LIST OF TABLES

Table No.	Title No.	Page No.
2.1	Litho-Stratigraphic Succession of Kumaun Himalayas	16-17
2.2	Litho-Tectonic Succession of Tawaghat - Jipti Route Corridor	30
4.1	Geometric Parameters of Mangti Landslide	84
4.2	Element Characteristics of the Mangti Landslide	87
4.3	Rock Mass Rating System (After Bieniawski 1989)	95
4.4	Rock Mass Rating (RMR) Classification of Mangti Landslide Region (Based on Beineawski, 1989)	96
4.5	Adjustment rating for joints	99
4.6	Adjustment rating for methods of excavation of slopes	99
4.7	Tentative description of SMR classes	99
4.8	Slope Mass Rating (SMR) Classification of Mangti Landslide Region (Based on Romana, 1993)	100-101
4.9	Rock Mass Rating (RMR) Classification of Tawaghat – Jipti Route Corridor (Based on Bieniawski, 1989)	105-106
4.10	Slope Mass Rating (SMR) Classification of Tawaghat - Jipti Route Corridor (Based on Romana, 1993)	106-110
5,1	Gradation & Size Characteristics of Colluvial Soil Sediments, (Disturbed/ Un-disturbed) Mangti Landslide	133
5.2	Soil Consistency and Permeability Parameters of Piezometer Pit's Samples, Mangti Landslide	134
5.3	Bulk Density, Dry Density & Moisture Content of Disturbed Soil Samples, Mangti Landslide	136
5.4	Proctor Density Test Results of Piezometer Pit Samples (Un-disturbed), Mangti Landslide	137
5.5	Box Shear Test Parameters of Piezometer Pit's Samples, Mangti Landslide	139

5.6	Density & Porosity Parameters of Biotite Gneiss, Mangti Landslide	142
5.7	Water Absorption Test Results, Mangti Landslide	142
5.8	Uni-axial Compressive Strength Parameters of Biotite Gneiss	144
5.9	Tri-axial Strength Parameters of Biotite Gneiss, Mangti Landslide	145
5.10	Tensile Strength (Brazilian Test) Parameters of Biotite Gneiss	146
5.11	Summary of Physico-Mechanical Properties of Biotite Gneiss, Mangti Landslide	147
6.1	Statistical Data on Rainfall Distribution Pattern and Observed Landslide Incidents: Mangti Landslide Environ	151
6.2	Landslide Incidences Along Tawaghat - Jipti Route Corridor	153
6.3	Rainfall - Landslide Incidences Correlation Tawaghat - Jipti Route Corridor	154
6.4	Predicted Earthquake Recurrence Intervals in Indo-Western Nepal Border Region	160
6.5	Scale of Earthquake Magnitude and Landslide Types	161
6.6	Observed Earthquake Events vis-à-vis Landslide Incidence and Rainfall	162
7.1A	Equations of Statics Satisfied	169
7. 1 B	Interslice Force Characteristics and Relationships	169
7.2	Adopted Material Properties in Slope Stability Analysis; Mangti Landslide	176
7.3	Estimated Factor of Safety Using Various Approaches Upper Level-Mangti Landslide	188
7.4	Estimated Factor of Safety Using Various Approaches Lower Level-Mangti Landslide	188

7.5	Estimated Factor of Safety from Various Analysis Techniques, Applying Reinforced Structural Elements for Upper and Lower Level-Mangti Landslide	197
8.1	Adopted SMR Classes For Various Litho-units Along TJRC	21
8.2	Landslide Distribution in Tawaghat – Jipti Route Corridor	222-22
8.3	Showing Derived Information Values of the Variables	23
8.4	Statistics of Landslides' Area and Incidences in the Study Area	23
8.5	Summary of Approaches to Potential Slope Stability Problems	238-24
8.6	Categorization of Biotechnical Slope protection & Erosion Control Measures	24
8.7	Scheme of Earth Retention Systems	24
8.8a	Dimensional Parameters for the Proposed Anchoring System to be Installed on Upper Level Mangti Landslide	24
8.8b	Dimensional Parameters for Anchors and Soil Nails to be Installed on Lower Level Mangti Landslide	24