संलग्नक संख्या–5

परियोजना का नाम :–

जनपद–देहरादून मसूरी स्थित श्री अमित राजेन्द्र कुमार गुप्ता की निजी वन भूमि स्थित श्रीनगर इस्टेट, कैम्पटी–चकराता रोड, निकट मसूरी इन्टरनेशनल स्कूल, मसूरी में 4118.90 वर्गमीटर भूखण्ड में से कुल 249.96 वर्गमीटर अर्थात 0.024996 है0भाग में प्रस्तावित आवासीय भवन निर्माण हेतु वन (सरंक्षण) अधिनियम, 1980 के अन्तर्गत पूर्वानुमति तथा उक्त से सम्बन्धित प्रत्यावर्तन की स्वीकृति का प्रस्ताव।

भू–वैज्ञानिक की आख्या

संलग्न

A R Gupta

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GEOLOGICAL APPRAISAL
OF PLOT OF
MR. AMIT RAJENDRA KUMAR GUPTA
FOR PROPOSED HOUSE
AT
SRINAGAR ESTATE, CHAKRATA ROAD,
MUSSOORIE

NOTARY
C. R. ARYA
Advocate
Mussoorie (Dehradun)
Regn.No.43(01)2004
04/01/14
GOVT. OF UTTARAKHAND

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GEOLOGICAL APPRAISAL

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INTRODUCTION

The Geological appraisal of the plot of Mr Amit Rajendra Kumar Gupta (Fig.1) forming part of Srinagar Estate, Chakrata Road, Mussoorie is being attempted here. The plot is located on a gentle sloping terrace which is bound by low terraces on all the side

2.0 CLIMATE:

The climate varies widely from extreme cold in winter to pleasant in summer season. The temperature also varies considerably between the day and night. The temperature goes down to freezing points in the winters and rises up to 32 ° C in summers. The average annual rainfall is around 2000mm.

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3.0 PHYSIOGRAPHY:

Topography of the region is, in general rugged and mountainous, having moderate to steep slopes. Drains are steep and narrow and are mostly seasonal. The low order drainage is dendritic in the area. The proposed area falls on a moderately sloping east – west aligned terrace located on a hill face having slope towards north.

4.0 REGIONAL GEOLOGY:

The regional geology of the area has been described by various workers out of which the work of Auden (1934) is still regarded to be authentic. Recently Validya (1980) gave a detailed account of leaser Himalaya of this region, whereas its seismicity had been discussed by Singh st. al. (1966). The region forms a part of the main Krol Belt. It comprises of Janusar-Blaini-Krol-Tal sequence folded in the form of major syncline (Known as Mussoorie syncline) and thrust over the Siwaliks in the south along the Krol thrust (Fig. 2). The thrust dips at the 28° to 35° due N 40°E to east. In this region Krol Thrust coincides with the Main Boundary Fault.

The regional stratigraphic succession of the rocks in the area is given in the table 1. The Chandpur slates represented by highly jointed phyllites and quartzites is thrust over the Siwaliks in the Rajpur region, while all other formations including the Nagthat stage, Blaini series and Krol series have normal conformable contacts.

As stated earlier, the Jaunsar-Blaini-Krol-Tal succession is folded as a major syncline, with its NW-SE trending fold axis passing through Batagad (30°27'-78°7') east of Mussoorie. This syncline is thrust over the Siwaliks and at places even on Doon gravels.The limbs of the Mussoorie syncline are also folded into local anticline and syncline with their axes often oblique to the main axis of the major fold. Such minor folds are prominent in the Krol D and E dolostones exposed in Banog block. The incompetent nature of the intercalated shales in the limestones has given rise to open or tight folding of varied nature. Few of these folds show overturning. In the north and west regions of this syncline the fold axes of minor folds are parallel to the axis of main syncline, whereas in the southern limb these are either oblique or normal. Considerable faulting within the Krol belt is also noted along with folding.

Table 1: Stratigraphic Succession of Rocks in the Mussoorie Region (Modified after Singh et. al. 1966)

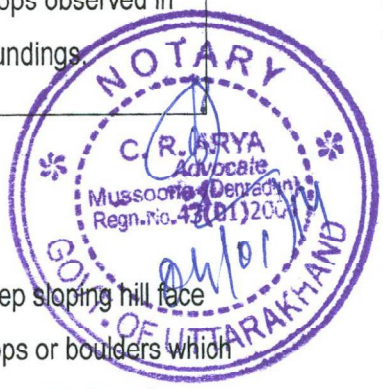
Age	Group	Formations
Recent		Gravels
Upper Pleistocene		Doon Gravels
Miocene-pliocene		Middle Siwalik: Unconsolidated sandstone and Sub-ordinate clay shales.
	Siwalik System	
Middle-Miocene		Lower Siwaliks Sandstone And dominant clay shales.
Triassic-creataceous	Tal Group	Upper Tals: Quartzites and siltstone Lower Tals: shales
		Krol E- Cherty Dolostone and shales.
		Krol D- Dolostone and shales
Permo-Carboniferous	Krol Group	Krol C-Bluish Black limestone, grey to white grey cryptocrystalline marble and limestone, calcareous siltstone and shales.
		Krol B-Purple shales.
		Krol A- Thin intercalations of clayey limestone and calcareous shales.
Upper-carboniferous	Blaini series	Infra Krols: staty-Shales Blaini Boulder Bed
Devonian		Naghat Stage: Quartzites
	Jaunsar Series	
Lower Paleozoic and Pre-Cambrian	Jaunsar Series	Chandpur Stage: Phyllites.

5.0 GEOLOGY OF THE AREA

The geology of the plot belonging to Mr. Amit Rajendra Kumar Gupta within the Srinagar Estate (Fig.3) is given in the table 2.

Table 2. Geology of the Area

Geological Age	Lithology	
Recent	Debris deposits	Boulders, pebbles, grit set in the matrix of calcareous sand silt and clay.
Permo Caboniferous	Krol Group	Krol limestone Scattered outcrops observed in the plot as well as in the surroundings.



Gently sloping terrace designated for the proposed house site is located on a steep sloping hill face aligned E-W (Fig 4). The slope is having scattered exposures of limestone outcrops or boulders which are set in the matrix of loose sediments consisting of dolomitic gravels and pebbles and the calcareous sand. The loose sediments are found all over the plot. Thickness of the loose deposits varies from 0.5 m to 1m, as evidenced through the open vertical exposures at places.

Dolomitic rocks of Krol -D member of Krol Group are found exposed at one place on the narrow terrace. The grayish, fine grained dolomitic rocks are hard massive and slightly weathered at the surface. These are found in isolated patches spread all over the surface in the surrounding.

6.0 Appraisal of Property:

The property of Mr. Amit Rajendra Kumar Gupta is located on a E-W trending wide terrace located on a northerly sloping hill face (Fig 4). The terrace deposits as described above are found overlying the Krol D deposits. The terrace is bound by road on the southern side and by moderate slope on northern side.

The area does not shows any sign of mass movement or even soil erosion, which indicates that the rocks are lying at very shallow depths. The segment designated for house is a nearly flat terrace having stable platform (Fig. 5).

The site falls on stable hill slope, where the bearing capacity is also high. Plot requires a proper drainage on the northern side.

7.0 SEISMICITY:

The site falls in the seismic zone V of as per the Indian Standard Code. Therefore, the area is always prone to earthquakes. The structure of the building has to be designed with extra safety factor, as per the seismic load of zone V.

8.0 RECOMMENDATION:

The site of Mr Amit Rajendra kumar Gupta is geologically stable and the proposed structure do not seems to have any threat from erosion, landslide or mass movement. It is recommended that proper drainage may be developed all around the plot.

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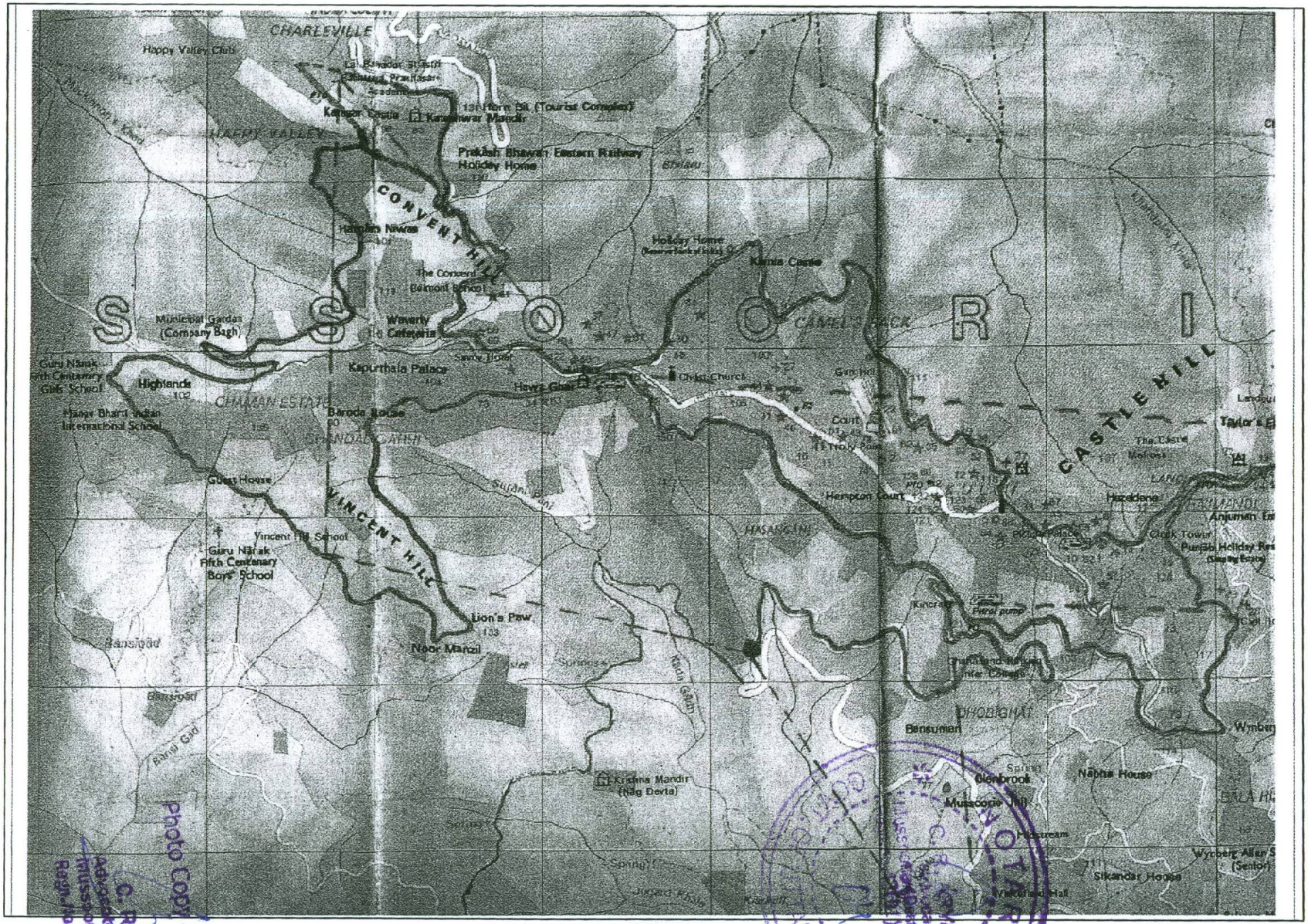

LOCATION MAP:
PRCPOSED RESIDENCE OF SHRI AMIT RAJENDRA KUMAR GUPTA
SITUATED AT SRINAGAR ESTATE,MUSSOORIE, CHAKRATA ROAD

FIG.1

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Regional Geological Map of Mussoorie

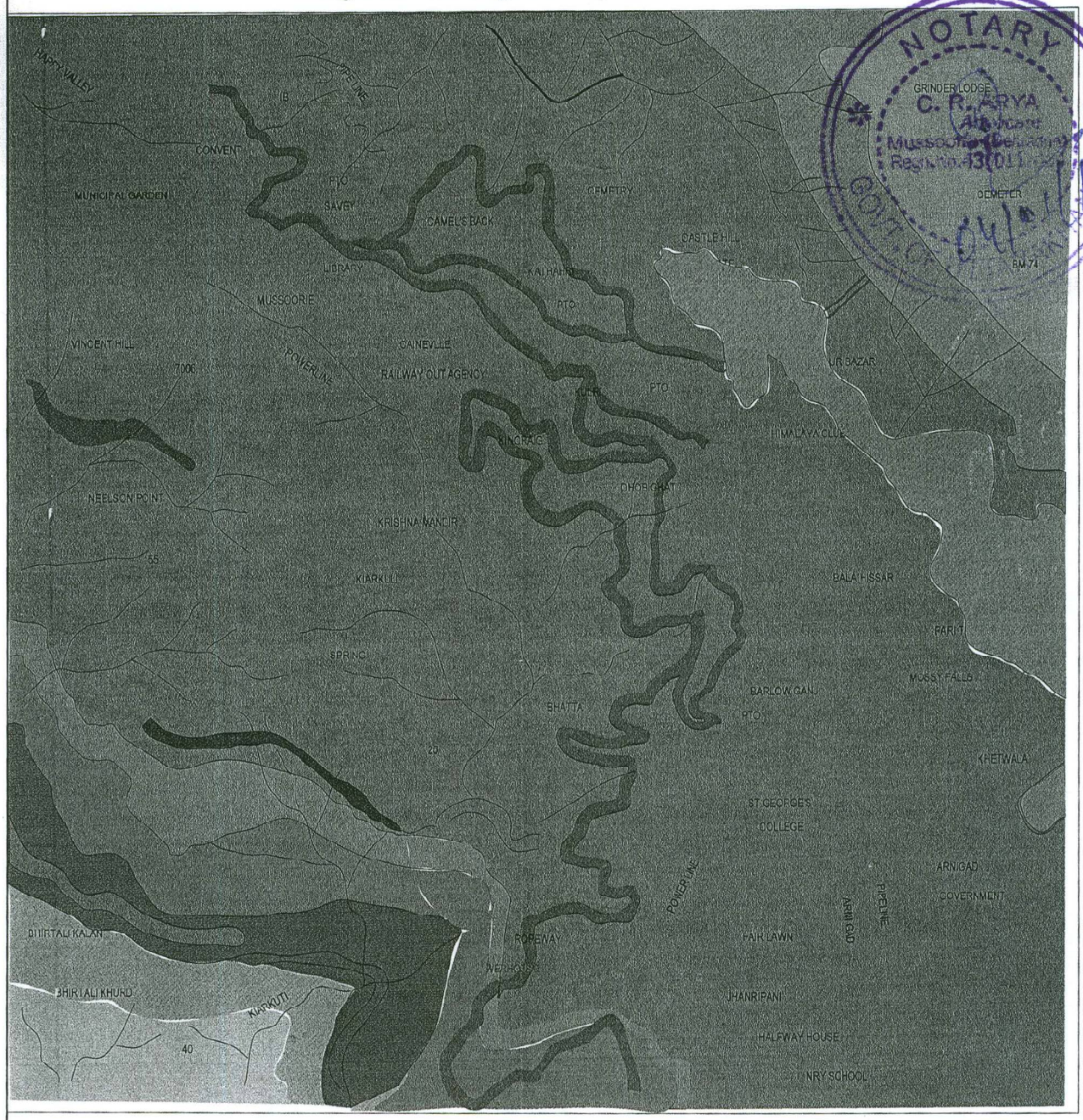

Fig.2

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GEOLOGICAL MAP:
PROPOSED RESIDENCE OF SHRI AMIT RAJENDRA KUMAR GUPTA
SITUATED AT SRINAGAR ESTATE,MUSSOORIE, CHAKRATA ROAD

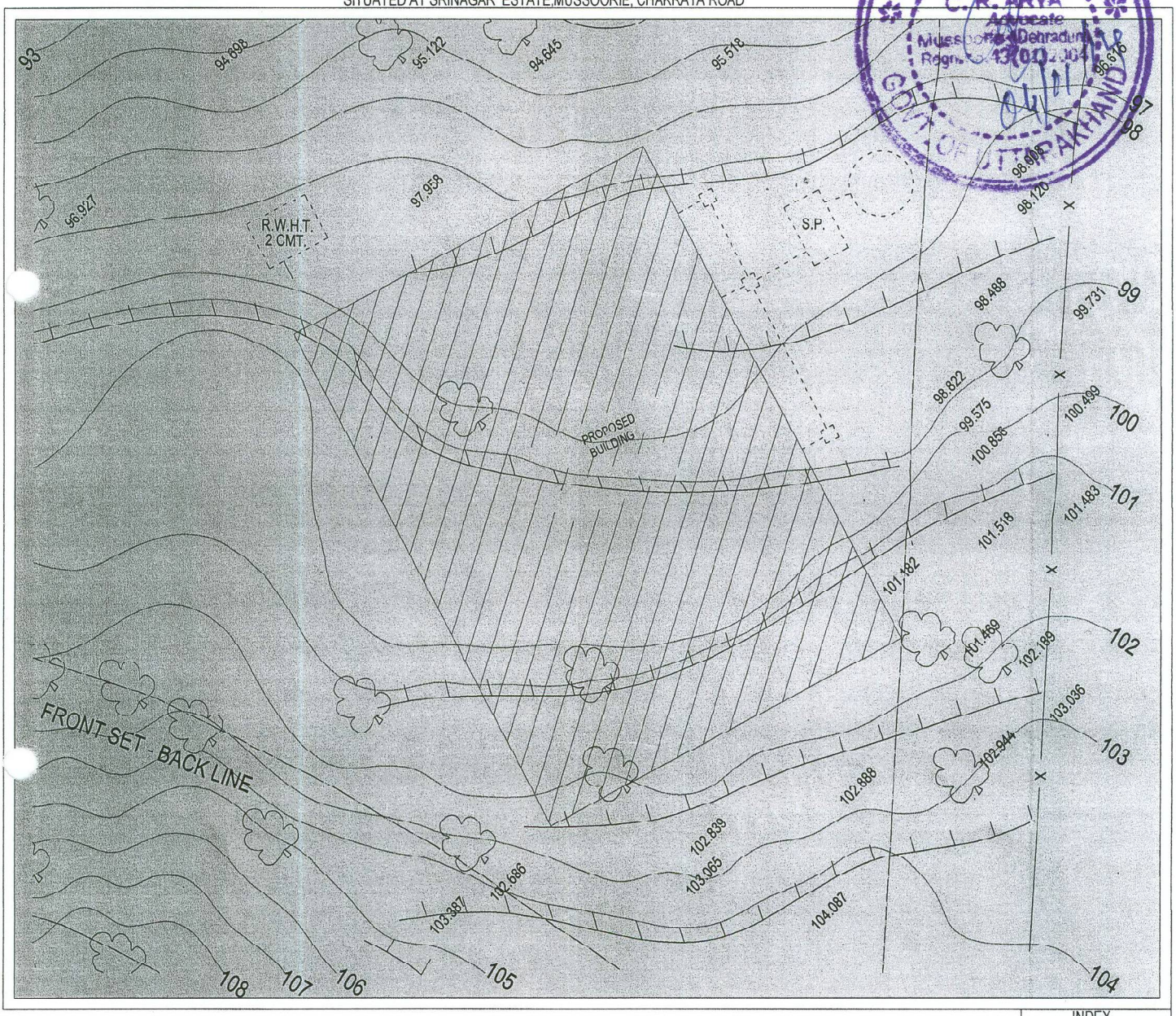

Fig.3

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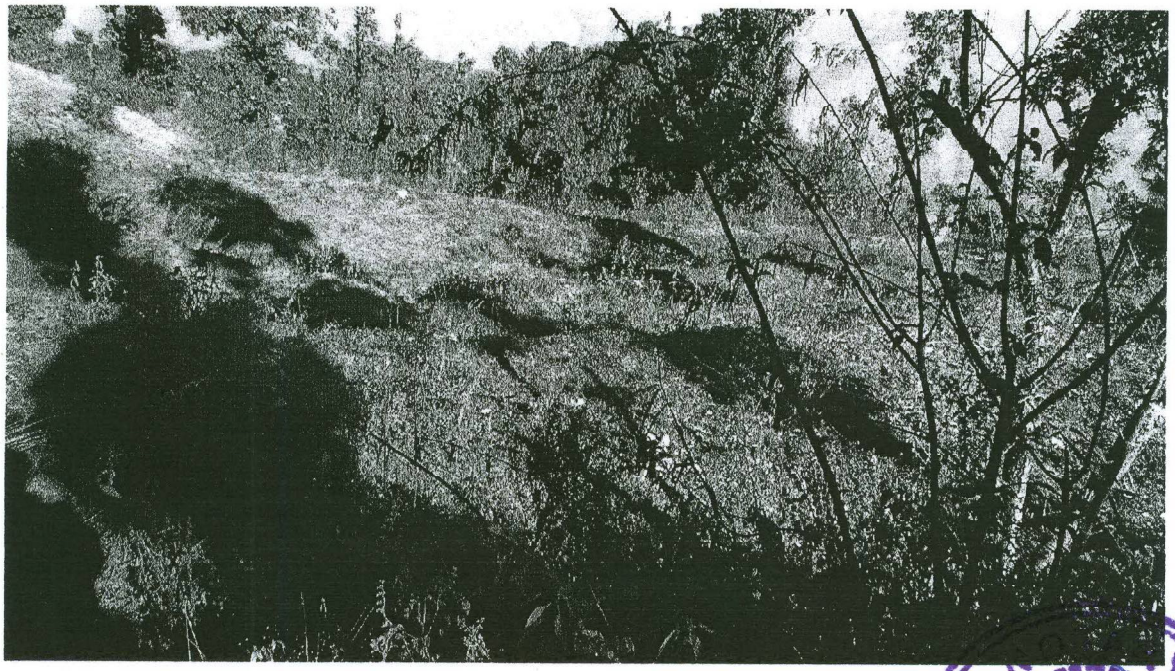

Fig.4. Terrace designated for proposed house falls on gentle sloping hill face.

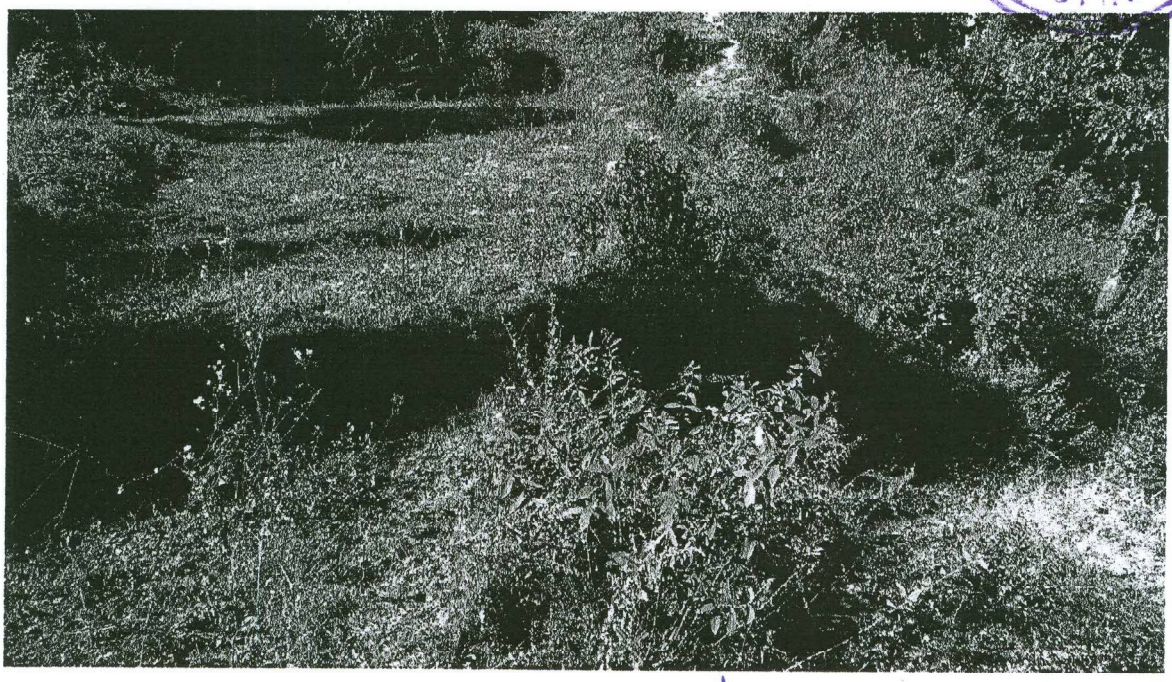

Fig.5 Terrace designated for house is flat.