

Agency : S.H Construction
Schedule XLV Form No.-134 M/R (3054) of Road from
BIHAR P.W.D. "NH 28 Pipra Kothi to
S.H. Const. Motihari Salempur".

A.E RWD works DIVISION
Pipra Kothi SUB-DIVISION

M.B. No 5427.

MEASUREMENT BOOK

Under M/R (3054) New Maintenance Policy

Certified that this measurement book
contained one hundred (100) pages machine
numbering only. Issued to A B R W D Works
Sub. Pipra Kolhi

Signature

Executive Engineer
R.W.D. (W) Division
Mothari
11.7.2020

Schedule XLV Form No.-134

A B R W D Works

DIVISION

Pipra Kolhi

SUB-DIVISION

M.B. No - 5427.

MEASUREMENT BOOK

Executive Engineer
R.W.D. (W) Division
Mothari

Name of officer _____

Isl: on AIC Bill

Name of work-

Situation of work-

Agency by which work is executed-

Date of measurement-

No. and date of agreement.

(These four lines should be repeated at the commencement of the measurement relating to each work.)

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
Name of the Work:	Construction of				
	Road from NH 28 Piplakothi				
	to Motihari Salempur under MR				
	- 3054 (New Maintenance dist)				
Name of Agency:	S.H Construction,				
	At. - Belbanwa, Motihari				
Agreement No.:	29 S.B.D of 1920-21				
Agreement amount:	Rs. 60312398.00				
Date of Commencement:	16/06/2020				

Contract date of Completion: 15/03/2021

Measurement-

(1) Providing and fixing of typical or mass informative signboard with logo as per MORD Specification and drawing etc. - all comp. sh as per specification and direction of G. S. C.

1 No

(2) Clearing, canal grubbing road land including uprooting wild vegetation, grass, vegetation, bushes, shrubs, saplings and felled of growth upto 500 mm and disposal of unserviceable material etc. - all comp. sh as per

Continuation

Particulars	Details of actual measurement			Contents of area
	No.	L.	B.	
Spec. 8' cube and direction of G.I.C.				
2x 30 x 30.00 x 0.70				1260.00 m ³
2x 30 x 30.00 x 0.70				1260.00 m ³
2x 30 x 30.00 x 0.70				1260.00 m ³
2x 20 x 30.00 x 0.70				840.00 m ³
2x 4 x 10.00 x 0.70				56.00 m ³
				<u>1676.00 m³</u>
∴ Area in hectare				<u>0.47 ha.</u>

3) Earthwork in excavation for foundation of structures upto 3.00m depth as per drawing and technical specification etc. do all comp. etc. as per direction of G.I.C.

(3.00 x 2.00) m Box Cell Culvert				
1x 1.00 x 6.50 x 2.00	Ar.	Ar.	Ar.	52.00 m ³
2x 2.25 x 0.60 x 1.90	Ar.	Ar.	Ar.	5.13 "
2x 2.30 x 0.50 x 2.10	Ar.	Ar.	Ar.	4.83 "
				<u>61.96 m³</u>

(4) Sand filling in foundation trenches etc. do all comp. etc. as per drawing, specification and direction of G.I.C.

1x 3.80 x 6.00 x 0.10				2.28 m ³
4x 2.10 x 0.40 x 0.10				0.34 "
				<u>2.62 m³</u>

(5) Providing P.C.C. grade M15 concrete in open foundation trenches as levelling course as per drawing etc. do all comp. etc. as per specification and direction of G.I.C.

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
	1x	3.80	2.00	0.10	= 2.80 m ³
	4x	2.10	0.40	0.10	= 0.34 "
					<u>3.14 m³</u>

(6) Supplying, fitting and placing HYSD bar reinforcement in substructure as per detailed drawing, design, spec & code and as per direction of E.I.C.

10 mm ϕ reinforcement bar

Raft top & bottom main bar

	12x	8.07	=	96.84 m
	65x	3.87	=	251.55 m
	32x	1.90	=	60.80 m

Abt. Vertical inner face

	62x	2.80	=	173.60 m
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R. wall Vertical both face

	88x	2.80	=	246.40 m
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Raft corner bar

	128x	2.22	=	284.16 m
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Distribution bar

	40x	6.00	=	240.00 m
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	22x	6.00	=	132.00 m
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Stirrups 44 x 1.36 = 59.84

Chairs 15 x 1.20 = 18.00

			=	1563.19 m
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% wt. of 10 mm ϕ steel bar

	=	1563.19 x 0.62	=	969.18 kg
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12 mm ϕ reinforcement bar

Abt. Vertical bar

	62x	4.74	=	293.88 m
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% wt. of steel = 293.88 x 0.89 = 261.55 kg

Continuation

1230.73 kg.

12/07/21
J.E

10 mm ϕ reinforcing bar

$$\text{Abt. } \underline{\hspace{1cm}} \quad 22 \times 6.00 = 132.00 \text{ €}$$
$$= 132.00 \times 0.62 = 81.84 \text{ m}$$

Haunch bar

$$82 \times 1.20 = 98.40 \text{ m}$$

R. wall	$88 \times 2.45 = 215.60 \text{ m}$
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₹ 14.00 cm

$\therefore$ wt. of 8 mm ϕ steel bar

$$F = 314.00 \times 0.39 = 122.46 \text{ kg.}$$

204.30 Kg.

Trick 2 initial and
checked by me
22/7/21

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
(1) Supplying, fitting and placing HYSD bar reinforcement in sub-structure etc. - do - all comp. as per detailed drawing, design, specification and direction of E. D. Co.					
12 mm ϕ reinforcement bar					
Slab main bar					
$\downarrow$	51	3.87		$= 197.37 \text{ m}$	
chairs	15	1.20		$= 18.00 \text{ m}$	
				215.37 m	
$\therefore$ Wt. of 12 mm ϕ bar					
$= 215.37 \times 0.89$				$=$	191.68 kg.
Parapet long bar					
$\downarrow$	16	3.87		$= 61.92 \text{ m}$	

$\therefore$ Wt. of 12 mm ϕ steel bar
~~main~~ $= 61.92 \times 0.89 = 55.11 \text{ kg}$

~~10 mm ϕ reinforcement bar~~

12 mm ϕ reinforcement bar

Parapet stirrups

$104 \times 1.14 = 118.56 \text{ m}$

$\therefore$ Wt. of Steel $= 118.56 \times 0.89 = 105.52 \text{ kg}$

10 mm ϕ reinforcement bar

Slab top main bar

$\downarrow$ $32 \times 3.87 = 123.84 \text{ m}$

Distt. $\downarrow$ $40 \times 6.00 = 240.00 \text{ m}$

Parapet $\downarrow$ $16 \times 3.87 = 61.92 \text{ m}$

~~Distt long~~

427.76 m

$\therefore$ Wt. of 10 mm ϕ steel bar

$\downarrow$ $= 427.76 \times 0.62 = 265.21 \text{ kg.}$

Prepared & initial checked by me.
 In

Continuation

562.41 kg.

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
all complete job as per specification and direction of E. I/c.					
	1x	3.52 x m	5.20 x m	0.60 = m	10.92 m ³
	1x	3.40 x m	5.20 x m	0.60 = m	10.61 "
					<u>21.53 m³</u>
07/08/2021					
Subhab					
07/08/21					
Date of entry : 17/09/2021					

(1) Earthwork in excavation for foundation of structures up to 3.0m depth as per drawing, technical

specification and direction of E. I/c.

Box (3.00 x 2.00) m

$$1 \times 8.00 \times 0.30 \times 1.45 = 3.48 \text{ m}^3$$

$$1 \times 8.00 \times 0.30 \times 1.40 = 3.36 "$$

$$\underline{6.84 \text{ m}^3}$$

(2) Sand filling in foundation trench etc. - do - all Comp. job as per drawing, specification and direction of E. I/c.

Box (3.00 x 2.00) m

$$2 \times 8.00 \times 0.30 \times 0.10 = 0.48 \text{ m}^3$$

(3) Supplying, fitting and placing HYSD bar reinforcement in substructure as per detailed drawing, design, specification and as per direction of E. I/c.

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
<u>10 mm ϕ reinforcement bar</u>					
4 x 7 Nos = 28 Nos x 7.80 m					218.40 m
$\therefore$ wt. of 10 mm ϕ bar					
= 218.40 x 0.62					= 135.41 kg.
<u>8 mm ϕ reinforcement bar</u>					
2 x 41 = 82 Nos x 2.10 m					
					= 172.20 m
$\therefore$ wt. of 8 mm ϕ bar					
= 172.20 x 0.39					= 67.16 kg.
					<u>202.57 kg.</u>

(4) Providing R.C.C. m/s grade of concrete in Box Culvert etc. - all comp. s/s as per design, drawing, specification and direction of E. S/O.

Box (3.00 x 2.00) m

$$2 \times 8.00 \times 0.30 \times 1.50 = 7.20 \text{ m}^3$$

19/09/2021

J.E.

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	

Record Entry

(1) Proven Laminar sub base

grading II

3	X	1.25	X	1.05	X	0.100	=	0.39M ³
2	X	5.40	X	2.50	X	0.100	=	2.50M ³
3	X	4.40	X	2.50	X	0.100	=	3.00M ³
2	X	5.50	X	1.90	X	0.100	=	2.09M ³
4	X	6.40	X	3.40	X	0.100	=	7.20M ³
2	X	4.40	X	1.75	X	0.100	=	1.40M ³
1	X	3.40	X	1.40	X	0.100	=	0.30M ³
2	X	4.50	X	2.10	X	0.100	=	1.89M ³
2	X	5.40	X	1.60	X	0.100	=	1.60M ³

3	X	3.50	X	2.50	X	0.100	=	2.62M ³
2	X	1.50	X	1.40	X	0.100	=	0.30M ³
2	X	2.40	X	0.50	X	0.100	=	0.20M ³
3	X	4.40	X	3.40	X	0.100	=	3.60M ³
5	X	3.40	X	2.50	X	0.100	=	3.75M ³
3	X	4.40	X	1.50	X	0.100	=	1.80M ³
2	X	5.40	X	2.60	X	0.100	=	2.60M ³
2	X	4.40	X	2.40	X	0.100	=	1.60M ³
3	X	2.40	X	1.50	X	0.100	=	0.90M ³
2	X	4.40	X	2.50	X	0.100	=	2.00M ³
4	X	3.40	X	2.40	X	0.100	=	2.40M ³
2	X	2.40	X	2.40	X	0.100	=	0.80M ³
3	X	2.40	X	1.50	X	0.100	=	0.90M ³
2	X	4.50	X	2.25	X	0.100	=	2.02M ³
1	X	4.40	X	0.50	X	0.100	=	0.20M ³

Continuation

46.06M³

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
			B.F.		46.06M ³
2	X	3.00	2.50	0.100	1.50M ³
5	X	2.00	2.00	0.100	2.00M ³
3	X	3.00	3.00	0.100	2.70M ³
1	X	4.50	2.10	0.100	0.94M ³
2	X	5.00	2.50	0.100	2.50M ³
1	X	3.50	1.90	0.100	0.66M ³
2	X	6.00	2.20	0.100	2.64M ³
3	X	3.00	2.00	0.100	1.80M ³
3	X	2.00	1.50	0.100	0.90M ³
2	X	5.00	2.25	0.100	2.25M ³
4	X	4.00	2.00	0.100	3.20M ³

2	X	3.50	1.90	0.100	1.33M ³
1	X	4.50	2.00	0.100	0.90M ³
4	X	4.00	3.00	0.100	4.80M ³
5	X	3.00	2.50	0.100	3.75M ³
2	X	3.00	3.00	0.100	1.80M ³
1	X	4.00	1.70	0.100	0.68M ³
2	X	5.50	2.50	0.100	2.75M ³
1	X	3.00	0.90	0.100	0.27M ³
3	X	6.00	2.70	0.100	4.86M ³
1	X	2.50	0.80	0.100	0.20M ³
2	X	3.20	1.85	0.100	1.18M ³
2	X	6.00	2.50	0.100	3.00M ³
1	X	4.00	1.80	0.100	0.72M ³
3	X	5.50	2.00	0.100	3.30M ³
1	X	3.00	0.80	0.100	0.24M ³

Continuation

96.93M³

Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
⑥ Horn and fixing Traffic sign					
(i) 6 square regulated -					28 NA
(ii) 6 square irregular -					14 NA
(iii) 6 square x 450mm -					8 NA
⑦ Horn and laying Rumble strip					
8 x 5m x 3.0 x 0.50 =					60.00 ft ²
⑧ Horn and fixing boundary pillar					112 NA
⑨ Planting of Trees by the road side → 1m =					167 NA
⑩ Horn and laying Road Marking					
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 10 x 30 x 0.100 =					60.00 ft ²
2 x 4 x 30 x 0.100 =					24.00 ft ²
2 x 1 x 24 x 0.100 =					4.80 ft ²
Continuation					688.00 ft ²

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Particulars	Details of actual measurement				Contents of area
	No.	L.	B.	D.	
<u>Material Statement :</u>					
1) Soil	—			1435.54 m ³	
2) Stone - up to 100 mm	—			744.37 m ³	
3) Stone - chips	—			622.46 m ³	
4) Stone Boulder	—			25.85 m ³	
5) Stone - Screening	—			125.55 m ³	
6) Bricks	—			7200 Nos.	
7) Moorum	—			15.10 m ³	
8) Emulsion (SS-1)	—			3.55 MT	
9) Emulsion (RS-1)	—			4.735 MT	
10) Bitumen	—			45.554 MT	
11) Sand	—			140.31 m ³	

Bitumen / Emulsion etc

(1) Emulsion (RS-1)

Supplier - MUBH Bitcon Pvt. Limited

Invoice No. - FY2021M2301M3139

dt. - 31/12/2020

Qty of RS-1 - 4.800 MT

(2) Bitumen

Supplier - Indian oil Corporation Ltd.

Vide DOC No. - BH5520208192

dt. - 15/03/2021 - Qty. = 16.830 MT

Vide DOC No. - BH5520208884

dt. - 16/03/2021 - Qty. = 17.610 MT

Vide DOC No. - BH5520210844

dt. - 19/03/2021 - Qty. = 11.320 MT

Total Qty. = 45.810 MT

Continuation

07/03/21
T.E