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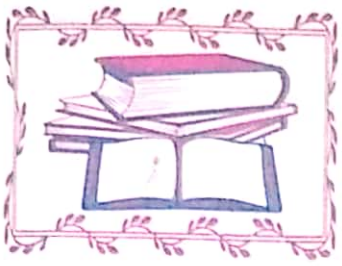

Name Krishna Priyadarshini

Class 6th sem Section _____ Roll No. 721-20 Year 2024

Subject Land Survey Pra - II

Sl. No.	Experiment Description	Experiment Date	Submission Date	Remarks Signature
1	To determine the multiplying constant & additive constant of the tacheometer	6/2/24	9/2/24	Kstana 9/2/24
2	To determine the hori. distance betⁿ two points on plane ground	13/2/24	16/2/24	Kstana 16/4/24
3	To set out circular curve by taking offset from long chord.	20/2/24	23/2/24	Kstana 23/2/24
4	To set out a circular curve by taking offset from suessive bisection of arcs.	27/2/24	12/3/24	Kstana 12/3/24
5	To set out a simple curve by taking offset from tangent	15/3/24	19/3/24	Kstana 19/3/24
6	To set out a simple curve by linear method	19/3/24	22/3/24	Kstana 29/3/24
7	To setup a station by set-orientation by using total station.	22/3/24	2/4/24	Kstana 2/4/24
8	To measured the station point by Ts-10	25/3/24	9/4/24	Kstana 9/4/24

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EXPERIMENT NO.-1

Aim:- To determine the multiplying constant and additive constant of the given theodolite.

Instruments Used :-

a) Theodolite
b) Arrows
c) Pegs
d) Ranging rods
e) Levelling staff

Procedure :-

i) Stretch the chain in the field & drive pegs at 5m, 10m & 15m interval.
ii) Set the theodolite at the zero end & do the temporary adjustments.
iii) Keep the staff on the pegs and observe the corresponding staff intercept with horizontal side.
iv) Substitute the values of distance (D) & staff intercept (S) for different points in the equation $D = KS + C$, where K & C are the tacheometric constants, 'K' is the multiplying constant and 'C' is the additive constant.

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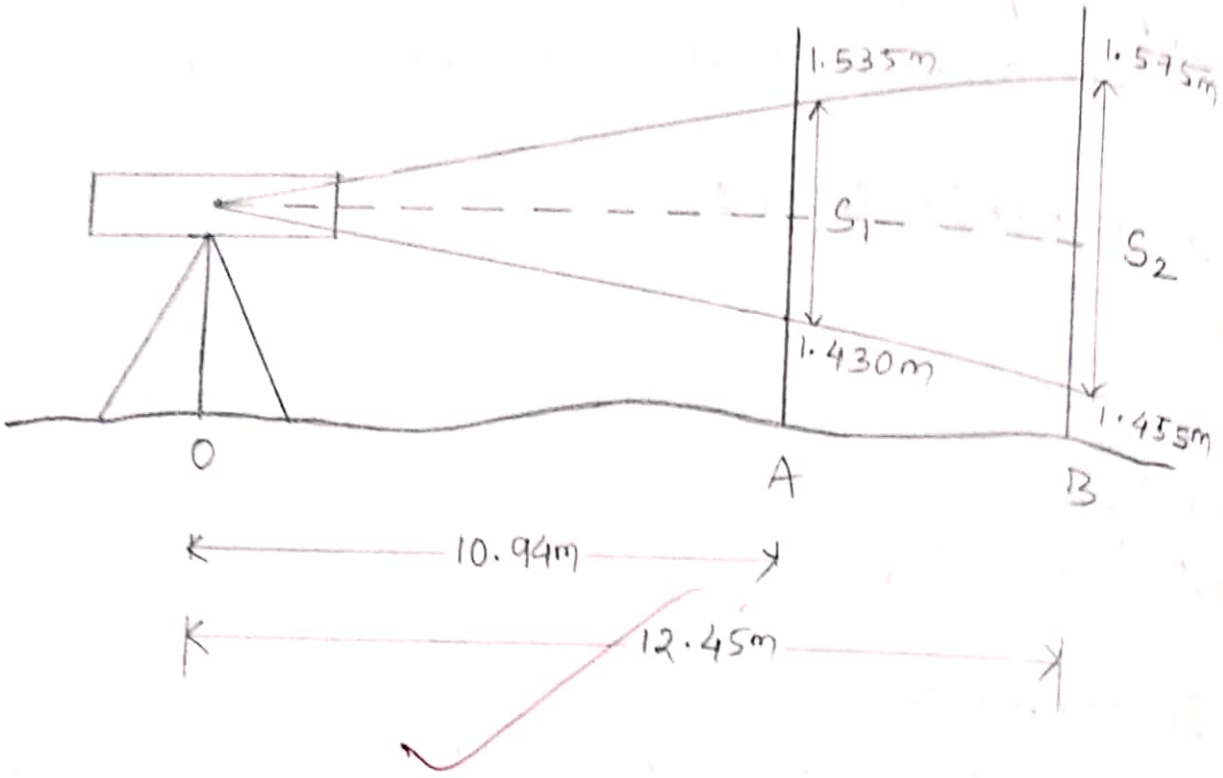

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Date 6/2/24

Calculation :-

Station	Point	Distance	Readings		
			Lowere	Upper	Staff intercept (s)
O	A	10.943	1.430 m	1.535 m	0.105 m
	B	12.45	1.455 m	1.575 m	0.120 m

According to tacheometry distance formula,

$$D = KS + C \quad \text{or}$$

$$D = \left(\frac{f}{i}\right)s + (f + d)$$

Let $K = x$, $C = y$

Point A,

$$D = KS + C$$

$$\Rightarrow 10.943 = x(0.105) + y \quad \text{——— (i)}$$

Point B,

$$D = KS + C$$

$$\Rightarrow 12.45 = x(0.120) + y \quad \text{——— (ii)}$$

from eq^n (i) & (ii),

$$10.943 = 0.105x + y$$

$$\Rightarrow 12.450 = 0.120x + y$$

$$\Rightarrow 1.507 = 0.015x \Rightarrow \boxed{x = 100.46} \Rightarrow K = 100.46$$

Teacher's Signature .....

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Put the value of x in eq^n ①,

$$10.943 = (100.46)(0.105) + y$$

$$\Rightarrow y = 10.943 - 10.54$$

$$\Rightarrow \boxed{y = 0.40} \qquad \Rightarrow c = 0.40$$

Hence, the value of multiplying constant and additive constant are 100.46 and 0.40 respectively.

Result :-

Multiplying constant (k) = 100.46

Additive constant (c) = 0.40

Submitted by
Krishna Priyadarshini
6th sem, civil
Regd. No.- F211100010 20

Teacher's Signature 7/2/24

GOVERNMENT POLYTECHNIC, BALANGIR

LARKIPALI, BALANGIR

State Council Regd. No. F21110001021

Name Khirasindhu Sahu

Roll No. F21110001021 Semester 6th Session 2023-24

Branch Civil Group

Subject CWPS MSP

GOVERNMENT POLYTECHNIC, BALANGIR

DEPARTMENT OF ....CIVIL ENGINEERING.....

INDEX PAPER

Sl. No.	NAME OF THE EXPERIMENT	DATE	SHEET USED	REMARKS
1	Study about various type of construction tools	5/02/24	1 - 04	Kana 9/2/24
2	Lay out plan of building	7/02/24	5 - 6	Kana 16/2/24
3	construction of 1.5 1.5 brick thick wall	12/2/24	7 - 8	Kana 23/2/24
4	1.5 1.5 brick pillar	19/02/24	9 - 10	Kana 12/3/24
5	BBS of beam	4/2/24	11	Kana 19/3/24
6	BBS of Slab	11/3/24	12 - 13	Kana 22/3/24
7	BBS of lintel	18/3/24	14 - 15	Kana 2/4/24
8	BBS of column	27/3/24	16 - 18	Kana 9/4/24
9	non - destructive compressive strength test	08/4/24	19 - 20	Kana 16/4/24
10	Study of pipe Joints and plumbing fixtures	15/4/24	21 - 23	Kana 23/4/24

EXPERIMENT NO-1

AIM :- To study about various types of masonry tools used for building construction.

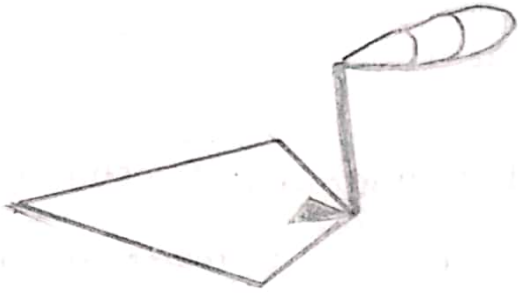
Common Masonry tools used in masonry construction

(1) **Trowel** → The basic masonry trowel is made up of stainless steel with a plastic / wooden handle.
→ The ends of trawel may be ball nosed or pointed.
→ this is used to lift and spread mortar in joints during masonry construction.

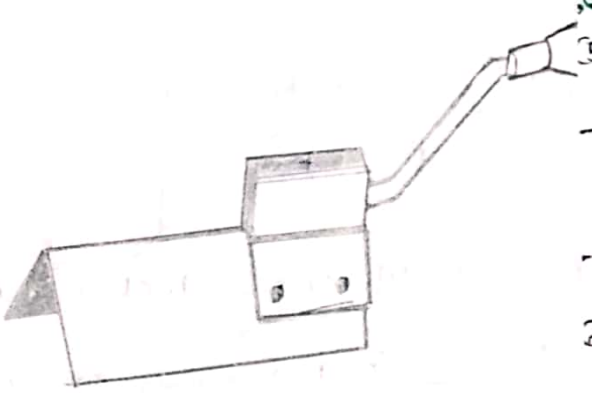
(2) **Corner trowel :→**
→ It is one of the common modification of the basic trawel. It is used for shaping corners of the wall.
→ they are two types of corner trawel.

(3) **setting out square :**
→ It is used to set out right angles at the corners of masonry wall.
→ This is very important and basic tool used in masonry work.

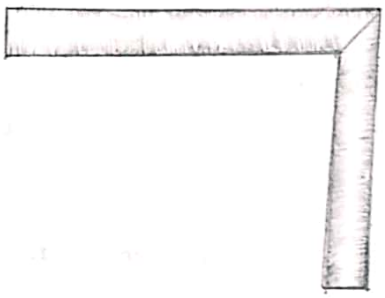
(4) **Plumb Rule**
→ It is basic masonry tool used to check the verticality of walls
→ It has consist of string with weight at bottom.



(Trowel)



(Corner Trowel)



(setting out square)

(Plumb Rule)

(5) Pick Axe :-

-> It is employed for rough dressing of stones and to split the stone in the quarry.

-> It has a long head pointed at both ends.

(6) Chisel :-

-> They are used with mallet and with hammers,

-> A chisel is used for normal splitting, roughing, cut and shaping the stone.

(7) Tooth chisel :-

-> Tooth chisel is also used to fine dressing. It is a hand-held tool of metal consisting of a long shaft, with a toothed cutting edge at on end.

(8) Boaster :-

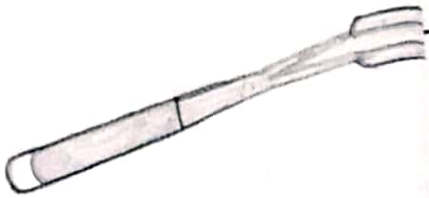
-> It is used to cut soft stones. It is a broad faced or wide-edged masonry chisel. Boated finish is done by boaster.

(9) Hammers :-

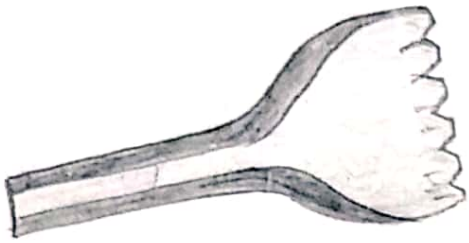
following are the types of hammers that are speicaly used for stone masonry.

(a) spalling hammer
(b) math hammer
(c) mallet (wooden hammer)
(d) Dummy
(e) scabbling hammer
(f)

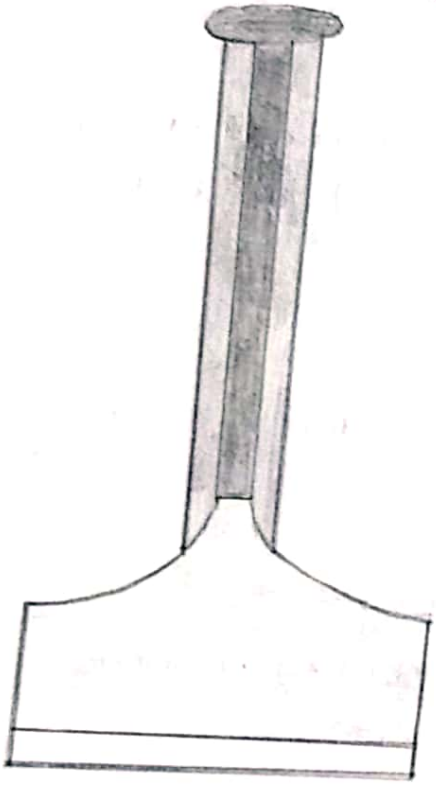
(Pick Axe)



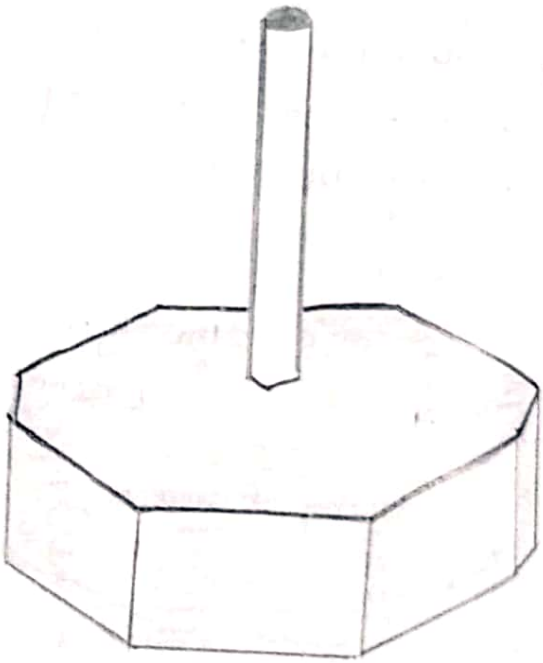
(chisel)



(Tooth chisel)



(Boaster)



(Hammer)

(10) Punch & Point :-

→ Punch is employed to dress the hard stones roughly and it is one piece rod-shaped tool made from metal

→ Point employed to dressing roughly to the hard and tough stones.

(11) Saw :-

→ It is used to cut soft stones

→ It is a saw with wide cross-cut toothed steel blade and wooden / plastic handle.

(12) Brick hammer :-

→ It is used for rough cutting of brick in different shapes and size.

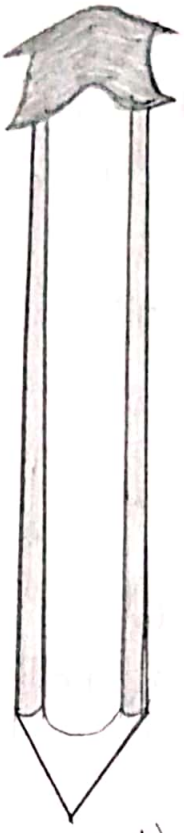
(13) Bevel :-

It is employed to set out angles. It comprises of two slotted blades of steel and fixed with each other with thumb screw.

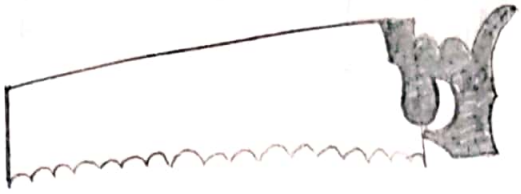
(14) Jointer

→ Jointer is a tools which is used for finishing the mortar joint in brick masonry.

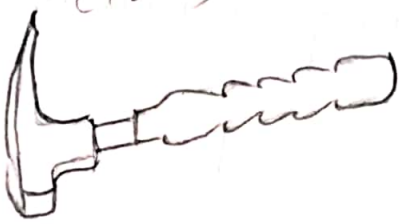
(15) Line and pins → It is used to maintain the alignment of the work in progress.



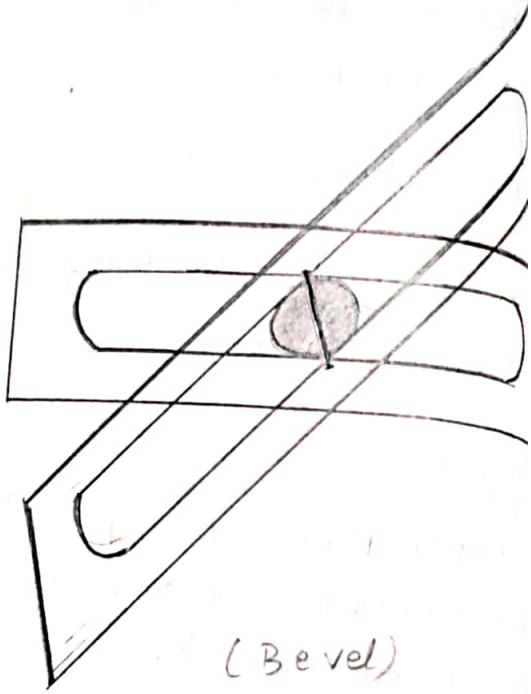
(Point)



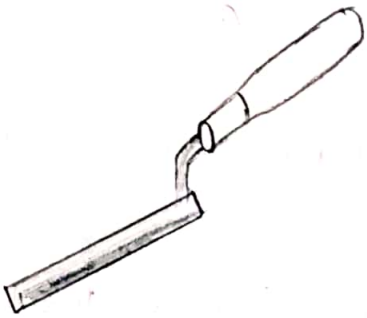
(saw)



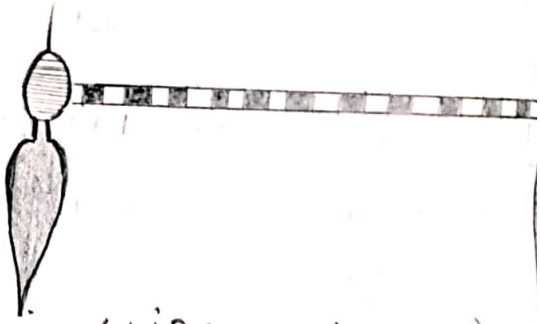
(Brick hammer)



(Bevel)



(Jointer)



(Line and Pins)

16) Water level :-

→ It is used to transfer and check level. It is a sample tool to measure the level at two different points.

(17) Boning rods :-

→ They are used to levelling from two fixed points in surveying.

→ It consist of an upright pole having a horizontal board its top forming a T shaped rod.

Conclusion

The tools used in brick and stone masonry construction play a crucial role in ensuring the accuracy, efficiency and quality of the final structure.

Submitted by

K Shivasindhu Sahu

Regd - 2111000102