

TENDER DOCUMENT

Road Construction Project

Tender ID:	TEN20250330155330
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 proposed 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. With a project value of █100,000,000.0, this project is expected to contribute significantly to the development of the region, enhancing connectivity, safety, and economic growth.

## Project Objectives

The primary objectives of this project are:

To construct a 20-kilometer stretch of road with asphalt paving, ensuring a durable and long-lasting surface.

To design and install an efficient drainage system to prevent waterlogging and ensure the longevity of the road.

To install necessary signage, including road markings, traffic signals, and directional signs, to ensure safe and efficient traffic management.

To adhere to environmental and safety standards, minimizing the project's environmental impact and ensuring a safe working environment for personnel.

## Project Scope

The scope of the project includes:

Excavation and grading of the road surface.

Asphalt paving, including laying of asphalt layers and compaction.

Installation of drainage systems, including culverts, stormwater drains, and catch basins.

Installation of necessary signage, including road markings, traffic signals, and directional signs.

Provision of pavement marking, line painting, and traffic island installation.

Environmental and safety management, including implementation of waste management plans and provision of personal protective equipment.

## Project Requirements

To ensure the successful execution of this project, the following requirements must be met:

The bidder must provide proof of experience in road construction, including completed projects of similar scope and complexity.

The bidder must demonstrate the availability of qualified labor and machinery for the job, including:

- + Experience with asphalt paving and compaction.
- + Familiarity with drainage system installation and maintenance.
- + Knowledge of environmental and safety standards.

The bidder must commit to adhering to environmental and safety standards, including:

- + Implementation of waste management plans.
- + Provision of personal protective equipment.
- + Compliance with relevant labor laws and regulations.

#### Project Timeline

The project is expected to be completed within a period of 18 months, with the following milestones:

Month 1-3: Site preparation, excavation, and grading.

Month 4-6: Asphalt paving and drainage system installation.

Month 7-9: Signage installation and pavement marking.

Month 10-12: Testing and commissioning.

Month 13-18: Final inspection and handover.

#### Project Budget

The project budget is ■100,000,000.0, which includes:

Asphalt paving and compaction: ■35,000,000.0

Drainage system installation: ■20,000,000.0

Signage installation: ■10,000,000.0

Environmental and safety management: ■5,000,000.0

Contingency fund: ■30,000,000.0

By awarding this project to a qualified bidder, the client will ensure the successful execution of a critical infrastructure development initiative, enhancing connectivity, safety, and economic growth in the region.

## Project Overview and Objectives

### Project Overview and Objectives

## Project Overview

The proposed Road Construction Project aims to construct a 20-kilometer stretch of road, marking a significant milestone in the development of the region's transportation infrastructure. The project scope encompasses the construction of a high-quality road network that will provide safe, efficient, and reliable connectivity between various communities and economic hubs. The project is estimated to have a total value of ₹100,000,000.0, making it a substantial investment in the region's development.

## Project Objectives

The primary objectives of this Road Construction Project are:

Construct a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage, ensuring a durable and long-lasting infrastructure that meets the standards of the Indian Ministry of Road Transport and Highways.

Improve road safety by incorporating design elements that minimize the risk of accidents, such as dedicated pedestrian and cycling lanes, and traffic calming measures.

Enhance connectivity between various communities and economic hubs, promoting economic growth, social development, and improved access to essential services.

Minimize environmental impact by adopting sustainable construction practices, minimizing waste, and ensuring adherence to environmental regulations.

Ensure compliance with safety standards by implementing a comprehensive safety management system, providing necessary training to workers, and conducting regular safety audits.

## Key Performance Indicators (KPIs)

The following KPIs will be used to measure the success of the project:

**Completion time:** The project shall be completed within 18 months from the commencement of work.

**Quality of work:** The constructed road shall meet the specifications and standards set by the Indian Ministry of Road Transport and Highways.

**Safety record:** The project shall maintain a zero-accident record throughout the construction period.

**Environmental impact:** The project shall minimize environmental impact by reducing carbon emissions, conserving natural resources, and promoting sustainable construction practices.

**Cost-effectiveness:** The project shall be completed within the approved budget of ₹100,000,000.0.

## Industry Standards and Regulations

The project shall adhere to the following industry standards and regulations:

Indian Road Congress (IRC) standards: The constructed road shall meet the specifications and standards set by the Indian Road Congress.

Environmental Protection Act, 1986: The project shall comply with the provisions of the Environmental Protection Act, 1986, and ensure that all environmental regulations are met.

Factories Act, 1948: The project shall comply with the provisions of the Factories Act, 1948, and ensure that all safety regulations are met.

Labor laws: The project shall comply with all labor laws and regulations, including the Payment of Wages Act, 1936, and the Employees' Provident Funds and Miscellaneous Provisions Act, 1952.

#### Bidder Requirements

The bidder shall 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 shall also demonstrate their ability to meet the project objectives, KPIs, and industry standards and regulations.

## Detailed Technical Specifications

### Detailed Technical Specifications

#### Section 1: Introduction

The Project involves the construction of a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. This section outlines the detailed technical specifications for the project, ensuring that the selected bidder meets the required standards and quality.

#### Section 2: Road Geometry and Design

##### 2.1 Road Alignment and Grade

- The road shall be designed with a nominal gradient of 2% to facilitate safe and efficient traffic flow.
- The road alignment shall be a straight line with gentle curves (radius  $\geq 300$  meters) to minimize driver fatigue and improve road safety.

##### 2.2 Road Cross-Section

- The road shall have a 7.5-meter wide carriageway with 1-meter wide shoulders on both sides.
- The road surface shall be designed to accommodate a maximum speed of 80 km/h.

### 2.3 Ditch and Drainage System

- The road shall have a 0.5-meter wide ditch on both sides to collect and direct stormwater runoff.
- The drainage system shall include:
  - 150mm diameter stormwater pipes with a minimum of 2.5-meter spacing.
  - Catchpits with a minimum capacity of 0.5 cumecs.
  - Inlets and outlets shall be designed to ensure proper flow and prevent erosion.

## Section 3: Asphalt Paving

### 3.1 Asphalt Mix Design

- The asphalt mix shall be designed in accordance with Indian Roads Congress (IRC) standards, with a minimum Marshall Stability Test value of 10 kN.
- The asphalt mix shall be composed of:
  - 5% asphalt binder.
  - 90% aggregate (80% crushed stone and 10% sand).
  - 5% filler material.

### 3.2 Paving Layers

- The road shall have a minimum of two layers of asphalt:
  - 50mm thick binder course.
  - 30mm thick wearing course.

### 3.3 Compaction and Testing

- The asphalt layers shall be compacted using a 100-tonne roller.
- The asphalt layers shall be tested for density and stability using a Nuclear Density Gauge.

## Section 4: Safety Features

### 4.1 Traffic Safety Barriers

- The road shall be protected with a 2-meter high safety barrier along the entire length.
- The safety barrier shall be designed to withstand a minimum impact speed of 80 km/h.

### 4.2 Signage

- The road shall have a minimum of 50 warning signs, including:
  - Speed limit signs.
  - Directional signs.
  - Warning signs for sharp curves and intersections.

## Section 5: Environmental Considerations

### 5.1 Noise Reduction

- The road shall be designed to minimize noise pollution, with a maximum noise level of 70 dB(A) at the nearest residential area.

### 5.2 Stormwater Management

- The road shall be designed to prevent stormwater runoff from entering nearby water bodies.
- The drainage system shall be designed to capture and treat stormwater runoff.

## Section 6: Quality Control and Assurance

### 6.1 Labor and Machinery

- The bidder shall provide proof of qualified labor and machinery for the job.
- The bidder shall ensure that all labor and machinery meet the required safety and environmental standards.

### 6.2 Testing and Inspection

- The bidder shall conduct regular testing and inspection of the road, including:
  - Asphalt density and stability.
  - Drainage system performance.
  - Safety barrier condition.

## Section 7: Acceptance Criteria

### 7.1 Road Surface Condition

- The road surface shall be smooth and even, with a minimum skid resistance value of 60.
- The road surface shall be free from cracks and potholes.

### 7.2 Drainage System Performance

- The drainage system shall be able to handle a minimum flow rate of 1.5 cumecs.
- The drainage system shall be free from blockages and erosion.

### 7.3 Safety Features

- The safety barrier shall be intact and secure along the entire length.
- The signage shall be clear and visible.

## Section 8: Warranty and Liability

### 8.1 Warranty Period

- The bidder shall provide a 5-year warranty for the road surface and drainage system.
- The bidder shall provide a 2-year warranty for the safety barrier and signage.

## 8.2 Liability

- The bidder shall be liable for any damages or injuries caused by their negligence or breach of contract.

## Section 9: Conclusion

The detailed technical specifications outlined in this section ensure that the selected bidder meets the required standards and quality for the Road Construction Project. The bidder shall ensure that all work is carried out in accordance with the specifications and requirements outlined in this document.

# Implementation Methodology

## Implementation Methodology for Road Construction Project

### Project Overview

The Road Construction Project, valued at █100,000,000.0, aims to construct a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. The project scope encompasses all necessary civil engineering works, including excavation, grading, and paving. The successful bidder will be responsible for designing, procuring, and implementing the project, adhering to industry standards, environmental regulations, and health and safety guidelines.

### Implementation Approach

Our implementation approach will comprise the following phases:

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

Conduct site surveys and topographic studies to identify potential construction risks and opportunities.

Develop a detailed project plan, including timelines, milestones, and resource allocation.

Establish a project management team, including a project manager, site engineer, and safety officer.

Conduct environmental impact assessments and obtain necessary permits.

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

Excavate and grade the roadbed, ensuring proper drainage and stability.

Lay down a geotextile membrane and compact the subgrade.

Apply a layer of aggregate base course and compact to required density.

Lay down asphalt surfacing, ensuring a minimum thickness of 50 mm.



Install drainage systems, including culverts and stormwater management structures.

Erect necessary signage, including road markers, traffic signals, and warning signs.

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

Conduct asphalt paving tests to ensure compliance with industry standards.

Conduct drainage tests to ensure proper functioning of drainage systems.

Conduct safety inspections to ensure compliance with health and safety regulations.

Obtain certification from relevant authorities, including road safety audits and environmental impact assessments.

#### Quality Control and Assurance

To ensure compliance with industry standards and project requirements, we will implement the following quality control and assurance measures:

Conduct regular site inspections and audits to ensure compliance with project plans and specifications.

Establish a quality control plan, including procedures for testing and inspection of materials and workmanship.

Conduct regular training and awareness programs for site staff on quality control and assurance practices.

Maintain a quality control register to track and record all quality control activities.

#### Health and Safety

To ensure a safe working environment for all personnel, we will implement the following health and safety measures:

Conduct regular safety inspections and audits to identify potential hazards and risks.

Establish a health and safety plan, including procedures for reporting accidents and incidents.

Provide personal protective equipment (PPE) and ensure that all site staff wear PPE as required.

Conduct regular training and awareness programs for site staff on health and safety practices.

#### Environmental Management

To minimize the environmental impact of the project, we will implement the following environmental management measures:

Conduct environmental impact assessments to identify potential environmental risks and opportunities.

Establish an environmental management plan, including procedures for waste management and pollution control.

Provide training and awareness programs for site staff on environmental management practices.

Conduct regular monitoring and reporting of environmental performance.

#### Metrics and Performance Indicators

To measure and evaluate project performance, we will track the following metrics and performance indicators:

Project completion rate

Quality control and assurance metrics

Health and safety metrics

Environmental performance metrics

Cost savings and value engineering initiatives

#### Industry Standards and Best Practices

We will adhere to the following industry standards and best practices:

Indian Roads Congress (IRC) standards for road construction

Ministry of Road Transport and Highways (MoRTH) guidelines for road construction

Occupational Safety and Health Administration (OSHA) standards for health and safety

International Organization for Standardization (ISO) standards for quality management and environmental management.

By implementing a comprehensive and structured project management approach, we are confident that we will deliver a high-quality road construction project that meets the client's requirements and expectations.

## Quality Control and Standards

#### Quality Control and Standards

The successful bidder for the Road Construction Project shall adhere to the highest standards of quality control and safety to ensure that the constructed road meets the requirements outlined in this tender document. The following section outlines the quality control and standards that the bidder must adhere to.

#### Quality Control Measures

The bidder shall implement the following quality control measures to ensure that the road construction project meets the required standards:

#### Pre-Construction Quality Control

- + Conduct a thorough site investigation to identify potential environmental and safety hazards.
- + Develop and implement a quality control plan that includes regular inspections, testing, and documentation of all construction activities.
- + Ensure that all construction personnel are aware of and trained in quality control procedures.

#### Materials Inspection and Testing

- + Conduct regular inspections of materials received at the site, including asphalt, aggregate, and other construction materials.
- + Test materials for compliance with Indian Standards (IS) and other relevant standards, such as:
  - IS 1488:2000 (Standard Test Methods for Determination of Physical Properties of Bituminous Materials)
  - IS 15658:2005 (Standard Test Methods for Determination of Properties of Emulsified Bituminous Mixtures)
- + Ensure that all materials meet the specified requirements and standards.

#### Construction Quality Control

- + Conduct regular inspections of construction activities, including laying of asphalt, drainage systems, and signage.
- + Test finished products, such as pavement layers, to ensure compliance with IS and other relevant standards.
- + Document all inspections and testing activities, including results and any corrective actions taken.

#### Post-Construction Quality Control

- + Conduct a final inspection of the completed road to ensure compliance with the specified requirements and standards.
- + Document all final inspection activities, including results and any corrective actions taken.

#### Standards and Specifications

The bidder shall adhere to the following standards and specifications for the road construction project:

#### Asphalt Paving

- + IS 1488:2000 (Standard Test Methods for Determination of Physical Properties of Bituminous Materials)
- + IS 15658:2005 (Standard Test Methods for Determination of Properties of Emulsified Bituminous Mixtures)

#### Drainage Systems

- + IS 3027:2012 (Standard Specification for Pre-cast Concrete Drainage Pipes)
- + IS 10499:1983 (Standard Specification for Cast Iron Sewer Pipes)

#### Signage

- + IS 14436:2012 (Standard Specification for Road Signs)
- + IS 1499:2002 (Standard Specification for Reflective Materials for Road Signs and Markings)

#### Environmental and Safety Standards

- + Comply with the Environmental Protection Act, 1986, and the Factories Act, 1948.
- + Implement safety measures to prevent accidents and injuries, including:
  - Providing personal protective equipment (PPE) to all construction personnel.
  - Ensuring proper training and supervision of construction personnel.
  - Conducting regular safety inspections and audits.

#### Metrics and Performance Indicators

The bidder shall maintain records of the following metrics and performance indicators to ensure compliance with quality control and standards:

##### Quality Control Metrics

- + Number of inspections conducted per week/month.
- + Number of materials tested per week/month.
- + Number of defects identified and corrected.

##### Safety Metrics

- + Number of accidents and injuries per month.
- + Number of safety inspections conducted per month.
- + Number of safety audits conducted per quarter.

##### Environmental Metrics

- + Number of environmental inspections conducted per month.
- + Number of environmental audits conducted per quarter.
- + Number of environmental incidents reported per month.

## Certification and Compliance

The bidder shall provide proof of certification and compliance with the following standards and regulations:

ISO 9001:2015 (Quality Management System)

OHSAS 18001:2007 (Occupational Health and Safety Management System)

ISO 14001:2015 (Environmental Management System)

Environmental Protection Act, 1986

Factories Act, 1948

The bidder shall also provide proof of insurance coverage for liability and risks associated with the project.

## Penalties for Non-Compliance

Failure to comply with the quality control and standards outlined in this tender document may result in penalties, including:

Monetary penalties: The bidder shall pay a penalty of ₹1,00,000 (one lakh rupees) for each non-compliance incident.

Delayed payment: The bidder shall delay payment of 0.5% (half percent) of the total contract value for each non-compliance incident.

Contract termination: The bidder shall be liable for contract termination if they fail to comply with quality control and standards.

The bidder shall acknowledge and agree to the quality control and standards outlined in this tender document by signing and returning the attached acknowledgement form.

# Risk Management Framework

## Risk Management Framework

### Purpose:

The purpose of this Risk Management Framework is to identify, assess, and mitigate risks associated with the Road Construction Project, ensuring the successful execution of the project and the protection of the client's interests.

### Scope:

This Risk Management Framework applies to all parties involved in the project, including the contractor, subcontractors, suppliers, and the client.

### Risk Management Process:

The risk management process will be based on the following steps:

1. Risk Identification: Identify potential risks and opportunities that may affect the project. This will be done through a thorough analysis of the project scope, including the construction of a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage.
2. Risk Assessment: Assess the identified risks and opportunities based on their likelihood and potential impact on the project.
3. Risk Prioritization: Prioritize the risks based on their likelihood and potential impact, and focus on mitigating the most critical risks.
4. Risk Mitigation: Develop and implement strategies to mitigate the identified risks.
5. Risk Monitoring: Continuously monitor the risks throughout the project lifecycle and update the risk management plan as necessary.

Risk Categories:

The following risk categories will be considered:

Technical Risks:

- + Delays in construction due to unforeseen site conditions or equipment failures
- + Inadequate design or construction of drainage systems
- + Insufficient asphalt paving or road surfacing

Environmental Risks:

- + Environmental damage or pollution during construction
- + Non-compliance with environmental regulations

Safety Risks:

- + Accidents or injuries to personnel during construction
- + Non-compliance with safety regulations

Financial Risks:

- + Cost overruns due to unforeseen site conditions or changes in project scope
- + Delays in payment or non-payment by the client

Contractual Risks:

- + Delays or non-delivery of materials or equipment by suppliers
- + Non-compliance with contractual obligations

Risk Metrics:

The following metrics will be used to measure the effectiveness of the risk management plan:

Risk Score: A numerical value assigned to each risk based on its likelihood and potential impact

Risk Probability: The likelihood of the risk occurring, expressed as a percentage

Risk Impact: The potential impact of the risk on the project, expressed as a percentage

Risk Mitigation Effort: The effort required to mitigate the risk, expressed as a percentage

Industry Standards:

The following industry standards will be followed:

ISO 31000:2009: Principles and guidelines on risk management

AS/NZS 4360:2004: Risk management

EN 16002:2012: Risk assessment for construction work

Roles and Responsibilities:

The following roles and responsibilities will be assigned:

Project Manager: Responsible for implementing and overseeing the risk management plan

Risk Manager: Responsible for identifying, assessing, and prioritizing risks

Contractor: Responsible for mitigating risks and ensuring compliance with contractual obligations

Client: Responsible for providing input on risk management and ensuring compliance with environmental and safety regulations

Risk Management Plan:

The risk management plan will be reviewed and updated regularly, with the following frequency:

Monthly: Review of risk metrics and risk management plan

Quarterly: Review of risk management plan and identification of new risks

Annually: Review of risk management plan and risk mitigation strategies

Appendix:

The following documents will be included in the appendix:

Risk Register: A detailed list of identified risks, including risk score, risk probability, risk impact, and risk mitigation effort

Risk Mitigation Strategies: A detailed description of the strategies to be implemented to mitigate identified risks

Contractual Obligations: A copy of the contract between the client and the contractor, including the scope of work, payment terms, and delivery schedule

# Financial Terms and Conditions

## Financial Terms and Conditions

The Financial Terms and Conditions outlined in this document form an integral part of the Tender and are binding on the Successful Bidder (hereinafter referred to as "the Contractor"). These terms and conditions are intended to ensure a clear understanding of the financial obligations and framework governing the project.

### 1. Payment Terms

1.1 The Client (hereinafter referred to as "the Employer") shall make payments to the Contractor in accordance with the payment schedule outlined in the Pricing Schedule, as attached to this Tender Document.

1.2 The Employer shall pay to the Contractor a progress payment of 80% of the value of the work completed, as certified by the Engineer, on a monthly basis.

1.3 The Employer shall pay to the Contractor a final payment of 10% of the contract value, upon satisfactory completion and acceptance of the project.

1.4 The Employer shall pay to the Contractor a liquidated damages amount of █5,000 per day for any delay in completion, up to a maximum of █50,000,000.

### 2. Pricing Schedule

2.1 The Contractor shall submit a Pricing Schedule as part of the Tender, detailing the following:

A breakdown of the total contract value into separate components, including labor, materials, and overheads.

A detailed estimate of the costs associated with each component.

A schedule of milestones and corresponding payment amounts.

2.2 The Pricing Schedule shall be based on the Contractor's estimate of the costs associated with the project, and shall not include any contingency or risk allowances.

### 3. Taxes and Levies

3.1 The Contractor shall be responsible for paying all applicable taxes and levies, including Goods and Services Tax (GST), Value Added Tax (VAT), and any other taxes or levies imposed by the government.

3.2 The Contractor shall provide the Employer with a tax invoice for all payments made, and shall ensure that the tax invoice is compliant with all applicable tax laws and regulations.

### 4. Invoicing and Payment



4.1 The Contractor shall submit invoices to the Employer on a monthly basis, detailing the work completed and costs incurred during the previous month.

4.2 The Employer shall review and verify the invoices, and shall pay the Contractor within 30 days of receipt of the invoice.

4.3 The Contractor shall ensure that all invoices are accurate, complete, and compliant with all applicable laws and regulations.

#### 5. Retention Money

5.1 The Employer shall retain 10% of the contract value, as a retention money, until the project is completed and accepted by the Employer.

5.2 The Contractor shall not have any claim to the retention money, and shall not include it in the Pricing Schedule.

#### 6. Bank Guarantee

6.1 The Contractor shall submit a Bank Guarantee, in the amount of █20,000,000, to secure the performance of the contract.

6.2 The Bank Guarantee shall be valid for a period of 12 months from the date of submission, and shall be renewable upon request.

#### 7. Insurance

7.1 The Contractor shall procure and maintain all necessary insurance, including:

Workers' Compensation Insurance

Public Liability Insurance

Equipment Insurance

7.2 The Contractor shall provide the Employer with proof of insurance, and shall ensure that the insurance is valid and compliant with all applicable laws and regulations.

#### 8. Dispute Resolution

8.1 Any disputes arising out of or in connection with this contract shall be resolved through arbitration, in accordance with the Arbitration and Conciliation Act, 1996.

8.2 The arbitration shall be conducted by a sole arbitrator, appointed by the Employer, and shall be governed by the laws of the applicable jurisdiction.

#### 9. Force Majeure

9.1 The Contractor shall not be liable for any delay or failure to perform the contract, due to force majeure events, including:

Natural disasters

War and terrorism

Government regulations and restrictions

9.2 The Contractor shall notify the Employer in writing, within 7 days of the occurrence of a force majeure event, and shall provide the Employer with a detailed explanation of the impact on the project.

## 10. Termination

10.1 The Employer may terminate this contract, upon written notice to the Contractor, in the event of:

Breach of contract

Insolvency or bankruptcy

Failure to pay taxes or levies

10.2 The Contractor shall not have any claim to any payment or compensation, in the event of termination, except for the payment of reasonable expenses and costs.

## 11. Governing Law

11.1 This contract shall be governed by and construed in accordance with the laws of the applicable jurisdiction.

11.2 Any dispute arising out of or in connection with this contract shall be resolved through arbitration, in accordance with the Arbitration and Conciliation Act, 1996.

By signing below, the Contractor acknowledges that they have read, understood, and agreed to the Financial Terms and Conditions outlined in this document.

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Signature of Contractor

Date

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Acceptance

The Employer accepts the Financial Terms and Conditions outlined in this document, and agrees to be bound by the same.

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Signature of Employer

Date

# Legal and Compliance Requirements

Legal and Compliance Requirements

The successful bidder must comply with all applicable laws, regulations, and industry standards in relation to the Road Construction Project. The following are the specific legal and compliance requirements that must be adhered to:

#### 1. Contractual Compliance

The bidder must enter into a contract with the Government of the State/Union Territory, on behalf of which the tender is being issued, on the standard contract terms and conditions specified in the tender documents.

The contract must be executed in conformity with the applicable laws, including the Indian Contract Act, 1872 and the Arbitration and Conciliation Act, 1996.

The bidder must comply with all contractual obligations, including the scope of work, timeline, and payment terms.

#### 2. Environmental Compliance

The bidder must comply with the Environment (Protection) Act, 1986 and the rules and regulations made thereunder.

The bidder must obtain all necessary environmental clearances and permits before commencing work on the project.

The bidder must implement measures to prevent air and water pollution and ensure proper waste management during the project execution.

The bidder must maintain a minimum of 10% of the project cost for environmental mitigation and rehabilitation measures.

#### 3. Labour Laws and Social Compliance

The bidder must comply with the Factories Act, 1948, the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, and other relevant labor laws.

The bidder must provide a safe working environment, comply with occupational health and safety standards, and ensure that its workers are paid as per the applicable minimum wages.

The bidder must maintain a minimum of 12% of the project cost for labor welfare and social security measures.

#### 4. Taxation and GST Compliance

The bidder must comply with the Goods and Services Tax Act, 2017 and the rules and regulations made thereunder.

The bidder must register itself with the Goods and Services Tax Network (GSTN) and obtain a GST registration number.

The bidder must pay all applicable taxes, including GST, Value Added Tax (VAT), and Central Sales Tax (CST).

## 5. Safety and Security Compliance

The bidder must comply with the Occupational Safety, Health and Working Conditions (National) Code, 2017 and the rules and regulations made thereunder.

The bidder must implement measures to ensure the safety and security of its workers, the public, and the environment.

The bidder must maintain a minimum of 8% of the project cost for safety and security measures.

## 6. Government of India's General Financial Rules (GFRs)

The bidder must comply with the Government of India's General Financial Rules (GFRs) 2017 and the rules and regulations made thereunder.

The bidder must follow the public procurement rules specified in the GFRs, including the principles of transparency, accountability, and fairness.

## 7. Right to Information Act, 2005

The bidder must comply with the Right to Information Act, 2005 and the rules and regulations made thereunder.

The bidder must provide information to the public as per the Act and maintain a Public Information Officer (PIO) to respond to queries.

## 8. Intellectual Property Rights (IPRs)

The bidder must comply with the Patents Act, 1970, the Trademarks Act, 1999, and the Copyright Act, 1957.

The bidder must obtain necessary permissions and licenses for the use of any IPRs that may be required for the project.

## 9. Anti-Corruption and Anti-Bribery Compliance

The bidder must comply with the Prevention of Corruption Act, 1988 and the rules and regulations made thereunder.

The bidder must adhere to the World Bank's Anti-Corruption Guidelines and the United Nations Convention Against Corruption (UNCAC).

## 10. Other Compliance Requirements

The bidder must comply with all other applicable laws, regulations, and industry standards, including those related to labor, environment, health, and safety.

The bidder must obtain all necessary licenses, permits, and approvals before commencing work on the project.

## 11. Certifications and Compliance Documents

The bidder must provide certifications and compliance documents to the Government of the State/Union Territory, as required, before commencing work on the project.

The bidder must update the Government of the State/Union Territory on any changes in its certifications and compliance documents.

By submitting this tender, the bidder acknowledges that it has read, understood, and agreed to comply with the above-mentioned legal and compliance requirements. Failure to comply with these requirements may result in the bidder being disqualified from the tender process or the contract being terminated.

## **Performance Metrics and SLAs**

### **Performance Metrics and Service Level Agreements (SLAs)**

As part of the Road Construction Project, it is essential to establish clear performance metrics and Service Level Agreements (SLAs) to ensure the project's success and adherence to industry standards. The following performance metrics and SLAs are required to be met by the successful bidder.

#### **Scope of Measurement**

The performance metrics and SLAs will be measured against the scope of work outlined in this tender document, specifically:

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

Installation of drainage systems

Installation of necessary signage

#### **Performance Metrics**

The following performance metrics will be used to measure the successful bidder's performance:

##### **1. Quality of Work**

Percentage of road surface completed to the required specification (asphalt paving, etc.)

Percentage of drainage systems installed and functioning correctly

Percentage of signage installed and aligned with industry standards

Adherence to environmental and safety standards

##### **2. Safety Performance**

Number of workplace accidents reported per 100,000 man-hours worked

Percentage of employees trained in safety procedures

Number of safety inspections conducted per month

Compliance with industry safety standards

### 3. Schedule Performance

Percentage of work completed within the scheduled timeframe

Number of days ahead of schedule

Number of days behind schedule

Adherence to project timelines

### 4. Cost Performance

Actual cost of construction compared to the estimated cost

Variance between actual and estimated costs

Adherence to the budget

### 5. Environmental Performance

Quantity of waste generated and disposed of in accordance with industry standards

Percentage of recyclable materials used

Compliance with environmental regulations

Service Level Agreements (SLAs)

The following SLAs will be applicable to the successful bidder:

#### 1. Response Time

Response time to project-related queries: 2 hours

Response time to safety-related queries: 1 hour

#### 2. Resolution Time

Resolution time for project-related issues: 4 hours

Resolution time for safety-related issues: 2 hours

#### 3. Availability

Availability of project team: 8 hours a day, 5 days a week

Availability of safety team: 24/7

#### 4. Performance Reporting

Regular performance reports to be submitted to the Client: weekly, bi-weekly, and monthly

Report format and content to be agreed upon by the Client and the successful bidder

Industry Standards

The successful bidder is expected to adhere to the following industry standards:

#### 1. Indian Roads Congress (IRC) Standards

IRC: SP: 3(1963)

IRC: SP: 53(1985)

IRC: SP: 96(2005)

## 2. American Society for Testing and Materials (ASTM) Standards

ASTM D 36-02 (2002)

ASTM D 1402-93 (1999)

ASTM D 1558-96 (1999)

## 3. Occupational Safety and Health Administration (OSHA) Standards

29 CFR 1926

29 CFR 1910

### Penalties and Incentives

The successful bidder will be subject to penalties and incentives as follows:

#### 1. Penalties

Failure to meet quality standards: ■10,000 per kilometer of road not meeting standards

Failure to meet safety standards: ■5,000 per safety incident

Failure to meet schedule: ■1,000 per day behind schedule

Failure to meet budget: ■5,000 per percent of budget exceeded

#### 2. Incentives

Meeting quality standards: ■5,000 per kilometer of road meeting standards

Meeting safety standards: ■2,000 per safety inspection conducted

Meeting schedule: ■2,000 per day ahead of schedule

Meeting budget: ■5,000 per percent of budget saved

The performance metrics and SLAs outlined above are essential to ensure the successful completion of the Road Construction Project. The successful bidder is expected to adhere to these metrics and SLAs to ensure the project's success and adherence to industry standards.

## Testing and Acceptance Criteria

### Testing and Acceptance Criteria

The Testing and Acceptance Criteria for the Road Construction Project are outlined below to ensure that the works are performed to the satisfaction of the Client and meet the specified standards. The testing and acceptance process will be conducted in accordance

with the guidelines outlined in this section.

#### Pre-Testing Requirements

Prior to commencing testing, the Contractor shall:

Ensure that all works are completed in accordance with the approved drawings, specifications, and contractual requirements.

Obtain all necessary permits and approvals from relevant authorities.

Conduct a thorough inspection of the works to identify any defects or omissions.

#### Testing Criteria

The following testing criteria will be applied to the road construction works:

##### Structural Integrity:

- + The road pavement shall be tested for its structural integrity using the Marshall Stability Test (MST) and the Unconfined Compressive Strength (UCS) test.
- + The test results shall be compared to the specified values as outlined in the Indian Roads Congress (IRC) standards.
- + The Contractor shall ensure that the pavement meets the minimum required values as specified in the contract documents.

##### Surface Texture and Skid Resistance:

- + The road surface shall be tested for its texture and skid resistance using the Texture Depth Meter (TDM) and the Skid Resistance Tester (SRT).
- + The test results shall be compared to the specified values as outlined in the IRC standards.
- + The Contractor shall ensure that the road surface meets the minimum required values as specified in the contract documents.

##### Drainage System:

- + The drainage system shall be tested for its functionality and capacity using the Flow Rate Test and the Pressure Test.
- + The test results shall be compared to the specified values as outlined in the IRC standards.
- + The Contractor shall ensure that the drainage system meets the minimum required values as specified in the contract documents.

##### Signage and Marking:

- + The signage and marking shall be tested for their visibility and legibility using the Visibility Test and the Legibility Test.



- + The test results shall be compared to the specified values as outlined in the IRC standards.
- + The Contractor shall ensure that the signage and marking meet the minimum required values as specified in the contract documents.

#### Acceptance Criteria

The following acceptance criteria will be applied to the road construction works:

**Structural Integrity:** The road pavement shall meet the specified values as outlined in the IRC standards.

**Surface Texture and Skid Resistance:** The road surface shall meet the specified values as outlined in the IRC standards.

**Drainage System:** The drainage system shall meet the specified values as outlined in the IRC standards.

**Signage and Marking:** The signage and marking shall meet the specified values as outlined in the IRC standards.

**Compliance with Specifications:** The Contractor shall ensure that all works are completed in accordance with the approved drawings, specifications, and contractual requirements.

#### Acceptance Tests

The following acceptance tests will be conducted:

**Pavement Condition Index (PCI) Test:** The PCI test will be conducted to assess the overall condition of the road pavement.

**Ride Quality Test:** The ride quality test will be conducted to assess the ride quality of the road.

**Skid Resistance Test:** The skid resistance test will be conducted to assess the skid resistance of the road surface.

#### Acceptance Criteria for Defects

The following acceptance criteria will be applied to defects:

**Defect Classification:** Defects will be classified as minor, moderate, or major.

**Defect Repair:** Minor defects shall be repaired within 3 days, moderate defects within 7 days, and major defects within 14 days.

**Defect Evaluation:** The Contractor shall evaluate the defects and provide a written report to the Client.

**Defect Rectification:** The Contractor shall rectify the defects in accordance with the approved rectification plan.

#### Acceptance Process

The acceptance process will be conducted in the following stages:

1. Inspection: The Client will conduct an inspection of the works to assess their quality and completeness.
2. Testing: The Client will conduct testing of the works to assess their performance and compliance with the specifications.
3. Evaluation: The Client will evaluate the test results and assess the overall quality of the works.
4. Acceptance: The Client will accept the works in accordance with the specified acceptance criteria.
5. Defect Rectification: The Contractor shall rectify any defects identified during the acceptance process.

#### Industry Standards

The testing and acceptance process will be conducted in accordance with the following industry standards:

Indian Roads Congress (IRC) standards

American Society for Testing and Materials (ASTM) standards

Indian Standard (IS) standards

#### Certification and Documentation

The Contractor shall provide the following certification and documentation:

Material certification: The Contractor shall provide certification of the materials used in the works.

Labor certification: The Contractor shall provide certification of the labor used in the works.

Machinery certification: The Contractor shall provide certification of the machinery used in the works.

Test reports: The Contractor shall provide test reports for all testing conducted during the acceptance process.

#### Timeline

The testing and acceptance process will be conducted within the following timeline:

Pre-testing requirements: 7 days

Testing: 14 days

Acceptance testing: 7 days

Defect rectification: 14 days

The Contractor shall ensure that the works are completed within the specified timeline.

## Responsibilities

The following responsibilities will be assigned to the parties:

Client: The Client shall conduct the inspection, testing, and acceptance process.

Contractor: The Contractor shall perform the works in accordance with the specifications and contractual requirements.

Third-party inspectors: Third-party inspectors shall be engaged to conduct the testing and inspection.

## Confidentiality

All testing and acceptance reports shall be kept confidential and shall not be disclosed to any third party without the prior written consent of the Client.

## Amendments

The testing and acceptance criteria may be amended by the Client from time to time. The Contractor shall ensure that they comply with the amended testing and acceptance criteria.

## Governing Law

The testing and acceptance process shall be governed by the laws of India.

## Dispute Resolution

Any disputes arising out of the testing and acceptance process shall be resolved through arbitration in accordance with the Indian Arbitration and Conciliation Act, 1996.

## Acceptance Form

The Client shall provide an acceptance form to the Contractor upon completion of the testing and acceptance process. The acceptance form shall be signed by the authorized representative of the Client.

## Payment

Payment shall be made to the Contractor upon completion of the testing and acceptance process and receipt of the acceptance form.

## Termination

The contract may be terminated by the Client in the event of non-compliance with the testing and acceptance criteria.

## Conclusion

The testing and acceptance criteria outlined in this section shall be used to assess the quality and performance of the road construction works. The Contractor shall ensure that they comply with the testing and acceptance criteria to ensure timely completion and payment of the contract.

## 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.