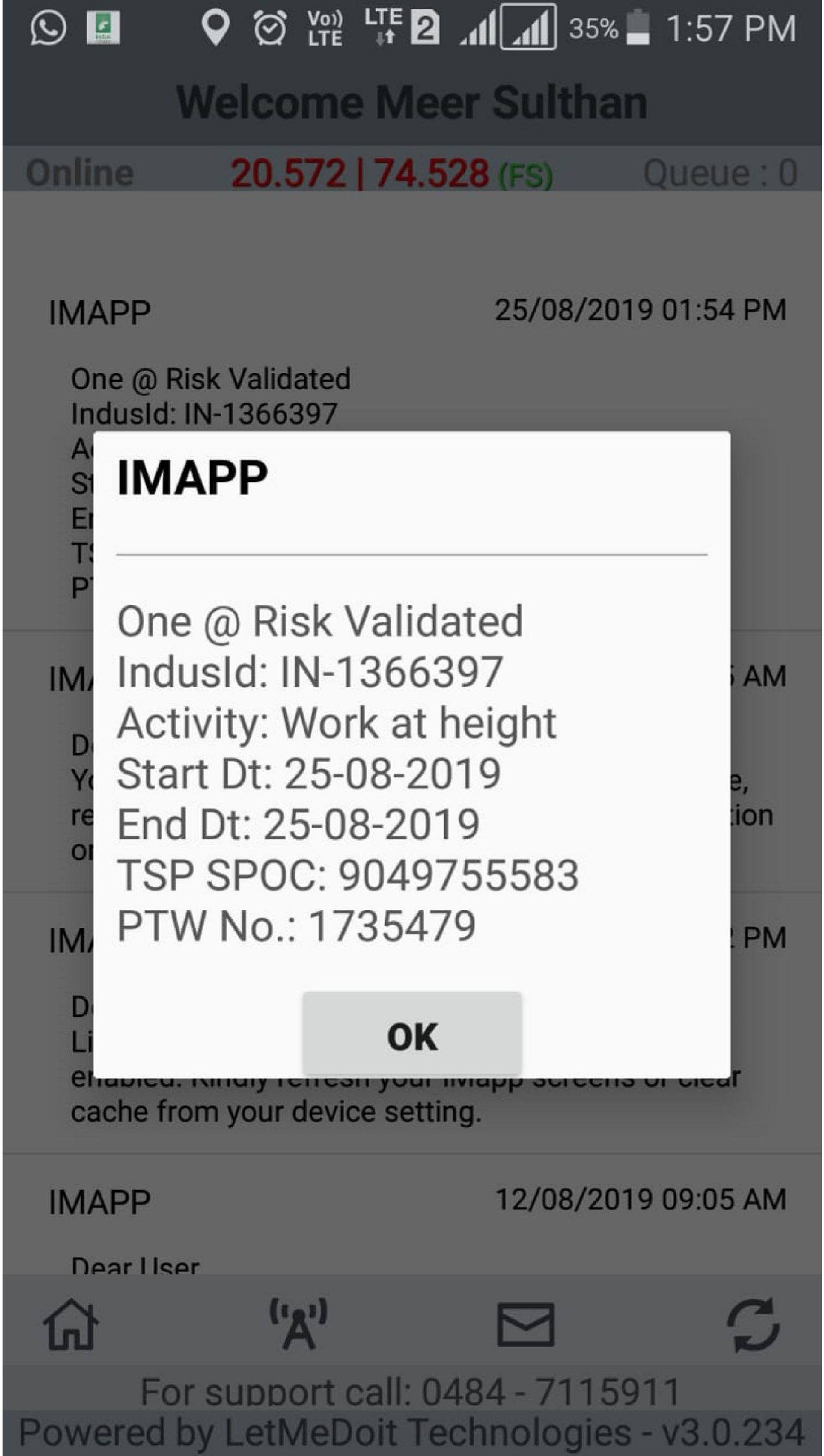
35% 1:57 PM
Welcome Meer Sulthan
Online
20.572 | 74.528 (FS)
Queue : 0
IMAPP
25/08/2019 01:54 PM
One @ Risk Validated
IndusId: IN-1366397
IMAPP
One @ Risk Validated
IndusId: IN-1366397
Activity: Work at height
Start Dt: 25-08-2019
End Dt: 25-08-2019
TSP SPOC: 9049755583
PTW No.: 1735479
OK
cache from your device setting.
IMAPP
12/08/2019 09:05 AM
Dear User
For support call: 0484 - 7115911
Powered by LetMeDoit Technologies - v3.0.234

Indus Towers Limited

MAW - Pune Warehouse

Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra

Delivery Challan

Original for Recipient

Source		Destination		Project Details	
Document No.	: 19270037219	**Document Date**	: 05-AUG-2019	**Project No.**	: R/NN-351122
Department	: Technology	**Internal IR Date**	: N/A	**Move order No**	: N/A
BOQ Req. No.	: 1914556730	**Internal ISO Date**	: N/A	**GE/GO Date**	:
Internal IR	: N/A	**Consignee**	: Indus Towers Limited	**Transporter Name**	: OSPS TELECOM SERVICE PVT . LTD
Internal SO	: N/A	**Site ID**	: IN-1366397	**Vehicle No**	: MH46F0194
Consignor	: Indus Towers Limited	**Site Name**	: DYG Industrial.	**LR No**	: 08 97
Site ID	: MAW - Pune Warehouse	**Site Address**	: Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Malegaon,Nashik,423203,Maharashtra	**GO/GE No**	:
Site Name	: MAW - Pune Warehouse			**ST Form No.**	:
Site Address	: Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra			**Contact Person**	:
				Way bill No	: NA

OSPS TELECOM SERVICES PVT. LTD.

GSTIN No of Consignor	27AABCI7776B1ZI	GSTIN No of Consignee	27AABCI7776B1ZI	Remarks	

S.No.	Item Code	Item Description	UOM	Qty.	Lot No.	Serial No.	FA. No.	MFG. No.	Tax Rate	Amount
1	14-900000-0-00-ZZ-ZZ-322 HSN: 7308 SAC :	Flange Foundation Bolts : 8.8 Grade:-Size M27X1050- 30 M GBM & 30 M Unicam+	Each	24	19060234547					Amt : 24326.88 Tax amt : 0 Total : 24326.88
2	14-925F50-0-01-ZZ-ZZ-002 HSN: 7308 SAC :	Tower Template Set, 30M GBM Flange Monopole w/o Camouflage 180 KMPH Normal Wt. 149.4 Kgs, Version -1.0	Set	1	19060219834					Amt : 8057.04 Tax amt : 0 Total : 8057.04

INDUS TOWERS
C/o. FM India Supply Chain Pvt. Ltd.
Unique Warehousing, Survey No-11,
Lonikand, Tal.Haveli Dist. Pune-412216
OUTWARD
Date: 05.08.19 Time: 19:25
Entry No: 112430
GRIN No: DATE:
S/S Name:

OSPS TELECOM SERVICES PVT. LTD.

Authorized Signatory

Indus Towers Limited

MAW - Pune Warehouse

Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra

Delivery Challan

Original for Recipient

3	12-440000-0-01-ZZ-ZZ-000 HSN: 8311 SAC :	Earthing,Maintenance Free Chemical Earthing,Version 1.0	Each	2	19060237449					Amt : 8714 Tax amt : 0 Total : 8714
4	12-201G80-0-00-ZZ-ZZ-034 HSN: 8544 SAC :	Cable Harness for Tamperproof Alarm of SMPS with D25 Pin Male Connector and 15M Alarm Cable,0.5 MM Dia,12 Pair,Solid Annealed Tinned Copper (ATC) HRFR	Set	1	19060237277					Amt : 978 Tax amt : 0 Total : 978
5	18-642000-C-01-ZZ-ZZ-000 HSN: 3919 SAC :	EMF Signage,Sticker Type Version 1.0,(Size, Description, Color & font as per DOT Guidelines, Weather Resistant, Fade Proof - for installation in Monopole sites only) Version 1.0, - Capex	Each	1	19060235348					Amt : 31 Tax amt : 0 Total : 31
6	18-521500-0-01-ZZ-ZZ-000 HSN: 7326 SAC :	Fall Protection System, Monopole (GBM/RTM), Without Brackets - 30m	Set	1	19060231983					Amt : 27839 Tax amt : 0 Total : 27839
7	14-900000-0-00-ZZ-ZZ-318 HSN: 7306 SAC :	Supply of Pipe Mount Generic - single GSM antenna mount (For angular & Tubular towers)vertical/sloped portion of tower, J0942-MW-GENMOUNT - Supply to ware house,Version - 5.0 WT. = 44.29 kg.	Each	2	19060234706					Amt : 6624 Tax amt : 0 Total : 6624

Value	:	Rs. 76569.92
Tax value	:	Rs. 0
Total Value	:	Rs. 76569.92
Amount in Words	:	Seventy Six Thousand Five Hundred Sixty Nine Rupees And Ninety Two Paise Only

IN 1366397 Dye Industries Nashik

DSPS TELECOM SERVICES PVT. LTD.

Authorized Signatory

Indus Towers Limited

MAW - Pune Warehouse

Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra

Delivery Challan

Original for Recipient

Source		Destination		Project Details	
Document No.	: 19110046806	**Document Date**	: 05-AUG-2019	**Project No.**	: R/NN-351122
Department	: Technology	**Internal IR Date**	: 05-AUG-2019	**Move order No**	: 1661426
BOQ Req. No.	: 19150081735	**Internal ISO Date**	: 05-AUG-2019	**GE/GO Date**	:
Internal IR	: 19040254522	**Consignee**	: Indus Towers Limited	**Transporter Name**	: OSPS TELECOM SERVICE P. LTD
Internal SO	: 1920082332	**Site ID**	: IN-1366397	**Vehicle No**	: MH12LT7640
Consignor	: Indus Towers Limited	**Site Name**	: D4C I Nclusion	**LR No**	: 98 97
Site ID	: MAW - Pune Warehouse	**Site Address**	: Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Malegaon,Nashik,423203,Maharashtra	**GO/GE No**	:
Site Name	: MAW - Pune Warehouse			**ST Form No.**	:
Site Address	: Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra			**Contact Person**	:
				Way bill No	:

OSPS TELECOM SERVICES PVT. LTD.

GSTIN No of Consignor	27AABCI7776B1ZI	GSTIN No of Consignee	27AABCI7776B1ZI	Remarks	

S.No.	Item Code	Item Description	UOM	Qty.	Lot No.	Serial No.	FA. No.	MFG. No.	Tax Rate	Amount
1	11-894900-0-02-07-ZZ-000 HSN: 8507 SAC :	Battery Bank,VRLA+ 48V,600 Ah, Make-Exide,Version 2.0	Each	1		40013899792				Amt : 147152 Tax amt : 0 Total : 147152

Value	:	Rs. 147152
Tax value	:	Rs. 0
Total Value	:	Rs. 147152
Amount in Words	:	One Lakh Forty Seven Thousand One Hundred Fifty Two Rupees And Zero Paise Only

INDUS TOWERS
C/o. FM India Supply Chain Pvt. Ltd.
Unique Warehousing, Survey No-11,
Lonikand, Tal.Haveli, Dist.Pune-412216
OUTWARD
Date: 05.08.19 Time: 19:25
Entry No: 112431
GRIN No: DATE:
S/S Name & Sign:

OSPS TELECOM SERVICES PVT. LTD.

Authorized Signatory

Indus Towers Limited

MAW - Pune Warehouse

Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra

Delivery Challan

Original for Recipient

Source		Destination		Project Details	
Document No. : 19110046808		**Document Date** : 05-AUG-2019		**Project No.** : R/NN-351122	
Department : Technology		**Internal IR Date** : 05-AUG-2019		**Move order No** : 1661412	
BOQ Req. No. : 19150081735		**Internal ISO Date** : 05-AUG-2019		**GE/GO Date** :	
Internal IR : 19040254522		**Consignee** : Indus Towers Limited		**Transporter Name** : OSPS TELECOM SERVICE PVT . LTD	
Internal SO : 1920082332		**Site ID** : IN-1366397		**Vehicle No** : MH46F0194	
Consignor : Indus Towers Limited		**Site Name** : D4C Indestore		**LR No** : 98 97	
Site ID : MAW - Pune Warehouse		**Site Address** : Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Shaikh Shafeeque Shaikh Kaleem and Mr.Shekh Rafique Kalim, Survey No-56/5, Dyne Industries, Kusumbha Road, Dhyane, Malegaon-423203,Malegaon,Nashik,423203,Maharashtra		**GO/GE No** :	
Site Name : MAW - Pune Warehouse				**ST Form No.** :	
Site Address : Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra				**Contact Person** :	
				Way bill No :	

GSTIN No of Consignor	27AABCI7776B1ZI	GSTIN No of Consignee	27AABCI7776B1ZI	Remarks	

S.No.	Item Code	Item Description	UOM	Qty.	Lot No.	Serial No.	FA. No.	MFG. No.	Tax Rate	Amount
2	14-5130Q0-0-01-02-ZZ-000 HSN: 8507 SAC :	Enclosure, Space For Battery Bank 600 Ah, Battery Bank cabinet, Outdoor IP55,with provision for Next GEN OD SMPS Mounting, Make- Svarn,Version 1.0	Each	1		SIPL/INDUSVRLA600AH/1607198616				Amt : 24473 Tax amt : 0 Total : 24473

INDUS TOWERS
C/o. FM India Supply Chain Pvt. Ltd.
Unique Warehousing, Survey No-11,
Lonikand, Tal.Haveli, Dist.Pune-412216
OUTWARD
Date: 05.08.19 Time: 19:25
Entry No: 112432
GRIN No: DATE:
S/S Name & Sign:

OSPS TELECOM SERVICE PVT. LTD.

Authorized Signatory

Indus Towers Limited

MAW - Pune Warehouse

Unique warehousing, S. No. 11,Behind Yogesh Service Station,Lonikand,Pune,412216,Maharashtra

Delivery Challan

Original for Recipient

4	18-236000-C-01-ZZ-ZZ-000 HSN: 8424 SAC :	Fire Extinguisher, ABC Type, 4kg, Version 1.0, Capex	Each	1		0012670				Amt : 1300 Tax amt : 0 Total : 1300
5	11-D21D22-0-01-17-ZZ-000 HSN: 8537 SAC :	TX RACK, 19", Outdoor IP55, 21U, Floor mount, 48V DC Fan, Make-Maxbros, Version 1.0	Each	1		MBIT21U200519125				Amt : 21756 Tax amt : 0 Total : 21756
3	11-63B2E0-C-0B-03-ZZ-000 HSN: 8504 SAC :	SMPS,Outdoor IP54 - 48V,Total Capacity 24KW,Loading Capacity 12 KW (4X3), Rectifier Capacity 4000W, (with space for 2 cartridge 1 cartridge=3X4000W Rectifier & loaded with 1 cartridge, QR Code Based), Make-Delta,Version 2.6	Each	1		40013572813				Amt : 99910 Tax amt : 0 Total : 99910

IN 1366397 DYC. Invoice ful-

Value	:	Rs. 147439
Tax value	:	Rs. 0
Total Value	:	Rs. 147439
Amount in Words	:	One Lakh Forty Seven Thousand Four Hundred Thirty Nine Rupees And Zero Paise Only

Authorized Signatory

Report
On

SOIL TESTING

FOR

SITE ID- IN-1366397

SITE NAME- DYNE INDUSTRIAL ZONE

SITE ADD.- SHAIKH SHAFEEQUE SHAIKH KALEEM AND MR.SHEKH RAFIQUE KALIM, SURVEY NO-56/5, DYNE INDUSTRIES, KUSUMBHA ROAD, DHYANE, MALEGAON-423203

REF. NO.- GD-IND-2019-20-069

DATE:- 25th JUL. 2019

FOR

INDUS TOWER LIMITED

MAHARASHTRA

PREPARED BY

Green Design

15A Bhale Estate rear wing,3rd floor ,Behind new India insurance ,
Pune –Mumbai rd. Wakdewadi, Pune-411005.
Mob.No : +91 – 8446677977.
E –mail:-project@greendesignindia.com
Website: -www.greendesignindia.com

Summary of Test

As per the various test carried out, our recommendations are as follows.

1. Safe bearing capacity of soil is 10 T/m^2 at 2.00m depth

2. Remove Excavated soil up to 2.0.

3. Use excavated soil for back filling.

4. R. C. C. Shallow foundation is recommended for tower, DG and Shelter foundation.

5. Water table was not found.

6. No chemicals found in soil.

7. Level difference of 200 mm observed in plot.

8. Site is covered with small trees and vegetation. Hence site cleaning is required.

CERTIFICATE

Certified by:	Mr. B.N.Jagtap
Designation:	Geotechnical Engineer
Qualification:	B.E. (Civil). M. Tech (Geotechnical Engineering IITR)

INDEX

1. INTRODUCTION

The purpose of the soil investigation is to arrive at an optimum design for the tower foundations. The telecom towers are generally 3-legged or 4-leggedbraced steel structures varying from 30m to 60m height. The weight ranges from 5 to 15 tons depending on the type of tower. Under extreme conditions of wind loading, the load on each leg will be in the range of 25 to 100 tonnes in compression, 25 to 100 tons in uplift and 2 to 10 tons in lateral thrust. In most cases, the uplift capacity of the foundation governs the design.

As part of contracting work M/Green Design Pune collected samples of soil/strata from project area & carried out Geotechnical Investigation work for proposed Structure. The soil samples are collected and laboratory tests are conducted in well-equipped laboratory at Pune.

The details of site exploration including foundation recommendations are given in this report.

2. SCOPE OF WORK

The scope of the Geotechnical investigation was as mentioned below. It was comprehensive enough to enable to estimate or determine the following:

i) The engineering properties of the soil:

a) Field Tests:

-Depth, thickness and variability

- Visual Identifications.

b) Laboratory tests(Soil)

-Natural Moisture content, density

- Sieve Analysis

-Atterberg's Limit

-Triaxial Shear Test

-Direct Shear Test

-Unconfined compression test.

-Swelling Pressure.

-Chemical Analysis.

-Crushing Strength of Rock

c) Chemical analysis of water

ii) Suitable depth of foundation:

3. TERMINOLOGY

Following are the terminologies used in the report. (IS: 1904 – 1966)

1) Safe Bearing Capacity (SBC)

Maximum intensity of loading that the foundation will safely carry without the risk of shear failure of soil irrespective of any settlement that may occur.

2) Clays

An aggregate of microscopic and sub microscopic particles derived from the chemical decomposition and disintegration of rock constituents. It is plastic within a moderate to wide range of water content. The particles are less than 0.002 mm size.

3) Firm Clay

Clay, which had its natural moisture content, can be moulded bysubstantial pressure with the fingers and can be excavated with aspade.

4) Soft Clay

Clay, which had its natural moisture content can be easily mouldedwith the fingers and readily excavated.

5) Stiff Clay

Clay, which had its natural moisture content cannot be moulded withthe fingers and requires a pick or pneumatic spade for its removal.

6) Foundation

That part of a structure which is in direct contactwith soil and transmits loads into it.

7) Raft Foundation

Foundation continuous into all directions, covering an area equal to orgreater than the base area of the building or structure.

8) Gravel

Cohesion less aggregates of rounded, sub rounded, angular, subangular or flat fragments of more or less unaltered rocks or minerals,90% of the particles having a size greater than 2 mm less than 60mm.

9) Sand

Cohesion less aggregates of rounded, sub rounded, angular, subangular or flat fragments of more or less unaltered rocks or minerals,90% of the particles having a size greater than 0.06 mm less than 2.0mm in size.

10) Coarse sand

Sand which contains 90% of particles of size greater than 0.6 mm andless than 2.0 mm.

11) Medium Sand

Sand, which contains 90% of particles of size greater than 0.2 mm and less than 0.6 mm.

12) Fine Sand

Sand, which contains 90% of particles of size greater than 0.06 mmand less than 0.2 mm.

13) Silt

A fine granular soil with little or no plasticity. If shaken in the palm ofthe hand, a pat of saturated inorganic silt expels enough water tomake its surface appears glossy. If the pat is stressed or squeezedbetween the fingers, it surface again becomes dull. The size ranges forsilt are as follows:-

a) Coarse Silt : 0.06 to 0.02 mm
b) Medium Silt : 0.02 to 0.006 mm
c) Fine Silt : 0.006 to 0.002 mm

14) Soft Rock

A rocky cemented material, which offers a high resistance to diggingup with pick axes and sharp tools, but which does not normallyrequires blasting or chiselling for excavation.

15) Hard Rock

A rock which offers a high resistance to digging up with pick axes andsharp tools and normally which requires blasting or chiselling forexcavation. Also hard rock offers a high resistance to metal tools andgenerates heavy sparks at the time of excavation.

16) Black Cotton Soil

Inorganic clays of medium to high compressibility, which is generallycohesive in nature and exerts swelling pressure when comes incontact with moisture or water.

4.SITE INVESTIGATION & EXPLORATION

The investigation of the site is an essential prerequisite to the construction ofall civil engineering work with a view to assess the general suitability of the site for the proposed tower and enable in preparing an adequate and economical design.

In particular, it is necessary to assess the changes that may occur during or after the construction of the structure due to the choice of material or method of construction, which may adversely, affects safety of structure or after its performance or utility. The investigation of the site is being carried out and in accordance with the principles set by IS 1892 – 1979.

Before carrying out soil exploration programme, detail information about the site is being collected.

Site exploration can be carried out by most common and satisfactory method seven by IS 1892– 1979 are,

a) Method of trial pits

b) Method of boring

c) Heading

In our site exploration programme, we have adopted second method, i.e., method of boring. In site exploration programme, particular attention shall be paid to the ground water level, soil profile is being plotted and variation of soil strata is marked according to the depth of excavation.

The sites where problem of water logging in rainy season may cause, in such areas, it is desirable to determine the contour of the water table surface in order to indicate the direction of the natural drainage and to obtain the basis of the design of intercepting drains to prevent the influx of ground water to the site from higher grounds.

Brief Description of Site:-

1. Site level from Road – Site is located at plain ground.
2. Site is covered with small trees.
3. No filled up Ground found
5. Water Table- No water table
6. Site Location – Site is located at plain Ground and level difference of 200 mm observed.
7. Remove all trees and vegetation before starting site activity.

TAKING TRIAL BORES

BORE HOLE NO:- BH-1 **DOE**:- **R.L:** M**ETHOD OF BORING**:- ROTATY/ WASH
TOTAL DEPTH:- 10.00m **Co-Ordinate(X,Y) :-** **GROUND WATER LEVEL**:- NE

BORELOG

Depth(m)	R.L (m)	THICKNESS OF LAYER	LOG	VISUAL DESCRIPTION OF STRATA	FIELD TEST SPT					TYPE OF SAMPLE	CORE DRILLING			WASH WATER COLOUR
					15	15	15	N	N_{corr}		CORE PIECES	RECOVERY %	R. Q. D %	
0.0m														
1		4.00m		Brown Coloured Soil mix with gravels as a soft to Medium Hard murum	6	8	9	17	17	WS/ SPT				Gray
2														
3					7	10	15	25	25	WS/ SPT				
4					50	R	R	R	R	WS/ SPT				Greyish White
5		5.00m		Completely Weathered & Fractured Decomposed Rock	50	R	R	R	R	WS				
6														
7					50	R	R	R	R	WS				
8					50	R	R	R	R	WS				Brown
9														
10		1.00m		Highly Weathered & Fractured Rock						SP/ CP	1/7	26	00	
11														
12														
13														
14														
15														

GRAVEL CLAY ROCK
SAND FILLINGS MURUM
BOULDERS SILT

ABBBRV DS :DISTURBED SAMPLE
WS :WASH SAMPLE
UDS :UNDISTURBED SAMPLE
C.P : CORE PIECES
N.E : NOT ENCOUNTERED
S.P.T STANDARD PENETRATION TEST
V.S.T VANE SHEAR TEST
DOE : Date of Exploration

Scale:V1:100
H NTS
Borelog No.1
DRWN BY:-JBK
CHKD BY :- BNJ

5. LABORATORY TESTS
CHARACTERISTICS OF SOIL

(AS PER IS: 1498 – 1970)
(Reaffirmed in 1997)

1. Grain Size Analysis:- (IS:2720 Part:-IV) Grain Size Analysis

Depth of Sample (m)	Gravel	Sand	Silt & Clay	Engg. Classification
0.00 to 4.00	9%	54%	37%	SM

Depth of Water Table : NA

2. Determination of water content :- (IS:2720 Part 2). Determination of water content

3. Specific gravity :- (IS:2720 Part 3) Determination of specific gravity

Section 1- Fine Grained Soils

Section 2- Fine, medium and coarse grained soils.

4. Dry & Bulk Density : - (IS:2720 Part:-XXIX) Determination of Dry Density of Soils In-place by the Core-cutter Method

Depth of Sample (m)	Moisture Content	Specific Gravity	Bulk Density (gm/cc)	Dry Density (gm/cc)
0.00 to 4.00	15.34	2.71	2.09	1.81

5. Liquid and Plastic Limit :-(IS: 2720 Part:-5) Determination of Liquid and Plastic Limit

6. Shrinkage Factors:- (IS:2720 Part:- 6) Determination of shrinkage factors

7. Free Swell Index :- (IS: 2720 Part:-XL) Determination of Free Swell Index of Soils

8. Swelling pressure :- (IS:2720 Part:-XLI) Measurement of Swelling Pressure of Soils

Depth of Sample (m)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Shrinkage Limit (%)	Free Swell Index
0.00 to 4.00	45	31	14	20	30%

9. **Triaxial Shear Test:-** (IS: 2720 Part:-11) Determination of the Shear Strength Parameters of a specimen tested in Triaxial compression .

10. Shear Strength Test:- (IS:2720 Part:-10) Determination of unconfined compressive strength

Depth of Sample (m)	Direct Shear Test Parameters		Unconfined Compressive Strength (kN/m^2)
	Undrained Cohesion (C_u) kN/m^2	Angle of Internal Friction (ϕ)	
0.00 to 4.00	11.29	21^0	----

Chemical Properties of Soil

Sample Depth Below EGL	Chloride Content g/l	Sulphate Content g/l	P^H
0.00 to 4.00	0.15	0.10	7.71

From above results site can be classified under class 1 as per IS-456, therefore attack of sulphates and chlorides to O.P.C.is negligible. Hence O.P.C. construction can be made consideration to foundation and underground works.

6. RECOMMENDATIONS

ESTIMATE OF SAFE BEARING CAPACITY

1**) SBC at 2.00m depth**

Assume Density of Soil =1.70 t/m^3

$q_d = cN_c\ S_c*d_c*i_c + q(N_q-1)S_q*d_q*i_q+0.5B_\gamma* N_\gamma* d_\gamma * s_\gamma * i_\gamma * W'$ *(IS:6403:1981 Cl.5.1.2)*

q= Effective surcharge at the base of foundation

d_c, d_q, d_γ = Depth factors=1

i_c, i_q, i_γ = Inclination factors=1

N_c, N_q , N_γ = Bearing capacity factors

s_c, s_q, s_γ = Shape factors

W' = Correction factor for location of water table =0.5

N=18 consider $\phi=21^0$ c=11.29 kN/m^2

N_c=16. N_q=7.25 N_γ=6.48

S_c=1.3 s_q=1.2 s_γ=0.6 $d_c=d_q=d_\gamma=1$ $i_c=i_q=i_\gamma=1$

$q_d = cN_c\ S_c*d_c*i_c + q(N_q-1)S_q*d_q*i_q+0.5B*\gamma* N_\gamma* d_\gamma * s_\gamma * i_\gamma * W'$

$B\gamma$ = 1.5m

Take overburden Pressure q=17*2.0=34 kN/m^2

q_d =11.29*16.0*1.3*1*1+ 34*(7.25-1)*1.2*1*1+0.5*2.0*17*6.48*1*0.6*1*0.5

=522.88kN/m^2

Take Factor of safety (F.S) = 3.0

SBC= q_d /3.0 =522.88/3.0 =174.29kN/m^2= 17.42 T/m^2

SBC is conservatively Restricted to 10 T/m^2

Settlement Analysis:-

SPT (N) = 18 No.s

Settlement Analysis: - *(IS 8009 :(Part-I)-1976 Cl.9.1.4)*

Take Allowable settlement = 40mm

SPT (N_{avg}) = 18

Assume width of foundation B= 3m

Settlement per unit pressure for ($1kg/cm^2$) = 0.020m

SBC = $10T/m^2$ = 1.0 kg/cm^2

Water table correction = 0.5

Total Settlement = (1.1*0.02)/0.5= 0.040m =40.00mm .....ok

So Allowable Net bearing capacity may take 10 T/m^2 at 2.0m depth

ALLOWABLE BEARING PRESSURE

Sr. No	BH No.	Footing Depth (m)	Type of strata	Recommended Bearing Capacity			
				UB Capacity (T/Sq.m)	FS	SBC (T/Sq.m)	Allowable Bearing Capacity (T/Sq.m)
01	01	2.0	Soft to medium Hard murum	52.29	3.00	17.43	10.00
02	01	2.5		58.66	3.00	19.55	12.00
03	01	3.0		65.04	3.00	21.68	16.00

Type of Foundations:

The following open types of Foundations are recommended.

i) RCC Isolated / Strip Footing

Additional Recommendations:

· The recommended minimum depth of foundation shall be 2.0m below NGL.

· All the columns are to be connected by an RCC Tie Beam at plinth level

Note:-

1. **The foundation should be anchored into the preferred strata at least 300mm.**
2. **The report submitted as per actual site investigation as well as laboratory test results on soil samples collected during SPT and bore hole drilling.**
3. **Designing of foundation should be done with considering all the loads and combination of loads as per relevant IS Codes.**

PHOTOS OF DYNE INDUSTRIAL ZONE SITE

Certificate for Tower Foundation

Date : 10-Oct-19

I, **Sushil Shinde** from M/s. **Indus Inhouse** , certify that the Tower

Foundation for this Site Name :- Dyne Industrial Zone Site Address :- Shaikh Shafeeque Shaikh Kaleem and Mr

Nahsik , Indus ID :- IN-1366397 Opco ID :- MLG6193

Site type :- GBM Foundation designer name: Ramboll India Pvt Ltd

Opco Name :- Airtel Tower Ht 30 Foundation drwaing No. J15009-DC006_30m-Flange-MP-10NWT

was checked and found Ok in all respect with consideration of all checkpoints as per checklist anddrawings furnished by Indus specification

Tower Foundation constructed by :- OSPS TELECOM SERVICES PVT LTD (name of TSP partner name).

Stage	Inspection Date	Revisit Date if any	Final Casting date
C1	02-Aug-19	-	-
C2	07-Aug-19	-	-

Summary of site observations

Following were the observations/deviations observed during foundation construction inspection of the above site.

Rectification refer inspection reports

Key observations during 1st inspection: **Rectification Status**

NIL

Key observations during 2nd inspection: **Rectification Status**

NIL

	Prepared By	Reviewed By	Approved By
Signature:			
Name:	Mr.Prashant Narkar	Mr.Rajesh Dharmadhikari	Mr. Anand Khedkar
Designation	Project Co-Ordinator	Circle Quality Manager	Circle Quality Head
Audit Agency/ Indus			

For all punch points to be rectified before final acceptance

Certificate to be invalid if any additional acivity done by partner on foudnaiton wihtout quality audit or CQH approval after completion of audit acceptance and final

Applicabe for 3rd audit agency only

HO ID Number	

Certificate without Audit Agency HO seal, hologram sign and ID number is invalid

कर्मचारी भविष्य निधि संगठन
Employees' Provident Fund Organization
भविष्य निधि भवन, १४, भीकाजी कामा प्लेस, नई दिल्ली - ११००६६
Bhavishya Nidhi Bhawan, 14, Bhikaji Cama Place, New Delhi - 110066

Generated On 16/10/2019 14:43:

Payment Confirmation Receipt

TRRN No :	1201910013878
Challan Status :	Payment Confirmed
Challan Generated On :	14-OCT-2019 13:27:33
Establishment ID :	APHYD0042194000
Establishment Name :	OSPS TELECOM SERVICES PVT. LTD.
Challan Type :	Monthly Contribution Challan
Total Members :	54
Wage Month :	SEP-2019
Total Amount (Rs) :	1,09,021
Account-1 Amount (Rs) :	72,746
Account-2 Amount (Rs) :	2,186
Account-10 Amount (Rs) :	32,158
Account-21 Amount (Rs) :	1,931
Account-22 Amount (Rs) :	0
Payment Confirmation Bank :	HDFC Bank
CRN :	240141019016688
Payment Date :	14-OCT-2019
Payment Confirmation Date :	14-OCT-2019

ESIC
Employees' State Insurance Corporation

Insurance

0

Monthly Contribution > Online Challan Form

Transaction Details * Required Fields

Transaction status:	Completed Successfully
Employer's Code No:	52000202200001099
Employer's Name:	O S P S TELECOM SERVICES
Challan Period:	Sep-2019
Challan Number :	05219134753790
Challan Created Date	14-10-2019 16:21:56
Challan Submitted Date	14-10-2019 16:22:06
Amount Paid:	15829.00
Transaction Number:	192879336830

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