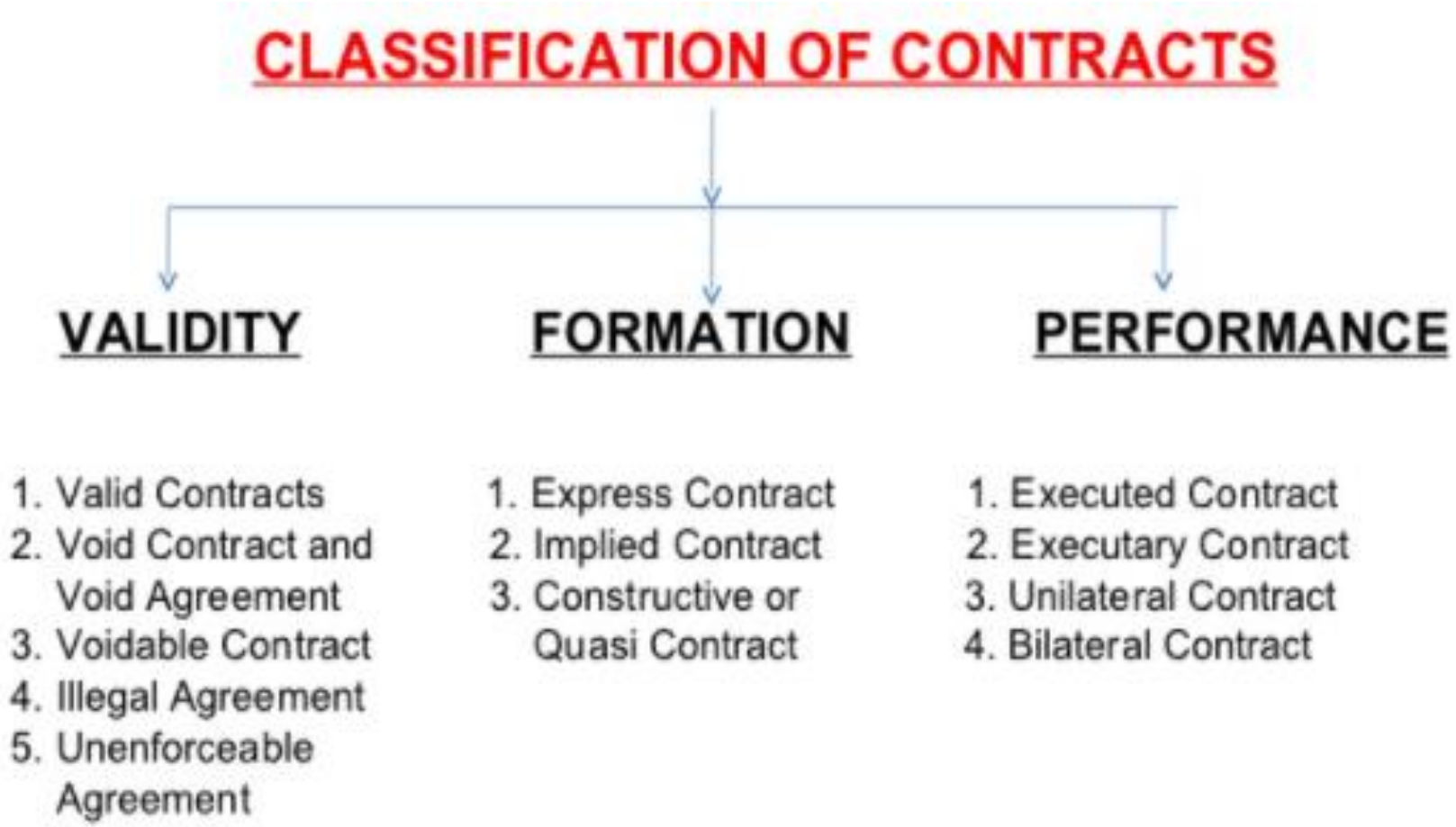
WRITTEN & REGISTERED

Agreement should be Written and Registered.
Should be signed and attested by the witnesses.

LEGAL RELATIONSHIP

Relation between the parties of agreement should be legal.
Parties are bound to perform the obligations.
“A” agrees to go cinema with “B”. (Social Relation)
“A” agree to sell his house to “B”. (Legal Relation)

TYPES OR CLASSIFICATION OF CONTRACTS



ON THE BASIS OF VALIDITY

Valid Contract:

A contract is legally bind or valid (officially accepted)agreement between two parties Example "A" promises to sell his car to "B" for Rs. 500000, 'B" agrees to buy it for his price.

Void Contract

An agreement which was legally enforced by law when entered into but which has become void due to supervening(sudden changing situation) impossibility of performance

Voidable Contract:

A contract becomes voidable when the consent is not free.

Usually a contract becomes voidable when the
consent of one of the parties to the contract is not free.

Eg- Ram threatens to kill Rohan if does not agree to sell his property at **very low Price to him.** Here essential element of free consent is absent

This contract is voidable at the option of Rohan

.

ON THE BASIS OF FORMATION

Express Contract

An express contract is one entered into by words which may be either be spoken or written

Eg- A offers to sell his house for Rs 5 Lakh to B by words of mouth and B agrees to buy it for this price by word of mouth or in writing.

Implied Contract

Contract which are not expressed orally or in writing but are reflected in **thinking behaviour of parties concerned**

OR

When the offer and acceptance is made by **acts or conducts** of the parties, it is an implied contract.

For e g-

A, a coolie in uniform takes up the luggage of B at Railway Station and B allows him to do so, then the law implies that B will have to pay for the services of A. This is an implied contract.

ON THE BASIS OF PERFORMANCE

Executed contract

An executed contract is one where both the parties have **performed their obligations**

Ex- A sells a site to B for 1 lakh , B pays the price and A hands over site to B

EXECUTORY CONTRACT

When either both the parties to a contract have still to perform their share of obligation, then it is **executory contract.**

OR

Where the contract **is yet to** be performed either wholly or partially or one or both the parties have yet to perform their obligations

Ex- **A** agrees to make furniture for **B** for Rs 5000.Mr.A has yet to make furniture and Mr.B has not made the payment. So, Both A&B are yet to perform their obligations. Suppose A has made the furniture But B has yet to make payment, it is executed on A's part but executory on B's part

On the basis of Nature –

- **Void Agreement** : As per sec.2(g), “An agreement not enforceable by law is said to be void”.
- **Valid Contract** : As per Sec.2(h), “An agreement enforceable by law is a valid contract”.
- **Void Contract :** As per sec.2(j), “A void contract is a contract which was enforceable by law in the beginning but due to some circumstances it becomes void”.
- **Voidable Contract :** As per sec.2(i), “A contract which is valid unless until avoided by either the party”
- **Unenforceable Contract :** “ A contract which is good in substance but due to technical defects it become unenforceable”.
- **Illegal Agreement** : “ An agreement which is forbidden and punishable by law”

Types of contracts

- Lump sum contracts
- Turn key contract(engineering procurement and construction)
- Item rate contract
- Percentage rate contract
- Rate only items
- Labour contract
- Cost plus contract
- Sub contracting
- BOT (Build, Operate and Transfer)
- Cost plus percentage rate contract
- Cost plus fixed fee contract

The plan of a boundary wall is shown below. The 230mm thick boundary wall has reinforced concrete pillars placed at 2.5 m centre to centre to enclose the area as shown. The clear length of the opening is 5 m.

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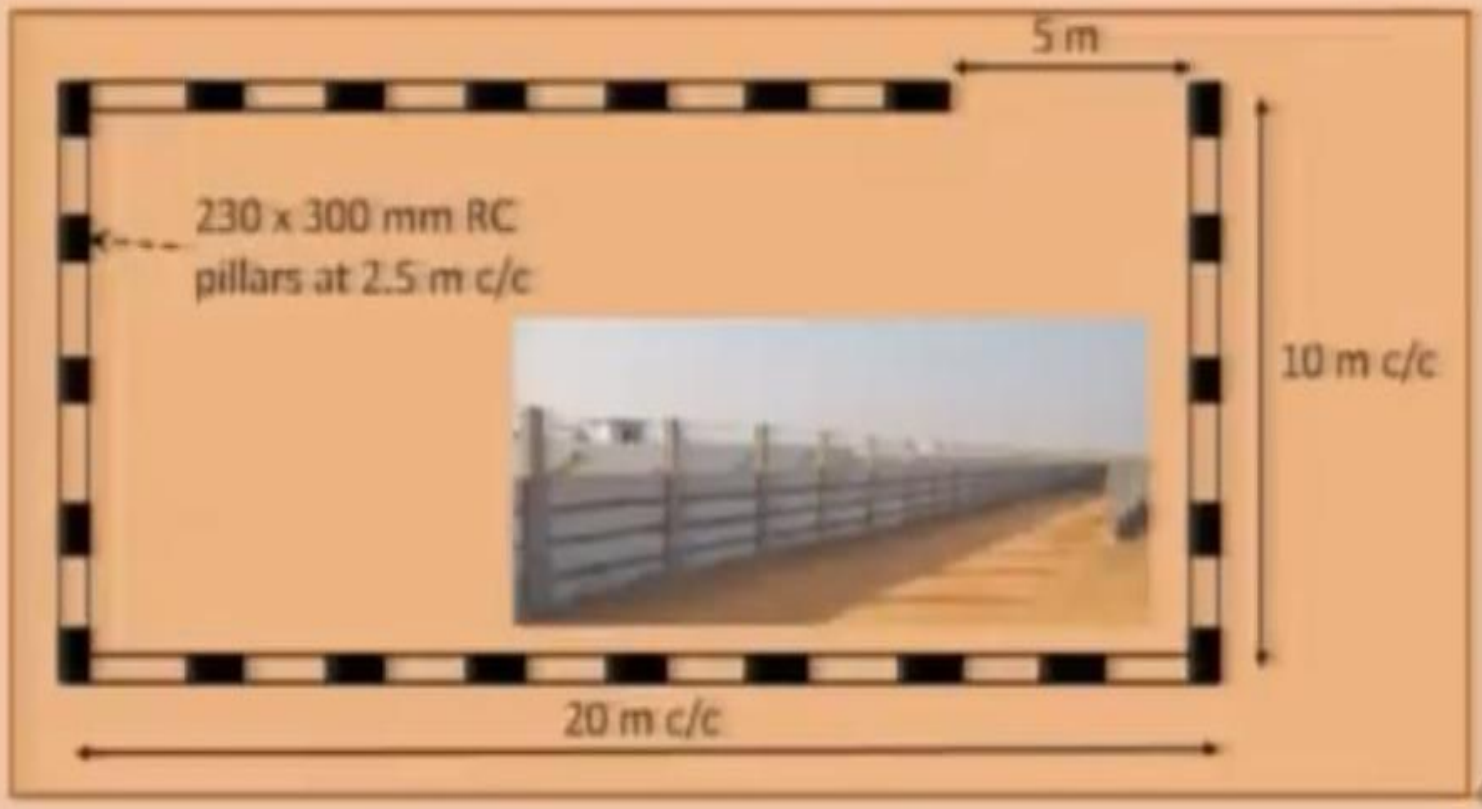
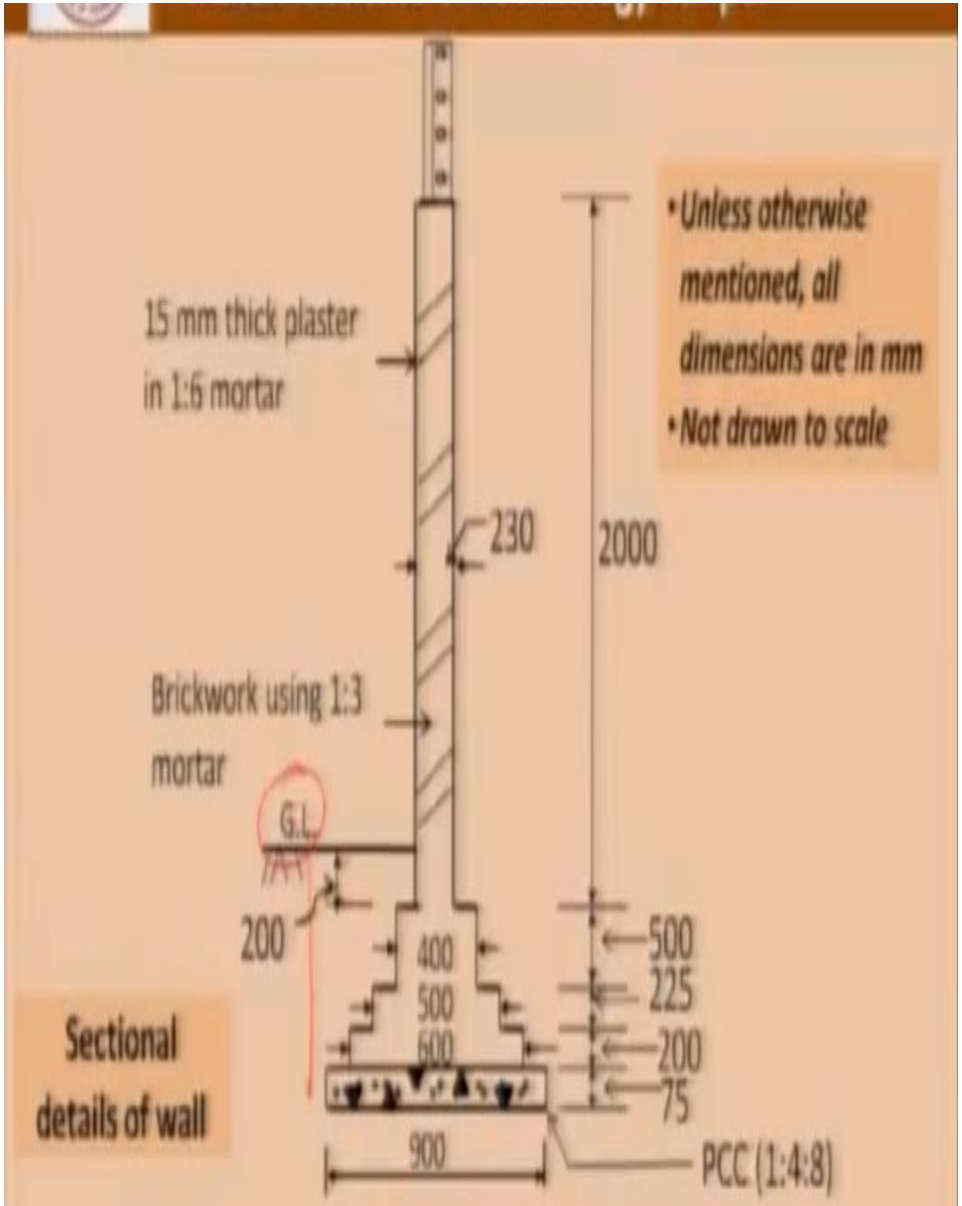
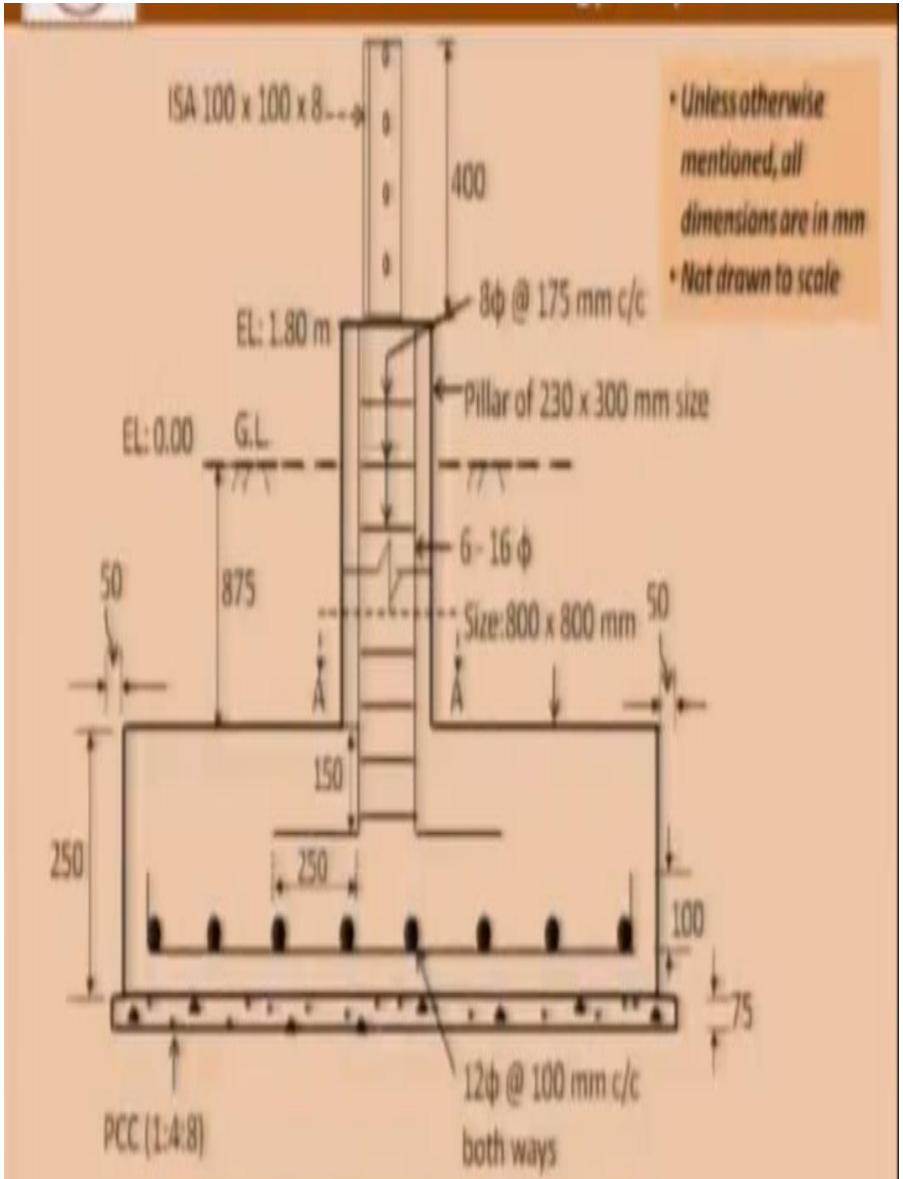




Sectional details of wall

5



Sectional details of RC pillar and foundation

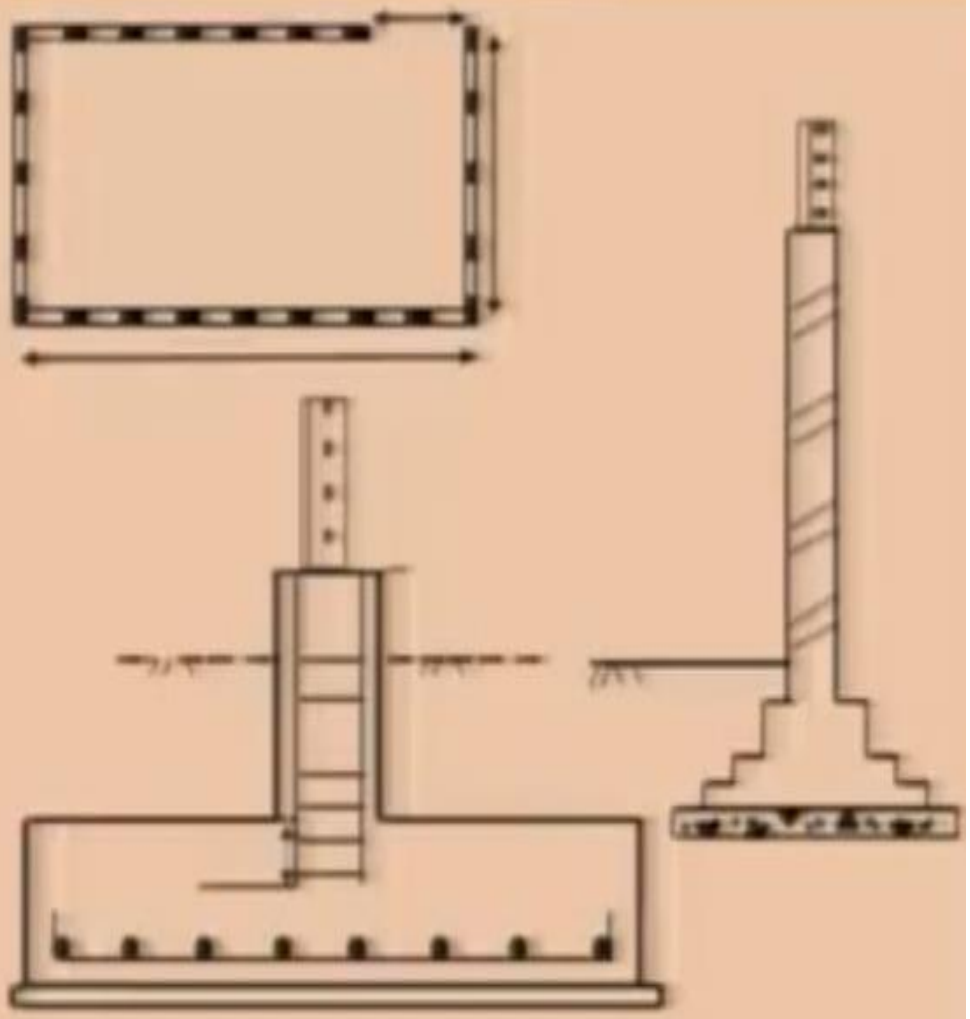
6

Additional notes

- Excavation is to be calculated allowing 200 mm on both sides beyond minimum width required.
- All concrete work is in M25 grade concrete. Concrete pillars are also to be plastered.
- RC pillars are supported on isolated footings measuring 800mm x 800mm.
- Assume the clear cover as 40 mm, wherever required.

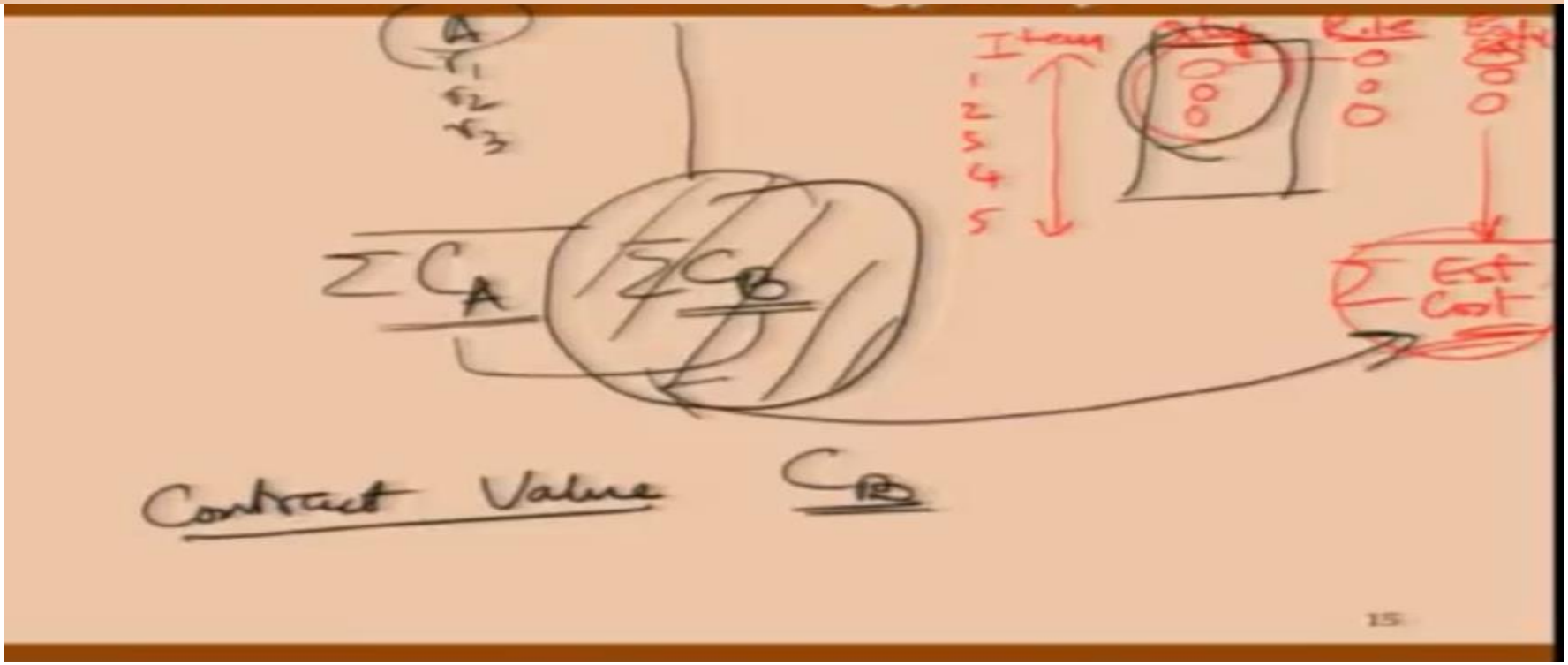
Identifying the Items involved

- Excavation
- PCC
- Brickwork
- Concrete work
- Plastering work
- Shuttering
- Length of barbed wires
- Reinforcement work
- Structural steel (angles)

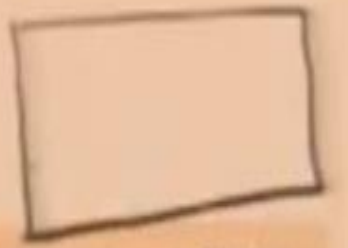


Quantity

Item	No	L (m)	B (m)	H (m)	Quantity	Unit	Remarks



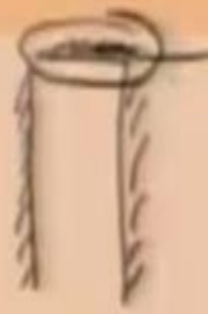
Turn key contract



- A turn key contract is one in which the contractor is responsible for both design and execution.
- The owner obviously still provides the functional requirements, and approves the design and the drawings.
- The contractor will provide the works ready at fixed date and an agreed rate.
- The term is used synonymously with "package contract" , "design and build" or "design constructor".
- These contracts are also known as EPC contracts (Engineering Procurement and Construction).

Item rate contract

- Item rate contract is also known as unit price contract or schedule contract. A contractor undertakes the execution of work on an item rate basis.
- The contractor is required to quote rate for individual item of work or the basis of schedule of quantities (i.e., bill of quantities) furnished b the owner or the client, and the amount to be received by the contractor, depends upon the quantities of work actually performed.



1. Items of work of the contract are specified with **estimated quantities**

2. for **major works**, item rate contracts are adopted. Owner indicates quantities and units only for all items of work and the tenderer quotes rates for each individual item.

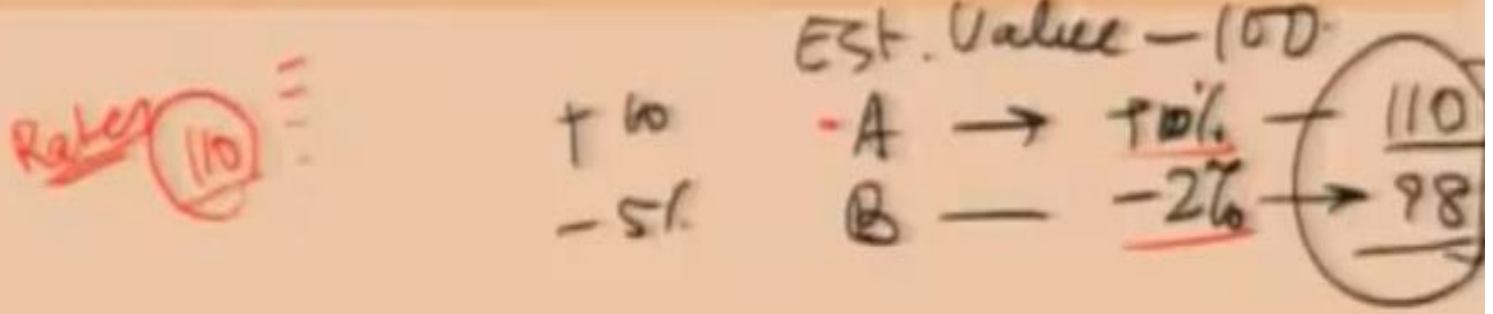
3. Estimated quantities are surveyed by Architect/Engineer.

4. It is also know as **schedule contract /unit price contract**

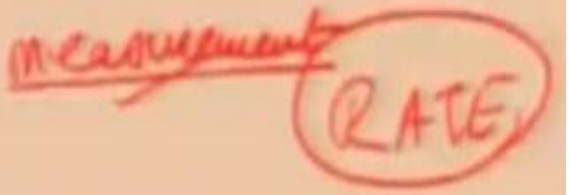
5. Payment is made on the **basis of units of work actually done.**

Percentage rate contract

- In this form of contractor, the client or the owner draws up 'item rate tender' i.e bill of quality and total amount.
- Contractors are required to offer to carry out the work as per with the rates shown in the specific price schedule or some percentage above or some percentage below the rates indicated in the schedule of work attached with the tender.



Rate only contract



These contracts call for tenderers to quote only their rates per unit of work of different kinds. They are used for work whose quantity cannot be defined in advance, such as for site investigations, grouting work or the sinking of boreholes.

Lump Sum Contact

- In this contractor agrees to execute a complete work in all respects for specified amount within a specified time
- The plans , construction drawings & detailed specifications are provided to the contractor but
- The detailed of quantities and schedule of items will not given to contractor
- The contractor will have to complete the work as per plan and specification with in contract period
- On completion of the work, no measurements will be taken by the owner, the contractor will be paid the fixed amount as agreed by checking the whole work in comparing with plan, drawings

Labour contract

- This is the most commonly adopted system for the construction of private individual buildings in small cities.
- The contractor under takes **only the labour portion of the work**
- All the necessary materials are supplied to the site b/w owner and client
- Contractor arranges **his own labour, machinery and get the work** done as per the specification
- The contractor is paid for the **labour only on the actual quantity of work done**

BOT(BUILD OPERATE TRANSPER)

- BOT is a type of arrangement in which the private sector **builds an infrastructure projects**, operate it and eventually transfer owner ship of the **project to the government**

- Also called as PPP (Public, private ,patnership)

- To construct facilities like good road, water supply,bridges,exports highway in partnership with the private sector

Cost plus percentage rate contract

In this type of contract the contractor is paid the actual cost of the work plus certain percentage as a profit for his personal service

The speed and quality of work is maintained in this system but there is always tremendous wastage of materials as the contractor's aim is to increase the total cost of the work.

Eg-1 lakh is the cost of the project + 10% profit

Cost plus fixed fee contract

In this type of contract the contractor is paid by the owner an agreement fixed lump-sum amount over & above actual cost of work

Smaller the completion time more is the profit and hence the contractors hurry to complete the work and the quality of workmanship is not maintained.

Eg-1 lakh is the cost of the project + no profit

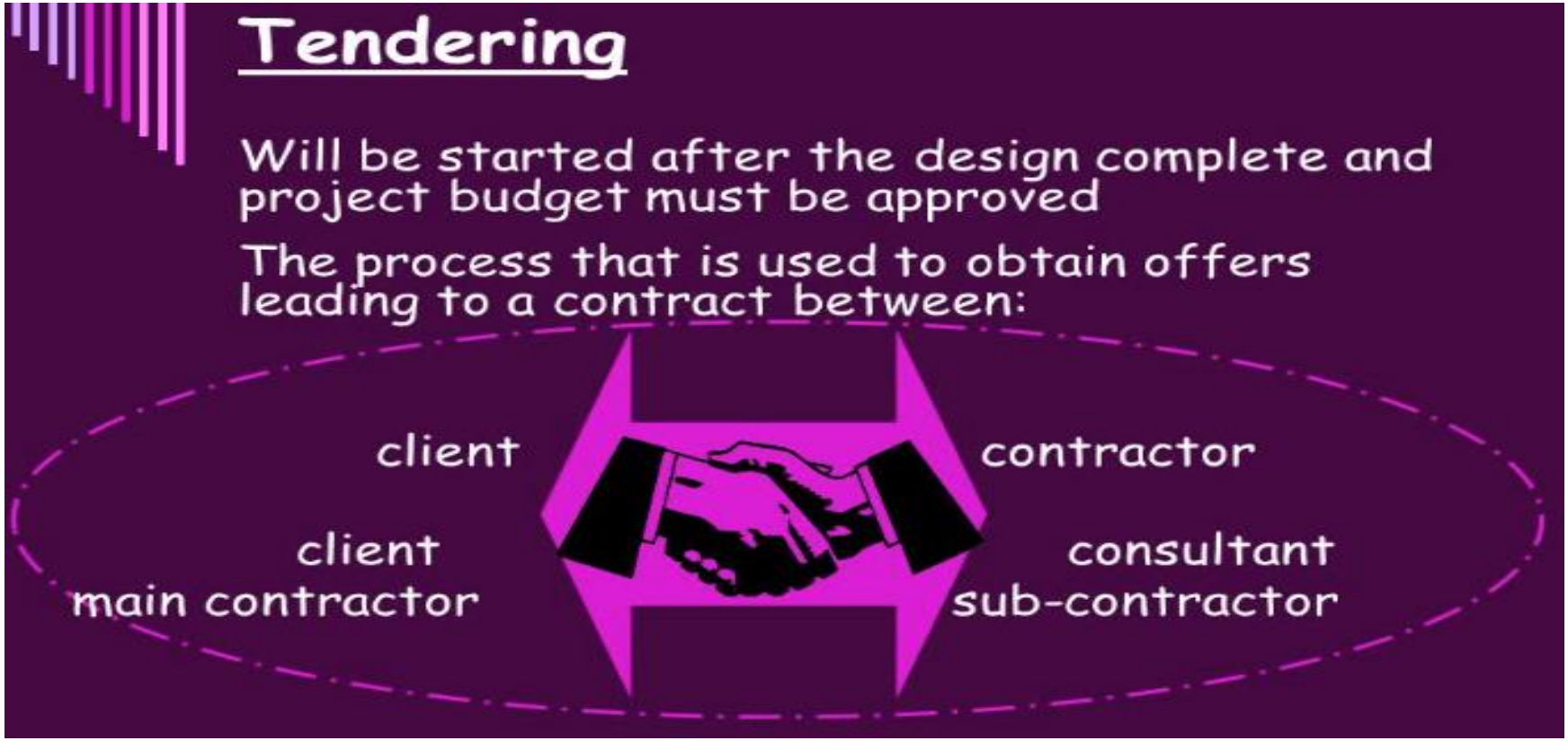
TENDER

Stages of a project

- **Stage 1: inception & feasibility** – identifying project objectives / set up project brief
- **Stage 2: design** – develop further project brief / develop concept & schematic design / Undertake detailed design & detailing / prepare cost plan & budget
- **Stage 3: tendering** – issue tender documents / prepare & submit tender / evaluation of tender / award tenders / prepare contract documents

Stages of a project

- **Stage 4: construction** – site possession & mobilization / undertake procurement fabrication, installation, construction / carry out contract admin
- **Stage 5: handover & maintenance** – undertake all testing, commissioning & training / obtain CF / handover project to owner /carry out necessary maintenance / Defect rectification / etc



It is an invitation from **the owner to the contractor** to execute some work at **specified cost in specified time**. It is published in the form of tender notice in news papers, notice boards, gussets, etc. according to the cost of works.

Purpose of tendering process

- To select a suitable contractor at a time appropriate to the situation of the project
- To obtain from the contractor selected at the proper time an acceptable tender or offer upon which a contract can be let

Classification of tenders:-

Local tender- In small area and small cities the tender will give for local pre-qualified companies.(local contractors)

Open tender– An oral talk or written document between the Engineer and the Contractor for certain small jobs to be performed. Sometimes it is advertised.

Limited tender-Only a selected no. of contractors are invited to quote their rates

Global tender – International level eg-(airport,outring roads)

Single tender/ Negotiate tender -Invitation is given to only one firm to render a service by quoting their rates. If the quoted rates are high, it will be negotiated prior to the agreement of the contract.

Rate contract-usually adopted for supply of materials, machine, tools & plant, etc. (items to the store). It specifies the supply at a fixed rate during the period of contract. The quantities are not mentioned in type of contract and the contractor is bound to accept any order which would be placed before him.

Procedure for tendering:-

1. Preparation of tender documents

2. Issue of notice inviting tender or tender call notice

3. Submission and opening of tenders and their scrutiny

4. Acceptance of tender and award of contract

Tender Documents

- One set of approved drawings where necessary
- All the documents are signed by the contractor page by page, forwarding letter head of a contractor with bank draft (or other form of earnest money) are put in closed cover.
- Then the cover is closed and dropped in the tender box within the time limit for tender.
- The name of the work and the name of the contractor are mentioned on the cover.

Information to be given in a tender document:-

1. The notice inviting tender in specified form like PWD 6
2. Layout plan, location of work
3. Division in which location is situated
4. Schedule of quantities of work
5. Nearest road/railway link
6. Set of drawings including working drawings
7. Availability of materials in the vicinity
8. Detailed specifications or reference to standard specifications for each item of work

Information to be given in a tender document

10. Complete architectural and structural drawings
11. Schedule of tools & plant and other facilities to be made available by the owner, indicating the conditions, hire charges and place of delivery
12. Rate of supply of power and the point of supply
13. Location of water supply point
14. Time for completion and the progress to be made at intervals of time
15. Conditions regarding employment of technical personnel
16. Weather conditions in the area
17. Amount of EMD and the form in which it is to be paid

Information to be given in a tender document:-

18. Insistence on Income tax and sales tax clearance certificate
19. Amount of Security deposit to be paid/ deducted from running bills of contractors should be notified in the tender call notice
20. Mode of payment for work done
21. Penalty conditions for slow progress and delay in the completion of work
22. Designation of arbitration (technique for the resolution of disputes outside the courts)authority in case of disputes

Tender Notice

Tender for work or supply are invited by issuing tender notice in prescribed form. Following particulars are given in the tender notice

Name of the authorities(deptt.) inviting tender Exa: Govt. of Tamil Nadu Water Resources Organisation Public Works Department (PWD),

1.Name of work and its location
2. Estimated cost
3. Last date and time of receipt of tender
4. Period of availability of tender document or validity of tender
5. Cost of tender document
6. Time of completion and type of contract
7. Earnest Money Deposit to be paid & security deposit
9. Date, time and place of opening the tender
10. Designation of the officer opening the tender

भारतीय कंटेनर निगम लिमिटेड
(भारत सरकार का उपक्रम - रेल मंत्रालय)
CONTAINER CORPORATION OF INDIA LIMITED
(A Govt. India Undertaking- Ministry of Railways)

कॉनकोर CONCOR

1st Floor, BPCL Bldg, 7 Chitnavis Marg, Civil Lines, Nagpur. Tel.: 2540406.

TENDER NOTICE

CONCOR invites Sealed Tender for the following work:-

Tender No. & Date	CON/CR/NGP/801/2012/42 Dt. 19.03.2012
Description of Work	Tender for Hiring of Loaded Reach Stacker & Forklift/ Empty Container Handler at Nagpur Container Terminal.
Cost of Tender Document	₹ 3150/- (Rs. Three Thousand One Hundred Fifty only) including VAT @ 5%
Earnest Money Deposit	₹ 3,30,000/- (Rs. Three lakhs Thrity Thousand only)
Mode of Payment	Draft favoring "Container Corporation of India Ltd." Payable at Nagpur
Contract Period	4+1 Years
Date of Sale of Tender Document	From 19/03/2012 to 09/04/2012 during office hours in Regional Office.

Date of Tender Submission	Date of Opening of PQ bids
Before 15.00 Hrs on 10/04/2012	On 10/04/2012 at 15.30

For eligibility criteria and other details please log on to www.concorindia.com or contact at above address.

Chief General Manager

भारतीय ताराभौतिकी संस्थान
विज्ञान व प्रौद्योगिक विभाग – भारत सरकार
सं. 9, दूसरा ब्लॅक, कोरमंगला, बेंगलूर - 560 034

INDIAN INSTITUTE OF ASTROPHYSICS

Department of Science & Technology - Govt. of India
No. 9, 2nd Block, Kormangala, Bangalore - 560 034
Ph No. : 080-25530672-676, Fax No. : 2553 4043

PUBLIC TENDER NOTICE NO : 06/IIA/CIVIL/CREST/canteen reno/2012-13 Dated-19.12.2012

The Director, Indian Institute of Astrophysics invites Quotations / Bids from reputed firms for the work of **"RENOVATION OF THE CANTEEN ROOF AND GUEST ROOM TOILETS AT CREST CAMPUS, I.I.A, HOSAKOTE"**, with the following details. The firm(s) interested in offering bids should have executed similar items/works.

Name of the work	Estimated cost in Rs	Time for Completion	EMD	Cost of Tender Document
RENOVATION OF THE CANTEEN ROOF AND GUEST ROOM TOILETS AT CREST CAMPUS, I.I.A, HOSAKOTE.	9.72 Lakhs	3 Months	20000.00	1000=00

The Tender document can be viewed and downloaded from our **website www.iiap.res.in/tenders.htm**. The last date of submission of bid is **10.01.2013 on or before 3:00pm.** The bids will be opened at **3.30 pm.** On the same day in the presence of attending tenderers or their authorized representatives.

Administrative Officer

EARNEST MONEY DEPOSIT

- It is a assurance or guarantee in the form of cash on the part of the contractor to keep open the offer for consideration and to confirm his intention to take up the work accepted in his favour for execution as per terms and conditions in the tender
- It is the amount of money to be deposited along with the tender document to the department by the contractors quoting a tender. In case of refusal, this amount is forfeited.
- EMD of contractors whose tenders are not accepted will be refunded.
- 1% - 2% of the estimated cost of work is the Earnest Money Deposit (EMD).

Objectives of collecting EMD

- **Restriction on unnecessary competition**: contractor with low sound financial position may also submit tender with low price which may late lead to great difficulties in completion of work. Thus provision of EMD will restrict competition among sound financial contractors who are capable of completing work.
- **Punishment:** Contractors with no intension of work may quote low rates. They may be punished by forfeiting EMD.
- **Compensation:** In case if lowest contractor refuses to do work it may be allotted to second lowest contractor and EMD will be forfeited from first lowest contractor

SECURITY DEPOSIT

- Security deposit is the amount of money which is deposited by the contractor to the owner before awarding a work, whose tender has been accepted in order to render himself liable to the department to pay compensation amounting to the part or whole of his security deposit if the work is not carried according to specifications.
- This amounts is generally 5% to 10% of estimated cost of the project and is inclusive of the EMD already deposited by the contractor along with the tender.
- This will be refunded after the completion of the project.
- No interest is paid on SD.

Following are the main reasons for security deposit:

- **Deposit for loans:** It serves as security against the materials or the plants and machinery supplied by the department to the contractor as a loan.
- **Punishment:** on incomplete work in time, use of inferior quality of material, leaving work incomplete SD if forfeited as punishment.
- SD is refunded after successful completion of work with in specified time. It is refunded after the first maintenance is done which is six months.

Tender opening

- All the tenders should be sealed and submitted to the respective officer, before the time and date as mentioned in the tender note.
- At the described date, time and place all the received tenders will be opened in the presence of intending tenderers or their authorised agents.
- The rates quoted by the various tenders shall be read out by the officer

Following points should be observed while opening the tenders:

1.The tender should be opened in public at ….on …..in the office of the …..and rates will read out in presence of the owner or committee members and tenderers or their respective representative as are present.
2. If the owner is not present, the architect along with one assistant should open the tender. The architect shall scrutinize the same, prepare the comparative statements and forward them to his client, with his recommendation as to whom the work should be awarded and why.
3. A record must be kept for the list of tenderers and the money deposited by them. The earnest money should preferably be accepted in the form of bank draft.

4. The lowest tender should be accepted after close investigating the reputation and standing of that contractor.

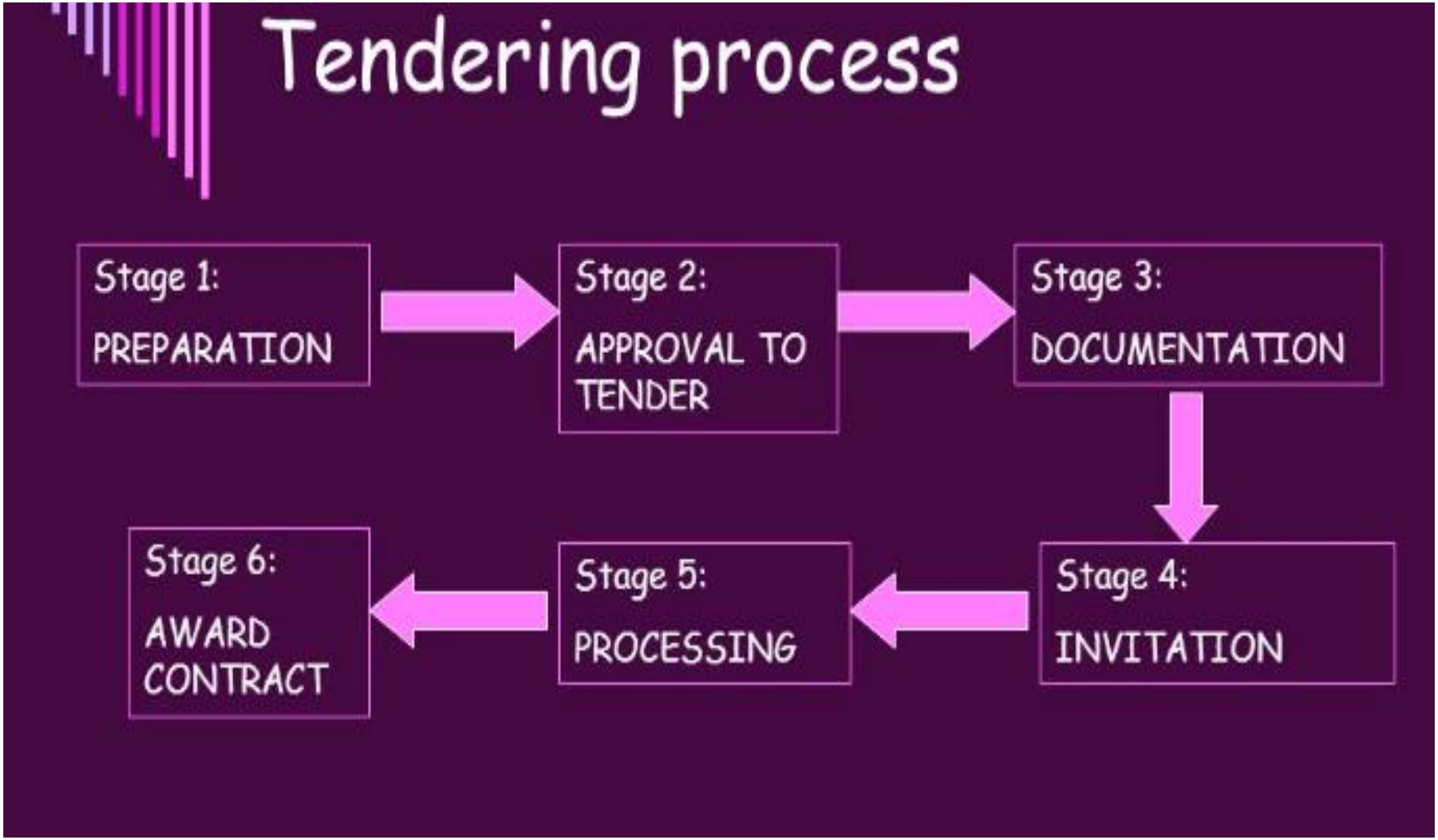
6. It is essential to ensure that they have been thoroughly checked and are without any mistakes.

Acceptance of tender

- Based on the comparative statement, usually the lowest tender is accepted, while accepting the tender, the tender accepting authority shall satisfy the following regarding the tenderers.

1) the financial status of each tenderer.
2) capacity to do the work
3) past record as contractor such as experience, procurement of labourer etc.

Procedure for tender Process:-



Stage 1: Preparation

- Final completion of drawings, specification, measurement / take-off process.
- Choose conditions of contract.
- Parties involved: architect, engineers, QS, client, project manager

Stage 2: Approval to tender

- Discussion and decision on type of tender to be used.
- Selection of tender:
  - Open
  - Selective
  - Negotiate

  } Shortlist the selected contractor
- Parties involved: CLIENT, CONSULTANT, PROJECT MANAGER

Stage 3: Documentation

Contract based on quantities

- Compilation of:
  - Letter of invitation to tenderers
  - Articles of agreement / conditions of contract
  - Form of tender
  - Form of tenderer's details. i.e: contractor's registration, organization background, track record (past and present projects)
  - Letter of acceptance
  - Bank and insurance guarantee forms (performance bond)
  - Bank and insurance guarantee forms (advance payments)
  - Specifications
  - Bills of quantities
  - Relevant drawings

Contract based on tender & specs

- Compilation of:
  - Letter of invitation to tenderers
  - Articles of agreement / conditions of contract
  - Form of tender
  - Form of tenderer's details. i.e: contractor's registration, organization background, track record (past and present projects)
  - Letter of acceptance
  - Bank and insurance guarantee forms (performance bond)
  - Bank and insurance guarantee forms (advance payments)
  - Specifications
  - Summary of tender
  - Schedule of rates
  - Relevant drawings

Stage 4: Invitation

- Based on selection of tendering methods
  - Open / competitive / bid tender - produce tender notice
  - Selective - shot listed contractors will be invited to tender if they wish
  - Negotiated - only one contractor is approached- direct entry to project

Stage 5: Processing

- Received tender submitted by contractor
- Tender assessment / evaluation
  - Completed tenders are received
  - Arithmetical check
  - Reasonable tender sum
  - Reasonable completion time
  - Capabilities of tenderers under considerations
- Tender recommendation / report – tender board

Stage 6: Award contract

- Pre-award meeting with contractors – validation of lowest complying bid
- Validate lowest bid - Pre-contract meeting with contractor for contract signing
- Approval by tender board / treasury (tender exceeds RM10 mill.) – an acceptance of tender form is issued to tenderer , signed by the authorised officer

PRE QUALIFICATION

Objective

- Select companies to invited to tender or negotiate for contract

Process

- Registration of interest invited
- Construction companies submit details resources skills and experience
- Engineer and client review companies
- Tender document sent to shortlisted companies only

Advantages

- To reduce the need to evaluate unqualified contract
- Allows for unqualified bidders to be weeded out
- Speed up evaluation of bids

TENDER PREQUALIFICATION FORM

SECTION A: COMPANY INFORMATION

Company Name: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Phone: _____ Fax: _____

Is this company a subsidiary of another company? If yes, name of company: _____

Bank Name: _____ Branch: _____

Phone: _____

SECTION B: ORGANIZATIONAL INFORMATION

Number of years in operation (Min. 3 years): _____

Is your company bondable?: ❑ Yes ❑ No Maximum bondable job ($ value): _____

Member of Canadian Nursery Landscape Association: ❑ Yes ❑ No

Percentage of work by own forces (Min. 50%): _____

Percentage of company income generated in horticulture: _____

Has the company performed this type of work previously? ❑ Yes ❑ No

Has this company or any officer or partner ever failed to complete any work awarded? ❑ Yes ❑ No

SECTION C: INSURANCE INFORMATION

Workers Compensation Firm #: _____

Workers Compensation Group Code (enter appropriate code): _____

Amount of Insurance Carried: $_____

General Liability: $_____ Expiry Date: _____

Insurance Company: _____ Policy #: _____

Motor Vehicle Liability: $_____ Expiry Date: _____

Insurance Company: _____ Policy #: _____

Environmental Impairment (if applicable): $_____ Expiry Date: _____

Insurance Company: _____ Policy #: _____

SECTION D: REFERENCE INFORMATION

Clients serviced with in the last three (3) years:
Enter following information or attach separate list.

1. Name (Company/Municipality):_____
   Contact Person:_____
   Telephone:_____
   Project Name:_____
   Value of Project:_____ Date Completed: _____

2. Name (Company/Municipality):_____
   Contact Person:_____
   Telephone:_____
   Project Name:_____
   Value of Project:_____ Date Completed: _____

3. Name (Company/Municipality):_____
   Contact Person:_____
   Telephone:_____
   Project Name:_____
   Value of Project:_____ Date Completed: _____

4. Name (Company/Municipality):_____
   Contact Person:_____
   Telephone:_____
   Project Name:_____
   Value of Project:_____ Date Completed: _____

5. Name (Company/Municipality):_____
   Contact Person:_____
   Telephone:_____
   Project Name:_____
   Value of Project:_____ Date Completed: _____

SECTION E: AUTHORIZATION

Signature of Signing Officer: _____ Date: _____

Print Name: _____ Title: _____

Note: This document must be completed for the company to be considered for inclusion on the list of companies invited to bid.

Admiration approvals

It is the permission given by **highest authority of user dept**. for the execution of proposed project on the basis of approximate estimation of the project

For example

A collage building is to be constructed by PWD but is t be used

By the education department. then, PWD is the technical department where as education dep't is the administrative department .

It is in effect an order to the PWD to execute certain specified works at a stated **sum to meet the administrative needs of the department needs of the department requiring the work**

Technical sanction

- Technical sanction amounts to a guarantee that the proposals are technically sound, estimates are accurately prepared based on adequate data.
- **Accord of technical sanction:**
- Detailed estimates are required to be prepared for technical sanction.
- Before an estimate is technically sanctioned, the following shall be desirable:
  - Detailed architectural drawings and specifications.
  - Preliminary structural drawings for foundations.
  - Preliminary structural drawings of superstructure at least upto slab at level 2
  - Preliminary drawings for internal and external services.
- In case of work for design and construct basis. Details functional requirement and complete specifications including preliminary drawings finalized before the call of tenders.
- Detailed estimate shall be prepared based on applicable schedule of rates.
- **Deviation in Technical Sanction:**
- **Can be exceeded upto 10% beyond which**
- **Material structural alterations , orders of the authority which sanctioned necessary**

How to submit tender ?

We have 4 Envelope

Envelope 1

Envelope 2

Envelope 3

Envelope 4

Envelope 1- It contains Earnest money form (EMD)-2% of the total tender cost

Envelope 2- It contain

- Income tax clearance certificate
- Solvency certificate from bank
- Certification of registration as contractor.
- Detail of technical person (CV) availability
- List/nature of work carried out same magnitude by tender
- Detail of plants & machinery available
- Complete details of work in hands
- Detail about form(our Company)
- Covering letter to tender

Envelope 3- Price tender form (Quote Value, BOQ)

Envelope 4- all three envelope put in 4th envelope ,properly sealed out side, write address outside (to and from)

Bid Submission & Evaluation Process

The Bid Submission/ Tender Submission

Subsequent to the Pre Bid Meeting, the Bids are prepared and submitted in the prescribed time and form, duly sealed.

The Bid submission could be of following forms

Two Stage Bidding : First Techno commercial part & then Price part

Single stage Bidding : Comprehensive Bid is submitted

The Bid Submission/ Tender Submission

The Bid Opening / Tender Opening

Tender Board (consisting of representative of Employer -Chairman/ Board Member/ CEO/ CE; Consultant, Financial Institute) meets on the nominated day and time to open these Sealed bids (Generally few hours after last time of Bid submission date). Late Bids are not supposed to be entertained. Usually Following steps are followed:

Step 1 : Introduction of the Participants and announcement of the Bidders. Followed by Attendance marking.

Step 2 : Declaration of Sufficiency of the Bid Bond

Step 3 : Declaration of Guaranteed Technical Particulars

Step 4 : Declaration of the Bid Price if it's a Single Stage Bid

The Bid Opening / Tender Opening

The Bid Evaluation

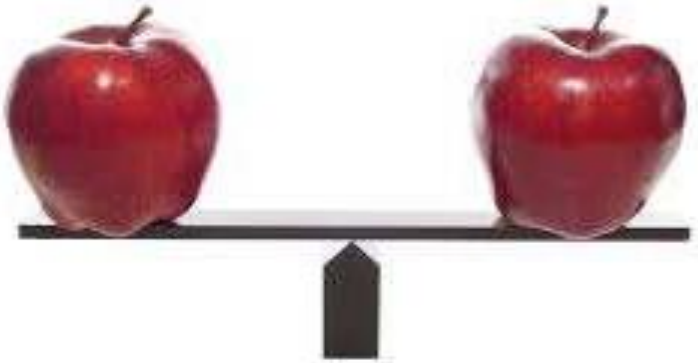
Generally the bid evaluation process involves a team of experts or panels which is lead at the front by a single person who is responsible for interdepartmental/interdisciplinary coordination as well as coordination with the stake holders to and Bidders . He may be known as **Project Coordinator or Project Manager**. His objectives are:

- The Bid is thoroughly evaluated by the respective Technical, Legal, Commercial &Financial experts
- Proper flow of communication to & from bidders (queries & replies)
- All aspects of bids are evaluated
- Every Bidder gets a fair chance of winning the contract

The Bid Evaluation

The Evaluation of the bid has following parts:

- Technical Evaluation
- Commercial Evaluation
- Capacity Evaluation



The Bid Evaluation- Technical

- The equipment /system & manufacturer being offered by the bidder is to be evaluated for its conformance with the tender technical specification
- The Guaranteed Technical particulars are to meet the minimum Tender requirement.
- Any alternative technology or material grade offered by the bidder needs to be verified.
- Any price implication on the project w.r.t. technical parameters to be verified and respective loading on the price to be proposed.
- The feedback of working of the equipment supplied by the bidders in other projects to be evaluated
- The factory load of the bidder or its major supplier should be evaluated

The Bid Evaluation- Technical (-Score method)

Technical Evaluation Criteria

RFP for the provision of Legal Advice of a Law Firm

		Points Obtainable	Company/ Institution										
			Watson/ Farley	Simpson /Thacher	Wilmer/ Hale	Baker/ Mckenzie	Dubarry Le Douarin	Shearman	Reed Smith				
1.0 Expertise of Firm/ Organization Submitting the Proposal													
1.1	Reputation of Organization and Staff (Competency/ Reliability)	**40**	20	39	37	34	10	38	25				
1.2	Litigation and Arbitration History	**75**	48	75	75	65	25	75	50				
1.3	General Organisational Capability which is likely to affect implementation (i.e. loose consortium, holding company or one firm, size of the firm / organisation, strength of project management support e.g. project financing capacity and project management controls)	**35**	23	35	35	35	20	35	25				
1.4	Extent to which any work would be subcontracted (subcontracting carries additional risks which may affect project implementation, but properly done it offers a chance to access specialised skills)	**15**	0	15	15	15	15	15	15				
1.5	Quality Assurance Procedures , Warranty	**25**	12	24	23	21	10	24	15				
1.6	Relevant of : -Specialized Knowledge -Experience on similar Projects	**60**	40	45	50	55	20	60	45				
1.7	Work for UNDP /major multilateral/or bilateral programmes	**50**	30	50	50	50	20	40	30				
	TOTAL MARKS	**300**	**173**	**283**	**295**	**275**	**120**	**287**	**205**				

The Bid Evaluation- Commercial

- The Bid Forms are duly filled and signed
- The declared Deviations on the Commercial part are to be evaluated
- All costs are properly covered in the offered prices
- Bid price is in specified currency or the listed conversion rate at the time of price bid opening are to be considered.
- Any price variation/escalation formulae are correct and is justified
- Details of any extra costs (such as Delivery cost , shipping cost, custom charges, insurance, documentation , testing & inspection) are identified
- Cost of Spares if mentioned extra is identified
- Any other indirect commercial deviations are identified

The Bid Evaluation- Capacity

- The Bidder has sound financial condition
- The Bidder has sufficient funds to procure raw material and process so that positive cash flow is maintained up to delivery of equipment
- The Bidder is not under litigation or any act resulting in bank corruptly
- The Bidder's financial has sufficient immunity from market economy trend
- Will there be any cost resulting from loss of economy of scale
- If offer is for Services , then check should be done if resultant staff savings or reduction in support services fully accounted for
- Has the cost of any long term agreement been included ?
- In case of Foreign Bidder, geo-Political scenario to be evaluated.

Award Process

- Based on Evaluation report & recommendation of Assessment Panel a " Best Fit Bidder" or successful is declared.
- A Letter of Award is Issued to the Successful Bidder.
- The Bidder is asked to submit a Contract Performance Guarantee which could be in form of a Bank Guarantee, Demand Draft, Cash or a Fixed Deposit Receipt
- A contract between Bidder & Employer is drafted as per International Contract Laws.
- Contractual Obligations & Rights are being drafted / incorporated in the contract
- Technical Obligations are clearly stated
- Quality Obligations are clearly stated
- Completion Schedule is clearly stated
- Payment schedules are clearly stated
- The contract is signed and moved for implementation

Letter of Intent

A **letter of intent** (**LOI**) is a document declaring the preliminary commitment of one party to do business with another. The **letter** outlines the chief terms of a prospective deal.

Letter of Intent

Sample construction letter of intent

Frank Smith
124 Broadway 2nd street
Los Angeles, LA

Date:

Thomas Charlie
CEO, Model Construction Company

Subject: letter of intent for starting the construction prior signing the agreement

Dear Mr. Charlie,

I am writing this letter to you in order to notify you about my intentions. I have decided to select your services for the construction work required on my property and as you know, if you accept the deal, we will have to enter in the construction agreement and that can take at least 10 days. I don't want to wait for another week or two before starting the actual construction work on my property.

This is why I am sending you this letter of intent and asking you that if you agree and accept my offer, you should start the construction work right away and once the agreement is prepared and arrives in my office, I will let you know and we can both sign it in order to legalize the deal that we have made.

Yours sincerely,
Frank Smith

Letter of acceptance & Notice to Proceed

A **notice to proceed** is a **letter** from the owner or director of a company or business to a contractor. This **notice** will inform the contractor of the date that he can start work, as outlined in a previous contract. The date mentioned in the **notice to proceed** will be the official start of the contract

Letter of acceptance & Notice to Proceed

CA No. CE (P) CTK/ /2015-16
Tender No. CE (P) CTK/32/2015-16

TENDER / CONDITIONS ACCEPTANCE LETTER
(To be given on Rs 10/- Stamp Paper duly Notarized)

Date:

To,

The Chief Engineer,
Project Chetak,
C/O 56 APO

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No. : **CE (P) CTK/32/2015-16**

NAME OF WORK:- DESIGN AND CONSTRUCTION OF 82.40 MTR SPAN(20.60 x 4) PMT BRIDGE WITH RCC DECKING OVER STEEL BEAM BOTTOM GIRDER SUPER STRUCTURE ON SATLUJ RIVER AT HUSSAINIWALA BARRAGE BY REPLACING 1 X EXISTING BAILEY BRIDGE AT INITIAL PORTION OF HUSSAINIWALA BARRAGE UNDER PROJECT CHETAK IN PUNJAB STATE

Dear Sir,

1. I/ We have downloaded/obtained the tender document(s) for the above mentioned 'Tender / Work' from the web site(s) namely:- **https://eprocure.gov.in/eprocure/app**

2. I/We hereby certify that I/We have read entire terms and conditions of the tender documents from Page No. 01 to 141 (including all documents like annexure), schedule(s), etc.,), which form part of the Contract Agreement and I/We shall abide hereby the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organization too have also been taken into consideration, while submitting this acceptance letter.

4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in totality/entirely.

5. In case any provisions of this tender are found violated, your department/ organization shall be at liberty to reject this tender / bid including the forfeiture of the full said earnest money deposit absolutely and we shall not have any claim/ right against deptt in satisfaction of this condition.

Yours faithfully

(Signature of the Bidder, with Official Seal)

SAMPLE NOTICE TO PROCEED

TO: Contractor/DLG

FROM: City of _____

DATE:

SUBJECT: Notice to Proceed with Construction Contract #_____

(Project Name), located at (address) was awarded to (Name of Contractor, address and name of contact person and #), in the amount of (Contract Amount), on (date). Contractor is hereby notified to commence work set forth in the contract on or before (date).

All work is to be done in accordance with plans, specifications and conditions provided in the contract.

The project must be fully complete within _____ consecutive calendar days after (date). The date of completion of all work is, therefore (date). Contractor will pay as liquidated damages, the sum of $_____ for each consecutive calendar day thereafter as specified in paragraph 9 of the Information for Bidders and under such conditions as provided in paragraph 19 of the General Conditions.

Please acknowledge receipt of this Notice by signing the space below and returning a copy to this office.

Please advise if there are any questions.

Sincerely,

_____, Mayor/Judge/Subrecipient CEO

Acceptance of Notice

Receipt of the above Notice to Proceed is hereby acknowledged by _____, this _____ day of _____, 20__.

BY: _____

TITLE: _____

Features /elements of standard tender documents

- **Standard means** a level of quality or excellence that is accepted as the norm or by which actual attainments are judged
- **Tender means** It is an invitation from the owner to the contractor to execute some work at specified cost in specified time.
- **Tender documents means** the documents provided by the procuring entity to tenderers as basis for preparation of their tenders
- **Standard tender document mean** the document prepared in a level of quality determined by PPOA and distributed to PE'S for the purpose of customization and providing them to tenderers as a basis for preparation of their tenders

Elements of standard tender documents

- Section 1. Instructions to Tenderers (ITT)
- Section 2. Tender Data Sheet (TDS)
- Section 3. General Conditions of Contract (GCC)
- Section 4. Particular Conditions of Contract(PCC)
- Section 5. Tender and Contract Forms
- Section 6. Bill of Quantities
- Section 7. General Specifications
- Section 8. Particular Specifications
- Section 9. Drawings

Section 1-Instruction to Tenders (IIT)

1.Criteria for eligibility

2.Informations

- Information on -

  Tender preparation

  Tender submission

  Tender opening and evaluation

  contract of awards

Section 2-Tender Data Sheet (TDS)

1.General

- **The procuring entity:** Executive engineer, PWD ,Division-V
- **Title of work:** Constructions of 4 Storied commercial Building

2.Tender Documents

- Attention : Executive engineer
- Address: Chickballpur division
- Telephone-934548
- Email adress-eepwd@gmail.com

3.Qualification Criteria

- A satisfactory complete of similar works of at least Rs1 Crore 20 lacks under single number contract
- Required average annul construction turnover :Rs 1 crore over the last 1 year
- Minimum amount of liquid asses :Rs 80 lacs

4.Tender Preparation

- **Additional documents**

  Professionals and technical qualification

  Financial resource

  Equipment and physical facilities

  Specific experience
- **Tender validity period:** 80days

Tender Submission

dead line : 10 am , 12th November 2019

Tender Opening

Address: office of the executive engineer, PWD-Chickballpur - division

Time and date -10 am 15th November 2019

Contract award

Performance security-least of coated

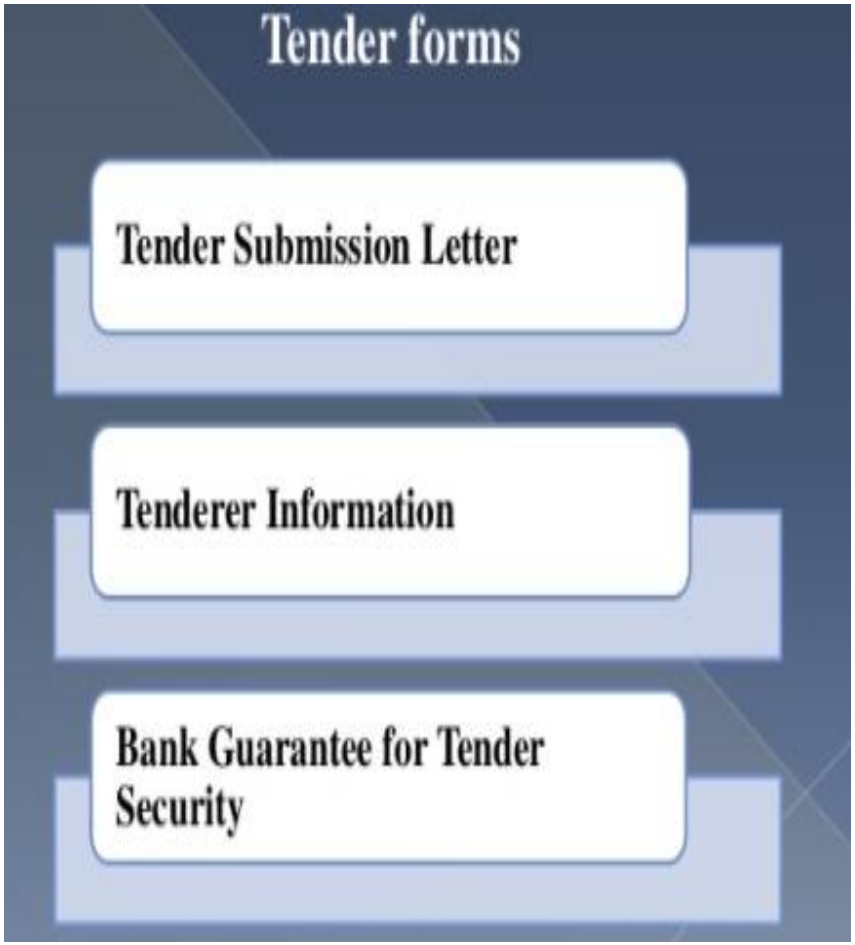
Section 3-Genral condition of Contract(GCC)

- General
- Time Control
- Quality Control
- Cost Control
- Completion of Contract
- Termination and Settlement of Disputes
- Disputes and Arbitration

Section 4-Particular Condition Of Contract (PCC)

- Procuring Entity: .....
- Project Manager: .....
- Site location: .....
- Job: .....

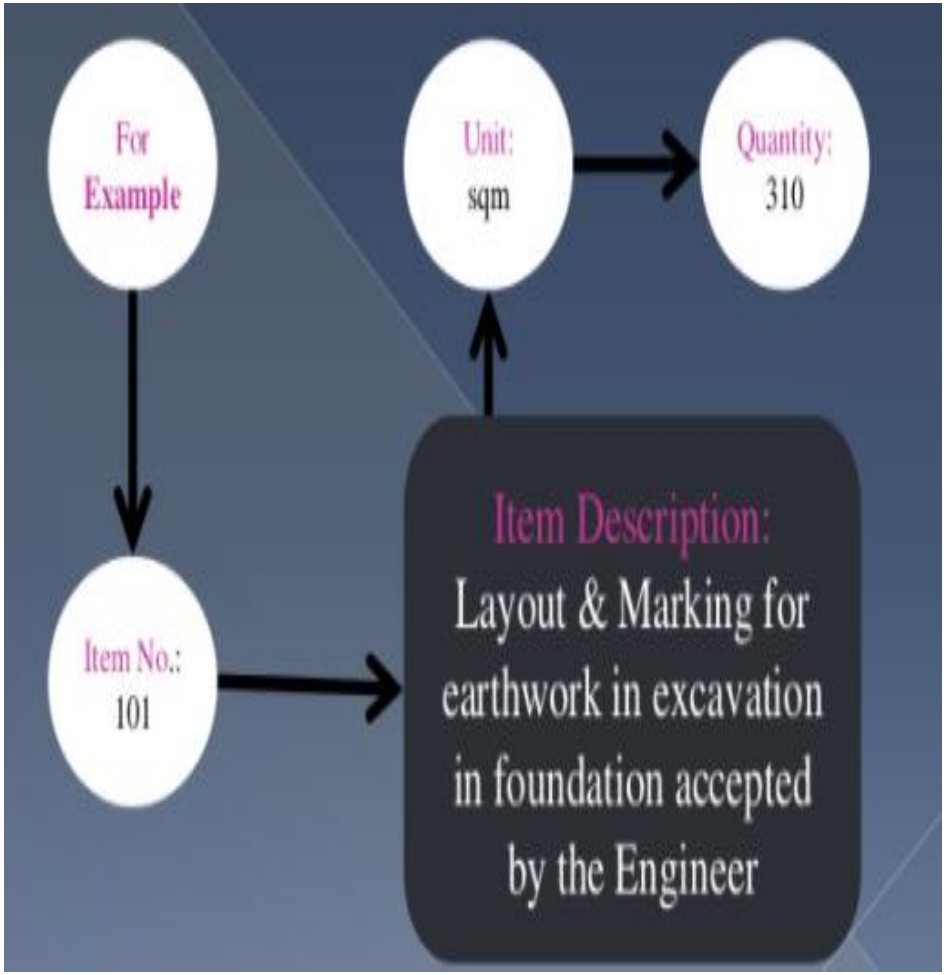
Section 5-Tenders and Contract Forms



Section 6-Bill of Quantities (BOQ)

Outline of the 'Bill of Quantities'

- Main parts of 'Bill of Quantities'
  I. Item No-100: Earth Work
  II. Item No-200. RCC Works
  III. Item No-300: Reinforcements
  IV. Item No-400: Brick soling, CC, DPC
  V. Item No-500: Brickwork, Plastering & Floor finish
  VI. Item No-600: Door and Window Materials



Section 7-General Specification

- Mobilization and Preparation of Site
- Dismantling & Removal of Existing Structures
-Security
-Health and Safety
-Disposal and Pollution
-Surveys and Setting Out
-Programme and Progress Reports and Return

Section 8-Particular Specification

- Cement –Cement conforming IS 269:1989 – Specification for ordinary Portland cement, 33 grade.
- Sand – best quality fine and coarse sand shoulder be used (FM-2.5)
- Concrete –M20 concrete should be used for slab and M 25 concrete should be used for column
- Steel –Grade of steel Fe500
- window frames must be made with aluminium of SS colour
- Brick –First class brick should be used its Not less than 3.5 kg/cm^2

Section 9-Drawings

- Quantities should be computed net from the Drawings

-The actual Drawings, including site plans, should be attached to this section or annexed in a separate folder.

Assignment

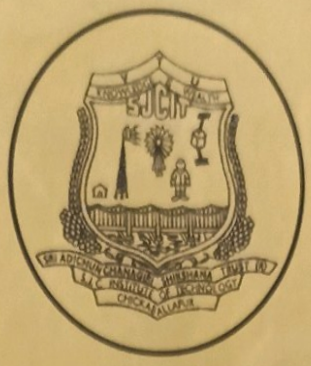
1) Contract forms: FIDIC Contract Forms ,CPWD, NHAI,NNTPC,HEPC

2) Features/elements of standard tender document(source: PWD/CPWD/International competitive Bidding-NHAI/NHEPC/NPC)

Thanks You

II JAI SRI GURUDEV II

SRI ADICHUNCHANAGIRI SHIKSHANA TRUST (R.)



S.J.C. INSTITUTE OF TECHNOLOGY

CHICKBALLAPUR - 562 101.

Assignment Book

Name ...Keerthana. N.....

Class ...7th A Civil..... Roll/Reg. No ...1ST18CV051.....

Subject ...Quantity Surveying & Contract management.....

Assignment No.	Date	REMARKS	Sig. of the Student	Sig. of the Staff Member
I	10/1/22	Assignment		
II				
III		10/10 20/1/22		
IV				

20/1/22

Staff in-Charge

Head of Department

SJCIT CONSUMERS CO-OPERATIVE SOCIETY LTD.

CHICKBALLAPUR - 562 101.

Steel Reinforcement				
Black smith	-	55	410	22550
Helper	-	55	390	21450
				= 84495.78
3) Tools & Equipments				
mixer	Noldag	1	1200	1200
Vibrator	Noldag	1	500	500
Others	Noldag	Lumpsum		500
				2000
			Total	= 598409.78

1.5% of water charges → $\left(\frac{1.5}{100} \times 598409.209\right) = 8943.13$

10% of Contractor profit = $\left(\frac{10}{100} \times 8943.13\right) = 894.31$

Grand total = 7,60824.22

4) Earthwork Excavation on trenchers for foundation not exceed 1.5m width 1ft up to 1.5m leed up to 30m (ordinary so

Volume of earthwork = 1.5 × 1.5 × 30 = 67.5

Earth excavation for Ordinary soil	67.5	299	20182.5
Filling	67.5	120	8100
Workmenship			
mazdoor (3'/4)	21.9	385	8431
Lumpsum		1000	1000
			94311.

3) RCC Slab on 1 : 1½ : 3 (M_{20}) ratio & size of the slab is 10m x 10m & 150mm thick

Sol^n :

$1 + 1.5 + 3 = 5.5$

Volume of concrete = $10 \times 10 \times 0.15 = 15\ m^3$

Dry volume = wet volume x 1.54

Dry volume = 15×1.54

Dry volume = $23.1\ m^3$

Cement = $\frac{1}{5.5} \times 23.1 = 4.2\ m^3 = \frac{4.2}{0.034} = 124$ bags

fine aggregate = $1.5 \times 4.2 = 6.3\ m^3$

Coarse aggregate = $3 \times 4.2 = 12.6\ m^3$

Sl No	Particular	Unit	Quantity	Rate	Amount
(1)	Material calculation				
	Cement	bags	124	450	55800
	fine aggregate	Cum	6.3	1680	10584
	Coarse aggregate	cum	12.6	1091	13746.6
(2)	steel				
	5/100 x 15 x 7.850 = 5887 kgs	kgs	5887	72	423864
	Bending wire = $\frac{1}{100}$ x 5887 = 58 kgs	kgs	58	60	3480
	shattering = 106 sq m	Sqm	106	40/m²	4240
					511714
	workmenship for 15cum				
	Head mason	—	0.375	466	174.75
	mason	—	3	456	1368
	mazdor	—	18	385	6930
	helper	—	3	385	1155
	Carpenter	—	32	410	13120
	Carpenter helper	—	42	400	16850
		—	3	456	1368

Rate Analysis

Calculate the Quantity and do the rate analysis for cement Concrete 1:3:6 for foundation.

Sol ⇒ Consider $10m^3$ wet mix concrete

W.K.T Total quantity of dry mix concrete required is $15.2m^3$

Quantity of cement ⇒ $\left(\frac{1}{1+3+6}\right) \times 15.2 \Rightarrow 1.520m^3$

1 bag of cement ⇒ $0.035m^3$

No. of bags of cement ⇒ $\frac{1.52}{0.035} \Rightarrow 43.42$ bags $\approx$ 44 bags

Quantity of fine aggregate ⇒ $\left(\frac{3}{1+3+6}\right) \times 15.2 \Rightarrow 4.560m^3$

Quantity of Coarse aggregate ⇒ $\left(\frac{6}{1+3+6}\right) \times 15.2 \Rightarrow 9.120m^3$

Sl No	Particulars	Quantity	Rate	Amount (Rs)
a)	Materials			
i)	Cement	44 bags	330 / bag	14520/-
2)	fine aggregate	$4.560m^3$	1300/m^3	5928/-
3)	Coarse aggregate	$9.120m^3$	700/m^3	6384/-
(b)	Labour			
	Head mason	1/4	400	100/-
	Mason	2	390	780/-
	Mazdoor	20	290	5800/-
	Contingencies	Lumpsum		200/-

Total ⇒ Rs 33,712

→ fine aggregate

→ Shall be of coarse sand consisting of hard, sharp angular grains and shall pass through a screen of 4.75mm square meter

→ cement shall be french portland cement of standard specifications and shall have the required tensile compressive stress and fineness.

Proportion specifications :-

1:2:4 (Cement : Sand : Stone ballast) by volume when specified maximum compressive strength of concrete 1:2:4 proportion shall be 140 kg/cm² in 7 days.

Hand mixing :

mixing shall be done on masonry platform or sheet iron tray.

Laying Techniques

→ Concrete shall be laid gently (not thrown) in layers not exceeding 15 cm and compacted by punishing with rods tamping with wooden tampers or with mechanical vibrator machine until a dense concrete is obtained.

Curing method

→ After about two hours of laying of concrete, when the concrete has begun to harden, it shall kept damp by covering with wet gunny bags or wet sand for 24 hours,

→ Necessary precautions shall be taken to prevent surface water to enter into the trench.

Measurement:-

→ The measurement of the excavation shall be taken in cubic metere (cubic feet)

→ volume = Rectangular trench bottom width × vertical depths of foundation from the ground level × length of trenche

→ for every extra lead of 30m and every extra lift of 1.5 m, separate extra rate is provided.

(2) Specifications for plain cement concrete (PCC)

Plain cement Concrete (PCC) is a Construction material general used as a building materials and is composed of cement, (commonly portland cement), and other cementations material such as fly ash & slag cement, aggregate (generally a coarse aggregate made of gravels or crushed rocks such as limestone or granite, plus a fine aggregate such as sand), water, and chemical admixtures,

Materials Specifications

→ Aggregate shall be of inert materials and should be clean, dense, hard, sound, durable, non-absorbent and capable of developing good bond with mortor.

→ Coarse Aggregate :- Shall be of hard broken stone of granite or similar stone, free from dust, dirt and other foreign matters. The stone shall be of 20mm size and smaller all the coarse materials should be retained in a 4.75mm square meter

Module - 03

Write detailed specifications for following:

① Earthwork excavation for foundation:-

Excavation:-

→ The surface cleaned from grass, roots of trees and o Organic matters.

→ foundation trenches shall be dug out to the exact w and length as per engineering drawing.

→ sides of foundation shall be vertical

→ If the soil is not good and cleaned does not permet vertical sides. the sides should be sloped back or protected with shoring.

→ Excavated earth shall not be placed within 1 meter (3 fe of the edge of the trench

finish of Trench

→ The bottom of foundation of trenches shall be perfe levelled both longitudinally and traversely.

→ The bed of trench shall be tightly watered and well rammed.

→ excess digging. if done through mistake. shall be filled with Concrete at the expense of the Contractor

finds:-

→ Any treasure and valuable or material found during the excavation, shall be the property of government

water in foundation

→ water, if any accumulates in the trenchs. should be baile (or) pumped out without any extra payment

The Bid Evaluation

The evaluation of the bids has following parts:

- Technical evaluation
- Commercial evaluation
- Capacity evaluation.

1) Technical Evaluation

* The equipment / system & manufacturer being offe
  the bidder is to be evaluated for its conform
  with the tender technical specification
* The Guaranteed Technical particulars are to me
  minimum Tender requirement
* Any alternative technology or material grade
  by the bidder needs to be verified.
* The factory load of the bidder or its major suppl
  should be evaluated

2) Bid Evaluation - Commercial

* The Bid forms are duly filled and signed
* The declared Deviations on the commercial part
  are to be evaluated.
* All costs are properly covered in the offered p
* Bid price is in specified currency or the lastes
  Conversion rate at the time of price bid openi
  are to be considered.
* Any price variation / escalation formulae are correct
  is justified.

3) The Bid Evaluation - Capacity.

* The Bidder has sound financial condition
* The Bidder has sufficient funds to procure raw materi
  and process so that positive cash flow is maintained
* The Bidder is not under litigation or any act resulting
  bank occur. Corruptly
* will there be any cost resulting from loss of econom
  scale

④ Administration approvals

It is the permission given by highest authority of user dept. for the execution of proposed project on the basis of approximate estimation of the project.

for example:

A College building is to be constructed by PWD but is to be used.

By the education department, then PWD is the technical department where as education dept is the administrative department.

It is in effect an order to the PWD to execute certain specified works at a stated sum to meet the administrative needs of the department requiring the work.

By the education department, then PWD to execute certain is the technical department where as education dept is the administrative department.

⑤ Bid Submission & Evaluation process

Bid Submission / Tender submission

Subsequent to the Pre Bid meeting. the Bids are prepare and submitted on the prescribed time and form duly sealed

The Bid submission could be of following forms

Two stage Bidding: first Techno Commercial part & then price part.

single stage Bidding: Comprehensive Bid is submitted.

Stage 6:

* Pre-award meeting with contractors - validation of lowest complying bid
* validate lowest bid - Pre contract meeting with Cont. for contract signing
* Approval by tender board | treasury (tender exceed Rm 10 mill.) - an acceptance of tender form as issued to tenderer. signed by the authorised officer.

(3) Explain the following terms:

(1) Pre Qualification

Objective

- Select companies to invited to tender or negotiate for contract

Process:

- Registration of interest invited
- Construction Companies submit details resources skills and experience.
- Engineer and client review companies
- Tender document send to shortlisted companies only.

Advantages

- To reduce the need to evaluate unqualified Contract
- Allows for unqualified bidders to be weeded out
- Speed up evaluation of bids.

Module-4

① List the types of Contracts. Briefly explain three types of Contract?

* Types of Contracts
  1. Lump Sum Contracts
  2. Turn key Contract
  3. Item rate Contract
  4. Percentage rate contract
  5. Rate only items
  6. labour Contract
  7. Cost plus Contract
  8. Sub Contracting
  9. BOT (Build, Operate & Transfer)

① Lumpsum Contract

In this Contractor agrees to execute a Complete work in all respect for specified amount within a specified time.

* The plans, construction drawings & detailed specifications are provided to the Contractor.
* The detailed quantities and schedule of items will not given to Contractor.
* The Contractor will have to Complete the work as per plan & specification with in Contract period.
* On the Completion of work no measurement will be taken by the owner. The Contractor will be paid the fixed amount as agreed by checking the whole work by Comparing plans & Drawings.

Value depends on supply and demand whereas cost is a constant amount required for the construction. For an example, suppose a person has constructed a nice out-house at a deserted place according to his liking at a cost of Rs 80,000/- But just after that he wants to sell the property which has little value to the others whereas and he gets a maximum offer of Rs 40,000/- The owner was about to sell his property, but just at that time a plan is sanctioned to develop a big industry adjoining to the area and subsequent growth of population started so due to demand the out-house becomes valuable and he sells it at a price of Rs 1,25,000/- So the value of the property varies from Rs 40,000/- to Rs 1,05,000/- but the cost remains the same Rs 80,000/- Therefore value depends on demand & supply whereas cost is a constant amount.

Estimate:-

An estimate is an anticipated or probable cost of a work. which is usually prepared before the construction is taken up.

Before undertaking any work or project it is necessary to know its probable cost. An estimate is prepared by calculating the cost of available rates.

Assignment

Module-05

① What is valuation ? Explain methods of valuation of buildings.

→ Valuation is a technique of estimation or determining the fair price or value of property such as building, a factory, other engineering structures of various types, lands, etc.

Methods of valuations

i) Methods of valuation for open land
ii) Methods of valuation for land with buildings

i) Methods of valuation for open lands

a) Comparative method
b) Abstractive method
c) Betting method.

a) Comparative method :

* Various transaction of near by lands are studied and then fair rate of lands under consideration is decided.
* Active market is necessary for this method.
* Elements of time play a very virtual role in this method to be application.
* In case of volatile market there is, large change and comparison become difficult.

b) Abstractive method

The abstractive method become useful when no information is available regarding land transaction in the nearby areas or in other words.

c) Direct Comparison method

* Capitalized value of a property is determined by direct Comparison with Capitalized valve of a few adjoining properties
* This method is used when particular of sale of adjoining properties are available
* Properties should be similar, details of them should be known and transaction should be as new or fresh as possible
* Suitable for properties where fair rent is not know school's clubs, out houses etc.

d) Profit based valuation

* Similar to the rental method suitable for hotels, Cinemas shop etc
* Net profit is worked out after deducting all possible outgoings
* This net profit is multiplied with year purchase to get the Capitalized valuation

20% is my rate of interest I need
X = investment
Net income = 100000

Capitalised value = Net income * Year's purchase.

(2) what is difference b/w the cost, estimate & value ?

Cost:-

→ Cost means actual amount incurred in producing a Commodity
→ for example- Cost of materials, labour and other service on constructing a building.

Cost & value

Cost means the actual cost of construction whereas value means the present market value which may not be the same as the cost of construction.

Module-4

① List the types of Contracts. Briefly explain three types of Contract?

→ Types of Contracts

① Lump Sum Contracts
② Turn key Contract
③ Item rate Contract
④ Percentage rate Contract
⑤ Rate only items
⑥ labour Contract
⑦ Cost plus Contract
⑧ Sub Contracting
⑨ BOT (Build, Operate & Transfer)

① Lumpsum Contract

In this Contractor agrees to execute a Complete work in all respect for specified amount within a specified time.

* The plans, construction drawings & detailed specifications are provided to the Contractor.
* The detailed quantities and schedule of items will not given to Contractor.
* The Contractor will have to complete the work as per plan & specification with in Contract period.
* On the Completion of work no measurement will be taken by the owner. The Contractor will be paid the fixed amount as agreed by checking the whole work by Comparing plans & Drawings.

3) Turn key Contractor

* A turn key contractor is one in which contractor is responsible for both design & execution.
* The owner obviously shall provides the functional requirements & approves the design & drawings.
* The Contractor will provide the work for fixed date & an agreed rate
* The term is used synonymously with "package Contr "design & build" or "design constructor"
* These contracts are also known as EPC Contracts (Engine procurement & Construction).

4) Item rate Contract

* Item rate contract is also known as unit price Contract or schedule Contract.
* A Contractor undertakes the execution of work on the Basis of Item rate.
* The Contractor is required to quote rate of individ item of work on the basis of schedule of quantities furnished by the owner.
* Estimated quantities are surveyed by Architect/Engg
* payment is made on the basis of unit of work actually done.

5) Labour Contract:

* This is the most commonly adopted system for the Construction of private individual buildings in small cities

* The contractor undertakes only the labour portion of the work.
* All the necessary materials are supplied by the site b/w owner & client.
* Contractor arrange his own labour, machinery & get the workdone as per the specification.
* The contractor is pay for the labour only on the actual quantity of work done.

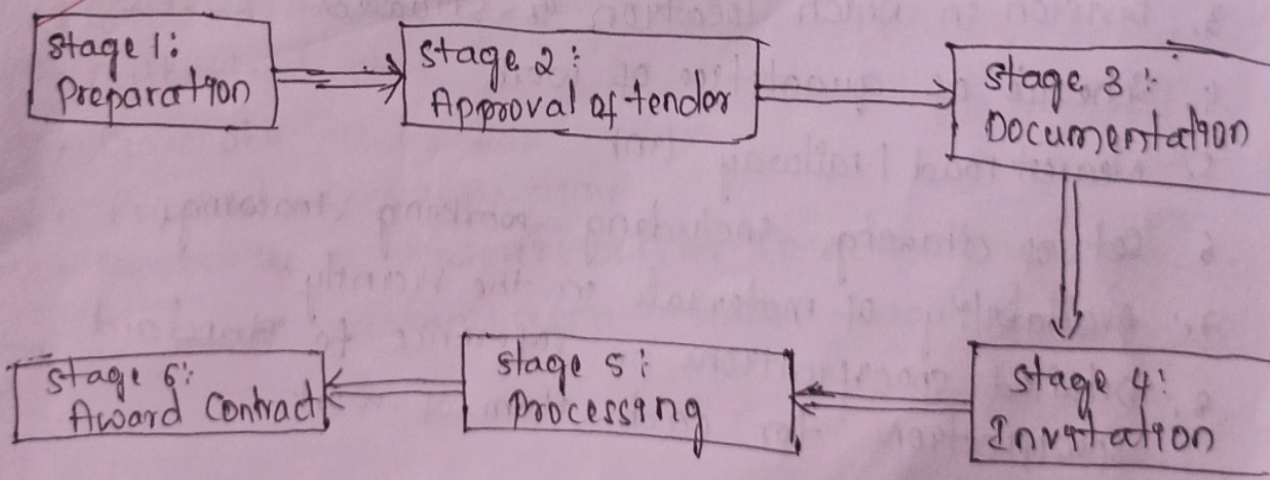
5) BOT (Build, organise & transfer)

BOT is a type of arrangement in which the private sector builds an infrastructure projects. operate it and eventually transfer ownership of the project to the government.

* Also called as PPP (public, private, partnership.)
* To construct facilities like good road, water supply bridges, exports highway in partnership with the private sector.

2) Explain the procedure of tendering & award of works in civil engineering projects.

⇒ Procedure for tendering process



Stage 1: Preparation:

Department Engineers Ex:- PWD Engineers will prepare. They go through the * Site visit
* Surveying
* Architectural drawing
* structural drawing

* They prepare detailed project report.

Stage 2: Approval to tender

The Detailed project Report (DPR) is send to the financial department. The financial officer check the Reports & Sanction the amount for PWD department.

Stage 3: Preparation of tender Documents

* One Set of approved drawings are necessary
* All documents are signed by the Contractor page by page forwarding letter head of a Contractor with bank draft & pat in closed cover.
* Then the cover is closed & dropped in the tender box within the time limit for tender.

Information to be given in a tender document

1. The notice inviting tender in specified form like PWD 6
2. layout plan, location of work.
3. Division in which location is situated
4. Schedule of quantities of work
5. Nearest road / railway link
6. Set of drawings including working drawings
7. Availability of materials in the vicinity.
8. Detailed specifications or reference to standard specifications for each item of work.

10. Complete architectural and structural drawings.
11. Schedule of tools & plant and other facilities to be made available by the owner, indicating the conditions, hire charges and place of delivery.
12. Rate of supply of power and the point of supply.
13. location of water supply point.
14. Time for completion and the progress to be made at intervals of time.
15. Conditions regarding employment of technical personnel.
16. Weather conditions on the area
17. Amount of EMD and the form in which it is to be paid.

Stage 4: Invitation

Based on selection of tendering methods.

* Open / competitive / bid tender - produce tender notice
* Selective - shortlisted Contractors will be invited to tender if they wish.
* Negotiated - only one Contractor is approached. direct entry to progeel.

Stage 5: Processing

* Received tender Submitted by Contractor
* Tender assessment / Evaluation
  - Completed tenders are received
  - Arithmetical check
  - Reasonable tender sum
  - Reasonable Completion time
  - Capabilities of tenderers under Considerations
* Tender recommendation / report - tender board

1.5% of water charge = $\frac{1.5}{100} \times 9431 = 141$

10% of contractual profit = $\frac{10}{100} \times 9572 = 957$

Total = ₹10,529

Rate per m^3 = $\frac{\text{total Amount}}{\text{Vol}}$

= $\frac{10,529}{67.5}$ = 155.98 m^3

10/10

20/1/22

Internal Test Question paper format- CBCS Scheme	
Name of the staff/s: Dr.Sidde Gowda , Chetan G N	
Date: 02/12/2021	Signature: 01/12/21
Reviewer's Signature:	11/12/21 11/12/21

S.J.C. Institute of Technology
Department: Civil Engineering.
Test: I

Semester: VII Section: 'A' & 'B' Max Marks: 60
Subject Name & Code: Quantity surveying and contract management (18CV71)
Duration: 90 min

Answer the following questions.

Q.No	Questions	M	CO	Levels
1	The details of a Residential building is show in **fig 1** estimate the quantities and cost of each item of work 1. Earth work estimation for foundation @ Rs 380/m^3 2. Plain Cement concrete 1:3:6 for bed of foundation @3000/m^3 3. SSM with CM 1:6 for footing @2000/m^3 4. First class Brick work CM 1:6 in super structure @4500/m^3	25	CO1	L5
	OR			
2	The details of a Residential building is show in **fig 2** estimate the quantities and cost of each item of work 1. Earth work estimation for foundation @ Rs 380/m^3 2. Plain Cement concrete 1:3:6 for bed of foundation @3000/m^3 3. SSM with CM 1:6 for footing @2000/m^3 4. RCC slab for building @4500/m^3	25	CO1	L5
3	The details of a septic tank is show in **fig 3** estimate the quantities and cost of each item of work 1. Earth work estimation for foundation @ Rs 380/m^3 2. Plain Cement concrete 1:3:6 for bed of foundation @3000/m^3 3. BBM with CM 1:3 for footing @4500/m^3 4. RCC 1:1.5:3 for cover of the tank @5500/m^3	25	CO2	L5
	OR			
4	Reduced level (R.L) of ground along the Centre line of a proposed road from chainage 10 to chainage 20 is given below. The formation level at the 10th chainage is 107 and the road is in downward gradient of 1 in 150 up to the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width of road is 10 meter and side slopes of banking are 2:1 (H:V) Length of the chain is 30 meter . Estimate of Earth work at the Rate of Rs 380/m^3	25	CO2	L5

Chainage	10	11	12	13	14	15	16	17	18	19	20
RL of Ground	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.3

Internal Test Question paper format- CBCS Scheme	
Name of the staff/s: Mr. Raghu K , Chetan G N	Signature: 27/12/21
Date: 27/12/2021	
Reviewer's Signature:	27/12/21 27/12/21

S.J.C. Institute of Technology
Department: Civil Engineering.
Test: II

Max Marks: 60

Semester: VII Section: 'A' & 'B'
Subject Name & Code: Quantity surveying and contract management (18CV71)
Duration: 90 min

Answer the following questions.

Q.No	Questions	M	CO	Levels
1	Write Detail Specification for the following 1. Earth work excavation for Foundation 2. Bed Concrete for foundation CC1:4:8 3. Plastering in CM 1:6 to interior surface 4. Size stone masonry in CM 1:6 5. RCC work Proportion 1:2:4	25	CO3	L3
	OR			
2	Carry Out rate analysis for the following 1. Earth work excavation for foundation 2. Burnt Brick Masonry(BBM) for superstructure in CM 1:6 3. RCC 1:1.5:3 for Roof slab 4. 20 mm thick Plastering with cement mortar CM 1:4 5. Concrete flooring 25mm thick (1:2:4)	25	CO3	L3
3	What is tender? List and explain the departmental procedure of tendering in civil engineering works	15	CO4	L2
	OR			
4	Explain briefly for the following 1. Prequalification 2. Administrative approvals & Technical sanction 3. Award of contract and letter of acceptance 4. Invention to Tender	15	CO4	L2
5	Explain the process of Bid submission and Evaluation Process	10	CO4	L2
	OR			
6	Explain Tender Notice. List the essential information given along the Tender Notice	10	CO4	L2

Internal Test Question paper format- CBCS Scheme	
Name of the staff's: Mr. Raghu K , Chetan G N	
Date: 18/01/2022 Signature:	
Reviewer's Signature:	

S.J.C. Institute of Technology

Department: Civil Engineering.

Test: III

Semester: VII Section: 'A' & 'B' Max Marks: 50

Subject Name & Code: Quantity surveying and contract management (18CV71)

Duration: 90 min

Answer the following questions.

Q.No	Questions	M	CO	Levels
1	List the types of contract .Briefly explain the types of contract	15	CO4	L2
	OR			
2	Explain the following a) Law of contract as per Indian Contact act 1872 b) Contract Forms c) Earnest money deposit and security deposit.	15	CO4	L2
3	List and Explain the methods of valuation of land with building	15	CO5	L2
	OR			
4	What is Valuation? Explain the Purpose of Valuation.	15	CO5	L2
5	Explain the following a) Mobilization and equipment advance b) Breach of contract c) Suspension of work d) Contract management	20	CO5	L2
	OR			
6	Explain the following a) Outgoing b) Sinking fund c) Capitalized value d) Freehold and lease hold	20	CO5	L2

CO4	15	CO5	35	L1	00	L2	50	L3	00

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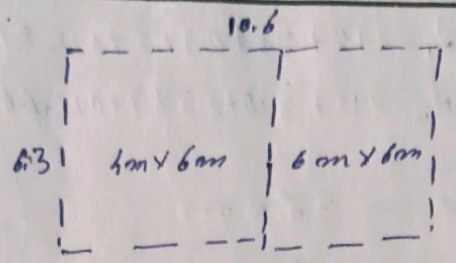
DEPARTMENT OF CIVIL ENGINEERING

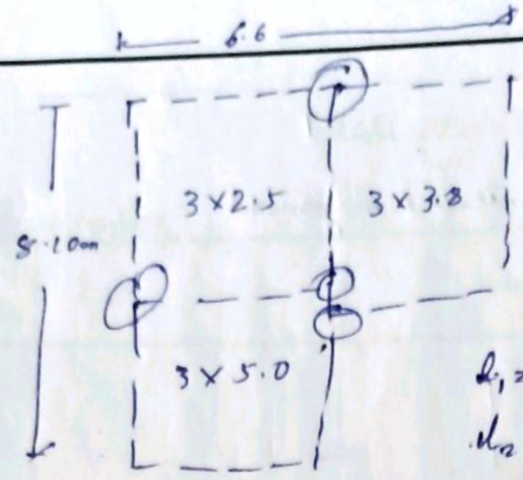
Scheme & Solutions- TEST- 1

Semester:

Subject Title: Quantity Surveying & contract Management **Subject Code:** 18CV71

Q. No.	Solution	Marks Allocated
01	 C.L = (6.3×3) + (10.6×2) = 40.1 m ——— 4m	4
	Earthwork Excavation	
	L: 40.1 | B: 1.1 | D: 1 | Q: 44.1 ⟶ 4m	4
	P.C.C: 40.1 | 1.10 | 0.3 | 13.2 ⟶ 4m	4
	SSm: 40.1 | 0.7 | 0.7 | 19.64 } — 4m 40.1 | 0.5 | 0.6 | 12.03 }	4
	BBm — 40.1 | 0.3 | 4.2 | 50.5 — 4m	4
	Calculation	
	Earth works 44.1 × 380 = 16761	
	P.C.C 13.93 × 3000 = 39690	
	SSm 31.67 × 2000 = 63340 ——— 5m	
	BBm 46.92 × 4500 = 209260	
	3,28,091.8	
	12 % GST 36749.0167	4+4+4+4+4+5 = 25m

09)



$l_1 = 0.15 + 2.5 + 0.3 + 5 + 0.15 = 8.1$

$l_2 = 0.15 + 3.0 + 0.3 + 3 + 0.15 = 6.6m$

Total centre line — 36.8 m
no of Junction — 4 no } — 5m

Earth works	1	35	0.9	0.95	29.925		— 4m
P.C.C	1	35	0.9	0.15	4.725		— 4m
SSM	1	35.2	0.8	0.5	14.08	26.19	— 4m
	1	35.9	0.45	0.75	12.11		
RCC	1	41.24	0.4	0.12	1.97		— 4m

Amount

Earth works 29.42 × 380 = 11371.8)

PCC 4.725 × 3000 = 14,175/-

SSM 26.19 × 2000 = 52.380/- — 5m

RCC 1.97 × 5500 = 10,835

88,761.5 1

12-1.95L

5+4+4+4+4 = 25 m

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DEPARTMENT OF CIVIL ENGINEERING

Scheme & Solutions- TEST- 1

Semester:
Subject Title: Quantity Surveying

Subject Code: 18CV71

Q. No.	Solution							Marks Allocated
		NO	L	B	D	Qty		
Q3)	1 Earthwork	2	2.8	1.7	1.95	18.564		
	2) P.C.C	2	2.8	1.7	0.2	1.904		
	3) BBM							
	Long wall 1st step	2	2.6	0.3	0.75	1.17	→	15M
	2nd step	2	2.4	0.2	1	0.96		
	Short wall 1st step	2	0.9	0.3	0.75	0.405		
	2nd step	2	0.9	0.2	1	0.36		
						2.895		
	4) R.C.C slab	0.1	2.4	1.1	0.1	0.264		

Q4) Abstract Estimation → 10M

Earthwork = 18.56 × 380 = 27054.32 /-

P.C.C = 1.905 × 3000 = 5712

BBM = 2895 × 4500 = 13,027.5

R.CC = 0.264 × 5500 = 1452/-

Total

93712/-

15 + 10 = 25 M

Gradiones

04) $\frac{1}{150} \times 30 = 0.2$ → 3m

$\frac{1}{100} \times 30 = 0.3m$

chainage | BL of ground | RL formation | Depth

chainage	10	11	12	13	14	15
RL of ground	105	105.60	105.44	105.90	105.42	104.30
RL formation	107.00	106.8	106.6	106.4	106.2	105.9
Depth	2	1.2	1.16	0.5	0.78	1.6

→ 7m

chainage	Depth	Mean depth	Bd	sd^2	L	$(Bd+sd^2) \times L$ Banking / Cutting

→ 10m

Total 3512.67

Graph → (d)

calculation part

3512.97 × 380/- 1334928.00/- → 5m

01/12/21 1/12/2021 1/12/2021

34 + 10 + 5
= 25

03) multiple chance question → 1×10 = 10 m

1) d) All the above
2) c) 1200 m^3
3) c) 19×9×9 cm
4) d) All the above
5) a) Detailed estimate
6) a) 12m
7) c) 50
8) a) length, Breadth, height
9) b) 75cm
10) b) [illegible]

CBCS SCHEME

USN 1SJ17CV041

17CV81

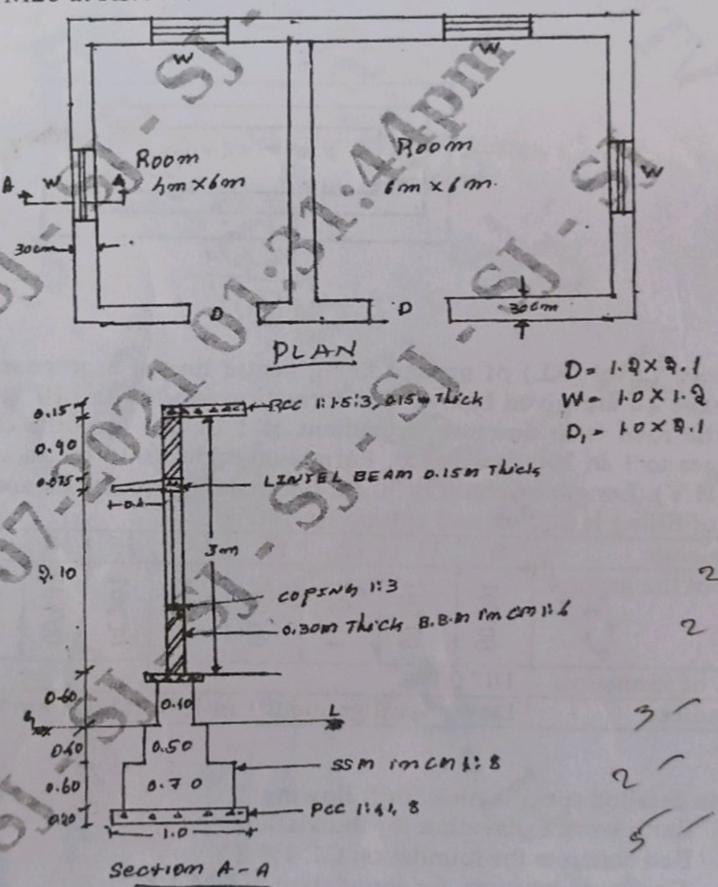
Eighth Semester B.E. Degree Examination, July/August 2021
Quantity Surveying and Contracts Management

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions.

1 What is an estimate? Explain briefly purpose and different types of estimate (any three). **(20 Marks)**

2 The details of two room building are shown in the Fig.Q2. Estimate quantities and cost of the following items of work:
(i) Earth work excavation for foundation in ordinary soil at Rs.390/m^3
(ii) Bed concrete CC 1:4:8 for foundation at Rs.3600/m^3
(iii) S.S.M for foundation and basement at Rs.2600/m^3
(iv) Burn brick masonry for superstructure in CM 1:6 at Rs.5400/m^3
(v) RCC roof slab M20 at Rs.4800/m^3



D = 1.2 x 2.1
W = 1.0 x 1.2
D₁ = 1.0 x 2.1

Long – 10.6m
Short 6.3
Earth = 46.92 m^2
C.C 1:4:8 = 7.78 m^2
SSM = 33.6 m^3
BBM – 32.49
Roof = 10.79
3,61,450

Fig.Q2

(20 Marks)

20-1

3 The details of septic tank are shown in Fig.Q3. Estimate the quantities of following items and cost.

(i) Earth work excavation at Rs.440/m^3

(ii) P.C.C. 1:3:6 for bed at Rs.4200/m^3

(iii) B.B.M. in CM 1:4 at Rs.4500/m^3

(iv) Plastering in CM 1:4 at Rs.250/m^2

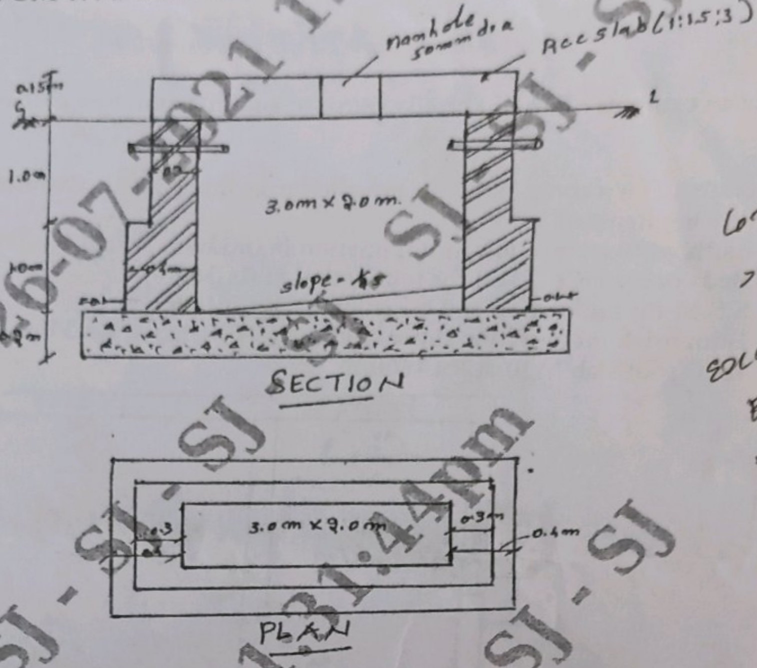


Fig.Q3

(20 Marks)

4 Reduced Level (RL) of ground along centre line of a proposed road from chainage 10 to chainage 20 are given below. The formation level at the 10th chainage is 107 and the road and the road is in downward gradient of 1 in 150 upto the chianage 14 and the gradient changes to 1 in 100 downward. Formation width is 10 metre and side slope of banking are 2:1 (H:V). Length of chain is 30 m. Estimate the quantities and cost of earth at the rate the cost of filling is 200/m^3 and cutting Rs.140/m^3.

Chainage	10	11	12	13	14	15	16	17	18	19	20
RL of the ground	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.3
RL of formation	107.00										
Gradient	Down ward gradient 1 in 150					Down gradient 1 in 100					

(20 Marks)

5 Write detailed specification for following:

(i) Earth work excavation for foundation

(ii) Bed concrete for foundation CC 1:4:8

(iii) Size stone masonry for foundation in CM 1:8

(iv) Burnt brick masonry for super structure in CM 1:6

(20 Marks)

6 Analyze rates from first principle for following:
(i) Random rubble masonry for foundation in CM 1:6
(ii) Earth work excavation for foundation
(iii) RCC roof slab CC 1: 1½ : 3 with 1% steel
(iv) Burnt Brick Masonry (BBM) for super structure in CM 1:6.
(20 Marks)

7 List the types of contract. Briefly explain any three types of contract. **(20 Marks)**

8 Explain briefly for the following:
(i) Administrative approval
(ii) Tender and its process
(iii) Law of contract as per Indian Contact Act 1872.
(iv) Prequalification
(20 Marks)

9 Explain briefly for the following:
(i) Mobilization and equipment advance
(ii) Security deposit
(iii) Breach of contract
(iv) Suspension of work
(20 Marks)

10 What is valuation? Explain briefly methods of valuation buildings. **(20 Marks)**

* * * * *

3