Report S. No. 236/ODCH (Utk-Teh.-Bhatwari)/2013-14

RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI HARICHAND S/O SHRI KALAM SINGH FOR THE CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION HOUSING (ODCH) VILLAGE SAINZ, TOK-NALUNA, TEHSIL- BHATWARI- DISTRICT UTTARKASHI, UTTARAKHAND KHASARA NO – 1390 & AREA – 0.010 ha

Date of Inspection: 12/12/13

INTRODUCTION:

In a 'World Bank' funded programme, Government of Uttarakhand has consummate teams of undersigned for geological studies in proposed site for Owner Driven Construction House (ODCH) in disaster affected districts of Uttarakhand.

Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand has issued an office order No. 1612 Aa. Pra./Bhu.Ni./Bhu.Khani.E./2013-14 dated 10th December 2013 regarding geological studies in disaster affected five districts of Uttarakhand.

In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Shri Subodh Singh Rana, Revenue Sub-Inspector, Maneri for proposed site of Shri Harichand S/o Shri Kalam Singh, Village Maneri, Tehsil- Bhatwari, Khasara No- 1390, Area-0.010 ha. The site is 14km approximately from District Headquarter Uttarkashi, Uttarakhand and is 25m-30m approximately from the NH-108 (National Dharasu-Gangotri Highway). It falls on coordinate – N 30˚45.437' E 78˚32.782' elevation 4550 feet. The site is on the right bank of river Bhagirathi and the vertical height from the river Bhagirathi is approx 15 m in South direction. The site is less populated.

GEOMORPHOLOGICAL OBSERVATION OF THE AREA:

The proposed site is having an uphill slope of approx 55˚ in Southward direction and the downhill slope is 15-20˚ towards Southward direction. The overburden thickness is approximately 50-60 m and the site is covered with alluvial deposit and large fragments of quartzite are also seen. The land is consolidated around the proposed site. The vegetation is less around the site.

GEOLOGICAL OBSERVATION OF THE AREA:

Regional Geology

Uttarkashi valley exhibits characteristic rugged topography of the Lesser Himalayan terrain. The ground elevations generally vary between 1150m to 2000m above msl. The hill slopes in the area are generally observed to comprise of rocky outcrops, rocky cliffs and mantle of colluviums. The hill slopes in the area is generally moderately steep (25˚- 35˚) to steep (36˚-45˚) while few escarpments or cliffs (> 50˚) are also present.

Uttarkashi town is located in the Lesser Himalayan geotectonic block and it is bound by two major Thrust fault i.e. Main Central Thrust (MCT) and Srinagar Thrust (ST). The MCT can

be traced to the northeast of Uttarkashi while the Srinagar Thrust lies in the southwest. Phyllite, metabasic and quartzite of Garhwal Group are exposed around the area.

Geologically, the area falls in the region of rocks of Netala Formation of Lesser Himalayan terrain. Quartzite with bands of limestone, phyllite and slate is fine grained, compact, massive in general, but jointed and fractured at places. The slope of the hill ranges between 25˚-30˚ towards eastern direction. At few places insitu rocks are exposed in the plot whereas maximum plot area is covered with overburden. This overburden material comprising soil, hillwash and debris of varying size consisting of brown colored, fine to medium grained silty to gravely matrix with angular fragments of dolomitic limestone and a few brown fine grained shale etc., in which percentage of the angular fragments is more than the matrix. The major joint trends 240˚/30˚ NW (Oblique to foliation plane) whereas minor joint trends 265˚/40˚ NW.

Geology of Site

In the proposed site in-situ rocks are not found. The site is stable with consolidated landmass.

GEOTECHNICAL OBSERVATION OF THE AREA:

According to the discussions with the local villagers, no landslide is seen around the proposed site within 25 years. At the proposed site the soil is alluvial type and there is cultivated land at the uphill side. There is no plot boundary and there are few newly constructed houses and hotels around the site within the last 5 years.

A close view of the proposed site for construction

CONDITIONS AND RECOMMENDATIONS:

1. At the toe of the site a 5-6m retaining wall and at the uphill side of the site 2-3m retaining wall must be constructed with proper weep holes at regular intervals.
2. A sufficient gap of about 2-3ft must be kept between the backside wall of the house and the uphill retaining wall to avoid the seepage problem.
3. The foundation of the house should be kept on the in-situ rocks to secure the proposed site.
4. The back, sides and premises of the proposed house to be made cemented for preventing subsurface water seepage and proper drainage system to be developed for discharge of rain and household water.
5. Framed structure must be used as the area falls in the earthquake zone IV, and it is essential that the house must be constructed with latest earthquake resistive techniques.

CONCLUSION:

Prima-facie, the proposed site of Shri Harichand S/o Shri Kalam Singh is geologically feasible for construction of house, only if, the above mentioned recommendations will be followed strictly, otherwise, in its contravention; geological suitability will be deemed voided.

Anupriya

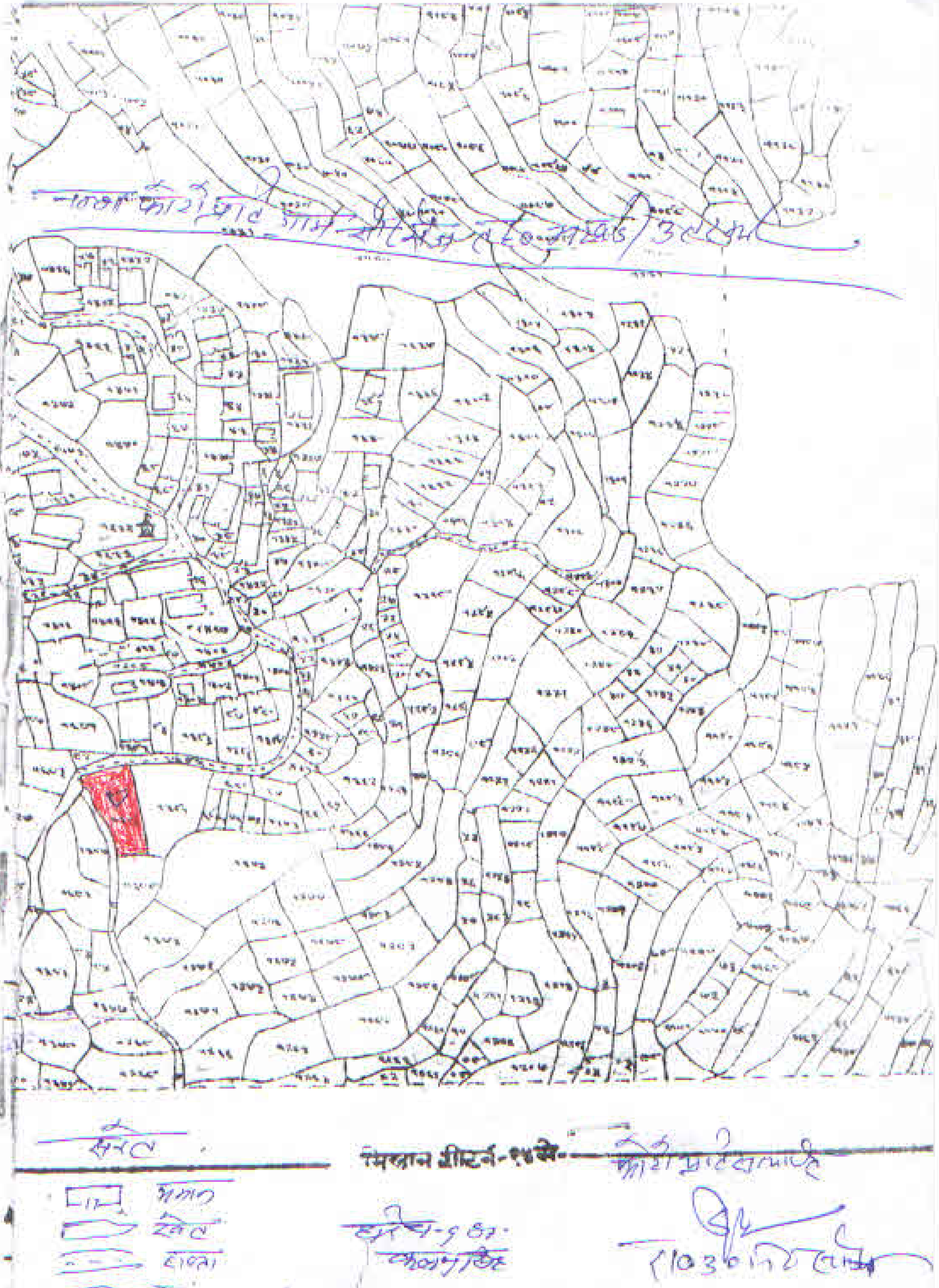
(Anupriya Shah)
Consultant Associate
Geologist

(Vijai Kr. Sen)
Consultant Geologist

Date:
Place:Uttarkashi

18/11/2013

(Dipender Singh Chand)
Assistant Geologist



सड़क

नक्सा शीट नं - १५ख

मकान

खेत

रास्ता

नहर

प्रस्तावित भूमि 1390/[illegible]

कोटी ग्राम [illegible]

[illegible]

बी० एस० राणा