

VOLUME CHART FOR CYLINDRICAL FOUNDATION

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NOTES-

- DRAWING NOT TO BE SCALED AND ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SPECIFIED.
- THE CONCRETE SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC COMPRESSIVE CUBE STRENGTH FOR SEVERE EXPOSURE CONDITIONS:
(A) FOUNDATION - M20
(B) GROUTING - M20
- CLEAR COVER TO REINFORCEMENT SHALL BE 75mm.
- (A) THE DEPTH OF CYLINDRICAL FOUNDATION AS SHOWN IN THE TABLE ARE NOT SUITABLE IF:
(i) SOIL DENSITY IS LESS THAN 1.6T/M³.
(ii) YARD LOCATIONS.
(B) THIS DRAWINGS OF CYLINDRICAL FOUNDATION IS NOT VALID FOR THE FOLLOWING SOIL TYPES:-
(i) BLACK COTTON SOIL
(ii) ROCK STRATA
- FOR DETAILED DESIGN REFER DOCUMENT NO. DOC/EMP-16/DGN/DC/049 REV. 0 AND ADDENDUM 1 TO DOCUMENT NO. DOC/EMP-16/DGN/DC/049 REV. 0.
- CENTER LINE OF FOUNDATION AND CENTER LINE OF OHE MAST NEED TO BE MATCHED BEFORE EXECUTION.

LEGENDS:	
	STAGE 1 CONCRETING
	STAGE 2 CONCRETING

GOOD FOR CONSTRUCTION

Signature: Date: 30/03/19

PMC 2R		DFCCIL	
DESIGNATION	SIGNATURE	DESIGNATION	SIGNATURE
PM/PMC		CPM/DFCCIL	
CEE/ELECT.		ACPM/ELECT.	
DESIGN EXP.		APP/ELECT.	

ISSUED BY :-
ENGINEERING DESIGN & RESEARCH CENTRE-ELECTRICAL, LARSEN & TOUBRO LIMITED
J. P. SINGH
CHIEF ENGINEERING MANAGER (ELECT)

REV. NO.	DATE	DESCRIPTION	SIGNATURES
D	01.04.2019	DESIGN CHANGE NOTE FOR REVISED GFC. CONCRETE GRADE FOR GROUTING MODIFIED	
C	16.02.2019	ISSUED FOR CONSTRUCTION AS PER ENGINEER'S LETTER NO. L/OCG/DFCC/CMT/EMP-16/1001/19769, DATED 11.01.2019	
B	12.12.2018	ADDENDUM TO REV. A: FOUNDATION DEPTH FOR EXTRA IMPLANTATIONS (4.25M AND 4.85M) HAS BEEN ADDED IN THE DRAWING	
A	09.08.2017	MODIFIED AS PER PMC COMMENTS RECEIVED VIDE LETTER NO. L/OCG/DFCC/CMT/EMP-16/1707/5667 DATED 21.07.2017	
-	31.05.2017	INITIAL SUBMISSION	

PROJECT: DEDICATED FREIGHT CORRIDOR PROJECT (WESTERN CORRIDOR, PACKAGE EMP16 - JNPT TO MAKARPURA)

EMPLOYER: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED

ENGINEER: OCG CONSORTIUM

CONTRACTOR: SOJITZ-L&T CONSORTIUM

CONSULTANT: ARDANUY INGENIERIA S.A.

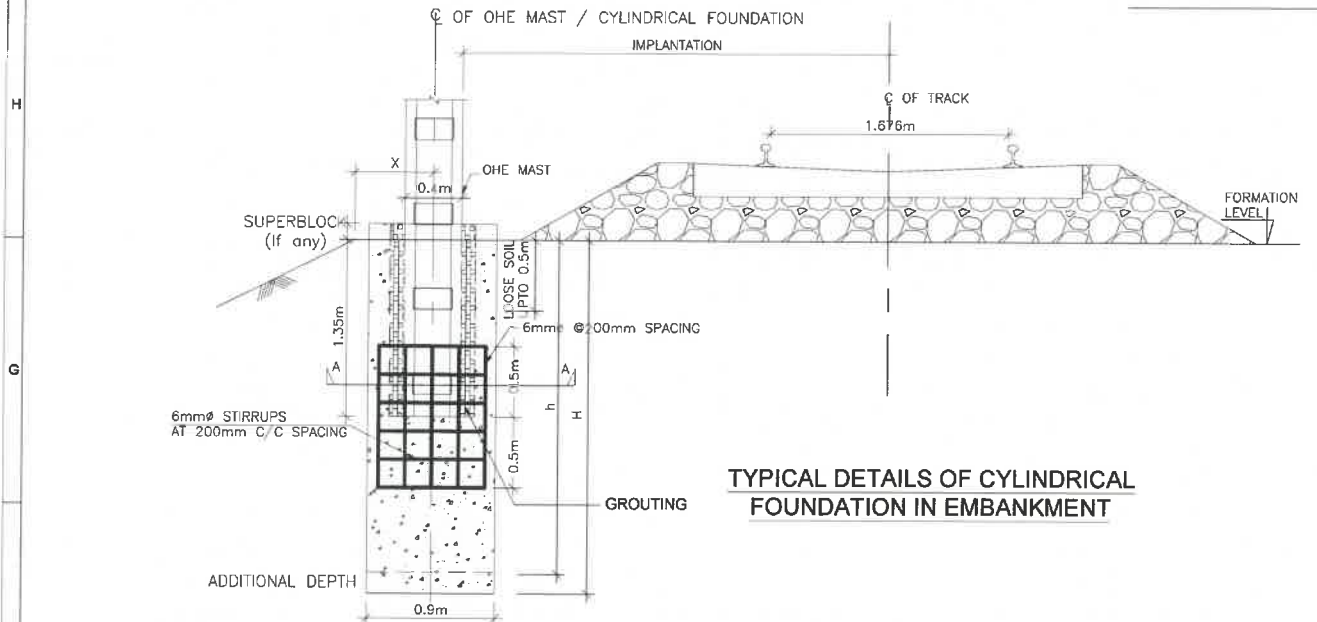
TITLE: TYPICAL DETAILS OF CYLINDRICAL FOUNDATION FOR OHE MAST

JOB No :		CHIEF DESIGN ENGINEER		SIZE		RELEASED FOR	
NAME	SIGN	NAME	SIGN	DATE	SCALE	DATE	DATE
DSGN	PH						
CHKD	AK	APPD	J. HASROUNI				
APPD	AK						

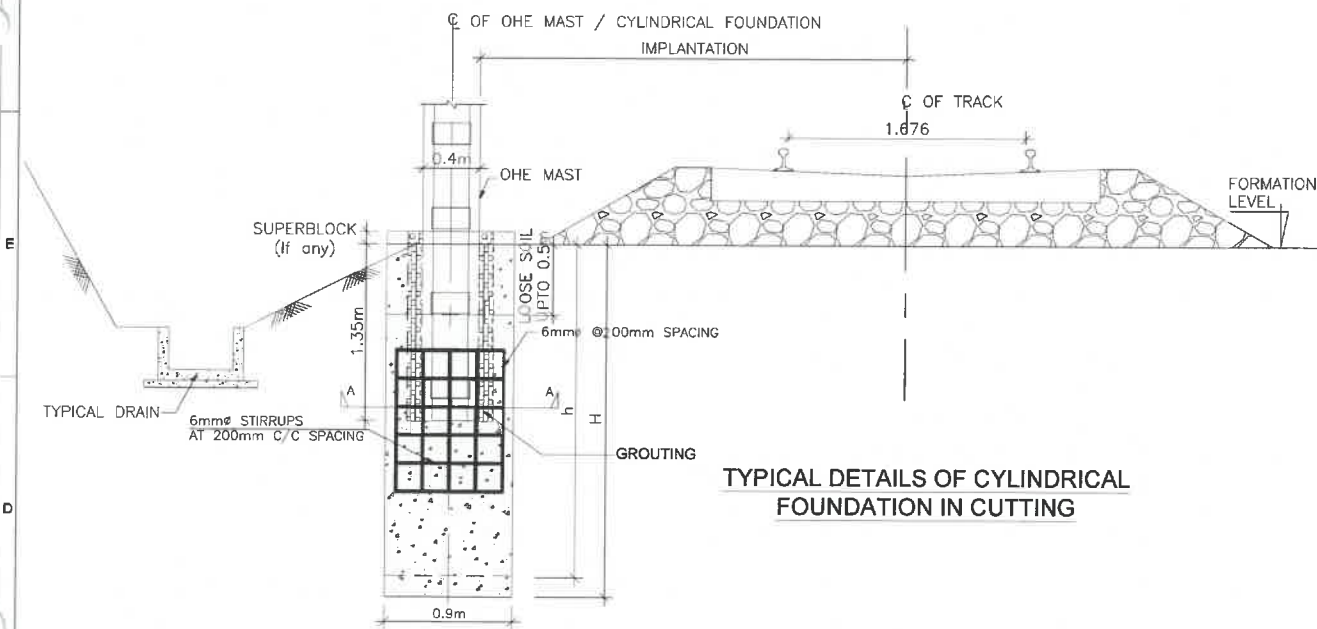
DRG. NO : 5 OR TD 1 1 2 7

DATE : 01.04.2019

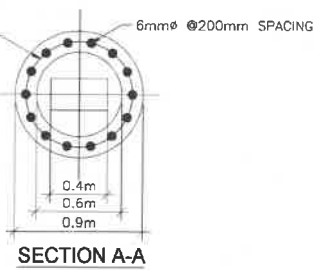
S.No.	Foundation code	Vertical Load (kg)	Bending Moment (kg-m)	Diameter d (m)	Depth of foundation (in m)									
					Embankment					Cutting				
					3.0m	3.5m	3.85m	4.25m	4.85m	3.0m	3.5m	3.85m	4.25m	4.85m
1	107	1500	7000	0.9	2.50	3.00	3.30	3.70	4.30	2.20	2.20	2.20	2.20	2.20
2	108	1500	8000	0.9	2.60	3.10	3.40	3.80	4.40	2.40	2.40	2.40	2.40	2.40
3	109	1500	9000	0.9	2.80	3.30	3.60	4.00	4.60	2.50	2.50	2.50	2.50	2.50
4	110	1500	10000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
5	111	1500	11000	0.9	3.10	3.60	3.90	4.30	4.90	2.70	2.70	2.70	2.70	2.70
6	112	1500	12000	0.9	3.20	3.70	4.00	4.40	5.00	2.80	2.80	2.80	2.80	2.80
7	113	1500	13000	0.9	3.30	3.80	4.10	4.50	5.10	3.00	3.00	3.00	3.00	3.00
8	114	1500	14000	0.9	3.40	3.90	4.20	4.60	5.20	3.10	3.10	3.10	3.10	3.10
9	115	1500	15000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
10	209	2000	9000	0.9	2.80	3.30	3.60	4.00	4.60	2.50	2.50	2.50	2.50	2.50
11	210	2000	10000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
12	211	2000	11000	0.9	3.00	3.50	3.80	4.20	4.80	2.70	2.70	2.70	2.70	2.70
13	212	2000	12000	0.9	3.20	3.70	4.00	4.40	5.00	2.80	2.80	2.80	2.80	2.80
14	213	2000	13000	0.9	3.30	3.80	4.10	4.50	5.10	3.00	3.00	3.00	3.00	3.00
15	214	2000	14000	0.9	3.40	3.90	4.20	4.60	5.20	3.10	3.10	3.10	3.10	3.10
16	215	2000	15000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
17	216	2000	16000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
18	217	2000	17000	0.9	3.60	4.10	4.40	4.80	5.40	3.30	3.30	3.30	3.30	3.30
19	218	2000	18000	0.9	3.70	4.20	4.50	4.90	5.50	3.40	3.40	3.40	3.40	3.40
20	310	3000	10000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
21	311	3000	11000	0.9	3.00	3.50	3.80	4.20	4.80	2.70	2.70	2.70	2.70	2.70
22	312	3000	12000	0.9	3.20	3.70	4.00	4.40	5.00	2.80	2.80	2.80	2.80	2.80
23	313	3000	13000	0.9	3.30	3.80	4.10	4.50	5.10	2.90	2.90	2.90	2.90	2.90
24	314	3000	14000	0.9	3.40	3.90	4.20	4.60	5.20	3.10	3.10	3.10	3.10	3.10
25	315	3000	15000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
26	316	3000	16000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
27	410	4000	10000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
28	411	4000	11000	0.9	3.00	3.50	3.80	4.20	4.80	2.70	2.70	2.70	2.70	2.70
29	412	4000	12000	0.9	3.20	3.70	4.00	4.40	5.00	2.80	2.80	2.80	2.80	2.80
30	413	4000	13000	0.9	3.30	3.80	4.10	4.50	5.10	2.90	2.90	2.90	2.90	2.90
31	414	4000	14000	0.9	3.40	3.90	4.20	4.60	5.20	3.10	3.10	3.10	3.10	3.10
32	415	4000	15000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
33	416	4000	16000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
34	417	4000	17000	0.9	3.60	4.10	4.40	4.80	5.40	3.20	3.20	3.20	3.20	3.20
35	510	5000	10000	0.9	2.90	3.40	3.70	4.10	4.70	2.50	2.50	2.50	2.50	2.50
36	511	5000	11000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
37	512	5000	12000	0.9	3.00	3.50	3.80	4.20	4.80	2.70	2.70	2.70	2.70	2.70
38	513	5000	13000	0.9	3.10	3.60	3.90	4.30	4.90	2.80	2.80	2.80	2.80	2.80
39	514	5000	14000	0.9	3.20	3.70	4.00	4.40	5.00	2.90	2.90	2.90	2.90	2.90
40	515	5000	15000	0.9	3.30	3.80	4.10	4.50	5.10	3.00	3.00	3.00	3.00	3.00
41	516	5000	16000	0.9	3.40	3.90	4.20	4.60	5.20	3.10	3.10	3.10	3.10	3.10
42	517	5000	17000	0.9	3.50	4.00	4.30	4.70	5.30	3.20	3.20	3.20	3.20	3.20
43	518	5000	18000	0.9	3.60	4.10	4.40	4.80	5.40	3.30	3.30	3.30	3.30	3.30
44	609	6000	9000	0.9	2.70	3.20	3.50	3.90	4.50	2.40	2.40	2.40	2.40	2.40
45	610	6000	10000	0.9	2.80	3.30	3.60	4.00	4.60	2.50	2.50	2.50	2.50	2.50
46	611	6000	11000	0.9	2.90	3.40	3.70	4.10	4.70	2.60	2.60	2.60	2.60	2.60
47	612	6000	12000	0.9	3.00	3.50	3.80	4.20	4.80	2.70	2.70	2.70	2.70	2.70
48	613	6000	13000	0.9	3.10	3.60	3.90	4.30	4.90	2.80	2.80	2.80	2.80	2.80



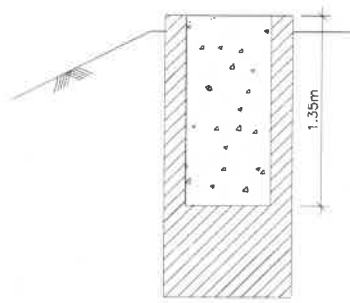
TYPICAL DETAILS OF CYLINDRICAL FOUNDATION IN EMBANKMENT



TYPICAL DETAILS OF CYLINDRICAL FOUNDATION IN CUTTING



SECTION A-A



TYPICAL STAGES OF CONCRETING

IMPORTANT NOTES

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH LOADING CHART.
- LOADING CORRESPONDING TO PARTICULAR TYPE OF LOCATION MUST BE READ FROM LOADING CHART AND DEPTH OF FOUNDATION BASED ON DIFFERENT VERTICAL LOAD & BENDING MOMENT AND DIFFERENT IMPLANTATION VALUE MUST BE ADOPTED AS PER THE FOLLOWING CRITERIA-
i) BASED ON VERTICAL LOAD & BENDING MOMENT VALUES.
CRITERIA ADOPTED DEPTH
A) BOTH VERTICAL LOAD & BENDING MOMENT ARE SAME - SAME AS MENTIONED IN VOLUME CHART
B) VERTICAL LOAD IS HIGHER & BENDING MOMENT IS SAME - CORRESPONDING TO BENDING MOMENT
C) VERTICAL LOAD IS SAME & BENDING MOMENT IS HIGHER - CORRESPONDING TO ONE VALUE HIGHER BENDING MOMENT
- ii) BASED ON IMPLANTATION (I) VALUE:-
RANGE ADOPTED DEPTH RANGE ADOPTED DEPTH
A) 1<=3 m - FOR 3.0m D) 3.85<=4.25m - FOR 4.25m
B) 3.0<=3.5m - FOR 3.5m E) 4.25<=4.85m - FOR 4.85m
C) 3.5<=3.85m - FOR 3.85m
- FOR EMBANKMENTS, ADDITIONAL DEPTH FOR IMPLANTATION OF 3.00M TO 4.85M ARE INCLUDED IN THESE DEPTHS. FOR ANY OTHER VALUE OF IMPLANTATION, ADDITIONAL DEPTH CORRESPONDING TO (0.6-X)M MUST BE ADDED TO DESIGNED DEPTHS PROVIDED IN DOCUMENT NO. DOC/EMP-16/DGN/DC/049 REV. 0 AND ADDENDUM 1 TO DOCUMENT NO. DOC/EMP-16/DGN/DC/049 REV. 0.
- THESE DEPTH OF FOUNDATIONS ARE BASED ON TYPICAL CONDITIONS SHOWN IN THIS DRAWING.
- IN CASE THE DRAIN LOCATION IS DIFFERENT THAN SHOWN ABOVE, THE CASE MUST BE REFERRED BACK TO DESIGN.
- THESE DEPTHS ARE VALID FOR SLOPE 2H:1V OR FLATTER SLOPES.
- MINIMUM FORMATION WIDTH MUST BE 13.5M FOR EMBANKMENTS AND 12.9M FOR CUTTING.

PMC-2R OCG-OCI-NK-NKI-RITES

Submtal No/ Ltr. Ref. No: 3168 Date: 30-4-2019

Engineer's Response

NONO

Checked	Name	Signature
	Ishan	
Reviewed	CHANDAN	
Authorised Signatory	Rk	

Date: 12-4-2019