

ANNEXURE - 7
SPECIAL CONDITION

Special Clause - I

The unit rates of controlled cement concrete items for RCC work of mix M-15, M-20, M-25, M-30, M-35, M-40 and M-45 included in tender are taken considering cement consumption as shown below in Table-A.

TABLE-A

Sr. No.	Grade of Controlled Cement Concrete	Cement Consumption as per SOR in Kg/Cmt.	Remarks
1	M-15	290	
2	M-20	360	
3	M-25	380	
4	M-30	410	
5	M-35	425	
6	M-40	440	
7	M-45	450	

The contractor has to submit the mix design for different grades of cement concrete at his own cost before execution as directed and to be approved from the Engineer-in-charge. Reduction in rates particular RCC items put into the tenders by the contractor shall be given according to the cement consumption of the approved mix design of cement concrete for that item. If the cement consumption of the mix design is less than as prescribed in Table-A the recovery shall be carried out as per the **relevant clause of the tender**. In any case cement consumption, more than prescribed as in table-A shall be not paid. The condition is also applicable to the (i) excess quantity for RCC items and (ii) extra item rate lists. This condition is to be followed in addition to Clause-14.

Special Clause - II :

Special Conditions of Contract

Free maintenance guarantee period of four years.

- (1) The contractor shall have to give four years free maintenance guarantee from the certified date of completion. During the period contractor shall have to repair the damaged portion of the Road / Bridge and B.T. surface of road at his risk and cost as per direction of Engineer-in-charge. If B.T. surface during maintenance period of 3 years is worn out then agency shall have to provide renewal coating as per tender item as directed by the Engineer-in-charge. If any damage is observed (noticed during maintenance period, Agency has to repair as per standard practice of repairing (SP/40). The amount equivalent to 5% of each running bill shall be deposited and will be released after the free maintenance guarantee period (i.e. 4 years) is over.
- (2) If the sealing surface during the period is worn out or degenerates then the contractor will have to provide renewal coat with wearing coat as originally laid by contractor.
- (3) A close monitoring of the following likely deficiencies will maintain the road to its normal position.

TABLE 1 : TYPE OF DEFECTS & LEVEL OF SERVICE

Sr. No	Type of Defects	Level of Service
1	Pot holes shallow & deep	Area of each exceeding 25 sq. cm. & 1 cm. depth
2	Cracking –Type, width & extent	Over all not to exceed 5 % of surface area.
3	Ruts extent	Not exceeding 20mm. (depth of rut measured with 2m. straight edge with a length of 10m. at a place)
4	Corrugations	Not exceeding 25mm. (depth of rut measured with 3m. straight edge) Area exceed 1m
5	Reveling	Not to exceed 1sq.m.in an area
6	Bleeding	Not to exceed 5 % of surface area
7	Edge drop	Not to exceed 50mm.
8	Broken edge	Not to exceed 5 %
9	Patch work	Should not exceed 30 % in case, if exceeds surface to be renewal with wearing coat as originally land by contractor

(A) Maintenance Norms for Road Works

Sr. No	Distress and service Level	Remedy	Period to attend for the Contractor
1	Potholes – area of each exceeding 25 sq. cm. and 1 cm. in depth irrespective of number	Patching / Pothole filling MORT & H Specification 3004.1	One Month
2	Cracks exceeding 5 % of area in each K.m.	MORT & H Specification 3004.1	
	(a) Width of crack less than 3 mm.	Fog seal Clause 518 of MORT & H	One Month
	(b) Width of crack more than 3 mm.	Slurry seal Clause 516 of MORT & H	One Month
	(c) Alligator cracking more than 5 %	Full depth patching	One Month
	(d) Broken edge exceeding 5 %	Repair and reconstruct Shoulder with good quality material	One Month
3	Rutting depth of rut exceeding 10 mm. with a length of 10m. at a place	Full depth patching	One Month
4	Corrugation area exceeds 1sq. mat a place and depth / height of corrugation exceeds 25mm.	Full depth patching	One Month
5	Bleeding over 5 % area	Application of hot sand Clause M-3	One Month
6	Patch work area exceeds 30 %	Renewal with wearing coat as originally laid by Contractor	One Month
7	Roughness index of pavement exceeding 3500 mm/km during guarantee period (Checking of – Roughness index once in a year and 3 months before date of expiration of the guarantee period)	Renewal with wearing coat as originally laid by contractor	One Month

- (4) The flakiness and elongation index (combined) for coarse aggregates under circumstances shall exceed the allowable limit set forth in the relevant clause for the material in question.
- (5) 2% of the amount eligible for the payment of bituminous items shall be with held till the miscellaneous items like earthwork in embankment / cutting for side shoulders, side gutters, kilometer / indicator / guard stones, sign boards etc. are completed in all respect by the contractor. After completion of the miscellaneous items, the above said 2% with held amount shall be released.

- (6) Setting up of adequate laboratory & deployment of quality engineer.

The contractor shall have to set up the laboratory with adequate equipment. Till the setting up of adequate laboratory is completed & reported of this to the engineer (subject to due verification by engineers representative) by contractor in writing, Rs.2,00,000 shall be withheld. The qualified quality engineer shall be deployed exclusive for this contract by the contractors. If quality engineer is not deployed by contractor within one month after the date of work order, the amount equivalent to Rs.15,000 per month shall be recovered till the actual deployment of quality engineer. The amount so recovered towards the deployment of quality engineer shall not be refunded.

- (7) Asphalt work will have to be cross checked as per G.R. No.: RGN/60/2006/35/C, dtd.31/5/07 before final bill is paid.

- (8) Third Party testing

Employer shall authorize third party agency / Laboratory for quality testing of samples and materials.

- (9) Technical Audit & Quality Assurance :

The Employer shall select a consulting firm to undertake.

Independently the technical audit assurance job for this contract. Contractor shall cooperate & facilitate such that the T.A. & Q.A. job can be satisfactorily performed by the consultant.

- (10) Curves to be improved of this road shall be designed as per IRC by the contractor at his own cost and the design shall be got approved from the Engineer-in-charge prior to execution of work.

- (11) Contractor shall have to take photographs at different stages of the work and should be submitted with the final bill copy in hard and soft copy at free of cost.

- (12) Railway Portion detail design and drawings are in scope of DFCCL. It is a responsibility of the contractor to do necessary follow up for in-time availability of these drawings for the execution.

(B) Maintenance Norms for Bridge / C.D. Works :

APPENDIX -2

SELECTION OF TECHNIQUES AND MATERIALS

Adoption of a particular technique will be governed basically by the end requirements of structural repairs. Choice of materials shall also depend on various factors such as compatibility with the structure, availability of the equipment etc. While tackling structural repairs, several situations may be encountered. Choice of different techniques and materials as given in the table below is after considering such situations. The list given in the table is not exhaustive but only indicative of some commonly adopted techniques and it is possible to use these techniques/materials in combination with other methods.

of SP:40

Detailed description will be found in earlier chapters. In this, only summary is attempted.

Sr. No.	Type of Material of the Bridge	Component of the Bridge	Type of distress of damage	Suggested Remedial Measures	
				Repairs/Rehabilitation	Strengthening
I	Masonry Bridges	(A) Foundations	Undermining, Scouring	River Training Protection by Sheet Piling	—
			Settlement	—	Modification of the foundation, jacking etc.

Sr. No.	Type of Material of the Bridge	Component of the Bridge	Type of Extent of Damage	Suggested Remedial Measures	
				Repair/Rehabilitation	Strengthening
II	RCC Bridges	(B) Sub-structure	Leaching of mortar in joints surface deterioration	Epoxy mortar painting and injection of epoxy surface protection.	Grouting, Jacking
		(C) Super-structure	Cracking, loosening of Stones/bricks	Treatment by epoxy resin and mortar	Bonding of steel plates, Grouting
			Leaching of joints, surface deterioration	Protective coating	Adding material to the intrados or extrados in case of Arch Bridges
		(A) Foundation	Deterioration, Structural Damage, Sinking of foundation, Erosion	Protection and replacement of material. River Training by sheet piling, gablanding etc.	Modification of the foundation, jacking etc.
		(B) Sub structure	Spalling, Cracking, Disintegration, Sealing, Corrosion of reinforcement	Repair to concrete surface by cement mortar or resin systems. Injection of epoxy, Surface protection, Replacement of reinforcement.	Grouting with treatment to reinforcement and using bonding agent, jacking.
		(C) Superstructure	Surface deterioration spalling honey combs cracks disintegration, corrosion of reinforcement	Surface preparation by mechanical or chemical means with the use of sand blasting. Demolition of concrete by jack hammers, chisels explosives etc.	Strengthening by external reinforcement such as bars or epoxy bonded plates

Sr. No.	Type of Material of the Bridge	Component of the Bridge	Type of distress of damage	Suggested Remedial Measures	
				Repair/Rehabilitation	Strengthening
				<p>Bonding agent such as cement mortar/paste Impregnation with silicon, organic solutions, resins or oils</p> <p>Replacement of concrete section - careful pretreatment of surface and building up the section by resin system or cement mortar with plastic modification.</p> <p>Repair of cracks by proper selection of epoxy polyurethane resins. Acryl resins etc. and with suitable injection equipment.</p> <p>Shotcrete Gunite</p> <p>Protective coating. Removal of Chloride contamination - physical removal of affected concrete (wherever possible) and rebuilding the section</p>	Strengthening by post-tensioning-Using external prestressing cables suitably anchored at the end of the girder.

Sr. No.	Type of Material of the Bridge	Component of the Bridge	Type of distress of damage	Suggested Remedial Measures	
				Repair/Rehabilitation	Internal measures
iii	Prestressing Concrete	(A) Foundation	Details given under PSC	"PSC Bridges" are also applicable to	
		(B) Substructure	-do-	-do-	
		(C) Superstructure	Surface deterioration Spalling Corrosion of reinforcement	Repair methods suggested under "PSC Bridges" can be applied here also.	Strengthening by external Cables Epoxy bonded plates
	(B) Sub structure	Corrosion of cables	Corrosion of cables	Cleaning of prestressing cables and re-grouting	
		Loss of Prestress	Loss of Prestress	Complicated solution involved	
		Weakening of members	Weakening of members	Replacement of weak or defective members	Introduction of extra load carrying elements
	(C) Superstructure	Decrease in load carrying capacity	Decrease in load carrying capacity	Splicing	External prestressing of the beams and similar members
		Cracking	Cracking	Introducing new members	

Sr. No.	Type of Material of the Bridge	Component of the Bridge	Type of distress of damage	Suggested Remedial Measures	
				Repairs/Rehabilitation	Strengthening
V	Composite Bridges		Corrosion, pitting, Fatigue, Loosening of Bolts and rivets etc.	Protective coating, Replacement of bolts and rivets.	Addition of Stiffeners to flanges webs and diaphragms.
		(A) Foundation (B) Sub-structure	Abnormal deflections, Buckling, working or kinking of elements necking, yielding		
		(C) Superstructure	Details given in I to IV be applicable in pertinent particulars Not many references are available. Defects in concrete or steel shall be dealt as per manner described under Nos. II to IV.	1 to III above shall be applicable in pertinent particulars	

NOTE: - If any damage is observed/noticed during maintenance period, agency has to repaired as stated above (SP:40: Guidelines on techniques for strengthening & rehabilitation of Bridges).

Special Clause - III

Special Condition for Bituminous work with Use of Drum Mix Plant and paver finisher.

- (i) The Drum mix plant and accessories to be used for the work shall be conformity with the specifications prescribed vide Govt. of India, Minister of Transport Circular No. RN/RMP/1161384 dt. 01/01/87. The plant shall be equipped with all units and accessories as per latest IS 3066/1955 as amended from time to time. The contractors will have to modify their plants suitably within a period of six months from the date of issue of latest specification or codes.
- (ii) The contractor shall invariable get the job mix formula for the mix approved by the Engineer in charge before starting of work.
- (iii) Use of vibratory roller to be compulsory.
For the work like earth work, water bound macadam and bituminous items the compactions shall be done with vibratory roller only. The vibratory roller shall be of standard make and suitable to impart desired degree of compaction. The compaction with the help of static roller shall not be permitted and no claim what so ever shall be entertained on this account. Wherever use of the road roller is mentioned in specification / clause etc. in this documents shall be treated as use of vibratory roller.
- (iv) Amount to be with held till miscellaneous item are completed.
2% of the amount eligible for the payment of bituminous items only shall be with held till the miscellaneous items like earthwork in embankment / cutting for side shoulders, side gutters. After completion of all the miscellaneous items, the above said **2%** with held amount shall be released.

Special Clause - IV

CONSTRUCTION EQUIPMENT :

- 1.1 The methodology and equipment to be used on the project shall be furnished by the contractor to the Engineer well in advance of commencement of work and approval of the Engineer obtained prior to its adoption and use.
- 1.2 The contractor shall give a trial run of the equipment for establishing its capability to achieve the laid down specifications and tolerance to the satisfaction of the Engineer before commencement of work, if so desired by the Engineer.
- 1.3 All equipment provided shall be of present efficiency and shall be operated and maintained at all times in a manner acceptable to the Engineer.
- 1.4 No equipment or personnel will be removed from site without permission of the Engineer.

Special Clause - V

WORK PROGRAMME AND METHODOLOGY OF CONSTRUCTION :

The contractor shall furnish his programme of construction for execution of the work in within the stipulated time schedule together with methodology of construction of each time of work and obtain the approval of the Engineer prior to actual commencement of work.

Special Clause - VI

ACTION IN CASE OF DISPROPORTIONATE PROGRESS :

In case of extremely poor progress of the work or any item at any stage of work which in the opinion of the, Engineer can not be made good by the contractor considering his available resources, the Engineer will get it accelerated to make up the lost time through any other agency and recover the additional cost incurred, if any, in getting the work done from the contractor after informing him in writing about the action envisaged by him.

Special Clause - VII

SETTING OUT:

Setting out the work as spelt out in clause – 109 of Ministry's Specifications for Road and Bridge work (5th Revision) will be carried out by the contractor.

Special Clause - VIII

PUBLIC UTILITIES :

Action in respect of public utilities will be taken by the contractor as envisaged in clause 110 of Ministry's Specification for Road and Bridge work (5th Revision)

Special Clause - IX

ARRANGEMENT FOR TRAFFIC DURING CONSTRUCTION :

Action for arrangement for traffic during construction will be taken by the Contractor as envisaged in the contract documents and spelt out in Clause-112 of Ministry's Specifications for road and Bridge works (5th Revision).

Special Clause - X

QUALITY CONTROL :

The norms of achieving quality of work will be on the contractor who will take as stipulated in section-900 of Ministry's Specifications for Road and Bridge works. (5th Revision).

Special Clause - XI

MINISTRY'S SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (5th REVISION) :

The Ministry's specifications for Road and Bridge works (5th Revision) will form part of the contract documents and the contractor will be legally bound to the various stipulations made therein unless and otherwise specifically relaxed or waived partly through a special clause in the contract document.

Special Clause - XII

DOCUMENTATION:

The contractor will prepare drawing(s) of the work as constructed and will supply original with three copies to the Engineer who will verify and certify these drawings. Final as constructed drawing(s) shall then be prepared by the contractor and supplied in triplicate along with a micro film of the same to the Engineer for record and reference purpose.

Special Clause - XIII

APPLICABLE IN CASE OF ROAD WORKS ONLY :

The details of the paver, specified in the clause-504.3.5 will be relaxed in the case of Bituminous macadam (Clause-504) where it is going to be covered by any wearing course including 25 mm semi-dense concrete (Clause-519) and other than 40 mm semi-dense Bituminous Concrete (Clause-511)/Bituminous concrete (Clause - 512) or by a base course of Dense Bituminous macadam (Clause-507) with the provision that Bituminous macadam and 25 mm semi-dense Bituminous concrete can be laid by means of self propelled mechanical paver with suitable screeds capable of spreading tamping and finishing the mix true to the specified lines/grades and cross sections. (M.O.S.T. GOI No.RW/NH/33045/1/88-DO. II, Dated 6.4.1990).

1. The use of drum mix plant for mixing bitumen and aggregate is compulsory for this work. Only contractor possessing facility of drum mix plant shall be eligible to bid for this work. The tender copies shall be issued to only those contractors who are possessing drum mix plant.
2. The work shall be executed with the equipment as per MOST specifications (5th Revision), 1988, where in details of the types of equipment are given for various specification only those bidders who supply necessary proof/document for possession of the required type of equipment in their bids shall be considered as responsible for further evaluation and award of work.

Special Clause - XIII

- 1. Notwithstanding any clause of the tender, imported bitumen shall not be allowed.**
- 2. Compulsory batch mix plant to be included (no drum mix plant) for bitumen work**
- 3. Deck continuity to be adopted throughout bridge.**

LETTER OF BINDING

If any materials in special case is not available as per specification then in that case we will bring in good quality of materials as approved by the department from the other sources of supply and will not claim for any compensation thereof.

Signature of Contractor

Vice President
GUDC