TENDER DOCUMENT

Road Construction Project

Tender ID:	TEN20250330134133
Issuing Authority:	Public Works Department (PWD), State Government
Tender Amount:	■100,000,000.00
Bid Start Date:	05-03-2025
Bid End Date:	10-05-2025

Executive Summary

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The proposed Road Construction Project aims to deliver a high-quality, 20-kilometer stretch of road that meets the highest standards of safety, sustainability, and efficiency. With a total project value of ■100,000,000.0, this initiative will not only enhance the region's infrastructure but also provide a significant economic boost to the local community. Our team is committed to providing a comprehensive and professional approach to this project, ensuring that all aspects of the construction process are carefully planned, executed, and monitored to guarantee a successful outcome.

Project Overview

The scope of the project includes the construction of a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. The road will be designed to accommodate a minimum of two lanes, with a total carriageway width of 7.5 meters and a shoulder width of 2.5 meters on either side. The project will also involve the construction of culverts, bridges, and other ancillary structures as required. Our team will ensure that all materials and equipment used in the project meet or exceed the relevant industry standards, including those specified by the Indian Roads Congress (IRC) and the Ministry of Road Transport and Highways (MoRTH).

Key Requirements and Deliverables

To ensure the successful completion of the project, our team will focus on the following key requirements and deliverables:

* Provide proof of experience in road construction, with a minimum of 5 years of experience in similar projects

* Deploy qualified labor, including engineers, technicians, and skilled workers, to ensure that all aspects of the project are properly managed and executed

* Utilize machinery and equipment that meet or exceed industry standards, including asphalt pavers, rollers, and cranes

* Adhere to environmental and safety standards, including those specified by the National Environmental Policy (NEP) and the Occupational Safety and Health (OSH) regulations

* Implement a comprehensive quality management system, including regular testing and inspection of materials and equipment

* Ensure that all aspects of the project are completed within the specified timeframe and budget, with a minimum of 95% completion rate within the first 12 months of the project

Methodology and Approach

Our team will employ a structured approach to the project, with a focus on the following key methodologies:

* Conduct a thorough site investigation and analysis to identify potential risks and opportunities

* Develop a comprehensive project plan, including a detailed schedule, budget, and resource allocation plan

* Implement a robust quality management system, including regular testing and inspection of materials and equipment

* Utilize advanced technologies, including GPS and GIS, to ensure accurate and efficient construction

* Foster a culture of safety and environmental responsibility, with regular training and awareness programs for all personnel involved in the project

Conclusion

In conclusion, our team is committed to delivering a high-quality Road Construction Project that meets the highest standards of safety, sustainability, and efficiency. With a focus on careful planning, rigorous execution, and comprehensive monitoring, we are confident that we can deliver a successful project that exceeds the expectations of all stakeholders. We look forward to the opportunity to work on this project and contribute to the development of the region's infrastructure.

Project Overview and Objectives

Project Overview and Objectives

The Road Construction Project aims to design and build a 20-kilometer stretch of road, enhancing the region's transportation infrastructure and promoting economic growth. The project's scope encompasses the construction of a high-quality asphalt paved road, complete with a functional drainage system and necessary signage to ensure safe and efficient travel. With a total project value of ■100,000,000.0, this initiative is expected to have a significant impact on the local community, improving connectivity and facilitating the movement of goods and services.

The project's primary objective is to deliver a durable and sustainable road network that meets the highest standards of quality, safety, and environmental responsibility. To achieve this, the successful bidder will be required to demonstrate extensive experience in road construction, a proven track record of delivering similar projects on time and within budget, and a commitment to

adhering to stringent environmental and safety standards. Key project objectives include:

* Constructing a 20-kilometer stretch of road with asphalt paving, meeting the Indian Roads Congress (IRC) standards for road design and construction

* Designing and installing a functional drainage system, capable of managing stormwater runoff and preventing waterlogging

* Installing necessary signage, including traffic signs, guide signs, and warning signs, in accordance with the Ministry of Road Transport and Highways (MoRTH) guidelines

* Ensuring compliance with environmental regulations, including the Environmental Impact Assessment (EIA) and the Water (Prevention and Control of Pollution) Act, 1974

* Maintaining a safe working environment, adhering to the Occupational Safety and Health (OSH) standards, and minimizing the risk of accidents and injuries to workers and the general public

The project's success will be measured against a range of key performance indicators (KPIs), including:

* Completion of the project within the stipulated timeframe of 24 months

* Achievement of a minimum road pavement quality index (PQI) of 80, as per the IRC standards

* Maintenance of a safe working environment, with a maximum of 0.5 accidents per 1,000 workers per month

* Compliance with environmental regulations, including a maximum of 10% deviation from the predicted environmental impact

* Achievement of a minimum customer satisfaction index (CSI) of 85, as measured through regular surveys and feedback sessions with local stakeholders

To ensure the project's objectives are met, the successful bidder will be required to provide proof of experience in road construction, qualified labor, and machinery for the job. The bidder must also demonstrate a commitment to adhering to environmental and safety standards, including the implementation of a comprehensive environmental management plan (EMP) and a safety management plan (SMP). By delivering a high-quality road network that meets the needs of the local community, this project is expected to have a lasting impact on the region's economic and social development.

Detailed Technical Specifications

Detailed Technical Specifications

The Road Construction Project requires the construction of a 20-kilometer stretch of road with asphalt paving, drainage systems, and necessary signage. The following technical specifications outline the requirements for the successful completion of the project.

Road Design and Geometry

The road shall be designed and constructed to meet the following specifications:

* The road shall have a carriageway width of 7.5 meters, with a 1.5-meter wide shoulder on either side.

* The road shall have a camber of 2.5% to ensure proper drainage.

* The road shall have a longitudinal gradient of not more than 4% and a crossfall of 2%.

* The road shall be designed to accommodate a speed of 80 km/h, with horizontal curves having a minimum radius of 400 meters.

* The vertical alignment shall be designed to provide a minimum stopping sight distance of 120 meters.

Asphalt Paving

The asphalt paving shall meet the following specifications:

* The asphalt pavement shall consist of a 50mm thick wearing course, a 70mm thick binder course, and a 150mm thick base course.

* The asphalt mix shall be designed to meet the requirements of the Marshall Mix Design method, with a minimum stability of 1000 kg and a flow of 2-4 mm.

* The asphalt pavement shall be laid in layers, with each layer compacted to a minimum density of 95% of the maximum dry density.

* The asphalt pavement shall be finished with a smooth surface, with a texture depth of not more than 0.5 mm.

Drainage Systems

The drainage system shall meet the following specifications:

* The drainage system shall include a combination of cross-drains, side drains, and culverts to ensure proper drainage of the road.

* The cross-drains shall be spaced at intervals of not more than 200 meters, with a minimum diameter of 600 mm.

* The side drains shall be constructed with a minimum slope of 1% and a minimum depth of 300 mm.

* The culverts shall be designed to carry a minimum discharge of 10 cubic meters per second, with a minimum diameter of 1200 mm.

Signage and Markings

The signage and markings shall meet the following specifications:

* The road shall be provided with standard traffic signs, including warning signs, guide signs, and regulatory signs.

* The signs shall be manufactured to meet the requirements of the Indian Roads Congress (IRC) and shall be installed at intervals of not more than 500 meters.

* The road shall be marked with standard road markings, including center line markings, edge line markings, and lane markings.

* The markings shall be applied using thermoplastic paint, with a minimum thickness of 1.5 mm.

Environmental and Safety Standards

The contractor shall ensure that the construction activities meet the following environmental and safety standards:

* The contractor shall obtain all necessary environmental clearances and permits before commencing construction activities.

* The contractor shall implement measures to minimize noise pollution, air pollution, and water pollution.

* The contractor shall ensure that all construction personnel wear personal protective equipment, including hard hats, safety glasses, and gloves.

* The contractor shall provide regular training to construction personnel on safety procedures and emergency response plans.

Quality Control and Testing

The contractor shall ensure that all materials and construction activities meet the following quality control and testing requirements:

* The contractor shall conduct regular tests on asphalt mix, aggregate, and cement to ensure compliance with specifications.

* The contractor shall conduct regular inspections of the road to ensure compliance with specifications.

* The contractor shall maintain a quality control laboratory on site, with necessary equipment and personnel to conduct tests and inspections.

* The contractor shall provide test reports and inspection records to the employer on a regular basis.

Machinery and Equipment

The contractor shall provide the following machinery and equipment to ensure successful completion of the project:

* Asphalt pavers with a minimum laying width of 4.5 meters.

* Roller compactors with a minimum weight of 10 tons.

* Excavators with a minimum bucket capacity of 1 cubic meter.

* Trucks with a minimum capacity of 10 tons.

* Generators with a minimum capacity of 50 kVA.

Labor and Personnel

The contractor shall provide the following labor and personnel to ensure successful completion of the project:

* A minimum of 50 skilled laborers, including asphalt pavers, roller operators, and excavator operators.

* A minimum of 20 semi-skilled laborers, including truck drivers and equipment operators.

* A minimum of 10 supervisors, including road engineers, quality control engineers, and safety officers.

* A minimum of 2 engineers, including a project manager and a quality control manager.

By meeting these detailed technical specifications, the contractor shall ensure that the Road Construction Project is completed to the required standards, with a focus on quality, safety, and environmental sustainability.

Implementation Methodology

Implementation Methodology

The successful implementation of the Road Construction Project requires a well-planned and structured approach. Our methodology is designed to ensure that the project is completed on time, within budget, and to the required quality standards. The following sections outline our approach to implementing the project.

Project Planning and Management

Our project planning and management process will commence with a thorough review of the project scope, requirements, and specifications. We will develop a detailed project schedule, including milestones, timelines, and resource allocation plans. The project schedule will be created using the Critical Path Method (CPM) and will be regularly updated to reflect any changes or deviations from the original

plan. Our project management team will be responsible for coordinating and overseeing all aspects of the project, including:

* Developing and managing the project schedule and budget

* Coordinating with stakeholders, including the client, contractors, and suppliers

* Identifying and mitigating potential risks and issues

* Ensuring compliance with environmental and safety standards

Site Preparation and Clearance

Prior to commencing construction activities, we will conduct a thorough site survey to identify any potential hazards or obstacles. The site will be cleared of any debris, vegetation, or other obstacles, and any necessary excavation or grading work will be undertaken to prepare the site for construction. This will include:

* Conducting a site survey to identify potential hazards or obstacles

* Clearing the site of debris, vegetation, or other obstacles

* Undertaking excavation or grading work as required

* Installing temporary drainage systems to prevent erosion or water damage

Construction of Road Pavement

The construction of the road pavement will be undertaken in accordance with the relevant industry standards and specifications. We will use a combination of asphalt paving and aggregate base course to provide a durable and long-lasting road surface. The pavement will be designed to withstand the expected traffic loads and will be constructed in accordance with the following specifications:

* Asphalt paving: 50mm thick, laid in two layers, with a minimum binder content of 4.5%

* Aggregate base course: 150mm thick, composed of crushed aggregate, with a minimum CBR value of 80%

* Pavement design: designed to withstand a minimum axle load of 8.2 tons, with a minimum pavement life of 20 years

Drainage Systems

The drainage systems will be designed and constructed to ensure that the road surface remains safe and free from water damage. The drainage system will include:

* Culverts: designed to withstand a minimum flow rate of 10 cubic meters per second

* Drainage pipes: laid at a minimum gradient of 1:100, with a minimum diameter of 300mm

* Catch pits: installed at regular intervals, with a minimum capacity of 1 cubic meter

Signage and Road Markings

The signage and road markings will be designed and installed in accordance with the relevant industry standards and specifications. The signage will include:

* Warning signs: installed at regular intervals, with a minimum size of 600mm x 450mm

* Directional signs: installed at intersections and junctions, with a minimum size of 900mm x 600mm

* Road markings: applied using thermoplastic materials, with a minimum thickness of 1.5mm

Quality Control and Assurance

We will implement a comprehensive quality control and assurance program to ensure that the project is constructed to the required standards. The program will include:

* Regular inspections and testing of materials and workmanship

* Implementation of a defect reporting and rectification system

* Maintenance of accurate and detailed records of all construction activities

* Compliance with relevant industry standards and specifications, including:

+ Indian Roads Congress (IRC) standards

+ Ministry of Road Transport and Highways (MoRTH) specifications

+ International Organization for Standardization (ISO) standards

Environmental and Safety Management

We are committed to minimizing the environmental impact of the project and ensuring the safety of all personnel involved. Our environmental and safety management plan will include:

* Implementation of a waste management plan, including recycling and disposal of waste materials

* Installation of erosion and sedimentation control measures

* Implementation of a safety management system, including:

+ Regular safety training and induction programs for personnel

+ Implementation of a hazard reporting and risk assessment system

+ Maintenance of accurate and detailed records of all safety incidents and near-misses

* Compliance with relevant environmental and safety regulations, including:

+ Environmental Protection Act, 1986

+ Occupational Safety, Health and Working Conditions Code, 2020

Metrics and Performance Indicators

We will track and measure the following metrics and performance indicators to ensure that the project is constructed to the required standards:

* Project schedule performance index (SPI): minimum 0.9

* Project cost performance index (CPI): minimum 0.9

* Defect rate: maximum 5%

* Safety incident rate: maximum 0.5 per 1000 man-hours

* Environmental incident rate: maximum 0.1 per 1000 man-hours

By implementing this comprehensive implementation methodology, we are confident that the Road Construction Project will be completed on time, within budget, and to the required quality standards.

Quality Control and Standards

Quality Control and Standards

The Quality Control and Standards section outlines the requirements and expectations for ensuring the highest quality of workmanship, materials, and overall project delivery for the Road Construction Project. The successful bidder must demonstrate a commitment to maintaining stringent quality control measures, adhering to industry standards, and meeting the specified requirements.

Quality Management System

The bidder must implement a Quality Management System (QMS) that is certified to ISO 9001:2015 or equivalent. The QMS must cover all aspects of the project, including design, procurement, construction, testing, and commissioning. The bidder must provide documentation of their QMS, including quality policies, procedures, and records of quality audits and reviews. The QMS must ensure that all work is carried out in accordance with the contract specifications, industry standards, and relevant regulations.

Quality Control Measures

The bidder must implement the following quality control measures:

* Conduct regular inspections and testing of materials and workmanship to ensure compliance with contract specifications and industry standards

* Maintain accurate and detailed records of all quality control activities, including inspection reports, test results, and corrective actions

* Establish a non-conformance reporting and corrective action system to address any defects or deficiencies in the work

* Ensure that all personnel involved in the project are trained and competent in their respective roles and responsibilities

* Implement a system for controlling and tracking changes to the project, including design changes, material substitutions, and construction methodology

Industry Standards and Codes

The bidder must comply with the following industry standards and codes:

* Indian Roads Congress (IRC) standards for road design and construction

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

* Bureau of Indian Standards (BIS) codes for materials and testing

* National Building Code of India (NBC) for construction and safety

* Environmental Protection Act, 1986, and relevant state pollution control board regulations for environmental protection

Environmental and Safety Standards

The bidder must demonstrate a commitment to environmental and safety standards, including:

* Implementing measures to minimize the impact of construction activities on the environment, such as dust suppression, noise reduction, and waste management

* Ensuring compliance with all relevant environmental regulations and laws

* Maintaining a safe working environment, including provision of personal protective equipment, training, and regular safety audits

* Implementing a system for reporting and investigating accidents and near-misses

* Ensuring that all personnel involved in the project are trained in environmental and safety procedures

Material Specifications and Testing

The bidder must ensure that all materials used in the project meet the specified requirements and industry standards. The bidder must provide documentation of material specifications, including:

* Aggregate and asphalt concrete specifications

* Cement and concrete specifications

* Steel and reinforcement specifications

* Testing and inspection procedures for materials and workmanship

* Frequency and methodology for testing and inspection, including sampling rates and testing protocols

Inspection and Testing Frequencies

The bidder must conduct regular inspections and testing to ensure compliance with contract specifications and industry standards. The minimum inspection and testing frequencies are as follows:

* Daily inspections of work in progress, including concrete pouring, asphalt laying, and drainage system installation

* Weekly testing of materials, including aggregate, asphalt, and concrete

* Monthly inspections of completed work, including drainage systems, signage, and road markings

* Quarterly audits of quality control records and procedures

Defects Liability Period

The bidder must provide a defects liability period of 24 months from the date of completion of the project. During this period, the bidder must rectify any defects or deficiencies in the work, including repairs, replacements, and reinstatement of affected areas.

Quality Assurance Plan

The bidder must submit a Quality Assurance Plan (QAP) as part of their tender. The QAP must outline the bidder's approach to quality control, including:

* Organizational structure and personnel responsibilities

* Quality control procedures and protocols

* Inspection and testing frequencies and methodologies

* Defects reporting and corrective action system

* Continuous improvement and monitoring procedures

The QAP must demonstrate the bidder's commitment to delivering a high-quality project that meets the specified requirements and industry standards. The bidder must provide evidence of their ability to implement and maintain a robust quality management system, including certification to ISO 9001:2015 or equivalent.

Risk Management Framework

Risk Management Framework

The Risk Management Framework is a critical component of our approach to delivering the Road Construction Project. As a responsible and experienced contractor, we recognize the importance of identifying, assessing, and mitigating risks to ensure the successful completion of the project. Our Risk Management Framework is designed to provide a structured approach to managing risks, ensuring that we can deliver the project on time, within budget, and to the required quality standards.

Risk Identification

We have conducted a comprehensive risk assessment to identify potential risks that may impact the project. These risks include, but are not limited to:

* **Environmental risks**: damage to surrounding ecosystems, pollution, and non-compliance with environmental regulations

* **Safety risks**: accidents, injuries, and fatalities to workers, pedestrians, and motorists

* **Construction risks**: delays, cost overruns, and defects in workmanship or materials

* **Logistical risks**: supply chain disruptions, transportation issues, and equipment failures

* **Financial risks**: cost overruns, payment delays, and changes to funding arrangements

* **Regulatory risks**: non-compliance with laws, regulations, and industry standards

Risk Assessment and Prioritization

We will assess each identified risk using a combination of qualitative and quantitative methods, including:

* **Probability**: the likelihood of the risk occurring, scored on a scale of 1-5 (low to high)

* **Impact**: the potential impact of the risk on the project, scored on a scale of 1-5 (low to high)

* **Risk score**: the product of the probability and impact scores, used to prioritize risks

We will prioritize risks based on their risk score, with high-scoring risks receiving the most attention and resources.

Risk Mitigation and Control

We will develop and implement risk mitigation and control strategies to minimize the likelihood and impact of each identified risk. These strategies will include:

* **Environmental management plans**: to minimize the project's environmental footprint and ensure compliance with regulations

* **Safety management plans**: to ensure a safe working environment and prevent accidents

* **Quality control procedures**: to ensure that work is completed to the required standards

* **Supply chain management**: to ensure timely and reliable delivery of materials and equipment

* **Financial management**: to monitor and control costs, and manage payment arrangements

* **Regulatory compliance**: to ensure that all laws, regulations, and industry standards are met

Metrics and Key Performance Indicators (KPIs)

We will track and measure the following metrics and KPIs to monitor the effectiveness of our risk management framework:

* **Risk register**: a comprehensive record of all identified risks, their risk scores, and mitigation strategies

* **Safety incident rate**: the number of safety incidents per 100,000 man-hours worked

* **Environmental incident rate**: the number of environmental incidents per 100,000 man-hours worked

* **Quality control metrics**: the number of defects, rework, and corrective actions required

* **Schedule performance index (SPI)**: a measure of the project's progress against the planned schedule

* **Cost performance index (CPI)**: a measure of the project's expenses against the planned budget

Industry Standards and Best Practices

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 - Requirements with Guidance for Use

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

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

We will also comply with all relevant laws, regulations, and industry standards applicable to the project.

Review and Revision

Our risk management framework will be reviewed and revised regularly to ensure that it remains effective and relevant to the project. We will conduct regular risk assessments, review metrics and KPIs, and update our risk management plans as necessary to ensure that we can deliver the project successfully and with minimal risk.

Financial Terms and Conditions

Financial Terms and Conditions

The Financial Terms and Conditions outlined in this section are an integral part of the tender document for the Road Construction Project, with a total value of ■100,000,000.0. The successful bidder is expected to comply with these terms and conditions, ensuring timely and efficient completion of the project.

Payment Terms

The payment terms for this project will be as follows:

* The contractor will be paid in installments, based on the completion of specific milestones, as outlined in the project schedule.

* The payment schedule will be divided into five installments, with the following payment percentages:

+ 20% of the total contract value upon completion of 20% of the project scope (i.e., 4 kilometers of road construction).

+ 30% of the total contract value upon completion of 50% of the project scope (i.e., 10 kilometers of road construction).

+ 20% of the total contract value upon completion of 80% of the project scope (i.e., 16 kilometers of road construction).

+ 15% of the total contract value upon completion of 90% of the project scope (i.e., 18 kilometers of road construction).

+ 15% of the total contract value upon completion of the entire project scope, including all necessary testing and certification.

* Payment will be made within 30 days of receipt of a valid invoice from the contractor, provided that all work has been completed to the satisfaction of the project manager.

Taxes and Duties

The contractor is responsible for paying all applicable taxes and duties, including but not limited to:

* Goods and Services Tax (GST) at the prevailing rate.

* Income Tax, as per the Income Tax Act.

* Any other taxes or duties that may be applicable to the project.

The contractor must provide the necessary tax identification documents and comply with all tax laws and regulations.

Price Variation

The contract price is fixed, and the contractor is not entitled to claim any price variation, except in the following circumstances:

* Changes to the project scope, as approved by the project manager.

* Increases in the cost of materials, labor, or equipment, due to unforeseen circumstances, such as natural disasters or changes in government policies.

* Any other variations, as specified in the contract agreement.

The contractor must provide written notice of any price variation claims, along with supporting documentation, within 14 days of the event giving rise to the claim.

Performance Security

The successful bidder will be required to provide a performance security, in the form of a bank guarantee, for an amount equal to 10% of the total contract value. The performance security will be released upon completion of the project, provided that all work has been completed to the satisfaction of the project manager.

Liquidated Damages

In the event of delays or non-compliance with the contract terms, the contractor will be liable for liquidated damages, as follows:

* ■50,000 per day, for every day of delay beyond the scheduled completion date.

* ■100,000, for every instance of non-compliance with environmental or safety standards.

The liquidated damages will be deducted from the payment due to the contractor, and the contractor will not be entitled to claim any additional compensation.

Dispute Resolution

Any disputes or disagreements arising out of or in connection with the contract will be resolved through arbitration, in accordance with the Arbitration and Conciliation Act. The arbitration will be conducted by a single arbitrator, appointed by mutual agreement between the parties, and the decision of the arbitrator will be final and binding.

Insurance

The contractor is required to maintain adequate insurance coverage, including but not limited to:

* Public Liability Insurance, with a minimum coverage of ■50,000,000.

* Employee Compensation Insurance, with a minimum coverage of ■10,000,000.

* Equipment Insurance, with a minimum coverage of ■20,000,000.

The contractor must provide proof of insurance coverage, along with the policy documents, within 14 days of the contract award.

Audit and Compliance

The contractor must maintain accurate and complete records of all financial transactions related to the project, and must comply with all applicable laws and regulations. The project manager or authorized representatives may conduct audits and inspections, as necessary, to ensure compliance with the contract terms and conditions.

Legal and Compliance Requirements

Legal and Compliance Requirements

The Road Construction Project, valued at ■100,000,000.0, is subject to various legal and compliance requirements that bidders must adhere to. The successful bidder will be required to demonstrate compliance with all applicable laws, regulations, and industry standards to ensure the project is completed safely, efficiently, and with minimal environmental impact.

Statutory Requirements

The bidder must comply with all relevant statutes, including but not limited to:

* The Indian Contract Act, 1872

* The Arbitration and Conciliation Act, 1996

* The Environment (Protection) Act, 1986

* The Factories Act, 1948

* The Minimum Wages Act, 1948

* The Employees' State Insurance Act, 1948

* The Employees' Provident Funds and Miscellaneous Provisions Act, 1952

The bidder must provide evidence of compliance with these statutes, including any necessary licenses, permits, or certifications.

Environmental Compliance

The bidder must demonstrate adherence to environmental standards and regulations, including:

* Compliance with the Environmental Impact Assessment (EIA) notification, 2006

* Obtaining necessary environmental clearances from the relevant authorities

* Implementing measures to minimize waste generation, air and water pollution, and noise pollution

* Ensuring compliance with the Noise Pollution (Regulation and Control) Rules, 2000

* Implementing a waste management plan that includes recycling, reuse, and disposal of waste in accordance with the Solid Waste Management Rules, 2016

The bidder must provide a detailed environmental management plan, including metrics for measuring environmental performance, such as:

* Reduction in greenhouse gas emissions

* Water conservation measures

* Waste reduction and recycling targets

Safety and Health Requirements

The bidder must demonstrate a commitment to safety and health, including:

* Compliance with the Occupational Safety, Health and Working Conditions Code, 2020

* Implementing a safety management system that includes risk assessment, hazard identification, and control measures

* Providing personal protective equipment (PPE) to all workers

* Ensuring compliance with the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996

The bidder must provide a detailed safety and health plan, including metrics for measuring safety performance, such as:

* Accident frequency rate

* Lost time injury frequency rate

* Near miss reporting and analysis

Labor Requirements

The bidder must demonstrate compliance with labor laws and regulations, including:

* Compliance with the Minimum Wages Act, 1948

* Ensuring equal pay for equal work

* Providing fair labor practices, including non-discrimination and non-exploitation of workers

* Ensuring compliance with the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979

The bidder must provide evidence of compliance with these regulations, including:

* Labor contracts and agreements

* Payroll records

* Employee benefits and welfare programs

Quality and Technical Requirements

The bidder must demonstrate compliance with quality and technical standards, including:

* Compliance with the Indian Roads Congress (IRC) standards for road construction

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

* Implementing a quality management system that includes testing, inspection, and certification

* Ensuring compliance with the National Highways Authority of India (NHAI) guidelines for road construction

The bidder must provide a detailed quality and technical plan, including metrics for measuring quality performance, such as:

* Defect rate

* Material wastage rate

* Compliance with specifications and standards

Certifications and Accreditations

The bidder must provide evidence of relevant certifications and accreditations, including:

* ISO 9001:2015 (Quality Management System)

* ISO 14001:2015 (Environmental Management System)

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

* Other relevant industry certifications and accreditations

The bidder must provide documentation of these certifications and accreditations, including certificates, audit reports, and surveillance audit reports.

Compliance with Tender Conditions

The bidder must comply with all the conditions specified in the tender document, including:

* Submission of all required documents and information

* Payment of the tender fee

* Compliance with the tender schedule and timelines

* Acceptance of the terms and conditions of the contract

The bidder must provide a declaration of compliance with all the tender conditions, including a statement of acceptance of the terms and conditions of the contract.

Performance Metrics and SLAs

Performance Metrics and SLAs

The successful bidder will be required to meet specific performance metrics and service level agreements (SLAs) to ensure the timely and quality completion of the Road Construction Project. The following metrics and SLAs will be used to measure the contractor's performance:

The primary performance metrics for this project will include:

* **Project Timelines**: The contractor is expected to complete the project within the stipulated timeframe of 24 months from the date of commencement.

* **Quality of Work**: The contractor must ensure that the road construction meets the required standards, including asphalt paving, drainage systems, and signage, as per the Indian Road Congress (IRC) guidelines and specifications.

* **Safety Performance**: The contractor must maintain a safe working environment, with a minimum safety rating of 90% as per the Occupational Health and Safety Assessment Series (OHSAS) 18001:2007 standards.

* **Environmental Compliance**: The contractor must adhere to environmental regulations and guidelines, including those related to noise pollution, air quality, and waste management, as per the Environment (Protection) Act, 1986.

Service Level Agreements (SLAs)

The following SLAs will be applicable to this project:

* **Response Time**: The contractor must respond to any project-related issues or concerns within 2 hours of notification.

* **Rectification Time**: The contractor must rectify any defects or issues within 7 days of notification.

* **Progress Reporting**: The contractor must submit progress reports on a weekly basis, detailing the work completed, and any issues or concerns.

* **Meetings and Coordination**: The contractor must attend project meetings and coordinate with stakeholders, including the project manager, engineers, and other contractors, as required.

Key Performance Indicators (KPIs)

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

* **Project Schedule Performance Index (SPI)**: The contractor must maintain an SPI of 0.9 or higher, indicating that the project is on track to meet the scheduled completion date.

* **Project Cost Performance Index (CPI)**: The contractor must maintain a CPI of 0.9 or higher, indicating that the project is within budget.

* **Quality Rating**: The contractor must maintain a quality rating of 90% or higher, based on inspections and tests conducted by the project manager.

* **Safety Incident Rate**: The contractor must maintain a safety incident rate of less than 0.5 per 1000 man-hours worked.

Consequences of Non-Compliance

Failure to meet the specified performance metrics and SLAs may result in consequences, including:

* **Liquidated Damages**: The contractor may be liable for liquidated damages of up to 10% of the contract value for failure to complete the project within the stipulated timeframe.

* **Contract Termination**: The contract may be terminated if the contractor fails to meet the required performance metrics and SLAs, and the project is not completed to the required standards.

* **Reputation Damage**: The contractor's reputation may be damaged if they fail to meet the required performance metrics and SLAs, which may impact their ability to secure future contracts.

Monitoring and Review

The project manager will monitor and review the contractor's performance on a regular basis, using the specified performance metrics and SLAs. The contractor will be required to submit regular progress reports, and attend project meetings to

discuss any issues or concerns. Any issues or concerns will be addressed promptly, and corrective action will be taken to ensure that the project is completed to the required standards.

Testing and Acceptance Criteria

Testing and Acceptance Criteria

The Testing and Acceptance Criteria section outlines the requirements and standards that the contractor must meet to ensure the successful completion of the Road Construction Project. The criteria are divided into several categories, including construction materials, road pavement, drainage systems, signage, and environmental and safety standards.

Construction Materials Testing

The contractor shall conduct regular testing of construction materials, including asphalt, aggregates, and cement, to ensure compliance with the specified requirements. The testing shall be carried out in accordance with the relevant Indian Standards, such as IS 73:2013 for asphalt, IS 2386:1963 for aggregates, and IS 12269:2013 for cement. The test results shall be submitted to the employer for review and approval. The following tests shall be conducted:

* Marshall Stability Test for asphalt mix design

* Los Angeles Abrasion Test for aggregate durability

* Compressive Strength Test for cement concrete

Road Pavement Testing

The road pavement shall be tested for its thickness, density, and surface evenness. The testing shall be carried out using the following methods:

* Nuclear Density Gauge for measuring pavement density

* Straight Edge and Spirit Level for measuring surface evenness

* Core drilling for measuring pavement thickness

The pavement shall meet the following requirements:

* Pavement thickness: 50 mm +/- 5 mm

* Pavement density: 95% +/- 2% of the maximum theoretical density

* Surface evenness: 3 mm +/- 1 mm over a 3-meter length

Drainage Systems Testing

The drainage systems, including culverts, bridges, and side drains, shall be tested for their functionality and hydraulic capacity. The testing shall be carried out using

the following methods:

* Water flow measurement for hydraulic capacity

* Visual inspection for structural integrity

* CCTV survey for internal condition assessment

The drainage systems shall meet the following requirements:

* Hydraulic capacity: 100% of the designed flow rate

* Structural integrity: no signs of cracking, settlement, or erosion

* Internal condition: no blockages, sedimentation, or corrosion

Signage Testing

The signage, including road signs, markings, and traffic signals, shall be tested for their visibility, legibility, and compliance with the relevant standards. The testing shall be carried out using the following methods:

* Visual inspection for sign face visibility and legibility

* Reflectivity measurement for sign face reflectivity

* Verification of sign placement and orientation

The signage shall meet the following requirements:

* Sign face visibility: 100% of the sign face shall be visible from a distance of 100 meters

* Sign face legibility: 100% of the sign text shall be legible from a distance of 50 meters

* Sign placement and orientation: 100% compliance with the relevant standards

Environmental and Safety Standards

The contractor shall comply with all relevant environmental and safety standards, including the Environmental Impact Assessment (EIA) notification, 2006, and the Occupational Safety and Health (OSH) regulations. The contractor shall implement the following measures:

* Environmental management plan for minimizing environmental impacts

* Safety management plan for ensuring worker safety and health

* Waste management plan for disposing of waste materials

* Regular monitoring and reporting of environmental and safety performance

Acceptance Criteria

The acceptance criteria for the Road Construction Project shall be based on the following:

* Compliance with the specified requirements and standards

* Test results and inspection reports

* Verification of as-built drawings and documentation

* Certification from the relevant authorities and regulatory bodies

The employer reserves the right to conduct independent testing and inspection to verify the contractor's compliance with the acceptance criteria. The contractor shall rectify any defects or non-compliances identified during the testing and inspection process.

Documentation and Record-Keeping

The contractor shall maintain accurate and detailed records of all testing and inspection activities, including test results, inspection reports, and certification documents. The records shall be submitted to the employer for review and approval. The contractor shall also maintain as-built drawings and documentation, including records of materials used, construction methods, and testing procedures. The documentation shall be kept for a minimum period of 5 years after project completion.

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.