File No.SCR-HQ0ENGG(SOR)/13/2020-Dy CE/WORKS/SCR

SOUTH CENTRAL RAILWAY
OFFICE OF THE PRINCIPAL CHIEF ENGINEER
5TH FLOOR, RAIL NILAYAM, SECUNDERABAD - 500071

W.55/I/1/ Quality control/ Site records Dt: 26.05.2022.

Sr. DENs/Co-ord/ SC, GTL, BZA, GNT, HYB & NED
Dy.CE/EWS/LGD

Sub: System improvements for maintaining Site records in contracts for ensuring quality of work -reg.

* * *

Ensuring good quality of works in the field is prime responsibility of Engineer in-charge of the work. Various tools and aids are available to the field Engineers in the form of specifications, IS codes, contract conditions, various field tests and laboratory tests etc. In spite of these, many a times, the quality of works is found not up to the mark due to not ensuring quality of materials which are brought by contractor to the work site for execution and not following standard procedure as per specifications during execution of works.

A list of registers required to be maintained commonly for **both building and bridge works** and **exclusively for Bridge works** is mentioned below.

A. Common Registers to be maintained for both Buildings and Bridge works(18 registers).

1. Site order book (E – 1123),
2. Field book (E – 1122),
3. Technical register,
4. Quality control register. {consists of (i) Tests for Cement Steel & Water, (ii) Sieve Analysis for CA & FA, (iii) Bulkage of sand, (iv) Bricks tests, (v) Compressive strength of Concrete cube register, (vi) Slump test and (vii) Timber test},
5. Cement register,
6. Steel register,
7. Wood work register,
8. Anti corrosive treatments register,
9. Other consumable items register,
10. Daily contractor's labour register,
11. Daily progress of work register,
12. Tools and plants of Contractor at site register,
13. Bill register (no annexure),
14. Hindrance Register,
15. Drawing issue register,
16. Piling Register,
17. Structural Steel Register,
18. RMC Register.

B. Registers to be maintained exclusively for Bridge works (09 Registers).

19. Grouting record register,
20. Cable profile register,
21. Permeability Concrete test register,
22. Pile passing register,
23. Well passing register,
24. Record of load testing of foundation,
25. Record of load testing of PSC Girders,
26. Camber Register,
27. Stressing cum Elongation register.

Signature Not Verified
Digitally signed by ROLLAKUPPASWAMY KISHORE
Date: 2026.11.11 12:05:12 IST
Reason: IREPS-CRIS
Location: New Delhi

Divisions are advised to ensure that all registers duly completed and signed by both parties to the contract and should be submitted during passing of bills. A certificate mentioning that items for which payment is proposed are meeting the specifications passed the requisite tests and records thereof have been duly maintained.

This supersedes all earlier instructions issued regarding maintenance of site registers.

This issues with the approval of PCE.

Digitally Signed by Alla Achuta Rao
Date: 26-05-2022 11:30:06
Reason: Approved

Encl: Compiled list of site registers along with proformas.

Chief Engineer/Works

Copy to: PCE, CPD/SD, CPD/BW, CTE, CBE, CGE, CE/TM, CE/P&D,
CE/TP, CE/SD, CE/RSW, CWM/CPOH/WS/RYP – for kind information.
DRMs/SC, HYB, BZA, GTL, GNT & NED – for kind information.
CVO/Engg – for kind information.

दक्षिण मध्य रेलवे

मण्डलरेल (कायय)

काकायायलय

SOUTH CENTRAL RAILWAY

DRM (W)'s Office,
(Division).....Location.....

1. 1st page shall be designated for General Information mentioned as under.

Register issued on:

Name of work:.....

Letter of Acceptance:.....

Contract Agreement No.....

Value of Work:.....

Revised Value of Work:.....

Date of Completion:.....

Extended date of Completion:.....

No. of Machine Numbered Pages:.....

Railways Officials

Senior Section Engineer.....Contact No.....

Asst. Divisional Engineer.....Contact No.....

Sr. Divisional Engineer.....Contact No.....

Divisional Engineer.....Contact No.....

Contractor's Officials:

Contractor's Authorised Representative:.....Contact No.....

Contract's Engineer.....Contact No.....

Signature of SSE/Works

Signature of Contractor's
Authorised Representative/Engineer

SITE ORDER BOOK (E - 1123)

This book contains ….. Pages
from page no……..to page no……....

Sd
Sr.DEN/DEN

Note: 1. Site order book shall be opened for every agreement by Supervisor. The first entry should be of the date of mark out/commencement of work, which should be enterd by Supervisor.
2. Pages should be machine numbered. The first page should indicate starting page and ending page and below which Sr.DEN/DEN will sign.

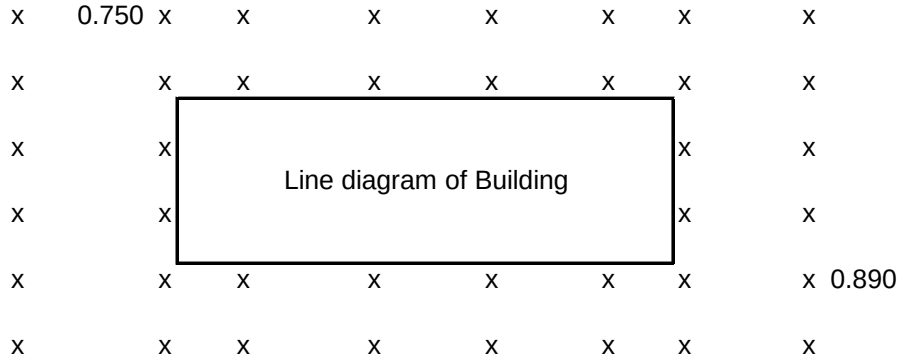
Sl. No.	Date	Instruction issued, with Signature and Designation of the inspecting Official	Signature of the Executive Subordinate	Signature of Contractor/ Authorised Representative	Compliance Particulars

FIELD BOOK (E - 1122)

S.No.	Date	Particulars about quality of work, materials, workmanship and Qualification of assistance and helpers of Contractor	Signature of Site Engineer	Remarks

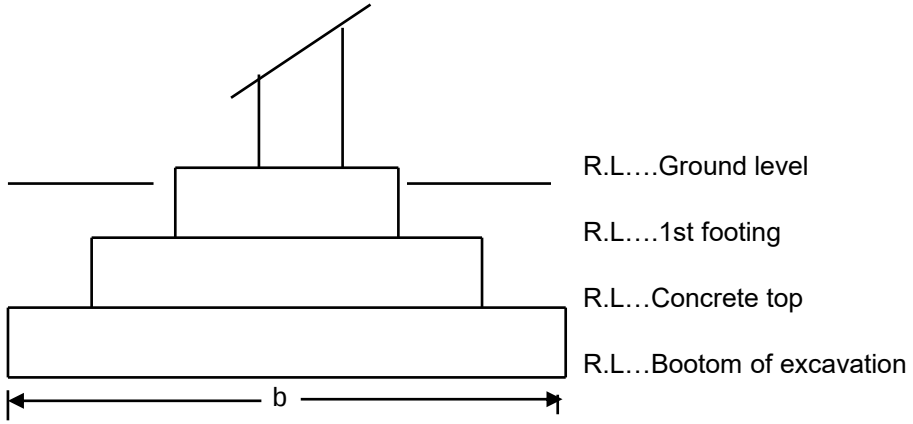
TECHNICAL REGISTER

1 Plan with initial ground levels shall be recorded in this register.



2 All initial ground levels, final levels after excavation and earth work calculations shall be recorded in technical register.

3 Foundation cross sections at every change of section shall be drawn with all details,



TECHNICAL REGISTER

4. Bar bending schedule for all reinforcement work shall be recorded.

Sl.No.	Description	Shape of Bar	Dia. Of bar	Cut length	No's provided	Laps	Total length	Total weight	Remarks

5. Any modifications from standard drawing or agreement shall be recorded in Technical register.

6. Any items or measurements which has no separate register, shall be entered in technical register.

Quality Control Register

Note: 1. A separate page shall be opened for each test.
2. Date of testing shall be recorded for every test.

Cement:

Date	Test	Value
	Fineness	
	Soundness	
	Initial Setting time	
	Final Setting time	
	Compressive strength	

Steel:

Date of testing	Sl.No.	Type and nominal Size of bar	Carbon percent.	Ultimate Tensile Stress	Yield Stress	Elongation Percent.	Unit weight.

Quality Control Register

Water:

Date	S.No.	Characteristics	Value
	1	Turbidity	
	2	Colour Haten units	
	3	Taste and odour	
	4	PH value	
	5	Total dissolved solids(mg/l) max.	
	6	Total hardness as $CaCo_3$(mg/l) max.	
	7	Chlorides as Cl_2(mg/l)250	
	8	Sulphates as SO_4(mg/l)max.	
	9	Fluorides as F(mg/l) max.	
	10	Nitrates as NO_3(mg/l) max.	
	11	Calcium as Ca(mg/l) max.	
	12	Iron as Fe(mg/l) max.0.3	
	13	Zinc as Zn(mg/l) max. 5.0	
	14	Mineral Oil(mg/l) max.0.01	
	15	Copper as Cu(mg/l) max. Toxic materials	
	16	Arsenic as As(mg/l) max.	
	17	Cadmium as Cd (mg/l) max.	
	18	Lead as Pb(mg/l)max. 0.05	
	19	Residual free chlorine	

Quality Control Register

Coarse Aggregate:

Date	Test	Value
	Deleterious materials & Organic impurities:	
	Aggregate crushing value	
	Aggregate impact value	
	Aggregate abrasion value	
	Soundness	

Sieve Analysis

IS Sieve Designation	Percentage passing for single sized aggregate of nominal size.						Percentage passing for graded aggregate of nominal size.			
	63 mm	40 mm	20 mm	16 mm	12.5 mm	10 mm	40 mm	20 mm	16 mm	12.5 mm
80 mm										
63 mm										
40 mm										
20 mm										
16 mm										
12.5 mm										
10 mm										
4.75 mm										
2.36 mm										

Quality Control Register

Fine Aggregate:

Deleterious materials & Organic impurities:

Sieve Analysis

Date	IS Sieve Designation	Percentage passing
	10 mm	
	4.75 mm	
	2.36 mm	
	1.18 mm	
	600 microns	
	300 microns	
	150 microns	

Bulkage of Sand:

Date of testing	Initial weight of Speciman	Weight after dried in oven	Difference in weight.

Surface moiture content can be taken from IS 456 - 2000

Quality Control Register

Bricks:

Date	Test	Value
	Compactness	
	Water absorption	
	Afflorescences	
	Dimensions	
	Uniform colour(Yes/No)	
	Sharp, square corners and edges(Yes/No)	
	Free from cracks, chipped surfaces and broken corners(Yes/No)	

Quality Control Register

Concrete

Compressive strength of Cube:

Sl. No.	Date of Casting	Grade of Concrete	Description of Work	07 Days Comressive Strength				Average	Minimun Strength Required
				Due Date for 7 Days Strength	Test Results 07 Days				
					a	b	c		
1	2	3	4	5	6	7	8	9	10

28 Days Comressive Strength				Average	Minimun Strength Required	Sign. of Rly. representative	Sign. of Contractor	Remarks
Due Date for 28 Days Strength	Test Results 28 Days							
	a	b	c					
11	12	13	14	15	16	17	18	19

Quality Control Register

Slump Test:

Date of Testing	Location from where Concrete Speciman collected	Slump value		
		Speciman1	Speciman 2	Speciman 3

Timber:

Date	Description of Door/Window/Ventilator	Well seasoned (Yes/No)	Free from defects(Yes/No)				
			Rots	Fungus attack	Split or twist	Dead knot	Sap wood

CEMENT REGISTER

Sl.No.	Date	Cement Receipt Details				Description of the item of work for which cement is consumed	Quantity consumed in bags	Balance quantity in bags	Signature of		Remarks
		Brand	Date of Manufacturing	Bill No.& Date	Quantity received in bags				Railway Engineer	Contractor/ Authorised Representative	
1	2	3	4	5	6	7	8	9	10	11	12

STEEL REGISTER

NOTE:1. Separate page shall be opened for each diametre of bar.

Sl.No.	Date	Reciepts			Issues		Balance Quantity	Signature		REMARKS
		Brand Name	Bill No.& Date	Quantity received in Tonnes/Kgs.	Quantity consumed on date.	Reference Page No. of Bar-bending schedule.		Railway Supervisor	Contractor/ Authorised Representative.	

WOOD WORK REGISTER

Date of fixing	Description of Door/Window/ Ventilator	Numbers	Size		Name of wood	Weather free from Deffects (Yes/No)	Signature		Remarks
			Frame	Shutter			Railway Engineer	Contractor/ Representative	
Example:									
17/06/2005	Main door	1			Neem	Yes			

Anti-corrossive Treatment Register.

Date	Reciepts			Quantity consumed on date	Balance Quantity	Signature		Description of the item of work for which Material is consumed	Remarks
	Brand Name	Bill No.& Date	Quantity received			Railway Engineer	Contractor/ Authorised Representative		

OTHER CONSUMABLE ITEMS REGISTER

Note:

1. A separate page shall be opened for each material.

Date	Reciepts			Quantity consumed on date	Balance Quantity	Description of the item of work for which Material is consumed	Signature		Remarks
	Brand Name	Bill No.& Date	Quantity received				Railway Engineer	Contractor/ Authorised Representative	

DAILY PROGRESS REPORT

Date	Activity (1)	Activity (2)	Activity (3)	Activity (4)	Siganture		Remarks
					Railway Engineer	Contractor/ Authorised Representative	
Example: 17/06/2005	Earth work excavation at….location, approximate volume of work done….	M20 RCC work at ….location, approximate volume of work done……	……..				

NOTE: In major works number of items of work being operated at a time, in such cases each item of work shall be recorded in separate column with proper details.

DAILY CONTRACTOR's LABOUR REGISTER

Date	Description of work	No. of Persons Engaged			Signature		Remarks
		Skilled	Semi - skilled	Unskilled	Contractor/ Authorised Representative	Railway Official	

TOOLS AND PLANTS OF CONTRACTOR - REGISTER

Sl.No.	Date	Description of T&P	Quantity brought to site in Nos.	Date of deployment of T&P	Whether in working condition or not	Date on which T&P removed from site.	Signature			Remarks
							Contractor	Railway Supervisor	ADEN	
1	2	3	4	5	6	7	8	9	10	11

Hindrance Register

Sl. No.	Nature of Hindrance	Date of occurrence	Date of clearance	Period	Over Lapping Period if any	Weightage of Hindrance	Net Effective days of Hindrance	Remarks & References	Sign. of site Engineer with date	Contractor' s representative with Signature & Date
1	2	3	4	5	6	7	8	9	10	11

Drawing issue Register

Sl. No.	Drg. No. & Revision No. if any	Details of Drg.	Date of issue to the Contractor	Acknowledgement of Contractor/ Remarks	Signature of Railway Engineer
1	2	3	4	5	6

Piling Register

Sl. No.	Pile No.	Date of Boring	Date of Casting	Concrete Grade	Datum level	Depth from Datum	Socketing in Rocks	Level of Pile bottom	Cut off level	Payable Length	Liner top level	Liner bottom level	Payable length of liner	Sign. of site engineer with date	Contractor's representative with Signature & Date
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Structural Steel Register

Sl.No.	Date of Receipt	Designation of Item	Source of Receipt & Chalan No./ Bill No.	Quantity Receipt (MT)	Cum. Qty Received (MT)	Details of MTC	Details of 3rd Party Test Report	Reference of Material passing Register	Item of work in which Consumed	Sign of Rly's Engineer with Date	Sign. of Contractor's Representative. with Date
1	2	3	4	5	6	7	8	9	10	11	12

RMC Register

Sl. No.	Date of Concreting	Location/ Structural/ Member	Estimated Quantity of Concreting	Transit Mixture No. & Qty.	Time of Loading	Time of arrival	Time of discharge Completion	Temperature		Slump		No. of Cubes/ Samples taken	Delivery Challan No. & its File Reference No.	Batch Report No. & its File Reference No.	Cement Content		Type of Cement and Grade	Sign of Rly's Engineer with Date	Sign of Contractor's Representative with Date
								Ambient	Concrete	Reqd.	Actual				As per Approved Mix	As per Batch Report			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

GROUTING RECORD

Bridge No:					
Section:					
Span No.		Grout Mixer No.		Date of Casting	
Girder No.		Type of Grout Mixer		Date of Pre-stressing	
Drawing No.		Pressure Gauge No.		Date of Calibration	
Grout Pump No.		Temperature		W/C Ratio	
Date of Grouting					

Cable			Blockages - Yes/No				Time		Grouting OBS		Cement Consumption		Grouting Pressure	
No.	Length (M)	Duct Dia (mm)	Inlet	Outlet	Vents	Duct	Start	Finish	Vents	Outlets	Theo	Actual	Theo	Actual
1		75												
2		75												
3		75												

CABLE PROFILE RECORDS

Bridge No:																										
Section:																										
Span Details											Date of Casting															
Girder No.											Date of Pre-stressing															
Drawing No.																										
Cable profile ordinates	DISTANCE (X)	X12=	X11=	X10=	X9=	X8=	X7=	X6=	X5=	X4=	X3=	X2=	X1=	X0=	X1=	X2=	X3=	X4=	X5=	X6=	X7=	X8=	X9=	X10=	X11=	X12=
DATE																										
CABLE NO:4	As per GAD																									
	As per Site																									
CABLE NO:3	As per GAD																									
	As per Site																									
CABLE NO:2	As per GAD																									
	As per SIte																									
CABLE NO:1	As per GAD																									
	As per Site																									

PERMIABILITY TEST RECORD						
Bridge No:						
Section:						
S.No.	Date of Casting	Grade of Concrete	Description of work	Date of test	Depth of permeabilty	Signature

Pile Passing Register

Date of Casting	Location	Pile No.	Checking parameters									
			Dia. of Shaft	Depth of Shaft from Bottom of Pile Cap	No. of bulbs if applicable	Dia. of Lower bulb if applicable	Dia. of Upper bulb if applicable	Horizontal Alignment	Vertical Alignment	Deviation	Direction
1	2	3	4	5	6	7	8	9	10	11	12

Remarks (Passed/ Failed)	Defects (If any)	Date of Rectification	Date of Re-Checking	Whether washed the bore to bring specific gravity of slush less than specified or not	Whether the Reinforcement is as per approved Drawings	Cover blocks and spacer rings are provided	Final Remaks (Passed/ Failed)	Sig. of Rly. Representative	Sig. of Contractor	Sig. of ADEN/ AXEN	Remarks
13	14	15	16	17	18	19	20	21	22	23	24

Well Passing Register

PIER/ ABUTMENT NO: **SHAPE OF WELL :**

SIZE OF WELL: **INITIAL CUTTING EDGE LEVEL :**

A) DURING DAILY SINKING:

Date	Tilt	Shift	Whether Tilt is within Permissible Limit	Whether Shift is within Permissible Limit	Correction Measures adopted for Tilt and Shift	After Correction		Depth of Sinking from Bottom of Well Cap	Daily Progress of Well Sinking			Total Depth of Sinking	Signature of Railway Represenative	Signature of Contractor	Remarks
						Tilt	Shift		Starting Time	Ending Time	Depth of Sinking				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

B) PASSING OF WELL

Date	Final Tilt	Final Shift	Final Level of Cutting Edge	Actual Depth of Sinking from Bottom of Well Cap	Depth of Sinking as per Approved Drawing	Signature of Railway Represenative	Signature of Contractor	Remarks
1	2	3	4	5	6	7	8	9

C) BOTTOM PLUGGING

Date	Final Level of Cutting Edge	Final Level of Bottom Plugging	Depth of Bottom Plugging below Cutting Edge	Final Level of top of Bottom Plugging	Approval of Chief Engineer before Bottom Plugging is obtained or Not
1	2	3	4	5	6

Record of Load Testing of Foundation

A) General Load Test

Date	Time	Initial Load in MT	Load added in MT	Total Load in MT	Settlement in MM (Dial Gauge Reading)			Remarks	Sig. of Rly. Representative	Sig. of Contractor
					No.1	No.2	Average			
1	2	3	4	5	6	7	8	9	10	11

B) Routine Vertical Load Test on Pile (IS: 2911- Part-4)

1) Date of Casting of Pile under test :
2) Date of Testing of Pile :
3) Diameter of Pile :
4) a) Safe load on Pile :
   b) Design load for testing of pile :
5) Driven depth of pile :
6) Pile No. :
7) Cement used :
8) Concrete Grade :
9) Cube Strength of :
   7 Days :
   28 Days :
10) Reinforcement used :
11) Type of Jack :
12) Pressure Gauge make :
13) Dial Gauge make and type :
14) Least count of Pressure Gauge :
15) Diameter of Jack Ram :
16) Area of Ram for 3 Jacks :
17) No. of Dial Gauges :
18) Least Count of Dial Gauge :
19) Duration of Stage Load increments :
20) Load Increment :
21) Maximum Settlement :
22) Rebound :
23) Net Settlement :

Record of Load Testing of PSC Girders

Br. No.	Girders		Least count of Dial Gauge	Load for Testing	Max Permitted Deflection	Max Observed Deflection
	Foot path side	Ballast retainer side				
1	2	3	4	5	6	7

Sl. No.	Day	Time	Loading/ Unloading	Dial Gauge Reading					
				End of Span Girders		Middle of Span Girders		End of Span Girders	
				D1	D2	D3	D4	D5	D6
1	2	3	4	5	6	7	8	9	10

Temperature Correction	Net Deflection						% Recovery	Average % Recovery of Deflection for the Span
	End of Span Girders		Middle of Span Girders		End of Span Girders			
	D1	D2	D3	D4	D5	D6		
11	12	13	14	15	16	17	18	19

CAMBER REGISTER

Bridge No:	
Section:	



SPAN	GIRDER NO.	A	B	C	CAMBER IN 'mm' {(A+B)/2} -C	Remarks
S1	G1					
	G2					
	G3					
S2	G4					
	G5					
	G6					
S3	G7					
	G8					
	G9					
S4	G10					

PRESTRESSING CUM ELONGATION RECORD

GIRDER STRESSING REPORT

Bridge No:								
Section:								
Date of casting				Date of Stressing				
Girder No.				Cable No.				
Span Details				Cube Strength				
LRPC STRAND DETAILS				DESIGN DATA (AS PER DRAWING)				
S.No.				GFC DWG No./Rev.No.				
Actual MOE of strand				Thea MOE of strand				
Actual Area of C/s of Strand				Thea Area of C/s. of Strand				
Pre stressing Jack Details				Design Elongation				
Pre stressing Jack Ram Area				Design Stressing Load				
Jack Efficiency								
Modified Elongation			=	Design Elongationx Theo Area of C/s Strand x Thea MOE of Strand				
				Actual area of Strand (A) X Actual Modulus of Elasticity €				
Tolerance in Elongation	Max (+5%)							
	Min (-5%)							
Modified Pressure (KG/CM2)			=	Stressing load in Ton x1000				
				Ram Area x Jack eff.				
Tolerance in Pressure	Max (+5%)							
	Min (-5%)							

S.No.	Pressure (KG/CM2)	ELONGATION						
		Jack No . (LHS End)			Jack No . (RHS End)			Remarks
		Piston Reading (MM)	Elongation (MM)	Cummulative Elongation (MM)	Piston Reading (MM)	Elongation (MM)	Cummulative Elongation (MM)	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
		Lock Pressure =						
A		Zero correction in (MM)			Zero correction in (MM)			
B		Slip after Locking (MM)			Slip after Locking (MM)			
		Slip after 24 Hrs			Slip after 24 Hrs			
C		Net Elongation each End			Net Elongation each End			

ACHUTA RAO ALLA

Digitally signed by ACHUTA RAO ALLA
Date: 2022.05.26 11:35:32 +05'30'