

TENDER DOCUMENT

Road Construction Project

Tender ID:	TEN20250330154919
Issuing Authority:	Public Works Department (PWD), State Government
Tender Amount:	■100,000,000.00
Bid Start Date:	25-02-2025
Bid End Date:	09-05-2025

# Executive Summary

## Executive Summary

The Road Construction Project is a significant infrastructure development initiative aimed at constructing a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. This project has an estimated value of ₹100,000,000.0 and is expected to be completed within a timeframe of 18 months, subject to satisfactory progress and weather conditions.

## Project Objectives

The primary objectives of this project are to:

Construct a durable and long-lasting road infrastructure that meets the required specifications and standards

Ensure the safety of road users, pedestrians, and construction personnel

Minimize environmental impacts and adhere to relevant regulations

Provide a world-class transportation network that supports economic growth and development

## Key Project Features

Road length: 20 kilometers

Asphalt paving: High-quality asphalt mix with a minimum thickness of 100 mm

Drainage systems: Design and installation of stormwater drainage systems, including culverts, catchpits, and pipe networks

Signage: Installation of road signs, markings, and signals to ensure safe and efficient traffic flow

## Bidder Requirements

To participate in this tender, bidders must demonstrate their capabilities and experience in road construction, including:

Proof of experience in road construction projects of similar scope and magnitude

Qualified labor and skilled workforce with relevant certifications and training

Access to necessary machinery and equipment, including asphalt pavers, rollers, and graders

Adherence to environmental and safety standards, including:

- + Compliance with Indian Environmental Protection Act (EPA) and relevant regulations

- + Implementation of safety protocols and procedures to minimize risks and ensure a safe working environment

## Industry Standards and Regulations

This project will be executed in accordance with the following industry standards and regulations:

Indian Roads Congress (IRC) guidelines and specifications

Bureau of Indian Standards (BIS) standards for road construction materials and equipment

Environment and safety regulations, including the Indian Environmental Protection Act (EPA) and relevant state and local regulations

## Project Timeline and Milestones

The project timeline is expected to be as follows:

Project commencement: 15 days from contract award

Road construction completion: 12 months from project commencement

Final inspection and completion: 3 months from road construction completion

Project completion: 18 months from project commencement

## Tender Evaluation Criteria

The tender will be evaluated based on the following criteria:

Technical capabilities and experience (30%)

Price and cost-effectiveness (30%)

Safety and environmental record (20%)

Demonstrated understanding of project requirements and specifications (20%)

By awarding this project to a capable and experienced bidder, we expect to deliver a high-quality road infrastructure that meets the needs of the community, supports economic growth, and adheres to industry standards and regulations.

# Project Overview and Objectives

## Project Overview and Objectives

Project Title: Construction of a 20-kilometer Road Stretch with Asphalt Paving, Drainage Systems, and Signage

### Project Overview:

The Government of [State/Country] has embarked on an ambitious project to upgrade the rural road network, improving connectivity and facilitating economic growth in the region.

The proposed Road Construction Project is a critical component of this initiative, aiming to

construct a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. This project is expected to enhance road safety, reduce travel time, and promote socio-economic development in the area.

#### Project Objectives:

The primary objectives of this project are to:

Construct a 20-kilometer stretch of road with asphalt paving, meeting the Indian Road Congress (IRC) standards for road design and construction.

Install a comprehensive drainage system, ensuring efficient water flow and minimizing the risk of flooding.

Install necessary signage, including traffic signs, road signs, and directional signs, to enhance road safety and facilitate navigation.

Ensure compliance with environmental and safety standards, as specified in the project requirements.

#### Key Performance Indicators (KPIs):

To measure the success of this project, the following KPIs will be used:

Project completion time: The project shall be completed within 18 months from the date of commencement.

Road quality: The constructed road shall meet the IRC standards for road design and construction.

Safety record: The project shall maintain a zero-accident record during the construction phase.

Environmental compliance: The project shall adhere to the environmental standards and regulations specified in the project requirements.

#### Project Scope:

The scope of the project includes:

Excavation and grading of the roadbed

Construction of a 20-kilometer stretch of road with asphalt paving

Installation of a comprehensive drainage system, including culverts, stormwater drains, and permeable pavements

Installation of necessary signage, including traffic signs, road signs, and directional signs

Provision of streetlights and other necessary infrastructure

#### Project Requirements:

To ensure the successful completion of this project, the bidder must provide proof of experience in road construction, qualified labor, and machinery for the job, as well as

adherence to environmental and safety standards. The bidder must also demonstrate a strong understanding of the project scope, objectives, and requirements.

#### Industry Standards:

The project shall be designed and constructed in accordance with the following industry standards:

Indian Road Congress (IRC) standards for road design and construction

American Society for Testing and Materials (ASTM) standards for asphalt pavement

International Organization for Standardization (ISO) standards for environmental management systems

#### Project Budget:

The estimated project budget is ■100,000,000.00, which includes all costs associated with the construction of the road, drainage systems, signage, and other necessary infrastructure.

#### Project Timeline:

The project timeline is as follows:

Project commencement: Within 6 weeks from the date of award

Project completion: Within 18 months from the date of commencement

Handover of the project: Within 2 weeks from the date of completion

By working together, we can deliver a high-quality road construction project that meets the needs of the community and sets a new standard for road construction in the region.

## Detailed Technical Specifications

### Detailed Technical Specifications for Road Construction Project

#### 1. Project Overview

The Road Construction Project involves the construction of a 20-kilometer stretch of road, including asphalt paving, drainage systems, and necessary signage. The project will be executed in strict compliance with industry standards, environmental regulations, and safety protocols.

#### 2. Road Design and Construction

**Road Alignment:** The road will be constructed with a minimum design speed of 80 km/h and a maximum gradient of 5%.

**Road Width:**

- + Carriageway width: 7.5 meters (min.)

- + Shoulder width: 2 meters (min.)

- + Kerb radius: 2 meters (min.)

Pavement Structure:

- + Sub-grade: compacted soil with a minimum density of 95% of the maximum dry density

- + Sub-base: crushed stone with a minimum thickness of 150 mm

- + Base course: dense graded aggregate with a minimum thickness of 150 mm

- + Surface course: asphalt concrete with a minimum thickness of 50 mm

Drainage Systems:

- + Culverts: concrete or metal, with a minimum size of 600 x 400 mm

- + Channels: concrete or metal, with a minimum size of 600 x 400 mm

- + Gully traps: concrete or metal, with a minimum size of 300 x 300 mm

### 3. Asphalt Pavement

Asphalt Mix Design:

- + Type: dense graded asphalt concrete

- + Binder content: 5.5%  $\pm$  0.5%

- + Aggregate content: 94.5%  $\pm$  0.5%

Asphalt Layer Thickness:

- + Surface course: 50 mm (min.)

- + Intermediate course: 75 mm (min.)

- + Base course: 150 mm (min.)

### 4. Safety Features

Traffic Management:

- + Traffic control measures will be implemented to ensure safe working conditions for construction personnel and the traveling public

- + Traffic signals and signage will be installed to redirect traffic around construction zones

Safety Equipment:

- + Hard hats, safety vests, and gloves will be provided to all construction personnel

- + Safety harnesses and lanyards will be used for high-visibility work

Emergency Response Plan:

- + A comprehensive emergency response plan will be developed and implemented in case of accidents or emergencies

## 5. Environmental Protection

### Waste Management:

- + A waste management plan will be developed to minimize waste generation and ensure proper disposal
- + All construction waste will be disposed of in accordance with local regulations

### Water Conservation:

- + Water-saving measures will be implemented to minimize water consumption
- + A water-efficient irrigation system will be installed for landscaping

### Erosion Control:

- + Erosion control measures will be implemented to prevent soil erosion and sedimentation

## 6. Labor and Machinery Requirements

### Labor:

- + A minimum of 50% of construction personnel will be trained in road construction techniques and safety protocols
- + All construction personnel will be employed in accordance with local labor laws and regulations

### Machinery:

- + A minimum of 5 asphalt pavers, 3 rollers, and 2 graders will be provided for the project
- + All machinery will be in good working condition and will meet industry standards

## 7. Quality Control and Assurance

### Quality Control Plan:

- + A comprehensive quality control plan will be developed and implemented to ensure compliance with industry standards and specifications
- + Regular quality control checks will be conducted to ensure that all construction work meets the required standards

### Testing and Inspection:

- + All asphalt mix and pavement layers will be tested and inspected in accordance with industry standards
- + Regular inspections will be conducted to ensure that all construction work meets the required standards

## 8. Geographic Information System (GIS) Mapping

#### GIS Mapping:

- + A GIS map will be developed to track the project's progress and location
- + The GIS map will be used to identify areas of interest, such as environmental sensitive areas, and to plan construction activities accordingly

#### 9. Project Schedule and Timeline

##### Project Schedule:

- + The project will be completed within 12 months from the start date
- + A detailed project schedule will be developed and updated regularly to ensure that the project is completed on time

##### Key Milestones:

- + Site preparation: 2 months
- + Asphalt paving: 6 months
- + Drainage system installation: 3 months
- + Signage installation: 1 month

#### 10. Warranty and Maintenance

##### Warranty:

- + A 2-year warranty will be provided for all construction work
- + The warranty will cover any defects or damages to the road surface or drainage systems

##### Maintenance:

- + A maintenance plan will be developed to ensure that the road surface and drainage systems are properly maintained
- + Regular inspections will be conducted to identify any areas of concern and to address them promptly.

By following these detailed technical specifications, the bidder will be able to demonstrate their ability to execute the project in accordance with industry standards, environmental regulations, and safety protocols.

## Implementation Methodology

#### Implementation Methodology

The successful bidder for the Road Construction Project will be expected to execute the project in accordance with the scope, requirements, and industry standards outlined in this



tender document. The implementation methodology will be based on a structured approach to ensure timely completion, quality, and safety.

#### Project Organization and Management

The bidder will establish a project organization structure that includes the following roles and responsibilities:

**Project Manager:** Overall responsibility for the project, ensuring that it is completed on time, within budget, and to the required quality standards.

**Site Manager:** Responsible for the day-to-day management of the site, including labor, machinery, and materials.

**Quality Control Manager:** Responsible for ensuring that the project meets the required quality standards, including testing and inspection of materials and workmanship.

**Safety Officer:** Responsible for ensuring compliance with safety regulations and protocols, including the provision of personal protective equipment (PPE) and regular safety inspections.

**Environmental Officer:** Responsible for ensuring compliance with environmental regulations and protocols, including the provision of waste management and environmental monitoring.

#### Project Phasing and Scheduling

The project will be divided into the following phases:

##### 1. Pre-Construction Phase (Weeks 1-4):

Site preparation and clearing

Surveying and staking

Permitting and approvals

##### 2. Construction Phase (Weeks 5-40):

Excavation and grading

Drainage system installation

Asphalt paving

Signage installation

##### 3. Testing and Inspection Phase (Weeks 41-44):

Testing of materials and workmanship

Inspection of completed work

##### 4. Handover and Commissioning Phase (Weeks 45-52):

Final inspection and testing

Handover of the completed project to the client

#### Quality Control and Assurance

The bidder will implement a quality control and assurance system that includes the following:

**Quality Control Plan:** A written plan that outlines the procedures for ensuring quality throughout the project.

**Material Specification:** A detailed specification of the materials to be used, including their source, quality, and certification.

**Testing and Inspection:** Regular testing and inspection of materials and workmanship to ensure compliance with the quality control plan.

**Non-Conformance Report (NCR):** A system for reporting and addressing non-conformances to the quality control plan.

**Corrective Action:** A system for taking corrective action to address non-conformances and prevent re-occurrence.

#### Safety Management

The bidder will implement a safety management system that includes the following:

**Safety Policy:** A written policy that outlines the company's commitment to safety.

**Safety Procedures:** Written procedures for addressing safety risks and hazards.

**Safety Training:** Regular safety training for all personnel involved in the project.

**Personal Protective Equipment (PPE):** Provision of PPE for all personnel involved in the project.

**Incident Reporting:** A system for reporting and investigating incidents.

#### Environmental Management

The bidder will implement an environmental management system that includes the following:

**Environmental Policy:** A written policy that outlines the company's commitment to environmental protection.

**Environmental Procedures:** Written procedures for addressing environmental risks and hazards.

**Environmental Monitoring:** Regular monitoring of environmental impacts.

**Waste Management:** A system for managing waste generated during the project.

**Environmental Reporting:** Regular reporting of environmental performance.

#### Communication and Stakeholder Management

The bidder will establish a communication and stakeholder management plan that includes the following:

**Stakeholder Identification:** Identification of stakeholders, including the client, local authorities, and local communities.

**Communication Plan:** A plan for communicating with stakeholders, including regular meetings and updates.

**Issue Resolution:** A system for resolving issues and concerns raised by stakeholders.

#### Metrics and Targets

The bidder will establish metrics and targets for the project, including:

**Time:** Completion of the project within 52 weeks.

**Cost:** Completion of the project within the budget of ■100,000,000.0.

**Quality:** Achievement of the required quality standards, including testing and inspection of materials and workmanship.

**Safety:** Achievement of a zero-harm target, including regular safety inspections and training.

**Environmental:** Achievement of a zero-waste target, including regular environmental monitoring and reporting.

#### Industry Standards

The bidder will comply with the following industry standards:

**Indian Road Congress (IRC) Standards:** The bidder will comply with the relevant IRC standards for road construction.

**ISO 9001:2015:** The bidder will comply with the requirements of ISO 9001:2015 for quality management systems.

**ISO 14001:2015:** The bidder will comply with the requirements of ISO 14001:2015 for environmental management systems.

**OHSAS 18001:2007:** The bidder will comply with the requirements of OHSAS 18001:2007 for occupational health and safety management systems.

By following this implementation methodology, the bidder will ensure that the Road Construction Project is completed on time, within budget, and to the required quality standards, while also ensuring the safety of personnel and the protection of the environment.

## Quality Control and Standards

## Quality Control and Standards

The successful bidder for the Road Construction Project is expected to adhere to the highest standards of quality control and safety to ensure the successful completion of the project. The following section outlines the quality control and standards requirements that must be met.

### Quality Control Objectives:

The bidder shall ensure that the quality of the work meets the requirements of the project specifications and industry standards. The quality control objectives are as follows:

Ensure that the work is performed in accordance with the project specifications and drawings.

Maintain a high level of quality in all aspects of the work, including materials, labor, and equipment.

Ensure that all work is performed in a timely and efficient manner.

Maintain accurate records of all quality control activities, including inspections, tests, and measurements.

### Quality Control Procedures:

The bidder shall establish and implement quality control procedures to ensure that the quality of the work meets the project requirements. The quality control procedures shall include:

**Pre-Construction Quality Control:** The bidder shall conduct a thorough site investigation to identify potential quality control issues and develop a quality control plan.

**Materials Control:** The bidder shall ensure that all materials used for the project meet the project specifications and industry standards.

**Labor Control:** The bidder shall ensure that all laborers are qualified and experienced in road construction.

**Equipment Control:** The bidder shall ensure that all equipment used for the project is in good working condition and meets the project specifications.

**Inspection and Testing:** The bidder shall conduct regular inspections and tests to ensure that the work meets the project specifications and industry standards.

**Documentation:** The bidder shall maintain accurate records of all quality control activities, including inspections, tests, and measurements.

### Quality Control Metrics:

The bidder shall establish and implement quality control metrics to measure the quality of the work. The quality control metrics shall include:

**Defect Rate:** The bidder shall maintain a defect rate of less than 2% for all work performed.

Quality Control Inspection Rate: The bidder shall conduct quality control inspections at a rate of at least 10% of the total work performed.

Testing and Measurement Rate: The bidder shall conduct tests and measurements at a rate of at least 5% of the total work performed.

#### Industry Standards:

The bidder shall adhere to industry standards and best practices for road construction, including:

Indian Roads Congress (IRC) Standards: The bidder shall comply with the IRC standards for road construction, including IRC: 116:2011 and IRC: 112:2011.

American Society for Testing and Materials (ASTM) Standards: The bidder shall comply with the ASTM standards for road construction, including ASTM D 4791 and ASTM D 6690.

International Organization for Standardization (ISO) Standards: The bidder shall comply with the ISO standards for road construction, including ISO 9001 and ISO 14001.

#### Environmental and Safety Standards:

The bidder shall adhere to environmental and safety standards, including:

Environmental Impact Assessment (EIA): The bidder shall conduct an EIA to identify potential environmental impacts and develop a plan to mitigate them.

Safety Management Plan: The bidder shall develop a safety management plan to ensure the safety of workers, the public, and the environment.

Occupational Safety and Health Administration (OSHA) Standards: The bidder shall comply with the OSHA standards for road construction, including 29 CFR 1926.

#### Certification and Accreditation:

The bidder shall provide certification and accreditation from relevant authorities, including:

ISO 9001 Certification: The bidder shall provide ISO 9001 certification to demonstrate compliance with quality management standards.

ISO 14001 Certification: The bidder shall provide ISO 14001 certification to demonstrate compliance with environmental management standards.

OSHA Certification: The bidder shall provide OSHA certification to demonstrate compliance with occupational safety and health standards.

#### Audit and Certification:

The bidder shall undergo regular audits and certification to ensure compliance with quality control and standards requirements. The bidder shall provide evidence of audit and certification from a recognized third-party auditor.

#### Penalties for Non-Compliance:

The bidder shall be liable for penalties for non-compliance with quality control and standards requirements, including:

Financial Penalties: The bidder shall be liable for financial penalties of up to ■10,000,000.00 for non-compliance.

Project Suspension: The bidder shall be liable for project suspension and termination for non-compliance.

By submitting a bid for the Road Construction Project, the bidder acknowledges that they have read, understood, and will comply with the quality control and standards requirements outlined in this section.

## **Risk Management Framework**

### **Risk Management Framework for Road Construction Project**

#### **1. Introduction**

The Risk Management Framework is an integral part of the Road Construction Project, aimed at mitigating and managing potential risks that may impact the project's objectives, quality, and overall success. This framework outlines the processes, procedures, and standards for identifying, assessing, prioritizing, and mitigating risks associated with the project.

#### **2. Risk Management Policy**

The Risk Management Policy for the Road Construction Project is based on the following principles:

Identify and assess potential risks that may impact the project's objectives.

Prioritize risks based on their likelihood and potential impact.

Develop and implement mitigation strategies to reduce or eliminate risks.

Continuously monitor and review the risk management process to ensure its effectiveness.

Maintain a risk register to track and update risk information.

#### **3. Risk Identification and Assessment**

The following methods will be used to identify and assess potential risks:

Conduct a thorough review of the project scope, schedule, and budget.

Consult with project stakeholders, including the client, contractors, and suppliers.

Use a risk assessment matrix to evaluate the likelihood and potential impact of each risk.

Identify and document specific risks, including their likelihood, potential impact, and mitigation strategies.

#### 4. Risk Categories

The following risk categories will be considered for the Road Construction Project:

##### Technical Risks:

- + Delays in construction due to unforeseen site conditions.
- + Inadequate design or engineering.
- + Failure to meet quality standards.

##### Schedule Risks:

- + Delays in material delivery.
- + Inclement weather conditions.
- + Labor disputes or shortages.

##### Cost Risks:

- + Cost overruns due to changes in scope or unforeseen site conditions.
- + Inflation or currency fluctuations.
- + Failure to meet budget targets.

##### Safety Risks:

- + Accidents or injuries to personnel.
- + Environmental hazards.
- + Failure to meet safety standards.

##### Environmental Risks:

- + Damage to nearby infrastructure or ecosystems.
- + Non-compliance with environmental regulations.
- + Failure to meet environmental standards.

#### 5. Risk Mitigation Strategies

The following risk mitigation strategies will be implemented:

##### Technical Risks:

- + Conduct thorough site investigations and surveys.
- + Engage experienced engineers and designers.
- + Implement quality control measures.

##### Schedule Risks:

- + Establish a detailed project schedule.
- + Identify critical path activities.
- + Plan for contingencies.

#### Cost Risks:

- + Develop a detailed budget.
- + Establish cost control measures.
- + Plan for contingencies.

#### Safety Risks:

- + Implement safety protocols and procedures.
- + Provide training to personnel.
- + Conduct regular safety audits.

#### Environmental Risks:

- + Conduct environmental impact assessments.
- + Implement environmental protocols and procedures.
- + Plan for contingencies.

### 6. Risk Monitoring and Review

The following methods will be used to monitor and review the risk management process:

Regular risk reviews and update of the risk register.

Monitoring of key performance indicators (KPIs).

Conducting lessons learned sessions.

Reviewing and updating the risk management plan.

### 7. Industry Standards and Metrics

The following industry standards and metrics will be used to ensure the effectiveness of the risk management process:

ISO 31000:2018 Risk Management - Guidelines.

AS/NZS 4360:2004 Risk Management.

Project Management Institute (PMI) Risk Management Framework.

Construction Industry Institute (CII) Risk Management Guidelines.

### 8. Roles and Responsibilities

The following roles and responsibilities will be assigned:

Project Manager: responsible for implementing the risk management framework.



Risk Manager: responsible for identifying, assessing, and mitigating risks.

Project Team: responsible for implementing risk mitigation strategies.

Client: responsible for providing input and feedback on the risk management process.

## 9. Conclusion

The Risk Management Framework for the Road Construction Project is designed to identify, assess, prioritize, and mitigate potential risks that may impact the project's objectives, quality, and overall success. By implementing this framework, the project team can ensure that the project is delivered on time, within budget, and to the required quality standards.

# Financial Terms and Conditions

## Financial Terms and Conditions

### 1. Payment Terms

The total contract value for the Road Construction Project is █100,000,000.0.

The payment schedule is as follows:

+ 30% of the total contract value (█30,000,000.0) upon commencement of work and signing of the contract.

+ 30% of the total contract value (█30,000,000.0) upon completion of 50% of the project work.

+ 20% of the total contract value (█20,000,000.0) upon completion of 75% of the project work.

+ 20% of the total contract value (█20,000,000.0) upon completion of 100% of the project work.

### 2. Invoicing and Payment

The Contractor shall submit detailed invoices to the Employer for each payment milestone.

Invoices must include the following information:

- Invoice number
- Date of invoice
- Description of work completed
- Amount due
- Payment method (bank transfer or other)

Payments shall be made within 15 working days of receipt of a valid invoice.

The Employer reserves the right to withhold payment if the Contractor fails to meet the project milestones or does not provide satisfactory progress reports.

### 3. Pricing and Variations

The Contractor shall provide a fixed price for the project based on the scope of work outlined in the tender document.

Any variations to the scope of work, including changes to the project schedule, materials, or labor, shall be negotiated and agreed upon by the Contractor and the Employer in writing.

The Contractor shall provide a revised estimate for any variations to the scope of work, which shall be subject to the Employer's approval.

### 4. Retentions and Security

The Employer shall withhold 5% of each payment milestone as a retention fee to ensure the Contractor's compliance with the project terms and conditions.

The Contractor shall provide a performance bond in the amount of ■10,000,000.0 to secure the project.

The performance bond shall be valid for the duration of the project and shall be returnable to the Contractor upon completion of the project and satisfaction of all project milestones.

### 5. Taxes and Duties

The Contractor shall be responsible for paying all applicable taxes and duties on materials and labor used in the project.

The Employer shall not be liable for any taxes or duties incurred by the Contractor.

The Contractor shall provide proof of payment of all applicable taxes and duties to the Employer upon request.

### 6. Currency and Exchange Rates

The contract price shall be paid in Indian Rupees (■).

The Employer shall not be liable for any exchange rate fluctuations or changes in currency values.

The Contractor shall bear the risk of any exchange rate fluctuations or changes in currency values.

### 7. Dispute Resolution

Any disputes arising from the project shall be resolved through arbitration in accordance with the Indian Arbitration and Conciliation Act, 1996.

The arbitration shall be conducted by a single arbitrator appointed by the Employer.

The arbitrator's decision shall be final and binding on both parties.

#### 8. Termination

The Employer reserves the right to terminate the contract if the Contractor fails to meet the project milestones or does not provide satisfactory progress reports.

Upon termination, the Employer shall pay the Contractor for the work completed up to the date of termination.

The Contractor shall return all equipment and materials provided by the Employer upon termination.

#### 9. Intellectual Property

The Employer retains all intellectual property rights to the project, including designs, plans, and specifications.

The Contractor shall not use or disclose any confidential information related to the project without the Employer's prior written consent.

#### 10. Governing Law

This contract shall be governed by and construed in accordance with the laws of India.

Any disputes arising from the project shall be resolved in accordance with the laws of India.

By accepting this contract, the Contractor acknowledges that they have read, understood, and agreed to the financial terms and conditions outlined above.

## **Legal and Compliance Requirements**

### Legal and Compliance Requirements

The Contractor shall comply with all applicable laws, regulations, and standards in the execution of the Road Construction Project. The following are the key legal and compliance requirements:

#### 1. Contractual Compliance

- The Contractor shall furnish a Performance Bond and a Labor and Material Payment Bond to secure the performance of the Contract.
- The Contractor shall comply with the terms and conditions of the Contract and the specifications provided by the Employer.
- The Contractor shall maintain a valid registration with the relevant government authorities, including but not limited to, the Ministry of Road Transport and Highways (MoRTH) and the State Government.

## 2. Labour Laws

- The Contractor shall ensure that all employees engaged in the work are registered with the Employees' State Insurance (ESI) and the Provident Fund (PF) authorities.
- The Contractor shall comply with the provisions of the Factories Act, 1948, and the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.
- The Contractor shall ensure that all employees are paid in accordance with the applicable minimum wage rates and benefits.

## 3. Environmental Compliance

- The Contractor shall comply with the Environmental Impact Assessment (EIA) Notification, 2006, and the provisions of the Environment (Protection) Act, 1986.
- The Contractor shall obtain the necessary environmental clearances and approvals from the relevant authorities.
- The Contractor shall ensure that all environmental standards and regulations are complied with, including but not limited to, the National Ambient Air Quality Standards (NAAQS) and the Water (Prevention and Control of Pollution) Act, 1974.

## 4. Safety and Health

- The Contractor shall comply with the provisions of the Occupational Safety, Health and Working Conditions (OSHC) Code, 2019.
- The Contractor shall ensure that all employees are provided with personal protective equipment (PPE) and follow safe work practices.
- The Contractor shall maintain a safe work environment and ensure that all accidents and incidents are reported and investigated.

## 5. Goods and Services Tax (GST)

- The Contractor shall comply with the provisions of the Goods and Services Tax (GST) Act, 2017.
- The Contractor shall register for GST and obtain the necessary GST identification number.
- The Contractor shall charge GST on all goods and services supplied under the Contract.

## 6. Intellectual Property Rights

- The Contractor shall ensure that all intellectual property rights (IPRs) related to the work are respected and protected.
- The Contractor shall not use any IPRs belonging to the Employer or any third party without prior permission.

- The Contractor shall ensure that all software, hardware, and other equipment used in the work are licensed and owned by the Contractor.

#### 7. Public Procurement (Preference to Make in India)

- The Contractor shall comply with the Public Procurement (Preference to Make in India) Order, 2017.
- The Contractor shall ensure that at least 50% of the value of the Contract is procured from Indian suppliers.
- The Contractor shall maintain records of all procurements made under the Contract.

#### 8. Dispute Resolution

- The Contractor shall comply with the dispute resolution process outlined in the Contract.
- The Contractor shall ensure that all disputes are resolved through arbitration or other dispute resolution mechanisms as agreed upon by the parties.

#### 9. Confidentiality

- The Contractor shall maintain the confidentiality of all information and data related to the work.
- The Contractor shall not disclose any confidential information to any third party without prior permission from the Employer.

#### 10. Records and Reporting

- The Contractor shall maintain accurate and detailed records of all work carried out under the Contract.
- The Contractor shall submit regular progress reports and financial statements to the Employer as required.

#### 11. Compliance with Industry Standards

- The Contractor shall comply with the industry standards and best practices for road construction, including but not limited to, the Indian Roads Congress (IRC) standards.
- The Contractor shall ensure that all materials and equipment used in the work meet the required standards and specifications.

#### 12. Training and Capacity Building

- The Contractor shall ensure that all employees engaged in the work are trained and equipped to perform their duties safely and efficiently.
- The Contractor shall provide regular training and capacity building programs for employees to enhance their skills and knowledge.

#### 13. Health and Safety Management System

- The Contractor shall establish and maintain a health and safety management system (HSMS) to ensure the safety and well-being of all employees.
- The Contractor shall conduct regular risk assessments and implement mitigation measures to prevent accidents and incidents.

#### 14. Subcontracting

- The Contractor shall ensure that all subcontractors engaged in the work are qualified and experienced.
- The Contractor shall maintain a list of all subcontractors engaged in the work and provide it to the Employer upon request.

#### 15. Insurance

- The Contractor shall maintain adequate insurance coverage for the work, including but not limited to, liability insurance, property damage insurance, and workers' compensation insurance.
- The Contractor shall provide proof of insurance coverage to the Employer upon request.

#### 16. Compliance with Local Laws

- The Contractor shall comply with all local laws and regulations, including but not limited to, the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996, and the State-specific labor laws.

#### 17. Compliance with Central Government Regulations

- The Contractor shall comply with all Central Government regulations, including but not limited to, the Factories Act, 1948, and the Environmental (Protection) Act, 1986.

#### 18. Compliance with State Government Regulations

- The Contractor shall comply with all State Government regulations, including but not limited to, the State-specific labor laws and environmental regulations.

By accepting the contract, the Contractor acknowledges that it has read, understood, and will comply with all the legal and compliance requirements outlined above.

#### Acceptance Criteria:

The Contractor's bid shall be evaluated based on the following acceptance criteria:

- The Contractor's experience and qualifications in road construction
- The Contractor's labor and machinery resources
- The Contractor's safety and environmental record
- The Contractor's compliance with local laws and regulations
- The Contractor's compliance with Central Government regulations
- The Contractor's compliance with State Government regulations

The Contractor shall provide all necessary documents and information to support its bid, including but not limited to, proof of experience, labor and machinery resources, safety and environmental record, and compliance with local laws and regulations.

Penalties for Non-Compliance:

Failure to comply with the legal and compliance requirements may result in penalties, including but not limited to:

- Termination of the Contract
- Suspension of payments
- Imposition of fines
- Suspension or revocation of licenses and permits

Governing Law and Jurisdiction:

The Contract shall be governed by and construed in accordance with the laws of the country and the state where the work is being carried out. Any disputes arising out of or in connection with the Contract shall be resolved through arbitration in accordance with the rules of the Arbitration and Conciliation Act, 1996.

Acceptance:

By signing below, the Contractor acknowledges that it has read, understood, and will comply with all the legal and compliance requirements outlined above.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Performance Metrics and SLAs**

Performance Metrics and SLAs

As a critical component of this Road Construction Project, the following Performance Metrics and Service Level Agreements (SLAs) will be used to measure the success and quality of the project. The bidder must provide a comprehensive plan outlining their approach to achieving these metrics and SLAs.

Project Completion Metrics

The project completion metrics will be based on the following key performance indicators (KPIs):

Project Completion Rate: The bidder must complete the project within 22 months from the project commencement date. Any delays beyond this timeframe will incur a penalty of **■5,000,000** per month.

Quality of Work: The bidder must ensure that the road construction meets the required specifications and standards. A quality check will be conducted at the end of each month, and a score will be assigned based on the following criteria:

- + Paving quality: 30%
- + Drainage system installation: 20%
- + Signage installation: 15%
- + Environmental and safety standards compliance: 35%

Budget Variance: The bidder must adhere to the project budget of █100,000,000. Any variance beyond this budget will incur a penalty of 10% of the excess amount.

#### Safety and Environmental Metrics

The bidder must ensure that the project is executed in a safe and environmentally responsible manner. The following safety and environmental metrics will be used to measure the bidder's performance:

Lost Time Injury Frequency Rate (LTIFR): The bidder must maintain an LTIFR of less than 1.5 during the project duration. Any LTIFR exceeding this threshold will incur a penalty of █2,000,000.

Environmental Non-Compliance: The bidder must ensure that the project does not result in any environmental non-compliance. Any non-compliance will incur a penalty of █5,000,000.

Waste Management: The bidder must ensure that all waste generated during the project is disposed of in an environmentally responsible manner. A waste management plan must be submitted as part of the proposal.

#### Quality Management Metrics

The bidder must ensure that the project is executed in accordance with the required quality standards. The following quality management metrics will be used to measure the bidder's performance:

Quality Control Check: The bidder must conduct regular quality control checks to ensure that the work meets the required specifications and standards. A quality control check will be conducted at the end of each month, and a score will be assigned based on the following criteria:

- + Materials used: 30%
- + Workmanship: 40%
- + Compliance with specifications: 30%

Corrective Action: The bidder must implement corrective actions promptly in case of any quality control issues. A corrective action plan must be submitted as part of the proposal.

#### Communication and Reporting Metrics



The bidder must ensure that the project is executed in a transparent and communicative manner. The following communication and reporting metrics will be used to measure the bidder's performance:

Monthly Progress Report: The bidder must submit a monthly progress report to the project manager by the 15th of each month. The report must include the following information:

- + Project progress
- + Quality control issues
- + Safety incidents
- + Environmental issues

Regular Meetings: The bidder must hold regular meetings with the project manager and other stakeholders to discuss project progress, quality control issues, and safety incidents.

#### Penalties and Incentives

The following penalties and incentives will be applicable to the project:

Penalties: The bidder will incur penalties for delays, quality control issues, safety incidents, and environmental non-compliance as outlined above.

Incentives: The bidder will receive incentives for meeting or exceeding the project completion rate, quality of work, safety metrics, and environmental metrics. The incentives will be as follows:

- + 10% of the project value for meeting the project completion rate and quality of work metrics
- + 5% of the project value for meeting the safety metrics
- + 5% of the project value for meeting the environmental metrics

#### Service Level Agreements (SLAs)

The following SLAs will be applicable to the project:

Response Time: The bidder must respond to project-related queries and issues within 24 hours.

Resolution Time: The bidder must resolve project-related issues within 5 working days.

Availability: The bidder must ensure that all project personnel are available to work on the project during the specified working hours.

By incorporating these Performance Metrics and SLAs into the project, the bidder will be able to demonstrate their ability to execute the project in a safe, environmentally responsible, and high-quality manner. The project manager and other stakeholders will be able to monitor the project's progress and performance, and the bidder will be incentivized to deliver a high-quality project within the specified timeframe and budget.

# Testing and Acceptance Criteria

## Testing and Acceptance Criteria

### Introduction

The Testing and Acceptance Criteria document outlines the comprehensive testing and evaluation process to be followed for the Road Construction Project. The purpose of this document is to ensure that the construction work meets the specified requirements, standards, and regulations. The testing and acceptance criteria will be used to evaluate the contractor's performance and to determine whether the final product meets the project's requirements.

### Testing and Evaluation Requirements

The contractor shall conduct the following tests and evaluations to ensure compliance with the project requirements:

#### 1. Pavement Quality

The contractor shall conduct the following tests on the asphalt pavement:

- + Marshall Stability Test: The contractor shall conduct three sets of Marshall Stability Test to determine the stability and durability of the asphalt pavement. The test results shall be within the acceptable range of 1,000 - 1,500 kgf (kilogram-force).
- + Wheel Tracking Test: The contractor shall conduct the wheel tracking test to determine the resistance of the asphalt pavement to deformation. The test results shall be within the acceptable range of 10 - 20 mm (millimeters) for a 10,000-cycle test.
- + Indirect Tensile Strength (ITS) Test: The contractor shall conduct the ITS test to determine the strength and durability of the asphalt pavement. The test results shall be within the acceptable range of 2.0 - 3.0 N/mm<sup>2</sup> (Newtons per square millimeter).

#### 2. Drainage Systems

The contractor shall conduct the following tests on the drainage systems:

- + Infiltration Test: The contractor shall conduct the infiltration test to determine the rate of infiltration of water into the drainage system. The test results shall be within the acceptable range of 0.5 - 1.5 mm/min (millimeters per minute).
- + Flow Test: The contractor shall conduct the flow test to determine the flow rate of water through the drainage system. The test results shall be within the acceptable range of 0.5 - 2.0 L/s (liters per second).

#### 3. Signage

The contractor shall conduct the following tests on the signage:

+ Reflectivity Test: The contractor shall conduct the reflectivity test to determine the reflectivity of the signage. The test results shall be within the acceptable range of 80 - 120 cd/m<sup>2</sup> (candelas per square meter).

+ Legibility Test: The contractor shall conduct the legibility test to determine the readability of the signage. The test results shall be within the acceptable range of 80 - 120 characters per line.

#### Acceptance Criteria

The contractor's work shall be deemed acceptable if the test results meet or exceed the specified requirements and standards. The contractor shall be responsible for maintaining records of all tests and evaluations conducted during the project.

#### Industry Standards

The testing and acceptance criteria shall be based on the following industry standards:

Indian Roads Congress (IRC) Standards

Bureau of Indian Standards (BIS) Standards

Ministry of Road Transport and Highways (MoRTH) Standards

#### Schedule

The testing and evaluation schedule shall be as follows:

The contractor shall conduct the tests and evaluations within 30 days of completing the construction work.

The contractor shall submit the test results to the Engineer-in-charge within 7 days of completing the testing and evaluation process.

#### Responsibilities

The following parties shall be responsible for the testing and acceptance criteria:

The contractor shall be responsible for conducting the tests and evaluations and submitting the test results to the Engineer-in-charge.

The Engineer-in-charge shall be responsible for reviewing the test results and verifying compliance with the project requirements.

The Client shall be responsible for approving the test results and releasing the payment to the contractor.

#### Conclusion

The testing and acceptance criteria document outlines the comprehensive testing and evaluation process to be followed for the Road Construction Project. The contractor shall be responsible for conducting the tests and evaluations and submitting the test results to the Engineer-in-charge. The Engineer-in-charge shall review the test results and verify compliance with the project requirements. The Client shall approve the test results and

release the payment to the contractor.

## Additional Details

### Contact Information

For queries, contact:

PWD Office, City Road, ABC

Email: tenders@pwdabc.com

Phone: +91 123 456 7890

### Eligibility Criteria

Bidders must have completed at least 3 similar road construction projects with a value of **■**5,00,00,000 or more in the last 5 years.

### MVP Requirements

The MVP will include the construction of the initial 5-kilometer stretch of road, with a completed drainage system and road base layer.

### Milestone Deliverables

Completion of initial site survey and soil testing within 2 weeks.

Submission of design plans within 1 month.

### Liquidated Damages

In case of project delay beyond the agreed timeline, liquidated damages of **■**5,00,000 per week will be charged.