

PREVENTIVE VIGILANCE



Compilation of

(Check-Lists for Preventive Checks)



Vigilance Organization
North Eastern Railway

OCTOBER-2020

Foreword

Vigilance aims to promote fairness, transparency and equity in public transactions. In its endeavor in doing so vigilance emphasizes need of preventive vigilance than to punitive vigilance. Preventive vigilance is nothing but adoption of a package of measures to improve systems, procedures to reduce/eliminate discretion and consequently reduce/eliminate corruption. Preventive vigilance works on the principle of **“prevention better than cure”**. Simplification of systems & procedures, watchfulness of the quality of work delivered, bringing about transparency in the systems, periodical review of existing system to plug the loop holes, protecting the honest, bringing about greater degree of awareness amongst employees about vigilance so as to create corruption-free ambience are some of the groundworks in the direction of preventive vigilance. Preventive vigilance is not the responsibility of the vigilance organization alone, but is the responsibility of one and all.

In this booklet few check-lists have been provided to monitor the quality of various ingredients of civil & construction works as per the contracts, to monitor the progress and to ensure the completion of the works as per the terms & conditions of the contract. Such check-lists can be prepared and put in place by each department depending upon the nature of the work/function desired to be performed. Vigilance expects that putting in place such check-lists and righteously following them will go a long way in the direction of preventive vigilance and to ensure quality of deliverance and ultimately bringing the value to the public money.

Vigilance Organization

NORTH EASTERN RAILWAY

CHECK LIST FOR WORKS

SERIES -W1 TO W24

VERSION-1

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NORTH EASTERN RAILWAY

ID-W1 Version 1

1. CHECK LIST FOR CEMENT

Name of Work	
Contractor	
Brand	Grade
Quantity	Date of manufacture
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether cement brought at site is as per contract schedule, confirming to specification, special conditions of cement supply and approved source/brand?		
2	Whether the supplied cement is stored in stacks properly and protected from damp atmosphere?		
3	Whether the date of manufacture & batch no. seen on the bag and recorded on cement register?		
4	Whether lumps are found in the bag and settling has taken place?		
5	Whether it gives cool feeling when hand is put inside the cement bag?		
6	Whether cement gives smooth feeling when pinched between the fingers?		
7	Whether cement float initially, before final setting when handful of cement is thrown in water?		
8	Whether test certificate has been given by manufacturer and confirms to IS specification?		
9	Cement is tested and passed for all required tests?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W2 Version 1

2. CHECK LIST FOR STEEL REINFORCEMENT

Name of Work	
Contractor	
Lot No., Batch No. and Date	
Brand	Grade
Dia of Steel (a)	Quantity(MT)
(b)	Quantity(MT)
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether Steel brought at site is as per contract schedule, confirming to specification (IS:1786), special conditions of Contract and approved source & grade?		
2	Whether the supplied steel is stored properly?		
3	Whether the date of manufacture & batch no. seen on the lot of steel and recorded on steel register ?		
4	Whether Manufacturer test report is available and is as per specification along with Invoice?		
5	Whether samples are tested as per the specification and are confirming to same?		
6	Whether the unit weight of steel as per dia. is checked and is within the tolerance limit ?		
7	Whether reinforcement is in good condition, free from rust etc.?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W3 Version 1

3. CHECK LIST FOR SAND

Name of Work	
Contractor	
Approved Source of Sand (as per Mix design)	Quantity
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether the sand to be used is neat, clean and free from any deleterious material?		
2	Whether the sand has been stored properly?		
3	Whether the sand has been tested as per IS-2386 and found satisfactory?		
4	whether sand is received from Approved source?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W4 Version 1

4. CHECK LIST FOR WATER

Name of Work	
Contractor	
Approved Source of Water	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether water is from approved source?		
2	Whether water is confirming to specification mentioned in conditions of contract?		
3	Whether water is clean and free from injurious amount of oils, acids, alkalis, salts, sugar, organic material or other substances that may harm the quality of concrete?		
4	Whether PH value of water is not less than 6?		
5	Whether chemical analysis of water proposed to be used in concreting is confirming to IS-3025?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W5 Version 1

5. CHECK LIST FOR AGGREGATE

Name of Work	
Contractor	
Approved Source (as per Mix Design)	Quantity
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether aggregate is robust, clean, free from deleterious materials and free from flaky and elongated pieces?		
2	Whether aggregate has been tested as per IS 2386 and found satisfactory?		
3	Whether Aggregate Crushing Value Confirms to limits as per to IS-383?		
4	Whether Aggregate Impact value confirms to limits as per IS-383?		
5	Whether Aggregate Abrasion value confirms to limits as per IS-383?		
6	Whether sieve analysis of coarse aggregates confirms to IS code 383?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W6 Version 1

6. CHECK LIST FOR BRICKS

Name of Work	
Contractor	
Class of Bricks	Quantity
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether bricks are free from Crack, flaws and nodules of free lime?		
2	Whether bricks have smooth rectangular faces with sharp corners and are uniform in colour?		
3	Whether Dimensions of the Bricks are as per provisions of IS-1077?		
4	Whether Bricks have passed in compressive strength test?		
5	Whether Bricks are passing in water absorption test?		
6	Whether Bricks are passing in efflorescence test?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W7 Version 1

7. CHECK LIST FOR FORM WORK

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether thickness of shuttering plate acceptable?		
2	Whether shuttering plates are straight without any bend, depression etc?		
3	Whether shuttering plates are clean, free from rust?		
4	Whether mould releasing oil / agent applied?		
5	Whether Joints have been properly sealed?		
6	Whether the shape, size, alignment, plumb and level of shuttering/form work is as per requirement?		
7	Whether end stoppers provided wherever required?		
8	Whether Form work is Strong (No deformation, bulging etc.)?		
9	Whether shoulders are adequate for providing support?		
10	Whether supports of Form work are strong enough to withstand the weight of concrete without any deflection?		
11	Whether arrangements have been made for safe staging for further lift of concreting?		
12	Whether arrangements have been made for electrical shock protection/earthing arrangement if required?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W8 Version 1

8. CHECK LIST FOR REINFORCEMENT WORK FOR BUILDING & MISCELLANEOUS WORK

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether Working drawing is approved?		
2	Whether Bar bending Schedule (BBS) is approved?		
3	Whether approved Steel Reinforcement is being used		
4	Whether Reinforcement provided is as per approved Drawing?		
5	Whether Reinforcement is coated with protective coating or cement slurry, if provided in contract?		
6	Whether Bar Lap length provided is as per BBS?		
7	Whether Sufficient Chairs are provided to support the reinforcement?		
8	Whether Bar size is correct?		
9	Whether Bar spacing is Correct?		
10	Whether Bar Lapped at staggered Locations?		
11	Whether Bar are tied as specified?		
12	Whether Cover block is of the same grade as of concrete?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W9 Version 1

9. CHECK LIST FOR PRE-CONCRETING WORK FOR BUILDING & MISCELLANEOUS WORK

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Grade of concrete as per approved drawing (M.....)		
2	Whether Mix Design is approved?		
3	Whether cement, Coarse aggregates, sand and water are from approved sources and as per mix design?		
4	Whether grading of aggregate and sand checked?		
5	Whether Sufficient quantity of material/admixture etc is available?		
6	Batching Plant/ RMC Plant/Concrete mixer location.....		
7	Method of concreting		
a	By concrete Pump		
b	By conveyor/chute/crane bucket/boom placer		
c	Whether sufficient spare parts like concrete pipes etc kept at site		
8	Vibrating arrangements		
a	Whether adequate number of Shutter and form vibrators are available?		
b	Whether adequate number of Needle vibrators are available?		
9	Theoretical concrete Quantity= Cum		
10	Whether arrangement for Slump measurement is available at site?		
11	Whether sufficient number of moulds are available for casting of concrete cubes as per IS-456 ?		

12	Whether the old concrete surface has been roughened and cement slurry sprinkled before concreting?		
13	In case of concreting has to continue in night, whether adequate illumination arrangements have been done for night working?		
14	Whether pin rods of sufficient diameter between two layers of reinforcement provided to ensure easy flow of concrete?		

*** Accepted by Railway's Representative (Yes/No)**

*** Remarks, if any:**

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W10 Version 1

10. CHECK LIST FOR DURING CONCRETING WORK FOR BUILDING & MISCELLANEOUS WORK

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether Concrete is as per approved mix design ?		
2	Whether workability is sufficient for required flow of concrete ?		
3	Whether adequate vibration is being imparted by form vibrator and needle vibrator ?		
4	Whether there is any settlement of support of form work?		
5	Whether there is any leakage of cement slurry?		
6	Whether top level of concrete is being maintained		
7	Whether slump is being measured as per the frequency given in IS-456 ?		
8	Whether the cube test results are satisfactory ?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W11 Version 1

11. CHECK LIST FOR POST-CONCRETING WORK FOR BUILDING & MISCELLANEOUS WORK

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Curing Method: Ponding / Spraying / any other		
2	Curing Start date-----		
3	Curing Finish Date----		
4	Whether Curing is satisfactory?		
5	Whether de-shuttering has been done as per codal provisions?		
6	Whether the concrete surface is smooth after de-shuttering?		
7	Whether any defect like honeycombing/Sand streaks/air bubbles/cold joints/cracks are found?		
8	Whether 14 days cube results are satisfactory?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W12 Version 1

12. CHECK LIST FOR BRICK WORK FOR BUILDING & MISCELLANEOUS WORKS

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether material being used is conforming to relevant specifications and whether mandatory test have been done?		
2	Whether the center line of brickwork checked with reference to structural drawing?		
3	Whether bricks soaked in water before use for sufficient period?		
4	Whether joints are staggered?		
5	Whether brickwork is in true plumb & vertical and all layers truly horizontal?		
6	Whether graduated wooden straight edge is used for keeping height of brick courses uniform?		
7	Whether wall height being constructed in a day is being restricted to 1 m height?		
8	Whether thickness of joints in brickwork is kept 1 cm ?		
9	Whether mortar of approved mix is used?		
10	Whether all horizontal and vertical joints are being filled?		
11	Whether proper arrangements of curing and curing period maintained as per specification?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W13 Version 1

13. CHECK LIST FOR PLASTER WORK FOR BUILDING & MISCELLANEOUS WORKS

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether Block/brick masonry and concrete surface are found clean, free from dust loose material, oil, grease, mortar droppings, nails, wooden pieces, wire etc.?		
2	Whether Joints in blocks masonry are raked to a depth of 10 mm?		
3	Surface to be plastered is made sufficiently damp.		
4	Unavoidable projections in masonry and concrete are chiseled.		
5	Any leakages observed before plastering attended		
6	Whether Joints between concrete surface and masonry are properly filled with cement mortar or sealant before applying plaster?		
7	Whether the materials used are conforming to relevant specification?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W14 Version 1

14. CHECK LIST FOR INTERNAL PLUMBING WORKS FOR BUILDING & MISCELLANEOUS WORKS

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether the plumbing pipe lines and fittings confirm to the specification as given in Contract?		
2	Whether plumbing line layout marking done, chasing of plaster (Min.15mm depth from the level of the plastering to the edge of pipe) done accordingly?		
3	whether all the pipe lines supported properly with the brackets & anchor bolts?		
4	Whether dense packing been ensured around the pipes?		
5	Check if there is no 90° bend connection in the sanitary line?		
6	Whether the joints in the soil & waste water line have been given outside the wall?		
7	Is the slope for the soil & waste water line proper & sufficient?		
8	Whether the pressure testing/hydro testing has been carried out & the results are satisfactory?		
9	Are the dummy points covered with big wall flanges?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W15 Version 1

15. CHECK LIST FOR PREPARATORY/PRE-CONCRETING WORK FOR MAJOR BRIDGES

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether the alignment of the bridge has been finalized and approved by competent authority?		
2	Whether the Centre line of bridge has been marked/pegs provided at site with the help of total station/other surveying instrument?		
3	Whether the Centre of all piers/abutments marked and fixed duly providing pegs and permanent bench marks at the ends to check the Centre/alignment during execution?		
4	Whether the GAD of the proposed major bridge has been approved by competent authority?		
5	Whether the structural drawings of the proposed major bridge have been prepared and approved by competent authority?		
6	Whether CRS sanction obtained in case proposed bridge is interfering the running line?		
7	Whether a lab has been set up at site for cube testing, monitoring, keeping records etc?		
8	Whether Mix Design of Concrete done and approved by DyCE/DEN/SrDEN for each grade and kept at site?		
9	Whether weigh batching plant available and calibrated?		
10	In case of concreting from RMC plant, whether the distance of plant has been assessed to avoid settlement of concrete?		

11	Whether all checks of raw material i.e. water, sand, aggregates, cement, reinforcement/steel, admixtures etc to be used in concrete have been done and found satisfactory?		
12	In case of using concrete pump for conveying concrete to actual site, whether pump has been fixed at proper location/level with adequate arrangements of conveyor, chute, bucket etc with spare parts?		
13	Whether all registers have been prepared for recording and keeping records?		
14	Whether proper arrangements like water, food, shelter etc have been done in the camps provided for staying labour?		
15	Whether electricity has been provided for camp office as well as camps for staying labour?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W16 Version 1

16. CHECK LIST FOR CONCRETING OF PILE FOUNDATION

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
	PIER/ABUTMENT No. -		
	PILE No. -		
1.	Whether the pile lay out has been marked at ground correctly as per approved plan ?		
2.	Whether the pilling equipment with cutting tool is suitable for boring of required dia. of pile?		
3.	Whether the depth of boring has been determined as per test pile?		
4.	Whether the strata of soil recorded at every level where there is change?		
5.	Whether the bore depth has reached up to required depth including socketing in case of end bearing pile?		
6.	Whether the bore shift and verticality is within permissible limit?		
7.	In case of liner prescribed, whether the thickness and depth of liner is as prescribed?		
8.	Whether the bore has been cleaned thoroughly with water and depth measured before putting cage in the bore?		
9.	Whether bentonite slurry is inserted in case of unstable soil strata?		
10.	Whether the cage of reinforcement is reasonably stiffened for lifting?		
11.	Whether roller type cover have been provided in the cage of reinforcement?		
12.	Whether reinforcement checked and cage placed centrally in the bore?		

13.	Whether the contractor has stacked sufficient quantity of ingredients to complete full pile in one go?		
14.	Whether the tremie pipe is continuously embedded in the poured concrete?		
15.	Whether quantity of concrete poured is matching with the quantity theoretically calculated before concreting?		
16.	Whether concreting has been done up to level of false concrete (which has to be demolished later) as prescribed?		

*** Accepted by Railway's Representative (Yes/No)**

*** Remarks, if any:**

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W17 Version 1

17. CHECK LIST FOR CONCRETING OF WELL FOUNDATION

Name of Work	
Contractor	
Location:	Date of Inspection

	PIER/ABUTMENT No. -		
1	Whether the well lay out has been marked at ground correctly as per approved plan ?		
2	Whether the cutting edge is placed centrally/as per drawing?		
3	Whether reinforcement placed as per approved drawing?		
4	Whether shuttering of required shape, size, thickness after cleaning has been placed with proper support?		
5	Whether old concrete surface has been roughened before placing new concrete?		
6	Whether the cutting edge is of proper shape, size, approved quality of steel, rigid and as per approved drawing?		
7	Whether all pre-arrangements i.e. quality of ingredients, mixing plant, adequate availability of concreting material, concrete pump, labour etc have been checked and found satisfactory?		
8	Whether proper vibrators of required capacity are available and being used?		
9	Whether proper lap length and at proper location (staggered) has been ensured while placing reinforcement?		
10	For post-concrete work, whether proper equipment for lowering of well i.e. crane, cutting tools (Jham), weights etc are available?		
11	Whether concrete strength, tilt & shift etc are measured after concreting and during lowering of well?		
12	Whether the strata of soil recorded at every level where there is change?		

13	Whether the well has been rested below scour level and as per the depth shown in the drawing/revised calculation as per the strata observed?		
14	Whether the quality of sand to be filled (either from the digged well or from out side) is suitable?		
15	Whether final level/depth, tilt, shift and all parameters checked before final plugging of well?		
16	Whether Plugging of bottom and top of well has been done as per drawing?		

*** Accepted by Railway's Representative (Yes/No)**

*** Remarks, if any:**

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W18 Version 1

18. CHECK LIST FOR CONCRETING OF OPEN FOUNDATION

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1.	Whether the foundation lay out has been marked at ground correctly as per approved plan ?		
2.	Whether the excavation done as per working drawings with additional width for working area?		
3.	Whether soil has been prevented sufficiently from falling in the pit and to avoid harming the labour?		
4.	In case of nearby running line, whether all precautionary measures taken to avoid any mishappening?		
5.	Whether the foundation pit has been properly cleaned, levelled before allowing to place reinforcement?		
6.	Whether reinforcement placed as per approved drawing?		
7.	Whether shuttering of required shape, size, thickness has been placed?		
8.	Whether all pre-arrangements i.e. quality of ingredients, mixing plant, adequate availability of concreting material, labour etc have been checked and found satisfactory?		
9.	Whether proper vibrators of required capacity are available and being used?		
10.	Whether final level/depth, shape of foundation, continuation of reinforcement and all parameters checked before final closing of concrete?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W19 Version 1

19. CHECK LIST FOR CONCRETING OF SUB/SUPER STRUCTURE

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
	PIER/ABUTMENT No.		
	LOCATION		
1	Whether the all ingredients, staging, formwork, pre-concrete arrangements are checked and approved before allowing for concrete?		
2	Whether sufficient men, material and machineries (vibrator, mixer machine, cube moulds etc.) are available and in working condition?		
3	Whether the reinforcement including stirrups, binding wire, welding etc placed properly?		
4	Whether cover blocks, shutters, chairs etc are as per drawing?		
5	Whether lap length is provided as per requirement at correct locations (staggered) and as per the Codal provisions?		
6	Whether the cover blocks are of the same grade of concrete and of proper size and fixed at proper spacing?		
7	Whether all joints tied properly with binders using double knot and keeping the end of binder down?		
8	Whether the bar assembly rigid and adequately supported on spacers/chairs etc?		
9	Whether the old concrete surface has been roughened and cement slurry sprinkled before concreting?		
10	Whether dowel bars have been provided as per the approved drawing?		
11	Whether the construction joints provided as per drawing/requirement?		

12	In case of concreting has to continue in night, whether adequate illumination arrangements have been done for night working?		
13	Whether pin rods of sufficient diameter between two layers of reinforcement provided to ensure easy flow of concrete?		
14	Whether concreting is as per approved design mix?		
15	Whether the slump of concrete is adequate to keep workability of concrete?		
16	Whether the required number of cubes taken as per quantity of concrete?		
17	Whether embedded parts like pipes for weep holes, etc. have been placed in position before concreting?		
18	Whether proper vibration is being done to ensure compaction? Whether shutter vibrators are being used as per requirement?		
19	After the concrete is over, whether all unwanted like rods, nails etc are cut and surface smoothened to avoid any ingress of water?		
20	Whether final level, shape, continuation of reinforcement for further concreting and all parameters checked before final closing of concrete?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W20 Version 1

20. CHECK LIST FOR CONCRETING FOR PSC GIRDER/SLAB

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether the all ingredients, staging, formwork, pre-concrete arrangements are checked and approved before allowing for concrete?		
2	Whether sufficient men, material and machineries (vibrator, mixer machine, cube moulds etc.) are available and in working condition?		
3	Whether the reinforcement including stirrups, binding wire, welding, cover blocks, shutters, laps, chairs etc are as per drawing?		
4	In case of concreting has to continue in night, whether adequate illumination arrangements have been done for night working?		
5	Whether pin rods of sufficient diameter between two layers of reinforcement provided to ensure easy flow of concrete?		
6	Whether concreting is as per approved design mix?		
7	Whether the required number of cubes taken as per quantity of concrete?		
8	Whether the shuttering is quite stable and conforming to the dimensions and shape given in the drawing?		
9	Whether cable profile has been marked exactly as per coordinates?		
10	Whether sheathing has been provided exactly as per the profile?		

11	Whether pre-stressing wires have been provided as per the requirement and pulled far and back during concrete to avoid any settlement?		
12	Whether all fixtures for pre-stressing i.e. cone, pre-stressing plate etc are fixed as per drawing?		
13	Whether proper vibration is being done to ensure compaction? Whether shutter vibrators are being used as per requirement?		
14	After the concrete is over, whether all unwanted like rods, nails etc are cut and surface smoothened to avoid any ingress of water?		
15	Whether final level, shape, continuation of reinforcement for further concreting and all parameters checked before final closing of concrete?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W21 Version 1

21. CHECK LIST FOR POST CONCRETING WORK OF FOUNDATION, SUBSTRUCTURE, SUPERSTRUCTURE OF BRIDGES

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether the proper curing (Ponding/Spraying /curing compound/Steam etc) has been done and for a prescribed period?		
2	Whether de-shuttering has been done as per Codal provisions?		
3	Whether the concrete surface is smooth after de-shuttering?		
4	Whether any defect like honeycombing / Sand streaks / Air bubbles / Cold joints/cracks are found? Number of defects: Minor Defects: Major Defects:		
5	In case of structural defects, whether action taken to rectify as per approved procedure?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W22 Version 1

22. CHECK LIST FOR EARTH WORK-BEFORE START

Name of Work	
Contractor	
Detail of Structure	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether GE field laboratory has been setup at site for quality check?		
2	Whether equipment available in the field laboratory?		
3	Whether alignment plan has been approved by competent authority?		
4	Whether classification of ground soil has been done and ground soil found suitable to retain?		
5	Whether initial levels (longitudinal and cross) have been recorded/test checked?		
6	Whether bench mark, alignment reference pegs, toe of bank/cutting marked?		
7	In case of borrowed soil from Railway land , whether pits are more than H+3m away from toe of bank?		
8	Whether borrow pit diagram has been approved by DEN/Sr.DEN in case of borrowed soil from Railway land ?		
9	Whether classification of Fill material /soil has been done and found suitable for sub- grade?		
10	Whether laboratory test of borrowed soil i.e. classification, OMC, MDD & CBR (if reqd) done?		
11	Whether field Trial for compaction conducted? if yes		
	(a) Type of roller & its weight		
	(b) Optimum thickness of layer achieved		
	(c) Optimum No. of passes achieved		
	(d) Field moisture content		

12	Whether proper protection/fencing provided in case of nearby running line?		
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*** Accepted by Railway's Representative (Yes/No)**

*** Remarks, if any:**

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W23 Version 1

23. CHECK LIST FOR EARTH WORK-DURING EXECUTION

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether thickness of layer of loose earth maintained for compaction?		
2	Whether cross slope & side slope of 1 in 30 & 2:1 respectively maintained?		
3	Whether adequate formation width maintained?		
4	Whether approved soil is only being used and clods or hard lumps have been broken to 75 mm or lesser size?		
5	Whether adequate No. of checks for compaction being done? (Method being used for MDD may be indicated)		
6	Whether type of roller recommended is only being used for compaction? Whether grader is being used for top surface finishing?		
7	Whether water tank with sprinkling arrangements has been made available to maintain required moisture content while compacting?		
8	Whether earth work for Trolley refuges is being done along with formation?		
9	Whether finished level of sub grade maintained?		
10	Whether sub-bank provided in case of bank height more than 6m and width of berm kept as per requirement?		
11	In case of E/W adjoining old bank, whether benching has been done?		
12	Whether all records being maintained as per RDSO guidelines?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

ID-W24 Version 1

24. CHECK LIST FOR BLAKETTING WORK

Name of Work	
Contractor	
Location:	Date of Inspection

S.N.	Description	Contractor's Representative (Yes/No)	Railway's Representative (Yes/No)
1	Whether blanket being provided is as per agreement i.e. manually mixed at site/mechanically mixed in the pug mill?		
2	Whether final level & cross slope of earth work are recorded, test checked and conforming to requirement?		
3	Whether blanketing curve drawn for proposed material and satisfying as per RDSO specification?		
4	Whether supplied material matching with the proposed material?		
5	Whether total thickness of blanket and thickness of layer of loose blanket maintained for compaction?		
6	Whether adequate no. of checks for compaction being done and material satisfying blanket curve?		
7	Whether type of roller recommended is only being used for compaction? Whether grader is being used for top surface finishing?		
8	Whether water tank with sprinkling arrangements has been made available to maintain required moisture content?		
9	Whether finished level of blanket maintained?		
10	Whether proper protection/fencing provided in case of nearby running line?		
11	Whether all records being maintained as per RDSO guidelines?		

* Accepted by Railway's Representative (Yes/No)

* Remarks, if any:

(Railway's Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY

CHECK LIST FOR FABRICATION,ASSEMBLY/ERECTION &LAUNCHING OF BRIDGE GIRDERS AND BEARINGS

SERIES -B-1 TO B-6

VERSION-1

Issued on 16.10.2020

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5	B-5	DURING LAUNCHING OF OPEN WEB GIRDER/COMPOSITE GIRDER
6	B-6	BEARINGS

NORTH EASTERN RAILWAY**Check List: To Be Filled Before Starting of Fabrication**

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's Representative
		Yes/No	Yes/No
1	Whether girder fabricating firm is RDSO approved ? (in case of Bridge girder)		
2	Whether the procured structural steel is of desired grade (As per para 8.2 of IRS B1-2001) from approved primary producer having integrated steel plants?		
3	Whether the manufacturer's Testing Certificate of raw material has been submitted? .		
4	Whether the Visual inspection for surface defects like pitting, lamination, imperfect edges, twists etc. has been done ?		
5	Whether RDSO approval has been obtained , If workshop is established at site .		
6	Whether raw material testing from NABL/Govt. Lab for testing of Chemical and Mechanical properties has been done and accepted by competent authority ?		
7	Whether Quality assurance plan (QAP) as per RDSO guide lines has been prepared and approved by competent authority ?		
8	Whether approval of Welding Procedure Specification Sheet (WPSS) has been obtained from RDSO/Railway?		
9	Whether Welding Procedure Qualification Record (WPQR) has been approved by RDSO/Railway ?		
10	Whether the welding consumables are as per approved QAP and WPSS and have been tested from NABL labs including test report of manufacturers?		
11	Whether the welding wire dia is as per approved QAP & WPSS and approved by competent authority ?		
12	Whether Shear studs have been supplied as per RDSO guide line BS-115 and manufacturer's test report has been provided ?		
13	Whether manufacturer's report of HSFG bolts has been obtained and 3 rd party test of bolts & nuts i.e. NABL labs as per RDSO guide line BS-111 have been ensured and record is available at site ?		
14	Whether Layout Plan on template Floor has been approved by RDSO/Railway ?		
15	Whether the Jigs & fixtures and Master plates have been inspected and approved by RDSO/Railway ?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)

Check list for bridge Works

[B-2;ver-1]

NORTH EASTERN RAILWAY

Check List: During Fabrication

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's Representative
		Yes/No	Yes/No
1	Whether the Jigs & fixtures and Master plates available at site has been inspected and approved by RDSO ?		
2	Whether approved Jigs have been checked by GO – No – GO gauge and scale ?		
3	Whether clamping of flange plates to fixtures for prevention of distortion has been made ?		
4	Whether the welders have appropriate competency certificate issued by RDSO/Railway ?		
5	Whether the welders, who are doing the welding job are mentioned in the WPQR ?		
6	Whether approved & accepted welding consumables are used ?		
7	Whether the SAW(Submerged Arc Welding) /MMAW(Manual Metal Arc Welding) is being done as per approved WPSS ?		
8	Whether cleaning of surface of the members to be welded for minimum 75mm has been ensured ?		
9	Whether FITUP of the members to the size are as per drawing ?		
10	Whether welding Current, Voltage, Travel speed & Wire feed rate is as per approved WPSS ?		
11	Are Top & Bottom flange plates, perfectly perpendicular with reference to web ?		
12	Whether the size of welds are as per WPSS, on testing with weld gauge?		
13	Is uniformity of weld bead proper?		
14	Whether the sequence of welding has been ensured as per approved WPSS ?		
15	Whether Run-on & Run off plates has been provided?		
16	Is there any over head welding? If yes, Proper methodology is being adopted as defined in WPSS &WPQR and welder is certified for the same ?		
17	Whether welding is being done from upper to lower side in case of Vertical welding ?		
18	Whether welding is being done from one end to another end in case horizontal welding ?		
19	Whether the following tests have been conducted and proper record has been maintained ?		
	a. Dimensional test		
	b. Mechanical test		
	c. Leg Lengths		

	d. Throat thickness		
	e. DPT Test		
	f. Macro Etching Test		
20	Shear Stud (for Composite Girder)		
(a)	Whether the Shear studs are vertical ?		
(b)	Whether 1% Bend test of shear stud has been done ?		
(c)	Whether 5% ring test of shear stud has been done ?		
21	Metalizing		
(a)	Whether grit blasting for surface preparation has been done ?.		
(b)	For grit blasting whether the air pressure more than 4 kg/cm ² has been maintained?		
(c)	For grit blasting whether the nozzle distance has been kept 150mm to 250 mm from surface?		
(d)	Whether the 1 st coat of metalizing has been done within 4 hrs. of surface preparation ?		
(e)	Whether the 2 nd coat of metalizing has been done within 8 hrs. of surface preparation?		
(f)	Whether wash primer has been applied over metalized surface ?		
(g)	Whether the one coat of Zinc Chromate Primer has been applied after 4 to 6 hrs after wash primer ?		
(h)	Whether the Dry film thickness (DFT) of metalizing has been checked with Elcometer (Magnetic thickness gauge)Dial type/ Electronic coating thickness gauge/Surface Profile gauge (Dial type) is as per specification ?		
(i)	Whether after two coats, average thickness of metalizing (DFT) has been maintained 150 microns (Minimum 115 microns) ?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY**Check List: After Fabrication at Workshop**

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's representative
		Yes/No	Yes/No
1	Whether the size of weld is as per WPSS ?		
2	Whether the Dye Penetration Test (DPT) has been conducted and records has been maintained ?		
3	Whether the Macro Etching test of welds have been conducted and records has been maintained?		
4	Whether Dimensional measurement of all the components has been recorded in register?		
5(a)	Whether the Trial assembly of 1 st span has been done following dimensions have been checked and are within the tolerances? i. Overall length ii. Bearing centers iii. Height iv. Trusses center v. Center to center distance of rail bearers vi. Center to center distance of panel points vii. Squareness viii. Alignment of the girder ix. Fairing of holes x. Verticality		
5(b)	Whether the residual Camber after releasing jacks has been taken and the same is within tolerances ?		
5(c)	Whether inspection of dismantled 1 st trial assembly components have been completed and following have been checked and recorded ? i. Elongation of holes ii. Abnormal stress marks iii. Any cut and bend in the components.		
6	Whether subsequent spans have been permitted without the Trail Assembly ?		
7	Whether the Dry Film thickness (DFT) of metalizing and painting have been checked and component wise register have been maintained ?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY**Check List: During Assembling /Erection of Open Web girder/Composite Girder**

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's Representative
		Yes/No	Yes/No
1	Whether the overall length of the girder is as per standard drawing?		
2	Whether the Centre to Centre of bearing is as per standard drawing?		
3	Whether the Centre to Centre of girder is as per standard drawing ?		
4	Whether the Centre to Centre of X-girder is as per standard drawing?		
5	Whether the Centre to Centre of stringer is as per standard drawing ?		
6	Whether the distance taken at X girder for checking of diagonals is as per standard drawing ?		
7	Whether the Diagonal distance at all panel points is as per standard drawing ?		
8	Whether the Centre line at all X girder for checking of alignment is as per standard drawing ?		
9	Whether the X-diagonal (first panel point to last panel point) is as per standard drawing ?		
10	Whether the X-diagonal (first panel point to last panel point) for twist checking in girder is as per standard drawing ?		
11	Whether the Vertically of vertical members by (5kg.) plumb is as per standard drawing ?		
12	Whether the Top clearance between stringer and X-girders is as per standard drawing ?		
13	Whether the ODC clearance checking and comparing including height of girder is as per standard drawing?		
14	Whether the Loose bolts checking at all panel points & all field rivets/bolts are as per standard drawing ?		
15	Whether the Camber reading at all panel points is as per standard drawing ?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY**Check List: During Launching of Open Web Girder/Composite Girder:**

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's Representative
		Yes/No	Yes/No
1	Whether design & drawing of bearings is approved by competent authority ?		
2	Whether the Launching methodology has been approved by the competent authority ?		
3.	Whether the Centre line of track & Centre line of the girder has been checked ?		
4.	Whether the Holes position at bed block for fixing of bearings is proper ?		
5.	Whether the bearings are aligned properly at specified locations ?		
6.	Whether the Top level of bed blocks for seating of bearing before placing bearings has been recorded and is proper ?		
7.	Whether the Dimensional Inspection of Bearings as per drawing has been conducted ?		
8.	Whether the Gap between two girders as per drawing is available ?		
9.	Whether the Alignment of all girders in case multiple spans have been corrected ?		
10.	Whether the Measurement of Camber after seating of girders on bearing has been checked and recorded ?		
11.	Whether the Final coat of Aluminium paint as per specification has been checked and recorded ?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)

NORTH EASTERN RAILWAY**Check List : Bearings**

Name of Work			
Contractor			
Detail of Structure			
Location		Date of Inspection	

S. No.	Description	Contractor's Representative	Railway's Representative
		Yes/No	Yes/No
1	Whether design & drawing of bearing are approved by competent authority?		
2	Whether the type of bearings are as per approved drawing?		
3	Whether the bearings has been procured from RDSO approved firm?		
4	Whether desired grade steel and Manufacturer's Testing Certificate of raw material for manufacturing of bearings has been submitted by agency ?		
5	Whether bearings have been supplied as per approved drawing?		
6	Whether bearings have been passed by nominated agency?		
7	Whether the dimensional test of bearings has been conducted and are as per approved drawing ?		
8	Whether Stamping Mark of passing authority has checked & available in supplied bearings?		

*Accepted by Railway Representative (Yes/No)

*Remarks, if any:

(Railway Representative)

(Contractor's Representative)



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