KETKI CONSULTANCY ENGINEERING SERVICES

CIVIL ENGINEERING CONSULTANCY

MOB. NO. - 9234657427, 7004043636

Dated: 16/03/2019

1. Test conducted as per I.S. Code :- 3025
2. Name of Applicant:- Sarita Prasad.
3. Proposed to build :- G+4 Residential Apartment.
4. Khata No :- 0
5. Plot No :- 2157
6. Ward No :- 24
7. Thana No :- 209
8. Thana :- Ranchi
9. Date of Sample Received :- 25/02/2019
10. Date of Test Conducted :- 25/02/2019
11. Approximate B. Area :- 1331.98 sq. Mt.
12. Sample given :- By the Client
13. Type of Test :- Water test. Required for Residential building (G+4)
14. Village :- Hindpidi, Ranchi

This test will be required for Construction of Building.

Sl No	Parameter	Unit	Results
1	PH		7.4
2	Turbidity	NTU	<5
3	Colour	Hazen unit	<5
4	Total dissolved solid	Mg/l	287.0
5	Total Hardness (as CaCO3)	Mg/l	156.10
6	Alkalinity	Mg/l	147.33
7	Calcium (as Ca)	Mg/l	47.0
8	Magnesium (as Mg)	Mg/l	20.0
9	Nitrate (as SO4)	Mg/l	5.6
10	Chloride (as Cl)	Mg/l	85.0
11	Sulphate (as SO4)	Mg/l	45.0
12	Fluoride (as F)	Mg/l	Nil
13	Iron (as Fe)	Mg/l	Nil

Praveen Kumar
Environment Engineering Lab.
Ketki Consultancy Engineering Services
RANCHI (Jharkhand)

Seema Constructions and Developers

Deepak Kumar

Partner

A. Discharge: 3135.89 L/hr.
   a) Extraction allowed: -3135.89 L/hr.
   b) Maximum extraction: - 15679.45 L/day.
B. Physically water odorless & Colorless
C. Roof top rain water harvesting (to recharge the aquifer) details enclosed. Applicant of proposed building will have to utilize rainwater on roof top and from open space such as parking, pathway etc. through recharge pits & trenches.
D. I do hereby declare that the informing given hereinabove are true to the best of my knowledge and belief and based on the basis of engineering/ field tests. This is based on data collected. Certified that the test has been conducted at site.
E. Over all requirement of Water: - Approximate 10600.00 lit.
F. Requirement & store of over Head tank / Surge: - Approximate 10900.00 lit.
G. Number of flats: - 16 nos
H. Number of visitors: - 50 persons

Calculation of Discharged at Bore well

Bore

1.	Total depth of Bore well	: 551'
2.	Diameter of the well	: 8"
3.	Diameter of outlet Pipe	: 6"
4.	Details of pump (Type of Pump)	: 1.5 hp subm. Pump
5.	Static water level (Before starting pump)	: 60'BGL
6.	Pump started at	: 8.30 A.M.
7.	Discharge measured up to	: 9.30 A.M.
8.	Maximum draw –down as noticed at	: (After 9.30 A.M 180')
9.	Water level draws down	: (230'B.G.L.)
10.	Discharge	: 3135.89 L/hr

Calculation of discharge of bore well measured by taking volume Vs time method in account a container of 250 liters is taken and found that the container was filled in 287 Seconds.

Hence the rate of discharge can be calculated as follows:
$Q = 250/_{287} \times 60 = 0.87 \times 60 = 52.26 \times 60 = 3135.89$ L/hr

Extraction allowed: -3135.89 L/hr.
Maximum allowed: -15679.45 L/day.

Seema Constructions and Developers

Partner

Remarks

a) Since the bore wells are yielding water 3135.89 L/hr is providing at par sufficient/insufficient water for above-mentioned consumption.

b) Bore well is required: - Not more required
The rate of extraction will not exceed by 3135.89 l/hr and the extraction period will under no circumstances will exceed 3 hrs at a stretch limited to 15679.45 L/day. This will help in recharging the water bodies (Aquifer) falling under cone of depression.

c) The Site has D.W.S.D. water supply connection/Pipe line crossing through the plot will also cater the need of people of apartment which reduces the extraction of ground water.

d) Roof top harvesting of rainwater to recharge ground water on the plot must be restored to as per the design and plan for the same attached with this certificate.

e) Regarding the recharging the aquifer by rainwater proposed apartment has got approximate 332.99 sqm(App.) open roof area, which can retain annual rainwater of given magnitude area. Average annual rainfall of Ranchi is approx 1.4 mts (1400mm) As per ours calculation annual volume of water recharge approx total 466186.0L/year.

f) The construction of rainwater recharge pit including 4.5" – 6" dia drilling up to desired depth (Depth variable as per litho logy of area) in the recharge pit in the building premises to facilitate harvesting of rainwater to recharge ground water should be technically supervised by Engineer.

Seen and understand.

Signature of Applicant/ Attorney holder.

Date: - 16/03/2019

For Ketki Consultancy Engineering Services

Praveen Kumar

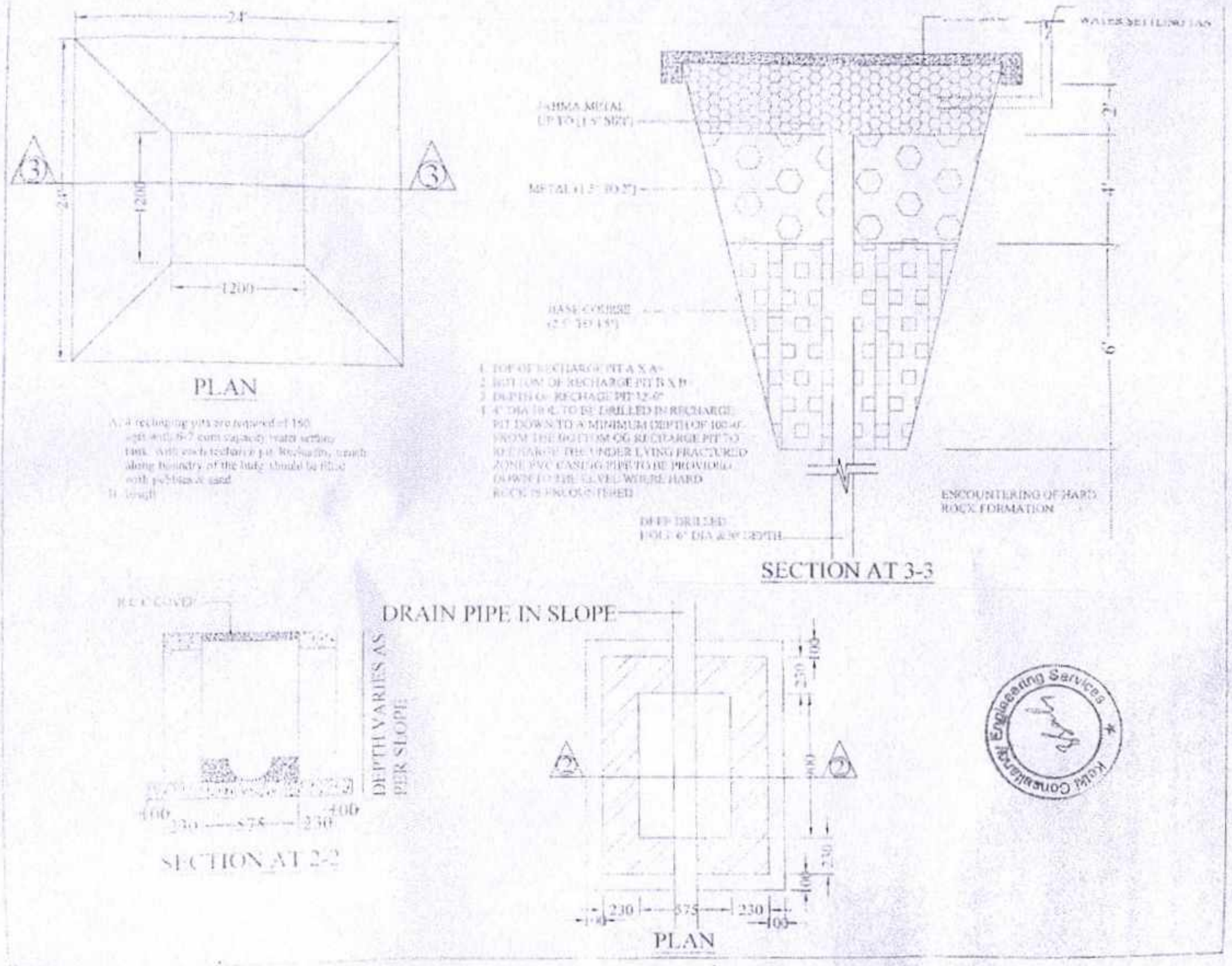
Place: - Ranchi

(Praveen Kumar)

Ketki Consultancy Engineering Services

Seema Constructions and Developers

Partner



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Partner