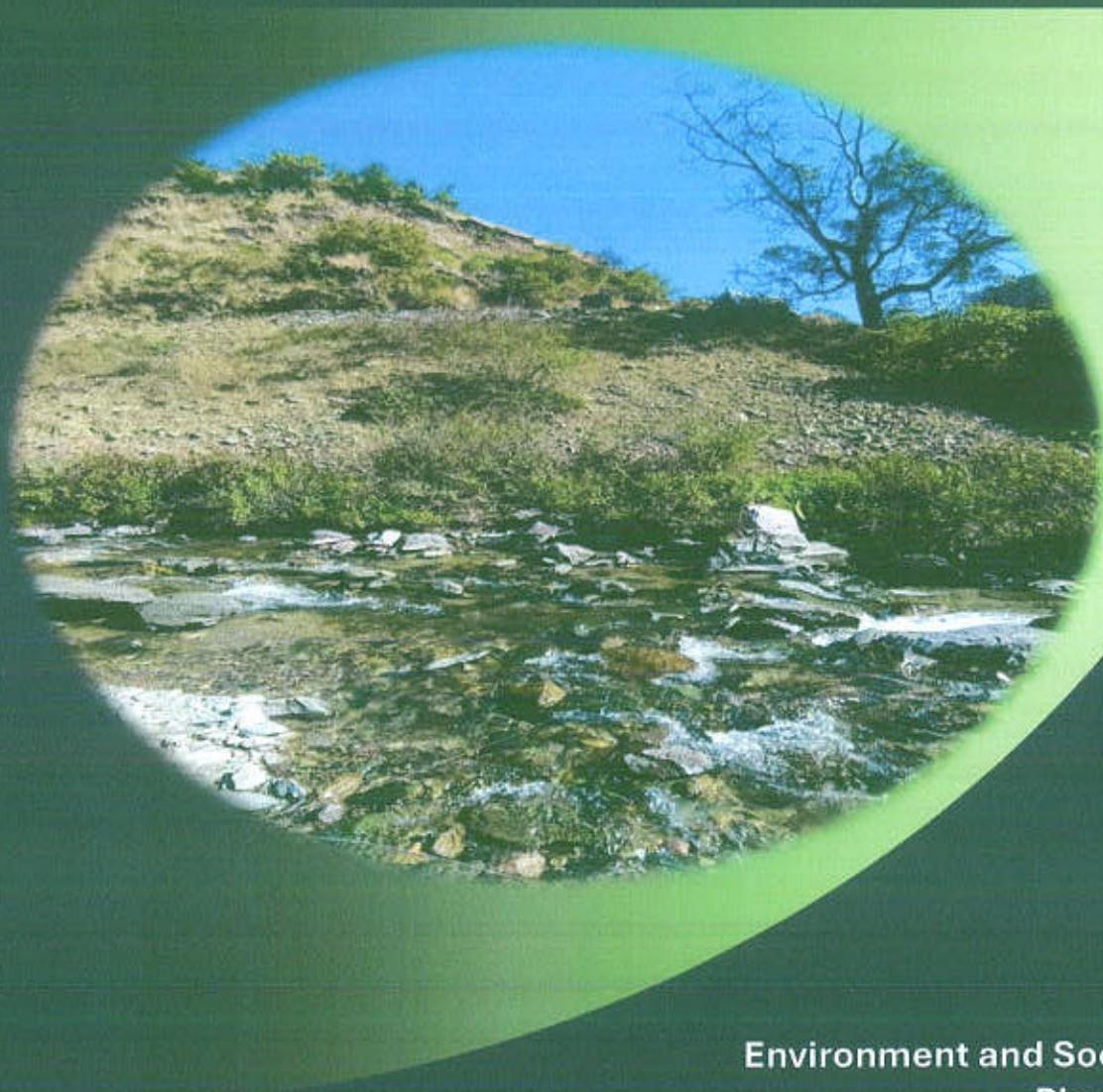


UTTARAKHAND DISASTER PREPAREDNESS &
RESILIENCE PROJECT (U-PREPARE)



Environment and Social Management
Plan

Construction of 48M Span Intermediate Lane Motor Bridge & its approach in
Km-2 of Gairsain to village Devalkot Motor Road in District Chamoli.



M/s Umashankar Singh Rawat

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

1.1 Description of the Project Road

A steel truss motor bridge is proposed on Gairsain to Village Devalkot M/R in Km-2 in district Chamoli. On left bank there is village Mityala and on right bank there is Devalkot village. As the present arrangement is temporary and poor, which lacks appropriate connectivity, it has been proposed to construct a new bridge to cater for the likely increase in number of people. The construction of this bridge will provide improved access to market for the people. The location of Project Bridge is hilly terrain. Presently it is difficult for people to cross the river to access market, school/college, health center district HQ and other places for their important work.



Figure: Proposed Bridge location

1.2 Objectives of EMP

The Environmental Management Plan (EMP) consists of a set of mitigation, monitoring, and institutional measures to be taken during the different stages of the project to eliminate adverse environmental and social impacts, to offset them, or to reduce them to acceptable levels. The plan also includes the actions needed for the implementation of these measures.

The broad objective of the Environmental Management Plan (EMP) is to ensure that

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Environmental and Social risks and impacts identified during the Environmental screening and ESIA process, are effectively addressed for the pre-construction, construction, and operation phases of the sub-project. The EMP specifies the mitigation and management measures to be implemented in the project along with institutional arrangements for the implementation, monitoring, and reporting, including the budget.

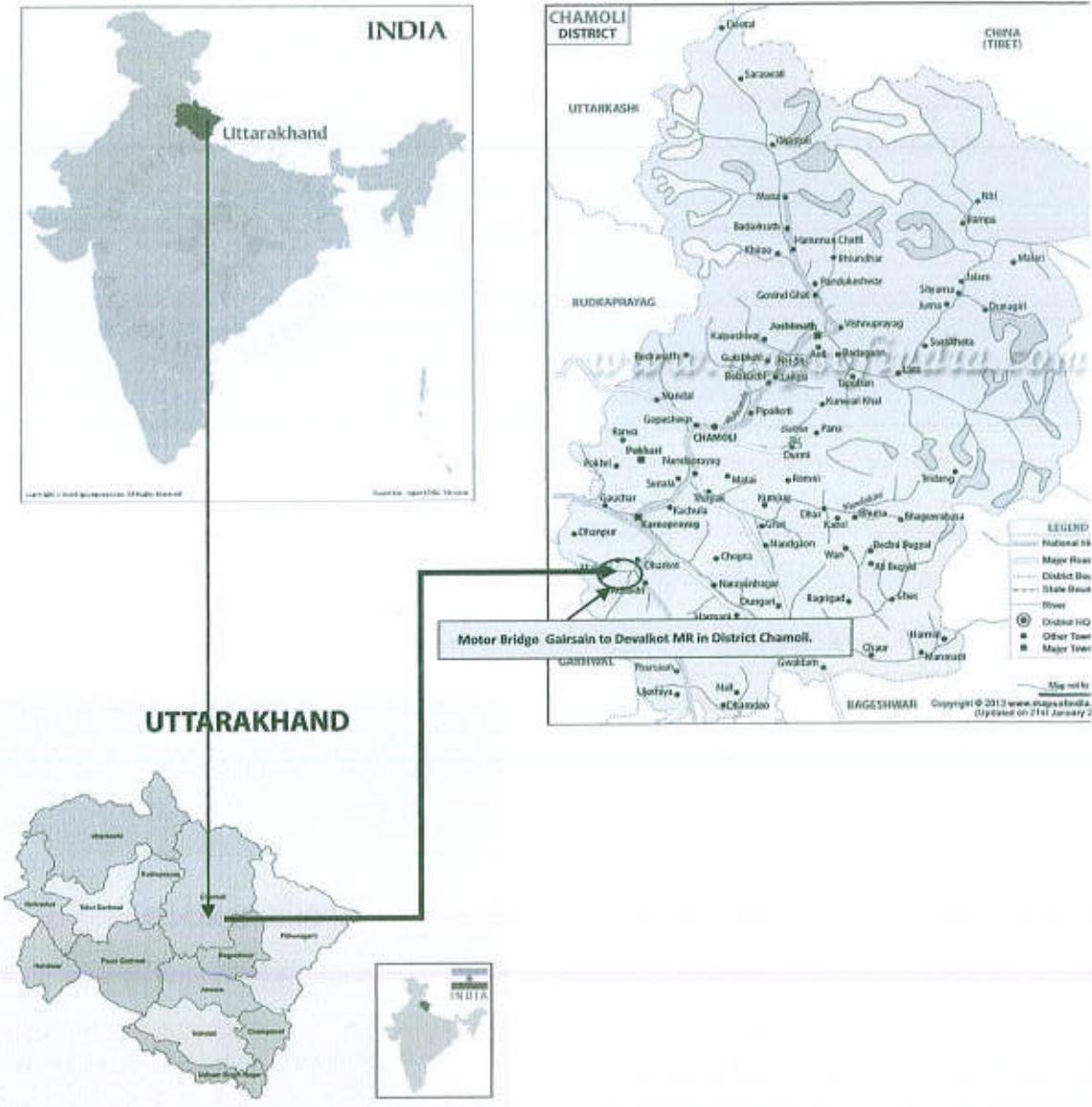


Figure2: Key Map of Bridge Proposed Gairsain to Devalkot Village MR in District Chamoli.

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1.3 Key Statutory Clearances/ Permits and Licences Requirements

Based on the proposed activities of the project, the contractor has to comply with all the relevant regulations on Environmental and Social Safeguards. The project requires several licenses/permits under different acts and rules. The type of permits and licenses required for the sub-project is listed under **Table 1**.

Table Error! No text of specified style in document.: Applicability of National and State Statutes and Regulations

S. No.	Type of Permits and Licenses	Relevant Acts and rules	Competent Authority	Responsibility	Timeline
1.	Pollution Under Control Certificate for both owned vehicles and hired vehicles.	Central Motor and Vehicle Act, 2019	Applicable	Contractor	1 Week
2.	NOC for Quarries Material (stone) and Sand NB: In case the contractor is open their own stone quarry	Uttarakhand Minor Mineral Concession Rules, 2023	District Authority	Contractor	2-3 months
3.	Labour License and insurance	The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 Uttarakhand Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Rules, 2005	Labour Commissioner	Contractor	1-2 month
4.	Labour License (In Case Engagement of Interstate Migrant Labour)	Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979	Labour Commissioner	Contractor	1-2 month
5.	Non-Forest Tree Cutting	Uttar Pradesh Tree (Protection), Act 1976 (as adopted in Uttarakhand)	Forest Department	Contractor	1-2 month

1.4 Proposed Site-specific Environmental Management Plan

This chapter describes the Environmental and Social Management Plan for the proposed project during different stages of the project. An Environment and Social Management Plan has been developed following the delineation of impacts and mitigation measures. These measures will be adopted by the project proponent and imposed as conditions of the contract. The Management Plan has been formulated for the implementation of environmental and social mitigation measures to be carried out by the Contractor and to ensure that the provisions of the EMP are strictly followed and implemented by strengthening implementation arrangements to prevent and minimize the adverse impacts during the Construction phase of the project. EMP has also addressed certain measures to be taken to prevent further deterioration of the environment and social components for various stages of the project.

Table:2 The table describes the nature of the potential environmental, impacts, the mitigation measures required to be implemented, and the implementing agency and responsible organization.

Tables 2: Environment Management Mitigation Plan

Sr. No	Anticipated Impact	Mitigation Measures	Responsible for Mitigation	Monitoring of Mitigation
		(Design Stage)		
1.	Hydrological Study, Erosion control & approach connectivity for designing of Bridge	(i) The hydrological study should be carried out for designing of the proposed bridge with flood safeguard (ii) Both Abutment wall be provided with proper slopes and may use a combination of gabion baskets and/or mattresses for slope protection. (iii) Approach slab as per IRC guidelines and well-designed approaches to connect bridge with the existing road or foot track both sides should be ensured during the design of the proposed bridge. (iv) In both abutments of the proposed bridge weep holes will be provided with minimum require standard filter Media for draining of water to prevent sliding of backfilling and to avoid any uplift pressure.	Design Engineer /Contractor	FPIU/PIU
2.	Impact of earth quake on bridge	The proposed bridge is located in Seismic zone IV and prone to high intensity earthquake. Therefore, it is imperative that seismic load factor must be taken into consideration while designing of bridge components.	Design Engineer /Contractor	FPIU/PIU
3	Debris Accumulation on or around the proposed bridge	The project is located in land slide prone area. Accumulation of Debris on or around the bridge may affect integrity of the proposed bridge. This factor should be considered while designing of the proposed bridge.	Design Engineer /Contractor	FPIU/PIU
4	Safety of proposed Bridge and its users	For safety of road users and bridge, necessary road safety signage, hazard signage and warning signage with reflective tapes need to be provided before and at the proposed bridge as per IRC guidelines	Safety/OHS Expert/ Contractor	FPIU/PIU
		(Pre – Construction Stage)		
2	Provision of Early Training of construction contractor regarding EHS Safeguards of World Bank	Contractor team has not adequate training or knowledge on EHS safeguards when working in and over flowing waters, leading to construction period impacts affecting river hydrology and water quality, PIU will provide a training as part of the overall 1.5-day training workshop to be delivered before construction begins, period to the contractor mobilizing to the field (i) Contractor shall submit a plan including a method statement and timeline about specific actions that will be taken to implement the provisions mentioned in the EMP. (ii) Project Information Board showing the name of work, project cost, duration, date of commencement, date of completion, executing agency and contact details (including telephone number/s) for providing suggestions/filing grievances shall be displayed prominently in both English and in vernacular.	Environment Expert Contractor	PIU / FPIU Environment Expert
3	Work Planning/ Dissemination	The Contractor shall obtain Labour License and all required Insurance as specified in the contract conditions from the concerned authorities. Originals will be checked/verified by the Engineer and a copy shall be available at the site office at all times. The Contractor is required to abide by all conditions laid out in the said clearances/consents given by the regulatory authorities. The	Environment Expert Contractor	PIU / Field PIU
4	Regulatory/ clearances/ approvals		Environment Expert Contractor	PIU / Field PIU

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		monthly progress report shall include the status and action taken for each of the conditions mentioned in such permits/ consent letters/ clearances.		
6	Arrangements for temporary land requirements for camp and construction plant	The contractor as per prevalent rules will carry out negotiations with the landowner for obtaining their consent for temporary use of land for construction campsites.	Contractor	Environment Expert PIU/ Field PIU
7	Labour Requirement & Procurement of construction material	(i)The contractor desired to use unskilled/semiskilled labour from local area to give the maximum benefit to the local community. (ii) The contractor will finalize the approved quarry/crusher for procurement of aggregate / sand for the proposed bridge construction after assessment of the availability of sufficient materials, quality and other logistic arrangements.	Contractor	Environment Expert PIU/ Field PIU
8	Worksite Management	Safety <ul style="list-style-type: none"> (i) Temporary barricades shall be provided to delineate construction zone, including material stacking areas from the remaining area. The construction area along with its labour facility, Warning signage shall be installed. All operational areas shall be access controlled with fixed entry and exit points. Watch and ward facilities at all times will be provided by the Contractor. (ii) Construction materials shall be stacked in a suitable place/ manner without obstructing the access. Necessary measures shall be taken for smooth and safe movement of men and material. (iii) Safety signage and posters for generating awareness will be provided at the work site. (i) All precautionary measures for prevention of pollution on account of the construction work (including both on-site and off areas) shall be implemented as per the requirements/standards of CPCB, SPCB and in line with measures listed in thisEMP. Contractor will chose/select a material source after assessment of the availability of sufficient materials, quality and compliance to Environment regulatory requirements.(ii) During the construction phase, the Contractor will carry out Environment monitoring for ambient air quality and noise levels by engaging reputed / approved laboratory. (iii) The Contractor will be required to submit Monthly Status Reports on EMP compliance covering parameters and points mentioned in the section above. 	Contractor	Environment Expert PIU/ Field PIU
9	Measures for prevention of pollution	(Construction Stage) <ul style="list-style-type: none"> The following mitigation measures are suggested during construction of the proposed bridge abutments: (i) Construction of bridge should be done during least flow or no flow area. (ii) Curtain should be provided over the flowing water to avoid the falling of construction material inwater. (iii) Construction wastes should be collected and disposed in Environmentally sound manner as soon as construction is over. (iv) The construction of bridge should not affect existing flow pattern and drainage system around the proposed bridge. (v) Flowing water will be diverted with guide bunds. (i) The contractor will take all precautionary measures to collect and dispose construction wastes generated from the proposed bridge construction site (if any). (ii) No solid or hazardous wastes (oil contaminated waste) from camp site will be dumped on water course bank area or in open 	Contractor	Environment Expert PIU/ Field PIU
1	Impact on Water Resource during construction of bridge	Water Pollution from	Contractor	Environment Expert PIU/
2.	Water Wastes			

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		areas, such wastes will be collected and disposed in Environmentally sound manner as per Environment regulations/ local regulations		Field PIU
3.	Dust and Pollution	The contractor will take every precaution to reduce the level of dust and gaseous pollution from batching plant and bridge construction site. (i) The contractor will procure the batching plant and construction machinery, which will conform to the pollution control norms specified by the MoEF&CC/CPCB/UOEPCB. (ii) The excavated materials at the bridge construction site will be collected and disposed properly so that it does not generate fugitive dust emissions. (iii) Regular maintenance of machinery and equipment will be carried and vehicular pollution check will be made mandatory. (iv) LPG shall be used as fuel for cooking of food at construction labour camp instead of fuelwood. (v) Water sprinkling is mandatory around construction site & in construction camp area. (vi) Personal Protective equipment (PPE) should be provided as a mandatory effort to the construction workers at the batching plant.	Contractor	Environment Expert Field PIU
4	Emissions from Construction Vehicles, Equipment & Machineries (like DG set)	The contractor will ensure (i) that all vehicles, equipment and machinery used for construction works are regularly maintained and confirm that pollution emission levels comply with the relevant requirements of CPCB and/Motor Vehicles Rules. The contractor will submit PUC certificates for all vehicles/ equipment/machinery used for the construction of bridge. (ii) DG set will be provided with chimney of appropriate height as per CPCB guidelines (Height of stack in meter = Height of the building + 0.2vKVA).	Contractor	Environment Expert Field PIU
5	Noise Pollution: Noise Levels from Vehicles, Plant and Equipment's	The contractor will confirm the following: (i) All construction plant and equipment used for construction will strictly confirm to the MoEF&CC/CPCB noise standards. (ii) All vehicles and equipment used in construction works will be fitted with exhaust silencers/mufflers. (iii) Maintenance and servicing of all construction vehicles and machineries will be done regularly. (iv) Only acoustic enclosures fitted DG set will be allowed at the bridge construction site and batching plant/camp site.	Contractor	Environment Expert Field PIU
6	Personal Safety Measures for Labours and Staff	The contractor will take necessary measures for personal safety during the bridge construction: (i) Protective footwear, protective goggles, Ladders Safety hooks and rope (if workers is working above 3m height) and nose masks (as required) will be provided to the workers employed in batching plant and concrete works at bridge construction site, painting etc. (ii) Welder's protective eye-shields will be provided to workers who are engaged in welding works (as required). (iii) Earplugs will be provided to the workers exposed to high noise levels. (iv) Safety vests will be used by workers when on bridge site. The contractor will comply with all the precautions as required for ensuring the safety of the workmen. (v) The Contractor will make sure that during the construction work all relevant provisions of the Building and other Construction Workers (regulation of Employment and Conditions of Services) Act, 1996 are adhered to. (vi) The Contractor will not employ any person below the age of 14 years for any work.	Contractor	Environment Expert Field PIU

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			Environment Expert Field PIU	
7	Fire Safety	Adequate fire safety precautions shall be taken and the required fire safety equipment (such as fire extinguishers) shall be provided by the Contractor in the construction camp & plant area.	Contractor	Environment Expert Field PIU
8	Emergency Management, Risk Force Measure and First Aid	(i) Emergency numbers (Fire, police & nearest health center) will be displayed at the camp construction plant and bridge construction site, (ii) The contractor will arrange for A readily available first aid unit including an adequate supply of sterilized dressing materials and appliances as per the Factories Rules in construction workzone. First boxes will be made available at the camp, construction plant and construction site, (iii) The contractor will make required arrangements so that in case of any mishap on the bridge construction site, all necessary steps can be taken for prompt first aid treatment.	Contractor	Environment Expert Field PIU
9.	Labour Camp Management			
9.1	Accommodation for workers	(i) Contractor will follow all relevant provisions of the Building and the other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 for construction and maintenance of labour camp. (ii) The location, layout and basic facility provision of labour camp will be submitted to PIU prior to their construction. (iii) The Contractor will maintain necessary living accommodation and ancillary facilities functionally and hygienically. (iv) Proper ventilation will be provided in labor accommodation rooms. (v) Regular cleaning and sweeping will be ensured at the labour campsite. (vi) Fuel wood will not be allowed for cooking at labour camps. LPG cylinders will be provided at labour camp by the contractor (vii) Fire Safety: Adequate fire safety precautions shall be taken and the required fire safety equipment (such as fire extinguishers) shall be provided by the Contractor.	Contractor	Environment Expert Field PIU
9.2	HIV/AIDS PreventionMeasures	(i) Necessary HIV/AIDS prevention measures will be taken at construction & labour camp (ii) HIV/AIDS & Occupational Health awareness programme will be organized by the contractor's Environment & Safety officer.	Contractor	Environment Expert Field PIU
9.3	Potable Water forWorkers	(i) The contractor will construct and maintain labour accommodation in such a fashion that uncontaminated clean water is available for drinking, cooking, bathing and washing. (ii) The Contractor will also provide potable water facilities at bridge construction site in an accessible place, as per the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 (iii) site personals of DSC will be required to inspect the labour camp twice in a week to ensure the compliance of the EMP.	Contractor	Environment Expert Field PIU
9.4	Sanitation and Sewage System at Labour Camp	The contractor will ensure that: (i) The sewage disposal system for the camp will be designed, built and operated in such a fashion that no health hazard occurs and no pollution to the air, surface &	Contractor	Environment Expert Field PIU

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		Field PIU
9.5	Wastes Disposal	<p>ground water or adjacent water courses take place, (ii) Separate toilets / bathrooms required will be provided for men and women (if deployed), marked in vernacular language, (iii) Toilets will be provided with septic tank followed by soak pit. Adequate water supply is to be provided in all toilets and urinals,</p> <p>(i) The contractor will provide garbage bins in the camp; construction plant and bridge construction site and it will be ensured that these are regularly emptied and disposed of hygienically as per Solid Waste Rule2016. Burning of wastes will not be allowed. (ii) Solid waste generated at the bridge construction site, batching plant & camp site, will be collected in covered waste bins and segregated as biodegradable (food waste, paper, etc) and non-biodegradable (plastic, polyethylene bag, etc) wastes. Polyethylene/plastic wastes will be stored in empty cement bags and to be sent for recycling through scrap dealer. Biodegradable (food waste, paper, etc) solid waste will be disposed in compostpit.</p>
10	Clean-up, Restoration and Rehabilitation	<p>(i) On completion of construction of bridge, the contractor will prepare site restoration and demobilization plan, which will be approved by the Environment Expert of PIU. The clean-up and restoration operation are to be implemented by the contractor prior to demobilization. (ii) The Contractor will clear all temporary structures; dispose all garbage, night soils and POL (Petroleum, Oil and Lubricants) wastes in Environment soundmanner. (iii) Disposal pits or trenches will be filled in and effectively sealedoff. (iv) Construction area including camp, and any other area used/affected due to the bridge construction work will be left clean and tidy at the contractor's expense to the entire satisfaction to the land owner/Environment Expert of PIU.</p>
		<p>Environment Expert Field PIU</p> <p>Contractor</p> <p>Environment Expert Field PIU</p>

Note: - The Contractor has to ensure procurement and placement of labour camp and temporary housing for labours, safety measures, first aid and grievance redress mechanism as mentioned above before starting the project work.

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Environment Monitoring

The objectives of environmental monitoring are: to ensure effective implementation of EMP; comply with all applicable Environmental, safety, labour and local legislation; ensure that public opinions and obligations are taken into account and respected to the required satisfaction level; and modify the mitigation measures or implementing additional measures if required.

The environmental monitoring plan contains:

- * All performance indicators
- * Environment monitoring programme
- * Necessary budgetary provisions

Performance Indicators

The physical, biological, and social components identified to be particularly significant in affecting the environment at critical locations have been suggested as Performance Indicators (PIs). The Performance Indicators shall be evaluated under three heads:

- a) Environment condition indicators to determine the efficiency of environmental management measures in control of air, noise, and water pollution.
- b) Environment management indicators to determine compliance with the suggested environmental management measures.
- c) Performance indicators that have been devised to determine the efficiency and utility of the proposed mitigation measures. The Performance Indicators and monitoring plans prepared are presented in the Table below:

The Performance Indicators and monitoring plan

Performance Indicators	Target	Achievement in Semiannually and annually
Budget	Environment Budget (EMMP Budget)	Expenditure till date
Performance Indicators of Monitoring Plan		
Ambient Air Quality		
Noise Level	Total Number of samples as per Environment Monitoring Plan	Total Number of samples collected
Water Quality		
Soil		
Safety of Workers	List of PPE as per the number of labours	List of PPEs actually provided in the project
Performance Indicators of Environment Mitigation Plan		

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Permissions/NoC's/Consents requirement	Target timeline to obtain the permit/NoC/ consents and its validity	List of Permission and NoCs /Consents obtained till date and status of its validity.
Grievance redressal	Total number of complaints received, its timeline to response and resolution	Actual number of complaints resolved in percentage, response time.
Issues raised in public consultation	Target to attend the issues raised in the Public Consultation	Status of compliance to the issues of public consultation
Information disclosure	List of information and locations where information to be disclosed	Actual locations where information has been disclosed.
Education of site staff on Environment training	Total Number of staffs to be trained	No of staff actually
Capacity Building	Total number of sessions to be covered Total Number of contractors, PIUs and DSCs to be covered	Number of Sessions completed and Number of contractors, PIUs and DSCs.
Implementation of EMP mitigation Measures	All items of Environment Management Plan with timeline	Implementation status of EMP items till date
Reporting	List and number of Report to be submitted	List and number of reports submitted

Monitoring, Communication, and Reporting

Monitoring is an essential aspect of environmental and social management plan. An Effective monitoring of the whole project cycle will assist for the implementation of a monitoring plan and coordination of work of the project with concerned stakeholders as well as identify the unexpected problems/outcomes that might come in the physical, biological and socio-economic sectors and facilitate the correction of those. Land use patterns, settlement, health and safety, infrastructure, and implementation of the mitigation measures are a few areas of monitoring. PIU and DSC are responsible for regular monitoring and reporting of the implementation of the project.

The Environment monitoring will be carried out at all the project impact areas in a regular or intermittent schedule.

The contractor shall: Appoint an Environment and OHS Expert to monitor the contractor's compliance with the EMP. The contractor shall also ensure that the Environment Specialist receives full support during the auditing period. The details of monitoring parameters, schedule, and method are presented in the table given below.

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Environment monitoring for Air, Water and Noise

S.No	Parameter	Indicators	Method	Location /Schedule	Agencies to be Consulted
1	Air Quality	Dust around the proposed site/ project areas	Visual Observation	Construction site Weekly during construction	FPIU/PIU
2	Noise Quality	Construction equipment's	Observation		
3	Waste Management	Unpleasant odor and visual impact	Visual Observation	Labor camp/ construction sites Weekly during construction	FPIU/PIU
4	Workers and community people accident, Health and Safety issues	Impacts on health of the workers; No. of accidents	Inspection of the construction place; Records of accidents	Project area Continuous during construction period	District hospital/ local health center's
5	Employment	No. of local people employed by project	Records kept by contractor and DSC	Project area Continuous during construction period	FPIU/PIU
6	Air Quality	PM10, PM2.5, SO2, NOx, CO.	High volume sampler Use method specified by CPCB for 24 hr sampling	Once in a Quarter where work is in progress and near sensitive receptors; and at the construction camp sites (except monsoon) for the entire construction	Contractor Monitoring through NABL Accredited Laboratory
7	Water Quality (Drinking & Surface)	Grab sample collected from source and analyze as per standard methods for examination	IS for Inland surface waters (IS:2296,1982) and for drinking water (IS: 105000-2012)	Once in a Quarter, except monsoon season Drinking water samples from the labour camps and from hand pumps, Surface water from the water courses along the proposed site	Contractor Monitoring through NABL Accredited Laboratory
8	Noise	Equivalent noise level using and integrated noise level meter kept at a distance of 15m from edge of pavement L _{eq} in db (A) of day time and nighttime	NAANQM 2000	Once in a Quarter, except monsoon season Near the construction camps, working zones, sensitive receptors at major human settlements	Contractor Monitoring through NABL Accredited Laboratory

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APPENDIX – 1
ENVIRONMENT STANDARDS
National Ambient Air Quality Standards

Pollutants	Time Weighted	Industrial Area	Residential Rural & Other	Sensitive Area ³	Method of Measurement
Sulphur Dioxide (SO ₂)	Annual	80µg/ m ³	60µg/ m ³	15µg/ m ³	Improved West and Gaekemethod
	24 hour	120µg/ m ³	80µg/ m ³	30µg/ m ³	Ultraviolet fluoresce
Oxides of Nitrogen (NO _x)	Annual	80µg/ m ³	60µg/ m ³	15µg/ m ³	Jacobe and Hochheiser
	24 hours	120µg/ m ³	80µg/ m ³	30µg/ m ³	Gas phase Chemiluminescence
Carbon Monoxide (CO)	8 hours	5000µg/ m ³	2000µg/ m ³	1000µg/ m ³	Non dispersive infrared spectroscopy
	1 hour	1000µg/ m ³	4000µg/ m ³	2000µg/ m ³	
Hydrocarbon (HC)		Not Establish	Not Established	NotEstablished	
Lead (Pb)	Annual	1.0µg/ m ³	0.75µg/ m ³	0.50µg/ m ³	AAS Method 24 hours after sampling using EPM 20000 or equivalent filter paper
	24 hours	1.5µg/ m ³	1.00µg/ m ³	0.75µg/ m ³	
Respirable Particulate (RPM)- size less than 10 µ	Annual	120µg/ m ³	60µg/ m ³	50µg/ m ³	
	24 hours	150µg/ m ³	100µg/ m ³	75µg/ m ³	
Suspended Particulate Matter (SPM)	Annual	360µg/ m ³	140µg/ m ³	70µg/ m ³	Average flow rate not less than 1.1cu.m/minute
	24 hours	500µg/ m ³	200µg/ m ³	100µg/ m ³	

* Average Arithmetic mean of minimum 104 measurements in a year taken for a week 24 hourly at uniform interval. 24 hourly/8 hourly values should meet 98 percent of the time in a year.

Sensitive areas may include:

- ⇒ One km around the periphery of health resorts so notified by SPCB in consultation with the Department of public Health.
- ⇒ One km around the periphery of Biosphere Reserves, Sanctuaries, and National parks so notified by MoEFCC.
- ⇒ One km around the periphery of an Archaeological Monuments declared to be of national importance or otherwise so notified by ASI in consultation with SPCB.
- ⇒ Areas where crops sensitive to air pollution are grown, so notified by SPCB in consultation with the Department of Agriculture.
- ⇒ One km around the periphery of tourism or pilgrimage sites due to their religious, historic, scenic or other attraction so notified by the Department of Tourism of the concerned state in construction with SPCB.

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Indian Standards of Drinking Water Specifications-IS 10500: 2012

S. No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable Desirable Limit	Effect outside	the Permissible Limit in the Absence of Alternate Source	Methods of Test (Ref. To IS)	Remarks
Essential Characteristics							
1.	Colour, Hazen units, Max.	5	Above 5, consumer acceptance decreases	25	3025(Part 1983	3025(Part 4) Extended to 25 only if toxic substances, in absence of alternate sources	
2.	Odour	Unobjectionable	-	-	1984	a) Test cold and when heated b) Tests at several dilutions	
3.	Taste	Agreeable	-	-	3025(Part 7 and 8) 1984	Test to be conducted only after safety has been established	
4.	Turbidity NTU, Max.	5	Above 5, consumer acceptance decreases	10	3025(Part 10) 1984	-	
5.	pH Value	6.5 to 8.5	Beyond this range, the water will affect the mucous membrane and/or water supply system	No Relaxation	3025 (Part 11) 1984	-	
6.	Total hardness (as CaCO_3)mg/L Max.	300	Encrustation in water supply structure and adverse effects on domestic use	600	3025 (Part 21) 1983	-	
7.	Iron (as Fe) mg/L Max.	0.3	Beyond this limit taste/appearance are affected, has adverse effects on domestic uses and water supply structures, and promotes iron bacteria	1	32 of 3025:1964	-	
8.	Chlorides (asCl) mg/L	250	Beyond this limit, taste, corrosion and palatability are affected	1000	3025 (Part 32) 1988	-	
9.	Residual, free chlorine, mg/L, Min	-	-	-	3025 (Part 26) 1986	To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection is required, it should	

Desirable Characteristics				be Min 0.5 mg/l.
1. Dissolved solids	500 mg/L, Max	Beyond this palatability decreases and 2000 may cause gastrointestinal irritation	3025 (Part 16) 1984	-
2. Calcium (as Ca)	75 mg/L, max	Encrustation in water supply structure 200 and adverse effects on domestic use	3025 (Part 40) 1991	-
3. Magnesium (as Mg)	30 mg/L, Max	Encrustation to water supply structure 100 and adverse effects on domestic use	16.33,34 of IS 3025:1964	-
4. Copper (as Cu) mg/L, Max	0.05	Astringent taste, discoloration and corrosion of pipes, fitting and utensils will be caused beyond this	36 of 3025: 1964	-
5. Manganese (as Mn)	0.1 mg/L,Max	Beyond this limit taste / appearance are affected, has adverse effect son domestic uses and water supply structures	0.3	35 of 3025:1964
6. Sulphate (assSO4)	200 mg/L,Max	Beyond this causes gastrointestinal irritation when magnesium or sodium are present	400	3025 (Part 24) 1986
7. Nitrate (as NO2),	45 mg/L,Max	Beyond this methemoglobinemia takes place	100	3025 (Part 34) 1988
8. Fluoride (as F) mg/L, Max	1	Fluoride may be kept as low as possible, high fluoride may cause fluorosis	1.5	23 of 3025: 1964
9. Phenolic compounds	0.001 (As C5H5OH) mg/L, Max	Beyond this, it may cause objectionable taste and odor	0.002	54 of 3025: 1964
10. Mercury (as Hg)	0.001 mg/L, Max	Beyond this, the water becomes toxic	No relaxation	Mercury io in analyzer
11. Cadmium (as Cd),	0.01 mg/L, Max	Beyond this, the water becomes toxic	No relaxation	To be tested when pollution is suspected
12. Selenium (as Se),	0.01 mg/L, Max	Beyond this, the water becomes toxic	No relaxation	28 of 3025: To be tested when pollution is suspected
13. Arsenic (as As) mg/L, Max	0.05	Beyond this, the water becomes toxic	No relaxation	3025 (Part 37) 1988 To be tested when pollution is suspected

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14.	Cyanide mg/L, Max	(as CN) 0.05	Beyond this, the water becomes toxic	No relaxation	3025 (Part 27) 1986	To be tested when pollution is suspected
15.	Lead (as Pb) mg/L, Max	0.05	Beyond this, the water becomes toxic	No relaxation	-	To be tested when pollution is suspected
16.	Zinc (as Zn) mg/L, Max	5	Beyond this limit it can cause astringent taste and an opalescence in water	15	39 of 1964	To be tested when pollution is suspected
17.	Aromatic detergent (as MBAS) mg/L, Max	0.2	Beyond this limit it can cause a light froth in water	1	Methylene-blue extraction method	To be tested when pollution is suspected
18.	Chromium (as Cr+) mg/L, max	0.05	May be carcinogenic above this limit	-	38 of 1964	To be tested when pollution is suspected
19.	Polynuclear aromatic hydrocarbon (as PAH) g/L, Max	-	May be carcinogenic above this limit	-	-	-
20.	Mineral oil mg/L, Max	0.01	Beyond this limit undesirable taste and odor after chlorination take place	0.03	Gas Chromatograph	-
21.	Pesticides mg/L, Max	Absent	Toxic	0.001	-	-
22.	RadioactiveAlpha emitters Bq/L,Max	-	-	0.1	58 of 01964	3025:-
23.	Radioactive emitters pci/L,Max	-	-	1	58 of 01964	3025:-
24.	Aluminium (as Al), mg/L Max	200	Beyond thi s unpleasant	600	13 of 1964	3025:-
25.	Aluminium (as Al), mg/L Max	0.03	Cumulative effect is reported to cause 0.2 dementia	-	31 of 1964	3025:-
26.	Boron, mg/L, Max	1	-	5	29 of 1964	3025:-

Source: Indian Standard Drinking water Specification- IS 10500: 2012 ®

M/s Umashankar Singh Rawat


Partner

Noise Level Standards

Category	Noise level for Day Time Leq dB (A)	Noise level for Night Time dB (A)
Industrial area	75	70
Commercial area	65	55
Residential area	55	45
Silence Zone	50	40

Note:

Day Time- 6.00 am –10.00 pm (16hours)

Night Time- 10.00 pm –6.00 am (8hours)

Silence Zone: The silence zone includes a radius of 100 m around premises where loud noise is prohibited (including hospitals and educational institutions)

Source: CPCB, 1989, GOI.

Standards for Suspended Particulate Matter for Stone Crushing Unit

The suspended particulate matter measured between 3 to 10 meters from any process equipment of a stone crushing unit shall not exceed $600 \mu\text{g}/\text{m}^3$

(Source: EPA Notification [G.S.R. 742(E) dt. 30th Aug, 1990] & [S.O. 8(E) dt. Dec. 31, 1990)

Mrs Umashanker Singh, Rawat



Partner

B. Social Management Plan (SMP)

Sl.No	Social Issue	Mitigation Measures	Responsibility			Remarks
			Planning Execution	Supervision Monitoring		
PRE-CONSTRUCTION STAGE						
P.1	Assessment of Impacts	The PMU SCDGS and DSC Social specialist shall assess impacts and revise /modify the SMP and other required sections of the project document.	Contractor	Social Specialist		As per site condition
CONSTRUCTION STAGE						
C.1	Labour Camp	The construction contractors set up their construction camps in identified locations where labour force required for the construction activities will be provided with temporary residential accommodation and other necessary Infrastructure facilities.	Contractor	Social Specialist and Field PIU		
		Provide all the infrastructure facilities, such as acceptable accommodation, potable water, sanitation, etc. to labor In Labor camps along with Insurance to the laborers. Foreseeing the involvement of women, both direct and Indirect In the construction activities, IA shall ensure certain measures that are required to be taken by the construction contractor towards welfare and wellbeing of women and children during the construction haze.	Contractor	Social Specialist and Field PIU		
C.2	Temporary Housing	During the construction, the families of laborers/workers should be provided with suitable to nuclear families residential accommodation	Contractor	Social Specialist and Field PIU		
C.4	Health Problems	Every Sub Project should have First Aid Box to provide minimum medical attention to tackle first-aid requirements	According to site execution the contractor provided the First Aid Box to provide minimum medical attention to tackle first-aid requirements	PIU and Field PIU	Social Specialist	

M/s Umashankar Singh, Rawat

 Partner

S.No	Social Issue	Mitigation Measures	Responsibility		Remarks
			Planning	Execution	
		<p>Linkage with nearest hospital (Primary Health Centers - It covers population of 20,000 and is present in rural areas) to refer patients of major illnesses or critical cases and to handle health problems of the workers by providing basic health care facilities thro these centres.</p> <p>Also Linkage with other health centre which has MCW (Mother and Child Welfare) units for treating mothers and children In the camp. Apart from this, the health centre should provide with regular vaccinations required - for children.</p>	Contractor		
C.5	Day Crèche Facilities	<p>Display Emergency number (Police fire and Hospitals at all subprojects.</p> <p>Provision of crèche should be made for infants and small children of women workers so that they can leave behind their children in crèche and work for the day in the construction activities.</p> <p>The crèche should be provided with at least a trained worker, preferably women, who may take care of the children in a better way. In cases of emergency, a trained worker can the health problems of the children much more efficiently and effectively and can organize treatment linking the nearest health centre.</p>	Contractor		<p>According to the site execution, female workers are encouraged to do work and provision of all facilities of Day Crèche.</p> <p>PIU Social Specialist and Field PIU</p>

M/s Umashankar Singh Rawat

 Partner

Sl.No	Social Issue	Mitigation Measures	Responsibility		Remarks
			Planning Execution	Supervision Monitoring	
C.6	Education Facilities	Women, especially the mother's with infants, should to be exempted from night shifts as far as possible. If unavoidable, creche facilities in the construction camps must be extended to them in the night shifts too.	Provision of facilities such as primary day crèche with primary education facilities and informal education at the construction camp measures are taken consideration by the Contractor.	PIU and Field PIU	PIU Social Specialist
		Wherever feasible, day creche facilities may be extended with primary educational facilities or same kind of informal education facilities could be creche at the construction camp as the construction workers are mainly mobile groups of people. Thus, there is a need for education their children at the place of their work.	Along with other stakeholders, participation and engagement of women and other vulnerable are ensured during construction.	Male and female workers are encouraged to do work equally by the Contractor.	PIU and Field PIU
C.7	Participation of Woman	Allow women to take part in the consultation process. Ensure that the women are consulted and invited to participate in group based activities, to gain access and control over the resources. Compensation for land and assets lost, being same for all the affected or displaced families, special care needs to be taken by the IAs for women groups, while implementing the process of acquisition and compensation as well.	The women are also encouraged to take part in the consultation process and give their suggestions if any.	Male and female workers are encouraged to do work equally by the Contractor.	PIU Social Specialist

Ms. Umashanker Siraji, Rawat

Partner

Sl.No	Social Issue	Mitigation Measures	Responsibility			Remarks
			Planning Execution	Supervision Monitoring		
		<p>Encourage women to evaluate the project outputs from their point of view and their useful suggestions should be noted for taking necessary actions for further modifications in the project creating better and congenial situation for increasing participation form women.</p> <p>The labour force required for the construction activities has to be of a highly skilled nature, as there is a lot of mechanized work in construction of subprojects. In addition, there is also a requirement of unskilled labour, where women can certainly contribute. Apart from this, women as family members of the skilled and semiskilled labours, will also stay in the construction camps and will be indirectly involved during the construction phase. The families of labours will include their children also. The construction contractors are expected to bring along skilled labour force, both migratory as well as female members.</p>				
C.8	Capacity Building of Woman	<p>Imitate woman's participation through self-help group formation in each of the villages affected by the project these groups can then be linked to special development schemes of the government.</p> <p>Provide separate trainings to woman groups for upgrading the skill in the alternative livelihoods and assist throughout till the beneficiaries start up with production and business.</p>	Contractor Social Expert	PIU and Field PIU	Social Specialist	PIU and Field PIU

M/s Umashankar Singh, Rawat

 Partner

UTTARAKHAND DISASTER PREPAREDNESS & RESILIENCE PROJECT (U-PREPARE)



Occupational Health and Safety Plan For

*Construction of 48M Span Intermediate Lane Motor Bridge & its approach in
Km-2 of Gairsain to village Devalkot Motor Road in District Chamoli.*

M/s Umashankar Singh Rawat

Partner

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Nis Umashankar Singh Rawal
Partner

Partner

I. INTRODUCTION

ABOUT UTTARAKHAND

Uttarakhand has a total area of 53,483 Square kms of which 86% is mountainous and 65% is covered by forest. Most of the northern part of the state is covered by high Himalayan peaks and glaciers. Uttarkashi, Chamoli and Pithoragarh districts of Uttarakhand share International boundary in the NW with China. In the east, the districts of Pithoragarh, Champawat and Udam Singh Nagar also share International boundary with Nepal. Uttarkashi and Dehradun share inter-state boundaries with Himachal Pradesh in the north-west, while Dehradun, Haridwar, part of Nainital and Udam Singh Nagar touches the boundary of Uttar Pradesh in the south.

It is rich in natural resources especially water and forests with many rivers and snow-clad mountain peaks. Resting majestically in the Garhwal Himalayas is a twin-peaked massif that forms a long high ridge leaning east to west, known as Nanda Devi. The Nanda Devi East Peak is part of this, and together with the West Peak, are formed the twin peaks of the Goddess Nanda. A barrier ring guards the main summit, within which can be found some of the highest mountains in the Indian Himalayas, and Nanda Devi East is one of them. Twelve peaks surpass 6,400 meters in height.

The heart of the insurmountable ring is the Nanda Devi Sanctuary which is protected as the Nanda Devi National Park. Nanda Devi East lies on the eastern edge of the ring and of the Park; at the border of Chamois, Pithoragarh and Bageshwar districts. The Nanda Devi West Peak towers at 7,817 meters and is the second highest in the country. Uttarakhand lies on the southern slope of the Himalaya range, and the climate and vegetation vary greatly with elevation, from glaciers at the highest elevations to subtropical forests at the lower elevations. The highest elevations are covered by ice and bare rock. Below them, between 3,000 and 5,000 metres (9,800 and 16,400 ft.) are the western Himalayan alpine shrub and meadows. Two of the most important rivers in Hinduism originate from the glaciers of Uttarakhand, the Ganges at Gangotri and the Yamuna at Yamunotri. These two along with Badrinath and Kedarnath form the Chota Char Dham, a holy pilgrimage for the Hindus.

TRANSPORT

Road Network

Uttarakhand has a total road length of 58,714 kms out of which surfaced roads are 36,026 kms. Length of National Highways is 2,042 kms and length of State Highways is 3,788 kms.

CLIMATE

Uttarakhand mainly has two different climatic regions, namely, the hilly terrain and the smaller plain region. The most favorable time to visit Uttarakhand happens to be in the course of the summers when the weather is very clement and mild. Certain areas of the hills even become inaccessible in winter due to extremities of climate causing prolonged snowfall. The plain region seems to be at its best in terms of climate in winter, when the weather is pleasant.



MONSOON

During the period of July to September, lies the monsoon season of Uttarakhand. The temperature ranges from 15 to 25 degrees Celsius at most of the places, during this time. The state receives approximately 90% of its annual rainfall in this season. It is also one of the most pleasant seasons of Uttarakhand.

II. PROJECT BACKGROUND

Client is aiming to build the new bridges in replacement of existing old bridges/Construction of new bridges at locations of Bridges which have been washed away in disaster of year 2013 and construction of new bridges as per requirement at site. Under the contract, the contractor M/S UMASHANKAR SINGH RAWAT is assigned to perform all activities related to the Construction of 48M Span Intermediate Lane Motor Bridge & its approach in Km-2 of Gairsain to village Devalkot Motor Road in District Chamoli.

III.Objectives of OHSE Plan:

The purpose of the OHS Action Plan is to provide safety guidelines and procedures for employees and to clearly define roles and responsibilities for its implementation. This Action Plan focuses primarily on protecting employees in the workplace from various risks such as accidents and injuries, in addition to maintaining their rights for a safe working environment. The OHSE plan sets out the OHSE management system as well as the resources required to implement. It includes the minimum requirements for compliance with OHSE laws and regulations in order to prevent injuries to workers, damage to property or the environment.

IV.Occupational health and safety

Occupational health and safety The rights of workers, including occupational health and safety, must be taken into account to avoid accidents and injuries, loss of labor resources, labor abuse and ensure fair treatment, pay, working and living conditions. For the purposes of the correct implementation of the Health and Safety program, the following basic concepts used in the national labor legislation are used:

labor protection - a system of measures to preserve the life and health of workers in the course of their work, including legal, socio-economic, organizational and technical, sanitary and hygienic, medical and preventive, rehabilitation and other measures;

Working conditions - a set of factors of the working environment and the labor process that affect the performance and health of an employee;

Harmful production factor - a production factor, the impact of which on an employee can lead to his illness or decrease in working capacity;

Hazardous production factor - a production factor, the impact of which on an employee can lead to his injury or sudden sharp deterioration in health, death;

Safe working conditions - working conditions under which the impact on workers of harmful or hazardous production factors is excluded or the levels of their impact do not exceed the established standards;

Workplace - a place of permanent or temporary stay of employees in the process of labor activity;

Means of individual and collective protection of workers - technical means used to prevent or reduce the impact on workers of harmful or hazardous production factors, as well as to protect against pollution;

Personal protective equipment of an employee - means intended for personal protection of the respiratory, hearing, vision and skin of an employee from the effects of adverse factors;

Occupational disease - a chronic or acute disease caused by exposure of an employee to harmful production factors in connection with the employee's performance of his labor (service) duties;

occupational risk - the magnitude of the probability of a health disorder, taking into account the severity of the consequences as a result of exposure to adverse factors in the working environment and the labor process;

In addition, in order to achieve the objectives of the OHSE, the following activities shall be carried out:

- i. All construction sites/ sites should have first aid facilities available on a regular basis;
- ii. Contractor shall conduct awareness camps / health camps on quarterly basis and disseminate information at worksites on the risks of all the transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction;
- iii. Conducting training for all Contractor personnel on basic sanitation and health issues, general health and safety issues, taking into account the specifics of the work;
- iv. Providing clean drinking water to all employees;

- v. Provision of Sanitation facility, adequate number of toilets and covered space for bathing and washing at the construction site, which will be cleaned to prevent an outbreak of diseases;
- vi. Conducting monthly safety meetings as well as daily safety briefings;
- vii. Lighting and signs should not be obscured and be readable.
- viii. Equipment that is contaminated or out of place must be repaired immediately and put away.

V. Occupational health and safety risk assessment

The Contractor will constantly take measures to prevent violations and comply with generally accepted OHS rules, analyze the reasons for non-compliance with labor protection requirements. The main types of possible incidents that led to an accident at work shall include:

- 1) Traffic accident
- 2) Falling from height;
- 3) Collapses, collapses of objects, materials, earth;
- 4) Electric shock;
- 5) Exposure to harmful substances;
- 6) Exposure to ionizing radiation;
- 7) Physical overload;
- 8) Damage resulting from contact with animals, insects and reptiles;
- 9) Fire, burns;
- 10) Disaster damage, etc

Incidents on the site will be immediately reported to the FPIU / PIU Engineer and the competent government authorities. Records will be kept in the office and on site. The FPIU / PIU engineer as well as the public have rights and access to information on labor protection.

VI. Ensuring labor safety during construction

This section provides an overview of the management of activities that will be carried out as part of the overall implementation of the project. Failure to comply with health and safety regulations can pose a risk to construction workers. The Contractor will comply with occupational health and safety regulations, which include, but are not limited to, strict adherence to established norms and procedures, which depend on the type of work performed, the use of

PPE, training activities and monitoring. In addition, all workers must be familiar with the handling of hazardous materials. The Contractor shall provide the workers with appropriate living conditions: safe water supply, optimal conditions for meeting hygiene needs etc.

VII. General Safety Guidelines

Housekeeping: Housekeeping is an essential safety requirement for all safe work environments. An untidy work area can cause accidents, inefficiencies, and creates fire and other hazards. Wet floors, spills, and clutter may cause slips, trips and falls. It is important to keep work areas clear of clutter and equipment.

Drugs and Alcohol Consumption: To ensure the ongoing safety of all our employees, the consumption of alcohol or recreational drugs are not permitted in the workplace at any time. All employees reporting to work must be free of alcohol and drugs. Measures to identify whether alcohol or drugs are being taken will include:

- Employee experiencing poor coordination, poor concentration and/or visual disturbance;
- Near miss incidents;
- Violence;
- Habitual lateness or absences;
- Neglect of personal grooming.

Smoking: The partners shall commit to protecting the health and safety of all its employees and others who may be affected by environmental tobacco smoke at work by creating a smoke-free workplace. Smoking is prohibited in the workplace and is only permitted in designated areas.

Electrical Safety: This project does not involve any electrical safety risks.

Machinery and Power Tools: This project does not include the use of any dangerous moving parts of machinery, such as gears, belts, pulleys, sprockets, counterweights, chains, and shafts.

VIII. Emergency Response Plan

Emergency Plan: A site-specific emergency procedure shall be produced prior to the commencement of site operations. This shall be communicated to all personnel via the Site Induction Training. An emergency situation may involve:

- Fire
- Flooding
- Explosion
- Pollution
- Fuel Leak

- Medical Emergency
- Natural Disasters (e.g. earthquake, hurricane, high winds etc.)

First Aid Arrangements: -

- OHS expert will be responsible to administer basic first aid at site.
- First aid supplies will be placed in the workplace.
- First aid box shall be available. It shall contain all the emergency medicines, artificial respiration apparatus, bandages, gauss swabs etc. Routine checks and maintenance shall be conducted on all fire suppression /protection systems and equipment as per the regulatory standards. Registers shall be kept of all such maintenance and inspections.

Incident reporting:

- All workplace related accidents where an employee, contractor or visitor is injured must be reported immediately to the Authority Engineer and an accident/incident report form must be completed within 24 hours of the accident.

Engineers and Supervisors are required to:

- a. FPIU will be notified in line with their requirements.
- b. Take appropriate action as far as is reasonably practicable to eliminate or control any risk associated with a reported incident or known hazardous situation;
- c. Ensure accident/incident reports are completed and submitted.
- d. Ensure a record of any work related injury to an employee is produced and.

Fire Emergency Procedure:

Routine checks and maintenance shall be conducted on all fire suppression /protection systems and equipment as per the regulatory standards. Registers shall be kept of all such maintenance and inspections. Fire extinguishers signs shall be included in all the offices, in addition to an office plan clearly showing the exits.

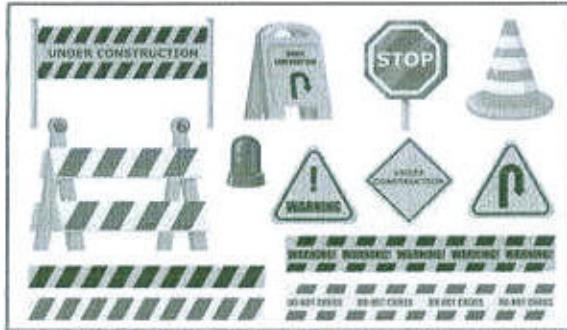
The fire emergency procedure shall be shared with all employees and reminded regularly:

- Where a fire is detected, the person should attempt to extinguish the fire only if it is safe to do so and the fire is containable.
- The person must notify the OHS Expert immediately.
- If required, the OHS expert will make an announcement for all employees to evacuate the premises immediately and meet at the "Fire Assembly Point".

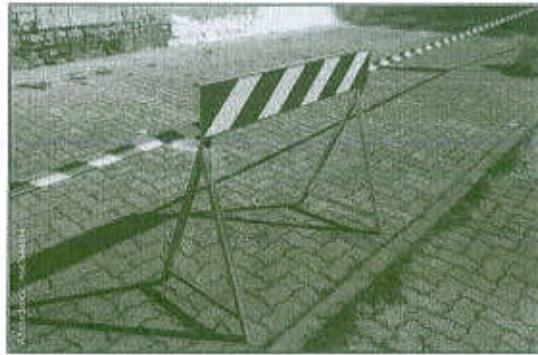
- Assembly Points and the location of fire extinguishers will be made clear by the senior management to all the employees during regular trainings.
- All employees must stop work immediately and evacuate.
- The OHS expert must notify the Fire Services as soon as practical.
- An incident/accident report form will be filled out by the OHS expert/project manager and personnel on the site at the time.
- A review will be carried out of the effectiveness of the process and any improvements or corrective actions will be recorded for future implementation.

IX. Project Site Arrangements

- **Traffic Management** – Communication and display of traffic routes, speed restrictions, signage, speed bumps, one way routes, and detailed traffic management plan.



- **Storage of Materials** - Storage of materials, Oils, fuels, and tools at the designated store area in the construction site.
- Dedicated area to be barricaded with suitable arrangement.



- **Signages** – Signages to be displayed at work site detailing warning instructions for people working and site and visiting the site and also providing preventive information to avoid accidents at site.



- **Temporary Services** – Clean drinking water provided in bottles for labor and staff.
- **Labour Camp**- The contractors to set up the accommodation and arrangement for acceptable residential accommodation, potable water for labours at proposed construction site

X. Plan of the education

In accordance with the requirements of the national legislation on labor protection, an OHS coordinator has been appointed to perform tasks related to labor protection in the workplace. In accordance with the requirements of national legislation, the OHS coordinator must:

- OHS Expert will provide different trainings to their labours and staff as per the training schedule provided to them by PMU and will properly maintained the records of the trainings.
- Comply with workforce management procedures and occupational health and safety requirements.
- Monitor compliance with labor management procedures and health and safety requirements

- Keep records of employees under the contract and compliance with the conditions of their employment
- Ensure that each hired employee knows the phone number, email address and website where he can file a GRM complaint with the FPIU/PIU.

M/s Umashankar Singh Rawat

Partner

Site-specific Occupational Health & Safety (OHS) Management Plan

OHS Issues	Potential Impact	Mitigation Measures	Location	Time Frame	Project Execution	Monitoring
					Execution	Contractor OHS Expert
Contractor's OHS Plan	<ul style="list-style-type: none"> The Contractor will Develop a site-specific and job-specific Occupational Health and Safety (OHS) Plan which will cover the following aspects but not limited to: <ul style="list-style-type: none"> - Site and Activity specific Hazard identification - Identification of PPE requirements - Work zone safety Plan including Safety during excavation, concreting, etc., operation of Heavy Plant & Machinery; - safety during Material handling, safety plan for lifting devices, fire, electrical and mechanical safety, vehicular safety - Medical facilities including first aid arrangements - Institutional arrangement for implementation of safety measures including safety committee - H&S safety training program including training schedule - Incidence reporting system and 	<p>Contractor's Document at Contractor's Camp</p>	Pre-Construction		FPIU and PIU Environment Expert	

Ms Umashankar Singh Rawat

Partner

	Safety Checklists	<ul style="list-style-type: none"> • The Contractor OHS Expert will comply with the requirements of the Environmental, Health, and Safety (EHS), Guidelines of the World Bank Group, 2007[1] and all national, state and local core labor laws during preparation of OHS Plan and implement the same. • A general guideline as provided in the Labour Management Procedures (LMP) on Occupational Health and Safety, prepared for U-PREPARE as separate document will be followed by the contractor in developing the OHS Plan. • In addition to EHS Plan the Contractor will develop Disaster Management Plan and Emergency Response System in line with the Disaster Management Policy of the State to deal with emergency situations, such as accidents, natural calamities, construction failure and submit them to the PIU for approval. • The Contractor's EHS Officer will be responsible for conducting
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Mr. Umesh Kumar Singh, Advocate

 Partner

environmental and safety awareness training for workers	<ul style="list-style-type: none"> He will be responsible for record keeping and reporting on various environmental and OHS issue of the project during construction and defect liability period 	Camp Site and Working areas	<p>FPIU and PIU Environment Expert</p> <p>Construction Phase</p> <p>Contractor</p>

	<p>concrete,</p> <ul style="list-style-type: none"> - Construction workers will be provided high visibility vests, Ear plugs to workers exposed to high noise levels, Hard hat or helmets to workers, where there is danger of falling objects from height, - Hand gloves, helmets, protective footwear/safety shoes, protective goggles, nose masks, high visibility vests etc. (as required) will be provided to the workers employed in construction works, - Safety belts will be used by workers while working at height, • Safety net will be provided around the girders/ under construction superstructure for protection against falling of objects • The Contractor will provide and maintain safe access and safe working conditions to the work site throughout the working period • The medical insurance coverage for the workers should be provided by the Contractor. • The emergency contact details of concern officer and medical 		

	<p>officers/officers require to be made available at working sites.</p> <ul style="list-style-type: none"> • The Contractor will provide hard barricading around the Work Zone • The Contractor will secure all installations from unauthorized intrusion and accident risks; • The Contractor will arrange of potable drinking water at work site as well as at camps; • Provide clean eating areas where workers are not exposed to hazardous or noxious substances; • The Contractor will provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; • Ensure moving equipment is outfitted with audible back-up alarms; • Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to,
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	<p>and easily understood by workers, visitors, and the general public as appropriate;</p> <ul style="list-style-type: none"> • Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively; • Bridge construction will be carried out only during lean period and no construction activity will be carried out during monsoon period. • During the alert from the Metrological Department/ USDMA, the river side construction work should be suspended till the situation normalize. • All the construction material and machineries stacked near the river must be cleared during alert period to avoid any mis happening. 	<p>OHS Awareness Trainings</p> <ul style="list-style-type: none"> • Occupational health hazards and accidents at working sites 	<p>Work site and Camp site</p> <ul style="list-style-type: none"> • The Contractor will organize awareness program on occupational health and safety aspects on periodic basis as per the training schedule • The Contractors EHS Expert will provide regular pep talks and toll box talk to the labourers on the type of risk specific to the planned 	<p>During Construction period</p>	<p>Contractor</p>

M/s Unistaranker Singh, Rawat

 Partner

		activities for the day and safety requirements before start of work			
First Aid and Emergency Management	<ul style="list-style-type: none"> • Emergency numbers will be displayed at the camp and construction sites, • Readily available First Aid boxes will be made available at the camp and construction sites. The Contractor will ensure at all time that all the basic items of the first aid are available in the first aid kits • Ensure that qualified first-aider can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site • Contractor will maintain First Aid Register • The Contractor will tie up with nearby health centers to provide immediate treatment in case of any incidence requiring advance treatment beyond first-aid • Designated vehicles, which can be used as ambulances during emergencies, will be available at construction sites as required. 	<p>Camp Site and Working areas</p> <p>Construction Phase</p>	<p>Contractor OHS Expert</p>	<p>FPIU and PIU Environment Expert</p>	
Emergency Response System	<ul style="list-style-type: none"> • Since the project area is located in a disaster-prone area, so there is the risk of natural calamities such as flash floods, cloud bursts and 				

M/s Umashankar Singh Rawat

 Partner

		<p>landslides in the area. Moreover, there may be an accidental failure of the structure during construction. So, it is important to develop an emergency response system.</p> <ul style="list-style-type: none"> • To develop and communicate a plan for emergency response that is tailored to the hilly environment. • Conducting a comprehensive risk assessment of the construction site to identify potential hazards.

Annexure:1

Occupational Health and Safety (OHS)/Community Health and Safety (CHS) and grievances Redressal related trainings for workers

Number of Trainings conducted in a month	Key issues identified	Proposed line of action
a) OHS/CHS Trainings, b) Awareness on Grievance Redressal Mechanism c) Awareness on (ICC) Internal complaint committee for Sexual Harassment/Sexual exploitation and Abuse d) Awareness on prevention of HIV (AIDS) at project site, e) Any other challenge at project site for which stakeholder meeting taken?	a) b) c) d) e)	a) b) c) d) e)

M/s Umashankar Singh Rawat



Partner

Partner

Annexure:2

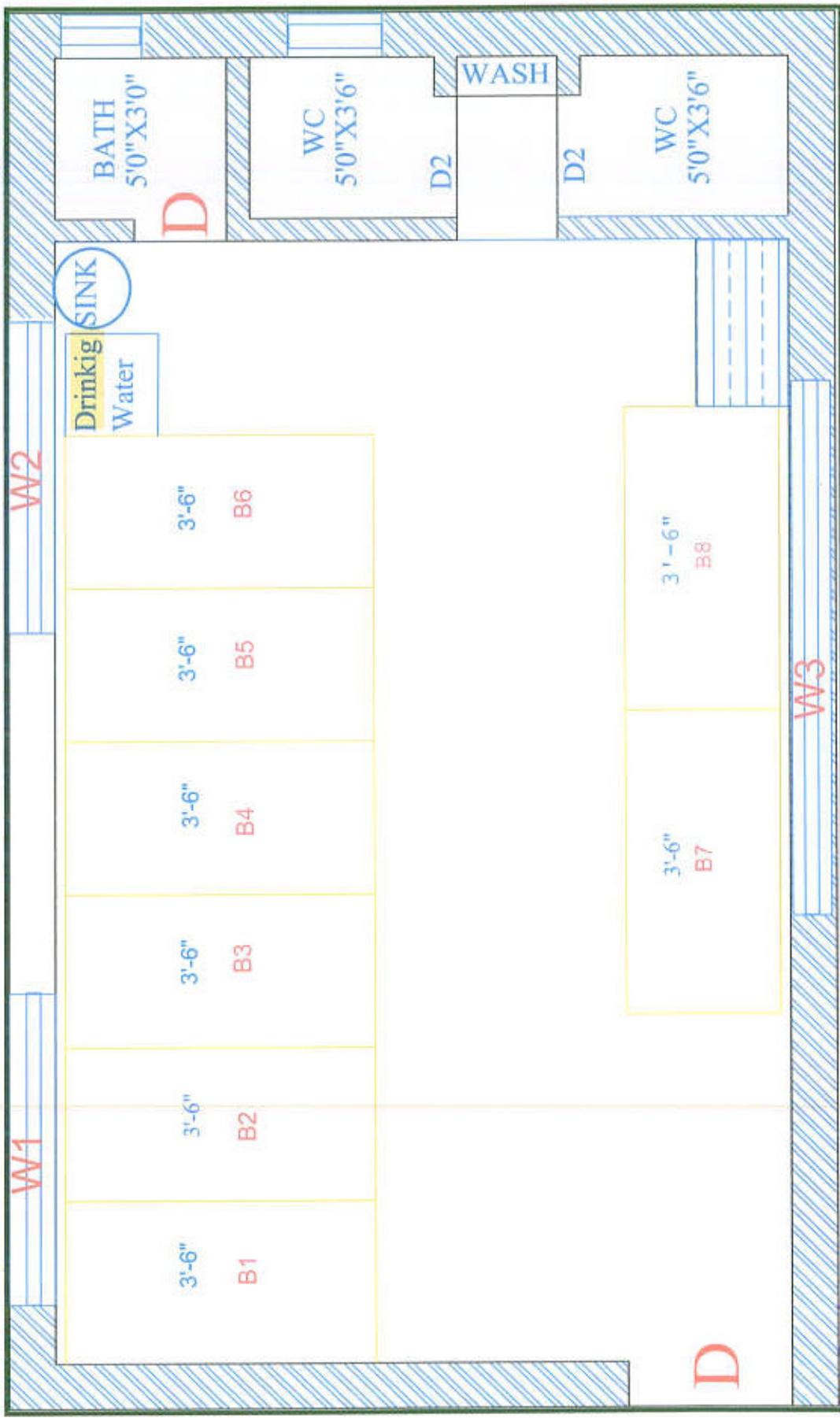
Safety and Security at project site and labour camp

SI	Safety and Amenities available for Labours at site	Present status	Issues/bottlenecks identified if any (Kindly list out issues and line of action)
1	a) No of barricades as per position/area, b) Drinking water facility c) No of wash rooms at site d) Rest Room for workers e) Sanitation facility at site (like handwash, hygienically maintained wash rooms etc.) f) Security guard g) Fire extinguisher h) First Aid box i) Safety sign board j) C&D waste generation collection treatment and its disposal at site	a) b) c) d) e) f) g) h) i) j)	a) b) c) d) e) f) g) h) i) j)
Safety & security at Labour camp			
2	a) Drinking water b) No of toilets for workers c) Sanitation facility d) Fire extinguisher e) First aid box f) Safety sign board g) Hand wash h) Sanitation facility at Labour camp (like handwash, hygienically maintained wash rooms etc.) i) Solid and liquid waste generation collection treatment and its disposal at labour camp	a) b) c) d) e) f) g) h) i)	a) b) c) d) e) f) g) h) i)

M/s Umashankar Singh Rawat

 Partner

Construction of 48M Span Intermediate Lane Motor Bridge & its approach in Km-2 of Gairsain to village Devalkot Motor Road in District Chamoli.



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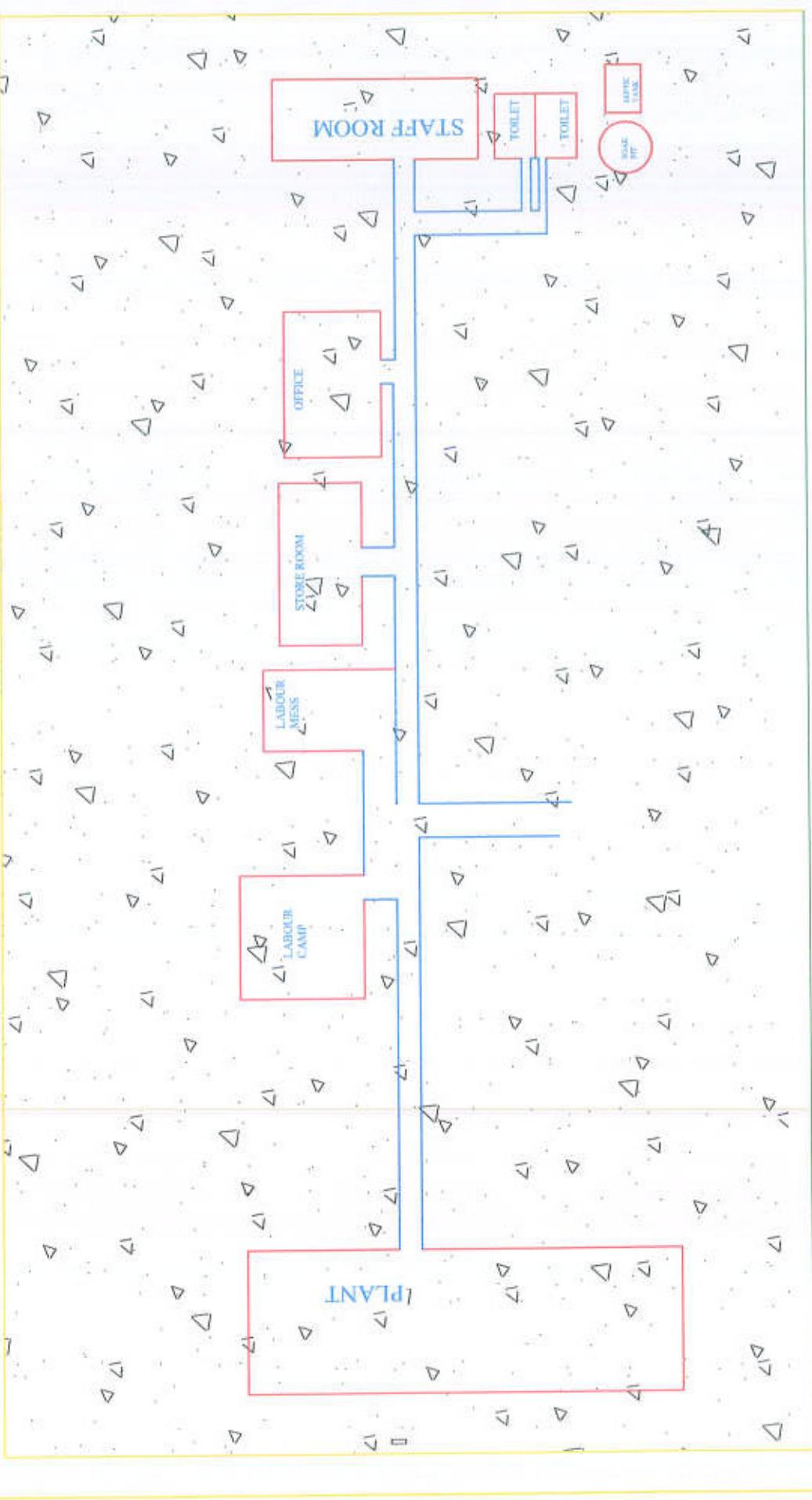

Partner

Layout Plan of Labour Camp

N 30.176598 79.173218
M/S UMASHANKAR RAWAT CON.

Construction of 48M Span Intermediate Lane Motor Bridge & its approach in Km-2 of Gairsain to village Devalkot Motor Road in District Chamoli.

Layout Plan of Construction Camp



M/s Umashankar Singh, Rishav
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Partner

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30.176598 79.173218
M/S UMASHANKAR CONS.


Partner



M/s Umashankar Singh, Rewat


Partner

Partner