

U.P. STATE BRIDGE CORPORATION LTD

LUCKNOW

(संज्य सरकार का उपक्रम)



OFFICE OF GENERAL MANAGER (LUCKNOW)

VIBHUTI KHAND, GOMTI NAGAR,

LUCKNOW

EXPRESSION OF INTEREST FOR DESIGN & DRAWING OF FOLLOWING WORKS.

- 1- *Construction of 3 lane flyover on Guru Govind Singh Marg from HussainganjChauraha-BansmandiChauraha-Naka HindolaChauraha to DAV College in Distt-Lucknow.*
- 2- *Construction of 2 lane flyover on Vikram Cotton Mill Marg from CharakChauraha to HaiderganjChauraha-Charak crossing in Distt-Lucknow.*
- 3- *Construction of 2 lane flyover on TulsidasMarg from HaiderganjTiraha towards Meena Bakery in Distt-Lucknow.*
- 4- *Construction of Elevated Flyovers on Shaheed Path between Lucknow Airport foFaizabad Road in alignment of Shaheed Path and Lucknow Airport in Distt- Lucknow.*

GENERAL TERMS AND CONDITIONS

- 1. Sealed offers shall reach the office of undersigned uptill 3.00 PM of 14.08.2018.*
- 2. The consultant must be empanelment with UPSBC Ltd, Lko for Design of bridge structures.*
- 3. The design shall be based on IRC-112-2011 (based on Limit State Method in seismic Zone III) and other latest edition of IRC Codes, MORTH specification, other relevant codes, latest sound engineering practice and should be most economical.*
- 4. Soft and hard copies of all the vetted designs calculation and drawing including GAD etc shall be made available to UP State Bridge Corporation Ltd and shall be treated as property of UP State Bride Corporation Ltd.*
- 5. The undersigned reserves the right to reject/accept any or all tenders without assigning any reason thereof.*
- 6. Design shall be got proof checked by any IIT on the offered rates by the consultant. No separate payment shall be made on this account.*
- 7. Tenetative G.A.D., detailed survey (Soft Copy)& SSI report is enclosed herewith the E.O.I. documents.*
- 8. Representative of firm/consultant have to visit site if needed for the work. No extra payment will be given for site visit.*
- 9. Entire Stamp Duty for preparing the contract agreement shall be borne by the consultants/tenderer.*
- 10. In case of any dispute in respect of the design, the same shall be settled by the Chief Project Manager (Design) UP State Bridge Corporation Ltd, Lucknow whose decision in the matter will be final and binding on consultants/firm.*
- 11. Grade of concrete in all the components shall be decided by the designer.*
- 12. The rates offered by the consultant shall be all inclusive of site visits, accommodation & transportation etc complete except G.S.T.*
- 13. Design & drawings & foundation shall have to be submitted within 30 days, sub structure within 45 days and super structure within 60 days from the date of issue of acceptance letter.*
- 14. Agreement must be made within 3 days from the date of issue of letter of acceptance.*

Scope of Work

1. All design and drawing must be vetted by IIT.
2. Designing and providing structural drawings & calculation for construction of 4 flyovers including vetting from I.I.T. as per details mentioned in B.O.Q.
3. In case of arising of any necessity for redesigning of any component due to site conditions, it shall be provided by the consultant without any extra charge in lieu of the same.

General Manager (Lucknow)

SCHEDULE OF THE PAYMENT

1. Submission of inception report	-	5%
2. Submission of design and drawing of Foundation with proof checking	-	25%
3. Submission of design and drawing of Sub- structure with proof checking	-	20%
4. Submission of design and drawing of Super structure with proof checking	-	40%
5. Completion of all activities of project constructions.	-	10%

General Manager(Lucknow)

I have read all terms & condition & accept them.

Seal & Signature of Bidder

Name of Work: Design, Drawing & proof checking from I.I.T. of all components with G.A.D. of following Flyovers in Distt-Lucknow (U.P.)

B.O.Q.

Sl. No.	Particular of components	Quantity	Units	BASIC RATE Rs. P without GST
1.01	Design, drawing & proof checking from I.I.T. of foundation, sub-structure, super-structure & all components with GAD of flyover to be constructed between Guru Govind Singh Marg from HussainganjChauraha-BansmandiChauraha-Naka HindolaChauraha to DAV College in Distt-Lucknow (Length: 1656.00 M)	1.000	Job	
1.02	Design, drawing & proof checking from I.I.T. of foundation, sub-structure, super-structure & all components with GAD of flyover to be constructed between Vikram Cotton Mill Marg from CharakChauraha to HaiderganjChauraha-Charak crossing in Distt-Lucknow (Length: 2478.042 M)	1.000	Job	
1.03	Design, drawing & proof checking from I.I.T. of foundation, sub-structure, super-structure & all components with GAD of flyover to be constructed between TulsidasMarg from HaiderganjTiraha to Meena Bakery in Distt-Lucknow (Length: 908.765 M)	1.000	Job	
1.04	Design, drawing & proof checking from I.I.T. of foundation, sub-structure, super-structure & all components with GAD of flyover to be constructed between Lucknow Airport foFaizabad Road in alignment of Shaheed Path and Lucknow Airport in Distt- Lucknow. (Length: 1115.09 M towards Faizabad and 1082.426 M towards Airport)	1.000	Job	



RELIABLE TEST HOUSE

(I.S.O. 9001-2015)

Off. : L.G. 21, 37, 38, Goyal Plaza, Faizabad Road, Lucknow.

Lab. : H.N. 135, Ayush Vihar-2nd, Jankipuram Extension, Lucknow.

Email : reliabletesthouse@gmail.com

◆ Soil Investigation for Determination of Safe Bearing Capacity ◆ Testing of Constructional Material

RECOMMENDATION AND CONCLUSION

1. The strata in the effective zone below footing level is comprises of cohesive soil.
2. The depth of water table was observed about of 18.30m depth below existing ground level in the month of investigation.
3. The recommended value of allowable bearing capacity below existing ground level is tabulated below:

B.H. No.	Depth of Foundation (in m)	Width/size of Foundation (in m.)	Type of footing	Safe Bearing capacity	
				Kg/ cm ²	T / M ²
1CH.1720.00M near abutment A-2 and hotel lovely	3.0	10.0	R.C.C. Raft Footing	1.702	17.02
	4.0			1.862	18.62
	5.0			2.195	21.95
2 CH. 1040M near ch. P31-P32 and pravidhik shiksha parishad office	3.0	10.0	R.C.C. Raft Footing	1.769	17.69
	4.0			1.968	19.68
	5.0			2.276	22.76
3 CH. 310M Near abutment A-1 and hotel P.R. Palace	3.0	10.0	R.C.C. Raft Footing	1.634	16.34
	4.0			1.892	18.92
	5.0			2.161	21.61

4.0 The recommended value of safe load on pile below existing ground level is tabulated below:

Safe Load On Pile:-

B.H No.	Length pile (in M)	Dia of pile (in M)	Safe Load on Pile (in tone)
1	22.0	1.20	283.19
2	22.0	1.20	283.98
3	22.0	1.20	287.08

Final design diameter & length of pile etc. will depend on incoming loads and capacity of piles, as determine by load test at site.

Recommended for 16.24T/M² S.B.C. at a depth of 3.00m and 282.19T safe load on pile a depth 22.00M. for design considerations.

04/08/18

(कमल कुमार श्रीवास्तव)
उप परिचालन प्रबंधक
सेतु निर्माण इकाई-3
लखनऊ

34

Approved

6/10/18

सिद्धि प्रबंधक (सि.स.न.उ.)
उपग्रं राज्य सेतु निगम लि.
लखनऊ

For Reliable Test House

1/8/2018

RELIABLE TEST HOUSE
 MOB.: 9452804346, 9454652401

Project : Proposed construction of Three Lane Flyover at CH.1720.00M Near Abutment A-2 and Hotel Lovely on Guru Govind Singh Marg Lucknow District- Lucknow
 Bore Hole No. 01
 Depth of Bore Hole : 36.0 M.

LABORATORY TEST RESULTS

Depth of Water table : 18.50 M

S. No.	Depth of Bore Hole	Nature of soil Sample	% Passing on IS Sieve					Terberg's Limit			Particle Size Analysis					S.P.T. Value	IS Group Symbol	hatching	Natural Moisture Content %	Wat Density gm/cc	Dry Density gm/cc	Specific Gravity 'G'	Void ratio 'e'	Shear Parameter n 'C' in Kg/Secm. Level	Angle of Internal Friction	Compress ion Index Cc
			4.75 mm	2.00 mm	0.425 mm	0.075 mm	LL %	PL %	PI %	Gravel %	Sand %	Silt %	Clay %	0.50 m	F											
1	0.0-1.00	DS	-	Field	Up	Soil	-	Met	-	Up	To	-	-	-	9	CL		8.6	1.77	1.63	2.68	0.64	0.26	11	0.127	
2	1.50-1.85	UD	100	100	100	88	31	18	13	0	12	62	26	-	-	-	9.2	1.78	1.63	2.64	0.62	0.27	13	0.129		
3	1.85-2.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	
4	3.00-3.35	UD	100	100	100	90	33	19	14	0	10	63	27	-	-	-	9.5	1.78	1.63	2.66	0.63	0.2	15	0.121		
5	3.35-3.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	
6	4.50-4.85	UD	100	98	97	91	28	20	8	0	9	75	16	-	CL		9.7	1.74	1.59	2.61	0.64	0.19	16	0.119		
7	4.85-5.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	
8	6.00-6.35	UD	100	99	98	83	21	16	5	0	17	73	10	-	CLML		10.8	1.77	1.6	2.6	0.63	0.14	18	-		
9	6.35-6.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	
10	7.50-7.85	UD	100	98	97	85	23	17	6	0	15	73	12	-	CLML		11.7	1.78	1.59	2.61	0.64	0.18	17	-		
11	7.85-8.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	
12	9.00-9.35	UD	100	99	98	82	25	18	7	0	18	68	14	-	CLML		12.8	1.70	1.51	2.61	0.73	0.00	24	-		
13	9.35-9.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	
14	10.50-10.85	UD	100	100	100	72	19	16	2	0	28	69	3	-	ML		13.4	1.71	1.51	2.63	0.74	0.00	25	-		
15	10.85-11.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	
16	12.00-12.35	UD	100	100	100	71	20	17	3	0	29	66	5	-	ML		13.9	1.88	1.65	2.74	0.66	0.52	6	-		
17	12.35-12.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	
18	13.50-13.85	UD	100	98	97	95	44	23	21	0	5	53	42	-	CI		14.5	1.90	1.66	2.73	0.64	0.47	7	-		
19	13.85-14.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	
20	15.00-15.35	UD	100	99	98	96	40	22	18	0	4	60	36	-	CI		14.8	1.89	1.65	2.71	0.64	0.50	6	-		
21	15.35-15.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-	
22	16.50-16.85	UD	100	98	97	94	45	23	22	0	6	50	44	-	CI		15.7	1.93	1.67	2.72	0.63	0.45	7	-		
23	16.85-17.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	
24	18.00-18.35	UD	100	100	100	95	41	22	19	0	5	57	38	-	CI		23.2	2.05	1.66	2.7	0.63	0.54	8	-		
25	18.35-18.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-	-	
26	19.50-19.85	UD	100	100	100	97	39	23	16	0	3	65	32	-	CI		23.0	2.05	1.67	2.71	0.62	0.34	8	-		
27	19.85-20.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-	
28	21.00-21.35	UD	99	98	97	96	38	22	16	1	3	55	41	-	CI		-	-	-	-	-	-	-	-	-	
29	21.35-21.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	

25

30	22.50-22.85	UD	100	100	100	25	NON PLASTIC	0	75	25	0	-	SM	28.5	1.91	1.49	2.59	0.74	0	28	-
31	22.85-23.30	SPT	-	-	-	-	-	-	-	-	-	32	-	28.4	1.93	1.5	2.61	0.74	0	29	-
32	24.00-24.35	UD	100	100	100	27	NON PLASTIC	0	73	27	0	-	SM	-	-	-	-	-	-	-	-
33	24.35-24.80	SPT	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-
34	25.50-25.85	UD	100	100	100	29	NON PLASTIC	0	71	29	0	-	SM	28.2	1.94	1.51	2.63	0.74	0	30	-
35	25.85-26.30	SPT	-	-	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-
36	27.00-27.35	UD	100	100	100	28	NON PLASTIC	0	72	28	0	-	SM	27.6	1.94	1.52	2.62	0.72	0	30	-
37	27.35-27.80	SPT	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	-	-
38	28.50-28.85	UD	100	100	100	27	NON PLASTIC	0	73	27	0	-	SM	29.4	1.92	1.48	2.62	0.77	0	30	-
39	28.85-29.30	SPT	-	-	-	-	-	-	-	-	-	41	-	-	-	-	-	-	-	-	-
40	30.00-30.35	UD	100	100	100	30	NON PLASTIC	0	70	30	0	-	SM	28.2	1.94	1.51	2.63	0.74	0	31	-
41	30.35-30.80	SPT	-	-	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-
42	31.50-31.85	UD	100	100	100	28	NON PLASTIC	0	72	28	0	-	SM	28.5	1.93	1.5	2.62	0.75	0	31	-
43	31.85-32.30	SPT	-	-	-	-	-	-	-	-	-	45	-	-	-	-	-	-	-	-	-
44	33.00-33.35	UD	100	100	100	25	NON PLASTIC	0	75	25	0	-	SM	27.5	1.95	1.53	2.64	0.73	0	31	-
45	33.35-33.80	SPT	-	-	-	-	-	-	-	-	-	47	-	-	-	-	-	-	-	-	-
46	34.50-34.85	UD	100	100	100	27	NON PLASTIC	0	73	27	0	-	SM	27.6	1.94	1.52	2.62	0.72	0	32	-
47	34.85-35.30	SPT	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	-	-	-
48	35.30-36.00	DS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generalist

RELIABLE TEST HOUSE
MOB:- 9452804346, 9454652401

Project : Proposed construction of Three Lane Flyover At Ch. 1040.00 M P-31 - P-32 and Pravidhik Shiksha Parishad Office On Guru Govind Singh Marg District- Lucknow (U.P.)
Bore Hole No. 02
Depth of Bore Hole : 36.0 M.

LABORATORY TEST RESULTS

Depth of Water table : 18.50 M

S. No.	Depth of Bore Hole	Nature of soil Sample	% Passing on IS Sieve			terberg's Limit			Particle Size Analysis				S.P.T. Value	IS Group	Natural Moisture Content %	Wet Density gm/cc	Dry Density gm/cc	Specific Gravity 'G'	Void ratio 'e'	Shear Parameter n 'C' in Kg/Secm. Level	Parameter Angle of Internal Friction	Compress ion Index Cc	
			4.75 mm	2.00 mm	0.425 mm	LL %	PL %	PI %	Gravel %	Sand %	Silt %	Clay %											
1	0.0-1.00	DS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1.50-1.85	UD	100	100	100	30	18	12	0	9	67	24	-	CL	9.8	1.78	1.62	2.65	0.64	0.24	11	0.128	
3	1.85-2.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.00-3.35	UD	100	100	100	92	32	19	13	0	8	66	26	CL	8.1	1.76	1.63	2.65	0.63	0.27	14	0.123	
5	3.35-3.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	4.50-4.85	UD	100	99	98	89	32	17	15	0	11	61	28	CL	11.2	1.81	1.63	2.64	0.62	0.29	13	0.125	
7	4.85-5.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	6.00-6.35	UD	100	98	97	86	23	17	6	0	14	70	16	CL	12.9	1.78	1.58	2.63	0.66	0.18	17	0.116	
9	6.35-6.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	7.50-7.85	UD	100	99	95	86	25	18	7	0	14	72	14	CL	13.2	1.79	1.58	2.61	0.65	0.19	16	-	
11	7.85-8.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9.00-9.35	UD	100	97	96	84	24	19	5	0	16	74	10	CL	14.1	1.79	1.57	2.61	0.66	0.13	19	-	
13	9.35-9.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	10.50-10.85	UD	100	100	100	70	21	16	5	0	30	63	7	ML	14.8	1.76	1.53	2.64	0.73	0.00	23	-	
15	10.85-11.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	12.00-12.35	UD	100	100	100	72	23	18	5	0	28	65	7	ML	15.3	1.74	1.51	2.63	0.74	0.00	25	-	
17	12.35-12.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	13.50-13.85	UD	100	98	97	96	41	23	18	0	4	60	36	CI	15.9	1.92	1.66	2.72	0.64	0.48	7	-	
19	13.85-14.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	15.00-15.35	UD	100	99	98	95	39	22	17	0	5	63	32	CI	16.3	1.94	1.67	2.73	0.63	0.42	8	-	
21	15.35-15.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	16.50-16.85	UD	100	98	97	94	44	23	21	0	6	52	42	CI	16.7	1.93	1.65	2.71	0.64	0.49	6	-	
23	16.85-17.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	18.00-18.35	UD	100	100	100	95	45	22	23	0	5	49	46	CI	17.5	1.96	1.67	2.72	0.63	0.48	7	-	
25	18.35-18.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	19.50-19.85	UD	100	100	100	94	37	21	16	0	6	63	31	CI	23.5	2.05	1.66	2.72	0.64	0.31	9	-	
27	19.85-20.30	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	21.00-21.35	UD	99	98	97	96	39	22	17	1	3	62	34	CI	23.0	2.05	1.67	2.71	0.62	0.45	8	-	
29	21.35-21.80	SPT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

RELIABLE TEST HOUSE
 MOB:- 9452804346; 9454652401

Project : Proposed construction of Three Lane Flyover at CH.310.00M Near Abutment A-1 and Hotel P.R. Palace on Guru Govind Singh Marg Lucknow District-Lucknow (U.P.)
 Bore Hole No. 03
 Depth of Bore Hole : 36.0 M.

LABORATORY TEST RESULTS

Depth of Water table : 18.30 M

S. No.	Depth of Bore Hole	Nature of soil Sample	% Passing on IS Sieve			Terberg's Limit		Particle Size Analysis			S.P.T. Value	IS Group	hatching	Natural Moisture Content %	Wet Density gm/cc	Dry Density gm/cc	Specific Gravity 'G'	Void ratio 'e'	Shear Parameter 'C' in kg/sqcm.	Angle of Internal Friction	Compression Index Cc
			4.75 mm	2.00 mm	0.425 mm	0.075 mm	LL %	PL %	PI %	Gravel %											
1	0.0-1.00	DS	-	Field	Up	Soil	-	Met	Up	To	-	F		11.2	1.81	1.63	2.67	0.64	0.28	9	0.133
2	1.50-1.85	UD	100	100	100	91	36	21	15	0	9	CL		13.7	1.89	1.64	2.65	0.62	0.33	11	0.131
3	1.85-2.30	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
4	3.00-3.35	UD	100	100	100	92	33	19	14	0	8	CL		-	-	-	-	-	-	-	-
5	3.35-3.80	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
6	4.50-4.85	UD	100	.99	98	93	32	19	13	0	7	CL		13.9	1.88	1.63	2.66	0.63	0.28	13	0.128
7	4.85-5.30	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
8	6.00-6.35	UD	100	98	96	82	24	17	7	0	18	CLML		14.1	1.79	1.57	2.61	0.66	0.21	16	0.118
9	6.35-6.80	SPT	-	-	-	-	-	-	-	-	-	-		13.8	1.81	1.59	2.63	0.65	0.17	17	-
10	7.50-7.85	UD	100	97	95	86	24	18	6	0	14	CLML		-	-	-	-	-	-	-	-
11	7.85-8.30	SPT	-	-	-	-	-	-	-	-	-	-		12.9	1.76	1.56	2.61	0.67	0.15	18	-
12	9.00-9.35	UD	100	97	96	84	23	17	6	0	16	CLML		-	-	-	-	-	-	-	-
13	9.35-9.80	SPT	-	-	-	-	-	-	-	-	-	-		13.5	1.70	1.5	2.62	0.75	0.00	22	-
14	10.50-10.85	UD	100	100	100	79	19	16	3	0	21	ML		14.2	1.71	1.5	2.63	0.75	0.00	22	-
15	10.85-11.30	SPT	-	-	-	-	-	-	-	-	-	-		14.2	1.71	1.5	2.63	0.75	0.00	22	-
16	12.00-12.35	UD	100	100	100	78	20	17	3	0	22	ML		15.2	1.90	1.65	2.72	0.65	0.44	6	-
17	12.35-12.80	SPT	-	-	-	-	-	-	-	-	-	-		15.2	1.90	1.65	2.72	0.65	0.44	6	-
18	13.50-13.85	UD	100	98	97	96	47	23	24	0	4	CI		15.5	1.92	1.66	2.73	0.64	0.41	7	-
19	13.85-14.30	SPT	-	-	-	-	-	-	-	-	-	-		16.2	1.92	1.65	2.71	0.64	0.43	6	-
20	15.00-15.35	UD	100	99	98	97	49	24	25	0	3	CI		17.4	1.94	1.65	2.72	0.65	0.49	6	-
21	15.35-15.80	SPT	-	-	-	-	-	-	-	-	-	-		17.4	1.94	1.65	2.72	0.65	0.49	6	-
22	16.50-16.85	UD	100	98	97	94	48	24	24	0	6	CI		24.2	2.04	1.64	2.72	0.66	0.45	5	-
23	16.85-17.30	SPT	-	-	-	-	-	-	-	-	-	-		24.5	2.04	1.64	2.74	0.67	0.48	5	-
24	18.00-18.35	UD	100	100	100	95	42	22	20	0	5	CI		-	-	-	-	-	-	-	-
25	18.35-18.80	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
26	19.50-19.85	UD	100	100	100	97	49	24	25	0	3	CI		-	-	-	-	-	-	-	-
27	19.85-20.30	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
28	21.00-21.35	UD	99	98	97	96	46	22	24	1	3	CI		-	-	-	-	-	-	-	-
29	21.35-21.80	SPT	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-

30	22.50-22.85	UD	100	100	100	96	40	22	18	0	4	64	32	-	CI	24.1	2.05	1.65	2.74	0.66	0.42	7	-
31	22.85-23.30	SPT	-	-	-	-	-	-	-	-	-	-	-	32	-	-	-	-	-	-	-	-	-
32	24.00-24.35	UD	100	100	100	95	40	22	18	0	5	62	33	-	SM	27.5	1.94	1.52	2.61	0.72	0	30	-
33	24.35-24.80	SPT	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-
34	25.50-25.85	UD	100	100	100	26	NON PLASTIC	0	-	74	26	0	-	-	SM	28.7	1.92	1.49	2.6	0.74	0	31	-
35	26.85-26.30	SPT	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-	-	-	-	-	-	-
36	27.00-27.35	UD	100	100	100	27	NON PLASTIC	0	-	73	27	0	-	-	SM	28.2	1.92	1.5	2.6	0.73	0	30	-
37	27.35-27.80	SPT	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-	-	-	-	-	-
38	28.50-28.85	UD	100	100	100	29	NON PLASTIC	0	-	71	29	0	-	-	SM	27.8	1.94	1.52	2.63	0.73	0	31	-
39	28.85-29.30	SPT	-	-	-	-	-	-	-	-	-	-	-	41	-	-	-	-	-	-	-	-	-
40	30.00-30.35	UD	100	100	100	24	NON PLASTIC	0	-	76	24	0	-	-	SM	27.0	1.94	1.53	2.61	0.71	0	32	-
41	30.35-30.80	SPT	-	-	-	-	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-
42	31.50-31.85	UD	100	100	100	27	NON PLASTIC	0	-	73	27	0	-	-	SM	28.2	1.92	1.5	2.6	0.73	0	33	-
43	31.85-32.30	SPT	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	-	-
44	33.00-33.35	UD	100	100	100	29	NON PLASTIC	0	-	71	29	0	-	-	SM	27.6	1.94	1.52	2.62	0.72	0	32	-
45	33.35-33.80	SPT	-	-	-	-	-	-	-	-	-	-	-	47	-	-	-	-	-	-	-	-	-
46	34.50-34.85	UD	100	100	100	31	NON PLASTIC	0	-	69	31	0	-	-	SM	27.2	1.95	1.53	2.62	0.71	0	32	-
47	34.85-35.30	SPT	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	-	-	-
48	35.30-36.00	DS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Donat

CONSTRUCTION OF 2 LANE FLYOVER FROM CHARAK CHAURAHA TO HAIDERGANJ TIRAHA ON VIKRAM
COTTON MILL ROAD.

A. FOR OPEN FOUNDATION

Value recommended below 3.0 m from
Road Level/Ground

$$c = 0.10 \text{ kg/cm}^2$$

$$\phi = 21^\circ$$

B. RL of BH 1 is 1.00m above Level. Therefore, 4.0m
depth of foundation at Bore hole location 1 is
actually 3.00m below Road Level. Safe Allowable
Pressure 18.91 T/M²

B. FOR PILE FOUNDATION


Value recommended at 21.70 m depth below
cut off Level 2.30m for 1200mm dia pile
foundation Safe pile capacity (compression)

$$c = 0.30 \text{ kg/cm}^2$$

$$\phi = 17^\circ$$

Manas

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**RECOMMENDATIONS FOR PROPOSED CONSTRUCTION OF TWO LANE
ELEVATED FLYOVER BETWEEN CHARAK CHAURAHA-HAIDAR GANJ TIRAHA-
CHARAK CROSSING VIKRAM COTTON MILL ROAD IN LUCKNOW CITY**

OPEN FOUNDATION

Borehole No.	Type of Structure	Depth of Foundation below GL (m)	Shape of Footing	Size of Footing		Net Safe Bearing Capacity Tonne/sqm	Settlement Produced (mm)	Safe Allowable Pressure Tonne/sq,m
				Length (m)	Width (m)			
1	Flyover	3.00	RECTANGULAR	10.00	8.00	24.92	112.83	12.46
		3.00	SQUARE	8.00	8.00	27.58	116.53	13.04
		4.00	RECTANGULAR	10.00	8.00	28.82	96.57	18.01
		4.00	SQUARE	8.00	8.00	31.65	99.10	18.91

*RL of BH 1 is 1.00m above Road Level. Therefore, 4.00m depth of foundation at Bore hole location 1 is actually 3.00m below Road Level

PILE FOUNDATION

Bore Hole	Pile Diametre (mm)	Pile Length Below Cut-off Level (m)	Pile Cut-off Length (m)	Safe Pile Capacity (compression) (Tonnes)	Safe Pile Capacity (Uplift) (Tonnes)	Load Capacity of Pile (Lateral) (Tonnes)	Depth of fixity (m)
1	1200	20.20	2.30	221.91	134.39	-	-
		21.70		234.07	140.75	-	-
		23.20		246.13	147.10	-	-
		24.70		268.02	153.76	13.50	12.55
		26.20		280.84	160.43	14.33	12.26
		27.70		293.69	167.09	15.05	12.02

NOTE: -

The above recommendations are based on the field investigation data results and the laboratory tests results of the samples collected from the test locations and our experience in this regards. If the actual sub-soil conditions during excavation for the foundations differ from that has been reported, a reference should be made to us for suggestions.

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(A) For open foundation.

Value recommended below 3.00 m. from
Road Level/Ground.

$$c = 0.25 \text{ kg/cm}^2$$
$$\phi = 16^\circ$$

Approved vide Annexure III/B

(B) For Pile foundation.

Value recommended at 21.70m depth below
cut off level of 2.30m for 1200 mm dia pile foundation

$$c = 0.50 \text{ kg/cm}^2$$
$$\phi = 9^\circ$$

Approved vide Annexure II/A

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