

PREPARING SCHEDULE AND ESTIMATING THE COST OF TWO STOREY HOUSE PROJECT

A report submitted in partial fulfillment of the requirements for

SEMESTER PROJECT

in

CONSTRUCTION TECHNOLOGY AND MANAGEMENT (CE308)

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STATEMENT

I hereby declare that the work presented in this report is original to the best of my knowledge, except as acknowledged in the text. This material has not been submitted, either in whole or in part, for another degree, project or research work at any University except for partial fulfilment of the requirements for the certificate of completion of PROJECT 1 in Construction Project Management in Civil Engineering Department at the Indian Institute of Technology Guwahati.

Date: 1 April 2024

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This report follows English (United Kingdom) spellings and ‘ASCE’ Referencing Style.

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Lastly, I would like to thank my friends and family for always encouraging me and supporting my decisions.

DISCLAIMER

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ABSTRACT

In any construction project preplanning is necessary to identify all the required steps to build a structure, splitting them into defined activities, ordering these steps logically, and determining the necessary materials, manpower, and equipment. It ensures the completion of work/project within the specified time and budget, in other words, optimum usage of the resources. Generally, it has been seen that in different construction projects during different activities over allocation or under-allocation of resources occurs due to which the project either gets delayed or doesn't remain budget friendly. There is a need for a common platform or software that would help the contractors/stakeholders to know the suitable number/quantity of resources in different activities. This report comprises two parts, first one involves project management, where we learned about the well-established techniques used in scheduling activities. We've also learned about the software used in project management (MS Project and Primavera).

Keywords: Construction Project Management; CPM; PERT; MS Project, Primavera.

TABLE OF CONTENTS

STATEMENT	i
ACKNOWLEDGEMENTS	iii
DISCLAIMER	iv
ABSTRACT	v
INTRODUCTION	8
DRAWINGS.....	10
ASSUMPTION AND DRAWING DESCRIPTION.....	12
ESTIMATION OF QUANTITIES	13
ACTIVITIES INVOLVED	26
ESTIMATION OF DURATION.....	27
ESTIMATION OF MATERIAL AND COST	29
TOTAL BUILDING COST.....	45
LIMITATIONS.....	46
REFERENCES.....	46
MS PROJECT.....	47

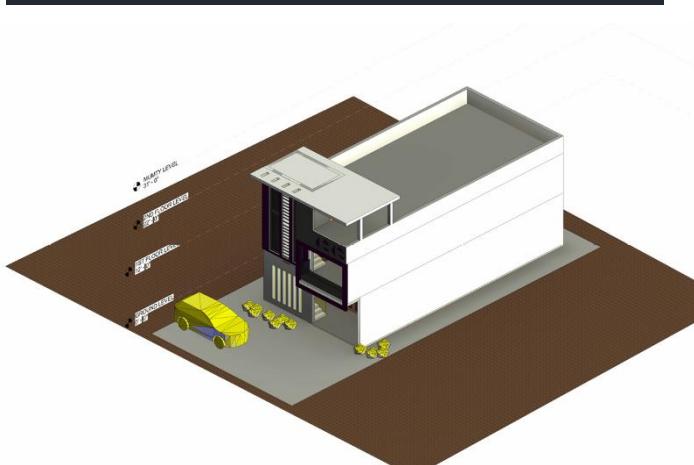
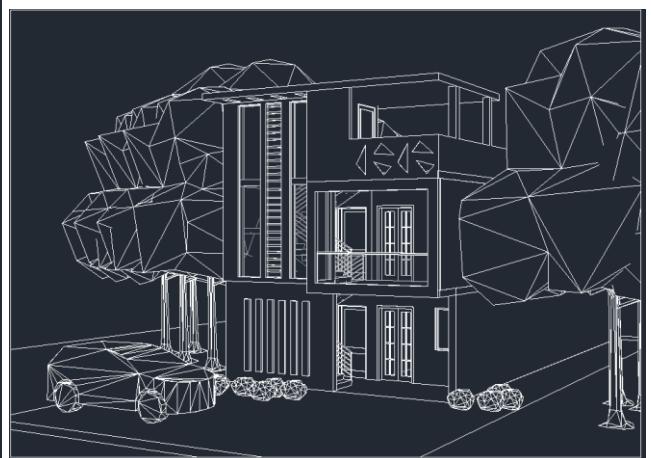
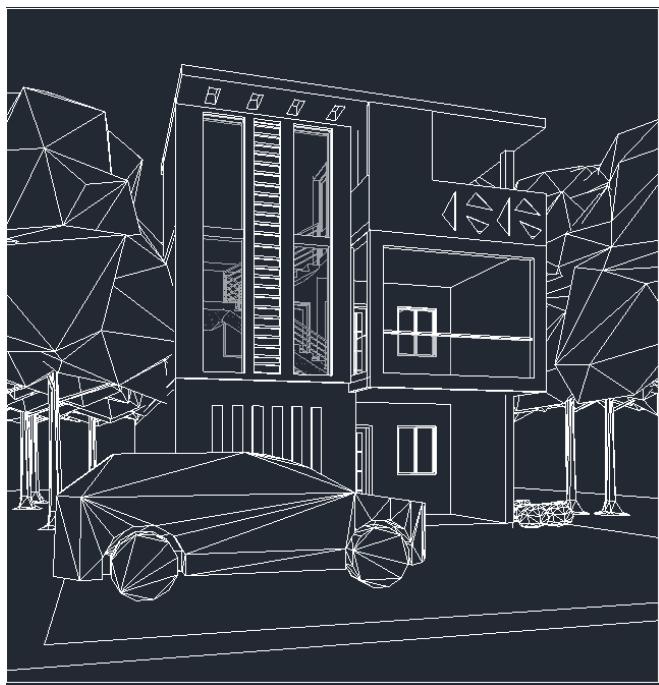
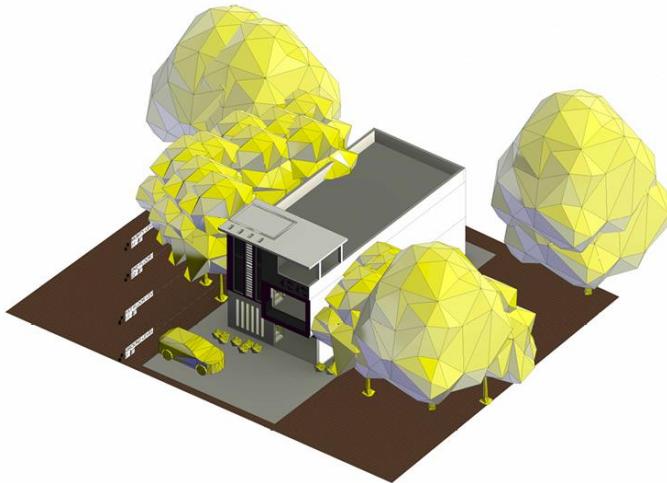
INTRODUCTION

In this project, there is a brief description of complete roadway map of a construction of a 2 storey house. In construction besides the site works, construction planning calculations are also very important.

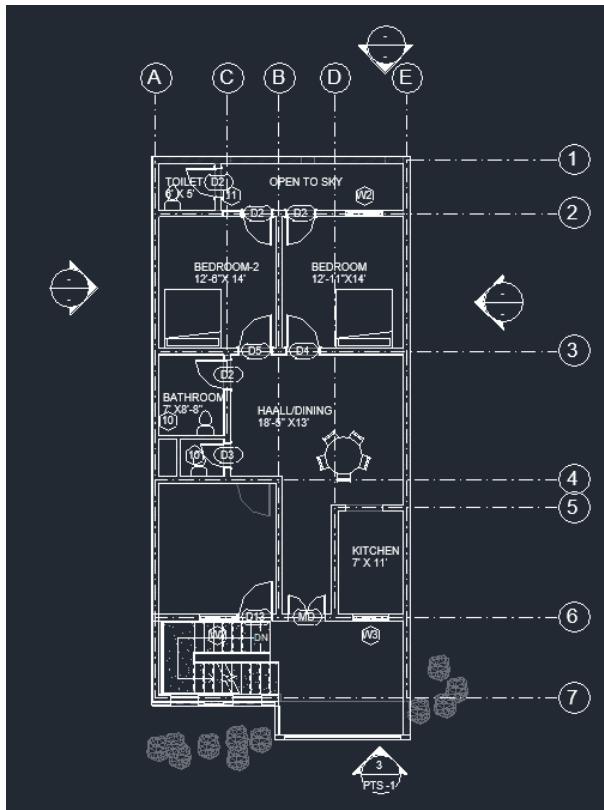
Here, the house construction data is provided from scratch with complete calculations, estimation and assumptions.

Planning can be defined as method to draw up scheme of acting, doing, proceeding, etc. which is developed in advance. Planning of a project involves different resources (like human, equipment, materials, money, etc.) The assignment for a project manager is to draw up plans with optimum utilisation of all the available resources. Major activities involved in construction planning are: (1) Defining the scope of work, (2) Identifying activities involved (3) Establishing project duration (4) Defining procedure for controlling and Assigning resources (5) Updating and revising. Some of the commonly used plans in construction industry are: (1) Time Plan (2) Man-Power Plan (3) Material Plan (4) Construction equipment plan (5) Finance Plan.

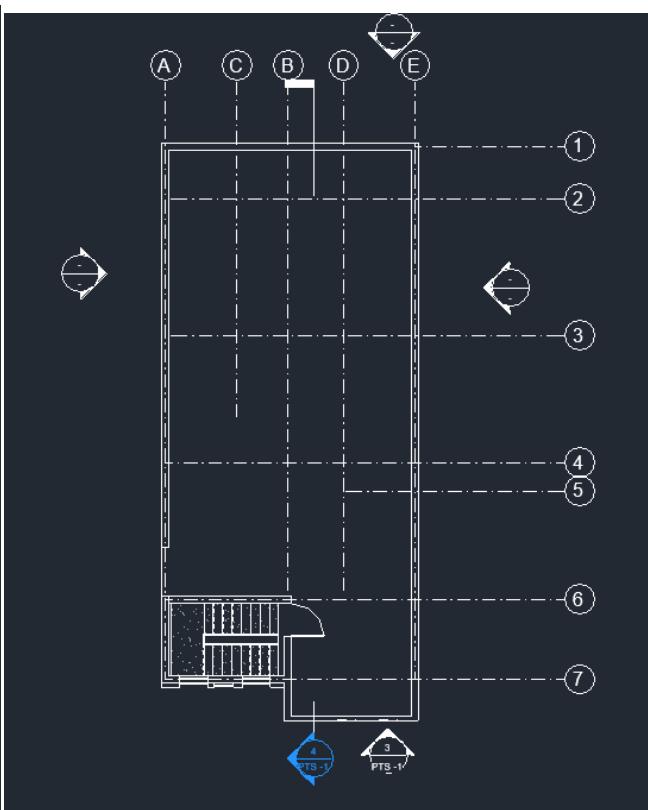
DRAWING



FIRST FLOOR PLAN



ROOF PLAN



ASSUMPTIONS AND DESCRIPTION OF DRAWING

- ❖ Shallow, Isolated and Trapezoidal footing.
- ❖ We have taken the Gross Design Area = **1800 sq. feet.**
- ❖ Dimensions of the Gross Design = **60 feet * 30 feet.**
- ❖ Plinth Area of house to be constructed = **1608.75 sq. feet.**
- ❖ Plinth dimension of design = **58 feet 6 inches * 27 feet 6 inches.**
- ❖ Numbers of Column in our design = **18 columns.**
- ❖ Dimensions of columns= a) **6 columns of (9 in. * 9 in.)**
b)**12 columns of (9in. * 12 in)**
- ❖ Thickness of exterior walls and majority of interior walls = **9 inches.**
- ❖ Thickness of rest interior walls = **6 inches.**
- ❖ Land type- **hard dense soil.**
- ❖ All the requirement of paperwork and preparation for construction are fulfilled.

ESTIMATION OF QUANTITY

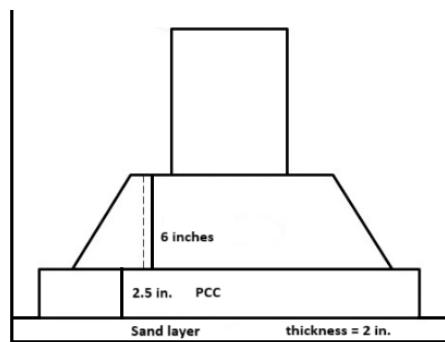
- SITE CLEANING

Area to be cleared = 1800 sq. feet.

- EXCAVATION

We are taking 6 feet shallow trapezoidal footing below the plinth level.

FOR 9 in. *12 in. columns

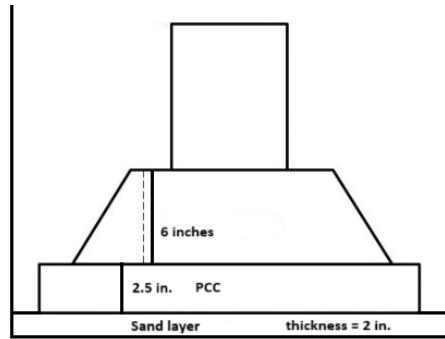


Excavation for one trapezoidal footing of 9 in. * 12 in. column

Excavation volume = **6 ft. * 3 ft. * 2.75 ft. = 49.5 cubic ft. (for 0.75ft*1ft column)**

Excavation volume for 12 columns (9 in. *12 in.) = **49.5 *12 = 594 cubic ft.**

For 9 in. * 9 in. columns



Excavation volume = **6 ft. * 2.75 ft. * 2.75 ft. = 45.375 cubic ft.**

Excavation volume for 6 columns (9 in. *9 in.) = **45.375 *6 = 272.25 cubic ft.**

- PCC CALCULATIONS

FOR 9 in. *12 in. columns

Volume of PCC work for one column = **2.33 ft. * 2.583 ft.* 0.208 ft.**
= 1.25 cubic ft.

Volume for 12 columns = **12* 1.25 cubic ft. = 15 cubic ft.**

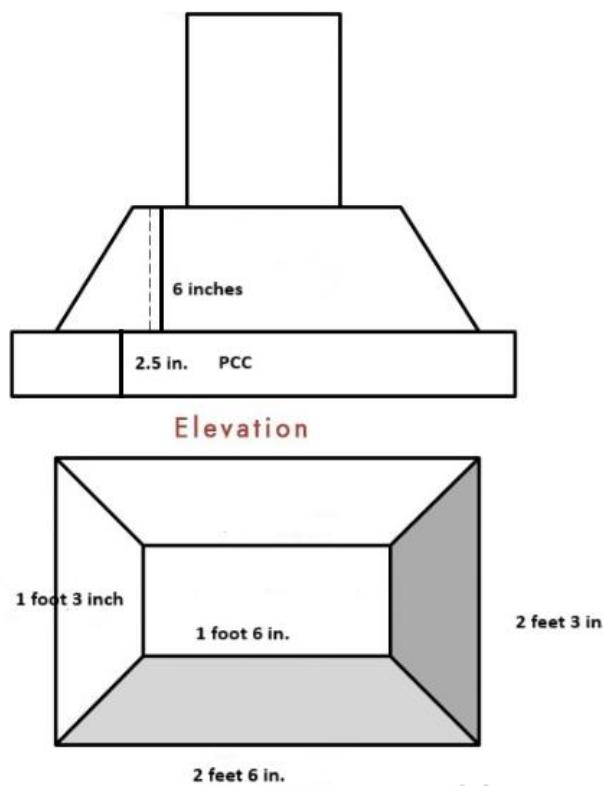
For 9 in. * 9 in. columns

Volume of PCC work for one column = **2.33 ft. * 2.33 ft.* 0.208 ft.**
= 1.13 cubic ft.

Volume for 6 columns = **6*1.13
= 6.78 cubic ft.**

- FOOTING WORK

FOR 9 in. *12 in. columns



i) Sand filling

Vol. of sand required = **3 ft. * 2.75ft. * 0.167 in. = 1.375 cubic ft.**

For 12 columns we get volume = **12 * 1.375 cubic ft. = 16.5 cubic ft.**

ii) Volume of concrete required for trapezoidal footing

Vol. of work = volume of trapezoid section

$$\begin{aligned} &= 0.5/3 * (1.5\text{ft} * 1.25\text{ft} + 2.5\text{ft} * 2.25\text{ft} + \sqrt{(1.5\text{ft} * 1.25\text{ft}) * (2.5\text{ft} * 2.25\text{ft})}) \\ &= \mathbf{1.79 \text{ cubic ft.}} \end{aligned}$$

Vol. of 12 columns = **12 * 1.79 = 21.48 cubic ft.**

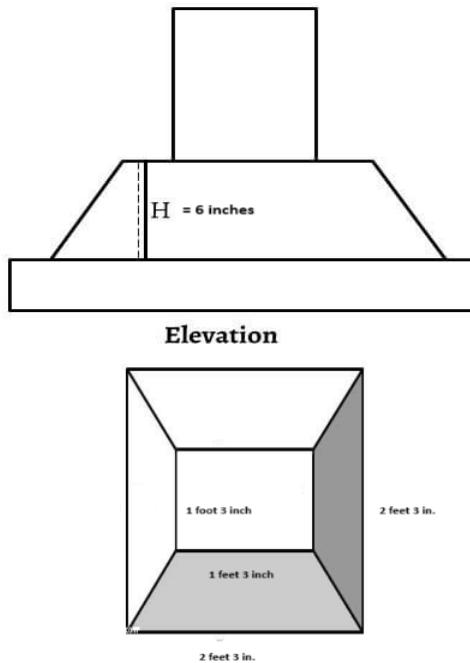
iii) Volume of column below plinth level

Vol. = **5.125 ft. * 0.75 ft * 1 ft. = 3.84 ft.** (assuming dimension of column 12 in. * 9 in. below plinth level)

Where we assumed the height of column below plinth level = **5.125 feet.**

Vol. of 12 columns = **12 * 3.84 = 46.125 cubic ft.**

For 9 in. * 9 in. columns



i) Sand filling

Vol. of sand required = **2.75 ft. * 2.75ft. * 0.167 in. = 1.26 cubic ft.**

For 6 columns we get volume = **6 * 1.375 cubic ft. = 7.56 cubic ft.**

ii) Volume of concrete required for trapezoidal footing

Vol. of work = volume of trapezoid section + volume of cuboid

$$= 0.5/3 * (1.25\text{ft} * 1.25\text{ft} + 2.25\text{ft.} * 2.25\text{ft} + \sqrt{(1.25\text{ft.} * 1.25\text{ft.}) * (2.25\text{ft.} * 2.25\text{ft.})})$$

$$= \mathbf{1.57 \text{ cubic ft.}}$$

Vol. of 12 columns = **6 * 1.57 = 9.42 cubic ft.**

iii) Volume of column below plinth level

$$\text{Vol.} = \mathbf{5.125 \text{ ft.} * 0.75 \text{ ft.} * 0.75 \text{ ft.} = 2.88 \text{ ft.}}$$

Where we assumed the height of column below plinth level = **5.125 feet.**

$$\text{Vol. of 6 columns} = \mathbf{6 * 2.88 = 17.29 \text{ cubic ft.}}$$

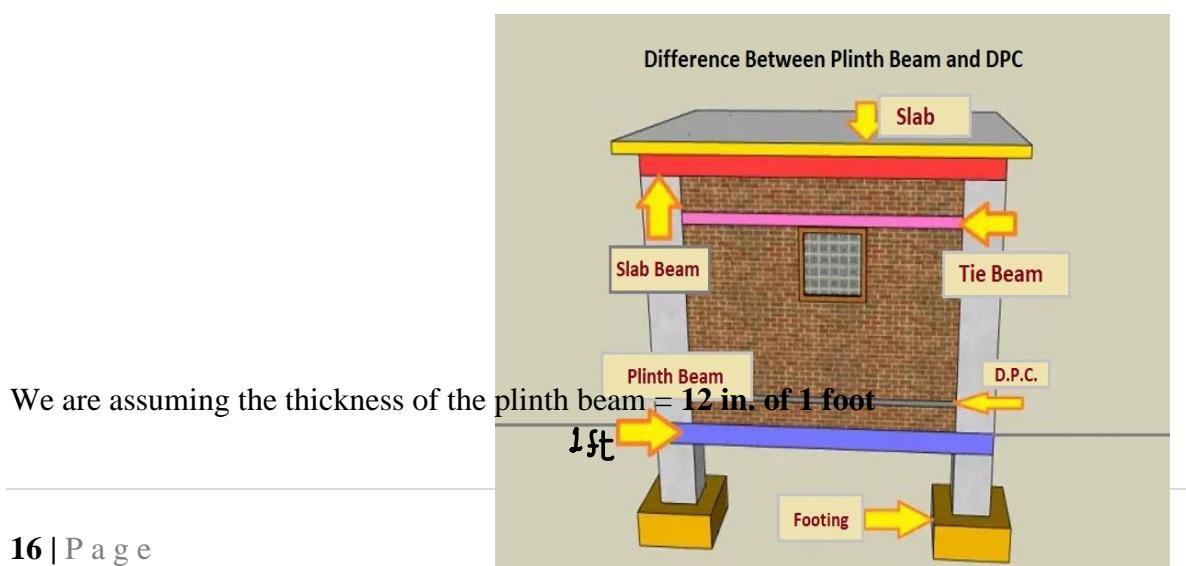
• BACKFILLING

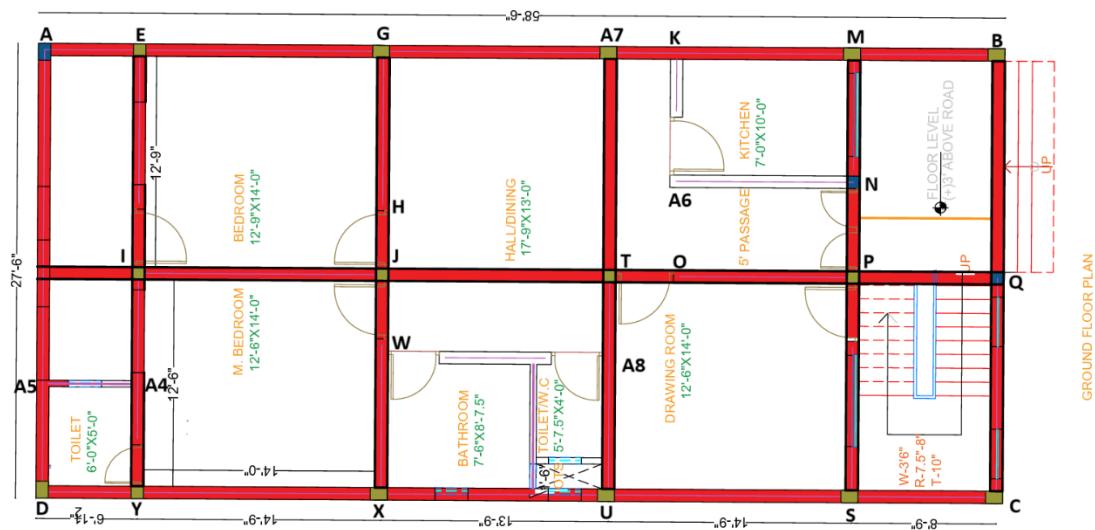
Here we will do backfilling with the help **MURUM FILLING.**

Total volume of backfill = **total volume of excavation – total volume of trapezoidal footing – PCC work – sand layer.**

$$\begin{aligned} &= 594 + 272 - (16.5 + 36.48 + 46.125 + 7.56 + 16.20 + 17.29) \\ &= \mathbf{778.845 \text{ cubic ft.}} \end{aligned}$$

• CASTING OF PLINTH BEAM



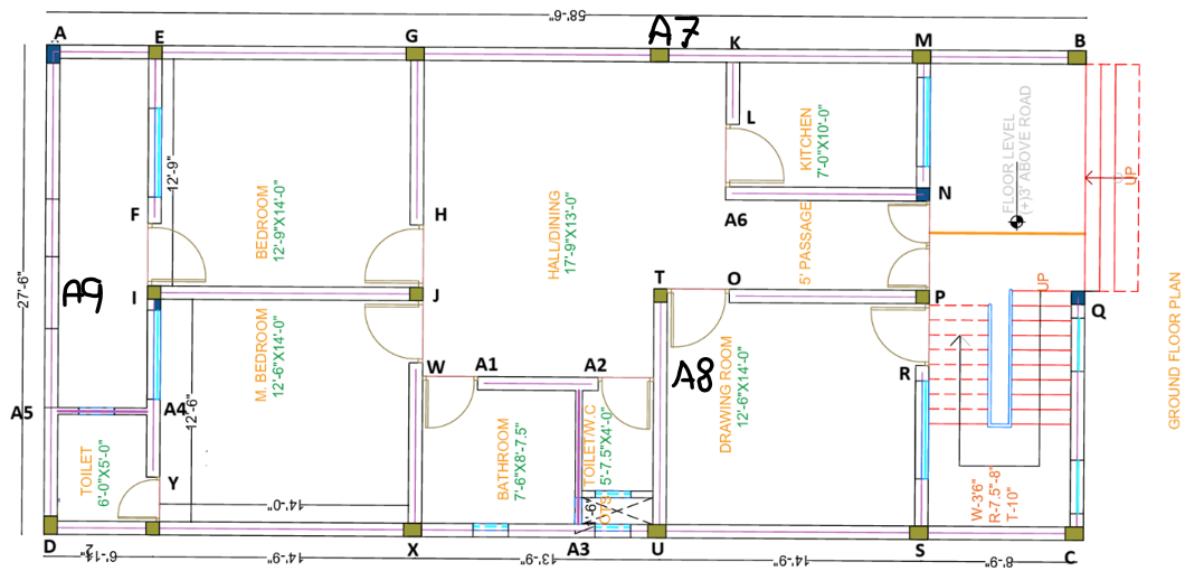


CENTER LINE METHOD

PLINTH BEAM	PLINTH BEAM LENGTH	PLINTH BEAM VOLUME	REMARKS (for length)
AB	57 ft. 9 in.	43.3125 cubic. Ft	58 ft. 6 in. - 2*4.5 in.
BC	26 ft. 9 in.	20.0625 cubic ft.	27 ft. 6 in. - 2*4.5 in.
AD	26 ft. 9 in.	20.0625 cubic ft.	27 ft. 6 in. - 2*4.5 in.
CD	57 ft. 9 in.	43.3125 cubic ft.	58 ft. 6 in. - 2*4.5 in.
GX	26 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
EY	26 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
A9Q	57 ft.	42.75 cubic ft.	57 ft. 9 in. - 2*4.5 in.
A7U	26 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
MS	26 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
TOTAL	330 ft.	247.5 cubic ft.	

• DPC WORK (DAMPED PROOF CONCRETE)

<u>DESCRIPTION OF ITEM</u>	<u>NO. OF ITEMS</u>	LENGTH	BREADTH	HEIGHT	QNTY.	UNIT OF MEASUREMENT
1 in. thick DPC	1	330 ft.	9 in.		247.5	Sq. ft.
Deduction of door opening	10	3 ft.	9 in		-22.5	Sq. ft.
Total		300 ft.			225	Sq. ft



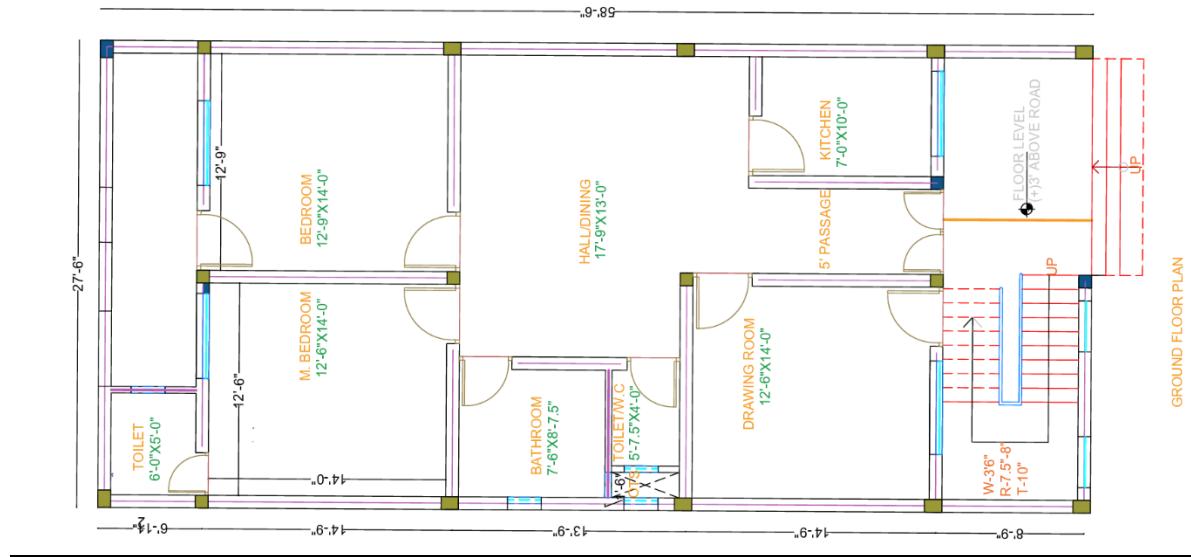
• FIRST CLASS BRICK WORK AND SUPERSTRUCTURE

Assuming the height of the wall is 11 feet.

DESCRIPTION OF ITEM	NO.	LENGTH	BREADTH	HEIGHT	QUANTITY	UOM	EXPLANATORY NOTE
FIRST CLASS BRICKWORK IN SUPERSTRUCTURE	1	287 ft. 6 in.	9 in.	11 ft.	2371.875	Cubic ft.	This is for 9 inches walls.
WALLS WITHOUT BEAM	1	30 ft.	9 in.	12 ft.	270	Cubic ft.	Wall without beams(11+1) ft.
FIRST CLASS BRICKWORK IN SUPERSTRUCTURE	1	12 ft. 6 in.	6 in.	12 ft.	75	Cubic ft.	This is for 6 inches internal walls.
DEDUCTION FOR WINDOW OPENING	8	4 ft.	9 in.	4 ft.	-96	Cubic ft.	
DEDUCTION FOR DOOR OPENING	10	3 ft.	9 in.	6 ft. 6 in.	-146.25	Cubic ft.	
DEDUCTION PART LINTEL	8	5ft. 4 in.	9 in.	4 in.	-10.55	Cubic ft.	4ft + 2*8 in.
WINDOW	8	4 ft.	9 in.	6 in.	-12	Cubic ft.	
DOOR	10	3 ft.	9 in.	6 in.	-11.25	Cubic ft.	
COLUMNS	12	1 ft.	9 in.	11 ft.	-99	Cubic ft.	For columns of dim. 9 in.*12 in.
COLUMNS	6	9 in.	9 in.	11 ft.	-37.125	Cubic ft.	For columns of dim. 9 in.*9 in.
TOTAL					2304.7	Cubic ft.	

$$\begin{aligned}
 \text{Total Brickwork} &= \text{brickwork for first floor} + \text{brickwork for ground floor} \\
 &= 2304.7 + 2304.7 \\
 &= 4609.4 \text{ cubic ft.}
 \end{aligned}$$

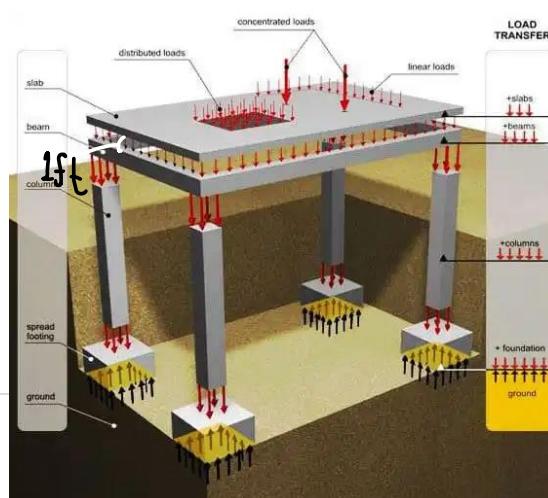
- COLUMN CASTING



DESCRIPTION OF ITEMS	NO.	LENGTH	BREADTH	HEIGHT	QUANTITY	UOM	REMARKS
COLUMNS	12	12 in.	9 in.	11 ft.	99	Cubic ft.	Columns of 9 in. * 12 in.
COLUMNS	6	9 in.	9 in.	11 ft.	37.125	Cubic ft.	Columns of 9 in. * 9in.
TOTAL	18				136.125	Cubic ft	

Total column work required = $2 * 136.125 = 272.25$ cubic ft. (for both floors)

- BEAM CASTING



BEAM	BEAM LENGTH	BREADTH	HEIGHT	BEAM VOLUME	REMARKS (for length)
AB	57 ft. 9 in.	9 in.	1 ft.	43.3125 cubic. Ft	58 ft. 6 in. - 2*4.5 in.
BC	26 ft. 9 in.	9 in.	1 ft.	20.0625 cubic ft.	27 ft. 6 in. - 2*4.5 in.
AD	26 ft. 9 in.	9 in.	1 ft.	20.0625 cubic ft.	27 ft. 6 in. - 2*4.5 in.
CD	57 ft. 9 in.	9 in.	1 ft.	43.3125 cubic ft.	58 ft. 6 in. - 2*4.5 in.
GX	26 ft.	9 in.	1 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
EY	26 ft.	9 in.	1 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
A9Q	57 ft.	9 in.	1 ft.	42.75 cubic ft.	57 ft. 9 in. - 2*4.5 in.
A7U	26 ft.	9 in.	1 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
MS	26 ft.	9 in.	1 ft.	19.5 cubic ft.	26 ft. 9 in. - 2*4.5 in.
TOTAL	330 ft.			247.5 cubic ft.	

We have assumed the dimension of beam as 9 in. * 12 in.

We are using center line method for this.

For 2 floors beam volume = **$2 * 247.5 = 495$ cubic ft.**

• FLOORING WORK

DESCRIPTION OF ITEMS	LENGTH	BREADTH	QUANTITY	UOM
FLOORING OF MASTER BEDROOM	14 ft.	12 ft. 6 in.	175	Sq. ft.
FLOORING OF BEDROOM	14ft.	12 ft. 9 in.	178.5	Sq. ft.
BEDROOM ATTACHED BATHROOM	6ft.	5ft.	30	Sq. ft.
FLOORING OF BATHROOM	8ft. 7.5in.	7ft. 6 in.	64.6875	Sq. ft.
FLOORING OF COMMON TOILET	5ft. 7.5in.	4 ft.	22.5	Sq. ft
FLOORING OF HALL	17 ft. 9 in.	13 ft.	230.75	Sq. ft.
FLOORING OF KITCHEN	10 ft.	7 ft.	70	Sq. ft.
FLOORING OF DRAWING ROOM	14 ft.	12 ft. 6 in.	175	Sq. ft.
FLOORING OF PASSAGE		5 ft.	98	Sq. ft
FLOORING BELOW STAIRS	8 ft.	12ft. 6 in.	100	Sq. ft
OTHERS			464	Sq. ft
TOTAL			1608.4375	Sq. ft.

For flooring there will be 3 floors.

Total flooring area = **3 *1608.4375 = 4825.3125 sq. ft.**

• WALL PLASTERING

DESCRIPTION OF ITEM	No.	LENGTH	HEIGHT	QUANTITY	UOM
WALL AREA	1	454.5 ft.	12 ft.	5454	Sq. ft.
WINDOW	8	4 ft.	4 ft. 6in.	-144	Sq. ft.
DOOR	10	3 ft.	7 ft.	-210	Sq. ft.
EXTERNAL WALLS				1737	Sq. ft.
TOTAL				6837	Sq. ft.

For 2 floors of plastering the working area will be doubled = **6837*2 = 13,674 sq. ft.**

- PAINTING WORK

DESCRIPTION OF ITEM	No.	LENGTH	HEIGHT	QUANTITY	UOM
WALL AREA	1	454.5 ft.	12 ft.	5454	Sq. ft.
WINDOW	8	4 ft.	4 ft. 6in.	-144	Sq. ft.
DOOR	10	3 ft.	7 ft.	-210	Sq. ft.
ROOF	1			1600	Sq.ft.
EXTERNAL WALL				1737	Sq. ft.
TOTAL				8437	Sq. ft.

For 2 floors of painting the working will be doubled = **8437 * 2= 16874 sq. ft.**

- SLAB CASTING

Here we are assuming that the slab will give same area as of plinth.

Total area of slab to be casted = **1608.75 sq. ft.**

Now we have to exclude the slab where there is staircase.

Area of staircase = **10ft. * 8 ft. = 80 sq. ft.**

Volume of slab = **(1608.75 -80) sq. ft. * 8 in. = 1019.1656 cubic ft. (we are assuming the thickness of slab = 8 inches)**

Total dimension of slab = **2 * (1019.1656) = 2038.3322 cubic ft.**

We are using two slabs

i) for first floor.

ii) for ceiling.

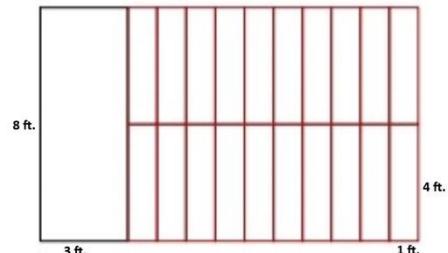
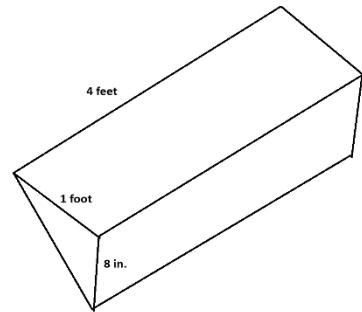
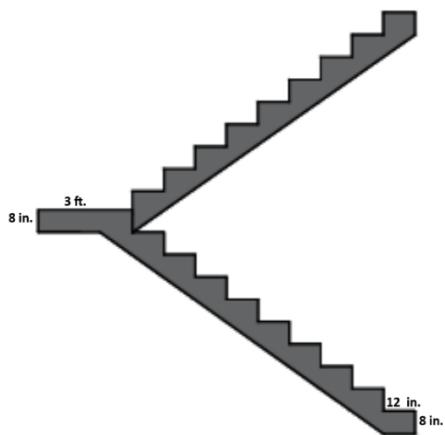
- STAIRCASE

DESCRIPTION OF ITEMS	NO.	LENGTH	BREADTH	HEIGHT	QUANTITY	UOM	REMARKS
STEPS	18	4 ft.	1 ft.	8 in.	48	Cubic ft.	
STAIR SLAB	1	8 ft.	3 ft.	8 in.	16	Cubic ft.	
SUPPORTINGS	19				25	Cubic ft.	For supporting the stairs (triangular in shape)
TOTAL	38				89	Cubic ft.	

$$\text{Volume of supporting} = (\frac{1}{2} * 1 \text{ ft.} * 0.6667 \text{ ft.}) * 4\text{ft.} * 19 \text{ steps}$$

$$= 25 \text{ cubic ft.}$$

$$\text{Total volume of stair work} = 2 * 89 = 178 \text{ cubic ft.}$$



- WALL TILINGS

DESCRIPTION OF ITEMS	NO.	LENGTH	HEIGHT	QUANTITY	UOM	REMARKS
COMMON TOILET	1	14 ft. 3 in.	5 ft.	71.25	Sq. ft.	Tiling is done in bathroom till 5 ft. only.
MASTER BEDROOM TOILET	1	11 ft.	5 ft.	55	Sq. ft.	
BATHROOM	1	24 ft. 9 in.	5 ft.	123.75	Sq. ft.	
TOTAL				250	Sq. ft.	

Total wall tiling area = for 2 floor = **2 * 250 = 500 sq. ft.**

- RAILING WORKS

DESCRIPTION OF ITEMS	NO.	LENGTH	QUANTITY	UOM	REMARKS
RAILING AT STAIRS	2	36 ft.	72 ft.	ft.	Metal railing are provided for safety.
RAILING AT ROOF	1	170 ft.	170 ft.	ft.	
TOTAL			242 ft.	ft.	

- ADDITIONAL BRICK WORK FOR COVERING STAIRS ON ROOF

WORK	LENGTH	HEIGHT	BREADTH	QUANTITY	UOM
BRICKWORK	33 ft.	10 ft.	9 in.	247.5	Cubic ft.
PLASTERING	33 ft.	10 ft.		330	Sq. ft.
PAINTING	33 ft.	10 ft.		330	Sq. ft.
SLAB	13 ft.	8 in.	9 ft.	78	Cubic ft.

Summary

Site area to be cleared = 1800 sq. feet.

Total excavated volume = 245.25+594 = 839.25 cubic ft.

PCC calculation = 15 + 6.78 = 22.78 cubic ft.

Footing work :- i) Sand filling = 16.5+7.56 = 24.06 cubic ft.

**ii) Volume of conc. Req. for trapezoidal footing = 21.48+9.42
= 30.9 cubic ft.**

**iii) Volume of column below plinth level = 46.125+17.29
= 63.415 cubic ft.**

Backfilling = 778.845 cubic ft.

Total brickwork = 4609.4+247.5=4696.9 cubic. Ft

Total slab work = 2038.3322 + 78 = 2116.3322 cubic ft.

Total paint work = 16874 + 330 = 17204 sq. ft. (combined interior and exterior)

Total plaster work = 13674+330=14004 sq. ft.

ACTIVITIES INVOLVED

Serial no.	Activity
1	Site cleaning
2	Excavation
3	Sand filling
4	PCC work
5	Casting and Reinforcement of footing
6	Backfilling
8	Shuttering and casting of plinth beam
9	Brickwork
10	Slab casting
11	Flooring
12	Painting
13	Plastering
14	Casting of slab
15	Shuttering and casting of column
16	Plumbing
17	Electrical work
18	Wall tiling
19	Casting of stairs
20	Railing of boundaries and stairs
21	Wooden(door) work and glass work
22	White washing
23	Marble tiling on floor
24	Roof Flooring

ESTIMATION OF DURATION

ACTIVITIES	QUANTITY	CONSTANT FROM IS-7272	DURATION	REMARKS
SITE CLEARANCE	1800 sq. ft.		3 days (24 hours)	1 mazdoor
EXCAVATION	839.25 cubic ft.	Mazdoor = 0.11, Mate = 0.01	4 days (32 hours)	2 mazdoors, 1 mate
PCC CALCULATION	22.78 cubic ft.	Mazdoor=0.12 Mason=0.08 Bhisti=0.18	1 day (8 hours)	1 mason,1 mazdoor, 1 bhisti
SAND FILLING	26.04 cubic. Ft.		½ day (4 hours)	1 mazdoor
TRAPEZOIDAL FOOTING	30.9 cubic ft.	Mazdoor = 0.5 Mixer operator=0.07 Mixer = 0.07 Bhisti= 0.1	1 days (8 hours)	2 mazdoor,1 bhisti,1 mixer operator, 1 mixer
COLUMN BELOW PLINT LEVEL	63.415 cubic ft.	Mason = 0.23 Mazdoor = 3.5 Bhisti =0.9 Mixer operator = 0.1 Mixer =0.1 Vibrator =0.1	4 days (48 hours)	1 mason,3 mazdoor, 1 bhisti, 1 mixer operator, 1mixer, 1 vibrator
BACKFILLING	778.845 cubic ft.	Mazdoor =	1 days (8 hours)	2 mazdoors
BRICKWOK	2304.7 cubic ft.	Mason=0.94 Mazdoor =1.8 Bhisti =0.2	20 days (160 hours)	2 masons, 4 mazdoors, 1 bhisti
SLABWORK	1019.1656 cubic ft.		12days (96 hours)	5 mazdoor, 1 mixer, 1 mixer operator,1 bhisti, 2 mates, 1 vibrator
PAINTING	8437 sq. ft.	Painter=0.35	10 days (80 hours)	3 painters
PLASTERING	6837 sq. ft.	Mason = 0.08 Mazdoor = 0.1 Bhisti = 0.1	25 days (200 hours)	2 masons, 2 majdoors,2 bhisti.
COLUMN CASTING	136.125 cubic ft.	Mason=0.23 Mazdoor = 3.5 Bhisti=0.9 Mixer operator =0.1 mixer =0.1 vibrator=0.1	5 days (40 hours)	1 mason, 3 mazdoor, 1 bhisti, 1 mixer operator,1 mixer, 1 vibrator
WHITE WASHING	8392 sq. ft.	washers = 0.03 mazdoor = 0.01	5 days (40 hours)	2 washers. 1mazdoor

FLOORING	1608.4375 sq. ft.	Mason=0.22 Bhisti=0.1 Mazdoor=0.22 Mazdoor for marble finishing =0.5 Machine for finishing =0.4	25 days (200 hours)	2 mason, 1 bhisti ,2 mazdoor for laying work For polishing = 3 mazdoors 3 machines for finishing
ROOF FLOORING	1608.4375 sq. ft.	For laying, Mason =0.1 Mazdoor= 0.3 Bhisti =0.05 For beating and finishing, Mazdoor =0.07 Bhisti =0.1	15 days (120 hours)	1 bhisti, 1 mason, 3 mazdoor For beating and finishing, 1 bhisti, 1 mazdoor
DOOR WORK AND GLASSING	352 sq. ft.	Carpenter = 0.25 Mazdoor = 0.25 Glassier =0.2	4 days (32 hours)	2 carpenter, 2 mazdoors, 1 glassier
RAILING	242 ft.		7 days (56 hours)	1 welder, 4 mate
ELECTRICAL WORKS		Electrician	5 days (40 days)	2 electricians
PLUMBING			10 days (80 hours)	2 plumbers and 1 mazdoor
BEAMS CONSTRUCTIONS	247.5 cubic. ft.	Mazdoor=3 Mason=0.2 Bhisti=0.9 Mixer=0.1 Mixer operator=0.1 Vibrator=0.1	7 days (56 hours)	4 mazdoors,1 mason,2 bhisti, 1 mixer operator,1 mixer,
CASTING OF STAIRCASE	89 cubic ft.	Mason=0.3 Bhisti=0.9 Mazdoor=4.3 Mixer=0.07 Mixer operator=0.07 Vibrator=0.07	3 days (24 hours)	1 mason, 3 mazdoor,1 bhisti,1 mixer, 1 mixer operator,1 vibrator
Wall Tiling	250 sq. ft.		3 days (24 hours)	1 mazdoor, 1 mason

ESTIMATION OF MATERIAL AND COST

SITE CLEARENCE:

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	1	3 days	714	2,142

Total cost for site clearance = Rs.2142

EXCAVATION:

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	2	4 days	714	5,712
2	Mate	1	4	784	3,136

Total cost of excavation = Rs. 8848

SANDFILLING

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Sand	Cum	0.74	1500	1125

Now for labours,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	1	½ days	714	357

Total cost of sand filling = Rs. 1482.

BACKFILLING:

Assuming density of Murum soil = **1800 kg/m³**

we have volume = **22.05443 m³**

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Murum soil	Tonne	39.69	250	9,172.5

Now for workers,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	2	1 days	714	1428

Total cost of backfilling = 9172.5+1428 = Rs. 10597.5

PAINTING:

- Total interior area = 13400 sq. ft.
- Total exterior area = 3474 sq. ft.
- Total volume = 16874 sq. ft.
- Now for painting the required material = putty, primer, paint.
- 1 kg putty cover 10-12 sq. ft area after double coating.
- 1 litre of primer cover 100-120 sq. ft area.
- 1 litre of paint cover 50-70 sq. ft. area after painting.

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Putty	Kg	1687.4	30	50,622
2	primer	Ltr.	168.74	130	21,936.2
3	Paint	Ltr.	337.48	160	53.996.8

Total cost of material = Rs. 126,554.8

Now for painters,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Painter	3	20 days	714	42840

Total cost of painting = Rs. 169,394.8

- **WHITE WASHING**

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	White lime	Kg	52.27	10	522.7
2	Glue powder	Lump some			50
3	blue pigment	Lump some			50

Total cost of material = Rs. 622.7

Now for labours,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Washer	2	10 days	714	14280
2	Mazdoor	1	10 days	714	7140

Total cost of white washing = Rs. 22042.7

BRICKWORK:

Assumptions-

- Vol. of brickwork = $4609.4 \text{ ft.}^3 = 130.52 \text{ cum.}$
- Vol. of brick = $0.09m * 0.09m * 0.19m = 0.001539 \text{ m}^3.$
- Vol. of brick with mortar = $0.1m * 0.1m * 0.2m = 0.002\text{m}^3.$
- No. of bricks required = $(130.52/0.002) = \mathbf{65260 \text{ bricks}}$
- Vol. of bricks only = $65260 * 0.001539 = \mathbf{100.435 \text{ cum.}}$
- Mortar = $130.52 - 100.43 = \mathbf{30.085 \text{ cum}}$
- Cement required = 11.5 tonne.
- Sand (grade III coarse) = $\mathbf{32.0104 \text{ cum.}}$

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Bricks	No's	65260	4.6	3,00,196
2	Cement	Tonne	11.5	5000	57,500
3	Sand	Cum.	32.0104	1500	48,015

Total cost of material = Rs. 4,05,711.00

Now for workers

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mason (first class brick work)	2	45 days	784	70,560
2	Mazdoor	4	45 days	714	128,520
3	Bhisti	1	45 days	714	32,130

Total cost of labours= Rs. 231,210.00

Total cost of brickwork = Rs. 508,471.00

CONCRETE AND RCC WORKS

- TRAPEZOIDAL FOUNDATION

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	0.2769	5000	1384
2	Sand	Cum	0.3849	1500	577.35
3	Coarse aggregate	Cum.	0.7699	1350	1039
4	Steel	Kg.	72.31	55	3977.05
5	Steel binding	Kg.	0.7231	55	39.7705

Total price of material = 1384+577.35+1039+3977.05+39.7705 = Rs. 7017.17

Now for workers,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	1	714	714
2	Mazdoor	2	1	714	714
3	Bhisti	1	1	714	714
4	Mixer operator	1	1	784	784

Total cost of workers = 714+714+714+784 = Rs. 2926

Total cost = Rs. 9943.17

- PCC CALCULATIONS

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	0.2027	5000	1013.5
2	Sand	Cum	0.2824	1500	423.6
3	Coarse aggregate	Cum.	0.5649	1350	762.615
4	Steel	Kg.	53.305	55	2931.775
5	Steel binding	Kg.	.533	55	29.317

Total cost of materials = 1013.5+423.6+762.615+2931.775+29.717 = Rs. 5,160.807

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	1	714	714
2	Mazdoor	2	1	714	1428
3	Bhisti	1	1	714	714

Total cost of worker = Rs. 2856

Total cost of PCC = Rs. 8016.807

- COLUMN BELOW PLINTH LEVEL

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	0.564	5000	2820
2	Sand	Cum	0.786	1500	1179
3	Coarse aggregate	Cum.	1.57	1350	2119.5
4	Steel	Kg.	148.3911	55	8161.5
5	Steel binding	Kg.	1.4839	55	81.615

Total cost of material = $2820 + 1179 + 2119.5 + 8161.5 + 81.615 = 14,366.115$

Now for the workers,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	4	714	2856
2	Mazdoor	3	4	714	8568
3	Bhisti	1	4	714	2856
4	Mixer operator	1	4	784	3136
5	Mixer	1	4	714	2856
6	Vibrator	1	4	350	1400

Total cost for the worker = Rs. 21,672

Total cost = Rs. 36,038.115

- SLABWORK

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	18.141	5000	90,705
2	Sand	Cum	25.275	1500	37,912.5
3	Coarse aggregate	Cum.	50.55	1350	68,242
4	Steel	Kg.	4769.69	55	2,62,332.95
5	Steel binding	Kg.	47.6969	55	26,23.2295

**Total cost of material = $90,705 + 37,912.5 + 68,242 + 2,62,332.95 + 26,23.2295 =$
=Rs. 4,61,814.7295**

Now for workers

- **For 2 floors the duration will be double = 24 days**

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mate	2	24	784	37632
2	Mazdoor	5	24	714	85680
3	Bhisti	1	24	714	17136
4	Mixer operator	1	24	784	18816
5	Mixer	1	24	714	17136
6	Vibrator	1	24	350	8400

Total for worker = Rs. 184,800

Total cost = Rs. 646,615.00

- COLUMN CASTING

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	1.211	5000	6,055
2	Sand	Cum	1.687	1500	2,530.5
3	Coarse aggregate	Cum.	3.375	1350	4,556.25
4	Steel	Kg.	318.53	55	17,519.15
5	Steel binding	Kg.	3.185	55	175.191

**Total cost of materials = $6,055 + 2,530.5 + 4,556.25 + 17,519.15 + 1,75.191$
= Rs. 30,836.091**

Now for workers,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	10	714	7140
2	Mazdoor	3	10	714	21420
3	Bhisti	1	10	714	7140
4	Mixer operator	1	10	784	7840
5	Mason	1	10	784	7840

Total cost off worker = Rs. 51,380.00

Total cost = Rs. 82,216.091

- FLOORING

Ground floor + first floor

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	19.086	5000	95430
2	Sand	Cum	26.59	1500	39885
3	Coarse aggregate	Cum.	53.18	1350	71793
4	Steel	Kg.	5018.31	55	276,007.05
5	Steel binding	Kg.	50.183	55	27,60.070

Total cost of material = Rs. 399,985.12

Now for the workers,

- **For 1 floor 25 days and for 2 floors 50 days**

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	50	714	35700
2	Mazdoor	2	50	714	71400
3	Bhisti	1	50	714	35700
4	Mixer operator	3 qnty.	50	784	117,600
5	Polishing mazdoor	3	50	714	107100

Total cost of worker = Rs. 270,700

Total cost = Rs. 670,685.12

- FLOORING FOR ROOF

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	2.38	5000	11900
2	Sand	Cum	3.32	1500	4980
3	Coarse aggregate	Cum.	6.64	1350	8964
4	Steel	Kg.	627.29	55	34500.95
5	Steel binding	Kg.	6.2729	55	345.01

Total cost of material = 60,689.95

Now for the worker,

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	4	15	714	42,840
2	Bhisti	2	15	714	21,420
3	Mason	1	15	784	11,760

Total cost of worker = Rs. 76,020

Total cost = 76020 + 60689.5 = Rs. 136,709.95

- BEAMS CONSTRUCTION

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	2.20	5000	11000
2	Sand	Cum	3.069	1500	4603.5
3	Coarse aggregate	Cum.	6.138	1350	8286.3
4	Steel	Kg.	579.15	55	31853.25
5	Steel binding	Kg.	5.791	55	318.5325

Total cost of material = Rs. 56,061.5825

Now for workers,

Beams are made 3 times – plinth beam, for first floor, for second floor

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	21	714	14994
2	Mazdoor	4	21	714	59976
3	Bhisti	2	21	714	29988
4	Mixer operator	1	21	784	16464
5	Mason	1	21	784	16464

Total cost of workers = Rs.137,886

Total cost = Rs. 193,947.00

- STAIRCASE CASTING

Serial no.	Description	Unit	Quantity	Rate/unit	Amount
A	Material				
1	Cement	Tonne	0.7921	5000	3960.5
2	Sand	Cum	1.1036	1500	1655.4
3	Coarse aggregate	Cum.	2.2072	1350	2979.72
4	Steel	Kg.	208.26	55	11,454.3
5	Steel binding	Kg.	2.08	55	114.543

Total cost of material = Rs. 20,164.463

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mixer	1	6	714	4284
2	Mazdoor	3	6	714	12,852
3	Bhisti	1	6	714	4284
4	Mixer operator	1	6	784	4704
5	Mason	1	6	784	4704
6	Vibrator	1	6	350	2100

Total cost of worker = Rs. 32,928

Total cost = Rs. 53092.463

PLASTERING WORK

Serial no.	Description of material	Unit	quantity	Rate per unit	amount
1	Cement	Tonne	3.11	5000	15550
2	Sand	Cum.	12.963	1500	19444.5

Total cost of material = Rs. 34,994.5

Now for workers,

For 1 floor it takes 25 days, therefore for 2 floors = 50 days.

Serial no.	Labour	No of labours	No. of working days	Cost per day	Amount
1	Mazdoor	2	50	714	71400
2	Bhisti	2	50	714	71400
3	Mason	2	50	784	78400

Total cost of worker = 221,200

Total cost = Rs. 256,194.5

- OTHER WORKS**

All the given are in rupees

DESCRIPTION	MATERIAL COST	WORKER COST	TOTAL COST
PLUMBING	207,600	48,400	256,000
WALL TILING	66,012	8,988	75,000
ELECTRIC WORK	212,940	17,060	230,000
RAILING	81,564	22,435	103,999
DOORS AND WINDOW	250,000	50,000	300,000
TOTAL			964999

- CARRIAGE COST ANALYSIS**

CARRIAGE OF MATERIAL	UNIT	QUANTITY	RATE PER UNIT	AMOUNT
CARRIAGE OF CEMENT	TONNE	59.4637	145.72	8665.05
CARRIAGE OF COARSE SAND OF GRADE III	CUM.	107.4713	163.93	17617.77
CARRIAGE OF BRICKS	NO'S	65620	0.43715	28685.783
CARRIAGE OF AGGREGATE (10-20MM)	CUM.	124.995	178.19	22272.859
BACKFILLING MATERIAL(MURRUM)	CUM.	22.05	163.93	3614.65
STEEL	TONNE	11.5	145.72	1675.75

Total cost of carriage = **Rs. 66,631.892**

TOTAL BUILDING COST ESTIMATION

WORK	COST
SITE CLEARING	Rs. 2142
EXCAVATION	Rs. 8848
SANDFILLING	Rs. 1482
BACKFILLING	Rs. 10597.5
PAINT	Rs. 169,394.8
WHITEWASHING	Rs. 22042.7
BRICKWORK	Rs.508471
TRAPEZOIDAL FOOTING	Rs. 9943.17
PCC WORK	Rs.8016.8
COLUMN TILL PLINTH LEVEL	Rs.36038.115
SLAB WORK	Rs.646615
COLUMN WORK	Rs.82,216.091
FLOORING	Rs.670685.12
ROOF FLOORING	Rs.136709.95
BEAM WORKS	Rs.193,947
STAIRCASE	Rs.53092.46
PLASTERING	Rs. 256194.5
OTHER WORKS	Rs. 9,64,999
CARRIAGE COST	Rs. 66,631.892
SUNDRIES	Rs. 150000
TOTAL	Rs. 39,98,064.392

TOTAL COST	Rs. 39,98,064.392
WATER CHARGES	Rs. 39980.64
GST (18%)	Rs. 726848
CONTRACTOR'S PROFIT (4%)	Rs. 190595.72
CESS 1%	Rs. 49554.88
GRAND TOTAL COST	Rs. 50,05,042.912

LIMITATIONS

- This code is rigidly made on IS:7272 and Delhi Analysis of Rates
- It still can show better allocation of resources to the activities.

REFERENCES

- IS 7272
- DELHI ANALYSIS OF RATES
- CPWD ANALYSIS OF RATES
- CE 308 COURSE SLIDES

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	F	S	31 Mar '24	S	M	T	W	T	F	S
1		Two Storey House	177.5 days?	Mon 15-04-24	Wed 18-12-24			₹ 1,433,472.68										
2		SUBSTRUCTURE	31.5 days?	Mon 15-04-24	Tue 28-05-24			₹ 88,753.00										
3		SITE CLEANING	1 day	Mon 15-04-24	Mon 15-04-24		Mazdoor	₹ 714.00										
4		EXCAVATION	4 days	Tue 16-04-24	Fri 19-04-24	3	Mazdoor[200%],	₹ 8,848.00										
5		SAND FILLING	0.5 days	Mon 22-04-24	Mon 22-04-24	4	Mazdoor	₹ 357.00										
6		PCC Work	1 day	Mon 22-04-24	Tue 23-04-24	5,11	Mason,Mazdoor	₹ 2,212.00										
7		TRAPEZOIDAL FOOTING WORK	2 days	Tue 23-04-24	Thu 25-04-24	6	Mazdoor[200%], Operator	₹ 7,280.00										
8		COLUMN TILL PLINTH BEAM	4 days	Thu 25-04-24	Wed 01-05-24	7	Mason,Mazdoor Operator,Vibrator	₹ 21,952.00										

Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	F	S	31 Mar '24	S	M	T	W	T	F	S
9		PLINTH BEAM CONSTRUCTION	7 days	Wed 01-05-24	Fri 10-05-24	8	Mason,Bhisti[20%],Operator	₹ 45,962.00										
10		BACKFILLING	1 day	Mon 29-04-24	Tue 30-04-24	7FS+2 days	Mazdoor[200%]	₹ 1,428.00										
11		MATERIAL PROCUREMENT	1 day	Mon 15-04-24	Mon 15-04-24	3SS		₹ 0.00										
12		SUPERSTRUCTURE 1 GROUND FLOOR	110 days	Tue 30-04-24	Tue 01-10-24			₹ 619,763.28										
13		Material PROCUREMENT	1 day	Tue 30-04-24	Wed 01-05-24	10		₹ 0.00										
14		BRICKWORK	20 days	Fri 31-05-24	Fri 28-06-24	19SS	Mason[200%],M	₹ 102,760.00										
15		FLOORING	25 days	Fri 17-05-24	Fri 21-06-24	17SS	Mason[200%],Bhisti[200%],Machine[300%]	₹ 136,850.00										
16		PLASTERING	25 days	Fri 12-07-24	Fri 16-08-24	14FS+10 days	Mason[200%],M	₹ 110,600.00										

Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	F	S	31 Mar '24				
									S	M	T	W	T	F	S
17	Normal	CASTING OF COLUMN	5 days	Fri 17-05-24	Fri 24-05-24	13,9FS+5 days	Mason,Mazdoor Operator	₹ 25,690.00							
18	Normal	SLAB WORK	12 days	Fri 12-07-24	Tue 30-07-24	14FS+10 days,19FS+10 days,15FS+10	Mazdoor[500%], Operator,Bhisti,I	₹ 92,400.00							
19	Normal	CASTING OF BEAM	7 days	Fri 31-05-24	Tue 11-06-24	17FS+5 days	Mazdoor[400%], Operator	₹ 45,962.00							
20	Normal	PAINTING	10 days	Mon 02-09-24	Mon 16-09-24	21FS+1 day	Painter[300%]	₹ 21,420.00							
21	Normal	WHITE WASHING	5 days	Fri 23-08-24	Fri 30-08-24	16FS+5 days,18FS+10 days	Washer[200%],N	₹ 10,710.00							
22	Normal	DOOR WORK AND GLASSING	4 days	Mon 16-09-24	Fri 20-09-24	20	Carpenter[200%]	₹ 14,840.00							
23	Normal	ELECTRICAL WORK	5 days	Fri 20-09-24	Fri 27-09-24	24,22	Electrician[200%]	₹ 8,530.40							
24	Normal	PLUMBING	10 days	Fri 23-08-24	Fri 06-09-24	21SS	plumber[200%],I	₹ 24,200.80							

Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	31 Mar '24							
									F	S	S	M	T	W	T	F
25	Normal	WALL TILING	3 days	Fri 06-09-24	Wed 11-09-24	24	Mazdoor,Mason	₹ 4,494.00								
26	Normal	RAILING WORK ON STAIRCASE	2 days	Fri 27-09-24	Tue 01-10-24	27FS+5 days,23,25	Welder,Mate[30]	₹ 4,842.08								
27	Normal	CASTING OF STAIRCASE	3 days	Fri 21-06-24	Wed 26-06-24	15,17,19	Mason,Mazdoor Operator,Vibrator	₹ 16,464.00								
28	Normal	SUPERSTRUCTURE 2 FIRST FLOOR	87 days	Tue 30-07-24	Thu 28-11-24											₹ 613,631.28
29	Normal	MATERIAL PROCUREMENT	1 day	Tue 30-07-24	Wed 31-07-24	27,14,18,17,19										₹ 0.00
30	Normal	BRICKWORK	20 days	Wed 31-07-24	Wed 28-08-24	29	Mason[200%],M	₹ 102,760.00								
31	Normal	FLOORING	25 days	Tue 13-08-24	Tue 17-09-24	27FS+10 days,18FS+10 days	Mason[200%],Bricklayer[200%] Machine[300%]	₹ 136,850.00								
32	Normal	PLASTERING	25 days	Wed 11-09-24	Wed 16-10-24	30FS+10 days	Mason[200%],M	₹ 110,600.00								

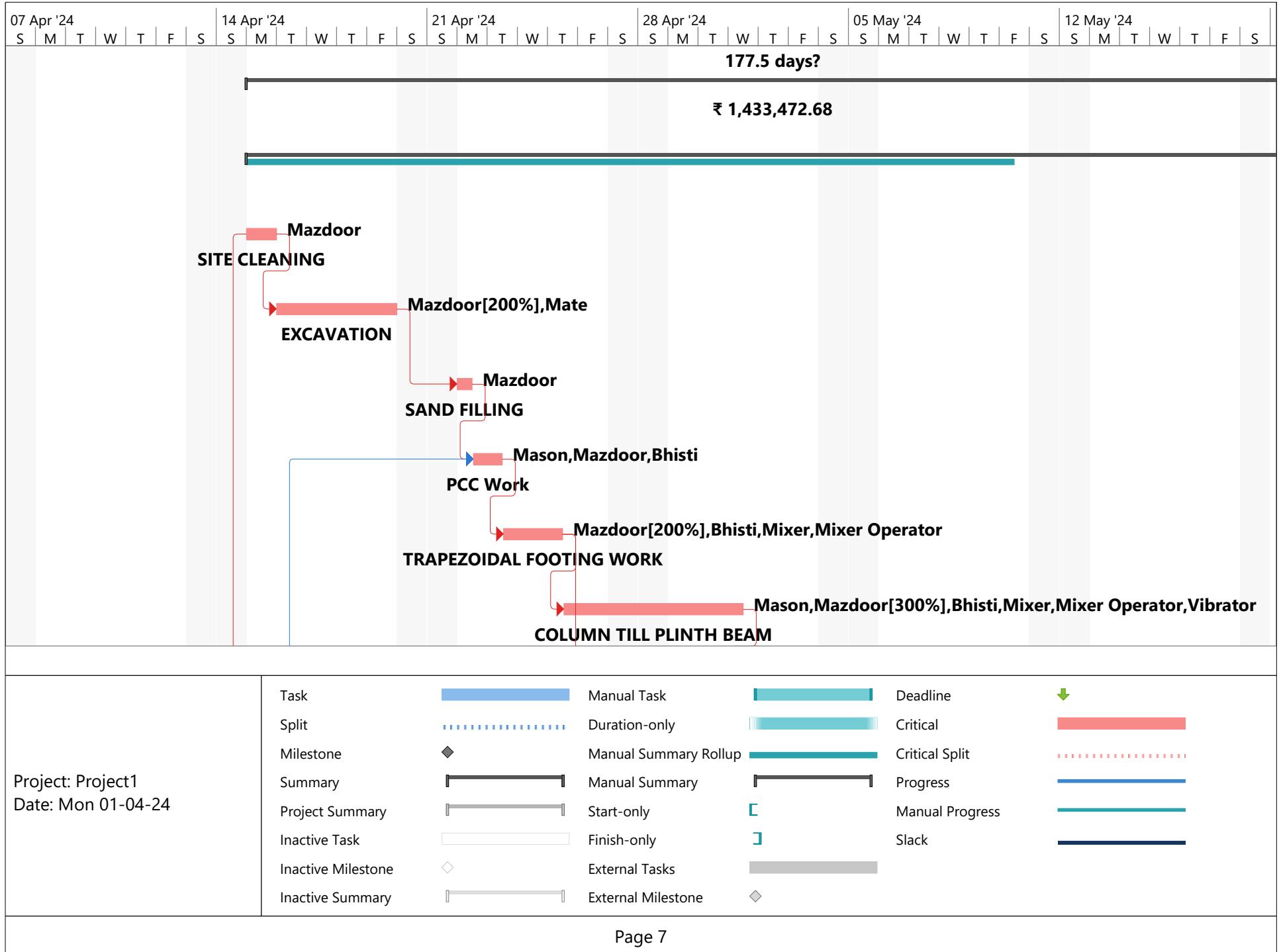
Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone	Manual Summary Rollup	Critical Split	
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		

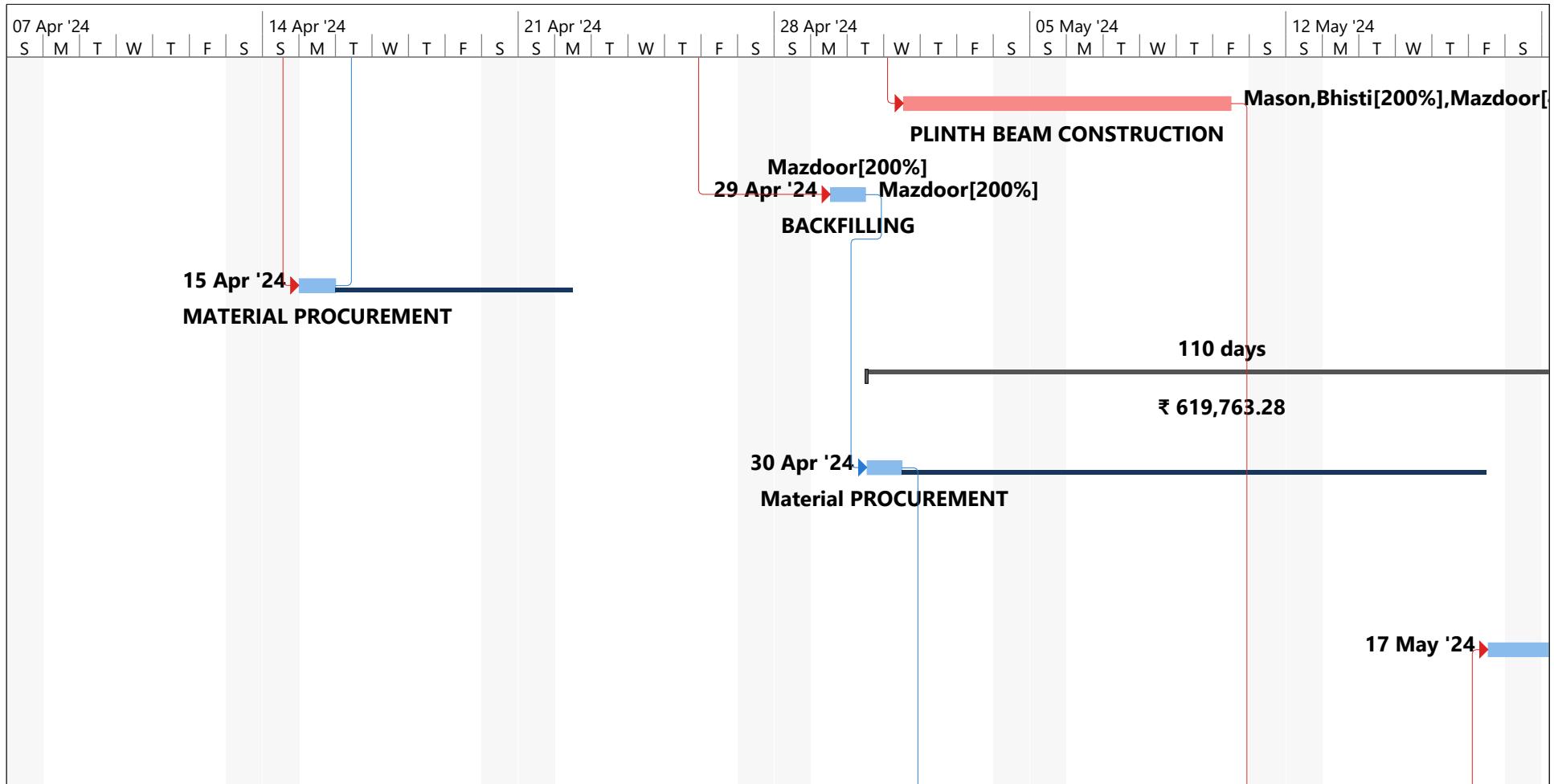
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	F	S	31 Mar '24	S	M	T	W	T	F	S
33	Normal	COLUMN WORK	5 days	Tue 13-08-24	Tue 20-08-24	18FS+10 days,19,17	Mason,Mazdoor Operator	₹ 25,690.00										
34	Normal	SLAB WORK	11 days	Tue 01-10-24	Wed 16-10-24	30FS+10 days,35FS+10 days,31FS+10	Mazdoor[500%], Operator,Bhisti,I	₹ 84,700.00										
35	Normal	BEAM WORK	7 days	Tue 27-08-24	Thu 05-09-24	33FS+5 days	Mazdoor[400%], Operator	₹ 45,962.00										
36	Normal	PAINTING	10 days	Wed 30-10-24	Wed 13-11-24	37	Painter[300%]	₹ 21,420.00										
37	Normal	WHITEWASHING	5 days	Wed 23-10-24	Wed 30-10-24	32FS+5 days	Washer[200%],N	₹ 10,710.00										
38	Normal	DOOR WORK AND GLASSING	4 days	Wed 13-11-24	Tue 19-11-24	36	Carpenter[200%]	₹ 14,840.00										
39	Normal	ELECTRICAL WORK	5 days	Tue 19-11-24	Tue 26-11-24	38	Electrician[200%]	₹ 8,530.40										
40	Normal	PLUMBING	10 days	Wed 23-10-24	Wed 06-11-24	37SS	plumber[200%],I	₹ 24,200.80										

Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
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	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			

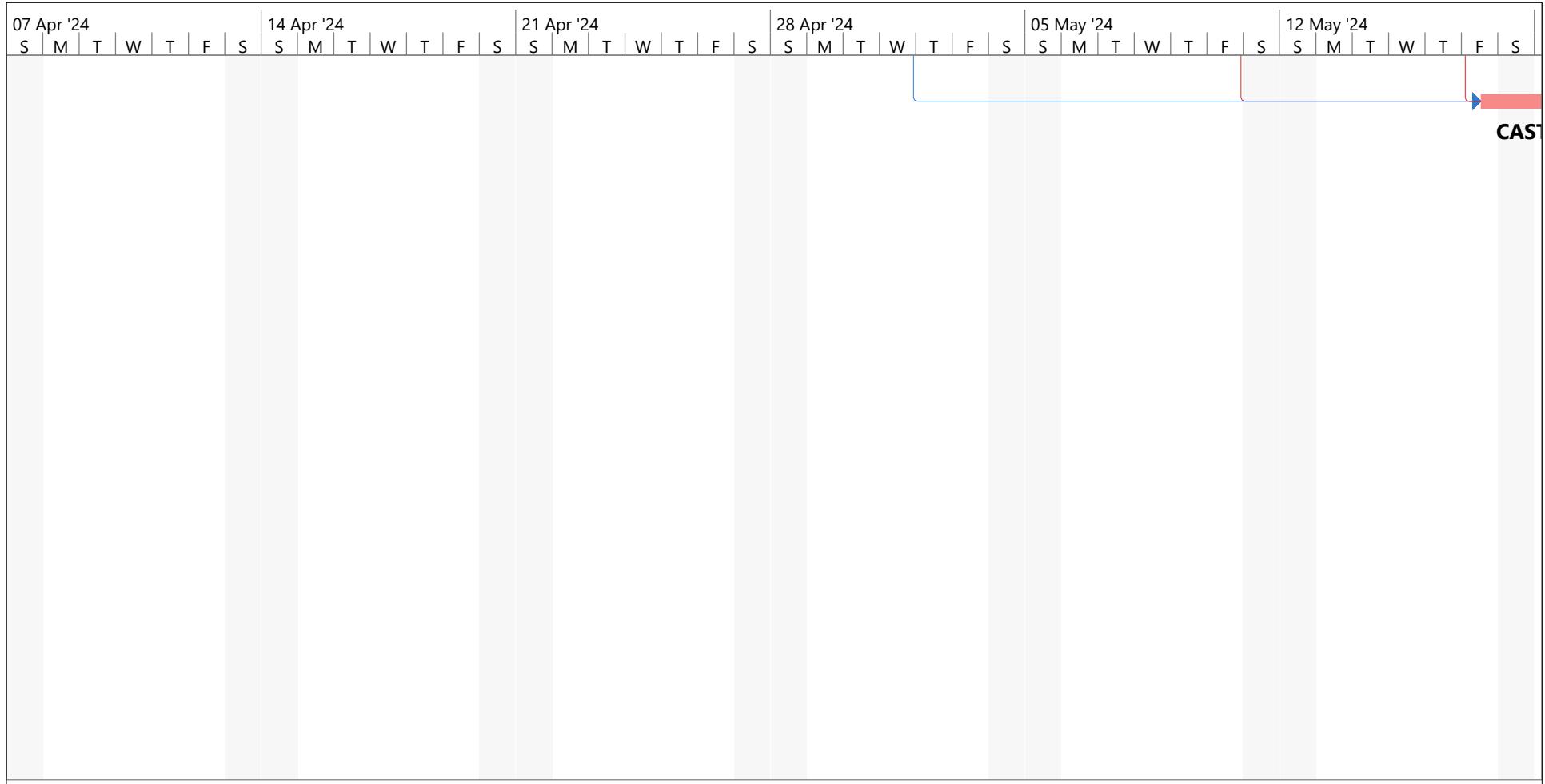
ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	31 Mar '24							
									F	S	S	M	T	W	T	F
41	Normal	WALL TILING	3 days	Fri 25-10-24	Wed 30-10-24	37SS+2 days,32	Mazdoor,Mason	₹ 4,494.00								
42	Normal	CASTING OF STAIRCASE	3 days	Wed 30-10-24	Mon 04-11-24	30,33FS+5 days,34FS+10	Mason,Mazdoor Operator,Vibrator	₹ 16,464.00								
43	Normal	RAILING WORK ON STAIRCASE	2 days	Tue 26-11-24	Thu 28-11-24	40,41,39,42FS days,26	Welder,Mate[30]	₹ 6,410.08								
44	Normal	ROOF WORK	35 days	Wed 30-10-24	Wed 18-12-24											₹ 111,325.12
45	Normal	ROOF FLOORING	15 days	Wed 30-10-24	Wed 20-11-24	34FS+10 days	Bhisti[200%],Ma	₹ 76,020.00								
46	Normal	RAILING	3 days	Wed 11-12-24	Mon 16-12-24	43,45FS+15 days	Welder,Mate[30]	₹ 9,615.12								
47	Normal	BRICKWORK ABOVE STAIRS	5 days	Wed 11-12-24	Wed 18-12-24	45FS+15 days	Mason[200%],M	₹ 25,690.00								

Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
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	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			





Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
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	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			



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	Inactive Milestone		External Tasks			
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Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
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	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
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19 May '24 | 26 May '24 | 02 Jun '24 | 09 Jun '24 | 16 Jun '24 | 23 Jun '24

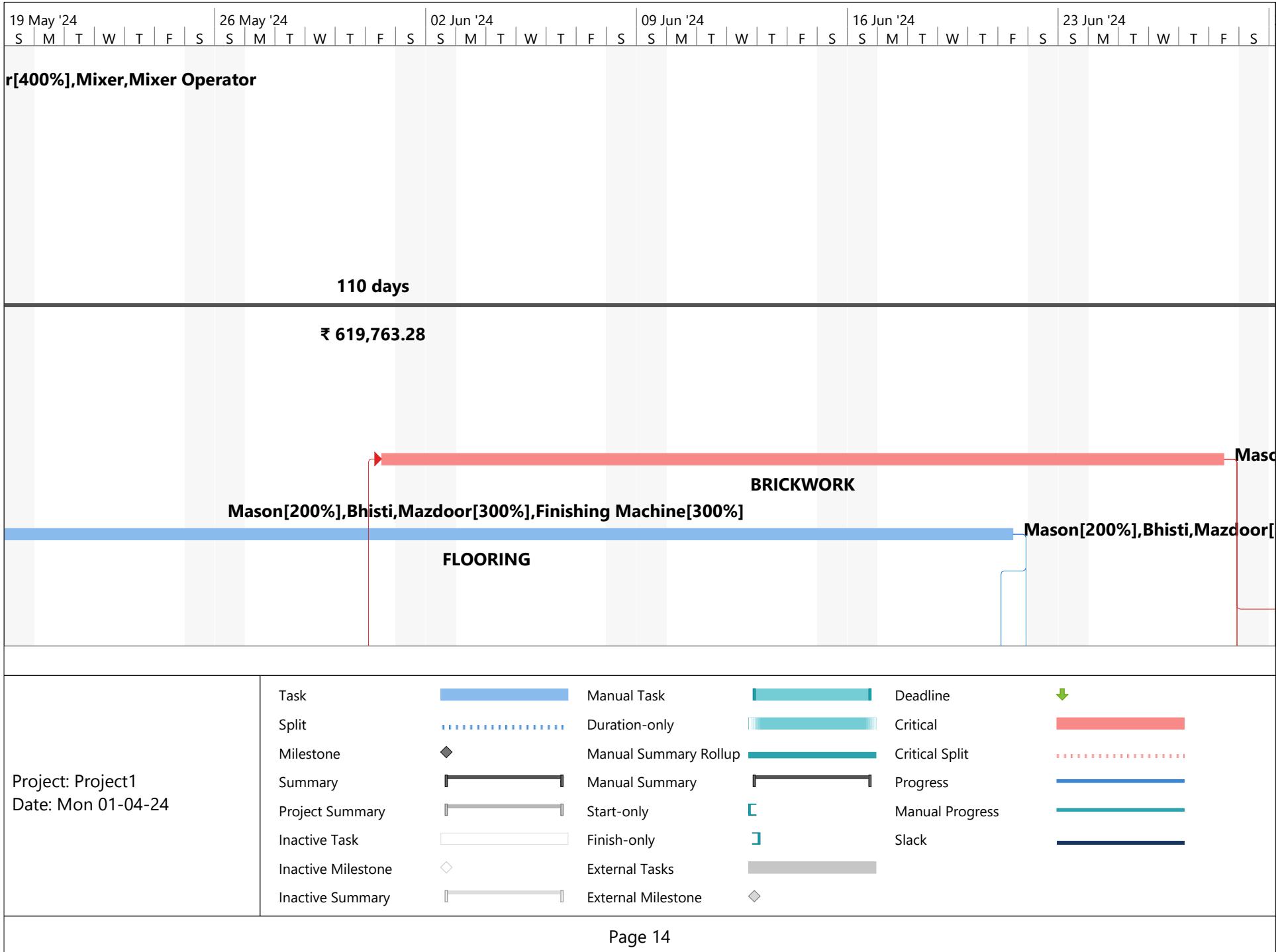
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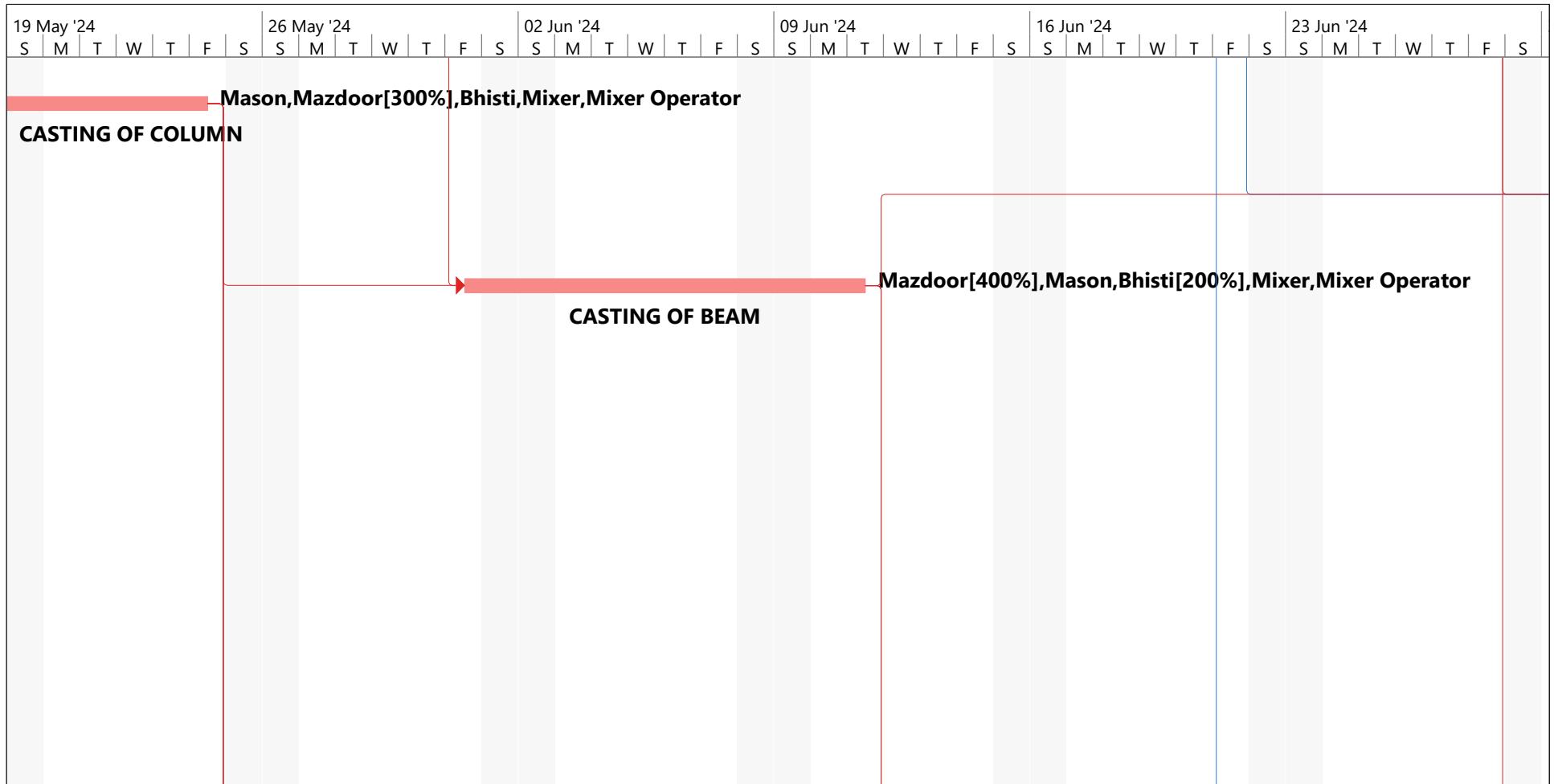
177.5 days?

₹ 1,433,472.68

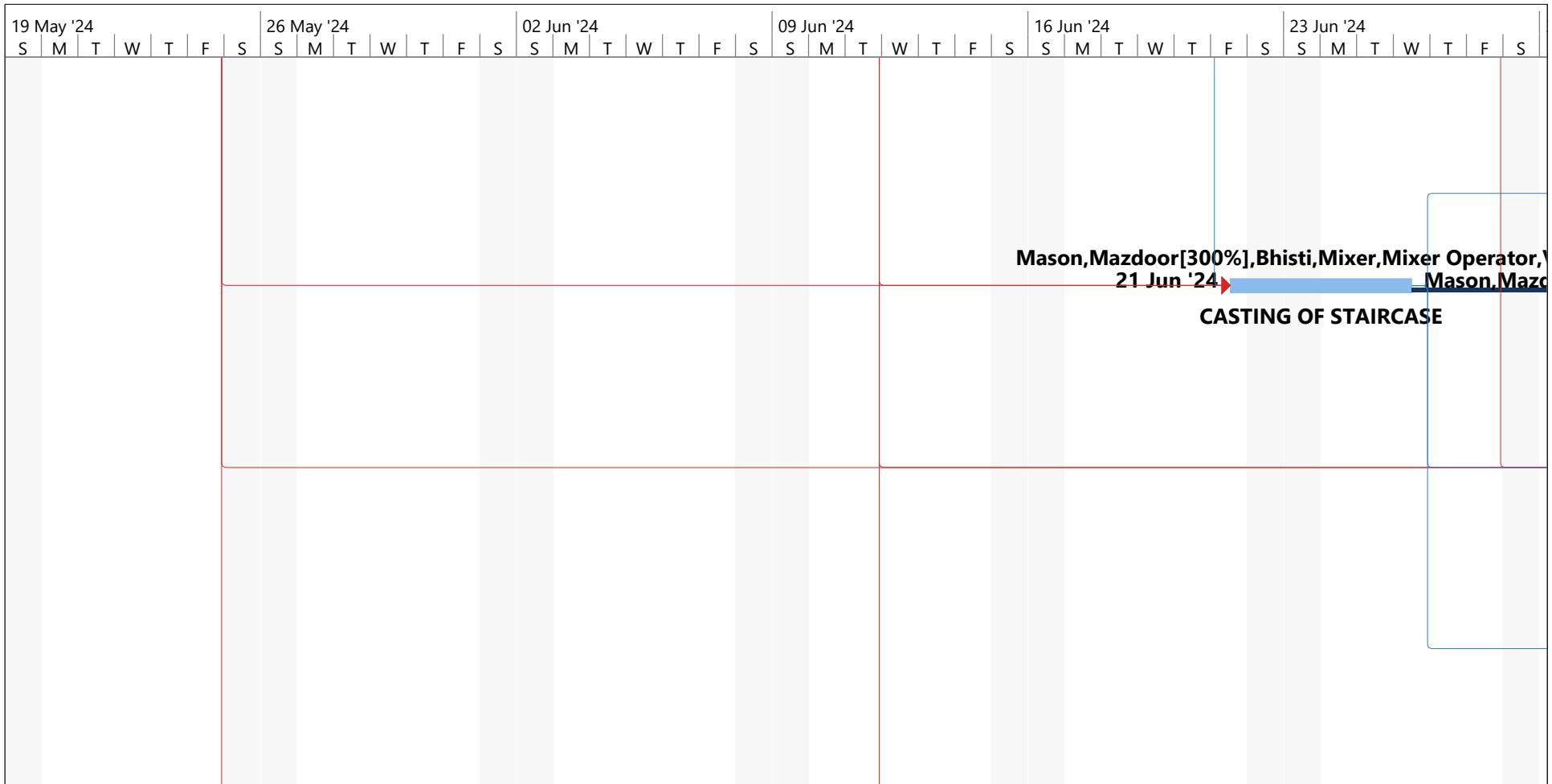
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Deadline	2024-06-02	2024-06-02	0 days	Completed
Split	2024-05-26	2024-06-23	27 days	In Progress
Milestone	2024-05-26	2024-06-23	27 days	Pending
Summary	2024-05-26	2024-06-23	27 days	Pending
Project Summary	2024-05-26	2024-06-23	27 days	Pending
Inactive Task	2024-05-26	2024-06-23	27 days	Pending
Inactive Milestone	2024-05-26	2024-06-23	27 days	Pending
Inactive Summary	2024-05-26	2024-06-23	27 days	Pending

Project: Project1
Date: Mon 01-04-24





Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone	Manual Summary Rollup	Critical Split	
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		



Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone		Manual Summary Rollup	Critical Split
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
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	Inactive Milestone		External Tasks	
	Inactive Summary	External Milestone		

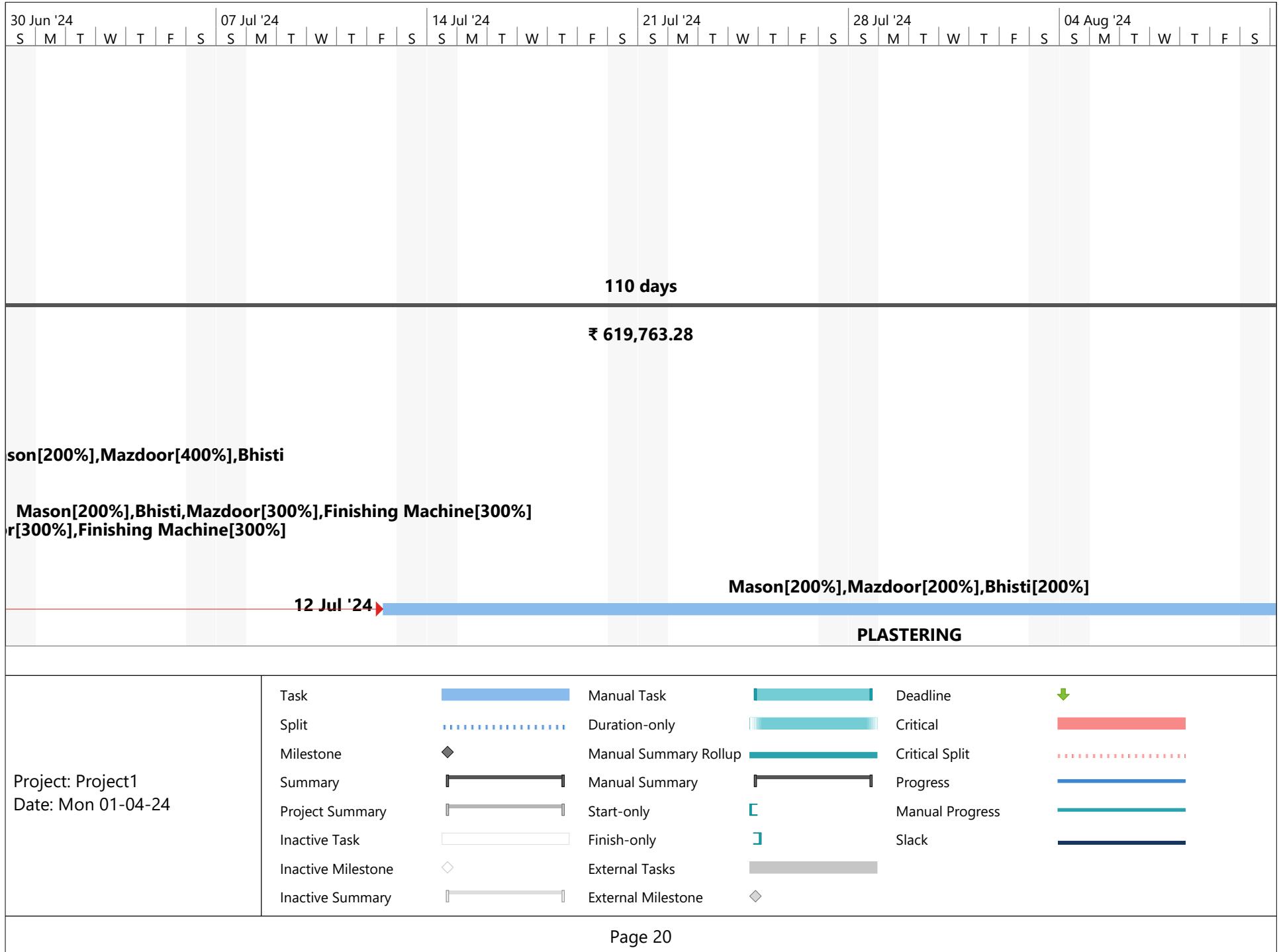


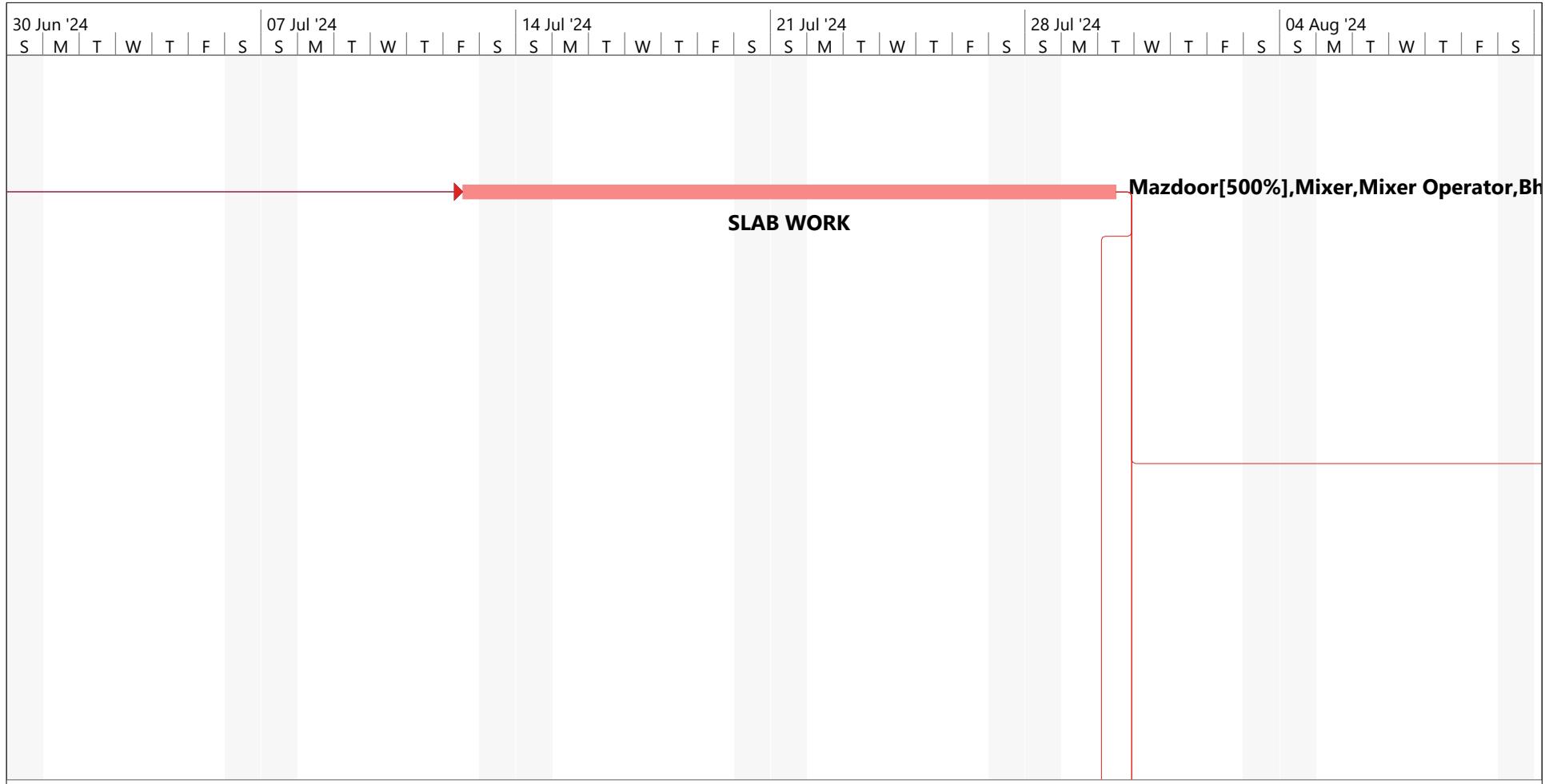
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	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		

30 Jun '24	S	M	T	W	T	F	S	07 Jul '24	S	M	T	W	T	F	S	14 Jul '24	S	M	T	W	T	F	S	21 Jul '24	S	M	T	W	T	F	S	28 Jul '24	S	M	T	W	T	F	S	04 Aug '24	S	M	T	W	T	F	S
177.5 days?																																															

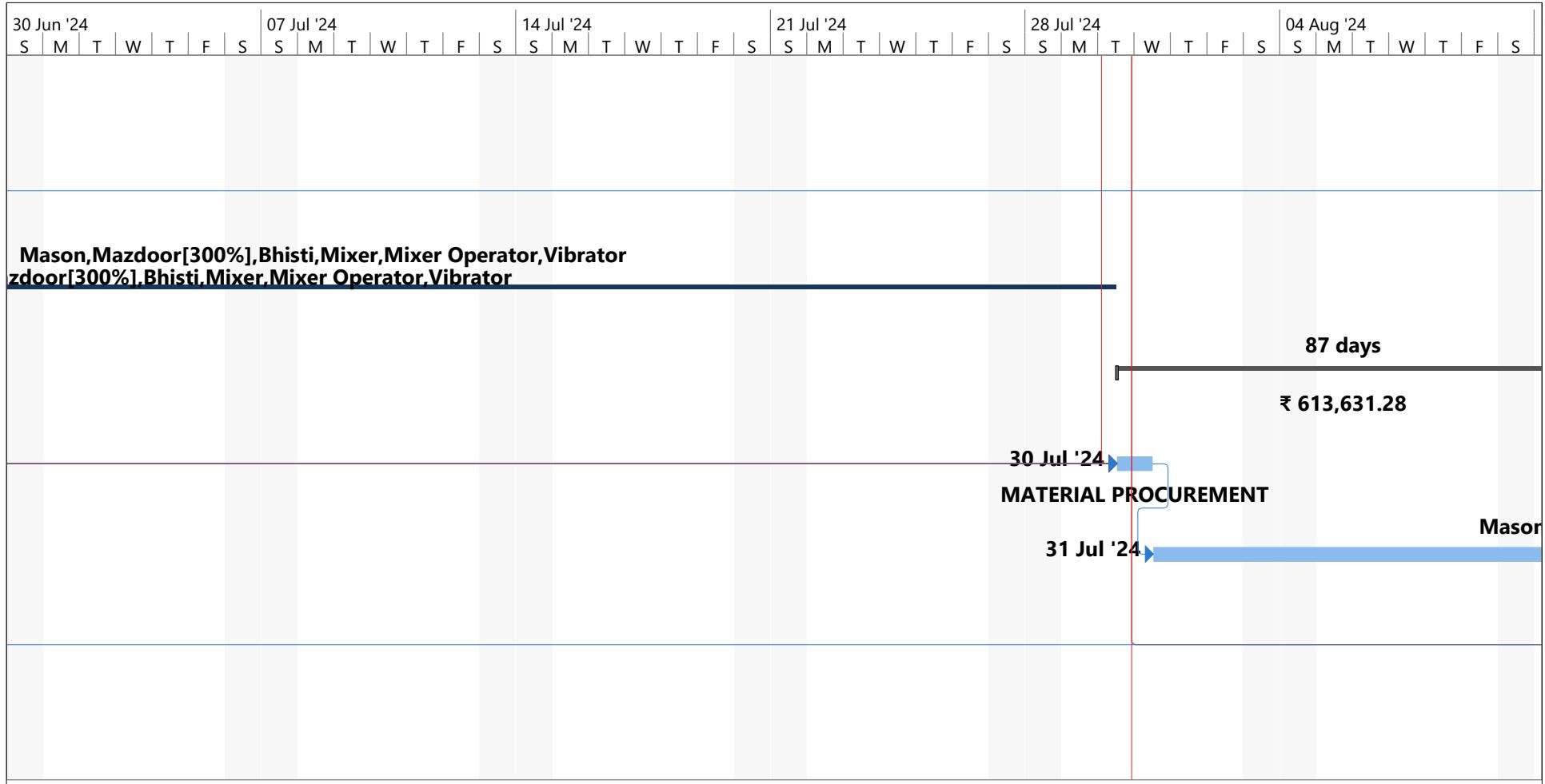
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Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone	Manual Summary Rollup	Critical Split	
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		





Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
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	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
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Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
	Milestone		Manual Summary Rollup		Critical Split	
	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			



Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone	Manual Summary Rollup	Critical Split	
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		

11 Aug '24	S	M	T	W	T	F	S	18 Aug '24	S	M	T	W	T	F	S	25 Aug '24	S	M	T	W	T	F	S	01 Sep '24	S	M	T	W	T	F	S	08 Sep '24	S	M	T	W	T	F	S	15 Sep '24	S	M	T	W	T	F	S
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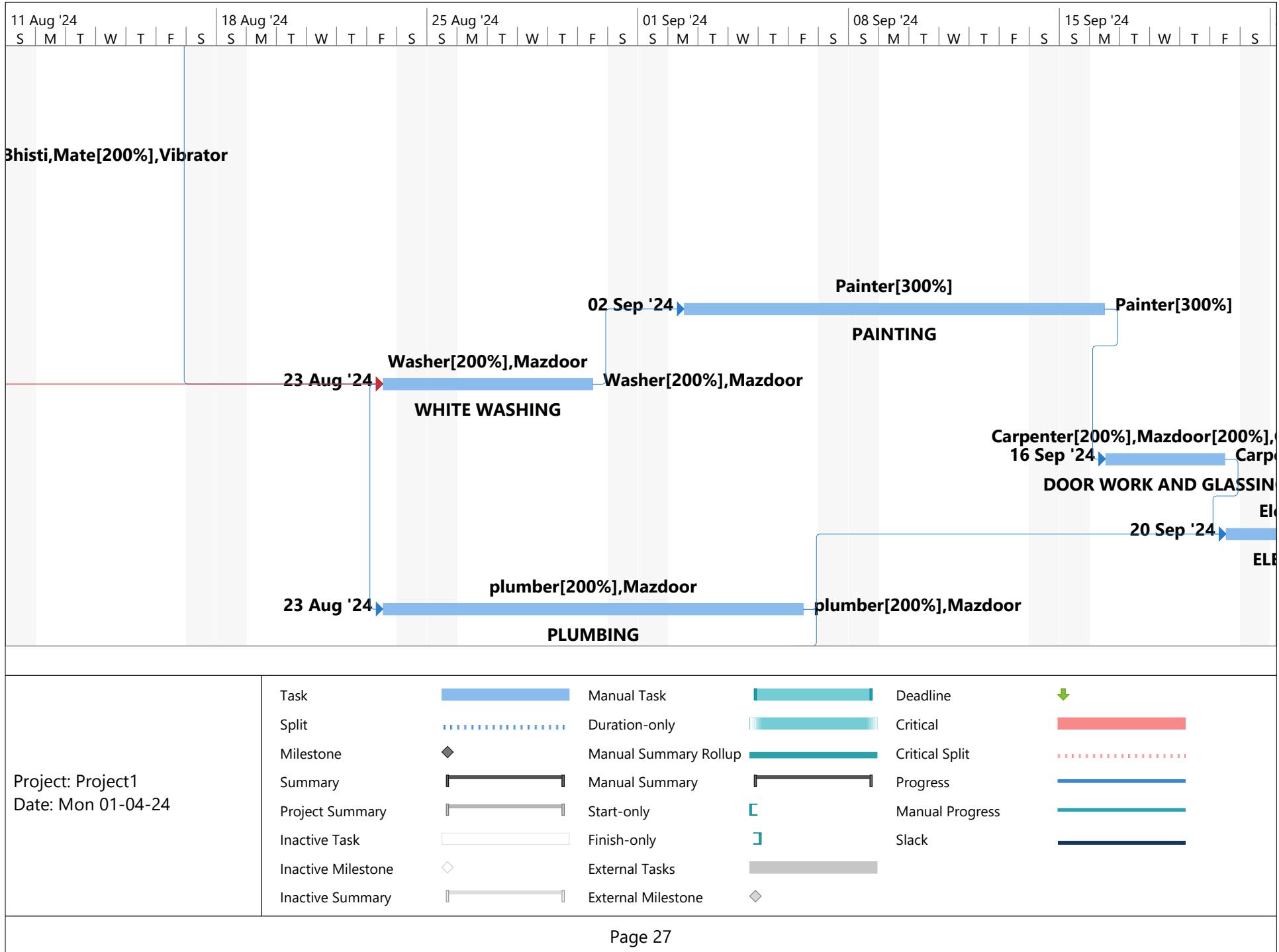
177.5 days?

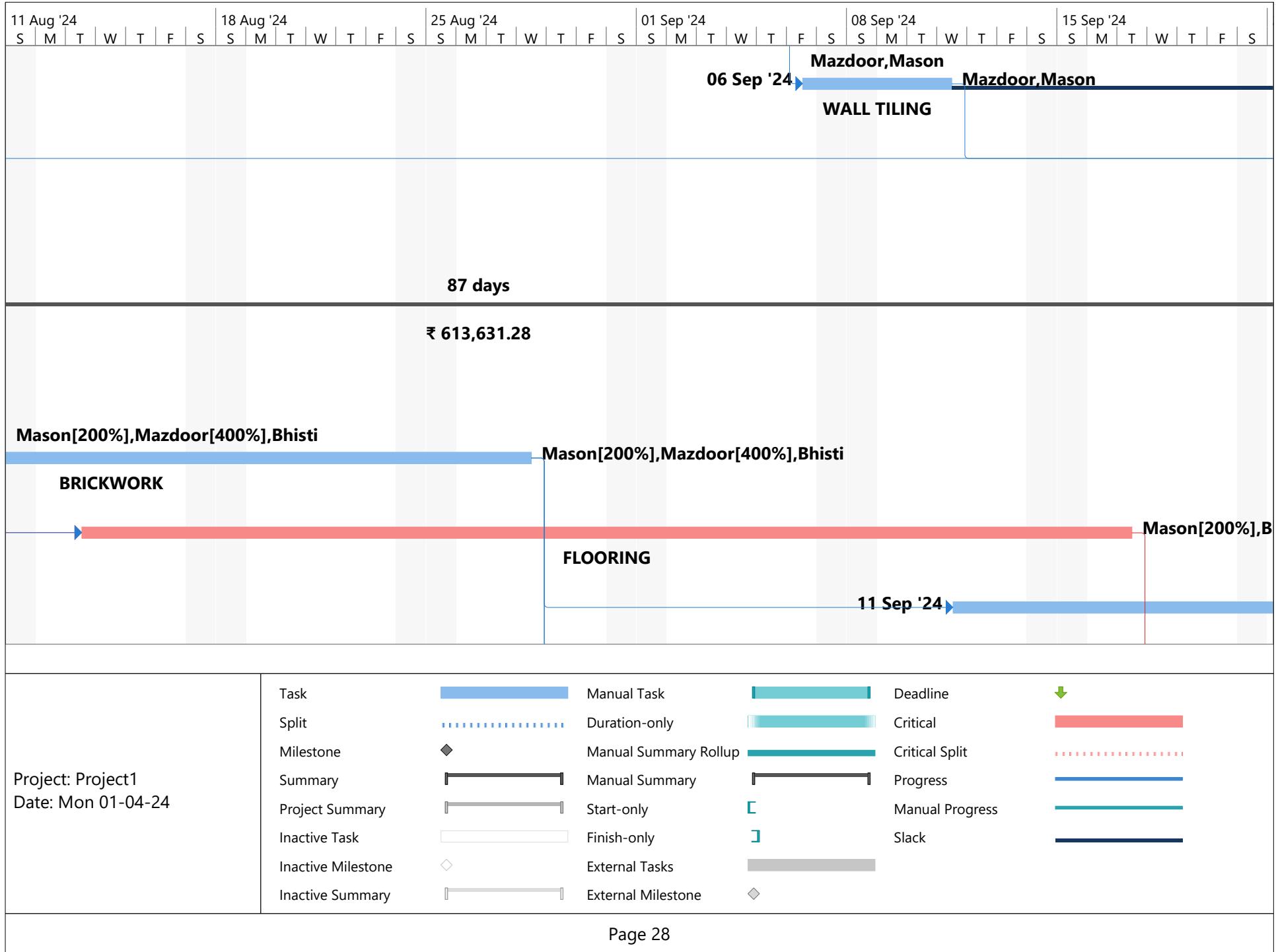
₹ 1,433,472.68

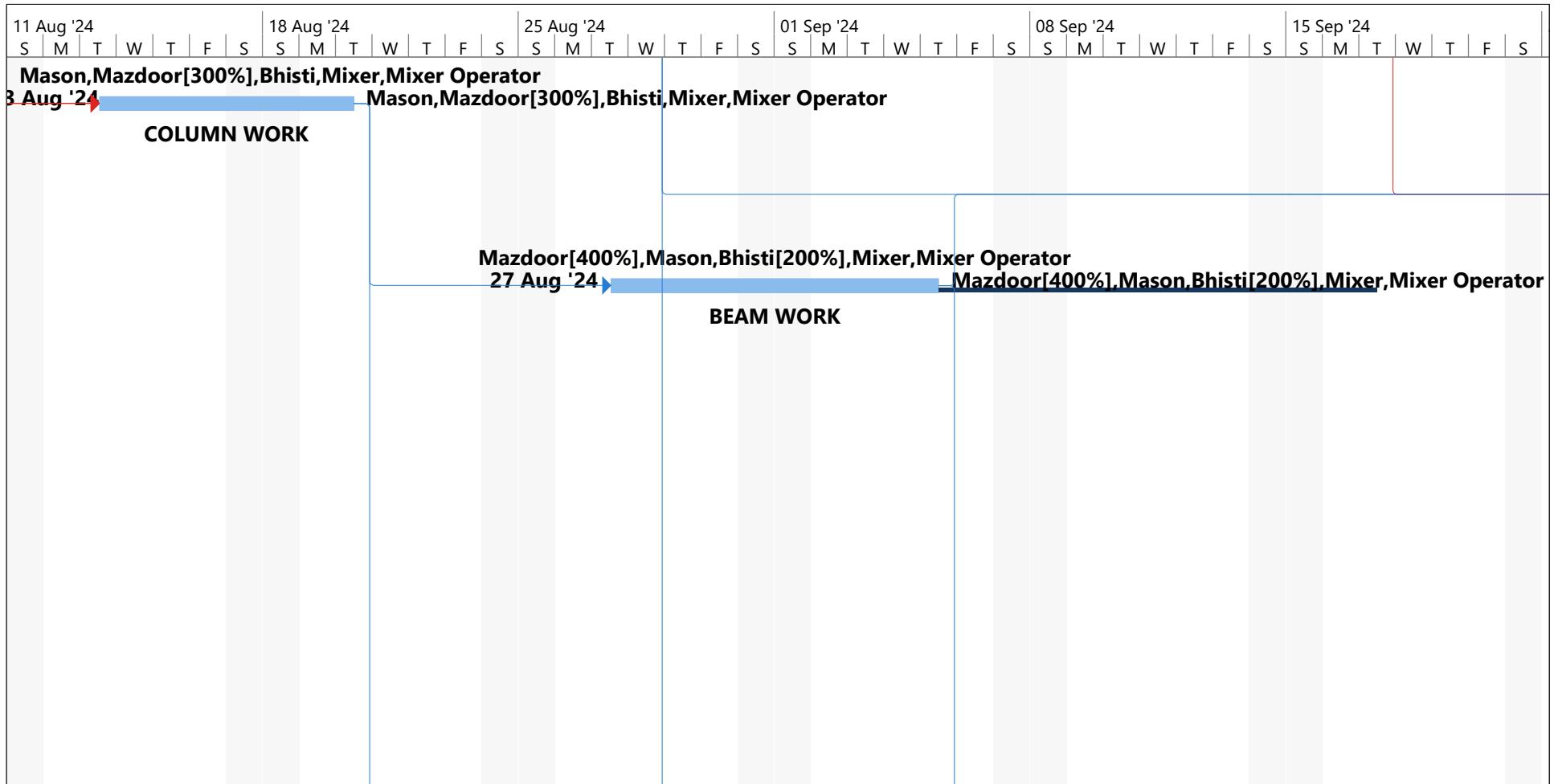
Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
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	Milestone	Manual Summary Rollup	Critical Split	
	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		

Project: Project1
Date: Mon 01-04-24

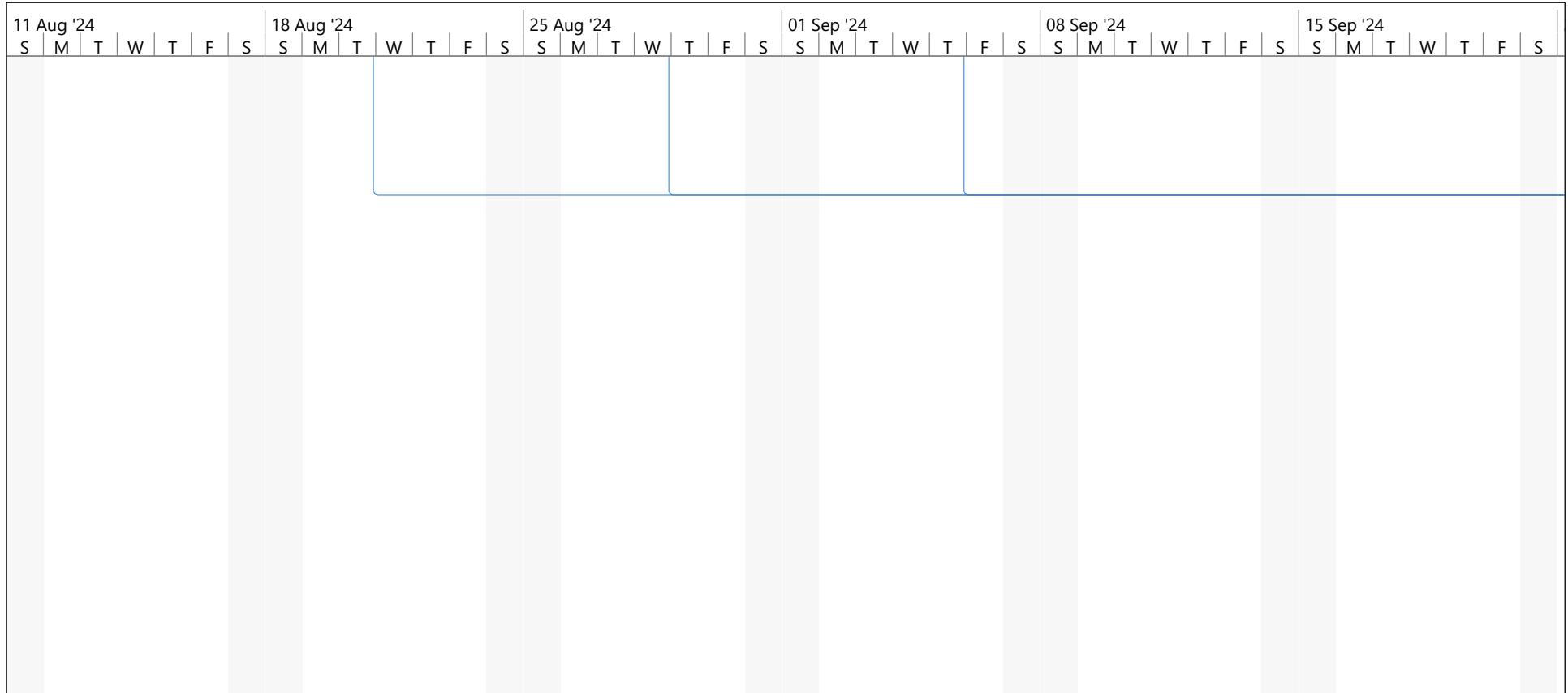
Task		Manual Task		Deadline	
Split		Duration-only		Critical	
Milestone		Manual Summary Rollup		Critical Split	
Summary		Manual Summary		Progress	
Project Summary		Start-only		Manual Progress	
Inactive Task		Finish-only		Slack	
Inactive Milestone		External Tasks			
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Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
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	Inactive Summary		External Milestone			



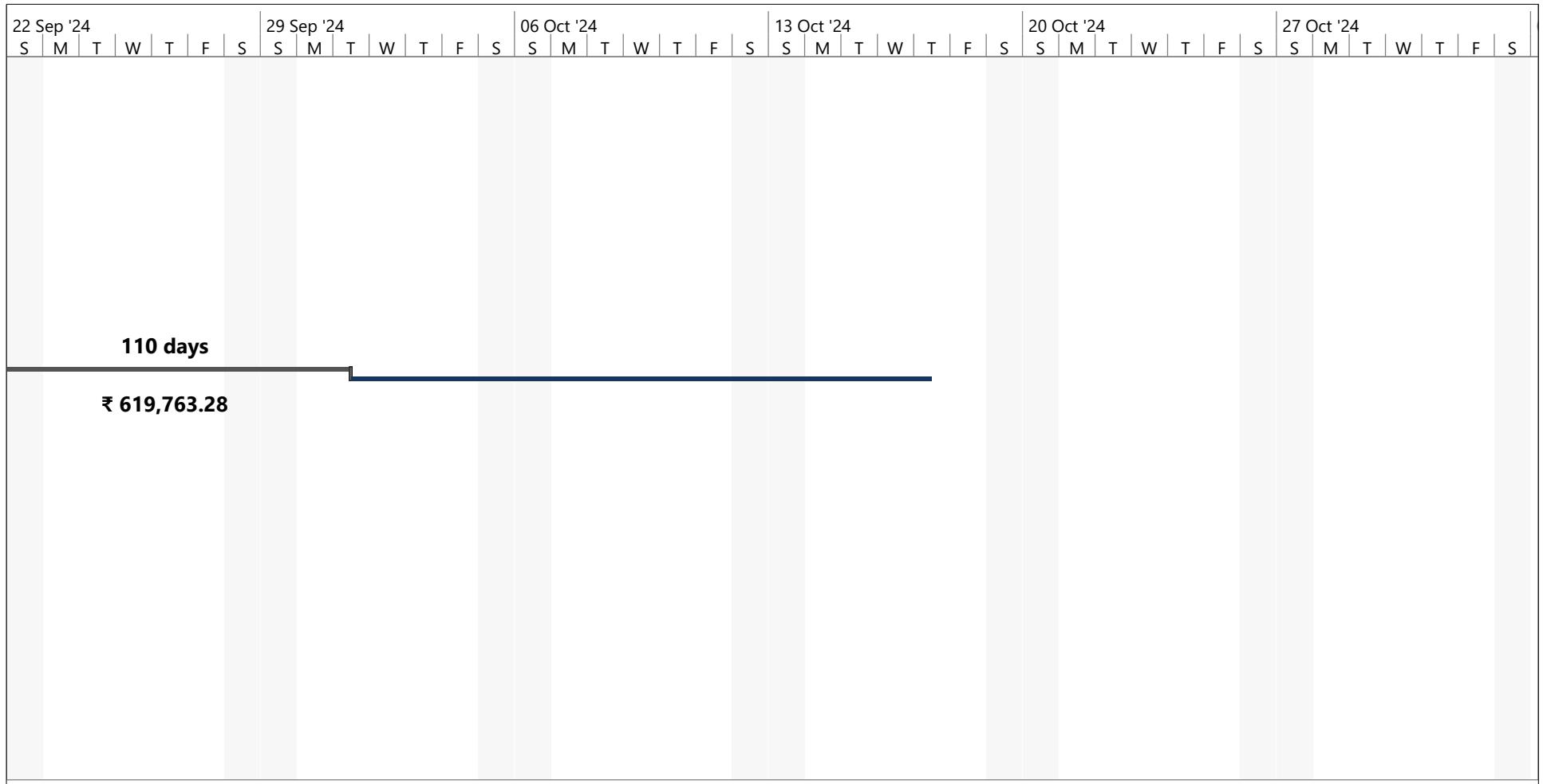
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	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
	Inactive Task	Finish-only	Slack	
	Inactive Milestone	External Tasks		
	Inactive Summary	External Milestone		

22 Sep '24	S	M	T	W	T	F	S	29 Sep '24	S	M	T	W	T	F	S	06 Oct '24	S	M	T	W	T	F	S	13 Oct '24	S	M	T	W	T	F	S	20 Oct '24	S	M	T	W	T	F	S	27 Oct '24	S	M	T	W	T	F	S
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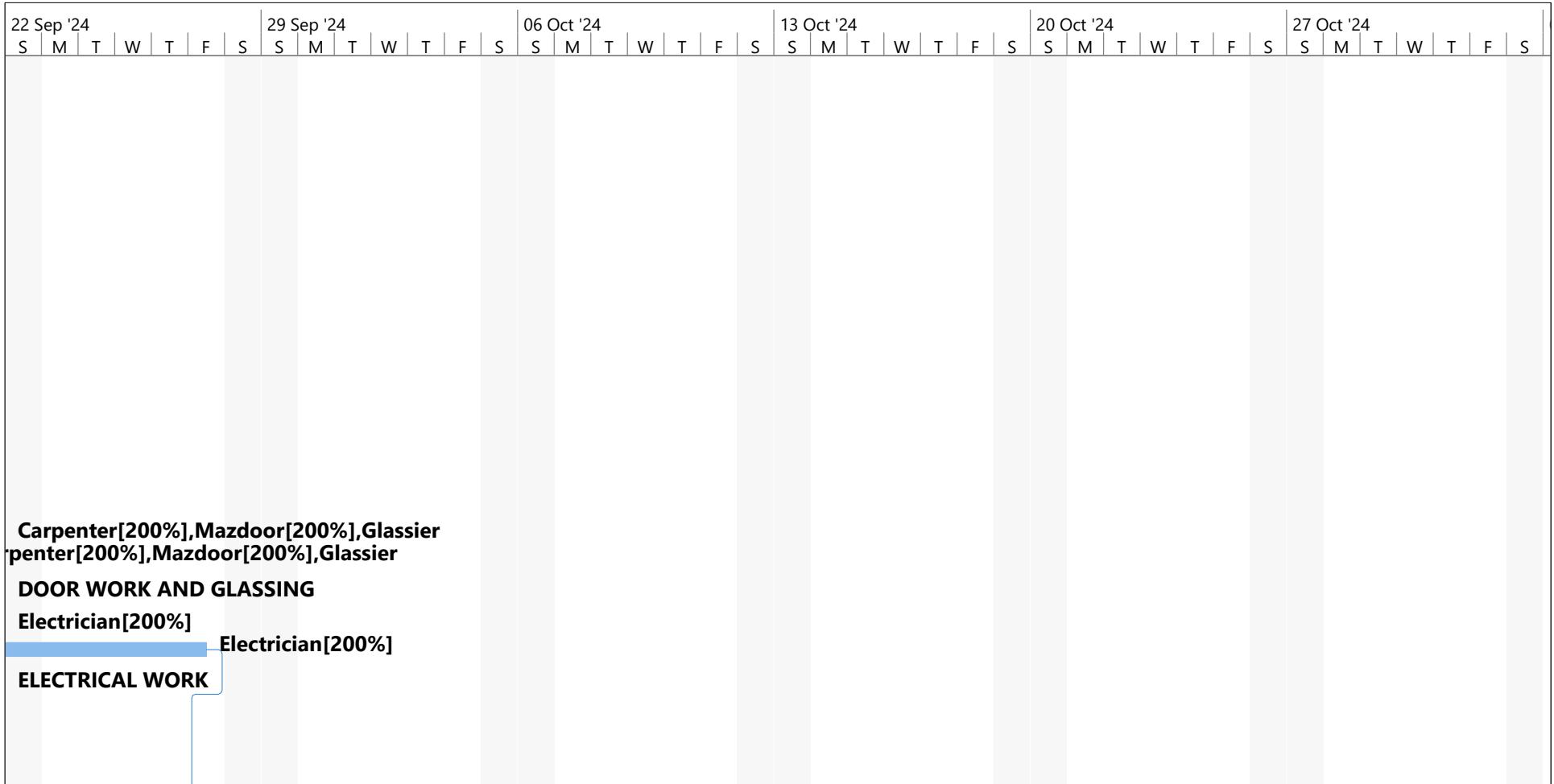
177.5 days?

₹ 1,433,472.68

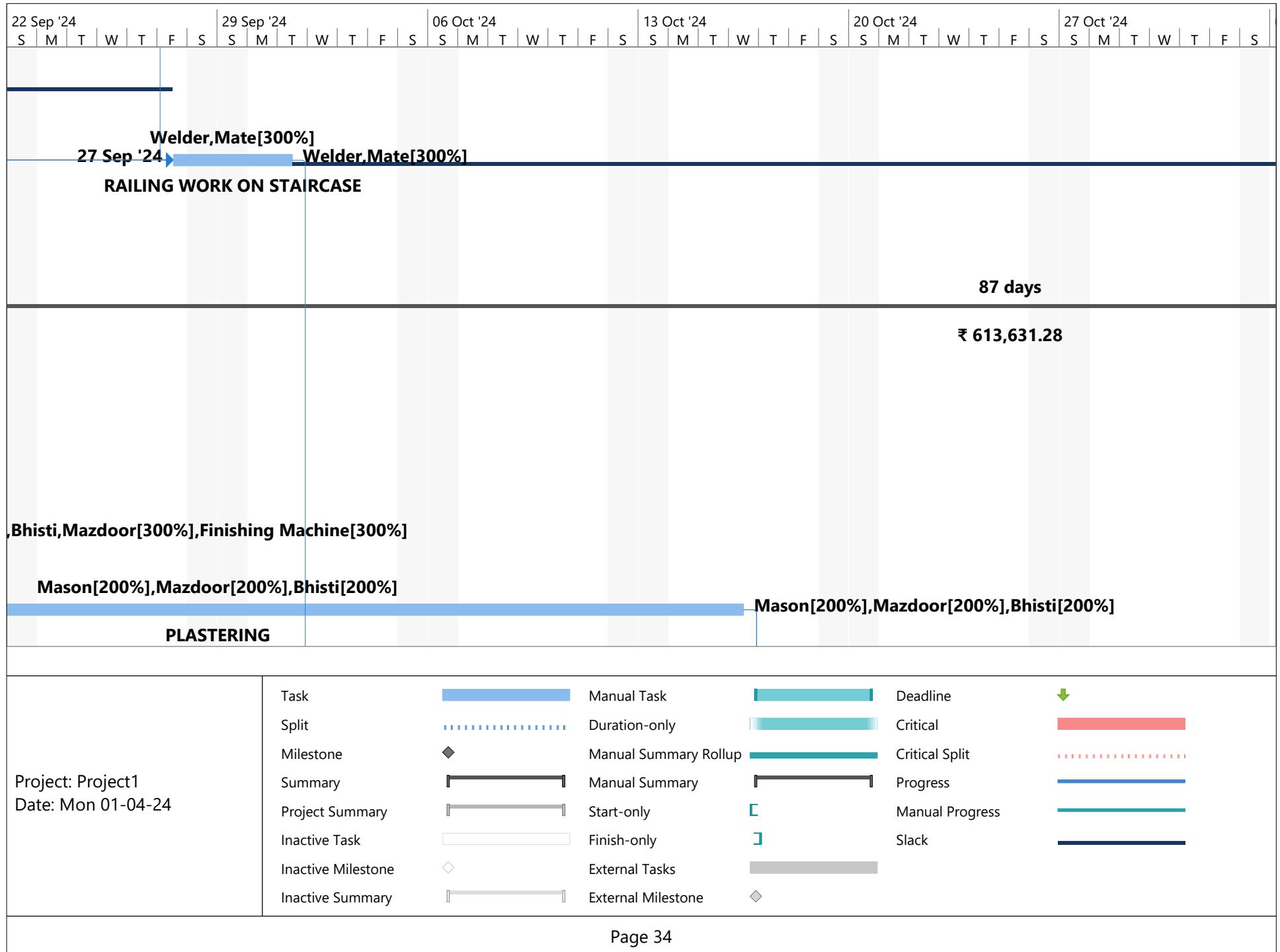
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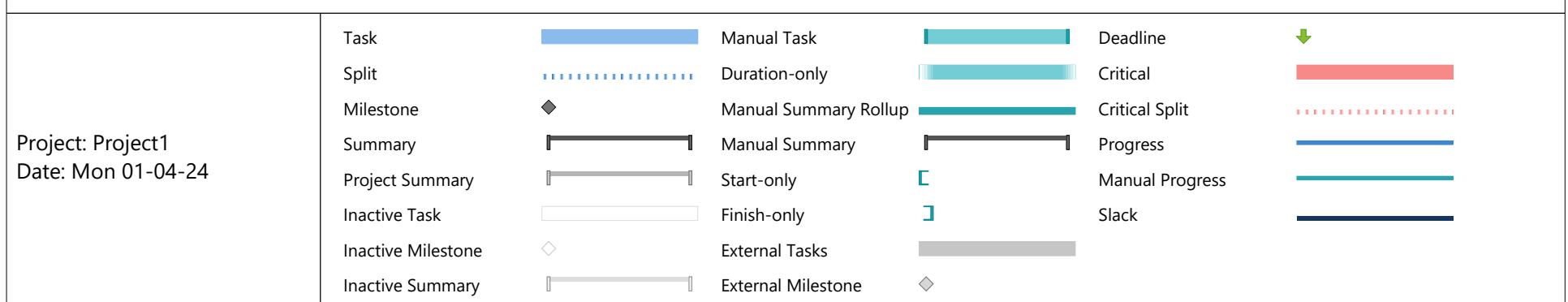
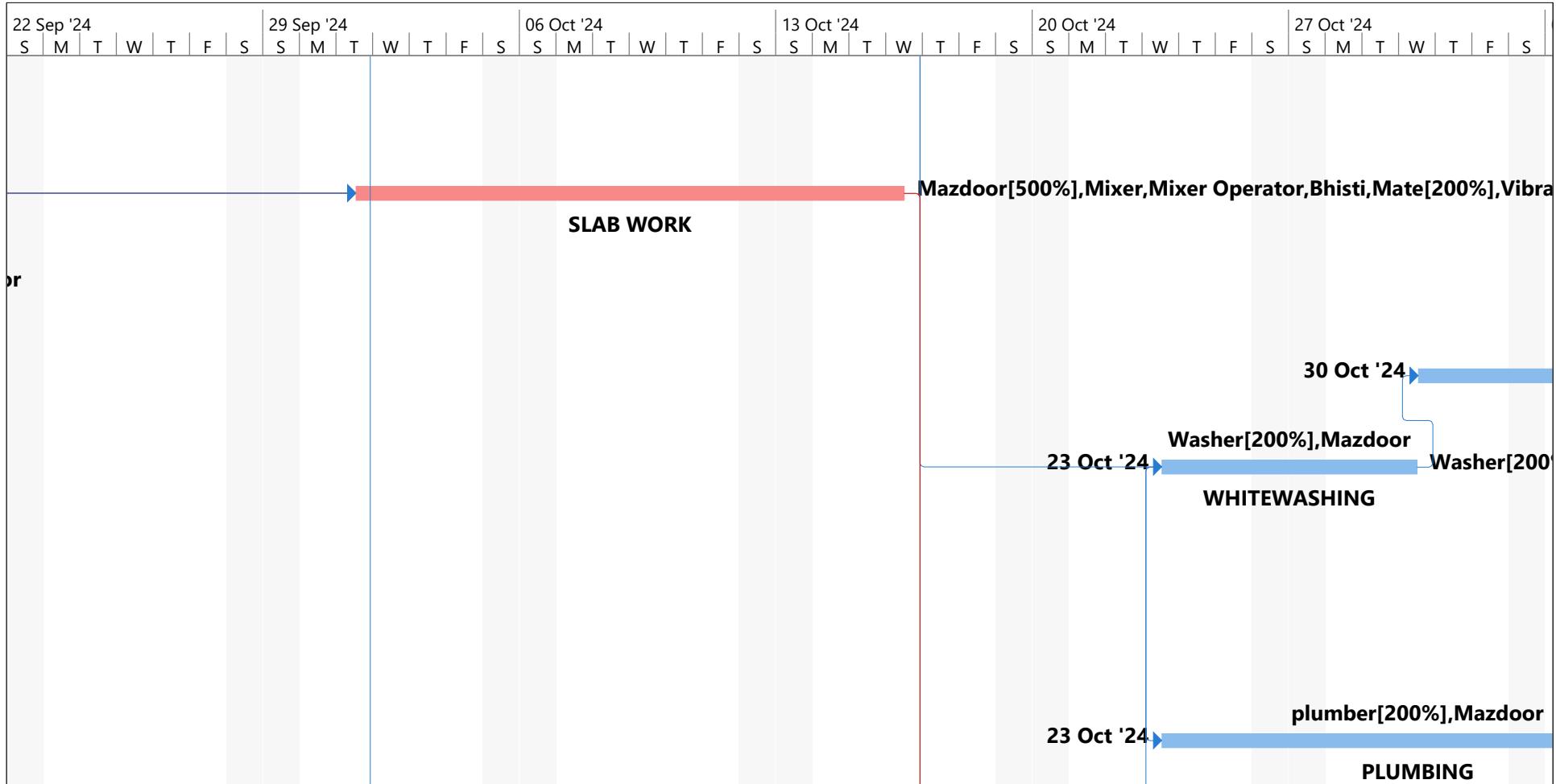


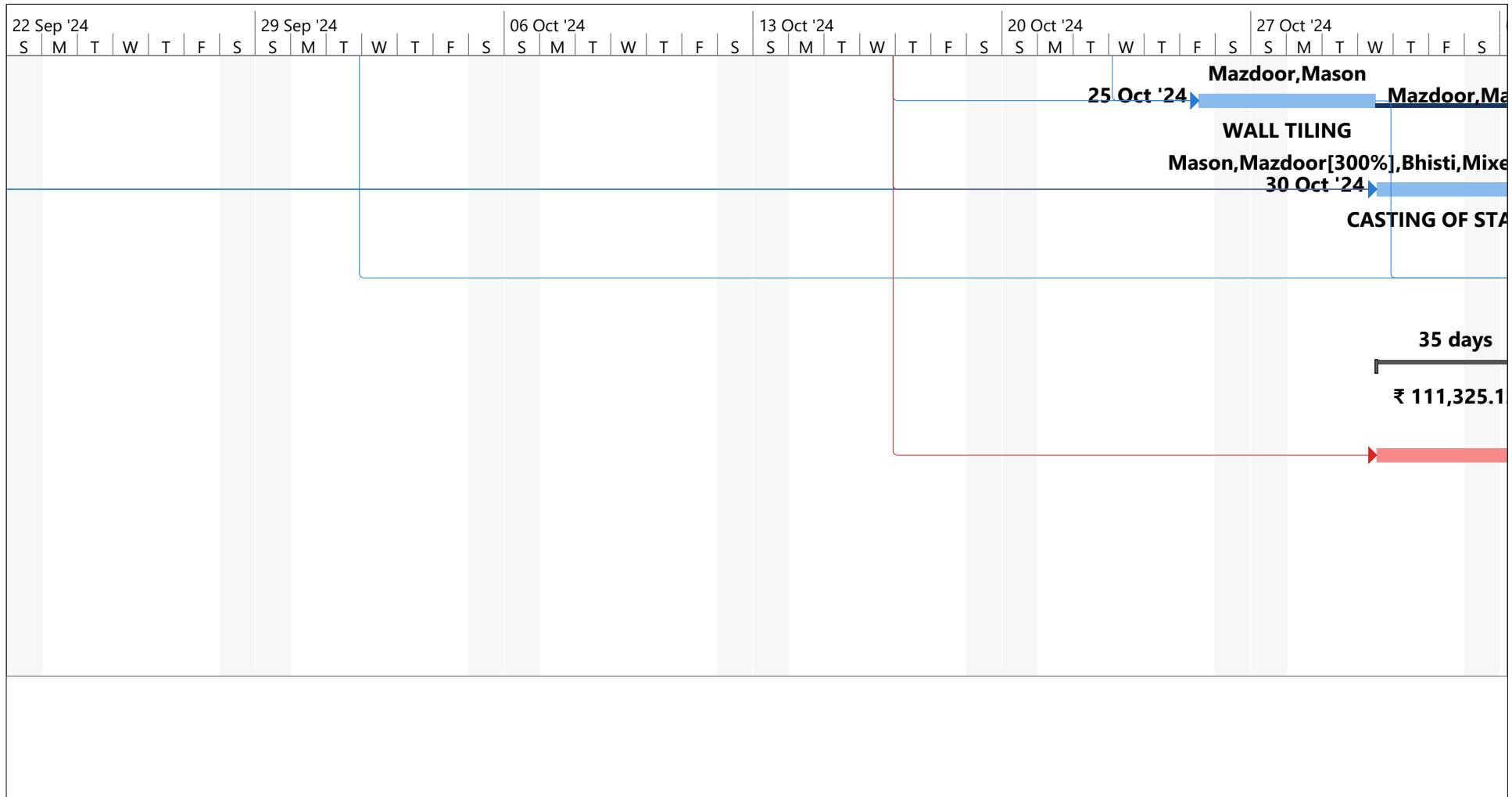
Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
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	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			



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	Summary		Manual Summary		Progress	
	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
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Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
	Split	Duration-only	Critical	
	Milestone		Manual Summary Rollup	Critical Split
	Summary		Progress	
	Project Summary		Manual Progress	
	Inactive Task		Slack	
	Inactive Milestone		External Tasks	
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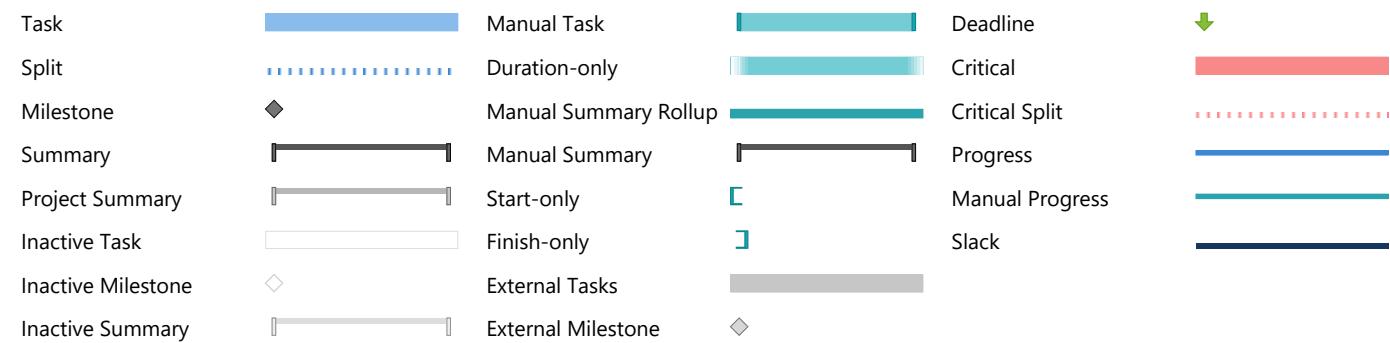
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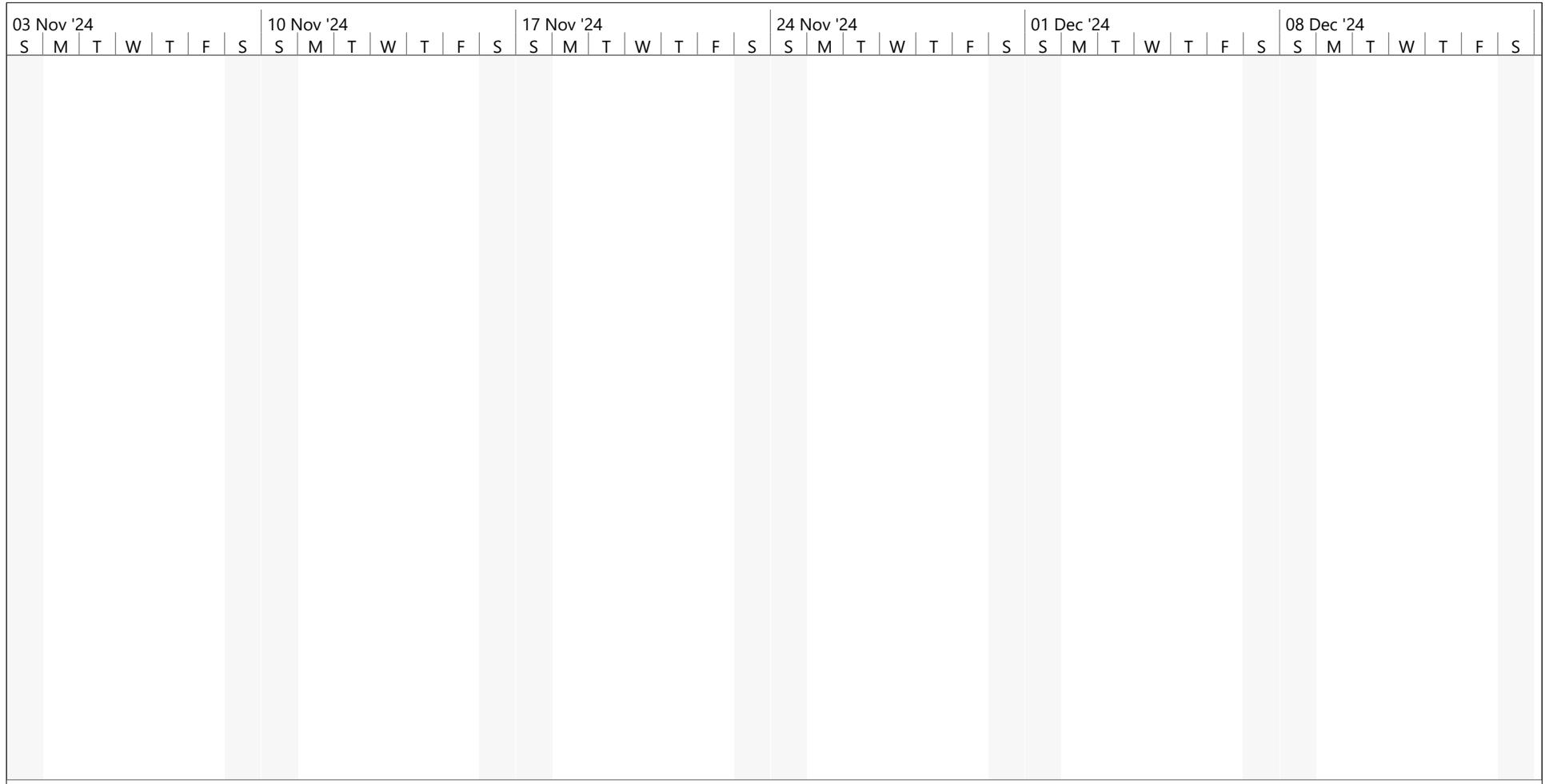
177.5 days?

₹ 1,433,472.68

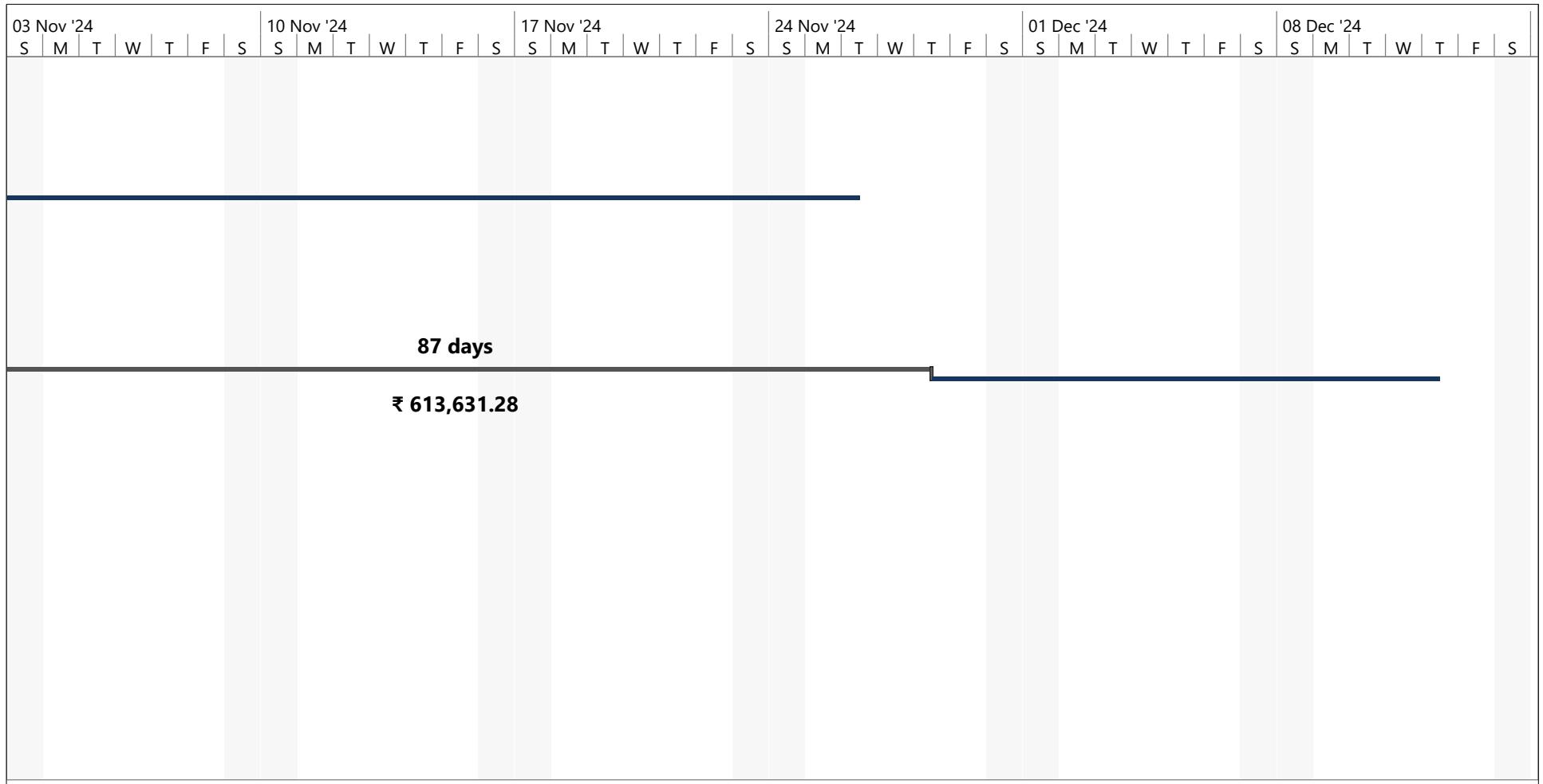
Project: Project1 Date: Mon 01-04-24	Task	Manual Task	Deadline	
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Project: Project1
Date: Mon 01-04-24

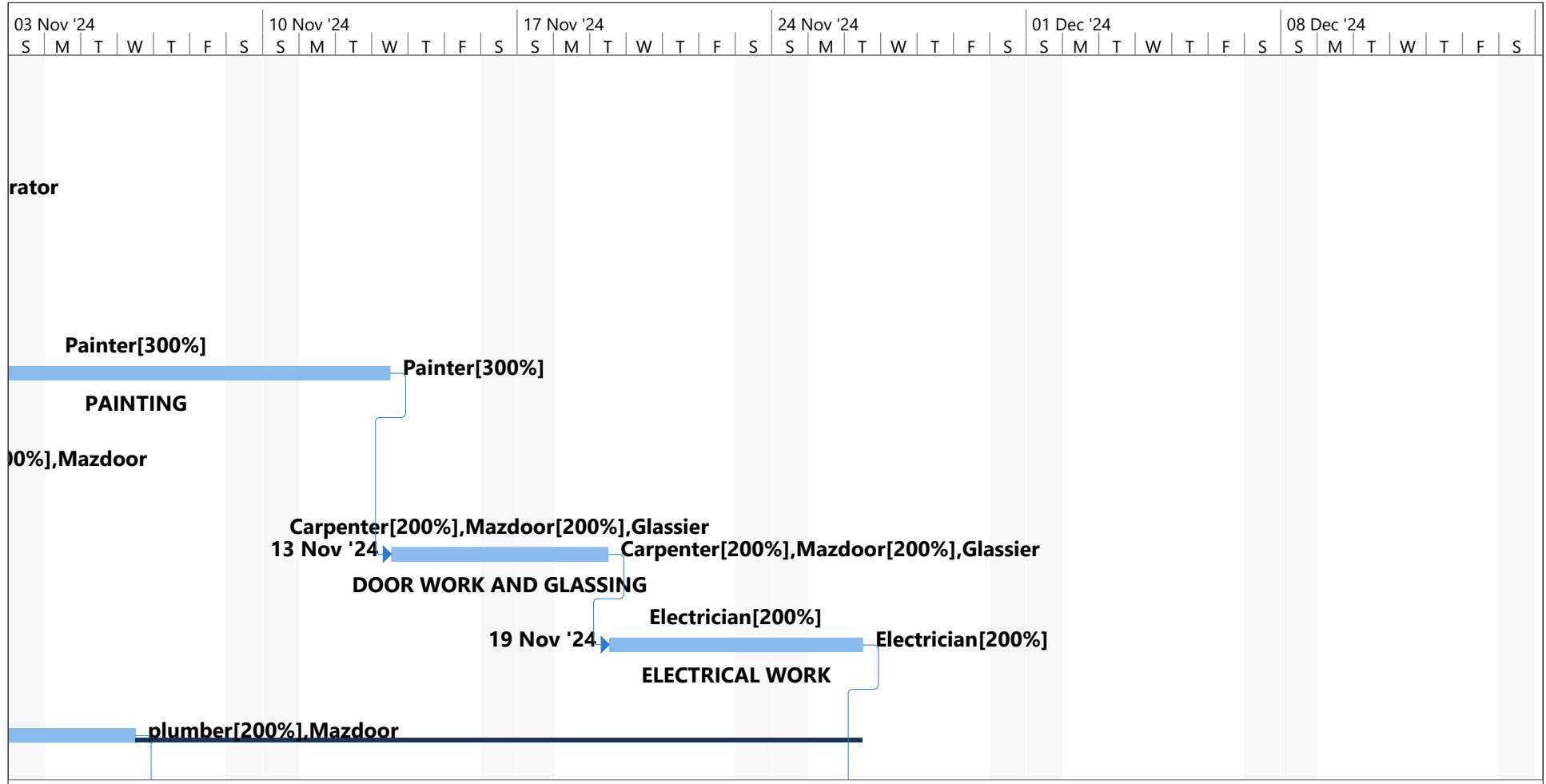




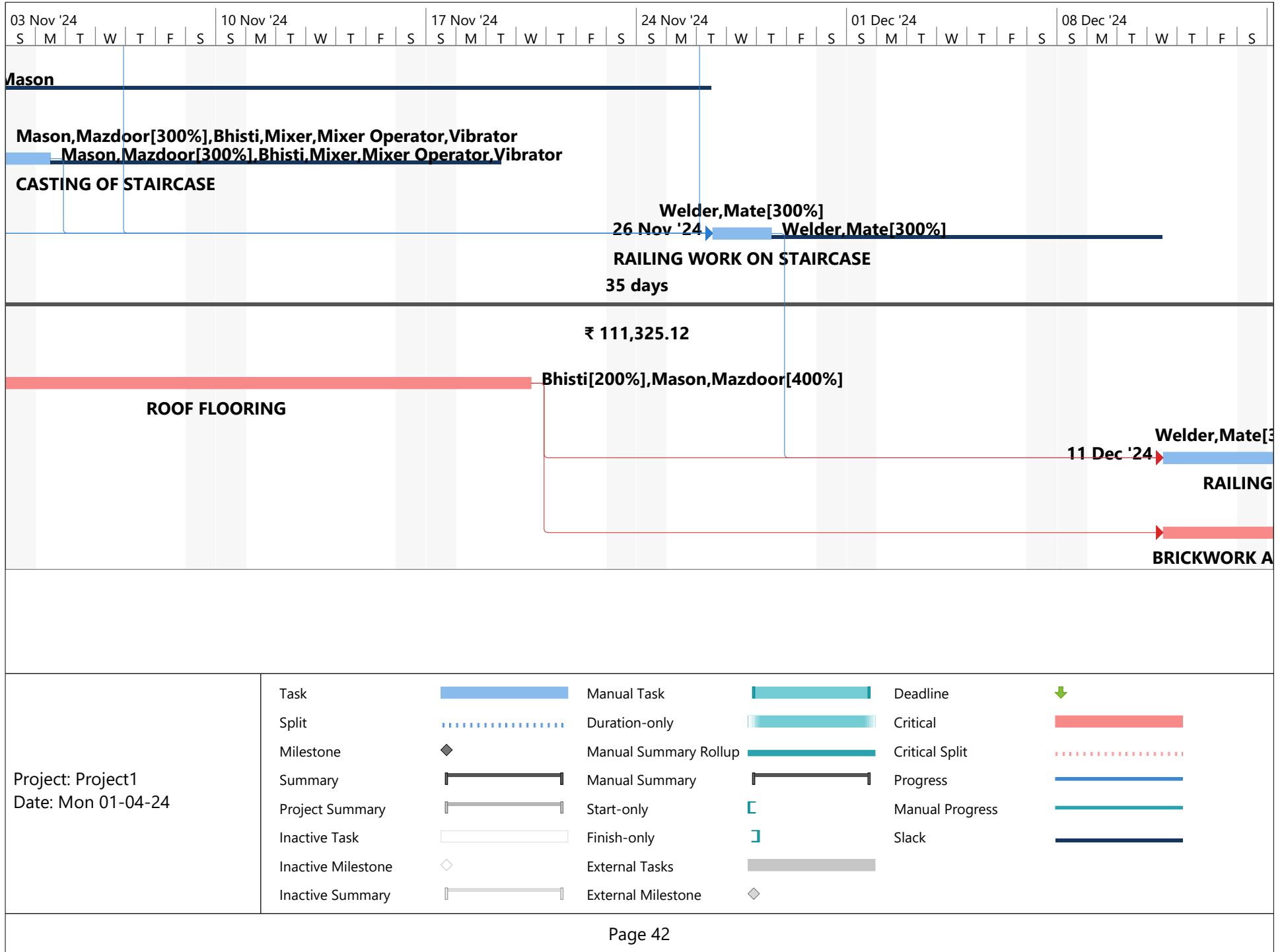
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	Summary	Manual Summary	Progress	
	Project Summary	Start-only	Manual Progress	
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	Inactive Milestone	External Tasks		
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Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
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	Inactive Milestone		External Tasks			
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Project: Project1 Date: Mon 01-04-24	Task		Manual Task		Deadline	
	Split		Duration-only		Critical	
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	Project Summary		Start-only		Manual Progress	
	Inactive Task		Finish-only		Slack	
	Inactive Milestone		External Tasks			
	Inactive Summary		External Milestone			



Two Storey House

Start: Mon 15-04-21ID: 1

Finish: Fri 13-12-24 Dur: 174.5 days?

Comp: 0%

SUBSTRUCTURE

Start: Mon 15-04-21ID: 2

Finish: Tue 28-05-21Dur: 31.5 days?

Comp: 0%

SUPERSTRUCTURE 1 GROUND FLOOR

Start: Tue 30-04-21ID: 12

Finish: Tue 01-10-21Dur: 110 days

Comp: 0%

SUPERSTRUCTURE 2 FIRST FLOOR

Start: Mon 29-07-21 ID: 28

Finish: Wed 27-11-21 Dur: 87 days

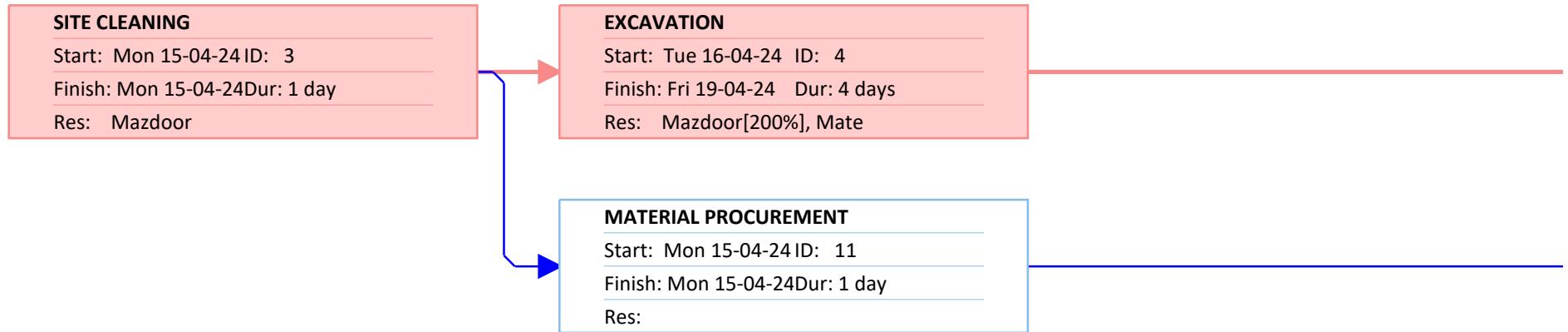
Comp: 0%

ROOF WORK

Start: Tue 29-10-24 ID: 44

Finish: Fri 13-12-24 Dur: 33 days

Comp: 0%



SAND FILLING

Start: Mon 22-04-24 ID: 5

Finish: Mon 22-04-24 Dur: 0.5 days

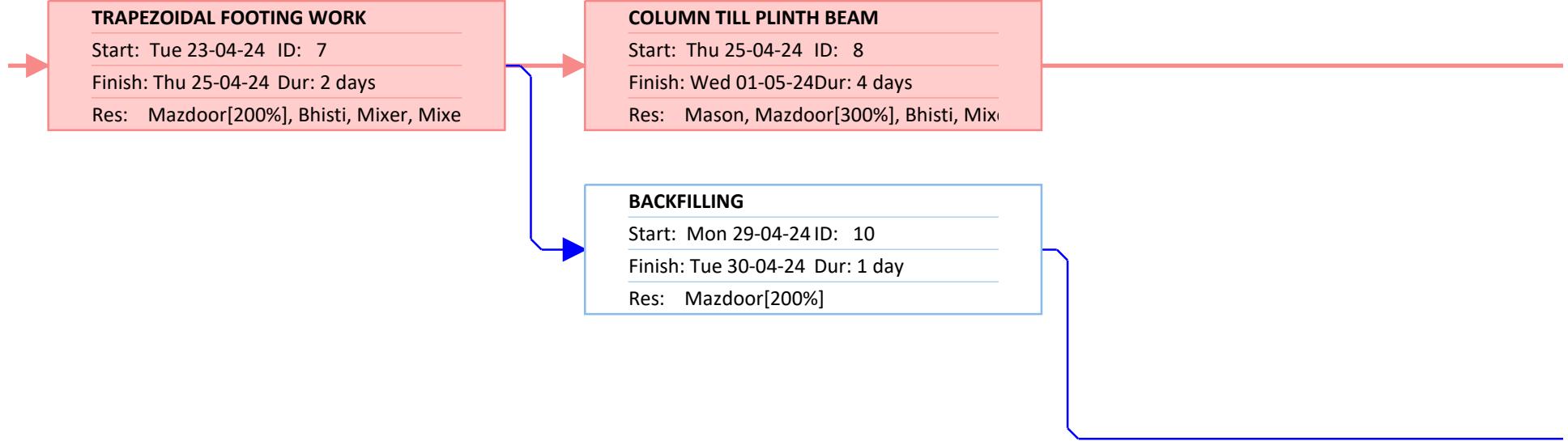
Res: Mazdoor

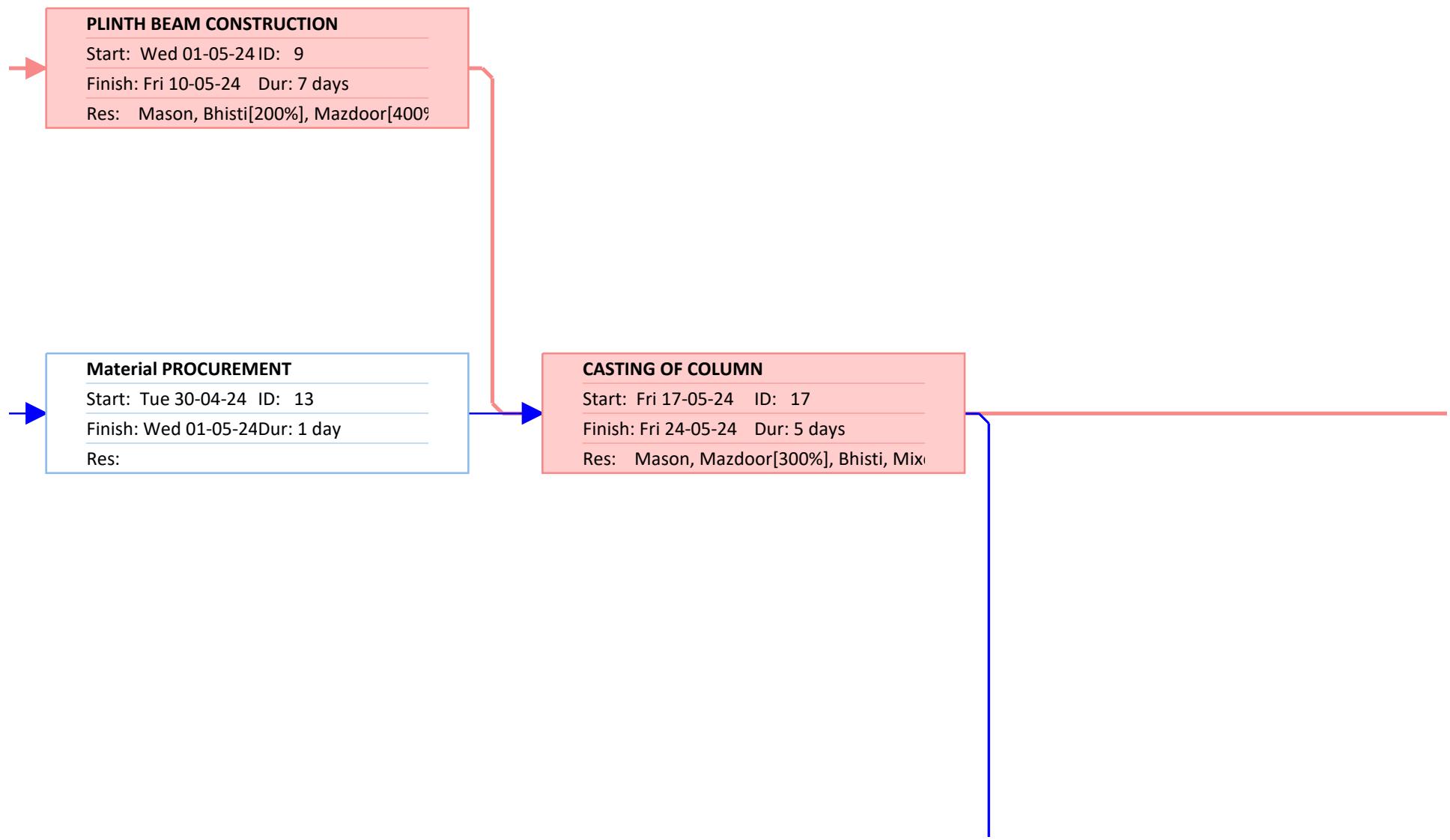
PCC Work

Start: Mon 22-04-24 ID: 6

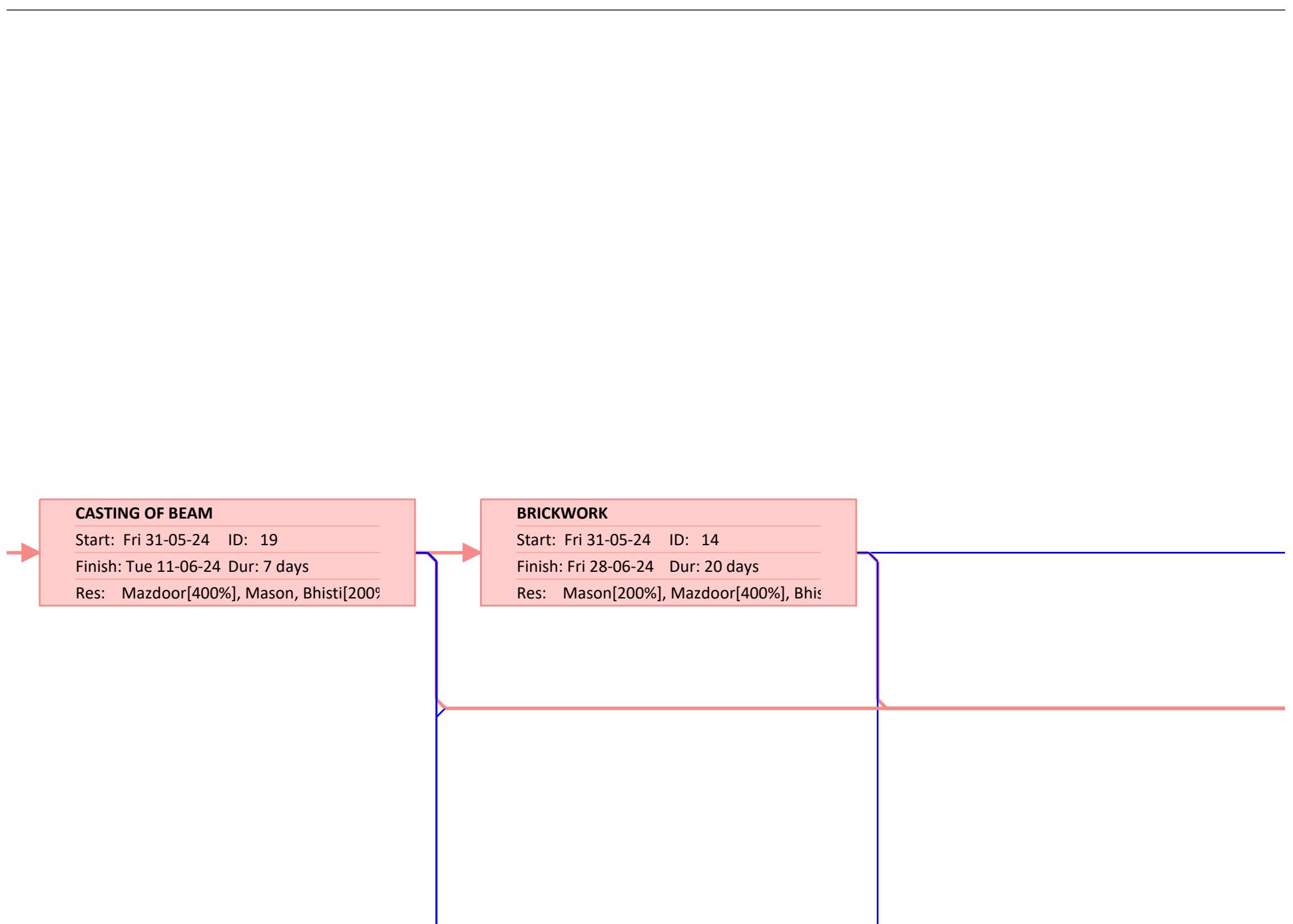
Finish: Tue 23-04-24 Dur: 1 day

Res: Mason, Mazdoor, Bhisti







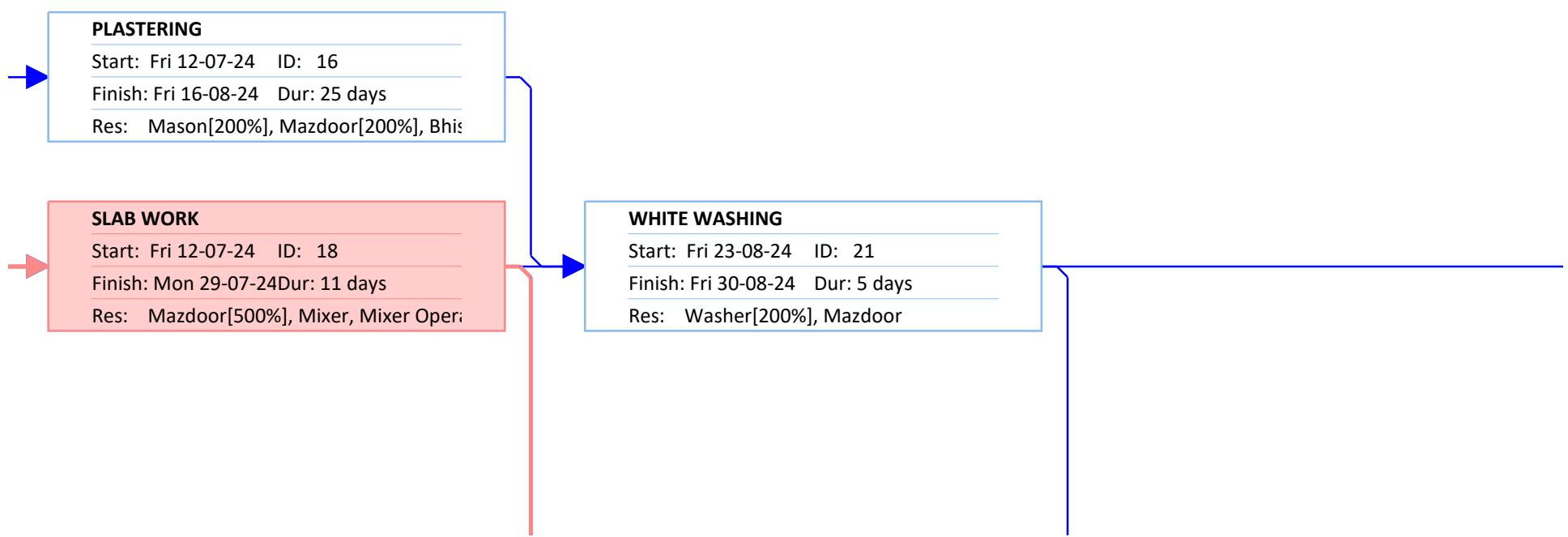


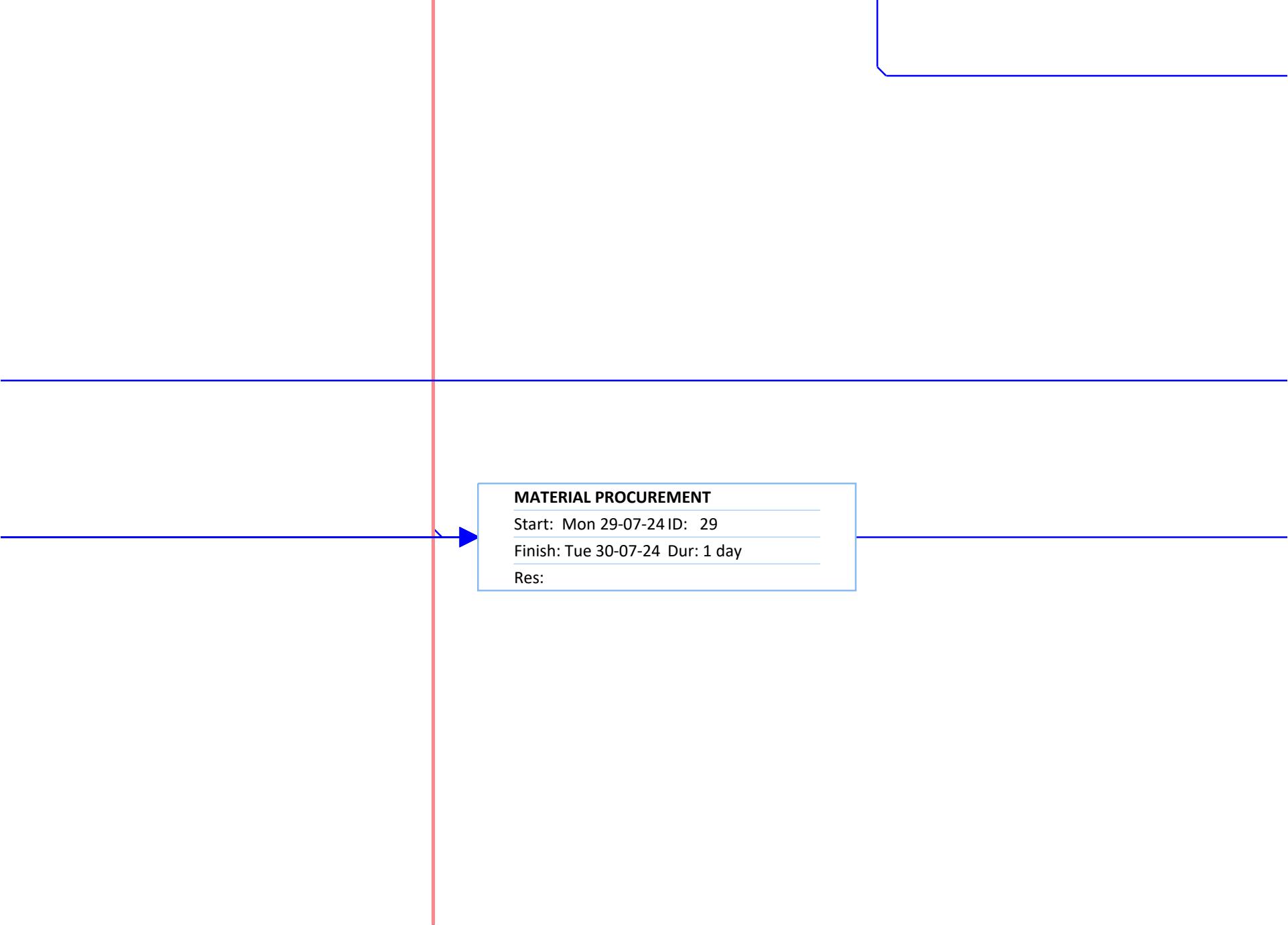
FLOORING

Start: Fri 17-05-24 ID: 15
Finish: Fri 21-06-24 Dur: 25 days
Res: Mason[200%), Bhisti, Mazdoor[300%]

CASTING OF STAIRCASE

Start: Fri 21-06-24 ID: 27
Finish: Wed 26-06-24 Dur: 3 days
Res: Mason, Mazdoor[300%), Bhisti, Mix





MATERIAL PROCUREMENT

Start: Mon 29-07-24 ID: 29

Finish: Tue 30-07-24 Dur: 1 day

Res:

FLOORING

Start: Mon 12-08-24 ID: 31

Finish: Mon 16-09-24 Dur: 25 days

Res: Mason[200%, Bhisti, Mazdoor[300%

COLUMN WORK

Start: Mon 12-08-24 ID: 33

Finish: Mon 19-08-24 Dur: 5 days

Res: Mason, Mazdoor[300%, Bhisti, Mixi

PLUMBING

Start: Fri 23-08-24 ID: 24
Finish: Fri 06-09-24 Dur: 10 days
Res: plumber[200%], Mazdoor

WALL TILING

Start: Fri 06-09-24 ID: 25
Finish: Wed 11-09-24 Dur: 3 days
Res: Mazdoor, Mason



PAINTING

Start: Mon 02-09-24 ID: 20

Finish: Mon 16-09-24 Dur: 10 days

Res: Painter[300%]

DOOR WORK AND GLASSING

Start: Mon 16-09-24 ID: 22

Finish: Fri 20-09-24 Dur: 4 days

Res: Carpenter[200%, Mazdoor[200%, (

**BRICKWORK**

Start: Tue 30-07-24 ID: 30

Finish: Tue 27-08-24 Dur: 20 days

Res: Mason[200%, Mazdoor[400%, Bhis

PLASTERING

Start: Tue 10-09-24 ID: 32

Finish: Tue 15-10-24 Dur: 25 days

Res: Mason[200%, Mazdoor[200%, Bhis



BEAM WORK

Start: Mon 26-08-24 ID: 35

Finish: Wed 04-09-24 Dur: 7 days

Res: Mazdoor[400%], Mason, Bhisti[200%

SLAB WORK

Start: Mon 30-09-24 ID: 34

Finish: Tue 15-10-24 Dur: 11 days

Res: Mazdoor[500%], Mixer, Mixer Oper:

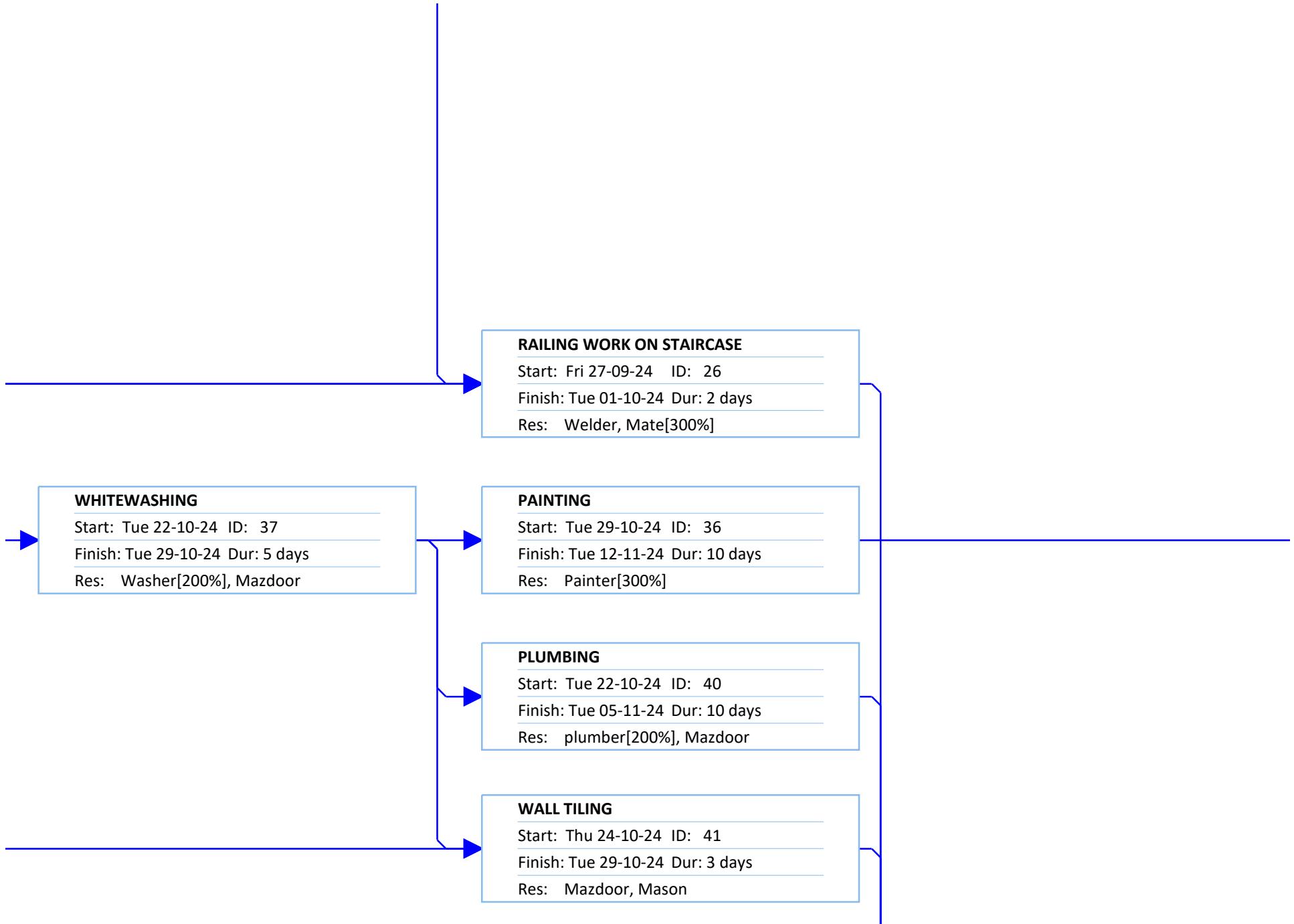
ELECTRICAL WORK

Start: Fri 20-09-24 ID: 23

Finish: Fri 27-09-24 Dur: 5 days

Res: Electrician[200%]





CASTING OF STAIRCASE

Start: Tue 29-10-24 ID: 42

Finish: Fri 01-11-24 Dur: 3 days

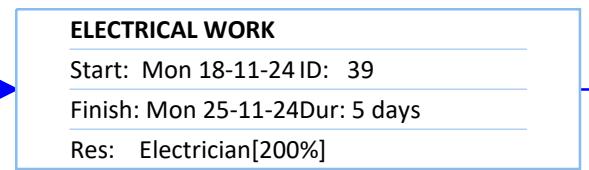
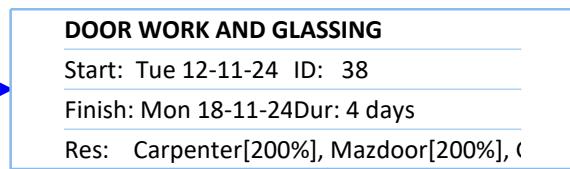
Res: Mason, Mazdoor[300%], Bhisti, Mix

ROOF FLOORING

Start: Tue 29-10-24 ID: 45

Finish: Tue 19-11-24 Dur: 15 days

Res: Bhisti[200%], Mason, Mazdoor[400%



RAILING WORK ON STAIRCASE

Start: Mon 25-11-24 ID: 43

Finish: Wed 27-11-24 Dur: 2 days

Res: Welder, Mate[300%]

RAILING

Start: Tue 10-12-24 ID: 46

Finish: Fri 13-12-24 Dur: 3 days

Res: Welder, Mate[300%]



Project: Project1
Date: Mon 01-04-24

Critical



Summary



Critical External



Noncritical



Critical Inserted



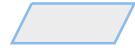
External



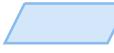
Critical Milestone



Inserted



Project Summary



Milestone



Critical Marked



Highlighted Critical



Critical Summary



Marked



Highlighted Noncritical



