



**No. RW/BHP/MP/Gantry(03)/2024-25**  
**Government of India**  
**Ministry of Road Transport & Highways**  
**(Chief Engineer - Regional Office, Bhopal)**

2<sup>nd</sup> Floor, Nirman Bhawan, Arera Hills, Bhopal-462011  
PH: 0755-2551329, 0755-2571467, Email ID: ro.bpl-morth@gov.in

**Date: 17.01.2025**

**Invitation of Public Comments**

**Subject: Proposal for permission for Gantry Installation (Check Gate) on Sidhi-Singrauli road at Ch 185+010 on NH-39 in the state of Madhya Pradesh. Reg.**

DM, MPRDC Rewa vide letter no. 1709/MPRDC-2/Sidhi-Singrauli/Check Gate/2025 dated 01.01.2025 forwarded therewith a proposal in this office for Gantry Installation (Check Gate) on Sidhi-Singrauli road at Ch 185+010 on NH-39 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**  
**II<sup>nd</sup> Floor, Nirman Bhawan, Bhopal-462011.**  
**Email: ro.bpl-morth@gov.in**

4. This issues with the approval of Highways Administrator-cum Regional Officer, MoRT&H, Bhopal. (Computer no. – 248016)

**Digitally signed by**  
**Shubham Kaushal Ahirwar**  
**Date: 17-01-2025 16:36:15**

Assistant Executive Engineer  
For CE-RO, MoRT&H, Bhopal

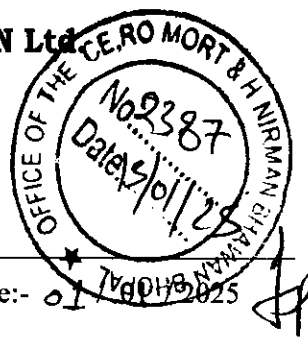
**Copy to:**

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, Rewa-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
4. Directorate of Geology and Mining, MP (Email: dirgeomn@nic.in) - for information.



**MADHYA PRADESH ROAD DEVELOPMENT CORPORATION Ltd.**

(Govt. of M.P. Undertaking)

**OFFICE OF THE DIVISIONAL MANAGER MPRDC Div. Sidhi****Near Old PWD Workshop Chirhula Colony, Distt. Rewa (M.P.)****E-mail - mprdcnewal@gmail.com**Letter No. **1709/MPRDC-2/Sidhi-Singrauli/Check Gate/2025**Rewa, Date:- **01/01/2025**

To,

✓ Chief Engineer (RO),  
Ministry of Road Transport & Highways  
2<sup>nd</sup> floor, Nirman Bhawan,  
Arera Hills, Bhopal (M.P.)

Sub:- Permission for additional Director, Directorate of Geology and Mining, 29A Khanij Bhawan, Arera Hills Bhopal gantry installation (Check Gate) on Sidhi-Singrauli Road (NH-39) in the state of MP.

Ref:- 1. Additional Director, Directorate of Geology and Mining, Bhopal letter dt. 19.12.2024 (Received on dt. 01.01.2025)  
2. This office no. 1619 /MPRDC-2/Sidhi-Singrauli/Check Gate/2024, Date:- 29.11.2024  
3. Additional Director, Directorate of Geology and Mining, Bhopal letter dt. 09.10.2024

With respect to above subject, this office is in receipt of proposal from Directorate of Geology and Mining, Madhya Pradesh, Bhopal for erection of Over Head Gantry at Ch. 185.010 of Sidhi-Singrauli Road. The site inspected by Kumari Sangeeta Uikey (AGM), MPRDC Div. Sidhi with representative Directorate of Geology and Mining, Khanij Bhawan, Bhopal Gantry Installation (Check Gate) on Sidhi-Singrauli Road (NH-39) in the state of MP.

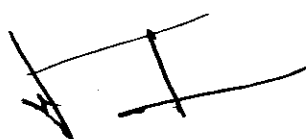
The proposal checked as per stipulated norms for Ministry of Road Transport & Highway, Govt. of India New Delhi, Circular No. RW/NH-33044/29/2015/S&(R) dated 22.11.2016 and found in order.

The Following documents submitted herewith:-

1. Receipt of License fee Rs. 56,371/- on Bharatkosh.gov.in (Govt. of India) (Transaction ref. 0512240022416 dt. 05.12.2024)
2. BG amounting to Rs. 11,000/- (Bank of Maharashtra, BG No. 01140241PG020306)
3. Duly verified Checklist
4. Methodology.
5. Drawing
6. Undertaking.

The same is hereby forwarded for further necessary action.


Encl:- Proposal file (2 Nos.)

  
Divisional Manager  
MPRDC Div. Rewa (M.P.)

Endt. No. **/MPRDC-2/Sidhi-Singrauli/Check Gate/2025**Rewa, Date:- **/ 01 / 2025**

Copy to:

1. Additional Director, Directorate of Geology and Mining, Bhopal for kind information.
2. The Chief Engineer (BOT), MPRDC Bhopal for kind information.

  
Divisional Manager  
MPRDC Div. Rewa (M.P.)

## 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: Near MPEB Colony, Ward No. 8, Distt Sidhi ( M.P.) 486661

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 – Khanhana barrier, Singrauli

### Enclosures:

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

1728  
11/12/2024



**bharatkosh.gov.in**

Government of India Receipt Portal

**RECEIPT**

Transaction Ref.No. 0512240022416

Dated: Dec 5 2024 3:14PM

Received from MR. ABHAYSINH K JAGTAP with Transaction Ref.No.  
0512240022416

Dated Dec 5 2024 3:14PM 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 MP  
- Khanhna Barie Singrauli.

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

*Printed On: 05-12-2024 03:41:51*

 <p>बैंक ऑफ महाराष्ट्र Bank of Maharashtra एक परिवार एक बैंक</p>	<p>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</p>	 
<p>प्रधान कार्यालय: लोकमंगल, 1501, शिवाजीनगर, पुणे-5 Head Office: LOKMANGAL, 1501, SHIVAJINAGAR, PUNE-5</p>		

AQ46/BG/ 2024-2025

Date: 16.12.2024

Our Ref: 0114024IPG020306

To  
Divisional Manager,  
MPRDC, Sidhi, Madhya Pradesh - 486661

DEAR SIR(S),

We enclose here with Bank Guarantee No. 0114024IPG020306 in favour of "Divisional Manager, MPRDC, Sidhi, Madhya Pradesh - 486661" on behalf of our Client SHIAURYA 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: 16.12.2024 BG No.: 0114024IPG020306

OLD BANK GUARANTEE NUMBER: N.A.

Amount: INR 11000/-

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



UnClassified



BANK GUARANTEE

Bank of Maharashtra

MSME (SSI) Branch

Beneficiary: Divisional Manager, MPRDC, Sidhi, Madhya Pradesh - 486661

Bank Guarantee No. 0114024IPG020306.

Date of Issue: 16.12.2024

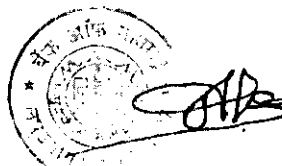
Performance Bank Guarantee amount: Rs. 11,000 /- (Rupees Eleven thousand Only) Date of expiry: 01-12-2029, Last date of claim: 01-12-2029

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

Erec on of Over Head Gantry at AI Checkgate proposal on Sidhi-Singrauli Road (NH-39), Village Churki, Change 185.010, Madhya Pradesh-486661, by Directorate of Geology and Mining, Government of Madhya Pradesh at Divisional Manager, MPRDC, Sidhi, Madhya Pradesh - 486661, le er no. 1619/MPRDC-2/NH-39/Sidhi-Singraul /Check Gate/2024 Dated 29-11-2024 and is going to execute an agreement with Divisional Manager, MPRDC, Sidhi-Singrauli, Madhya Pradesh - 486661, (herein a er called the principal)

Furthermore, we understand that, according to the condi on of the agreement an uncondi onal 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. 11000/- (Rupees Eleven Thousand Only) payable under this guarantee, without any demur, merely on receipt by us (bank) principal's first demand in wri ng accompanied by a wri en statement sta ng that the contractor is in breach of its obliga on(s) under the agreement, without principal's needing to prove or to show grounds for your demand.



Our liability under this guarantee shall be restricted Rs. 11,000/- (Rupees Eleven Thousand Only). We undertake to pay the principal any amount, limiting to the amount under this guarantee, so demanded notwithstanding 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 if all the dues of the principal have been fully paid and its claims satisfied or discharged or if the principal certifies 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 on 01.12.2029, we shall be discharged our liabilities under this guarantee thereafter.

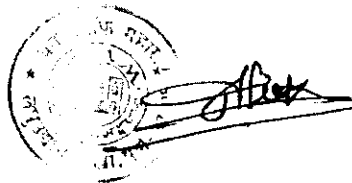
We, Bank of Maharashtra further undertakes not to revoke this guarantee during its currency except with previous consent of the principal in writing.

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.

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.

For Bank of Maharashtra

MSME(SSI) Branch



Signature of authorised official.





**MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED**

(Govt. of M.P. Undertaking)

**OFFICE OF THE DIVISIONAL MANAGER MPRDC Div Sidhi**

**Near MPEB Colony WARD No. 8, Dist Sidhi (M.P.) Pin No. 486661**

**E-mail - dm-rewa2@mp.gov.in**

Letter No. **1619/MPRDC-2/NH-39/Sidhi-Singrauli/Check Gate/2024**

Sidhi, Date- **29** / 11 / 2024

To,

✓ Additional Director,

Directorate of Geology and Mining,

29-A Khanij Bhawn, Arera Hills Bhopal (M.P.)

Email ID- dirgeomn@nic.in

Sub.: Permission for Additional Director, Directorate of Geology and Mining, 29A Khanij Bhawn, Arera Hills Bhopal gantry installation (Check Gate) on Sidhi-Singrauli Road (NH-39) in the state of MP.  
**Regarding demand note for License Fee and Bank Guarantee.**


Ref.: Additional Director, Directorate of Geology and Mining, Bhopal letter dt. 09.10.2024

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In continuation to the letter under reference above, the demand note is raised as below and you are requested to submit the following documents for further processing of the application & obtaining NOC:-

1. Bipartite agreement original in two copies on 500/- NJS.
2. Power of attorney on Rs. 500/- NJS to authorizing to execute the agreement.
3. Submit affidavit/undertaking of Rs. 100/- NJS from the applicant.
4. Submit the Bank Guarantee as security in favor of Divisional Manager, MPRDC Ltd. Sidhi @500/- RM for length of laying Rs. 11,000/- (Eleven Thousand only). (MoRT&H Circular No. RW/NH-33044/29/2015/S&R (R) dated 22.11.2016)
5. Pay the license fee of Rs. 56,371/- (Rupees Fifty Six Thousand Three Hundred Seventy One only) as per circular at Bharatkosh (NTRP) in the name of MoRT&H, RPAO (NH) Bhopal as one time license fee. (MoRT&H Circular No. RW/NH-36094/01/2022-S&R(P&B)(E-208825), Dated 24.04.2023)

Kindly submit the above mentioned fee & documents for further necessary action.


  
Divisional Manager  
MPRDC Div. Sidhi (M.P.)

Endt. No. **7/MPRDC-2/NH-39/Sidhi-Singrauli/Check Gate/2024**

Sidhi, Date- / 11 / 2024

Copy to:

1. CE-RO, MoRT&H Bhopal for kind information Please.
2. The CGM (Admin.), MPRDC Bhopal for kind information Please.

  
Divisional Manager  
MPRDC Div. Sidhi (M.P.)

**Calculation sheet for License fees required to deposit for overhead Gantary  
(Check Gate) on NH-39 Under Jurisdiction of MPRDC**

**MoRT&H Circular Dated 22.11.2016 & 24.04.2023**

**Applicant : Directorate of Geology and Mining, Bhopal (M.P.)**

1. Name of Project:- Sidhi-Singrauli Road (NH-39)
2. Location :- Ch. 185.010
3. No. of villages/Town through which Utility is Passing:- 01
4. Details for Calculation of License Fee and BG:-

Calculation of Utilized Land Area (Village Wise)									
Sr. No.	Utility Details	Stretch (Rural/ Urban)	Village/ Town	District (Guideline Sr No.)	Length (m)	Width (m)	Utilized Land Area (Sq.m)	Preavailing Circle Rate of Land (Rs./Sq.m) - 2024-25	Utilized Land Area X Preavailing Circle Rate of Land per unit area X 1.5%
1	2	3	4	5	6	7	8	9	10
1	Over Head Gantary	Rural	Churki	Singrauli (537)	22.00	10.00	220.00	1800.00	5,940.00

**Calculation of License Fees**

1st Year - 2024-25 (Minimum of 10000 per anum)	=	10,000
2nd Year - 2025-26 (Cummulative @ 6% increment per Year)	=	10,600
3rd Year - 2026-27 (Cummulative @ 6% increment per Year)	=	11,236
4th Year - 2027-28 (Cummulative @ 6% increment per Year)	=	11,910
5th Year - 2028-29 (Cummulative @ 6% increment per Year)	=	12,625
<b>Total Amount for License Fees</b>	<b>=</b>	<b>56,371</b>

**Calculation of Refundable Bank Guarantee**

As per para 6 if MoRT&H circular, a performance bank guarantee for an amount based on per route metre with a validity of one year initially shall have to be furnished by the utility service provider/licensee.

Bank Gaurantee for >1000 mm @ Rs. 500 per meter i.e. 500x22	=	11,000
<b>Total Amount of Bank Guarantee</b>	<b>=</b>	<b>11,000</b>

**Total Amount To be Submitted**

1	License Fee to be submitted through Bharat Kosh (NTRP) Portal in the name of RPAO, MoRT&H	=	56,371
2	Bank Gaurantee (In the name of Divisional Manager, MPRDC Sidhi)	=	11,000

  
**Divisional Manager**  
 MPRDC Div-II Rewa H.Q. Sidhi

**Directorate of Geology and Mining, Madhya Pradesh**

29-A, Khanij Bhawan, Arera Hills Bhopal

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

Date: [9/10/2024]

To: MPRDC SINGH

Title: document Submission Receiving - Khanhna barrier, Singrauli

Department/Organization: Madhya Pradesh road development Corporation

Address: \_\_\_\_\_

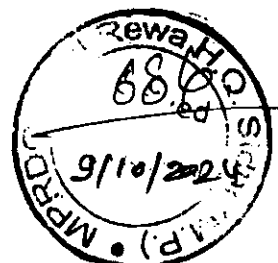
**Subject:** Submission of G&M Project Documents- AI Based system to curb illegal transportation of minerals for Approval from your Concern/Esteemed department/Organization

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 Khanhna Barrier

**Enclosures:**

1. Agreement on Stamp of Rupees-500 [Draft]
2. Undertaking on Stamp of Rupees 100 [Draft]
3. Bank guaranty / Fixed Deposit/License Fees ( Fee Exempted by MPRDC, Letter Attached )
4. Check-List Document
5. Detailed Survey report along with Site Photographs
6. Working Drawing
7. 3D Design of gantry with all specifications
8. Soil Report
9. NHAI letter.



**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: *Dr officer*

Department: *Directorate of Geology and Mining - Bhopal*

Contact Information:

Email Address:

Phone Number: *8956418957 / 8956418958*

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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**

संचालनालय भौमिकी तथा खनिकर्म, मध्यप्रदेश

29-ए खनिज भवन अरेरा हिल्स भोपाल

फोन एवं फैक्स 0755&2551795

e-mail : [dirgeomn@nic.in](mailto:dirgeomn@nic.in)

क्रमांक 6201 /2024

भोपाल, दिनांक 13/06/2024

प्रति,

महाप्रबंधक,  
राष्ट्रीय राजमार्ग प्राधिकरण,  
क्षेत्रीय कार्यालय, भोपाल,  
ई2/167, अरेरा कॉलोनी,  
भोपाल (म0प्र0)

विषय:- खनिजों के अवैध परिवहन पर नियंत्रण हेतु Artificial Intelligence आधारित मानव रहित चेक गेट की स्थापना के संबंध में अनुमति प्रदान करने हेतु।


—00—

प्रदेश में खनिजों के अवैध परिवहन पर नियंत्रण हेतु Artificial Intelligence आधारित मानव रहित चेक गेट की स्थापना ऐसे स्थलों पर किये जाने का प्रस्ताव है जहां से खनिजों का परिवहन करने वाले वाहनों का सर्वाधिक आवागमन होता है। अवैध परिवहन की रोक थाम हेतु Artificial Intelligence आधारित मानव रहित i-Checkpoint स्थापित किये जाने हैं। i-Checkpoint स्थापित करने हेतु पूरे प्रदेश 40 स्थलों का चिन्हांकन किया गया है जिसमें से 27 स्थल NHAI की अधिकारिता में आते हैं।

चेक गेट की स्थापना इस प्रकार की जायेगी कि, वाहनों का आवागमन अप्रभावित रहेगा। चेक गेट किसी प्रकार का अवरोध उत्पन्न नहीं करेगा। इस चेक गेट में सड़क की चौड़ाई के बाहर दोनों ओर आयर्न स्ट्रैक्चर रहेगा, जिसमें कैमरा तथा आर.एफ. टैग रीडर ऊंचाई पर स्थापित होगा। चेक गेट की संरचना NHAI द्वारा निर्धारित मापदण्ड के अनुरूप होगी।

अतः अनुरोध है कि चिन्हित स्थल पर चेक गेट की स्थापना हेतु अनुमति प्रदान करने का कष्ट करें।

संलग्न :- (उपरोक्तानुसार चेक गेट की सूची)

  
संचालक .  
(प्रशासन एवं खनिकर्म)



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	78.245623				6.6	25.4
2	Gwalior	NH44 gwalior (recommended)	NH44 Gwalior, Madhya Pradesh - 475001	NHA	Four Lane	44	26.32596	78.111599				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	Alabelli Police Chauki	NHA	Four Lane	44	26.64395	77.91549				6.6	22.6
5	Rewa	Teothar	Baghedi Chauraha , Chakghat Village	NHA	Four Lane	30	25.01728	81.72085	NHA			6.6	17
6	Singrauli	Sarai	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	82.582894				6.6	11
9	Sidhi	Churhat	Koshtha Kothar	NHA	Four Lane	39	24.41628	81.619961				6.6	13

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
10	Indore	Khudel	Near Sanawadla 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	75.974093				6.6	13
12	Alirajpur	Katthiwada	Chandpur	NHA	Two Lane	56	22.35841	74.237035				6.6	
13	Sagar	Deori	Maharajpur Police Station Deori Sagar	NHA	Four Lane	44	23.28578	79.044554				6.6	22.9
14	Niwari (recommended)	Orchha	Orchha-Pratpura	NHA	Four Lane	39	25.41946	78.647622				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	80.350561				6.6	10
17	Jabalpur	Jabalpur	Jotpur near Tilwara Bridge	NHA	Four Lane	34	23.10445	79.87117				6.6	17

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
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	80.454132	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	77.568745	NH/MORTH			6.6	17
23	Sehore	Budhni	Gadariyana la	NHA	Four Lane	46	22.80107	77.70129	NHAI			6.6	17
24	Chhindwara	Parasia	Ambara	NHA	Two Lane	198	22.19105	78.687367	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



# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

( सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार )

NATIONAL HIGHWAYS AUTHORITY OF INDIA

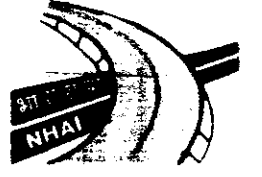
(Ministry of Road Transport and Highways, Govt. of India)

क्षेत्रीय कार्यालय / REGIONAL OFFICE

ई-6/47, स्मृति परिसर, साईबोर्ड 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.)

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

**सन्दर्भ:** मध्यप्रदेश शासन, खनिज साधन विभाग, भोपाल का पत्र क्रमांक 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 प्राधिकरण के नियमानुसार आवश्यक सहयोग प्रदान करने हेतु निर्देश पारित करने का कष्ट करें।

भवदीय,

**संलग्न:** उपरोक्तानुसार।

(प्रदीप कुमार लाल)

महाप्रबंधक (तक)

प्रतिलिपि:

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

मध्यप्रदेश शासन  
खनिज साधन विभाग  
मंत्रालय

क्रमांक - 3507/1211282/2023/12/1  
प्रति,

भोपाल, दिनांक- 13/06/2024

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

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

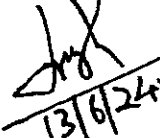
\*\*\*\*\*

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 चिह्नंकित 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।

संलग्न:- उपरोक्तानुसार।

  
13/6/24  
(प्रकाश पट्टे)  
अवर सचिव

पृष्ठ क्रमांक - 3508/1211282/2024/12/1  
प्रतिलिपि:-

मध्यप्रदेश शासन, खनिज साधन विभाग  
भोपाल, दिनांक- 13/06/2024

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

की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

2. गार्ड फाईल।

  
13/6/24  
अवर सचिव

मध्यप्रदेश 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	26.05188	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. R. Road	NHA	Four Lane	44	26.32526	78.11211				6.6	20
4	Morena	Morena	Alabell Police Chauki	NHA	Four Lane	44	26.64395	77.91549				6.6	22.6
5	Rewa	Teothar	Baghedi Chauraha, Chakehat Village	NHA	Four Lane	30	25.01728	81.72085	NHA			6.6	17
6	Singrauli	Sarai	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
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19	Katni (recommended)	Katni	Surkhi Tank, Katni-483501	NHA	Two Lane	10	23.83677	80.45413	NH			6.6	11


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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

## Check List - Singrauli - Khanhna Barrier - Madhya Pradesh

### Project - AI Based system to curb illegal transportation of Minerals

		As per specification	Remarks
1	State Highway No	NH-39	
2	Crossing Name	Khanhna Barrier	
3	System of supply (i.e. Voltage) frequency, no of phases wheather	2 kilo watts	
4	Position of Tower	Latitude-24.22072, Longitude-82.71134	
5	Normal / Basic Span of gantry	11 Mtr	
6	Maximum Sag at Normal Span of gantry	16 Mtr	2.5 Mtr both side will be spared from the shoulder of the road. ( As per MORTH Norms )
7	Crossing Span of gantry	Single Side of Road	
8	Preceding Span with LOC	Single Side of Road	
9	Successing Span With LOC	Single 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=30.4 mtr	
12	Clearance Over Road	7.0 mtr	
13	Heght of lower base / foundation 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	Location comes under NHAI jurisdiction
17	Permdicular 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 Tower 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		
26A	Left side from centre Line	8 Mtr	Includes 2.5 meters from shoulder of road as spare
26B	Right side from centre line	8 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 )	4 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	
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 concrete 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 concrete or dense bituminous concrete type	NA	

  
**A.G.M.**  
 M.P. Road Ltd  
 Dm. Road, Rewa

  
 संचालनालय भौमिकी तथा खनिकर्म  
 भोपाल (म.प्र.)

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 size of 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 concrete nor dense bituminous concrete 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 surface without 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 layers each consolidated by mechanical tamping and controlled addition of moisture to 95% of the proctors density, over fill shall be compacted to the same density as the material that had 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 barricades and red light during night hours	Yes as per specification	

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

A.G.M.  
M.P.R.D.C. Ltd  
Un No.1, Rewa

Divisional Manager  
MPRDC Ltd. Rewa



Highway	Name of Highway Authority	Highway Administration Address	Whether the Fuel Station is part of Rest-area complex	Name of Applicant/Oil Company	Mineral Resources Department	Address	Pin	Email	Application Category	Utility	State	Type	Remarks	Submitted On
			No			Address: 29 A Khari Bhawan Area Hqs Bhopal MP 462010 BHOPAL (MADHYA PRADESH) PIN 462010	Pin: 3425014339	Email: wind.bagde@mp.gov.in	Public Utility	Towers	MADHYA PRADESH	New	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 gentry / Check gates	30 Aug 2024 17:56:05



# **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.

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- Strategic Implementation Approach.....3
- Expected Outcomes.....4
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- Scope of Survey.....4
- Field Survey(Operational).....6
- Soil Bearing Capacity.....9.
- Gantry Design.....21

## 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 poses a 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 within 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 oversight 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.

## **Scope of Survey for Smart Enforcement System to Curb Illegal Transportation 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. Develop 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 deliverables for Smart Enforcement System implementation. This includes geographical 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.

SingrauliKhanhan Barrier NH 39

Singrauli, Madhya Pradesh

Singrauli

Khanhna Barrier

26-02-2024

01

24.220753

82.711308

4 Lane

Near Singrauli Police  
Station

Yes

Need Permission from  
Govt. Officer

24 °c

Normal

10KM/H

60% humidity

NH\_39\_4 Lane

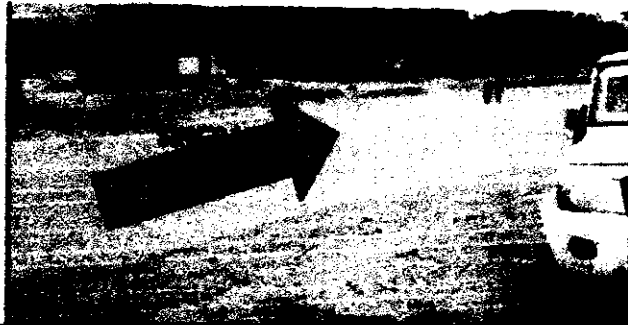
Normal Vehicle Traffic

Average Speed 70-80KM/H

11 MTR.



*Signature*



	<i>[Signature]</i>
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MUNENDRA SINGH	Mining Officer
INSPECTOR KAPIL SINGH	Mining Officer
Ankul Soni	Surveyor

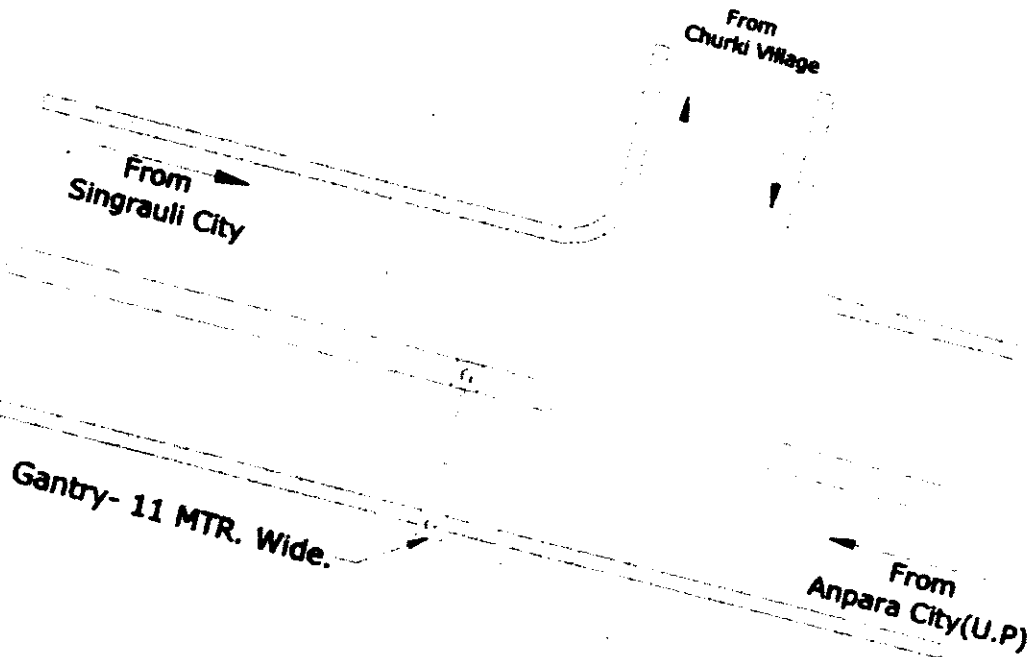
**Site Survey done on**

- # Distance Measured by Rodo Meter and Laser Distance Meter # 11 MTR
- # Its National Highway and need permission from NH & Govt. Officials.
- # Electricity (meter) Permission and installation to be done. # 1200-1500 Mtr
- # Street light : no
- # Internet : no
- # Security: Yes near Police Station 1 Km

*[Signature]*

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Dist.-Singrauli Tehsil-Singrauli Junction Name- Khanhna Barrier.

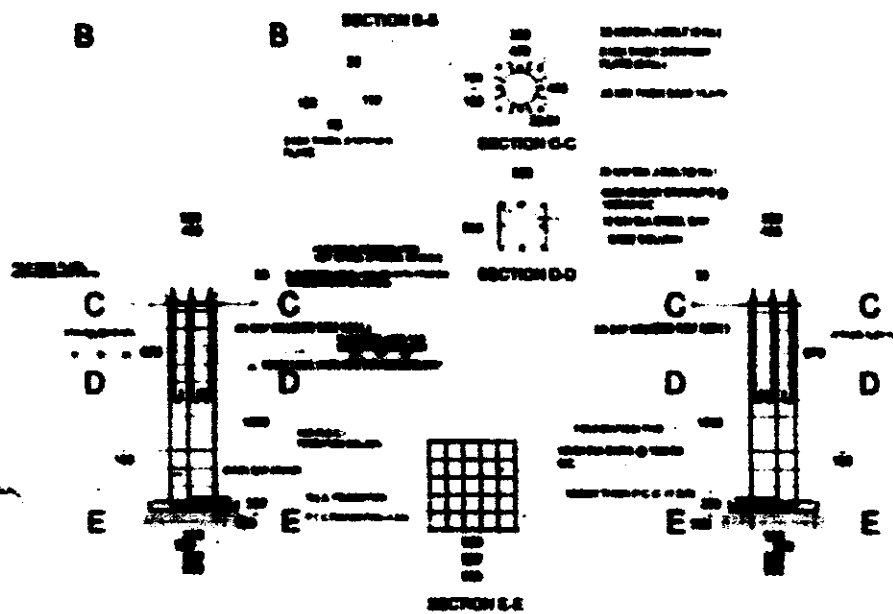
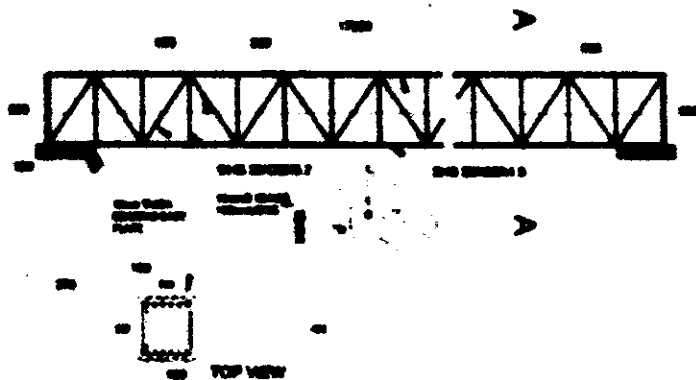


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3. SIDEWALK	4. DRAINAGE
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RAILWAY COMPENSATION FORM (MOTY)  
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*[Handwritten signatures and initials]*

*[Handwritten signature]*  
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 १६९  
 कार्यालय प्रमुख  
 संघातनालय भौमिकी तथा खनिकर्म  
 मध्य प्रदेश, भोपाल



CLIENT: Rastogi Corporation India Limited

MANUFACTURE BY: SEMSECURE INTEGRATED SOLUTIONS PVT LTD.

TITLE: Gantry Design for ERP.

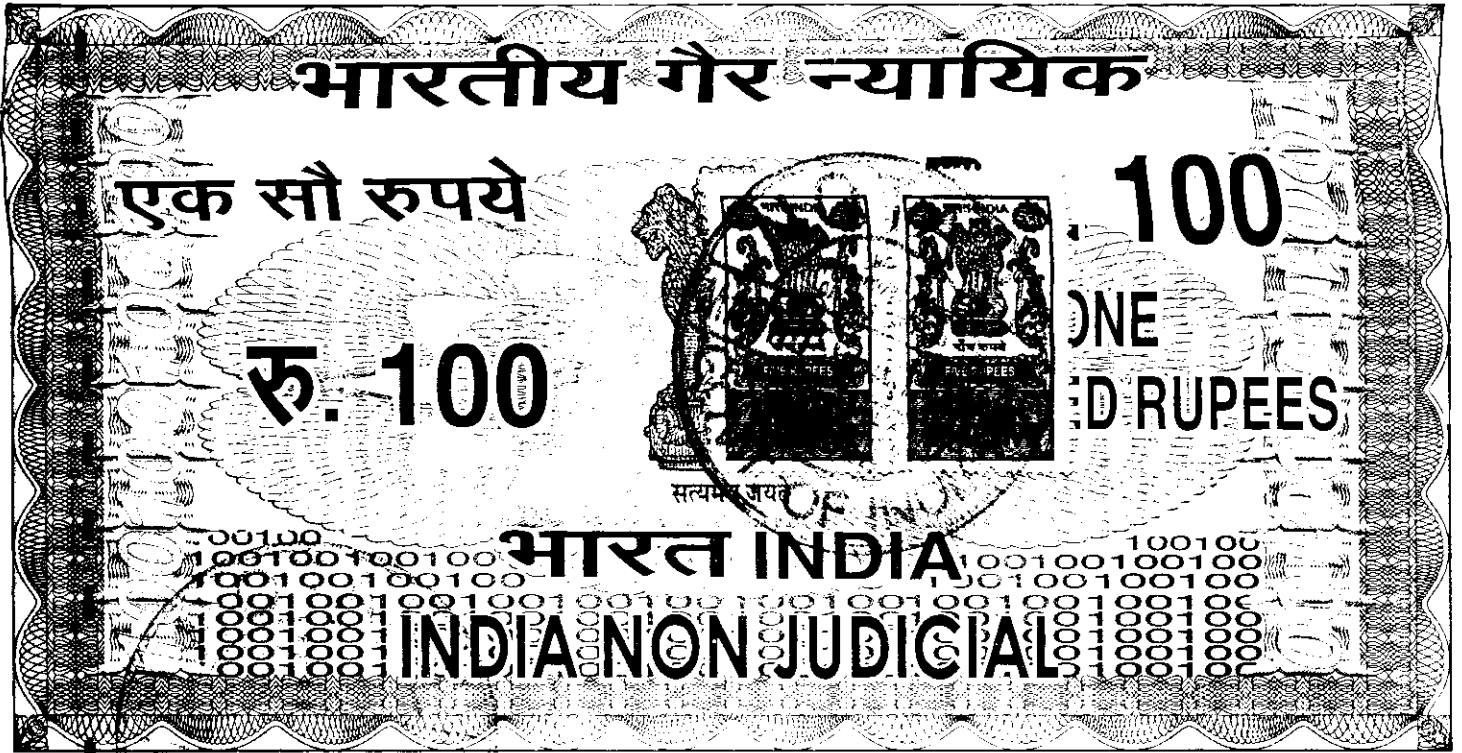
Drawing Prepared By: ERL. LOMESH N TALWAR

Engineer: ERL. LOMESH N TALWAR  
Date: 20/08/2024

Working Approved By: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

DWG. NO.: \_\_\_\_\_ Scale: NTS

कार्यालय प्रमुख  
संचालनालय बीजिकी तथा खनिकर्मा  
मध्यप्रदेश, भोपाल



मध्य प्रदेश MADHYA PRADESH

CS 363856

### Undertaking

We hereby certify that following terms and conditions will be adhered to during the overhead gantry crossing Near Khannah Barrier, Singrauli with latitude 24.22072 & longitude 82.71134 associated work from AI Based Smart Enforcement System (Madhya Pradesh) Project.

- 1- The overhead said gantry (I- check gate) with span of 16 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.
- 5- AI Based Smart Enforcement System shall not construct or develop any type of permanent structures along/across the developed surface area of NH.

अपर संचालक (भौतिकी) एवं कार्यालय प्रमुख  
मंडालनालय भौतिकी तथा खनिकर्म  
भोपाल (म.प्र.)

685  
100  
11/11/24

Directorate of Geology  
and Mining  
29-A Kharis Bhuwan  
Sector 11B Bhubaneswar

Undertaking


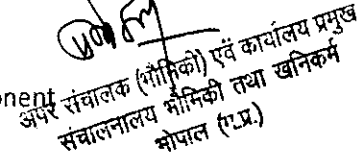
Ref: Inter



संयोजक, भूगर्भ विभाग  
भूगर्भ विभाग, भूगर्भ विभाग  
भूगर्भ विभाग, भूगर्भ विभाग



- 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.

  
Deponent   
अपर संचालक (भौतिकी) एवं कार्यालय प्रमुख  
संचालनालय भौतिकी तथा खनिकर्म  
भोपाल (म.प्र.)

#### IDENTIFIED BY ME

SIGNATURE.....

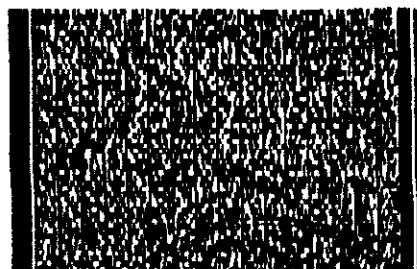
NAME.....

ADDRESS.....

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# Registration and Stamp Department Madhya Pradesh



## Certificate of Stamp Duty

### E-Stamp Details

E-Stamp Code: 01010511112024014511  
Total E-Stamp Amount: 500  
Govt. Stamp Duty (Rs.): 500  
Janpad Duty (Rs.): 0  
Exempted Amount (Rs.): 0  
Municipality Duty (Rs.): 0  
Upkar Amount (Rs.): 0  
E-Stamp Type: NON-JUDICIAL  
Issue Date & Time: 11/11/2024 17:17:27  
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

### Deed Details

Deed Type: Agreement or Memorandum of an agreement  
Deed Instrument: If not otherwise provided for- Five hundred rupees.  
Purpose: Agreement

### First Party Details

Organization Name: Directorate of Geology and Mining  
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: MPRDC - Near MPEB Colony, Ward No. 08, SIDHI Madhya Pradesh INDIA  
Number of Persons: 1

Agreement



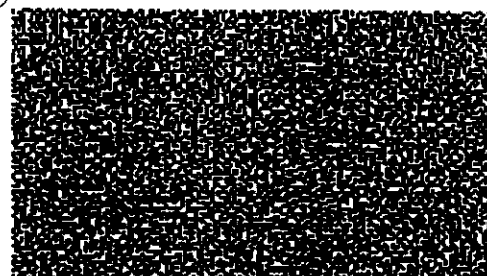
Digitally signed by BABITA

YADAV

Date: 2024.11.11 17:17:29

IST

अपर सहायक निमित्त एवं कार्यालय प्रमुख  
संभालनालय नौमिकी तथा खनिकम  
भोपाल (म.प्र.)



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 16 meters in length and 6.60 meters in height to 0.50 meters of Khanhana Barrier NH 39, Singrauli land.

**Details of location is :**

1. Site Name : Singrauli, Madhya Pradesh
2. Location : Singrauli Khanhan Barrier NH 39
3. Latitude : 24.220753 and Longitude : 82.711308 Lane type : 4 Lane

This Agreement made 11 day of November month 2024 of (year) between Directorate of Geology and Mining, 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 16 Meters to 50 Meters Of State Highway No 39 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 16 meters in length and 6.60 meters in height to 0.50 meters of road/route up to 10 Meters and from 16 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.

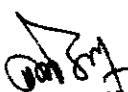
1. RoW permissions are only enabled in nature. The purpose of extending the way leave facility on the National Highway RoW is not for enhancing the scope of activity of a utility service provider, either by content or by intent. Further, enforceability of the permission so granted shall be restricted 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 RoW and any subsequent user will be permitted to use the RoW, either above or below, or by the side of the utilities laid by the

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 \_\_\_\_\_/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. 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 roadside 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

  
समन्वयक/सहायक सचिव

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 cm. but not more than 60 cms 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 cm. 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 50m 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 coordination with Authority, regarding the location of other utilities /underground installations/ facilities

  
मुख्य कार्यपालक अधिकारी  
सर्व कार्यपालक अधिकारी  
सर्व कार्यपालक अधिकारी


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
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

उत्तराखण्ड (सिडिजी) एवं वायुमय प्रमुख  
वायु सैनिकी तन्त्र, खनिज  
(स.प्र.)

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-33032/01/17 S&R (R) Dated 26 June 2020.

  
अपर संचालक (भौतिकी) एवं कार्यालय प्रमुख  
संचालनालय भौतिकी तथा खनिक्य  
मोयाल (रज.)

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)

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 11/11/2024

EXECUTED IN ACCORDANCE WITH THE RESOLUTION NO. \_\_\_\_\_ DATED \_\_\_\_\_ PASSED BY THE 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

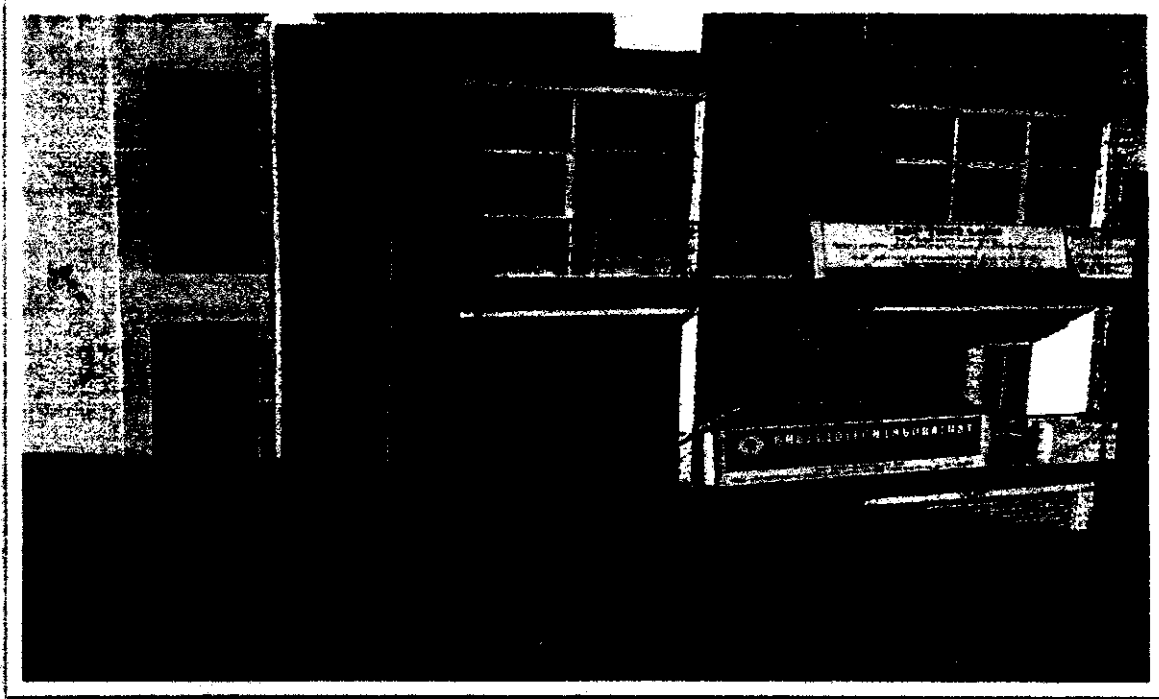
  
Ashish Mohan Shrivastav  
Assistant Mineral Economist  
Directorate of Geology and Mining,  
M.P.

IDENTIFIED BY ME

SIGNATURE.....  
NAME.....  
ADDRESS.....  
.....



**GEOTECHNICAL  
SAFE BEARING CAPACITY REPORT  
FOR  
PROPOSED WORK FOR GANTRY AT KHANHNA  
BARRIER, DISTT. SINGRAULI. (M.P.)  
FOR  
M/S. RAIL TEL CORPORATION,  
SITE : KHANHNA BARRIER,  
DISTT. SINGRAULI. (M.P.)  
REPORTED BY**




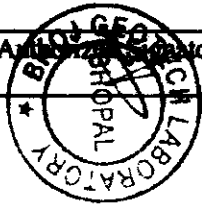
**Bhoj Geotech Laboratory**  
(NABL Accredited As Per ISO/IEC-17025:2017)  
B-27, Jai Bhawani, Phase-II, Opp. Extol College, Bawadiyakalan, Bhopal. 462039  
Mob. : 9926014126, 7043613655, Email : bhojgeotechlab@gmail.com

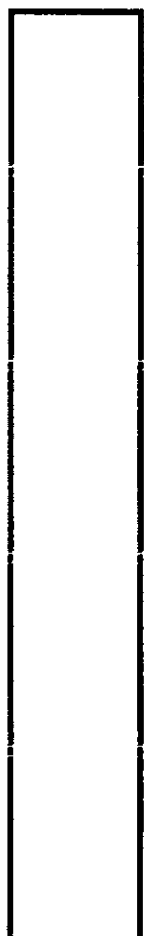
# **BHOJ GEOTECH LABORATORY**

(B-27, 2nd Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

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## **BHOJGEOTECH LABORATORY**

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

### **BRIEF DETAILS**

Name of Work : Soil Testing Work for Gantry at Khanhana Barrier, Distt. Singrauli.

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.)


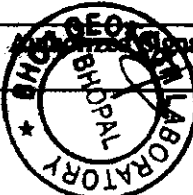
Location of Pit : Khanhana Barrier, Distt. Singrauli.

Open Pit. : 1 No. (Pit - 07)

Date : 07/07/2024

Pit Depth : 2.00 mtr.

Type of Pit : Hand Axe

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SN NO

# **BHOJGEOTECH LABORATORY**

**(B-37, Ist Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)**


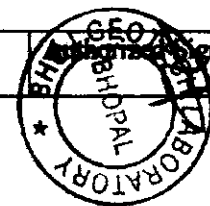
## **1.0 GENERAL**

- 1.1 The Soil sample received from the proposed work for Gantry at Khanhana Barrier, Distt. Singrauli 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

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## BHOJGEOTECH LABORATORY

(B-27, 2nd Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

### 2.1.COMPUTATION OF SAFE BEARING CAPACITY

- BASED ON SHEAR CONSIDERATION**

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

$$Q = [C N_c S_{cd} + q (N_q - 1) S_{qd} + 0.5 B \gamma N_{\gamma} S_{\gamma d}] \quad (\text{for General shear})$$

$$Q = [2/3 C N'_c S_{cd} + q (N'_q - 1) S_{qd} + 0.5 B \gamma N_{\gamma} S_{\gamma d}] \quad (\text{for Local shear})$$

Where,

$c$  = Cohesion

$\phi$  = Angle of internal friction

$\gamma$  = Density

$B$  = Width of the Footing

$N_c, N_q, N_{\gamma}$  = Bearing capacity Factor

$S_c, S_q, S_{\gamma}$  = Shape Factor

$d_c, d_q, d_{\gamma}$  = 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)

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

Uniaxial Compressive Strength

$$q_c = 22 \times I_p(50)$$

The safe bearing pressure should be estimated from the equation:

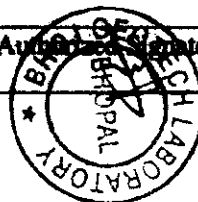
$$q_s = q_c \times N_f$$

$q_s$  = 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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## BHOJ GEOTECH LABORATORY



(B-37, 2nd Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

### 3.0 CONCLUSION & RECOMMENDATION

1. The present report covers the Geotechnical Investigation carried out for Open Pits locations of Khanhana Barrier, Distt. Singrauli. 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 Stars 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-07 (Khanhana Barrier)	1.5m	11.61	Reddish Soil
	2.00	12.86	Reddish Soil

For BHOJ GEOTECH LABORATORY  
Tech. Manager

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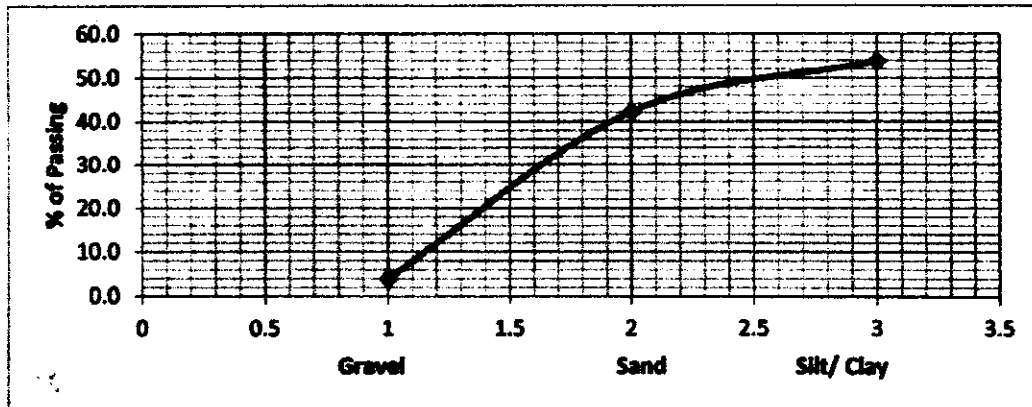
# BHOJGEOTECH LABORATORY

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

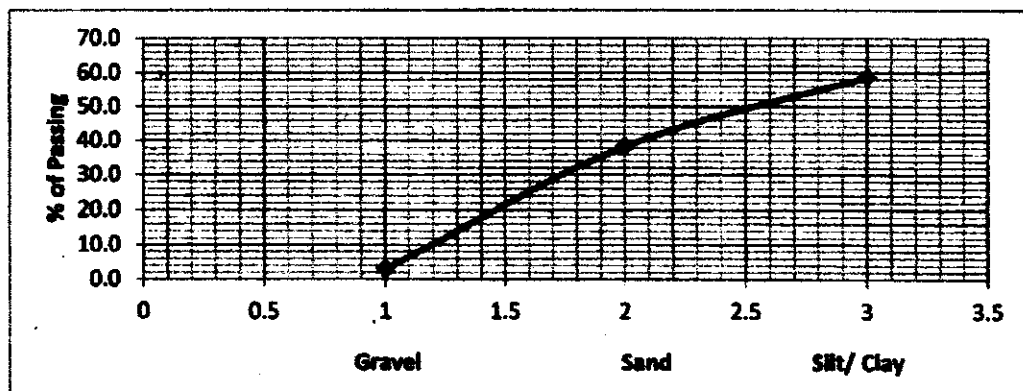
## SOIL PROPERTIES

S. NO.	SOIL DESCRIPTION DESCRIPTION	SIEVE ANALYSIS ANALYSIS		
		Depth (m)	1.50	3.00
1	Reddish Soil	Gravel (%)	3.9	3.0
2		Sand (%)	42.2	38.3
3		Silt /Clay (%)	53.9	58.7

1.50 M



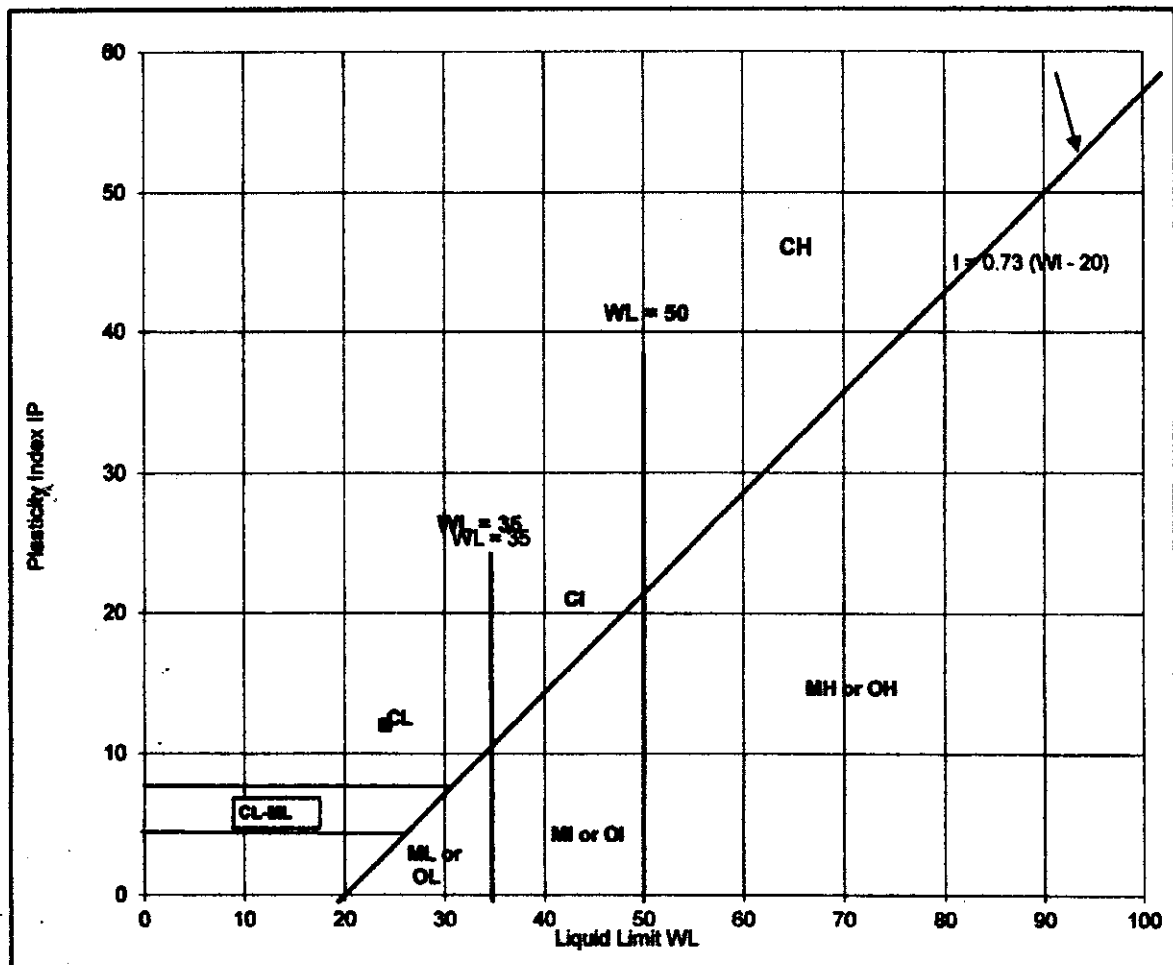
2.00M





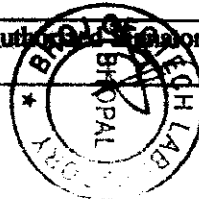
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S. No.	Depth in Mtr.	LL	PL	PI	Classification
1	1.50	24	12	12	CL



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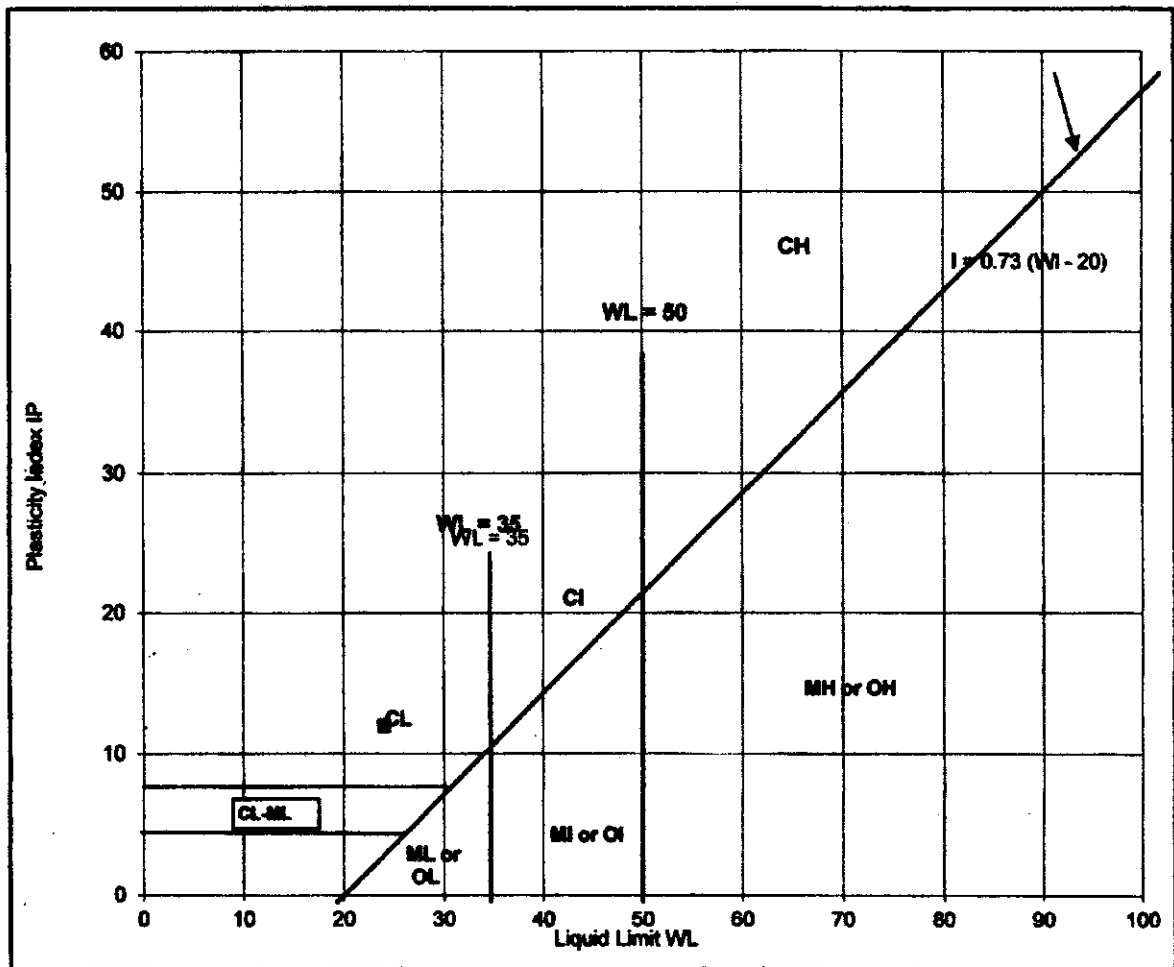


# BHOJ GEOTECH LABORATORY

(B-37, 2nd Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

## Classification of Soil

S. No.	Depth in Mtr.	LL	PL	PI	Classification
1	2.00	26	12	14	CL



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## **BHOJGEOTECH LABORATORY**

**(B-37, 2nd Milestone, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)**

### **RESULTS OF CHEMICAL ANALYSIS OF SOIL**

S. No	SOIL DESCRIPTION	DEPTH (M)	pH VALUE	Chloride (Cl %)	Sulphate (So3)
01	Reddish Soil	1.50	8.19	0.20	0.19
02	Reddish Soil	2.00	8.14	0.23	0.18

### **COMPRESSION TEST RESULTS**

S. No.	DEPTH (M)	Wt. Density gm/cc	N.M.C. %	Dry Density gm/cc	C kg/sq.cm	$\phi$ (Degree)
01	1.50	1.85	11.20	1.82	0.35	15
02	2.00	1.88	12.65	1.86	0.34	18

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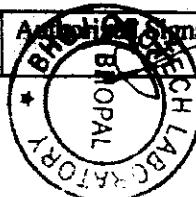
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## BHOJGEOTECH LABORATORY

(B-27, 3rd Floor, Phase-II, Opp. Extol College, Bawadiya Kalan, Bhopal)

### SBC CALCULATION

Site : Khanhana Barrier (P14-07)

Depth, D	1.50	2.00	
$\phi$	15	18	From Test Result
C (KN/M2)	35	34	From Test Result
Bulk Density $\gamma$ (KN/M3)	18.23	18.60	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	10.16	12.26	
Nc	8.44	8.87	IS 6403 : 1981 Pg. 8 Table-1
Nq	2.52	2.59	IS 6403 : 1981 Pg. 8 Table-1
Ny	1.27	1.15	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
$dc = 1 + 0.2 D/B \sqrt{N \phi}$	1.03	1.05	IS 6403 : 1981 Pg. 9
$dq = dy$ if $\phi < 10$	1.02	1.02	IS 6403 : 1981 Pg. 9
$dq = dy$ if $\phi < 10 = dq = 1.0.1 D/B \sqrt{N \phi}$	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	342	378	
F = Factor of Safety	3.00	3.00	
SBC KN/Sq. M	113.9	126.1	
SBC T/Sq. M	11.61	12.86	

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# BHOJ GEOTECH LABORATORY

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## Site Photograph



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