No.RW/BHP/MP/Gantry(04)/2024-25 (Computer No.248555)
Government of India
Ministry of Road Transport & Highways
(Chief Engineer - Regional Office, Bhopal)
2nd Floor, Nirman Bhawan, Arera Hills, Bhopal-462011
PH: 0755-2551329, 0755-2571467, Email ID: ro.bpl-morth@gov.in

Date: 03.02.2025

Invitation of Public Comments

Subject: Proposal for permission for Gantry Installation (Check Gate) near Barahi Toll Plaza om Gwalior-Bhind-Etawah section of NH-719 in the state of Madhya Pradesh. Reg.-

DM, MPRDC, Gwalior vide letter no. 1580/MPRDC/2024 dated 20.01.2025 forwarded therewith a proposal in this office for Permission for Gantry Installation (Check Gate) near Barahi Toll Plaza om Gwalior-Bhind-Etawah section of NH-719 in the state of Madhya Pradesh.

2. As per Ministry vide OM No. RW/NH-33044/29/2015/S&R(R) dated 22.11.2016, the Highways Administrator will make available the proposal seeking permission for utility laying for public comments for 30 days on ground of public interest.

3. In view of the above the comments of public are invited on captioned proposal and the same should reach to below mentioned address within 30 days beyond which no comments will be considered.

The Highways Administration
O/o RO Highways Administration
Ministry of Road Transport & Highways
IInd Floor, Nirman Bhawan, Bhopal-462011.
Email: ro.bpl-morth@gov.in

4. This issues with the approval of Highways Administration-cum Regional Officer, MoRT&H, Bhopal. (Computer no. – 248555)

Ypurs faithfully
Digitally signed by
Shubham Kaushal Ahirwar
Date: 03-02-2025 13:23:28
Assistant Executive Engineer
For CE-RO, MoRT&H, Bhopal

Copy to:

1. The Senior Technical Director, NIC, Transport Bhawan, New Delhi-110001 for uploading on Ministry's Website.
2. The CE (NH), MPRDC, Bhopal-for information.
3. The DM, MPRDC Division Gwalior-for information and requested to furnish the recommendation in view of Ministry's circular No. RW/NH-33044/29/2015/S&R (R) dated 22.11.2016 along with verified fees viz. license fee etc. as per circular and their detailed calculations.

CIN : U45203MP2004SGC016758

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
OFFICE OF THE DIVISIONAL MANAGER M.P.R.D.C. LTD. GWALIOR
Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior (M.P.)
Web site: www.mprdc.nic.in, E-mail:dmmprdcgwl@gmail.com
Phone: 0751-4728185

No. 1580 /MPRDC/2024/ Gwalior, Date 20/1/2025

OFFICE OF THE CE.RO MORT&H NIRMAN BHOPAL No. 4349 Date 27/01/25

To,

The Chief Engineer- R.O.
MORT&H, 2nd Floor
Nirman Bhawan, Arera Hills
Bhopal (M.P.)-462011

DS-II AEE 23/1/25

Sub: - Regarding permission for AI- Checkgate proposal at NH-719 (Old NH-92), near Barahi Toll Plaza Dist.-Bhind in the state of M.P.

Ref:-
1- T.O. letter no. 1502/I-Check/NH-92/MPRDC/2024, Chambal Dated 12.11.2024
2- Additional Director, Directorate of geology and mining Bhopal letter dated 29.11.2024

With reference to above, kindly find enclosed herewith a proposal received from Additional director, Directorate of geology and mining Bhopal to obtain permission for AI-Checkgate proposal at NH-719 (Old NH-92), near Barahi Toll Plaza Dist.-Bhind in the state of M.P.

In this regard Additional director, Directorate of geology and mining Bhopal has been submitted the proposal according to MoRT&H technical circular no. RW/NH-33044/29/2015/ S&R(R) Dated 22.11.2016 on norms for granting ROW permission for accommodation of public and industrial utility services along the National Highway.

The proposal has been checked and site inspection conducted by Sh. Paras Ratnakar, Manager (Tech.), MPRDC-Gwalior and recommended to accord necessary permission. Following documents are enclosed along with the proposal: -

1- Licence Fees amounting to Rs.56371/- through NTRP Portal.
2- Bank Guarantee amounting to Rs. 2000/- in favour of Divisional Manager, MPRDC-Chambal.
3- Bipartite Agreement.
4- Layout Plan and methodology showing the proposed location for laying Carbon Steel Pipeline duly signed by authorized signatory.
5- Duly filled checklist.
6- Certificate for 6 laning from the applicant in the following format-

(i)"We do undertake that I will relocate service road/approach road/Utilities at my own cost notwithstanding the permission granted within such time as will be stipulated by MPRDC for future four-laning or any other development".

This is in Favour of your information and recommended for approval please.

Encl:- Calculation sheet

Divisional Manager
MPRDC, Gwalior-Div.,
(Gwalior)

Conti.....2

Endt.No. /MPRDC/2024 Gwalior, dated .....

Copy to:-

1. M/s M.P. Highways Pvt. Ltd., Gwalior (M.P.) For information.
2. Additional Director, Directorate of geology and mining Bhopal for information.

-Sd-

Divisional Manager
MPRDC, Gwalior-Div.,
(Gwalior)

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(M.P. STATE HIGHWAY AUTHORITY)
(Govt. of M.P. Undertaking)
CIN No: U45203MP2004SGC016758
OFFICE OF THE DIVISIONAL MANAGER, CHAMBAL
Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior, Phone: 0751-4042386
Web site: www.mprdc.gov.in, E-mail:-chambal-dm@mp.gov.in

Memo No. 1502 -Check/NH-92/MPRDC/2024 Chambal, Dated 12 / 11 /2024

To,

Additional Director
Geology and Mining,
Bhopal (M.P.)

Sub: - Regarding Al-Checkgate proposal on Gwalior-Bhind-Etawah Road (NH-92.)

Ref:- Your Letter ref. no. 3169/1211283/2023/12/1 dated 04.06.2024.

With reference to above, vide above referred you have applied for I-Check gate on Gwalior-Bhind-Etawah Road (NH-92) at Barahi, Total length is 20Mtr.

In this regard you are requested to submit the proposal according to MoRT&H technical circular No. RW/NH-33044/29/2015/S&R(R), Dated 22.11.2016 & Circular no. NH-36094/01/2022-S&R(P&B)(E-208825) dated 24.04.2023 on Norms for granting Right of Way permission for accommodation of Public and Industrial Utility services along and across the National Highways in two copies along with following documents to this office for further action:-

1. Submit the Licence fees Amounting to Rs 56371/- (Rs Fifty-Six Thousand Three Hundred Seventy-One Only) online through NTRP Portal and submit the receipt of license fee deposition. **(Calculation Sheet enclosed)**
2. A Performance Bank Guarantee as per enclosed format, with a validity of one year initially (Extendable if required till satisfactory completion of work) in Favour of **"Divisional Manager, MPRDC, Chambal"** for total length of 20mtr @ Rs. 100/- per RM, i.e. Rs. 2000/-(Rs. Two Thousand Only). **(Calculation Sheet enclosed)**
3. Applicant should submit 02 copies of Bipartite "Agreement regarding granting of right of way permission for I-Check gate on National Highways" on Rs. 500/- Non-Judicial Stamp for OFC in proper format as per the Ministry Circular Dated 22.11.2016.
4. Power of attorney to authorizing the official to execute the agreement.
5. Layout plan and drawing showing the I-Check gate signed by the authorized signatory (Each page).
6. Cross section of pit indicating width, depth & position of crossing.
7. Cross section of each road crossing showing depth of ground level and drilling level below road top level. Road crossing should be done by HDD method only(No any other method is acceptable).
8. Drawing showing arrangement to cross the CD structures.
9. Certificate for 4/6laning from the applicant in the following format: - "We do undertake that I will relocate service road/approach road/ utilities at my own cost notwithstanding the permission granted within such time as will be stipulated by MPRDC" for future four-laning or any other development.

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(M.P. STATE HIGHWAY AUTHORITY)
(Govt. of M.P. Undertaking)
CIN No. U45203MP2004SGC016738
OFFICE OF THE DIVISIONAL MANAGER, CHAMBAL
Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior, Phone: 0751-4042386
Web site: www.mprdc.gov.in E-mail:- chambal.dm@mp.gov.in

10. In view of the above, if there is any deviation found in fee, it will be payable by your office.

Therefore, it is requested you to submit the complete proposal along with above required documents then it could be forwarded to NOC.

It is submitted for your information and necessary action.

Encl-As above.

Divisional Manager
MPRDC Chambal.

Endt.No. 1503 / I-Check/NH-92/MPRDC/2024 Chambal, Dated 12/11/2024

Copy to:-

1. Chief Engineer-Regional Officer, MoRT&H, Nirman Bhawan Bhopal for information.
2. Mining officer, district Bhind for information & necessary action.
3. M/s MP. Highways Pvt. Ltd., Gwalior (M.P.) For information.

Divisional Manager
MPRDC Chambal.

Calculation sheet for licence fees required to deposit for I-Checkgate along and across the NH under jurisdiction of MPRDC

1. **Name of Project** :- Permission for AI Checkgate proposal on Gwalior-Bhind-Etwah Road Barahi MPRDC on NH- 719 (Old NH-92)
2. **Start Point and End Point of Utility** :-
3. **Total Length** :- 20
4. **No. of villages/Towns through which Utility is passing** :-01
5. **Details for calculation of License fee** :-

Sr.No.	Utility Details	Stretch (Rural/ Urban)	Village/ Town	District	Length (M)	Width (M)	Area (sqm)	Applicable Rates (Rs./Sqm)	Utilized SH/MDR/NH land area x Prevailing circle rate of land per unit area	License fee for public utility = (Utilised NH land area x Prevailing circle rate of land per unit area x 1.5% per anum) (Minimum of 10000 per anum)
A	B	C	D	E	F	G	H	I	J	K
1	AI Check Gate	Rural	Barahi	Bhind	20	1	20.000	1000	20000	300
TOTAL					**20**				**20000**	**300**
License fee for 1st year Subject to minimum of Rs. 10,000/-)										10000
License fee for 2nd year (with 6% annual increment)										10600
License fee for 3rd year (with 6% annual increment)										11236
License fee for 4th year (with 6% annual increment)										11910.16
License fee for 5th year (with 6% annual increment)										12624.7696
Total License Fee for 05 Years										**56371**
In words :- (RS. Fifty Six Thousand Three Hundred Seventy One Only)										
Calculation of Performance Bank Guarantee as per the circular :- 2000 In Words :- (RS.Two Thousand Only)										

DIVISIONAL MANAGER
MPRDC, CHAMBAL-DIV.,
GWALIOR

Directorate of Geology and Mining, Madhya Pradesh

29-A, Khanij Bhawan, Arera Hills Bhopal

Phone & Fax: 0755-2551795, Email: dirgeomn@nic.in

Date: 19-12-2024

To: Divisional Manager,

Title: Document Submission Receiving

Department/Organization: Madhya Pradesh Road Development Corporation,

Address: Office campus of chief engineeer P.W.D. Thatipur,Gwalior,

Subject: Submission of G&M Project Documents– AI Based system to curb illegal transportation of minerals for Approval from your Concern/Esteemed department/Organization

I am writing to formally submit G&M Project - AI Based system to curb illegal transportation of minerals for your review and approval. Please find the details below:

- **Document Title: AI Based system to curb illegal transportation of minerals**
- **Document Type: Original Hard Copies**
- **Purpose of Submission:** Required NOC certificate for installation of Check gate at site – Near barhi Toll Plaza, Bhind,

Enclosures:

1. Bank Guarantee (As requested in Demand Note)
2. Receipt of License fee paid on Bharat-kosh Portal (As Requested in Demand Note)

bharatkosh.gov.in

Government of India Receipt Portal

RECEIPT

Transaction Ref.No. 0512240022109 Dated: Dec 5 2024 3:22PM

Received from MR. ABHAYSINH K JAGTAP with Transaction Ref.No. 0512240022109

Dated Dec 5 2024 3:22PM the sum of INR 56371 (Fifty-Six Thousand Three Hundred Seventy-One Only) through Internet based Online payment in the account of

Receipt of Service Fees on Account of NH, , AI based enforcement system for esteem state MP - Bhind.

Disclaimer:- This is a system generated electronic receipt, hence no physical signature is required for the purpose of authentication

Printed On: 05-12-2024 03:42:13

Courtesy :- Controller General of Accounts

बैंक ऑफ़ महाराष्ट्र
Bank of Maharashtra
भारत सरकार का उपक्रम
एक परिवार एक बैंक

अंचल कार्यालय/ शाखा पुणे शहर / एस. एस. आइ. पुणे
Zonal Office / Branch PUNE CITY / S S I, PUNE
टेलीफोन/TELE : 020-24275562 / 2426674
ई-मेल/e-mail :
bom1140@mahabank.co.in

प्रधान कार्यालय: लोकमंगल, 1501, शिवाजीनगर, पुणे-5
Head Office: LOKMANGAL,1501.SHIVAJINAGAR, PUNE-5

AQ46/BG/ 2024-2025 Date: 06.12.2024

Our Ref: 0114024IPG019833

To
Divisional Manager,
MPRDC, Chambal, Bhind, Gwalior
Madhya Pradesh 477 001

DEAR SIR(S),

We enclose here with Bank Guarantee No. 0114024IPG019833 in favour of "Divisional Manager, MPRDC, Chambal, Bhind, GwaliorMadhya Pradesh 477 001" on behalf of our Client SHAURYA TECHNOSOFT PRIVATE LIMITED, under the terms of contract entered in to by our Client and yourself.

Details of Bank Guarantee:

Issuing Branch: 01140

Date of BG: 06.12.2024 BG No.: 0114024IPG019833

OLD BANK GUARANTEE NUMBER: N.A.

Amount: INR 2000/-

Expiry Date: 01.12.2029

Claim Date: 01.12.2029

Confirmation of this guarantee can be had from our Regional Office at:

"Yashomangal 1183-A Shivajinagar F.C. Road, Pune, Maharashtra-411 005"

Yours faithfully,

Authorized Signature

भारतीय गैर न्यायिक

भारत INDIA

रु. 500

FIVE HUNDRED RUPEES

पाँच सौ रुपये

Rs. 500

INDIA NON JUDICIAL

अ.नु.क्र:- 35934 दि. ०५/१२/२०२४ रु- ५००/-

महाराष्ट्र MAHARASHTRA 2024

CW 744257

दस्ताचा प्रकार	बँकगॅरंटी
दस्त नोंदणी करणार आहे का ?	नाही
मिळकतीचे वर्णन	दस्तवर्णनानुसार
मुद्रांक विकत घेणाऱ्याचे नाव व पत्ता	शौर्य टेक्नोसॉफ्ट प्रा. लि , शंकरशेठ रोड , पुणे
दुसऱ्या पक्षकाराचे नाव	बँक ऑफ महाराष्ट्र
हस्ते व्यक्तीचे नाव व पत्ता	सुरजसिंह राजपूत , धनकवडी , पुणे
मुद्रांक विकत घेणाऱ्याची सही	
परवानाधारक मुद्रांक विक्रेत्याची सही व परवाना क्रमांक तसेच मुद्रांक विक्रीचे ठिकाण /पत्ता	सौ साधना दिलीप कोठारी २२०११२९, ४/४ रायसोनी पार्क, मार्केटयार्ड पुणे -४११०३७ मो. ९५८१७३६०९१

ज्या कारणासाठी ज्यांनी मुद्रांक खरेदी केला आहे त्याच कारणासाठी मुद्रांक खरेदी केल्यापासून १२ महिने मुदतीमध्ये वापरावे

साधना दि. कोठारी
- २२०११२९
4/4 रायसोनी पार्क
मार्केटयार्ड पुणे- ३७

वरिष्ठ कोषागार अधिकारी
पुणे

0 4 DEC 2024

प्रथम मुद्रांक लिपीक
कोषागार पुणे करिता

Bank Guarantee No. 0114024BG019833

BG NO 0114024IPG019833

BANK GUARANTEE

Bank of Maharashtra

MSME (SSI) Branch Poonam Plaza Opp. Kamal Nursing Home Market Yard Pune Maharashtra 411037

Beneficiary: Divisional Manager, MPRDC, Chambal, Bhind, Gwalior, Madhya Pradesh - 477001

Bank Guarantee No...0114024IPG019833

Date of Issue: 07.12.2024

Performance Bank Guarantee amount: **Rs. 2,000 /- (Rupees Two Thousand Only)**

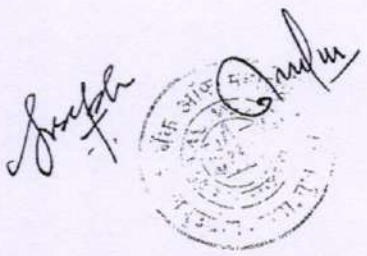
Date of expiry: **01-12-2029,** Last date of claim: **01-12-2029**

We have been informed that *Shaurya Technosoft Pvt Ltd* **Regd. Office: CyberNex, 7th Floor, Shankar Seth Road, Swargate, Pune-4110137, Maharashtra, India, India.** Tel: 084848 01165; (Name of the Department/licensee/contractor)... *Shaurya Technosoft Pvt Ltd* **Regd. Office: 7th Floor, Cybernex, 399, Shankar Sheth Rd, Swargate, Pune, Maharashtra 411037, India, India. Tel: 08484801165;** (herein after called the applicant) has applied for permission for Gantry installation on (e-Checkgate)

Erection of Over Head Gantry at Al Checkgate proposal on Gwalior-Bhind-Etawah Road(NH-92), Bhind-Gwalior, Madhya Pradesh-477001, by Directorate of Geology and Mining, Government of Madhya Pradesh at Divisional Manager, MPRDC, Chambal, Bhind, Gwalior, Madhya Pradesh - 477001, **letter no. 3169/1211283/2023/12/1 Dated 04-06-2024** and is going to execute an agreement with Divisional Manager, MPRDC, Chambal, Bhind, Gwalior, Madhya Pradesh - 477001,(herein after called the principal)

Furthermore, we understand that, according to the condition of the agreement an unconditional bank guarantee is required.

At the request of the applicant, we, Bank of Maharashtra here by irrevocably undertake to pay the Principal any amount not exceeding in total an amount **Rs. 2000/- (Rupees Two Thousand Only)** payable under this guarantee, without any demur, merely on receipt by us (bank) principal's first demand in writing accompanied by a written statement stating that the contractor is in breach of its obligation(s) under the agreement, without principal's needing to prove or to show grounds for your demand.



BG NO 0114024IPG019833

Our liability under this guarantee shall be restricted **Rs. 2,000/- (Rupees Two Thousand Only)** We undertake to pay the principal any amount, limiting to the amount under this guarantee, so demanded not withstanding any dispute or dispute raised by the applicant in any suit or proceeding pending before any court or tribunal relating their/ our liability. The payment so made by us(bank) under this guarantee shall be a valid discharge of our liability for payment.

We Bank of Maharashtra, further agree that this guarantee shall remain in full force and effect during the period of performance of said agreement and that it shall be continued to be enforceable till all the dues of the principal have been fully paid and its claims satisfied or discharged or till the principal certify that the terms and conditions of the said agreement have been fully and properly carried out by the said applicant and accordingly discharges this guarantee or till .....01.12.2029., we shall be discharged our liabilities under this guarantee thereafter.

We, Bank of Maharashtra further undertakes not to revoke this guarantee during its currency except with previous consent of the principal in writing.

This guarantee shall be valid up to 01.12.2029 We are liable to pay any amount, limiting to the amount under this guarantee, only if we received a written claim or demand on or before 01.12.2029 at Bank of Maharashtra MSME (SSI) Branch Poonam Plaza Opp. Kamal Nursing Home Market Yard Pune Maharashtra 411037

We Bank of Maharashtra agree for a one time extension of this guarantee for a period not exceeding one year, in response to the principal's written request for such extension, such request to be presented to the guarantor (bank) before the expiry of the guarantee.

Bank of Maharashtra

Signature of authorised person

Directorate of Geology and Mining, Madhya Pradesh

29-A, Khanij Bhawan, Arera Hills Bhopal

Phone & Fax: 0755-2551795, Email: dirgeomn@nic.in

Date: 19-12-2024

To: Divisional Manager,

Title: Document Submission Receiving

Department/Organization: Madhya Pradesh Road Development Corporation,

Address: Office campus of chief engineeer P.W.D. Thatipur,Gwalior,

Subject: Submission of G&M Project Documents– AI Based system to curb illegal transportation of minerals for Approval from your Concern/Esteemed department/Organization

I am writing to formally submit G&M Project - AI Based system to curb illegal transportation of minerals for your review and approval. Please find the details below:

- **Document Title: AI Based system to curb illegal transportation of minerals**
- **Document Type: Original Hard Copies**
- **Purpose of Submission:** Required NOC certificate for installation of Check gate at site – Near barhi Toll Plaza, Bhind,

Enclosures:

1. Bank Guarantee (As requested in Demand Note)
2. Receipt of License fee paid on Bharat-kosh Portal (As Requested in Demand Note)

Summary of Key Points:

Please review the enclosed document at your earliest convenience. Should you require any additional information or clarification, feel free to contact me directly.

Thank you for your attention to this matter. I look forward to your feedback and approval for the same

Sincerely,

- Full Name – Rajesh Sharma
- Position: IT Officer - DGM
- Department: Directorate of Geology & Mining Bhopal
- Email Address – Dirgeomn@nic.in
- Phone Number – 8956418957 / 8956418958

This format ensures that all critical details are included and presented in a Tabulated manner/Format, Adjustments can be made based on the specific requirements of your organization or the nature of the document being submitted.

Seal & Signature of Receiving Authority

Directorate of Geology and Mining, Madhya Pradesh

29-A, Khanij Bhawan, Arera Hills Bhopal
Phone & Fax: 0755-2551795, Email: dirgeomn@nic.in

Date: 29-11-2024

To: Divisional Manager – MPRDC – Chambal

Title: Document Enclosure Details

Department/Organization: Madhya Pradesh Road Development Corporation Limited

Address: Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior, Phone: 0751-4042386

Subject: Submission of G&M Project Documents– AI Based system to curb illegal transportation of minerals for Approval from your Concern/Esteemed department/Organization

I am writing to formally submit G&M Project - AI Based system to curb illegal transportation of minerals for your review and approval. Please find the details below:

- **Document Title: AI Based system to curb illegal transportation of minerals**
- **Document Type: Original Hard Copies**
- **Purpose of Submission:** Required NOC certificate for installation of Check gate at site Near Barhi Toll Plaza Bhind

Enclosures:

1. Agreement on Stamp of Rupees 500
2. Undertaking on Stamp of Rupees 100
3. Bank guaranty / Fixed Deposit Calculation Sheet (Demand Note)
4. Check-List Document
5. Detailed Survey report along with Site Photographs
6. Working Drawing - A2
7. 3D Design of gantry with all specifications - A2
8. Receipt of online application submitted in MoRTH Portal
9. Letter of MPRDC + NHAI
10. Cover Letter
11. Soil Report

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार)

NATIONAL HIGHWAYS AUTHORITY OF INDIA

(Ministry of Road Transport and Highways, Govt. of India)

क्षेत्रीय कार्यालय/ REGIONAL OFFICE

ई-6/47, स्मृति परिसर, साईंबोर्ड के पास, अरेरा कॉलोनी, भोपाल (म.प्र.)-462016

E-6/47, Smriti Parisar, Near Sai Board, Arera Colony, Bhopal (M.P.)-462016

दूरभाष / Phone : 0755-2426638, फैक्स/Fax : 0755-2426698, ई-मेल/E-mail ID - robhopal@nhai.org

भाराराप्रा / क्षे.का.–म.प्र. / सामान्य / 2024 / 51203 दिनांक 25 / 06 / 2024

प्रति,

क्षेत्रीय अधिकारी,
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण,
क्षेत्रीय कार्यालय,
जबलपुर (म.प्र.)

विषयः **अवैध परिवहन की रोकथाम हेतु स्थापित किये जा रहे i-Checkgate के लिये लागू की जा रही License Fees को Exempt किये जाने बावत।**

सन्दर्भः मध्यप्रदेश शासन, खनिज साधन विभाग, भोपाल का पत्र कमांक 3507/1211282/2023/12/1 दिनांक 13 / 06 / 2024.

महोदय,

कृपया विषयांतर्गत संदर्भित पत्र का अवलोकन करें जिसके माध्यम से मध्यप्रदेश शासन, खनिज साधन विभाग, भोपाल द्वारा लेख किया गया है कि अवैध परिवहन की रोकथाम हेतु संपूर्ण प्रदेश में Artificial Intelligence आधारित मानवरहित i-Checkgate स्थापित किये जा रहे हैं। जिसमें से 27 स्थल NHAI की अधिकारिता में आते हैं।

2. उक्त संबंध में लेख है कि आपके क्षेत्रांतर्गत परियोजना निदेशकों को खनिज साधन विभाग के अधिकारियों से समन्वय स्थापित कर भारतीय राष्ट्रीय राजमार्ग प्राधिकेरण के नियमानुसार आवश्यक सहयोग प्रदान करने हेतु निर्देश पारित करने का कष्ट करें।

भवदीय,

संलग्नः उपरोक्तानुसार।

(प्रदीप कुमार लाल)
महाप्रबंधक (तक.)

प्रतिलिपिः

मध्यप्रदेश शासन, खनिज साधन विभाग, भोपाल की ओर सूचनार्थ प्रेषित।

मध्यप्रदेश शासन
खनिज साधन विभाग
मंत्रालय

क्रमांक – 3507 /1211282/2023/12/1 भोपाल, दिनांकः– 13/06/2024

प्रति,

महाप्रबंधक एवं क्षेत्रीय अधिकारी (पूर्व क्षेत्र),
राष्ट्रीय राजमार्ग प्राधिकरण (NHAI),
जबलपुर, मध्यप्रदेश।

विषयः– अवैध परिवहन की रोकथाम हेतु स्थापित किये जा रहे i-Checkgate के लिये लागू की जा रही License Fees को Exempt किये जाने बाबत।

उपरोक्त विषयांतर्गत लेख है कि, खनिज साधन विभाग द्वारा अवैध परिवहन की रोकथाम हेतु संपूर्ण प्रदेश में Artificial Intelligence आधारित मानवरहित i-Checkgate स्थापित किये जा रहे हैं। i-Checkgate स्थापित करने हेतु पूरे प्रदेश में कुल 40 स्थल चिन्हांकित किये गये हैं, जिसमें से 27 स्थल NHAI की अधिकारिता में आते हैं।

i-Checkgate की स्थापना राष्ट्रीय राजमार्ग प्राधिकरण (NHAI) द्वारा निर्धारित मापदण्डों के अनुरूप ही की जा रही है, जिसमें किसी भी प्रकार का परिवहन बाधित नहीं होगा। इसके साथ ही उपरोक्त i-Checkgate का उपयोग शासकीय कार्य हेतु किया जा रहा है, जिसमें किसी भी प्रकार का व्यवसायिक प्रचार–प्रसार नहीं किया जाएगा।

अतः अनुरोध है कि, NHAI द्वारा उपरोक्तानुसार स्थापित किये जा रहे i-Checkgate के लिये लागू की जा रही License Fees या अन्य शुल्क को Exempt करने का कष्ट करें।

संलग्नः– उपरोक्तानुसार।

13/6/24

(प्रकाश पन्द्रे)
अवर सचिव
म0प्र0 शासन, खनिज साधन विभाग
भोपाल, दिनांकः– 13/06/2024

पृष्ठ. क्रमांक – 3508 /1211282/2024/12/1

प्रतिलिपिः–

1. संचालक (प्रशासन तथा खकिनर्म), संचालनालय, भौमिकी तथा खनिकर्म, मध्यप्रदेश, भोपाल।

की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

2. गार्ड फाईल।

13/6/24

अवर सचिव
म0प्र0 शासन, खनिज साधन विभाग

Field Survey Report all MP Districts													
Sr.No.	District	Tehsil	Location	Highway Type	Highway Lane	Highway Number	Latitude	Longitude	Remarks	Application Ref No	Application Tracking No	HEIGHT in mtr	WEIDTH in mtr
1	Gwalior	- Dabra recommended	Jorasi Gwalior MP - 475001	NHA	Four Lane	44	26.06188	78.24562				6.6	25.4
2	Gwalior	NH44 gwalior (recommended)	NH44 Gwalior, Madhya Pradesh – 475001	NHA	Four Lane	44	26.32596	78.1116				6.6	21
3	Morena	Morena	Banmore Tiraha Bypass, A. B. Road	NHA	Four Lane	44	26.32526	78.11211				6.6	20
4	Morena	Morena	Alabeli Police Chauki	NHA	Four Lane	44	26.64395	77.91549				6.6	22.6
5	Rewa	Teothar	Baghedi Chauraha , Chakghat	NHA	Four Lane	30	25.01728	81.72085	NHA			6.6	17
6	Singrauli	Sarai	Village Nigari,Near Bridge of River Gopad	NHA	Two Lane	39	24.42427	82.20086				6.6	9.5
7	Singrauli	Singrauli	Khanhna Barrier	NHA	Two Lane	39	24.22072	82.71134				6.6	11
8	Singrauli	Singrauli	Kachni Telai Bridge	NHA	Four Lane	39	24.07639	82.58289				6.6	11
9	Sidhi	Churhat	Koshiha Kothar	NHA	Four Lane	39	24.41628	81.61996				6.6	13

10	Indore	Khudel	Near Sanawadia Panchayat (Nemawar Road)	NHA	Two Lane	47	22.67554	75.93239				6.6	13
11	Indore (recommended)	Sawer	A. B. Road, Indore MP	NHA	Two Lane	47	22.89844	75.97409				6.6	13
12	Alirajpur	Katthiwada	Chandpur	NHA	Two Lane	56	22.35841	74.23704				6.6	
13	Sagar	Deori	Maharajpur Police Station Deori Sagar	NHA	Four Lane	44	23.28578	79.04455				6.6	22.9
14	Niwari (recommended)	Orchha	Orchha-Pratpura	NHA	Four Lane	39	25.41946	78.64762				6.6	53
15	Chhatarpur	Luvkush Nagar	Pura	NHA	Two Lane	34	25.235	79.92323				6.6	11
16	Chhatarpur	Barigarh	Rampur Ghat(UP-MP Border, Gorihar) Chhatarpur	NHA	Two Lane	35	25.27469	80.35056				6.6	10
17	Jabalpur	Jabalpur	Jotpur near Tilwara Bridge	NHA	Four Lane	34	23.10445	79.87117				6.6	17
18	Jabalpur	Sihora	Village Barnu	NHA	Four Lane	30	23.39057	80.05488				6.6	13
19	Katni (recommended)	Katni	Surkhi Tank, Katni-483501	NHA	Two Lane	10	23.83677	80.45413	NH			6.6	11

20	Umaria	Chandia	Mahanadi Forest Checkpost	NHA	Two Lane	43	23.69726	80.67875				6.6	13
21	Chhindwara	Chhindwara	Sarra, Near Kulbehra River	NHA	Four Lane	347	22.00901	78.93021				6.6	18
22	Bhopal	Raisen	Obaidullaganj	NHA	Four Lane	46	23.02401	77.56874	NH/MORTH			6.6	17
23	Sehore	Budhni	Gadariyanala	NHA	Four Lane	46	22.80107	77.70129	NHAI			6.6	17
24	Chhindwara	Parasia	Ambara	NHA	Two Lane	198	22.19105	78.68737	NHAI			6.6	11
25	Jabalpur	Jabalpur	Village Bheeta, Near Bhedaghat Square	NHA	Four Lane	45	23.15656	79.7904	NHAI			6.6	13
26	Bhind	Bhind	Near Barhi Toll Plaza	NHA	Two Lane	719	26.68318	78.91788	NH/MORTH			6.6	12.5
27	Datia	Bhander	Pandokhar Police Station	NH/PWD	Two Lane	552	25.88419	78.79448	NH/PWD			6.6	14.5

Directorate of Geology and Mining, Madhya Pradesh
29-A, Khanij Bhawan, Arera Hills Bhopal
Phone & Fax: 0755-2551795
Email: dirgeomn@nic.in

11484
No: / IT Branch/2024 Bhopal Dated: 15.10.2024

To,

The Regional Officer
National Highways Authority of India (NHAI)
6, E-6, Arera Colony, Bhopal, Madhya Pradesh 462016
Madhya Pradesh 462016

Subject: Request for joint survey with mining team regarding AI check gates proposal.

Dear Sir,

I hope this letter finds you well. On behalf of the Geology and Mining Department, I am writing to request the cooperation of the various Project Implementation Units (PIUs) to conduct a joint survey with our mining team concerning the proposal for AI check gates designed to curb illegal mining activities.

This joint survey is essential for gathering the necessary data to facilitate the issuance of the demand note, which will enable us to draft the original undertaking and agreement efficiently.

Attached to this letter, you will find the list of respective sites for which the proposal has been sent to the PIUs.

We appreciate your prompt attention to this matter and look forward to coordinating with you on scheduling the joint survey. Please let us know your available dates to ensure a productive collaboration.

Thank you for your support in this important initiative.

Sincerely,

15/10/24
Additional Director
अपर संचालक (भौमिकी)
संचालनालय भौमिकी एवं खनिकर्म
भोपाल (म.प्र.)

Received O/C

24/10/24

CIN : U45203MP2004SGC016758

MPRDC

मध्यप्रदेश रोड डेव्हलपमेंट कार्पोरेशन लि.

(म.प्र. राज्य राजमार्ग प्राधिकरण)

(म.प्र. शासन का उपक्रम)

45-ए, अरेरा हिल्स, भोपाल-462011

☎ : (ऑफिस) 0755-2597290/2765205, फैक्स : 0755-2572643, वेबसाइट : mprdc.gov.in

क्रमांक..11041... /28/ OTH/एम.पी.आर.डी.सी./24

भोपाल, दिनांक: 26/11/2024

प्रति,

संचालक (प्रशासन तथा खकिनर्म),
संचालनालय, भौमिकी तथा खनिकर्म, मध्यप्रदेश,
29–ए, खनिज भवन, अरेरा हिल्स,
भोपाल (म.प्र.)

विषयः– अवैध परिवहन की रोकथाम हेतु स्थापित किये जा रहे I-Checkgate के लिये लागू की जा रही License Fees को Exempt किये जाने बावत्।

संदर्भः– आपका पत्र क्र. 12241/न.क्र./2024 भोपाल, दिनांक 07.11.2024।

संदर्भित पत्र के माध्यम से एमपीआरडीसी के अधीन मार्गों पर Artificial Intelligence आधारित मानवरहित I-Checkgate स्थापित किये जाने हेतु प्रस्तुत निम्नलिखित प्रकरणों में एम.पी.आर.डी.सी. द्वारा लागू की जा रही लायसेंस फीस को exempt करने हेतु लेख किया गया है:--

Sr.	District	Tehsil	Location	Application Ref No
1	Shahdol	Sohagpur	Koni Tiraha, Medhki, Shahdol	APMS2024/15027
2	Anuppur	Chhirapatpar	Chhirapatpar, Anuppur	APMS2024/15031
3	Rewa	Teothar	Baghedi, Chauraha, Chakghat	APMS2024/15032
4	Indore	Sawer	AB Road, Sawer Indore	APMS2024/15034
5	Singrauli	Sarai	Village Nigari, Near Bridge of River Gopad	APMS2024/15035
6	Singrauli	Singrauli	Khanhna Barrier	APMS2024/15036
7	Alirajpur	Katthiwada	Chandpur	APMS2024/15040
8	Singrauli	Singrauli	Kachni Talai Bridge	APMS2024/15046

अतः खनिज साधन विभाग, मध्यप्रदेश को एम.पी.आर.डी.सी. के अधीन मार्गों पर I-Checkgate स्थापित किये जाने हेतु उपरोक्त सूची में उल्लेखित प्रकरणों में किसी भी प्रकार की फीस जमा करने से छूट प्रदान की जाती है। उपरोक्तानुसार खनिज साधन विभाग, मध्यप्रदेश को केवल फीस जमा करने से छूट प्रदान की जा रही है, परन्तु खनिज साधन विभाग द्वारा एम.पी.आर.डी.सी. के अधीन मार्गों पर I-Checkgate स्थापित किये जाने हेतु नियमानुसार अनुमति लेना अनिवार्य होगा एवं प्राप्त अनुमति की शर्तों के अनुसार ही कार्य किया जाना सुनिश्चित करना होगा।

(प्रबंध संचालक द्वारा अनुमोदित)

(श्री अभिषेक गेहलोत)
मुख्य महाप्रबंधक (प्रशा.)
एमपीआरडीसी, भोपाल

पृ.क्रमांक...../28/ OTH/एम.पी.आर.डी.सी./24 भोपाल, दिनांक /11/2024

प्रतिलिपि:–

1. निज सचिव, प्रबंध संचालक, एम.पी.आर.डी.सी., भोपाल की ओर सूचनार्थ।
2. संभागीय प्रबंधक, एम.पी.आर.डी.सी., शहडोल, रीवा, इंदौर, सीधी एवं धार की ओर सूचनार्थ।

ह/-

मुख्य महाप्रबंधक (प्रशा.)
एमपीआरडीसी, भोपाल

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(M.P. STATE HIGHWAY AUTHORITY)
(Govt. of M.P. Undertaking)
CIN No: U45203MP2004SGC016758
OFFICE OF THE DIVISIONAL MANAGER, CHAMBAL
Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior, Phone: 0751-4042386
Web site: www.mprdc.gov.in, E-mail:-chambal-dm@mp.gov.in

Memo No. 1502 -Check/NH-92/MPRDC/2024 Chambal, Dated 12 / 11 /2024

To,

Additional Director
Geology and Mining,
Bhopal (M.P.)

Sub: - Regarding AI-Checkgate proposal on Gwalior-Bhind-Etawah Road (NH-92.)

Ref:- Your Letter ref. no. 3169/1211283/2023/12/1 dated 04.06.2024.

With reference to above, vide above referred you have applied for I-Check gate on Gwalior-Bhind-Etawah Road (NH-92) at Barahi, Total length is 20Mtr.

In this regard you are requested to submit the proposal according to MoRT&H technical circular No. RW/NH-33044/29/2015/S&R(R), Dated 22.11.2016 & Circular no. NH-36094/01/2022-S&R(P&B)(E-208825) dated 24.04.2023 on Norms for granting Right of Way permission for accommodation of Public and Industrial Utility services along and across the National Highways in two copies along with following documents to this office for further action:-

1. Submit the Licence fees Amounting to Rs 56371/- (Rs Fifty-Six Thousand Three Hundred Seventy-One Only) online through NTRP Portal and submit the receipt of license fee deposition. **(Calculation Sheet enclosed)**
2. A Performance Bank Guarantee as per enclosed format, with a validity of one year initially (Extendable if required till satisfactory completion of work) in Favour of **"Divisional Manager, MPRDC, Chambal"** for total length of 20mtr @ Rs. 100/- per RM, i.e. Rs. 2000/-(Rs. Two Thousand Only), **(Calculation Sheet enclosed)**
3. Applicant should submit 02 copies of Bipartite "Agreement regarding granting of right of way permission for I-Check gate on National Highways" on Rs. 500/- Non-Judicial Stamp for OFC in proper format as per the Ministry Circular Dated 22.11.2016.
4. Power of attorney to authorizing the official to execute the agreement.
5. Layout plan and drawing showing the I-Check gate signed by the authorized signatory (Each page).
6. Cross section of pit indicating width, depth & position of crossing.
7. Cross section of each road crossing showing depth of ground level and drilling level below road top level. Road crossing should be done by HDD method only(No any other method is acceptable).
8. Drawing showing arrangement to cross the CD structures.
9. Certificate for 4/6laning from the applicant in the following format: - "We do undertake that i will relocate service road/approach road/ utilities at my own cost notwithstanding the permission granted within such time as will be stipulated by MPRDC" for future four-laning or any other development.

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(M.P. STATE HIGHWAY AUTHORITY)
(Govt. of M.P. Undertaking)
CIN No: U45203MP2004SGC016758
OFFICE OF THE DIVISIONAL MANAGER, CHAMBAL
Office Campus of Chief Engineer P.W.D., Thatipur, Gwalior, Phone: 0751-4042386
Web site: www.mprdc.gov.in, E-mail:-chambal-dm@mp.gov.in

10. In view of the above, if there is any deviation found in fee, it will be payable by your office.

Therefore, it is requested you to submit the complete proposal along with above required documents then it could be forwarded to NOC.

It is submitted for your information and necessary action.

Encl:-As above.

Divisional Manager
MPRDC Chambal,

Endt.No. 1503 / I-Check/NH-92/MPRDC/2024 Chambal, Dated 12/11/2024

Copy to:-

1. Chief Engineer-Regional Officer, MoRT&H, Nirman Bhawan Bhopal for information.
2. Mining officer, district Bhind for information & necessary action.
3. M/s M.P. Highways Pvt. Ltd., Gwalior (M.P.) For information.

Divisional Manager
MPRDC Chambal,

Calculation sheet for licence fees required to deposit for I-Checkgate along and across the NH under jurisdiction of MPRDC

1. **Name of Project** :- Permission for AI Checkgate proposal on Gwalior-Bhind-Etwah Road Barahi MPRDC on NH- 719 (Old NH-92)
2. **Start Point and End Point of Utility** :-
3. **Total Length** :- 20
4. **No. of villages/Towns through which Utility is passing** :-01
5. **Details for calculation of License fee** :-

Sr.No.	Utility Details	Stretch (Rural/ Urban)	Village/ Town	District	Length (M)	Width (M)	Area (sqm)	Applicable Rates (Rs./Sqm)	Utilized SH/MDR/NH land area x Prevailing circle rate of land per unit area	License fee for public utility = (Utilised NH land area x Prevailing circle rate of land per unit area x 1.5% per anum) (Minimum of 10000 per anum)
A	B	C	D	E	F	G	H	I	J	K
1	AI Check Gate	Rural	Barahi	Bhind	20	1	20.000	1000	20000	300
TOTAL					**20**				**20000**	**300**
License fee for 1st year Subject to minimum of Rs. 10,000/-)										10000
License fee for 2nd year (with 6% annual increment)										10600
License fee for 3rd year (with 6% annual increment)										11236
License fee for 4th year (with 6% annual increment)										11910.16
License fee for 5th year (with 6% annual increment)										12624.7696
Total License Fee for 05 Years										**56371**
In words :- (RS. Fifty Six Thousand Three Hundred Seventy One Only)										
Calculation of Performance Bank Guarantee as per the circular :- 2000 In Words :- (RS.Two Thousand Only)										

DIVISIONAL MANAGER
MPRDC, CHAMBAL-DIV.,
GWALIOR

Registration and Stamp Department
Madhya Pradesh

Certificate of Stamp Duty

E-Stamp Details

E-Stamp Code	0101052611202400393 4
Total E-Stamp Amount	500
Govt. Stamp Duty (Rs.)	500
Janpad Duty (Rs.)	0
Exempted Amount(Rs.)	0
E-Stamp Type	NON-JUDICIAL
Issue Date & Time	26/11/2024 12:58:15
Service Provider or Issuer Details	Babita Yadav/SP010541705201600314
SP/SRO/DRO/HO Details	Shop No. 2, Zone-1,M.P.Nagar, Bhopal M.P. HUZUR BHOPAL

Municipality Duty (Rs.) 0

Upkar Amount (Rs.) 0

Deed Details

Deed Type	Agreement/Memorandum of an agreement
Deed Instrument	If relating to secure repayment of a loan or debt.- 0.25 percent of the amount of loan or debt, subject to a maximum of five lakh rupees
Purpose	Agreement

First Party Details

Organization Name	Directorate of Geology and Mining Madhya Pradesh
Address	29-A, Khanij Bhawan, Arera Hills BHOPAL Madhya Pradesh INDIA
Number of Persons	1

Second Party Details

Organization Name	Madhya Pradesh Road Development Corporation
Address	6685+3VM, Campus of Chief Engineer (North), in front of Chouhanpyaoo, Thatipur, , Madhya Pradesh 474011 GWALIOR Madhya Pradesh INDIA
Number of Persons	1

Agreement

Digitally signed by BABITA YADAV
Date: 2024.11.26 13:39:25 IST

कार्यालय प्रमुख
संचालनालय भौमिकी तथा खनिकर्म
भोपाल (म.प्र.)

Appendix

Enclosure to Ministry of Road Transport & Highways letter No. 33044/29/2015 /S&R(R) dated 22.11.2016

AGREEMENT REGARDING GRANTING OF RIGHT OF WAY PERMISSIONS FOR LAYING UTILITY SERVICES ON NATIONAL HIGHWAYS

Agreement to lay Telecom cable / OFC cable / electrical cable / pipe line/ ducts / Gantry and Junction box etc. from 17 meters in length and 6.60 meters in height to 0.50 meters of Barhi (Phooph) Toll Plaza Bhind land.

Details of location is :

1. Site Name : Near Barhi (Phooph) Toll Plaza Bhind,
2. Location :Near Barhi(Phooph) Toll Plaza, Bhind, Madhya Pradesh – 474010
3. Latitude : 26.6823188 and Longitude : 78.9173215 Lane type : 2 Lane

This Agreement made **26 day of November Month 2024** of (year) between **Directorate of Geology and Mining Madhya Pradesh & Madhya Pradesh Road Development Corporation** acting in his executive capacity through Shri Vinod Bagdey, Additional Director, Bhopal

(Hereinafter referred to as the "Authority". which expression shall unless excluded by or repugnant to the context, include his successors in office and assigns) on the one part,

and Directorate of Geology and Mining, Madhya Pradesh, a State Government Department and having its Registered Office at 29-A, Khanij Bhawan, Arera Hills, Bhopal, Madhya Pradesh - 462010

(hereinafter called the "Licensee") which expression shall unless excluded by repugnant to the context, include his successors/administrator assignees on the second part.

Whereas the Authority is responsible, inter-alia, for development and maintenance of lands in Km 17 Meters to 50 Meters 0f State Highway No 719 RoW

Whereas the Licensee proposes to lay Telecom cable / OFC cable / electrical cable / pipe line / ducts / Gantry and Junction box etc. referred to as utility services in subsequent paras.

Whereas the Licensee has applied to the Authority for permission to lay utility services from 17 meters in length and 6.60 meters in height to 0.50 meters of road/route up to 10 Meters and from 17 meters in length and 6.60 meters in height to 0.50 meters of road/route up to 10 Meters

And whereas the Authority has agreed to grant such permission for way leave on the State Highway RoWasper terms and conditions hereinafter mentioned

Now this agreement witnessed that in consideration of the conditions hereinafter contained and on the part of the Licensee to be observed and performed, the Authority hereby grants to the Licensee permission to lay utility services as per the approved drawing attached hereto subject to the following conditions, namely.

1. RoW permissions are only enabled in nature. The purpose of extending the way leave facility on the National Highway RoW is not for enhancing the scope of activity of a utility service provider, either by content or by intent. Further, enforceability of the permission so granted shall be restricted only to the extent of provisions/scope of activities defined in the license agreement & for the purpose for which it is granted
2. No Licensee shall claim exclusive right on the RoWand any subsequent user will be permitted to use the RoW, either above or below, or by the side of the utilities laid by the

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first user, subject to technical requirements being fulfilled. Decision of the Authority in relation to fulfilment of technical requirements shall be final and binding on all concerned parties. In case any disruption damage is caused to any existing user by the subsequent user, the Authority shall not be held accountable or liable in any manner.

3. The Licensee shall be responsible for undertaking all activities including, but not limited to site identification, survey, design, engineering, arranging finance, project management, obtaining regulatory approvals & necessary clearances, supply of equipment, material, construction, erection, testing and commissioning, maintenance and operation and all other activities essential or required for efficient functioning of their own utility/ industrial infrastructure facilities.
4. The Licensee shall pay license fees @ Rs 56371/sq m/ 5 years to the Authority. The License fee shall become payable from the date of handing over of RoW land to the Licensee, for laying of utilities/cables/conduits/pipelines for infrastructure/ service provider / gantry and Junction box . As regards Tariff and Terms and conditions for providing common utility ducts along National Highways, there shall be a separate agreement regime
5. Fee shall have to be paid in advance for the period for which permission is granted for entering into a license agreement. In case of renewal, rate prevailing at the time of renewal shall be charged. Delay in deposit of fee shall attract interest @15%per annum compounded annually.
6. The present policy of the MoRT&H is to provide a 2.00 m wide utility corridor on either side of the extreme edge of RoW. In cases where utility ducts with sufficient space are already available along NH, the utility services shall be laid in such ducts subject to technical requirements being fulfilled.
7. The utility services shall be laid at the edge of the RoW. In case of restricted width of RoW, which may be adequate only to accommodate the carriageway, central verge, shoulders, slopes of embankment, drains, other road side furniture etc; the utility services shall be laid beyond the toe line of the embankments and clear of the drain.
8. The Licensee shall make his own arrangement for crossing of cross drainage structure, rivers, etc. below the bed. In case, this is not feasible, the utility services may be carried outside the railings/parapets and the bridge superstructure. The fixing and supporting arrangement with all details shall be required to be approved in advance from the concerned Highway Administration. Additional cost on account of fixing and supporting arrangement as assessed by the Authority shall be payable by the Licensee.
9. In exceptional cases, where RoW is restricted the utility services can be allowed beneath the carriageway or service road, if available, subject to the condition that the utility services be laid in concrete ducts, which will be designed to carry traffic on top. The width of the duct shall not be less than one lane. In such cases, it also needs to ensure that maintenance of the utility services shall not interfere with the safe and smooth flow of traffic. The cost of operation and maintenance will have to be borne by the Licensee.
10. It is to be ensured that at no time there is interference with the drainage of the road land and maintenance of the National Highways. Towards this, the top of the utility services shall be at least 0.6 metre below the ground level. However, any structure above ground shall be aesthetically provided for / landscaped with required safety measures as directed by the concerned Authority;
11. The utility services shall be permitted to cross the National Highway either through structure or conduits specially built for that purpose. The casing / conduit pipe should, as minimum, extend from drain to drain in cuts and toe of slope to toe of slope in the fills and shall be designed in accordance with the provision of IRe and executed following the Specifications of the Ministry
12. Existing drainage structures shall not be allowed to carry the lines across
13. The top of the casing/conduit pipe containing the utility services to cross the road shall be at least 1.2m below the top of the sub grade or the existing ground level whichever is lower, subject to being at least 0.3m below the drain inverts. A typical sketch showing the clearances is given in Attachment-I

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14. The utility services shall cross the National Highway preferable on a line normal to it or as nearly so as practicable
15. *The casing/conduit pipe for crossing the road may be installed under the road embankment* either by boring or digging a trench. Installation by boring method shall be preferred
16. .In case of trenching, the sides of the trench should be done as nearly vertical as possible. The trench width should be at least 30 em. but not more than 60 ems wider than the outer diameter of the pipe. Filling of the trench shall conform to the specifications contained here-in-below or as supplied by the Highway Authority
    a. Bedding shall be to a depth not less than 30 cm. It shall consist of granular material, free of lumps, clods and cobbles, and graded to yield a firm surface without sudden change in the bearing value. Unsuitable soil and rock edges should be excavated and replaced by selected material.
    b. The backfill shall be completed in two stages (i) Side-fill to the level of the top of the pipe (ii) Overfill to the bottom of the road crust.
    c. The side fill shall consist of granular material laid in 15 ern. Layers each consolidated by mechanical tamping and controlled addition of moisture to 95% of the Proctor's Density. Overfill shall be compacted to the same density as the material that had been removed. Consolidation by saturation or ponding will not be permitted.
    d. The road crust shall be built to the same strength as the existing crust on either side of the trench or to thickness and specifications stipulated by the Highway Authority.
17. The Licensee shall ensure making good the excavated trench for laying utility services by proper filling and compaction, so as to restore the land in to the same condition as it was before digging the trench, clearing debris/loose earth produced due to execution of trenching at least SOm away from the edge of the right of way
18. All required restoration work subsequent to laying of the cable shall be required to be undertaken by the Licensee at its cost either by itself or through its authorized representative in consultation with the Authority as per predetermined time schedule and quality standards
19. Prior to commencement of any work on the ground, a performance Bank Guarantee @ Rs. per route metre / Rs per sq m with a validity of one year initially (extendable if required till satisfactory completion of work) shall have to be furnished by the Licensee to the Authority/its designated agency as a security against improper restoration of ground in terms of filling/unsatisfactory compaction damages caused to other underground installations/utility services & interference, interruption, disruption or failure caused thereof to any services etc. In case of the Licensee failing to discharge the obligation of making good of the excavated trench/other restoration work, the Authority shall have a right to make good the damages caused by excavation, at the cost of the Licensee and recover the amount by forfeiture of the Bank Guarantee
20. In case, the Performance Bank Guarantee is invoked as mentioned above, the Licensee shall be required to replenish and reinstate the required Performance Bank Guarantee within one month of such invoking. In case the work contemplated herein is not completed to the satisfaction of the Authority, which has granted the permission, within a period of 11 months from the date of issue of the Bank Guarantee, the Licensee shall either furnish a fresh guarantee or extend the guarantee for a further period of one year. Notwithstanding this, the Licensee shall be liable to pay full compensation to the aggrieved Authority/ its designated agency for any damage sustained by them by reason of the exercise of the RoW facility;
21. The Licensee shall shift the utility services within 90 days (or as specified by the respective Authority) from the date of issue of the notice by the concerned Authority to shift/relocate the utility services, in case it is so required for the purpose of improvement/widening of the road/route/highway or construction of flyover/bridge and restore the road/land to its original condition at his own cost and risk.
22. The Licensee shall be responsible to ascertain from the respective agency in co-ordination with Authority, regarding the location of other utilities /underground installations/ facilities

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etc. The Licensee shall ensure the safety and security of already existing underground installations/utilities/facilities etc. before commencement of the excavation/using the existing cable ducts. The Licensee shall procure insurance from a reputed insurance company against damages to already existing underground installations/utilities/facilities etc.

23. The Licensee shall compensation/indemnification be solely responsible/ liable for full of concerned agency / aggrieved Authority for any direct, indirect or consequential damage caused to them/claims or replacements sought for, at the cost and risk of the Licensee. The concerned agency in coordination with the Authority shall also have a right to make good such damages/ recover the claims by forfeiture of Bank Guarantee.
24. If the Licensee fails to comply with any condition to the satisfaction of the Authority, the same shall be executed by the Authority at the cost and risk of the Licensee.

25. Grant of License is subject to the Licensee satisfying (a) minimum disruption of traffic and (b) no damage to the highways. As far as possible, the Licensee should avoid cutting off the road for crossing highway, and other roads and try to carry out the work by trenchless technology. In case any damage is caused to the road pavement in this process, the Licensee will be required to restore the road to the original condition at its cost. If due to unavoidable reasons the road needs to be cut for crossing or laying utility services, the Licensee has to execute the restoration work in a time bound manner at its cost either by itself or through its authorized representative in consultation with the Authority as per predetermined time schedule and quality standards. In case of the Licensee failing to discharge the obligation of making good of the excavated trench/other restoration work, the Authority shall have a right to make good the damages caused by excavation, at the cost of the Licensee and recover the amount by forfeiture of the Bank Guarantee.
26. The Licensee shall inform/give a notice to the concerned agency designated by the Authority at least 15 days in advance with route details prior to digging trenches, for fresh or maintenance/repair works. A separate performance Bank Guarantee for maintenance/repair works shall have to be furnished by the Licensee.
27. Each day, the extent of digging the trenches should be strictly regulated so that utility services are laid and trenches filled up before the close of the work that day. Filling should be completed to the satisfaction of the concerned agency designated by the Authority.
28. The licensee shall indemnify the concerned agency in coordination with Authority, against all damages and claims, if any due to the digging of trenches for laying cables/ducts.
29. The permission for laying utility services is granted maximum for 5 years at a time, which can thereafter be considered for renewal. On payment of additional fee at the time of renewal, the permission shall automatically be renewed, unless defaults exist. In case of renewal, rate prevailing at the time of renewal shall be charged. Delay in deposit of fee shall attract interest @ 15% per annum compounded annually.
30. The permission shall be valid only for the period it is issued and fee deposited. However, the Authority also has a right to terminate the permission or to extend the period of Agreement.
31. That the Licensee shall not undertake any work of shifting, repairs or alterations to the utility services without prior written permission of the concerned agency in coordination with the Authority.
32. The permission granted shall not in any way be deemed to convey to the Licensee any ownership right or any interest in route/road/highway land /property, other than what is herein expressly granted. No use of NH RoW will be permitted for any purpose other than that specified in the Agreement.
33. During the subsistence of this Agreement, the utility services located in highway land / property shall be deemed to have been constructed and continued only by the consent and permission of the Authority so that the right of the Licensee to the use thereof shall not become absolute and indefeasible by lapse of time
34. The Licensee shall bear the Stamp Duty charged on this Agreement

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35. Three copies of 'as laid drawings' of utilities (hard and soft copies) with geotagged photographs and geo-tagged video recordings of laying of cables in the trench (with respect to the NH) and after complete restoration shall be submitted to the Authority for verification and record within a month of completion of works.
36. The Licensee shall allow free access to the Site at all times to the authorised representatives of Authority to inspect the Project Facilities and to investigate any matter within their Authority, and upon reasonable notice, shall provide reasonable assistance necessary to carry out their respective duties and functions.
37. The utility services shall not be made operational by the Licensee unless a completion certificate to the effect that the utility services has been laid in accordance with the approved specifications and drawings and the trenches have been filled up to the satisfaction of the concerned agency in coordination with the Authority has been obtained. Notwithstanding anything contained herein, this Agreement may be cancelled at any time by Authority for breach of any condition of the same and the Licensee shall neither be entitled to any compensation for any loss caused to it by such cancellation nor shall it be absolved from any liability already incurred.
38. The Licensee shall ensure adherence to relevant Indian standards and follow best industry practices, methods and standards for the purpose of ensuring the safe, efficient and economic design, construction, commissioning, operation, repair and maintenance of any part of the utility lines/industrial infrastructure facilities and which practices, methods and standards shall be adjusted as necessary, to take account of
    a. operation, repair and maintenance guidelines given by the manufacturers,
    b. the requirements of Law,
    c. the physical conditions at the Site, and
    d. The safety of operating personnel and human beings
39. The Licensee shall have to provide safety measures like barricading, danger lighting and other necessary caution boards while executing the work.
40. While laying utility services, at least one lane of road shall be kept open to traffic at all times. In case of single lane roads, a diversion shall be constructed. If any traffic diversion works are found necessary during the working period such diversion shall be provided at the cost of Licensee.
41. After the termination/expiry of the agreement, the Licensee shall remove the utility services within 90 days and the site shall be brought back to the original condition failing which the Licensee will lose the right to remove the utility services. However before taking up the work of removal of utility services the Licensee shall furnish a Bank Guarantee to the Authority for a period of one year for an amount assessed by the Authority as a security for making good the excavated trench by proper filling and compaction, clearing debris, loose earth produced due to excavation of trenching at least 50 m away from the edge of the RoW.
42. Any disputes in interpretation of the terms and conditions of this Agreement or their implementation shall be referred to the redress mechanism prevailing in the Ministry and the decision of the redress mechanism shall be final and binding on all
43. For PPP Projects, in case of any financial loss incurred by the respective project concessionaires due to such laying/shifting of utility services by the Licensee, compensation for the same shall be required to be borne by the Licensee in mutual agreement with the respective project concessionaires. MoRT&H/ NHAI implementing authorities for the project shall not be liable to the concessionaire in any way in this regard.
44. Necessary alteration including complete removal/ shifting for the approach roads as our own cost by Directorate of Geology and Mining, only if so required by National Highway for the development of National Highway for in the interest of safety in this section as per circular no. RW/NH-33032/01/17S&R (R) Dated 26 june 2020.

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भोपाल (म.प्र.)

This agreement has been made in duplicate, each on a Stamp Paper, Each party to this Agreement has retained one stamped copy each

IN WITNESS WHEREOF THE PARTIES HERETO HAVE CAUSED THIS AGREEMENT TO BE EXECUTED THROUGH THEIR RESPECTIVE AUTHORISED REPRESENTATIVES THE DAY AND THE YEAR FIRST ABOVE WRITTEN.

SIGNED SEALED AND DELIVERED FOR AND ON BEHALF OF AUTHORITY

BY **Shri** _____

(Signature, name & address with stamp)

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संचालनालय भौमिकी तथा खनिकर्म
भोपाल (म.प्र.)

SIGNED ON BEHALF OF Directorate of Geology and Mining, Madhya Pradesh (LICENSEE)

BY **Shri Vinod Bagdey**, Additional Director, Bhopal, MP

(Signature, name & address with stamp)

HOLDER OF GENERAL POWER OF ATTORNEY Dated 26/11/2024

EXECUTED IN ACCORDANCE WITH THE RESOLUTION NO._____ DATED _____PASSED BY BOARD OF DIRECTORS IN THE MEETING HELD ON

IN THE PRESENCE OF (WITNESSES):

1. Shri. Rajesh Sharma, IT Officer, Directorate of Geology and Mining
2. Shri. Ashish Mohan Shrivastav, Assistant Mineral Economist, Directorate of Geology and Mining

Ashish Mohan Shrivastava
Assistant Mineral Economist
Directorate of Geology and Mining
M.P.

NOTARY
MADHUSUDAN TIWARI
GOVT. OF INDIA

IDENTIFIED BY ME
SIGNATURE.....
NAME.....
ADDRESS.....
.....

ATTESTED
Madhu Sudan Tiwari
Notary & Advocate Bhopal (M.P.)
26/11/24

मध्य प्रदेश MADHYA PRADESH

CS 363890

Undertaking

I/we hereby certify that following terms and condition will be adhered to during the overhead gantry crossing Near Barhi (Phoop) Toll Plaza, Bhind with latitude 26.6823188 & longitude 78.9173215 associated work from AI Based Smart Enforcement System (Madhya Pradesh) Project.

1- The overhead said gantry (I- check gate) with span of 17 Meter project shall be laid in strict observance of the norms prescribed for the purpose and in compliance with the instruction to be obtained from the project officer of concerned road authority.
2- Adequate arrangement for caution by way of caution board during the day-time & danger light at night will be provided by us and in consultation with concerned local authority as and when required.
3- If any Trees (Under Revenue) shall fall across our gantry work, then the necessary permission shall be obtained from the concerned authority for the purpose of desired alternation (if any).
4- We ensure that we shall intimate to the concerned authority prior to the commencement of gantry installation work.

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भोपाल (म.प्र.)

733
100
26/11/24

DUM BHOPAL

Undertaking

Botim

21 OCT 2024

बबीता यादव
स्टाम्प विक्रेता
शॉप नं.2,एम.पी. नगर,जोन-I, भोपाल
Mob. 9425358804

5- AI Based Smart Enforcement System shall not construct or develop any type of permanent structures along/across the developed surface area of NH.

6- We ensure that if any claim is reported by the concessionaire towards any damage, during the aforesaid work then the same shall be repaired/restored by us.

7- We ensure that no claim shall be made by the agency in case of any revenue losses which arise during the transmission line stringing work.

8- We ensure that while laying of the installation/ implementation across the national highway, we shall take care of the existing utilities and services line that have been previously laid. In case of any damage happening during the transmission line stringing work, then we shall repair/restore the actual damages accordingly.

9- We ensure that we shall follow and abide by all those standard conditions of ministry circular /NH/MPRDC guidelines regarding overhead Transmission line crossing work.

10- We ensure that we shall manage and control the ongoing traffic movement while stringing work of above Transmission line work across National Highway.

11- Directorate of Geology and Mining, Madhya Pradesh would pay necessary fees for the use of National Highway/ authorities in future as per circular no RW/NH-33032/01/17/S&R(R) Dated 2 June 2020.

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भोपाल (म.प्र.)

Deponent

IDENTIFIED BY ME
SIGNATURE.....
NAME Arun Sharma
ADDRESS B-5 Nikhil Bunglows
Jadkhedi Bhopal

IDENTIFIED BY ME
SIGNATURE.....
NAME.....
ADDRESS.....
.....

ATTESTED
Madhu Sudan Tiwari
Notary & Advocate Bhopal (M.P.)
26/11/24

Check List - Bhind - Near Barhi Toll Plaza - Madhya Pradesh

Project - AI Based system to curb illegal transportation of Minerals

Sr No	Description	As per Site	Remarks
1	State Highway No	NH-719	
2	Crossing Name	Barhi(Phoop) Toll Plaza, Bhind, Madhya Pradesh – 474010	
3	System of suppply (i.e. Volatage) frquesncy, no of phases wheather	2 kilo watts	
4	Position of Tower	Latitude-26.6823188,Longitude-78.9173215	
5	Normal / Basic Span of gantry	12.5 Mtr	
6	Maximum Sag at Normal Span of gantry	17.5 Mtr	2.5 Mtr both side will be spared from the shoulder of the road. (As per MORTH Norms)
7	Crossing Span of gantry	Both Side of Road	
8	Preceding Span with LOC	Both Side of Road	
9	Successing Span With LOC	Both Side of Road	
10	Height of structure above ground and Below Ground Separately	Above=7mtr & Below=2.30 mtr	both sides of gantry structure
11	gantry height & weidth	height= 6.5 mtr & weidth=17.5 mtr	
12	Clearance Over Road	7.0 mtr	
13	Hegiht of lower base / founduation of gantry	2.65 mtr	
14	Height / Difference of Lower foundation from level of NH at LOC	2.65 mtr	
15	Angle of Road crossing	90 degree	with respect to ground
16	Distance from NH Boundry from center of tower/ gantry	500 mtr	
17	Perndicular distance from center of Tower to Center of Road	6.5 mtr	
18	Protection of gantry	GI with 86 micron	
19	Foundation Type	square foundation with M-25 grade	
20	No of Stay required	NA	
21	Minimum factor of Safety	2	
22	Two legs of Toweer earthend	Yes as per specification	
23	Plain paper digram	profile enclosed	
24	Earthing	Pipe Type	
25	Praposal to lay underground electrical cable/OFC/Water-Pipeline	Yes as per specification	
25A	Left side from central line towards increasing chainage/km direction.	NA	
25B	Right side from centre line towards increasing chainage/km direction	NA	
26	Proposal to aquire Land	NA	
26A	Left side from centre Line	8.75 Mtr	Includes 2.5 meters from shoulder of road as spare
26B	Right side from centre line	8.75 Mtr	Includes 2.5 meters from shoulder of road as spare
27	Whether proposal is in the same side where land is not to be acquired	Yes as per specification	
27 A	if not then where to lay the cable	NA	
28	Details of already laid services, if any, along with the proposed route	NA	
29	Number of Existing Lanes (2/4/6/8 Lanes)	2 Lane	
30	Proposed number of Lanes (2 Lanes with paved shoulders/4/6/8 lanes)	NA	
31	Service road existing or not	NA	
	if yes then which side	NA	
31A	Left side from centre line	NA	
31B	Right side of centre line	NA	
32	Proposed service road	NA	
32A	Left side from centre line	NA	
32B	Right side of centre line	NA	
33	Whether proposal to lay water pipeline is after the service roador between the service road or main carriageway	NA	
34	Whether carrying of sewage / water pipeline has been proposed on highway bridges, if yes then mention the methodology proposed for same	NA	
35	Whether carrying of sewage / water pipeline has been proposed on the parapet/any part of the bridges, if yes then mention the methodology proposed for the same	NA	
36	if crossing of the road involved	Yes	
37	if yes it shall be either encased in pipes or through structure or conduits specially built for that purpose at the expenses of the agency owning the line	Yes as per specification	
38	whether exisiting drainage structure are allowed to carry sewage / water pipeline	NA	
39	is it on a line Normal to NH	Yes	

MANAGER (TECH)
MPRDC, GWALIOR

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खनिकर्म
भोपाल (म.प्र.)

Divisional Manager
M.P.R.D.C. Gwalior

40	What is the distance of crossing the sewage /water pipeline from the existing structures, shall not be too near the existing structure on the national highway, the minimum distance being 15 meters.	NA	
41	the casing pipe (or conduit pipe in the case of electric / OFC cable) carrying the utility line shall be of steel. Cast iron or reinforced cement concerete and have adequate strength and be large enough to permit ready withdrawal of the carrier pipe/cable, Mention type of casing	Yes	
42	Ends of the casing conduit pipe shall be sealed from the outside so that it does not act as a drainage path	Yes	
43	the casing/conduit pipe should be at least 1.2 meter below the surface of the road subject to being atleast 0.3 meter below the drain inverts, Mention the proposed details	Yes as per specification	
44	Mention the methodology proposed for crossing of road for the proposed water pipeline crossing shall be by boring method (Trench-less technology) especially where the existing road Pavement is of cement concerete or dense bituminous concerete type	NA	
45	The casing /conduit pipe shall be installed with an even bearing throughout its length and in such a manner as to prevent the formation of a waterway along it.	Yes	
46	Document / Drawing to be enclosed with the proposal	Yes , Enclosed	
47	gross section showing the size of trench for open trenching method (is it normal sizeof 1.2 m deep X0.3m wide	Yes	
48	Should not be greater than 60cm wider than the outer diameter of the pipe	Yes as per specification	
49	Located as close to the extreme edge of the right of way as possible but not less than 10meters from the centrelines of the nearest carriageway	Yes as per specification	
50	shall not be permitted to run along the national highways when the road formation is situated in double cutting nor shall these be laid over the existing culverts and bridges	NA	
51	These should be so laid that their top is atleast 0.6 meter below the ground level so as not to obstruct drainage of the road land	Yes as per specification	
52	Cross section showing the size of pit and location of cable for HDD method	Yes as per specification	
53	Strip plan / route plan showing water pipeline chainage width of ROW, distance of Proposed water pipeline with OFC from the edge of ROW inportant milestone intersection, cross drainage works etc	Yes as per enclosed Drawing	
54	Methodology for laying of water pipeline	NA	
55	open trenching method (may be allowed in utility corridor only where pavement is neither cement concerete nor dense bituminous concerete type if if yes what is the methodology of refilling of trench	NA	
56	The trench width should be at least 30cm but not more than 60cm wider than the outer diameter of the pipe	NA	
57	for filling of the trench, bedding shall be to a depth of not less than 30cm it shall consist of granular material free of lumps, clods and cobbles and graded to yield a firm surfacewithout sudden change in the bearing value, unsuitable soil and rock edged should be excavated and replaced by selected material	NA	
58	the backfill shall be completed in two stages 1) side fill to the level of the top to the pipe and 2) overfill to the bottom of the road crust	Yes as per enclosed Drawing	
59	the side fill shall bconsist of granular material laid in 15cm layesrs each consolidated by mechanical tampering and controlled addition of moisture to 95% of the proctors density, over fill shall be compacted to the same density as the material thathad been removed, consolidation by saluration of pending will not be permitted	Yes as per enclosed Drawing	
60	The road crust shall be built to the same strength as the exisiting crust on either side of the trench, care shall be taken to avoid the formation of dip at the trench	Yes	
61	The excavation shall ve protected by flagman signs and baricades and red light during night hours	Yes as per specification	

MANAGER (TECH)
MPRDC, GWALIOR

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भोपाल (म.प्र.)

Divisional Manager
M.P.R.D.C. Gwalior

Application Details [20240830/1/4/27591/9745]	
Highway	NH44 [NH44]
Name of Highway Authority	**NHAI** Dwarka New delhi
Highway Administration Address	**RO-UP West** RO-UP West
Whether the Fuel Station is part of Rest-area complex	No
Name of Applicant/Oil Company	Mineral Resources Departmen Address: 29 A Khanij Bhawan Arera Hills Bhopal MP 462010, BHOPAL (MADHYA PRADESH), PIN: 462010 Phn: 9425014339 Email: vinod.bagde@mp.gov.in
Application Category	Public Utility
Utility	Towers
State	MADHYA PRADESH
Type	New
Remarks	Geology and Mining team has esteem project AI-Based Enforcement System to curb illegal transportation of mineral. we need to implement various check gates across Madhya Pradesh state. Hence we require permission for implement the gantry / Check gates
Submitted On	30 Aug 2024 21:29:18

Bhind, Bhari Tollplaza
[MPRDC CHAMBAL]
APMS-2024/4528

SURVEY REPORT

AI-Based Smart Enforcement System to Curb Illegal Transportation of Minerals

The survey covered various aspects, including structural integrity, equipment functionality, safety measures, and Soil bearing capacity. Through on-site inspections, interviews with relevant stakeholders, and the examination of technical specifications, the report provides a detailed overview of the surveyed areas.

Table of Contents

Executive Summary

To combat unauthorized mineral transportation and strengthen environmental and regulatory compliance, the Government of Madhya Pradesh, through its Directorate of Geology & Mining, has partnered with RailTel Corporation India Limited. As per the state requirement we will deploy AI-powered Smart Enforcement System at 40 designated Check Gates across the state of Madhya Pradesh.

This initiative directly addresses the pressing issue of illegal mineral conveyance, which posesa significant challenge to revenue security and environmental protection. The system itself seamlessly integrates with existing Electronic Transit Pass (eTP) services, leveraging advanced AI technology to significantly enhance the Directorate's ability to monitor, regulate, and prevent such activities. By implementing AI-powered Check Gates equipped with RFID Tag technology, the system is designed to streamline and increase the accuracy of eTP validation processes. This, in turn, is expected to yield substantial benefits for the state, including preserving revenue, ensuring adherence to mining regulations, and upholding environmental clearances. This project marks a significant step forward for the Directorate, harnessing the power of advanced technology for responsible resource management and environmental protection within Madhya Pradesh.

Implementation Strategy

Responding to the critical objectives of the Directorate of Geology & Mining, Government of Madhya Pradesh, the strategy is meticulously tailored to address the Department's unique operational challenges, particularly the significant volume of mineral transportation with in the state (~35,000 vehicles) and across its borders (Uttar Pradesh, Rajasthan, Chhattisgarh, Maharashtra, and Gujarat).

Strategic Implementation Approach

- Site Survey and System Study : Initial phases will involve detailed site surveys and system studies to identify strategic locations for check gate installations, assess infrastructural and technical requirements, and draft detailed project plans and designs. This will be complemented by rigorous data collection efforts to ensure that all technical and administrative aspects are thoroughly addressed.
- Technical Infrastructure: The implementation of high-level and low-level technical infrastructure is crucial. This includes application architecture, database designs, data modelling documents, physical infrastructure design, and the setup of field devices, ensuring scalability, availability, security, manageability, interoperability, and adherence to open standards.
- Operational Components: Key operational components include the installation of check gates equipped with advanced surveillance and monitoring technologies, the establishment of Command and Control Centers for real-time over sight and

management, and the deployment of a mobile and web application ecosystem for comprehensive data capture, analysis, and decision support.

- Security and Compliance: The project will incorporate robust security measures to protect against malicious attacks and ensure data integrity, while also facilitating seamless integration with third-party systems and adhering to open standards wherever possible.
- Stakeholder Engagement and Support: The project will provide extensive support to stakeholders, including the setup of a 24x7 helpdesk, the development of a web portal and mobile app for transporter engagement, and the supply, installation, and testing of RFID tags on registered vehicles, ensuring transparency and ease of compliance.

Expected Outcomes

The deployment of the AI-based Smart Enforcement System is anticipated to yield significant benefits, including:

- Reduction in Illegal Mining Activities: Enhanced monitoring and enforcement capabilities are expected to deter illegal mining operations.
- Increased Revenue Collection: By curbing illegal transportation of minerals, the project aims to secure state revenues that were previously lost.
- Environmental Conservation: The system supports sustainable mining practices by ensuring compliance with environmental norms.

ScopeofSurveyforSmartEnforcementSystemtoCurbIllegalTransportation of Minerals Project Implementation

As the appointed System Integrator (SI) for the implementation of the Smart Enforcement System to Curb Illegal Transportation of Minerals by the Directorate of Geology and Mining, Govt. of Madhya Pradesh (GoMP). RailTel Corporation India Limited is committed to executing a comprehensive survey and system analysis. This document delineates the scope of survey activities essential for the strategic deployment and operational success of the Smart Enforcement System, aimed at curtailing illegal mineral transportation within the state.

Scope of Survey

- Site Identification and Evaluation: Conduct detailed site surveys to identify strategic locations for the installation of Check Gates

- (CGs). This will involve collaboration with Competent Authorities to ensure sites are selected based on vulnerability to illegal mineral transport, operational efficacy of Smart Enforcement System, and compliance with environmental and infrastructural suitability.
- Infrastructure Assessment: Assess existing infrastructure capabilities and technical enhancements required to support the Smart Enforcement System. This includes evaluating the requirements for SITC of necessary technologies such as AI and RFID systems. Engagement with the Client will facilitate comprehensive data gathering like soil report etc.

- Compliance and Environmental Impact: Evaluate the Smart Enforcement System deployment's environmental impact, ensuring compliance with applicable guidelines and regulations. Prepare necessary documentation for obtaining approvals from relevant authorities, adhering to safety, regulatory, and environmental standards.
- Risk Management: Identify potential risks associated with Smart Enforcement System deployment, including operational, technical, and environmental challenges. Development mitigation strategy outlining preventive measures and contingency plans, detailing roles and responsibilities within the project management framework.
- Project Planning: Prepare a detailed project plan, outlining timelines, milestones, and deliverablesforSmartEnforcementSystemimplementation.Thisincludesgeograp hical mapping of installation sites, infrastructure upgrade schedules, and a phased strategy for the SITC process, ensuring alignment with RFP specifications.

Data Collection for Smart Enforcement System Framework: Undertake targeted data collection to support the development of the Smart Enforcement System operational framework. Gather essential technical and administrative data to inform AI algorithm optimization and real-time dashboard development, enhancing the Smart Enforcement System's effectiveness in monitoring and enforcement

Site Name	**Barhi(Phoop) Toll Plaza, Bhind**		
Address/ Location	Barhi(Phoop) Toll Plaza, Bhind, Madhya Pradesh – 474010		
District	**Bhind**	**Tehsil**	Bhind
Site Visit Date	20-02-2024	**Survey Number**	09
Latitude	26.6823188	**Longitude**	78.9173215
Lane type	# 2	**Nearby Outpost / Toll Plaza**	Phoop Toll plaza
Internet Connectivity	Internet is available	**Electricity Connectivity**	Yes, Need permission from Govt. Officials
Temperature Condition	25 C	**Dust Condition**	Normal dust
Wind Condition	8 KM/Hr	**Rain Condition**	Normal

Survey Points

... No.	**Particular**
#1	National Highway 719
#2	Heavy Traffic. Road condition is good and fast movement as its NH
#3	Most of vehicle carry Sand and Gitti (Crushed Stone)
#4	Average speed of vehicle is around 40/50 KM/Hr

#3	Most of vehicle carry Sand and Gitti (Crushed Stone)
#4	Average speed of vehicle is around 40/50 KM/Hr

Attachment/ Photo

Photo 1	Photo 2

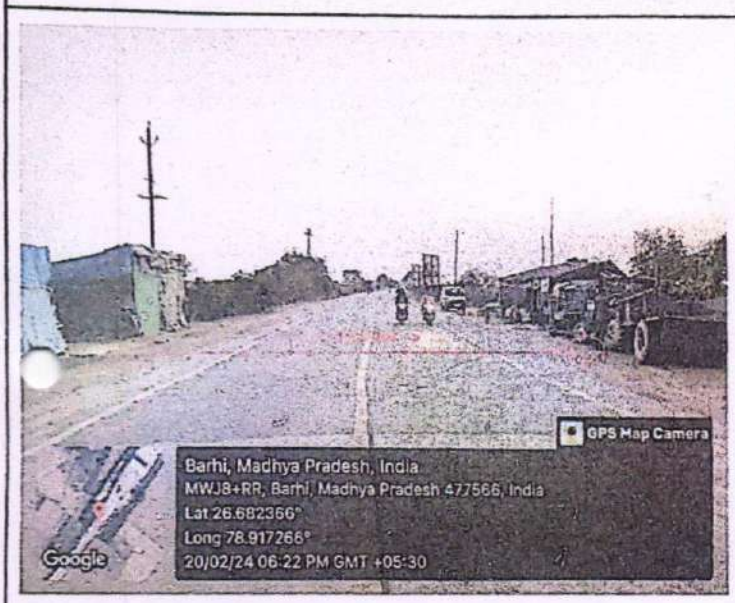
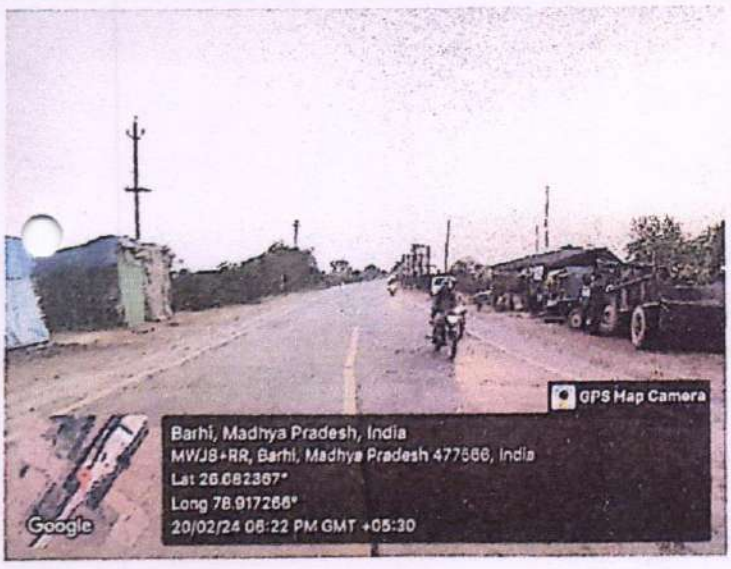
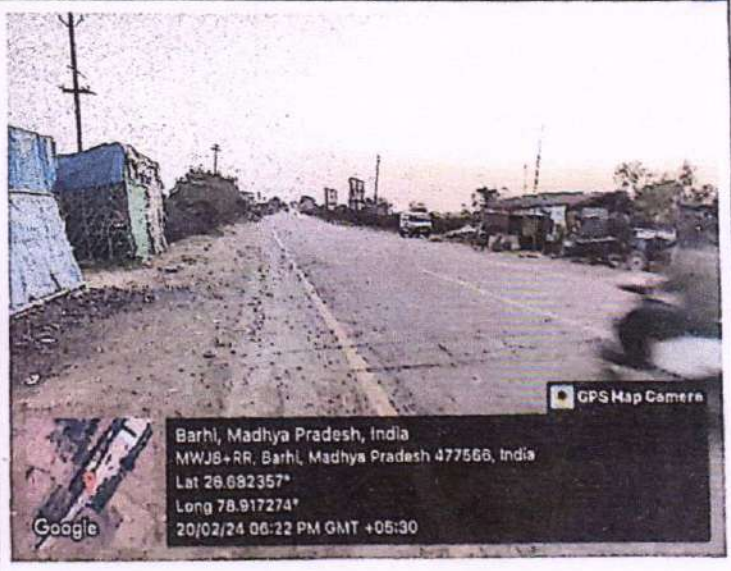



Photo 3	**Photo 4**
	

Approval Authority

Sr. No.	Prepared By / Department	Approved By / Reviewed By &Department
01	Mr. Rohit Pawar / Mr. Mohit Kamble	कार्यालय प्रमुख संचालनालय भौमिकी तथा खनिकर्म मध्यप्रदेश, भोपाल

Surveyor

Name	Team/ Dept.
Mr. Sanjay Dhakad	Mining dept. Bhind
Mr. Prashant Gupta	Project Coordinator
Mr. Mohit Kamble	Site Survey
Mr. Rohit Pawar	Site Survey

Remark

Site Survey done on 20-02-2024.

Distance measured by Rodo meter and laser distance meter

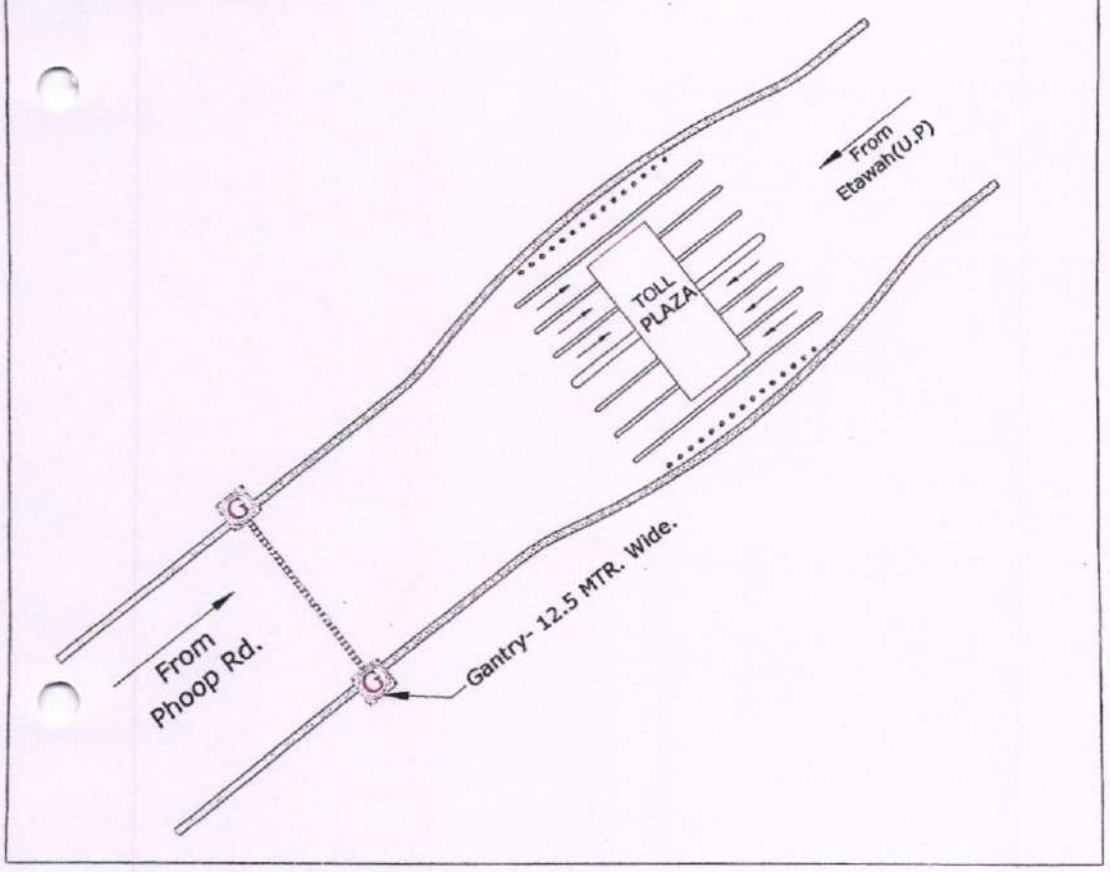
Its National Highway and need permission from State Govt. Department

Electricity (meter) permission from toll plaza and installation to be done. Nearby distance and cabling can be done easily

2 Lane : 2 box cameras , 2 verifocal cameras , 2 RFID , 2 IR illuminator, 2 LED.

Total length is 12.5 meter.

Dist.- Bhind	Tehsil- Bhind	Junction Name - Near Barhi Toll Plaza.



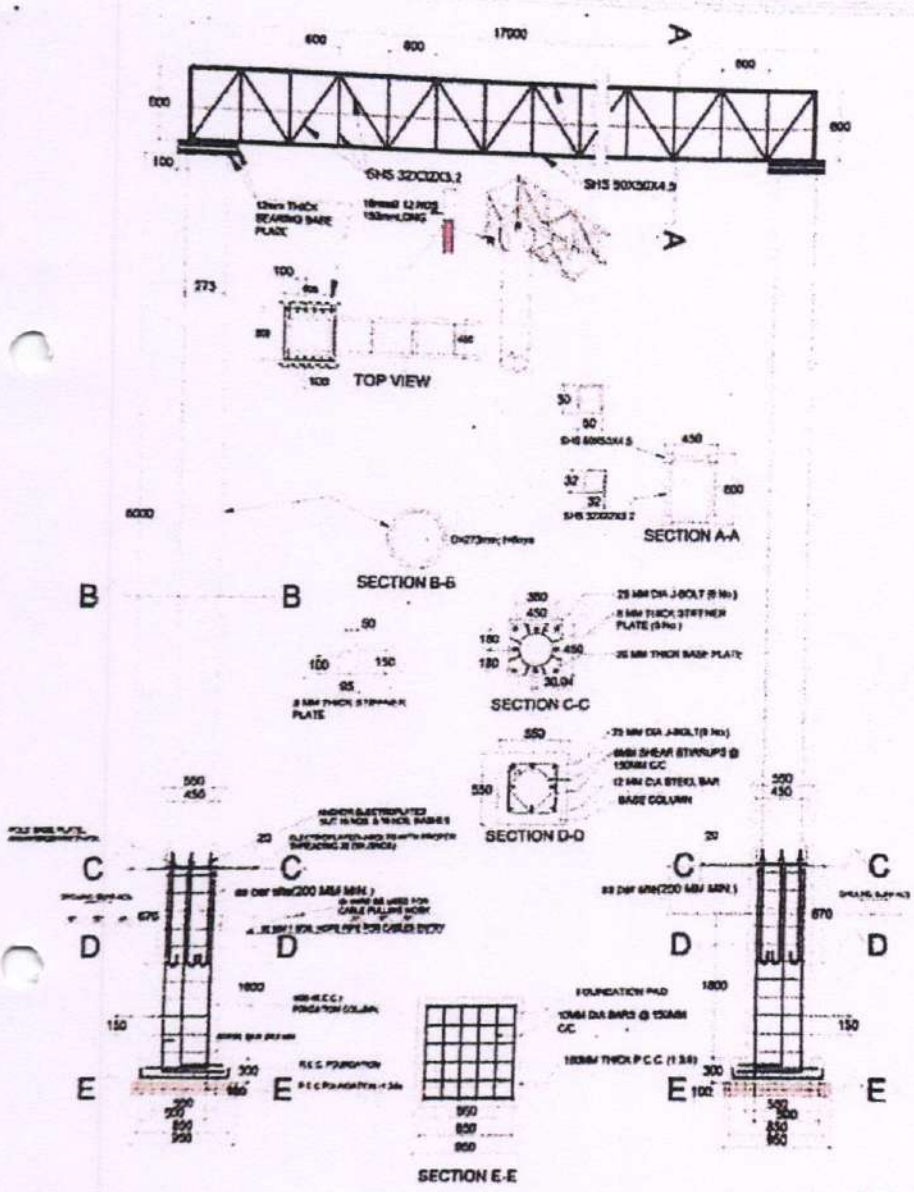
LAT LONG:26.682366,78.917266

LEGEND	ITEM	QTY.
	ANPR CAMERA	
	SURVEILLENCE CAMERA	
	PTZ CAMERA	
	JUNCTION BOX	
	SWITCH	
	STABILIZER	
	STRAIGHT POLE	
	GANTRY	
	EARTHING	
	CAT-6 CABLE	
	POWER CABLE	
	RFID READER	
	LPU	
	NVR	
	SOLAR PANEL & BATTERIES	

MSI: RAILTEL CORPORATION INDIA LIMITED

A3

कार्यालय प्रमुख
संचालनालय भौमिकी तथा खनिकर्म
मध्यप्रदेश, भोपाल



NOTES :

CLIENT	RailTel Corporation India Limited
MANUFACTURE BY -	SENSECURE INTEGRATED SOLUTIONS PVT. LTD.
TITLE	Gantry Design for MP.
Drawing Prepared By:-	ER. LOMESH N TAUNK

Engineer	Date
ER. LOMESH N TAUNK	20/02/2024

Drawing Approved By:-

Engineer	Signature	Date
MA		

DWG. NO. GOA/GAT17/REV01

Scale:- NTS

कार्यालय प्रमुख
संचालनालय भौमिकी तथा खनिकर्म
मध्यप्रदेश, भोपाल

```
*****************************************************
*                                                   *
*           STAAD.Pro V8i SELECT series 5           *
*           Version 20.07.10.64                     *
*           Proprietary Program of                  *
*           Bentley System, Inc.                    *
*           Date=    OCT16, 2024                    *
*           Time=    14:32:32                       *
*                                                   *
*      USER ID:                                     *
*****************************************************

     1. STAAD SPACE
INPUT FILE: trussgantry.STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 20-FEB-24
     4. JOB CLIENT DIRECTORATE OF GEOLOGY AND MINING - BHOPAL
     5. JOBNO1
     6. JOBREV3
     7. JOBPART1
     8. JOB REFIS-800(2007),IS456-2000
WARNING- One or more lines are too long and will be split into 2 lines.
         This may not work for all commands. Please check.
     9. JOB COMMENT 17.5M CLEAR SPAN GANTRY DESIGN IN WIND SPEED 150 KMPH TO CARRY DEAD-
    10. LOAD OF MAX 200KG.
    11. ENGINEER NAME LNT
    12. JOB NAME 17.5 MT SPAN GANTRY
    13. END JOB INFORMATION
    14. INPUT WIDTH 79
    15. UNIT METER KN
    16. JOINT COORDINATES
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    18.10176-0.22;110.660.22;120.66-0.22;131.260.22;141.26-0.22
    19.15  1.8 60.22;161.86-0.22;172.460.22;182.46-0.22;19360.22
    20.20   36 -0.22;213.660.22;223.66-0.22;234.260.22;244.26-0.22
    21.25  4.8 60.22;264.86-0.22;275.460.22;285.46-0.22;29660.22
    22.30   66 -0.22;316.660.22;326.66-0.22;337.260.22;347.26-0.22
    23.35  7.8 60.22;367.86-0.22;378.460.22;388.46-0.22;39960.22
    24.40   96 -0.22;419.660.22;429.66-0.22;4310.260.22;4410.26-0.22
    25. 45 10.860.22;4610.86-0.22;4711.460.22;4811.46-0.22;491260.22
    26. 50 126-0.22;5112.660.22;5212.66-0.22;5313.260.22
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    33. 79 36.60.22;8036.6-0.22;813.66.60.22;823.66.6-0.22
    34. 83 4.26.60.22;844.26.6-0.22;854.86.60.22;864.86.6-0.22
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46. 1 1 2; 4 6 2; 5 7 8; 6 10 8; 7 4 11; 8 10 66; 9 11 13; 10 12 6; 11 12 11
47. 12 13 15; 13 14 12; 14 14 13; 15 15 17; 16 16 14; 17 16 15; 18 17 19; 19 18 16
48. 20 18 17; 21 19 21; 22 20 18; 23 20 19; 24 21 23; 25 22 20; 26 22 21; 27 23 25
49. 28 24 22; 29 24 23; 30 25 27; 31 26 24; 32 26 25; 33 27 29; 34 28 26; 35 28 27
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61. 121 35 95; 122 36 96; 123 37 97; 124 38 98; 125 39 99; 126 40 100; 127 41 101
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63. 134 48 108; 135 49 109; 136 50 110; 137 51 111; 138 52 112; 139 53 113
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83. 264 115 57; 265 57 119; 266 119 61; 267 61 123; 268 123 65; 269 65 69
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86. 298 96 38; 299 38 100; 300 100 42; 301 42 104; 302 104 46; 303 46 108
87. 304 108 50; 305 50 112; 306 112 54; 307 54 116; 308 116 58; 309 58 120
88. 310 120 62; 311 62 124; 312 124 66; 313 66 70; 314 2 4; 315 8 9
89. DEFINE MATERIAL START
90. ISOTROPIC STEEL
91. E 2.05E+008
92. POISSON 0.3
```

```
  93. DENSITY 76.8195
  94. ALPHA 1.2E-005
  95. DAMP 0.03
  96. TYPE STEEL
  97. STRENGTH FY 253200 FU 407800 RY 1.5 RT 1.2
  98. END DEFINE MATERIAL
  99. MEMBER PROPERTY TATASTRUCTURA
 100. 1 4 TO 8 10 90 314 315 TABLE ST 273X6CHS
 101. 9 12 13 15 16 18 19 21 22 24 25 27 28 30 31 33 34 36 37 39 40 42 43 45 46 -
 102. 48 49 51 52 54 55 57 58 60 61 63 64 66 67 69 70 72 73 75 76 78 79 81 82 84 -
 103. 85 87 88 91 155 TO 158 160 161 163 164 166 167 169 170 172 173 175 176 178 -
 104. 179 181 182 184 185 187 188 190 191 193 194 196 197 199 200 202 203 205 206 -
 105. 208 209 211 212 214 215 217 218 220 221 223 224 226 227 229 230 232 233 235 -
 106. 236 238 239 TABLE ST 50X50X4.5SHS
 107. 11 14 17 20 23 26 29 32 35 38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 -
 108. 86 89 92 TO 154 159 162 165 168 171 174 177 180 183 186 189 192 195 198 201 -
 109. 204 207 210 213 216 219 222 225 228 231 234 237 240 242 TO 269 284 TO 312 -
 110. 313 TABLE ST 32X32X3.2SHS
 111. CONSTANTS
 112. MATERIAL STEEL ALL
 113. SUPPORTS
 114. 1 7 FIXED
 115. DEFINE WIND LOAD

*** NOTE: If any floor diaphragm is present in the model Wind Load definition
          should be defined after Floor Diaphragm definition. Otherwise wind
          load generation may be unsuccessful during analysis.

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 118. ASCE-7-2010:PARAMS 150.000 KMPH 0 1 1 0 0.000 FT 0.000 FT 0.000 FT 1 -
 119. 1 40.000 FT 30.000 FT 25.000 FT 2.000 0.010 0 -
 120. 0 0 0 0 0.761 1.000 1.000 0.850 0 -
 121. 0 0 0 0.866 0.800 -0.550
 122. !> END GENERATED DATA BLOCK
 123. INT 0.738938 0.738938 0.751572 0.763219 0.774045 0.784176 0.793712 0.80273 -
 124. 0.811292 0.81945 0.827247 0.83472 0.841898 0.848809 0.855474 HEIC  0  4.572 -
 125. 5.15815  5.74431  6.33046  6.91662  7.50277  8.08892  8.67508  9.26123 -
 126. 9.84739  10.4335  11.0197  11.6059  12.192
 127. EXP 1 JOINT 1 2 4 6 TO 126
 128. DEFINE REFERENCE LOADS
 129. LOAD R1 LOADTYPE DEAD  TITLE DEAD LOAD
 130. SELFWEIGHT Y -1
 131. MEMBER LOAD
 132. 186 216 CON GY -1.
 133. END DEFINE REFERENCE LOADS
 134. LOAD 1 LOADTYPE WIND  TITLE WL+X
 135. WIND LOAD X 1 TYPE 1 YR 0 15 OPEN
 136. LOAD 2 LOADTYPE WIND  TITLE WL-X
 137. WIND LOAD -X -1 TYPE 1 YR 0 15 OPEN
```

```
138. LOAD 3 LOADTYPE WIND  TITLE WL+Z
139. WIND LOAD Z 1 TYPE 1 YR 0 15 OPEN
140. LOAD 4 LOADTYPE WIND  TITLE WL-Z
141. WIND LOAD -Z -1 TYPE 1 YR 0 15 OPEN
142. LOAD 5 LOADTYPE DEAD  TITLE DEAD LOAD
143. REFERENCE LOAD
144. R1 1.0
145. LOAD COMB 6 GENERATED INDIAN CODE GENRAL_STRUCTURES 1
146. 5 1.5
147. LOAD COMB 7 GENERATED INDIAN CODE GENRAL_STRUCTURES 2
148. 5 1.2 1 1.2
149. LOAD COMB 8 GENERATED INDIAN CODE GENRAL_STRUCTURES 3
150. 5 1.2 2 1.2
151. LOAD COMB 9 GENERATED INDIAN CODE GENRAL_STRUCTURES 4
152. 5 1.2 3 1.2
153. LOAD COMB 10 GENERATED INDIAN CODE GENRAL_STRUCTURES 5
154. 5 1.2 4 1.2
155. LOAD COMB 11 GENERATED INDIAN CODE GENRAL_STRUCTURES 6
156. 5 1.2 1 -1.2
157. LOAD COMB 12 GENERATED INDIAN CODE GENRAL_STRUCTURES 7
158. 5 1.2 2 -1.2
159. LOAD COMB 13 GENERATED INDIAN CODE GENRAL_STRUCTURES 8
160. 5 1.2 3 -1.2
161. LOAD COMB 14 GENERATED INDIAN CODE GENRAL_STRUCTURES 9
162. 5 1.2 4 -1.2
163. LOAD COMB 15 GENERATED INDIAN CODE GENRAL_STRUCTURES 10
164. 5 1.2
165. LOAD COMB 16 GENERATED INDIAN CODE GENRAL_STRUCTURES 11
166. 5 1.5 1 1.5
167. LOAD COMB 17 GENERATED INDIAN CODE GENRAL_STRUCTURES 12
168. 5 1.5 2 1.5
169. LOAD COMB 18 GENERATED INDIAN CODE GENRAL STRUCTURES 13
170. 5 1.5 3 1.5
171. LOAD COMB 19 GENERATED INDIAN CODE GENRAL_STRUCTURES 14
172. 5 1.5 4 1.5
173. LOAD COMB 20 GENERATED INDIAN CODE GENRAL_STRUCTURES 15
174. 5 1.5 1 -1.5
175. LOAD COMB 21 GENERATED INDIAN CODE GENRAL_STRUCTURES 16
176. 5 1.5 2  1.5
177. LOAD COMB 22 GENERATED INDIAN CODE GENRAL_STRUCTURES 17
178. 5 1.5 3 -1.5
179. LOAD COMB 23 GENERATED INDIAN CODE GENRAL_STRUCTURES 18
180. 5 1.5 4 -1.5
181. LOAD COMB 24 GENERATED INDIAN CODE GENRAL_STRUCTURES 19
182. 5 0.9
183. PERFORM ANALYSIS
```

P R O B L E M S T A T I S T I C S

NUMBER OF JOINTS	124	NUMBER OF MEMBERS	298
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	2

SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

ORIGINAL/FINAL BAND-WIDTH= 66/ 6/ 42 DOF
TOTAL PRIMARY LOAD CASES = 5, TOTAL DEGREES OF FREEDOM = 732
TOTAL LOAD COMBINATION CASES = 19 SO FAR.
SIZE OF STIFFNESS MATRIX = 31 DOUBLE KILO-WORDS
REQRD/AVAIL. DISK SPACE = 12.8/ 119887.5 MB

184. PARAMETER 1
185. CODE INDIAN
186. FYLD 250000 ALL
187. CHECK CODE ALL

STAAD.Pro CODE CHECKING - (IS-800:1984) v1.1
****

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
1	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.639	18
		10.93 C	29.69	-3.52	0.00
4	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.054	19
		1.86 T	1.45	1.32	0.22
5	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.645	18
		10.69 C	28.84	4.56	0.00
6	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.053	19
		1.76 T	-1.41	1.33	0.22
7	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.150	17
		9.95 C	-0.08	7.34	0.00
8	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.112	16
		2.14 C	-0.04	5.86	0.00
9	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.465	19
		5.22 C	-0.58	0.12	0.00
10	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.150	17
		9.95 C	-0.08	7.34	0.60
11	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.056	18
		0.06 T	-0.01	0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
12	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.207	18
		5.37 T	0.25	-0.02	0.00
13	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.465	18
		5.22 C	-0.58	0.12	0.60
14	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.859	18
		0.00 T	0.34	0.06	0.44
15	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.189	18
		7.12 T	-0.21	0.00	0.60
16	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.207	19
		5.37 T	0.25	-0.02	0.60
17	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.857	18
		0.00 T	0.38	0.02	0.44
18	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.255	10
		13.64 T	-0.20	-0.03	0.60
19	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.189	19
		7.12 T	-0.21	0.00	0.00
20	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.803	18
		0.00 T	0.36	0.01	0.44

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
21	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.246	18
		15.15 T	-0.19	0.01	0.60
22	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.255	19
		13.64 T	-0.20	-0.03	0.00
23	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.707	18
		0.00 T	-0.33	0.00	0.00
24	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.306	18
		20.63 T	-0.17	-0.04	0.60
25	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.246	19
		15.15 T	-0.19	0.01	0.00
26	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.651	18
		0.00 T	0.30	0.01	0.44
27	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.289	18
		21.84 T	-0.16	0.01	0.60
28	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.306	19
		20.63 T	-0.17	-0.04	0.00
29	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.571	18
		0.00 T	-0.26	0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
30	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.342	18
		26.36 T	-0.14	-0.05	0.60
31	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.289	19
		21.84 T	-0.16	0.01	0.00
32	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.506	18
		0.01 T	0.23	0.01	0.44
33	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.317	18
		27.24 T	-0.13	0.01	0.60
34	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.342	19
		26.36 T	-0.14	-0.05	0.00
35	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.426	18
		0.01 T	-0.19	0.01	0.00
36	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.356	18
		30.02 T	-0.11	-0.05	0.60
37	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.317	19
		27.24 T	-0.13	0.01	0.00
38	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.361	18
		0.06 T	0.16	0.01	0.44

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
39	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.332	18
		30.56 T	-0.10	0.02	0.60
40	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.356	19
		30.02 T	-0.11	-0.05	0.00
41	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.274	18
		0.01 T	-0.12	0.01	0.00
42	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.351	18
		31.58 T	-0.07	-0.05	0.60
43	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.332	19
		30.56 T	-0.10	0.02	0.00
44	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.201	18
		0.01 T	0.08	0.01	0.44
45	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.325	18
		31.79 T	-0.03	-0.05	0.00
46	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.351	19
		31.58 T	-0.07	-0.05	0.00
47	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.118	18
		0.00 T	-0.05	0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
48	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.331	18
		31.79 T	-0.04	-0.05	0.60
49	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.325	19
		31.79 T	-0.03	-0.05	0.60
50	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.044	18
		0.00 T	0.01	0.01	0.44
51	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.346	18
		31.67 T	-0.06	-0.05	0.00
52	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.331	19
		31.79 T	-0.04	-0.05	0.00
53	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.074	18
		0.00 T	0.03	0.01	0.00
54	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.326	18
		30.64 T	-0.09	0.02	0.00
55	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.346	19
		31.67 T	-0.06	-0.05	0.60
56	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.158	18
		0.00 T	-0.06	0.01	0.44

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
57	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.353	18
		30.18 T	-0.10	-0.05	0.00
58	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.326	19
		30.64 T	-0.09	0.02	0.60
59	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.229	18
		0.00 T	0.10	0.01	0.00
60	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.323	18
		28.12 T	-0.12	0.01	0.00
61	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.353	19
		30.18 T	-0.10	-0.05	0.60
62	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.316	18
		0.01 T	-0.14	0.01	0.44
63	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.345	18
		27.34 T	-0.13	-0.05	0.00
64	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.323	19
		28.12 T	-0.12	0.01	0.60
65	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.385	18
		0.01 T	0.17	0.01	0.00

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
66	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.297	18
		23.49 T	-0.15	0.00	0.00
67	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.345	19
		27.34 T	-0.13	-0.05	0.60
68	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.477	18
		0.06 T	-0.21	0.01	0.44
69	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.318	18
		22.36 T	-0.17	-0.04	0.00
70	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.297	19
		23.49 T	-0.15	0.00	0.60
71	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.538	18
		0.01 T	0.24	0.01	0.00
72	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.256	18
		16.74 T	-0.18	0.00	0.00
73	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.318	19
		22.36 T	-0.17	-0.04	0.60
74	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.625	18
		0.01 T	-0.26	0.01	0.44

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
75	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.269	18
		15.28 T	-0.20	-0.03	0.00
76	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.256	19
		16.74 T	-0.18	0.00	0.60
77	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.683	18
		0.00 T	0.32	0.00	0.00
78	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.201	18
		8.60 T	-0.21	0.00	0.00
79	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.269	19
		15.28 T	-0.20	-0.03	0.60
80	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.777	18
		0.00 T	-0.36	0.01	0.44
81	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.203	18
		6.84 T	-0.22	-0.02	0.00
82	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.201	19
		8.60 T	-0.21	0.00	0.60
83	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.830	18
		0.00 T	-0.38	0.01	0.44

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
84	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.232	19
		3.61 C	-0.29	-0.05	0.60
85	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.203	19
		6.84 T	-0.22	-0.02	0.60
86	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.920	18
		0.00 T	-0.40	0.03	0.44
87	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.568	18
		2.96 C	0.56	0.34	0.60
88	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.232	18
		3.61 C	-0.29	-0.05	0.00
89	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.818	18
		0.00 T	-0.35	0.03	0.44
90	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.112	16
		2.14 C	-0.04	5.86	0.20
91	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.568	19
		2.96 C	0.56	0.34	0.00
92	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.013	18
		0.09 T	0.00	0.00	0.00

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
93	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.157	18
		0.19 C	0.05	0.03	0.00
94	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.157	19
		0.19 C	-0.05	0.03	0.00
95	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.708	16
		20.80 T	0.00	-0.14	0.00
96	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.708	16
		20.80 T	0.00	-0.14	0.00
97	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.406	18
		6.88 C	0.11	0.01	0.00
98	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.406	19
		6.88 C	-0.11	0.01	0.00
99	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.173	18
		0.28 C	0.06	-0.02	0.00
100	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.173	19
		0.28 C	-0.06	-0.02	0.00
101	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.060	19
		0.11 T	-0.02	-0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
102	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.060	18
		0.11 T	0.02	-0.01	0.00
103	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.035	18
		0.20 C	0.00	-0.01	0.00
104	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.035	19
		0.20 C	0.00	-0.01	0.00
105	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	19
		0.22 T	0.00	0.01	0.60
106	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	18
		0.22 T	0.00	0.01	0.60
107	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.025	18
		0.23 C	0.00	-0.01	0.00
108	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.025	19
		0.23 C	0.00	-0.01	0.00
109	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.030	19
		0.28 T	0.00	0.01	0.60
110	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.030	18
		0.28 T	0.00	0.01	0.60

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
111	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.025	18
		0.27 C	0.00	-0.01	0.00
112	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.025	19
		0.27 C	0.00	-0.01	0.00
113	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.040	19
		0.33 T	-0.01	0.01	0.60
114	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.040	18
		0.33 T	0.01	0.01	0.60
115	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.087	18
		0.99 C	-0.03	0.00	0.60
116	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.087	19
		0.99 C	0.03	0.00	0.60
117	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.030	19
		0.35 T	-0.01	0.00	0.60
118	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.030	18
		0.35 T	0.01	0.00	0.60
119	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.017	18
		0.33 C	0.00	0.00	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
120	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.017	19
		0.33 C	0.00	0.00	0.00
121	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.017	19
		0.36 T	0.00	0.00	0.60
122	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.017	18
		0.36 T	0.00	0.00	0.60
123	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.015	18
		0.34 C	0.00	0.00	0.00
124	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.015	19
		0.34 C	0.00	0.00	0.00
125	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.016	19
		0.36 T	0.00	0.00	0.60
126	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.016	18
		0.36 T	0.00	0.00	0.60
127	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.018	18
		0.34 C	0.00	0.00	0.00
128	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.018	19
		0.34 C	0.00	0.00	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
129	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.019	19
		0.35 T	0.00	0.00	0.60
130	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.019	18
		0.35 T	0.00	0.00	0.60
131	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.020	18
		0.31 C	0.00	0.00	0.00
132	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.020	19
		0.31 C	0.00	0.00	0.00
133	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.031	19
		0.33 T	-0.01	0.00	0.60
134	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.031	18
		0.33 T	0.01	0.00	0.60
135	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.090	18
		0.97 C	-0.03	-0.01	0.60
136	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.090	19
		0.97 C	0.03	-0.01	0.60
137	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.040	19
		0.29 T	-0.01	-0.01	0.60

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
138	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.040	18
		0.29 T	0.01	-0.01	0.60
139	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.026	18
		0.23 C	0.00	0.01	0.00
140	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.028	19
		0.23 C	0.00	0.01	0.00
141	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	19
		0.23 T	0.00	-0.01	0.60
142	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	18
		0.23 T	0.00	-0.01	0.60
143	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.030	18
		0.19 C	0.00	0.01	0.00
144	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.030	19
		0.19 C	0.00	0.01	0.00
145	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.033	19
		0.08 T	0.00	0.01	0.00
146	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.033	18
		0.08 T	0.00	0.01	0.00

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
147	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.061	18
		0.26 C	0.02	0.01	0.00
148	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.061	19
		0.26 C	-0.02	0.01	0.00
149	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.193	18
		0.63 C	0.05	0.03	0.00
150	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.193	19
		0.63 C	-0.05	0.03	0.00
151	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.363	18
		1.83 C	0.08	-0.07	0.00
152	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.363	19
		1.83 C	-0.08	-0.07	0.00
153	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.305	18
		0.00 T	0.09	0.05	0.44
154	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.363	18
		0.00 T	-0.10	0.07	0.44
155	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.070	18
		0.48 T	0.09	-0.02	0.00

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
156	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.220	16
		6.97 T	0.00	0.27	0.20
157	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.170	18
		1.02 T	0.23	0.04	0.00
158	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.070	19
		0.48 T	0.09	-0.02	0.60
159	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.565	18
		0.00 T	0.18	0.08	0.44
160	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.162	18
		2.31 T	0.23	0.01	0.00
161	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.170	19
		1.02 T	0.23	0.04	0.60
162	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.751	10
		0.00 C	0.30	0.05	0.44
163	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.210	19
		8.84 C	0.20	-0.02	0.60
164	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.162	19
		2.31 T	0.23	0.01	0.60

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
165	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.830	18
		0.00 C	0.36	0.02	0.44
166	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.220	19
		10.51 C	0.20	0.01	0.60
167	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.210	18
		8.84 C	0.20	-0.02	0.00
168	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.792	18
		0.00 C	0.36	0.01	0.44
169	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.284	19
		16.99 C	0.19	-0.03	0.60
170	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.220	18
		10.51 C	0.20	0.01	0.00
171	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.743	18
		0.00 C	-0.34	0.01	0.00
172	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.272	19
		18.39 C	0.18	0.01	0.60
173	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.284	18
		16.99 C	0.19	-0.03	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
174	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.654	18
		0.00 C	0.30	0.00	0.44
175	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.330	19
		23.80 C	0.16	-0.05	0.60
176	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.272	18
		18.39 C	0.18	0.01	0.00
177	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.596	18
		0.00 C	-0.27	0.01	0.00
178	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.312	19
		24.85 C	0.15	0.02	0.60
179	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.330	18
		23.80 C	0.16	-0.05	0.00
180	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.498	18
		0.00 C	-0.23	0.00	0.00
181	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.365	19
		29.13 C	0.13	-0.06	0.60
182	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.312	18
		24.85 C	0.15	0.02	0.00

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
183	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.443	18
		0.02 C	0.19	-0.01	0.44
184	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.337	19
		29.83 C	0.11	0.02	0.60
185	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.365	18
		29.13 C	0.13	-0.06	0.00
186	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.479	18
		0.06 C	0.15	0.07	0.44
187	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.362	19
		31.57 C	0.09	-0.06	0.60
188	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.337	18
		29.83 C	0.11	0.02	0.00
189	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.281	18
		0.02 C	0.12	-0.01	0.44
190	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.334	19
		31.92 C	0.08	0.02	0.60
191	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.362	18
		31.57 C	0.09	-0.06	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
192	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.182	18
		0.00 C	-0.08	-0.01	0.00
193	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.349	19
		32.57 C	0.05	-0.06	0.60
194	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.334	18
		31.92 C	0.08	0.02	0.00
195	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.110	18
		0.00 C	-0.04	0.01	0.00
196	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.347	19
		32.58 C	0.05	-0.06	0.00
197	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.349	18
		32.57 C	0.05	-0.06	0.00
198	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.022	18
		0.00 C	0.00	0.01	0.44
199	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.335	19
		32.15 C	0.07	0.02	0.00
200	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.347	18
		32.58 C	0.05	-0.06	0.60

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
201	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.098	18
		0.00 C	0.03	0.01	0.00
202	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.362	19
		31.82 C	0.09	-0.06	0.00
203	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.335	18
		32.15 C	0.07	0.02	0.60
204	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.169	18
		0.00 C	-0.07	0.01	0.44
205	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.339	19
		30.33 C	0.11	0.02	0.00
206	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.362	18
		31.82 C	0.09	-0.06	0.60
207	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.257	18
		0.00 C	0.11	0.01	0.00
208	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.363	19
		29.66 C	0.12	-0.05	0.00
209	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.339	18
		30.33 C	0.11	0.02	0.60

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
210	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.327	18
		0.00 C	0.15	-0.01	0.00
211	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.331	19
		27.10 C	0.14	0.02	0.00
212	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.363	18
		29.66 C	0.12	-0.05	0.60
213	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.425	18
		0.02 C	-0.19	-0.01	0.44
214	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.354	19
		26.08 C	0.16	-0.06	0.00
215	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.331	18
		27.10 C	0.14	0.02	0.60
216	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.622	18
		0.06 C	-0.22	0.07	0.44
217	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.294	19
		21.01 C	0.18	0.01	0.00
218	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.354	18
		26.08 C	0.16	-0.06	0.60

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MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
219	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.583	18
		0.02 C	-0.26	-0.01	0.44
220	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.307	19
		19.65 C	0.19	-0.04	0.00
221	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.294	18
		21.01 C	0.18	0.01	0.60
222	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.638	18
		0.00 C	0.29	0.00	0.00
223	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.247	19
		13.51 C	0.20	0.01	0.00
224	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.307	18
		19.65 C	0.19	-0.04	0.60
225	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.725	18
		0.00 C	0.33	0.01	0.00
226	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.249	19
		11.84 C	0.21	-0.03	0.00
227	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.247	18
		13.51 C	0.20	0.01	0.60

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
228	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.782	18
		0.00 C	-0.36	0.01	0.44
229	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.170	19
		4.89 C	-0.21	0.00	0.60
230	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.249	18
		11.84 C	0.21	-0.03	0.60
231	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.841	18
		0.00 C	-0.39	0.01	0.44
232	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.177	19
		3.16 C	-0.25	0.00	0.60
233	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.170	18
		4.89 C	-0.21	0.00	0.00
234	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.853	18
		0.00 C	-0.37	0.02	0.44
235	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.254	18
		4.97 T	0.25	0.11	0.60
236	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.177	18
		3.16 C	-0.25	0.00	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
237	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.794	18
		0.00 C	-0.31	0.06	0.44
238	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.220	16
		6.97 T	0.00	0.27	0.00
239	ST 50X50X4.5SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.254	19
		4.97 T	0.25	0.11	0.00
240	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	7.1.2 BEND C	0.465	18
		0.00 T	-0.15	0.06	0.44
242	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.197	18
		4.58 T	0.04	0.01	0.85
243	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.204	18
		4.25 C	0.04	-0.01	0.00
244	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.115	18
		3.73 T	-0.02	0.00	0.85
245	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.148	19
		3.79 C	0.02	0.01	0.85
246	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.106	18
		3.23 T	-0.02	0.00	0.85

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
247	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.130	19
		3.35 C	0.01	0.01	0.85
248	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.092	18
		2.84 T	0.01	0.01	0.00
249	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.107	19
		2.88 C	0.01	0.01	0.85
250	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.076	18
		2.39 T	-0.01	0.00	0.85
251	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.063	19
		1.41 C	0.00	-0.01	0.00
252	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.038	18
		0.95 T	0.01	0.00	0.49
253	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.044	19
		0.87 C	0.00	-0.01	0.28
254	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	18
		0.49 T	0.00	0.00	0.28
255	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.033	19
		0.36 C	0.00	-0.01	0.21

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
256	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.039	19
		0.74 C	0.00	-0.01	0.57
257	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.041	18
		1.02 T	-0.01	0.00	0.00
258	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.058	19
		1.23 C	0.00	-0.01	0.85
259	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.054	18
		1.47 T	-0.01	0.00	0.00
260	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.079	19
		1.74 C	-0.01	-0.01	0.85
261	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.094	18
		2.93 T	-0.01	0.00	0.00
262	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.121	19
		3.20 C	-0.01	-0.01	0.85
263	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.109	18
		3.39 T	-0.02	0.01	0.00
264	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.140	19
		3.58 C	0.01	0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
265	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.119	18
		3.84 T	-0.02	0.00	0.00
266	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.157	19
		3.82 C	0.02	0.00	0.00
267	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.140	18
		4.92 T	0.02	0.00	0.85
268	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.430	18
		4.17 C	0.10	0.05	0.85
269	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.657	16
		19.68 C	0.00	-0.12	0.00
284	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.262	17
		11.06 T	0.00	0.02	0.00
285	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.262	17
		11.06 T	0.00	0.02	0.00
286	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.197	19
		4.58 T	-0.04	0.01	0.85
287	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.204	19
		4.25 C	-0.04	-0.01	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
288	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.115	19
		3.73 T	-0.02	0.00	0.00
289	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.148	18
		3.79 C	-0.02	0.01	0.85
290	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.106	19
		3.23 T	0.02	0.00	0.85
291	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.130	18
		3.35 C	-0.01	0.01	0.85
292	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.092	19
		2.84 T	0.01	0.01	0.85
293	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.107	18
		2.88 C	-0.01	0.01	0.85
294	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.076	19
		2.39 T	0.01	0.00	0.85
295	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.063	18
		1.41 C	0.00	-0.01	0.00
296	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.038	19
		0.95 T	0.00	0.00	0.26

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
297	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.044	18
		0.87 C	0.00	-0.01	0.28
298	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.029	19
		0.49 T	0.00	0.00	0.28
299	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.033	18
		0.36 C	0.00	-0.01	0.21
300	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.039	18
		0.74 C	0.00	-0.01	0.57
301	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.041	19
		1.02 T	0.01	0.00	0.00
302	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.058	18
		1.23 C	0.00	-0.01	0.85
303	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.054	19
		1.47 T	0.01	0.00	0.00
304	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.079	18
		1.74 C	0.01	-0.01	0.85
305	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.094	19
		2.93 T	0.01	0.00	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
306	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.121	18
		3.20 C	0.01	-0.01	0.85
307	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.109	19
		3.39 T	0.02	0.01	0.00
308	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.140	18
		3.58 C	-0.01	0.01	0.00
309	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.119	19
		3.84 T	0.02	0.00	0.00
310	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.157	18
		3.82 C	-0.02	0.00	0.00
311	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.140	19
		4.92 T	-0.02	0.00	0.85
312	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(A)	0.430	19
		4.17 C	-0.10	0.05	0.85
313	ST 32X32X3.2SHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.1(B)	0.657	16
		19.68 C	0.00	-0.12	0.00
314	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.054	18
		1.86 T	1.45	1.32	0.00

ALL UNITS ARE - KN METE (UNLESS OTHERWISE Noted)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
315	ST 273X6CHS		(TATA STRUCTURA SECTIONS)		
		PASS	IS-7.1.2	0.053	18
		1.76 T	-1.41	1.33	0.00

********** END OF TABULATED RESULT OF DESIGN **********

188. PARAMETER 2
189. CODE INDIAN
190. STEEL MEMBER TAKE OFF ALL

STEEL TAKE-OFF

PROFILE	LENGTH(METE)	WEIGHT(KN)
ST 273X6CHS	14.48	5.598
ST 50X50X4.5SHS	66.40	3.912
ST 32X32X3.2SHS	110.30	2.898
	TOTAL =	12.409

MEMBER	PROFILE	LENGTH (METE)	WEIGHT (KN)
1	ST 273X6CHS	6.00	2.320
4	ST 273X6CHS	0.22	0.085
5	ST 273X6CHS	6.00	2.320
6	ST 273X6CHS	0.22	0.085
7	ST 273X6CHS	0.60	0.232
8	ST 273X6CHS	0.20	0.077
9	ST 50X50X4.5SHS	0.60	0.035
10	ST 273X6CHS	0.60	0.232
11	ST 32X32X3.2SHS	0.44	0.012
12	ST 50X50X4.5SHS	0.60	0.035
13	ST 50X50X4.5SHS	0.60	0.035
14	ST 32X32X3.2SHS	0.44	0.012
15	ST 50X50X4.5SHS	0.60	0.035
16	ST 50X50X4.5SHS	0.60	0.035
17	ST 32X32X3.2SHS	0.44	0.012
18	ST 50X50X4.5SHS	0.60	0.035
19	ST 50X50X4.5SHS	0.60	0.035
20	ST 32X32X3.2SHS	0.44	0.012
21	ST 50X50X4.5SHS	0.60	0.035
22	ST 50X50X4.5SHS	0.60	0.035
23	ST 32X32X3.2SHS	0.44	0.012
24	ST 50X50X4.5SHS	0.60	0.035
25	ST 50X50X4.5SHS	0.60	0.035
26	ST 32X32X3.2SHS	0.44	0.012
27	ST 50X50X4.5SHS	0.60	0.035
28	ST 50X50X4.5SHS	0.60	0.035
29	ST 32X32X3.2SHS	0.44	0.012
30	ST 50X50X4.5SHS	0.60	0.035
31	ST 50X50X4.5SHS	0.60	0.035
32	ST 32X32X3.2SHS	0.44	0.012
33	ST 50X50X4.5SHS	0.60	0.035
34	ST 50X50X4.5SHS	0.60	0.035
35	ST 32X32X3.2SHS	0.44	0.012
36	ST 50X50X4.5SHS	0.60	0.035
37	ST 50X50X4.5SHS	0.60	0.035
38	ST 32X32X3.2SHS	0.44	0.012
39	ST 50X50X4.5SHS	0.60	0.035
40	ST 50X50X4.5SHS	0.60	0.035

41	ST	32X32X3.2SHS	0.44	0.012
42	ST	50X50X4.5SHS	0.60	0.035
43	ST	50X50X4.5SHS	0.60	0.035
44	ST	32X32X3.2SHS	0.44	0.012
45	ST	50X50X4.5SHS	0.60	0.035
46	ST	50X50X4.5SHS	0.60	0.035
47	ST	32X32X3.2SHS	0.44	0.012
48	ST	50X50X4.5SHS	0.60	0.035
49	ST	50X50X4.5SHS	0.60	0.035
50	ST	32X32X3.2SHS	0.44	0.012
51	ST	50X50X4.5SHS	0.60	0.035
52	ST	50X50X4.5SHS	0.60	0.035
53	ST	32X32X3.2SHS	0.44	0.012
54	ST	50X50X4.5SHS	0.60	0.035
55	ST	50X50X4.5SHS	0.60	0.035
56	ST	32X32X3.2SHS	0.44	0.012
57	ST	50X50X4.5SHS	0.60	0.035
58	ST	50X50X4.5SHS	0.60	0.035
59	ST	32X32X3.2SHS	0.44	0.012
60	ST	50X50X4.5SHS	0.60	0.035
61	ST	50X50X4.5SHS	0.60	0.035
62	ST	32X32X3.2SHS	0.44	0.012
63	ST	50X50X4.5SHS	0.60	0.035
64	ST	50X50X4.5SHS	0.60	0.035
65	ST	32X32X3.2SHS	0.44	0.012
66	ST	50X50X4.5SHS	0.60	0.035
67	ST	50X50X4.5SHS	0.60	0.035
68	ST	32X32X3.2SHS	0.44	0.012
69	ST	50X50X4.5SHS	0.60	0.035
70	ST	50X50X4.5SHS	0.60	0.035
71	ST	32X32X3.2SHS	0.44	0.012
72	ST	50X50X4.5SHS	0.60	0.035
73	ST	50X50X4.5SHS	0.60	0.035
74	ST	32X32X3.2SHS	0.44	0.012
75	ST	50X50X4.5SHS	0.60	0.035
76	ST	50X50X4.5SHS	0.60	0.035
77	ST	32X32X3.2SHS	0.44	0.012
78	ST	50X50X4.5SHS	0.60	0.035
79	ST	50X50X4.5SHS	0.60	0.035
80	ST	32X32X3.2SHS	0.44	0.012
81	ST	50X50X4.5SHS	0.60	0.035
82	ST	50X50X4.5SHS	0.60	0.035
83	ST	32X32X3.2SHS	0.44	0.012
84	ST	50X50X4.5SHS	0.60	0.035
85	ST	50X50X4.5SHS	0.60	0.035
86	ST	32X32X3.2SHS	0.44	0.012
87	ST	50X50X4.5SHS	0.60	0.035
88	ST	50X50X4.5SHS	0.60	0.035
89	ST	32X32X3.2SHS	0.44	0.012
90	ST	273X6CHS	0.20	0.077
91	ST	50X50X4.5SHS	0.60	0.035
92	ST	32X32X3.2SHS	0.44	0.012
93	ST	32X32X3.2SHS	0.60	0.016
94	ST	32X32X3.2SHS	0.60	0.016
95	ST	32X32X3.2SHS	0.60	0.016
96	ST	32X32X3.2SHS	0.60	0.016

GEOTECHNICAL

SAFEBEARING CAPACITY REPORT

FOR

PROPOSED WORK FOR GANTRY AT NEAR BARHI TOLL PLAZA, NH/NORTH, DISTT. BHIND.

FOR

M/S. RAIL TEL CORPORATION,

SITE : NEAR BARHI TOLL PLAZA, NH/NORTH, DISTT. BHIND.

REPORTED BY

Bhoj Geotech Laboratory

(NABL Accredited As Per ISO/IEC-17025:2017)

B-27, Jai Bhawani, Phase-II, Opp. Extol College, Bawadiyakalan, Bhopal. 462039
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BRIEF DETAILS

Name of Work	: Soil Testing Work for Gantry at Barhi Toll Plaza NH/North, Distt. Bhind.
Client	: **M/s. Rail Tel Corporation,**
Testing Agency	: **M/s. Bhoj Geotech Laboratory**
	: B-27, Jai Bhavani Society, Phase-II,
	Opp. Extol College, Bawadiyakalan, Bhopal. (M.P.)
Location of Pit	: Barhi Toll Plaza, Distt. Bhind.
Open Pit.	: 1 No. (Pit – 25)
Date	: 27/07/2024
Pit Depth	: 2.00 mtr.
Type of Pit	: Hand Axe

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1.0 GENERAL

1.1 The Soil sample received from the proposed work for Gantry at Barhi Toll Plaza, Distt. Bhind for test in the Laboratory.

1.2 The Sample was received at Lab. for Testing Purpose.

1.3 The soil properties are based on the sample received for the tests. The To Trial Pit is up to 2.0m depth.

2.0 LABORATORY INVESTIGATION :

Following laboratory tests & studies were conducted on the soil samples collected from the bore holes:

(I) Grain Size Analysis

(II) Atterbergs Limits

(III) Maximum Dry Density

(IV) Optimum Moisture Content

(V) IS Soil Classification

(VI) Chemical Analysis

(VII) Shear test

2.1.COMPUTATION OF SAFE BEARING CAPACITY

- *BASED ON SHEAR CONSIDERTION*

There are various types of shear tests but here we have performed the unconsolidated undrained test (UU) to get shear parameters for the samples. The safe bearing capacity is calculated as per IS: 6403-1981.

For local and general shear failure the net safe bearing capacity is given as

$$Q = [C N_c S_c d_c + q (N_q - 1) S_q d_q + 0.5 B y N_y S_y d_y] \quad \text{(for General shear)}$$

$$Q = [2/3 C N'_c S_c d_c + q (N'_q - 1) S_q d_q + 0.5 B y N y S y d y] \quad \text{(for Local shear)}$$

Where,

c	=	Cohesion
Ø	=	Angle of internal friction
y	=	Density
B	=	Width of the Footing
N c, Nq, Ny	=	Bearing capacity Factor
Sc, Sq,Sy	=	Shape Factor
d_c, d_q, d_y	=	Depth Factor

- *COMPUTATION OF SAFE BEARING CAPACITY FOR ROCK*

(1) Based on Point Load Strength Index of Core

(as per IS: 8764 : 1998 & IS : 12070:1987)

$$I_s(50) = \frac{P}{D^{1.5} \sqrt{D50}} \quad MN/m^2 (kg/cm^2)$$

Uniaxial Compressive Strength

$q_c =$ 22xIs (50)

The safe bearing pressure should be estimated from the equation:

$$q_s = q_c x N_f$$

q_s = safe bearing pressure (gross)

q_c = average uniaxial compressive strength of rock cores,

N_f= empirical coefficient depending on the spacing of discontinuities

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3.0 CONCLUSION & RECOMMENDATION

1. The present report covers the Geotechnical Investigation carried out for Open Pits locations of Village at Barhi Toll Plaza, Distt. Bhind. The above report is based on the strata encountered at depth of Investigation

2. Based on the proposed type of project, bore log data, Laboratory test Compelling & Analyzing data as per various code guidelines & Safe Bearing Capacities considering Factor of safety of Soil Stara 3.0 & Rock/Boulder 8.0 as shown in report.

3. The recommendations are based on the collected field data, laboratory tests results conducted on Soil considering factor of safety 3.0 as in recommendation.

4. The Recommended foundation depth & corresponding Safe Bearing Capacity is provided in as under.

Pit No.	Depth of Foundation	SBC T/m^2	Type of Strata
Pit-25 (Barhi Toll Plaza, Bhind)	1.5m	12.26	Reddish Soil
	2.00	13.65	Reddish Soil

For **BHOJ GEOTECH LABORATORY**
Tech. Manager

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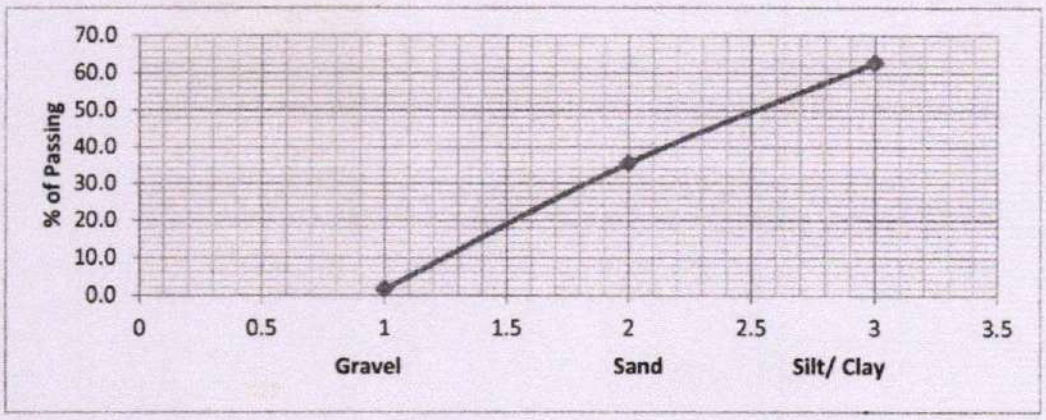
(B-27, Jai Bhawani, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

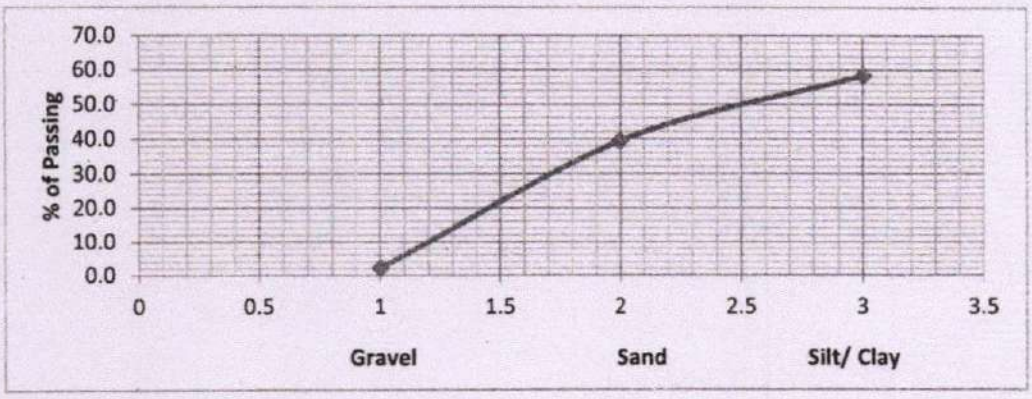
SOIL PROPERTIES

S. NO.	SOIL DESCRIPTION DESCRIPTION	SIEVE ANALYSIS ANALYSIS		
		Depth (m)	1.50	3.00
1	Reddish Soil	Gravel (%)	1.6	2.2
2		Sand (%)	35.6	39.4
3		Silt /Clay (%)	62.8	58.4

1.50 M



2.00M



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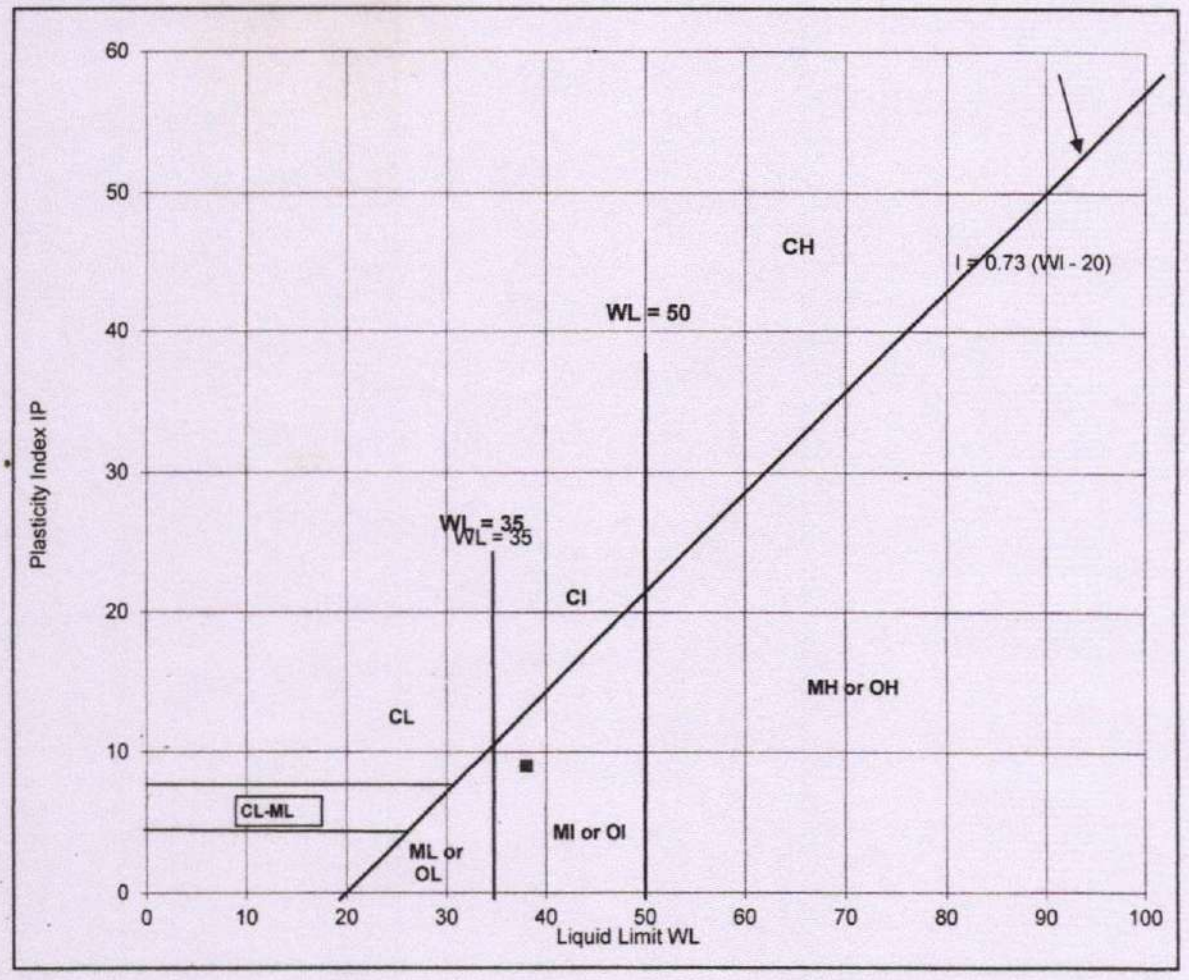
Classification of Soil

S. No.	Depth in Mtr.	LL	PL	PI	Classification
1	1.50	38	29	9	MI or OI



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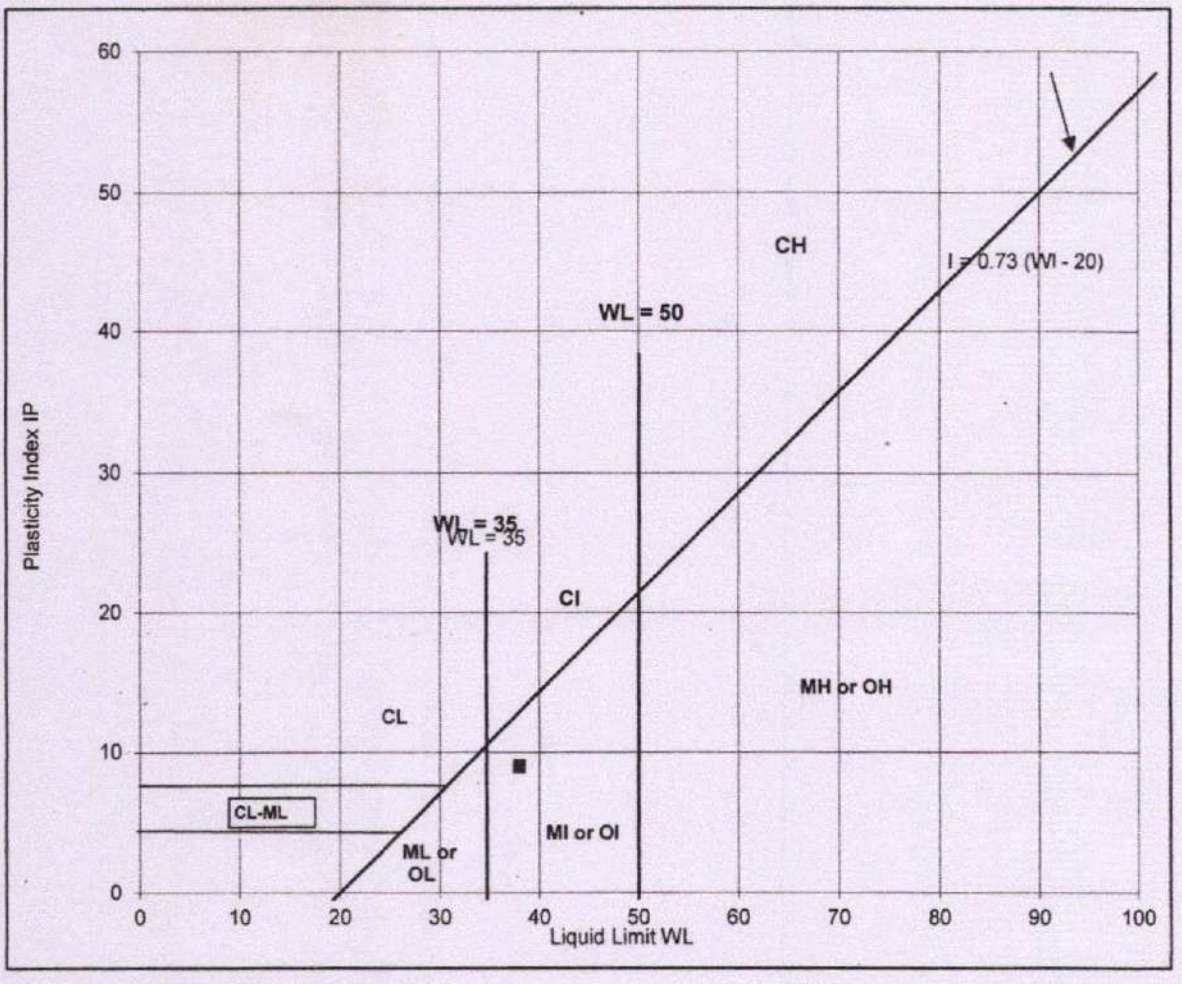
Classification of Soil

S. No.	Depth in Mtr.	LL	PL	PI	Classification
1	2.00	40	28	12	MI or OI



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REULTS OF CHEMICAL ANALYSIS OF SOIL

S. No	SOIL DESCRIPTION	DEPTH (M)	pH VALUE	Chloride (Cl %)	Sulphate (So3)
01	Reddish Soil	1.50	8.15	0.19	0.14
02	Reddish Soil	2.00	8.11	0.17	0.16

COMPRESSION TEST RESULTS

S. No.	DEPTH (M)	Wt. Density gm/cc	N.M.C. %	Dry Density gm/cc	C kg/sq.cm	Ø (Degree)
01	1.50	2.12	12.3	2.08	0.34	17
02	2.00	2.01	12.9	1.95	0.32	19

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SBC CALCULATION

Site : Barhi Toll Plaza, Bhind (Pit- 25)

Depth, D	1.50	2.00	
Ø	17	19	From Test Result
C (Kn/M2)	34	32	From Test Result
Bulk Density y (KN/M3)	20.80	19.57	From Test Result
Df (M)	1.50	2.00	Depth of Foundation
B (M)	1.50	1.50	Width of Footing in Mtr.
SBC Based on Local Shear Failure	12.26	12.97	
Nc	8.87	9.42	IS 6403 : 1981 Pg. 8 Table-1
Nq	2.59	2.94	IS 6403 : 1981 Pg. 8 Table-1
Ny	1.15	1.54	IS 6403 : 1981 Pg. 8 Table-1
Sc	1.30	1.30	IS 6403 : 1981 Pg. 8 Table-2
Sq	1.20	1.20	IS 6403 : 1981 Pg. 8 Table-2
Sy	0.60	0.60	IS 6403 : 1981 Pg. 8 Table-2
dc =1+0.2 Df/B√NØ	1.03	1.05	IS 6403 : 1981 Pg. 9
dq = dy if Ø<10	1.02	1.02	IS 6403 : 1981 Pg. 9
dq = dy if Ø<10 = dq = 1.0.1 Df/B√N Ø	1.02	1.02	IS 6403 : 1981 Pg. 9
dy	1.02	1.02	IS 6403 : 1981 Pg. 9
W' (M)	1.00	1.00	IS 6403 : 1981 Pg. 9
Net Ultimate Bearing Capacity	361	402	
F = Factor of Safety	3.00	3.00	
SBC KN/Sq. M	120.3	133.8	
SBC T/Sq. M	12.26	13.65	

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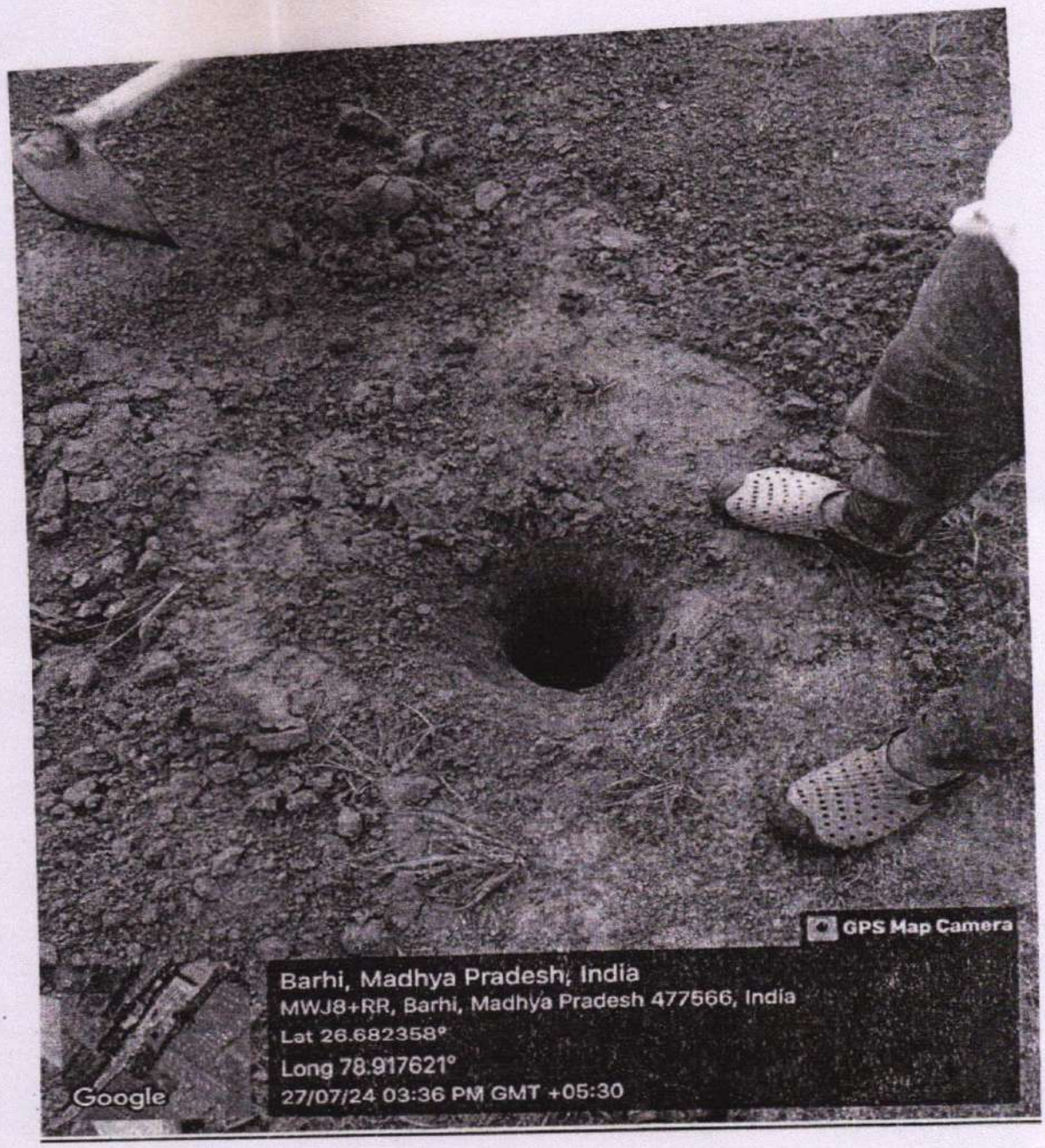
SUMMERY

ELEVATION IN METERS	DEPTH IN METERS BELOW REFERENCE	DATE OF SAMPLE	NATURE OF SAMPLE	DEPTH OF SAMPLEBE LOW REFERNCE LAVEL	SAMPLE REFERENCE NO.	VISUAL DESCRIPTION OF SOIL/ROCK	% Gravels	%Sand 2.00-6.00 mm	Silt/Clay %	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification	DRY DENSITY, GM/CC	%WATER ABSORPTION	UNCOMFINED COMPRESSIVE STRENGTH THEN KG/CM²		SHEARING STERENGTH CHARACTERIS TIC		IF FACTOR OF SAFTY 3.00	SBC (T/M²)
																UCS Kg/cm²	Point Load Strength Kg/cm²	Cohesion 'c' In Kg/cm²	Angle of Shearing		
-1.50	0.0-1.5	27/07/2024	D.S	1.5	Barhi Toll Plaza, Bhind (Pit-25)	Reddish Soil	1.6	35.6	62.8	38	29	9	MI or OI	2.12	12.3			0.34	17	3.0	**12.26**
-2.00	1.5-2.0		D.S.	2.0		Reddish Soil	2.2	39.4	58.4	40	28	12	MI or OI	2.01	12.9			0.32	19	3.0	**13.65**

Site Photograph



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