

POST TENSIONING FORMAT FOR PSC GIRDER

General information:

Name & Location of Bridge: Construction Of 301.00m Long PSC Girder Bridge Over the River Kartoa at Ch 4500 on Chatra GC-Gilabari Ghat Via Nischintobati Primary School Road, Road ID : 185764034			District: Rangpur	Upazila: Pirganj
Span/Girder Ref: Span-1, Girder-2	Girder Length (m): 43m		Cable Ref. to be Stressed 01 of 04	
Girder Casting Date: 20-04-2026	Stressing Stage of Cable : 02	Jacking End 1: L709046		
Date of Tensioning: 12-05-2026		end Ref: End 2: L709047		

Design information:

Dia of Strand (mm): 15.24mm	No. of Strand Cable: 19 nos	Anchorage Brand: Decomate	UTS of Strand (N/mm2): 1860	M. of Elasticity, E (MPa): 197000
Area of Strand (mm2): 140	Area of Cable, A (mm2): 2660	Design Jacking Force P: 3750 Kn		
Design Elongation Each end (mm):	Design Elongation for Gripping Length (mm): N/A	Actual Gripping Length (mm): 560	Corrected Elongation for Grip Length δ(mm): 4.00	
Design Cable Slip (mm): 6mm	Design Conc. St. during Tensioning (N/mm2): 36 MPa	Actual Conc. St at the time of Tensioning (N/mm2): 43.06 MPa		


Stressing & Jack information:

Pump Model No. P1: 710570 P2: 710567	Pressure gauge Model: M1: MPC-237219E M2: MPC-256050C	Tensioning Ram Area (m2): TA1: TA2:	Blocking Ram Area (Cm2): BA1: BA2:
Actual Area of Cable, A1 (mm2): 2707.50	Modulus of Elasticity, E1(MPA): 200400	Corrected Elongation (mm) for Actual A1 & E1: $\delta * (A * E / A1 * E1)$: 141.04 mm	
Jack Pres. With Jack loss (BAR) Kg/cm2. J1: P/(TA1*efficiency): J2: P/(TA2*efficiency):	Calibrated Jack press. (Kg/cm2) CJ1: 438.61 CJ2: 442.07	Initial Jack Press. (Kg/cm2) ICJ1: 79.24 ICJ2: 87.25	Initial Marking: IRJ1: 48 IRJ2: 46
Actual calculated Elongation for Grip Length, δ1 (mm): 3.86 mm	Gross Slip of Cable (mm): (Final Elong. - Net Elong.)	Net Slip at Jack end after lock-off (mm): (Gross Slip - Calcul. Elong. δ 1 for Grip length)	
Blocking Pressure Kg/Cm2): E1: Auto Block E2: Auto Block	At end 1	At end 2	At end 1
	165-156=9	161-153=8	9-3.86=5.14
			8-3.86=4.14

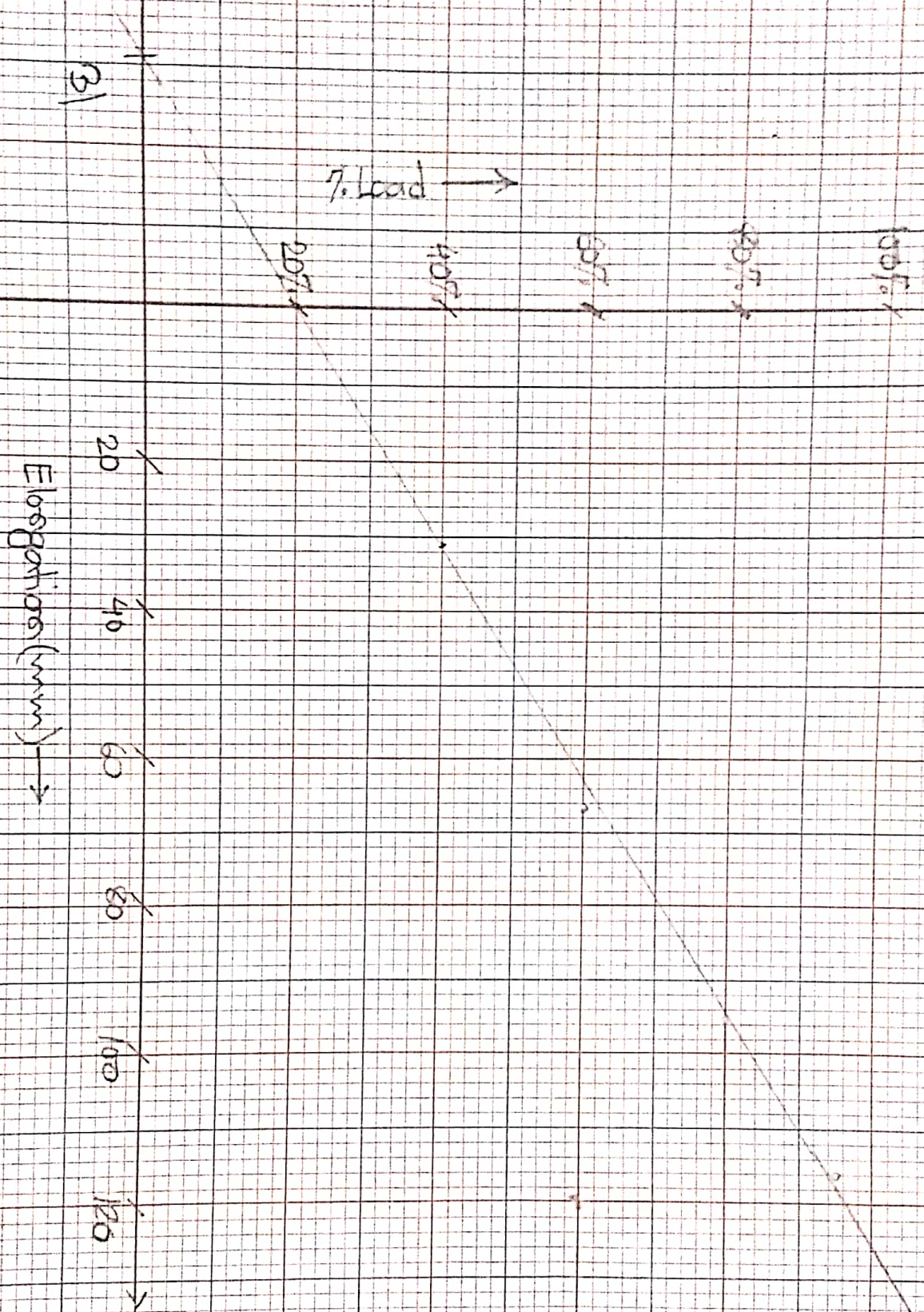
Record of Stressing & Elongation:

Avg. % of Design Load	Actual Applied Pressure		Calculated Gauge Pressure Kg/cm2		Reading for Elongation (mm)		Measured Elongation At both Jacking end (mm)			Corre ction Factor For ICJ	Final/ Total Elongation. (mm)	Averag e Elonga tion At each End.	Remarks (Average Slip at each end)		
	Col(1)		Col(2)		Col(3)		Col(4)=(Col 3-IRJ)							Col(5)	Col(6)=(4+5)
	1	2			1	2	1	2	Avg.					1	2
	KN	TON	Kg/cm2	Kg/cm2	-	-	-	-	-		-	-			
20	750	76.48	79.24	87.25	48	46	-	-	-				5.14+4.14		
40	1500	152.96	169.08	175.96	80	76	32	30	31				2		
60	2250	229.44	258.92	264.66	115	112	67	66	66.5				=4.64		
80	3000	305.91	348.76	353.37	145	140	97	94	95.5						
95	3562.5	363.27	416.15	419.90	165	161	117	115	116	31		147	26		
98	3675	374.75	429.62	433.20											
100	3750	382.39	438.61	442.07											
102	3825	390.04	447.59	450.94											
105	3937.5	401.51	461.07	464.25											
Lock off					156	153									

Client's Representative


 Consultant's Representative

Contractor's Representative



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Span/Girder Ref: Span-1, Girder-2	Girder Length (m) 43m		Cable Ref. to be Stressed: 02 of 04	
Girder Casting Date: 20-04-2026	Stressing Stage of Cable : 02		Jacking end Ref: End 1: 17090M6 End 2: 17090M7	
Date of Tensioning: 12-05-2026				

Design Information:

Dia of Strand (mm): 15.24mm	No. of Strand Cable: 19 nos	Anchorage Brand: Decomate	UTS of Strand (N/mm²): 1860	M. of Elasticity, E (MPa): 197000
Area of Strand (mm²): 140	Area of Cable, A (mm²): 2660	Design Jacking Force P: 1750 Kn		
Design Elongation Each end (mm):	Design Elongation for Gripping Length (mm): N/A	Actual Gripping Length (mm): 560	Corrected Elongation for Gripping Length (mm): 400	
Design Cable Slip (mm): 6mm	Design Conc. St. during Tensioning (N/mm²): 36 MPa		Actual Conc. St at the time of Tensioning (N/mm²): 41.06 MPa	

Stressing & Jack Information:

Pump Model No.: P1: 710570 P2: 710567	Pressure gauge Model: M1: MPC-237219E M2: MPC-256050C	Tensioning Ram Area (cm²): TA1 TA2	Blocking Ram Area (cm²): BA1 BA2
Actual Area of Cable, A1 (mm²): 2707.50	Modulus of Elasticity, E1(MPa): 200400	Corrected Elongation (mm) for Actual A1 & E1: $\delta \cdot (A \cdot E / A1 \cdot E1) = 143.93$ mm	
Jack Pres. With Jack loss (BAR) Kg/cm²: J1: P/(TA1*efficiency) J2: P/(TA2*efficiency)	Calibrated Jack press (Kg/cm²): CJ1: 438.61 CJ2: 442.07	Initial Jack Press (Kg/cm²): ICJ1: 79.24 ICJ2: 87.25	Initial Marking: IRJ1: 48 IRJ2: 48
Actual calculated Elongation for Gripping Length, d1 (mm): 3.86 mm	Gross Slip of Cable (mm) (Final Elong - Net Elong)	Net Slip at Jack end after rock off (mm) (Gross Slip - Calcul. Elong. d1 for Gripping length)	
Blocking Pressure Kg/Cm²: E1: Auto Block E2: Auto Block	At end 1	At end 2	At end 1
	160-152=8	161-153=8	8-3.86=4.14 8-3.86=4.14

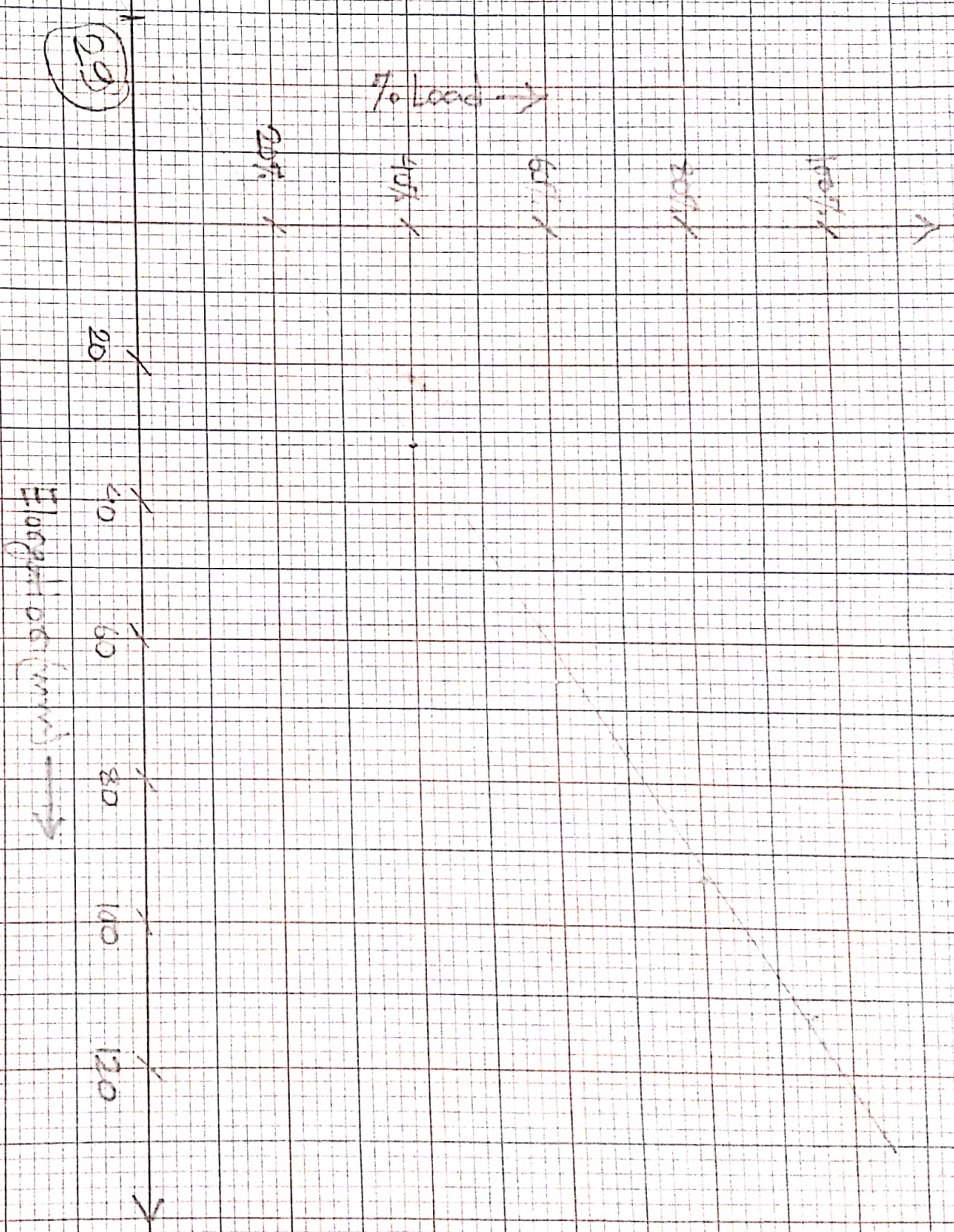
Record of Stressing & Elongation:

Avg. % of Design Load	Actual Applied Pressure		Calculated Gauge Pressure Kg/cm ²		Reading for Elongation (mm)		Measured Elongation At both Jacking end (mm)			Correction Factor For ICJ	Final/ Total Elongation. (mm)	Average Elongation At each End.	Remarks (Average Slip at each end)		
	Col(1)		Col(2)		Col(3)		Col(4)=(Col 1-IRJ)							Col(5)	Col(6)=(4+5)
	1	2	1	2	1	2	1	2	Avg.					1	2
	KN	TON	Kg/cm ²	Kg/cm ²	-	-	-	-	-	-	-	-			
20	750	76.48	79.24	87.25	48	48	-	-	-	-	-	-	4.14+4.14		
40	1500	152.96	169.08	175.96	80	80	32	32	32	-	-	-	2		
60	2250	229.44	258.92	264.66	115	113	67	65	66	-	-	-	=4.14		
80	3000	305.91	348.76	353.37	144	140	96	92	94	-	-	-	< 6		
95	3562.5	363.27	416.15	419.90	160	161	112	113	112.5	29	-	141.5	OK		
98	3675	374.75	429.62	433.20											
100	3750	382.39	438.61	442.07											
102	3825	390.04	447.59	450.94											
105	3937.5	401.51	461.07	464.25											
Lock-off					152	153									

Client's Representative


Consultant's Representative

Contractor's Representative



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Span/Girder Ref: Span-1, Girder-2	Girder Length (m): 43m	Cable Ref. to be Stressed: 03 of 04	
Girder Casting Date: 20-04-2026	Stressing Stage of Cable : 02	Jacking end Ref: End 1 : L7090m	End 2 : L7094.7
Date of Tensioning: 14-05-2026			

Design Information:

Dia of Strand (mm): 15.24mm	No. of Strand Cable: 19 nos	Anchorage Brand: Deconate	UTS of Strand (N/mm²): 1860	M. of Elasticity, E (MPa): 197000
Area of Strand (mm²): 140	Area of Cable, A (mm²): 2660	Design Jacking Force P : 3750 Kn		
Design Elongation Each end (mm):	Design Elongation for Gripping Length (mm): N/A	Actual Gripping Length (mm): 160	Corrected Elongation for Grip Length (mm): 4.00	
Design Cable Slip (mm): 6mm	Design Conc. St. during Tensioning (N/mm²): 36 MPa	Actual Conc. St. at the time of Tensioning (N/mm²): 41.86 MPa		

Stressing & Jack Information:

Pump Model No: P1: 710570 P2: 710567	Pressure gauge Model: M1: MPC-237219E M2: MPC-256050C	Tensioning Ram Area (m²): TA1 TA2	Blocking Ram Area (cm²): BA1 BA2
Actual Area of Cable, A1 (mm²): 2707.50	Modulus of Elasticity, E1 (MPa): 200400	Corrected Elongation (mm) for Actual A1 & E1: $\delta \cdot (A^*E/A1 \cdot E1) = 148.76$ mm	
Jack Pres. With Jack loss (BAR) Kg/cm²: J1 P/(TA1*efficiency) J2 P/(TA2*efficiency)	Calibrated Jack press. (Kg/cm²): CJ1: 438.61 CJ2: 442.07	Initial Jack Press. (Kg/cm²): ICJ1: 79.24 ICJ2: 87.25	Initial Marking: IRJ1: 47 IRJ2: 45
Actual calculated Elongation for Grip Length, (l) (mm): 1.86 mm	Gross Slip of Cable (mm): (Final Elong. - Net Elong.)	Net Slip at Jack end after lock off (mm): (Gross Slip - Calcul. Elong. (l) for Grip length)	
Blocking Pressure Kg/cm²: E1: Auto Block E2: Auto Block	At end 1: 161-152=9	At end 2: 157-149=8	At end 1: 9-3.86=5.14 At end 2: 8-3.86=4.14

Record of Stressing & Elongation:

Avg. % of Design Load	Actual Applied Pressure		Calculated Gauge Pressure Kg/cm ²		Reading for Elongation (mm)		Measured Elongation At both jacking end (mm)			Correction Factor For ICI	Final/ Total Elongation. (mm)	Average Elongation At each End.	Remarks (Average Slip at each end)			
	Col(1)		Col(2)		Col(3)		Col(4)-(Col 1-IRJ)							Col(5)	Col(6)-(4+3)	
	1	2	1	2	1	2	Avg	1	2							
	KN	TON	Kg/cm ²	Kg/cm ²												
20	750	76.48	79.24	87.25	47	45							5.14 + 4.14			
40	1500	152.96	169.08	175.96	80	80	33	35	34				2			
60	2250	229.44	258.92	264.66	107	104	60	59	59.5				= 4.64			
80	3000	305.91	348.76	353.37	134	132	87	89	88							
95	3562.5	363.27	416.15	419.90	161	157	114	112	113	31		144	2.6			
98	3675	374.75	429.62	433.20												
100	3750	382.39	438.61	442.07									OK			
102	3825	390.04	447.59	450.94												
105	3937.5	401.51	461.07	464.25												
Lock-off					152	149										

Client's Representative

Consultant's Representative

Contractor's Representative

Q1

70 Load →

Elongation (mm) →

25
40
60
80
100
120

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Date of Tensioning: 12-05-2026		End Ref:	End 2: L709047

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Design Elongation Each end (mm):	Design Elongation for Gripping Length (mm): N/A	Actual Gripping Length (mm): 560	Corrected Elongation for Grip Length d(mm): 4.00	
Design Cable Slip (mm): 6mm	Design Conc. St. during Tensioning (N/mm2): 36 MPa		Actual Conc. St at the time of Tensioning (N/mm2): 43.06 MPa	

Stressing & Jack information:

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Actual Area of Cable, A1 (mm2): 2707.50	Modulus of Elasticity, E1(MPA): 200400	Corrected Elongation (mm) for Actual A1 & E1: $\delta * (A * E / A1 * E1)$: 148.76 mm	
Jack Pres. With Jack loss (BAR) Kg/cm2. J1: P/(TA1*efficiency): J2: P/(TA2*efficiency):	Calibrated Jack press. (Kg/cm2) CJ1: 438.61 CJ2: 442.07	Initial Jack Press. (Kg/cm2) ICJ1: 79.24 ICJ2: 87.25	Initial Marking: IRJ1: 42 IRJ2: 45
Actual calculated Elongation for Grip Length, d1 (mm): 3.86 mm	Gross Slip of Cable (mm): (Final Elong. - Net Elong.)	Net Slip at Jack end after lock-off (mm): (Gross Slip - Calcul. Elong. d1 for Grip length)	
Blocking Pressure Kg/Cm2): E1: Auto Block E2: Auto Block	At end 1	At end 2	At end 1
	162-154=8	167-158=9	8-3.86=4.14 9-3.86=5.14

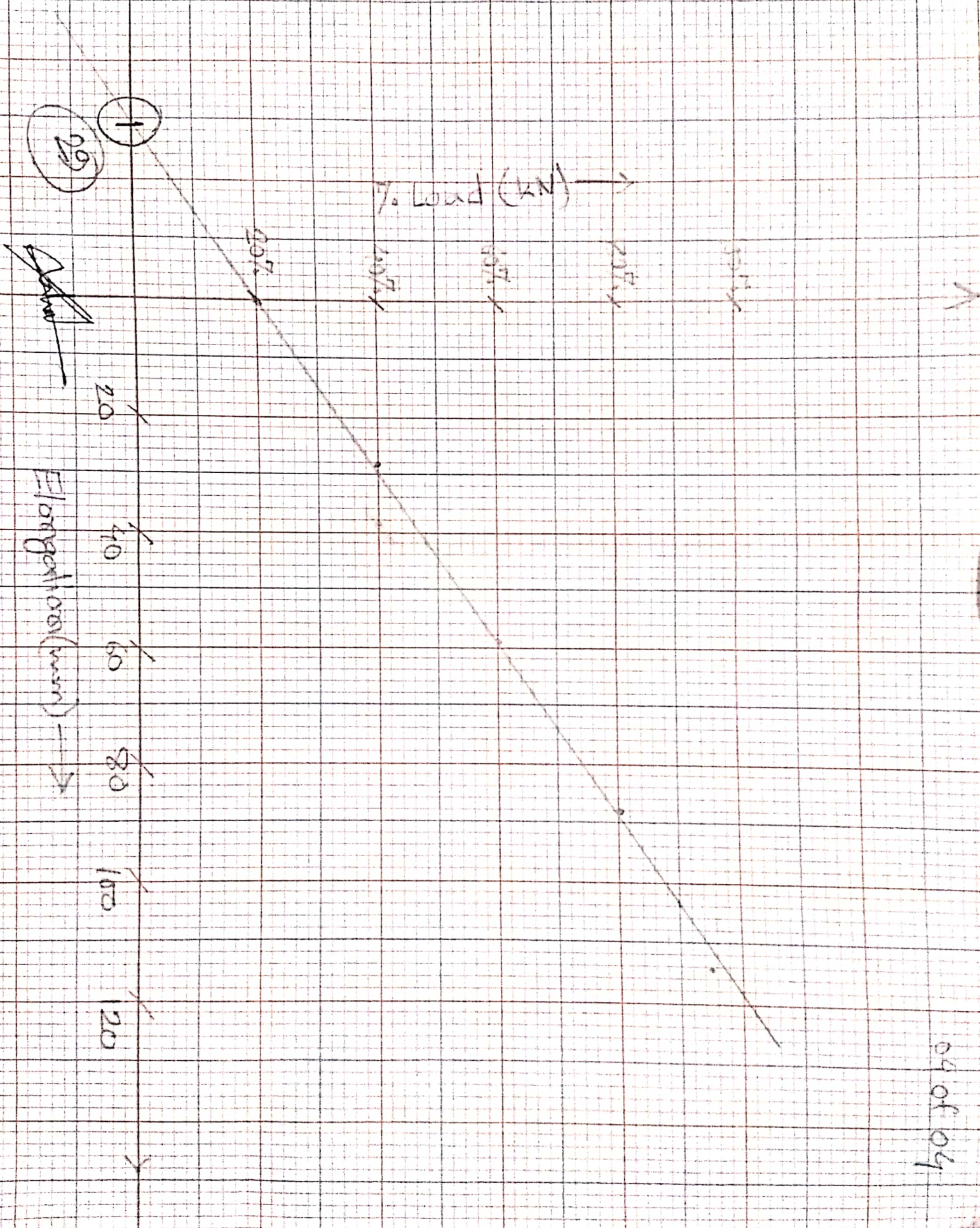
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Avg. % of Design Load	Actual Applied Pressure		Calculated Gauge Pressure Kg/cm2		Reading for Elongation (mm)		Measured Elongation At both Jacking end (mm)			Corre ction Factor For ICJ	Final/ Total Elong ation. (mm)	Averag e Elonga tion At each End.	Remarks (Average Slip at each end)		
	Col(1)		Col(2)		Col(3)		Col(4)=(Col 3-IRJ)							Col(5)	Col(6)=(4+5)
	1	2			1	2	1	2	Avg.					1	2
	KN	TON	Kg/cm2	Kg/cm2	-	-	-	-	-		-	-			
20	750	76.48	79.24	87.25	42	45	-	-	-				4.14+5.14		
40	1500	152.96	169.08	175.96	70	74	28	29	28.5				2		
60	2250	229.44	258.92	264.66	101	104	59	59	59				= 4.64		
80	3000	305.91	348.76	353.37	130	133	88	88	88				< 6		
95	3562.5	363.27	416.15	419.90	156	160	114	115	114.5						
98	3675	374.75	429.62	433.20	162	167	120	122	121	29		150			
100	3750	382.39	438.61	442.07									OK		
102	3825	390.04	447.59	450.94											
105	3937.5	401.51	461.07	464.25											
Lock-off					154	158									

Client's Representative

Consultant's Representative

Contractor's Representative



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