গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

স্থানীয় সরকার প্রকৌশল অধিদপ্তর

"প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রীজেস"
আগারগাঁও, শেরেবাংলা নগর
ঢাকা-১২০৭।
www.lged.gov.bd

"শেখ হাসিনার মূলনীতি
গ্রাম শহরের উন্নতি"

স্মারক নং- ৪৬.০২.০০০০.৯২৭.১৪.১২০.২০২০.৮৭৯ তারিখ ঃ ২০.১০.২০২০ইং

প্রতি,

১। তত্ত্বাবধায়ক প্রকৌশলী
এলজিইডি, অঞ্চলঃ ..... (সকল)।

২। নির্বাহী প্রকৌশলী
এলজিইডি, জেলাঃ ..... (সকল)।

বিষয়ঃ "প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রীজেস" শীর্ষক কর্মসূচী'র আওতায় মাঠ পর্যায়ে কর্মরত পরামর্শকগণের Monthly Performance Monitoring Checklist যাচাই প্রসঙ্গে।

সূত্রঃ স্মারক নং- ৪৬.০২.০০০০.৯২৭.১৪.১২০.২০২০-৭১০ তারিখ ঃ ১৩/০৯/২০২০ইং।

উপর্যুক্ত বিষয়ের আলোকে জানানো যাচ্ছে যে, "প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রীজেস" শীর্ষক কর্মসূচী'র আওতায় মাঠ পর্যায়ে আঞ্চলিক তত্ত্বাবধায়ক প্রকৌশলীর দপ্তরে পরামর্শক প্রতিষ্ঠানের ০১(এক) জন Bridge Maintenance Engineer, ০১(এক) জন Survey Specialist, ০১(এক) জন Regional Quality Control Engineer এবং জেলা নির্বাহী প্রকৌশলীর দপ্তরে ০১(এক) জন Field Resident Engineer ইতোমধ্যে পদায়ন করা হয়েছে। কিন্তু তাঁহাদের কার্যক্রম Monitoring করার কোন টুল না থাকায় স্কীমের কাজের অগ্রগতি তথা প্রকল্পের কার্যক্রম বিঘ্নিত হচ্ছে। তাই পরামর্শকগণের প্রকল্পের কাজ নিয়মিত সুপারভিশন, মনিটরিং এবং বিভিন্ন Survey সহ অন্যান্য কার্যক্রম সমূহ আপনার দপ্তর এবং সদর দপ্তর হতে মনিটরিং করার জন্য অত্র দপ্তর কর্তৃক একটি Monthly Performance Monitoring Checklist প্রনয়ণ করে সূত্রস্থ স্মারকে প্রেরণ করা হয়েছিল। উক্ত Checklist টি আংশিক সংশোধন পূর্বক অত্র সাথে পূনরায় প্রেরণ করা হলো। প্রতি মাসের কার্যক্রমের বিষয়ে সংশোধিত Checklist টি Bridge Maintenance Engineer, Survey Specialist এবং Regional Quality Control Engineer পৃথক পৃথক ভাবে পূরণ করে আঞ্চলিক তত্ত্বাবধায়ক প্রকৌশলী'র নিকট এবং Field Resident Engineer সংশ্লিষ্ট জেলার নির্বাহী প্রকৌশলীর নিকট যাচাই এবং স্বাক্ষরের জন্য প্রেরণ করবেন। স্বাক্ষরিত Checklist টি পরামর্শকগণ নিজ নিজ দায়িত্বে পরবর্তী মাসের ০৫(পাঁচ) দিনের মধ্যে সংশ্লিষ্ট Consulting Firm এর নিকট প্রেরণের ব্যবস্থা গ্রহণ করবেন।

বিষয়টি অতীব জরুরীঃ

২০/১০/২০২০

(মোঃ শাহজাহান মোল্লা)
প্রকল্প পরিচালক (SupRB)
ও
অতিরিক্ত প্রধান প্রকৌশলী
ফোন: ০২-৯১২৯১০০
ই-মেইল: pd.suprb@lged.gov.bd

সংযুক্তিঃ Monthly Performance Monitoring Checklist (সংশোধিত)-৪ পাতা

অনুলিপি সদয় জ্ঞাতার্থেঃ

০১। প্রধান প্রকৌশলী, এলজিইডি, সদর দপ্তর, ঢাকা।
০২। অতিরিক্ত প্রধান প্রকৌশলী (পল্লী অবকাঠামো উন্নয়ন ও ব্যবস্থাপনা), এলজিইডি, সদর দপ্তর, ঢাকা।
০৩। অতিরিক্ত প্রধান প্রকৌশলী, এলজিইডি, বিভাগঃ .....।

অনুলিপি কার্যার্থেঃ

০১। পরামর্শক প্রতিষ্ঠান, ...। **তাঁর প্রতিষ্ঠান কর্তৃক নিয়োজিত সকল পরামর্শকের Checklist প্রাপ্তির পর প্রতি মাসের Invoice এর সহিত সংযুক্ত করে প্রকল্প পরিচালকের দপ্তরে প্রেরণ করবেন।**

০২। জনাব, ..., পদবীঃ BME/SS/RQCE/FRE। পরামর্শক প্রতিষ্ঠানের নামঃ .....।

Monthly Performance Monitoring Checklist
of
Field Level/Region Level Consultants
under
"Program for Supporting Rural Bridges (SupRB)"

(*Monthly Performance Report* to be filled and sent by the Consultants *by 5th of every month for the previous month*)

1.Personal Information:

a.	Name of the Consultant	:	
b.	Designation	:	
c.	Cell Phone No	:	
d.	E-mail Address	:	
e.	Place of Posting	:	
f.	Name of Consulting Firm (Employer)	:	
g.	Package Type [Field level/Regional level]	:	
h.	Division/Region	:	
i.	Consultant's Contract Package No.	:	

2. Performance Indicator:

2.1 Document Related (Please put a tick mark (√) in the Boxes)

a.[1]	Have you gone through the **(POM)[2] Program Operation Manual (Version-2, November 2019)?**		:	Yes	No
	a.1	Are you familiar with **DLI Matrix** described in the POM (Table-3.1)?		Yes	No
	a.2	Are you familiar with **DLI Verification Protocol** described in the POM (Table-3.2)?	:	Yes	No
	a.3	Are you familiar with **Condition State (CS1, CS2, CS3, CS4)** of the Individual Element of the Structure described in the POM (Table-5.1)?	:	Yes	No
	a.4	Are you familiar with **Bridge Maintenance Catalogue** described in the POM (Table-5.2)?	:	Yes	No
	a.5	Are you familiar with **Action Plan for Citizen Engagement** described in the POM (Table-9.2)?	:	Yes	No

1 Mandatory to put tick marks (√) in the appropriate boxes for all Consultants.

2 POM is available at https://oldweb.lged.gov.bd/ProjectLibrary.aspx?projectID=832 **of** www.lged.gov.bd

b.[3]	Had you been familiar with the **Environmental and Social Management Framework (ESMF)[4] of World Bank (WB)?**		:	Yes	No
	b.1	Have you participated in the Environmental and social related Training Program organized by SupRB at LGED HQ?	:	Yes	No
	b.2.	Are you familiar with i) **Environmental Screening Checklist (Annexure-A1)?** ii) **Questionnaire for Bridge projects (Annexure-A2)** iii) **Screening Format of Social Safeguard Issues (Annexure-A3)?** iv) **Environmental Management plan (EMP)** **[Sample EMP including A1, A2 and A3 formats has been given in Attachment-1]**	:	Yes	No

3 Mandatory to put tick marks (√) in the appropriate boxes by each BME (Br. Maintenance Engr.) and FRE (Field Resident Engr.)

4 ESMF is available at https://oldweb.lged.gov.bd/ProjectLibrary.aspx?projectID=832 **of** www.lged.gov.bd

2.2 Activities

2.2.1 Survey[5]

a.	Have you been familiar with **Bridge/Culvert Inspection Form** of LGED's existing **Road and Structure Database Management System** (RSDMS) Software?		:	Yes	No
	a.1.	Have you prepared any **Monthly Program Schedule** and taken approval from Superintending Engineer to survey Bridge/Culvert and related issues on Rural Roads for the reporting month? (If yes, Please attach the **Program Schedule** with approval of SE)	:	Yes	No
	a.1.1.	How many Structures you have conducted for survey and accordingly filled-up the **Sl. No. 1 to 6** of the **Bridge/Culvert Inspection Blank Form** as per Program Schedule in the reporting month? **(Please put the number in the Box)** (Form has been given in **Attachment-2**)	:		
b.	How many roads for **Traffic survey** you have performed in the reporting month? **(Please put the number in the Box)** (Form has been given in **Attachment-3** also can found in RSDMS software)		:		
c.	How many roads for **Socio-connectivity survey** you have performed in the reporting month? **(Please put the number in the Box)** (Form has been given in **Attachment-4** also can found in RSDMS software)		:		

5 Mandatory to fill up by each SS (Survey Specialist). Also mandatory to fill up by each BME only for Activities a1. and a1.1. under 2.2.1.

2.2.2 Visual Inspection of Bridge/Culvert[6]

a.	Have you been familiar with **Bridge/Culvert Inspection Form (given in Attachment-2) in the LGED's existing Road and Structure Database Management System (RSDMS) Software?**		:	Yes	No
	a.1	How many Structures you have inspected visually and accordingly filled up the **Sl. No. 7 to 10** of the **Bridge/Culvert Inspection Blank Form as per Program Schedule** in the reporting month? **(Please put the number in the Box)**	:		

6 Mandatory to fill up by each SS and BME.

Note for Survey and Visual Inspection of Bridge/Culvert:

I. **After getting order from Chief Engineer/Project Director for Updating of all kinds of survey and Inspection of Bridge/Culvert on UZR and UNR, Concern Superintending Engineer will issue an Office Order to form 2 (two) nos. Upazila-wise teams headed by SS and BME separately consisting of his Surveyor (Out Sourcing), Survey Assistant (Out Sourcing) of his region along with concern Upazila Engineer.**

II. **The Concern SS and BME will then separately prepare a Monthly program schedule through coordinating all Upazila Engineer which will be approved by the concern Superintending Engineer.**

III. **Upazila Engineer will ensure his presence or engage his representative with that team not below the Upazila Assistant Engineer, Sub Assistant Engineer or Surveyor of that Upazila.**

IV. **Updating of RSDMS/RuBIMS through performing all kinds of survey and Inspection of Roads/Structures will have to be conducted and coordinated by the SS and BME separately. Minimum 25 (twenty-five) nos. of Bridges/Culverts will have to be surveyed each month by each team. Except otherwise, according to order of Project Director, special Survey will have to be conducted time to time.**

V. **Hard copy of Survey Sheet will have to be signed by concern Surveyor (Out Sourcing), Sub-Assistant Engineer, Survey Specialist, Bridge Maintenance Engineer and Upazila Engineer.**

VI. **Executive Engineer or his Representative and Representative from Head Quarter will randomly check the Survey Data for validation.**

VII. **Above all, the method of conducting any engineering survey may be modified on the basis of the administrative order from Chief Engineer/Project Director.**

2.2.3 Structural Review[7]

a.	How many Bridges/Culverts you have participated with collaboration of **the Structural Review Team of SupRB** in the reporting month? **(Please put the number in the Box)**	:	

7 Mandatory responsibility of the concerned BME and FRE to fill up jointly.

i) **Note: Review will be arranged according to the direction of the Project Director (PD), SupRB.**

2.2.4 Environmental and Social Safeguard[8]

a.	How many structures you have surveyed and prepared EMP using **(Annexure-A1, A2 and A3 format) (Please put the number in the following Box)**	:	

8 Mandatory for concerned BME, QCE, FRE to fill up jointly.

Note: i) A1, A2, A3 formats and EMP will have to be prepared for every structure of a Package and EMP describing mitigation measures w.r.t identified impacts specified in A1, A2 and A3 formats should be prepared. EMP should be prepared for every structure under Major Main/Re-habilitation, Capacity Expansion, Replacement and New Construction. This work will have to be done before estimate preparation and send a complete set to Upazila Engineer office for include with the estimate

ii) Please remember, EMP will be the significant part of the Tender Document (TD).

2.2.5 Public consultation on Draft Design for New Bridge of ≥50m[9]

a.	How many **Public consultation meetings** were conducted before Bridge design at the time of preparatory stage for design in the reporting month? **In the consultation meeting, the main issues given below will have to be discussed;** **i) free board for facilitating movement of water transport,** **ii) any climate change related issues,** **iii) bridge location and approach roads,** **iv) inclusion of footpath in a bridge and** **v) inclusion of gender-related requirements** **vi) Others issues (if necessary) governing bridge design parameters.**	:	

9 Responsibility of the concerned BME, FRE.

2.2.6 Estimate Preparation and Check[10]

a.	Are you familiar with the **guidelines (Minor/Major Maint. as per memo no. 46.02.0000.927.14.80.19-856, dt:15/10/2019 given in Attachment-5 (PDF file)** to prepare **Estimates** of the selected Schemes (Bridge/Culvert) under SupRB Package?	:	Yes	No
b.	How many structures you have proposed with treatment option and submitted to Upazila Engineer for estimate preparation? **(Please put the number in the Box)**			
c.	How many Estimate (Structure)you have checked in the reporting month? **(Please put the number in the Box)**	:		
d.	How many **Estimates of Structure** have sent from District to SE(Region)/ SE(Region) to Project HQ in the reporting month? **(Please put the number in the Box)**	:		

10 Joint responsibility of the concerned BME, FRE and AE (SupRB)

Note: i) Color Photograph of the damaged components with caption will have to be attached with the estimate. Softcopy of the photographs will have to be preserved in sub-folder of concerned Bridge/Culvert including chainage, date and road ID information.

2.2.7 Quality Assurance[11]

a.	Are you able to prepare **the Quality Assurance Plan (QAP)?**	:	Yes	No
b.	Against how many Packages you have prepared **Quality Assurance Plans (QAPs)** in the reporting month? **(Please put the number in the Box)** **(Sample QAP for a Package given in Attachment-6)**	:		
c	How many structures you have visited and filled up the checklist for Monitoring QAP in the reporting month?			

11 Responsibility of the concerned Quality Control Engineer (QCE) and Field Resident Engineer (FRE)

Note: i) Quality Control Engineer (QCE) and Field Resident Engineer (FRE) will have to prepare QAP for the schemes which have been approved.

ii) Draft Sample of QAP report is given in Attachment-6 (PDF file).

iii) A common QAP report will have to be prepared after approval as a Package.

iv) QAP will be the significant part of the Tender Document (TD).

2.2.8 Labour Management Plan (LMP) of Approved scheme with estimated cost ≥ 4 (four) crore[12]

a.	Against how many Schemes you have prepared **Labour Management Plans (LMPs)** in the reporting month? **(Please put the number in the Box)** **(Sample LMPs for a Package given in Attachment-7)**	:	
b	How many structures you have visited and filled up the checklist for Monitoring LMP in the reporting month?		

12 Responsibility of the concerned BME and FRE. AE (SupRB) will assist them.

Note: i) LMP report will have to be prepared after approval.

ii) Draft Sample of LMP report is given in Attachment-7 (PDF file).

iii) LMP report will be the significant mandatory part of the Tender Document (TD).

2.2.9 Sub-Soil Investigation and Topographical Survey[13]

a.	How many **Sub-Soil Investigations** performed **in your District and you were present in that investigation?** in the reporting month? **(Please put the number in the Box)**	:	

b.	How many **Topographical Surveys** performed in your District and you were present in that investigation in the reporting month? **(Please put the number in the Box)**	:	

13 Responsibility of the concerned SS and FRE. AE (SupRB) will ensure reporting to PMU, SupRB.

Note: **i) Sub-Soil Investigation and Topographical Survey will be performed after the approval from Project Director for being selected for Capacity Expansion, Replacement and New construction by PMU through Structural Review.**

ii) Terms of References (ToR) of Sub-Soil Investigation and Topographical Survey are available in Executive Engineer Office and at https://oldweb.lged.gov.bd/ProjectLibrary.aspx?projectID=832 **of** www.lged.gov.bd.

2.2.10 Work Supervision[14]

a.	How many **Structures** you have supervised in the reporting month? **(Please put the number in the Box)**		:	
	a.1	Please fill the Monthly Work Supervision Checklist **(Attachment-8)**		Attached

14 Responsibility of the concerned BME, SS, QCE, FRE and AE (SupRB). They will visit the Schemes jointly/ separately.

Note: **i) Supervision program will be made by Team Leader (selected by SE, LGED, Region) with the coordination of BME, QCE, FRE and AE (SupRB) in such a way that according to work program fixed at the Management Meeting headed by the District Executive engineer, progress will have to be achieved.**

2.2.11 Progress Monitoring[15]

a.	Please fill the Progress Report of the reporting month in your jurisdiction **(Attachment-9)**		:	Attached	
	a.1.	Have you identified any issues for particular Scheme that are hindrance to achieve satisfactory physical progress?	:	Yes	No

15 Responsibility of the concerned BME, SS, QCE, FRE and AE (SupRB).

I declare that the information provided in the checklist are correct and authentic.

Verified by:

Signature

Signature

(Name:.....)

Designation.....

District/Region.....

(Name:.....)

Designation (SE, Region/District XEN).....

Region/ District .....

Notice: Every Consultant is requested to send the verified Performance Checklist separately to his/her Consulting Firm (Employer).

The Managing Directors or their authorized representatives are requested to sign the verified Performance Checklist and accordingly send to the Project Director, SupRB with monthly invoice.

Signature

(Name:.....)

Designation.....

Consulting firm.....

Important Note: Please feel free to raise any query. If any problem of understanding arise to fill up the checklist, please contact with

(i) Mr. Md. Reffat Nur, XEN, SupRB, LGED HQ (01711-197148) and e-mail: reffatnur@gmail.com
(ii) Mr. Md. Abu Kamal, XEN, SupRB, LGED HQ (01713-413555) and e-mail: makamal94@yahoo.com
(iii) Mr. Masum-Al-Mamun, Sr. AE, SupRB, LGED HQ (01713-460958) and e-mail: mamamun.1976@gmail.com
(iv) Mr. Md. Monirul Islam, Sr. AE, SupRB, LGED HQ (01716-796112) and e-mail: monirul1968@yahoo.com
(v) Mr. Rabi Shankar Chowdhury, Sr. Training Specialist-1, SupRB (01711-132468) and e-mail: rabichy1957 @gmail.com
(vi) Mr. Jiban Krishna Saha, Sr. Training Specialist-1, SupRB (01912-850247) and e-mail: saha.jibank@ yahoo.com

Attachment-1

LOCAL GOVERNMENT ENGINEERING DEPARTMENT
Program for Supporting Rural Bridges (SupRB)

Environmental Management Plan (EMP)
for

The Scheme
of
12.00m long RCC Girder Bridge at ch. 2+740km on Upazila road [Rd. ID. 367062003] in Bandar Upazila

and

9.00m long RCC Girder Bridge at ch. 3+175km on Upazila road [RD. ID. 367062006] in Bandar Upazila

under

Package No: SupRB/Nara/Maint/18-19/W-01

1.0 Package Description:

1.1 Package No.	:	SupRB/Nara/Maint./18-19/W-01
1.2 Name of the Work under the package	:	This sub-project involves the maintenance work of 03 (three) nos. Bridges containing 03 (three) schemes namely: **Scheme-1:** Minor Maintenance of 120.00m long RCC Girder bridge at ch. 10+223km on Upazila road [Rd. ID. 367022003] in Araihazar Upazila, **Scheme-2: Major Maintenance** of 12.00m long RCC Girder Bridge at ch. 2+740km on Upazila road [Rd. ID. 367062003] in Bandar Upazila, **Shceme-3: Major Maintenance** of 9.00m long RCC Girder Bridge at ch. 3+175km on Upazila road [RD. ID. 367062006] in Bandar Upazila under Narayanganj district.
1.3 District Name	:	Narayangonj
1.4 Name of the Upazila	:	2 in Bandar Upazila & 1 in Araihazar Upazila
1.5 Name of the Work under **major maintenance** that requires EMP	:	**Scheme-2:** 12m long RCC Girder Bridge on Bandar R&H – Bejergaon R&H via. Chowdhurybari GC Road at Ch. 2+740Km in Bandar Upazila requires **Major Maintenance.** **Shceme-3:** 9.00m long RCC Girder Bridge at ch. 3+175km on Upazila road [RD. ID. 367062006] in Bandar Upazila requires **Major Maintenance.**
1.6 Geographical Location of the bridge under **Major Maintenance**	:	**Scheme-2:** Latitude: ---------- Longitude: ---------- **Scheme-3:** Latitude: ---------- Longitude: ----------

2.0 Characteristics of the bridge under Major Maintenance:

2.1 Year of Construction & Executing agency	:	**Scheme-2:** Construction year _____ Implementation Agency _____ **Scheme-3:** Construction year _____ Implementation Agency _____
2.2 Total length of the Bridge	:	**Scheme-2:** 12.00 m (Existing) **Scheme-3:** 9.00 m (Existing)
2.3 Width of the Bridge	:	**Scheme-2:** ----------m (Existing carriage way) **Scheme-3:** ----------m (Existing carriage way)
2.4 Width of the walkway (If available)	:	**Scheme-2:** Right Side ---------- m Left Side ---------- m **Scheme-3:** Right Side ---------- m Left Side ---------- m

2.5 Number and Length of Span	:	**Scheme-2:** No. ---------- and ---------m +-------m +---------m **Scheme-2:** No. ---------- and ---------m +-------m +---------m
2.6 Height of Abutment	:	**Scheme-2:** Abutment 1(at Back App.): --------- m Abutment 2 (at Front App.): ----------m **Scheme-3:** Abutment 1(at Back App.): --------- m Abutment 2 (at Front App.): ----------m
2.7 Name of the Road & Total length	:	**Scheme-2:** Bandar R&H – Bejergaon R&H via. Chowdhurybari GC, & Total length ----------Km **Scheme-3:** Ispahani bazar (Sadhurghat)-Langabandh GC Road & Total length ----------Km
2.8 Name of the River/Khal	:	**Scheme-2:** **Scheme-3:**

Fig. Scheme-2: Image of the Bridge

Fig. Scheme-3: Image of the Bridge

3.0 Overall Environmental Assessment according to the Environmental screening data:

The proposed Bridge Maintenance sites are not located within any environmentally sensitive area and thus will not create threats to the important environmental features. Some earthwork will be involved, but no agriculture productive soil will be used for the purpose. To minimize noise pollution, the entire work site will be surrounded by fencing. Air quality will be controlled by spraying water time to time. Pure drinking water will be supplied for all the workers in the site. Personal health and safety equipment will be provided to all workers, supervisors, visitors etc. For work site safety all kinds of measures will be taken and that will be ensured time to time through top level monitoring and safety inspection. Moreover, if required additional mitigation measures will be taken according to the EMP.

4.0 Environmental Mitigation and Monitoring Plan (EMMP)

We have carefully reviewed and considered the potential environmental impacts included in the Environmental Screening data sheet, Bridge Information Data sheet and Social Screening data sheet. Due to same nature of the maintenance works under the 2 (two) Schemes, based on Environmental and Social screening reports we have considered following same mitigation measures against the project activities and affected environmental aspects. Table 4.1 below presents mitigation measures, organization/personnel responsibility for EMP implementation, supervision and monitoring as well as scheduling of monitoring.

Table 4.1: Environmental Mitigation and Monitoring Plan (EMMP)

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
Pre-maintenance Period						
Construction of labor camp	May occur loss of agricultural land, improper waste disposal may affect environment. Also improper sanitation facility will generate health hazard situation for the workers and the area.	Identify the location of construction camps so that minimum/no disturbance on agricultural land. Camps shall not be located near settlements or near water supply intakes. Camp site will be kept neat and clean strictly. Toilet facility and water supply facilities will be properly provided.	Cost for necessary measures Integrated into BOQ Item	Contractor	LGED & Supervision Consultant at Regional and Field level	Based on CEMAP
Removal of Vegetation	May cause soil erosion and their deposition on nearby crop field, affecting soil quality and productivity.	Vegetation will be removed from the ROW before the commencement of construction after obtaining necessary permissions.	Cost for necessary measures Integrated into BOQ Item	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Tree cutting	Cutting of trees will not be required but some bushes are in a risk of being cut for the	Use of trees/bushes will be avoid strictly as fuel for the construction and other purpose.	-	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
	construction work.					
Setting up of Bituminous material preparation yard	Emission of hot and polluting fumes affecting air quality, causing health hazard and damaging green habitation.	Hot mix plants and Tar boiler shall be located at a safe distance from the nearest habitation and dense tree area.	-	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Identification of general solid waste, construction & dismantled debris dumping sites	Hither and thither dumping of waste may cause nuisance to human habitat, cause hindrance to natural drainage of the surrounding areas.	Following criteria shall considered strictly for location of debris dumping sites. • Shall not be located within designated forest areas. • Dumping cannot impact natural drainage courses. • Dumping sites shall be located at least 1 km away from the site.	Cost for dumping of waste to the designated area is included in BOQ	Contractor	LGED & Supervision Consultant at Regional and Field level	Once
Maintenance Period						
Earthwork	Land slide, silt deposition on crop fields, dust blowing	Proper care will be taken during cutting and filling so that slope or toe of the road embankment remain within the right of way and does not damage the crop.	Measures shall be taken as Described in the BOQ	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Construction Materials Transportation	Transportation of construction Materials without protection may cause environmental pollution through dust generation and spillage	Vehicles transporting the material from quarries to the construction site shall be covered to prevent blowing of dust and spillage.	-	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Tree Plantation	The natural and Planted vegetation and trees at the subproject will not be subjected to disturbance	Trees plantation will not be required. All the construction related disturbances will be expected to be temporary and the situation will be	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
	and removal during the activities.	restored after the construction is over.				
Dust	Cause air pollution	• Vehicles delivering materials should be covered to reduce spills and dust blowing. • In laying sub-base/base course in pavement repair, water will be sprayed regularly to limit the dust at desired level. • Plants, machinery and equipment shall be so handled (including dismantling) as to minimize generation of dust.	Measures shall be taken as described in the BOQ	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Noise	Noise quality will be deteriorated due to vehicular traffic & construction equipment that have an impact on adjacent residents.	• Transportation of the construction materials have to be carried with scheduled time, mainly day time. • Stone/Bricks breaking machine shall be confined within a temporary shed. • Construction equipment and vehicles shall be fitted with silencers and maintained properly.	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Surface water	Contamination of surface water may be due to throwing of construction and general wastes and oil spill from the construction equipment and vehicles	• No waste/debris shall be throwing into water bodies. • Handling of hazardous liquid will be carefully done. • Wastes shall be dumped into the designated waste dumping area. • Surface water testing in the designated	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	3 times during the contract period

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
		laboratory shall be done.				
Water Logging	During construction work or in rainy season water logging may take place	• Proper care will be taken during maintenance work through providing drainage facilities at work site to avoid water accumulation. • Cleaning of tree trunks, branches, graffiti, accumulation of debris, vegetation in and around abutment, Pier, Pile cap for free movement of waterways within 150 meters upstream and downstream faces of the existing bridges including disposing them at a safe distance from site outside ROW etc. will be taken during maintenance work to avoid water logging and drainage congestion.	As per specification described in BOQ	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Maintenance Safety	Temporary electrical wiring, excavation of borrow pits, stockpiling of construction materials, placing of construction equipment and movement and parking of construction vehicles etc. have an impact to construction site safety.	• Adequate precautions will be taken to prevent danger from electrical wiring and equipment. • No material will be so stacked that will cause danger to any Person / public. • Warning sign shall be provided to protect the public. • Parking of vehicles shall be done in systematic way. • Limit the speed of the vehicles.	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
Occupational Health and Safety (OHS)	Lack of proper housing, water supply and sanitation facilities will generate health hazard. Management of waste is crucial to minimize impacts on the environment. Lack of first aid facilities and health care facilities will aggravate the health conditions of the victim. Working without health safety (PPE) may cause injury to the workers.	• Adequate housing, safe drinking water supply, hygienic sanitary facilities and sewerage system shall be provided as per BOQ. • Locate garbage site minimum 500m away from residents area and covered with soil shall be ensured. • Appropriate PPE for workers, first aid facilities, adequate lighting in the construction area, work site safety etc. shall be provided.	Cost for sanitary latrine, source of safe drinking water, solid waste disposal, PPE, First aid box etc. included in BOQ	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Road Traffic and Accidents	Due to narrow access road the movement of normal road traffics and the safety of the road users.	• Provision for traffic management during maintenance work will be taken for keeping safe traffic flow all the time. • Road safety measures such as warning signs/lights, road safety signs, flagman etc. shall be included.	As per BOQ of bidding document	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Air Pollution	Air quality can be effected due to vehicle exhaust emission and blowing dust.	• Fit vehicles with appropriate exhaust system shall be used. • Water spray to the dry earth as and when required will be ensured. • The Air quality monitoring will be carried out.	As per BOQ of bidding document	Contractor	LGED & Supervision Consultant at Regional and Field level	3 times during the contract period
Disturbance of Boat Communication	Temporary disturbance from construction	• Local community shall be informed about small disturbances	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional	Based on occurrence and complaint

Activities & Aspects	Potential Environmental Impact(s)	Mitigation Measures	Budgeting	Responsibility		Monitoring Schedule (How Often?)
				Implementation	Supervision	
	activities on the water ways.	• Restrict the boat movement particularly during construction and dismantling activities. • Preference of working schedule will be given during dry/winter season.			and Field level	
Fisheries and other Aquatic Animals	Turbid water can disturb spawning beds for fish	• Construction activities will be preferred during the dry season • Careful handling of construction waste in the construction site.	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Flora and Fauna	Dust will reduce the growth of trees Noise generation can create disturbance for the birds and wildlife Obstacle in water flows act as barriers to the migration of fishes and aquatic animals.	• Regular water spraying in the dry area • Construction activities will be preferred during the dry season • Avoid unnecessary machineries and equipment's operation	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Daily
Influx of construction workers	Social conflict Unavailability of food, water etc. Discrimination of labor wages	• Consider the location of worker camps away from communities. • Create awareness on social issues among the camp users. • Ensure the availability of food and water supply • Working conditions and terms of employment will be fully compliant for the Bangladesh labor laws.	Measures shall be taken as described	Contractor	LGED & Supervision Consultant at Regional and Field level	Based on occurrence and complaint

5.0 Environmental Supervision and Monitoring

Environmental and Social mitigation measures supervision shall be implemented as part of overall engineering supervision of project activities. The supervising stuff of contractor and LGED will be responsible for ensuring the EMP mitigation measures are employed. A checklist (Site Visit Form) for field inspection of

environmental and social safeguard measures have been developed in order to ensure the EMP implementation and assesses the effectiveness of control measures. LGED is responsible for ensuring that

- EMP provisions are incorporated into contractor documents.
- Adequate resources and personnel are in place to supervision and monitor EMP performance.
- All contractors and subcontractors comply with EMP regulations on daily basis.
- All monitoring—data is adequately recorded for reporting purposes
- Oversee the Contractors Environmental Management Action Plan (CEMAP)

6.0 Cost of Environmental Enhancement Works in BOQ

In consideration to the environmental impacts and their mitigation measures mentioned above for this sub-project, the following items are included in the BOQ for ***in figure*** (***in words***) schemes separately under this sub-project.

Sl. No.	BOQ Item No.	Description of Item	Unit	Cost for Scheme-2 (Tk.)	Cost for Scheme-3 (Tk.)
		ENVIRONMENTAL and SOCIAL MITIGATION ENHANCEMENT WORKS			
		Overall environmental and social management in addition to compliance to the clauses 27 & 29 of GCC to the entire satisfaction of E-I-C			
1.	M.M.1	**Drinking Water Facilities:** Providing continuous adequate drinking water supply at worksite and site office as well by installing necessary tube-well/s where applicable or any other means depending on local situation, also providing essential arrangement for storing drinking water by supplying portable best quality water tank equivalent to Gazi/Padma of adequate capacity depending on the number of users, including supplying 1 (one) no. best quality water filter of minimum capacity 30 liters with necessary kits, etc. all complete as per satisfaction and direction of the Engineer-in-charge, all relevant goods and equipment under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully.	LS		
2.	M.M.2	**Temporary Toilet Facilities:** Providing at least two nos. portable toilets or constructing temporary semi pucca toilets one for female and another for male with necessary soak well at worksite and site office in a safe location, so that no adverse impact will generate on the surrounding environment, including providing requisite arrangement for water supplying etc. All complete as per drawing, specification, direction and satisfaction of the Engineer-in-charge. All relevant accessories and arrangements under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully.	LS		
3.	M.M.3	Waste Disposal Facilities: Providing, installing and maintaining at least 2 (two) nos. waste disposal bins one for organic waste and other for inorganic waste of minimum capacity of 30liters with hinge supported 450mm dia cover plate for opening, made of durable plastic material at worksite, both bins will be kept in a safe and easily accessible place, so	LS		

Sl. No.	BOQ Item No.	Description of Item	Unit	Cost for Scheme-2 (Tk.)	Cost for Scheme-3 (Tk.)
		that will easy to use and no adverse impact will generate on the surrounding environment, including continuing the full functioning of waste disposal in accordance with the full satisfaction of the project manager throughout the contract period, all complete as per drawing, specification and direction of the Engineer-in-charge. Entire relevant accessories and arrangements under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully.			
4.	M.M.4	**Traffic Management:** Maintaining traffic management at the worksite from the time of commencement of the contractor's activities to the time of completion of the activities, including ensuring that the road is safe for users of the road, providing a safe working area for those involved in work on the trafficked network and minimizing any disruption to the smooth flow of the traffic (this includes providing necessary barricades, warning signs/lights, guide signs, flagmen, maintaining diversion roads by cutting, filling, constructing, etc. or by any other means) in accordance with the full satisfaction of the Engineering-in-charge, unless specified otherwise, including keeping provision for existing traffic and pedestrian movements in such a way as to assure that a single lane at least 3.0m wide is available for public traffic at all times (including access to properties and local roads) affected by the contractor's activities shall be maintained at all times (day & night), including removal of all temporary constructions on completion of the activities, etc. all complete as per requirement and instruction of Engineer-in-charge. All relevant accessories and arrangements under this item shall be property of the contractor and payment will be made after 100% completion of the contract successfully and be applicable where AADT≥ 1000.	LS		
5.	M.M.5	Control of Air Pollution (Dust Suppression): Maintaining, carrying out proper and efficient measures wherever and as often as necessary to reduce the dust nuisance, and to prevent dust which has originated from the contractor's activities/operations at the worksite and site office, including sprinkling water on aggregates/unpaved roads at least three times a day or more depending on the atmospheric conditions, including keeping necessary covering/protection on stockpiled fine aggregates to reduce the dust nuisance during natural air blowing, all complete like emission of dust into the atmosphere shall be strictly controlled during the manufacture, handling, storage of concrete, road aggregates, and to be used such methods and equipment as are necessary for the collection and disposal, or prevention, of dust during these operations means of eliminating atmospheric discharges of dust as per requirement and instruction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.	LS		
6.	M.M.6	**Control of Soil Pollution:** Providing appropriate controlling measures to prevent entrance, or accidental spillage, solid	LS		

Sl. No.	BOQ Item No.	Description of Item	Unit	Cost for Scheme-2 (Tk.)	Cost for Scheme-3 (Tk.)
		matter, contaminants, debris, garbage, cement, concrete, sanitary waste, oil, other petroleum products and wastes into soil to avoid soil pollution at the worksite and to evade emission of high concentration of sediments into wetlands, swampy areas and other particular sensitive areas, all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.			
7.	M.M.7	**Control of Water Pollution:** Providing necessary arrangement to prevent entrance, or accidental spillage, solid matter, contaminants, debris, garbage, cement, concrete, sanitary waste, oil, other petroleum products, pollutants and wastewaters from aggregate processing, concrete batching, or other construction operations into streams, flowing or dry watercourses, lakes, and underground water sources for ensuring water quality, including monitoring p^H value, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), etc, including concerned tests to be carried out three times (before, during and end of physical work) from the nearest Department of Public Health Engineering (DPHE) laboratory or any laboratory/ies approved by PM, all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.	LS		
8.	M.M.9	First Aid Box: Supplying, equipping and maintaining adequate first-aid box throughout the working period at worksite and site office, and erect conspicuous notice boards directing where these are situated and providing all requisite emergency medical first aid kits, including complying with the government medical or labour requirements at all times, and provide, equip and maintain necessary dressing kits throughout the working period for attending minor injuries, etc. all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.	LS		
9.	M.M.10	**Personal Protection Equipment for Workers:** Providing and maintaining appropriate (safe design, fit and comfort) personal protection equipment (PPE) to ensure the highest possible protection for employees in establishing and maintaining a safe and healthful working environment at workplace, including demonstrating, providing training on the proper understanding and development of skill in the use of PPE, including supplying (i) best quality safety jacket for construction workers made of 100% polyester waterproof fabric, fluorescent yellow/orange/green/red/blue or pantone color, (ii) suitable hand protection gloves for construction work of Flexible/durable/excellent puncture resistance working gloves with PVC palm and T/C drill back, pasted cuff, palm liner and fit properly and be reasonably comfortable to wear, (iii) appropriate foot protection shoes having impact-resistant toes and heat-resistant soles that will protect the feet against hot	LS		

Sl. No.	BOQ Item No.	Description of Item	Unit	Cost for Scheme-2 (Tk.)	Cost for Scheme-3 (Tk.)
		working surfaces, (iv) best quality safety helmets of ABS shell, tough, lightweight, durable which will be able to resist penetration by objects, absorb the shock of a blow and water-resistant and slow burning with available four-six-point adjustable suspension for shock-absorbing, slotted sides to accommodate accessories, such as face shields, ear muffs (v) suitable eye protection goggles to protect against specific workplace hazards, fit properly and be reasonably comfortable to wear, provide unrestricted vision and movement, including instructing workers to wear strictly during working time and reviewing periodically, updating, evaluating the effectiveness of the PPE and maintaining, replacing worn or damaged PPE etc. all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.			
10.	M.M.11	**Site Preparation, Protective Fencing & Safety Measure with Warning Sign:** Erecting and maintaining temporary fencing and gates, and if necessary, providing watchmen to ensure that livestock cannot stray at surrounding premises of site office/work site with using of best practice construction techniques to minimize disturbance to fauna and flora, and confining it within defined working areas, utilizing of appropriate techniques to minimize soil erosion, including filling and cutting slopes shall be repaired immediately whenever damaged by surface water, compacting the filled material, using suitable light equipment and confine the effects of vegetation clearance and soil disturbance within defined allocated land boundaries including avoiding environmentally sensitive or valuable areas such as nature reserves, archaeological sites, areas inhabited by sensitive species, areas adjacent to surface water bodies, providing necessary protective fencing and safety measures with warning signboard, including furnishing and placing all materials, labour, equipment, tools and incidentals necessary to complete the work and removal, disposal at a safe distance after completion of work etc. all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.	LS		
11.	M.M.12	**Site Cleaning, Removal and Disposal Activity:** Cleaning and maintaining at all times, keeping the construction area, storage areas used, free from accumulations of waste materials or rubbish, with necessary arrangement for collecting at a central disposal area, on a daily basis and disposing in a manner approved and satisfaction by the Engineer, especially waste water and sewage from office, residential and mobile camps shall be piped to soak pits or other disposal areas, all used fuels, oils, other plant or vehicle fluids, old tyres, tubes, other solid waste from household, office, workshop, construction materials, etc. to be kept at safe places and any spillages shall be cleaned up by either burning in place or collecting the contaminated soils and burning them at the central disposal area, including removing all waste, debris, rubbish, unused materials, concrete forms and other like	LS		

Sl. No.	BOQ Item No.	Description of Item	Unit	Cost for Scheme-2 (Tk.)	Cost for Scheme-3 (Tk.)
		material, tools, equipment, machinery and surplus/unwanted materials buried or cleaned up in a manner acceptable to the Engineer after completion of work etc. all complete as per requirement and full satisfaction of Engineer-in-charge. Payment will be made after 100% completion of the contract successfully.			
12.	M.M.15	Cleaning out tree trunks, branches, graffiti, accumulation of debris, vegetation in and around abutment, Pier, Pile cap, including cleaning waterways within 150 meters upstream and downstream for free movement of water, faces of the existing bridge including river banks, including removal and disposal of mentioned unwanted material, trash, plastic, vegetation, etc. at a safe distance, all complete as per requirement, direction and full satisfaction of Engineer-in-charge, furthermore vegetation will grow and debris will regenerate again in the course of time during construction, So, the job also includes re-clearing of the areas previously cleared, including the removal and disposal of mentioned unwanted material, debris, other vegetation and objectionable material in the same manner as for the first clearing operation, Frequency of cleaning will be two times throughout the contract period.	LS		

7.0 Contractor's Environmental Management Action Plan (CEMAP)

The Contractor shall provide Risk Assessment and Management program in each major activities, and it shall be attached in Work Method Statements separately and submitted to the Employer and the Engineer for approval prior to the commencement of construction works. All risks shall regularly be reviewed to ensure hazards related to each operation.

List of potentials those will need to be addressed in the CEMAP are:

(i) Construction Noise Management
(ii) Air quality including dust management
(iii) Sustainable waste management
(iv) Traffic Management
(v) Water Management (Ground & Surface water)
(vi) Archaeology and heritage management (if any)
(vii) Management and protection of ecological resources
(viii) Contaminated land management
(ix) Occupational Health and Safety

The CEMAP would be set out objectives and targets for the site that are realistic and relevant for maintaining or improving environmental performance. The contractor will submit CEMAP in the Form shown below.

Form: Contractor's Environmental Management Action Plan (CEMAP)

Name of Work	**:**	**Scheme-2:** Major Maintenance of 12m RCC Girder Bridge on Bandar R&H-Bejergaon R&H via. Chowdhurybari GC Road at ch. 2+740Km **Scheme-3:** Major Maintenance of 9.00m long RCC Girder Bridge on Upazila road at ch. 3+175km	**Date of work commencement:** **Scheme-2:** **Scheme-3:**
Name of Contractor	**:**		**Mobile:**
Name of Contractor's Representative	**:**		**Mobile:**

Sl.	Item	Description of Action to be Taken with specific steps for Resolution	Persons Assigned	Performing Date
1.	Drinking Water Facilities	Installation of Tube well and arrangement for storing water in water tank, 30lit. capacity Water filter etc. for supplying adequate potable drinking water at site office, Work site and Labour camp.	Construction Manager and Foreman	
2.	Temporary Toilet Facilities	Construction of temporary semi pucca toilet/portable toilet including arrangement of water supply etc. all complete (1 for male and 1 for female)	Construction Manager and Foreman	
3.	Waste Management/ Disposal Facilities	Setting 2 nos. plastic bins of minimum 30 liter capacity for waste disposal at site office/work site (one for organic waste and another for inorganic waste).	Construction Manager and Foreman	
4.	Control of Air Pollution (Dust Suppression	Arrangement for spraying water around the work site/site office also sprinkling water on aggregates / unpaved roads at least 3-times daily.	Construction Manager and Foreman	
5.	First Aid Box.	First Aid Box at place including emergency medicine, first aid kit etc.	Construction Manager and Foreman	
6.	PPE for Workers	Personal Protective Equipment (Safety Jacket, Hand gloves, Safety shoe, Safety helmet, eye protection etc.) have to be available at site.	Construction Manager and Foreman	
7.	Work site Safety	Providing protective fencing and safety measures with warning sign plates at proper location and arrangement for disposal/removal of solid waste/construction waste/ unwanted materials at safe distance.	Construction Manager and Foreman	
8.	Site Preparation/ Cleaning	Preparation of areas including drainage system for storing properly the all kinds of construction materials.	Construction Manager and Foreman	

Sl.	Item	Description of Action to be Taken with specific steps for Resolution	Persons Assigned	Performing Date
9.	Surface Water Quality Test	Carrying out test (Temperature, pH, TDS, EC, Salinity, DO, COD, BOD & TSS) for quality of surface water at downstream of the bridge.	Construction Manager and Foreman	
10.	Air Quality Test	Carrying out test (PM_{10}, PM_{25}, SPM, NOx & SOx) for quality of air adjacent to the bridge site.	Construction Manager and Foreman	
11	Noise Management	Stone/Bricks breaking machine shall be confined within a temporary shed. Construction equipment and vehicles shall be fitted with silencers and maintained properly.	Construction Manager and Foreman	
12	Traffic Management	Road safety measures such as warning signs / lights, road safety signs, flagman etc. shall be provided.	Construction Manager and Foreman	
13	Construction Materials Transportation	Vehicles transporting the material from quarries to the construction site shall be covered to prevent blowing of dust and spillage.	Construction Manager and Foreman	

Signature with Date

Contractor's Environment and Safety Supervisor

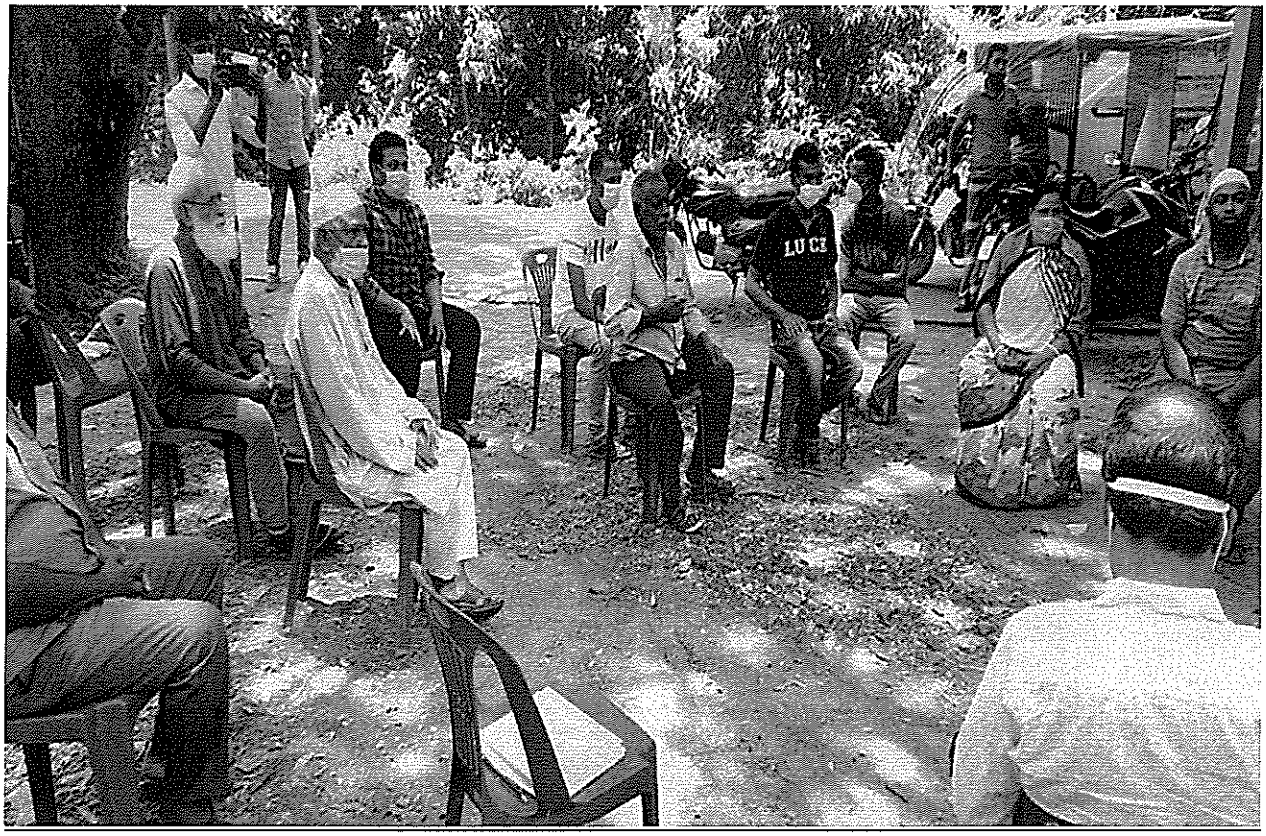

Fig 1. Image of Stakeholders consultation meeting on Environmental and Social issues

Fig 2. Image of Stakeholders consultation meeting on Environmental and Social issues

Attendance of the Stakeholder Participant

Date :- 16-04-2019

Sl. No.	Name	Sex	Address with Phone Number	Occupation	Signature
01.	মো: হাবিবুর রহমান	পুরুষ	রংপুর 01718429557	SAE (LGED)	[signature]
02.	মো: আলমগীর হোসেন	পুরুষ	[illegible]	ইঞ্জিনিয়ার	[signature]
03.	[illegible]	পুরুষ	[illegible] 01734898632	ইঞ্জিনিয়ার	[signature]
04.	মো: আ: লতিফ	পুরুষ	[illegible] 01767220082	বেকার	[signature]
05.	মোঃ আমিনুর রহমান	পুরুষ	চৌধুরানী বাজার [illegible]	ব্যবসায়ী	[signature]
06.	মো: মোস্তাফিজুর রহমান	পুরুষ	রংপুর 01750-846478	AE (SupRB)	[signature]
07.	মোহাঃ মাহবুবুর		[illegible] 01905-939576	ইউ. পি. সদস্য	[signature]
08.	মোঃ লেবু মিয়া	পুরুষ	রামচন্দ্রপাড়া 01727985548	চাকুরী	[signature]
09.	মো: [illegible] মিয়া	পুরুষ	রামচন্দ্রপাড়া [illegible]	—	[signature]
10.	মো: [illegible]		[illegible] 01755428207	কৃষি	[signature]
11.	মো: মমিন		[illegible] 01716155604	কৃষক	[signature]
12.	[illegible]	পুরুষ	চৌধুরানী 01762-625662	চাকুরী	[signature]
13.	মো: আইয়ুব আলী	পুরুষ	[illegible]	চাকুরী	[signature]
14.	[illegible]	পুরুষ	চৌধুরানী 01915-010632	চাকুরী	[signature]
15.	মো: সামীম বাবু	পুরুষ	[illegible]	—	[signature]
16.	মো: [illegible]	পুরুষ	[illegible] 01762919404	ব্যবসা	[signature]
17.					
18.					

LOCAL GOVERNMENT ENGINEERING DEPARTMENT (LGED)

Programme for Supporting Rural Bridges (SupRB)

Check List for Environmental and Social Safeguard Issues

Name of Visitor with designation:			**Date of Visit:**
Upazila:	**District:**	**Contract Package No.:**	
Name & Type of structure			**Intervention:**
Road Name:			**Road ID:** **Structure ID:**
Date of Commencement (Start) as per Contract:		**Actual Date of Commencement:**	
Date of Completion as per Contract / Revised:		**Up to date progress of work (Physical):_____%**	
Name of the Contractor:			

A. Are the following documents available at site?

	Y	N	N/A
1. Site Order Book.			
2. Environmental Screening List in standard Format.			
3. Social Screening List in standard Format.			
4. EA (Environmental Assessment) Report for specific work.			
5. EMP (Environmental Management Plan) for specific work			
6. CEMAP (Contractor's Environmental Management Action Plan) for specific work.			
7. Surface Water Quality Test Report (at Start/Interim/Completion).			
8. Air Quality Test Report (at Start/Interim/Completion)..			

B. Environmental & Social Safe Guard Issues			
Has earth cutting and filling of bridge approach road embankment been within the right of way?			
Has earth cutting and filling of bridge approach road embankment been disturbed the crops?			
Has waterway been obstructed within 150m up and down stream due to accumulation of debris?			
Has hazardous materials (Bitumen, Fuels, Lubricants etc.) been stored over raised platform (not directly on the ground)?			
Has playground of the educational institutes been used as a stack yard or labor camp?			
Are dust Suppression Measures by spraying water being carried out at satisfactory level (at least 3 times daily)?			
Are transportation of construction materials being carried in scheduled time (mainly at day time)?			
Is sound of Mechanical equipment/machinery being disturbed?			
Are construction and demolition (C&D) waste being disposed in specified places (not in water bodies, forest area etc.)?			
Has agricultural land been disturbed due to construction of labor camp?			
Has labor camp been constructed away from water bodies?			
Has tree cutting been carried out for any purpose (for construction of labor camp/material store yard etc.)?			
Has tree plantation been carried out to compensate tree cutting?			
Has Hot mix plants/Tar boiler been located at a safe distance from the nearest habitation/dense forest?			

Is construction material covered during transportation from source to site?			
C. Health & safety	Y	N	N/A
Has Sanitation Facility been provided adequately to male and female workers separately?			
Has temporary campsite waste disposal facility been provided?			
Has source provided for supply of safe drinking water at labor campsite?			
Has source provided for supply of safe drinking water at work site?			
Has Drainage Facility been provided at camp / work site?			
Is First Aid Box available at site?			
Is personal protective equipment (safety shoes, helmet, safety jacket etc.) properly provided to laborers considering Operational Health & Safety (OHS)?			
Has Sign Board been erected at site as per sample incorporating Environmental Issues (see sample of sign board in the reverse side)?			
D. Road Safety & Work site safety			
Has safe diversion road been constructed?			
Has safety Road Sign Plate been provided at correct location?			
Has Directional Road Sign been provided correctly for use of diversion road?			
Has traffic been maintained at all time for traffic management?			
Is safety road sign plate visible at night also?			
Is work site safety adequately undertaken including safety signs?			
Are safety measures taken properly during work at elevated place (like deck soffit) cutting earth deeply, construction of scaffolding etc.?			
Have all suggestion, instructions incorporated in Site Order Book?			
Has rectification been carried out as per suggestions in last Inspection Report/Site Order book?			

Remarks and Recommendations:

Signature with designation

Screening Checklist and Questionnaire

Attachment-1

Annexure: A-1: Environmental Screening Checklist for Bridge projects

Name of the Bridge:

Relative Location:

Geographical Location:

Connecting Road:

Name of the Khal/River:

Screening Questions	Yes	No	Scale of Impact			Remarks
			High	Medium	Low	
A. Project Siting						
Is the project area adjacent to or within any of the following environmentally sensitive areas?						
Cultural heritage site						
Protected Area (Forest)						
Wetland (Beel, Haor)						
National Park						
Wildlife sanctuary						
Buffer zone of protected area						
Special area for protecting biodiversity						
B. Potential Environmental Impacts						
Will the Project cause...						
Loss of agricultural land?						
Negative effects on rare (vulnerable), threatened or endangered species of flora or their habitat?						
Affects designated fish sanctuary?						
Increase river bank erosion?						
Affect boat traffic?						
Negative effects on designated wetlands?						
Negative effects on wildlife habitat, populations, corridors or movement?						
Negative effects on locally important or valued ecosystems or vegetation?						
Destruction/removal of trees and vegetation						
Impact on fish migration and navigation?						
Obstruction of natural connection between river and wetlands inside project area?						
Water logging in the areas?						
Insufficient drainage?						
Negative effects on surface water quality?						
Negative effects on groundwater quality?						
Loss of existing buildings, property, economic livelihood?						

Screening Questions	Yes	No	Scale of Impact			Remarks
			High	Medium	Low	
Increased soil erosion and/or sedimentation?						
Negative impact on soil stability and compactness?						
Impacts on sustainability of associated construction waste disposal?						
Traffic disturbances due to construction material transport and wastes?						
Increased noise due to transportation of equipment and construction materials?						
Increased noise due to day-to-day construction activities?						
Increased wind-blown dust from material (e.g. fine aggregate) storage areas?						
Health risks to labors involve in activities?						
C. Potential impacts of the improved bridge Will the improved Bridge cause ...						
Negative effects on neighborhood or community characters?						
Negative effects on local business, institutions or public facilities?						
Potential social conflict between occupational groups: farmers vs. fisheries?						
Degradation or disturbance of historical or culturally important sites (mosque, graveyards etc.)?						
Blockage of navigation system?						
Obstructions to movements of people and animals?						
Conflicts in water supply rights and related social conflicts?						
Air quality?						
Shifting of utilities?						

Assessment: .....

Annexure: A-2: Questionnaire for Bridge projects

Name of Investigator: ..... **Date:.....**

1. BASIC INFORMATION

1.1 Name of the Bridge:.....; Location:..... (Chainage)

1.2 Relative location of the Bridge: A) Village:.....B) Union:.....

C) Upzilla:..... D) District:.....

1.3 Geographical location: Latitude:.....Longitude:.....

2. CHARACTERISTICS OF THE BRIDGE

2.1 Status of the Bridge: A) New construction; B) Rehabilitation; C) Reconstruction; D) Major Maint.

If existing then specify the year of construction & executing agency:.....&.....

2.2 Length of the Bridge.....(m) (existing)..... (m) (proposed)

2.3 Width of the Bridge.....(m) (existing)..... (m) (proposed)

2.4 How many piers are in the bridge: .....Nos.

2.5 Width of the walking way *(if available):* side 1(L/R).....(m) & side 2 (L/R).....(m)

2.6 Length of Span..... (m)..... nos. and abutment.....(m).....nos.

2.7 Name of the Road: ..... & total length..... (km)

2.8 Name of the River/Khal:..... & total length.....(km)

2.9 Is there have any connection of the following utility services with the Bridge/approach road:

Types of Utility services	Yes	No	Remarks/comments
Gas pipeline			
Water supply pipeline			
Electricity transmission line			
Any other cables			
Others (please specify)			

3. DESCRIPTION ABOUT THE RIVER/KHAL

3.1 Top width of River/Khal:..... (m) *(bank to bank distance)*

3.2 Present water depth in the River/Khal..... (m)

3.3 Maximum water depth of the River/Khal:..... (m)

3.4 Maximum depth of River/Khal:..... (m)

3.5 Type of Channel (River/Khal): A) Straight B) Meandering

3.6 Types of River/Khal: A) Seasonal B) Not Seasonal

4. EROSION/SEDIMENTATION/DRAINGAE CONGESTION CHARACTERISTICS

4.1 Is there have any Khal/River bank erosion activities in the Bridge area? A) Yes B) No

If yes then specify the area in ..... (m) erosion/year & causes of erosion:

a)..... b)..... c)..... d).....

4.2 Is there have any bank/bridge approach protection activity in the bridge area? A) Yes B) No

4.3 Whether bridge/approach is inundated by flood water? A) Yes B) No *(if yes, then specify the year).....*

4.4 Is there have any drainage congestion in the bridge area? A) Yes B) No

If yes, what are the reasons: a)..... b).....c).....

4.5 Is there have any siltation in river/khal? A) Yes B) No *(if yes, then which bank or side).....*

5. NAVIGATION

5.1 Vertical Navigation clearance during high flood..... (m)

5.2 Types of boat moved in the river/khal under the bridge: a)..... b).....c).....

5.3 Nos. of boat movement per day:..... nos./day

6. VEHICLES/TRANSPORTATION

6.1 ***Types of Vehicles/transports*** moved on BR/ROW and ***nos./day***:

a).....Nos./day.....b).....Nos./day.....c).....Nos./day.....

d).....Nos./day.....e).....Nos./day.....f).....Nos./day.....

6.2 History of accident in the Bridge area:.....*(if yes then what's the reason):*.....

Figure: Sketch of River/Khal including the Bridge

7. IEFS IN THE BRIDGE AREA

7.1 IEFs around the Bridge area *(ex. Archaeological sites, protected area, religious institutes, social institutes etc.) (Please collect GPS location of the IEFs)*

50 meter at			end
L/S		R/S	
Within ROW (5m)	Within IA (0.5 km)	Within ROW (5m)	Within IA (0.5 km)

8. TREE CENSUS

At bridge 50 m approach road at						end
	L/S *[within ROW (5 m)]*			R/S *[within ROW (5 m)]*		
Name of tree	Size & Number			Size & Number		
	Small	Medium	Large	Small	Medium	Large

9. ECOLOGY OF THE STUDY AREA

9.1 Terrestrial Ecology

9.1.1 Terrestrial Flora (Trees, Plants, Shrubs, Herbs and Medicinal)

A) At present Abundant:

.....

B) Not Abundant:

.....

C) Not Available:

.....

9.1.2 Terrestrial Fauna (Birds, Amphibian, Reptiles, Mammals, Butterfly & Wildlife)

A) At present Abundant:

.....

B) Not Abundant:

.....

C) Not Available:

.....

9.2 Aquatic Ecology

9.2.1 Aquatic Flora

A) At present Abundant:

.....

B) Not Abundant:

.....

C) Not Available:

.....

9.2.2 Aquatic Fauna (Dolphin, Turtle, Crab, Frog etc)

A) At present Abundant:

.....

B) Not Abundant:

.....

C) Not Available:

.....

9.3 LIST OF FISH SPECIES

A) At present Abundant:

.....

B) Not Abundant:

.....

C) Not Available:

.....

9.3.1 Please take note from the fisherman *(if fish and fisherman exist in the area)* on their economic condition, daily income, amount of capture fish per day, market price of the fish etc.....

10. PHYSICAL ENVIRONMENTAL CHARACTERISTICS

10.1 Surface Water Quality *(at downstream of the bridge)*

Description/parameter		SW1
Type (khal/pond/river at downstream)		
GPS location	Latitude	
	Longitude	
Relative location (village, union, Thana, District)		
Water Quality Parameter		
Temperature		

Description/parameter	SW1
PH	
TDS	
EC	
Salinity	
DO	
COD	
BOD	
TSS	

10.2 Ground Water Quality *(adjacent to the bridge location)*

Description/parameter		GW1
Type (close to bridge location)		
GPS location	Latitude	
	Longitude	
Relative location (village, union, Thana, District)		

Water Quality Parameter	
pH	
Fe	
Mn	
As	
Fc	
Tc	
Salinity	

10.3 Air Quality *(adjacent to the bridge location)*

Description/parameter		AQ1
GPS location	Latitude	
	Longitude	
Relative location (village, union, Thana, District)		
Air Quality Parameter		
PM_{10}		
$PM_{2.5}$		
SPM		
NOx		
SOx		

10.4 Noise Level *(on the bridge and approach road)*

Description		NL1	NL2
GPS location	Latitude Longitude		
Relative location (village, union, Thana, District)			
	Max		
	Min		
	Average		

11. SOCIAL INFORMATION

11.1 Is there have any requirement of land acquisition for bridge *(construction/rehabilitation/reconstruction)?* A) Yes B) No *(if yes, then how much land will be required?).....*

11.2 What are the existing land use activities around the bridge area? a) ....., b)....., c)..... ....

11.3 Is there have the possibility to resettlement/displacement of the settlement during the development activities? A) Yes B) No *(if yes, how many houses, utility, family etc.).....*

11.4 Is there have any possibility to damage to livelihood or a way of life? A) Yes B) No

11.5 Is there have any impacts on minority or vulnerable groups (ex. Indigenous, tribal etc.) A) Yes B) No

11.6 What is the current trends of road accident in the area.....is there have any possibility to increase in future? A) Yes B) No

11.7 Based on the current location, is the bridge is located in the best location? A) Yes B) No *(if no, then what's the reason)*.....

Annexure: A-3

SCREENING FORM FOR SOCIAL SAFEGUARDS ISSUES

[To be filled by Consultants for each bridge spot. Where private lands are to be acquired or public lands (including LGED's own) are to be resumed from authorized and unauthorized private uses, census of affected persons and inventory of losses to be prepared. The consultants will include a summary of the impacts and mitigation requirements for each bridge spot in the Focus Group Discussion. Impacts identification and the mitigation eligibility and requirements should follow the principles adopted in this SMF]

A. Identification

1. Name of bridge: ....

District:.....Upazila:.....Union/Municipality:..... Village

.....; Length of Bridge:.....Name of the canal/river.....Connecting

road.....

Location with mark: Left ..... Right..... Front.....

Back.....

2. Brief description of the physical works: .....

.....

.....

.....

.....

3. Focus Group Discussion Date(s): .....

B. Participation in Focus Group Discussion

4. Names of Consultants' representatives:

.....

....

5. Names of LGED officials participated in Focus Group Discussion:

.....

.....

.....

6. Local Government representatives and community members and organizations participated in Focus Group Discussion: List them in separate pages with names and addresses, in terms of bridge/road sections/spots and any other information to identify them during preparation of impact mitigation plans.

7. Would-be affected persons participated in Focus Group Discussion: List them in separate pages with names, addresses in terms of bridge/road sections/spots where they would be affected, and any other information to identify them during preparation of impact mitigation plans.

C. Land Requirements & Ownership

8. Will there be a need for additional lands* to carry out the intended works under this contract?

(a) Yes (b) No (* 'Additional lands' mean lands beyond the approach road of bridge)

9. If 'Yes', the required lands presently belong to (Indicate all that apply):

(a) LGED (b) Government – khas & other GOB agencies (c) Private Citizens

(d) Others (Mention):.....

D. Current Land Use & Potential Impacts

10. If the required lands belong to Private Citizens, they are currently used for (Indicate all that apply):

(a)Agriculture # of households using the lands: .....

(b) Residential purposes # of households living on them: .....

(c) Commercial purposes # of persons using them: ..... # of shops: .....

(d) Other Uses (Mention): ..... # of users: .....

11. If the required lands belong to LGED and/or other Government agencies, they are currently used for (Indicate all that apply):

(a) Agriculture# of persons/households using the lands: .....

(b) Residential purposes# of households living on them: .....

(c) Commercial purposes # of persons using them: ..... # of shops: .....

(d) Other Uses (Mention): ..... # of users: .....

12. How many of the present users have lease agreements with any government agencies?

.....

13. Number of private homesteads that would be affected on private lands:

Entirely, requiring relocation: .....

Partially, but can still live on present homestead: .....

14. Number of business premises/buildings that would be affected on private lands: .....

Entirely and will require relocation: .....# of businesses housed in them: .....

Partially, but can still use the premises: ..... # of businesses housed in them: .....

15. Residential households will be affected on LGED's own and public lands: .....

Entirely affected and will require relocation: # of these structures: .....

# of structures built with brick, RCC, & other expensive and durable materials: .....

# of structures built with inexpensive salvageable materials (bamboo, GI sheets, etc: .....

Partially affected, but can still live on the present homestead: # of structures: .....

# of structures built with brick, RCC, & other expensive and durable materials:

.....

# of structures built with inexpensive salvageable materials (bamboo, GI sheets, etc):

.....

16. # of business premises that would be affected on LGED's own & other public lands: .....

Entirely affected and will require relocation: # of these structures: .....

# of businesses housed in these structures: .....

# of persons presently employed in the above businesses: .....

# of these structures built with brick, RCC, & other durable materials: .....

# of structure built with inexpensive salvageable materials (bamboo, GI sheets, etc):

Partially affected, but can still stay in the present premises: # of these structures: .....

# of businesses housed in these structures: .....

# of persons presently employed in these businesses: .....

# of these structures built with brick, RCC, & other durable materials: .....

# of structure built with inexpensive salvageable materials (bamboo, GI sheets, etc):

.....

17. # of businesses/trading activities that would be displaced from make-shift structures on the approach road, and other areas/spots: .....

18. Do the proposed bridge works affect any community/ groups' access to any resources that are used for livelihood purposes?

(a) Yes (b) No

19. If 'Yes', descrTPtion of the resources:

.....

.....

20. Do the proposed works affect community facilities like school, cemetery, mosque, temple, or others that are of religious, cultural and historical significance?

(a) Yes (b) No

21. If 'Yes', description of the facilities:

.....

.....

.....

22. Whether the sub-project (proposed bridge) will effect on normal water flow of adjacent source of water and how?

.....

.....

23. If any water transport system that crosses the bridge.

(a) Yes (b) No

24. If yes, is freeboard sufficient for moving water transport in rainy season?

(a) Yes (b) No

25. Describe any other impacts that have not been covered in this questionnaire?

.....

.....

26. Describe alternatives, if any, to avoid or minimize use of additional lands:

.....

.....

.....

.....

27. Which of the following impact mitigation plans would be prepared for the bridge?

(a) Resettlement Plan (b) Abbreviated Resettlement Plan(c) None

E. ADDITIONAL INFORMATION ON TRIBALPEOPLES (TPs)

(This section must be filled in if bridge is located in areas that are also inhabited by tribal peoples.)

28. Names of TP community members and organizations who participated in Focus Group Discussion:

.....

.....

.....

29. Have the TP community and that would-be affected TPs been made aware of the potential positive and negative impacts and consulted for their feedback and inputs?

(a) Yes (c) No

Has there been a broad-based community consensus on the proposed works?

(a) Yes (c) No

30. Total number of would-be affected TP households:.....

31. The would-be affected TP households have the following forms of rights to the required lands:

(a) Legal: # of households: .....

(b) Customary: # of households: .....

(c) Lease agreements with any GOB agencies: # of households: .....

(d) Others (Mention): ..... # of households: .....

32. Does the project affect any objects that are of religious and cultural significance to the TPs?

(a) Yes (b) No

33. If 'Yes', description of the objects:

.....
.....

.....

34. The following are the three main economic activities of the would-be affected TP households:

a. .....

b. .....

c. .....

35. Social concerns expressed by TP communities/organizations about the works proposed under the subproject:

.....

.....

.....

36. The TP community and organizations perceive the social outcomes of the subproject:

(a) Positive (b) Negative (c) Neither positive nor negative

37. In respect of any conditions that may have been agreed for the broad-based community consensus, and the social impacts on TPs and their concerns, is there a need to, undertake an in-depth Impact Assessment study? (a) Yes (b) No

Prepare an Tribal Peoples Plan? (a) Yes (b) No

On behalf of the consultants, this Checklist has been filled in by:

Name: ..... Designation: .....

Signature: ..... Date: .....

ANNEXURE- B-4

Attendance of the participants (Identity and signatures)

Sl. No.	Name	Sex	Address with Phone Number	Occupation	Signature

Attachment-2

Local Government Engineering Department

Bridge/Culvert Inspection Form

Inspected By (Name)		Designation		Inspection Date	

1. Location:

Division		District		Upazila	
Road ID		Road Name		Construction Year	
Structure ID		Chainage (m)		Load Restriction (Tons)	
Latitude		Longitude		Altitude (If required)	

2. Structure Type [(√) Tick Mark Only]:

Box Culvert			Box Girder Bridge		Bailey Bridge		Iron Bridge		Others	
Slab Culvert			Arch Bridge		Bailey with Steel Deck		Wooden Bridge		Existing Gap	
OFC			Suspension Bridge		Truss with RCC Slab		Hydraulic Structure		Gap Length (m)	
RCC Girder Bridge			Light Traffic Bridge		Truss with Steel Deck		Pipe Culvert		RCC Continuous Girder Bridge	
PC Girder Bridge			Steel Beam & RCC Slab		Arch Masonry		U-Drain		Slab Bridge	

Type of Water Way	Open Field		Drainage Canal		Navigable Canal		River		Navigable River		Others	

3. Super-Structure Details [Numeric Value or (√) Tick Mark Only]:

Width (m)		Carriageway Width (m)		Sidewalk (L/S) (m)		Sidewalk (R/S) (m)	

Similar Span/Boxes (No.)						Total No. of Span/Boxes		Wearing Course	Nil	
No. of Girder in Each Span (No.)						Total No. of Girders (No.)			Bitumen		Concrete	
Length of Each Similar Span (m)						Total Length (m)		Bank to Bank Distance at Bridge Site (m)		

Types of Railing	Nil		RCC Railing [Bar & Post]		RCC Wall		Masonry		Steel		Composite		Other Information (If required)	

Tie/Hanger	Nil		Concrete		Steel		Wire		Bracing	Nil		Concrete		Steel	

Source of Electricity	N/A		REB		PDB		Solar		No. of Light Posts	Left Side		Right Side		Total	

4. Sub-Structure Details [(√) Tick Mark Only]:

Description	RCC	Masonry	Steel	Weep Hole
Abutment/End Wall				
Wing Wall				
Pier/Intermediate Wall				

5. Foundation Type [(√) Tick Mark Only]:

Abutment	Footing		Piled		Well		Box		Others		Unknown			
Wing Wall	Footing		Piled		Well		Others		Unknown					
Pier	Footing		Piled		Well		Others		Unknown					
No. of Pile Known	Y		N											

Position of Abutment/Pier											A-front	Total
No. of Column in Each Pier/Abut.												
No. of Piles in Each Pier/Abut.												

6. Approach Information [Numeric Value or (√) Tick Mark Only]:

Abut. Protection including Approach (B-App.)	Y	N	Protection Type	Brick Pala Wall		Brick Retaining Wall		RCC Retaining Wall		Toe Wall with CC Block		Toe Wall with Rip-Rap		Others	
Abut. Protection including Approach (F-App.)	Y	N	Protection Type	Brick Pala Wall		Brick Retaining Wall		RCC Retaining Wall		Toe Wall with CC Block		Toe Wall with Rip-Rap		Others	

Drainage System	Back Approach	Y	N	Front Approach	Y	N	Outlet	Back App.	Y	N	Front App.	Y	N	Cut-off Wall	Y	N	Apron	Y	N

Approach Road	Y	N	Material Type	BC		RCC/CC		HBB		Block		Earthen		Req. Length of Approach Road (m)	Back Approach		Front Approach	

Approach Slab	Y	N

7. Overall Visual Observation on Condition of Non-Structural Elements [Write **NENR/G/F/P/NER/S/B** Only]: **NENR**: Not Exist & Not Required, **NER**: Not Exist But Required, **Note: G**=Good (No Maintenance Required); **F**=Fair (Minor Maintenance); **P**=Poor (Major/Re-hab.); **S**=Severe (Re-Construction); **B**=Blocked.

Activity	Repair/Rehabilitation/(Re/New construction)										Repair/Replacement /New construction			
Non-Structural Elements	Embankment Slopes of Approach Roads [G/F/P/S/B]		Protective works of Abutment including approaches [NENR/G/F/P/NER/S/B]		Pavement of approaches [G/F/P/NER/S]		Wearing course [G/F/P/S]	Expansion-joint/Nosing/ Sealing [G/F/P/NER/S]	Checker Plates, Nut-Bolts [G/F/P/S]	Wheel guard, Walkway [NENR/G/F/P/NER/S]		Rail Bar, Rail Post [G/F/P/NER/S]		Guide Post, Traffic Sign, Electric Post. [NENR/G/F/P/NER/S]	
Location	Back App.	Front App.	Back App.	Front App.	Back App.	Front App.	Deck Top	Deck Top	Deck Top	Left Side	Right Side	Left Side	Right Side	Back App.	Front App.
Condition															

Activity	Repair/Replacement		Painting				Cleaning				Clearing	
Non-Structural Elements	Surface of Wing Wall and Abutment Wall [G/F/P/S]		Guide Post, Traffic Sign, Road Marking, Electric Post. [NENR/G/F/P/NER/S]		Railing, Rail Posts, Wheel guard [NENR/G/F/P/NER/S]		Steel members of Truss & Bailey bridges [NENR/G/F/P/NER/S]	Deck Slab, Top Slab of Box, Verges Ducts & D-spouts [G/F/P/S]	Surface of Abutment, End wall, Intermediate wall & Wing Wall, Weep Holes, Drain outlet [G/F/P/S]		Water flow of Slab/ Box/ P-Culverts [G/F/P/S/B]	Obstruction of Water Ways [G/F/P/S/B]	
Location	Back App.	Front App.	Back App.	Front App.	Left Side	Right Side	Above Deck	Above Deck/Slab	Back App.	Front App.	Inside of Structure	Up Stream	D- Stream
Condition													

8. Observation of Individual Component of Structure [Put the quantity of elements in each relevant observation]: **Note**: N=Not Appear; M=Moderate; H=High; S=Severe

Segments	Elements		Quantity	Cracks				Concrete Spalling/ Ravelling/ Corrosion				Rebar Exposed (Rusted, Section Loss)				Damaged or Missing Section/ Section Loss				Settlement				Tilting				Movements/ Displacement				Scouring			
	Description		No.	N	M	H	S	N	M	H	S	N	M	H	S	N	M	H	S	N	M	H	S	N	M	H	S	N	M	H	S	N	M	H	S
NS	River Training Works																																		
Super Structure (RCC Bridge)	Deck (Top & Soffit)																																		
	Girder/ Beam																																		
	Cross-Girder																																		
	Box Girder																																		
	Arch																																		
	Hanger of Arch																																		
Super Structure (Steel Truss/Bailly)	Common	Stringer																																	
		Floor Beam																																	
		Checker Plates (Deck)																																	
		Bottom Bracing																																	
		Bottom Chord																																	
	Bailly	Connector																																	
		Vertical Panel																																	
	For Steel	Vertical Post																																	
		Diagonal																																	
		Top Bracing																																	
		Strut																																	
		Top Chord																																	
Sub-Structure	Bearing Assembly																																		
	Abutment / End Wall																																		
	Wing Wall																																		
	Top Slab of Box Culvert																																		
	Abutment Base/B-Slab																																		
	Pier Cap																																		
	Pier / Intermediate Wall																																		
	Bracing of Pier																																		
	Pile Cap																																		
	Exposed Pile [If any]																																		
	Projected Pile (If any)																																		

Note: Please don't write anything on shaded area

9. Over-all Observation of the Structure [(√) Tick Mark Only]: **Note**: L=Low; M=Medium; H=High; VH=Very High

Carriageway Width	Length of Structure	Traffic Volume				Condition of Super Structure				Condition of Sub Structure				Is Capacity Expansion Possible?? (Y/N)		Y	N
m	m	L	M	H	VH	G	F	P	S	G	F	P	S	One Side	Both Side	Another New Str.	

Replacement Essential.!! (Y/N)		Y	N
At Existing Site	Beside the Exist. Site		

10. Over-all Comments of the Inspector (If any):

⇒	All tick marks as indicated in all specific boxes have completed with required details or dimensions.	Y	N
⇒	Additional Information and / or Sketches are given on separate page(s)	Y	N

Signature :..... Date :.....

Name :..... Designation :.....

Attachment-3

Local Government Engineering Department
Daily Traffic Count (12 Hours From 8am to 8pm)

DISTRICT: **Survey Conducted on Hat day/ Non-Hat day (Put tick)** **UPAZILA:**

Road Code	Road Type	Road Name	Total Length (km)

Counting Station:		Survey Date:	
Surveyed By:		Designation:	

Traffic Type	Time 8 am-10 am	Time 10 am-12 noon	Time 12 noon-2 pm	Time 2 pm-4 pm	Time 4 pm-6 pm	Time 6 pm-8 pm	Total
Motorized Vehicle							
Truck Medium (Two or Three Axle Rigid (>3.5 ton payload))							
Truck Light (Two Axle Rigid (<3.5 ton payload))							
Bus Heavy (>40 Seats and >36 Feet Chassis)							
Bus Mini (16-39 Seats and <36 Feet Chassis)							
Bus Light (<16 Seats)							
Utility (Landrover/Jeep type Vehicle)							
Delivery Vehicle (Panel Van, Pickup Truck)							
Car (All Saloon Cars and Taxis)							
Auto Rickshaw (All Three Wheeled Motorised Vehicles)							
Tempo (All Three Wheeled Motorised Vehicles)							
Motorcycle (All Two Wheeled Motorised Vehicles)							
Non-Motorized Vehicle							
Bicycle (All Two Wheeled Non-Motorised Vehicles)							
Rickshaw (Three Wheeled Passenger Non-Motorised Vehicles)							
Rickshaw Van (Three Wheeled Cargo Non-Motorised Vehicles)							
Animal Cart (All Animal Carts and Human Drawn/Push Carts)							

Attachment-4

LOCAL GOVERNMENT ENGINEERING DEPARTMENT BASIC INFORMATION OF ROAD (SURVEY FORM)

District : Survey Date : Surveyed By :

Upazila : Designation :

Basic Information

Road Type	Road Name	Total Length (Km)	Avg. Crest Width (m)	Avg. Embankment Height (m)

GC/Rural Market Connection

Name of Growth Center/ Rural Market	Situated at (Chainage)

Union-wise Breakup

Chainage		Name of Union	Union HQ stand at Chainage
From	To		

Social Connectivity

Social Infrastructure Type	Social Infrastructure Name	Situated at (Chainage)

Attachment-5

উন্নয়নের গণতন্ত্র
শেখ হাসিনার মূলমন্ত্র

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
"প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রীজেস" শীর্ষক প্রকল্প
আগারগাঁও, শেরে বাংলা নগর
ঢাকা-১২০৭।
www.lged.gov.bd

স্মারক নং- ৪৬.০২.০০০০.৯২৭.১৪.০৮০.১৯- ৮৫৬ তারিখ ঃ ১৫/১০/২০১৯ খ্রি:।

প্রতি,

১। তত্ত্বাবধায়ক প্রকৌশলী
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
অঞ্চলঃ---------- ।(১৯ অঞ্চল)

২। নির্বাহী প্রকৌশলী
স্থানীয় সরকার প্রকৌশল অধিদপ্তর
জেলাঃ ---------- ।(৬১ জেলা)

বিষয়ঃ ২০১৯-২০ অর্থ বছরের **"Program for Supporting Rural Bridges (SupRB)"** শীর্ষক কর্মসূচীর আওতায় এলজিইডি'র অধীন উপজেলা ও ইউনিয়ন সড়কে অবস্থিত গ্যাপসমূহে নতুন ব্রিজ নির্মাণ এবং বিদ্যমান ব্রিজসমূহের মেরামত, পুনর্বাসন, প্রশস্তকরণ ও প্রতিস্থাপন কাজের নিমিত্তে প্রাথমিকভাবে নির্বাচিত স্কিমসমূহের তালিকা প্রেরণ এবং পরবর্তী করণীয় প্রসঙ্গে।

উপর্যুক্ত বিষয়ের প্রেক্ষিতে জানানো যাচ্ছে যে, "Program for Supporting Rural Bridges" শীর্ষক কর্মসূচীর আওতায় জেলা ও উপজেলা পর্যায় হতে জুলাই-আগস্ট/১৯ মাসে সম্পাদিত Detail Bridge Condition Survey- এর মাধ্যমে প্রাপ্ত তথ্যাদি RSDMS-VIII-এ সন্নিবেশিত করণপূর্বক উক্ত সফ্টওয়্যার হতে কর্মসূচীর গাইডলাইন অনুযায়ী ২০১৯-২০ অর্থ বছরের জন্য উপজেলা ও ইউনিয়ন সড়কে প্রাথমিকভাবে নির্বাচিত তালিকা হতে নতুন ব্রিজ নির্মাণ ও বিদ্যমান ব্রিজসমূহের মেরামত, পুনর্বাসন, প্রশস্তকরণ ও প্রতিস্থাপন কার্যক্রমের অগ্রাধিকার তালিকা প্রস্তুত করা হয়েছে, যা অত্রসাথ প্রেরণ করা হলো। বর্তমান অর্থ বছরের লক্ষ্যমাত্রা অনুযায়ী স্কীম নির্বাচনের জন্য গৃহীতব্য কার্যক্রমসমূহ নিম্নে বর্ণনা করা হলো।

গৃহীতব্য কার্যক্রম সমূহঃ

০১। প্রাপ্ত জেলাওয়ারী অগ্রাধিকার তালিকায় বর্ণিত প্রস্তাবিত Minor এবং Major Maintenance ক্যাটাগরীর বিপরীতে ব্রিজসমূহ সংশ্লিষ্ট উপজেলা প্রকৌশলী/পরামর্শকবৃন্দ সরেজমিনে পরিদর্শন করে ব্রিজের সকল Component-এর তথ্যাদি সংগ্রহপূর্বক Program Operation Manual (POM)-এ প্রদত্ত Catalogue (সরলীকৃত নমুনা; সংযুক্তি-১ ও ২) এবং প্রয়োজনীয় নির্দেশনা অনুযায়ী (সংযুক্তি-৩) প্রাক্কলন প্রস্তুত এবং প্রাক্কলনসমূহ আগামী ২৮/১০/২০১৯ খ্রীঃ তারিখের মধ্যে সংশ্লিষ্ট নির্বাহী প্রকৌশলীর মাধ্যমে তত্ত্বাবধায়ক প্রকৌশলী, অঞ্চল-এর দপ্তরে প্রেরণ করবেন। পরিদর্শনকালে তালিকায় বর্ণিত ক্যাটাগরী (Intervention) যদি ব্রিজের বাস্তব চাহিদা হতে ভিন্নতর পাওয়া যায়, তবে উক্ত ব্রিজটির Detail Bridge Condition Survey (DBCS) পুনরায় সম্পাদন করতে হবে এবং RSDMS-VIII-এ উক্ত উপাত্ত সমূহ সংশোধনপূর্বক B-02 ফর্ম পূরণ করে স্বাক্ষরিত Hard Copy (B-02 ফর্ম) আগামী ০৩/১১/২০১৯ খ্রীঃ তারিখের মধ্যে সদর দপ্তরে প্রেরণ নিশ্চিত করতে হবে।

০২। তত্ত্বাবধায়ক প্রকৌশলী, অঞ্চল প্রাপ্ত প্রাক্কলন সমূহ POM অনুযায়ী সংশ্লিষ্ট ক্যাটালগ অনুসারে প্রস্তুত করা হয়েছে কিনা তা নিশ্চিত হবেন। এ উদ্দেশ্যে তিনি আগামী ০৬/১১/২০১৯ খ্রীঃ তারিখের মধ্যে সংশ্লিষ্ট নির্বাহী প্রকৌশলী, উপজেলা প্রকৌশলী ও সদর দপ্তরের প্রতিনিধির উপস্থিতিতে প্রাপ্ত প্রাক্কলনসমূহ তাঁর দপ্তরে পর্যালোচনা করবেন। সদর দপ্তরের কর্মসূচী বাস্তবায়ন ইউনিটের প্রতিনিধি উপস্থিতির সুবিধার্থে পর্যালোচনা সভার তারিখের অন্তত ০২ (দুই) দিন পূর্বে সদর দপ্তর-কে অবহিত করবেন।

০৩। প্রয়োজনীয় সকল সংশোধন কার্যক্রম শেষে আগামী ১২/১১/২০১৯ খ্রীঃ তারিখের মধ্যে তত্ত্বাবধায়ক প্রকৌশলী অঞ্চল, কোন ব্যর্থতা ছাড়া, সঠিকভাবে প্রনীত Minor ও Major Maintenance এর প্রাক্কলন অনুমোদনের জন্য সদর দপ্তরে প্রেরণ করবেন।

০৪। সংশ্লিষ্ট উপজেলা প্রকৌশলী/পরামর্শকবৃন্দের মাধ্যমে সরেজমিনে পরিদর্শনপূর্বক অগ্রাধিকার তালিকায় বর্ণিত প্রস্তাবিত Rehabilitation (পুনর্বাসন) ক্যাটাগরীর বিপরীতে নির্বাচিত ব্রিজসমূহের বাস্তব চাহিদা যথাযথ হলে সেসব ব্রিজের ক্ষতিগ্রস্থ Component সমূহের পর্যাপ্ত সংখ্যক Coloured Photograph (৫ ইঞ্চি x ৩ ইঞ্চি সাইজ) এবং প্রয়োজনীয় তথ্যাদি আগামী ২৮/১০/২০১৯ খ্রীঃ এর মধ্যে সদর দপ্তরে প্রেরণ নিশ্চিত করবেন। পরবর্তীতে উক্ত তথ্যসমূহের ভিত্তিতে ডিজাইন ইউনিট, এলজিইডি'র সহায়তায় সংশ্লিষ্ট ব্রিজসমূহের ডিজাইন প্রনয়নপূর্বক Catalogue অনুসারে প্রাক্কলন প্রস্তুত করা হবে। একইভাবে

পৃঃ- ১/২

(এ, কে, আজাদ)
প্রকল্প পরিচালক
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
ও
অতিরিক্ত প্রধান প্রকৌশলী (রক্ষণাবেক্ষণ)
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭।

ত্রুটিপূর্ণ DBCS-যুক্ত ব্রিজসমূহের Detail Condition Survey পুনরায় সম্পাদনকরতঃ RSDMS-VIII-এ উক্ত উপাত্তসমূহ সংশোধনপূর্বক B-02 ফর্ম পূরণ করে স্বাক্ষরিত Hard Copy (B-02 ফর্ম) আগামী ০৩/১১/২০১৯ খ্রীঃ তারিখের মধ্যে সদর দপ্তরে প্রেরণ নিশ্চিত করতে হবে।

০৫। একইভাবে সংশ্লিষ্ট উপজেলা প্রকৌশলী/পরামর্শকবৃন্দের মাধ্যমে সরেজমিনে পরিদর্শনপূর্বক অগ্রাধিকার তালিকায় বর্ণিত প্রস্তাবিত New Construction (নতুন নির্মাণ) ক্যাটাগরীর বিপরীতে নির্বাচিত ব্রিজসমূহের Appraisal রিপোর্ট এবং Capacity expansion (সক্ষমতা বৃদ্ধি) ও Replacement (প্রতিস্থাপন) ক্যাটাগরীর বিপরীতে নির্বাচিত ব্রিজসমূহের বাস্তব চাহিদা যথাযথ হলে সেসব ব্রিজের ক্ষতিগ্রস্থ Component সমূহের পর্যাপ্ত সংখ্যক Coloured Photograph (৫ ইঞ্চিx ৩ ইঞ্চি সাইজ) এবং প্রয়োজনীয় তথ্যাদিসহ Appraisal রিপোর্ট আগামী ৩০/১০/২০১৯ খ্রীঃ এর মধ্যে সদর দপ্তরে প্রেরণ নিশ্চিত করবেন। সে সাথে উক্ত ৩ (তিন) ক্যাটাগরীর আওতায় নির্বাচিত ব্রিজসমূহের Sub Soil Investigation এবং Digital Topographical Survey কার্যক্রম পরিচালনার জন্য প্রকল্প পরিচালকের পত্রের (স্মারক নং-৪৬.০২.০০০০.৯২৭.১৪.০১১.১৯-৬৩৫; তাংঃ ০৫/০৯/২০১৯খ্রীঃ এবং স্মারক নং-৪৬.০২.০০০০.৯২৭.১৪.০১২.১৯-১৭১; তাংঃ ১৩/০৩/২০১৯খ্রীঃ) নির্দেশনা অনুযায়ী উল্লেখিত তারিখের মধ্যে উপজেলা প্রকৌশলী কর্তৃক প্রস্তুতকৃত প্রাক্কলনসমূহ সদর দপ্তরে প্রেরণ নিশ্চিত করবেন। Capacity expansion এবং Replacement ক্যাটাগরীর বিপরীতে ত্রুটিপূর্ণ DBCS-যুক্ত ব্রিজসমূহের Detail Condition Survey পুনরায় সম্পাদনকরতঃ RSDMS-VIII-এ ব্রিজের উপাত্তসমূহ সংশোধনপূর্বক B-02 ফর্ম পূরণ করে স্বাক্ষরিত Hard Copy (B-02 ফর্ম) আগামী ০৩/১১/২০১৯ খ্রীঃ তারিখের মধ্যে সদর দপ্তরে প্রেরণ নিশ্চিত করতে হবে।

০৬। ত্রুটিপূর্ণ DBCS-যুক্ত ব্রিজসমূহের সংগৃহীত সঠিক উপাত্তসমূহ দ্বারা RSDMS-VIII-এর B-02 ফর্ম সংশোধনপূর্বক অগ্রাধিকার তালিকা পুনঃপ্রনয়ন করে আগামী ০৭/১১/২০১৯ খ্রীঃ তারিখের মধ্যে তা চূড়ান্ত অনুমোদনের জন্য তত্ত্বাবধায়ক প্রকৌশলী অঞ্চলের কার্যালয়ে প্রেরণ করা হবে।

০৭। অনুমোদিত অগ্রাধিকার তালিকায় নির্বাচিত Rehabilitation, Capacity Expension, Replacement ও New Construction Category'র স্কিমসমূহ বাস্তবায়নের উদ্দেশ্যে Technical Review'র পরবর্তী পদক্ষেপ নিম্নস্বাক্ষরকারীর দপ্তর হতে গ্রহণ করা হবে।

এমতাবস্থায়, মাঠ পর্যায়ে উল্লেখিত কর্মসূচী সংশ্লিষ্ট সকল তত্ত্বাবধায়ক প্রকৌশলী এবং জেলার নির্বাহী প্রকৌশলীগণকে উপরে বর্ণিত Minor এবং Major Maintenance ক্যাটাগরীর বিপরীতে নির্বাচিত ব্রিজের প্রাক্কলন সংযুক্তি-১, ২ ও ৩ এর নির্দেশনা অনুযায়ী প্রস্তুতকরণ, Rehabilitation (পুনর্বাসন) ক্যাটাগরীর বিপরীতে নির্বাচিত ব্রিজের বাস্তব চাহিদা যথাযথ হলে ক্ষতিগ্রস্থ Component সমূহের পর্যাপ্ত সংখ্যক Coloured Photograph (৫ ইঞ্চি x ৩ ইঞ্চি সাইজ) ও Measurement সহ প্রয়োজনীয় তথ্যাদি এবং Capacity Expension, Replacement ও New Construction Category'র বিপরীতে নির্বাচিত ব্রিজের বাস্তব চাহিদা যথাযথ হলে Sub Soil Investigation ও Digital Topographical Survey কাজ পরিচালনার জন্য প্রাক্কলন প্রেরণ সংক্রান্ত কার্যক্রমসমূহ নির্ধারিত সময়ে সম্পন্ন করার জন্য বিশেষভাবে অনুরোধ করা হলো। এছাড়া কর্মসূচী সংশ্লিষ্ট ক্যাটাগরী (New Construction ব্যতীত) আওতায় ত্রুটিপূর্ণ DBCS-যুক্ত ব্রিজসমূহের Detail Condition Survey পুনরায় সম্পাদনকরতঃ নির্ধারিত সময়ের মধ্যে সঠিক B-02 ফর্ম স্বাক্ষর করে প্রকল্প দপ্তরে প্রেরনে নিশ্চিত করতে অনুরোধ করা হলো।

বিষয়টি অত্যন্ত জরুরী।

(এ, কে, আজাদ)
প্রকল্প পরিচালক
ও
অতিরিক্ত প্রধান প্রকৌশলী(সড়ক ও সেতু রক্ষণাবেক্ষণ)
ফোন: ০২-৮১৪২৬৫১
ই-মেইল: ace.maintenance@lged.gov.bd

অনুলিপি সদয় জ্ঞাতার্থে ঃ

০১। প্রধান প্রকৌশলী, এলজিইডি, সদর দপ্তর, ঢাকা।
০২। অতিরিক্ত প্রধান প্রকৌশলী (RIDM), এলজিইডি, সদর দপ্তর, ঢাকা।
০৩। অতিরিক্ত প্রধান প্রকৌশলী, এলজিইডি, বিভাগঃ .....।

অনুলিপি কার্যার্থে ঃ

০১। উপজেলা প্রকৌশলী, এলজিইডি, উপজেলাঃ ....., জেলাঃ .....।
০২। পরামর্শক প্রতিষ্ঠান.....অঞ্চলঃ .....।
০৩। পরামর্শক প্রতিষ্ঠান.....জেলাঃ .....।

Minor Maintenance (ক্ষুদ্র মেরামত)-এর আওতায় প্রাক্কলন প্রস্তুতির বিবেচ্য বিষয় সমূহ

বাছাই নির্দেশক (Selection Criteria)

- ব্রিজের Super-Structure এবং Sub-Structure সার্বিকভাবে (Overall) ভাল/মোটামুটি ভাল (CS-1) হলে;
- Non-Structural Member সমূহ আংশিক বা ব্যাপকভাবে ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে;
- ব্রিজের দৈর্ঘ্য > ৬মি. এবং Carriage width ≥ ৫.৫ মি.

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
Cleaning, Removal and Disposal	■ ব্রিজের Non-Structural Components, Structural Components, River Banks-এর Slope, Waterways-এর ১৫০মি. এর মধ্যে Upstream ও Downstream-এর De-siltation (যদি থাকে) সহ ময়লা, আবর্জনা, প্রভৃতি পরিষ্কার ও অপসারণ করে নির্দিষ্ট দূরত্বে Dispose করা (অবশ্যই করনীয়)	• ব্রিজ/কালভার্ট এর প্রতিটি Component সমূহ হতে ময়লা, আবর্জনা, প্রভৃতি পরিষ্কার ও অপসারণ করে নির্দিষ্ট দূরত্বে Disposal করার জন্য Schedule ও Non-Schedule আইটেম সমূহ অবশ্যই বিবেচনা করতে হবে; • ব্রিজের Pier, Wingwall-এর নিম্নাংশ প্রয়োজনক্ষেত্রে Pile Cap-এর Top Surface অথবা Culvert-এর Bottom Slab-এর Top সারফেস Silted মাটি দ্বারা আবৃত থাকলে তা অপসারণ করার আইটেম সমূহ অবশ্যই বিবেচনা করতে হবে।	• প্রকল্পে নির্ধারিত Schedule এবং Non- Schedule আইটেম সমূহ
Earth work	■ Foundation-এর চারিপ্পার্শে ছোট আকারের (Minor) Scour হলে	• মাটি দ্বারা Scour ভর্তি করে Suitable Material দ্বারা Seal করে দিতে হবে।	• 4.05.03 (Bailing out of water), • 2.02.1.2 (Earthen dam in/c filling & removing), • 2.02.2.01 (Scour to be filled by Earthwork), • 3.11.22.02 – 3.11.22.05 (Pick up only one Item from four Items; Supplying & dumping of soil filled geo-textile bag) and so on as per local requirements.
Earth work	■ Approach এবং Abutment Slope (Non-Structural Component)-এর মাটি কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• মাটি দ্বারা Layer by Layer Compaction নিশ্চিত করে Slope সংশোধন করতে হবে।	• 4.05.03 (Bailing out of water), • 2.02.2.01 (Earthwork), • 2.06.2 (Sypplying and planting vertiver (Binna) grass) and so on as per local requirements.

মোঃ মনিরুল ইসলাম
অনিয়র সহকারী প্রকৌশলী (SupRB)

মোঃ রেফকাত্ত নূর
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
এলজিইডি, সদর দপ্তর, ঢাকা।

(মোঃ আল্লা হাফিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

(মোঃ কে, আজোদ)
প্রকল্প পরিচালক
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
ও
অতিরিক্ত প্রধান প্রকৌশলী (রক্ষণাবেক্ষণ)
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭।

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
Protective works	■ বিদ্যমান Protective works আংশিকভাবে কম মাত্রায় ক্ষতিগ্রস্থ হলে।	• বিদ্যমান Protective Work-এর ক্ষুদ্র মেরামত/আংশিক প্রতিস্থাপন (Partly Replacement)/বিদ্যমান Protective Work-এর সাথে তুলনামূলকভাবে কম দৈর্ঘ্যে নতুন নির্মাণ বা Re-construction (ভিন্ন ধরনের Protective work) করতে হবে।	• 4.05.03 (Bailing out of water), ▪ Dismantling items: • 5.03.10 (Dismantling of existing/damaged cement concrete work) and/or • 5.04.16 (Dismantling of existing/damaged brick work), • 3.11.08..... (Size of block should be matched with existing block), • 3.11.09 (labour charge for lying CC block), • 3.11.25.01 (Supplying Jute Geo-textile), • 3.11.14 (Pre-cast pile with brick work), • 5.04.04 (1st class Brick work with 1:4 mortar), • 3.11.20 (Providing single layer gunny bag filled with 1:8 mortar as barrier/wall for toe protection), • 3.11.21 (Single layer gunny bag filled with 1:8 mortar as rip-rap) and **so on as per local requirements.**
Resealing and Overlays	■ সহনীয় মাত্রার Longitudinal Slope বিশিষ্ট Bridge Approach (Non-Structural Component) কম থেকে মাঝারি মাত্রায় ক্ষতিগ্রস্থ (CS-2/(CS-3) হলে;	• Approach সমূহ Potholes, Edge break, Depression, Ruts, Cracks, Raveling, প্রভৃতি মেরামত সহ অথবা Hard Bed Preparation সহ স্বল্প দৈর্ঘ্যের Base Course (Maximum Thickness≤75mm) প্রদান করে ৪০মিমি কার্পেটিং দ্বারা উন্নয়ন করতে হবে, Type of Structure এবং আর্থিক দিক বিবেচনা করে মেরামতযোগ্য Approach-এর দৈর্ঘ্য যৌক্তিক হতে হবে; (Periodic Maintenance।	• 3.01.1 (Bed Preparation by cutting & filling), • 3.03.1 (Dismantling of damaged sub base & base course), • 3.02.1.1 (Sand filling), • 3.03.3.1 (Sub Base; 1:1), • 3.10.01.2 (Hard bed preparation), • 3.10.02 (Sand blinding), • 3.05.7.1 (WBM with compaction), • 3.04.2.1(Labour charge for resetting of bricks), • 3.04.3.2 (Brick on end edging), • 3.06.1.1(Prime coat), • 3.06.2.2 (Tack coat),

মোঃ মনিরুল ইসলাম
নির্বাহী সহকারী প্রকৌশলী (SupRB)

মোঃ মোফাক্কাত নূর
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস

(মোঃ আল্লা হাকিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক এর
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

(এ, কে, আজাদ)
প্রকল্প পরিচালক
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
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Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based items according to treatment)
			• 3.06.5.2 (40mm dense carpeting) and **so on as per local requirements.**
Repairing/ Replacement	▪ Deck-এর Wearing Course (Non-Structural Component) কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• Deck-এর Wearing Course **মেরামত/প্রতিস্থাপন/নতুনভাবে নির্মাণ** করতে হবে।	• 4.16.02.... (Removal of existing wearing course over deck slab), • 3.06.2.2 (Tack coat) and **so on as per local requirements.**
	▪ Expansion joint, Drainage outlets, Rainwater down pipe, প্রভৃতি কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• Expansion joint, Drainage outlets, Rainwater down pipe, প্রভৃতি **সম্পূর্ণ প্রতিস্থাপন/নতুনভাবে নির্মাণ** করতে হবে;	• 4.16.10 (Replacement of existing/damaged expansion joint), • 4.13.02..... (Providing & fixing Rainwater down pipe), • 4.13.05 (supplying, fitting, fixing of drainage spouts) and **so on as per local requirements.**
Repairing/ Replacement	▪ Brick Masonry Abutment/Wing Wall-এর Surface কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে। ▪ **সবসময় পানির টাচে থাকায় Mortar খসে পড়ার কারণে** Sub-Structure Component সমূহের সারফেস Rough (আংশিক এড়িয়া) (Thickness≤10mm) হলে; কিন্তু বিদ্যমান সারফেস Structurally Stable (No Spalling of Concrete or Section loss of Concrete)	• Brick Masonry Abutment ও Wing wall-এর ক্ষতিগ্রস্থ Pointing Work এবং Plaster **মেরামত/প্রতিস্থাপন/নতুনভাবে** প্রয়োগ করতে হবে; • Brick Masonry Abutment ও Wing wall-এর ক্ষতিগ্রস্থ সারফেস **নতুন Brickwork করে Re-pointing/Plaster** করতে হবে। • বিশেষ করে Sub-Structure-এর যে সকল Component সমূহের সারফেস (আংশিক এড়িয়া) Rough **(6mm<Average Thickness≤10mm)** হবে শুধুমাত্র সে অংশটুকু **Cement based Polymer Mortar (10mm Thick avg.) দ্বারা Plaster করে বাকী অংশটুকু Plaster with Neat Finishing (6mm)** করতে হবে; • Sub-Structure এবং Super-Structure-এর যে সকল Component সমূহ পানির টাচে থাকার সম্ভাবনা নেই, সে সকল Component সমূহ (ভাল/মোটামুটি ভাল) অবস্থায় থাকলেও **Water Based Cement Paint দিয়ে Treatment** করতে হবে; • **Silted মাটি দ্বারা আবৃত** ব্রিজের ক্ষতিগ্রস্থ Pier, Wingwall-এর নিম্নাংশ প্রয়োজনক্ষেত্রে Pile Cap-এর Top Surface অথবা Culvert-এর Bottom Slab-এর Top সারফেস **Cement based Polymer**	• 4.05.03 (Bailing out of water), • 2.02.1.2 (Earthen dam in/c filling & removing), • 4.01.01.01.03 (Dismantling of exiting/damaged RCC work mechanically), • 4.16.07 (10mm thick avg. Cement based Polymer mortar), • 4.06.06.01 (minimum 6mm thick Plaster with neat finishing), • 4.09.03.03 (Concrete work with compressive strength=25 MPa using mixer machine), • 4.16.18 (rust removal of reinforcement), • 4.11.01.03 (supplying ribbed or deformed bar B420DWR), • 5.04.16 (Dismantling of Damaged existing Brickwork), • 5.04.02 (Brickwork), • 3.11.03 (flush pointing)

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
		Mortar দ্বারা Re-surfacing/Polymer Concrete (25mm avg. Thick) দ্বারা Spalled Concrete Surface ত্রুটিমুক্ত/ছোট আকারের Concreting (Compressive strength≥25 MPa) করা যেতে পারে।	• 5.12.22 (Rule pointing), • 5.12.01 (Minimum 12mm tick plaster with neat finishing) and so on as per local requirements.
	■ Steel Truss/Bailey Bridge-এর Nuts/Bolts, Gaskets, Checker Plates, Cover plates প্রভৃতি কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ **(CS-2/CS-3/CS-4)** হলে।	• **মেরামত/প্রতিস্থাপন/Re-welded** করতে হবে।	• 3.10.10.1 (supplying, cutting & fitting of 6mm thick checker Plate), • 3.10.10.2 (welding for checker plate), • 4.04.06 (supply & fabrication of structural steel work without carriage cost), • 4.04.07 (Taking delivery of fabricated steelwork from stacks at site) and **so on as per local requirements.**
Repairing/ Replacement	■ Road Safety Component সহ অন্যান্য Non-Structural Component- সমূহ কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ **(CS-2/CS-3/CS-4)** হলে।	• Rail Bar, Rail Post, Wheel Guard, Guard Post-এর Minor Section Loss of Concrete হলে **Cement Based Polymer Mortar (10mm Avg. Thick) দ্বারা Plaster** অথবা ব্যাপকভাবে Damaged/Spalling হলে **আংশিক বা সম্পূর্ণ প্রতিস্থাপন/নতুনভাবে নির্মাণ করতে হবে;** • Traffic Sign **সম্পূর্ণ প্রতিস্থাপন/নতুনভাবে নির্মাণ** করতে হবে।	• 4.01.01.01.03 (Dismantling of exiting/damaged RCC work mechanically), • 4.16.07 (10mm thick avg. Cement based Polymer mortar), • 5.12.04 (Taking off defective plaster), • 5.12.03.1 (Minimum 6mm thick plaster without neat finishing), • 4.09.03.03 (Concrete work with compressive strength=25 MPa using mixer machine), • 4.09.03.08.01 (Concrete work for pre-cast railing & rail post), • 4.09.03.08.02 (Concrete work for cast-in-situ railing & rail post), • 4.16.13 (Concrete work only for pre-cast railing), • 4.16.14 (Carrying out repair of RCC railing matched with 4.16.13), • 4.11.01.03 (Supplying ribbed or deformed bar B420DWR),

মোঃ মনিরুল ইসলাম
পিডিয়ার সহকারী প্রকৌশলী (SupRB)

মোঃ রেফকাত নূর
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস

(মোঃ আল্লা হাফিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক এক
এলজিইডি, সদর দপ্তর ঢাকা-১২০৬

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatr. .nt)
			• 4.15.03 (Supplying, fitting, fixing Railing and rail post made of MS pipe), • 3.12.02 (Construction of Guide post), • 3.12.04........ (Supplying, fitting, fixing of retro-reflectorized traffic sign) and **so on as per local requirements.**
Painting	▩ Concrete Structure-এর Non-Structural Component সমূহ, Steel Truss/Bailey Bridge-এর Component সমূহ এবং Road Safety Component সমূহের Painting কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (**CS-2/CS-3/CS-4**) হলে।	• **Synthetic Enamel Paint দ্বারা** Rail Bar, Rail Post, Guide Post, Traffic Sign, প্রভৃতি **Component সমূহ রং** করতে হবে; • বিশেষক্ষেত্রে **Reflectorized Paint দ্বারা** Rail Post, Guide Post, Traffic Sign, প্রভৃতি **Component সমূহ রং** করতে হবে; • **Galvanized Paint দ্বারা** Steel Truss/Bailey Bridge-এর **Component সমূহ রং** করতে হবে।	• 3.12.05...... (Synthetic Enamel Paint), • 3.12.11 (reflectorized Paint), • 4.12.02...... (Galvanizing paint to steel member).

মোঃ মনিরুল ইসলাম
সিনিয়র সহকারী প্রকৌশলী (SupRB)

মোঃ রেফাত নূর
নির্বাহী প্রকৌশলী
...ং সাপোর্টিং রুরাল ব্রিজেস
...ইডি সদর দপ্তর, ঢাকা।

(মোঃ আল্লা হাফিজ)
...প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রো... শীর্ষক প্রকল্প

...সাপোর্টিং রুরাল ব্রিজেস
ও
...প্রধান প্রকৌশলী (রক্ষণাবেক্ষণ)
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭।

Major Maintenance (বৃহৎ মেরামত) including Minor Maintenance-এর আওতায় প্রাক্কলন প্রস্তুতির বিবেচ্য বিষয় সমূহ

বাছাই নির্দেশক (Selection Criteria)

- ব্রিজের Super-Structure এবং Sub-Structure সার্বিকভাবে (Overall) ভাল/মোটামুটি ভাল থেকে কম মাত্রার আংশিকভাবে ক্ষতিগ্রস্থ (CS-1/CS-2; Vice versa অথবা উভয়ই (CS-2) হয়ে থাকলে);
- Non-Structural Member সমূহ আংশিক বা ব্যাপকভাবে ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে;
- ব্রিজের দৈর্ঘ্য > ৬মি. এবং Carriage width ≥ ৫.৫ মি.

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
Minor Maintenance	■ Minor Maintenance-এর আওতায় বিবেচনাযোগ্য ত্রুটিসমূহ।	• Minor Maintenance-এর আওতায় Catalogue অনুযায়ী কার্যক্রম সমূহ।	• Minor Maintenance-এর কার্যক্রমে উল্লেখিত
Repairing/ Retrofitting	■ ব্রিজের Sub-Structure-এর যে কোনো Component সমূহ (Pile, Pile cap, Pier, Pier cap, Abutment) • Surface Area'র আংশিক/ব্যাপক অংশে কম মাত্রায় (CS-2) ক্ষতিগ্রস্থ (Minor crack, Spalling of Concrete without exposed bar or with exposed non-rusted bar, প্রভৃতি) • Surface Area'র আংশিক মাঝারি মাত্রায় (CS-3) ক্ষতিগ্রস্থ (Crack, Spalling of Concrete with exposed rusted bar, প্রভৃতি) • Surface Area'র আংশিক ব্যাপক মাত্রায় (CS-4) ক্ষতিগ্রস্থ (Crack, Spalling of Concrete with exposed rusted bar, প্রভৃতি)	• ক্ষতিগ্রস্থ Component সমূহ মেরামত (Repairing)/শক্তিবৃদ্ধিকরণ (Retrofitting)/আংশিক প্রতিস্থাপন (Partly Replacement) করতে হবে।	• 4.05.03 (Bailing out of water), • 2.02.1.2 (Earthen dam in/c filling & removing), • 4.01.01.01.03 (Dismantling of exiting/damaged RCC work mechanically), • 4.09.03...(Concrete work with compressive strength=25 MPa using mixer machine), • 4.09.05.....(Concrete work with compressive strength=30 MPa using mixer machine), • 4.16.18 (Rust removal of reinforcement), • 4.11.01.03 (Supplying ribbed or deformed bar B420DWR), • 4.07.07.....(Welding), • 4.16.05 (Shotcrete/Guniting concrete surface with 40mm thick avg.), • 4.16.06 (25mm thick avg. Polymer Concrete), • 4.16.08 (Providing and applying Epoxy bonding agent), • 4.16.07 (10mm thick avg. Polymer mortar), • 4.16.09 (10mm thick avg. Epoxy mortar), • 4.16.15 (Micro Concreting), • 4.16.03....(Sealing of crack with Cement grout/Cement Mortar Grout; 1:1), • 4.16.04 (Sealing of Crack with epoxy resin)

(মোঃ আল্লা হাফিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং কন্ট্রাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

মোঃ মনিরুল ইসলাম
সহকারী প্রকৌশলী (SupRB)

মোঃ [illegible]
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং কন্ট্রাল ব্রিজেস

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
			and so on as per local requirements.
Repairing/ Replacement	■ Bearing Pad কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• ক্ষতিগ্রস্থ Bearing Pad মেরামত (Repairing)/প্রতিস্থাপন (Replacement) করতে হবে; ▶ ক্ষতিগ্রস্থ Concrete Bearing Seats, Loose Bolt, প্রভৃতি মেরামত; ▶ ক্ষতিগ্রস্থ Bearing Pad প্রতিস্থাপন (Replacement);	•4.01.01.01.03 (Dismantling of exiting/damaged RCC work mechanically), •4.09.03...(Concrete work with compressive strength=25 MPa using mixer machine), •4.16.18 (Rust removal of reinforcement), •4.11.01.03 (Supplying ribbed or deformed bar B420DWR), •4.07.07.....(Welding), •4.16.01.....(Lifting of Super-Structure of Bridge), •4.11.08 (Supplying, fitting and fixing steel laminated Elastomeric/Neoprene Bearing) and so on as per local requirements.
Repairing/ Retrofitting/ Replacement	■ ব্রিজের Wing wall এবং Super-Structure-এর যে কোনো Component সমূহ (Girder, Cross-girder, Deck and Walkway) • Surface Area'র আংশিক/ব্যাপক অংশ কম মাত্রায় (CS-2) ক্ষতিগ্রস্থ (Minor crack, Spalling of Concrete without exposed bar or with exposed non-rusted bar, প্রভৃতি) • Surface Area'র আংশিক মাঝারি মাত্রায় (CS-3) ক্ষতিগ্রস্থ (Crack, Spalling of Concrete with exposed rusted bar, প্রভৃতি) • Surface Area'র আংশিক ব্যাপক মাত্রায় (CS-4) ক্ষতিগ্রস্থ (Crack, Spalling of Concrete with exposed rusted bar, প্রভৃতি)	• ক্ষতিগ্রস্থ Component সমূহ মেরামত (Repairing)/শক্তিবৃদ্ধিকরণ (Retrofitting)/আংশিক প্রতিস্থাপন (Partly Replacement) করতে হবে।	•4.05.03 (Bailing out of water), •2.02.1.2 (Earthen dam in/c filling & removing), •4.01.01.01.03 (Dismantling of exiting/damaged RCC work mechanically), •4.09.03...(Concrete work with compressive strength=25 MPa using mixer machine), •4.09.05.....(Concrete work with compressive strength=30 MPa using mixer machine), •4.16.18 (Rust removal of reinforcement), •4.11.01.03 (Supplying ribbed or deformed bar B420DWR), •4.07.07.....(Welding), •4.16.05 (Shotcrete/Guniting concrete surface with 40mm thick avg.), •4.16.06 (25mm thick avg. Polymer Concrete), •4.16.08 (Providing and applying Epoxy bonding Agent), •4.16.07 (10mm thick avg. Polymer mortar), •4.16.09 (10mm thick avg. Epoxy mortar), •4.16.15 (Micro Concreting), •4.16.03....(Sealing of crack with Cement grout/Cement Mortar Grout; 1:1), •4.16.04 (Sealing of Crack with epoxy resin) and so on as per local requirements.

মোঃ মনিরুল ইসলাম
সিনিয়র সহকারী প্রকৌশলী (SupRB)

(মোঃ আল্লা স্বাকিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based items according to treatment)
Repairing/ Retrofitting/ Replacement	■ Steel Truss/Bayley Bridge-এর যে কোনো Component কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• ক্ষতিগ্রস্থ Steel Truss/Bayley Bridge-এর Component সমূহ মেরামত (Repairing)/আংশিক প্রতিস্থাপন (Partly Replacement)/শক্তিবৃদ্ধিকরণ (Retrofitting) করতে হবে;	•3.10.10.1 (Supplying, cutting & fitting of 6mm thick checker Plate), •3.10.10.2 (Welding for checker plate), •4.04.06 (Supply & fabrication of structural steel work without carriage cost), •4.04.07 (Taking delivery of fabricated steelwork from stacks at site) and so on as per local requirements.
Repairing/ Rehabilitation	■ Embankment Slope protection (Non-Structural Component) আংশিক বা সম্পূর্ণ মাঝারি থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-3/CS-4) হলে।	• বিদ্যমান Protective Work-এর বৃহৎ মেরামত/আংশিক প্রতিস্থাপন (Partly Replacement)/চাহিদা অনুযায়ী নতুন নির্মাণ বা Re-construction (ভিন্ন ধরনের Protective work)/ Earth Retaining Wall) করা যাবে।	•4.05.03 (Bailing out of water), •2.02.2.01 (Earthwork), •Dismantling items: •5.03.10 (Dismantling of existing/damaged cement concrete work) and/or •5.04.16 (Dismantling of existing/damaged brick work), •3.11.08.....(Size of block should be matched with existing block), •3.11.09 (Labour charge for lying CC block), •3.11.25.01 (Supplying Jute Geo-textile), •3.11.14 (Pre-cast pile with brick work), •5.04.04 (1st class Brick work with 1:4 mortar), •3.11.20 (Providing single layer gunny bag filled with 1:8 mortar as barrier/wall for toe protection), •3.11.21 (Single layer gunny bag filled with 1:8 mortar as rip-rap), •4.09.03.03 (Concrete work with compressive strength=25 MPa using mixer machine), •4.16.18 (Rust removal of reinforcement), •4.11.01.03 (Supplying ribbed or deformed bar B420DWR) and so on as per local requirements.
Repairing/ Rehabilitation	■ Steep (অসহনীয় মাত্রার) Longitudinal Slope বিশিষ্ট Bridge Approach (Non-Structural	• Major Maintenance-এর আওতায় Steep (অসহনীয় মাত্রার) Longitudinal Slope বিশিষ্ট Approach সহনীয় মাত্রায় আনয়নের জন্য Rehabilitation করতে হবে; এক্ষেত্রে ISG দ্বারা	•3.01.1 (Bed Preparation by cutting & filling), •3.03.1 (Dismantling of damaged sub base & base course), •3.02.1.1 (Sand filling),

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)
	Component) ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-4) হলে	Slope সহনীয় মাত্রায় আনতে হবে এবং Existing Materials ও নতুন Materials (যদি প্রয়োজন হয়) দ্বারা Sub-Base (150mm) করতে হবে; এরপর WBM (150mm) প্রদান করে ৪০মিমি কার্পেটিং দ্বারা উন্নয়ন করতে হবে; Type of Structure এবং আর্থিক বিষয় বিবেচনা করে পুনর্বাসনযোগ্য Approach-এর দৈর্ঘ্য যৌক্তিক হতে হবে; • Approach সমূহ Re-construction (ভিন্ন ধরনের Approach) করা যাবে।	• 3.03.3.1 (Sub Base; 1:1), • 3.10.01.2 (Hard bed preparation), • 3.10.02 (sand blinding), • 3.05.7.1(WBM with compaction), • 3.04.3.2(Brick on end edging), • 3.06.1.1(Prime coat), • 3.06.2.2 (Tack coat), • 3.06.5.2 (40mm dense carpeting), • 4.16.02.... (Removal of existing wearing course over deck slab), • Items converting HBB to BC and so on as per local requirements.
Repairing/ Reconstruction/ New construction	■ River Training Works-এর আংশিক বা সম্পূর্ণ কম থেকে ব্যাপক মাত্রায় ক্ষতিগ্রস্থ (CS-2/CS-3/CS-4) হলে।	• ক্ষতিগ্রস্থ River Bank/Slope মেরামত (Repairing)/পুনঃনির্মাণ (Reconstruction; ভিন্ন ধরনের Protective Work) অথবা নতুন নির্মান (New Construction; Structural Review প্রয়োজন) করতে হবে;	• 4.05.03 (Bailing out of water), • 2.02.2.01 (Earthwork), • Dismantling items; • 5.03.10 (Dismantling of existing/damaged cement concrete work) and/or • 5.04.16 (Dismantling of existing/damaged brick work), • 3.11.08.....(Size of block should be matched with existing block), • 3.11.09 (Labour charge for lying CC block), • 3.11.25.01 (Supplying Jute Geo-textile), • 3.11.14 (Pre-cast pile with brick work), • 5.04.04 (1st class Brick work with 1:4 mortar), • 3.11.20 (Providing single layer gunny bag filled with 1:8 mortar as barrier/wall for toe protection), • 3.11.21 (Single layer gunny bag filled with 1:8 mortar as rip-rap), • 4.09.03...(Concrete work with compressive strength=25 MPa using mixer machine), • 4.11.01.03 (Supplying ribbed or deformed bar B420DWR), • 4.07.07.....(Welding) and so on as per local requirements.

মোঃ মনিরুল ইসলাম
সিনিয়র সহকারী প্রকৌশলী (SupRB)

মোঃ [illegible]
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
এলজিইডি সদর দপ্তর, ঢাকা।

(মোঃ আল্লা-হাফিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

[illegible]
প্রকল্প পরিচালক
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
ও
অতিরিক্ত প্রধান প্রকৌশলী (রক্ষণাবেক্ষণ)
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭।

Catalogue অনুযায়ী কার্যক্রম	বিবেচনাযোগ্য লক্ষ্যনীয় ত্রুটিসমূহ	কার্যক্রমের অনুকূলে গৃহীতব্য ব্যবস্থাদি	সম্ভাব্য আইটেম সমূহ (Need based Items according to treatment)

Repairing/ Reconstruction/ New construction	■ Foundation (Abutment/Pile cap/Pier)-এর চারিপ্পার্শে বড় আকারের (Major) **Scour** হলে	• মাটি দ্বারা **Scour** ভর্তি করে **Suitable Material** দ্বারা **Seal** করে দিতে হবে।	• 4.05.03 (Bailing out of water),
			• Any one of two items;
			  • 2.02.1.2 (Earthen dam in/c filling & removing)
			  • 4.05.04.01-02 (Earthen Ring Bundh),
			• 2.02.2.01 (Scour to be filled by Earthwork),
			• Any one of three items;
			  • 3.11.22.02 – 3.11.22.05 (Pick up only one Item from four Items; Supplying & dumping of soil filled geo-textile bag)
			  • 3.11.08.03 (Manufacturing & Supplying CC Block) and 3.11.09 (Labour charge for lying CC block)
			  • 3.11.21 (Single layer gunny bag filled with 1:8 mortar as rip-rap),
			• 3.11.25.01 (Supplying Jute Geo-textile),
			• 4.09.03.03 (Concrete work with compressive strength=25 MPa using mixer machine),
			• 4.11.01.03 (supplying ribbed or deformed bar B420DWR) and **so on as per local requirements.**

মোঃ মনিরুল ইসলাম
সহকারী প্রকৌশলী (SupRB)

মোঃ লেকফাত নূর
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
এলজিইডি সদর দপ্তর, ঢাকা।

(মোঃ আব্দুল হাফিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রীজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

সংযুক্তি-৩

প্রাক্কলন প্রস্তুতির প্রয়োজনীয় নির্দেশনা

- ইতোপূর্বে Online-এ প্রেরিত প্রাক্কলন প্রস্তুতীর ফরম্যাট অনুযায়ী প্রাক্কলন প্রস্তুত করতে হবে;
- প্রাক্কলনে সংযুক্ত B-02 ছকে প্রদত্ত তথ্য সমূহের সাথে Technical Report-এর তথ্যাদীর সামঞ্জস্য থাকতে হবে;
- ব্রিজ/কালভার্টের ভাল/মোটামুটি ভাল ও ক্ষতিগ্রস্থ Component এবং ত্রুটিসমূহের পরিমাপগত (Dimension) তথ্যাদি উপজেলা প্রকৌশলীর মাধ্যমে সরেজমিনে পরিদর্শন পূর্বক সঠিকভাবে সংগ্রহ নিশ্চিত করতে হবে, কারণ প্রাক্কলনে সকল Component সমূহ Treatment-এর আওতায় আনতে হবে;
- প্রাক্কলনে প্রয়োজনীয় সংখ্যক Photograph সংযুক্ত করার জন্য নির্দেশনা দিতে হবে; এক্ষেত্রে সরেজমিনে পরিদর্শনকালে বিভিন্ন এংগেল হতে Reference সহ ব্রিজ/কালভার্টের Photograph এমনভাবে তুলতে হবে যেন সকল Component সমূহ দৃশ্যমান থাকে, এছাড়া ত্রুটিযুক্ত Component সমূহ Closely তুলতে হবে, প্রতিটি Photograph-এর Caption (Structure length, Type of Structure, Position of Defect, Location of Structure, Road Name, প্রভৃতি) থাকতে হবে, Photograph-এর সাইজ (5 inchx 3 inch), Coloured এবং স্পষ্ট হতে হবে, সূর্যকে পিছনে রেখে ছবি তুলতে হবে, প্রত্যেক Structure-এর ছবিসমূহ Online-এ প্রেরণে নিশ্চিত করতে হবে;
- Minor Maintenance ব্যতিত অন্যান্য ক্যাটাগরী'র (Major Maintenance/Rehabilitation/Capacity Expansion/Replacement/New Construction) জন্য স্থানীয় সুবিধাভোগীদের নিয়ে সভা করে ইতোপূর্বে Online-এ প্রেরিত Environmental Screening ফরম্যাট পূরণ করে Environmental Assessment (EA) প্রতিবেদন প্রস্তুত করতে হবে এবং EA প্রতিবেদনের উপর ভিত্তি করে Environmental Mitigation Plan (EMP) প্রনয়ন পূর্বক Environmental and Social Risk Mitigation সংক্রান্ত আইটেম সমূহ প্রাক্কলনে অন্তর্ভুক্ত করতে হবে এবং EMP দরপত্র দলিলে (Tender Document) সংযুক্ত করতে হবে।

মোঃ খলিলুল ইসলাম
সিনিয়র সহকারী প্রকৌশলী (SupRB)

মোঃ মোফাজ্জাল হক
নির্বাহী প্রকৌশলী
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
এলজিইডি সদর দপ্তর, ঢাকা।

(মোঃ আব্দুল হাকিজ)
তত্ত্বাবধায়ক প্রকৌশলী (ব্রিজ রক্ষণাবেক্ষণ)
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস শীর্ষক প্রকল্প
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭

(এ, কে, আজাদ)
প্রকল্প পরিচালক
প্রোগ্রাম ফর সাপোর্টিং রুরাল ব্রিজেস
ও
অতিরিক্ত প্রধান প্রকৌশলী (রক্ষণাবেক্ষণ)
এলজিইডি, সদর দপ্তর, ঢাকা-১২০৭।

LOCAL GOVERNMENT ENGINEERING DEPARTMENT
Program for Supporting Rural Bridge (SupRB)

Attachment-6

Quality Assurance
&
Quality Control Plan

June 2019

Quality Assurance & Quality Control Plan

CONTENTS

Program for Supporting Rural Bridge (SupRB)
Quality Assurance & Quality Control Plan

1.0 Quality Assurance Plan (QA Plan)

The SupRB Quality Assurance Plan is a key part of the WB and Bangladesh Government Agreement. All aspects of the SupRB program are being implemented by LGED and their staff using well established tender processes. LGED will contract with a local construction contractor who will implement the work. LGED will utilize their staff to supervise/monitor quality & quantity progress, safety, social and environmental aspects of the work. LGED has the organizational structure in place to execute construction work in the various Districts and Upazilas throughout Bangladesh. Furthermore Design Consultants, Consultants for Region & Field Level (Supervision and Monitoring Consultant) will assist LGED to execute design and construction works.

In the case of the Supporting Program for Rural Bridges (SupRB), the program disbursement will be based on the achievement of results as measured by a framework of Disbursement Linked Indicators (DLIs). The Implementation, Monitoring and Evaluation Division (IMED) called the "verification entity" is responsible for leading verification process of DLIs under the program. The verification entity will select a random sample for physical verification of completed bridges (by number) as mentioned in the DLI verification Protocol (Appendix-VIII of DPP). This adds another layer of monitoring and communication that requires careful planning prior to field implementation.

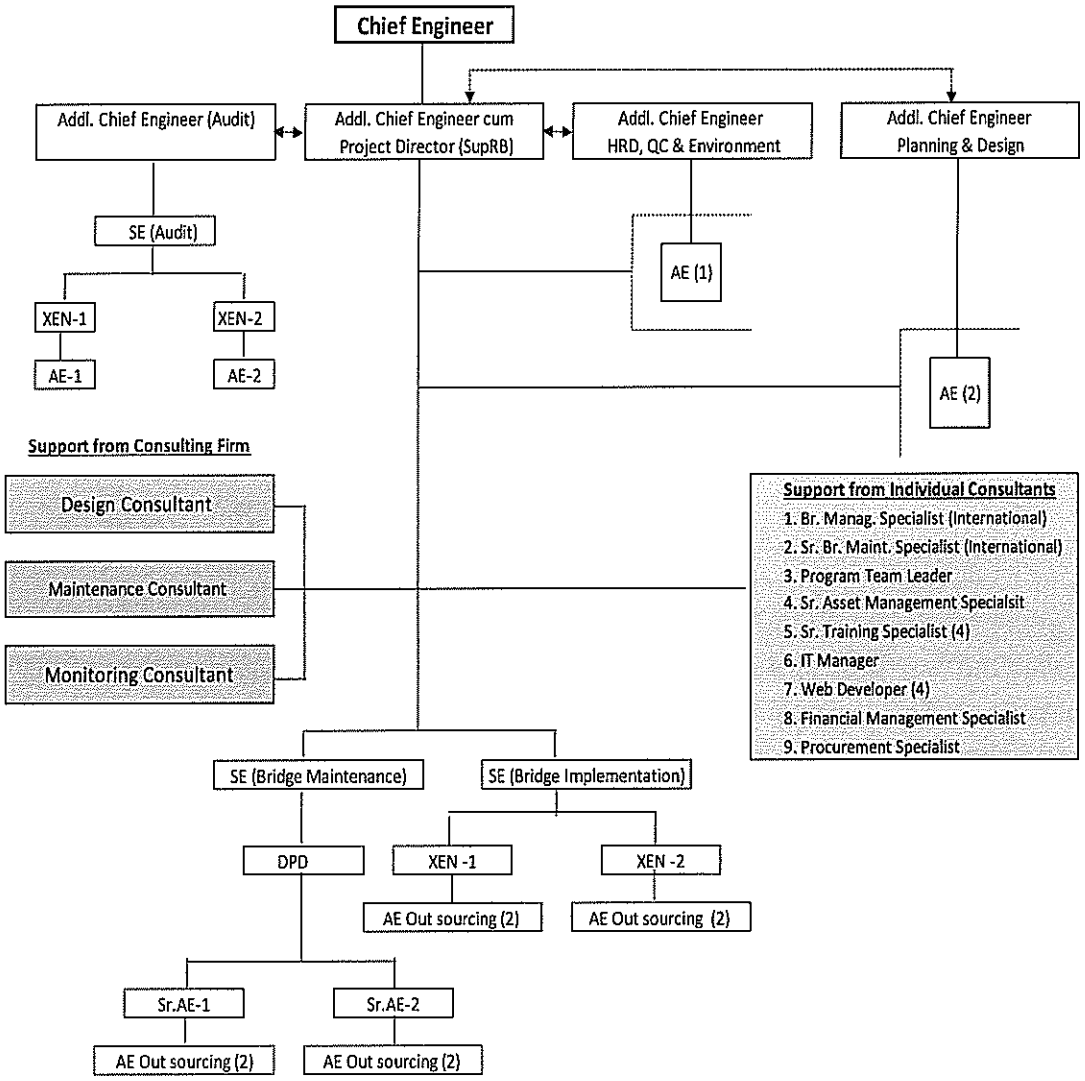
Following Disbursement Linked Indicators (DLIs) all the hard measures under this program is divided into categories of (i) DLI-1: Minor maintenance (ii) DLI-2: Major maintenance (iii) DLI-3: Rural bridge rehabilitation (iv) DLI-4: Rural Bridges Capacity Expansion (v) DLI-5: Rural bridge replacement or new bridge construction.

This Quality Assurance Plan for maintenance of Bridges has been prepared to define the plan-process for controlling quality of works under the SupRB program. Because LGED will have contractual arrangements with local contractors that require payment, any miscommunication in the required quality process will have significant impact.

2.0 Project Implementation Arrangement

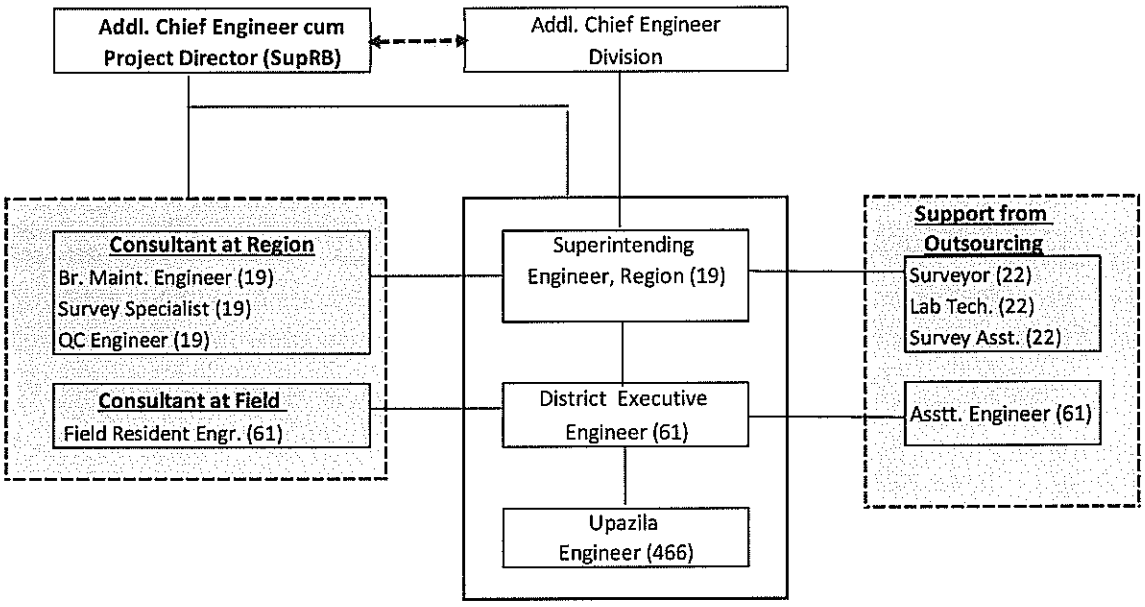
The program will be implemented by LGED under the Local Government Division of the Ministry of Local Government, Rural Development, and Cooperatives. The LGED's institutional structure is most suitable for implementing such type of Program interventions are dispersed geographically throughout Bangladesh that involve the procurement and execution of many small contracts. The LGED has strong field presence with offices in every districts and upazila. The district executive engineer offices will be mainly responsible for the field level implementation of the Program activities, including the procurement of contracts. The district executive engineer offices will be supported by the upazila Engineer Offices. An additional chief Engineer based at the LGED Headquarters will act as the Project Director. Through establishing a Program Management Unit (PMU) at the headquarters level headed by the Project Director (PD). Staffing arrangement of PMU is shown in the organogram (Staffing arrangement of Project Management Unit:

Staffing arrangement of Project Management Unit (PMU)



At the field level, PD will be supported by Addl. Chief Engineer Division, Regional Superintending Engineers, and Executive Engineers of the Regional Superintending Engineer's Office, District Executive Engineers, Senior/Assistant Engineers, Upazila Engineers, Upazila Assistant Engineers, Sub-Assistant Engineers, Surveyors, Community Organizer and other technical and accountant staffs. Moreover, the LGED field staff will be supported by outsourcing technical staffs. In addition to that LGED will procure support from Design Consultant, Maintenance Consultant, Consultant for Region and Consultant for Field Level. Staffing arrangement at Field Level is shown in the organogram (Staffing arrangement at Field Level):

Staffing Arrangement at Field Level



The Role of Consultant for Field Level (Supervision and Monitoring Consultant)

LGED will hire a consultancy firm to support the supervision of implementation activities. The objective of the consultancy services is to provide technical, socio-environmental and management support to the PMU, the regional level official's, the district level officials and the upazila level officials of LGED to implement the program ensuring compliance with the project document. Key personnel for supporting "Consultant for Field Level" are the **Regional Quality Control Engineer** and **Field Resident Engineer.** They will work closely with the District XEN, the UE, SAE and the LGED Contractor.

The Role of Consultant at Region level.

To achieve the desired output of the Program, LGED will also procure consultancy services for supporting the implementation activities under the Program. The main objective of the assignment is to deliver the best preventive measures of rural bridges through structural review including preparing and monitoring the implementation of bridge maintenance activities. The consultant shall provide competent personnel for the services who shall be managed by the PMU. The team shall comprise of one Bridge Maintenance Engineer and one Survey specialist in each region.

Role and responsibilities of Construction/Maintenance Contractor

The construction/maintenance contractors are responsible for constructing/repair the work in accordance with the design, drawings, plans and specifications. Each contractor is also responsible for controlling the quality of their work to meet contract plans, specifications, and related requirements. The Contractor's Quality Control System (CQCS) shall be the systematic implementation program for inspections, tests, and production controls to attain the required standards of quality, DLI (1 to 5) standards of this program and to prevent problems resulting from noncompliance. The construction manager (CM) under the employment of Contractor assures that the contractor's quality control system is working effectively and that the resultant

construction complies with the quality requirements established by the contract. Contractor's Responsibilities:

- Provide Work Plan for each of the worksite with detailed breakdown of all the work scope including Contractor's Environmental Management Action Plan (CEMAP) to manage all the identified social & environmental safeguards.
- Protect unlawful engagement of the child workers compliance with local laws, and ILO convention including perception of unfair recruitment of workers and selection practices that can annoyed surrounding community.
- Promote fair and equitable labor practices for discrimination and equal opportunity of workers including healthy, safe and secure working condition that does not impact negatively on the community in the surrounding area.
- Supervise, inspect and direct the work competently and efficiently and applying such skills and expertise as may be necessary to perform the work in accordance with the contract document.
- All the quality control tests at every stage and on all aspects of the work to be undertaken by the Contractor as per test schedule and test frequency mentioned in Art. 4.0 of this document.
- Capture the photographs of before work, works in progress and after works of all the project activities including photos of social, environmental, worksite safety, OHS etc. to meet the requirement of DLI (1 to 5) of this program.
- Responsible for the means, methods, techniques, sequences and procedures of construction/repair of works.
- Assign a competent Construction Manager thereto who shall be the contractor's representative at the site and shall have the authority to act on behalf of the contractor.
- Provide adequate number of competent, suitably qualified personnel to survey, layout setting, close supervision and construct the work as required by the contract documents.
- Maintain good discipline and administration at the site at all-time.
- Provide and assume full responsibility for all services, materials, equipment labour, transportation, fuel, power, water supply, sanitary facilities, accommodation facilities and all other facilities.
- Ensure suitable welfare facilities are provided from the start for workers under their control and maintain them throughout the work.
- Responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work
- Comply with all applicable laws and regulations relating to the safety of persons and property from damage, injury or loss and shall erect and maintain all necessary safeguards as per CEMAP for such safety protection.
- Submit shop drawings to the engineer for review and approval where a shop drawing or sample is required by the contract documents or schedule of shop drawings.

3.0 Definable Features of Work under SupRB project interventions.

The following Definable Features of Work are anticipated with the SupRB Bridge maintenance (Minor/Major/Rehabilitation/Replacement/New construction):

1) Construction of Site Support Facilities including OHS, source of water supply, sanitation etc.

2) Excavation and Clearing of soil/materials for Repair of foundations and others component (Wing wall, Abutment wall, side slope protection work etc.)

3) Framing, centering, bracing, sheeting, shoring etc. for safety and stability of existing structure under repair.

4) Safe dismantling of damaged structure (Railing/Deck slab/Girder/Abutment wall/Pier stem/Pier head/Bearings/Foundation/Wing wall etc.) including collection and disposal of constructional and dismantled (C&D) waste followed by Reduce, Reuse, Recycling, Recovery and Residual disposal.

5) Reinforcement work and other steel works

6) Concrete works & Brick works.

7) Earth fills in approach road construction/repair

8) De-siltation of channel/khal/river if required.

9) SG, ISG, Sub-base & Base course preparation for approach road construction / repair

10) Applying BC and Seal coat

11) Side slope protection and Turfing

12) Final Cleanup and Demobilization

Because each Definable Feature of Work has differing quality, safety, testing and environmental requirements, it is critical to review all requirements prior to starting the work. At a minimum, a Preparatory Phase Meeting will be held prior to starting each Definable Feature of Work. The UE, SAE, key contractor staff and key staff of Consultant for Field Level will be invited to the preparatory phase meeting (Kickoff Meeting).

4.0 Quality Control (QC) Testing

4.1 General

The contractor shall be fully responsible to the owner and the engineer for supplies and all acts of quality control to achieve the specified standard also for scheduling and coordinating the all quality control tests performing or furnishing. The main principles of quality control testing are:

- The Contractor may only bring materials on to the site after obtaining approval to the use of these materials from the Engineer in writing. No work will be allowed without prior approval of materials to be used.
- Throughout the contract all materials brought onto the site must be tested for compliance with the specification. Materials that fail to meet the specification

requirements must be rejected by the Engineer and removed from the site by the Contractor with his own cost.

- The Contractor must obtain the prior written approval before commencing each stage of the work. Approval will be based on satisfactory quality control tests on the preceding stage and or other requirements of the specification.

4.2 Quality Control Tests

The necessary quality control tests together with the frequency are listed in section 8.0 of this document and that are not covered, the contractor will also be oblige to carry out as per direction of the Engineer-in-charge. The quality control tests required as per specification are to be undertaken by the Contractor at his own expense, the cost of such testing being deemed to be included in his rates for the relevant work items. Many of the quality control tests can be undertaken on site and others will need to be carried out in the laboratory that has been approved by the Engineer. A detailed description of each test procedure and how it should be undertaken is contained in 'LGED Quality Control Manual' (available in hard copy at LGED HQ and districts). Quality Control Tests fall into three categories:

- Tests on materials prior to and during construction/maintenance
- Tests on the quality of workmanship.
- Tests on the finished works after construction.

All requisite tests for materials must be performed before using in any works as per guidelines below:

- The SAE and Field Resident Engineer (FRE) of Consultant for Field level will verify that the contactor has conducted material testing and that materials meet the requirements of the SupRB standard design, drawings and the contract specifications.
- Copies of all sample test reports will be maintained at the Upazila Engineer's Office and Consultant's office. The approval authority for all material testing is the District Executive Engineer with notification to SE Region.
- The results of all the tests carried out should be submitted to the Engineer-in-Charge. Where any test result fails to meet the requirements of the specifications the Engineer-in-Charge must be notified to the Contractor and the field supervisory personnel immediately by telephone with a copy of failed test report dispatched to them without delay.
- The material failed in testing must be removed from the site immediately by the contractor at his own cost.
- The UE and Field Resident Engineer (FRE) of Consultant will ensure that all unspecified materials are removed from site.
- If timely removal is not possible, the UE will direct the contractor to mark the materials as rejected until removed.

Materials testing parameters and testing frequency are included in Section 8.0 of this Plan.

4.3 Quality Control Tests on Workmanship

To a large extent these tests are required to ensure that

- The approved construction materials are correctly mixed, placed and compacted during the work.

- Where on-site mixing is employed by the contractor, the grading and proportioning of the materials must be strictly controlled so that all times the final mix complies with the design mix that has been approved by the Engineer.
- Whether mixed on site or off-site, the field supervisory staff must take samples for testing in the LGED Laboratory in accordance with the requirements of the specification.
- Inevitably the results of these tests will not be known until a considerable period of time has elapsed after the materials have been placed and compacted. Where the results of these tests show that the materials/works do not comply with the specification further intrusive and / or non-destructive tests must be carried out on the completed works for the Engineer to decide whether or not to reject the works.
- There must be a management system within the site and within the laboratory itself to ensure that samples are correctly registered, tagged, tested and recorded.

5.0 Quality Assurance (QA) Testing

- Quality Assurance (QA) testing is provided for the verification of the adequacy and effectiveness of the Quality Control (QC) testing at various stages of work.
- QA sampling and testing will be performed by or under supervision of the QA staff who monitor the Contractor's quality control to validate the contractor's QC sampling and testing.
- Regional Quality Control Engineer of Consultant for Field Level (Supervision and Monitoring Consultant) with the assistance of LGED will ensure adequacy and reliability of Quality Control testing performed at various stages of works.
- QA testing may be performed on a pre-established schedule or as directed by the higher authority.
- The typical test frequency normally one QA test for every ten to fifteen of the construction contractor's QC tests. More frequent testing during initial startup may be necessary to verify the process is under control and complies with the technical specifications of the construction contracts.
- In lieu of performing independent tests by the QA personnel, the QA Testing may choose to witness QC testing or conduct tests on split samples from QC testing.
- When QA and QC test results do not match or have wide variances, additional testing may be needed to validate the results.

The need for QA testing shall be based on the following considerations:

- Importance of the item as to its reliability, etc.;
- Need to perform quality checks for sequences that not possible available for inspection at completion; and
- Deficiencies are discovered.

5.1 Monitoring the Contractor's Quality Control and Adherence to Requirements

The contractor shall construct, install and carry out the works and physical services in accordance with the contract conforming to the requirement of DLI (1 to 5) of this program. Prior to starting work, the SAE will review all contract quality control requirements and develop a Quality Control Checklist (QC Checklist) specific to the work that will be used to verify DLI (1 to 5) and monitor the Contractor's compliance with contract specifications, safety

and environmental requirements. The PM will review and approve the QC Checklist prior to use. Quality requirements are included in the contract clauses, the approved design, the SupRB Standard Design and all associated attachments and references. The QC Checklist will be used throughout the project to help guide the SAE's testing program, their daily monitoring and their weekly reporting.

6.0 Testing Lab Requirements

LGED has a well-equipped laboratory in each district with sufficient instruments. One Assistant Engineer is in charge of the laboratory supported by Laboratory Technician (LT) and one Laboratory Assistant (LA). All material and field tests shall be performed by LGED's laboratory in charge. Test reports will be signed by the Lab Technician, Assistant Engineer and District Executive Engineer. In cases where the testing facilities are not available in the LGED laboratory; the tests shall be performed elsewhere as directed by the District Executive Engineer.

7.0 Testing Frequency

Notwithstanding the requirements stated in the detailed specifications for individual items, the following minimum tests shall be carried out in the LGED specific laboratories and in the field. In cases the testing facilities are not available in the LGED laboratory; the tests shall be performed elsewhere as directed by the Engineer-in-charge. All test types and quantities described in the following paras are considered "Normal Testing", whereas anything beyond that in type and quantity is considered as "Special Testing". The Engineer may increase the frequency of testing as required.

7.1 Earthworks/Embankment Fill

Tests & Testing Frequency

ITEM & TYPES OF TESTS		TEST FREQUENCY
EMBANKMENT		
i)	Liquid limit/plastic limit	1 for each end but more than one if soil character changes.
ii)	Maximum dry density (MDD)	1 for each end but more than one if soil character changes.
iii)	Compaction test	1 per 200m2 per layer
iv)	Laboratory CBR	1 for each site but more than one if soil character changes.

7.2 Improved Sub-grade

Tests & Testing Frequency

ITEM & TYPES OF TESTS		TEST FREQUENCY
IMPROVED SUB-GRADE		
i)	Liquid Limit/Plastic Limit	1 for each end but more than one if material character changes.
ii)	Gradation and F.M.	1 for each site but more than one if material character changes.
iii)	Laboratory MDD	1 set for each site but more than one if material character changes

iv)	Laboratory CBR & Maximum Dry Density relationship.	1 for each site but more than one if material character changes
v)	Field compaction Tests:	
By Sand Replacement Method/Core Cutter Method or any other method accepted by the Engineer-in-Charge		1 per 200m^2 per layer

7.3 Sub-Base

Tests & Testing Frequency

ITEM & TYPES OF TESTS			TEST FREQUENCY
(a)	**For approval of materials to be used in works the following tests are to be done**		
	i)	Water absorption	1 for each site but more than one if material character changes.
	ii)	AIV (Aggregate Impact Value)/ LAA (Los Angeles Abrasion)	1 for each site but more than one if material character changes.
	iii)	Laboratory CBR	1 for each site but more than one if material character changes.
	iv)	Laboratory MDD	1 set for each site but more than one if material character changes
	v)	Gradation Test	1 for each site but more than one if material character changes
(b)	**Field Test (Additional samples may be taken from pavement if necessary**		
	(i)	Compaction (Sand replacement Method or any other method accepted by the Engineers-in-charge)	1 per 200m^2 per layer

7.4 Water Bound Macadam/Wet Mix Macadam base course and hard shoulder

Tests & Testing Frequency

ITEM & TYPES OF TESTS			TEST FREQUENCY
WBM/WMM BASE COURSE AND HARD SHOULDER			
(a)	For approval of materials to be used in works the following tests are to be done		
	i)	Water absorption	1 for each site but more than one if material character changes.
	ii)	AIV (Aggregate Impact Value)/ LAA	1 for each site but more than one if material character changes.
	iii)	Laboratory CBR	1 for each site but more than one if material character changes.
	iv)	Laboratory MDD (Additional samples may be taken from the pavement if necessary)	1 set for each site but more than one if material character changes
	v)	Gradation Test	1 for each site but more than one if material character changes
(b)	**Field Test**		
	i)	Compaction (Sand replacement Method or any other method accepted by the Engineer-in-charge)	1 per 200m^2 per layer

7.5 Sealing and Surfacing

7.5.1 Bitumen Manufactures Certificates

The contractor shall provide the Engineer with Manufactures Certificates relating to separate batches of bituminous material provided for sealing and surfacing operations.

These should include, but may not be limited to the following:

a)	Penetration Grade	1 test per contract but more than one if material source/origin changes.
b)	Softening Point	1 test per contract but more than one if material source/origin changes.
c)	Flash Point	1 test per contract but more than one if material source/origin changes.

The contractor shall perform the above tests on bitumen or as directed by the Engineer-in-charge.

7.5.2 Bitumen Content Test

This test is done to determine the bitumen content in the bituminous mix by cold solvent extraction. These tests are carried out on mixtures and pavements shortly after their preparation.

Testing Frequency:

1 for each end bridge approach but more than one if material character changes.

7.5.3 Bitumen Application Rates

a)	Prime Coat
b)	Tack Coat
c)	Bituminous Surface Treatment
d)	Otta Seal

Testing Frequency:

Manual Spray rates shall be measured in liters for each $10m^2$ of spray area. Mechanical spray rates shall be measured in liters per square meter of spray area.

7.5.4 Temperature Control

(a)	Prime Coat
(b)	Tack Coat
(c)	Bituminous Carpet
(d)	Bituminous Surface Treatment
(e)	Otta Seal Coat

Testing Frequency

(i) Temperature shall be checked during each day Prime Coat or Tack Coat operations as frequently as required by the Engineer.

(ii) For Bituminous Carpeting temperature shall be checked before mixing with aggregates, at the time of laying and also during rolling.

7.6 Concrete

7.6.1 Cement

(a) Setting Time
(b) Strength

Testing Frequency

Tests shall be carried out to determine the setting time and strength for each batch of cement prior to this cement being incorporated into the works.

7.6.2 Aggregates

(a) Coarse Aggregate

(i) Gradation
(ii) Water Absorption
(iii) AIV or Los Angeles Abrasion

Testing Frequency

For new construction, the above tests shall be carried out for each days casting or per 15m3 of concrete, which ever provides the greater number of tests.

For repair work purpose, the above tests shall be carried out for each stockyard at site but further tests shall be carried out immediately before casting of more than 5m3 of concrete in a day.

(b) Fine Aggregate

(i) Grading
(ii) F.M.

Testing Frequency

For new construction, the above tests shall be carried out for each days casting or per 15m3 of concrete, which ever provides the greater number of tests.

For repair work purpose, the above tests shall be carried out for each stockyard at site but further tests shall be carried out immediately before casting of more than 5m3 of concrete in a day.

7.6.3 Workability

(a) Slump

Testing Frequency

The above tests shall be carried out as frequently as required by the Engineer and not less than one per hour during concreting operations.

7.6.4 Concrete Strength

(a) Cube/Cylinder Strength at 7 days and 28 days
(b) Density/Unit weight

Testing Frequency

At least 6 cubes/cylinders (1 set) shall be kept from each class of concrete for each days casting or at least 1 set per 15m3 for new construction and at least 1 set per 5m3 for repair works of each class of concrete for testing at 7 days and 28 days whichever is greater. Engineer in-charge has the right to increase the no. of tests beyond the set frequency as he deems required and the contractor is to perform the additional tests on his own cost. The location in the structure of the concrete from which the samples

were taken should be recorded. *If the casting of concrete less than 1m3 in a day, concrete strength test can be avoided but in that case quantity of cement must be increased by minimum 10% and slump test should be carried out for each batch of mixing.*

7.7 Reinforcement

7.7.1 Properties

(a) Diameter
(b) Unit/Weight
(c) Tensile Strength

Only test Certificates issued by BUET/RUET/KUET/CUET/DUET shall be accepted by the Engineer.

Testing Frequency

The above tests (at least 1 set per dia.) shall be carried out for each brand or as directed by the Engineer.

7.8 Repair/Retrofit Special Materials

The available special materials for damage repair works of various types and strengthening operation are **Shotcrete, Micro-concrete, Epoxy Resins, Epoxy mortar, Polymer mortar, Epoxy bonding agent, Non-shrinkage grout etc.** Any of these materials of any quantity are to be used in the work shall be pre packed patent materials obtained from manufacturer, approved in writing by the Engineer-in-charge and shall be complying with the requirements of AASHTO or ASTM or BS or BDS or mentioned in the Technical Specifications. Materials meeting other internationally accepted equivalent or higher standards may be accepted subject to review by the Engineer-in-charge.

Testing:

After operation, testing (Pull Test, Hammering test etc.) will be carried out to determine the performance of any of these materials.

8.0 Inspection, Supervision & Monitoring

There are layers of inspection will be performed during construction of works. After signing the Contract the Project Manager will deploy one Sub-Assistant Engineer and Work Assistant for regular supervision of works. Regional Quality Control Engineer and Field Resident Engineer of Consultant for Local Level (Supervision and Monitoring Consultant) will assist LGED supervisory staff to enhance site supervision, monitoring and site quality assurance inspections of various program activities during the construction phase. They will supervise the works regularly and will give necessary instruction on environmental mitigation plan, quality of works or any other activities related to works. The Upazila Engineer will issue a Site Order Book (Inspection Book) for each Contract. The Any comment or instruction during supervision or Inspection will be written into the inspection book. All inspections will be documented and records maintained.

- The Upazila Engineer will supervise/inspect the works at least once a week but more frequently as needed. Specifically he will inspect and check the ongoing works of every important stage in each milestone. He will provide necessary instruction for removal or rectification if any problem regarding materials quality, workmanship, site safety etc. He is entitled to suspend the works temporarily for non-compliance. The district executive engineer will take action immediately and will instruct Contractor for necessary action.
- The district Executive Engineer will inspect the site at important stages of work. However, the district XEN will inspect after completion of each stage of a milestone and will provide necessary direction for proceeding next stage of works if completed works meets specification supported by test results. The record of all inspection report will be maintained at the district XEN's and Upazila engineer's offices.
- The Regional Superintending Engineer will also inspect the site intermittently to check that the contractor follows safe and best working practices in all operations including the environmental mitigation measures required to be in place and immediately draw attention to any instances where the policy is not followed.
- The Project Director will undertake periodic interim visits to project sites in order to provide necessary direction for smooth implementation of the project. The Project Director will report to Chief Engineer and Donor and other government agencies if needed.
- Design Engineers, LGED accompanied by Bridge Maintenance Engineer of **"Consultant for Region"** will also undertake interim visit to check and verify the design of the works. He will make modification if necessary for site condition. Any design changes will be submitted to the PMU.
- Furthermore, Regional Quality Control Engineer of **"Consultant for Field Level"** and Bridge Maintenance Engineer of **"Consultant for Region"** will also undertake interim visit to check and verify that only the best construction practices is followed and that the final product is in full compliance with the specifications and DLI (1 to 5 requirements. Check that the contractor follows safe working practices in all operations and immediately draw attention to any instances where the policy is not followed.

8.1 Specific objectives of inspection are as follows:

1. Obtain assurance that the project has been completed in reasonably close conformity with plans and specifications including authorized changes and extra work.

2. Obtain the requirement of DLI (1 to 5) of this program such as capture the photographs of before work, works in progress and after works of all the project activities including photos of social & environmental safeguards, worksite safety, OHS etc.

3. Acquire information on problems and construction changes. Provide an opportunity for timely remedial action where applicable. Provide documentation of solutions to problems or commitments.

4. Promote the development and implementation of quality management programs

5. Offer technical and procedural advice. Recommend improved construction techniques and engineering supervision.

6. Report on special or innovative construction materials, methods, procedures, new equipment, and other technological innovations.

7. Provide support and encouragement for project personnel.

8. Follow up on previous inspection findings.

Site inspection checklist is geared toward the formal inspection of construction sites to assess adherence to Social and Environment management, Work site safety, Occupational Health safety and operating standards.

8.2 Site inspection checklist:

> Check site facilities for laborers.

> Review site tidiness and accessibility

> Asses the Social and Environmental Management/Mitigation measures.

> Assess the requirements of DLI (1 to 5) such as photographs of before work, works in progress and after works of all the project activities including photos of social & environmental safeguards, worksite safety, OHS etc.

> Review First Aid facilities

> Inspect heavy equipment

> Check all excavations

> Examine all site scaffolding

> Search for hazards etc.

9.0 Record Keeping

All records of project related activities will be kept in Upzila Engineer's office and Executive Engineers Office. Contractor will notify Upazila Engineer for testing of materials as well as works. A log of material testing will be maintained at the LGED district laboratory. This log will be available during inspection.

10.0 Record and As-built Drawings

LGED is responsible for producing necessary, photographs, Maps, Drawings and Designs. Contractor will follow this design and drawing. During construction/maintenance some aspects of the works may need to be built differently than designed. In that event, the LGED Design Engineer/Bridge Maintenance Engineer of Consultant for Region will visit site and if necessary modification would be made and contractor will do accordingly. At the conclusion of the project the design drawings will be updated to produce the as-built drawings. All construction drawings will be maintained at field by Contractor. One set of drawing will be available in the Upazila Engineer's office. The Contractor will be responsible for capturing photographs before work & work in progress, recording field changes and maintaining record drawings. The SAE will notify the UE if changes needed that affect the design. The UE will notify the Consultant for Region (Survey and Supervision Consultant) in the event of design changes.

11.0 Documentation

The district Executive Engineer will maintain all photographs, records and documents in his/her custody at least 5 years for any audit, post review. This will include:

- Topographic Survey, Soil Test report, photo evidence (Before & After works)
- Tender documents, invitation of tender, copy of advertisement

- Tender Opening Sheet, Tender Evaluation Report, copy of approved estimate, approval of evaluation
- All submitted tenders
- All correspondences with Contractor, PMU and Donor
- Inspection Books, Daily, Weekly and Monthly Reports
- Measurement book, Bills, copy of all test reports, payment voucher etc.
- Any other documents in regard to DLI (1 to 5) verifications.

12. Role and Responsibilities of Project Personnel

12.1 The Role of Project Director

An additional Chief Engineer will accomplish the role responsibilities as a Project Director of the program. The Project Director (PD) is the head of Project Management Unit (PMU) to look after day to day activities of the project. He is responsible for coordinating all the activities of the program and providing guidance and necessary instruction to Regional Superintending, District Executive Engineers, Upazila Engineers and contractors to implement the project in accordance with the design, drawings, specifications and other contract agreements. The PD has the overall responsibility to ensure compliance with the QA/QC Plan, ESMP, and the other applicable program documents. Role and Responsibilities of the Project Director includes but not limited to the following:

- Undertake periodic interim visits to project sites to monitor contracts and to provide necessary direction for smooth implementation of the project.
- Advise the District Executive Engineer regarding adherence to specification and the Quality Assurance Plan.
    - Review, check and finalize Annual Budget and to track program expenditures.
    - Disburse funds to the concerned Executive Engineers and will maintain all expenditures records of the program and face audit.
    - Review the progress reports collected from district offices and identify the weakness related to execution of contract.
    - Review, check and finalize monthly, quarterly, annual, midterm report, Draft Project Completion Report and Final Project completion Report.
    - Review, check and finalize yearly work plan, ADP fund expenditure report, IMED reports etc.

12.2 The Role of Regional Superintending Engineer

The Regional Superintending Engineer is at the Region Level will assist the Project Director in supervising, monitoring and physically visiting the implementation of the program activities as well as supervise consultants at Region level. His role and responsibilities include but not limited to the following:

- Work to ensure that only the best construction & maintenance practice is followed and executed in full compliance with the specification.
- Check that the contractor follows safe working practices in all operations.
- Assist PMU for updating Rural Bridge Information Management System (RuBIMS) or similar system.
- Assist PMU in connection with the control of region based consultants to achieve Annual Maintenance Program effectively and efficiently.
- Administration of region based consultant's staff and supervise their activities.
- Assist in checking Variation Order in light of contract agreement and recommend for approval
- Assist PMU in reviewing the progress reports collected from district office under the concerned region and identify the weakness related to execution of contract.

- Involve regional based consultants effectively in any issues on environmental and social safeguard including Environmental & Social screening, preparation of EA report & EMP.
- Assist to continuous monitor the Contractor's progress against program.
- Assist in coordination of all aspects of the program with project stakeholders.
- Contribute to prepare of monthly, quarterly, annual, midterm report, Draft Project Completion Report and Final Project completion Report.

12.3 The Role of District Executive Engineer (also known as the Procuring Entity)

The District Executive Engineer is at the District Level and is also the Procuring Entity (PE). According to LGED charter of duties all Sub-Assistant Engineers working in the Upazila report to the Upazila Engineer about activities of construction/maintenance works. Then Upazila Engineer reports to the District Executive Engineer and District Executive Engineer reports to regional Superintending Engineers, Project Director and Chief Engineer. The Project Director is responsible for reporting to Chief Engineer and others regarding all project related activities. The role and responsibilities of District Executive Engineer include but not limited to the following:

- Identify the scheme as per Program Operation Manual (POM)
- Prepare estimate for different interventions of the program
- Carryout environmental & social screening and prepare Environmental Assessment (EA) Report and Environmental Management Plan (EMP) in the light of Environmental & Social Management Framework (ESMF)
- Invite tender and signs contracts.
- Assist in management and contract administration of construction works.
- Review detailed engineering designs and bills of quantities for civil works.
- Assigning works to the officials and staffs under his jurisdiction.
- Provide technical guidance to Upazila Engineers and other engineers and staff in connection with the implementation process.
- Prepare physical and financial progress and send them to the PD.
- Making payment to contractors against bills certified by Upazila Engineers and the Consultants. He will maintain all payment records and face audit.
- Certify achievement of milestones of different schemes in conformity with the technical specifications.
- Preserve all documents in connection with the Schemes selection, Procurement, Contract management including e-CMS (if any)
- Ensure photo evidence of major works (before and after intervention/repair) including environmental, social and OHS safeguards.
- Monitor and check work in the field, safety and environmental aspects laboratory and on-site testing and advice on remedial actions as needed.
- Work for quality, cost and time control. He has the authority to stop the works for wrong doings and instruct to start work after necessary correction.

- Oversee and supervise the work of Field Level Consultant staffs.
- Contribute to the preparation of a bridge dossier for DLI verification, monthly, quarterly, annual and midterm report of the project.

12.4 The Role of Upazila Engineer (UE):

The Upazila Engineer (Project Manager) is the key person who is directly in control of monitoring the quality of the works by himself and through the Upazila Assistant Engineer, Sub-Assistant Engineers and other technical staff. He will deploy one Sub-Assistant Engineer and the necessary technical staff (work assistant) for close supervision of the sites.

Prior to commencing work, the contractor will provide a Work Plan for the sub-project/Package. The Project Manager (PM) will issue approval letter of Work Plan with prior concurrence of district Executive Engineer. Prior to starting the project, the PM will conduct a Project Kickoff Meeting. This meeting will be attended by key project staff, contractor himself and contractor's key staff and Key staff of Consultant for Local Level. The UE will discuss key aspects of the work such as work processes, inspections, reporting, materials testing, sampling, OHS issues, environmental and social safeguards, work schedule etc. Additionally, definable feature of Works mentioned in Section 4.0 of this plan are to be discussed. The role and responsibilities of Upazila Engineer includes but not limited to the following:

- Complete bridge inventory data collection, condition survey and assist in scheme selection, prioritization and finalization.
- Complete soil test, topo-survey, environmental & social screening and assist in sub-project design
- Review detailed engineering designs.
- Prepare EA report, EMP, Estimate and bill of quantities for civil works.
- Keeping photo evidence of major works (before and after intervention/repair) including environmental, social and OHS safeguards.
- Monitor closely the progress of work and report to the Executive Engineer of districts;
- Carryout inspection of Contractor's equipment, plant, machinery, installations, housing and medical facilities;
- Supervise the contractor on all matters concerning the safety of works, workmanship, social & environmental aspects, labour welfare etc.
- Witness to sampling and testing being carried out by staff of the Contractor to ensure quality;
- Monitor and review the test results/ certificates for all construction materials and/or sources of materials and report to XEN;
- Assist the Project Director and Executive Engineer of district in all sorts of project issues.
- Certify the milestones and the contractor bill and forward to the XEN for payment.
- Prepare a Monthly Progress Report for submittal to the XEN and PD and Contribute to preparation of quarterly, annual and mid-term reports,
- Participate in regular co-ordination meetings with project implementation staff; and
- Assist with any other duties as may be reasonably assigned by the project Director;

12.5 The Role of Sub-Assistant Engineer (SAE):

The Sub-Assistant Engineer (SAE) is the lawful representatives of Upazila Engineer. He is responsible for supervising the construction works closely/regularly for a particular project. The role and responsibilities of Sub-Assistant Engineer includes but not limited to the following:

- Assist to complete bridge inventory data collection, condition survey, scheme selection, prioritization and finalization.
- Assist to complete soil test, topo-survey, environmental & social screening.
- Assist to prepare EA report, EMP, Estimate and bill of quantities for civil works.
- Take and preserve photo evidence of major works (before and after intervention/repair) including environmental, social and OHS safeguards.
- Responsible for providing lay out of structures, setting out the alignment as per the design and drawing.
- Provide necessary instruction to clean the site and maintain compliance with the environmental, social and OHS requirements including traffic management.
- Closely supervise quality of works as per drawing, design and specifications under the guidance of the UE.
- Collect samples of materials for necessary tests.
- Complete/fill-up all necessary forms associated with Quality Control Checklist (Reinforcement Inspection Check List, and Request to Concrete Pour Check List etc.) and Daily Inspection Reports.
- Maintain and follow the Site Order Book (Inspection Book) to enhance quality of works.
- Prepare Measurement Book, Verify the contractor's bills, certify them and submit to the UE.
- Prepare and maintain daily Report on site activities.

The Sub-Assistant Engineer has no right to terminate or stop work without permission of UE or XEN but can give direction for rectification of any unspecified works.

In conjunction with the UE, the SAE will be responsible for coordinating activities with the Contractor. The SAE will support UE, XEN and Consultants during site inspections and certification of milestones.

12.6 The role and responsibilities of the Regional Quality Control Engineer includes but not necessarily be limited to:

- Assist the PMU/PIU, SE (Region)/LGED in implementation of all activities of the program;
- Oversee and supervise the work of Field Resident Engineers (FREs);
- Conduct Quality Assurance using the Quality Assurance Plan (QAP);
- Monitor the progress and quality control of the maintenance/construction activities as per drawing, design and specification;

- Undertake frequent field visits to the project districts/sites to review implementation and supervision of the construction works. And contribute to resolving any issues arising;
- Assist PMU/PIU in providing certification of the due quantity and quality of works based on cross checking of on-site approvals by the Field Resident Engineers;
- Assist the PMU/SE (Region), LGED/ PIU in preparing bridge dossier for DLI verification.
- Monitor and check on a continuous basis, through site visits and on-site testing, and advise on remedial actions as needed;
- Assist the PMU/ SE (Region), LGED and the LGED executive engineers in reviewing and checking site investigation carried out by other;
- Advise on the content and organize training courses where necessary for LGED district and Upazila staff and for contractors on construction methods on-site supervision and quality control, laboratory testing procedures, environmental requirements and contract management;
- Contribute to the preparation of monthly, Quarterly, annual and midterm report;
- Ensure that the requirement of DLI (1to5) **as per contents of bridge dossier checklist** are practically in place and satisfactory to complu DLI and assist LGED in DLI verification with the help of FRE.
- Assist in any other duties as may be reasonably assigned by the project Director

12.7 The role and responsibilities of the Field Resident Engineer include but not necessarily be limited to:

- Assist UE to complete bridge inventory data collection, condition survey, scheme selection, prioritization and finalization.
- Assist UE to complete soil test, topographic survey, environmental & social screening, EA report and EMP preparation of the sub-project.
- Review detailed engineering drawings and designs, estimate and bill of quantities for civil works.
- Provide physical layout of important road, bridges as per design and drawing;
- Keeping photo evidence of major works (before and after intervention/repair) including environmental, social and OHS safeguards.
- Carry out supervision of all works as per approved method statements, drawing design and specification.
- Ensure DLI (1 to 5) related documents (photo evidence of site activities, test certificates, site inspection records etc.) available.
- Carry out regular inspection of Contractor's equipment, plant, machinery, installations, housing and medical facilities;
- Supervise the contractor on all matters concerning the safety of works, workmanship and social & environmental aspects, occupational health & safety and labour welfare.
- Witness sampling and testing being carried out by LGED and staff of the Contractor to ensure quality;

- Monitor and review the test results/ certificates for all construction materials and/or sources of materials and report to UE/Executive Engineer of districts ;
- Accompany LGED for record of all measurements for the works/quantities to be paid for and payment dates;
- Review as-built" drawings prepared by the Contractor and maintain records;
- Contribute to preparation of quarterly, annual and mid-term reports, and participate in regular co-ordination meetings with project implementation staff;
- Provide prompt advice, based on site inspections, when problems are identified with soils or other materials during ongoing construction works;
- Accompany Upazila Engineer for environmental and social screening, EA Report preparation, EMP preparation etc.
- Report to the Concern Upazila Engineer, Executive Engineer, Project Director on findings and recommendations from all site inspections and checks;
- The consultant shall advice the Project Director on contractual matters in settling contractor's claims. He shall attend adjudication and arbitration sitting if necessary.
- Assist with any other duties as may be reasonably assigned by the project Director;

12.8 The role and responsibilities of the Bridge Maintenance Engineer include but not necessarily be limited to:

- Prepare recommendations for any proposed bridge replacement, minor/major repairs, rehabilitation and provision of capacity expansion/new bridges including reviews of environmental and social impacts of the proposals;
- Perform all duties associated with implementation work to ensure that only the best construction & maintenance practice is followed and is executed in full compliance with the specifications.
- Check that the contractor follows safe working practices in all operations addressing properly the environmental, social and OHS safeguards.
- Assist LGED for updating Rural Bridge Information Management System (RuBIMS), Identifying various issues in implementation of RuBIMS and preparing possible solutions to those issues;
- Assist in preparation and pilot-test the Bridge Maintenance manual, training modules and tools on Bridge Maintenance for LGED under Rural Bridge Infrastructure Maintenance framework;
- Establish a systematic construction procedure for different civil works set out in the specification following the GoB/Bank's environmental and social safeguards. Also will establish procedures for systematic on-site checking and monitoring of quality and quantities of all work items, including field checks to confirm integrity of DLI requirements.
- Assist in checking Variation Order (VOs) in light of contract agreement and recommend for approval, if required.
- Assist in reviewing the progress reports collected from district office under the concerned region and identify the weakness related to execution of contract and recommend to overcome the weakness;

- Assist in carrying out construction materials investigations in collaboration with LGED as necessary or advisable to minimize overhaul, to optimize the use of available resources, to enhance economy etc;
- Verify keeping and maintaining photo evidence of all the project activities including social, environmental, OHS and worksite safeguard issues and making them available for DLI verification when requested to do so.
- Verify keeping and maintaining up-to-date detailed Daily Site order book, complaint register and detailed records (making them available for DLI when requested to do so) of all contractual correspondence.
- Assist in reviewing the Contractor's proposed working drawing/plans and associated calculations. Recommend approve or reject the proposals accordingly and identify any changes required;
- Take digital color progress photographs throughout the duration of the Contract, keep and maintain an official photographic record (available for inspection). Each photograph to be captioned with: reference number, time, date, precise location, subject, and points of particular note.

12.9 The role and responsibilities of the Survey Specialist include but not necessarily be limited to:

- Conduct the engineering survey (Topographical Survey and Detailed Road and bridge condition Survey) and data collection for all rural infrastructure, including sample site inspections, and recommend remedial actions to the PMU where problems arise;
- Assist PMU/PIU to assess, select and prepare the priority list of bridges for project interventions based on set criteria and detailed bridge condition survey;
- Organize and conduct the survey work and accordingly assist to update Rural Bridge Information Management System (RuBIMS) during project period.
- Assist PMU/Dhaka based consultants to review and set standards for implementation of a modern Road Infrastructure Asset Management System (IT and modern Software base);
- Assist to set Process Performance Indicator (PPI) for measuring the performance of AMS both qualitatively and quantitatively (Data Collection, Data storage, Data Management, Analyses and Reporting);
- Organize and conduct the survey team under the project to carry out roughness survey on rural roads annually throughout the project period;
- Supervise the road safety works implemented in the project area and collect impact information;
- Assist in preparation and pilot-test the asset management manual, training modules and tools on asset management for LGED;
- Assist to monitor the progress and quality control of the implementation activities administered by LGED District and Upazila Offices;
- Undertake regular field visits to the project area to review implementation and supervision of the civil works, and contribute to resolving any issues arose;
- Assist PMU to monitor the progress of land acquisition or land donation with MOU;
- Contribute to the preparation of monthly, quarterly, annual, midterm report, Draft Project Completion report and Final Project Completion report.

13.0 Field Inspection Checklist

- **Form RBQC-1:** Field Inspection Check List (Pre-Concreting)
- **Form RBQC-2:** Field Inspection Check List (During Concreting)
- **Form RBQC-3:** Field Inspection Check List (Earthwork & Side slope Protection Work)
- **Form RBQC-4:** Field Inspection Check List (Sub-grade, Sub-base, Base course & Bituminous Work)
- **Form RBQC-5:** Field Inspection Check List (Social, Environmental and OHS safeguards)

LGED SupRB	Field Inspection Checklist (Form RBQC1) Review of Materials, Centering, Shuttering and Scaffolding (Checklist for prior of Concreting)	Date of Inspection:	Page 1 of 2

District:_____ Upazila:_____Contract Package No.:_____

Name of Work:_____

Name of Contractor: _____

	ATTRIBUTE	Yes	No	N/A
CONCRETING MATERIALS				
A	**COARSE AGGREGATE**			
1.	Have all the laboratory tests for Coarse Aggregate been carried out as per specifications? Are the test results acceptable?			
2.	Is size and gradation of coarse aggregate (Brick/stone chips) satisfactory (Visual)?			
3.	Is coarse aggregate clean (free from dust and foreign materials)?			
4.	Is coarse aggregate moistened?			
5.	Is coarse aggregate free from shingles/broken shingles and dead stones?			
B	**SAND**			
1.	FM tests for sand carried out? Are the test results acceptable as per specification?			
2.	Is sand clean (free from dust and foreign materials)?			
3.	Is sand free from salinity?			
C	**CEMENT**			
1.	Have all the laboratory tests for Cement been carried out? Are all the test results acceptable as per specifications?			
2.	Approved brand cement used?			
3.	Damped cement not used?			
D	**WATER**			
1.	Is source of water for concreting satisfactory?			
2.	Is water for concreting drinkable?			
E	**REINFORCEMENT WORKS**			
1.	Have all the laboratory tests for Reinforcement bar been carried out? Are the test results acceptable as per specifications?			
2.	Approved brand Reinforcement bar used?			
3.	Is manufacturer brand printed in place (in every meter length) in the steel bars?			
4.	Is actual size and numbers of re-bars as per drawing and design placed?			
5.	Is block and chair provided to maintaining of clear cover?			
6.	Are all the re-bars clean and free from rust?			
7.	Are the binding of re-bars followed standard practice (X-binding) with standard size GI wire?			
8.	Are all the re-bars truly straight?			
9.	Have separator of standard size been used properly?			
10.	Have lapping of re-bars been placed in compression zone in staggered way and lapping length adequate?			

Form RBQC2 Page 2of 2

	ATTRIBUTE	Yes	No	N/A
F	**CENTERING**			
1.	Is bedding fully compacted to support centering props?			
2.	Is approved quality materials (steel/Sal bollah/Bamboo) used?			
3.	Is size and spacing of the props complying with approved drawings?			
4.	Is required bracing of props provided in places?			
5.	Is centering props straight and placed in vertical position?			
6.	Is centering props placed in line?			
F	**FORMWORK/SHUTTERING STRUCTURES / & SCAFFOLDING**			
1.	Are Formwork or Shuttering structures strong enough to withstand the weight of fresh concrete and pressure of vibrator?			
2.	Is it rigid enough to retain the shape without undue deformation?			
3.	Is it water tight so that it does not allow the cement paste to leak through the joints?			
4.	Is correct to the size as design?			
5.	Is the inside surface of the formwork smooth so as to give good appearance or fair face appearance if specified?			
6.	Is a formwork made with approved materials (Steel/Wooden/Plywood etc.)?			
G	**SCAFFOLDING & ITS ACCESSORIES**			
1.	Is it capable to support its own weight and weight of persons including tools and equipment?			
2.	Is there any visible defects such as damaged platforms, access, guard rail etc. that may create falling hazards.			
3.	Is there any loose part or missing parts that may affect a scaffold's structural integrity?			
4.	Is there any materials used that may create slipping hazards?			

DEFICIENCIES NOTED:

RECOMMENDED CORRECTIVE ACTION:

Name & Signature with designation: Date:

LGED SupRB	Field Inspection Checklist (Form RBQC 2) Placing, Compacting and Finishing of Concrete (Checklist for during concreting)	Date of Inspection:	Page 1 of 1

District:_____ Upazila:_____Contract Package No.:_____

Name of Work:_____

Name of Contractor: _____

	ATTRIBUTE	Yes	No	N/A
A	**PLACING**			
1.	Has pre-placement checklist been completed? Is placement approved?			
2.	Has concreting surfaces been cleaned and moistened?			
3.	Is conveying equipment suitable for placement?			
4.	Has conveying equipment been cleaned and properly maintained?			
5.	Has vertical drop limits not been exceeded?			
6.	Is Horizontal layer not exceeding 60cm in depth?			
7.	Has placement of concrete been completed within 45mins. of mixing?			
B	**COMPACTING**			
1.	Has vibrator previously been tested and approved?			
2.	Has appropriate vibrator (Electrical/Diesel and Nozzle dia.) been used?			
3.	Vibrators:			
	a. Is penetrating previous layer?			
	b. Is not used for horizontal movement of concrete?			
	c. Is withdrawn slowly?			
	d. Is not over vibrating?			
	e. Is not touching re-bar/formwork?			
C	**FINISHING**			
1.	Has surface top properly been screened when required?			
2.	Has finishing tools been used for intended purpose?			
3.	Has desired finish been achieved? Even, smooth, level?			
4.	Joints, Edges, corners have properly been finished?			
D	**TESTING**			
1.	Has slump test been done? Is result satisfactory?			
2.	Has concrete cylinder been taken?			
E	**SUGGESTIONS ABOUT CURING**			
1.	Curing operations should be started immediately after final setting?			
2.	Curing should be adequate and check time to time.			
3.	Curing should be continuous up to specified length of curing process.			
4.	Traffic and loading over surfaces should be controlled during curing.			
F	**SUGGESTIONS ABOUT REPAIR**			
1.	Surfaces should be inspected during stripping of form works.			
2.	Serious defects of workmanship should be documented.			
3.	Cosmetic repairs should be made.			
4.	Structural defects repair should be in accordance with approved procedures in presence of Sr. Engineer.			

REMARKS:_____

_____

_____

_____

Name & Signature with designation: Date:

LGED SupRB	Field Inspection Checklist (Form RBQC 3) Earthwork, Side slopes of Embankment and Protection work	Date of Inspection:	Page 1 of 1

District:_____ Upazila:_____Contract Package No.:_____

Name of Work:_____

Name of Contractor: _____

	ATTRIBUTE	Yes	No	N/A
A	**EARTHWORK IN EMBANKMEMT FILLING**			
1.	Is specified materials/soil (LL, PL, PI etc. as per specification) in used?			
2.	Is layer by layer filling placed in required depth?			
3.	Is adequate compactive effort (heavy roller) used?			
4.	Is each layer compacted at OMC level?			
5.	Is compaction of each layer verified by laboratory tests (MDD, % Compaction etc.)?			
6.	Are all the laboratory test results satisfactory?			
B	**SIDE SLOPES OF EMBANKMENT**			
1.	Is earth filling in side slope adequately compacted?			
2.	Is shaping and dressing of side slope satisfactory?			
3.	Is side slope ratio (V:H) maintained as per design and drawing)?			
4.	Is side slope turffing satisfactory (close turfing with good quality grass)?			
5.	Is side slope protected with CC block/RCC palisading/Toe wall etc.)?			
6.	If yes			
	a. Does the side slope protection work give expected impression? If 'No' write down below the deviations and recommendations for corrections. Is appearance of protection work satisfactory (Good in level, shape & finishing)?			
	b. Is protection work done or in progress as per drawing, design and specifications? If 'No' write down below the deviations from design and drawings and recommendations for corrections.			
C	**SIDE SLOPE PROTECTION WITH CC BLOCK**			
1.	Is size and thickness of CC block as per drawing and design?			
2.	Is a material (shingles or brick chips Sand and Cement) used in CC block complying with specifications?			
3.	Have all the laboratory tests for materials including geotextile been carried out as per specifications? Are the test results acceptable?			
4.	Is casting (shape, size, finishing etc.) of CC block satisfactory?			
5.	Are line, level and positioning of CC block satisfactory?			
6.	Is a geotextile and filter material underneath CC block provided as per drawing, design and specifications?			
7.	Is toe wall or RCC palisading constructed as per drawing, design and specifications?			

DEFICIENCIES NOTED:

_____

_____

_____

_____

RECOMMENDED CORRECTIVE ACTION:

_____

_____

_____

_____

Name & Signature with designation: **Date:**

LGED SupRB	Field Inspection Checklist (Form RBQC 4) Field Inspection Check List (Sub-grade, Sub-base, Base course & Bituminous Work)	Date of Inspection:	Page 1 of 2

District:_____ Upazila:_____Contract Package No.:_____

Name of Work:_____

Name of Contractor: _____

	ATTRIBUTE	Yes	No	N/A
A	**Sub-grade**			
1.	Is specified materials/soil (LL, PL, PI etc. as per specification) in used?			
2.	Is layer by layer filling placed in required depth?			
3.	Is adequate compactive effort (heavy roller) used?			
4.	Is each layer compacted at OMC level?			
5.	Is compaction of each layer verified by laboratory tests (MDD, % Compaction etc.)?			
6.	Are all the laboratory test results satisfactory?			
7.	Is CBR of each layer verified by DCP test?			
8.	Is DCP test result satisfactory?			
9.	Is camber in subgrade maintained properly?			
B	**Improved Sub-grade**			
1.	Is specified materials/sand (F.M as per specification and free from clay) in used?			
2.	Is layer by layer filling placed in required depth?			
3.	Is adequate compactive effort (heavy roller) used?			
4.	Is each layer compacted at OMC level?			
5.	Is compaction of each layer verified by laboratory tests (MDD, % Compaction etc.)?			
6.	Are all the laboratory test results satisfactory?			
7.	Is CBR of each layer verified by DCP test?			
8.	Is DCP test result satisfactory?			
9.	Is camber in improved subgrade maintained properly?			
10	Is soaked CBR of materials verified by laboratory test?			
11	Is CBR test result satisfactory?			
C	**Sub-base**			
1.	Is specified materials (F.M of sand, LAA, Gradation & Water absorption of coarse aggregate as per specification) in used?			
2.	Is sand & aggregate mixed properly in specified ratio (some water is required to add to avoid segregation of mixing)?			
3.	Is layer by layer filling placed in required depth?			
4.	Is adequate compactive effort (heavy roller) used?			
5.	Is each layer compacted at OMC level?			
6.	Is compaction of each layer verified by laboratory tests (MDD, % Compaction etc.)?			
7.	Are all the laboratory test results satisfactory?			
8.	Is CBR of each layer verified by DCP test?			
9.	Is DCP test result satisfactory?			
10	Is camber in sub-base maintained properly?			
11	Is soaked CBR of materials verified by laboratory test?			
12	Is CBR test result satisfactory?			
D	**Base course (WMM)**			
1.	Is specified materials (F.M of sand, LAA, Gradation & Water absorption of coarse aggregate as per specification) in used?			
2.	Is sand & aggregate mixed properly (some water is required to add to avoid segregation of mixing) to meet specified gradation?			
3.	Is layer by layer filling placed in required depth?			

	ATTRIBUTE	Yes	No	N/A
D	**Base course (WMM) contd.**			
4.	Is adequate compactive effort (heavy roller) used?			
5.	Is each layer compacted at OMC level?			
6.	Is compaction of each layer verified by laboratory tests (MDD, % Compaction etc.)?			
7.	Are all the laboratory test results satisfactory?			
8.	Is CBR of each layer verified by DCP test?			
9.	Is DCP test result satisfactory?			
10	Is camber in base course maintained properly?			
11	Is line and level of surface top maintained properly?			
E	**Premixed Carpeting**			
1.	Is weather satisfactory to start bituminous work?			
2.	Is specified materials (Bitumen, different size of stone chips, stone dust etc.) available at site?			
3.	Is speciation of material (LAA, gradation & water absorption of stone chips, Penetration grade, solubility & Sp. gravity of bitumen etc.) in used meet the requirement?			
4.	Is measuring tools available at site to measure quantity of bitumen?			
5.	Is thermometer available at site to measure temperature of bitumen?			
6.	Is priming of base course surface completed satisfactory?			
7.	Are aggregate and bitumen heated separately at specified temperature?			
8.	Are temperature of hot bitumen and aggregate found at specified level?			
9.	Is adequate compactive effort (heavy roller) used?			
10	Is camber maintained properly?			
11	Is bitumen content tested in the laboratory?			
12	Is laboratory test result of bitumen content satisfactory?			

DEFICIENCIES NOTED:

RECOMMENDED CORRECTIVE ACTION:

Name & Signature with designation: **Date:**

LGED SupRB	Field Inspection Checklist (Form RBQC 5) Check list for monitoring Environmental, Social & OHS safeguards	Date of Inspection:	Page 1 of 2

Name of Visitor with designation:			**Date of Visit:**
Upazila:	**District:**	**Contract Package No.:**	
Name & Type of structure		**Intervention:**	
Road Name:		**Road ID:** **Structure ID:**	
Date of Commencement (Start) as per Contract:		**Actual Date of Commencement:**	
Date of Completion as per Contract / Revised:		**Up to date progress of work (Physical):_____%**	
Name of the Contractor:			

A. Are the following documents available at site?

	Y	N	N/A
1. Site Order Book.			
2. Environmental Screening List in standard Format.			
3. Social Screening List in standard Format.			
4. EA (Environmental Assessment) Report for specific work.			
5. EMP (Environmental Management Plan) for specific work			
6. CEMAP (Contractor's Environmental Management Action Plan) for specific work.			
7. Surface Water Quality Test Report (at Start/Interim/Completion).			
8. Air Quality Test Report (at Start/Interim/Completion)..			

B. Environmental & Social Safe Guard Issues			
Has earth cutting and filling of bridge approach road embankment been within the right of way?			
Has earth cutting and filling of bridge approach road embankment been disturbed the crops?			
Has waterway been obstructed within 150m up and down stream due to accumulation of debris?			
Has hazardous materials (Bitumen, Fuels, Lubricants etc.) been stored over raised platform (not directly on the ground)?			
Has playground of the educational institutes been used as a stack yard or labor camp?			
Are dust Suppression Measures by spraying water being carried out at satisfactory level (at least 3 times daily)?			
Are transportation of construction materials being carried in scheduled time (mainly at day time)?			
Is sound of Mechanical equipment/machinery being disturbed?			
Are construction and demolition (C&D) waste being disposed in specified places (not in water bodies, forest area etc.)?			
Has agricultural land been disturbed due to construction of labor camp?			
Has labor camp been constructed away from water bodies?			
Has tree cutting been carried out for any purpose (for construction of labor camp/material store yard etc.)?			
Has tree plantation been carried out to compensate tree cutting?			
Has Hot mix plants/Tar boiler been located at a safe distance from the nearest habitation/dense forest?			
Is construction material covered during transportation from source to site?			

C. Health & safety	Y	N	N/A
Has Sanitation Facility been provided adequately to male and female workers separately?			
Has temporary campsite waste disposal facility been provided?			
Has source provided for supply of safe drinking water at labor campsite?			
Has source provided for supply of safe drinking water at work site?			
Has Drainage Facility been provided at camp / work site?			
Is First Aid Box available at site?			
Is personal protective equipment (safety shoes, helmet, safety jacket etc.) properly provided to laborers considering Operational Health & Safety (OHS)?			
Has Sign Board been erected at site as per sample incorporating Environmental Issues (see sample of sign board in the reverse side)?			
D. Road Safety & Work site safety			
Has safe diversion road been constructed?			
Has safety Road Sign Plate been provided at correct location?			
Has Directional Road Sign been provided correctly for use of diversion road?			
Has traffic been maintained at all time for traffic management?			
Is safety road sign plate visible at night also?			
Is work site safety adequately undertaken including safety signs?			
Are safety measures taken properly during work at elevated place (like deck soffit) cutting earth deeply, construction of scaffolding etc.?			
Have all suggestion, instructions incorporated in Site Order Book?			
Has rectification been carried out as per suggestions in last Inspection Report/Site Order book?			

Remarks and Recommendations:

Signature with designation

Attachment-7

Labour Management Plan (LMP)

[Applicable for Scheme estimated cost equal or above 4.00 (four) crore]

Labour Management Plan and Measures

Scope

This Plan describes the requirements and expectations in terms of compliance, reporting, roles, and supervision with respect to engagement of laborersat construction site and working conditions. This Plan is expected to be adopted and applicable to construction/maintenance contractors for contracts higher than BDT. 4.0 cores.

The objectives of this Plan are to:

- Protect unlawful engagement of child laborers for activities that are only allowed under the local law and ILO Convention.
- Promote fair and equitable labor practices for the fair treatment, non-discrimination and equal opportunity of workers.
- Establish, manage and promote a healthy management-worker relationship
- Promote healthy, safe, secure and comfortable accommodation that does not impact negatively on the communities in the surrounding area.

Management System

Management Standard, apply to laborers and working conditions management to be as follows:

1. Compliance with local laws, regulations, permits, licenses, and other legally binding requirements or agreements
2. Maintaining operations that protect safety, health, and the environment and that conform to laws and regulations requires careful selection, placement, ongoing assessment, and proper training of employees
3. Socioeconomic issues will be identified, specifically in consultation with relevant communities, government officials, and appropriate stakeholder or individuals to share information, solicit opinions/ideas/feedback, and respond to expressed concerns.

Risk & Impact mitigation:

LGED and its construction contractors implement and comply with the mitigations measures as appropriate to the scope of work in order to avoid, minimize and control impacts and risks with regard to labors and working conditions. Table-1 presents a summary of the potential risks and impacts related to labor and working conditions, together with mitigation measures to avoid, eliminate or reduce associated impacts. Further details are provided in Section 5 of the Environmental Management Plan.

Table-1: Risk & Impact mitigation measures

Category	Workers/work site Impact/Risk	Mitigation Measures	Responsibility
1. Recruitment and selection of construction workers	Perception of unfair recruitment and selection practices that can annoyed surroundings community	Follow procedure that covers recruitment and selection processes including at least: • Selection criteria of each position • Method of recruitment • Transparency clauses • Local law and ILO Convention. • Maximize work opportunities for local communities • Maintain gender balance in recruitment •Issues associated with child labor	LGED & Contractor
2.Wages, salaries and benefits of Workers	Perceptions that wages, salaries and benefits are poor	Policy and procedure that describes at least • Contract arrangements and content • Equal pay for equal work • Process for pay increases • Work bands/ parallel pay scales • An effective employee complaints/grievance process.	LGED & Contractor
3. Labor relations – cultural diversity.	Perception that one's culture is not respected or valued. Conflict arises between different cultures	• Cultural awareness programs during induction and 'lunch and learns'. • A code of conduct to cover: • Respect for different cultures • Acknowledgement of cultural differences in respect to diet, religious ceremonies and so forth • Non-discrimination and equal opportunity • Harassment, types and consequences • Community "do's and don'ts"	LGED & Contractor

Category	Workers/work site Impact/Risk	Mitigation Measures	Responsibility
4. Labor relations – conflict handling.	Workers embark on various forms. They take matters into their own hands, which results in violence and conflict that affects workplace harmony	Human Resources policy and procedure that contains at least: • A worker grievance procedure • A disciplinary procedure • Workplace rules and regulations • Action handling protocols Workers to be informed of these procedures during induction training. • Female Representative are made available for Female workers grievance	LGED & Contractor
5. Labor and working conditions – contract Agreement	Details are provided in Section 5 of the Environmental Management Plan (EMP).		

Signature of Contractor/Authorized Representative with Date

Monthly Work Supervision Checklist for Consultant

Reporting Month : ...../2020

1 General Description

1.1	**District**	Input the District Name	Narayangonj	Dhaka				
1.2	**Upazila**	Input The Upazila Name	Araihajar	Savar				
1.3	**Intervention Type**	Input the Intervention Type	Main	Re-hab				
1.4	**Package No**	Input Package Number	W-12	W-22				
1.5	**Finantial Year**	Input the Finantial Year	2019-20	2018-19				
1.6	**Road ID**	Input Road ID Number	123452001	456782002				
1.7	**Chainage**	Input the Chainage	1200	134				
1.8	**Total Length**	Input Total Length according to approval	23m	45				
1.9	**Number of Visit**	Input number of visit in Reporting Month	6	8				

2 Site Supervision

Sl No	Key Issues	Description	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
2.1	Management Meeting	Had the Management meeting held under the Chairperson of XEN?						
2.1	**Site Order Book**	Is it Maintained? If Yes, attached the copy/copies of Site order book pages according to Number of visit						
2.2	**Lay-out**	Did you present in the Lay-out						
		Did you kept the record of Lay-out in the Site Order Book?						
2.3	**General Site Facilities**	Is Construction Sign Board installed?						
		Is Covid-19 Awareness Sign Board?						
		Is Temporary Office construct?						
		Is there any Waste Disposal arrangent?						
		Is there any facilities for Drinking Water Supply						
		Is Male and Female Toilet separately constructed?						
		Is Temporary Labor Shed constructed?						
		Is the Fencing of Construction Site installed?						
		Is the Site office Constructed?**(Applicable for Re-hab/Capacity Exp/Replace/New Bridge)**						
2.4	**Complain Register**	Is there any Complain Register?						
2.5	**Photograph**	Did you preserved the Photograph of Before, During and after completion of the work						
2.6	**Dismalting of Old structure**	Is UE take Necessary action for the recoverable materials according to Instruction?						
2.7	**Water Quality**	Has Water quality tested						
		i) Before the work Start						
		ii) During Work						
		iii) After Completion)						

Sl No	Key Issues	Description	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
2.8	**Quality Control**	Is QC Maintained as per Quality Assurance Plan(QAP)						
		Are all the test report has preserved in Site and your office?						
		Is Check list filled up by FRE/QCE						
		Did you report to concern Exen for Unspecified Material/Unspecified work? **If yes, please attached the report**						
		Did you check the Re-inforcing detail and Formwork of any element before casting?						
		Did you present in the Casting of any element of Bridges?						
2.9	**Environmental & Safety Supervisor**	Did the Contractor has appointed the **Supervisor for** the Packages?						
2.10	**Environment and Social Safegaurd**	Did the Monitoring Checklist regularly filled up						
2.11	**COVID-19 issues**	Is COVID-19 issues followed in the Site?						
		Did you fillup the Monitoring Checklist						
2.12	**Occupational Health and Safety**	Did the Monitoring Checklist for regularly filled up						
2.13	**Community Coordinator**	Is the Community Coordinator **(Applicable for New Bridge)** appointed by the Contractor?**(Applicable for Estimated Cost≥4.00 crore)**						
		Do the job assaigned for Community Coordinator is regularly done?						
2.14	**Committee**	Is Bridge Construction Quality Committee formed						
2.15	**Labor Management Plan**	Did the Monitoring Checklist regularly filled up ? **(Applicable for Estimated Cost≥4.00 crore)**						
2.16	**Progress**	Have you identified any issues that are hindrance to satisfactory physical progress?						
		If yes, have you reported to concern Exen/UE as well as Superintending Engineer (If Yes, **then please attach the copy)**						
		For back log scheme what steps did you take, please describe with separate attached paper						

Name of Consulting Firm:
Package Number of Firm:

Signature with date:
Name:
Designation :
Mobile No:
Email :

Local Government Engineering Department

Program for Supporting Rural Bridges (SupRB)

Monthly Progress Report

Reporting

SL. No.	Package No	Upazila	Name of the Scheme as per Approval letter	Length (m)	Estimated Cost	Salvage Amount	Date of Bid Receive	Date of NOA Issued	Name & Address of Contractor	Contract Signing Date	Contract Amount	Date of Commencement		Date of Completion		Physical Progress		Fund Spent During the Month			Cumulative Fund Spent upto I Month		
												As Per Contract Agreement	As Per Actual Start	As Per Contract Agreement	As Per Actual Completion	During Month (%)	Cumulative (%)	RPA	GOB	Total	RPA	GOB	Tota
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
District:																							
Intervention :		**Minor/Major**																					
Minor & Major Maintenance																							
Financial Year:																							
1																							
			Minor Maintenance	**0.00**	**0.00**	**0.00**					**0.00**							**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
			Major Maintenance	**0.00**	**0.00**	**0.00**					**0.00**							**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
Sub Total (Package Total)				**0.00**	**0.00**	**0.00**					**0.00**							**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**
2																							

Local Government Engineering Department

Program for Supporting Rural Bridges (SupRB)

Monthly Progress Report

Attachment-9

Reporting Month:

e Scheme as per Approval letter	Length (m)	Estimated Cost	Salvage Amount	Date of Bid Receive	Date of NOA Issued	Name & Address of Contractor	Contract Signing Date	Contract Amount	Date of Commencement		Date of Completion		Physical Progress		Fund Spent During the Month			Cumulative Fund Spent upto Reporting Month				Execution of Environmental Issue (Yes/No)	Execution of Social & Safeguard Issues (Yes/No)	Remarks
									As Per Contract Agreement	As Per Actual Start	As Per Contract Agreement	As Per Actual Completion	During Month (%)	Cumulative (%)	RPA	GOB	Total	RPA	GOB	Total	%			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Minor Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
Major Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
Minor Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
Major Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
Minor Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				

Local Government Engineering Department

Program for Supporting Rural Bridges (SupRB)

Monthly Progress Report

Reporting

SL. No.	Package No	Upazila	Name of the Scheme as per Approval letter	Length (m)	Estimated Cost	Salvage Amount	Date of Bid Receive	Date of NOA Issued	Name & Address of Contractor	Contract Signing Date	Contract Amount	Date of Commencement		Date of Completion		Physical Progress		Fund Spent During the Month			Cumulative Fund Spent upto I Month		
												As Per Contract Agreement	As Per Actual Start	As Per Contract Agreement	As Per Actual Completion	During Month (%)	Cumulative (%)	RPA	GOB	Total	RPA	GOB	Tota
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
District:																							
			Major Maintenance	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
Sub Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
[District Total]: (Minor + Major)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
District Total			Minor Maintenance	0.00	0.00	0.00												0.00	0.00	0.00	0.00	0.00	0.0
			Major Maintenance	0.00	0.00	0.00												0.00	0.00	0.00	0.00	0.00	0.0
Intervention :			Rehabilitation																				
1																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
2																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
[District Total]: (Rehabilitation)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
Intervention :			Capacity Expansion																				
1																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
2																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
[District Total]: (Capacity Expansion)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
Intervention :			Replacement																				
1																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
2																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
[District Total]: (Replacement)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0
Intervention			New Construction																				
1																							
Sub-Total (Package Total)				0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.0

Local Government Engineering Department

Program for Supporting Rural Bridges (SupRB)

Monthly Progress Report

Attachment-9

Reporting Month:

Scheme as per Approval letter	Length (m)	Estimated Cost	Salvage Amount	Date of Bid Receive	Date of NOA Issued	Name & Address of Contractor	Contract Signing Date	Contract Amount	Date of Commencement		Date of Completion		Physical Progress		Fund Spent During the Month			Cumulative Fund Spent upto Reporting Month				Execution of Environmental Issue (Yes/No)	Execution of Social & Safeguard Issues (Yes/No)	Remarks
									As Per Contract Agreement	As Per Actual Start	As Per Contract Agreement	As Per Actual Completion	During Month (%)	Cumulative (%)	RPA	GOB	Total	RPA	GOB	Total	%			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				
	0.00	0.00	0.00					0.00							0.00	0.00	0.00	0.00	0.00	0.00				