



Sub Structural Consult (SSC)(P.) Ltd.

(Engineers & Consultants)

AN ISO:9001-2015 Certified Company

SUSTAINABLE DEVELOPMENT INTERDISCIPLINARY APPROACH



✿ GEOTECHNICAL INVESTIGATION

✿ IRRIGATION

✿ TRANSPORTATION

✿ WATER SUPPLY AND SANITATION

✿ ENERGY


✿ BUILDING AND URBAN DEVELOPMENT

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BRIEF INTRODUCTION

SUB STRUCTURAL CONSULT (P.) LTD. (SS Consult) was established in 1984 in the form of a proprietorship primarily run by an experienced geotechnical engineer to provide specialized services in the field of Geotechnical Engineering. In 1987, it was converted into a private limited company and has been registered as a consulting company with the Government of Nepal, Department of Industries, under the Company Act 2021. SS Consult is a member of the Society of Architectural and Engineering Firms (SCAEF) Nepal. Gradually, the increase in the scope of consulting services in various development sectors led to the realization of a multidisciplinary approach. With this realization, SS Consult began with the diversification of consulting services into various fields of engineering, agriculture, rural development, environmental studies, social and economic studies, community development/gender studies, institutional and human resources development, as well as research and policy formulation related services.

SS Consult has its corporate office in Ratopul, Kathmandu. SS Consult is well organized to provide the highest possible standards of technical and managerial services to its clients with a strong professional backing-up by a Board of Directors consisting of experts and specialists of different disciplines. SS Consult maintains good strength of in-house full-time professional staffs and vast pool of resource professionals to ensure high-quality services to its valued clients

SS Consult provides services to its clients both independently and in collaboration with other consulting firms in Nepal, and has thus attained a level of performance commensurate with international standards.

Mission

SS Consult's mission is to provide consulting services to its clients with an interdisciplinary approach and corporate responsibilities for the sustainable growth of the national economy.

Vision

To be established as a company providing consulting services with capacity, competency, and quality to propel the services sector towards the new era of a knowledge-driven global economy.

Company Philosophy

Transparency, Interdisciplinary Approach, National Capacity Building Network, and Alliance, Corporate Social Responsibility, Professional Accountability, Sustainability of Results

BRIEF PROFILE OF MANAGING DIRECTOR

Er. Keshav Kunwar, Managing Director of the Company, since 1987, holds a Master's Degree in Civil and Structural Engineering, 1978, from the then USSR (Hns). He has more than 42 years of experience in various engineering projects and exhibits a high professional skill which is demonstrated by his experience as a Project Director, Team Leader, and Subject Matter Specialist in more than 150 engineering projects. His foresight & entrepreneurial drive took SS Consult well in all regions of Nepal. Mr. Kunwar was a member of the Task Force on "Consulting Architectural and Engineering Industry in Nepal" constituted by the then His Majesty's Government of Nepal from December 11, 1988, to May 18, 1990, this eventually led to the establishment of the Society of Consulting Architectural and Engineering Firms (SCAEF), Nepal, in 1990. Since then, Mr. Kunwar has worked for one term (2 years) as Treasurer and three terms as Vice President of the SCAEF. He served as the President of SCAEF from 2004 to 2007(2 years terms).

BRIEF PROFILE OF DIRECTORS

Er. Prabhu Raj Pandey

Prabhu Raj Pandey is the Director at SS Consult P. Ltd. He joined SS Consult in the year 2013 A.D. He holds a Master's Degree in Civil Engineering specializing in Highway from Tashkent Automobile and Road Construction Institute from the then USSR. Mr. Pandey is a life member of Nepal Uzbekistan Samaj. He has more than 30 years of experience in the field of Civil Engineering. He has worked as a Team Leader, Project Manager, Highway Engineer, and Contract Management Expert in various projects.

Er. Kishor Paudel

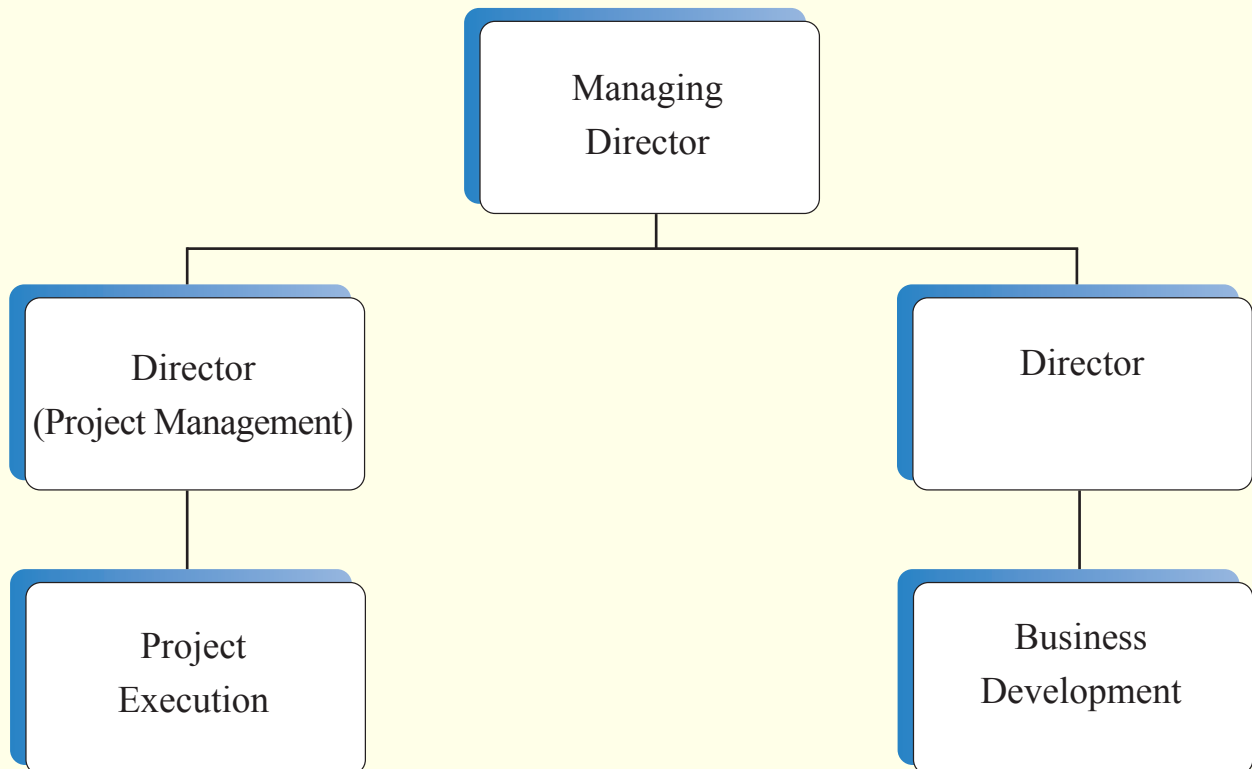
Kishor Paudel is the Director at SS Consult P. Ltd. He joined SS Consult in the year 2022 A.D. He holds a Master's Degree in Geotechnical Engineering from Institute of Engineering, Tribhuvan University. He has more than 17 years of experience in the field of Civil Engineering. He has worked as a Team Leader, Slope Stability Experts, and Geotechnical Expert in various projects.

ORGANIZATION STRUCTURE

SS Consult is governed by a Board of Directors, consisting of two shareholders. The overall management rests upon the Managing Director of the Company. Both of the shareholders are engineers and work actively in projects carried out by the company in addition to their managerial responsibilities. The company, managed by engineers active in their engineering profession, has adequate resources in core professional manpower and equipment to assure leadership and independent working, while the compactness of our organization allows us to act quickly and efficiently to the benefit of our valued clients.

MANAGEMENT TEAM

Mr. Keshav Kunwar	M.E. in Civil and Structural Engineering	Managing Director
Mr. Prabhu Raj Pandey	M.E. (Highway)	Director (Project Management)
Mr. Kishor Paudel	M.E. in Geotechnical Engineering	Director



Organization Chart

AFFILIATION

SS Consult is duly registered with the Government of Nepal, the Asian Development Bank (CMS No. 037490), and the World Bank (Online Registration as “Sub Structural Consult P. Ltd ”). SS Consult is a member of the Society of Consulting Architectural and Engineering Firms (SCAEF) Nepal (Membership. No. M27), a Government, an authorized umbrella body of consulting and architectural firms. The Firm works under the philosophy of **Sustainable Development and an Interdisciplinary Approach.**

SCOPE OF SERVICES

GEOTECHNICAL INVESTIGATION

- Topographic Survey
- Parcellary Map Survey and Map Preparation
- Cadastral Survey
- Geotechnical Investigation
- Core Drilling
- Soil, Rock and Construction Materials Testing
- Water Quality Survey and Testing
- Atmospheric Quality Survey and Testing
- Slope Stability Analysis
- Chemical and Biological Testing
- Seismic Hazard Assessment
- Iso-seismal Mapping
- Seismic Hazard Risk Zonation

TRANSPORTATION

- Pre-feasibility Study
- Detailed Inventory Preparation and Detailed Feasibility Study of Roads and Bridges
- Detailed Survey including Land Use Study
- Topographic Survey
- Traffic Survey
- Hydrological Survey
- Geological and Geotechnical Investigation
- Quarry Borrow Site Survey for Construction Material and Testing
- Social and Environmental Survey
- Land and Property Acquisition and Compensation
- Resettlement Plan
- Conduct Regional Multi-modal Transportation Study
- Detailed Engineering Design of Roads, Bridges, Appurtenant Structures for New Construction, Rehabilitation, Reconstruction, and Upgrading of Highways and Feeder Roads (Strategic Road Network), District Roads and Rural Roads
- Detailed Design of Pavement Surfacing including Gravel Surface, Otta Seal, SBSM, DBSM, Asphalt Concrete and others
- Prepare Construction Drawings
- Rate Analysis
- Quantity and Cost Estimates
- Financial Analysis
- Planning and Programming including Traffic Studies for Strategic Roads as well as other roads and trails
- Conduct Sector Wide Road Study
- Prepare Priority Investment Plan and Prepare Policies, Guidelines and Manuals
- Preparation and Interpretation of Digital Maps and Aerial Photo
- Preparation of Maps and Selection of Alignment
- Pavement Condition Evaluation
- Identification of Pavement Maintenance Requirements
- Planning of Road Pavement Maintenance & Rehabilitation including Prioritization for Investment
- Costing and Tariffs Preparation of Pre-qualification Document, Tender Document, Specifications
- Selection of Contractors
- Quality Control
- Construction Supervision and Contract Management
- Design and Construction Supervision of Low-cost, Labor-based & Environmental Friendly Road with Participatory Approach by Involving Potential Beneficiaries in all the Stages of the Projects and Strengthen them to make them Capable of operation & maintenance of the Road in a Sustainable Basis
- Project Benefit Monitoring and Evaluation with regard to Environment Conservation and Social Safeguard in the Project after Implementation.

ENERGY

● Micro, Small and Medium Hydropower: Resource Identification ● Feasibility Studies ● Detail Survey ● System Design ● Rehabilitation and Upgrading of Environmental and Socio-economic issues in Hydropower Development ● Design and Construction Supervision ● Topographical survey and Mapping Hydrological and Sedimentation Studies ● Geological/Geotechnical/Geophysical studies ● Construction materials and Seismicity Studies ● Selection of Project Configuration ● Power Optimization Studies ● Feasibility level design of projects ● Detailed Project Report Preparation ● Detailed Design ● Energy Computation ● Cost Estimation ● Construction Planning and Scheduling ● Project Benefit Analysis ● Monitoring and Evaluation Study Power Evacuation Studies and Transmission Line Surveys ● Contract Management ● Construction Supervision and Quality Control of Construction Works ● Preparation of Operation and Maintenance Plans and Manuals ● Initial Environment Examination (IEE) ● Environment Impact Assessment (EIA) of Hydropower Projects.

IRRIGATION

● Watershed Water Basin Study and Planning Gravity Surface Irrigation System ● Irrigation/Drainage Network ● Irrigation Water Management and Command Area Development Planning ● Design and Operation of Environmentally Sustainable Irrigation Schemes ● Preparation of Parcellary Map ● Preparation of Canal Operation and Maintenance (O&M) Plans ● Operation and Maintenance of Irrigation Systems ● PBME survey ● Planning Study and Design of Multi-Sectorial Projects including Institutional Development ● Land Resources Appraisal/Land Use Drainage Surveys and Evaluation ● Land Drainage Characteristics and Drainage Requirements' Identification ● Water Resources Appraisal and Use including Water Measurement ● Water Quality/ Characteristics' Determination ● Suitability and Requirements of Water for Irrigation ● Planning of Water User's Association (WUA) ● Organization Formation and Training Flood/River Control Works ● Erosion Control/Soil Conservation.

WATER SUPPLY AND SANITATION

● Water Supply System Planning ● Design of Water Supply Network ● Planning, Design, Rehabilitation and Upgrading of Water Resources Schemes (Identification, Assessment, and Engineering for Subsurface and Surface Water Resources) ● Rural and Community Based Water Supply and Sanitation (Needs Identification, Planning, Design, Social and Environmental Issues) ● Formation of Water User Groups ● Technical, Financial and Management Training to Community on Rural Water Supply Schemes ● Forecasting of Water Supply and Sanitation Requirement ● Financial Planning ● Monitoring and evaluation of Rates and Tariffs of WSS ● Preparation of Management Information Systems (MIS)

BUILDING AND URBAN DEVELOPMENT

● Design and Construction Supervision of Public buildings ● Urban Land Use Planning Studies of Urban Traffic Flow and Transportation ● Planning Design and Engineering Services for Urban Infrastructures as Roads, Bridges, Drainage, Water Supply, and Sanitation, etc. ● Urban Water Supply and Sanitation Management ● Network Survey and Optimization ● Integrated Solid Waste Management ● Preparation of Master Plan of Large Building Complex

RECENTLY COMPLETED WORKS

Kathmandu – Terai/Madhesh Fast Track Expressway Road Project

Kathmandu-Terai/Madhesh Expressway is a mega highway project prioritized as an “infrastructure of national pride” having strategic significance. After a high-level comprehensive consultation and thought process, the Government of Nepal in May 2017 decided to give the responsibility of construction management to Nepali Army. The development of the proposed Kathmandu- Terai/Madesh Fast Track Road Project (Kathmandu-Nijgadh) is one of the shortest road links between the Capital city Kathmandu and Central and Eastern Terai (Kathmandu-Nijgadh) through its rugged mountainous terrain. The Expressway consists of a dual carriageway with a double lane designed with a Flexible Pavement Design having a design life of 20 years. It also consists of 87 bridges with a total length of 10,596m. This Expressway includes 3 Twin Tube Tunnels of a total length of 6.415 Km. The overall 72.5 Km road stretches from starting point Km 0.0 of Khokana (Lalitpur) to endpoint Km 72.50 of Nijgadh (Bara District) interconnecting Kathmandu with the East-West Highway.

1. Name of the Assignment undertaken by SS Consult: Field Survey, Detailed Study and Geotechnical Investigation at Dhedre and Lendada Tunnel, Bridge and Subgrade / Road Slope Stability at Kathmandu- Terai/Madhesh Fast Track (Expressway) Road Project, Makwanpur District

Client: Poly Changda Engineering Co. Ltd, China
Date of Agreement: 7th July 2021
Date of Completion: 31st December 2021
Contract Value: Nrs. 53,714,812.16 (including VAT)

The main purpose of the field survey works is to develop a survey map of the area, preparation of meteorological datasheet, identify the hydrological and hydraulic condition of the river at proposed bridge sites, investigate probable seismic hazard of the proposed bridge, and geotechnical investigation of Dhedre and Lendada Tunnel, Bridges and 1016.5m Subgrade is to investigate the subsurface geological conditions, presence of groundwater, the thickness of rock bands, depth of overburden, etc. The geotechnical investigation for Dhedre and Lendada (2-Twin) Tunnels, Bridge, and Subgrade / Road Slope Stability comprises of 7 boreholes. The maximum depth of geotechnical exploration is 377m.

Description of Actual Services Provided in the Assignment:

A. Preparation of Survey Map including

- 1:2000 Scale Topographic Survey Map along Tunnel line – 3.2 km²
- 1:500 Scale Survey for tunnel portal area densification – 0.16 km²
- 1:500 Scale Topographic Survey and Map of bridge pier and abutment – 0.2 km²
- Forth-grade Control Points survey layout – 10 Nos
- First-grade Control Points layout – 10 Nos
- Profile Survey – 4.65 km
- Cross-Sectional Survey – 500 Sections
- Riverbed Section Survey – 5.5 km

B. Meteorological Survey

- Annual Rainfall Study, Wind Speed Study, Temperature Study

C. Hydrological, Hydraulics and Scour Survey

- Study of Catchment Characteristics
- Design Flood
- Sediment Yield
- Hydraulic Simulation
- Hydraulic Design
- Scour Calculation
- River Protection

D. Seismic Hazard Assessment of Bridge and Project Area

- Seismo Tectonic Data Analysis
- PSHA Model and Analysis
- Design Response Spectra Analysis

E. Geological Mapping of Area including RMR & Q calculation for Tunnel 1:2000 Scale -3.2 km²

F. Geotechnical Investigation (drilling works and laboratory tests) is to investigate the subsurface geological conditions, water pressure (Lugeon Test for permeability), presence of groundwater, the thickness of rock bands, depth of overburden, etc.

The detail of drilling and testing works is listed below:

S. N.	Hole ID	Coordinates		Reduced Level, m	Drilled Depth, m	Remarks
		X, m	Y, m			
1	DT-1	3037733	620089	996.5	36.0	Dhedre Tunnel Inlet
2	DT-2	3037228	619667	1307.3	370.0	Dhedre Tunnel Mid
3	DT-3	3036512	619053	961.5	51.0	Dhedre Tunnel Outlet
4	LT-1	3035401	618721	937.7	50.0	Lendada Tunnel Inlet
5	LT-2	3035140	618661	996.2	80.0	Lendada Tunnel Kholsa
6	LT-3	3034603	618594	1240.0	377.0	Lendada Tunnel Mid
7	LT-4	3033897	618577	906.3	65.0	Lendada Tunnel Outlet
Total Drill Depth, m					1029.00	

G. Insitu Test SPT, DCPT, Lugeon (Packer) Test

H. Laboratory Testing works include;

For Soil

- Moisture Content
- Specific Gravity
- Sieve Analysis
- Atterberg Limits
- Consolidation Test
- Direct Shear Test
- Swelling Test
- Density

For Rock

- Dry Density
- Specific Gravity
- Porosity
- Water Absorption
- Slake Durability
- Point Load Test
- Brazillian Test
- Uniaxial Compressive Strength
- Modulus of Elasticity and Poisson's Ratio
- Triaxial Compression Test
- Direct Shear Test of Jointed Rock
- Petrographic Analysis
- Basic Chemical Analysis of rock and Water sample

I. Preparation of all necessary reports, drawings, and their timely submission

2. Name of the Assignment undertaken by SS Consult: Field Survey, Detail Study and Geotechnical Investigation at 35# - 39# Bridge and Subgrade / Road Slope Stability at Kathmandu- Terai/Madhesh Fast Track (Expressway) Road Project, Makwanpur District

Client: Poly Changda Engineering Co. Ltd, China
Date of Agreement: 22nd June 2021
Date of Completion: 12th December 2021
Contract Value: Nrs. 39,154,845.00 (including VAT)

The main purpose of the field survey works is to develop a survey map of the area, preparation of meteorological datasheet, identify the hydrological and hydraulic condition of the river at proposed bridge sites, investigate probable seismic hazard of the proposed bridge and geotechnical investigation of 35# -39# Bridges and 1016.5m Subgrade is to investigate the subsurface geological conditions, presence of groundwater, the thickness of rock bands, depth of overburden, etc. The geotechnical investigation for the 35# - 39# bridge, the height of 72m from the riverbed, comprises of Soil Investigation of 30 Boreholes. The geotechnical investigation for 1016.5m of subgrade (road slope) comprises of Soil Investigation of 35 Boreholes. The maximum depth of drilling for slope analysis is 77 m.

Description of Actual Services Provided in the Assignment:

- A. Seismic Hazard Assessment of Bridge and Project Area
 - 4 Nos of Downhole Test for Vs30
- B. 2 Nos of Microtremor Array Measurement (MAM) for shear wave velocity at tunnel up to 400m depth
- C. Geotechnical Investigation (drilling works and laboratory tests) is to investigate the subsurface geological conditions, water pressure (Lugeon Test for permeability), presence of groundwater, the thickness of rock bands, depth of overburden, etc.

The detail of drilling and testing works is listed below:

S. N.	Hole ID	Coordinates		Reduced <i>Level, m</i>	Drilled <i>Depth, m</i>	Remarks
		<i>X, m</i>	<i>Y, m</i>			
1	WF-01	3037755	620116	979.0	16.5	Road Slope/Subgrade
2	WF-02	3037760	620172	983.1	20.5	Road Slope/Subgrade
3	WF-03	3037696	620155	1033.7	63.0	Road Slope/Subgrade
4	WF-04	3036474	619074	963.2	36.0	Road Slope/Subgrade
5	WF-05	3036527	619037	949.5	30.0	Road Slope/Subgrade
6	WF-06	3036258	618871	940.7	25.0	Road Slope/Subgrade
7	WF-07	3036148	618845	946.5	24.5	Road Slope/Subgrade
8	WF-08	3036153	618821	947.8	42.0	Road Slope/Subgrade
9	WF-09	3036065	618790	980.5	77.0	Road Slope/Subgrade
10	WF-10	3036078	618817	966.1	43.0	Road Slope/Subgrade
11	WF-11	3035968	618798	959.6	47.5	Road Slope/Subgrade
12	WF-12	3035859	618784	936.5	27.0	Road Slope/Subgrade
13	WF-13	3036106	618869	932.3	20.0	Road Slope/Subgrade
14	WF-14	3035983	618841	923.7	16.0	Road Slope/Subgrade
15	WF-15	3035931	618834	922.6	16.0	Road Slope/Subgrade
16	WF-16	3035515	618737	917.9	20.0	Road Slope/Subgrade
17	WF-17	3035460	618730	930.8	33.0	Road Slope/Subgrade
18	WF-18	3035455	618752	934.2	32.0	Road Slope/Subgrade
19	WF-19	3035412	618775	940.4	46.0	Road Slope/Subgrade
20	WF-20	3033887	618528	894.9	43.0	Road Slope/Subgrade
21	WF-21	3033918	618602	891.8	31.0	Road Slope/Subgrade
22	WF-22	3033791	618597	886.9	20.0	Road Slope/Subgrade
23	WF-23	3033754	618610	893.5	50.5	Road Slope/Subgrade
24	WF-24	3033764	618644	892.3	28.0	Road Slope/Subgrade
25	WF-25	3033728	618669	886.7	38.0	Road Slope/Subgrade
26	WF-26	3033740	618685	879.4	39.0	Road Slope/Subgrade
27	DP-01	3036302	618891	923.4	12.0	Road Slope/Subgrade
28	DP-02	3035785	618765	908.8	12.0	Road Slope/Subgrade
29	DP-03	3035789	618745	900.7	12.0	Road Slope/Subgrade
30	DP-07	3036033	618845	916.0	20.0	Road Slope/Subgrade
31	DP-08	3036025	618856	903.4	20.0	Road Slope/Subgrade

32	DP-09	3035879	618817	912.2	20.0	Road Slope/Subgrade
33	DP-10	3035826	618814	910.5	12.0	Road Slope/Subgrade
34	DP-11	3035821	618832	893.9	12.0	Road Slope/Subgrade
35	DP-12	3033851	618573	855.4	12.0	Road Slope/Subgrade
36	BR35P1	3036412	619006	889.5	42.0	Bridge 35
37	BR35P1(N)	3036435	619025	910.0	35.0	Bridge 35
38	BR35P2	3036317	618942	895.7	28.0	Bridge 35
39	BR35P3	3036374	618989	862.2	27.0	Bridge 35
40	BR35P4	3036335	618967	893.2	33.0	Bridge 35
41	BR35P6	3036272	618937	887.2	27.0	Bridge 35
42	BR35P7	3036239	618919	905.2	27.0	Bridge 35
43	BR35P8	3036214	618908	893.3	30.0	Bridge 35
44	BR35A2	3036166	618892	916.2	27.0	Bridge 35
45	BR36P1	3036466	618987	885.3	43.0	Bridge 36
46	BR36P1(N)	3036475	618996	885.2	37.0	Bridge 36
47	BR36P2	3036385	618928	897.5	37.0	Bridge 36
48	BR36P3	3036417	618960	885.1	27.0	Bridge 36
49	BR36P5	3036351	618920	903.3	35.0	Bridge 36
50	BR36P6	3036317	618904	918.1	32.0	Bridge 36
51	BR36A2	3036278	618889	926.3	33.0	Bridge 36
52	BR37A1	3035799	618798	905.6	27.0	Bridge 37
53	BR37P1	3035727	618777	874.9	50.0	Bridge 37
54	BR37P2	3035603	618758	833.8	55.0	Bridge 37
55	BR37P2(N)	3035751	618786	885.6	30.0	Bridge 37
56	BR37P3	3035720	618778	870.9	30.0	Bridge 37
57	BR37P4	3035678	618772	841.4	33.0	Bridge 37
58	BR37P6	3035555	618752	880.0	33.0	Bridge 37
59	BR38A1	3035598	618716	907.9	35.0	Bridge 38
60	BR38A1(N)	3035782	618756	904.6	27.0	Bridge 38
61	BR38P1	3035786	618760	851.4	42.0	Bridge 38
62	BR38P1(N)	3035759	618752	889.3	27.0	Bridge 38
63	BR38P2	3035718	618739	836.0	45.0	Bridge 38
64	BR38P3(1)	3035686	618735	831.9	32.0	Bridge 38
65	BR38A2	3035534	618703	901.6	35.0	Bridge 38
Total Drill Depth, m					2037.5	

D. Insitu test- SPT, DCPT, and Lugeon (Packer) test

E. Laboratory Testing works include;

For Soil

- Moisture Content
- Specific Gravity
- Sieve Analysis
- Atterberg Limits
- Consolidation Test
- Direct Shear Test
- Swelling Test
- Density

For Rock

- Dry Density
- Specific Gravity
- Porosity
- Water Absorption
- Slake Durability
- Point Load Test
- Brazillian Test
- Uniaxial Compressive Strength
- Modulus of Elasticity and Poisson's Ratio
- Triaxial Compression Test
- Direct Shear Test of Jointed Rock
- Petrographic Analysis
- Basic Chemical Analysis of rock and Water sample

For Subgrade and Construction Material

- Sieve Analysis
- Maximum Dry Density and Optimum Moisture Content (Proctor Test)
- California Bearing Test (CBR)
- Cohesion and Friction Angle, etc.

F. Preparation of all necessary reports, drawings, and their timely submission

3. Name of the Assignment undertaken by SS Consult:

- i. Basic Works for Road Furniture and Markings
- ii. Basic Design Works for Tunnel Management Office

Client: Beijing Jiaorong International Engineering Consultants Co., Ltd, China

Date of Agreement: October 2021

Date of Completion: December 2021

Contract Value: Nrs. 1,050,000.00 (excluding VAT and all other applicable taxes)

Description of Actual Services Provided in the Assignment:

A. Basic Works for Road Furniture and Markings

- Complete Review of the Detailed Project Report (DPR)
- Review of Nepal Standard, Traffic Sign Manual, Road Safety Manual, etc.
- Preparation of New Traffic Signs to support expressway and tunnel based on IRC, Asian Highway Standard, and others
- Design of tunnel sign standard and additional sign to be put on tunnel
- Locate all traffic signs exactly and prepare their drawings in Autocad
- Road marking, drawing on Autocad including lane marking, edge marking, tunnel marking, hazard line marking, and others
- Proposing of Gantry in front of the tunnel with all possible signs
- Locate the exact position of the sign, and all other things
- Locate the position of Chevron sign based on curve
- Installation of safety barrier along the road at the critical section
- Preparation of construction drawing especially of all the traffic signs on either side,
- Chainage wise detail of all road furniture and plotted on Autocad drawing\
- Preparation of necessary reports and timely submission, etc.

B. Basic Design Works for Tunnel Management Office

- Review of documents, assessment of design requirements
- Preparation of Inception Report
- Area Formulation
- Preparation of Preliminary Design
- Preliminary assessment of structural design requirements and site visit
- Preliminary assessment of existing transmission lines, connected demand and electrical design requirements, and site visit
- Preliminary assessment of HVAC/MEP design requirements of the tunnel and electrical loads for sub-station and site visit
- Preliminary assessment of MEP design requirements and site visit
- Auto CAD drafting and preparation of drawings.

PAST EXPERIENCES OF SS CONSULT

GEOTECHNICAL AND OTHER INVESTIGATION

S.No.	Name of the Project / Assignment	Client
1.	Exploratory Drilling and Piezometer Installation at Landslides	Department of Roads
2.	Geotechnical Investigation Works at Araniko Highway Road Project a. Km 74+300 to a depth of 100m. (vertical) b. Km 83+700 to a depth of 100m. (vertical) c. Km 89+700 to a depth of 80m (inclined) (150 from vertical axis) d. Landslide Stabilization and Foundation of Structures Investigations • Landslide exploratory drilling at two landslides consisting of four boreholes (90m) • Piezometer installation (75m) • Material Testing of Samples	Swiss Development Corporation (SDC)
3,	Kodku Water Supply Project	Provincial Waterworks Authority (PWA), Thailand
4,	Kathmandu Valley Urban Road Development Project Site Investigation	Japan International operation Agency (JICA)
5,	Kathmandu Valley Bridge Reconstruction Project	JICA
6,	Arjun Khola Irrigation Project, Dang district	Agroprogress Keinbaum Intl. GmbH, West Germany
7,	Terminal Building Site Investigation of New Tribhuvan Intl. Airport Project	Acres Norr Lea Consortium, Canada
8,	Site Investigation of Dead Burnt Magnesite Plant	Nepal Orind Magnesite
9,	Earth Satellite Station, Balambu, Kathmandu	Crown Agents, London
10,	Bharatpur-Pokhara Transmission Line, Bharatpur, Chitwan district to Pokhara, Kaski district	Tribeni Structure Ltd.

Bridge Site Exploratory Drilling & Investigation

1.	Bridge Site at Kaligandaki river (6x45m) (Pokhara-Baglung Road Project)	China Highway Technical Team
2.	Phushre Khola bridge site (1x80m) Dovilla, Pokhara	FINNIDA/FINNEP, KTM
3.	Madi Khola Bridge Site Pyuthan (3x45m)	HMG / Department of Roads
4.	Baya Khola Bridge Site (4x45m)	HMG / Department of Roads
5.	Jamuni River Bridge Site (4x50m)	Farm Irrigation Project (HMG)
6.	Ridi Khola Bridge Site (6x25m)	Department of Roads
7.	Melamchi Bridge Site (3x25m)	Department of Roads
8.	Badigad River Bridge (3x25m) Ridi - Wametukshar road, Gulmi	Department of Roads
9.	Bangari River Bridge Birgunj-Kalaiya road (3x45m)	HMG / Department of Roads
10.	Dudhaura River Bridge (4x40m)	HMG / Department of Roads
11.	Bishnumati River Bridge Hattigauda - Tokha road (3x25m)	HMG / Department of Roads
12.	Saptakoshi River Bridge Chatara - Bhojpur road (2x60m)	HMG / Department of Roads
13.	Gauri river Bridge Dharan - Chatara - Bhojpur road (2x25m)	HMG / Department of Roads
14.	Khahare Khola Bridge	HMG / Department of Roads
15.	Sunsari River Bridge Balchandpur - Laxminiya road (4x25m)	HMG / Department of Roads
16.	Buldi Khola Bridge Damauli - Bhadgaon road (4x25m)	HMG / Department of Roads

17.	Chundi Khola Bridge Chundi - Bagiraha road (3x25m)	HMG / Department of Roads
18.	Chameliya Bridge site	Chameliya Hydroelectric Project Nepal Electricity Authority
19.	Raxaul Bridge Site Investigation and Testing	IRCON (India Railway Construction Co. Ltd)
20.	Site Investigation of Murti & Jamuar Bridge Site	Department of Roads / Lumbini zone off
21.	Site Investigation of Shankhamul Bridge, Bagmati River at Shankhamul, Kathmandu	Department of Roads
22.	Bridge Site Investigation at Khatripauwa	IRCON (India Railway Construction Co. Ltd)
Foundation Investigation		
1.	Suiya River Bridge Bahauda road Banke, district. (4x25m)	Department of Roads
2.	Shinghiya River Bridge Ghinaghat, Biragnagar (4x25m)	Department of Roads
3.	Budhjhora River Bridge Bhadrapur Kechana road, Jhapa district. (3x25m)	Department of Roads
4.	Lohandra River Bridge Laxminiya, Morang district (3x25m)	Department of Roads
5.	Srisiya River Bridge, Parsa, district (3x30m)	Department of Roads
Dam Site Investigation		
1.	Jamuni River Dam Site, Siraha Exploratory drilling, packer test, geological investigation, etc.	Nepal Electricity Authority
2.	Kodku Dam Site, Kodku Exploratory drilling, packer test, geological investigation, etc.	Govt. of Thailand
3.	Khorange Khola small hydropower project, feasibility study	Private

Other Investigation

1.	Three Star Hotel Site, Chhauni, Kathmandu	TAEC Consult
2.	Marsyangdi Hydro- Electric Project, Kathmandu	TAISEI-China International Water and Electric Corporation J/V
3.	Fire Damages Assessment at Marsyangdi Tunnel Site Hydro- Electric	TAISEI-China International Water and Electric Corporation J/V

PAVEMENT INVESTIGATION

S.No.	Name of the Project / Assignment	Client
1,	Araniko Highway Maintenance Project Geotechnical Investigation for Road Rehabilitation (30 Km-57 Km) Dhulikhel-Dolalghat Sector	Araniko Highway Maintenance Project, SDC
a.	Pavement Condition Evaluation Consisting of: <ul style="list-style-type: none"> • Benkelman Beam Tests • CBR Tests • DCP Tests • Other Material Testing 	
b.	Quarry Investigation for Subbase, Base and Wearing Course Materials and Concrete Aggregates. Pavement Investigations	
2.	Preliminary Geotechnical/Pavement Investigations along Proposed Bishnumati Link Road	Asian Development Bank (ADB)
3.	Pavement Study along Arniko Highway (84 Km)	SDC
4.	Approach Road to Mineral Plant Site Bhusankhel, Kathmandu	Lasenco Ltd. Singapore
5.	Pavement Study of Airport	
	• Kathmandu International Airport	World Bank
	• Pokhara Airport	ADB

TRANSMISSION LINE TOWER FOUNDATION INVESTIGATION

S.No.	Name of the Project / Assignment	Client
1.	Atteriya-Dadheldhura Dipayal T/L	Nepal Electricity Authority
2.	Kohalpur-Guleriya 33Kv Electricity Transmission Line Electric	China International Water and Corporation, China
3.	Kohalpur-Nepalgunj 33Kv Electricity T/L	China International Water and Electric Corporation, China
4.	Shivpur-Krishnanagar 33Kv Electricity T/L	China International Water and Electric Corporation, China
5.	Lamahi Sub Station 33Kv Electricity T/L	China International Water and Electric Corporation, China
6.	Shivpur-Taulihawa Lumbini 33 Kv Electricity T/L	China International Water and Electric Corporation, China
7.	Butuwal-Lumbini 33 Kv Electricity T/L	China International Water and Electric Corporation, China
8.	Butuwal-Bhairahawa 33 Kv Electricity T/L	China International Water and Electric Corporation, China
9.	Kalaiya-Nijhgad Electricity T/L	China International Water and Electric Corporation, China
10.	Rajbiraj-Rupani-Lahan Electricity T/L	China International Water and Electric Corporation, China
11.	Jaleswor Sub-Station	China International Water and Electric Corporation, China

TRANSPORTATION

Road

S.No.	Name of the Project / Assignment	Client
1.	Road Network Study Covering 42 districts in three Western Development Regions of Nepal in Collaboration with APROSC	Department of Roads
2.	Detailed feasibility study of Ranke-Yasok-Rabi-Madhumalla road (22 Km.)	Department of Roads
3.	Alignment Survey and Design of : <ul style="list-style-type: none"> • Lauhaki-Chatara road (30 Km) • Dharan-Chatara road (15 Km) • Chatara-Bhantabari road (35 Km) 	Department of Roads
4.	Consultant Highway Engineer, Project preparation for Arniko Highway Maintenance Project (26km)	Swiss Development Corporation (SDC)
5.	Detail Engineering Survey & Design work of Sankhu - Phatkeswor - Melamchi - Nawalpur - Chautara road. (42km)	Department of Roads / NEPECON
6.	Resealing Training Contract of Charali - Ilam Road	ADB
7.	Feasibility (alignment) study of roads : <ul style="list-style-type: none"> • Lower Dhungeshwor - Upper Dhungeshwor Planning Branch Road in Dailekh district (25.8 m) • Dailekh Sadarmukam Rawalkot, Kusapani Road in Dailekh district (29 km) • Ranimatta - Jajarkot road in Dailekh district (35.8 km) • Narayan Khari Village Gitachaur road in Dailekh district (25 km) • Nayanbazar - Dakangol Takuri in Dang district (27 km) • Chaurjhari - Musikot in Rukum district (46.5 km) • Guleriya Ringroad in Bardiya district (39.5 km) 	Department of Roads
8.	Feasibility (alignment) study of roads : <ul style="list-style-type: none"> • Manthali - Sangutar - Okhaldhunga road at Planning Branch Okhaldhunga district (120 km) • Okhaldhunga - Lamidanda road at Okhaldhunga district (27 km) 	Department of Roads

Bridge Design and River Training Works

S.No.	Name of the Project / Assignment	Client
1.	Detailed Engineering Design of Jammuni river Barrage site	Farm Irrigation Project (HMG)
2.	Detailed Engineering Design of Pushre khola bridge, Dovilla, Pokhara (Span 40m) including	HMG, Department of Roads
3.	Bridge abutment design of bridge site of Budhi khola, Biratnagar-Dewan Gunj road	HMG, Department of Roads
4.	Detail Engineering Design of Susiya River Bridge Parsa, Birgunj including preparation of contract document and specification	HMG, Department of Roads
5.	Detail Engineering Design of Ridi khola bridge, Arghakhanchi district. Including preparation of contract document and specification	HMG, Department of Roads
6.	Detail Engineering Design of Budhjhora river bridge, Bhadrapur - Kechana road, Jhapa including preparation of contract document and specification	HMG, Department of Roads
7.	Detail Engineering Design of Ghinaghat bridge, Biratnagar Morang, including preparation of contract document and specification	HMG, Department of Roads
8.	Detailed Engineering Design & Construction Supervision of Ridi Khola	Grade, European Economic Commission (ECC)
9.	Detail Engineering Design of Lohandra River Bridge, Laxminiya, Biratnagar, Morang district including preparation of a contract document and specification	HMG, Department of Roads
10.	Detail Engineering Design of Suiya River Bridge Baghuda road Banke district, including preparation of contract document and specification	HMG, Department of Roads
11.	Detail Engineering Design of Singaha River Bridge (Span - 21m) at Birgunj - Kalaiya road	HMG, Department of Roads

12.	Detail Engineering Design of Bishnumati River Bridge (Hattigauda - Tokha road)	HMG, Department of Roads
13.	Detail Engineering Design of Gauri Khola River Bridge along Bhojpur - Chatara road	HMG, Department of Roads
14.	Detail Engineering Design of Sunsari River Bridge along Kalbanjar - Varauli VDC	HMG, Department of Roads
15.	Detail Engineering Design of Buldi River Bridge along Damauli - Bhadgaon road	HMG, Department of Roads
16.	Detail Engineering Design of Chundi River Bridge along Chundi Bagiraha road	HMG, Department of Roads
17.	Detailed Engineering Design of: <ul style="list-style-type: none"> • Keshaliya river bridge • Khado river bridge • Thalaha river bridge 	HMG, Department of Roads
18.	Detailed Engineering Design of Budhi- Rapti River Bridge along Tandi Sauraha road Bharatpur, Chitwan	HMG, Department of Roads
19.	Detailed Engineering Design of Jharahi River Bridge along Parasi road at Nawalparasi district	HMG, Department of Roads
20.	Detailed Engineering Design of Bhimad - Malebagar bridge	HMG, Department of Roads
21.	Detailed Engineering Design of Budhawa River Bridge along Malebagar - Dharapani road at Tanahu district	HMG, Department of Roads
22.	Detailed Engineering Design of Budhi Rapti River Bridge along Khairahani Ma Vi - Chainpur road at Chitwan district	HMG, Department of Roads
23.	Details Engineering Design of Bigahi River Bridge along Matihani-Tulsiyahai road at Mahottari/Dhanusha district	HMG, Department of Roads
24.	Detailed Engineering Design of Tarahari River Bridge along Pipariya - Bauhari road at Rautahat district	HMG, Department of Roads
25.	Feasibility study of Manahara River Bridge Barmakhel, Bhaktapur	HMG, Department of Roads
26.	Feasibility study and Soil Investigation of Saptakoshi River Bridge	HMG, Department of Roads
27.	Feasibility study of Bagmati bridge along Chobhar road in Kathmandu district	HMG, Department of Roads

28.	Feasibility study of Indrawati bridge at Sipaghat in Sindhupalchowk district	HMG, Department of Roads
29.	Feasibility study of Tengra bridge along Kalaiya-Maheshpur-Rajmarg road in Bara district	HMG, Department of Roads
30.	Feasibility study of bridges: <ul style="list-style-type: none"> • Kamal khola bridge along Dharampur - Panchaganchhi road in Jhapa district • Ramchandra khola bridge along Kohabara - Khajuraganchhi road in Jhapa district • Chandu khola bridge along Parajudi-Baluwathan-Dhamuna bazar Khajuraganchhi road in Jhapa district • Aduwa khola bridge along Birtamod – Biratpokhari road in Jhapa district 	HMG, Department of Roads
31.	Feasibility study of bridges: <ul style="list-style-type: none"> • Thakley VDC Hilepani Sokmatar bridge at Okhaldhunga district • Biruwaguthi VDC Bhadnihar - Puneet khola at Parsa district • Chiplete khola bridge at Chitwan district 	HMG, Department of Roads

WATER SUPPLY AND SANITATION

S.No.	Name of the Project / Assignment	Client
1.	Urban Water Supply and Sanitation Rehabilitation Project	Nepal Water Supply Corporation
2.	Stream Water Drainage in Improvement Work	KTM Municipal Corporation
3.	Bankable feasibility study of Melamchi Water Supply Project	Nepal Water Supply Corporation
4.	Fourth Water Supply and Sanitation Project	Dept. of Water supply and Sewerage

IRRIGATION

S.No.	Name of the Project / Assignment	Client
1.	Small And Medium Scale Hill Irrigation Project	Dept. of Irrigation Ministry of Water Resources
2.	Water resource utilization and potential study of Dhading district	GTZ, Kathmandu
3.	Imri-Hupi Danda khola, Kalikot, 18 sq. km (Detailed Engineering)	HMG, Department of Irrigation
4.	Ghugane to Danda khola, Kalikot, 18 sq. km (Detailed Engineering)	HMG, Department of Irrigation
5.	Pathala Chhara to Lot Dhara khola, Kalikot, 42 sq. km (Detailed Engineering)	HMG, Department of Irrigation
6.	Ghatte Khola to Made Gaon, 29 sq. km (Detailed Engineering)	HMG, Department of Irrigation
7.	Alitansen, 200 sq. km (Detailed Engineering)	HMG, Department of Irrigation
8.	Swarek, 220 sq. km (Detailed Engineering)	HMG, Department of Irrigation

BUILDING

S.No.	Name of the Project / Assignment	Client
1.	Horticulture Building Complex Site, Kirtipur, Kathmandu	Mitshui & Co. Japan
2.	Mineral Plant Site Bhusangkhel, Lalitpur	Lasenco Ltd. Singapore
3.	Science Education Project	SEP/KTM
4.	Nagarkot Hotel Complex Site Bhaktapur	Pacific Trading Circle
5.	Building Site Marco Polo Travels	SDB Brick Factory
6.	SDB Brick Factory Site, Chitwan	SDB Brick Factory
7.	Kathmandu Cement Paints	KCP, Kathmandu
8.	Proposed Building of Marco Polo Travels	SAKYA & SAKYA CORPORATE

HYDROLOGICAL STUDIES

S.No.	Name of the Project / Assignment	Client
1.	Hydrological study of Phusre Khola bridge construction	FINIDA
2.	Hydrological and Environmental Impact study of Kali Gandaki bridge	CECC
3.	Hydrological and Environmental Impact study of Saptakoshi bridge	Department of Roads
4.	Hydrological study of Gauri river bridge	Department of Roads
5.	Hydrological study of Kali Gandaki for bridge construction	China Highway Technical Team

ENVIRONMENT/SANITARY/PUBLIC HEALTH

S.No.	Name of the Project / Assignment	Client
1.	Environment Impact study	CECC
2.	Public Health/Sanitary Works/develop plan & design of storm water flow, Banepa Hospital area	TPH
3.	Sanitary/Environment Impact Study, Pavement design and supervision of Pokhara Airport	PAUW
4.	Environment Impact Study Saptakoshi Bridge Site	Department of Roads
5.	Environment Impact Study of Kathmnadu Naubise Alternate Road (25 km)	Nippon Koei
6.	Design of Screen House (Civil Engineering Part) and Construction Supervision of Screen House Construction at Khumaltar, for National Potato Development Programme Oct. 1991-Apr. 1992	SDC



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