

TENDER DOCUMENT

Road Construction Project

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Issuing Authority:	Public Works Department (PWD), State Government
Tender Amount:	■10,000,000.00
Bid Start Date:	05-03-2025
Bid End Date:	02-05-2025

Executive Summary

****Executive Summary****

The proposed Road Construction Project aims to develop a 20-kilometer stretch of road, enhancing the region's infrastructure and facilitating smoother transportation. With a project value of █10,000,000.0, this initiative seeks to improve the overall connectivity and safety of the area. Our team is committed to delivering a high-quality road construction project that meets the required standards and specifications, while ensuring minimal environmental impact and maximum safety for all stakeholders.

****Project Overview****

The scope of the project encompasses the construction of a 20-kilometer road with asphalt paving, drainage systems, and necessary signage. The project will be executed in accordance with industry standards and best practices, including:

- * Asphalt paving with a minimum thickness of 50mm to ensure durability and longevity
- * Installation of drainage systems, including culverts and stormwater management systems, to prevent waterlogging and erosion
- * Provision of necessary signage, including traffic signs, warning signs, and guide signs, to ensure safe navigation and compliance with traffic regulations
- * Implementation of environmental and safety measures, including erosion control, noise reduction, and traffic management plans

****Requirements and Qualifications****

To ensure the successful execution of the project, the bidder must demonstrate the following qualifications and experience:

- * Proof of experience in road construction, with a minimum of 5 years of experience in similar projects
- * Qualified labor, including engineers, technicians, and skilled workers, to ensure that the project is executed to the required standards
- * Availability of necessary machinery and equipment, including asphalt pavers, excavators, and cranes, to facilitate efficient and safe construction
- * Adherence to environmental and safety standards, including compliance with relevant laws and regulations, such as the National Highways Act and the Environmental Protection Act

****Key Performance Indicators (KPIs)****

The project's success will be measured against the following KPIs:

- * Completion of the project within the scheduled timeframe of 12 months
- * Achievement of a minimum pavement quality index (PQI) of 80, ensuring a smooth and durable road surface
- * Maintenance of a safe working environment, with a maximum of 5 reportable incidents per 100,000 man-hours worked
- * Compliance with environmental regulations, including a maximum of 10% deviation from the predicted environmental impact assessment

****Conclusion****

In conclusion, the proposed Road Construction Project offers a unique opportunity to improve the region's infrastructure and enhance the quality of life for its residents. Our team is committed to delivering a high-quality project that meets the required standards and specifications, while ensuring minimal environmental impact and maximum safety for all stakeholders. With a strong focus on quality, safety, and environmental sustainability, we are confident that our proposal will meet the expectations of the client and contribute to the region's development.

Project Overview and Objectives

****Project Overview and Objectives****

The Road Construction Project aims to design and construct a 20-kilometer stretch of road, enhancing the regional transportation infrastructure and promoting economic growth. With a total project value of ₹10,000,000.0, this initiative seeks to provide a safe, efficient, and durable road network that meets the increasing demands of the local community. The project's scope encompasses the construction of asphalt paving, drainage systems, and necessary signage, ensuring compliance with industry standards and regulatory requirements.

The primary objectives of the Road Construction Project are:

- * To design and construct a 20-kilometer stretch of road that meets the standards of the Indian Roads Congress (IRC) and the Ministry of Road Transport and Highways (MoRTH)
- * To ensure the road is safe, durable, and resistant to heavy traffic and environmental factors, with a minimum design life of 15 years
- * To implement effective drainage systems that prevent waterlogging and erosion, with a minimum drainage capacity of 10 cubic meters per second
- * To provide necessary signage and road furniture that meet the standards of the Manual of Traffic Signs and Markings, 2019

- * To minimize environmental impact and ensure compliance with environmental regulations, including the Environmental Impact Assessment (EIA) Notification, 2006

- * To promote local economic growth by creating employment opportunities and stimulating regional development, with a minimum of 30% local labor participation

The project's key performance indicators (KPIs) will include:

- * Construction of 20 kilometers of road with asphalt paving, completed within 12 months

- * Installation of drainage systems that meet the required capacity, with a minimum of 20 culverts and 10 bridges

- * Provision of necessary signage and road furniture, including 100 directional signs, 50 warning signs, and 20 kilometer markers

- * Achievement of a minimum road surface roughness of 2.5 mm, as measured by the International Roughness Index (IRI)

- * Maintenance of a minimum safety record, with zero fatalities and a maximum of 5 reportable incidents during the construction period

- * Compliance with environmental and safety standards, including a minimum of 90% compliance with the Environmental Management Plan (EMP) and the Safety Management Plan (SMP)

To ensure the successful execution of the project, the selected bidder will be required to demonstrate:

- * A minimum of 5 years of experience in road construction projects, with a proven track record of delivering similar projects on time and within budget

- * A team of qualified labor, including engineers, technicians, and skilled workers, with a minimum of 50 personnel on site at any given time

- * Access to necessary machinery and equipment, including asphalt pavers, rollers, and drainage excavation equipment, with a minimum of 20 machines on site at any given time

- * Adherence to environmental and safety standards, including the implementation of an Environmental Management Plan (EMP) and a Safety Management Plan (SMP), with a minimum of 2 environmental and safety audits per month

- * A commitment to quality management, including the implementation of a Quality Management System (QMS) that meets the requirements of ISO 9001:2015, with a minimum of 1 quality audit per month

By achieving these objectives, the Road Construction Project will provide a safe, efficient, and durable road network that enhances the regional transportation infrastructure, promotes economic growth, and improves the quality of life for the

local community.

Detailed Technical Specifications

****Detailed Technical Specifications****

The Road Construction Project aims to deliver a high-quality, 20-kilometer stretch of road that meets the required safety, environmental, and functional standards. The following technical specifications outline the requirements for the successful completion of the project.

****Road Design and Geometry****

The road shall be designed to accommodate a minimum of two lanes, with a carriage width of 7.5 meters and a shoulder width of 1.5 meters on either side. The road's vertical alignment shall be designed to ensure a maximum gradient of 4% and a minimum radius of curvature of 100 meters. The horizontal alignment shall be designed to ensure a minimum sight distance of 200 meters. The road's surface shall be designed to withstand a minimum axle load of 8.2 tons.

****Asphalt Paving****

The asphalt paving shall be constructed in accordance with the Ministry of Road Transport and Highways (MoRTH) specifications. The asphalt mix shall consist of a combination of aggregate, bitumen, and filler, with a minimum Marshall stability of 1200 kg and a flow value of 2-4 mm. The asphalt layer shall be laid in two courses, with a minimum thickness of 40 mm for the binder course and 20 mm for the surface course. The asphalt paving shall be compacted to a minimum density of 95% of the maximum theoretical density.

****Drainage Systems****

The drainage system shall be designed to ensure that the road remains safe and passable during rainfall events. The system shall include:

- * A cambered road surface with a minimum cross-fall of 2%
- * A longitudinal drainage system, consisting of a combination of catch pits, culverts, and side drains
- * A transverse drainage system, consisting of a combination of cross-drains and culverts
- * A minimum of one catch pit per kilometer, with a minimum capacity of 1 cubic meter

****Signage and Markings****

The signage and markings shall be installed in accordance with the MoRTH specifications. The signage shall include:

- * Warning signs, such as curve ahead, intersection ahead, and pedestrian crossing ahead
 - * Guide signs, such as directional signs and distance signs
 - * Regulatory signs, such as speed limit signs and no-parking signs
 - * The markings shall include:
 - + Center line markings, with a minimum width of 100 mm
 - + Edge line markings, with a minimum width of 100 mm
 - + Lane dividers, with a minimum width of 100 mm
- **Environmental and Safety Standards****

The contractor shall ensure that the construction activities are carried out in accordance with the environmental and safety standards specified by the relevant authorities. The contractor shall:

- * Implement measures to minimize dust pollution, noise pollution, and water pollution
- * Ensure that all personnel on site wear personal protective equipment, including hard hats, safety glasses, and gloves
- * Ensure that all vehicles and equipment on site are properly maintained and operated
- * Implement a traffic management plan to ensure the safety of road users during construction

****Materials and Testing****

The contractor shall ensure that all materials used in the construction of the road meet the required specifications. The materials shall be tested in accordance with the relevant standards, including:

- * Aggregate: IS 2386 (Part 1 to 8)
- * Bitumen: IS 73
- * Asphalt mix: IS 2386 (Part 1 to 8) and MoRTH specifications
- * The testing shall include:
 - + Aggregate tests, such as sieve analysis, specific gravity, and abrasion test
 - + Bitumen tests, such as penetration test, softening point test, and ductility test
 - + Asphalt mix tests, such as Marshall test, flow test, and density test

****Quality Control and Assurance****

The contractor shall implement a quality control and assurance plan to ensure that the construction activities are carried out in accordance with the required specifications. The plan shall include:

- * Regular inspections and testing of materials and workmanship
- * Implementation of corrective actions to address any defects or deficiencies
- * Maintenance of accurate records of construction activities, including materials used, testing results, and inspections
- * The contractor shall also ensure that all personnel on site are properly trained and qualified to carry out their duties.

****Construction Equipment and Machinery****

The contractor shall ensure that all construction equipment and machinery used on site are properly maintained and operated. The equipment and machinery shall include:

- * Asphalt pavers, with a minimum laying capacity of 200 tons per hour
- * Rollers, with a minimum weight of 10 tons
- * Excavators, with a minimum bucket capacity of 1 cubic meter
- * The contractor shall also ensure that all equipment and machinery are properly calibrated and tested before use.

By adhering to these detailed technical specifications, the contractor shall ensure that the Road Construction Project is completed to the required standards, ensuring the safety, functionality, and environmental sustainability of the road.

Implementation Methodology

****Implementation Methodology****

The implementation methodology for the Road Construction Project will be carried out in accordance with the project scope, requirements, and industry standards. Our approach will ensure that the 20-kilometer stretch of road is constructed with high-quality asphalt paving, efficient drainage systems, and necessary signage, while adhering to environmental and safety standards.

****Pre-Construction Phase****

Before commencing the construction work, we will conduct a thorough site survey to identify potential hazards, environmental concerns, and community sensitivities. This phase will include:

- * Conducting a topographic survey to determine the road alignment and design

- * Identifying and marking utility lines, such as water, electricity, and telecommunications
- * Developing a detailed project schedule, including milestones and timelines
- * Establishing a quality control and quality assurance plan to ensure compliance with industry standards
- * Conducting environmental and social impact assessments to identify potential risks and develop mitigation measures

****Construction Phase****

The construction phase will be divided into several stages, including:

- * ****Clearing and Grading****: We will clear the site, removing any debris, vegetation, and obstacles, and then grade the road surface to the required specifications
- * ****Drainage Systems****: We will design and install efficient drainage systems, including culverts, stormwater drains, and catch pits, to ensure that the road surface remains safe and durable
- * ****Asphalt Paving****: We will lay down a layer of asphalt pavement, with a minimum thickness of 50 mm, and a maximum temperature of 160°C, to ensure a smooth and durable road surface
- * ****Signage and Markings****: We will install necessary signage, including direction signs, warning signs, and information signs, and apply road markings, such as lane dividers and pedestrian crossings
- * ****Quality Control and Assurance****: We will conduct regular inspections and testing to ensure compliance with industry standards, including those specified by the Indian Roads Congress (IRC) and the Ministry of Road Transport and Highways (MoRTH)

****Environmental and Safety Considerations****

We are committed to adhering to environmental and safety standards, and will implement measures to minimize the project's impact on the environment and surrounding communities. These measures will include:

- * ****Environmental Management Plan****: We will develop and implement an environmental management plan to minimize waste, reduce pollution, and protect natural habitats
- * ****Safety Management Plan****: We will develop and implement a safety management plan to ensure the safety of our workers, stakeholders, and the general public
- * ****Waste Management****: We will implement a waste management plan to minimize waste, recycle materials, and dispose of waste in accordance with regulatory requirements

* **Community Engagement**: We will engage with local communities to raise awareness about the project, address concerns, and provide updates on the project's progress

Performance Metrics and Monitoring

To ensure that the project is completed on time, within budget, and to the required quality standards, we will establish performance metrics and monitoring systems. These will include:

* **Project Schedule**: We will track the project schedule, including milestones and timelines, to ensure that the project is completed on time

* **Budget Control**: We will monitor and control expenses to ensure that the project is completed within the allocated budget

* **Quality Control**: We will conduct regular inspections and testing to ensure compliance with industry standards and the project's quality requirements

* **Stakeholder Engagement**: We will engage with stakeholders, including the client, contractors, and local communities, to ensure that their concerns and expectations are addressed

Resource Allocation

To ensure the successful implementation of the project, we will allocate the necessary resources, including:

* **Qualified Labor**: We will employ qualified and experienced labor, including engineers, technicians, and skilled workers, to carry out the construction work

* **Machinery and Equipment**: We will provide the necessary machinery and equipment, including asphalt pavers, rollers, and excavators, to carry out the construction work

* **Materials and Supplies**: We will source high-quality materials and supplies, including asphalt, aggregate, and steel, to ensure that the project is completed to the required standards

By following this implementation methodology, we are confident that we can deliver the Road Construction Project on time, within budget, and to the required quality standards, while adhering to environmental and safety standards.

Quality Control and Standards

Quality Control and Standards

The successful bidder for the Road Construction Project must demonstrate a strong commitment to quality control and adherence to industry standards. The

quality control and standards section outlines the requirements and expectations for ensuring that the construction of the 20-kilometer stretch of road meets the highest standards of quality, safety, and environmental sustainability.

****Quality Management System****

The bidder must have a well-established quality management system in place, which includes a clear organizational structure, defined roles and responsibilities, and a documented quality policy. The quality management system must be certified to ISO 9001:2015 or equivalent, and the bidder must provide proof of certification. The quality management system must include procedures for:

- * Quality planning and control
- * Material procurement and testing
- * Construction methods and techniques
- * Inspection and testing of works
- * Defect reporting and rectification
- * Continuous improvement and monitoring

****Materials and Workmanship****

The bidder must ensure that all materials used in the construction of the road meet the required standards and specifications. The materials must be procured from approved suppliers, and the bidder must provide proof of compliance with the relevant industry standards, including:

- * Asphalt: IS 73:2013 or equivalent
- * Aggregates: IS 383:2016 or equivalent
- * Cement: IS 269:2015 or equivalent
- * Steel: IS 1786:2008 or equivalent
- * Signage: IS 9641:1994 or equivalent

The bidder must also ensure that all workmanship meets the required standards, including:

- * Compaction of asphalt layers: 98% of maximum dry density
- * Surface evenness: 3mm per 3-meter length
- * Drainage system: designed to withstand a 10-year storm event
- * Signage: installed in accordance with the relevant traffic laws and regulations

****Environmental and Safety Standards****

The bidder must ensure that all construction activities are carried out in accordance with the relevant environmental and safety standards, including:

- * Environmental Impact Assessment (EIA) report: prepared in accordance with the Environment (Protection) Act, 1986
- * Environmental Management Plan (EMP): implemented to minimize the impact of construction activities on the environment
- * Safety management system: certified to OHSAS 18001:2007 or equivalent
- * Personal Protective Equipment (PPE): provided to all workers, including hard hats, safety glasses, gloves, and steel-toed boots
- * Traffic management plan: implemented to ensure the safety of road users and construction workers

****Inspection and Testing****

The bidder must ensure that all works are inspected and tested in accordance with the relevant industry standards, including:

- * Frequency of inspections: daily, weekly, and monthly inspections to be carried out by the quality control team
- * Testing of materials: samples to be taken and tested in accordance with the relevant industry standards
- * Testing of works: completed works to be inspected and tested to ensure compliance with the required standards

****Key Performance Indicators (KPIs)****

The bidder must monitor and report on the following KPIs:

- * Quality: 95% of works to be completed to the required standards
- * Safety: zero fatalities and a lost-time injury frequency rate (LTIFR) of less than 0.5
- * Environment: zero environmental incidents and a 95% compliance rate with the environmental management plan
- * Time: completion of the project within the specified timeframe
- * Budget: completion of the project within the specified budget

****Documentation and Record Keeping****

The bidder must maintain accurate and detailed records of all construction activities, including:

- * Quality control records: inspection and test reports, material receipts, and work completion certificates
- * Safety records: incident reports, near-miss reports, and safety inspection reports

* Environmental records: environmental monitoring reports, waste management records, and compliance reports

* Progress reports: weekly and monthly progress reports to be submitted to the client

By adhering to these quality control and standards requirements, the successful bidder will ensure that the Road Construction Project is completed to the highest standards of quality, safety, and environmental sustainability.

Risk Management Framework

****Risk Management Framework****

The Risk Management Framework is a critical component of our approach to delivering the Road Construction Project. Our framework is designed to identify, assess, mitigate, and monitor risks throughout the project lifecycle, ensuring that we minimize potential impacts on the project timeline, budget, and quality. Our risk management approach is aligned with industry best practices and standards, including the ISO 31000:2018 Risk Management Guidelines.

****Risk Identification****

We will conduct a comprehensive risk assessment to identify potential risks associated with the project. This will include, but not be limited to, the following categories:

* ****Environmental Risks****: soil instability, water pollution, air quality, and ecosystem disruption

* ****Safety Risks****: worker accidents, equipment failures, and community disturbance

* ****Technical Risks****: design errors, material defects, and construction methodology flaws

* ****Logistical Risks****: supply chain disruptions, transportation issues, and labor shortages

* ****Financial Risks****: cost overruns, payment delays, and budget constraints

* ****Regulatory Risks****: non-compliance with environmental and safety regulations, permits, and approvals

****Risk Assessment and Prioritization****

We will use a risk matrix to assess and prioritize identified risks based on their likelihood and potential impact on the project. The risk matrix will be categorized into five levels of risk:

- * **Very Low**: minimal impact and likelihood
- * **Low**: minor impact and moderate likelihood
- * **Medium**: moderate impact and likelihood
- * **High**: significant impact and high likelihood
- * **Very High**: critical impact and very high likelihood

We will prioritize risks with a medium to very high rating for further analysis and mitigation.

Risk Mitigation and Control

We will develop and implement a Risk Mitigation Plan to minimize the likelihood and impact of identified risks. The plan will include:

- * **Risk avoidance**: eliminating or reducing the risk by modifying the project scope or design
- * **Risk transfer**: transferring the risk to third parties through insurance, contracts, or partnerships
- * **Risk reduction**: reducing the likelihood or impact of the risk through implementation of controls or mitigation measures
- * **Risk retention**: accepting and managing the risk through contingency planning and emergency response procedures

Some specific risk mitigation measures we will implement include:

- * Regular site inspections and audits to ensure compliance with environmental and safety regulations
- * Implementation of a quality management system to ensure design and construction defects are minimized
- * Development of a comprehensive emergency response plan to address potential accidents or incidents
- * Establishment of a supply chain management system to minimize logistical risks

Risk Monitoring and Review

We will establish a Risk Monitoring and Review process to track and review the effectiveness of our risk mitigation measures. This will include:

- * **Regular risk reviews**: scheduled reviews of the risk register to assess the effectiveness of mitigation measures and identify new risks
- * **Risk reporting**: regular reporting of risk-related issues and incidents to the project team and stakeholders

* **Corrective actions**: implementation of corrective actions to address identified risks and issues

* **Lessons learned**: documentation of lessons learned and incorporation into future project plans and risk management frameworks

We will use metrics such as:

* **Risk reduction percentage**: percentage reduction in risk likelihood and impact

* **Incident frequency rate**: number of incidents per million man-hours worked

* **Environmental compliance rate**: percentage of compliance with environmental regulations and permits

* **Schedule performance index**: measure of project schedule performance against the baseline schedule

Industry Standards and Compliance

Our Risk Management Framework is aligned with industry standards and best practices, including:

* **ISO 31000:2018**: Risk Management Guidelines

* **ISO 14001:2015**: Environmental Management Systems

* **OHSAS 18001:2007**: Occupational Health and Safety Management Systems

* **Indian Road Congress (IRC) guidelines**: guidelines for road construction and maintenance

We will ensure that our risk management approach is compliant with all relevant laws, regulations, and industry standards, and that we maintain a robust and effective risk management system throughout the project lifecycle.

Financial Terms and Conditions

Financial Terms and Conditions

The following Financial Terms and Conditions apply to the Road Construction Project, with a total value of ₹10,000,000.0. These terms and conditions outline the payment schedule, pricing, and other financial obligations of the Contractor and the Employer.

Payment Schedule

The payment schedule for the project will be as follows:

* 20% of the total contract value (₹2,000,000.0) will be paid as a mobilization advance, upon signing of the contract and submission of a performance security in the form of a bank guarantee.

- * 60% of the total contract value (■6,000,000.0) will be paid in six equal installments, based on the completion of predetermined milestones, as outlined in the project schedule.

- * 10% of the total contract value (■1,000,000.0) will be retained as a retention amount, to be released upon completion of the project and issuance of the final certificate.

- * 10% of the total contract value (■1,000,000.0) will be paid as a final payment, upon completion of all outstanding work, rectification of defects, and issuance of the final certificate.

****Pricing and Variation****

The contract price is based on the rates and prices quoted by the Contractor in their tender. Any variations to the contract scope, quantities, or specifications will be valued in accordance with the rates and prices quoted in the tender, or as agreed upon by the parties in writing. The following principles will apply to the valuation of variations:

- * The Contractor will provide a detailed breakdown of the costs associated with the variation, including labor, materials, and equipment.

- * The Employer will review and verify the costs, and may request additional information or clarification as necessary.

- * The parties will negotiate and agree upon the value of the variation, based on the verified costs and the rates and prices quoted in the tender.

****Taxes and Duties****

The contract price includes all applicable taxes and duties, as per the laws and regulations of the country. The Contractor will be responsible for paying all taxes and duties, including but not limited to:

- * Goods and Services Tax (GST)

- * Value Added Tax (VAT)

- * Income Tax

- * Withholding Tax

****Invoicing and Payment****

The Contractor will submit invoices to the Employer on a monthly basis, or as agreed upon in the contract. The invoices will include:

- * A detailed breakdown of the work completed during the month

- * The value of the work completed, based on the contract rates and prices

- * Any variations or changes to the contract scope or quantities

* A copy of the bank guarantee, if applicable

The Employer will make payments to the Contractor within 30 days of receipt of a valid invoice, provided that the work has been completed to the satisfaction of the Employer and the Contractor has complied with all the terms and conditions of the contract.

****Performance Security****

The Contractor will provide a performance security in the form of a bank guarantee, equal to 10% of the total contract value (■1,000,000.0). The performance security will be submitted to the Employer within 7 days of signing the contract, and will remain in force until the completion of the project and issuance of the final certificate.

****Liquidated Damages****

The Contractor will be liable for liquidated damages in the event of delay or non-compliance with the contract terms and conditions. The liquidated damages will be calculated as follows:

* ■50,000.0 per day, for every day of delay, up to a maximum of ■1,000,000.0

* ■20,000.0 per defect, for every defect or non-compliance, up to a maximum of ■500,000.0

****Termination****

The contract may be terminated by either party, upon written notice to the other party, in the event of:

* Breach of contract terms and conditions

* Non-payment of amounts due

* Bankruptcy or insolvency

* Failure to provide a performance security

* Any other material breach of the contract

In the event of termination, the Contractor will be entitled to payment for all work completed, and any costs incurred, up to the date of termination. The Employer will also be entitled to claim damages and losses, as a result of the termination.

****Dispute Resolution****

Any disputes or differences arising out of the contract will be resolved through negotiation and consultation between the parties. If the dispute cannot be resolved through negotiation, it will be referred to arbitration, in accordance with the rules of the Indian Arbitration and Conciliation Act, 1996. The arbitration will be conducted by a single arbitrator, appointed by mutual agreement, and the decision of the arbitrator will be final and binding on both parties.

****Audit and Compliance****

The Contractor will maintain accurate and detailed records of all financial transactions, and will comply with all applicable laws and regulations, including but not limited to:

- * The Companies Act, 2013
- * The Income Tax Act, 1961
- * The Goods and Services Tax Act, 2017
- * The Environment Protection Act, 1986
- * The Occupational Safety, Health and Working Conditions Code, 2020

The Employer will have the right to audit and inspect the Contractor's records, at any time, to ensure compliance with the contract terms and conditions. The Contractor will provide all necessary assistance and cooperation, to facilitate the audit and inspection process.

Legal and Compliance Requirements

****Legal and Compliance Requirements****

The Road Construction Project, valued at ₹10,000,000.0, requires strict adherence to legal and compliance requirements to ensure the successful completion of the project. The bidder must demonstrate a thorough understanding of the applicable laws, regulations, and industry standards to be considered for this project.

****Statutory Compliance****

The bidder must comply with all relevant statutes, regulations, and ordinances applicable to the project, including but not limited to:

- * The Indian Contract Act, 1872
- * The Arbitration and Conciliation Act, 1996
- * The Environmental Protection Act, 1986
- * The Factories Act, 1948
- * The Labour Laws, including the Minimum Wages Act, 1948, and the Payment of Wages Act, 1936
- * The National Highways Act, 1956
- * The Motor Vehicles Act, 1988

****Environmental Compliance****

The bidder must ensure that the construction activities comply with environmental regulations and standards, including:

- * Obtaining necessary environmental clearances and permits from the relevant authorities
- * Implementing measures to minimize dust pollution, noise pollution, and water pollution
- * Ensuring compliance with the Noise Pollution (Regulation and Control) Rules, 2000
- * Implementing measures to protect the surrounding ecosystem and wildlife
- * Disposing of waste materials in accordance with the Solid Waste Management Rules, 2016
- * Complying with the Air (Prevention and Control of Pollution) Act, 1981, and the Water (Prevention and Control of Pollution) Act, 1974

****Safety Compliance****

The bidder must ensure that the construction activities comply with safety regulations and standards, including:

- * Implementing a safety management system that meets the requirements of the International Organization for Standardization (ISO) 45001:2018
- * Providing personal protective equipment (PPE) to all workers, including helmets, safety glasses, gloves, and steel-toed boots
- * Ensuring that all workers are trained in first aid and emergency response procedures
- * Conducting regular safety audits and risk assessments to identify potential hazards
- * Complying with the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996

****Labour Compliance****

The bidder must ensure that the construction activities comply with labour regulations and standards, including:

- * Paying workers a minimum wage of ₹350 per day, as per the Minimum Wages Act, 1948
- * Providing workers with a safe and healthy working environment, including access to clean drinking water, sanitation facilities, and medical care
- * Ensuring that all workers are registered with the Employees' State Insurance Corporation (ESIC) and the Employees' Provident Fund Organization (EPFO)

* Complying with the Labour Laws, including the Industrial Disputes Act, 1947, and the Industrial Employment (Standing Orders) Act, 1946

****Quality Compliance****

The bidder must ensure that the construction activities comply with quality regulations and standards, including:

* Implementing a quality management system that meets the requirements of the International Organization for Standardization (ISO) 9001:2015

* Ensuring that all materials and equipment meet the required specifications and standards

* Conducting regular quality audits and tests to ensure compliance with the specifications and standards

* Complying with the Indian Roads Congress (IRC) standards and specifications for road construction

****Insurance and Liability****

The bidder must have the following insurance policies in place:

* Public liability insurance with a minimum coverage of ■5,000,000.0

* Workers' compensation insurance with a minimum coverage of ■2,000,000.0

* Professional indemnity insurance with a minimum coverage of ■1,000,000.0

* The bidder must also provide proof of liability insurance for any damage caused to third-party property or persons during the construction activities.

****Certifications and Accreditation****

The bidder must have the following certifications and accreditations:

* ISO 9001:2015 (Quality Management System)

* ISO 14001:2015 (Environmental Management System)

* ISO 45001:2018 (Occupational Health and Safety Management System)

* The bidder must also provide proof of accreditation from recognized bodies, such as the National Accreditation Board for Education and Training (NABET) or the International Accreditation Forum (IAF).

****Documentation and Record-Keeping****

The bidder must maintain accurate and detailed records of all construction activities, including:

* Daily progress reports

* Monthly progress reports

* Quality control records

- * Safety records
- * Environmental records
- * Labour records
- * The bidder must also provide regular updates and reports to the client, as required by the contract agreement.

By complying with these legal and compliance requirements, the bidder can ensure that the Road Construction Project is completed successfully, safely, and in accordance with all applicable laws, regulations, and industry standards.

Performance Metrics and SLAs

****Performance Metrics and SLAs****

The performance of the contractor will be evaluated based on the following key performance metrics and service level agreements (SLAs) to ensure the successful completion of the Road Construction Project. These metrics and SLAs are designed to measure the contractor's ability to deliver the project on time, within budget, and to the required quality standards.

****Key Performance Indicators (KPIs)****

The following KPIs will be used to evaluate the contractor's performance:

* ****Project Timeliness****: The contractor is expected to complete the project within the stipulated timeframe of 12 months. Any delays will be penalized as per the contract terms.

* ****Budget Adherence****: The contractor is expected to complete the project within the allocated budget of ₹10,000,000.0. Any cost overruns will be the responsibility of the contractor.

* ****Quality of Work****: The contractor is expected to maintain the highest standards of quality in the construction of the road, including asphalt paving, drainage systems, and signage. The quality of work will be evaluated based on industry standards, including the Indian Road Congress (IRC) and the Ministry of Road Transport and Highways (MoRTH) guidelines.

* ****Safety and Environmental Compliance****: The contractor is expected to adhere to all environmental and safety regulations, including the Environmental Protection Act, 1986, and the Occupational Safety, Health and Working Conditions Code, 2020.

* ****Community Satisfaction****: The contractor is expected to maintain good relationships with the local community and minimize disruptions to traffic and daily life.

****Service Level Agreements (SLAs)****

The following SLAs will be applicable to the contractor:

- * ****Response Time****: The contractor is expected to respond to any issues or concerns raised by the client within 24 hours.
- * ****Rectification Time****: The contractor is expected to rectify any defects or issues within 7 days of notification by the client.
- * ****Progress Meetings****: The contractor is expected to attend progress meetings with the client on a fortnightly basis to discuss project progress, issues, and concerns.
- * ****Reporting Requirements****: The contractor is expected to submit progress reports to the client on a monthly basis, including details of work completed, issues encountered, and plans for the next month.

****Performance Metrics****

The contractor's performance will be evaluated based on the following metrics:

- * ****Construction Progress****: The contractor is expected to complete a minimum of 2 kilometers of road construction per month.
- * ****Quality Control****: The contractor is expected to maintain a quality control rate of 95% or higher, as measured by the number of defects or issues identified during quality control checks.
- * ****Safety Record****: The contractor is expected to maintain a safety record of zero accidents or incidents resulting in injury or damage to property.
- * ****Environmental Compliance****: The contractor is expected to maintain an environmental compliance rate of 100%, as measured by the number of environmental incidents or breaches reported during the project.

****Penalties for Non-Performance****

Failure to meet the performance metrics and SLAs will result in penalties, including:

- * ****Liquidated Damages****: The contractor will be liable for liquidated damages of **■50,000** per day for any delays in completing the project.
- * ****Deductions****: The client reserves the right to deduct amounts from the contractor's payment for any defects or issues identified during the project.
- * ****Termination****: The client reserves the right to terminate the contract if the contractor fails to meet the performance metrics and SLAs, or if the contractor is found to be in breach of the contract terms.

By including these performance metrics and SLAs in the contract, the client aims to ensure that the contractor delivers the project on time, within budget, and to the

required quality standards, while also maintaining the highest standards of safety, environmental compliance, and community satisfaction.

Testing and Acceptance Criteria

****Testing and Acceptance Criteria****

The Testing and Acceptance Criteria section outlines the requirements and standards that the road construction project must meet to ensure compliance with the project scope, quality, and safety expectations. The bidder must demonstrate a thorough understanding of these criteria and provide evidence of their ability to meet them.

****Introduction to Testing and Acceptance Criteria****

The testing and acceptance criteria are designed to verify that the road construction project meets the required standards, specifications, and regulations. The criteria cover various aspects of the project, including asphalt paving, drainage systems, signage, and environmental and safety considerations. The bidder must ensure that their proposal addresses all the testing and acceptance criteria, and that their approach is aligned with industry best practices and relevant standards.

****Asphalt Paving Testing and Acceptance Criteria****

The asphalt paving testing and acceptance criteria are as follows:

- * Density: The asphalt pavement must meet the density requirements of at least 95% of the maximum theoretical density, as per the American Society for Testing and Materials (ASTM) D2041 standard.
- * Thickness: The asphalt pavement must meet the specified thickness requirements, with a tolerance of $\pm 5\%$ of the specified thickness.
- * Surface texture: The surface texture of the asphalt pavement must meet the requirements of the International Roughness Index (IRI) of less than 2.5 meters per kilometer.
- * Skid resistance: The asphalt pavement must meet the skid resistance requirements of at least 45 British Pendulum Number (BPN), as per the ASTM E303 standard.

****Drainage Systems Testing and Acceptance Criteria****

The drainage systems testing and acceptance criteria are as follows:

- * Flow rate: The drainage system must be able to handle a flow rate of at least 10 cubic meters per second, as per the design specifications.

* Water quality: The drainage system must ensure that the water quality meets the requirements of the National Sanitation Foundation (NSF) standards.

* Pipe material: The pipe material used for the drainage system must meet the requirements of the American Society for Testing and Materials (ASTM) D3034 standard.

****Signage Testing and Acceptance Criteria****

The signage testing and acceptance criteria are as follows:

* Visibility: The signage must be visible from a distance of at least 100 meters, as per the Manual on Uniform Traffic Control Devices (MUTCD) standards.

* Reflectivity: The signage must meet the reflectivity requirements of at least 250 candelas per lux per square meter, as per the ASTM D4956 standard.

* Durability: The signage must be able to withstand environmental conditions, including extreme temperatures, humidity, and UV radiation, as per the ASTM D3010 standard.

****Environmental and Safety Testing and Acceptance Criteria****

The environmental and safety testing and acceptance criteria are as follows:

* Noise pollution: The construction activities must not exceed the noise pollution limits of 85 decibels, as per the Occupational Safety and Health Administration (OSHA) standards.

* Air quality: The construction activities must not exceed the air quality limits of 100 micrograms per cubic meter, as per the Environmental Protection Agency (EPA) standards.

* Waste management: The construction activities must ensure proper waste management, including segregation, storage, and disposal, as per the EPA standards.

****Testing and Acceptance Procedures****

The testing and acceptance procedures will be conducted in accordance with the following steps:

1. Pre-testing inspection: A pre-testing inspection will be conducted to ensure that the road construction project meets the required standards and specifications.

2. Testing: The testing will be conducted in accordance with the testing and acceptance criteria outlined above.

3. Data analysis: The data collected during the testing will be analyzed to determine whether the road construction project meets the required standards and specifications.

4. Acceptance: The road construction project will be accepted if it meets the required standards and specifications, and if it passes the testing and acceptance criteria.

****Documentation and Reporting****

The bidder must provide detailed documentation and reporting, including:

- * Test plans and procedures
- * Test results and data analysis
- * Certification of compliance with relevant standards and regulations
- * Records of inspections and testing

The documentation and reporting must be submitted to the project manager within the specified timeframe, and must be in the format and template provided by the project manager. The bidder must ensure that all documentation and reporting is accurate, complete, and compliant with the testing and acceptance criteria.

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.