



SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

**SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF ARCHITECTURE
M. Arch (Building Management)**

**PROFESSIONAL TRAINING (S84APT)
JUL 2022 - AUG 2022**

Name of the Student : V.DIVYAJOTHI

Semester : III

Reg No. : 41840003

Batch : 2021-2023



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M. Arch (Building Management)

VIVA-VOCE EXAMINATION

This is to certify that the Professional Training Report (S89APT) is the work of **V.DIVYAJOTHI** who had undergone training in **EPMCR.PVT.LTD** has been monitored by the continuous assessment during Jul 2022 to Aug 2022.

Dr. Devyani Gangopadhyay
HOD AND DEAN

Submitted for Viva voce Examination held on 20.12.22

Internal Examiner

External Examiner



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DECLARATION

I **V.DIVYAJOTHI** hereby declare that this Professional Training Report done by me under the guidance of **Mr.S.KAVIN KUMAR** is submitted in partial fulfillment of the requirements for the completion of practical training session.

DATE : 20-12-2022
PLACE : CHENNAI




SIGNATURE OF CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA INSTITUTE OF SCIENCE & TECHNOLOGY** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. Devyani Gangopadhyay Dean, School of building and Environment** for providing me necessary support and details at the right time during the progressive reviews.

I would also like to express my sincere thanks to **AR. SURYA RAJKUMAR** Internal coordinator for her valuable guidance, during the entire Professional Training period.

I would like to express my special thanks to for this wonderful opportunity. Secondly, **EPMCR.PVT.LTD** I, sincerely, express my gratitude to **Mr.S.KAVINKUMAR, Mr.SEKAR, Mr.VINOD, Mr. DURAIRAJAN, and Mr. PRAKASH** for accepting and providing me the opportunity to work under their expert guidance and close supervision.

I wish to express my thanks to all Teaching and Non-teaching staff members of the Department of Architecture who were helpful in many ways for the completion of the project.

Date: 11.05.2022

TO WHOMSOEVER IT MAY CONCERN

DIVYAJOTHI C V (Reg No- 41840003) is a bonafide student of our institution pursuing Masters in Architecture in Building Management (Batch 2021-2023). As part of the curriculum the students are required to undergo Professional Training for a minimum period of 30 working days. Kindly grant permission for the same in your esteemed organization. We also assure that information collected about any project will be used for academic purpose only.

Thanking You,



Dr. Devyani Gangopadhyay
Dean, School of Building & Environment



Reference no. EPMCR/Internship/2022-23/07/06
Date: 05th July 2022

To

Ms. Divyajothi V
No. 29, Vallal Pachaiappan Street
Kanchipuram - 631 501
Mail Id: divyavenkatesan12@gmail.com
Mobile: 79045 16728

Subject: Confirmation of Internship in our organization - 2022-23 - reg.
Ref: Your Reg. No. 41840003 Sathyabama Campus, Chennai

Dear Ms. Divyajothi,

This is to confirm you that, you are selected for the Internship Program in our organization from **11.07.2022 to 13.08.2022 (4 Weeks)**.

The period of internship contains the subject of Advance Construction Management and Project Management Consultancy and others which relates.

* The internship period will be completed on submission of Report based on your learning through the internship. This report should submit to our Director and the completion certificate will be issued based on his approval.

Thanks & regards,
for Engineering Project Management Consultancy & Research Pvt. Ltd.,


(S Sekar Mahalingam)
HR & Admin.



ENGINEERING PROJECT MANAGEMENT CONSULTANCY & RESEARCH PVT. LTD.
CHENNAI 63

Engineering Project Management Consultancy and Research Pvt. Ltd.



No. 28, 1st Floor, Balaji Nagar Main Road, Bharathi Avenue, New Perungalathur, Chennai - 600 063.





August 18, 2022

Ref: EPMCRPL/22-23/HR/INTERN/08-09



INTERNSHIP CERTIFICATE

Ms. V. Divyajothi, pursuing her Masters in Architecture in Building Management (Reg No: 41840003) at Sathyabama Institute of Science & Technology, Chennai has completed an internship training at our company, from 11.07.2022 to 13.08.2022.

Main Tasks accomplished:

- Learned about lean construction management techniques
- Learned about design thinking last planner, fortnight planning for construction scheduling
- Learned to break the major and minor activities for scheduling
- Learned about delay analysis to find out the issue in delays and to give solution
- Learned to do daily tracking and cope up with other people involved in the project

Involved project during the Internship Period:

- Sathyabama Institute of Science and Technology – Convention Centre Project - Daily tracking, Presentation for monthly progress, Scheduling sub structure according to the lean construction technique.
- SDAT- Mini stadium-scheduling, revised presentation for tender bidding, initial level of zoning
- Polyhouse - Sunguvarchatharam initial presentation and initial planning
- Providing comprehensive sewerage scheme to Manali – Delay analysis, started initial presentation

During the internship she was found to be Highly Logical, Inquisitive & Hard Working.

For ENGINEERING PROJECT MANAGEMENT CONSULTANCY & RESEARCH PVT LTD.,

S SEKAR MAHALINGAM
HR & ADMIN



Engineering Project Management Consultancy and Research Pvt. Ltd.

No. 28, 1st Floor, Balaji Nagar Main Road, Bharathi Avenue, New Perungalathur, Chennai - 600 063.



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SCHOOL OF BUILDING & ENVIRONMENT, DEPARTMENT OF ARCHITECTURE

M. Arch (Building management) Batch 2020-2022

Continuous Assessment Report for Professional training

(Continuous progress report of the trainee architect/Project Manager for the period of 15 working days in the office to be submitted to HOD)

1. Name of the office / organization	EPMCR PVT LTD
2. Address & Contact Number	2A Balaji Nagar Main Road, Bharathi Avenue, New Perungalathur, Chennai - 600 063. TamilNadu, India.
3. Name of the student	:V.DIVYAJOTHI
4. Duration	: From :11.07.2022 To 27.07.2022
5. Total No. of days	:15DAYS
6. Evaluation of Performance criteria shall be on	

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month;

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture	✓				
Skillsets related to project management	✓				
Design Management	✓				✓
Understanding the Triple Constraints	✓				
Observation during Site Visits	✓				
Understanding of construction details	✓				
Understanding of Construction sequences	✓				
Site Supervision / Discussion with clients					✓
Adherence to Time schedule	✓				
Quantitative aptitude	✓				
Documentation skills	✓				
Coordination with other consultants	✓				

Overall Grading*

A.

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks

8. Signature of the
Head of the Office /
Organization (With Seal)

S. Kumar



SCHOOL OF BUILDING & ENVIRONMENT, DEPARTMENT OF ARCHITECTURE
M. Arch (Building management) Batch 2020-2022
Continuous Assessment Report for Professional training

(Continuous progress report of the trainee architect/Project Manager for the period of 15 working days in the office to be submitted to HOD)

1. Name of the office / organization :	EPMCR PVT LTD
2. Address & Contact Number	2A Balaji Nagar Main Road, Bharathi Avenue, New Perungalathur, Chennai - 600 063. TamilNadu, India.
3. Name of the student	:V.DIVYAJOTHI
4. Duration	: From :28.07.2022 To :13.08.2022
5. Total No. of days	:15DAYS
6. Evaluation of Performance criteria shall be on	

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month:

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture	✓				
Skillsets related to project management	✓				
Design Management	✓				
Understanding the Triple Constraints	✓				
Observation during Site Visits	✓				
Understanding of construction details	✓				
Understanding of Construction sequences	✓				
Site Supervision / Discussion with clients	*				✓
Adherence to Time schedule	✓				
Quantitative aptitude	✓				
Documentation skills	✓				
Coordination with other consultants	✓				

Overall Grading*	A
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(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks : _____

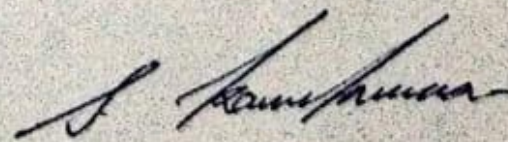
8. Signature of the Head of the Office / Organization (With Seal) :  

WORK DIARY

DAY	PROJECT NAME	WORK DONE	DAY	PROJECT NAME	WORK DONE
1	Crescent street apartment	studied RA puram drawing for basic scheduling	16	SITE VIST IIT RESEARCH PARK	Meeting with different stakeholders learned to create fortnight scheduling with the help of (lean construction methods) for time & cost management.
2	Crescent street apartment	studied RA puram drawing for basic scheduling	17	Polyhouse -sunguvarchatharam	initial presentation
3	SIST- CONVENTIONAL HALL	daily tracking, presentation for monthly progress	18	Polyhouse -sunguvarchatharam	initial presentation
4	SIST- CONVENTIONAL HALL	daily tracking, presentation for monthly progress	19	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction
5	SIST- CONVENTIONAL HALL	daily tracking, presentation for monthly progress	20	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction
6	SDAT-MINI STADIUM	scheduling, presentation for tender bidding	21	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction
7	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	22	SITE VIST-SIST CONVENTIONAL HALL	To record cycle time for pile construction and analysis
8	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	23	Ather energy	Basic scheduling for (interior work)
9	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	24	PROVIDING COMPREHENSIVE SEWERAGE SCHEME TO MANALI, CHINNASEKKADU, KARAMBAKKAM AND MANAPAKKAM IN CHENNAI CITY	Studied the document so far done works
10	SDAT-MINI STADIUM	scheduling, revised presentation for tender bidding, initial level of zoning	25	PROVIDING COMPREHENSIVE SEWERAGE SCHEME TO MANALI, CHINNASEKKADU, KARAMBAKKAM AND MANAPAKKAM IN CHENNAI CITY	Calculate nos of delay days according to the reason given, scheduling done in map to find delay days.
11	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	26	PROVIDING COMPREHENSIVE SEWERAGE SCHEME TO MANALI, CHINNASEKKADU, KARAMBAKKAM AND MANAPAKKAM IN CHENNAI CITY	Delay analysis, started initial presentation
12	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	27	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction
13	SIST- CONVENTIONAL HALL	daily tracking, fortnight, last planner	28	SITE VIST-SIST CONVENTIONAL HALL	To record cycle time for pile construction and analysis
14	SIST- CONVENTIONAL HALL	scheduling sub structure according to the lean construction technique.	29	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction
15	SIST- CONVENTIONAL HALL	scheduling sub structure according to the lean construction technique	30	SIST- CONVENTIONAL HALL	analysis the cycle time for pile construction

Chief Architect/PMC Signature:

Office seal:




1. FIRM HISTORY

- Engineering Project Management Consultancy and Research Private limited (EPMCR(P)LTD) is a professional Engineering and Project Management Consultancy company incubated by IIT Madras and formed with a vision “to enable a quality Indian Infrastructure development within time and budget through our Engineering, Project Management, Research and Training Services.
- EPMCR(P)LTD is an IIT Madras incubated Engineering and Project Management consulting company offering civil engineering solutions right from Architecture to delivery of the infrastructure facilities to the client.
- EPMCR(P)LTD offers single point solution for planning, design and construction of all type of Building Infrastructure, Transportation Infrastructure and Water Infrastructure.
- EPMCR(P)LTD’s expert consultants form the core strength of the company
- EPMCR(P)LTD acts as an interface between IITM and Construction industry and brings modern cutting technology developed by IITM to construction industry

Some of the iconic projects done by EMPCR.PVT.LTD

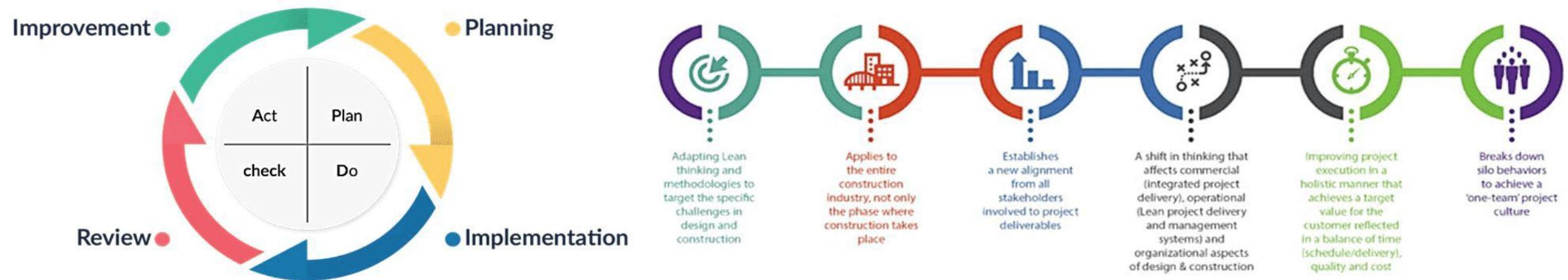
1. Plumbing Design for IIT Madras Hostel Building, 2011
2. Structural design and Project Management for Construction of Caustic Soda production plant, Ongole, 2011
3. Detailed Design of Storm water drainage system for the entire Tuticorin Port Trust Area, 2011
4. Construction Contract Advisory for construction of 4 lane Bridge across River Ariyankuppam, Puducherry 2011
5. Architectural & Structural design of a Commercial Building , New Perungalathur, 2011

TABLE OF CONTENTS

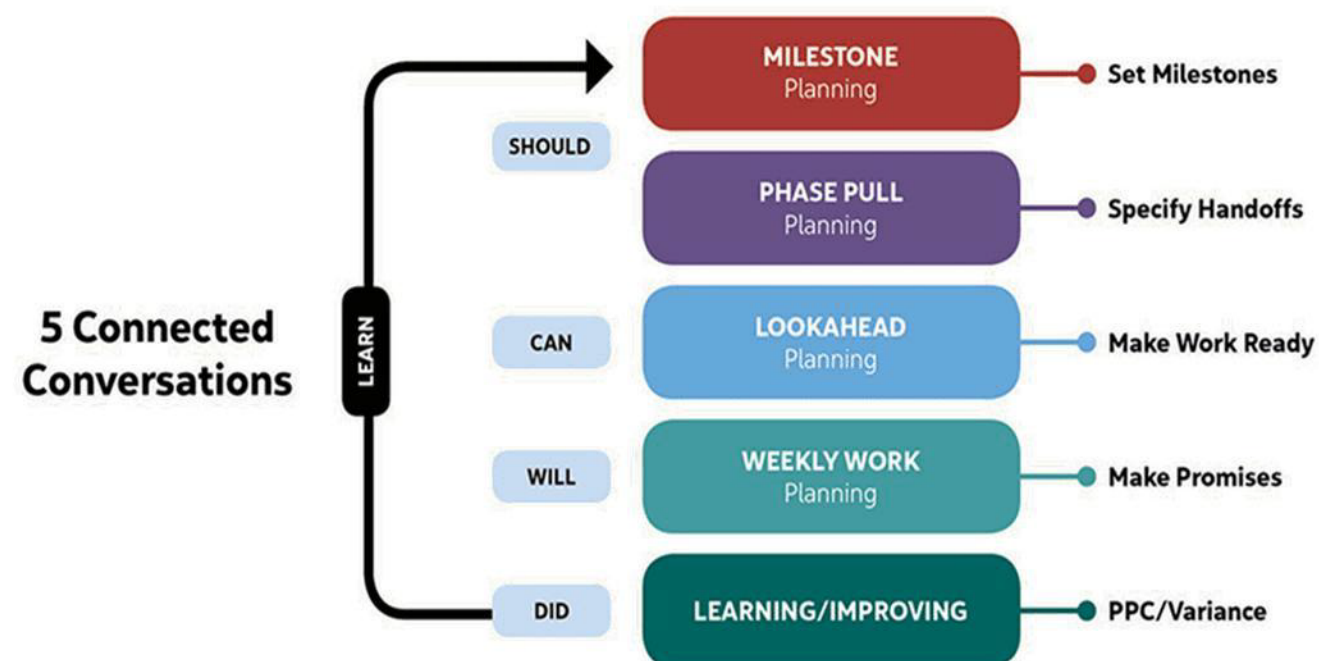
CHAPTER NO.	TITLE	PAGE NO.
1	LEAN MANAGEMENT IN CONSTRUCTION • LAST PLANNER SYSTEM • VALUE STREAM MAPPING	1 TO 2
2	SIST CONVENTIONAL CENTRE • MONTHLY REPORT PRESENTATION • CYCLE TIME CALCULATION • PILE CALCULATION SHEDULING (EXCEL) • SITE PICTURES OF SIST CONVENTIONAL CENTRE • SIST CONVENTIONAL CENTRE OVERALL SHEDULING (MSP)	3 TO 6
3	THE SPORTS DEVELOPMENT AUTHORITYOF TAMILNADU (SDAT) - MINI STADIUM • SDAT-MINI STADIUM-TENDER BIDDING PRESENTATION • SDAT-MINI STADIUM PREMILARY SCHEDULE	7 TO 12
4	PROVIDING THE COMPHRENSIVE SCHEME- MANALI, KARAMBAKKAM,CHINNASEKKADU • DELAY ANALYSIS- NO OF DELAY DATES AND REASON FINDINGS- (EXCEL) • DELAY ANALYSIS-AS PLANNED VERSUS AS BUILT ANALYSIS • PROVIDING THE COMPHRENSIVE SCHEME- MANALI, KARAMBAKKAM,CHINNASEKKADU OVERALL SCHEDULING IN MSP	13 TO 17

LEAN MANAGEMENT CONSTRUCTION

Lean construction is a combination of operational research and practical development in design and construction with an adoption of lean manufacturing principles and practices to the end-to-end design and construction process.



Last Planner® System Overview

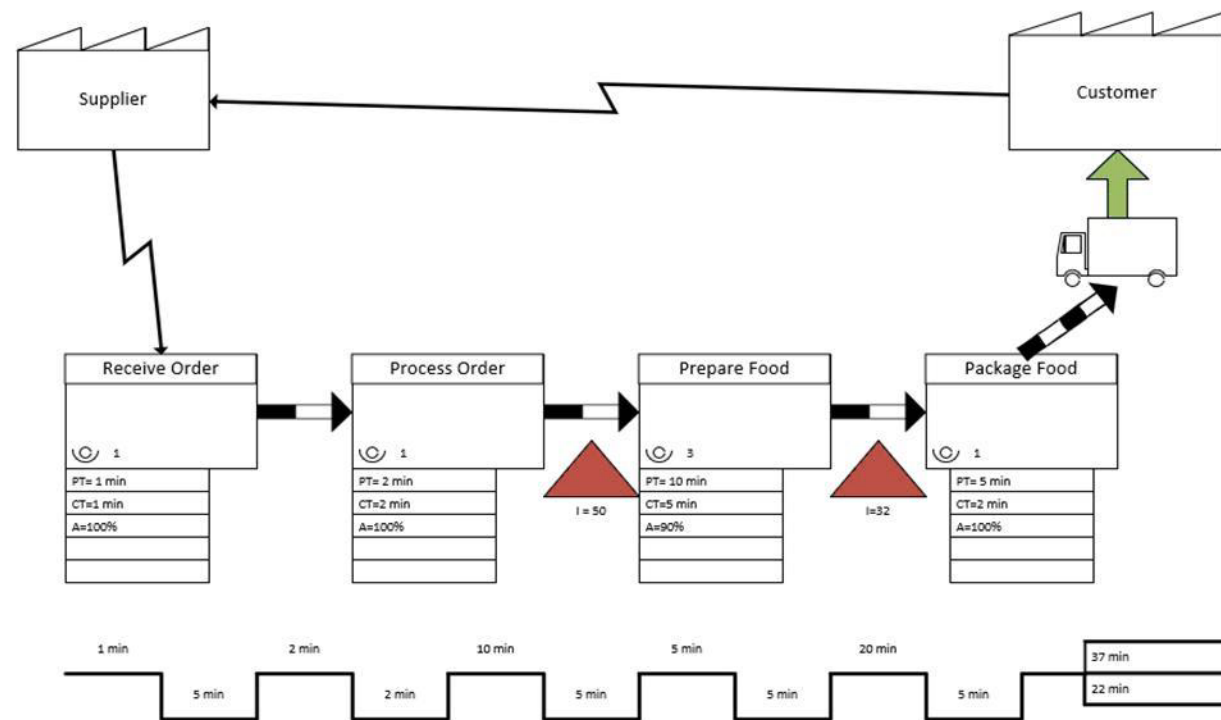


Why Is Lean Beneficial?

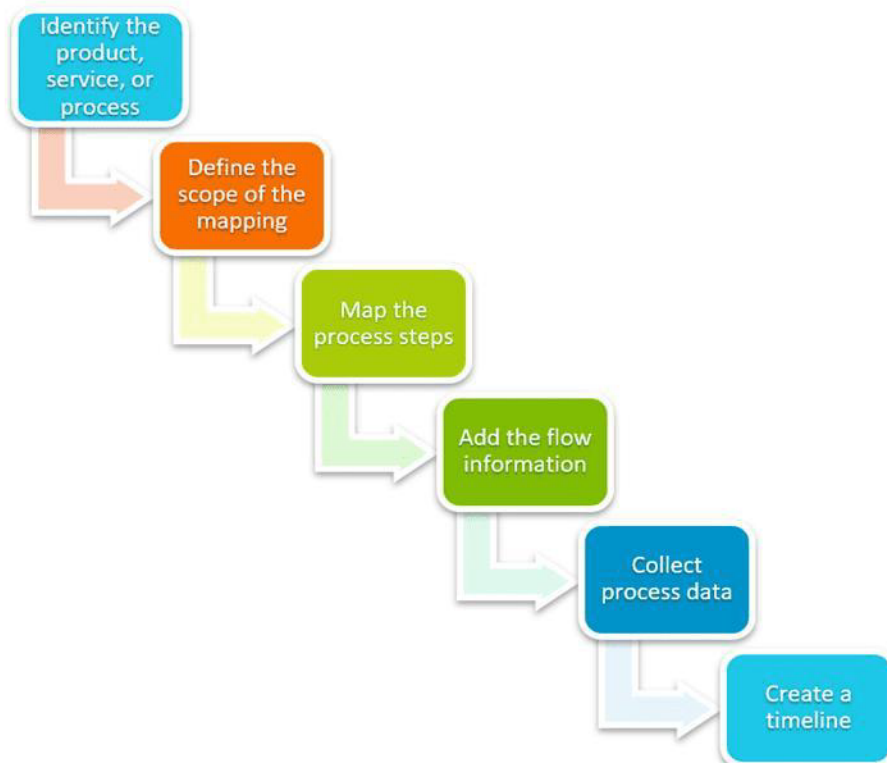


Value Stream Mapping?

Value stream mapping is a technique developed from Lean manufacturing that organizations use to create a visual guide of all the components necessary to deliver a product or service, with the goal of analyzing and optimizing the entire process.



Value Stream Mapping
Steps in the VSM process



BENEFITS OF VALUE STREAM MAPPING

Graphic Visualization

Create a graphic visualization of the entire material and information flow for the current-state value stream.

Linkages

Show linkages and connections between information flow and material flow.

Waste

Identify sources of waste in the value stream.

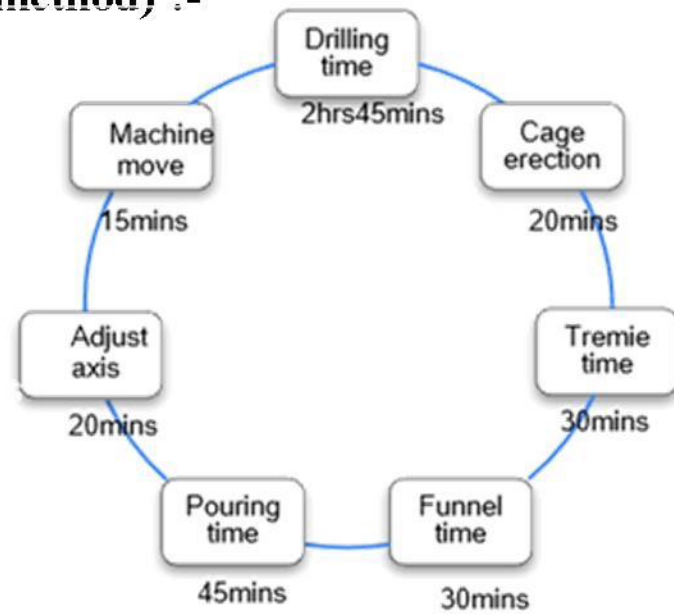
Common Language

Provides common language for talking about the processes.

Non Value Steps

Identify non-value-added steps, lead time, distances traveled, and amount of inventory for a process.

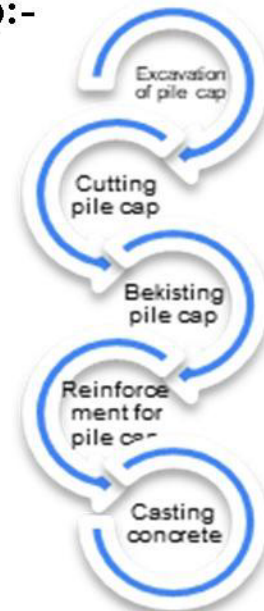
cycle time for pile construction activity (direct mud circulation method) :-



Drilling time calculation:-

No of holes	depth	Auger 3m	Auger 6m	Auger 9m	Auger 12m	Auger 15m
		(Drilling time min/hole)				
205	16m	20.34	21.7	20.01	21.27	20.64
210	15m	21	20.27	20.34	20.84	21.84
230	13.5m	20.26	21.75	20.68	21.48	2.08

Activity cycle for pile cap:-



activities	Hours/min
1. Adjusting the Axis and Hauling to Drilling Place	30mins
2. Drilling	180mins
3. Returning to Top of the Hole	10mins
4. Swing to Unload Area	10mins
5. Unloading	20mins 40mins
6. Swing Back to Top of the Hole	15mins-20mins
7. Move to Another Hole	30mins
8. Rebar Cage Erection	5mins
9. Tremie Erection and Pouring	30-45 mins
total time for completing one pile	5hrs 30mins

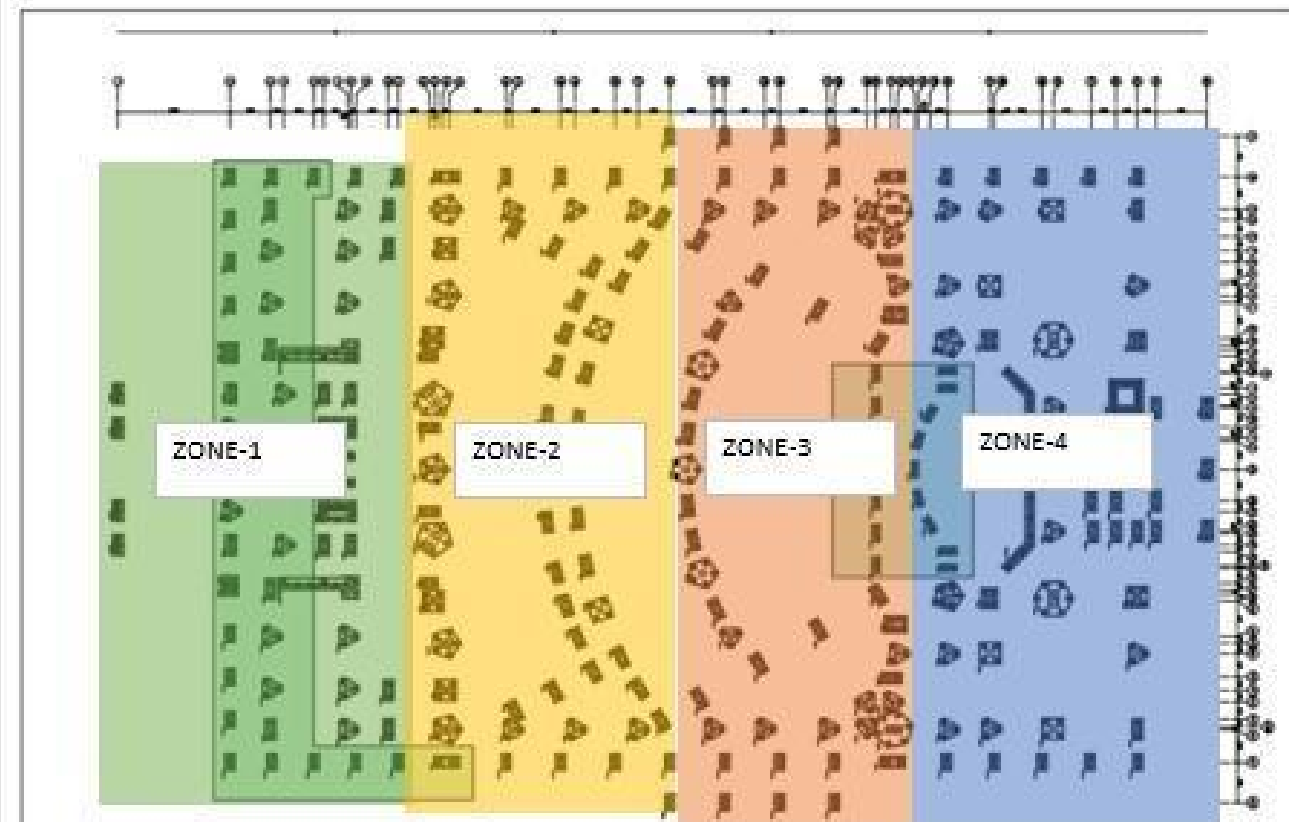
PILE SCHEDULE FOR NOS

ZONES	ZONE-1	ZONE-2	ZONE-3	ZONE-4
NOS OF PILE TO BE COMPLETE ACCORDING TO THE ZONE & PILE ID	1P TO 138P; NOS OF PILE-138	139P TO 301P; NOS OF PILE-164	302P TO 470P; NOS OF PILE-170	471P TO 642P; NOS OF PILE-170
PILE DRIVING EQUIPMENT USED & NOS	RIGGER-1,(RIGGER-5 STAND BY)	RIGGER-1,RIGGER-2,(RIGGER-5 STAND BY)	RIGGER-1,RIGGER-2,RIGGER-3,(RIGGER-5 STAND BY)	RIGGER-1,RIGGER-2,RIGGER-3,RIGGER-4,(RIGGER-5 STAND BY)

PER DAY 20 NOS OF PILE SHOULD BE COMPLETE

DAY	DATE	P1	P2	P1	P2	P1	P2	P1	P2
DAY1	10.06.2022	3	2	3	2	3	2	3	2
DAY2	11.06.2022	2	3	2	3	2	3	2	3
DAY3	13.06.2022	3	2	3	2	3	2	3	2
DAY4	14.06.2022	2	3	2	3	2	3	2	3
DAY5	15.06.2022	3	2	3	2	3	2	3	2
DAY6	16.06.2022	2	3	2	3	2	3	2	3
DAY7	17.06.2022	3	2	3	2	3	2	3	2
DAY8	18.06.2022	2	3	2	3	2	3	2	3
DAY9	20.06.2022	3	2	3	2	3	2	3	2
DAY10	21.06.2022	2	3	2	3	2	3	2	3
DAY11	22.06.2022	3	2	3	2	3	2	3	2
DAY12	23.06.2022	2	3	2	3	2	3	2	3
DAY13	24.06.2022	3	2	3	2	3	2	3	2
DAY14	25.06.2022	2	3	2	3	2	3	2	3
DAY15	27.06.2022	3	2	3	2	3	2	3	2
DAY16	28.06.2022	2	3	2	3	2	3	2	3
DAY17	29.06.2022	3	2	3	2	3	2	3	2
DAY18	30.06.2022	2	3	2	3	2	3	2	3
DAY19	01.07.2022	3	2	3	2	3	2	3	2
DAY20	02.07.2022	2	3	2	3	2	3	2	3
DAY21	04.07.2022	3	2	3	2	3	2	3	2
DAY22	05.07.2022	2	3	2	3	2	3	2	3
DAY23	06.07.2022	3	2	3	2	3	2	3	2
DAY24	07.07.2022	2	3	2	3	2	3	2	3
DAY25	08.07.2022	3	2	3	2	3	2	3	2
DAY26	09.07.2022	2	3	2	3	2	3	2	3
DAY27	11.07.2022	2	3	3	2	3	2	3	2
DAY28	12.07.2022	2	1	3	4	2	3	2	3
DAY29	13.07.2022	0	0	6	4	3	2	3	2
DAY30	14.07.2022	0	0	6	4	2	3	2	3
DAY31	15.07.2022	0	0	2	0	6	5	4	3
DAY32	16.07.2022	0	0	0	0	3	6	6	5
DAY33	18.07.2022	0	0	0	0	0	0	2	0
		69	69	85	79	84	86	87	83

TOTAL
642



Pile boring progress



Reinforcement



Pile reinforcement erection:-



Machinery:-



Concreting:-



SIST-CONVENTIONAL CENTRE –SCHEDULING

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	2022	2023	2024
1		Construction of SIST Convention Centre	521 days	Tue 01-02-22	Tue 30-01-24		Qtr 4	Qtr 1	Qtr 2
2		Finalisation of Architectural Drawing	103 days	Tue 01-02-22	Thu 23-06-22				
3		Check drawing compliance with standards	14 days	Tue 01-02-22	Fri 18-02-22				
4		Preperation of discrpeny observation list	14 days	Tue 01-02-22	Fri 18-02-22	3SS			
5		Identification of functional spaces and its dimensional requirement	1 day	Fri 18-02-22	Fri 18-02-22	3FF			
6		Schematic layout with Functional spaces and furniture details	4 days	Mon 21-02-22	Thu 24-02-22	5			
7		Preliminary Architectural drawings with section and elevation	7 days	Fri 25-02-22	Mon 07-03-22	6			
8		Preliminary Material specification & structural information	3 days	Tue 08-03-22	Thu 10-03-22				
14		Preliminary Structural drawings	5 days	Fri 11-03-22	Thu 17-03-22	13			
15		Preliminary Budget Estimate	5 days	Fri 18-03-22	Thu 24-03-22	14			
16		Finalization of structural drawing	5 days	Fri 25-03-22	Thu 31-03-22	15			
17		Detail Architectural drawings with section and elevation	60 days	Fri 01-04-22	Thu 23-06-22	16			
18		Pre construction	328 days	Tue 01-02-22	Thu 04-05-23				
19		Preparation of project scope document	3 days	Fri 25-02-22	Tue 01-03-22	6			
20		Site investigation	1 day	Fri 25-02-22	Fri 25-02-22	6			
21		Topo and contour survey	1 day	Fri 25-02-22	Fri 25-02-22	6			
22		Soil investigation	1 day	Fri 25-02-22	Fri 25-02-22	6			
23		Water testing	1 day	Fri 25-02-22	Fri 25-02-22	6			
24		Appointment of design consultants	76 days	Fri 11-03-22	Fri 24-06-22				
25		Structural consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
26		Interior design consultant	1 day	Fri 24-06-22	Fri 24-06-22	17			
27		Acoustical consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
28		Lighting consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
29		HVAC consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
30		Electrical consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
31		Plumbing consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
32		Landscape consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
33		Automation consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			

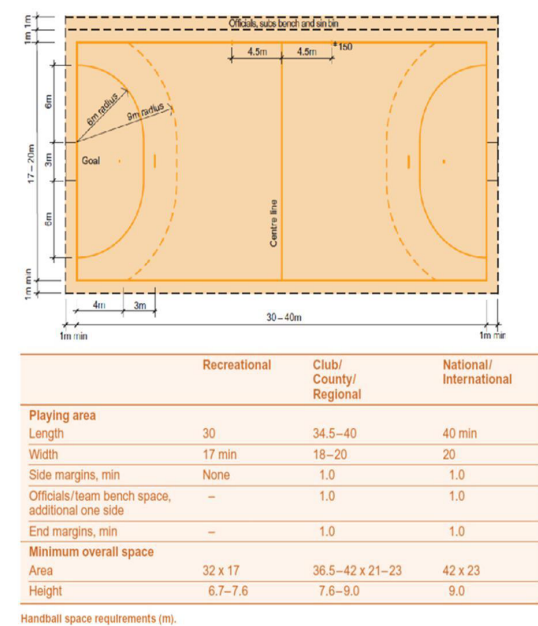
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	2022	2023	2024
34		Fire consultant	1 day	Fri 11-03-22	Fri 11-03-22	13			
35		Design coordination and value engineering	10 days	Mon 14-03-22	Fri 25-03-22	25			
36		Quantity and cost estimation	5 days	Mon 28-03-22	Fri 01-04-22	35			
37		Work packaging and pre bid documents	5 days	Mon 04-04-22	Fri 08-04-22	36			
38		Submission of building permit	1 day	Tue 01-02-22	Tue 01-02-22	4SS			
39		NOC for construction	1 day	Tue 01-02-22	Tue 01-02-22	4SS			
40		Building permit approval	1 day	Tue 01-02-22	Tue 01-02-22	4SS			
41		Tendering and appointment of contractors and vendors	299 days	Mon 14-03-22	Thu 04-05-23				
42		PEB contractor	7 days	Mon 14-03-22	Tue 22-03-22	35SS			
43		Pile contractor	7 days	Mon 11-04-22	Tue 19-04-22	37			
44		Civil contractor	7 days	Wed 22-06-22	Thu 30-06-22	43FS+45 days			
45		Electrical contractor	7 days	Wed 26-04-22	Thu 04-05-23	132			
46		Plumbing contractor	7 days	Fri 02-09-22	Mon 12-09-22	44FS+45 days			
47		HVAC vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
48		Acoustical vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
49		Interior contractor	7 days	Wed 26-04-22	Thu 04-05-23	132			
50		Lighting vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
51		Fire alarm system	7 days	Wed 26-04-22	Thu 04-05-23	132			
52		Fire protection system	7 days	Wed 26-04-22	Thu 04-05-23	132			
53		Surveillance system	7 days	Wed 26-04-22	Thu 04-05-23	132			
54		Automation vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
55		Landscape vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
56		Soft furnishing vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
57		Hard furnishing vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
58		Auditorium chair vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
59		Auditorium stage vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
60		Auditorium stage lighting vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
61		Audio visual system vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
62		Stage curtain vendor	7 days	Wed 26-04-22	Thu 04-05-23	132			
63		Construction	395 days	Wed 20-04-22	Tue 24-10-23				
64		Site clearance	7 days	Wed 20-04-22	Thu 28-04-22	43			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	2022	2023	2024
65		Foundation	92 days	Fri 29-04-22	Mon 05-09-22				
66		Marling and setting out	2 days	Fri 29-04-22	Mon 02-05-22	64			
67		Piling work	45 days	Tue 03-05-22	Mon 04-07-22	66			
68		Pile cap work	45 days	Tue 05-07-22	Mon 05-09-22	67			
69		Tie beam	30 days	Thu 14-07-22	Wed 24-08-22	68SS+7 days			
70		RC building A & B portions	327 days	Mon 25-07-22	Tue 24-10-23				
71		Structural frame works	202 days	Mon 25-07-22	Tue 02-05-23				
72		Columns upto Plinth level	10 days	Mon 25-07-22	Fri 05-08-22	69SS+7 days			
73		Block Work upto plinth bottom	15 days	Mon 01-08-22	Fri 19-08-22	72SS+5 days			
74		Plinth beam	20 days	Fri 19-08-22	Thu 15-09-22	73SS+14 days			
75		Filling of soil upto plinth level	10 days	Tue 06-09-22	Mon 19-09-22	74FF+2 days			
76		Column starter - Ground floor	2 days	Thu 22-09-22	Fri 23-09-22	74FS+4 days			
77		Column - Ground floor 1st lift	6 days	Mon 26-09-22	Mon 03-10-22	76			
78		Column - Ground floor 2nd lift	6 days	Tue 04-10-22	Tue 11-10-22	77			
79		Beam and slab casting - Ground floor	30 days	Wed 12-10-22	Tue 22-11-22	78			
80		Column starter - First floor	2 days	Tue 29-11-22	Wed 30-11-22	79FS+4 days			
81		Column - First floor 1st lift	6 days	Thu 01-12-22	Thu 08-12-22	80			
82		Column - First floor 2nd lift	6 days	Fri 09-12-22	Fri 16-12-22	81			
83		Beam and slab casting - 1 st floor	30 days	Mon 19-12-22	Fri 27-01-23	82			
84		Column starter - Terrace floor	2 days	Fri 03-02-23	Mon 06-02-23	83FS+4 days			
85		Column - Terrace floor 1st lift	6 days	Tue 07-02-23	Tue 14-02-23	84			
86		Beam and slab casting - Terrace floor	25 days	Wed 15-02-23	Tue 21-03-23	85			
87		Overhead tank (Domestic and fire tank)	30 days	Wed 22-03-23	Tue 02-05-23	86			
88		Masonry and concealed MEP works	90 days	Mon 30-01-23	Fri 02-06-23				
89		Ground floor	30 days	Mon 30-01-23	Fri 10-03-23	83			
90		First floor	30 days	Mon 13-03-23	Fri 21-04-23	89			
91		Terrace floor	30 days	Mon 24-04-23	Fri 02-06-23	90			
92		Plastering , putty and primer works	90 days	Mon 13-03-23	Fri 14-07-23				
93		Ground floor	30 days	Mon 13-03-23	Fri 21-04-23	89			
94		First floor	30 days	Mon 24-04-23	Fri 02-06-23	90			
95		Terrace floor	30 days	Mon 05-06-23	Fri 14-07-23	91			
96		External plastering	30 days	Mon 05-06-23	Fri 14-07-23	91			

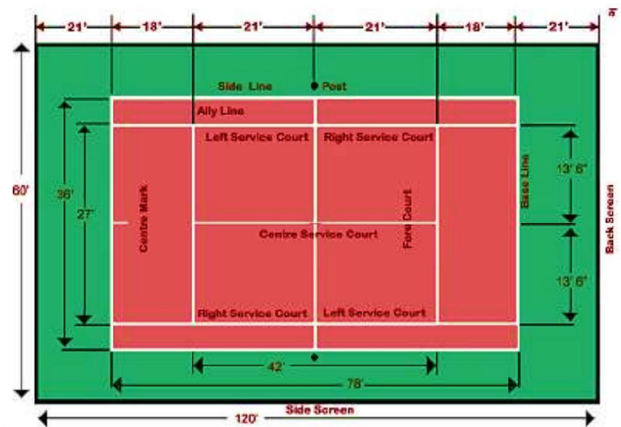
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	2022	2023	2024
97		Windowfixing	30 days	Mon 24-04-23	Fri 02-06-23				
98		Ground floor	10 days	Mon 24-04-23	Fri 05-05-23	93			
99		First floor	10 days	Mon 08-05-23	Fri 19-05-23	98			
100		Terrace floor	10 days	Mon 22-05-23	Fri 02-06-23	99			
101		Water proofing	27 days	Mon 08-05-23	Tue 13-06-23				
102		Ground floor	7 days	Mon 08-05-23	Tue 16-05-23	98			
103		First floor	7 days	Mon 22-05-23	Tue 30-05-23	99			
104		Terrace floor	7 days	Mon 05-06-23	Tue 13-06-23	100			
105		Flooring and wall cladding	40 days	Wed 17-05-23	Tue 11-07-23				
106		Ground floor	20 days	Wed 17-05-23	Tue 13-06-23	102			
107		First floor	20 days	Wed 31-05-23	Tue 27-06-23	103			
108		Terrace floor	20 days	Wed 14-06-23	Tue 11-07-23	104			
109		Door fixing	30 days	Wed 14-06-23	Tue 25-07-23				
110		Ground floor	10 days	Wed 14-06-23	Tue 27-06-23	106			
111		First floor	10 days	Wed 28-06-23	Tue 11-07-23	107			
112		Terrace floor	10 days	Wed 12-07-23	Tue 25-07-23	108			
113		Painting	35 days	Wed 28-06-23	Tue 15-08-23				
114		Ground floor	15 days	Wed 28-06-23	Tue 18-07-23	110			
115		First floor	15 days	Wed 12-07-23	Tue 01-08-23	111			
116		Terrace floor	15 days	Wed 26-07-23	Tue 15-08-23	112			
117		External painting	20 days	Wed 16-08-23	Tue 12-09-23	116			
118		Structural glazing	30 days	Wed 13-09-23	Tue 24-10-23				
119		Ground floor	10 days	Wed 13-09-23	Tue 26-09-23	117			
120		First floor	10 days	Wed 27-09-23	Tue 10-10-23	119			
121		Terrace floor	10 days	Wed 11-10-23	Tue 24-10-23	120			
122		PEB portition	140 days	Thu 25-08-22	Wed 08-03-23				
123		Pedestal first lift	10 days	Thu 25-08-22	Wed 07-09-22	69			
124		Anchor bolt fixing	10 days	Thu 08-09-22	Wed 21-09-22	123			
125		Pedestal second lift	10 days	Thu 22-09-22	Wed 05-10-22	124			
126		Primary members erection (Column, rafter, grit, purlins, sagrod, bracing, etc.)	40 days	Thu 06-10-22	Wed 30-11-22	125			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	2022	2023	2024
127		Secondary members erection (Roof sheet, wall cladding, rain water gutters, etc.)	40 days	Thu 01-12-22	Wed 25-01-23	126			
128		Erection of steel works for auditorium seat	30 days	Thu 26-01-23	Wed 08-03-23	127			
129		Civil works	139 days	Thu 09-03-23	Tue 19-09-23				
130		PCC flooring	7 days	Thu 09-03-23	Fri 17-03-23	128			
131		RCC auditorium seating area flooring	7 days	Mon 20-03-23	Tue 28-03-23	130			
132		Masonry and concealed MEP works	20 days	Wed 29-03-23	Tue 25-04-23	131			
133		Plastering , putty and primer works	20 days	Wed 26-04-23	Tue 23-05-23	132			
134		Window fixing	15 days	Wed 24-05-23	Tue 13-06-23	133			
135		Flooring and wall cladding	30 days	Wed 14-06-23	Tue 25-07-23	134			
136		Door fixing	20 days	Wed 26-07-23	Tue 22-08-23	135			
137		Painting	20 days	Wed 23-08-23	Tue 19-09-23	136			
138		Interior	180 days	Wed 24-05-23	Tue 30-01-24	133			

FIELD OF PLAY DIMENSIONS FOR HANDBALL



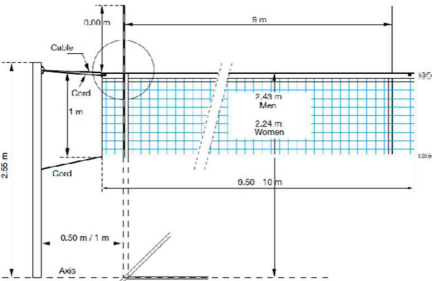
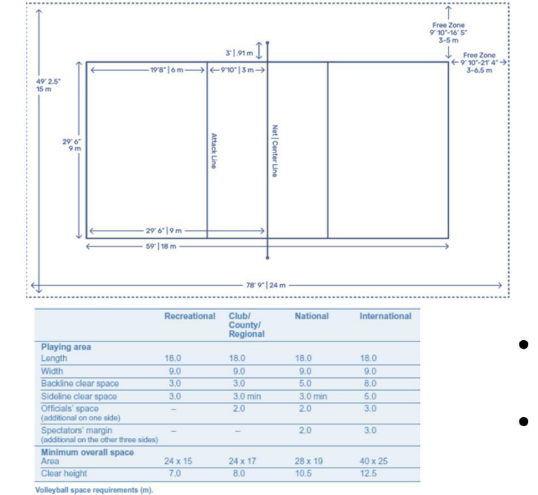
FIELD OF PLAY DIMENSIONS FOR LAWN TENNIS



- Rules of Tennis :
- For singles Game, Court shall be a rectangle 78 feet (23.77 m.) long and 27 feet (8.23m) wide.
 - For the doubles Game, the court shall be 36 feet 10.97 m.) in width. i.e. 4½ feet (1.37m) wide.



FIELD OF PLAY DIMENSIONS FOR VOLLEYBALL



- The net shall be 1m deep and 9.50m long, placed vertically over the axis of the center line to divide the playing surface into two parts.
- The height of the net shall be 2.43 meters for men and 2.24 meters for women.

FIELD OF PLAY DIMENSIONS FOR BASKETBALL

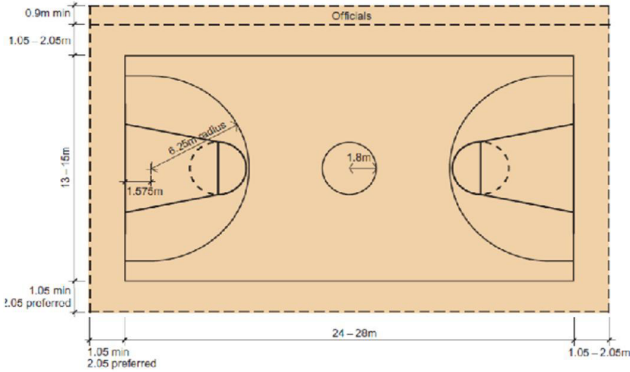
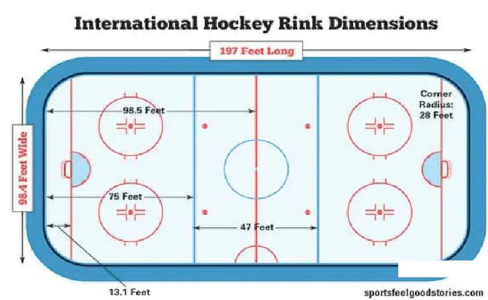
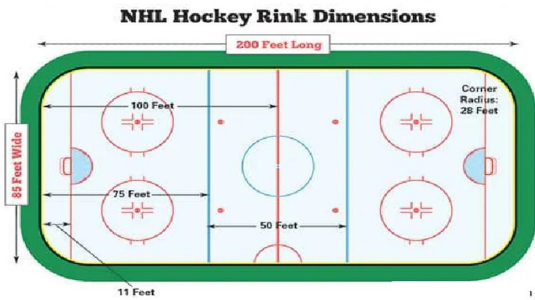


Table with 4 columns: Playing area, Length, Width, Out-of-bounds surround, Extra one side for officials and team areas, Minimum overall space, Area, Height. Rows for Recreational/ Club, County/ Regional, National/ International.

FIELD OF PLAY DIMENSION



- An International Hockey rink is about the same length but considerably wider than an NHL rink. Bigger ices change the style of play.
- It provides for a more wide-open style of play with more space and more time. The pace of play tends to be slower, and the game turns to puck possession. Still, a shooter's angles are not quite as good when forced wide.

NBA COURT DIMENSIONS

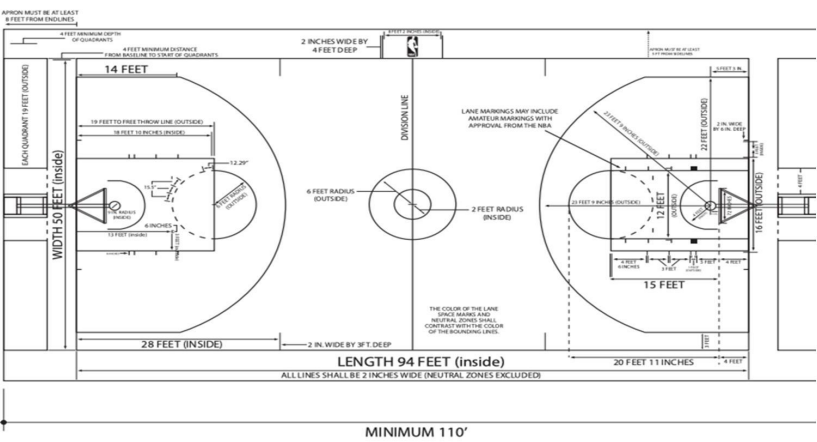


Diagram illustrating the layout of the official's area. The area is defined by a dashed line. The total width is 13.4m, divided into three sections: 0.76m, 3.96m, and 1.98m. The total height is 11.5m, divided into three sections: 1.5m, 6.1m, and 1.5m. The central area is 3.96m wide and 6.1m high. The side areas are 0.76m wide and 1.5m high. The bottom area is 1.98m wide and 1.5m high. The diagram also shows a 2.0m x 2.3m area (see table) on the left and right sides.

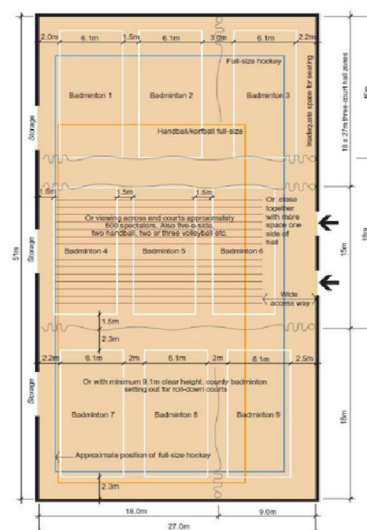


	Recreational/ Club	County/ Regional	National/ International
Minimum height over court	7.6	9.1	9.1
Playing area (doubles court)			
Length	13.4	13.4	13.4
Width	6.1	6.1	6.1
Wall from baseline, min	2.0*	2.3	2.3
Wall from sideline	1.5 min	2.2	2.2
Between parallel courts, min	1.5*	2.0	2.0
Minimum overall area			
For a single court	17.4 x 9.1	18 x 10.5	18 x 10.5
For a parallel pair	17.4 x 16.7	18 x 18.6	18 x 18.6
For each additional court	+7.6	+6.1	+6.1

*Baseline to division netting 1.5 min; sideline to division netting 1.2 min

Badminton space requirements (m)

NINE COURT HALL



The diagram illustrates the layout of a 27.0m x 33.0m sports hall. The layout is divided into several sections:

- Top Section:** A 44 x 22m indoor hockey pitch is located at the top, with an overall width of 50 x 36.2m. Below the pitch is a 6m wide area.
- Top Right Section:** Approximately 150 seats in three rows, with a pitch in the middle.
- Middle Section:** Three county basketball hall courts, each 23 x 15.8 x 4.8m, with 170 seats in the central zone. Below the courts are two zones, each 33 x 27m.
- Bottom Section:** Four badminton courts labeled Badminton 1, Badminton 2, Badminton 3, and Badminton 4. Each court is 1.2m wide and 1.2m deep. There are 1.5m gaps between the courts and a 2.0m gap at the bottom.
- Right Side:** Approximately 170 seats and approximately 200 seats in rows.
- Dimensions:** The overall width is 27.0m and the overall length is 33.0m. There are 9.0m gaps on the right side.

Badminton



Team games

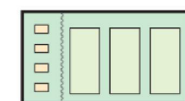
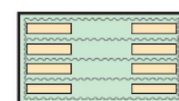
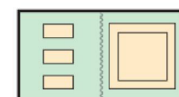


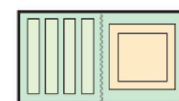
Table tennis/badminton



Cricket nets

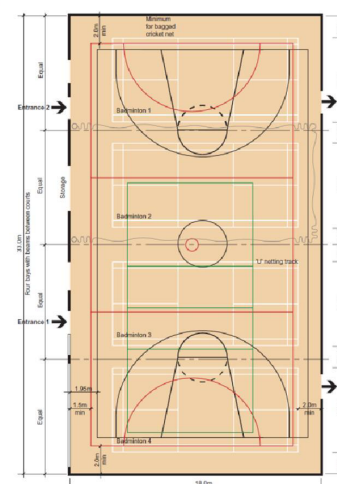


Trampoline/judo

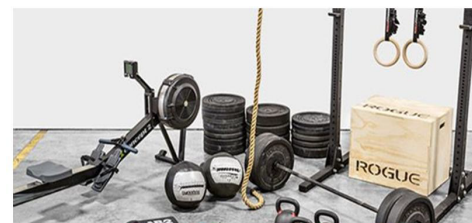


Short bowls/gymnastics

Different uses of a four-court hall.



3.33 x 1.6 x 7.1m four-court hall

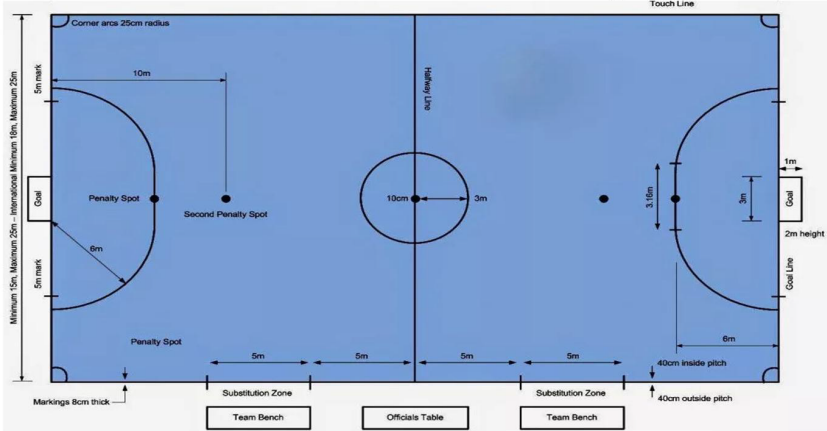
[illegible]

The diagram illustrates the layout of a running track and field facility. It features a large, oval-shaped running track with multiple lanes, colored red. Inside the track is a green field area, which is divided into sections for different sports. A blue area represents the water pool, and a red area represents the sand area. The diagram also shows the layout of the track and field, including the starting and ending points for various events.



FUTSAL COURT DIMENSIONS FOR FIFA M/

For international FIFA matches the Futsal Court dimensions shall have a minimum size of 38 meters long by 20 meters wide and a maximum size of 42 meters long by 25 meters wide.



DIFFERENT TYPES OF JUMPS IN A/

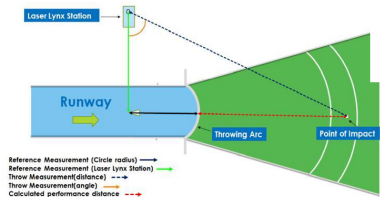
HIGH JUMP



LONG JUMP



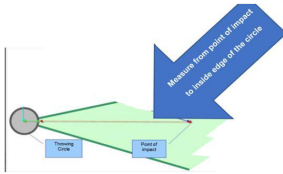
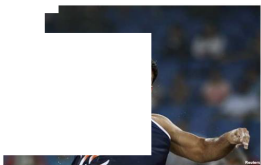
JAVELIN THROW



HAMMER THROW



SHORT-PUT



YOGA & MEDITATION AREA

- Practicing yoga can make every form of training more effective and efficient by improving not only flexibility, but also posture, body mechanics, and awareness. Yoga gives the body an opportunity to naturally return to its optimal alignment.
- Athletes who consistently practice meditation can help their body to recover quicker from training, racing, and even injury.



DIFFERENT TYPES OF JUMPS IN ATHLETICS

TRIPLE JUMP



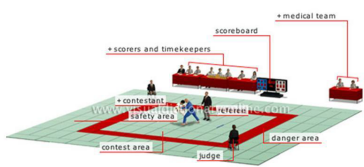
POLE VAULT



ARCHERY



JUDO

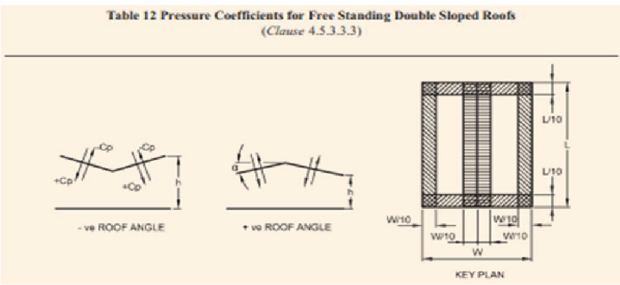


SDAT-MINI STADIUM -TENDER BIDDING PRESENTATION

PROPOSED GAMES ARE AS PER FOLLOWING STANDARDS

- VOLLEYBALL - The Federation Internationale de Volleyball (FIVB)
- BASKETBALL - National Basketball Association (NBA)
- HAND BALL - International Handball Federation (IHF)
- HOCKEY - International Hockey Federation (FIH)
- BADMINTON - International Badminton Association (IBA)
- LAWN TENNIS - All India Tennis Association (AITA)
- TABLE TENNIS - IS 3659 Bureau of indian standards
- RUNNING TRACK - the International Association of Athletics Federations, or IAAF

ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS



Roof Angle α Degree	Society Ratio ϕ	Maximum (Largest +ve) and Minimum (Largest -ve) Pressure Coefficients					
		Overall Coefficients		Local Coefficients			
						Windward	Leeward
-20	All values of ϕ	+0.7	+0.8	+1.8	+0.6	+1.7	+1.4
-10		+0.5	+0.6	+1.5	+0.7	+1.4	+1.1
-5		+0.4	+0.6	+1.4	+0.8	+1.3	+0.9
+5		+0.4	+0.7	+1.3	+1.0	+1.2	+0.8
+10		+0.4	+0.6	+1.2	+1.1	+1.1	+0.8
+15		+0.5	+1.1	+1.2	+1.2	+1.0	+0.8
+20		+0.7	+1.2	+1.2	+1.3	+1.0	+0.8
+25		+0.9	+1.3	+1.2	+1.4	+1.0	+0.7
+30		+1.2	+1.5	+1.2	+1.6	+1.0	+0.6
-20	$\phi \geq 0$	-0.7	-0.8	-1.3	-1.6	-1.2	-1.0
-10	$\phi \geq 0$	-0.5	-0.6	-1.2	-1.7	-1.1	-0.9
-5	$\phi \geq 0$	-0.4	-0.6	-1.1	-1.7	-1.0	-0.8
+5	$\phi \geq 0$	-0.6	-0.8	-1.3	-1.8	-1.1	-0.9
+10	$\phi \geq 0$	-0.6	-0.8	-1.3	-1.9	-1.1	-0.9
+15	$\phi \geq 0$	-0.6	-0.8	-1.3	-2.0	-1.1	-0.9
+20	$\phi \geq 0$	-0.6	-0.8	-1.3	-2.1	-1.1	-0.9
+25	$\phi \geq 0$	-0.6	-0.8	-1.3	-2.2	-1.1	-0.9
+30	$\phi \geq 0$	-0.6	-0.8	-1.3	-2.3	-1.1	-0.9
-20	$\phi < 0$	-0.7	-0.8	-1.3	-1.6	-1.2	-1.0
-10	$\phi < 0$	-0.5	-0.6	-1.2	-1.7	-1.1	-0.9
-5	$\phi < 0$	-0.4	-0.6	-1.1	-1.7	-1.0	-0.8
+5	$\phi < 0$	-0.6	-0.8	-1.3	-1.8	-1.1	-0.9
+10	$\phi < 0$	-0.6	-0.8	-1.3	-1.9	-1.1	-0.9
+15	$\phi < 0$	-0.6	-0.8	-1.3	-2.0	-1.1	-0.9
+20	$\phi < 0$	-0.6	-0.8	-1.3	-2.1	-1.1	-0.9
+25	$\phi < 0$	-0.6	-0.8	-1.3	-2.2	-1.1	-0.9
+30	$\phi < 0$	-0.6	-0.8	-1.3	-2.3	-1.1	-0.9

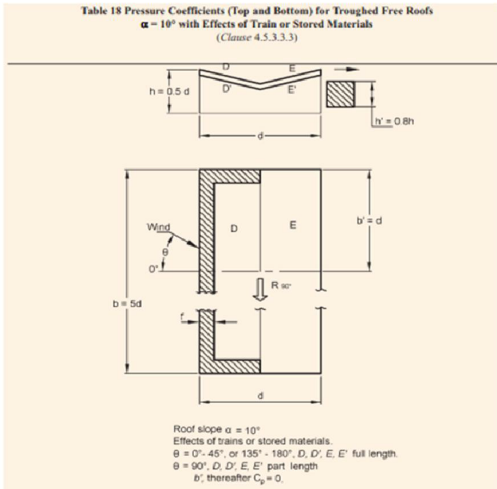
NOTE—If ϕ and α are overall with and through sloped overhangs.

Each side of a ducted canopy should be able to withstand forces using both the maximum and the minimum coefficients in the table. The windward side of the canopy should be able to withstand the design pressure (which may be less than the design wind pressure) for ducted canopies the design pressure should be based on the design wind pressure.

CHILDREN'S PLAY AREA



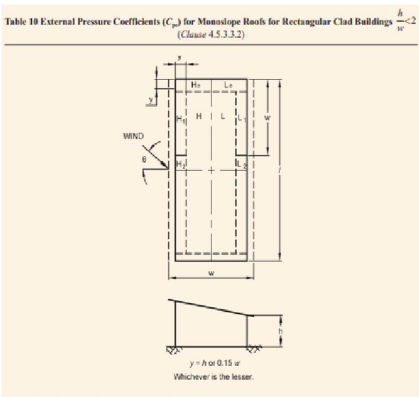
ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS



Wind Angle θ	Pressure Coefficients, C_p			
	D	D'	E	E'
0°	-0.7	+0.8	-0.6	+0.6
45°	-0.4	+0.3	-0.2	+0.2
90°	-0.1	+0.1	-0.1	+0.1
180°	-0.4	-0.2	-0.6	-0.3
For all value of θ	For f : $C_{pTop} = -1.1$, $C_{pBottom} = 0.9$ Tangentially acting friction: $R_{90^\circ} = 0.1 p_d b d$			

ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS

The pressure coefficients are given in Tables separately for monopitch and double pitch canopy roofs such as open-air parking garages, shelter areas,outdoor areas, railway platforms, **stadiums** and theatres.



NOTE - Area H and area L refer to the whole quadrant.

Roof Angle α Degree	Wind Angle θ										Local Coefficients (C_{pe})						
	0°		45°		90°		135°		180°								
	H	L	H	L	H	L	H	L	H	L	H ₁	H ₂	L ₁	L ₂	H ₆	L ₉	
5	-1.0	-0.5	-1.0	-0.9	-1.0	-0.5	-0.9	-1.0	-0.5	-1.0	-2.0	-1.5	-2.0	-1.5	-2.0	-2.0	-2.0
10	-1.0	-0.5	-1.0	-0.8	-1.0	-0.5	-0.8	-1.0	-0.4	-1.0	-2.0	-1.5	-2.0	-1.5	-2.0	-2.0	-2.0
15	-0.9	-0.5	-1.0	-0.7	-1.0	-0.5	-0.6	-1.0	-0.3	-1.0	-1.8	-1.4	-1.8	-1.4	-2.0	-2.0	-2.0
20	-0.8	-0.5	-1.0	-0.6	-0.9	-0.5	-0.5	-1.0	-0.2	-1.0	-1.6	-1.2	-1.6	-1.4	-2.0	-2.0	-2.0
25	-0.7	-0.5	-1.0	-0.6	-0.8	-0.5	-0.3	-0.9	-0.1	-0.8	-1.4	-1.0	-1.4	-1.2	-2.0	-2.0	-2.0
30	-0.5	-0.5	-1.0	-0.6	-0.8	-0.5	-0.1	-0.6	0	-0.6	-1.2	-0.8	-1.2	-1.0	-2.0	-2.0	-2.0

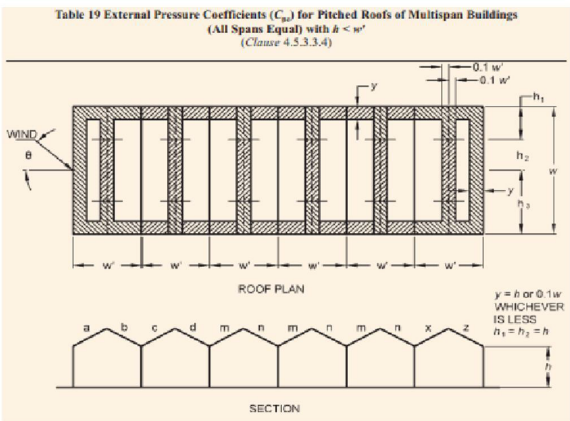
* Applied to length $w/2$ from wind-ward end.
 ** Applies to remainder

NOTES

1. h is the height of eaves at lower side, f is the greater horizontal dimensions of a building and w is the lesser horizontal dimension of a building.

2. f and w are overall length and width including overhangs.

ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS



Roof Angle Degree	Wind Angle Degree	First Span		First Intermediate Span		Other Intermediate Spans		End Span		Local Coefficient
		a	b	c	d	e	f	g	h	
5	0	-0.9	-0.6	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-2.0
10		-1.1	-0.6	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	
20		-0.7	-0.6	-0.4	-0.3	-0.3	-0.3	-0.3	-0.5	
30		-0.2	-0.6	-0.4	-0.3	-0.2	-0.3	-0.2	-0.5	
45		+0.3	-0.6	-0.6	-0.4	-0.2	-0.4	-0.2	-0.5	
DISTANCE										
Roof Angle Degrees	Wind Angle Degrees	h ₁		h ₂		h ₃				
Up to 45	90	-0.8		-0.6		-0.2				

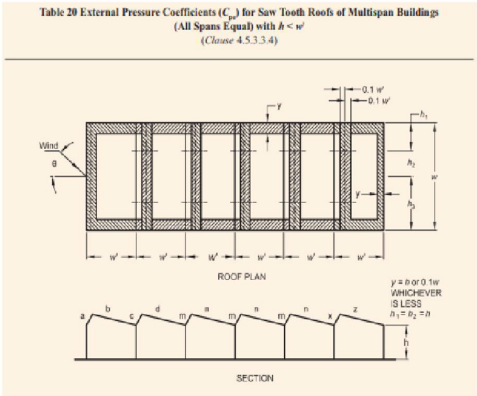
Frictional drag: When wind angle $\theta = 0^\circ$, horizontal forces due to frictional drag are allowed for in the above values, and

When wind angle $\theta = 90^\circ$, allow for frictional drag in accordance with 4.5.4.1.

NOTE - Evidence on these buildings is fragmentary and any departure from the cases given should be investigated separately

SDAT-MINI STADIUM -TENDER BIDDING PRESENTATION

ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS

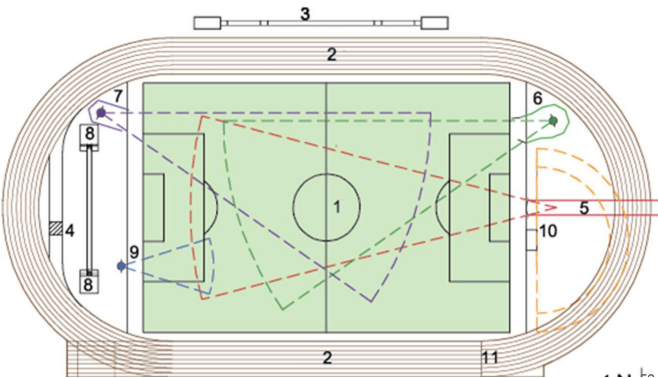


Wind Angle θ Degree	First Span a	First Intermediate Span b	Other Intermediate Spans c	End Span d	Local Coefficient z
0	+0.6	+0.7	+0.7	+0.3	+0.1
90	-0.6	-0.3	-0.3	-0.4	-0.6
180	-0.6	-0.3	-0.3	-0.4	-0.6
270	-0.6	-0.3	-0.3	-0.4	-0.6

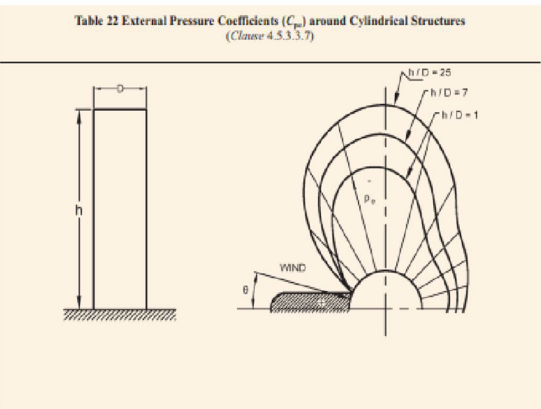
NOTE: — Evidence on these buildings is fragmentary and any departure from the cases given should be investigated separately.

CONCEPTUAL AREA ARRANGEMENTS FOR DIFFERENT SPORTS

1. Football Pitch
2. Standard Track
3. Long & Triple Jump Facility
4. Water Jump
5. Javelin Throw Facility
6. Discus & Hammer Throw Facility
7. Pole Vault Facility
8. Shot Put Facility
9. High Jump Facility
10. Finish Line

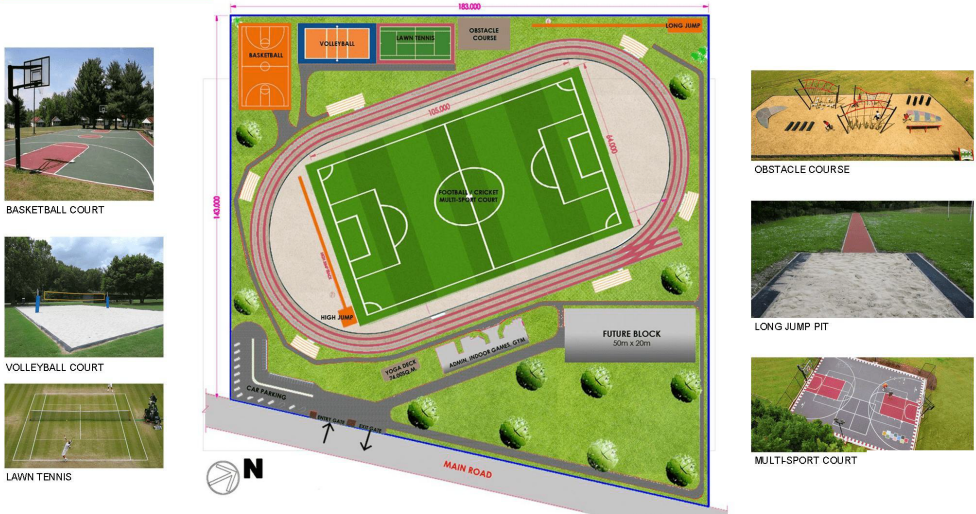


ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS

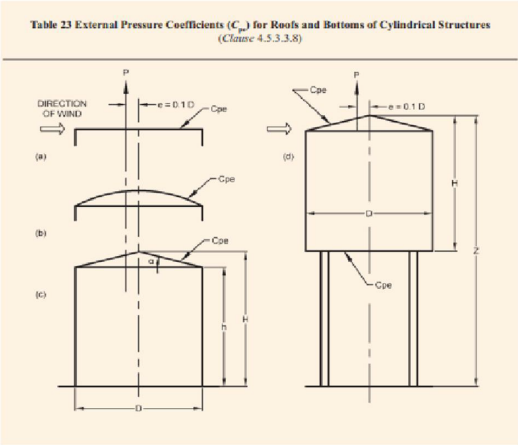


Position of Retaining θ Degree	Pressure Coefficients (C_{pe})		
	$h/D = 25$	$h/D = 7$	$h/D = 1$
0	1.0	1.0	1.0
15	0.8	0.8	0.8
30	0.1	0.1	0.1
45	-0.9	-0.8	-0.7
60	-1.9	-1.7	-1.2
75	-2.2	-2.2	-1.0
90	-2.6	-2.2	-1.7
105	-1.9	-1.7	-1.2
120	-0.9	-0.8	-0.7
135	-0.7	-0.6	-0.5
150	-0.6	-0.5	-0.4
165	-0.6	-0.5	-0.4
180	-0.6	-0.5	-0.4

PROPOSED DESIGN



ACCORDING TO NBC, STANDARDS FOR DIFFERENT KINDS OF ROOFS



Coefficients of External Pressure (C_{pe})				
Structure According to Shape				
H / D	a, b and c		d	
	Roof	(z / H) - 1	Roof	Bottom
0.5	-0.65	1.00	-0.75	-0.8
1.00	-1.00	1.25	-0.75	-0.7
2.00	-1.00	1.50	-0.75	-0.6

Total force acting on the roof of the structure, $P = 0.785 D^2 (C_{pi} - C_{pe}) \rho_d$
The resultant of P lies eccentrically, $e = 0.1 D$

SDAT-MINI STADIUM PREMLARY SCHEDULE

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	2022	A	S	O	N
1		SDAT -MINI STADIUM	397 days	Thu 01-09-22	Fri 08-03-24							
2		CONCEPTUAL DESIGN	30 days	Thu 01-09-22	Wed 12-10-22							
3		SITE ANALYSIS	5 days	Thu 01-09-22	Wed 07-09-22		LAND SURVEYOR ,PROJEC					
4		PREMLARY DESIGN	5 days	Thu 08-09-22	Wed 14-09-23		ARCHITECT,DESIGNER					
5		SCHEMATIC DESIGN	20 days	Thu 15-09-22	Wed 12-10-24		ARCHITECT,DESIGNER					
6		PLANNING	75 days	Thu 13-10-22	Wed 25-01-23							
7		BUDGET	30 days	Thu 13-10-22	Wed 23-11-23		ACCOUNTER ,ACCOUNTIV					
8		SCOPE OF WORK	5 days	Thu 24-11-22	Wed 30-11-22		PROJECT EXECUTIVE					
9		HUMAN RESOURCES	10 days	Thu 01-12-22	Wed 14-12-23		PROJECT COORDINATOR					
10		TIMELINE	10 days	Thu 15-12-22	Wed 28-12-23		PROJECT EXECUTIVE,PRO					
11		FACILITES REQUIRED	20 days	Thu 29-12-22	Wed 25-01-24		PROJECT ENGINEER					
12		PROCUREMENT	10 days	Thu 26-01-23	Wed 08-02-23							
13		CLIENT REQUIREMENT	3 days	Thu 26-01-23	Mon 30-01-23		PROJECT EXECUTIVE,PRO					

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

Project: MINI STADIUM SCHED
Date: Tue 16-08-22

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ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	2022	A	S	O	N
26		INSTALLATION OF STEEL STRUCTURE ON ROOF	25 days	Thu 12-10-23	Wed 15-11-23	25	BOLTS ,NUTS,SITE SUPERVISOR,STEEL,STRU ENGINEER					
27		ERECTION OF ROOF	10 days	Thu 16-11-23	Wed 29-11-23	26	BOLTS ,CONSTRUCTION					
28		DECORATION	15 days	Thu 30-11-23	Wed 20-12-23	27	CONSTRUCTION WORKER					
29		PAINTING THE SEATS	10 days	Thu 21-12-23	Wed 03-01-24	28	PAINTS,TROLLEY					
30		ARRANGING LIGHTS	10 days	Thu 04-01-24	Wed 17-01-24	29	ELECTRICAL ENGINEER ,E					
31		INSTALLATION OF SCORE BOARD AND OTHER FACILITIES	30 days	Thu 18-01-24	Wed 28-02-24	30	CONSTRUCTION WORKERS,PLUMBERS,SC ,SCORE BOARD					
32		FINAL INSPECTION	4 days	Thu 29-02-24	Tue 05-03-24	31	PROJECT COORDINATOR					
33		HANDOVER	3 days	Wed 06-03-24	Fri 08-03-24	32	PROJECT COORDINATOR					

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

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Manual Summary Rollup

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External Tasks

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Manual Progress

Project: MINI STADIUM SCHED
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ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	2022	A	S	O	N
14		TENDERING	6 days	Tue 31-01-23	Tue 07-02-23	13	PROJECT ENGINEER,PROJ					
15		APPROVAL CONTRACT	1 day	Wed 08-02-23	Wed 08-02-23	14	PROJECT MANAGER					
16		CONSTRUCTION PHASE	282 days	Thu 09-02-23	Fri 08-03-24							
17		SITE CLEARING	20 days	Thu 09-02-23	Wed 08-03-23	15	BULL DOZER ,DUMPER,LA					
18		EXCAVATION	20 days	Thu 09-03-23	Wed 05-04-23	17	BACKHOE LOADER,CEME					
19		SURFACE DRAINAGE	30 days	Thu 06-04-23	Wed 17-05-23	18	DRAINAGE WORKER,LAND					
20		FILLING OF PLAYING AND TRACK	15 days	Thu 18-05-23	Wed 07-06-23	19	ASPHALT PAVING,PAINTS,CONSTR					
21		INSTALLATION OF ARTIFICIAL PLAYING AND TRUF	10 days	Thu 08-06-23	Wed 21-06-23	20	CONSTRUCTION WORKERS,GREEN SAND ,SILICA					
22		POURING CONCRETE FOOTINGS	20 days	Thu 22-06-23	Wed 19-07-23	21	CONCRETE LORRY,CONSTRUCTION					
23		POURING OF SUPPORTING SEATS AND GALLARIES	25 days	Thu 20-07-23	Wed 23-08-23	22	CONSTRUCTION WORKERS,PLYWOOD					
24		ERECTING PRECAST GALLARIES	25 days	Thu 24-08-23	Wed 27-09-23	23	CRANE,PLYWOOD ,SCAFFOLDING ,SITE					
25		POURING THE SEATS	10 days	Thu 28-09-23	Wed 11-10-23	24	CONSTRUCTION WORKER					

Task

Split

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Project: MINI STADIUM SCHED
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ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	2022	A	S	O	N
26		INSTALLATION OF STEEL STRUCTURE ON ROOF	25 days	Thu 12-10-23	Wed 15-11-23	25	BOLTS ,NUTS,SITE SUPERVISOR,STEEL,STRU ENGINEER					
27		ERECTION OF ROOF	10 days	Thu 16-11-23	Wed 29-11-23	26	BOLTS ,CONSTRUCTION					
28		DECORATION	15 days	Thu 30-11-23	Wed 20-12-23	27	CONSTRUCTION WORKER					
29		PAINTING THE SEATS	10 days	Thu 21-12-23	Wed 03-01-24	28	PAINTS,TROLLEY					
30		ARRANGING LIGHTS	10 days	Thu 04-01-24	Wed 17-01-24	29	ELECTRICAL ENGINEER ,E					
31		INSTALLATION OF SCORE BOARD AND OTHER FACILITIES	30 days	Thu 18-01-24	Wed 28-02-24	30	CONSTRUCTION WORKERS,PLUMBERS,SC ,SCORE BOARD					
32		FINAL INSPECTION	4 days	Thu 29-02-24	Tue 05-03-24	31	PROJECT COORDINATOR					
33		HANDOVER	3 days	Wed 06-03-24	Fri 08-03-24	32	PROJECT COORDINATOR					

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

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Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

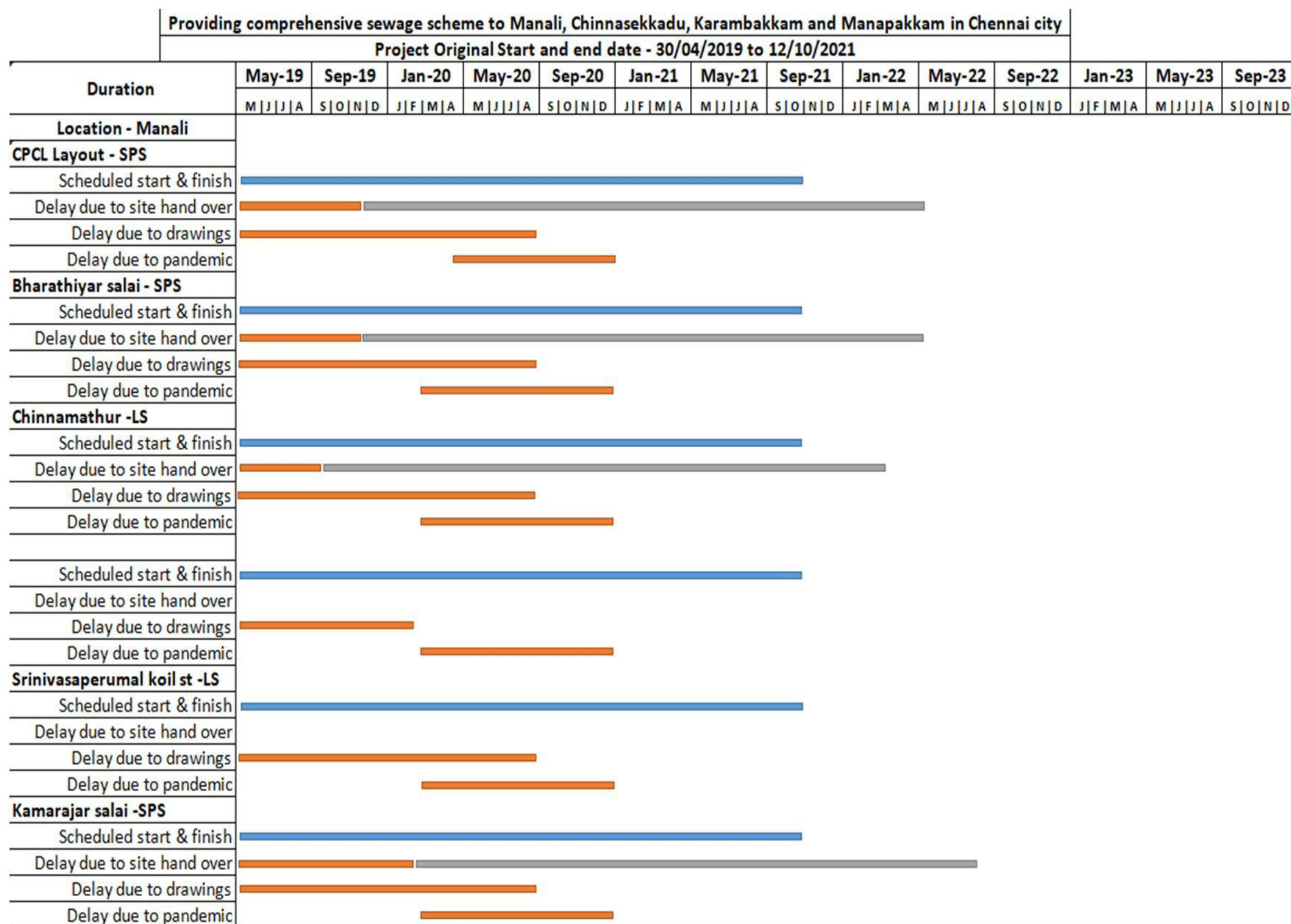
Deadline

Progress

Manual Progress

Project: MINI STADIUM SCHED
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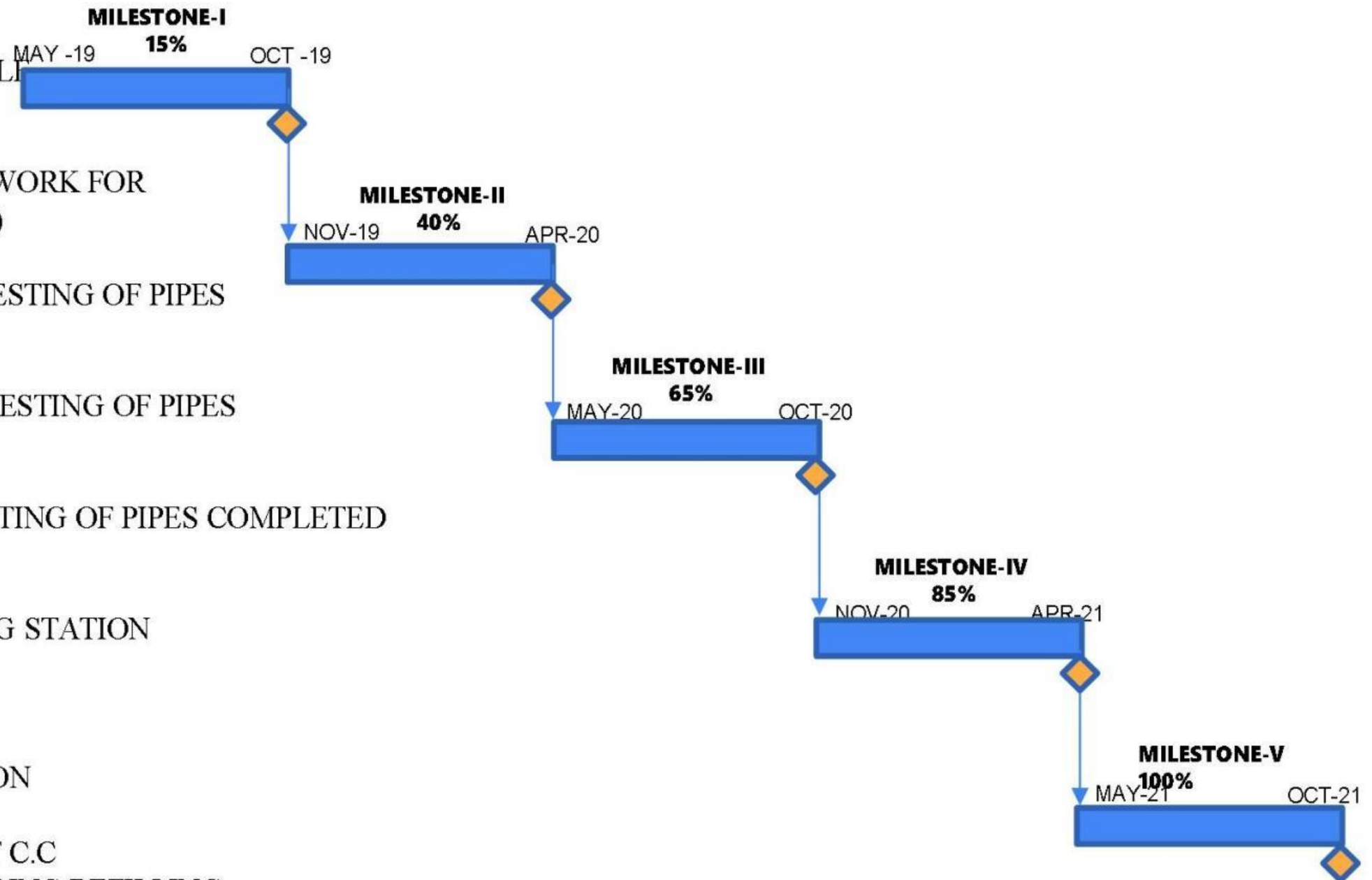


AS PLANNED VERSUS AS BUILT ANALYSIS-DELAY ANALYSIS

AS PLANNED SCHEDULE:-

ACTIVITIES:-

- 1)CONSTRUCTION OF MANHOLE (DEPTH UPTO 3.5M)
- 2)CONSTRUCTION OF BRICK WORK FOR MANHOLE (DEPTH UPTO 3.5M)
- 3)I)LAYING ,JOINTING ,AND TESTING OF PIPES (DEPTH UTO 3.5M)
- 4)II)LAYING ,JOINTING ,AND TESTING OF PIPES (DEPTH UTO 3.5M)
- 5)LAYING ,JOINTING,AND TESTING OF PIPES COMPLETED FOR PUMPING MAIN
- 6)CONSTRUCTION OF PUMPING STATION
- 7) ELECTRO MECHANICAL
- 8)HOUSE SERVICE CONNECTION
- 9)PUMPING MAIN SPECIAL B.T C.C CUTTING BARICADDING,BEDDING,REFILLING DISPOSAL)
- 10)COMMISSIONING AND TRAIL RUNNING

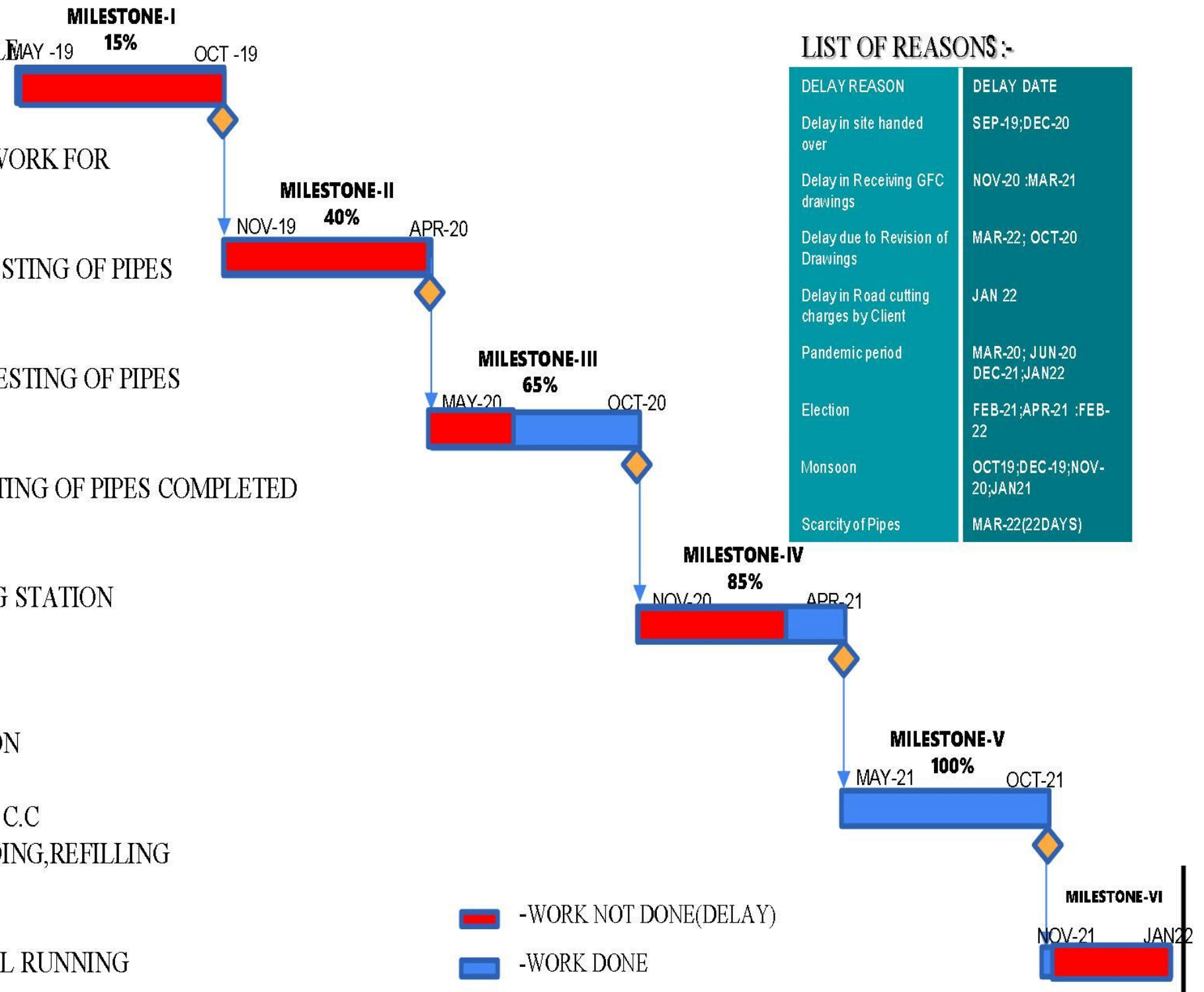


AS -BUILT SCHEDULE:-

AS PLANNED VERSUS AS BUILT ANALYSIS-DELAY ANALYSIS

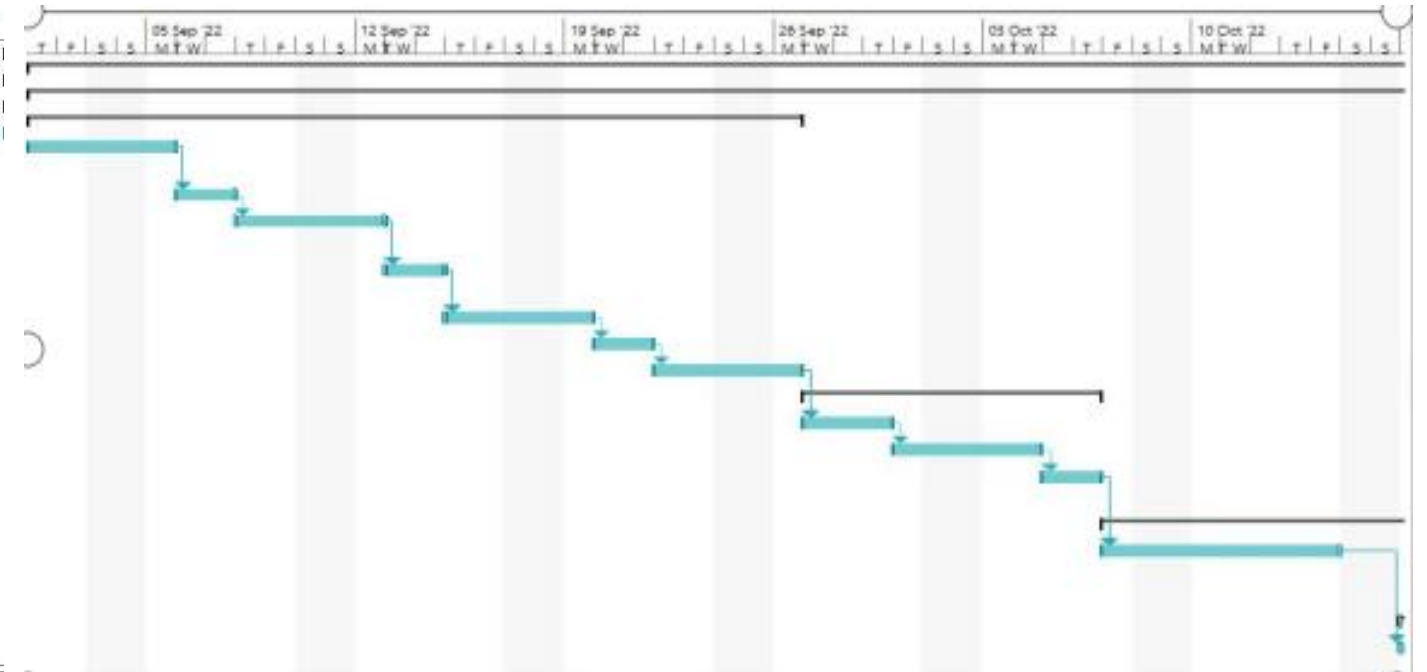
ACTIVITIES:-

- 1)CONSTRUCTION OF MANHOLE (DEPTH UPTO 3.5M)
- 2)CONSTRUCTION OF BRICK WORK FOR MANHOLE (DEPTH UPTO 3.5M)
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- 7) ELECTRO MECHANICAL
- 8)HOUSE SERVICE CONNECTION
- 9)PUMPING MAIN SPECIAL B.T C.C CUTTING BARICADDING,BEDDING,REFILLING DISPOSAL)
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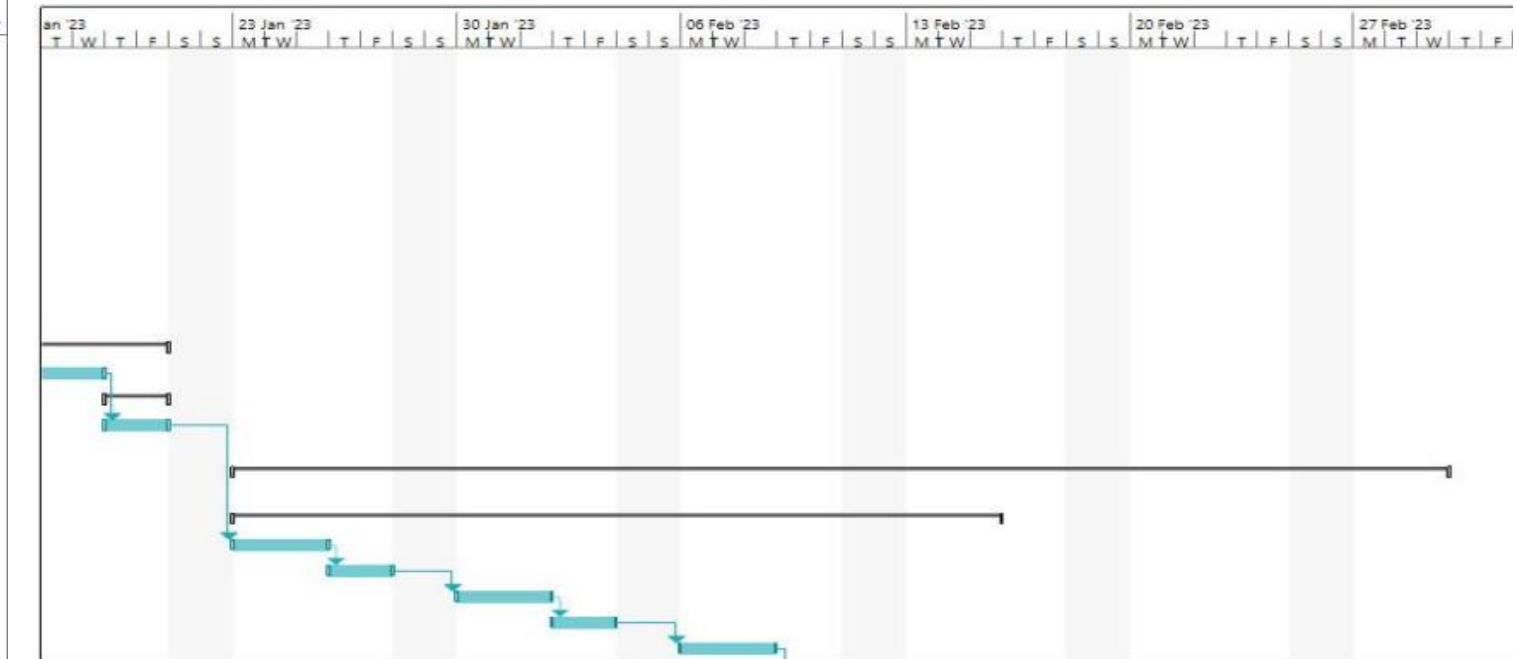


PROVIDING THE COMPHRENSIVE SCHEME- MANALI, KARAMBAKKAM,CHINNASEKKADU,-

ID	Task Name	Duration	Start	Finish	Predecessors	15 Aug '22	22 Aug '22	29 Aug '22
1	LOCATION-MANALI	163 days	Thu 01-09-22	Mon 17-04-2				
2	CPCL LAYOUT -ZONE -1	34 days	Thu 01-09-22	Tue 18-10-22				
3	COLLECTION SYSTEM	18 days	Thu 01-09-22	Mon 26-09-2				
4	Double Wall Corrugated PE/PP pipes	3 days	Thu 01-09-22	Mon 05-09-22				
5	CI pipes of LA class	2 days	Tue 06-09-22	Wed 07-09-22	4			
6	Construction of Brickwork manholes	3 days	Thu 08-09-22	Mon 12-09-22	5			
7	Construction of Precast manholes	2 days	Tue 13-09-22	Wed 14-09-22	6			
8	Construction of RCC manholes	3 days	Thu 15-09-22	Mon 19-09-22	7			
9	Construction of PE manholes	2 days	Tue 20-09-22	Wed 21-09-22	8			
10	House service connection	3 days	Thu 22-09-22	Mon 26-09-22	9			
11	Construction of Pumping station	8 days	Tue 27-09-22	Thu 06-10-22				
12	Suction well	3 days	Tue 27-09-22	Thu 29-09-22	10			
13	Screen well	3 days	Fri 30-09-22	Tue 04-10-22	12			
14	Valve chamber, Pipes & Specials and allied works	2 days	Wed 05-10-22	Thu 06-10-22	13			
15	installation of pump works	8 days	Fri 07-10-22	Tue 18-10-22				
16	Installation of pumping machineries and allied electrical works	6 days	Fri 07-10-22	Fri 14-10-22	14			
17	pumping main works	2 days	Mon 17-10-22	Tue 18-10-22				
18	pumping main at CPCL LAYOUT	2 days	Mon 17-10-22	Tue 18-10-22	16			



ID	Task Name	Duration	Start	Finish	Predecessors	15 Aug '22	22 Aug '22	29 Aug '22
19	BHARATHIYAR SALAI STREET -ZONE -2	34 days	Wed 19-10-22	Mon 05-12-22				
20	COLLECTION SYSTEM	18 days	Wed 19-10-22	Fri 11-11-22				
21	Double Wall Corrugated PE/PP pipes	3 days	Wed 19-10-22	Fri 21-10-22	18			
22	CI pipes of LA class	2 days	Mon 24-10-22	Tue 25-10-22	21			
23	Construction of Brickwork manholes	3 days	Wed 26-10-22	Fri 28-10-22	22			
24	Construction of Precast manholes	2 days	Mon 31-10-22	Tue 01-11-22	23			
25	Construction of RCC manholes	3 days	Wed 02-11-22	Fri 04-11-22	24			
26	Construction of PE manholes	2 days	Mon 07-11-22	Tue 08-11-22	25			
27	House service connection	3 days	Wed 09-11-22	Fri 11-11-22	26			
28	Construction of Pumping station	8 days	Mon 14-11-22	Wed 23-11-22				
29	Suction well	3 days	Mon 14-11-22	Wed 16-11-22	27			
30	Screen well	3 days	Thu 17-11-22	Mon 21-11-22	29			
31	Valve chamber, Pipes & Specials and allied works	2 days	Tue 22-11-22	Wed 23-11-22	30			
32	installation of pump works	8 days	Thu 24-11-22	Mon 05-12-22				
33	Installation of pumping machinery	6 days	Thu 24-11-22	Thu 01-12-22	31			
34	pumping main works	2 days	Fri 02-12-22	Mon 05-12-22				
35	pumping main at bhath	2 days	Fri 02-12-22	Mon 05-12-22	33			
36	CHINNAMATTUR-ZONE -3	34 days	Tue 06-12-22	Fri 20-01-23				
37	COLLECTION SYSTEM	18 days	Tue 06-12-22	Thu 29-12-22				



PROVIDING THE COMPHRENSIVE SCHEME- MANALI, KARAMBAKKAM,CHINNASEKKADU,-

