



**GOVERNMENT OF ODISHA
WORKS DEPARTMENT**

Contract for Consultants' Services

For

***Construction Supervision of 1st Year Roads (Balance Works) of
Odisha State Roads Project***

between

**Chief Engineer, World Bank Projects, Odisha
on behalf of
Works Department, Government of Odisha**

and

**MSV International, Inc. USA
in Joint venture with
UPHAM INTERNATIONAL CORPORATION**

***Project Management Unit, Odisha State Roads Project
Office of the Engineer-in-Chief (Civil), Odisha,
Nirman Soudha, Keshari Nagar, Unit - V, Bhubaneswar - 751 001***

Dated: 12th MARCH , 2012





Chief Engineer,
World Bank Projects, Odisha

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I. Form of Contract

TIME-BASED

This CONTRACT (hereinafter called the "Contract") is made the 12th day of the month of March, 2012, between, on the one hand, *Chief Engineer, World Bank Projects, Odisha on behalf of Works Department, Government of Odisha* (hereinafter called the "Client") and, on the other hand, a joint venture/consortium/association consisting of the following entities, each of which will be jointly and severally liable to the Client for all the Consultant's obligations under this Contract, namely, *MSV International Inc., USA, 11101, NE 60th Street, Kirkland, Washington – 980337528, Regional office: D-7, South City – I, Gurgaon, Haryana – 122002 and UPHAM International Corporation, 103-104, CS-I, GYAN KHAND – II, INDIRAPURAM, GHAZIABAD (UP), INIDA* (hereinafter called the "Consultant").



[Signature]
CONSULTANT
12/13/2012

[Signature]
Chief Engineer,
World Bank Projects, Odisha

WHEREAS

- (a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");
- (b) the Consultant, having represented to the Client that he has the required professional skills, and personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;
- (c) the Client has received a loan from the International Bank for Reconstruction and Development (hereinafter called the "Bank") towards the cost of the Services and intends to apply a portion of the proceeds of this loan to eligible payments under this Contract, it being understood (i) that payments by the Bank will be made only at the request of the Client and upon approval by the Bank, (ii) that such payments will be subject, in all respects, to the terms and conditions of the agreement providing for the loan, and (iii) that no party other than the Client shall derive any rights from the agreement providing for the loan or have any claim to the loan proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

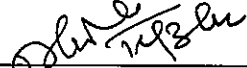
1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
 - (a) The General Conditions of Contract;
 - (b) The Special Conditions of Contract;
 - (c) The following Appendices:
 - Appendix A: Description of Services
 - Appendix B: Reporting Requirements
 - Appendix C: Personnel and Sub-Consultants – Hours of Work for Key Personnel
 - Appendix D: Cost Estimates in Foreign Currency ... Not Used
 - Appendix E: Cost Estimates in Local Currency
 - Appendix F: Duties of the Client
 - Appendix G: Form of Advance Payments Guarantee
2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
 - (a) the Consultants shall carry out the Services in accordance with the provisions of the Contract; and
 - (b) the Client shall make payments to the Consultant accordance with the provisions of the Contract.




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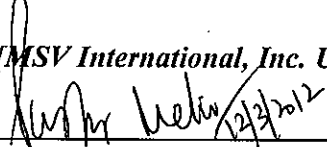
IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of
[Chief Engineer, World Bank Projects, Odisha on behalf of Works Department,
Government of Odisha]



[Er. Nalini Kanta Pradhan]

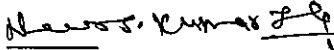
For and on behalf of each of the Members of the Consultant

[MSV International, Inc. USA]
 12/3/12

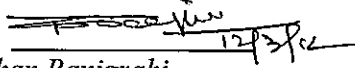
[Authorized Representative]

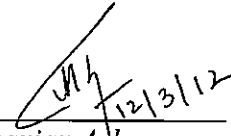


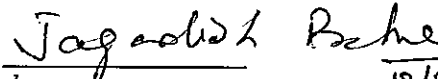
UPHAM International Inc.




[Authorized Representative] 12/3/12

Witness : 
Er. Fakir Mohan Panigrahi
Executive Engineer, PMU

Witness : 
Mr. Manabhanjan Acharya.
Financial Advisor, PMU

Witness : 
Mr. Jagdish Behera 12/3/12
Sr. Social -cum- Environmental Expert, MSV International




Chief Engineer,
World Bank Projects, Odisha

II. General Conditions of Contract

1. GENERAL PROVISIONS

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- (a) "Applicable Law" means the laws and any other instruments having the force of law in the Government's country, or in such other country as may be specified in the Special Conditions of Contract (SC), as they may be issued and in force from time to time.
- (b) "Bank" means the International Bank for Reconstruction and Development, Washington, D.C., U.S.A., or the International Development Association, Washington, D.C., U.S.A.
- (c) "Consultant" means any private or public entity that will provide the Services to the Client under the Contract.
- (d) "Contract" means the Contract signed by the Parties and all the attached documents listed in its Clause 1, that is these General Conditions (GC), the Special Conditions (SC), and the Appendices.
- (e) "Day" means calendar day.
- (f) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 2.1.
- (g) "Foreign Currency" means any currency other than the currency of the Client's country.
- (h) "GC" means these General Conditions of Contract.
- (i) "Government" means the Government of the Client's country.
- (j) "Local Currency" means the currency of the Client's country.
- (k) "Member" means any of the entities that make up the joint venture/consortium/association; and "Members" means all these entities.
- (l) "Party" means the Client or the Consultant, as the case may be, and "Parties" means both of them.
- (m) "Personnel" means professionals and support staff provided by the Consultants or by any Sub-Consultants and assigned to perform the Services or any part thereof; "Foreign Personnel" means such professionals and support staff who at the time of being so provided had their domicile outside the Government's country; "Local Personnel" means such professionals and




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support staff who at the time of being so provided had their domicile inside the Government's country; and "Key Personnel" means the Personnel referred to in Clause GC 4.2(a).

- (n) "Reimbursable expenses" means all assignment-related costs other than Consultant's remuneration.
- (o) "SC" means the Special Conditions of Contract by which the GC may be amended or supplemented.
- (p) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.
- (q) "Sub-Consultants" means any person or entity to whom/which the Consultant subcontracts any part of the Services.
- (r) "Third Party" means any person or entity other than the Government, the Client, the Consultant or a Sub-Consultant.
- (s) "In writing" means communicated in written form with proof of receipt.

1.2 Relationship Between the Parties

Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of Personnel and Sub-Consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3 Law Governing Contract

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

1.4 Language

This Contract has been executed in the language specified in the SC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.5 Headings

The headings shall not limit, alter or affect the meaning of this Contract.

1.6 Notices

1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the SC.

1.6.2 A Party may change its address for notice hereunder by giving the other Party notice in writing of such change to the address specified in the SC.



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- 1.7 Location** The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
- 1.8 Authority of Member in Charge** In case the Consultant consists of a joint venture/consortium/association of more than one entity, the Members hereby authorize the entity specified in the SC to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
- 1.9 Authorized Representatives** Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the SC.
- 1.10 Taxes and Duties** The Consultant, Sub-Consultants and Personnel shall pay such indirect taxes, duties, fees and other impositions levied under the Applicable Law as specified in the SC.
- 1.11 Fraud and Corruption** If the Client determines that the Consultant and/or its Personnel, sub-contractors, sub-consultants, services providers and suppliers has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving 14 days notice to the Consultant, terminate the Consultant's employment under the Contract, and the provisions of Clause 2 shall apply as if such expulsion had been made under Sub-Clause 2.9.1(d).
- Should any Personnel of the Consultant be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Contract, then that Personnel shall be removed in accordance with Sub-Clause 4.5.
- 1.11.1 Definitions** For the purposes of this Sub-Clause, the terms set-forth below are defined as follows:
- (i) "corrupt practice"¹ is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - (ii) "fraudulent practice"² is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

¹ "Another party" refers to a public official acting in relation to the selection process or contract execution. In this context, "public official" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

² A "party" refers to a public official; the terms "benefit" and "obligation" relate to the selection process or contract execution; and the "act or omission" is intended to influence the selection process or contract execution.




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- (iii) "collusive practice"³ is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "coercive practice"⁴ is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Clause 3.6.

1.11.2 Commissions and Fees

The Client will require the successful Consultants to disclose any commissions or fees that may have been paid or are to be paid to agents, representatives, or commission agents with respect to the selection process or execution of the contract. The information disclosed must include at least the name and address of the agent, representative, or commission agent, the amount and currency, and the purpose of the commission or fee.

2. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

- 2.1 **Effectiveness of Contract** This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.
- 2.2 **Termination of Contract for Failure to Become Effective** If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the SC, either Party may, by not less than twenty one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.

³ "Parties" refers to participants in the selection process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

⁴ "Party" refers to a participant in the selection process or contract execution.



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- 2.3 Commencement of Services** The Consultant shall begin carrying out the Services not later than the number of days after the Effective Date specified in the SC.
- 2.4 Expiration of Contract** Unless terminated earlier pursuant to Clause GC 2.9 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SC.
- 2.5 Entire Agreement** This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
- 2.6 Modifications or Variations**
- (a) Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 7.2 here of, however, each Party shall give due consideration to any proposals for modification or variation made by the other Party.
- (b) In cases of substantial modifications or variations, the prior written consent of the Bank is required.
- 2.7 Force Majeure**
- 2.7.1 Definition**
- (a) For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.
- (b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Sub-Consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected both to take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.
- (c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.




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2.7.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

2.7.3 Measures to be Taken

- (a) A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.
- (b) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.
- (c) Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.
- (d) During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:
 - (i) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Client, in reactivating the Services; or
 - (ii) continue with the Services to the extent possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.
- (e) In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clause GC 8.

2.8 Suspension

The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.




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2.9 Termination

2.9.1 By the Client

The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause GC 2.9.1. In such an occurrence the Client shall give a not less than thirty (30) days' written notice of termination to the Consultants, and sixty (60) days' in case of the event referred to in (g).

- (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GC 2.8 hereinabove, within thirty (30) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing.
- (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary.
- (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 8 hereof.
- (d) If the Consultant, in the judgment of the Client, has engaged in corrupt or fraudulent practices in competing for or in executing this Contract.
- (e) If the Consultant submits to the Client a false statement which has a material effect on the rights, obligations or interests of the Client.
- (f) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- (g) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

2.9.2 By the Consultant

The Consultant may terminate this Contract, by not less than thirty (30) days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause GC 2.9.2.

- (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GC 8 hereof within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue.




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- (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
- (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8 hereof.
- (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

2.9.3 Cessation of Rights and Obligations

Upon termination of this Contract pursuant to Clauses GC 2.2 or GC 2.9 hereof, or upon expiration of this Contract pursuant to Clause GC 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GC 3.3 hereof, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 3.6 hereof, and (iv) any right which a Party may have under the Applicable Law.

2.9.4 Cessation of Services

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GC 3.9 or GC 3.10 hereof.

2.9.5 Payment upon Termination

Upon termination of this Contract pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Client shall make the following payments to the Consultant:

- (a) remuneration pursuant to Clause GC 6 hereof for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures pursuant to Clause GC 6 hereof for expenditures actually incurred prior to the effective date of termination; and
- (b) except in the case of termination pursuant to paragraphs (a) through (e) of Clause GC 2.9.1 hereof, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract including the cost of the return travel of the Personnel and their eligible dependents.



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- 2.9.6 Disputes about Events of Termination** If either Party disputes whether an event specified in paragraphs (a) through (f) of Clause GC 2.9.1 or in Clause GC 2.9.2 hereof has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to Clause GC 8 hereof, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.

3. OBLIGATIONS OF THE CONSULTANT

3.1 General

- 3.1.1 Standard of Performance** The Consultant shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub-Consultants or Third Parties.

- 3.1.2 Law Governing Services** The Consultant shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub-Consultants, as well as the Personnel of the Consultant and any Sub-Consultants, comply with the Applicable Law. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

- 3.2 Conflict of Interests** The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

- 3.2.1 Consultant Not to Benefit from Commissions, Discounts, etc.**
- (a) The payment of the Consultant pursuant to Clause GC 6 hereof shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GC 3.2.2 hereof, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-Consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional payment.
- (b) Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's applicable procurement guidelines, and shall at all times exercise such responsibility in the best interest of the Client.




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Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the Client.

- 3.2.2 Consultant and Affiliates Not to Engage in Certain Activities** The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-Consultants and any entity affiliated with such Sub-Consultants, shall be disqualified from providing goods, works or services (other than consulting services) resulting from or directly related to the Consultant's Services for the preparation or implementation of the project.
- 3.2.3 Prohibition of Conflicting Activities** The Consultant shall not engage, and shall cause their Personnel as well as their Sub-Consultants and their Personnel not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.
- 3.3 Confidentiality** Except with the prior written consent of the Client, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services.
- 3.4 Liability of the Consultant** Subject to additional provisions, if any, set forth in the SC, the Consultants' liability under this Contract shall be provided by the Applicable Law.
- 3.5 Insurance to be Taken out by the Consultant** The Consultant (i) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverages specified in the SC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.
- 3.6 Accounting, Inspection and Auditing**
- 3.6.1 The Consultant shall keep, and shall cause its Sub-consultants to keep, accurate and systemic accounts and records in respect of the Contract, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify relevant time changes and costs.
- 3.6.2 The Consultant shall permit, and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause 1.11.1 which provides, inter alia, that



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acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Clause 3.6 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank's prevailing sanctions procedures).

**3.7 Consultant's
Actions Requiring
Client's Prior
Approval**

The Consultant shall obtain the Client's prior approval in writing before taking any of the following actions:

- (a) Any change or addition to the Personnel listed in Appendix C.
- (b) Subcontracts: the Consultant may subcontract work relating to the Services to an extent and with such experts and entities as may be approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services. In the event that any Sub-Consultants are found by the Client to be incompetent or incapable in discharging assigned duties, the Client may request the Consultant to provide a replacement, with qualifications and experience acceptable to the Client, or to resume the performance of the Services itself.
- (c) Any other action that may be specified in the SC.

**3.8 Reporting
Obligations**

The Consultant shall submit to the Client the reports and documents specified in Appendix B hereto, in the form, in the numbers and within the time periods set forth in the said Appendix. Final reports shall be delivered in CD ROM in addition to the hard copies specified in said Appendix.

**3.9 Documents
Prepared by the
Consultant to be
the Property of
the Client**

All plans, drawings, specifications, designs, reports, other documents and software prepared by the Consultant for the Client under this Contract shall become and remain the property of the Client, and the Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents and software, and use such software for their own use with prior written approval of the Client. If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of any such computer programs, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the SC.



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- 3.10 Equipment, Vehicles and Materials Furnished by the Client** Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.
- 3.11 Equipment and Materials Provided by the Consultants** Equipment or materials brought into the Government's country by the Consultant and the Personnel and used either for the Project or personal use shall remain the property of the Consultant or the Personnel concerned, as applicable.

4. CONSULTANTS' PERSONNEL AND SUB-CONSULTANTS

- 4.1 General** The Consultant shall employ and provide such qualified and experienced Personnel and Sub-Consultants as are required to carry out the Services.
- 4.2 Description of Personnel**
- (a) The title, agreed job description, minimum qualification and estimated period of engagement in the carrying out of the Services of each of the Consultant's Key Personnel are described in Appendix C. If any of the Key Personnel has already been approved by the Client, his/her name is listed as well.
 - (b) If required to comply with the provisions of Clause GC 3.1.1 hereof, adjustments with respect to the estimated periods of engagement of Key Personnel set forth in Appendix C may be made by the Consultant by written notice to the Client, provided (i) that such adjustments shall not alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GC 6.1(b) of this Contract. Any other such adjustments shall only be made with the Client's written approval.
 - (c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix C may be increased by agreement in writing between the Client and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GC 6.1(b) of this Contract, this will be explicitly mentioned in the agreement.



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4.3 Approval of Personnel

The Key Personnel and Sub-Consultants listed by title as well as by name in Appendix C are hereby approved by the Client. In respect of other Personnel which the Consultant proposes to use in the carrying out of the Services, the Consultant shall submit to the Client for review and approval a copy of their Curricula Vitae (CVs). If the Client does not object in writing (stating the reasons for the objection) within twenty-one (21) days from the date of receipt of such CVs, such Personnel shall be deemed to have been approved by the Client.

4.4 Working Hours, Overtime, Leave, etc.

(a) Working hours and holidays for Key Personnel are set forth in Appendix C hereto. To account for travel time, Foreign Personnel carrying out Services inside the Client's country shall be deemed to have commenced, or finished work in respect of the Services such number of days before their arrival in, or after their departure from the Client's country as is specified in Appendix C hereto.

(b) The Key Personnel shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in Appendix C hereto, and except as specified in such Appendix, the Consultant's remuneration shall be deemed to cover these items. All leave to be allowed to the Personnel is included in the staff-months of service set forth in Appendix C. Any taking of leave by Personnel shall be subject to the prior approval by the Consultant who shall ensure that absence for leave purposes will not delay the progress and adequate supervision of the Services.

4.5 Removal and/or Replacement of Personnel

(a) Except as the Client may otherwise agree, no changes shall be made in the Personnel. If, for any reason beyond the reasonable control of the Consultant, such as retirement, death, medical incapacity, among others, it becomes necessary to replace any of the Personnel, the Consultant shall forthwith provide as a replacement a person of equivalent or better qualifications.

(b) If the Client (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultant shall, at the Client's written request specifying the grounds therefore, forthwith provide as a replacement a person with qualifications and experience acceptable to the Client.

(c) Any of the Personnel provided as a replacement under Clauses (a) and (b) above, as well as any reimbursable expenditures (including expenditures due to the number of eligible dependents) the Consultants may wish to claim as a result of




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such replacement, shall be subject to the prior written approval by the Client. The rate of remuneration applicable to a replacement person will be obtained by multiplying the rate of remuneration applicable to the replaced person by the ratio between the monthly salary to be effectively paid to the replacement person and the average salary effectively paid to the replaced person in the period of six months prior to the date of replacement. Except as the Client may otherwise agree, (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced.

4.6 Resident Project Manager

If required by the SC, the Consultant shall ensure that at all times during the Consultant's performance of the Services in the Government's country a resident project manager, acceptable to the Client, shall take charge of the performance of such Services.

5. OBLIGATIONS OF THE CLIENT

5.1 Assistance and Exemptions

Unless otherwise specified in the SC, the Client shall use its best efforts to ensure that the Government shall:

- (a) Provide the Consultant, Sub-Consultants and Personnel with work permits and such other documents as shall be necessary to enable the Consultant, Sub-Consultants or Personnel to perform the Services.
- (b) Arrange for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Government's country.
- (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Personnel and their eligible dependents.
- (d) Issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services.
- (e) Exempt the Consultant and the Personnel and any Sub-Consultants employed by the Consultant for the Services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the Applicable Law.



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- (f) Grant to the Consultant, any Sub-Consultants and the Personnel of either of them the privilege, pursuant to the Applicable Law, of bringing into the Government's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Personnel and their dependents and of withdrawing any such amounts as may be earned therein by the Personnel in the execution of the Services.
- (g) Provide to the Consultant, Sub-Consultants and Personnel any such other assistance as may be specified in the SC.

5.2 Access to Land

The Client warrants that the Consultant shall have, free of charge, unimpeded access to all land in the Government's country in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Consultant and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultant or any Sub-Consultants or the Personnel of either of them.

5.3 Change in the Applicable Law Related to Taxes and Duties

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GC 6.1(b).

5.4 Services, Facilities and Property of the Client

- (a) The Client shall make available to the Consultant and the Personnel, for the purposes of the Services and free of any charge, the services, facilities and property described in Appendix F at the times and in the manner specified in said Appendix F.
- (b) In case that such services, facilities and property shall not be made available to the Consultant as and when specified in Appendix F, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultant for the performance of the Services, (ii) the manner in which the Consultant shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause GC 6.1(c) hereinafter.

5.5 Payment

In consideration of the Services performed by the Consultant under this Contract, the Client shall make to the Consultant such payments and in such manner as is provided by Clause GC 6 of this Contract.




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5.6 Counterpart Personnel

- (a) The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in Appendix F.
- (b) If counterpart personnel are not provided by the Client to the Consultant as and when specified in Appendix F, the Client and the Consultant shall agree on (i) how the affected part of the Services shall be carried out, and (ii) the additional payments, if any, to be made by the Client to the Consultant as a result thereof pursuant to Clause GC 6.1(c) hereof.
- (c) Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

6. PAYMENTS TO THE CONSULTANT

6.1 Cost Estimates; Ceiling Amount

- (a) An estimate of the cost of the Services payable in foreign currency is set forth in Appendix D. An estimate of the cost of the Services payable in local currency is set forth in Appendix E.
- (b) Except as may be otherwise agreed under Clause GC 2.6 and subject to Clause GC 6.1(c), payments under this Contract shall not exceed the ceilings in foreign currency and in local currency specified in the SC.
- (c) Notwithstanding Clause GC 6.1(b) hereof, if pursuant to any of the Clauses GC 5.3, 5.4 or 5.6 hereof, the Parties shall agree that additional payments in local and/or foreign currency, as the case may be, shall be made to the Consultant in order to cover any necessary additional expenditures not envisaged in the cost estimates referred to in Clause GC 6.1(a) above, the ceiling or ceilings, as the case may be, set forth in Clause GC 6.1(b) above shall be increased by the amount or amounts, as the case may be, of any such additional payments.

6.2 Remuneration and Reimbursable Expenses

- (a) Subject to the ceilings specified in Clause GC 6.1(b) hereof, the Client shall pay to the Consultant (i) remuneration as set forth in Clause GC 6.2(b) hereunder, and (ii) reimbursable expenses as set forth in Clause GC 6.2(c) hereunder. Unless otherwise specified in the SC, said remuneration shall be fixed for the duration of the Contract.




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- (b) Payment for the Personnel shall be determined on the basis of time actually spent by such Personnel in the performance of the Services after the date determined in accordance with Clause GC 2.3 and Clause SC 2.3 (or such other date as the Parties shall agree in writing), at the rates referred to in Clause SC 6.2(b), and subject to price adjustment, if any, specified in Clause SC 6.2(a).
- (c) Reimbursable expenses actually and reasonably incurred by the Consultant in the performance of the Services, as specified in Clause SC 6.2(c).
- (d) The remuneration rates referred to under paragraph (b) here above shall cover: (i) such salaries and allowances as the Consultant shall have agreed to pay to the Personnel as well as factors for social charges and overhead (bonuses or other means of profit-sharing shall not be allowed as an element of overhead), (ii) the cost of backstopping by home office staff not included in the Personnel listed in Appendix C, and (iii) the Consultant's fee.
- (e) Any rates specified for Personnel not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Client, once the applicable salaries and allowances are known.
- (f) Payments for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultant's home office and directly attributable to the Services (one hour being equivalent to 1/176th of a month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30th of a month).

6.3 Currency of Payment


Foreign currency payments shall be made in the currency or currencies specified in the SC, and local currency payments shall be made in the currency of the Client's country.

6.4 Mode of Billing and Payment

Billings and payments in respect of the Services shall be made as follows:

- (a) Within the number of days after the Effective Date specified in the SC, the Client shall cause to be paid to the Consultant advance payments in foreign currency and in local currency as specified in the SC. When the SC indicate advance payment, this will be due after provision by the Consultant to the Client of an advance payment guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the SC. Such guarantee (i) to remain effective until the advance payment has been fully set off, and (ii) to be in the form set forth in Appendix G hereto, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal installments




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against the statements for the number of months of the Services specified in the SC until said advance payments have been fully set off.

- (b) As soon as practicable and not later than fifteen (15) days after the end of each calendar month during the period of the Services, or after the end of each time intervals otherwise indicated in the SC, the Consultant shall submit to the Client, in duplicate, itemized statements, accompanied by copies of invoices, vouchers and other appropriate supporting materials, of the amounts payable pursuant to Clauses GC 6.3 and GC 6.4 for such month, or any other period indicated in the SC. Separate statements shall be submitted in respect of amounts payable in foreign currency and in local currency. Each statement shall distinguish that portion of the total eligible costs which pertains to remuneration from that portion which pertains to reimbursable expenses.
- (c) The Client shall pay the Consultant's statements within sixty (60) days after the receipt by the Client of such statements with supporting documents. Only such portion of a statement that is not satisfactorily supported may be withheld from payment. Should any discrepancy be found to exist between actual payment and costs authorized to be incurred by the Consultant, the Client may add or subtract the difference from any subsequent payments. Interest at the annual rate specified in the SC shall become payable as from the above due date on any amount due by, but not paid on, such due date.
- (d) The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Client. The Services shall be deemed completed and finally accepted by the Client and the final report and final statement shall be deemed approved by the Client as satisfactory ninety (90) calendar days after receipt of the final report and final statement by the Client unless the Client, within such ninety (90) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount, which the Client has paid or caused to be paid in accordance with this Clause in excess of the amounts actually payable in accordance with the provisions of this Contract, shall be reimbursed by the Consultant to the Client within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the Client for reimbursement must be made within twelve (12) calendar months after receipt by the Client of a final report and a final statement approved by the Client in accordance with the above.




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- (e) All payments under this Contract shall be made to the accounts of the Consultant specified in the SC.
- (f) Payments in respect of remuneration or reimbursable expenses, which exceed the cost estimates for these items as set forth in Appendices D and E, may be charged to the respective contingencies provided for foreign and local currencies only if such expenditures were approved by the Client prior to being incurred.
- (g) With the exception of the final payment under (d) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder.

7. FAIRNESS AND GOOD FAITH

7.1 Good Faith

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

7.2 Operation of the Contract

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause GC 8 hereof.

8. SETTLEMENT OF DISPUTES

8.1 Amicable Settlement

If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within 14 days after receipt. If that Party fails to respond within 14 days, or the dispute cannot be amicably settled within 14 days following the response of that Party, Clause GC 8.2 shall apply.

8.2 Dispute Resolution

Any dispute between the Parties as to matters arising pursuant to this Contract that cannot be settled amicably according to Clause GC 8.1 may be submitted by either Party for settlement in accordance with the provisions specified in the SC.



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A handwritten signature in black ink.

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III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(a)	The words "in the Government's country" are amended to read "in India"
1.4	The language is : English.
1.6	<p>The addresses are:</p> <p>Client : Chief Engineer, World Bank Projects, Odisha on behalf of Works Department, Government of Odisha</p> <p>Attention : Er. Nalini Kanta Pradhan, Chief Engineer, World Bank Projects, Odisha</p> <p>Facsimile : +91 674 239 0080</p> <p>Consultant : MSV International Inc. 11101, NE 60th Street, Kirkland, Washington – 980337528, USA. Regional Office : D-7, South City – I, Gurgaon, Haryana – 122002.</p> <p>Attention : Suresh Malik, Chief Executive Office Facsimile : +91-124-4002605</p>
1.8	The Member in Charge is MSV International Inc.
1.9	<p>The Authorized Representatives are:</p> <p>For the Client: Chief Engineer, World Bank Projects, Odisha</p> <p>For the Consultant: Suresh Malik, Chief Executive Officer</p>



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<p>1.10</p> <p>1.10.1</p>	<p>For domestic consultants/sub-consultants / personnel and foreign consultants/personnel who are permanent residents in India</p> <p>The consultants, Sub-consultants and the Personnel shall pay the taxes, duties, fees, levies and other impositions levied under the existing, amended or enacted laws during life of this contract and the client shall perform such duties in regard to the deduction of such tax as may be lawfully imposed.</p>
<p>1.10.2</p>	<p>For foreign Consultancy firms</p> <p>The Client warrants that the Client shall reimburse the Consultant, the Sub-Consultants and the Personnel for any indirect taxes, duties, fees, levies and other impositions imposed, under the Applicable Law, on the Consultant, the Sub-Consultants and the Personnel in respect of:</p> <p>(a) any payments whatsoever made by the client directly to the Consultant, Sub-Consultants and the Personnel (other than nationals or permanent residents of the Government's country), in connection with the carrying out of the Services;</p> <p>(b) any equipment, materials and supplies brought into the Government's country by the Consultant or Sub-Consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn there from by them;</p> <p>(c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client;</p> <p>(d) any property brought into the Government's country by the Consultant, any Sub-Consultants or the Personnel (other than nationals or permanent residents of the Government's country), or the eligible dependents of such Personnel for their personal use and which will subsequently be withdrawn there from by them upon their respective departure from the Government's country, provided that:</p> <p>(1) the Consultant, Sub-Consultants and Personnel, and their eligible dependents, shall follow the usual customs procedures of the Government's country in importing property into the Government's country; and</p> <p>(2) if the Consultant, Sub-Consultants or Personnel, or their eligible dependents, do not withdraw but dispose of any property in the Government's country upon which customs duties and taxes have been exempted, the Consultant, Sub-Consultants or Personnel, as the case may</p>



[Signature]
 Chief Engineer,
 World Bank Projects, Odisha

	<p>be, (i) shall bear such customs duties and taxes in conformity with the regulations of the Government's country, or (ii) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Government's country.</p>
1.10.3	<p>a) The client shall reimburse Service Tax payable in India as per Applicable Law. The consultant shall register it self for service tax with appropriate authority in India & shall provide the registration Number to the client.</p> <p>b) Tax will be deducted at source as per the prevailing Income Tax Rules.</p>
2.1	<p>The effectiveness conditions are the following:</p> <p>[a] Client's approval of Consultant's proposals for appointment of specified key staff members; and</p> <p>[b] approval of the Contract by the Bank</p>
2.2	<p>The time period shall be <i>6 months</i> or such other time period as the parties may agree in writing.</p>
2.3	<p>The time period shall be <i>1 month</i> or such other time period as the parties may agree in writing.</p>
2.4	<p>The time period shall be <i>31 months</i> or such other time period as the parties may agree in writing.</p>
3.4	<p>"3.4 Limitation of the Consultants' Liability towards the Client</p> <p>(a) Except in case of gross negligence or willful misconduct on the part of the Consultants or on the part of any person or firm acting on behalf of the Consultants in carrying out the Services, the Consultants, with respect to damage caused by the Consultants to the Client's property, shall not be liable to the Client:</p> <p>(i) for any indirect or consequential loss or damage; and</p> <p>(ii) for any direct loss or damage that exceeds by <i>three</i> times the total value of the Contract.</p> <p>(b) This limitation of liability shall not affect the Consultants' liability, if any, for damage to Third Parties caused by the Consultants or any person or firm acting on behalf of the Consultants in carrying out the Services."</p>




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3.5	<p>The risks and the coverage shall be as follows:</p> <p>(a) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Government's country by the Consultant or its Personnel or any Sub-Consultants or their Personnel, with a minimum coverage as per Motor Vehicles Act 1988;</p> <p>(b) Third Party liability insurance, with a minimum coverage of Rs.20,00,000 (Rupees Twenty Lakhs) (After each occurrence the Consultant shall repay premium necessary to make insurance valid for this amount always) ;</p> <p>(c) professional liability insurance, with a minimum coverage of Three times the Contract Price;</p> <p>(d) employer's liability and workers' compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultants, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate; and</p> <p>(e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.</p>
3.7 (c)	<p>The other actions are: <i>Taking any action under a civil works contract designating the Consultant as "Engineer", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required.</i></p>
3.9	<p>The Consultant shall not use these documents and software for purposes unrelated to this Contract without the prior written approval of the Client.</p>
4.6	<p>The person designated as Team Leader-cum-Project Coordinator in Appendix C shall serve in that capacity, as specified in Clause GC 4.6</p>
6.1(b)	<p>The ceiling in foreign currency or currencies is: NIL</p> <p>The ceiling in local currency is: INR 77,812,200 excluding applicable Service Tax.</p> <p>Gross amount payable is INR. 85,826,857 including prevailing service tax rate at 10.3%</p>




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6.2(a)	<p>Payments for remuneration made in accordance with Clause GC 6.2(a) in local currency shall be adjusted as follows:</p> <p>(a) Remuneration paid in local currency pursuant to the rates set forth in Appendix E shall be adjusted every 12 months (and, for the first time, with effect for the remuneration earned in the 13th calendar month after the date of the Contract) by applying the following formula:</p> $R_t = R_{I_0} \times \left[0.1 + 0.9 \frac{I_t}{I_0} \right]$ <p>where R_t is the adjusted remuneration, R_{I_0} is the remuneration payable on the basis of the rates set forth in Appendix E for remuneration payable in local currency, I_t is the official index for salaries in the Client's country for the first month for which the adjustment is to have effect and, I_0 is the official index for salaries in the Client's country for the month of the date of the Contract.</p> <p>(Index for "State /UT wise General Consumer Price Index (Urban) for Odisha published by Central Statistics Office, Ministry of Statistics And Programme Implementation, Government of India shall be considered for adoption)</p>
6.2(b)	The rates for Foreign Personnel are set forth in Appendix D, and the rates for Local Personnel are set forth in Appendix E.
6.2(c)	The Reimbursable expenses to be paid in foreign currency are set forth in Appendix D, and the Reimbursable expenses to be paid in local currency are set forth in Appendix E.
6.3	<p>The foreign currency [currencies] shall be the following:</p> <p><i>Not Applicable</i></p>
6.4(a)	<p>The following provisions shall apply to the advance payment and the advance payment guarantee:</p> <p>(1) An advance payment of 5% of Total Local Remuneration payable under the Contract in local currency shall be made within 90 days after the Effective Date. The advance payment will be set off by the Client in equal installments against the statements for the first 12 months of the Services until the advance payment has been fully set off.</p> <p>(2) The advance payment guarantee shall be in the amount in the local currency for the advance payment.</p>



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6.4(c)	The interest rate is: - for local currency: 8 % per annum
6.4(e)	The accounts are: for local currency: Name : MSV International Inc. Account No. 1081855417, State Bank of India, Specialized NRI Branch, Parliament Street New Delhi- 110001
8.2	<p>Disputes shall be settled by arbitration in accordance with the following provisions:</p> <p>1. <u>Selection of Arbitrators.</u> Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three arbitrators, in accordance with the following provisions:</p> <p>(a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to <i>Secretary General, Indian Roads Congress, New Delhi</i>, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, <i>Secretary General, Indian Roads Congress, New Delhi</i>, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute.</p> <p>(b) Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultant shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by <i>Secretary General, Indian Roads Congress, New Delhi</i>.</p>



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	<p>(c) If, in a dispute subject to Clause SC 8.2 1.(b), one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the <i>Secretary General, Indian Roads Congress, New Delhi</i> to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.</p> <p>2. <u>Rules of Procedure.</u> Except as stated herein, arbitration proceedings shall be conducted in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract.</p> <p>3. <u>Substitute Arbitrators.</u> If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator.</p> <p>4. <u>Nationality and Qualifications of Arbitrators.</u> The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause SC 8.2 1 hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute.</p>
	<p>5. <u>Miscellaneous.</u> In any arbitration proceeding hereunder:</p> <p>(a) proceedings shall, unless otherwise agreed by the Parties, be held in BHUBANESWAR, INDIA;</p> <p>(b) the English language shall be the official language for all purposes; and</p> <p>(c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.</p>



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IV. Appendices

Appendix A – Description of Services

Consultancy Services for Construction Supervision for the Balance Works of Phase-1 Roads under Odisha State Roads Project

1 BACKGROUND

The State Government of Odisha through Government of India has received a loan of about US\$250 million equivalent from the International Bank for Reconstruction and Development (World Bank) towards the cost of the proposed Odisha State Roads Project (OSRP) and intends to apply part of the proceeds of this loan to payments under the contract for Construction Supervision Consultancy (CSC) services

- 1.1 The executing agency for the Odisha State Roads Project is the Odisha Works Department (OWD). The OWD has established a Project Management Unit (PMU) exclusively to be in-charge of the Odisha State Roads Project. The PMU is headed by the Chief Engineer, World Bank Projects, Odisha assisted by appropriate professional and support staff.
- 1.2 The OWD had engaged a Consultant for preparation of the Detailed Project Report for the 461 Km roads covered under OSRP. The Civil Works for approximately 204 Km of roads out of the total 461 Km had already commenced since early 2009 under Phase-1 programme of OSRP and the balance 257 Km of roads will be taken up for execution as Phase-2 programme.
- 1.3 The supervision of the Phase-1 work was earlier carried out through a Supervision Consultant. However, the services of the said Consultant engaged for Construction Supervision has been terminated in August, 2010 due to reasons beyond control of the Client. At present, the supervision of the ongoing Phase-1 civil work is being undertaken through an interim arrangement and it is expected that about 15-20% of the works shall be completed by the time the new CSC mobilizes for supervision of the balance works.
- 1.4 The ongoing construction packages for the Phase-1 roads along with approximate period of construction for the balance works for the new CSC are as follows:

Phase 1 Roads

Sl.	Package No.	Name of the Road Corridor	Approx. Length in Km	Approx. Period of Construction for the balance works
1	OSRP-CW-ICB-Y1-01	Bhawanipatna- Khariar (SH 16) [Km. 2/0 – 70/0]	68 kms	19 Months
2	OSRP-CW-ICB-Y1-02	Bhadrak – Chandbali (SH 9) [Km. 0/0 – 45/0] and Bhadrak – Anandpur (SH 53) [Km. 0/0 – 50/0]	95 kms [45 kms + 50 Kms]	19 Months
3	OSRP-CW-ICB-Y1-03	Berhampur – Taptapani (SH 17) [Km. 0/0 – 41/0]	41 kms	16 Months
Total			204 kms	

The location of the corridors is shown in Annex -1



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- 1.5 The duration of the Supervision Consultant services for the balance work under Phase-1 is now estimated for 16-19 months of construction period plus for 12 months of defect liability period. The civil works for the above corridors consist mainly of strengthening and widening of the existing single or intermediate-lane width to double lane width with paved / soft shoulders. The work also consists of construction, rehabilitation and replacement of a number of cross drainage structures including some major and minor bridges and roadside drains. Certain road stretches also require road safety provision such as sidewalks, pedestrian crossings, parking etc with social & environmental safeguards.

1.6 Geographical & Climatic Information

Phase 1 Roads

1.6.1 Bhawanipatna – Khariar Corridor

This road located in the South Western part of Odisha and having a total length of 70 Km, takes off from NH 201 at 140/0 km and terminates on 355/0 km on NH 217 at Khariar. The road passes through Kalahandi district and Nuapada district. This area experiences rainfall of average 900mm to 1200mm per annum and bulk of the rainfall occurs during June to October, which is the monsoon period in Odisha. Highest temperature in the area during, March to May is 47 degree Celsius and the temperature dips to the lowest of 6 degree Celsius during winter season. This road passes through the towns of Bhawanipatana and Khariar. Bhawanipatana is the district head quarter of Kalahandi district. Major river in the area are river Tel, which crosses the project road at 29th Km and river Under at 59th km

1.6.2 A. Bhadrak – Chandbali Corridor

This road located in the Eastern part of Odisha, takes off from NH 5 at 155/0 km and terminates at 52.600 km on SH -9 at Chandbali after river Baitarani. The total length of the road is 52.6 km and in the project corridor 45km of the length from Bhadrak has been considered for improvement under year-I. The road passes through Bhadrak district. This road is located in the Mahanadi Delta area and the major river located at Chandbali is river Baitarani. The terrain is plain and the drop in level in the entire 45 km is about 9m. This road suffers from inundation during rainy season as many stretches are having level lower than the high Water Level. This area experiences rainfall of average 1200mm to 1500mm per annum and bulk of the rainfall occurs during June to October, which is the monsoon period in Odisha. Highest temperature in the area during, March to May is 45 degree Celsius and the temperature dips to the lowest of 10 degree Celsius during winter season. This road passes through Bhadrak; the district head quarter, Tihidi, Motto villages/semi urban area.

B. Bhadrak – Anandpur

This road takes off from NH 5 at 155/0 km near Bhadrak. This road is having a total length of 57 km, but in the year-I improvement of first 50 km has been considered. The road passes through Bhadrak district and Keonjhar district. This area experiences rainfall of average 1200 to 1500mm per annum and bulk of the rainfall occurs during June to October, which is the monsoon period in Odisha. Highest temperature in the area during, March to May is 45 degree Celsius and the temperature dips to the lowest of 8 degree



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Celsius during winter season. This road passes Bhadrak, Barapada, Bonth, Basantia, Hatadihi, Anandpur villages/semi urban area.

1.6.3 Berhampur – Tatapani

This road located in the south-eastern part of Odisha and takes off from NH 217 at 18th km near Berhampur. Berhampur, a principal commercial town of south Odisha, is located at about 8km from Bay of Bengal. The total length of the road is from Berhampur to Bhangi is 150km, but in the year-I, improvement of 41 km has been considered. The terrain is predominantly plain and villages are closely located between 0/0 to 27/0. The stretch of road is located in Ganjam district. This area experiences rainfall of average 1500mm per annum and bulk of the rainfall occurs during June to October, which is the monsoon period in Odisha. Highest temperature in the area during , March to May is 40 degree Celsius and the temperature dips to the lowest of 10 degree Celsius during winter season. This project stretch passes through Berhampur, Digapahandi, villages/semi urban area. Principal river in the area is river Malabhanja, which crosses the project road at 28/600 Km near Digapahandi.

- 1.7 The word “Employer” wherever used in this TOR (RFP) is synonym with “Client” and will have the same meaning as defined in “Instruction to Consultants” in this RFP.
- 1.8 The words “Engineer’s Representative” wherever used in this RFP will mean “Engineer’s Assistant”, which term shall have the meanings as defined in the (proposed) construction contract.”

2 WORKS

- 2.1 The civil works will comprise of the following, as required, mostly on existing alignments.
- a. Improvement of road geometry;
 - b. Raising & Widening of embankments considering drainage and road geometry
 - c. Sub base, base and bituminous pavement with limited concrete pavements in built up areas and toll plazas;
 - d. Widening and paving of carriageway and shoulders;
 - e. Improvement of side drainage & improvement to or replacement and widening of culverts;
 - f. Repair and rehabilitation of bridges;
 - g. Construction of new Culverts and Bridges; HL major bridges & minor bridges
 - h. Traffic safety features;
 - i. Road signs and road markings;
 - j. Environmental protection and management measures during construction stage;
 - k. Traffic diversion and management during the construction;
 - l. Routine Maintenance of Project Corridors during the construction period;
 - m. Construction and maintenance of Diversion roads



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- 2.2 The Works contract documents are based on World Bank's standard bidding document for ICB works (May 2006, revised March and April, 2007) as modified / supplemented by the Particular Conditions for ICB procured contracts.
- 2.3 The Chief Engineer, World Bank Projects, Odisha, hereinafter the "Employer's Representative", on behalf of the Government of Odisha in Works Department, hereinafter the "Employer", now wishes to engage a team of multi-disciplinary international and local expertise, hereafter the "Consultant", to carry out construction supervision as "Engineer", hereafter the "Services", for the Works under the proposed project in accordance with the terms of reference below.
- 2.4 The supervision of the civil works will be carried out by qualified consultants with satisfactory experience in implementing projects of similar nature and size.

3 OBJECTIVES

3.1 The objectives of the consultancy service are:

- a. to take over the assignment from the interim arrangement of Phase-1 roads with collection of all relevant documents which are transferred from the earlier Consultant to the PMU as well as from the PMU's interim arrangement. *The indicative approach and methodology proposed by the consultant is presented in Para 11*
- b. to assess the quantum and cost of works completed at the time of taking over (including all variations in quantities and costs) and to estimate the remaining quantum of works to be completed during the assignment for Phase-1 roads;
- c. to make a quick sample assessment of the completed works of Phase-1 roads as regards to the quality and its conformity to the contractual specifications;
- d. to conduct appropriate field reconnaissance for examining the Bidding Documents, Engineering Design Reports etc submitted by the DPR Consultant and advise Employer and/or his representative for necessary corrective measures, if any, to facilitate the OWD and the Contractor for smooth progress of the construction activities without any delay. The field reconnaissance may be limited to random measurements of certain critical parameters such as road alignments, GADs of Bridges, bench marks, material sources with site verification.
- e. to ratify the Contractor's work plan for the execution of contracts including the corresponding pre-construction activities in such a way to avoid slippage's, delays by the contractor and to monitor and suggest to the Employer remedial advance actions to speed up works and avoid delays. The Supervision Consultant should use latest computer techniques, such as Total Station Survey, d-GPS, CADD and electronic data transfer.



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A handwritten signature in black ink, appearing to be "S. J. S.", written over the printed name of the Chief Engineer.

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- f. to ensure that high quality construction is achieved and to ensure that all works are carried out in full compliance with the engineering design, technical specifications and other contract documents;
- g. to demonstrate the efficacy of contract supervision by independent external agencies experienced in this field of work;
- h. to promote technology transfer by on-the-job training to the OWD staff; and
- i. training to OWD staff through field visits in India and exposure visit abroad.
- j. to ensure the traffic management during ongoing construction.
- k. to ensure the availability of the trafficable riding quality of existing pavement during construction.

4 CONTRACT MANAGEMENT FRAMEWORK

4.1 The execution of the works will be governed by the Contract Management Framework (CMF). The main features of CMF are described below.

- a. The Chief Engineer, World Bank Projects, Odisha on behalf of Works Department, Government of Odisha shall be the Contractual Employer who will ensure that the execution is within the scope defined in the objectives.
- b. The Chief Engineer, World Bank Projects, Odisha, will have authority to give instructions and approvals to the Supervision Consultant, and for all other items requiring specific approval from the Employer in writing as detailed in the Contracts for the Civil Works.
- c. The Supervision Consultant shall report fortnightly progress of work to the Chief Engineer, World Bank Projects and obtain any decisions required on technical matters promptly as and when needed.
- d. The designated officials of the Project Management Unit (PMU) will function as representative of the Employer (i.e. Chief Engineer, World Bank Projects) and shall certify the data provided by the Engineer as per provisions of Construction Contract Documents. They will also verify all Payment Certificates of Contractors and Invoices of the Supervision Consultant and forward the same to the Chief Engineer, World Bank Projects, Odisha for payment.
- e. Project accounts will be kept by the Accounts Officer attached to the Chief Engineer, World Bank Projects, Odisha in the Project Management Unit (PMU) of Odisha State Roads Project.



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5 SCOPE OF SERVICES

- 5.1 The Chief Engineer, World Bank Projects, Odisha on behalf of Odisha Works Department, in its role as "The Employer", will employ a consultancy firm to undertake the supervision of construction of the civil works. The Supervision Consultant will appoint **Three Resident Engineers** to act as the "Engineer" as defined in the construction contract for the respective packages. All the duties and responsibilities of the Engineer shall be discharged by these Resident Engineers. The Engineer may delegate some of the authority to the Senior Technical Staffs such as Highway Engineer, Bridge Engineer etc in his team for the said package who will act as "the Engineer's Representative", to whom duties and authorities are to be assigned / delegated by the "Engineer", as per the provisions of the construction contract. Resident Engineers must be stationed at respective project sites.
- 5.2 The Team Leader-cum Project Coordinator (TLPC) of the Consultant shall be stationed at Bhubaneswar. The TLPC shall act as the interface between the Client and Supervision Consultant in managing the contract for all practical purposes. The TLPC shall visit regularly to the field to monitor the progress of Works and submit monthly progress report to the Employer.
- 5.3 The Consultant shall take over the assignment from the interim supervision team with collection of all relevant documents which were transferred earlier from the previous Consultant to the PMU as well as from the PMU's current interim team.
- 5.4 The Consultant shall assess the quantum and cost of works completed at the time of taking over (including all variations in quantities and costs) and to estimate the remaining quantum of works to be completed during the assignment.
- 5.5 The Consultant shall make a quick sample assessment of the completed works as regards to the quality and its conformity to the contractual specifications. Quick sample assessment of the completed work may be done by possible independent tests such as NDT. Any other method can also be adopted which shall be finalised at the time of inception in consultation with the Client.
- 5.6 The Consultant is required to develop proper understanding of the project design and drawings within a month time from the date of commencement which were prepared earlier by the DPR Consultant. All site specific changes made to the above by the previous supervising team also need to be considered. The Supervision Consultant during its incumbency shall also review the BID documents, EMPs, Engineering reports pertaining to the Construction packages and suggest necessary corrective measures, if required.
- 5.7 Minor design changes to suit site requirements will be attended by the Construction Supervision Consultant. To mitigate major changes, the Supervision Consultant is expected to induct one Highway Design Engineer and one Bridge Design Engineer for 3 man-months each, whose input shall be utilised in phased manner in consultation with the Employer as and when required.



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- 5.8 In situation where it is felt essential to make some changes in the design/drawings requiring exceptional studies beyond the scope of the present services, the supervision consultant may undertake the same by deploying experts / specialized people. These experts may be hired by the Employer or through the Supervision consultant, approved by the Employer as per the requirement after mutual negotiation. Indicative proposal on the same may be furnished by the consultant during bid submission, which shall not be evaluated but shall be taken as reference for future need in accordance with the requirements as per para 8.2
- 5.9 The Supervision Consultant shall be responsible for preparing variation orders consequent on the design changes if required.
- 5.10 The supervision team headed by the Team Leader-cum Project Coordinator will be composed of qualified and experienced experts, who can carry out all the routine construction supervision duties as a fully competent and independent unit. However, in preparing the proposal for the construction supervision services, the Supervision Consultant should allow for a suitable mechanism which will ensure thorough co-ordination of the teams, so that each team is at all times fully aware of the remedies to common problems used by the other team, so that the full experience of all the members of the team as well as that of the Engineer and his staff can be applied as necessary.
- 5.11 As a minimum, coordination will involve weekly visit by the Team Leader -cum-Project Coordinator to the job sites. Each of these coordination meetings, both those on the job sites and those in Bhubaneswar will be attended by a representative of the PMU / OWD having authority to make decision on behalf of "The Employer." Such decisions will be communicated in writing immediately after the meeting.
- 5.12 The suggestive qualification, experience for support personnel (Technical) as indicated in **Annex – II** and **Annex – III** shall regulate the approval of these personnel during the implementation stage. The approval in respect of these personnel from the Employer will be required before the deployment.
- 5.13 There are certain positions of key experts like -Team Leader -cum-Project Coordinator, Resident Engineers Sr. Material-cum-Quality Control Engineer and Sr. Bridge Construction Engineer where deployment of suitable personnel is considered essential for successful completion of the project. These positions are to be considered for the purpose of technical evaluation. Consultants are therefore advised to field truly qualified, competent and experienced experts at these positions.
- 5.14 The consultant will make use of latest innovative computerized techniques of Project Management to have effective monitoring of physical and financial progress. The project management tools which have proved very effective in providing effective transparent management for running the project shall be used by the Consultant so that the Employer get benefits of complete information on the project.



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- 5.15 The Consultant will adopt specific plan / programme for ensuring safety during construction in discussion with Contractors and the Employer. As a minimum, following activities should form part of the Consultant's work programme:
- Involve public in selecting and finalizing traffic control plan
 - Initiate Traffic Awareness Program
 - Group and sequence projects activities to minimize exposure
 - Conduct Work Zone Traffic Management Training Schemes
 - Report and analyze all work zone crashes
 - Collect and disseminate real time traffic information
 - Ensure provision of "attention getting" signs in work zones .
 - Insist on durable temporary pavement marking material that can be easily removed and does not leave a visible residue on the pavement.
 - Adopt specifications that require adequate lighting for all nighttime operations.
 - Insist the Contractors to have trained security guards deployed to guide the traffic.
 - Ensure unauthorized personnel are prevented from entering hazardous or restricted areas.
 - Establish procedures for the transport and handling of hazardous materials.
 - Implement an operations and public emergency response program for spills, fires and major accidents, including emergency equipment and trained personnel, and test critical components of the program on a regular basis.
- 5.16 The Consultants will ensure that all the road safety traffic management measures suggested in the DPR/ Bid Documents are implemented effective in achieving the objectives and, in the long term, reducing the numbers and severity of road crashes. Special care will be taken by the Consultants during the construction of interchanges and intersections, traffic signals and installations, traffic signing and road marking, street lighting, guard rails, pedestrian safety by underpasses and footpaths, and road safety provisions provided for in the DPR/Bid Documents.
- 5.17 The Consultant shall undertake photography and videography at each stage of the activity as mentioned below to illustrate the works. The same shall be suitably indexed for documentation and for further use of the PMU/ OWD.
- (a) Pre-construction.
 - (b) During construction.
 - (c) Post construction up to the defect liability period.
- 5.18 The Consultant will co-ordinate, monitor and assist the Employer in utility and community assets shifting / relocation and removal of obstructions.
- 5.19 The Consultant shall assist the Employer during DRB Meetings, Arbitration Proceedings and any other hearings held by statutory & legal body..
- 5.20 The Consultant shall assist the PMU/Employer in providing relevant data to augment the PFMS/ PMIS / RAMS being developed by the PMU.

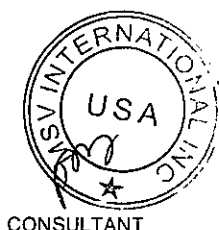



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6 DUTIES AND RESPONSIBILITIES AS THE "ENGINEER"

6.1 The duties of the Engineer are to supervise the works and to approve the materials and workmanship of the works in consultation with the Employer, as spelled out in the contract documents for the works. As stated therein, the Engineer shall have no authority to relieve the Contractor of any of their duties or obligations under the contract or to impose additional obligations not included in the contract. The Engineer will administer the works contract and ensure that the contractual clauses, whether related to quality or quantities of work, are respected. The duties of the Engineer include issuing of decisions; certificates and orders as specified in details in the construction contract documents. **In case of any disparity, the stipulations made in the construction contract documents will prevail in the order of precedence mentioned therein.** Principal responsibilities will be generally to carry out all the duties of the Engineer as specified in the construction Contract documents, within the limitations specified therein, but not limited to the following:

- (i) to clarify any inconsistency in the contract document;
- (ii) to approve the Contractor's key superintendent personnel, construction mobilization programs, temporary land to be occupied by the Contractor;
- (iii) to approve the contractor's work program including activity scheduling and resource programming;
- (iv) to give the order to commence the work;
- (v) to ensure that the construction works are in accordance with the technical specifications, Environmental Management Plan and other stipulation of construction contract documents and the construction methods proposed by the contractor are in compliance with the above stipulations particularly, in relation to Contractor's construction equipment and other resource deployment;
- (vi) to approve setting out of the works;
- (vii) to order suspension of works;
- (viii) to verify and if necessary order correction of the as staked drawings supplied by the Contractor
- (ix) ensure a system of Quality Assurance of works, approve materials and sources of materials, review all bituminous mix designs and concrete mix designs proposed by the contractor and approve/suggest modifications in the mix design, laying methods, sampling and testing procedure and Quality Control measures to ensure required standard and consistency in quality, at the commencement of each item;
- (x) to ensure the Quality Assurance, carry out independent laboratory tests in OWD's own and/or approved Laboratories;
- (xi) check the laboratory and field tests carried out by the contractor and develop a mechanism in consultation with Employer to involve Team Leader/RE to carry out adequate number of independent tests other than the regular testing done by the Contractor;
- (xii) order special tests of materials and/or completed works, order removal and substitution of improper materials and/or works as required;



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- (xiii) to make independent measurements and check all quantity measurements and calculations required for payment purpose and ensure that all measurements and calculations are carried out in a manner and at the frequencies specified in the contract documents;
- (xiv) to approve and/or issue a working drawing or modify the existing drawing or to supply a new/supplementary drawing which is not included in the contract, wherever required and to give instructions thereof in this connection to the contractor;
- (xv) to control and appraise the progress of the works to order suspension of works and to authorize with the Employer's approval, extensions of the period of completion of works;
- (xvi) to monitor and check the day to day quality control and quantity measurements of the works carried out under the Contract, keep all measurement records as per the directions of the Employer and issue monthly/interim payment certificates when the quality of the works is satisfactory and the quantities are correct;
- (xvii) to direct the Contractor in all matters concerning traffic as well as construction safety and care of the works (including the erection of the temporary signs at road-works) and if required, direct the Contractor to provide (any) necessary lights, guards, fencing and watchmen;
- (xviii) to direct the Contractor to carry out all such works or to do such things as may be necessary in his opinion to avoid or to reduce the risk in any emergency affecting the safety of life or of adjoining property;
- (xix) to direct the contractor to take all necessary steps including those mentioned in the construction contract to protect the environment on and off the site which arise due to construction operations;
- (xx) to inspect the works, during the construction period and at proper interval during the Defects Liability Period and to issue Defects Liability Certificates after the rectification, by the Contractor, of possible defects and issue final payment certificates;
- (xxi) issue interim certificates for monthly payments to the contractors, and specify completion of parts of the totality of the works, details of progress. Payments are to be recorded in the measurement book before issue of interim certificate;
- (xxii) to verify and correct the as-built drawings supplied by the Contractor.

6.2 The other responsibilities of the Engineer will be to carry out all such duties which are essential for effective implementation of the construction contract as mentioned in but not limited to the following:

- (i) provide feedback / suggestions, if any, to the Employer during the inception period on the Construction Supervision Manual/quality assurance manual prepared by the previous Consultant and reviewed / approved by the World Bank / PMU;
- (ii) assist/advise Employer for advance actions required to be taken for handing over of site and in achieving different milestones for completion of projects as per schedule;



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- (iii) verify the quantities of all items in the BOQ and suggest modifications to the same if necessary as per the prevailing site conditions, for the approval of the employer;
- (iv) assist Employer in proper monitoring/progress of works and implementation of project through computer aided project management technique and Management Information System (MIS);
- (v) write a day by day project diary which shall record all events pertaining to the admission of the Contract, request from and orders given to the Contractor, any other information which may at a later date be of assistance in resolving queries which may arise concerning execution of the works;
- (vi) prepare and issue monthly and quarterly progress reports along with detailed quality control test statement in an approved format and also prepare detailed contract completion report;
- (vii) advise the Employer on all matters relating to execution of the works, claims from the Contractor and to make recommendations thereon, including the possible recourse to dispute resolution and arbitration;
- (viii) prepare detailed recommendations to the Employer for contract change orders and addenda, as necessary, to ensure the best possible technical results are achieved with the available funds;
- (ix) assist the Employer in taking over from the Contractor of each section, in particular by preparing lists of deficiencies which need to be corrected, and assisting with monitoring of the performance of the works during the defects liability period;
- (x) prepare a maintenance manual describing the routine maintenance procedures to be adopted in each specific reach and for the C. D. works and bridges during defect liability period and beyond;
- (xi) deleted.
- (xii) assist the Employer in providing clarifications/explanations to observations made, from time to time, by the statutory Audits;
- (xiii) impart on the job training to Employer's personnel, associated with the project;
- (xiv) assist the Employer in co-ordination works with different agencies and hold meetings for proper and timely implementation of the project ;
- (xv) preparation of revised estimate etc., if required;
- (xvi) modification in design and drawings vide details in para 6.3;
- (xvii) carry out any other duties relevant to the project agreed during the negotiations;
- (xviii) Consultant shall review the independent safety Audit and incorporate feasible minor modifications in final drawings & BOQ.

6.3 Actions requiring specific approval of the Employer

6.3.1 The Engineer will be required to obtain the specific approval of the Employer in the following matters as specified in Cl. 3 of General Condition & Particular Condition of construction Contract Agreement.

- (a) Agreeing or determining an extension of time and/or additional cost. [Sub-Clause 4.12]



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- (b) Instructing a Variation, [Sub-Clause 13.1] except
 - (i) in an emergency situation as determined by the Engineer, or
 - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- (c) Approving a proposal for Variation submitted by the Contractor [Sub-Clause 13]
- (d) Specifying the amount payable in each of the applicable currencies [Sub-Clause 13.4]
- (e) Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer

6.3.2 The Engineer will further seek prior approval of the Employer in the following matters:

- (i) Issuing the order to commence the works;
- (ii) Issuing/approving variation orders which have financial implications; except
 - (a) in an emergency situation as reasonably determined by the Engineer or
 - (b) if such variation are within the limits of approval by the Engineer as specified in the construction contract documents;
- (iii) Approving new rates either for existing items of work, which arises from variation quantities beyond the limit, defined in the contract or fixing rates of non-priced works involving any extra item and certifying any additional cost determined under the provisions of contract;
- (iv) Approving subletting of any part of works;
- (v) Approving any extension of contractual time limits;
- (vi) Carrying out independent Quality Control tests;
- (vii) Issuing the order for special tests not provided for in the contract and determining the cost of such tests, which shall be added to the contract price;
- (viii) Issuing/approving the Technical Specification, if not provided for an item of works in the Construction Contract, similarly; for any change in Technical Specification of any item of work.



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7 DUTIES & RESPONSIBILITIES OF THE ENGINEER'S REPRESENTATIVE

- 7.1 The duties of the Engineer's Representatives are, under the overall control of the Engineer, to supervise construction of the works and, to test or order to test and examine any material to be used or workmanship employed in connection with the works. They shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract, or to order any works involving delay or any extra payment either by the Employer, or to make any variation of quantities or rates in the works except to the extent allowed under Para 8. The Engineer may from time to time delegate to the Engineer's Representative any of the duties and authorities vested with the Engineer and he may at any time revoke such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Employer and the Contractor. As part of the Inception Report, the Consultant shall specify the principal responsibilities which are being delegated to his representative.

8. INTERIM AND FINAL PAYMENTS

- 8.1 The Supervision Consultant will process interim and final payment certificates of the Contractor. Interim certificates shall be processed by the Supervision Consultants following applications submitted by the Contractor. In processing certificates, the Engineer of the Supervision Consultant will certify that he has checked the measurement books. Whenever measurements are to be made, the Engineer will inform the Contractor and the concerned designated PMU Official of the said package (Employer's Representative) in advance. The designated PMU Official's participation in such measurements will not be mandatory; however should he wishes to participate, he will be empowered to do so and may check any measurement. In the case of dispute between the Engineer and the Employer's Representative, the Employer will release upto 50% of the disputed amount as certified by the Engineer, and instruct the Engineer to respond to the queries or discrepancies within 14 days. Any such discrepancies shall be adjusted in the following interim payment certificates.

The Supervision Consultant will promptly submit the payment certificates duly certified in accordance with the above sub-clause to the Employer's Representative for the said package for verification and onward transmission to the Chief Engineer, World Bank Projects, Odisha for further necessary action.



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8.2 LIKELY ADDITIONAL SERVICE

The consultants may be required to carry out the following assignments in the event of the contingencies arising for them on the request of the employer as per terms negotiated then. The Client will make adjustment in the Contract Prices based on remuneration/reimbursable rates in contract or seek prices for the contingent services at the time of occurrence

The assignments are:

- (i) major redesigning of road or structure;
- (ii) preparation of reports or additional contract documents for consideration of proposals for carrying out additional work;
- (iii) any other specialist services by the Engineer or by other specialists, pertaining to the works contract supervised by the consultant as may be agreed upon

9. TRAINING

The Consultant will impart training to 8 OWD Engineers dealing with the World Bank project including the Engineers of PMU in foreign country and 12 OWD Engineers in India. The duration and batching shall be agreed mutually.

Apart from this, the Consultant will impart on the job training to Client's personnel associated with the Project on modern construction techniques, setting out, quarry and material selection, quality control & quality assurance during execution, contract administration, environmental management etc.

10. REVIEW OF the CONSULTANT'S WORK

10.1 The Consultant's performance would be reviewed/ monitored through the timely receipt of reports and the quality of the contents of these reports acceptable to the OWD and the Bank.

10.2 A review committee consisting of the following officers will review the work of the Consultant from time to time.

- a. Engineer-in-Chief-cum-Secretary to GOO, Works Department
- b. Chief Engineer, D.P. & I. & Roads, Odisha
- c. Chief Engineer, R.D. & Q.P., Odisha
- d. Chief Engineer, National Highways, Odisha
- e. Chief Engineer, World Bank Projects, Odisha




Chief Engineer,
World Bank Projects, Odisha

11. Consultants Indicative Methodology

A-1.6 TECHNICAL APPROACH AND METHODOLOGY

A-1.6.1 Management Dynamics

The project can be successfully managed through an efficient Project Management System which would include,

- Quality Management
- Construction Management
- Contract Management

As an elaboration of the Project Management Strategy, the three management plans and their conceptual jurisdictions are given in Figure 1 (Project Management)

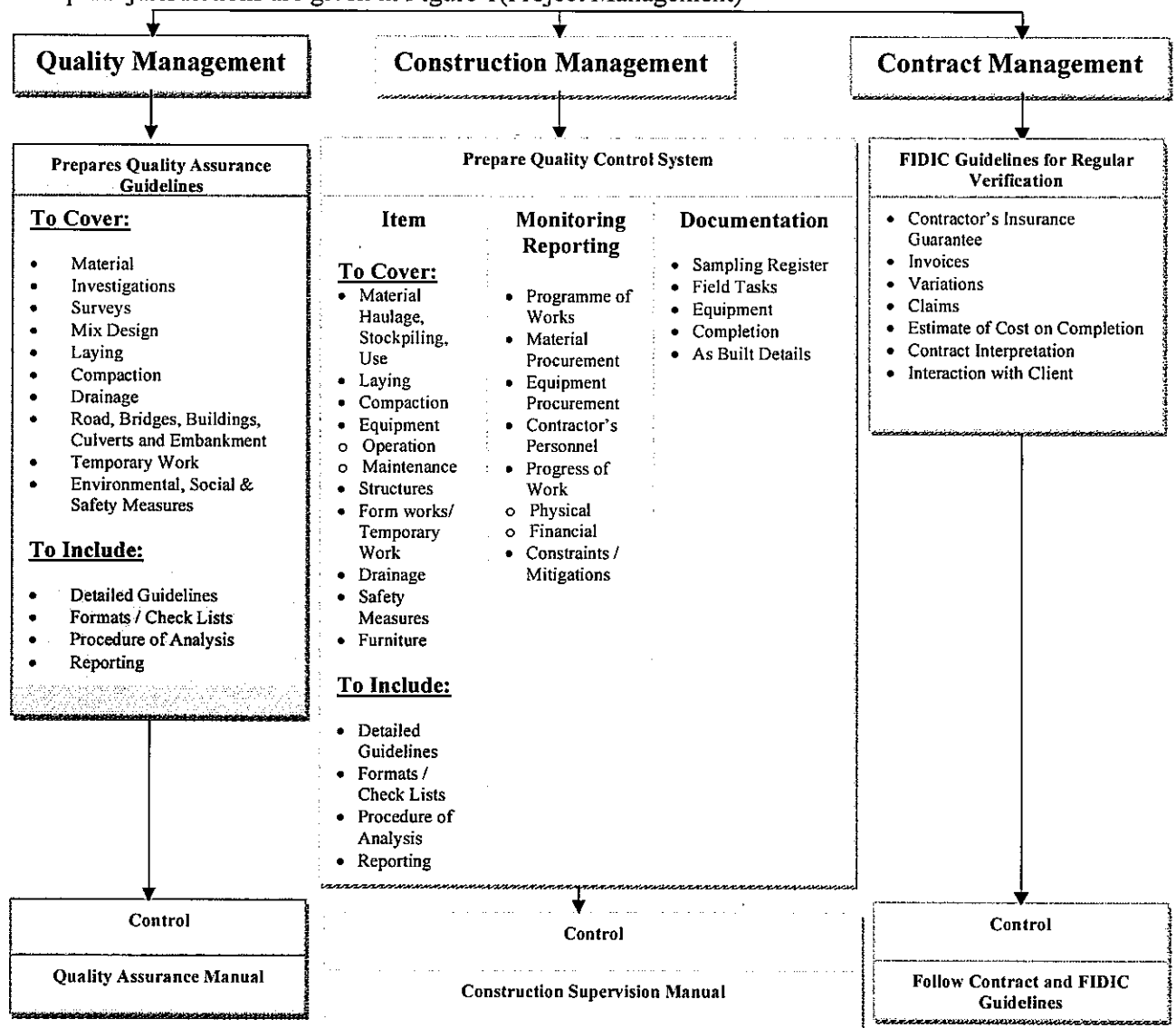


FIGURE 1 PROJECT MANAGEMENT




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Further, based on the outline of the TOR and Consultant proposed organization structure, a contract management framework has been proposed in Figure 2 in the similar lines, the proposed lines of communication have been formulated and proposed as Figure 3.

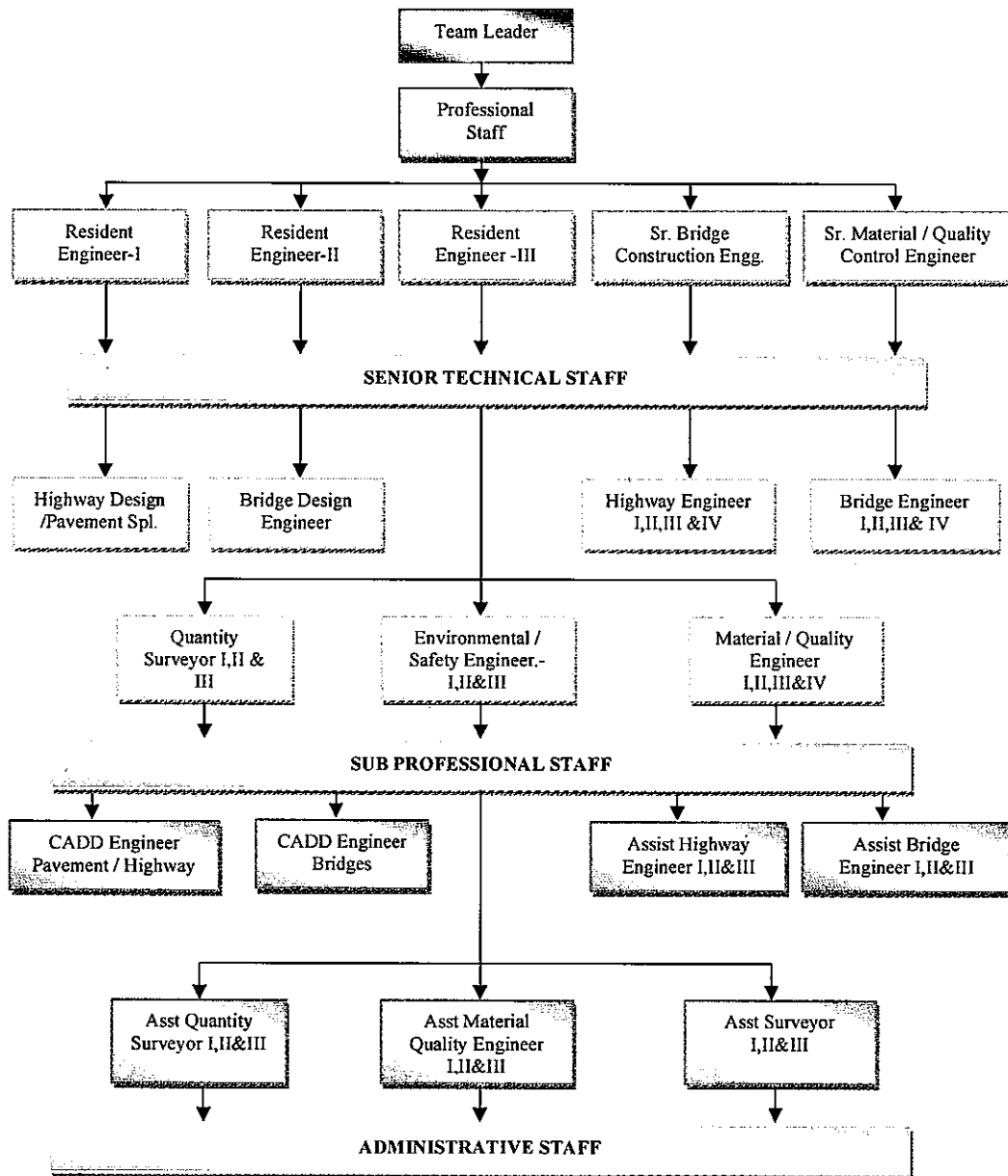


FIGURE 2 ORGANIZATION STRUCTURE



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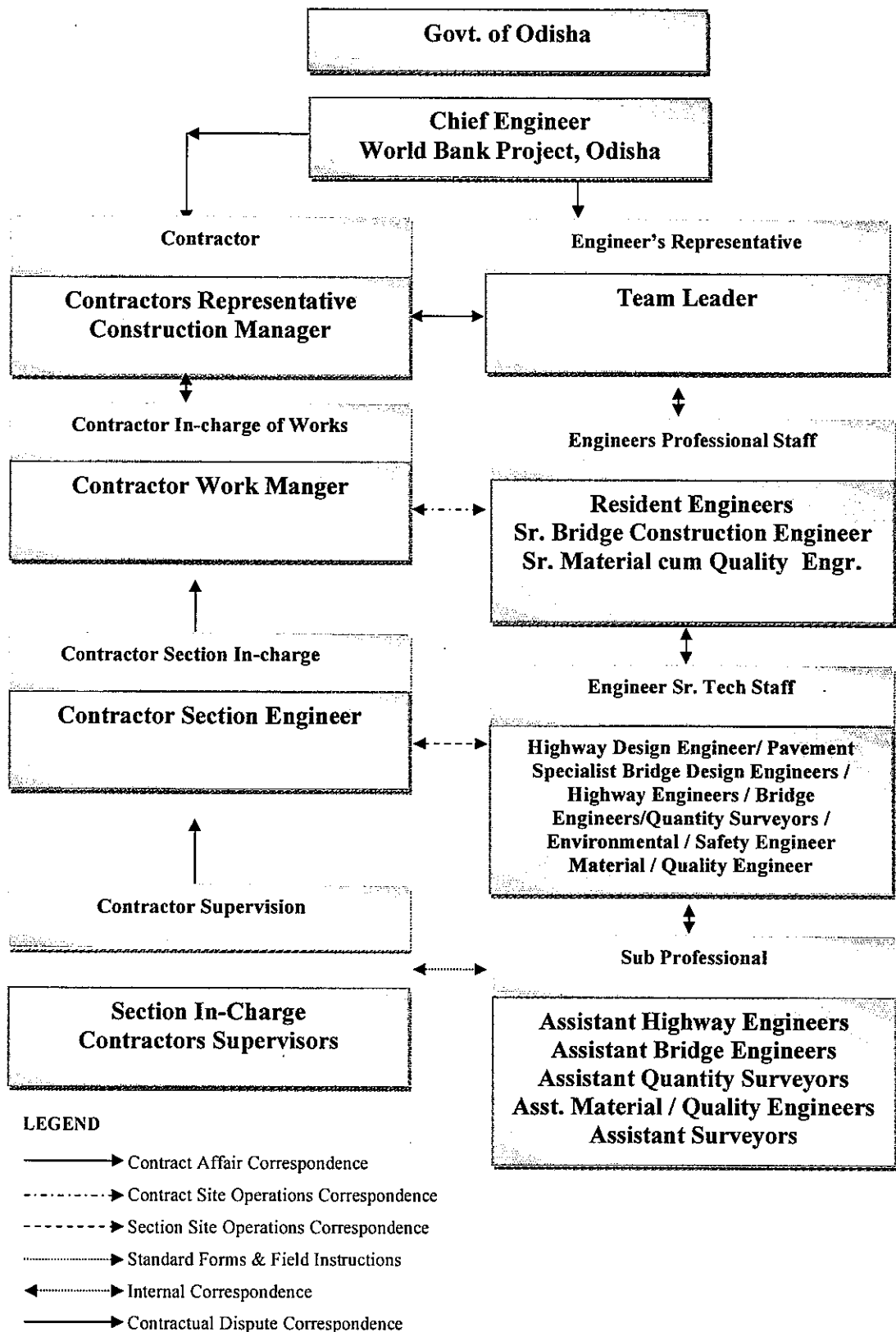


FIGURE 3 LINE OF COMMUNICATIONS



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ASSUMPTION	RISK	POTENTIAL EFFECT
Contractor's planning, and programme of works, are realistic for meeting the time deadline.	Contract fails to produce a realistic detailed Programme of Works	Effective monitoring of the project is difficult, if not impossible. This may result in a delay to the Project, with possible late completion of the project.
Contractor's plant and equipment are adequate, both in number and reliability	Contractor's resources are not in accordance with his contractual obligations. Insufficient plant and equipment, possibly with frequent	This may result in a delay to the project, with possible late completion of the project.
All materials comply with the Specification, and are obtained within a reasonable distance from the site.	Rock from quarries close to the site does not meet the quality and /or quantity requirements of the Contract documents.	Excessive haul distances from approved quarries result in adverse effect on progress, leading to delays. Potential for dispute over price.
Management of traffic by the Contractor during construction is effective.	Contractor fails to manage traffic effectively. Safety risks to the road- using public and the Contractor's workforce.	Disruption to traffic and site operations, possibly leading to accidents and delays in the works
Rehabilitation works to bridges and other drainage structures will be minimal	Further investigation indicates significant work required to upgrade structures the level compatible with the new road works	Possible delays and budget blow-out caused by additional commissioned work to upgrade structures
All Contractors' activities comply with the environmental requirements of the specifications.	The Contractor's activities result in pollution of the environment (air, streams, natural ground formation etc.)	Adverse effect on fauna an /or flora. Possible long-term effect on sensitive areas such as natural lakes.

FIGURE 4 EXPLANATION OF RISKS AND ASSUMPTIONS

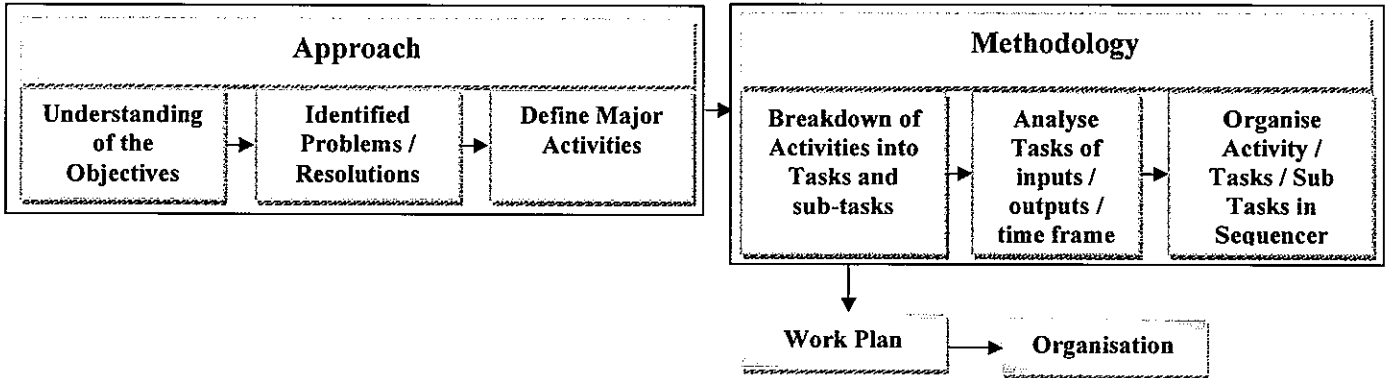


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A-1.7 FORMULATION OF APPROACH AND METHODOLOGY

The Technical approach and methodology have been formulated following a logical sequence.



In the technical approach to services, "Activities" have been identified based on the requirements of the TOR. The scope of work detailed in the TOR are detailed enough to meet the requirements.

A-1.8 TECHNICAL APPROACH TO THE SERVICES

The technical approach has been developed to determine major activities so as to encompass the issues discussed in previous sections.

The TOR scope of services were studied in details, in addition to the relevant World Bank publication and it was concluded that the defined services are adequate to manage the implementation to achieve the assigned objectives.

A-2 METHODOLOGY

The activities proposed in the technical approach have been further broken down into specific tasks and sub-tasks according to the intended content of the activity, to help ease in comprehending the methodology planned for carrying out the activity.

Analysis has been carried out for the input requirements of discipline experts and the output expected for each activity.

Since the methodology has been developed from the activities formulated in the Technical Approach, their compatibility has been assured. The problems that normally come up in such projects have been identified. Activities included in the approach and methodology address them adequately. Activities and tasks have been organized in a sequence, to run in series or in parallel. The supervisory activities to be carried out during pre-construction and construction periods, which include the initial mobilization of the Contractor(s) with several important activities taking place simultaneously along with setting up the Consultant organization, are detailed hereinafter.



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The project as per TOR is divided in to three distinct TASKS:

Handing over/Taking Over

Documents required at the time of Handing over/Taking over of each contract package

1. Copy Work Contract
2. Detailed Project Report
3. Work Implementation Programme including staff deployment
4. Approved Methodology
5. Approved Construction drawings
6. Survey references
7. Approved borrow areas/material quarries/sources
8. Progress reports monthly/quarterly
9. All copies of running payment particularly last bill (IPC)
10. Work carried out after PAYMENT OF last running bill
11. Non Conforming Reports
12. All correspondence files
13. Built up Drawings
14. Details of additional/extra work if any

Quality Control / Safety Requirement Status

1. Laboratory set up-EQUIPMENT AS PER AGREEMENT, CALIBRATION
2. Approval of material/sources of material
3. Mix design-BITUMINOUS AND CONCRETE
4. Tests and Certification
5. Special tests
6. Monitoring and day to day checks
7. Construction safety measures (SAFETY MANUAL)
8. Traffic management
9. Environmental safety measures



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Other requirements

1. Cash flow requirement
2. Record of plant, labor and material
3. Construction Supervision Manual
4. Maintenance Manual
5. Change order
6. Modifications to approved design and drawing (if any)
7. Other requirement if any will after study of work contracts

The consultant will deliver a status report on handing and taking over which will cover the Documents required at the time of Handing over/Taking over of each contract package; Quality Control / Safety Requirement Status and Other requirements such as Cash flow requirement; Record of plant, labor and material; Construction Supervision Manual; Maintenance Manual; Change order; Modifications to approved design and drawing.

Activity I: Project Initiation, Activity II: Construction Supervision & Activity III: Defect & Liability**ACTIVITY I: PROJECT COMMENCEMENT****Task I- 1. Consultant Team Mobilization**

The Team Leader, along with Resident Engineers, Sr. Bridge Construction Engineer, and Sr. Material cum Quality Engineer will be deployed on receiving letter intent. The rest of team will be mobilized as needed depending upon contractor's work program and after client approval.

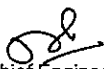
Task I- 2. Consultant Offices

A start up meeting will be held between Team Leader, Resident Engineers Sr. Bridge Construction Engineer, and Sr. Material cum Quality Engineer, Employer and civil work contractor on notice to proceed to discuss the project and how consultant plans to proceed on the project.

The initial discussions will cover review of scope of works, data requirements, availability and resource, work plan and methodology and also to get clear understanding of expectations of Employer.

The initial interaction and deliberations among the team members is essential for directing the thought process of individuals of different expertise in a matching wavelength and a common platform, so that the ultimate objective of the proposed consultancy services is met.




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Task I- 3. Start up Meeting with Client

Under the proposed arrangement supervision consultant will create project office, located at Bhubaneswar. Three site offices for three projects will be setup at locations acceptable to client.

Task I- 4. Consultant Team Composition

Consultant will submit to the client composition of its team and task assignments for its approval.

Task I- 5. Consultants Work Plan

MSV will prepare detailed work program that will include all activities as envisaged in the TOR together with their monitoring procedures and methodology. This will be prepared in consultation with contractor and client. This will be modified from time to time as site condition requires it. The Consultant will adopt specific plan / programme for ensuring safety during construction in discussion with Contractors and the Employer. As a minimum, following activities should form part of the Consultant's work programme: Involve public in selecting and finalizing traffic control plan; Initiate Traffic Awareness Program; Group and sequence projects activities to minimize exposure; Conduct Work Zone Traffic Management Training Schemes; Report and analyze all work zone crashes; Collect and disseminate real time traffic information; Ensure provision of "attention getting" signs in work zones; Insist on durable temporary pavement marking material that can be easily removed and does not leave a visible residue on the pavement Adopt specifications that require adequate lighting for all nighttime operations; Insist the Contractors to have trained security guards deployed to guide the traffic; Ensure unauthorized personnel are prevented from entering hazardous or restricted areas & Establish procedures for the transport and handling of hazardous materials.

Task I- 6. Detailed Methodology

The Consultant's prime objective is to deliver the Project as a fully functional facility, in conformity with the specifications, within the time schedule and within the budget. In order to achieve these objectives we will make effective use of the available project management techniques, which have specific relevance to this project.

The project management techniques of particular relevance to this project are: Programming; Cost Management; Change Control & Risk Management. These techniques will be described in the Project Plan / Manual, which is a specific plan of action to be developed for this particular project in compliance with ISO. Control of progress in the various fields of activity is carried out using project-monitoring techniques.

The Project Manual

The Project Manual (or project plan) is one of the most important documents necessary for project management. Drawn up at the beginning of the project, under the responsibility the Team Leader, the project manual describes all technical, administrative, financial and scheduling references. Specific procedures to be in project organization, management and control are also included. This manual is to be used by those involved in the project. It complements the Consultant's Quality Assurance Plan. Important information is contained in the Project Manual: Description of projects targets and constraints; Projects work breakdown



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structure (WBS) and Organization breakdown structure (OBS); Project management and supervision resources to be allocated; Activities and responsibilities of project stakeholders; Identifies risks and appropriate solutions; Project master schedule; Project cost evaluation cost breakdown structure (CBS) and budget plan (Cash flow diagram); Management procedures and standards & Guidelines for progress cash flow and change control monitoring

Project Monitoring

Major tasks are described hereafter

- **Programming**

The QS Engineer in consultation with the other team members and stakeholders, will coordinate, finalize and approve the detailed working schedules and will prepare an overall programme for the sites and the project, for approval by the client. This program includes: Programming of the project from the definition of major phases, key tasks milestones and critical paths & Definition of the procedures for monitoring the program

- **Cost Management**

The Cost Management Plan will be monitored and reports will be generated periodically as required for the overall budget and for each sub-budget listing: Approved budget; Value of work committed; Value of work executed; Value of payments made; Variance (if any) between planned progress and expenditure; Value of approved variations (if any); Estimated values of proposed variations (if any) & Estimated cost at completion. Reference budget reports will be supported by graphics showing planned and actual cash flow and predicting trends

- **Change Control**

When changes are proposed by the Contractors or are instigated at the request of the Client the consultant will follow the following procedure: The reasons for the change and its implications; The consultant numbers the proposal and logs it in the project change control database; The Team Leader evaluates whether the change is either essential or has benefits which warrant its review by the client. Other proposals will be rejected; Copies of the proposed change (if not rejected at the previous stage) are distributed to appropriate parties to ensure accurate costing and evaluation of other implications; Consultant collates data and submits to the client a report summarizing; the reason for the variation; the source of the variation; the estimated cost consequences; proposals for avoiding or mitigation any time over run; sources or proposals for funding any cost over-run; Client considers and authorizes or rejects the proposed change.

If authorized by the client, the Team Leader issues necessary instructions: Supervision of Construction Services during Construction Period. The overall objective of the supervision of the construction works is to ensure that the works are constructed in accordance with the specified standards, within the overall time schedule and within the tendered cost adjusted by justifiable variations. As far as the social impact of the works and the sensitivity of the project are concerned, all site teams will be trained before they begin the works, in order to



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increase their awareness in project objectives, work steps, critical points of their work, and how to dialog with the third parties within the scope of the project.

In meeting the overall objective the following office and site based tasks will be undertaken: Checking of all the information required prior to starting the works and obtaining additional information from the related authorities before the Contractors set out the works; Supervision of all setting – out activities by the contractors as per the FIDIC conditions of contract; Our PMC staff will satisfy themselves that there is sufficient survey coverage to ensure accurate setting out of all the Works; Advise on preparation and issue of working documents/drawings containing sufficient detail to enable the Contractors to translate the designer's concept into completed work on site; Advise on the provision of sufficient survey data to enable the Contractors to set out the works accurately on site and subsequent information including levels and grid references of benchmarks; Checking and approving the Contractors work program and construction schedules; Checking for compliance of standards and acceptable safe working practices and approving methods of construction; Ensuring that the Contractors bonds and insurance comply with the requirements of the contract and are maintained for the required duration; Advise on the preparation and issue of any additional designs, specifications, drawings and instructions to enable the contractors to execute the work; Examining any designs or proposals submitted by the contractors for compliance with standards, overall objectives of the project and acceptable and safe working practices; Preparing variation orders and advising the client on new rates and prices as required & Quality Control.

Quality control of all construction work will be provided through direct inspection of all field tests and through the use of testing laboratories and formal documentation of all non-compliance and remedial action, as required by the provisions of the quality assurance system and as supervised and enforces by the site engineer.

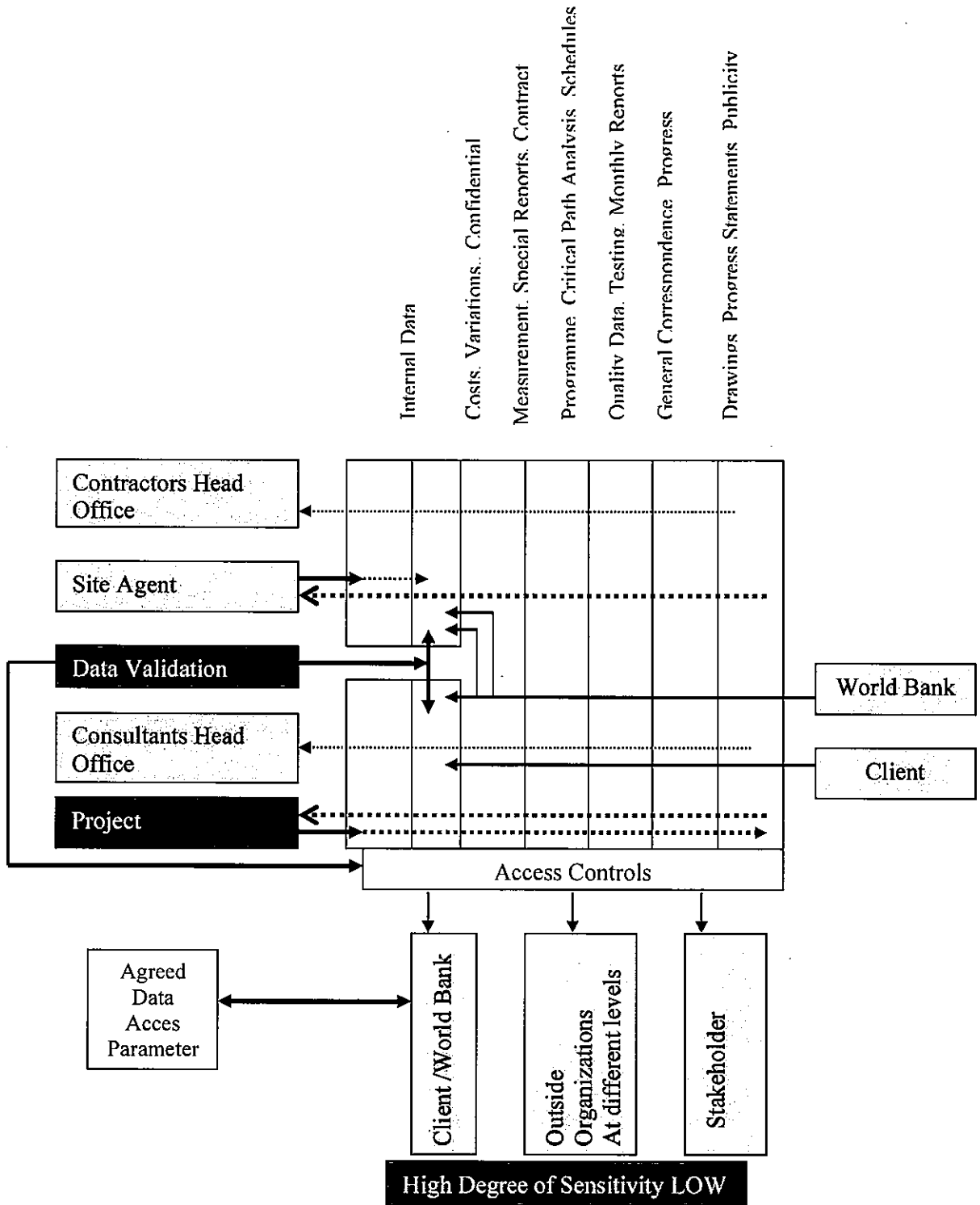
Task I- 7. Site Communication & Record Keeping

Web based MIS system will be used that provides an appropriate environment to carry out this important Task. The MIS will incorporate a monitoring system based on a well-prepared reporting and recording procedure which is essential for proper contract management. The main sources information are daily report which are a basis for monthly reports. These can generally be classified as follows: Daily Site Diary entries and detailed records including all correspondence and data on all works activities including work stoppages or delays, accidents on site and weather records; Field reports (based on daily inspection sheets); Interim reports (weekly reports by staff responsible for certain segments of supervision, e.g. quantity measurement, field or laboratory testing) & Executive reports, issued basically by the Resident Engineer to summaries monthly progress in physical and financial terms. Document storage and filing methods are also very important and the proposed computer based MIS provides an effective solution. The filing system should be clear and transparent to allow easy reference and accessibility. The Consultant will validate all the data produced prior to registering the files in the MIS. The access protocols for this information will have been agreed with client and controls will be applied by the Resident Engineer. Consultant will make online entries on online system of client.




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MIS FLOW CHART



[Signature]
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Task I- 8. Format for Monthly Progress Report

Consultant will develop format for monthly progress reports based upon its experience on other similar projects worldwide and submit it to client for approval before its use.

Task I- 9. Finalize Quality Assurance Manual

The Technical Specifications applicable to the project provide for Quality Control and Quality Assurance of the work executed by making use of a Quality Management System. The basic concept of this process is that the contractor performs adequate testing and inspections to ensure a quality product and the Construction Supervision Consultant performs adequate testing and inspection to ensure that the Contractor's Quality Contract test result are accurate. The main aim is to make sure that the contractor performs the necessary tests and inspections to ensure that all the works in road construction including structures and miscellaneous work meet the specifications stipulated in the contract agreement for acceptance or works as per laid down specifications. The Contractor's part of this QMS process is referred as Quality Control (QC), while the Construction Supervision Consultant's part of the process is referred as Quality Assurance (QA). The Contractor is responsible to mobilize competent personnel and laboratory equipments to perform his quality control as per his quality control Action Plan, and the Consultant is responsible to provide competent personnel to perform and implement the Quality Assurance Plan. To achieve this said objective of assessing and ensuring quality, it is essential to have a Quality Assurance (QA) Manual for the job in the initial stage itself. After carrying out the site appreciation, understanding the Scope of Services and based on consultants past experience of similar projects, an effort has been made to draft out the outline of the most suitable Quality Assurance Plan for the present project. However, it will undergo changes during the Implementation, based on better knowledge of the project and also taking feedback of the client agency. The proposed Quality Assurance Manual, in general, will spell out the following: Procedures for checks on level, dimensions, edges, geometric details; Procedure for selection, approval and operation of material sources; Procedure for storing of materials and equipment to be used in permanent works; Type, frequency and procedure of tests for different kinds of materials and related pavement works; Norms and procedures for control of alignment of Pipe Lines; Norms of compaction; Equipment and organization for field test and sampling of materials for laboratory tests; Procedures for monitoring concrete production, laying and compacting and testing; Formats for recording and compilation of test data, and reporting system for test result including forms/checklist and for actions taken; Safety measures; Environmental mitigation measures; Procedures of acceptance or works; Do's and Don't for supervisory staff & Responsibilities of operating and supervising staff

A typical content would look as follows:




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QUALITY ASSURANCE MANUAL (QAM)			
1.	IMPORTANCE OF QAM	5.	METHOD STATEMENTS
1.1	INTRODUCTION	6.	ACCEPTANCE CRITERIA
1.2	PROJECT QUALITY POLICY	6.1	REQUEST FOR INSPECTION
1.3	TERMINOLOGY	6.1.1	Material
2.	EFFECTIVE QUALITY CONTROL	6.1.2	Testing
2.1	GENERAL PHILOSOPHY	6.2	NON-CONFORMING REPORT
2.2	PRE-REQUISITES OF EFFECTIVE	6.2.1	NCR Format
2.3	QUALITY CONTROL	7.	QUALITY CONTROL TESTS
2.4	TYPES OF QUALITY CONTROL	7.1	PERFORMA
2.5	QUALITY WORK	7.2	PERFORMA FOR QC TESTS
3.	NEED FOR QUALITY CONTROL/ ASSURANCE		SURVEY STRIP LAYER
3.1	ASSURANCE	8.	CHART- KEY PLAN
3.2	QUALITY MANAGEMENT	8.1	ADDENDUM
4.	FRAMEWORK	8.2	TEST AND TEST STANDARD
	THE MANAGEMENT FRAMEWORKS		CONTROL OF ALIGNMENT,
4.1	QUALITY CYCLE	8.3	LEVEL AND SURFACE
	RESPONSIBILITIES OF THE		REGULARITY
4.2	CONTRACTOR AND THE		SPECIAL TESTS ON
	CONSULTANT		PROPRIETY MATERIALS
	CONTRACTOR'S RESPONSIBILITIES		
	CONTRACTORS CONSTRUCTION		
	ACTIVITIES		
	CONSULTANT'S RESPONSIBILITIES		

In light of above supervision consultant will provide feedback / suggestions if any, to the employer during the inception period on the quality assurance manual prepared by the previous consultant and reviewed / approved by the World Bank / PMU.

Task I- 10. Finalize Construction Supervision Manual

The Consultants / Engineer propose to provide strict supervision of Contractor's activities to ensure all works are carried out in full compliance with engineering designs, technical specifications and other contract document, including amendments, if any and in keeping with the "Best Practices" norms. Supervision Manual will essentially cover the following:

- What to inspect
- How to inspect (with flow charts detailing scheduling of tasks for inspection)
- Evolving effective quality control measures to be adopted
- Role of supervision during laboratory testing
- Description of role of key and sub key professionals
- Aspects on contract management

Supervision consultant will provide feedback/suggestions, if any, to the employer during the inception period on the construction supervision manual prepared by previous contract and reviewed / approved by World Bank / PMU.

Task I- 11. Taking Over Project from Interim Supervision Team

The Consultant will take over the assignment from the interim supervision team with collection of all relevant documents which were transferred earlier from the previous Consultant to the PMU as well as from the PMU's current interim team.



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The Consultant will assess the quantum and cost of works completed at the time of taking over (including all variations in quantities and costs) and to estimate the remaining quantum of works to be completed during the assignment.

The Consultant will make a quick sample assessment of the completed works as regards to the quality and its conformity to the contractual specifications. Quick sample assessment of the completed work may be done by possible independent tests such as NDT. Any other method can also be adopted which shall be finalised at the time of inception in consultation with the Client.

Task I- 12. Inception Report

The Consultant will prepare an Inception Report two (2) weeks after the mobilization of contractor. This report will include results of the review of the contractor's work program, any modifications thereto, status of the consultant and contractor's mobilization and any other matter requiring the Client's action. This report will include at least the following:

- (i) The Consultant's state of mobilization;
- (ii) Any changes to the composition of the Consultant's team;
- (iii) Proposed methodology for carrying out the services, including quality; progress and cost control, and ensuring compliance with environmental, Social and Safety requirements;
- (iv) Proposed site communication procedures and record keeping;
- (v) Detailed program of work, showing time, duration and personnel, as well as inter-relationship between activities;
- (vi) Format of Monthly Progress Reports
- (vii) Finalize Quality Assurance Plan
- (viii) Finalize Construction Supervision Manual
- (ix) Report on Taking Over from Interim Supervision Consultant

Activity II: CONSTRUCTION SUPERVISION

Task II- 1. Act as an "Engineer"

The consultant (Firm) is responsible for getting the work done by the contractor and would discharge responsibilities as Engineer defined in FIDIC and in terms of the civil contract. The Resident Engineers will also work as 'Engineer' at site for the respective package.

The firm would have an internal regulatory mechanism to act as interface between the Project Manager, the client and the firm's head office in Kirkland, Washington, USA. He would be designated as "Project Manager" of the firm. He would represent the firm's management and take calls on dispute resolution, conflict resolution, and concerns of the administrative issue of the client and the project as a whole. He would visit the site on a regular basis and keep himself updated about the project playing the role of a facilitator.

The Engineer would also ensure through coordination of the individual field teams in order that each team is at all times fully aware of the remedies to common problems adopted by the other team (s) and would ensure that the full experience of all the members of the various teams as well that of the "Engineer" and his staff are applied as necessary for the project.



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As a minimum coordination will involve weekly visit by Team Leader / project Coordinator to the Job site. Each of these coordination.

The Engineer will visit would visit the field regularity to monitor progress of works and quality of work.

Task II- 2. Delegation of Power

Under this task, the consultant / engineer will assign the responsibility / delegate power to his representative as per conditions of contract, so as to ensure that the works are being executed in accordance with the established standards, specification and procedures as provided in the approved contract documents.

The tasks assigned to each of the supervision team member are discussed in detail in this proposal and the Task Responsibility Matrix included in this proposal. Further dissemination of responsibilities and accountability would be elaborated in the Quality Assurance Manual as depicted in earlier section of this proposal.

Task II- 3. Coordination with Other Agencies

The Project Manager will coordinate with other agencies involved directly or indirectly for smooth implementation of the project wherever needed. He would approach the client for their assistance as deemed necessary or when the process gets stuck on 'procedural' grounds. Such entities may include:

- City Traffic Police
- Municipal Authority
- State Pollution Control Board
- State Electricity Department

Task II- 4. Advance actions for handing over of site

Assist/advise Employer for advance actions required to be taken for handing over of site and in achieving different milestones for completion of projects as per schedule

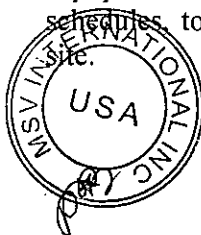
Task II- 5. Order to Commence the Work

The Team Leader would order the contractor to commence the work after getting approval from the employer and the date is considered as the commencement date / date of start of civil works.

Task II- 6. Contractor Mobilization

The Contractors will submit their Mobilization Schedule to Consultant with in the specified time after receiving the Notice to Proceed. The Consultant will review and finalize the Mobilization Schedule in consultation with Contractor and Client. This Mobilization Schedule will include the following items:

- Staffing Schedule
- Location of all the Contractor's base camps with a general location planned and detailed site plan of each camp showing the locations of the Contractor's offices, workshops, crushing plants, hot mix plants, Concrete Batching Plants, testing laboratories etc.
- Equipment delivery schedule indicating the current location of all plant listed in the schedules, together with the proposed means of transport and scheduled arrival dates at site.



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- Any changes in the equipment and staffing schedules.

The Consultant will review the Contractor's list of proposed equipment to ensure the sufficient and suitable equipment are delivered to the site. The Consultant will ensure sufficient provision of standby arrangement to guard against delays due to equipment breakdown.

An overall Mobilization Progress Schedule in the format of a bar chart showing each of major mobilizations activities and a target progress curve measured in the terms of percentage complete will be submitted by Contractor and reviewed by Consultant.

The consultant will advise the Contractor on possible delays in his deliveries and encourage the Contractor to develop alternative plans of action to eliminate possible future claims for time extensions due to delayed delivery of equipment and materials and staff.

Task II- 7. Preparation and Proof checking of all the drawings

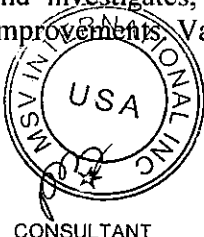
The Consultant will develop proper understanding of the project design and drawings within a month time from the date of commencement which were prepared earlier by the DPR Consultant. All site specific changes made to the above by the previous supervising team will to be considered. The Supervision Consultant during its incumbency will also review the BID documents, EMPs, Engineering reports pertaining to the Construction packages and suggest necessary corrective measures, if required.

Minor design changes to suit site requirements and major changes if required will be performed. In situation where it is felt essential to make some changes in the design/drawings requiring exceptional studies beyond the scope of the present services, the supervision consultant will undertake the same by deploying experts / specialized people. These experts may be hired by the Employer or through the Supervision consultant, approved by the Employer as per the requirement after mutual negotiation.

OWD will issue to the supervision consultant designs and drawings of the Project Package prepared by DPR consultant and Consultant will review these for implementation during construction. The consultant will obtain the details of computer programme used for designs, including details of surveys, geotechnical and sub- soil investigating carried out for design. The consultant will also field design check for horizontal and vertical alignment. The main objective of the review by the consultant is to identify any anomaly or items of variance with site conditions or situation felt essential to make some changes in design/ drawings. The review will also identify any defects or omissions that compromise the completeness or consistency of the design or affect the viability, accuracy or implementation of works contract. The Consultant also retains total direct responsibility for the design standards, design parameters, technical specifications for reviewing and approving the design work/ drawing and other output.

The review by the consultant will be carried out immediately after services commence.

During the construction the Consultant will review the design & drawing with the first month of start of work. He will perform: Document Review, scrutinize and verify the detailed design, and bid and documents including construction drawings, bills of quantities, estimates and specifications for any ambiguities and suggest any adjustment deemed necessary; Ascertain that design meets site condition; Recommend and supervise additional site surveys and investigates, as and when necessary; Advice on alternative options or other design improvements. Value Engineering may be performed if so desired by client.



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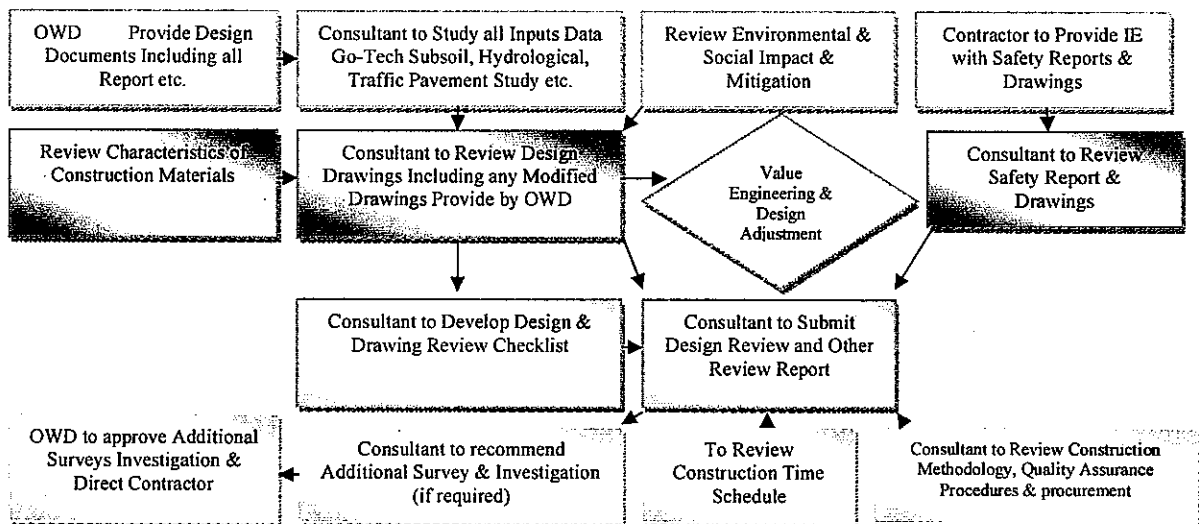

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The documents review will be carried out to ensure that the information to be provided to the Contractor(s) will be sufficient and correct, and;

- Conforms to the Client’s requirements;
- Complies with National or International Standards and Specifications;
- Standardization is applied to all contracts;
- The drawings, quantities and specification cross checked;
- The proposed design is buildable.

Value Engineering and Value Analysis will be mainly incorporated as part of the design review process. Value Engineering is a formalized and organized procedure of studying values of Projects. Recommendations are made as appropriate for revisions that will improve the engineering design, without radically distorting the original programme of the project. The aim of the Value Engineering process is to ensure that the Project provides the best value at the lower cost, the major objective being the reduction of initial and life cycle costs. The objective is to provide a rational guide for selection of the lower –cost system that meets the Client’s actual needs.

Moreover, in the framework of a value engineering approach, the Consultant will pay particular attention to initiate and develop a continuous and close co-ordination with client representatives in order to save time in approval processes, optimize the use of the available resources and therefore fully comply the project’s requirements as well as the Client’s expectations.



Design review will be completed within two months including reports, which sets out all findings and recommendations for making good any defects and/ or omissions. Supervision Consultant will immediately inform the Employer’s at the time these defects/ omissions, which may have impact on the project, at the time these are uncovered. Supervision consultant will submit review reports to the Employer and also construction drawing to the Contractor including preparation of modified drawings and associated variation order based on review and amendments agreed by the Employer.



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Consultant will review the independent safety Audit and incorporate feasible minor modifications in final drawings & BOQ.

Task II- 8. Review Contractor Work Programme

The Contractor is expected to submit his Work Program before commencement of the project. The work plan will be reviewed for the following:

- Working methods / construction methodology
- Procurement of machinery / material
- Deployment of resources
- Cash flow, etc.

The consultant will advise and assist the Contractor in development of work program. The Contractor will then develop the implementation plan and provide to consultant for review and further suggestions.

The work program prepared by the Contractor in Consultation with consultant will be approved by consultant and contain the following:

- A detailed schedule of implementation for putting up and operationalizing the project facilities.
- The Critical Path Method (CPM) / Programme Evaluation and Review Technique (PERT) charts or similar activity planning technique/ method for monitoring. This would cover all stages/ aspects of the project implementation including design and engineering, procurement of materials and equipment, installation, construction and testing,
- Manpower deployment plan, including the designation of key personnel for the management and supervision of all project activities.
- A broad method statement for key items (initial surveys, site clearance and dismantling, earthwork and sub grade, granular sub base, bituminous macadam and concrete pavement, cross drainage and protective works) setting out the methodology of construction, materials and construction equipment mobilization / utilization plans, broad output calculations and details of the quality assurance and quality control procedures.
- Format of the monthly report giving details of the physical progress in implementation of the project activities undertaken.

The Consultant will ensure that the Contractor adheres to the Implementation Plan strictly as agreed upon between the consultant and the Contractor. This will include the following:

- Ensure that the constructional activities of the Project Facilities are undertaken with minimal inconvenience to the traffic using existing road.
- Ensure that the standard of service on the existing road is maintained to the extent possible at the level that existed prior to the commencement of construction.
- Take the necessary precautions to remove feasibility of any accidents and respond to Emergency as quickly as possible.
- Take precautions to avoid inconvenience to, damage to, destruction of or disturbance to any third party rights and properties.
- Ensure adequate safety of traffic and the personnel deployed at the Project Site.
- Be in compliance with the applicable laws and applicable permits obtained for the project.
- Deploy adequate number of qualified and competent personnel having relevant experience and skills for implementation of the Project and interaction with the Client.



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The Contractor will also get prior permission from consultant for the following activities:

- Obtain and provide to Consultant all permits as necessary to commence construction of project facilities.
- Finalise the drawings and the Implementation Schedule in consultation with the consultant.
- Mobilize the requisite resources, personnel and equipment necessary for the same. Designate and appoint suitable officers & representatives with responsibility to supervise implementation of the project and for exchange of information with the consultant & Client.
- Finalise in consultation with the consultant, method statement setting out details of the actual method that would be adopted by the contractor for the construction of project including details of equipment and machinery that would be used, their locations and arrangements for conveying and handling materials
- Finalise in consultation with the consultant, Quality assurance and quality control procedures to cover all aspects of work so as to ensure the desired quality, this would include establishment of a well-equipped functional laboratory.

Consultant will insure that programme submitted for execution of works will in addition to programme for pure construction activities includes an evaluation programme for site staff, labour, HIV/AIDS, Anti-Trafficking, Child Labour, Gender.

Task II- 9. Review Contractor's superintendent Personnel, Equipment and temporary land to be occupied by the Contractor

A. Contractor's Superintendent Personnel

The contract documents invariably include list of minimum supervisory personnel to be provided by the Contractor for the work with their qualifications, minimum experience, etc. The key superintendent personnel proposed to be deployed by the Contractor would be reviewed for their adequacy for the project and conformance to the provisions of the Contract. The review will be inter-alia aimed at assessment of their:

- Capability to handle mechanized projects and acquaintance with working/problems of heavy machines/equipment procured for the project
- Capability to motivate labour
- Quality consciousness
- Adherence to time schedule
- Safety consciousness
- Capability to handle work during emergencies.

The personnel mobilization program will also be reviewed keeping in the work program submitted by the Contractor to insure optimum utilization of resources/completion of the project according to the laid down schedule. The land proposed to be hired / occupied by the Contractor for the Project will also be reviewed for its adequacy keeping in view infrastructure / logistics required for maintenance of machines and area required for providing amenities to labor under the State statues and avoiding adverse impact on the environment during/post construction period.



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A. Contractor's Equipment

At the opening of the work site, the Consultant will inspect in detail and record the Contractor's equipment, material and organization of the work site to ensure that they meet the specifications, are in suitable condition and are compatible with the nature and quantities of the work to be performed. Special attention will be given to: Rock crushing plant for the production of crushed base course and aggregates for asphalt surfacing and concrete works; Suitability of proposed concrete batch plants, concrete mixers, plate and needle vibrators; Suitability of proposed hot mix plants; Bitumen and concrete paving machines; Compacting equipment; Bitumen distributors; Dewatering equipments and Electric generators for power supply

Should the Consultants not be satisfied with any item he will immediately inform the Contractor of its unsuitability and urge him to replace it. All equipment will be monitored throughout the job to ensure its continued acceptability.

Furthermore, the Contractor will submit specifications of equipment prior to mobilization for evaluation by the Consultant. If the Consultant finds fault with the equipment and or associated work methods in that it is not going to perform in accordance with project requirements, he will instruct the Contractor accordingly in order that changes may be made without affecting the work schedule.

The Consultant will ensure that the Contractor mobilizes adequate number of equipments, plants and machinery to ensure adherence to the implementation Plan.

B. Contractor's temporary land

The consultant will make sure that the temporary land used by the contractor for construction staging is adequate and is maintained to Environmental standards.

Task II- 10. Review Contractor's construction Methodologies

The adequacy of the methodology would be scrutinized keeping in view the following:

- Sequence operation of various activities
- Deployment of resources including labors, materials and machines
- Adequacy of plan for completing critical activities and contingency plan for making up slippages, if any
- Compatibility with work program
- Maintenance of traffic flow during construction including construction of diversions
- Compatibility with safety and environmental standards
- Execution of emergency works
- Compliance with provisions of contract/technical specifications

The Consultant will discuss with the Employer/relevant employer officials and modify the methodology where necessary before according its approval

The contract documents invariably include list of minimum supervisory personnel to be provided by the Contractor for the work with their qualifications, minimum experience, etc. The key superintendent personnel proposed to be deployed by the Contractor would be reviewed for their adequacy for the project and conformance to the provisions of the Contract. The review will be inter-alia aimed at assessment of their: Capability to handle mechanized projects and acquaintance with working/problems of heavy machines/equipment




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procured for the project; Capability to motivate labour; Quality consciousness; Adherence to time schedule; Safety consciousness and Capability to handle work during emergencies.

The personnel mobilization program will also be reviewed keeping in the work program submitted by the Contractor to insure optimum utilization of resources/completion of the project according to the laid down schedule. The land proposed to be hired / occupied by the Contractor for the Project will also be reviewed for its adequacy keeping in view infrastructure / logistics required for maintenance of machines and area required for providing amenities to labor under the State statues and avoiding adverse impact on the environment during/post construction period.

Task II- 11. Contractor to Provide an Environmental Protection Plan

The Contractor will be instructed to provide an Environmental Protection Plan before actual work on ground based on the following:

- Project EIA report
- Project Environmental Management Plan contained in the contract

Review will be done by the consultants keeping the World Bank's published guidelines as bench mark for compliance. It would be approved subsequently for implementation. This also would be updated form time to time.

Additional mitigation measures as suggested by the client, or consultants or contractor during the construction have to be incorporated in the plan, in the updating process. Such additional measures would be considered with due consideration of additional cost if any vis-à-vis the benefit to the environment system and the society at large.

Task II- 12. Approval of the Plan

The consultant will approve such plans in collaborations with the client's Environmental Officer in charge and the World Bank's guidelines.

The potential adverse impact to be minimized during construction would broadly include the following in the approved EMP:

- Minimize water and soil pollution, by directing runoff waters into tailing ponds
 - Alleviate noise vibration
 - Suppress dust pollution in towns and rural villages by regular wetting of surface
 - Ensure safety during construction by installing the appropriate signs and signals at and around construction sites
 - All borrow pit areas will be reclaimed as much as possible to their original state
 - Minimizes the risk of soil erosion by grassing the embankments; stabilize with gabions or stone pitching at bridges and at the inlets and outlets of culverts on sandy soils. For the appropriate selection of grasses and tree species, the consultant will discuss with the local Departments of Agriculture and Natural Resources.
 - Long traffic diversion roads will be avoided so as to minimize the effect of dust on the surrounding Environment. In any case all diversions will be kept damp or reduce dust and the diversions need to be reinstated at least to their original state which may include loosening of the compacted soils, removal of foreign material, spreading of topsoil.
 - Spillage of oil, fuel, and lubricants, will be avoided. If spilt, they will be collected and disposed of in such a way as no to adversely affect the natural environment.



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- Rock blasting near settlement areas will be properly coordinated with the relevant officers of the Employer's Government Authorities in an attempt to minimize levels of noise pollution and community interference.
- Camp sites will be located in a area so as to minimize disruption to local population, fauna and flora and water courses; adequate drainage facilities and treatment of sewerage and waste disposals will be provided. Camp area will be dismantled and rehabilitation once construction is completed.

The consultant will also have full consultation with the local Authorities during implementation of above mitigation measures.

The consultant would draw client's attention to any instances of non-conformity of the contractor's works with the required Environmental Management Plan (EMP)

Task II- 13. Ensure that the construction works are in accordance with the technical specifications, Environmental Management Plan

Consultant will ensure that the construction works are in accordance with the technical specifications, Environmental Management Plan and other stipulation of construction contract documents and the construction methods proposed by the contractor are in compliance with the above stipulations particularly, in relation to Contractor's construction equipment and other resource deployment.

Task II- 14. To verify and if necessary order correction of the as –staked drawings supplied by the Contractor

Consultant will verify and if necessary order correction of the as –staked drawings supplied by the Contractor

Task II- 15. Identify all Becons and Benchmarks

An attempt will be made to identify the original bench-marks and control points installed during Project design. Control monuments will be fixed along the Project road as appropriate and made permanent for the whole Project period.

The checking of reference points will be made by the Consultant from the registered co-ordinates available with the original design documentation. It should be noted that this task has to be conducted in order to provide sufficient accuracy, with a differential GPS methodology.

Once the reference points are verified and any missing concrete bench-marks replaced, the Engineer will hand over those points to the Contractor for setting-out of the Project.

Task II- 16. Check contractor setting out of the works

The total station instrument, which automatically records surveyed information directly onto computer disk, will be used, together with other conventional survey equipment to provide the major control and positioning.

By the use of the original design Software with which MSV is familiar, the ground model and proposed alignment will be developed and used as baseline for control of the works. This information will also prove useful when producing as-built drawing at the end of the project. Under this task, the Consultant will also perform a survey of existing utility services




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based on site inspection and available documentation which must be handed over at the beginning of the project.

Task II- 17. Ensure a system of Quality Assurance of works

MSV is a ISO 9001:2008 certified organization in multidisciplinary services in consultancy, project management, design and engineering, procurement, quality assurance, export, planning and development activities in the fields of transportation, infrastructure and related technologies. We have in place ISO 9000 based Quality Management System (QMS), which covers the entire organization as per the organizational structure. The QMS which covers all services for clients in India and abroad executed through Strategic Business Units (SBU). Our corporate Quality Manuals contains the quality policy of MSV and is further Supplemented by SBU Quality Manuals at SBU level. They, combined, outline the standard policies & procedures followed in MSV. The Consultants would evolve a Quality Assurance cum Management System for assignment, which will be documented as Quality Assurance Plan (QAP) and the system would cover all aspects of field studies, engineering surveys and investigations, design and documentation activities and review, construction management and quality audit. This will be presented as separate sections like engineering surveys and investigations, traffic surveys, geo-technical and sub-soil investigations, pavement investigation, environment and R&R assessment, economic and financial analysis, drawing and documentation review, supervision and quality audit etc. The system will ensure responsibilities to be shared by concerned key personnel. MSV has a Guideline of Project Management, Manual of Company Rules & Procedures that provides guidance on all aspects of the company operations. With regard to long term projects MSV sends a questionnaire annually to the Team Leaders requesting performance / evaluation of the Sr. Staff nominated by the company.

Policy concerning control of the deliverables/outputs: The firms policy on quality delivery primarily is based upon best practice standards and we use three instruments namely (i) In-house QA practice, (ii) External or Independent QA, and the third (iii) Client and Stakeholder Feed Back. All the outputs / deliverables to be submitted to the client will under go thorough review and quality certification by Sr. professional and approval by the Project Director.

Upon award of a project, a Quality Assurance cum Management System (QMAS) will be prepared which focuses on providing confidence to the client that the quality requirements of the Project will be fulfilled at all levels. The QMAS will generally be include; (a) Identifying the areas and assessing the associated level (likelihood and impact) of risk of produces and services not conforming with the specified requirements (b) Developing processes, generally documented as plans and procedures to manage the risks, (c) Identifying and providing resources and allocating responsibilities to suite the plans and procedures; (d) Implementing the plans and procedures, (e) Monitoring, auditing and improving the implementation of plans and procedures; (f) Test, numbers, frequency, approach and timings; (g) QC registers, test reports, observations and compliance; and regularly reviewing and improving the QMAS.

Further, QMAS will incorporate appropriate methods such as progress reports and regular meetings to obtain feedback from the client / contractor during project execution for measuring and monitoring client satisfaction. At the completion of the project, the lessons learned will be documented by the Team Leader and disseminated within the project unit.



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It will be ensured by MSV that a member of Sr. Management visits the project site at least once in every six months to resolve any issue that have not been resolved in spite of the Project Coordinator's intervention.

Task II- 18. Approve materials and sources of materials

The contractor would identify and intimate the consultant for approved of materials meeting the Technical Specification, before approving particular source for use as raw material it is proposed to conduct an environmental sustainability analysis prior to the approval for extraction of material. Criteria used for environmental sustainability analysis are presented below:

- Environmental sensitive areas: e.g. National Park, wetland, erosion prone areas, steep slopes.
- Socially acceptable areas e.g. common property resource, places of special significance

Test of materials from additional sources will be carried out to ensure optimization of local materials with minimum haulage to reduce project cost.

Task II- 19. Approval of Construction Materials

Upon viable environmental sustainable analysis for source of materials, the consultant would test the material brought to site by the contractor and check for its conformity to specification especially for aggregates and soil. For other materials such as cement, pipes, equipment for STP, etc. the contractor has to inform in advance about the source and manufactures test certificates need to be produced along with each consignment.

Task II- 20. Issue of Drawings, Documents and Information

The Engineer Design / Drawings / Contract Documents are legal documents which form an integral part of the contract, and the contractor is required to perform the work in accordance to them. To achieve proper administration of the contract the transmittal of the approved design, drawings and documents related to "work" must be handled with circumspection, and properly recorded at all stages to avoid unnecessary disputes and claims. The drawings, as approved by client along with contract documents, will be issued to the contractor.

The drawings known as "Construction Drawings for Transmission Pipelines" along with the modifications if any carried out by the consultants with approval of Employer, along with Technical Specification and Contract Documents will be handed over to the Contractors for preparing working drawings. Proper record will be maintained of the handling of over these drawings and documents.

In case the contractors call for additional information, the consultant will examine their relevance and provide them to the contractor without delay. The client will be informed of the event.

Task II- 21. Review the Contractors Proposed Working Drawings, Plans and Associated Calculations

The Consultant will check the working drawings and drawings of temporary structures as proposed by the contractor for their structural stability and appropriateness throughout the currency of the project.



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Task II- 22. Sampling and Testing

For all the soils and materials proposed to be used by the contractor in the works, samples will be collected as per Technical Specification included in the QAM, so as to be representative of the soil or material. These samples will be subjected to laboratory tests under defined conditions, and the test result compiled in prescribed formats.

Task II- 23. Analysis of Test Results and Approval

Test results will be analyzed by the Material Technician for compliance with the Technical Specification. They will be approved by Sr. Quality & Material Engineer if they will be rejected and the contractor would be instructed to find alternative sources of soil or other material with correct sampling and testing procedures and quality control measures.

Task II- 24. Review all bituminous mix designs and concrete mix designs

The job mix for base/sub-course, bituminous and cement concrete etc will be prepared by the Contractor. The Consultant would review the job mix designs with associated details and approve them based on independent review. The characteristics / parameters checked would include:

- Mix stability and flow; compressive / flexural strength
- Air voids
- Density
- Aggregate gradation and mechanical properties
- Other parameters as relevant

After the mix design is approved, the plant trials would be taken up to evolve methodology to produce the design mix conforming to the approved mix design.

Task II- 25. Supervise construction of all elements

Inspection of the works will be undertaken continuously by the whole supervisory staff both on works under construction and works completed for compliance with the Specifications and agreed method of working. The schedule of inspection will be relatively simple. The inspection, however, will include all elements of the works including quarries, access roads and lines of supply.

In addition, the Consultant will review the safety aspects of construction and improvement works and methods to ensure that every reasonable measure has been taken to protect life and property. The Consultant will not, however, be responsible for the Contractor's operations. The Consultant is aware that it has the responsibility for the engineering aspects of the Project. However, it cannot be held responsible for unsafe practices of the Contractor over which it cannot exercise control. It will, however, observe and inform of them.

The Consultant's staff will direct, manage and closely supervise all the sampling and laboratory activities performed in the field laboratory to ensure the Works meet the specification. The frequency of testing of various materials will be as per equipments of Ethiopia/International. Standards as indicated in the contract documents.

The continuous, timely and consistent control of the works will aim to avoid any disruptions due to poor quality of material or workmanship. In combination with the testing carried out in the previous task and the continuous vigilant site inspections the Consultant will ensure the Contractor achieves a standard of workmanship and that all components meet the Contract Specifications and draw requirements.



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This task will also include the regular inspection of safety related to the construction work Certification of equipment and approval of the Contractor's programme and this task will be concerned with the day-to day safety precautions adopted on site and the provisions for traffic management and deviations.

Inspections of works for their adherence to specified quality and technical specifications; performance of machineries, Physical progress and method of work, forming a basis of payment is an absolute necessity. In civil contract.

Task II- 26. Inspection for Supervision

Project Manager to inspect the site occasionally and witness field tests; Continual Inspection by other key professionals with particular feedback from discipline experts; Continuous Inspection and supervision of works by field staff; Inspection of Works when special problems occur and are brought to the notice of seniors & Ensuring compliance to approved method of work, technical specifications as per agreement

Task II- 27. Focal Issues during Inspection

The Inspections have to necessarily cover; Quality of material in use (laboratory and site); Compaction: method and end results; Quality of the final product; Levels and dimensions; Performance of contractors, machineries / operators / management personnel; Physical progress vis-à-vis work programme & Special issues / problems.

Task II- 28. Check the laboratory and field tests carried out by the contractor

The Quality control laboratory for performing various types of tests will be provided by the consultant including testing personnel. Consultant will make sure the laboratory is provided as laid down in Para 121.3 of MORT&H Specifications. The equipment provided inter-alia include the calibration equipment.

The quality will be continuously monitored at pre-construction and construction stages for all steps envisaged in the construction. A concept of statistical quality control would be generally introduced in process of production, inspection, execution and acceptance of work.

The consultant will perform tests selectively and supervise all tests done by the contractor. It is responsibility of the contract to conduct tests on various materials and the completed work. Consultant will direct manage and closely supervise all the sampling and testing activities in field laboratory. Prior to starting any tests contractor will develop testing programme which will include type and number of test to be carried out on various materials and completed work, test frequency methods of various tests, and methods of sampling. Consultant will approve contractor's testing programme, prior to start of testing. Consultant will ensure it is in line with contract documents and meets international standards. Consultant will ensure that sufficient numbers of tests are being done to meet requirements of contract and that the contractor is keep good records of the tests. Consultant will approve the test results as per the acceptance standards. Whenever quality of materials or finished work is doubtful as may be oblivious from the test results, consultant will order removal or replacement of the faulty material or work area. Consultant will inform the contractor when the works to be corrected or reject or uncovered for observation. On such cases the consultant will have the contractor conduct additional test to ensure quality. Consultant will also some tests as will be detailed in the project manual.



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Task II- 29. Order special tests of materials and/or completed works

In addition to regular field tests, it may be necessary to arrange special tests at Research Laboratories of Engineering Institutions/approved test houses. These tests would generally require testing of proprietary/manufactured materials. These tests inter-alia will also include testing of workmanship in special cases like welded reinforcement in structures. Which requires X-ray tests etc.

In general, suitability of manufactured materials will be established on the basis of manufacture's test certificates. However, in special cases, the Consultant may have the tests carried out in the Engineer's laboratory or otherwise within the provisions of the contract. The test results of all manufactured materials will be properly recorded and compiled in a report.

Task II- 30. Order removal and substitution of improper materials and/or works as required

The Consultant will perform work tests regularly to ensure quality and workmanship during the process of construction of various items of work both in situ and in the laboratory in accordance with IRC/MOST guidelines, specifications and contract provisions. If any part of the work is found defective, the Contractor will be directed to rectify.

Task II- 31. Detailed Records of Staff

The consultant will keep the record of all the key professionals deployed by the contractor at site. In case of non performing staff, Team Leader may ask the contractor to remove such personnel under provision of the contract. Daily records on this account would be kept by the supervision staff of the Consultant.

All events of incoming and outgoing staff of the site have to be informed to the Team Leader by the contractor in advance. Daily records would be kept by the supervision staff of the consultant to keep a check on the contractor.

Task II- 32. Detailed Records of Equipment

Record of each equipment would be kept at site (Team Leader's Office) covering at least the following information:

- Precise date of arrival and date of commissioning at site to commence works
- Precise date of removal from site
- Availability, utilization and previous hours worked and condition
- Manufacture date
- Capacity evaluation for processing outputs
- Repair frequency and downtime

Inspection of Plant and Equipment

At the opening of the work site, the Consultant will inspect in detail and record the Contractor's equipment, material and organization of the work site to ensure that they meet the specifications, are in suitable condition and are compatible with the nature and quantities of the work to be performed. Special attention will be given to:

- Rock crushing plant for the production of crushed base course and aggregates for asphalt surfacing and concrete works;
- Suitability of proposed concrete batch plants, concrete mixers, plate and needle vibrators;



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- Suitability of proposed hot mix plans
- Bitumen and concrete paving machines;
- Compacting equipment
- Bitumen distributors;
- Dewatering equipments and
- Electric generators for power supply

Should the Consultants not be satisfied with any item he will immediately inform the Contractor of its unsuitability and urge him to replace it. All equipment will be monitored throughout the job to ensure its continued acceptability. All events of incoming and outgoing machinery of the site has to be informed to the Team Leader.

- To evaluate the portion of the event time for which the contractor is not responsible
- Identify the delay time which is concurrent / non-concurrent
- Calculate the total time delay making appropriate allowance for concurrent delays
- Extension of time will be recommended for the total period as per the above evaluations

This would include supporting documents and justifications.

Task II- 33. Arrange Joint Site Inspections with the Employer

The consultants will formally arrange joint inspections with the contractor, in the presence of the Employer for acceptance of Works and identification of defects for:

- Completed sections;
- Substantially completed sections
- During construction to assess the progress and quality of the works
- Upon expiry of the defects liability period
- The observations of the inspections will be recorded and issued after approval of the client. This will be followed by issue of Taking Over Certificate and Defects Liability Certificate.

Task II- 34. Quantity Measurement

A basic responsibility of supervision is the measurement and certification of quantities, which results in a recommendation for payment of the worked out and certified volumes. It will include the on-going surveying of the construction activities to verify quantities during the works.

The survey team will establish a thorough check of both the vertical and horizontal alignment of the Project and the cross-sections in order to correlate the field data with the detailed engineering data. This work will be done by means of a complete computerization of the original ground profile road design software, with intermediate levels of every layer and finished levels a screen and plotted visualization of the road will also be made and registered in the MIS.

Measurement information and data will also be backed up by the Works Inspectors' daily records and reports.

An accurate follow-up of each BOQ item will be maintained on a spreadsheet in order to compare at every stage the foreseen and revised quantities together with variations in quantities.



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Task II- 35. Issue a working drawing or modify the existing drawing

Consultant will issue a working drawing or modify the existing drawing (preferably within one month on request of the contractor) or to supply a new/supplementary drawing which is not included in the contract, wherever required and to give instructions thereof in this connection to the contractor .

The revision of plans, drawings and documents is a continuous process and a necessary step in administration of a road construction project and finally is useful in the preparation of the as-built drawings. This task also includes the alteration of the alignment design, as deemed appropriate during the works to improve the road and junction geometry and to strictly conform to the prevailing ground conditions. In some cases, this will be performed on the highway design software. It must be underlined that the Consultant has an extensive knowledge of the CADD software, In Roads and MOSS road that was used in the design and that it should largely facilitate the revision of plans and drawings during the execution of the works.

Task II- 36. Progress of the work

The consultant will assist the employer in proper monitoring/progress of works and implementation of project through computer aided project management techniques and management information system. The progress of work will be regularly monitored/evaluated, close watch will be kept of performance variations against schedule progress and cash flow. The variations will be periodically reviewed to neutralize the effect of such variations on the Project Implementation Process. If the shifting of the target date for final completion appears unavoidable due to excusable delays, the Consultant will prepare an Entitlement Schedule for advance information of client. Similarly if the analysis / evaluation reveals serious shortfall in progress due to failures on the part of the Contractor and the Contractor appears to be incapable of completing the work as per schedule due to unforeseen developments, the Consultant may suggest to the Employer to invoke the provisions of contract to terminate/rescind the work. Time is the essence of all contracts. It will be our endeavor to ensure that the work of all the packages is completed in time. The progress of individual packages will be monitored to: Identify the bottlenecks and constraints and Seek Solution to bottlenecks and constraints. After reviewing progress of work and case there are delays in project implementation and if shifting of the target for final completion appears due to excusable delays, the consultant will prepare entitlement schedule for advance information of client. Similarly if they evaluation / analysis reveals serious shortfalls in progress of work due to futures on part of the contract and the contractor seems to incapable of completing the work as per schedule due to unforeseen developments, the consultant may suggest the employer to invoke the provision of contract to terminate, rescinds the work. The consultant may also advise client to terminate are suspend the work in case contractor is found to ignore provision of contract. Two stage approaches would be adopted in performing this activity: Comprehensive Planning and Monitoring and updating. The planning stage will comprise the following: Conceptualization and data collection (identification of project breakdown structure, fixing of target dates in accordance with approved work program, collection of input data on resources productivity); Contract level planning (basic level PERT/CPM networks, scheduling of resources, master control network, segmental bar chart and project calendar); Package level planning (project milestone chart and precedence network) and Designing the information system (Defining, monitoring / reporting structure system). A comparison of actual and planned progress would be carried out. The reasons for shortfall,



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if any, will be identified. Where necessary, the network would be modified and resource augmentation plan prepared so that the slippages could be made up. Monitoring and updating activities will extend over the entire duration of the construction period at regular monthly and quarterly intervals and will essentially provide the basis for progress monitoring. One of the available softwares will be modified and used for monitoring. The program will be used to: develop a Master Schedule and Master Budget for the Contract; develop cash flow projections for the project on both the Early Start and Late Start scenarios; track actual progress against scheduled progress; warn of impacts on the schedule and project cost of various eventualities, eg. In the case of a delay in installing a stone crushing operation, how will this affect the timing of downstream activities such as base course, asphalt pavement, etc.; determine whether the Contractor's estimate of plant and equipment requirement is sufficient to achieve the Contractor's schedule; Produce graphic outputs for use in Monthly Progress Reports and Carry out 'what if' analyses of the type described above. The scope of project covers number of activities, which have to be co-ordinated for economically, and timely completion of the project. The MSV's Project Team has the enormous task of collection, storing and retrieval of data on progress of all activities from mobilization to completion of work the project and assess impact of each of them on overall Project Schedule vis-à-vis agreed Time schedule with Client including warning signal sufficiently in advance and take appropriate remedial measures. MSV will monitor the project covering all aspects of the project like: Progress in accordance with schedules with the objective of taking remedial measures to ensure project completion with in schedule date and costs; Critical interface requirements particularly when different agencies are involved; Cost Control; Environmental and Resettlement matters and Quality Control. In order to achieve above task, the MSV's Senior Resident Engineer/Resident Engineer with assistance of the other Project Specialist will develop a Project Management and Control System (PMCS) making use of project management software such as Primavera Sure Track/ MS project or as mutually agreed with the client. The PMCS will monitor all activities of the overall programme. PMCS will identify the milestone, interface requirements and programme reporting elements besides providing management information on cumulative progress of different items of work, additional items etc. PMCS will allow the MSV to summarize all technical and management data at activity-wise for timely transmission of progress reports to Client. PMCS will be logically divided into data entry and reporting system. The data entry system will allow access to all the project information contained in the system's database. This will be used to review information on any problems encountered at site and edit or update such information. The reporting system will produce reports representing the status of works, forecast cash flow and other information related to various items of work. The PMCS will not work merely as a tool for data entry and reporting but also identify potential problems or difficulties that are likely to cause delay in completion of works and come out with appropriate solutions for speedy completion of works without compromising on quality.



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The following base information will be entered into PMCS initially and as the work progresses.

Consultant's Time Schedule	This would consist the cumulative percentage of work completed each month. This information would be used to measure progress of work.
Monthly Progress	This would review the progress carried out during each month against planned activities for the month and help in identifying delays at an early stage.
Quality Control Data and report	Quality control data and reports will be stored and reports will be generated required for project quality control.

The following major PMCS outputs would be produced every month and reported to the client.

- Monthly Progress by items of work vs. schedule
- Quality control
- Technical Performance

Task II- 37. Order suspension of works and to authorize with the Employer's approval, extensions of the period of completion of works.

If the shifting of the target date for final completion appears unavoidable due to excusable delays, the Consultant will prepare an Entitlement Schedule for advance information of OWD.

Similarly if the analysis / evaluation reveals serious shortfall in progress due to failures on the part of the Contractor and the Contractor appears to be incapable of completing the work as per schedule due to unforeseen developments, the Consultant may suggest to the Employer to invoke the provisions of contract to terminate/rescind the work

The Consultant may also advise the Employer to approve/suspension of work in case the Contractor is found to ignore provisions of contract related to safety, environment protection, emergency works, etc.

Task II- 38. To direct the Contractor in all matters concerning construction safety

This task deals with the day- to-day safety precautions adopted on site and the provisions for traffic management and deviations but also regarding any potential blasting operations and measures to be adopted prior to approval. This project is being implemented in a semi urban environment close to a dense population area and there will be considerable interest in the works from members of the public. It is therefore essential to establish safe working practices with the Contractor in operating heavy construction plant and blasting in such an area. A high level of safety awareness will be enforced by all the supervision team and the Contractor will be made to deal with this aspect seriously. This task deals with the day- to-day safety precautions adopted on site and the provisions for traffic management. This project is being implemented in a semi urban environment close to a dense population area and there will be considerable interest in the works from members of the public. It is therefore essential to establish safe working practices with the Contractor in operating heavy construction plant and blasting in such an area. A high level of safety awareness will be enforced by all the supervision team and the Contractor will be made to deal with this aspect seriously.



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Traffic Circulation System: Before the commencement of the work, a project safety plan will be developed by contractor and approved by the consultant, keeping in view the contract provisions, relevant local laws and regulations, site constraints. Contractor's construction methodology, proposed pattern of resource deployment etc. particular attention will be paid to the following. Interference with existing traffic; Accident potential of construction operations; Public safety; Borrow / filling operations & Prevention of pollution. It will be obligatory for the Contractor to follow / implement the safety plan and consultant will ensure that it is accomplished.

Installation of Traffic Safety Features

It is critical that traffic flow be maintained throughout the construction period with minimum disruption. Consultant will ensure to attain this, the Contractor submit traffic control plans for each section of the works, especially for repair and replacement of bridges and other cross drainage structures. These plans will be discussed by the consultant with the Contractor before approval and modified if so required. Items to be considered in these plans are: Planned detours and their maintenance; Traffic control plans detour and caution signs or lights, guards, watchmen, fencing etc. These are especially critical during patching operations and placement of asphalt concrete overlay; Maintenance of access to properties along the road; Methods for keeping traffic off of newly constructed pavement, particularly; diversion plans for drainage structures; Temporary structures to carry traffic during construction must be structurally and hydraulically adequate; and Dust containment measures, particularly in built-up areas.

Maintenance and Protection of Traffic: Much of the Project's work will be performed on existing alignments. Widening, rehabilitation, and reconstruction of the existing highway are a major part of the Project's scope of work. During the period that work is being performed on existing alignments, vehicular, bicycle and pedestrian traffic will have to be maintained in conjunction and adjacent to the work being performed. The Consultant will ensure that the Contractor maintain flows during construction in an efficient, safe manner through the use of signboards, barriers, detours etc. The related work items and specification as per contract will be implemented with suitable modifications, if necessary to suit circumstances. In sections where the proposed highway truncates the existing highway, detour or alternative access routes will have to be provided by the Contractor. The design and construction of intersections onto the proposed alignment from existing secondary roads must be designed and constructed with the safety and convenience of the local user in mind.

Construction safety: Consultant will direct the contractor in all matters of construction safety and care of works including erection of temporary signs at road works. Consultant will request the contractor if needed to provide necessary lights, guards, fencing, watch man etc. Consultant will direct the contractor to carry out all such works or to do such things as may be necessary in his opinion to avoid or reduce risk in any emergency affecting the safety of life or of adjoining property.

Consultant will assure during this task that all safety traffic management measures are reviewed; Public is involved public in selecting and finalizing traffic control plan; Traffic Awareness Program is initiated; group and sequence projects activities have minimize exposure; conducts Work Zone Traffic safety; report and analyze all work zone crashes; collects and disseminate real time traffic information; ensures provision of "attention getting signs" in work zones; insists on durable temporary pavement marking material that



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can be easily removed and does not leave a visible residue on the pavement; adopt specifications that require adequate lighting for all night time operations; insists the Contractors to have trained security guards deployed to guide the traffic; ensures unauthorized personnel are prevented from entering hazardous or restricted areas; establishes procedures for the transport and handling of hazardous materials and Implements an operations and public emergency response program

Task II- 39. Issue interim certificates for monthly payments & Final payment certificate to the contractors

Further to site inspections carried out between the Consultant and the Contractor in order to identify the works to be completed before issuing the Certificate of Provisional Acceptance, a final inspection is carried out and a punch list of items to be completed corrected or replaced will be prepared.

Issuance of the above- mentioned will be done to close the period of the Construction works. However, maintenance of the works after construction period remains an obligation of the Contractor.

The Final Acceptance Report will be a compilation and condensation of data presented in regular monthly reports, and will be submitted together with As-built drawings to client during the last month before expiry of the construction period.

The report will contain in detail the following for ease of reference during end of construction of the road: A detailed description of the project as implemented including a summary of difficulties encountered and the means employed to overcome them; Changes made to the original design including amendments to the specifications; A summary of in-situ testing shoeing properties of sub grade and pavement layers; Variation orders and utilization of contingencies sums provided in the works contract; Cumulative payments and split in various currencies; As-built drawings and Special considerations that client may need to be aware of.

The Consultant will dispatch to site a senior member of the Supervision team in order to assist the Supervisor in dealing with the: Analysis of data made available by the contractor; Joint inspection of works with the Contractor; Listing of works remaining to be done and inspection of these works; Assistance in the final acceptance inspection and preparation of the final acceptance certificate and Preparation of final accounts and a final acceptance report.

Interim Payment Certificate and Final payment Certificate [where interim payment will become a Final payment] and where quantities will be adjusted according to final as-built drawings will be responsibility of the consultant. The Final Payment Certification is based on a Final Statement produced and submitted by the Contractor.

Claims or any additional payment required by the Contractor will be examined and their settlement included in this last certificate.

The objective is also to assist Client in preparing and in finalizing the project accounts. Other post-constructional technical and administrative tasks entrusted to the Consultant and to be completed during the Contract finalization are enumerated hereafter:



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- To ensure hand over of project assets, like Consultant's facilities, laboratory, equipment, vehicles, furniture, and appliances to the Supervisor, or back to the Contractor, as detailed under the works contract;
- To compile as-built records for delivery to client;
- To ensure that the performance Security is returned to the Contractor if this one provides the Final Statement to the satisfaction of the Supervisor after the issuance of the Final Acceptance Certificates;
- Some other tasks specific in the Contract.

Task II- 40. Prepare & Submit Variation works

Deviation/Variation Orders may arise as a result of the changed or unforeseen conditions during the progress of work. The variation order will modify original plans and specifications resulting in increased or reduced quantity of work or alterations to the character of the work. The Consultant will differentiate between a changed condition which warrants special compensation and an unforeseen expense to be borne by the Contractor and will advise client accordingly.

Deviation / Variation Orders will be in writing and drawn with considerable care since after approval and signature by the client, become a legally binding part of the contract. The deviation/variation orders will be prepared on formats approved by the Employer following guidelines of the Employer/ funding agency and provisions of FIDIC/ICB conditions of contract. The variations will be closely monitored to avoid cost and time over-run.

Consultant will assess quotation provided by the contractor for carrying out variation and instruct variation after approval by OWD.

Task II- 41. Claim Management

Contractor's claims in regard to disputes payment and extensions of time will be evaluated and acted upon. Recommendations will be made to the Employer for appropriate action where the required cause of action is outside the authority of the Consultant.

Sources of Claims

In recent times contractors' claims have become a major issue on international contracts and the Consultant will give this a great deal of importance to ensure that the client is fully aware of the potential areas of conflict.

Disagreements may arise between the Contractors and the Engineer over the interpretation of the contract documents. Common causes of disagreement include:

- Interpretations of what constitutes extra work on the contract;
- costing of design changes and variations; entitlement for extensions of time;
- damages for Employer directed acceleration or slowdown;
- costs occasioned by owner-caused delay;
- incomplete or ambiguous drawings or specifications;
- unforeseen or changed conditions;
- the actions of third parties;
- weather;
- delayed payments by the Employer; and
- general disruption.



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Submissions of Claims

The terms of the contract must be complied with. The contractor has to submit details of his claim along with supporting evidence within strict time limitations. If these time limitations are not observed the claim may not be accepted by the Employer.

The claim must be accompanied by full supporting information and relevant documentation. Such information would include the contractual basis for the claim, the details of the claim itself and full supporting details on costs. Without such details the claim is difficult to analyze and assess.

Analysis and Assessment of Claims

The Consultant has considerable experience in the analysis and assessment of claims. The Consultant's experience has been, that as soon as notification of a claim is received, a full and complete investigation and examination must be carried out. Once notification of a claim is received all necessary records must be collected to assist accurately reconstructing events. This can be very difficult at a later date when records may not be available and relevant personnel have left the project.

Documentation

One of the most important tasks of The Consultant's team is the establishment and implementation of procedures for documenting events which may lead to a claim. The data required to support or reject construction claims generally cannot be reconstructed after the event.

The collection and storage of all daily diaries and measurement sheets as described previously will greatly assist as a data base for claim investigations at a later date.

Estimates and Costs

Claims normally include some form of estimate showing how the claimed costs have been derived. An objective review of the source material and methods upon which the estimate was based will often show up weaknesses or deviations from accepted industry practice. Carefully prepared estimates greatly assist determining the quantum of the claim. Most construction claims are weakest in the presentation of cost data and the supporting documentation. The Consultant will assist and advise with carefully detailed reconstructions of all construction activities and their related costs for use in the analysis of claims.

Discussion

When a claim is received, the Resident Engineers and the Contractors should fully discuss it at the earliest opportunity, either to determine whether more facts and information are required or to consider the results of the preliminary examination. It is best to avoid any possible misunderstandings at this early stage by constructive discussion and it may be possible to successfully resolve the claim at this time



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Settlement of Claims

(i) Negotiation

In the Consultant's experience all parties to the Contract benefit if claims are settled by negotiation at the earliest possible opportunity. Thorough preparation is essential when entering into negotiations on a claim. It requires not only detailed knowledge of the claim itself and the collection of all pertinent information, but also knowledge of the strengths and weakness of each side's case. It also requires an attempt to understand the negotiating strategies likely to be pursued by the other side.

Negotiations may occasionally be assisted by selective use of outside experts but the actual negotiations should be conducted by personnel from either side with sufficient authority to settle the matter under discussion.

The negotiations themselves should however be conducted on a 'without prejudice' basis. Conducting the negotiations on such a basis should also help to create an atmosphere conducive to frank and open discussion.

(ii) Conciliation

If a claim cannot be settled by negotiation the parties can agree to put their respective cases to an agreed competent and impartial external expert. However, the decision of the conciliator is not binding unless provided for in the Contract, and can be rejected by either side.

(iii) Arbitration

Normally contracts provide for disputes to be settled by arbitration with the procedures to be used, the method of selection of arbitrators and the laws under which it is conducted set out in the Conditions of Contract. The results of arbitration are normally binding upon the parties.

Task II- 42. Assist Client in Adjudication or Arbitrations

Should legal and / or contractual problems arise during the Supervision, the Consultant shall, upon reception of the Contractor's intent to claim, alert client who will in turn decide upon referring the matter to order competent bodies or whether the Consultant remains in the best position to analyze and monitor the same. In any case, whilst a decision is being made by client, the Consultant will examine and make recommendation to client on the settlement of claims from the Contractor for extension of time, payment for other financial compensation due to unexpected occurrences during construction.

Because of the competition in Construction Contracts, it is often that, nowadays, the approach of Contractors is more and more claim-oriented. The contractual management is therefore increasingly difficult to handle and very special consideration has to be addressed as regards this issue. Thus, one of the main duties of the Consultant will be to keep the under close legal and contractual surveillance.

The Consultant will keep all relevant information regarding any project matter that may become a possible subject of claims or dispute with the client. Daily site records of activities, recorded and agreed between the Supervision Team and the Contractor, will have an



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important legal and technical significance in support of recommendations taken on contractual claims and disputes.

Common areas of contractual claim that the Consultant will particularly focus on are:

- Delays in handing the site to the Contractor,;
- Unforeseen physical conditions and obstructions;
- The effects [and delays] on the works programme of service divisions;
- Adverse weather conditions;
- Delays in acquisition of materials, spare parts, equipment;
- Payment defaults;
- Lack of sufficient progress;
- Variations in nature and scope of works;
- Late issuance of technical details and instructions to the Contractor.

Task II- 43. Prepare quarterly cash flow

Consultant will prepare quarterly cash flow for the projects for the employee in a format acceptable to the employer. Cash flow should identify budget estimates for all outstanding work.

Task II- 44. Update cost estimate each year or at quarterly completion

The estimate of the project will be reviewed at 25%, 50%, 75% and 100% completion of the project to check the likely wide variations in cost of the completed work requiring revised Administrative Approval / Revision of Estimate. It is also necessary to watch the progress of work vis-à-vis estimated quantities to avoid serious discrepancies in record of Field Measurements.

Task II- 45. Keep & Update all records

Consultant will keep updated all records including reports work diaries correspondence instruction given contractor's test records, measurement and quantities calculations payment records and all other relevant documents pertaining to works supervision and operation.

Task II- 46. Daily Project Dairy & Digital Photographs

Running the recording systems is considered a routine operation, since it does not imply judgment or initiative. Nevertheless site records are a vital part of the resident site team. Good site records may, for instance, often make the critical difference between having to award a claim for additional payment, or award an extension of time or not.'

The Site records should include the following:

- The Site Diaries; The daily weather records; All Contract documents; All official correspondence; A register of all incoming and outgoing mail; The materials investigations records; All construction control testing and investigation results; All setting out and survey data; The field survey books, survey calculations and ground data plots; All records of drawings received and issued; The variation orders, the provisional Sum orders, and day works orders issued; The Contractor's labor and plant reports; Staff records; Stockpiled materials records; Minutes of meetings; Progress photographs; All reports; The measurements and quantity calculations and variations; The Contractor's claims; Payment Certificates; As-built records; Third party claims; Provisional and Final Acceptance certificates and The visitors' book.



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Supervision Consultant will take digital color photographs / videography throughout the duration of contract starting with pre-intervention keep and maintain an official photographic record (available for inspection) of monthly progress at set locations and also any construction activity of any Technical or Contractual interest at any time. Each photograph/ videography to be captioned with reference number, time, date, precise locations, subject and points of particular note. All digital negative data need to be stored on diskette in a record system, together with copies of captions. The capturing of sites digitally will include areas, which are environmentally important both before and after construction works. These will include environmentally responsive road design elements, adverse or negative impacts of the road construction on the environment e.g. failed structures, slope failures, and mismanaged road corridor etc.. the consultant will also assist the contractor to take picture and also video of all sites including materials sites, campsites, access roads and diversions prior to any construction or during construction.

Task II- 47. Periodic coordination & progress meetings

The Consultant will arrange a schedule of management meetings, site inspections and other job conferences in liaison with the Contractor and notify those expected to attend. In arranging these meetings, he will maintain liaison with the Contractor principally through the Contractor's Road Manager, and give assistance in the understanding and interpretation of all aspects of the contract documentation; and work closely with client staff to ensure that as much knowledge and experience is passed on. This will be achieved through meetings and seminars to be held by the Resident Engineer. The Consultant will make presentations to explain the systems and procedures established on site for measuring the Contractor's performance and general contract management.

The main purpose of the management meetings is to review:

- ◆ The progress of the work (physical and financial)
- ◆ Status of resources mobilization
- ◆ The Contractor's proposals for future works (next week, next month)
- ◆ Proposed remedies
- ◆ Program revisions
- ◆ Progress constraints [blocking points]

The Resident Engineer will chair the site meetings and prepare, and circulate copies of minutes of each site meeting, after each meeting; the Consultant will be responsible for implementation follow up of each agreed decision. The minutes of those site meetings may be done accordingly to the following plan:

1. Welcoming
2. Attendance
3. Amendments and acceptance of previous minutes
4. Matters arising from previous minutes
5. Contractual issues and payment certificates
6. Programme and progress
7. Site safety and accommodation of traffic
8. Survey, setting out
9. Right of way obstructions
10. Utility diversions
11. General Discussion of work
12. Standard of work and acceptability



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13. Borrow pits, stone quarries, and general acquisition of construction materials
14. Environmental management
15. As-built data and drawings
16. Frustrations and complaints
17. Any other business
18. Approval of Minutes

In addition to these management meetings, supervision consultant will hold annual meetings with representatives from client, Contractor and road users in project influence area to discuss impacts of the project on operating conditions as to determine the appropriateness of service level criteria and any modifications to the contract that may need to be considered for future contractors

Task II- 48. Actions requiring specific approval of the Employer

The Engineer will be required to obtain the specific approval of the Employer in the following matters

- Agreeing or determining an extension of time and/or additional cost.
- Instructing a Variation,
 - in an emergency situation as determined by the Engineer, or
 - if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- Approving a proposal for Variation submitted by the Contractor
- Specifying the amount payable in each of the applicable currencies
- Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction and shall notify the Contractor accordingly, with a copy to the Employer

The Engineer will further seek prior approval of the Employer in the following matters:

- Issuing the order to commence the works;
- Issuing/approving variation orders which have financial implications; except
 - in an emergency situation as reasonably determined by the Engineer or
 - if such variation are within the limits of approval by the Engineer as specified
 - in the construction contract documents;
- Approving new rates either for existing items of work, which arises from
- variation quantities beyond the limit, defined in the contract or fixing rates of non-priced works involving any extra item and certifying any additional cost determined under the provisions of contract;
- Approving subletting of any part of works;
- Approving any extension of contractual time limits;
- Carrying out independent Quality Control tests;
- Issuing the order for special tests not provided for in the contract and determining the cost of such tests, which shall be added to the contract price;



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- Issuing/approving the Technical Specification, if not provided for an item of works in the Construction Contract, similarly; for any change in Technical Specification of any item of work.

Task II- 49. Authorize Sub Contract / Subletting

When the Contractor wishes to sublet part of the work, the consultant will advise OWD on the suitability of the proposed sub contractor, the impact of the sub contract on the finished work, the degree of sensitivity of works assigned under the sub contract and the general advisability or otherwise of sub letting in the particular situation. On obtaining written approval from OWD the consultant will authorize the contractor to engage the sub contractor to sublet the work.

Task II- 50. Details on Records & Reporting

The Reporting & Records requirements spelt out herein under have been provided in terms of the indicative type of information required. The Supervision Consultant will determine the following:

- Format of such reports and record requirements
- Software standards
- Number of copies required
- The Language of the reports and records will be English

The Consultant will prepare and submit to Client the following reports and documents listed below, in English, and in a format approved by Client in hard copies in numbers indicated under the respective reports. Each hardcopy will be accompanied with an electronic copy on a CD. Electronic copies will be in Word and Adobe pdf format. All reports and documents relevant to the services, including maps, field survey notes, will become the property of Client.

(a) Inception Report

The Consultant will prepare an Inception Report four (4) weeks after the commencement date. This report will include results of the review of the contractor's work program, any modifications thereto, status of the consultant and contractor's mobilization and any other matter requiring the Client's action. This report will be prepared and submitted with five (5) copies to the Client and will include at least the following:

- i. The Consultant's state of mobilization;
- ii. Any changes to the composition of the Consultant's team;
- iii. Review of the detailed design;
- iv. Proposed methodology for carrying out the services, including quality; progress and cost control, and ensuring compliance with environmental, Social and Safety requirements;
- v. Proposed site communication procedures and record keeping;
- vi. Detailed program of work, showing time, duration and personnel, as well as inter-relationship between activities;
- vii. Format of Monthly Progress Reports
- viii. Finalize quality control manual
- ix. Finalize supervision manual
- x. Take over the assignment from interim supervision team



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(b) Monthly Progress Reports

The Consultant will prepare progress reports every month within ten (10) days after the end of each reporting period for the duration of the Supervision Contract. These are to be submitted in 5 copies. These reports will cover:

- i) Summary of relevant Consultant's and Contractor's Contract data, both financial and physical
- ii) Physical and financial progress of the Works and comparisons with as-scheduled
- iii) progress, in tabular and graphical form
- iv) Quality of construction
- v) Environmental, health and safety issues and mitigation measures
- vi) Discussion of major problems and recommendations to address same
- vii) Program for the coming month, and revised program for the completion of the Project, if any
- viii) Cash flow forecasts
- ix) Schedules of variations orders and claims
- x) Activities of the Consultant
- xi) Activities of the Contractor
- xii) Weather information and charts,
- xiii) Information on Contractor's equipment, personnel and materials on site
- xiv) Copies of site meetings
- xv) Photographs

(c) Quarterly Progress Report

The engineer will prepare a comprehensive report summarizing all activities under the services at the end of each quarter, and also at other times when considered warranted by either the Engineer or the Employer because of delay of the construction works or because of the occurrence of technical or contractual difficulties. Such reports will summarize (i) the activities of the Engineer (ii) the progress of the Contracts (iii) all contract variations and change orders (iv) the status of Contractor's claims, if any; etc. and will include brief descriptions of the technical and contractual problems being encountered, physical and financial progress on approved formats, financial status of the contracts as a whole consisting the cost incurred, and cost forecast, as well as financial plan and other relevant information for the ongoing contracts. Five copies of Quarterly Report will be submitted by 20th of the month after end of each quarter.

(d) Finalize Quality Assurance Manual

Consultant will provide feedback/suggestions, if any, during the inception period on the quality assurance manual prepared by previous consultant and reviewed / approved by the World Bank/PMU.

Consultant will develop Quality Assurance Manual which will define the tests to be performed for quality assurance as per standards along with person responsible who will be accepting the same. This manual will be submitted to the employer with 30 days of commencement of services.



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(e) Finalize Construction Supervision Manual

Consultant will provide feedback/suggestion, if any, during the inception period on the construction supervision manual prepared by previous consultant and reviewed / approved by World Bank/PMU.

The manual will be modified to meet requirements of the project keeping in view the methodology proposed by the Contractor, indigenous/local natural materials proposed to be used in construction and machines/equipment proposed to be deployed on the project. This manual will be submitted within 30 days of commencement of services and will be updated/ improved every six months.

(f) Maintenance Manual

The Consultant will prepare the Draft Maintenance Manual and then shall submit the Maintenance Manual to the client for review and suggestions. Final Maintenance Manual will be submitted to Employer after incorporation of employer's comments. The manual will be submitted four months prior to completion of section of contract. The Maintenance Manual for the Project setting out in detail the standards, schedules, procedures, type, periodicity and other details of the operation and maintenance activities to be carried out for the project during the defect and liability period so as to meet the Maintenance Requirements as well as details of the Management Information System to be incorporated, reports to be submitted and procedure for reviews, the Maintenance Plan for the first year of operations and the emergency maintenance procedures. This shall be modified every year.

(g) Other Special Reports

From time to time Consultant may have to prepare and submit to Employer other special reports that may be considered necessary including emergencies that may arise on the project, force majeure and breach of obligations etc.

(h) Reports on Tests and Notices Issued

The Contractor will prepare and submit reports to Employer on tests performed and their results and also on the notices issued to the Contractor regarding the test, material, key personnel and equipment.

(i) As-Built Drawings

The Contractor will produce "As-Built" drawings at the end of the project. The Consultant will verify to ensure that the drawings are accurately produced and reflect the as built construction. These drawings will be produced after various sections of the project are completed to good international standards and Good Industry Practice. Consultant will review approve and submit two full set of as built drawings within two months of completion of the Works detailing all alignment and level information, position and sizes of drainage structures, services information, and structural drawings (including type and positions of reinforcement).

(j) Final Completion Report

The Consultant will prepare a comprehensive final Completion Report for each defined section of the construction contract, after such sections reaches a stage of substantial completion during the period of the services. These reports must be submitted immediately after the completion of the work by the contractor and before taking over of such sections by



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the Employer. The report shall incorporate summary of the method of construction, the construction supervision performed, as built construction drawings problems encountered & solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by the employer. The engineer will then summarize and consolidate in a single report the key information from each sectional completion reports to prepare the final Completion Report for the entire construction package.

Task II- 51. Assist the Employer in providing clarifications/explanations to observations made, from time to time, by the Auditor

The audit objections may arise on account of difference of opinion in interpretation of contract clauses, discrepancy in maintenance of accounts/certification of payments, Contractor's delay in implementing certain vital provisions of contract, Contractor raising claims related to work/ contractual provisions.

The Consultant will assist the Employer in replying to audit objections / observations, production of records, providing authoritative interpretation of rules leading to objections. Our team has wide experience in administering contracts and dealing with observations of the Auditors/Chartered Accountants.

Task II- 52. Likely Additional Service

The consultants may be required to carry out the following assignments in the event of the contingencies arising for them on the request of the employer as per terms negotiated then. The Client will make adjustment in the Contract Prices based on remuneration/ reimbursable rates in contract or seek prices for the contingent services at the time of occurrence.

The assignments are:

- major redesigning of road or structure;
- preparation of reports or additional contract documents for consideration of proposals for carrying out additional work;
- any other specialist services by the Engineer or by other specialists, pertaining to the works contract supervised by the consultant as may be agreed upon

Task II- 53. Independent Safety Audit

Consultant will review the independent Safety Audit and incorporate feasible on minor or modification in final drawing and BOQ

Task II- 54. Assist Employer in Taking Over of Completed Sections

Team Leader will assist the Employer in taking over of the completed section. He will prepare a list of defects in the completed section which the contractor needs to rectify in the DPL. He will also prepare a punch list of incomplete items as well which the contractor needs to complete during DLP. To keep a contractual binding for doing such job, TL may suggest not to release retention money or revoke issue of completion certificate in case of extreme conditions.

Task II- 55. Handover of Design Records, Quality Control and Testing Records

The Consultant will maintain permanent records of all design detail, used in the project. Permanent records of all design changes including all correspondence between the Contractor, Employer and Consultant would be maintained, indexed and submitted to the



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Employer. It will include all surveys, soils investigations, plans, design calculations, quantity calculations and relevant contract change order documents. Permanent records of the approved Contractor's Quality Control Plan, including approved testing methods and procedures, materials specifications, standard application formats, and all quality control test performed by the Contractor or the Supervision Consultant would also be indexed and submitted. Minutes of Meeting between Consultant, Employer, Contractor and design consultants held during the entire tenure of assignment would also be maintained and submitted.

Task II- 56. Handover of Records of Payment Request and Claims

Permanent records of all requests for payment by the Construction Contractors, including all backup data which supports the payment request, including Interim and Final Payment Certificates along with concerned measurement books would be maintained by Consultants during the project tenure and handed over to the Employer at conclusion of the contract. Claims by the Contractors, and Consultant's evaluation and recommendations of the claim, along with action taken by Employer and all supporting documents would be maintained by the Consultants and handed over on completion.

All document pertaining to import of equipments, exemption of duties for material and equipments will be compiled and handed over at the end of the Project.

Task II- 57. Handover Records of Setting Out of the Project

The Consultant will maintain as a permanent record all Control Points and Survey Data for alignment control and benchmarks for elevation control. This data will be turned over to the clients at the completion of the Contract.

Task II- 58. Handover Records of Correspondence

The Consultants will during the entire period of the assignment index and file organize correspondence all correspondence related to construction, contract administration etc. Assistance or reference required by the client on correspondence will be handover to client.

ACTIVITY III: DEFECT & LIABILITY

The Defects Liability calls for contractors to correct any defects identified by the consultant or client on substantial completion during defect liability period of the contract. The consultant will inspect the works at intervals during the course of work and on substantial completion and inform the contractors of any defects which must be corrected within the defects liability period.

Task III- 1. Inspection During DLP

We expect to have limited role during defect liability period. We propose that Project Manager and RE inspect and notify the defect list and punch list on incomplete items on substantial completion to Employer so that the contractor could be directed to undertake defect rectification / completion of work during the defect liability period. The Engineer / Consultant role would be limited to issuing necessary instructions to the contractors for remedial works if damages or failure is observed or if the routine maintenance is not being carried out adequately. Though completed works during this period would be inspected by Employer the Consultants would continue providing advisory services.



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Task III- 2. Issue of Final Defects Liability Period Inspection & Certification

The contract completion report will be prepared and submitted to Employer as per the. This will be submitted at the end of DLP.

Task III- 3. Consultancy Contract Completion Report

The Consultancy Completion Report will be prepared and submitted to Employer. This will be submitted immediately after the submission of Civil Contract Completion Report.

A. WORK PLAN**B-1 GENERAL**

The Work Plan is principally directed to organize the major "Activities" identified in formulating the Methodology for construction supervision of 1st Year Roads (Balance Work) under Odisha State Road Project. The content of each activity has been defined terms of "Tasks". These tasks have been assigned "time frames" to fit well with in Project Schedule 19 months of 16 months for Construction of various packages and 12 months for Defect Liability.

These Activities / Tasks are planned to run parallel or in series, depending upon their level of interdependence.

B-2 PHASE / TASKS / ACTIVITIES AND DURATION

In order to address consultant's responsibility as stated in the TOR, consultant has formulated the tasks and further elaborated the tasks. The brief of the activities / tasks with duration in given under and elaborated in figure 8.1.

Activity – I	PROJECT COMMENCEMENT
Task I- 1.	Consultant Team Mobilization
Task I- 2.	Consultant Offices
Task I- 3.	Start up Meeting with Client
Task I- 4.	Consultant Team Composition
Task I- 5.	Consultants Work Plan
Task I- 6.	Detailed Methodology
Task I- 7.	Site Communication & Record Keeping
Task I- 8.	Format for Monthly Progress Report
Task I- 9.	Finalize Quality Assurance Manual
Task I- 10.	Finalize Construction Supervision Manual
Task I- 11.	Taking Over Project from Interim Supervision Team
Task I- 12.	Inception Report




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Activity – II	CONSTRUCTION SUPERVISION
Task II- 1.	Act as an “Engineer”
Task II- 2.	Delegation of Power
Task II- 3.	Coordination with Other Agencies
Task II- 4.	Advance actions for handing over of site
Task II- 5.	Order to Commence the Work
Task II- 6.	Contractor Mobilization
Task II- 7.	Preparation and Proof checking of all the drawings
Task II- 8.	Review Contractor Work Programme
Task II- 9.	Review Contractor’s superintendent Personnel, Equipment and temporary land to be occupied by the Contractor
Task II- 10.	Review Contractor’s construction Methodologies
Task II- 11.	Contractor to Provide an Environmental Protection Plan
Task II- 12.	Approval of the Plan
Task II- 13.	Ensure that the construction works are in accordance with the technical specifications, Environmental Management Plan
Task II- 14.	To verify and if necessary order correction of the as –staked drawings supplied by the Contractor
Task II- 15.	Identify all Becons and Benchmarks
Task II- 16.	Check contractor setting out of the works
Task II- 17.	Ensure a system of Quality Assurance of works
Task II- 18.	Approve materials and sources of materials
Task II- 19.	Approval of Construction Materials
Task II- 20.	Issue of Drawings, Documents and Information
Task II- 21.	Review the Contractors Proposed Working Drawings, Plans and Associated Calculations
Task II- 22.	Sampling and Testing
Task II- 23.	Analysis of Test Results and Approval
Task II- 24.	Review all bituminous mix designs and concrete mix designs
Task II- 25.	Supervise construction of all elements
Task II- 26.	Inspection for Supervision
Task II- 27.	Focal Issues during Inspection
Task II- 28.	Check the laboratory and field tests carried out by the contractor
Task II- 29.	Order special tests of materials and/or completed works
Task II- 30.	Order removal and substitution of improper materials and/or works as required
Task II- 31.	Detailed Records of Staff
Task II- 32.	Detailed Records of Equipment
Task II- 33.	Arrange Joint Site Inspections with the Employer
Task II- 34.	Quantity Measurement
Task II- 35.	Issue a working drawing or modify the existing <i>drawing</i>
Task II- 36.	Progress of the work
Task II- 37.	Order suspension of works and to authorize with the Employer’s approval, extensions of the period of completion of works.
Task II- 38.	To direct the Contractor in all matters concerning construction safety
Task II- 39.	Issue interim certificates for monthly payments & Final payment certificate to the contractors




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Activity – II	CONSTRUCTION SUPERVISION
Task II- 40.	Prepare & Submit Variation works
Task II- 41.	Claim Management
Task II- 42.	Assist Client in Adjudication or Arbitrations
Task II- 43.	Prepare quarterly cash flow
Task II- 44.	Update cost estimate each year or at quarterly completion
Task II- 45.	Keep & Update all records
Task II- 46.	Daily Project Dairy & Digital Photographs
Task II- 47.	Periodic coordination & progress meetings
Task II- 48.	Actions requiring specific approval of the Employer
Task II- 49.	Authorize Sub Contract / Subletting
Task II- 50.	Details on Records & Reporting
Task II- 51.	Assist the Employer in providing clarifications/explanations to observations made, from time to time, by the Auditor
Task II- 52.	Likely Additional Service
Task II- 53.	Independent Safety Audit
Task II- 54.	Assist Employer in Taking Over of Completed Sections
Task II- 55.	Handover of Design Records, Quality Control and Testing Records
Task II- 56.	Handover of Records of Payment Request and Claims
Task II- 57.	Handover Records of Setting Out of the Project
Task II- 58.	Handover Records of Correspondence

Activity – III	DEFECT & LIABILITY
Task III- 1.	Inspection During DLP
Task III- 2.	Issue of Final Defects Liability Period Inspection & Certification
Task III- 3.	Consultancy Contract Completion Report

B-3 MILESTONES

There is no milestone for sectional completions. In case OWD so desires at the start of construction, this would be introduced in the work plan and other schedules through appropriate modifications, keeping the project completion time intact. No milestones has, therefore, been indicated in the Work Plan.

B-4 INTERIM APPROVAL OF CLIENT

The consultant will need interim approvals on various technical and contractual issues as and when these come up during the contract period. No specific interim approval can be anticipated at present.

B-5 DELIVERABLES

The consultant will prepare and submit to the client the following deliverables with the time schedule as indicated against each of reports or documents. The details of completion and submission for reports with brief outline of the report are given in table B.5.1.




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Sr. No.	Document	Number of Copies	Time
1.	Inception report + Review of Supervision and quality assurance Manual	10	One month of effectiveness of Contract
2.	Status Report of Handing and Taking Over	30	2 months of effectiveness of Contract
3.	Monthly progress report	10	10 business days after end of month
4.	Quarterly progress report	10	15 business days after end of quarter
5.	Maintenance Manual for Defect liability Period	30	6 months after effectiveness of Contract
6.	Sectional/Substantial Completion Reports	20	After substantial completion

B-6 FORMULATION OF WORK PLAN

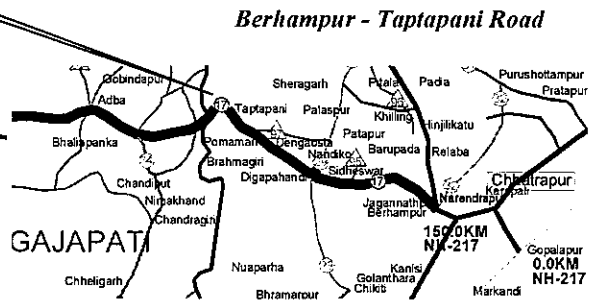
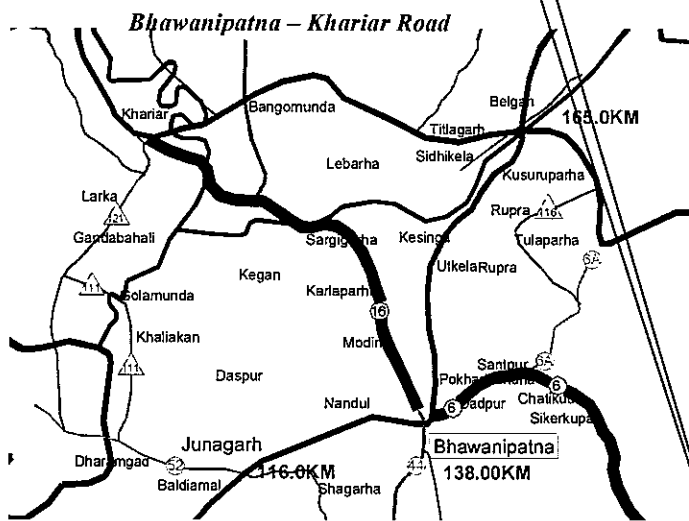
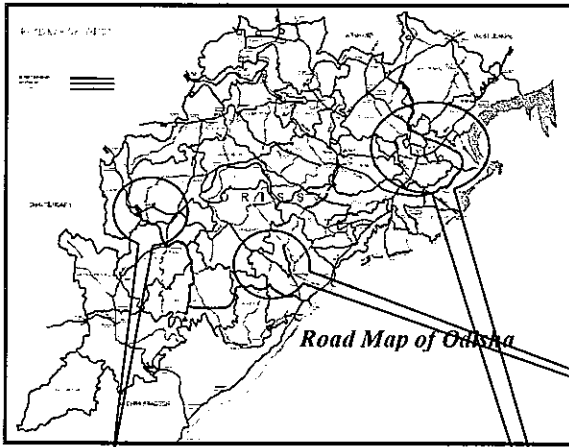
The work plan is formulation to indicate the sequence of Activities/ Tasks and their position in project time frame. The plan exhibits: Activities; Tasks; duration, Start and end points & Inter-relationship



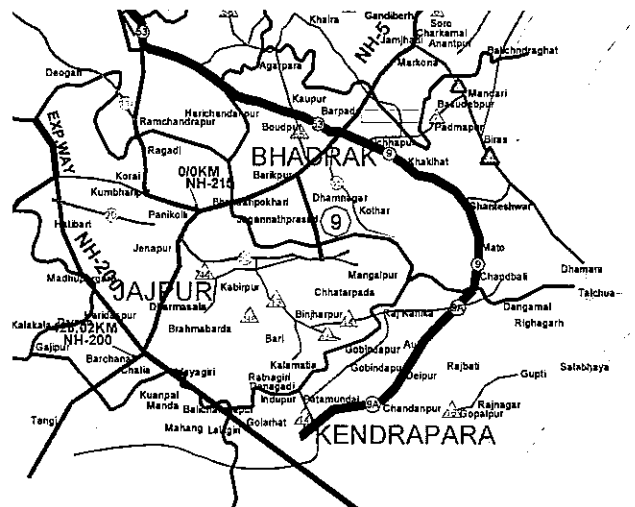
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ANNEX - I



Bhadrak - Chandbali & Bhadrak - Anandpur Road



[Signature]
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Appendix B - Reporting Requirements

The Consultant shall prepare and submit to the Employer alongwith softcopy of each of the following reports:

SI	Document	Number of Copies	Time
1	Inception report + Review of Supervision and quality assurance manual	10	One month of effectiveness of Contract (Ref. GC Cl. 2.1)
2	Status Report of Handing and Taking Over	30	2 months of effectiveness of Contract (Ref. GC Cl. 2.1)
3	Monthly progress report	10	10 business days after end of month
4	Quarterly progress report	10	15 business days after end of quarter
5	Maintenance Manual for Defect liability Period	30	6 months after effectiveness of Contract (Ref. GC Cl. 2.1)
6	Sectional/Substantial Completion Reports	20	After substantial completion

a. MONTHLY REPORT:

The Consultant will, no later than 10th of each month, prepare a brief progress report summarizing the work accomplished by the supervision team for the preceding month. The report will outline any problems encountered (administrative, technical or financial) and give recommendations on how these problems may be overcome. Brief work progress summaries will be included for on going road and bridge works, outlining problems encountered and recommending solutions. The report should record the status of payment of contractors monthly certificates, of all claims for cost or time extensions, and of action required of government and other agencies to permit unconstrained works implementation.

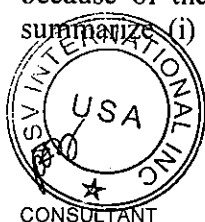
The monthly progress report shall also include one chapter each on environmental, signage, safety utility and community asset shifting, tree felling, details of initial rectification, routine maintenance and traffic diversion during construction. The PERT chart in Microsoft Project / output of the project management tool (software) listing all activities shall be enclosed with the monthly progress report.

b. Status Report of Handing and Taking Over

The consultant will deliver a status report on handing and taking over which will cover the Documents required at the time of Handing over/Taking over of each contract package; Quality Control / Safety Requirement Status and Other requirements such as Cash flow requirement; Record of plant, labor and material; Construction Supervision Manual; Maintenance Manual; Change order; Modifications to approved design and drawing

c. QUARTERLY PROGRESS REPORTS

The Consultant will prepare a comprehensive report summarizing all activities under the services at the end of each quarter, and also at other times when considered warranted by either the Consultant or the Employer because of delay of the construction works or because of the occurrence of technical or contractual difficulties. Such reports shall summarize (i) the activities of the Engineer (ii) the progress of the Contracts (iii) all




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contract variations and change orders (iv) the status of Contractor's claims, if any; etc. and will include brief descriptions of the technical and contractual problems being encountered, physical and financial progress on approved formats, financial status of the contracts as a whole consisting the cost incurred, and cost forecast, as well as financial plan (by Bank and the Government) and other relevant information for the ongoing contracts.

d. SECTIONAL AND SUBSTANTIAL / FINAL COMPLETION REPORTS

The Consultant will prepare a comprehensive final Completion Report for each defined section of the construction contract, after such sections reaches a stage of substantial completion during the period of the services. These reports must be submitted immediately after the completion of the work by the contractor and before taking over of such sections by the Employer. The report shall incorporate summary of the method of construction, the construction supervision performed, as built construction drawings problems encountered & solutions undertaken thereon and recommendations for future projects of similar nature to be undertaken by the employer. The engineer will then summarize and consolidate in a single report the key information from each sectional completion reports to prepare the final Completion Report for the entire construction package.



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Appendix C - Key Personnel and Sub-Consultants - Hours of Work for Key Personnel

1. STAFF

- 1.1 The consultants had made their own assessment of the manpower requirement in terms of man months for different category of persons proposed to be deployed to carry out the supervision works as envisaged in the Description of Services.
- 1.2 The duration of the Supervision Consultant services for the Balance Works of Phase 1 Roads is estimated for 16-19 months of construction period as listed at Para-1.4 plus for 12 months of defect liability period. Mobilization of staff would be subject to agreement with the Employer on bi-annually basis.
- 1.3 Person-month requirements for each category as proposed by the consultant will be generally considered as the ceiling for each category. In no case, shall actual deployment exceed more than 10% for any category. The consultant has indicated in his technical proposal the qualification and experience level of each category of technical support staff proposed.
- 1.4 All staff of supervision consultants would be expected to mobilize immediately upon commencement of services, as the works are ongoing.
- 1.5 During the defects liability period, the Supervision Consultant would be expected to provide technical advisory services on "as and when required" basis.
- 1.6 The Consultants has submitted the proposal for construction supervision as per the staff requirements indicated herein. Consultants may, if they wish, also indicate alternative staffing arrangements, which they consider to be appropriate.
- 1.7 After award of the contract, the Employer expects all of the proposed key personnel to be available during implementation of the contract. The Employer will not consider substitutions during contract implementation except under exceptional circumstances up to a maximum of one-third of the key personnel. In case of replacements, the consultant will ensure that there is a reasonable overlap between the staff to be replaced and the replacement.
- 1.8 The CVs of the following key professional staff has been evaluated in accordance with the criteria are set down in Annex-II.

1. Team Leader-cum-Project Coordinator	-	1 No.
2. Resident Engineer --cum-Sr. Highway Engineer	-	3 Nos
3. Sr. Bridge Construction Engineer	-	1 No
4. Sr. Material -cum-Quality Control Engineer	-	1 No




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1.9 The CVs of the following Sr. Technical Staff has been provided during the contract negotiations and has been reviewed for quality against the criteria set down in Annex - III. However, before signing of the contract, the approval of the Employer shall be required who shall check their CVs against the requirements as stated in Annex-III.

i)	Highway Design Engineer / Pavement specialist	-	1 No
ii)	Bridge Design Engineer	-	1 No
iii)	Highway Engineer	-	4 Nos
iv)	Bridge Engineer	-	3 Nos
v)	Quantity Surveyor	-	3 Nos
vi)	Environmental/Safety Engineer	-	3 Nos
vii)	Material / Quality Engineer	-	3 Nos

1.10 CVs for following field sub-professional staff are not required to be submitted in the Technical Proposal. However, the input and proposed numbers of these has been included in the proposal and the costs in respect of these personnel has been included in the financial proposal. The CV of these personnel should qualify against the criteria set down in **Annex - IV**. These CVs shall not be evaluated.


i)	CADD Engineer (Pavement/ Highway)
ii)	CADD Engineer (Bridge)
iii)	Asst. Highway Engineer
iv)	Asst. Bridge Engineer.
v)	Asst. Quantity Surveyor
vi)	Asst. Material/ Quality Engineer
viii)	Asst. Surveyor

1.11 The supervision consultant will be establish 4 offices including: (i) main office, suitably located in Bhubaneswar and (ii) three field offices shall be suitably located near project roads.

1.12 The supervision consultant shall use modern construction management techniques in all aspects of performing this work.



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ANNEX - II

BROAD QUALIFICATION REQUIREMENTS OF KEY EXPERTS

1. Team Leader-cum-Project Coordinator,

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Construction Management; or Project Management, or any other relevant field of Contract Management

II General Experience

- a) Total Experience : Total Professional Experience :
 Minimum: 15 Years
 Desirable: 20 Years
- b) Relevant Experience : Experience as Team Leader / Contract Management Specialist / Deputy TL / RE : 10 Years;
 Highway Projects of US\$ 15 Million: 3
Projects
 of similar complexity either that of NHAI or other project funded by multilateral agencies e.g. WB, JBIC, ADB etc.
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded Contracts
 (ii) Modern Survey & Construction Techniques
 (iii) Specifications and Standards for Highway Projects relevant to India and International best practice
 (iv) Contract administration & Dispute Resolution
- c) Language : Communication fluently in English is minimum

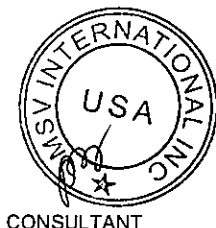
2. Resident Engineer / Engineer of each Package (3 Positions)

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Highway / Transportation Engineering; or Construction Management

II General Experience

- a) Total Experience : Total Professional Experience :
 Minimum: 10 Years
 Desirable: 15 Years
- b) Relevant Experience : Experience as RE / Sr. Highway Engineer : 8 Years ;




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Highway Projects of US\$ 15 Million : **3 Projects** of similar complexity either that of NHAI or other project funded by multilateral agencies e.g. WB, JBIC, ADB etc.

Knowledge in following fields are essential:

- (i) Administering FIDIC / International Funded Contracts
- (ii) Specifications and Standards for Highway Projects relevant to India and International best practice.
- (iii) Design and evaluation of Pavements
- (iv) Modern Survey & Construction Techniques

c) Language : Communication fluently in English is minimum

3. Senior Material-cum-Quality Control Engineer (1 Position)

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
- b) Desirable : Post Graduation is desirable either in Geotechnical / Soil Mechanics / Highway; or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience :
Minimum: 10 Years
Desirable: 15 Years
- b) Relevant Experience : Experience as Material / Quality Control Engineer :
8 Years ;
Highway Projects of US\$ 15 Million : **3 Projects** of similar complexity either that of NHAI or other project funded by multilateral agencies e.g. WB, JBIC, ADB etc.

Knowledge in following fields are essential:

- (i) Monitoring Quality Control Laboratory
- (ii) Supervising Contractor's Crushers & Mixing Plants
- (iii) Evaluation of Construction Materials
- (iv) Design of Bitumen & concrete Mix
- (v) Modern QAP & Construction Techniques
- (vi) Specifications and Standards for Highway Projects relevant to India and International best practice

c) Language : Communication fluently in English is minimum



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3. Sr. Bridge Construction Engineer (1 Position)

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering with specialized training in bridge design / bridge construction engineering
- b) Desirable : Post Graduation is desirable either in Bridge Engineering, Structural Engineering

II General Experience

- a) Total Experience : Total Professional Experience :
Minimum: 10 Years
Desirable: 15 Years
- b) Relevant Experience : Experience as Bridge Construction Engineer : 8 Years ;

Highway Projects of US\$ 15 Million : **3 Projects** of similar complexity either that of NHAI or other project funded by multilateral agencies e.g. WB, JBIC, ADB etc.

Knowledge in following fields are essential:

- (i) Design & Construction of Modern HL Bridges
- (ii) Latest CODEs, Circulars, Guidelines of MOST / IRC / AASHTO / TRL / BIS
- (iii) Modern Bridge Survey & Construction Techniques
- c) Language : Communication fluently in English is minimum



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ANNEX - III

BROAD QUALIFICATION REQUIREMENTS OF SUPPORT STAFFS

1. Highway Design Engineer

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Highway / Pavement Engineering; or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Highway Design Engineer or equiv.: 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Design of Flexible and Rigid Pavements
 (ii) Latest CODEs, Circulars, Guidelines of MOST / IRC / AASHTO / TRL / BIS
 (iii) Expertise in MX / MOSS / CIVIL CADD etc
 (iv) Modern Survey & Construction Techniques
 c) Language : Communication fluently in English is minimum

2. Bridge Design Engineer

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Structural Engineering; Or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Structural / Bridge Design Engineer or equiv. : 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Design of Modern HL Bridges
 (ii) Latest CODEs, Circulars, Guidelines of MOST / IRC / AASHTO / TRL / BIS
 (iii) Modern Survey & Construction Techniques
 (iv) Expertise in STAAD / FEM etc.
 c) Language : Communication fluently in English is minimum



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3. Highway Engineer

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Highway / Transportation Engineering; or Construction Management or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Highway Engineer or equiv. : 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded Contracts
 (ii) Specifications and Standards for Highway Projects relevant to India and International best practice
 (iii) Modern Survey & Construction Techniques
 c) Language : Communication fluently in English is minimum

4. Bridge Engineer

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Structural Engineering; or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Bridge Engineer or equiv. : 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded Contracts
 (ii) Specifications and Standards for Highway Projects relevant to India and International best practice
 (iii) Modern Survey & Construction Techniques
 c) Language : Communication fluently in English is minimum



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5. Quantity Surveyor**I Educational Qualification**

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in Highway / Transportation Engineering; or Construction Management or any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Quantity Surveyor or equiv. : 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded Contracts
 (ii) Specifications and Standards for Highway Projects relevant to India and International best practice
 (iii) Modern Survey & Construction Techniques
 c) Language : Communication fluently in English is minimum

6. Environmental/Safety Engineer**I Educational Qualification**

- a) Minimum : Graduate in Civil Engineering / Post Graduation in Environmental Science
 b) Desirable : Post Graduation / Higher Specialization is desirable either in Environmental Engineering or any equivalent field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years minimum
 b) Relevant Experience : Experience as Environmental Engineer or equiv. : 5 Years minimum ;
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded Contracts
 (ii) Specifications and Standards for Highway Projects relevant to India and International best practice
 (iii) MOEF Circulars, Guidelines etc
 (iv) EIA and EMP with their implementation
 (v) Modern Survey & Construction Techniques
 c) Language : Communication fluently in English is minimum




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7. Material Engineer

I Educational Qualification

- a) Minimum : Graduate in Civil Engineering
 b) Desirable : Post Graduation is desirable either in
 Soil Mechanics / Geotechnical Engineering;
 or
 any relevant field

II General Experience

- a) Total Experience : Total Professional Experience : 10 Years
 minimum
- b) Relevant Experience : Experience as Material Engineer or equiv. : 5 Years
 minimum;
Knowledge in following fields are essential:
 (i) Administering FIDIC / International Funded
 Contracts
 (ii) Specifications and Standards for Highway
 Projects relevant to India and International best
 practice
 (iii) Evaluation of Construction Materials
 (iv) Design of Bitumen & concrete Mix
 (v) Modern QAP & Construction Techniques
- c) Language : Communication fluently in English is minimum
 Local Language is Advantageous



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ANNEX – IV**BROAD QUALIFICATION REQUIREMENTS OF
FIELD SUB-PROFESSIONAL STAFF****1. CADD Engineer (Pavement or Bridge)****I Educational Qualification**

Minimum : Diploma in Civil Engineering

II General Experience

a) Total Experience : Total Professional Experience : 2 Years minimum

b) Relevant Experience : **Knowledge in following fields are essential:**

- (i) CAD in AutoCAD, MX
- (ii) Modern Survey & Construction Techniques
- (iii) Specifications and Standards for Highway Projects relevant to India and International best practice

c) Language : Communication fluently in English is minimum

2. Asst. Highway Engineer / Asst. Bridge Engineer**I Educational Qualification**

Minimum : Graduate in Civil Engineering

II General Experience

a) Total Experience : Total Professional Experience : 2 Years minimum

b) Relevant Experience : **Knowledge in following fields are essential:**

- (i) Administering FIDIC / International Funded Contracts
- (ii) Specifications and Standards for Highway Projects relevant to India and International best practice
- (ii) Modern Survey & Construction Techniques

c) Language : Communication fluently in English is minimum

3. Asst. Quantity Surveyor (Highway or Bridge)**I Educational Qualification**

a) Minimum : Diploma in Civil Engineering

II General Experience

a) Total Experience : Total Professional Experience : 2 Years minimum

b) Relevant Experience : **Knowledge in following fields are essential:**

- (i) Administering FIDIC / International Funded Contracts
- (ii) Specifications and Standards for Highway Projects relevant to India and International best



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- practice
- c) Language : (ii) Modern Survey & Construction Techniques
: Communication fluently in English is minimum
- 4. Asst. Material Engineer**
- I Educational Qualification**
- a) Minimum : Diploma in Civil Engineering
- II General Experience**
- a) Total Experience : Total Professional Experience : 2 Years
minimum
- b) Relevant Experience : **Knowledge in following fields are essential:**
- (i) Administering FIDIC / International Funded
Contracts
- (ii) Specifications and Standards for Highway
Projects relevant to India and International best
practice
- (iii) Evaluation of Construction Materials
- (iv) Design of Bitumen & concrete Mix
- (v) Modern QAP & Construction Techniques
- c) Language : Communication fluently in English is minimum
- 5. Asst. Surveyor**
- I Educational Qualification**
- a) Minimum : Diploma in Civil Engineering
- II General Experience**
- a) Total Experience : Total Professional Experience : 2 Years
minimum
- b) Relevant Experience : **Knowledge in following fields are essential:**
- (i) Administering FIDIC / International Funded
Contracts
- (ii) Specifications and Standards for Highway
Projects relevant to India and International best
practice
- (iii) Modern Survey & Construction Techniques
- c) Language : Communication fluently in English is minimum




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Qualification and Task Assignment of Key Personnel

Sr. No.	Name of Staff	Qualification	Firm	Area of Expertise	Position
1.	Rajiv Singh	A.M.I.E (Civil Engineering)	MSV	Highway	Team Leader-cum-Project Coordinator

Task Assigned:

Primary Responsibility

- Mobilization and appointment of Team Leader
- Initial Interactions with PMU Officials
- Study of work programme
- Road Safety
- Management meeting and seminar
- Finalize supervision manual
- Finalize training manual
- Finalize quality assurance plan
- Coordination with other agencies
- Review the Order to commence the work
- Review of land to be occupied by the contractor
- Review of construction mobilization programme of the contractor
- Review of key superintendent personnel of the contractor verification of insurance guarantees
- Review construction schedule / work programme including activity scheduling and resource programming including equipment and technical documents
- Review of Issuance of drawings, documents and information
- Review the contractor proposed working drawings, plans and associated calculations
- Review Approval of mix designs
- Review Traffic count survey
- Communication to contractor
- Apprise client
- Monitor progress vis-à-vis programme and work methodology
- Report to client
- Review Engineers instructions
- Regular advise on estimated completion cost
- Review Issue of interim payment certificate
- Liquidated damages
- Final payment certificate
- Review Extension of time
- Review Claims
- Seeking specific approval from employer
- Order suspension of works
- Reporting unsatisfactory performance of the contractor
- Arrange joint site inspections with the employer
- Ensure proper handling over of materials, tools & equipment and facilities
- Assist employer in handling over of the site
- Assist employer in arbitration / adjudication/technical audit scope of training
- Reports
- Submission of maintenance manual
- Assist employer in taking over of completed section
- Handover of design records, quality control and testing records
- Handover of records of payment request and claims
- Handover of records of setting out of the project




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- Handover records of correspondence
- Inspection during DLP
- Issue of final defect liability period inspection & certification
- Civil contract completion report
- Consultancy contract completion report

Secondary responsibility

- Inspection for supervision
- Local issues during inspection
- Quality control
- Order special tests
- Carry out independent test
- Develop programme management system and management information system (MIS) requirements
- Establish standardized forms and procedures
- Maintain site daily dairies and detailed records
- Work programme
- Analysis
- Acceptance of work programme
- Implementation of "Environment Management Plan"
- Implementation of "Safety Plan"
- Preparation of additional reports and documents
- Other specialist services or other specifications
- Deployment to site
- Records (As Built) Drawings

Sr. No.	Name of Staff	Qualification	Firm	Area of Expertise	Position
2.	Santosh Kumar	B.E. (Civil)	MSV	Highway Construction	Resident Engineer -- cum-Sr. Highway Engineer- I
3.	S. Ramanand	B.E. (Civil)	MSV		Resident Engineer -- cum-Sr. Highway Engineer- II
4.	Jagdish Singh	B.Sc. (Civil Engineering)	MSV		Resident Engineer -- cum-Sr. Highway Engineer- III

Task Assigned:

- To act as Engineer
- Delegation of power
- Order to commence the work
- Approval of land to be occupied by the contractor
- Approval of construction mobilization programme of the contractor
- Approval of key superintendent personnel of the contractor verification of insurance guarantees
- Review and approve construction schedule / work programme including activity scheduling and resource programming including equipment and technical documents
- Issue of drawings, documents and information
- To approve setting out of works
- Review the contractor proposed working drawings, plans and associated calculations
- Approval of mix designs
- Traffic count survey
- Communication to contractor
- Engineers instructions



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- Issue of interim payment certificate
- Liquidated damages
- Final payment certificate
- Extension of time
- Claims
- Seeking specific approval from employer
- Order suspension of works
- Arrange joint site inspections with the employer
- Assist employer in arbitration / adjudication/technical audit scope of training
- Reports
- To ensure that the construction works are executed in accordance with the technical specifications and other Works Contract documents
- To approve the setting out of the Works. The Consultant should use computer technology in survey;
- To verify the quantities of all items in the bills of quantities and/or the fee schedules and propose modifications to the same if necessary for the approval of the Engineer and the Employer. He should use latest technology for survey, quantity assessment and drawing amendments;
- To review the Contractor's construction methods, sequence of activities, and traffic management plan, prior to the Contractor starting any specific activity;
- To record all measurements of work in measurement books (the measurement books shall be in a form compatible with the output from the CADD system). All quantity measurements and calculations required for payment purposes to be verified or checked by the Resident Engineer or other authorized person and ensure that all measurements and calculations are carried out in a manner and at the frequencies specified in the Works Contract documents;
- To identify construction problems and delays and recommend to the Engineer, actions to expedite progress if the Works fall behind schedule;
- To maintain proper records such that a proper assessment of claims to be filed on/likely to be received from the Contractor can be made or assessment for any extension of time can be made or costs associated with unforeseen ground conditions can be calculated;
- To interpret and apply the Works Contract provisions, in particular with respect to the claims submitted by the Contractor for time extensions and/or extra payments and in general with respect to the Contractor's conformance and compliance with his contractual obligations;
- To prepare detailed recommendations to the Engineer for Works Contract variations and addenda, as necessary;
- To monitor and check the daily quality control and quantity measurements of the Works carried out under the Works Contract including request for inspections (RFI) and countersign the interim payment certificates when the quality of the Works is satisfactory and as per specifications and the quantities are correct. The Resident Engineers shall draw the Engineer's attention to any instances of non-conformance in the Contractor's works with the technical specifications;
- To supervise the Contractor in all matters concerning the environmental aspects, and the safety and care of the Personnel and the Works and, if required, to instruct the Contractor to provide any necessary signs, lights, guards, fencing, and watchmen;
- To ensure the Contractor's compliance with all environmental requirements of the Works Contract in particular the Environmental Management Plan (EMP) and the environment clearance requirements and to liaison with all relevant authorities and organizations;
- To direct the Contractor to carry out such works or to do such things as may be necessary in the Resident Engineer's opinion to avoid or to reduce the risk of any emergency affecting safety of life or of adjoining property, and to advise the Engineer thereof as soon thereafter as is reasonably practicable;
- To write a daily project diary which shall record all events pertaining to the administration of the Works Contract, requests from and orders given to the Contractor, all major activities and items and machinery deployed by the Contractor, and any other information which may at




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a later date be of assistance in resolving queries which may arise concerning execution of the Works;

- To carry out such duties under the terms of the Works Contract which may from time to time be delegated in writing by the Engineer;
- To verify, and if necessary order correction of the drawings supplied by the Contractor; to approve and/or issue working drawings;
- To organize the monthly/periodical site coordination meetings among the Employer (or Employer's Representative), the Contractor, the Engineer's Representative, and other implementing agencies (such as the agency implementing the Resettlement Action Plan); suggested schedule of the meeting should be informed to all parties (including the Employer at Jaipur) sufficiently in advance; the RE shall promptly prepare and circulate the minutes of the meetings indicating actions to be taken by respective parties with target dates;
- To assist the Engineer, on completion of Works in particular, by preparing lists of defects to be corrected by the Contractor;

Sr. No.	Name of Staff	Qualification	Firm	Area of Expertise	Position
5.	K. Vidya Sagar	B.E. (Civil)	MSV	Bridges	Sr. Bridge Construction Engineer

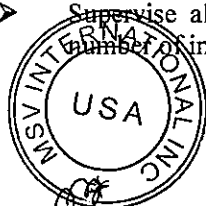
Task Assigned:

- Assist Team Leader in bridge and other structure related aspects of the project
- Check and approve working drawing of bridges and other structures
- Responsible for minor modifications in design of bridge/culverts needed during execution.
- Inspect and quality control construction of bridges and other structures
- Coordination with Material Engineer and contractor's expert for quality of works
- Guide and check reinforcement / cable laying operations, rectify any apparent mistakes.
- Check and control proper mix design
- Checking the adequacy of forming works, laying/compacting concrete and curing
- Check RFI pertaining to bridges
- Review and approve As-built documents for bridges and other structures
- Review and approve maintenance manual for bridge and other structures

Sr. No.	Name of Staff	Qualification	Firm	Area of Expertise	Position
6.	Puneel Pandey	B.E. (Civil)	MSV	Material	Sr. Material -cum-Quality Control Engineer

Task Assigned:

- Assist Team Leader / Resident Engineers in regard to Material and flexible pavement aspects of the project.
- Assurance all construction materials meet requirements of DPR
- Inspect sources of material
- Review test results of quarry and borrow area material
- Review contractor's key superintendent personnel as regard to material
- Monitor contractor's material inventory
- Coordination with Bridge Engineers for quality control
- Coordinate and control the support personnel placed under him for checking project quality
- Assist in evaluation of quality control system
- Supervise setting up of contractor's rock crushers
- Inspect contractor's field laboratories to ensure that these are adequately equipped and capable of performing all test as required in the contract
- Supervise all tests to be done at different stages of construction and perform adequate number of independent tests



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- Ensure specified tests are done as per codal stipulations and as the specifications laid down in the contract
- Maintain record Quality control program and Testing Records
- Guide and Supervise the Resident Engineers and Highway Engineers by prescribing construction methodologies and control tests specifications for pavement
- Tackle and decide in consultation with the Team Leader/Employer any specific problems pertaining to pavement that might arise during execution.
- Assist Team Leader in approving contractor's construction methodologies, superintendent personnel and construction equipment as related to pavement
- Assist in preparation of quality control manual section related to pavement.
- Approval of mix designs, laying procedures and slump control specifications and other materials tests related to pavement



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Staffing Schedule

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FOR CONSULTANCY SERVICES FOR CONSTRUCTION ADMINISTRATION OF 1ST YEAR ROAD BALANCE WORKS, WEST GARHA STATE ROAD PROJECT

TIME SCHEDULE FOR PROFESSIONAL PERSONNEL

Sl. No.	Name	Position	MONTHS												Sub Total	199	200	Contracted Period	Defect & Liability Period	Final Hand Over
			1	2	3	4	5	6	7	8	9	10	11	12						
KEY PROFESSIONAL STAFF																				
1	Rajiv Singh	Team Leader/Chief Professional																		
2	Santosh Kumar	Regional Engineer - Chief Sr Highway Engineer I																		
3	S. Hanumanth	Regional Engineer - Chief Sr Highway Engineer II																		
4	Jagdish Singh	Regional Engineer - Chief Sr Highway Engineer III																		
5	K. Ashok Kumar	Sr. Bridge Construction Engineer																		
6	Puneet Pandey	Sr. Material and Quality Control Engineer																		
SENIOR TECHNICAL STAFF																				
7	K.K. Sharma	Highway Design Engineer - Pavement Specialist																		
8	Bansraj C	Highway Design Engineer																		
9	Gourab Nath Mishra	Highway Engineer I																		
10	Dwijendra Kumar	Highway Engineer - II																		
11	H. Ramakrishna Belsa	Highway Engineer - III																		
12	M.P. Singh	Highway Engineer - IV																		
13	Dhruv Kumar	Model Engineer I																		
14	Udit Kumar Jha	Model Engineer - II																		

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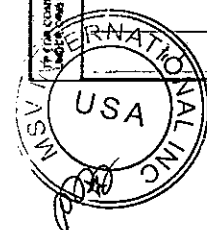
TABLE FOR CONSULTANT SERVICES FOR CONSTRUCTION SUPERVISION OF 151 TONNAGE (RAILWAY WORKS) UNDER ODISHA STATE ROAD PROJECT

Sl. No.	Name	Position	MONTHS												Defect & Liability Period	Project & Liability Period	Total Month	
			1	2	3	4	5	6	7	8	9	10	11	12				
15	Pr. Pratap Singh	Bridge Engineer III																
16	Sunil Kumar	Quantity Surveyor I																
17	Aditya Choudhary	Quantity Surveyor II																
18	Vijay Mishra	Quantity Surveyor III																
19	Manoj Kumar	Environmental Safety Engineer I																
20	S.K. Sureshwar	Environmental Safety Engineer II																
21	Pradyumn Singh	Environmental Safety Engineer III																
22	S. C. Bhatia	Senior J. Design Engineer I																
23	Suresh Prasad Singh	Material Quality Engineer II																
24	K. S. Sahoo	Material Quality Engineer III																
			SUB TOTAL														407	
SUBPROFESSIONAL STAFF																		
25	DN	Civil Engineer (Preventive Roadwork)																
26	DN	Civil Engineer (Budget)																
27	DN	Asst. Highway Engineer I																
28	DN	Asst. Highway Engineer II																
29	DN	Asst. Highway Engineer III																
30	DN	Asst. Bridge Engineer																
			SUB TOTAL														407	

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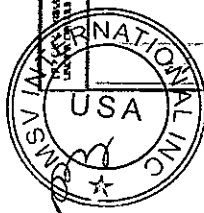
FOR CONSULTANCY SERVICES FOR CONSTRUCTION SUPERVISION OF 117 YEAR POLYMER BALANCE WORKS IN INDIA UNDER STATE ROAD PROJECT

Sl. No.	Name	Position	MONTHS												SUB TOTAL	JOB	Defect & Liability Period	Total Man Month
			1	2	3	4	5	6	7	8	9	10	11	12				
31	US	Asst. Budget Engineer II																
32	US	Asst. Budget Engineer III																
33	US	Asst. Quantity Surveyor - I																
34	US	Asst. Quantity Surveyor - II																
35	US	Asst. Quantity Surveyor - III																
36	US	Asst. Material Control Engineer - I																
37	US	Asst. Material Control Engineer - II																
38	US	Asst. Material Control Engineer - III																
39	US	Asst. Site office																
40	US	Asst. Site office II																
41	US	Asst. Surveyor III																
ADMINISTRATIVE STAFF																		
42	US	Office Manager																
43	US	Biological secretary																
44	US	Bank Clerks - I																
45	US	Bank Clerks - II																
46	US	Book-keeper III																

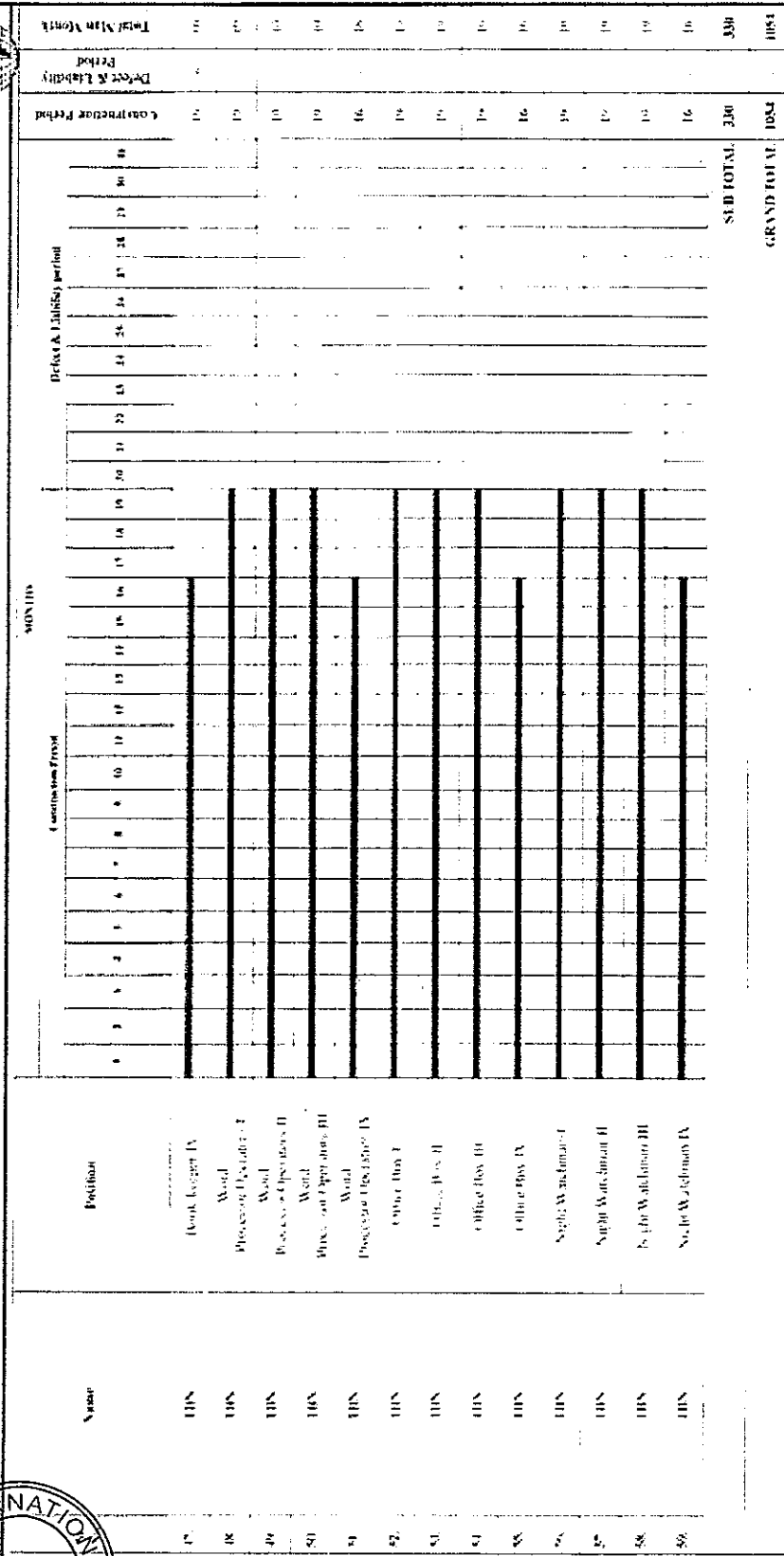
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 CHALLENGE SERVICES FOR CONSTRUCTION SUPERVISION OF 181 YEAR RIGGS (RAJANCE) PROJECT
 UNDER THE 1998 POLICY PROJECT



Legend:
 ■ Full Time
 ■ Part Time

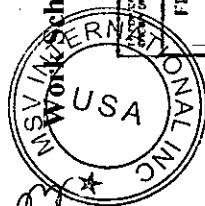
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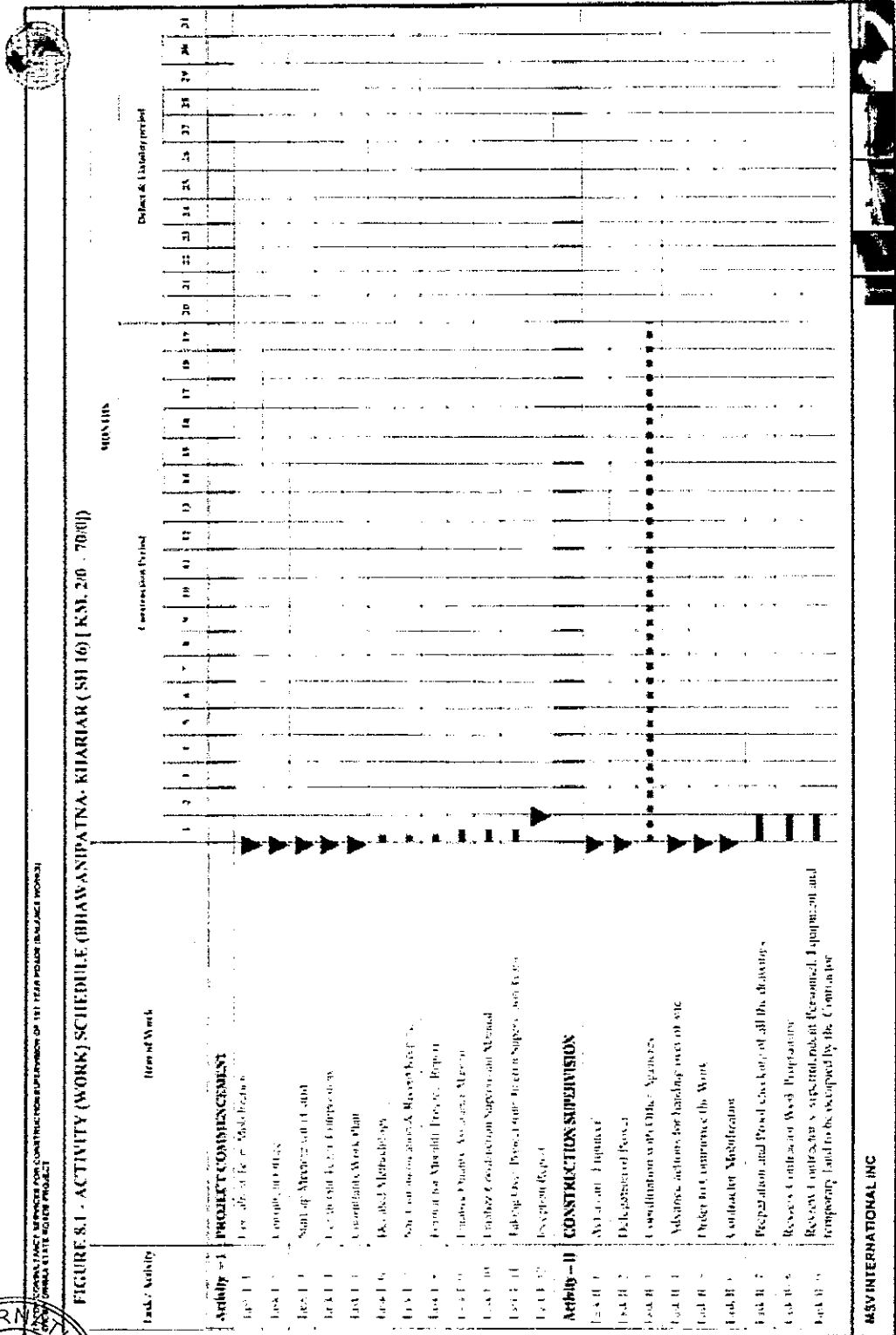
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WORK SCHEDULE

The work schedule outlining the activities to be taken up by the consultant is shown below:



Work Schedule





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Task ID	Item of Work	MONTHS																																	
		Construction Period															Finance & Liability Period																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Task ID 01	Review contractor's construction methodology																																		
Task ID 02	Contractor to provide and implement Protection Plan																																		
Task ID 03	Approval of the Plan																																		
Task ID 04	Ensure that the construction works are in accordance with the technical specifications, Environment and Management of Plan																																		
Task ID 05	Verify and if necessary order construction of the specified materials supplied by the Contractor																																		
Task ID 06	Check contractor setting out of the works																																		
Task ID 07	Ensure system of Quality Assurance of works																																		
Task ID 08	Approve details and submit cost materials																																		
Task ID 09	Approval of Construction Material																																		
Task ID 10	Issue of Drawings, Documents and Instruments																																		
Task ID 11	Review the Contractor's Proposed Working Drawings, Plans and Associated calculations																																		
Task ID 12	Sampling and Testing																																		
Task ID 13	Analysis of Test Results and Approval																																		
Task ID 14	Review all building mix design and concrete mix designs																																		
Task ID 15	Supervise construction of all elements																																		
Task ID 16	Inspection for Supervision																																		
Task ID 17	Local Issues during Inspection																																		
Task ID 18	Check the laboratory and field tests carried out by the contractor																																		
Task ID 19	Order special tests of materials and/or completed works																																		
Task ID 20	Order removal and substitution of improper materials and/or works as required																																		
Task ID 21	Detailed Records of Staff																																		
Task ID 22	Detailed Records of Equipment																																		

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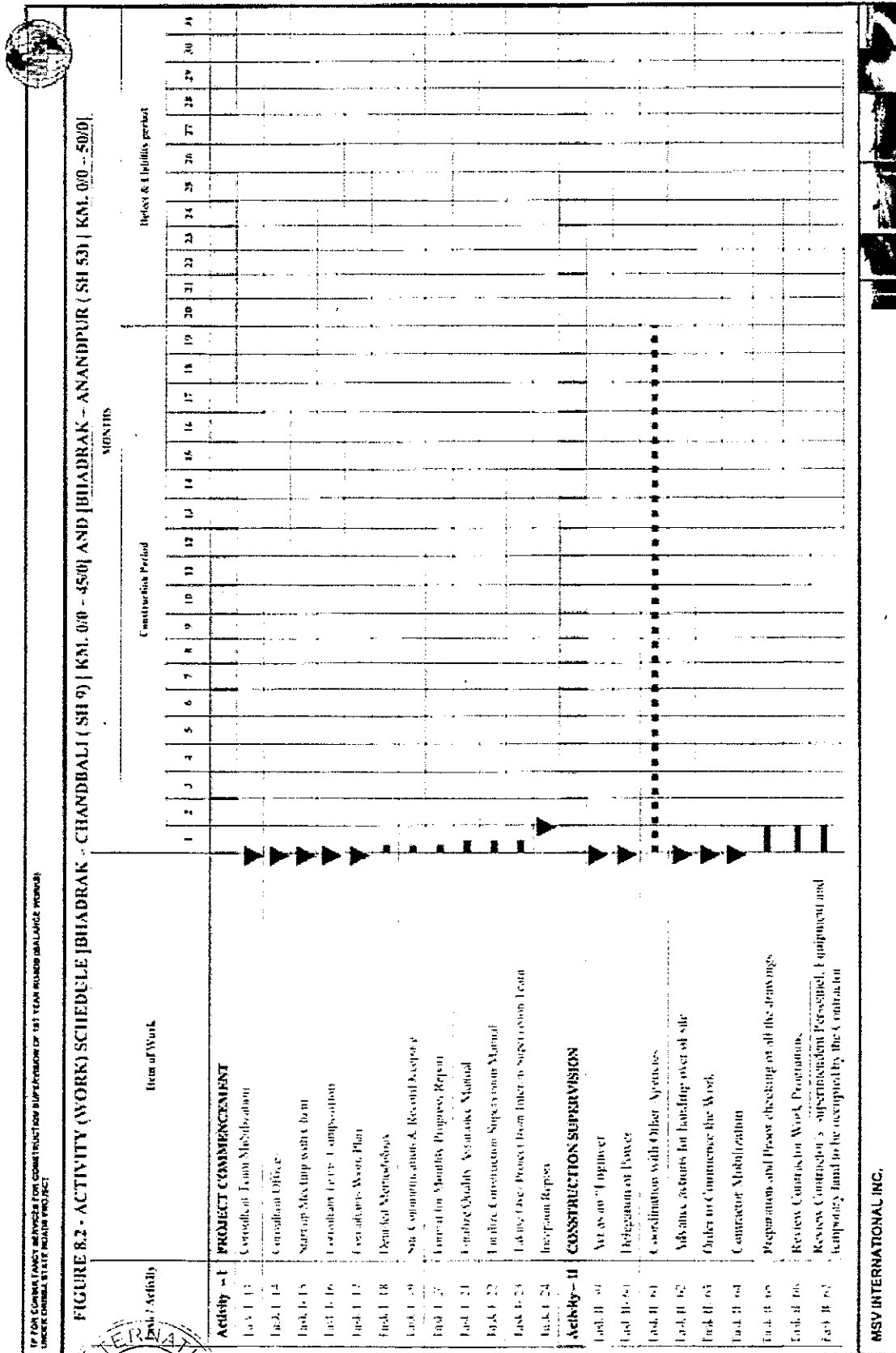
MSV INTERNATIONAL INC. USA		FOR CONSULTANT MANAGER FOR CONTRACTOR SUPERVISION OF 157 TONNAGE BALANCE WORKS UNDER DINDA RATA WATER PROJECT	
Activity	Item of Work	MONTHS	Defect & Liability period
Task II-50	Handover of Records of Payment Request and Claim	1	
Task II-57	Handover Records of Setting Out of the Project	2	
Task II-58	Handover Records of Correspondence	3	
Activity - III	DEFECT & LIABILITY	4	
Task III-1	Inspection During DLP	5	
Task III-2	Issue of Final Defect Liability Period Inspection & Certification	6	
Task III-3	Final Consultant Completion Report	7	
REPORTS		8	
1	Interim report - Review of Supervision and quality assurance Manual	9	
2	Monthly progress report	10	
3	Quarterly progress report	11	
4	Maintenance Manual for Defect Liability Period	12	
5	Sectional Substantial Completion Reports	13	
		14	
		15	
		16	
		17	
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		29	
		30	
		31	

LEGEND:

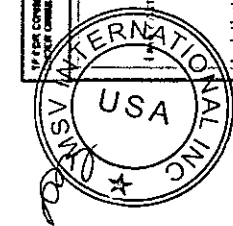
- ▼ Submittals
- Continuous Activity
- As & When Needed

One month of effectiveness of Contract
 10 business days after end of month
 15 business days after end of quarter
 9 months after effectiveness of Contract after substantial completion

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MSV INTERNATIONAL INC
 VP FOR CONSTRUCTION SERVICES FOR CONSTRUCTION SUPERVISION OF TETRAPOL BRIDGE (WALACE BRIDGE)
 UNDER CHHISAT POLICE PROJECT

Code No	Title of Work	MONTHS																																				
		Construction Period										Defect & Liability period																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
1.03.01.01	Agency form Site help systems with the Employer																																					
1.03.01.02	Obtain NK instrument																																					
1.03.01.03	Issue a working drawing or modify the existing drawing																																					
1.03.01.04	Preparation of the work																																					
1.03.01.05	Order preparation of works and to authorize with the Employer's approval extension of the period of completion of work																																					
1.03.01.06	Indirect the Construction in all matters concerning construction safety																																					
1.03.01.07	Receive and certify certificates for monthly payments & final payment certificates to the contractor																																					
1.03.01.08	Prepare & Submit Variation work																																					
1.03.01.09	Team Management																																					
1.03.01.10	Assess the contract administration & Arbitration																																					
1.03.01.11	Prepare quality & safety																																					
1.03.01.12	Update cost estimate each year as an estimate completion																																					
1.03.01.13	ISSUE & Update all records																																					
1.03.01.14	Body Project Data & Digital Photographs																																					
1.03.01.15	Periodic coordination & progress meetings																																					
1.03.01.16	Visions regular specific approval of the Employer																																					
1.03.01.17	Authorize Sub Contract - Subletting																																					
1.03.01.18	Provide on Records & Reporting																																					
1.03.01.19	Assess the Employer to provide clarifications, explanations or observations made from time to time by the Auditor																																					
1.03.01.20	Final Additional Service																																					
1.03.01.21	Independent Safety Audit																																					
1.03.01.22	Assess Employer by taking Care of Completed activities																																					
1.03.01.23	Maintainance of Risk Register, Quality Control and Testing Record																																					

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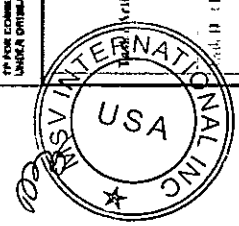
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Item of Work		MONTHS																																		
		Construction Period															Defects Liability Period																			
Activity - III	Activity - IV	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Handover of Records of Payment Request and Claims																																				
Handover Records of Setup Cost of the Project																																				
Handover Records of Correspondence																																				
DEFECT & LIABILITY																																				
Task III-1	Inspection During DLP																																			
Task III-2	Issue of Final Defects Liability Period Inspection & Certification																																			
Task III-3	Consolidate Contract Completion Report																																			
Task III-4	Inspection report - Review of Suppliers and quality assurance Manual																																			
Task III-5	Monthly progress report																																			
Task III-6	Quarterly progress report																																			
Task III-7	Maintenance Manual for Defects Liability Period																																			
Task III-8	Screened Substantial Completion Reports																																			
REPORTS																																				
1	Inspection report - Review of Suppliers and quality assurance Manual																																			
2	Monthly progress report																																			
3	Quarterly progress report																																			
4	Maintenance Manual for Defects Liability Period																																			
5	Screened Substantial Completion Reports																																			

One month of effectiveness of Contract
 10 business days after end of month
 15 business days after end of quarter
 6 months after effectiveness of Contract
 After substantial completion

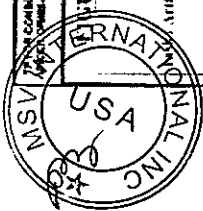
LEGEND:

- ▲ Submittals
- Continuous Activity
- ***** As & When Needed



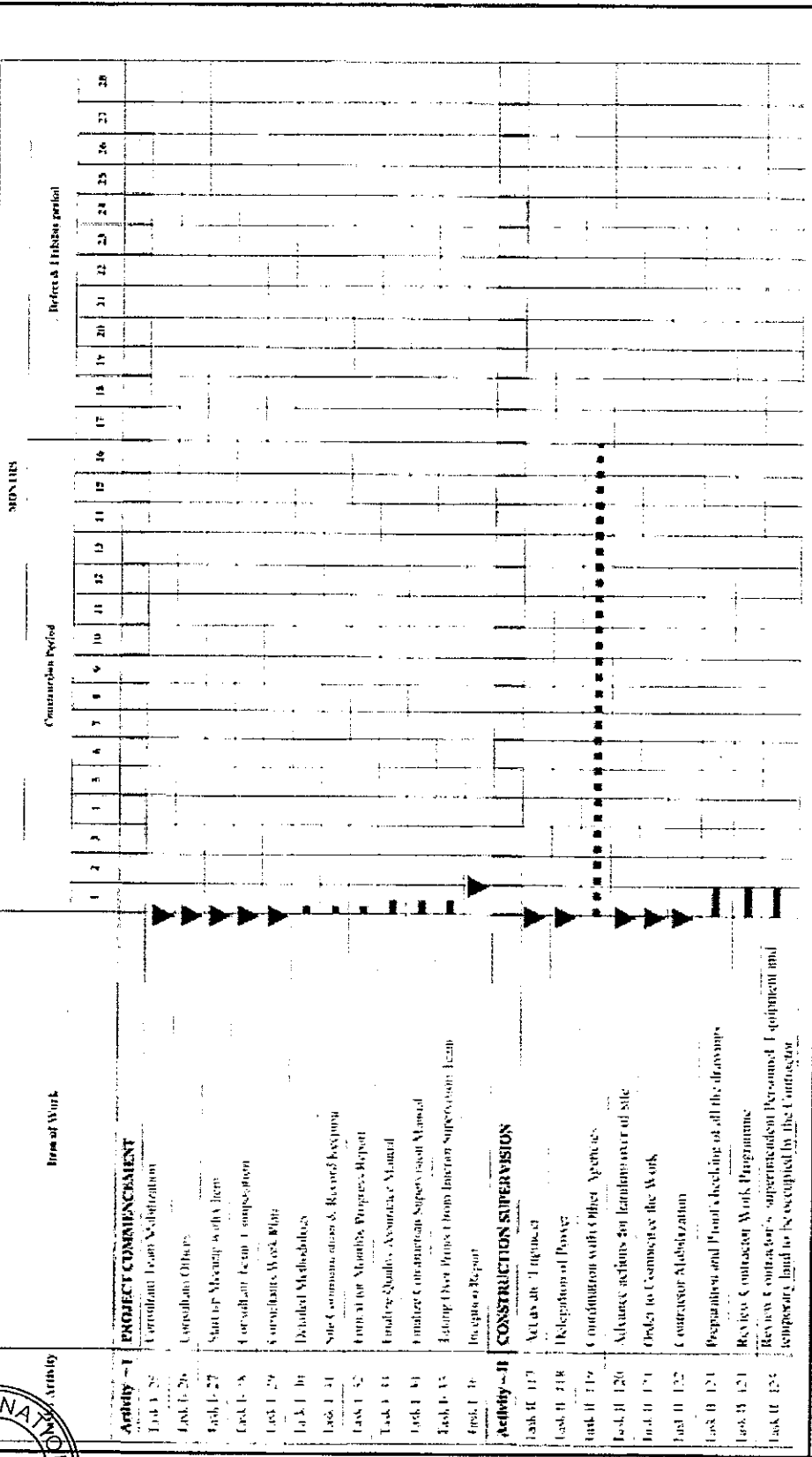
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MSV CONSULTANCY ADVISORY FOR CONSTRUCTION EXPANSION OF (1ST YEAR ROAD (BALANCE WORKS))
 (UNDER STATE ROAD PROJECT)

STRUCTURE K.3- BERHAMPUJUR - TAPTAPANI (SH 17) | KM. 00 - 41/0



MSV INTERNATIONAL INC.

Chief Engineer,
 World Bank Projects, Odisha

FOR CONSULTANCY SERVICES FOR CONSTRUCTION SUPERVISION OF THE ROAD (BALANCE WORKS)
UNDER ODISHA STATE ROAD PROJECT

MSV INTERNATIONAL INC. USA

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Task No.	Item of Work	MONTHS												DIVERS & LIABILITY PERIOD														
		Construction Period																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Task II. 126	Review Contractor's Submission Methodologic, Contractor to Provide an Environmental Protection Plan																											
Task II. 128	Approval of the Plan																											
Task II. 129	Ensure that the construction works are in accordance with the technical specifications, Environmental Management Plan. To verify and if necessary order construction of the as-staked drawings supplied by the Contractor																											
Task II. 130	Identify all Risks and Hazards																											
Task II. 132	Check contractor setting out of the works																											
Task II. 133	Install a system of Quality Assurance of works																											
Task II. 134	Approve materials and sources of materials																											
Task II. 135	Approval of Construction Materials																											
Task II. 136	Issue of Drawings, Documents and Information																											
Task II. 137	Review the Contractor's Proposed Working Drawings, Plans and Associated Calculations																											
Task II. 138	Sampling and Testing																											
Task II. 139	Analysis of Test Results and Approval																											
Task II. 140	Review all hazardous mix designs and concrete mix designs																											
Task II. 141	Supervise construction of all elements																											
Task II. 142	Inspection for Supervision																											
Task II. 143	Local Issues during Inspection																											
Task II. 144	Check the laboratory and field tests carried out by the contractor																											
Task II. 145	Order special tests of materials after completed works																											
Task II. 146	Order removal and substitution of improper materials after works is required																											
Task II. 147	Bank of Records of Staff																											
Task II. 148	Bank of Records of Equipment																											

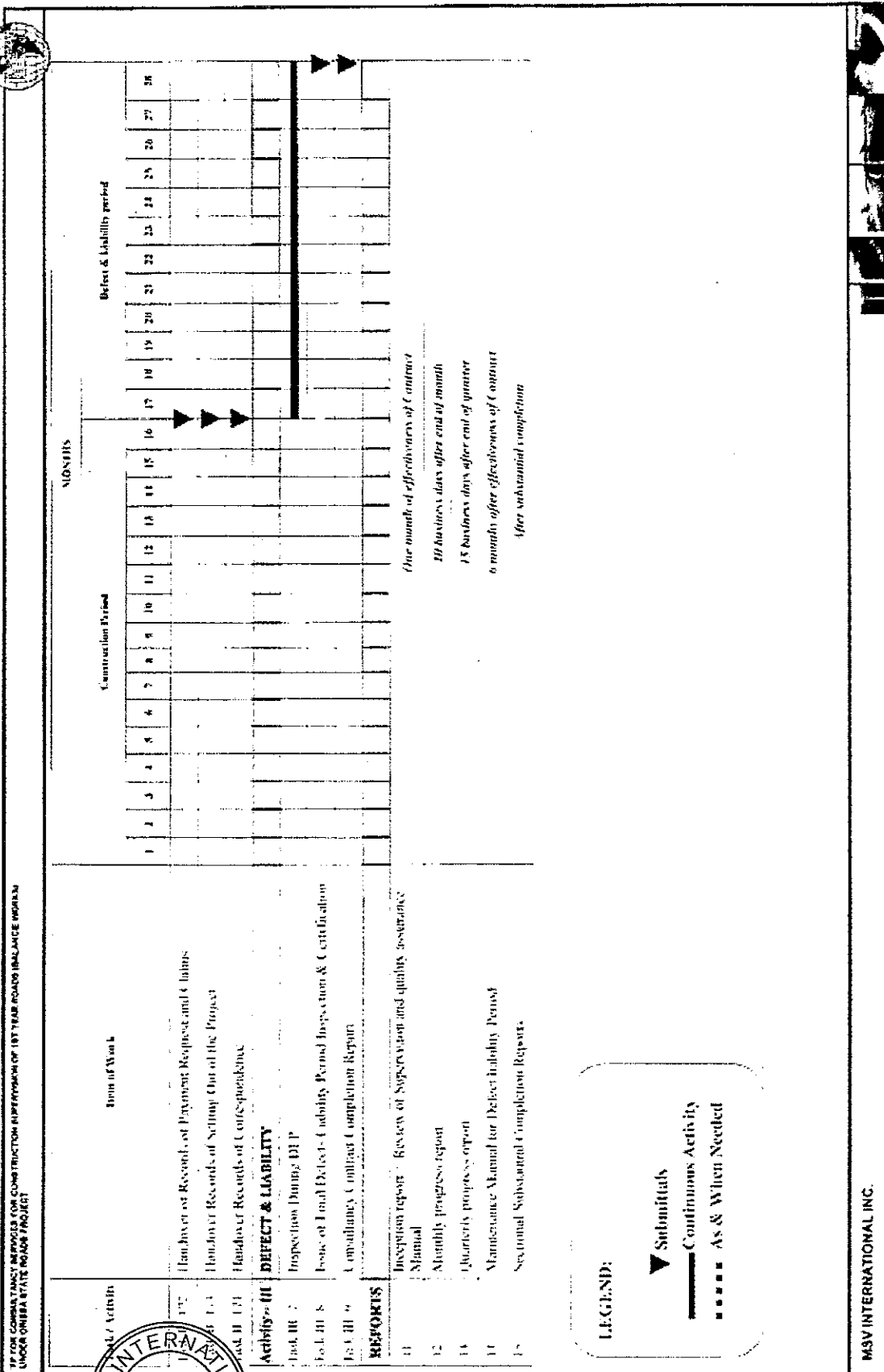
MSV INTERNATIONAL INC.

Chief Engineer,
World Bank Projects, Odisha

FOR COMPLIANCE SERVICES FOR CONSTRUCTION SUPERVISION OF SET-YEAR HOUSE (RANGE WORK) UNDER ODMIA STATE POLICE PROJECT

Task ID	Terms of Work	MONTHS																													
		Construction Period						Defect & Liability period																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
Task B 151	Arrange Joint Site Inspections with the Employer																														
Task B 152	Quantity Measurement																														
Task B 153	Issue a working drawing or modify the existing drawing																														
Task B 154	Progress of the work																														
Task B 155	Under supervision of work, need to authorize with the Employer's approval, extensions of the period of completion of work																														
Task B 156	To direct the Contractor in all matters concerning construction safety																														
Task B 157	Issue inter-approvals for monthly payments & Final payment certificate to the contractor																														
Task B 158	Prepare & Submit Variation work																														
Task B 159	Claim Management																														
Task B 160	Assist Client in Negotiation or Arbitration																														
Task B 161	Prepare quarterly cash flow																														
Task B 162	Prepare cost estimate each year or at quarterly completion																														
Task B 163	Keep & Update all records																														
Task B 164	Daily Project Diary & Digital Photographs																														
Task B 165	Periodic coordination & progress meetings																														
Task B 166	Actions requiring specific approval of the Employer																														
Task B 167	Authorize Sub-Contract - Subletting																														
Task B 168	Details on Records & Reporting																														
Task B 169	Assist the Employer in providing clarifications/explanations to observations made from time to time by the Auditor																														
Task B 170	Weekly Additional Services																														
Task B 171	Independent Safety Audit																														
Task B 172	Assist Employer in taking Over of Completed Sections																														
Task B 173	Handover of Design Records, Quality Control and Testing Records																														





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Appendix D - Cost Estimates in Foreign Currency

NOT APPLICABLE



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Appendix E - Cost Estimates in Local Currency

<i>Form FIN 2: SUMMARY OF COSTS IN LOCAL AND FOREIGN CURRENCY</i>			
Sl.No.	Description	Amount (INR)	Amount (USD)
	<u>Local Consultants</u>		
I	Remuneration For Local Key Professional Staff	64,110,000	0
II	Supporting Staff	3,239,800	0
III	Transportation	4,635,000	0
IV	Duty Travel To Site	90,000	0
V	Office Rent	2,015,000	0
VI	Office Supplies, Utilities and Communication	1,102,500	0
VII	Office Furniture and Equipment	1,181,900	0
VIII	Reports and Document Printing	670,000	0
IX	Surveys	768,000	0
	Subtotal Local Consultants	77,812,200	0
	<u>Foreign Consultants</u>		0
F-I	Remuneration for Expatriate Staff		0
F-II	Mobilization and Demobilisation		0
F-III	Accommodation for Consultants' Staff		0
F-IV	Other Costs		0
	Subtotal Foreign Consultants		0
	<u>Total Cost Net of Taxes indicated below:</u> Local & Foreign Consultants	77,812,200	0
Local Taxes & Duties	Local Indirect Taxes and Duties as defined in clause 1.10 of SCC(excluding service tax)		
	Service tax payable in India as defined in clause 1.10 of SCC	8,014,657	0
	TOTAL COSTS (Including Taxes and duties)	85,826,857	



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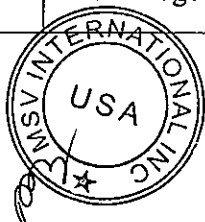
I. Remuneration for Local Staff					
S. No.	Position	Name	Rate	Staff Months	Amount
Key Professional Staff					
1	Team Leader-Cum-Project Coordinator	Rajiv Singh	210,000	19	3,990,000
2	Resident Engineer-cum-Sr Highway engineer-I	Santosh Kumar	170,000	19	3,230,000
3	Resident Engineer-cum-Sr Highway engineer-II	S.Ramanand	170,000	19	3,230,000
4	Resident Engineer-cum-Sr Highway engineer-III	Jagdish Singh	170,000	16	2,720,000
5	Sr. Bridge Construction Engineer	K.Vidyasagar	190,000	18	3,420,000
6	Sr Material-cum -Quality Control Engineer	Puneel Pandey	180,000	18	3,240,000
Sr. Technical Staff					
7	Highway Design Engineer/Pavement Specialist	K.K. Sharma	160,000	9	1,440,000
8	Bridge Design Engineer	Baswarajc C.	180,000	9	1,620,000
9	Highway Engineer-I	Gorakh Nath Mishra	100,000	19	1,900,000
10	Highway Engineer-II	Diwejendra Shukla	100,000	19	1,900,000
11	Highway Engineer-III	B. Ramakrishna Reddy	100,000	19	1,900,000
12	Highway Engineer-IV	M.P. Singh	100,000	16	1,600,000
13	Bridge Engineer-I	Dileep Kumar	110,000	19	2,090,000
14	Bridge Engineer-II	Unit Kumar Jha	110,000	19	2,090,000



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15	Bridge Engineer-III	Tej Pratap Singh	110,000	16	1,760,000
16	Quantity Surveyor-I	Sushil Gaur	100,000	19	1,900,000
17	Quantity Surveyor-II	Aditya Chowdhary	100,000	19	1,900,000
18	Quantity Surveyor-III	Vinod Mishra	100,000	16	1,600,000
19	Environmental/Safety Engineer-I	Manoj Kumar	100,000	19	1,900,000
20	Environmental/Safety Engineer-I	A.K. Srivastava	100,000	19	1,900,000
21	Environmental/Safety Engineer-I	Prithi Raj Sahu	100,000	16	1,600,000
22	Material/Quality Engineer-I	S. C. Dubey	90,000	19	1,710,000
23	Material/Quality Engineer- II	Suresh Prasad Singh	90,000	19	1,710,000
24	Material/Quality Engineer- III	K. N. Sahai	90,000	16	1,440,000
Jr. Technical Staff					
25	CADD Engineer(Pavement/Highwa y)	TBN	40,000	19	760,000
26	CADD Engineer(Bridge)	TBN	40,000	19	760,000
27	Asst.Highway Engineer-I	TBN	40,000	19	760,000
28	Asst.Highway Engineer-II	TBN	40,000	19	760,000
29	Asst.Highway Engineer-III	TBN	40,000	16	640,000
30	Asst.Bridge Engineer-I	TBN	40,000	19	760,000
31	Asst.Bridge Engineer-II	TBN	40,000	19	760,000
32	Asst.Bridge Engineer-III	TBN	40,000	16	640,000



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33	Asst.Quantity Surveyor-I	TBN	40,000	19	760,000
34	Asst.Quantity Surveyor-II	TBN	40,000	19	760,000
35	Asst.Quantity Surveyor-III	TBN	40,000	16	640,000
36	Asst.Material/Quantity Engineer-I	TBN	40,000	19	760,000
37	Asst.Material/Quantity Engineer-II	TBN	40,000	19	760,000
38	Asst.Material/Quantity Engineer-III	TBN	40,000	16	640,000
39	Asst.Surveyor-I	TBN	40,000	19	760,000
40	Asst.Surveyor-II	TBN	40,000	19	760,000
41	Asst.Surveyor-III	TBN	40,000	16	640,000
		Sub Total		308	12,320,000
		Grand Total		724	64,110,000



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II. Support Staff					
S. No.	Position	Name	Man Months	Billing Rate	Amount
1	Office Manager	TBN	19	20200	383800
2	Bilingual Secretary	TBN	19	12000	228000
3	Book Keeper-I	TBN	19	12000	228000
4	Book Keeper-II	TBN	19	12000	228000
5	Book Keeper-III	TBN	19	12000	228000
6	Book Keeper-IV	TBN	16	12000	192000
7	Word Processor Operator-I	TBN	19	13000	247000
8	Word Processor Operator-II	TBN	19	13000	247000
9	Word Processor Operator-III	TBN	19	13000	247000
10	Word Processor Operator-IV	TBN	16	13000	208000
11	Office Boy -I	TBN	19	6000	114000
12	Office Boy -II	TBN	19	6000	114000
13	Office Boy -III	TBN	19	6000	114000
14	Office Boy -IV	TBN	16	6000	96000
15	Night Watchman-I	TBN	19	5000	95000
16	Night Watchman-II	TBN	19	5000	95000
17	Night Watchman-III	TBN	19	5000	95000
18	Night Watchman-IV	TBN	16	5000	80000
Sub-Total			330		3,239,800



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III. Transportation (Reimbursable)					
The vehicles provided by the Consultants shall include the cost for rental, drivers, operation, maintenance, repairs, insurance etc					
SI. No.	Description	Qty.	Total Vehicle/ Months	Rate / Vehicle Month (Rs.)	Amount (Rs.)
1	Innova/Scorpio or equivalent	1	19	45,000	855,000
2	Hard top four wheeler	6	108	35,000	3,780,000
Total					4,635,000

IV. Duty Travel to Site (Reimbursable)				
SI.No.	Trips	Number of Trips	Rate*	Amount (Rs.)
1	Mobilization of Staff	6	7,500	45,000
2	Demobilization of Staff	6	7,500	45,000
Total				90,000

V. Office Rent -(Reimbursable)			
The rent cost includes maintenance, Cleaning, repairs etc			
Area	No of Months	Rate/month	Amount
Main Office	19	35,000	665,000
Site Office - I	19	25,000	475,000
Site Office - II	19	25,000	475,000
Site Office III	16	25,000	400,000
Total			2,015,000



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VI. Office Supplies, Utilities and Communication (Reimbursable)					
Sl. No.	Item	Offices	Months	Monthly Rate (Rs.)	Amount (Rs.)
1	Office Supplies	Project Office	19	5,000	95,000
		Site Office - I	19	2,500	47,500
		Site Office - II	19	2,500	47,500
		Site Office - III	16	2,500	40,000
2	Drafting Supplies	Project Office	19	5,000	95,000
		Site Office - I	19	2,500	47,500
		Site Office - II	19	2,500	47,500
		Site Office - III	16	2,500	40,000
3	Computer Running Costs	Project Office	19	5,000	95,000
		Site Office - I	19	2,500	47,500
		Site Office - II	19	2,500	47,500
		Site Office - III	16	2,500	40,000
4	Domestic and International Communication	Project Office	19	7,500	142,500
		Site Office - I	19	5,000	95,000
		Site Office - II	19	5,000	95,000
		Site Office - III	16	5,000	80,000
	Total				1,102,500




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VII. Office Furniture and Equipment (Reimbursable)					
Sl. No.	Description	Unit	Quantity	Rate	Amount (Rs.)
OFFICE FURNITURE(PURCHASE)					
1	Large Desks and Chairs	Set	4	18000	72,000
2	Medium Desks and Chairs	Set	19	8000	152,000
3	Computer Desks and Chairs	Set	8	5000	40,000
4	Double Door Cupboard	Nos	4	7500	30,000
5	Plan Filing Cabinet	Nos	0	7500	0
6	Filing Cabinet	Nos	4	7500	30,000
7	Desk Lamps	Nos	4	500	2,000
8	Meeting table with 12 chairs	Set	1	40000	40,000
9	White Board	Nos	4	2000	8,000
10	Sofa set	Set	1	14900	14,900
OFFICE EQUIPMENT (PURCHASE)					
1	Drawing Pen Set	Set	0		0
2	Lettering Set	Set	0		0
3	Photocopying Machine	Nos	4	55000	220,000
4	Blueprint Machine	Nos	0		0
5	Word Processor Operator	Nos	0		0
6	Computers	Set	10	38000	380,000
7	Facsimile (MFP)	Nos	4	25000	100,000
8	Ring Binding Machine	Nos	4	3000	12,000
9	Large Stapler	Nos	4	1000	4,000
10	Safe	Nos	1	5000	5,000
11	Drafting Board ,Machine,Chairs,etc.	Set	1	5000	5,000
12	Video Multi System	Set	0		0
13	Camera SLR/Digital	Nos	4	8000	32,000
14	OHP		1	35000	35,000
	Total				1,181,900



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VIII. Reports and Documents Printing					
Sl. No.	Description	No. of Volumes	No. of Copies per volume	Rate per Copy (Rs)	Amount (Rs.)
1	Monthly Progress Report	19	20	1000	380,000
2	Quarterly Progress Report	6	10	1000	60,000
3	Status Report on Handing/ Taking over	1	30	1000	30,000
4	O & M Manual	1	30	1000	30,000
5	Draft Completion Report	3	20	2000	120,000
6	Final Report	1	20	2500	50,000
	Total				670,000

IX. Topographical Surveys				
1. Rental for Surveying equipment for design				
S.No	Description	Month	Rate	Amount(Rs)
1	Total Station	2	3,00,000	600000
4	Automatic level	2	9000	18000
5	Staves ,range rods,etc	2	3000	6000
	Sub Total			624000
2. Chainmen				
S.No	Description	Month	Rate	Amount(Rs)
1	4 Chainmens for 6 months	24	6000	144000
	Sub Total			144000
	Grand Total			768000



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Breakdown of Agreed Fixed Rates in Consultant's Contract


We hereby confirm that we have agreed to pay to the staff members listed, who will be involved in this assignment, the basic salaries and from headquarters allowances (if applicable) indicated below:



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(Expressed in [INR])

Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Salary per Working Month	Social Charges ¹	Overhead ¹	Subtotal	Fee ²	Away from Headquarters Allowance	Agreed Fixed Rate per Working Month	Agreed Fixed Rate per Working Month
Rajiv Singh	Team Leader cum Project Coordinator	80,000	24,968	83,744	188,712	23,589	0	=4+5+6	265%
Santosh Kumar	Resident Engineer cum Sr. Highway Engineer - I	65,000	20,287	68,042	153,329	19,166	0		265%
S. Ramanand	Resident Engineer cum Sr. Highway Engineer - II	65,000	20,287	68,042	153,329	19,166	0		265%
Jagdish Singh	Resident Engineer cum Sr. Highway Engineer - III	65,000	20,287	68,042	153,329	19,166	0		265%
K. Vidyasagar	Sr. Bridge Construction Engineer	75,000	23,408	78,510	176,918	22,115	0		265%
Puneel Pandey	Sr. Material cum Quality Control Engineer	70,000	21,847	73,276	165,123	20,640	0		265%


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Personnel		1	2	3	4	5	6	7	8
Name	Position	Basic Salary per Working Month	Social Charges ¹	Overhead ¹	Subtotal	Fee ²	Away from Headquarters Allowance	Agreed Fixed Rate per Working Month	Agreed Fixed Rate per Working Month
K.K. Sharma	Highway Design Engineer/Pavement Specialist	70000	21847	73276	165123	20640	0	185763	265%
Baswaraj C.	Bridge Design Engineer	80000	24968	83744	188712	23589	0	212301	265%
Gorakh Nath Mishra	Highway Engineer-I	45000	14045	47106	106151	13269	0	119419	265%
Diweendra Shukla	Highway Engineer-II	50000	15605	52340	117945	14743	0	132688	265%
B. Ramakrishna Reddy	Highway Engineer-III	50000	15605	52340	117945	14743	0	132688	265%
M.P. Singh	Highway Engineer-IV	40000	12484	41872	94356	11795	0	106151	265%
Dileep Kumar	Bridge Engineer-I	40000	12484	41872	94356	11795	0	106151	265%
Unit Kumar Jha	Bridge Engineer-II	40000	12484	41872	94356	11795	0	106151	265%
Tej Pratap Singh	Bridge Engineer-III	50000	15605	52340	117945	14743	0	132688	265%
Sushil Gaur	Quantity Surveyor-I	50000	15605	52340	117945	14743	0	132688	265%



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Name	Personnel	Position	1 Basic Salary per Working Month	2 Social Charges ¹	3 Overhead ¹	4 Subtotal	5 Fee ²	6 Away from Headquarters Allowance	7 Agreed Fixed Rate per Working Month =4+5+6	8 Agreed Fixed Rate per Working Month
Aditya Chowdhary		Quantity Surveyor-II	50000	31.21%	52340	117945	14743	0	132688	265%
Vinod Mishra		Quantity Surveyor-III	50000	15605	52340	117945	14743	0	132688	265%
Manoj Kumar		Environmental/Safety Engineer-I	45000	14045	47106	106151	13269	0	119419	265%
A.K. Srivastava		Environmental/Safety Engineer-I	40000	12484	41872	94356	11795	0	106151	265%
Prithi Raj Sahu		Environmental/Safety Engineer-I	40000	12484	41872	94356	11795	0	106151	265%
S. C. Dubey		Material/Quality Engineer-I	45000	14045	47106	106151	13269	0	119419	265%
Suresh Prasad Singh		Material/Quality Engineer-II	50000	15605	52340	117945	14743	0	132688	265%
K. N. Sahai		Material/Quality Engineer-III	45000	14045	47106	106151	13269	0	119419	265%
A.K. Srivastava		Environmental/Safety Engineer-I	40000	12484	41872	94356	11795	0	106151	265%

1. Expressed as percentage of 1
2. Expressed as percentage of 4


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Appendix F - Duties of the Client

DATA, SERVICES AND FACILITIES TO BE PROVIDED BY THE EMPLOYER

The following shall be provided by the Employer either directly or through the civil works Contract.

- a. **Project Data/ Contract Documents:** The reports, base mapping, existing road inventory including data on pavement history, traffic statistics and forecasts and traffic count details on various project roads which were prepared earlier by the DPR Consultant will be available for the use of the Construction Supervision Consultant. The civil works contract documents will be provided by the Employer.
- b. **Site Laboratories:** The site laboratories (including furniture, equipment, running and maintenance) will be provided through the construction contract. The supervision consultant will perform the tests selectively and supervise all the tests done by the contractors.
- c. In case of additional independent test, the Consultant shall conduct these tests in Quality Control Laboratories approved by the State Government or through State's Quality Control Laboratories on payment basis. Prior approval of the Employer for the tests and laboratory is necessary in these cases.
- d. As it is difficult to assess the type and number of independent tests at present, the cost for all these items shall not be included in the financial proposal. Therefore the expenditure thereof shall be reimbursed as per actual on submission of documentary evidence.

Attention is drawn to the following which are **not to be provided by the Employer** and are to be arranged by the Consultant at his own cost.

- a. The OWD will not provide office accommodation. The Consultant shall make his own office accommodation arrangements for the office of the Team Leader-cum-Project Co-Ordinator and other support staff **at Bhubaneswar** and for each of the field supervision teams including furniture, equipment, communication equipments like telephones, VHF, operation and maintenance etc. The Consultant shall hire/purchase furniture and equipment for the offices and shall maintain inventory of such item at all times and submit the same to client as and when requested/necessary. Upon completion of the assignment the furniture and equipment so purchased for this contract shall become the property of the OWD and the same shall be handed over to the OWD.
- b. The OWD will not provide project vehicles to the Consultant. The Consultant shall hire vehicles required to perform their assignment. The Consultant shall be responsible for making his own arrangements for survey equipments.



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Appendix G - Form of Advance Payments Guarantee

Note: See Clause GC 6.4(a) and Clause SC 6.4(a).

Bank Guarantee for Advance Payment

_____ [Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: _____ [Name and Address of Client]

Date: _____

ADVANCE PAYMENT GUARANTEE No.: _____

We have been informed that _____ [name of Consulting Firm] (hereinafter called "the Consultants") has entered into Contract No. _____ [reference number of the contract] dated _____ with you, for the provision of _____ [brief description of Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum of _____ [amount in figures] (_____ [amount in words]) is to be made against an advance payment guarantee.

At the request of the Consultants, we _____ [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ [amount in figures] (_____ [amount in words])¹ upon receipt by us of your first demand in writing accompanied by a written statement stating that the Consultants are in breach of their obligation under the Contract because the Consultants have used the advance payment for purposes other than toward providing the Services under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Consultants on their account number _____ at _____ [name and address of Bank].

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Consultants as indicated in copies of certified monthly statements which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of the monthly payment certificate indicating that the Consultants have made

¹ The Guarantor shall insert an amount representing the amount of the advance payment and denominated in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Client.



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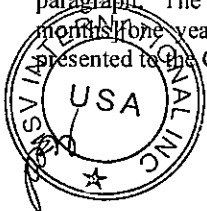
full repayment of the amount of the advance payment, or on the __ day of _____, 2____, ² whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

[signature(s)]

Note: All italicized text is for indicative purposes only to assist in preparing this form and shall be deleted from the final product.

² Insert the expected expiration date. In the event of an extension of the time for completion of the Contract, the Client would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Client might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months/one year], in response to the Client's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."



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OFFICE OF THE ENGINEER-IN-CHIEF (CIVIL), ODISHA
NIRMAN SOUDHA, KESHARI NAGAR, UNIT - V, BHUBANESWAR - 751 001

Letter No. PMU - WB - 40 / 2010 -

6373

Dt.

29-2-12

From

Er. Nalini Kanta Pradhan
Chief Engineer, World Bank Projects, Odisha
Tel: +91-674-2396783 / Fax: +91 - 674 -239 0080
Email: pmuosrp@gmail.com

To

MSV International, Inc.
[India Office]
D - 7, South City - I
Gurgaon -122 002, Haryana,

Fax: +91 124 400 2605

Email: info@msvgroup.com; uphaminternational@gmail.com; info@uphaminternational.com

Sub: Consulting Services for Construction Supervision of 1st Year Roads (Balance Works) of Odisha State Roads Project
- **AWARD OF CONTRACT**

Ref: i.) Request For Proposal issued vide this office letter No. 37554 Dt. 08.08.2011
ii) Receipt of your proposal on 15th Oct 2011 and Financial Proposal opened on 25.11.2011
iii) Call for Negotiation issued vide this office No. 52082 Dt. 28.11.2011

Sir,

In inviting a reference to the negotiation held with your authorized representatives from 5th December, 2011 to 10th January 2012 this is to intimate that your proposal for the aforesaid consultancy services submitted by **MSV International, Inc. USA** in Joint venture with **UPHAM INTERNATIONAL CORPORATION** for an amount of **Rs. 8, 58, 26, 857** (Indian Rupees Eight crore fifty eight lakhs twenty six thousands eight hundred fifty seven only) including applicable Service Tax @10.3%, is accepted as per the recommendation of the Evaluation Committee in their meeting held on 28th Nov 2011, No Objection received from the World Bank in their Email Dt.27 January 2012 and approval of the Government communicated in Works Department No. EAP (Cell) 16/2012 - 2198/w Dt. 28-02-2012. Accordingly in pursuant to Clause 7.1 of ITC, the contract is hereby awarded in favour of above consortium.

You are requested to send the authorized representatives of the respective constituent firms alongwith all supporting documents within a fortnight to sign the Contract.

Yours sincerely,


Chief Engineer

World Bank Projects, Orissa

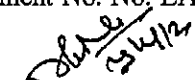
Memo No.

6374

Dt.

29-2-12

Copy submitted to the **Engineer-in-Chief-cum-Secretary**, Works Department, Government of Orissa for favour of information. This is with reference to Works Department No. No. EAP (Cell) 16/2012 - 2198/w Dt.28-02-2012.


Chief Engineer

World Bank Projects, Orissa

Memo No.

6375

Dt.

29-2-12

Copy forwarded to **Mr. Rajesh Rohatgi**, Senior Transport Specialist & Task Team Leader OSRP, Sustainable Development (South Asia Region), The World Bank, 50-M, Shantipath, Chanakyapuri, New Delhi - 110 021 for information.


Chief Engineer

World Bank Projects, Orissa

CONSULTANT


Chief Engineer,
World Bank Projects, Odisha

GOVERNMENT OF ODISHA
WORKS DEPARTMENT

No. 2198 /W., Bhubaneswar, Dated, the 28/2, 2012
EAP (Cell)-16/2012

From
Sri P.K. Rout,
FA-cum-Additional Secretary to Govt.

To
The Chief Engineer, World Bank Projects, Odisha,
Nirman Soudha, Bhubaneswar.

Sub:- Consultancy Services for Construction Supervision for the 1st Year Roads (Balance Works) of Odisha State Roads Project.

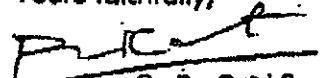
Sir,

I am directed to invite a reference to your Letter No. 3394 dated 1.2.12 on the subject noted above and convey the approval of Government for acceptance of the the lowest offer of **MSV International, Inc. USA** in joint venture with **UPHAM INTERNATIONAL CORPORATION** which stands highest in combined Technical & Financial Evaluation amounting to Rs.8,58,26,857.00 (Rupees Eight Crore fifty-eight lakh twenty-six thousand eight hundred fifty-seven) only which is 38% less than the estimated cost of Rs.13,84,00,000.00. Subject to the condition that all formalities and other preliminaries should be completed well before issuing the work order. Further the Chief Engineer, World Bank Projects, Odisha is to ensure that the Consultants shall mobilize its resources commensurate with progress of civil works.

A copy of the proceedings of the Tender Committee Meeting held on 13.02.2012 for the above work is enclosed for reference.

Tender documents received with your letter under reference are returned herewith, the receipt of which may please be acknowledged.

Yours faithfully,


28.2.2012

FA-cum-Additional Secretary to Govt.

EAP CELL-16-2012/ D. ACKARYA



CONSULTANT

Dr. Pal
Dr.
28/2/12


Chief Engineer,
World Bank Projects, Odisha

Chief Engineer, World Bank Projects, Orissa

From: <rrohatgi@worldbank.org>
To: "Chief Engineer, World Bank Projects, Orissa" <pmuosrp@gmail.com>
Cc: <nbhatia@worldbank.org>; <oprakash@worldbank.org>; <stadimalla@worldbank.org>; <workssec@ori.nic.in>; <ygupta@worldbank.org>; <pmmadan@worldbank.org>
Sent: Friday, January 27, 2012 10:49 PM
Subject: Re: Construction Supervision of 1st Year Roads (Balance Works) : Draft Contract & Combined Evaluation Report

Dear Mr Pradhan,

Thank you for your email of Jan 11, 2012 enclosing final draft contract and the minutes of negotiations for the above consultancy and subsequent clarifications provided per letter dated Jan 27, 2012. We have reviewed the final draft of the proposed contract and based on the information provided have no objection to your signing the contract with M/s. MSV International, Inc. USA in Joint venture with Upham International Corporation, USA for an amount not to exceed INR 77,812,200 excluding applicable service tax.

Please note that after signing of the contract, you need to publish the details on award of contract in UNDB in accordance with Para 2.28 of Consultancy Guidelines.

Please forward a copy of the signed contract to the Bank at your earliest, along with the checklist for prior review duly filled in.

With regards.

Rajesh Rohatgi
 Senior Transport Specialist
 Sustainable Development (South Asia Region)
 The World Bank
 50-M, Shantipath, Chanakyapuri
 New Delhi-110 021
 ☎ Tel: 91-11-41177839
 ☎ Fax: 91-11-41177849
 ✉ rrohatgi@worldbank.org
www.worldbank.org/sartransport

"Chief Engineer, World Bank Projects, Orissa" ---01/27/2012 06:19:03 PM---OFFICE OF THE ENGINEER-IN-CHIEF (CIVIL), ORISSA NIRMAN SOUDHA, KESHARI NAGAR, UNIT - V, BHUBANESWAR

"Chief Engineer, World Bank Projects, Orissa" <pmuosrp@gmail.com>
From: <rrohatgi@worldbank.org>
To:
Cc: <nbhatia@worldbank.org>, <oprakash@worldbank.org>, <stadimalla@worldbank.org>, <workssec@ori.nic.in>, <ygupta@worldbank.org>
Date: 01/27/2012 06:19 PM
Subject: Re: Construction Supervision of 1st Year Roads (Balance Works) : Draft Contract & Combined Evaluation Report

OFFICE OF THE ENGINEER-IN-CHIEF (CIVIL), ORISSA
 NIRMAN SOUDHA, KESHARI NAGAR, UNIT - V, BHUBANESWAR - 751 001

Letter No. PMU - WB - 40 / 2010 -

2873

Dt. 27-01-2012

From

Er. Nalini Kanta Pradhan




 Chief Engineer,
 World Bank Projects, Odisha

1/30/2012



Washington
Office of the Secretary of State
Invalid if Removed

UNITED STATES OF AMERICA

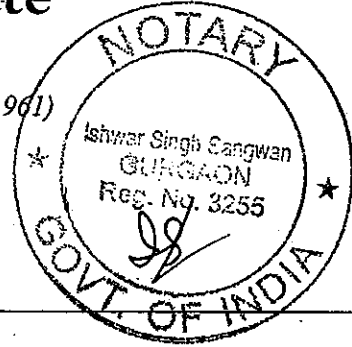
The State of Washington



Secretary of State
APOSTILLE

(Convention de la Haye du 5 Octobre 1961)

- 1. Country: United States of America
- 2. This public document has been signed by: JEAN MCEACHERN
- 3. acting in the capacity of: Notary Public, state of Washington
- 4. bears the seal/stamp of: JEAN MCEACHERN



CERTIFIED

- 5. at: Olympia, Washington
- 6. the: 27 day of September, 2011
- 7. by: Sam Reed, Secretary of State
- 8. No: 201114217
- 9. Seal/Stamp:
- 10. Signature:



Given under my hand and the Seal of the State of Washington at Olympia, the State Capital

Sam Reed, Secretary of State

ATTESTED TO BE TRUE COPY

ISHWAR SINGH SANGWAN
ADVOCATE & NOTARY
DIST. GURGAON (Haryana), India



11/10/2011

Power Of Attorney

KNOW ALL MEN BY THESE PRESENTS:

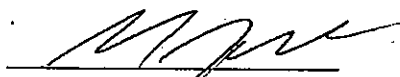
That The MSV International Inc., a corporation duly organized under the laws of the State of Washington, and having its principal place of business in the city of Kirkland, Washington, does hereby make, constitute, and appoint PUSHKAR MALIK, its true and law full Attorney in Fact for it, and in its name, place and stead, giving and granting unto its Attorney in Fact full power and authority to do and perform all and every act and thing whatsoever requisite, necessary and proper to be done in the capacity of The MSV International Inc. Representative in INDIA, for a period not to exceed three years from the date hereof.

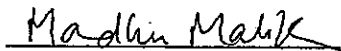
THEREFORE, he shall have the power:-

1. To represent the corporation, receive, sign and submit request for proposals, expression of interest/prequalification proposals, proposals/respond tender either singly or in joint-venture/association with others,
2. To carry out the negotiation on behalf the corporation for any work pursuant to proposal submitted by the corporation.
3. To sign any agreement resulting either from such negotiations or otherwise pursuant to proposals submitted for the work. Sign M.O.U/agreement for joint-venture/associations on behalf of the corporation.
4. To execute contracts or to do such acts, things, deeds as may be necessary to execute contracts on behalf of the corporation, MSV International Inc. in INDIA.
5. He may further delegate such powers pursuant of this Power of Attorney to such person as he may deem fit or proper to do such acts, deeds or things as listed hereinabove on behalf of the corporation, MSV International Inc in India.

The duration of this Power of Attorney may be extended by a Resolution of the Board of Directors of the Corporation.

IN WITNESS WHEREOF, The MSV International Inc. has caused its corporate name to be subscribed hereto by its President of the Board and its Corporate seal to be affixed by Secretary this 9th day of April, Two Thousand Eleven.


Sundeep Malik, Secretary

By 
Madhu Malik, President

MSV INTERNATIONAL INC.



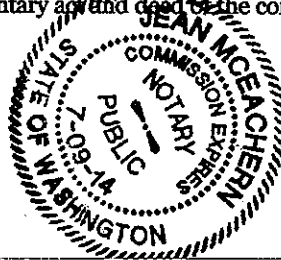
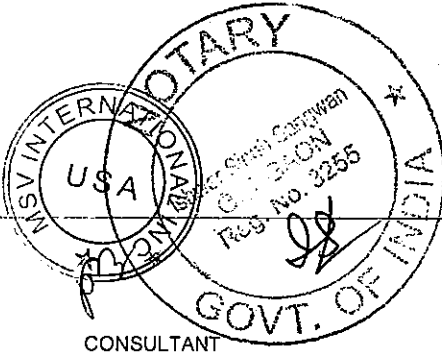
I, Sundeep Malik, Secretary of The MSV International Inc., hereby certify that this Power of Attorney is authorized by a proper resolution of the Board of Directors of The MSV International Inc. and that Madhu Malik, President of the Corporation of The MSV International Inc, is authorized to sign this Power of Attorney and the seal affixed hereto is the proper corporate seal.

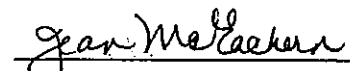

Sundeep Malik, Secretary

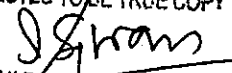
STATE OF WASHINGTON:

COUNTY OF KING

Be it remembered that on this 9th day of April, 2011, before me the subscriber, a Notary Public of the State of Washington, personally appeared Madhu Malik, who, I am satisfied, is the person who signed the within instrument as President of The MSV International Inc., the corporation named therein and he thereupon acknowledged that the said instrument made by the corporation and sealed with its corporate seal, was signed, sealed with the corporate seal and delivered by him as such officer and is the voluntary act and deed of the corporation, made by virtue of authority from its Board of Directors.




JEAN MCEACHERN
NOTARY PUBLIC OF WASHINGTON
ATTESTED TO BE TRUE COPY


ISHWAR SINGH SANGWAN
ADVOCATE & NOTARY
DIST. GURGAON (Haryana) India


Chief Engineer,
World Bank Projects, Odisha



UPHAM INTERNATIONAL CORPORATION
Engineers, Economists and Project Managers

Ref No: UIC/Con. Sup./Odisha/2011/1339

Date: 12.03.2012

To,
Er. Nalini Kanta Pradhan
Chief Engineer, World Bank Projects, Orissa
Nirman Soudha,
Keshari Nagar,
Unit - V, Bhubaneswar
Odisha-751 001

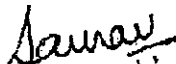
Subject: Consulting Services for Construction Supervision of 1st Year Roads (Balance Works) under Orissa State Roads Project- Authorization letter-Reg

Dear Sir,

With reference to above, we do hereby authorize Mr. Neeraj kr. Jha, Manager to sign the relevant documents and do all acts, deeds or things as may be required during contract signing on behalf of our company UPHAM International Corporation


Yours Sincerely,

For, UPHAM International Corporation


(Saurav Shekhar)
Director



CONSULTANT


Chief Engineer,
World Bank Projects, Odisha