

Bihar Police Buildings Constructions Corporation Pvt. Ltd

(Govt. of Bihar Undertaking)

Kautilya Nagar, Patna-14



File NO. Str.1307/2020

Office Order No.-.....486.../2020

For effective technical supervision and to ensure quality in construction, instructions have been issued from time to time, but these instructions are not being generally followed, may be for want of awareness.

To ensure proper monitoring, at different stages of construction, following consolidated guidelines are being issued again:-

Guidelines for Structural Monitoring

- (1) Full set of approved Architectural & Structural G.F.C. (Good for Construction) drawings for different works of Corporation are being issued by H.Q. to respective Executive Engineers, which is the part of the agreement and basis of the project / work.

It is known that before start of work, the detailed drawings are to be studied thoroughly by E.E./A.E./J.E. of the division, but it appears that things are left mostly on the understanding of junior engineers primarily. This needs to be certainly improved, since majority of the projects are R.C.C. (Earthquake Resistant) framed structure constructions.

Beside this, some sites have special problem of being 5'-0" to 15'-0" deep (Low Land), resulting into complicated provisions in structure.

Hence, at E.E. level also, study of drawings w.r.t. works site in the beginning itself is prime requirement, so that provisions made in G.F.C. drawings are not left out during construction. In case of any confusion / discrepancy, they may discuss with concerned Architect / Str. engineer of the Corporation at Head quarter for further action.

- (2) For routine structural monitoring of the specific work, instructions given earlier, also are to be ensured, which are not being done in most of the cases, while sending photos/ videos on WhatsApp, on the Notice Board of B.P.B.C.C.

So the videos/ photos of the following particulars must be sent on WhatsApp, on the Notice Board of B.P.B.C.C. for necessary perusal / guidance:-

(A) Regarding quality control (over all)

- (i) Photo/Video showing equipment for test material, cube strength of mixes etc
(At site by contractor)
- (ii) Photo/Video showing the engineers of agency as per provision made in the S.B.D.

(B) Regarding Materials.

(1) Cement:-

- (i) Photo/Video showing Company/Brand.
- (ii) Photo/Video showing Grade of Cement.
- (iii) Photo/Video showing Date of Manufacturing.
- (iv) Photo/Video showing Test report

(2) **Steel :-**

- (i) Photo/Video showing Manufacturing Company.
- (ii) Photo/Video showing Test report (Tensile stress) if any.
- (iii) Photo/Video showing Actual wt./m. length as compared to dia of bar

(3) **Stone Chips:-**

- (i) Photo/Video showing Quality/Stack and grading

(4) **Coarse Sand :-**

- (i) Photo/Video showing Quality/Stack and grading
- (5) Photo/Video showing any other details which is felt necessary.

(C) **Regarding Drawings.**

- (i) Photo/Video showing related structural drawings and checking the items with drawings.

(D) **Regarding Foundation:-**

- (1) Video showing the approved structural drawings at site..
- (2) Photo/Video showing the measurement of depth of excavation from E.G.L. for foundation work.
- (3) Photo/Video showing the sand filling, B.F.S & P.C.C. and their thickness.
- (4) Photo/Video showing the reinforcement details, Manufacturing Company, spacing & diameter of bars of isolated footing / raft/pile cap etc.
- (5) Photo/Video showing the cover blocks & chairs to maintain position & cover to reinforcement.
- (6) Photo/Video showing the Column reinforcement & development length, hoop spacing, shape & position below the plinth.
- (7) Photo/Video showing the length of reinforcement cage, in case of pile foundation with the spacing of ring and cover blocks for proper cover to reinforcement.
- (8) Photo/Video showing the length of projection of auger machine for pile cutting at the site, in case of under - ream in the pile foundation.
- (9) Video showing the use of vibrator while casting.
- (10) Video showing the arrangement of curing of R.C.C. element .
- (11) Photo/Video showing the slump test of concrete mix to be used in casting.
- (12) Photo/Video showing any other details which is felt necessary.

Columns

- (1) Photo/Video showing the longitudinal reinforcement as per drawings.
- (2) Photo/Video showing the spacing of hoops near joints i.e special confining reinforcement (S.C.R.)
- (3) Photo/Video showing the spacing of hoops near middle portion of columns.
- (4) Photo/Video showing the position of lap splice.
- (5) Photo/Video showing the shape & position of hoop to be provided in Column.
- (6) Photo/Video showing the arrangement of shuttering showing cover blocks.
- (7) Video showing the use of vibrator while casting and quality of concrete through batching plant/ mixer machine with Control.
- (8) Photo/Video showing the slump test of mix concrete.
- (9) Video showing the arrangement of curing.
- (10) Photo/Video showing the centre line of column in both direction as per layout, and

photo of painted column after seven days of removal of shuttering, to ensure the verticality of column. This is also applicable in case of stiffener.

- (11) Photo/Video showing any other details which is felt Necessary.

Beam

- (1) Photo/Video showing the arrangement of centering and shuttering of Beam
- (2) Photo/Video showing the polythene cover on shuttering to prevent leakage
- (3) Photo/Video showing cement slurry during casting.
- (4) Photo/Video showing the bottom & top Rt. Of beam.
- (5) Photo/Video showing the cover blocks / spacer bars.
- (6) Photo/Video showing the spacing of stirrups in middle position
- (7) Photo/Video showing the spacing of stirrups near joints / support.
- (8) Photo/Video showing the shape / position of stirrups.
- (9) Photo/Video showing Beam reinforcement/ development length over end supports.
- (10) Video showing the use of vibrator & quality of concrete through batching plant / mixture machine with control concrete or weigh batching system.
- (11) Any other details if felt necessary

Slab

- (1) Photo/Video showing the arrangement of centering & shuttering for casting of Slab.
- (2) Photo/Video showing the polythene cover shuttering to prevent leakage of Slurry.
- (3) Photo/Video showing the level of shuttering.
- (4) Photo/Video showing the Bottom reinforcement spacing near middle portion of slab.
- (5) Photo/Video showing the top reinforcement Spacing over/ near supports.
- (6) Photo/Video showing the thickness of slab.
- (7) Photo showing collection of concrete mix sample in six cubes for grade /strength test in the presence of police personnel of concerned P.S.
- (8) Video showing the use of vibrator while casting & quality of concrete through batching plant / mixture machine with control concrete or weigh battering system.
- (9) Photo/Video showing the arrangement of proper curing by making sand dunes on casted slab
- (10) Photo/Video showing any other details if felt necessary

Before casting the slab, electric conduit system has to be laid properly, so the electrical wing must take prior steps for proper wiring and earthing to be placed.

Architectural aspect :-

At some places, it is seen that constructional feature & construction details do not match with the Architectural Drawings, as a result buildings, with same Architectural designs, look different at different sites. This shortcoming is to be removed. For this the concerned J.E./A.E must study the Arch. Drawing & check site, time to time, while the work is in progress. In case of any confusion they may discuss with the concerned architect of the Corporation.

General Directions:-

- (i) It is known that the works are to be executed as per provisions made in S.B.D /agreement and G.F.C (Architectural/ Structural) drawings. So E.E./A.E. should check

the reinforcement system including all allied arrangements, for casting of all structural components of the frame, including foundation and thereafter casting should be allowed. Quality Control A.E. should be present at the time of casting.

- (ii) Before casting of R.C.C the measurement of reinforcement must be taken and entered into site order book or Reinforcement register which will form the part of record.
- (iii) All concerned engineers (S.E / E.E. / A.E./J.E) are directed to strictly follow the provisions made in P.W.D. Code, P.W.D. Accounts Code, Bihar Financial Rules and Bihar Governments letter no. 108/81-462/ (T.V.C) dt. 30.03.1982 for sanction, execution, measurement, checking & payment etc. of the project.
- (iv) Architect / Structural Section will monitor uploaded photos / videos (Project wise separately) under the leadership of C.T.A / Structural Consultant for necessary instruction and guidance.”

All concerned will strictly follow above guidelines.

By the order of DGP cum CMD

Sd/-

Secretary

Memo No.....

Date.....

Copy to:- All Executive Engineer,(Civil), Bihar Police Buildings Constructions Corporation for information and necessary action. They are directed to circulate copy of this order to all Assistant Engineer and Junior Engineer working under, immediately and ensure strict compliance.

Sd/-

Secretary

Memo No..... No. 3378

Date..... 13.10.2020

Copy to:- Chief Engineer/ Chief Technical Advisor/Superintending Engineer/ All Executive Engineer (Quality Control Lab & Flying squad/ B.O.Q/ Monitoring/ Electrical)/ Chief Account Officer/ Architect/ Structural/ P.A. to CMD, Bihar Police Buildings Constructions Corporation for information and necessary action.

2. Shri Jitendra Giri ,Sr, P.A. is directed to upload this order on Corporation website.

Secretary