

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण (सडक परिवहन और राजमार्ग मंत्रालय, भारत सरकार) National Highways Authority of India (Ministry of Road Transport & Highways, Govt. of India) परियोजना कार्यान्वयन इकाई, गानियाबाद **Project Implementation Unit, Ghaziabad**

टेलीफोन : +91 9560963936 ई-मेल : gha@nhai.org nh24ghaziabad@gmail.com E-mall वेबसाहट : www.nhai.gov.in Website



सी डब्ल्यू जी फ्लाईओवर के नीचे, कि. मी. 2+000 एन एच ~ 9, (पुराना एन एच-24), अक्षरधाम मंदिर के निकट, दिल्ली-110092 Under CWG Flyover, at Km. 2+000 of NH-9 (Old NH-24), Near Akshardham Temple, Delhi-110092

NHAI/PIU-GZB/DME-I/12029/NOC/IGL-6650/2023/E - /367

Dated: 19.05.2023

To.

The Senior Technical Director, National Informatics Centre, Ministry of Road Transport & Highways, Transport Bhavan, 1, Parliament Street, New Delhi- 110001.

Sub.: Development of 6 lane Delhi-Meerut Expressway and 8 laning of NH-24 from NH-24 Ring Road T-Junction to U.P. Gate (Km. 0.000 to Km. 8.360) in the State of Delhi. Reg: Permission for laying of 8 inch Carbon Steel Gas pipeline at Ch. 6+650 to Ch. 7+100 along National Highway no. NH-09 (Old NH-24) in NCT of Delhi.

Ref:

- IGL proposal dated 09.05.2022. (iii)
- Gazette Notification S.O.No. 3292 (E) dated 16.09.2019 (iv)

Sir.

MoRT&H has transferred the power of NOC for access permission to NHAI, as per Gazette Notification S.O.No. 3292 (E) dated 16.09.2019.

Now, this office would like to invite public objections for 30 days from the date of 2. uploading in the portal, as per the MoRT&H Circular no RW/NH-33044/29/2015/S&R (R) dated 22.11.2016 & NH-36094/01/2022-S&R(P&B) dated 17.04.2023. This issue with approval of Competent Authority.

It is requested to upload the subject proposal in the MoRT&H website. If any objection 3. received, may be communicated to the below mentioned address.

The Project Director, Project Implementation Unit-Ghaziabad, National Highways Authority of India (NHAI), Under CWG Flyover, at Km. 2+000 of NH-9 (Old NH-24), Near Akshardham Temple, Delhi-110092 Email: - gha@nhai.org , nh24ghaziabad@gmail.com

Yours faithfully,

Encl: As Above

. 05.23 (Arvind Kumar) **Project Director**

Copy for information & necessary action to: (i) Web-admin, NHAI - to upload on NHAI web site.

INDRAPRASTHA GAS LIMITED

SELD

IGL/PNG/STEEL/PROJECTS/NHAI/ 239933

(A Joint Venture of OA/ICERO/0\$/2002t. of NCT Delhi)

То

The Project Director National Highways Authority of India Under CWG Flyover, at Km 2 +000 of NH-9(Old N (* 24), Near Akshardham Temple, Delhi -110092

Subject: Permission for laying 8 inch diameter (arbon steel pipeline (RHS) from NH Km CH. 7.20 (IGL CNG Station) to NH Km CH. 7.60 (Near Metro Yard) including Ghazipur drain crossing & underpass crossing along National Highway No. 24 (Near NH 09) in NCT of Delhi.

Reference: Your office Letter no. NHAI/PIU-GZB/DME-1/2029/NOC/2022/430 dated 25.02.2022.

Dear Sir

We express the gratitude for the cooperation extended by your good self and NHAI for supporting us in extending environment friendly gas infrastructure in Delhi NCT area.

This is with reference to your letter that we are divergely submitting the fresh proposal incorporating all the observations provided by the u as per the guidelines of MORTH dated 22.11.2016.

So in view of the above kindly request your good delf to provide us the permission to carry this work of national and environmental importance. We assure you of our best co-operation at all times.

Thanking you,

Yours' Sinc

Sumit Rumar Additional Manager Indraprastha Gas Limited

Enclosed: Proposal for Permission

| Phone and |
|-----------|
| P.C. |
| 1 |
| 1 Partie |
| |
| |

IGL Bhawan, Plot No. 4, Community Centre, Sector-9, R.K. Puram, New Delhi-110 022 Tel. : 46074607 Fax : 26171863 Website : www.iglonline.net CIN : L23201DL1998PLC097614 An ISO 9001 : 2015, ISO 14001: 2015, OHSAS 45001 : 2018 Certified Organisation

CHECK-LIST

Guidelines for processing the proposal for laying of utility line in the land across National Highways vested with NHAI/PWD BRO.

Ministry circular No-RW/NH 330044/29/2015/S&R(R) Dated 22/11/2016.

| Sr.No. | Item | Information/ Status | Remarks |
|--------|--|--|---------|
| | General Information | | |
| 1 | Name and Address of the Applicant / | Indraprastha Gas Ltd. | |
| | Agency | IGL Bhawan, Plot No-4, | |
| | | Community Centre, R.K. Puram, | |
| | 1) | Sector-9, | |
| | | New Delhi-110022 | |
| 2 | National Highway Number | NH- 24 (New NH – 09) | |
| 3 | State | New Delhi | |
| 4 | Location | IGL CNG Station | |
| | | to | |
| | | Near Metro Yard | |
| 5 | (Chainage in km) | From NH Ch. Km- 6.650 | |
| | | to NH Ch. Km- 7.100 | |
| 6 | Length in Meters | 450 Mtrs | |
| 7 | Width of available ROW in both side | 30-Mtrs/ Variable Each- Sid e 🛛 🗂 | ral gom |
| 8 | Side of NH (left or right side of NH towards increasing change /KM/ direction) | RHS | |
| 9 | Name of Highways Authority of NHAI/PWD/BRO | NHAI | |
| 10 | Highway Administration Address | G 5 & 6, Sector 10, Dwarka, Delhi-110075 | |

Sr. Vice President (Projects) INDRAPRASTHA GAS LIMITED "IGL BHAWAN", PLOT NO. 4, COMMUNITY CENTRE, SECTOR-9, R.K. PURAM NEW DELHI-110 022



PROJECT DIRECTOR NATIONAL HIGHWAYS AUTHORITY OF INDIA PIU-GHAZIABAD 0

J

| Sr | . Item | Measurement observation as per site condition | MORT&H Norms | Whether complying with MORT&H Norms |
|-------|--|---|---|---|
| 1 | Details of already laid utility service in any | No | Enclosed | Complying |
| 2 | Whether up gradation of the stretch in near future is proposed or not | No | | N/A |
| | a. If yes provision of utility adversely affect the plan of up gradation | No | Not affect the plan of up gradation | N/A |
| 3 | Laying of the utility service along the National Highways | Yes | | Complying |
| 3.1 | Location of proposed utility service along the stretch | From NH Ch. Km. 6.650 to NH Ch. Km. 7.100 on RHS at Extreme edge of the ROW | Utility duct / beyond the toe line of the embankment and drains , enclose to the extreme edge of the ROW | Complying |
| 3.2 | Depth of the utility service from Ground level | 1.5 mtr | 0.6m | Complying |
| 3.3 | Mechanism for crossing for water channel | Beneath the bed | Through utility duct (if provision exist) or beneath the bed of water channel | N/A |
| 3.4 | Whether is ROW restricted in the stretch? | No | | N/A |
| 3.4.1 | If yes whether provision of land acquisition is required to lay utility | N/A | | N/A |
| | a. If yes whether undertaking for land acquisition along with relevant L.A detail has been furnished | N/A | | N/A |
| 3.4.2 | With if concrete duct , in utility service are proposed to be laid in concrete ducts | N/A | Not less than one lane | N/A |
| 4 | Laying of utility Service across the NH | Yes | | Complying |
| 4.1 | Whether existing drainage structures is allow to carry the utility lines. | No | Not to be allowed | N/A |
| 4.2 | Proposed crossing of utility service | No | Perpendicular to NH | Complying |



| 10.7 | Undertaking that if any claim is raised by the concessionaire/ contractor than the same has to be paid by the applicant | Enclosed | - Enclosed | Complying |
|------|--|----------|------------|-----------|
| 10.8 | Undertaking that the applicant has obtained various safety clearances from the representative authorities such as directorate of electricity, chief controller of explosive safety of directorate, state / central pollution control board and any other statutory clearances applicable before applying to Highway Administration | Enclosed | Enclosed | Complying |

The ROW of the National Highway available at the proposed location from the central line of divided carriage way to ROW extreme edge in rural section is 30.00 m

The above particular along with the drawing and documents has been verified and certified as correct as per prevailing site conditions.

Name designations & Signature of the Authorized representative of applicant

AJAI TYA GI Sr. Vice Preside Connects) INDU CREATE State COMMITED COMMITED State State NO. 4, COMMITED State K

Name designations & Signature of the concerned field authority of NHAI

PROJECT DIRECTOR NATIONAL HIGPWAY'S AUTHORITY OF INDIA PRILEDIAZIABAD

| Sr. | Item | Measurement observation as per site condition | MORT&H Norms | Whether complying with MORT&H Norms |
|-------|--|---|---|---|
| 1 | Details of already laid utility service in any | No | Enclosed | Complying |
| 2 | Whether up gradation of the stretch in near future is proposed or not | No | | N/A |
| | a. If yes provision of utility adversely affect the plan of up gradation | No | Not affect the plan of up gradation | N/A |
| 3 | Laying of the utility service along the National Highways | Yes | | Complying |
| 3.1 | Location of proposed utility service along the stretch | From NH Ch. Km. 6.650 to NH Ch. Km. 7.100 on RHS at Extreme edge of the ROW | Utility duct / beyond the toe line of the embankment and drains , enclose to the extreme edge of the ROW | Complying |
| 3.2 | Depth of the utility service from Ground level | 1.5 mtr | 0.6m | Complying |
| 3.3 | Mechanism for crossing for water channel | Beneath the bed | Through utility duct (if provision exist) or beneath the bed of water channel | N/A |
| 3.4 | Whether is ROW restricted in the stretch? | No | | N/A |
| 3.4.1 | If yes whether provision of land acquisition is required to lay utility | N/A | | N/A |
| | a. If yes whether undertaking for land acquisition along with relevant L.A detail has been furnished | N/A | | N/A |
| 3.4.2 | With if concrete duct , in utility service are proposed to be laid in concrete ducts | N/A | Not less than one lane | N/A |
| 4 | Laying of utility Service across the NH | Yes | | Complying |
| 4.1 | Whether existing drainage structures is allow to carry the utility lines. | No | Not to be allowed | N/A |
| 4.2 | Proposed crossing of utility service | No | Perpendicular to NH | Complying |



| 4.3 | Type of casing pipe/conduit carrying the utility line | Steel as Casing | Steel , cast iron , or RCC and have adequate strength | Complying |
|-----|---|--------------------|--|-----------|
| 4.4 | Whether ends of the casing /conduit pipe are sealed from the outside | Sealed | Sealed | Complying |
| 4.5 | Length of crossing /conduit pipe crossing NH | 60 Mtrs | Extend from drain to drain in cuts and toe to toe of slope in the fills | Complying |
| 4.6 | Depth of top of the casing /conduit pipe | 3.0 Mtrs | At least 1.2m below the top of subgrade | Complying |
| 4.7 | Crossing method in case of CC pavement | HDD | Only boring method (HDD) | Complying |
| 4.8 | Horizontal and vertical clearances in case utilities are allowed overhead | N/A | In accordance with IRC codes. | N/A |
| 5 | Document/drawing enclosed with the proposal | Yes Enclosed | | Complying |
| 5.1 | Cross section showing in the site of trench for open trenching method | Yes | Enclosed | Complying |
| | a. Trench width | Yes | More than 30cm and less than 60 cm wider than the outer diameters of the utility pipe | Complying |
| | b. Filling of trench | Yes | As per Ministry circular No- RW/NH 30044/29/2015/S&R(R) Dated 22/11/2016. | Complying |
| | c. Location of trench | Yes | Extreme edge of the ROW | Complying |
| 5.2 | Cross section showing the size of pit and location of conduit for HDD method | Yes enclosed | Enclosed , if applicable | Complying |
| 5.3 | Strip plan / Route plan showing utility line , chainage , width of ROW , distance of proposed utility from the edge of ROW , important mile stone , intersection , cross drainage works etc. | Yes Enclosed | Enclosed | Complying |
| 5.4 | Plan and profile drawing of stretch showing cross section of road at 20m distance along with ROW and proposed utility | Yes enclosed | Enclosed | Complying |

9

| 6 | Methodology for laying of utility line | Yes enclosed | Enclosed | Complying |
|------|--|--|--|-----------|
| 7 | Draft license agreement is as per Ministry circular No- RW/NH30044/29/2015/S& R(R) Dated 22/11/2016.and signed by two witness | Yes enclosed | Enclosed | Complying |
| 8 | License fee in favor of MORT&H RPAO Jaipur | Shall be furnished as per demand | As per Ministry circular No- RW/NH330044/29/2015/S& R(R) Dated 22/11/2016. | Complying |
| 9 | Whether bank guarantee has been obtained | Shall be furnished as per demand | As per Ministry circular No- RW/NH 30044/29/2015/S&R(R) Dated 22/11/2016. | Complying |
| | a.If yes, whether confirmation of BG has been obtained as per MORT&H / NHAI guidelines | Shall be obtained | | |
| 10.1 | Undertaking for not to damage other existing utility, if damaged then to pay the losses to either to MORT&H / NHAI to the cornered agency | Enclosed | Enclosed | Complying |
| 10.2 | Undertaking for renewal of bank guarantee and when asked by NHAI/MORT&H | Enclosed | Enclosed | Complying |
| 10.3 | Undertaking for conforming all standard condition of MORT&H / NHAI guidelines | Enclosed | Enclosed | Complying |
| 10.4 | Undertaking for shifting of utility as and when asked by MORT&H /NHAI within a month at their own cost | Enclosed | Enclosed | Complying |
| 10.5 | Undertaking for indemnity against all damages and claim | Enclosed | Enclosed | Complying |
| 10.6 | Undertaking for management of traffic moment during laying of utility line without hampering the traffic. | Enclosed | Enclosed | Complying |

()

AJAI TYAGI Sr. Vice President (Projects) INDRAPRASTHA GAS LIMITED "IGL BHAMAN", PLOT NO. 4, COMMUNITY COMMUNITY FOR 9, R.K. PURAM NEW Decommon 10 022

Ч.

| 10.7 | Undertaking that if any claim is raised by the concessionaire/ contractor than the same has to be paid by the applicant | Enclosed | Enclosed | Complying |
|------|--|----------|----------|-----------|
| 10.8 | Undertaking that the applicant has obtained various safety clearances from the representative authorities such as directorate of electricity, chief controller of explosive safety of directorate, state / central pollution control board and any other statutory clearances applicable before applying to Highway Administration | Enclosed | Enclosed | Complying |

The ROW of the National Highway available at the proposed location from the central line of divided carriage way to ROW extreme edge in rural section is 30.00 m

The above particular along with the drawing and documents has been verified and certified as correct as per prevailing site conditions.

Name designations & Signature of the Authorized representative of applicant

AJALTVACH Sr. Vice Preside diects) IND State Control Activitients COMPARENT ACTIVITED COMPARENT ACTIVITED Name designations & Signature of the concerned field authority of NHAI

PROJECT DIRECTOR NATIONAL HIGHWAYS AUTHORITY OF INDIA PHILIGHAZIABAD

<u>CERTIFICATE</u>

Undersigned has examined the proposal of the applicant for laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km-6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No-24 (New NH-09) in NCT of Delhi, and confirm that the standard conditions issued vide Ministry circular No: RW/NH-33044/29/2015/S&(R) dated 22.11.2016 and the subsequent amendments, has been fallowed.

- It is certified that any other location of utility line would be extremely difficult and unreasonable costly and installation of utility line within ROW will not adversely affect the design, stability & traffic safety of the highway nor the likely future improvement such as widening of the carriageway, easing of curve etc.
- 2. I will ensure supervision of the work of laying of utility and ensure that the defects in road portion after laying of utility are corrected.
- 3. I will notify/forfeit the BG for claims for damages done/disruption in working, if any.
- 4. I will ensure that proposed permission in entered the register of records.
- 5. The records of previous approval, if any has been considered and copy of same is enclosed with the proposal.

AJAI TYAGI Sr. Vice President (Projects) INDRAPRASTHA GAS LIMITED "IGL BHAWAN", PLOT NO. 4, COMMUNITY CENTRE, SECTOR-9, R.K. PURAM NEW DELHI-110 022

Project Director NHAI, PIU- Ghaziabad PROJE ATY OF INDIA NATIONAL HIGH

1990-1999 2000 बाद

नई दिल्ली में आवासीय और व्यावसायिक भूखडी के लिए

सर्किल दरें

प्रक्रिया को आसान बनाने और इसे शहर भर में समान रखने के लिए, दिल्ली सरकार ने दिल्ली **में संपत्तियों को आठ श्रेणियों में** विभाजित किया है – एदिल्ली के सबसे महंगे पॉश इलाके से एच। श्रेणी ए में हें जबकि श्रेणी एच में शहर के सबसे कम मूल्य वाले क्षेत्र हैं।

| क्षेत्र | DOA, समाजफ्लैट्स (प्रति वर्ग ⁷⁷ मीटर) | निजी विल्डर फ्लै ट्स (प्रति वर्ग मीटर) | निजी कॉलोनियों के लिए गुणा कारक |
|-----------------------|---|--|------------------------------------|
| 🗃 30 वर्ग मीटर तक | 天 50,400 | 55,400 | 1.1 |
| 30-50 वर्ग मीटर | 54,480 रुपये | 62,652 | 115 |
| 50-100 वर्ग मीटर | ₹ 66,240 | 79.488 रु। | 1.2 |
| 🕒 वर्ग मीटर से अधिक | 76.200 रुपये | 95.250 | 1.25 |
| बहु-मंजिला अपार्टमेंट | रु 87,840 | 1.1 लाख रुपये | 1.25 |

音

नई दिल्ली में

कृषि भूमि के लिए सकिल दरें

दिसंबर 2019 में, दिल्ली सरकार ने दिल्ली में कृषि भूमि के लिए सर्किल दरों में 10 गुना बढ़ोतरी की घोषणा की। कृषि भूमि का सर्किल रेट 53 लाख जूरुपये से बढ़ा दिया गया हैक्षेत्र के आधार पर प्रति एकड़ प्रति एकड़ 2.25-5 करोड़ रुपये।

| श्रेणी | भूनि की तागत (प्रति वर्ग भीवर) | निर्माण लागत: आवासीय (प्रति वर्ग मीटर) | निर्माण लागत: वाणिज्यिक (प्रति वर्ग मीटर) |
|---|-----------------------------------|---|--|
| एक | হু 7.74 নাম্র | ₹ 21,960 | रुपये25,200 |
| बी | হা 2.46 লান্দ্র | रु 17.400 | 19,920 रुपये |
| सी | হ :.6 নাম্ব | ড 13,920 | ₹1 24 9 €0 |
| ধী | 123 लाख रुपये | 专 11,760 | 12,840 |
| Share and the second | ₩20.050 | 9,360 | रु 10,800 |
| ्य व्य | रूची 55,640 | ¥78.220 | 9,480 |
| नी | ₹ 46,100 | ₹ 6,960 | ₹8,040 |
| housing.com/news/hl/sow-del | N-cardie-internet | · · · · · · · · · · · · · · · · · · · | N. AND |

| त बाग | શ્રેળી હી | L' |
|--|--|--------|
| नीतिं नगर | श्रेणी डी | |
| मयूर विहार | ग्रेणी डी | |
| न्यू राजिंदर नगर | श्रेणी डी | |
| पुराना राजिंदर नगर | श्रेणी डी | |
| राजौरी गार्डन | श्रेणी डी | |
| आनंद विहार | अणी सी | |
| दरियागंज | श्रेणी सी | |
| द्वारका | श्रेणी डी | |
| हिंद एंड अपार्टमेंट | श्रेणी डी | |
| गगन विहार | श्रेणी डी | |
| हडसन लाइन | श्रेणी डी | |
| इद्रप्रस्थ एक्सटेंशन | श्रेणी डी | |
| जाnakpuri | श्रेणी डी | |
| जंगपुरा ए | श्रेणी डी | |
| जंगपुरा एक्सटेंशन | श्रेणी डी | 5.49 |
| चांदनी चौक | श्रेणी E | |
| ईस्ट एंड एन्क्लेव | श्रेणी ह | |
| गगन विहार एक्सटेंशन | श्रेणी E | Alle - |
| 💭 ज़ काज़ी | श्रेणी ह | |
| जामा मस्जिद | श्रेणी ह | |
| कासhmere गेट | श्रेणी E | |
| खिरकी एक्सटेंशन | श्रेणी E | |
| मधुबन एन्वलेव | श्रेणी E | |
| महावीर नगर | श्रेणी E | |
| मोती नगर | श्रेणी E | |
| पहार गंज | श्रेणी E | , so |
| पांडव नगर | श्रेणी E | |
| | श्रेणी E | |
| रोहिणी Whousing.com/news/hi/new-delhi-circle-rate-hi/ | AJAI TVAGI AJAI TVAGI President (Projects) | |



TO ME BUILD

06100

2022 06:00 PM N

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

| Certificate No. | | IN-DL26555574798244U |
|---------------------------|---|--------------------------------------|
| Certificate Issued Date | ÷ | 01-May-2022 06:08 PM |
| Account Reference | 1 | IMPACC (IV)/ dl781703/ DELHI/ DL-DLH |
| Unique Doc. Reference | 2 | SUBIN-DLDL78170339513097391868U |
| Purchased by | 2 | INDRAPRASTHA GAS LIMITED |
| Description of Document | : | Article 5 General Agreement |
| Property Description | | Not Applicable |
| Consideration Price (Rs.) | 1 | 0 (Zero) |
| First Party | 1 | INDRAPRASTHA GAS LIMITED |
| Second Party | ŝ | NHAI |
| Stamp Duty Paid By | : | INDRAPRASTHA GAS LIMITED |
| Stamp Duty Amount(Rs.) | : | 100 (One Hundred only) |
| | | |



Please write or type below this line



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 for laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km-6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No-24 (New NH-09) in NCT of Delhi. AJAITVACI

Statutory Alert:

om or using e-Stamp Mobile App of Stock Holding Mobile App renders it invalid. The authenticity of this Stamp certificate should Any discrepancy in the details on this Certificate

the GAS LIMITED INDRAPRASTHA GAS L

PRASTHA GAS LIMITED INDRAPRASTHA GAS LIMITED INDRAPRAS

This Agreement made this Day of (Month) of (Year) between the President of Indian / National Highways Authority of India (hereinafter called the Government which expression shall, unless excluded by or repugnant to the context, include his successors in office and assigns) of the one part and Indraprastha Gas Ltd., IGL Bhawan, Plot No-4, Community Centre, R.K.Puram, Sector-9, New Delhi-110022, a company registered under the Companies Act 1956 and having its registered the the both (hereinafter called Licensee), which expression shall unless excluded by or repugnant to context, include his successors/administrator assignees on the second part.

Whereas the Authority is responsible, inter-alia, for development and manuferance and in NH Designed Km 0.00 to NH Designed Km 49.00 of NH No– 24 (Now NH OW) Row

D

Whereas the Licensee proposes to lay Gas Pipeline referred to as utility services in Subsequent paras.

Whereas the Licensee has applied to the Authority for permission for laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km-6.650 (IGL CNG Station) to NH Ch. Km-7.100 (Near Metro Yard) along the National Highway No-24 (New NH-09) in NCT of Delhi.

And whereas the Authority has agreed to grant such permission for way leave on the NH RoW as per terms and conditions herein after mentioned.

1. Now this agreement witness esthetic consideration of the condition here in after 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 here to subject to the following conditions namely RoW permissions are only enabling in nature. The purpose of extend in 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 inthe 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 fulfillment of technical requirements shall be final and binding on all concerned parties .Incase any disruption/damage caused to any existing user by the subsequent user, the Authority shall not be held accountable or habe manner.

The bicouse shall be responsible for undertaking all activities including, but not timited to site thentification, survey, design, engineering, arranging finance, project management, butaining regulatory approvals & necessary clearances .supply of equipment, material, construction, erection, testing and commissioning, maintenance involversion and all other activities essential or required for efficient functioning of

Y CENTRE, SECTOR-9, R.K. PURAM

their own utility/ industrial infrastructure facilities,

- 4. The Licensee shall pay license <u>fees@Rs.....</u> sqm/ month 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. As regards Tariff, Terms, and conditions for providing common utility ducts along National Highways, there shall be a separate agreement regime.
- 5. Fee shall have to paid in advance for the period for which permission is granted for entering in to a license agreement. In case of renewal, rate prevailing at the time of renewal shall be charged. Delay in deposition 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 roads include 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 out side 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.

Exceptional cases, where RoW is restricted the utility services can be allowed beneath the carriage way of 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 ducts hall 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 with the safe and by the Licensee.

10. It is to be ensured that at no time there is interference with the dramage of the road land and maintenance of the National Highways. Towards this, theotop of the unit services shall be at least 0.6 meter below the ground level towever apostructure above ground shall be aesthetically provided foreland scalp of the required safety measures as directed by the concerned Authority;

IGL BMAWAN", PLOT NO. 4, MMUNITY CENTRE, SECTOR-9, R.K. PURAM

0

- 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 fill sand shall be designed in accordance with the provision of IRC 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 0.3 m below the drain in vents. A typical sketch showing the clearances is given in Attachment-I.
- 14. The utility services shall cross the National Highway preferable on a neither 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 30cm. but not more than 60ems 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 30cm. It shall consist of granular material, free of lumps, clod sand cobbles, and graded to yield a firm surface without sudden change in the bearing value. Unsuitable soil and rocked gees should be excavated and replaced by selected material.
 - b. The back fill shall be completed in two stages (i) Side-fill to the level of the top of the pipe (ii) Over fill to the bottom of the road crust.
 - c. The side fill shall consist of granular material laid in15cm. Layers each consolidated by mechanical tamping and controlled addition of moisture to 95% of the Proctor's Density. Over fill shall be compacted to the same density as the material that had been removed. Consolidation by saturation or pending 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 the same Condition as it was before digging the trench clearing debris loose even produced due to Execution of trenching at least 50m away from the edge of the RAM of way

18. All required restoration work subsequent to laying of the cable shall be required to b Undertaken by the Licensee at its cost either by itself or through its authorized Representative In consultation with the Authority as per predetermined time of the Sr. Vice President (Projects)

ENTRE, SECTOR-9, R.K. PURAM

and quality standards.

- 19. Prior to commencement of any work on the ground, a performance Bank Guarantee@ Rs-100 per route metre/ Rs per sqm 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 terms of filling/ unsatisfactory compaction damages caused too the 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 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 for feature of the Bank Guarantee.
- 20. In case, the Performance Bank Guarantee is invoked as mentioned above, the Licensee Shall be required to replant is hand 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. Not with standing 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 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 Licensees hall procure insurance from are put reinsurance company against damages to already existing underground installations/ utilities/facilities etc.
- 23. The Licensee shall be solely responsible /liable for full compensation/indemnification of concerned agency *I* 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 Authority shall also have a right make bod such damages/recover the claims by for feature of Bank Guarantee.
- 24. If the Licensee fails to comply with any condition to the satisfaction of the Authority, the Authority at the cost and risk of the Licensee shall execute the same.
- 25. Grant of License is subject to the Licensee satisfying (a) minimum disruption of raffie and (b) no damage to the highways as far as possible, the Licensee should avoid entrin

PRASTHA GAS LIMITED CENTRE, SECTOR-9, R.K. PURAM

of 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 for feature of the Bank Guarantee.

- 26. The Licensee shall inform/give a notice to the concerned agency designated by the Authority at least 15 day in advance with route details prior to digging trenches, For fresh or maintenance/ repair works. As per para the 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 co-ordination with Authority, against all damages and claims, if any due to the digging of trenches for laying cables/ducts.
- 29. Thepermissionforlayingutilityservicesisgrantedmaximumfor5yearsatatime, which can thereafter be considered for renewal. On payment of additional fee at the time of renewal, the permission shall be automatically be renewed, unless defaults exist. In case of renewal, rate prevailing at the time of renewal shall charge. Delay in deposition 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 be 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 here in expressly granted. No use of NH RoW will 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 is property shall be deemed to have been constructed and continued only by the consent of and permission of the Authority so that the right of the Licensee to the use thereof shall not become absolute and indefensible by lapse of time.

INDRAPRASTHA "IGL BHAWAN", PLOT NO. 4, SECTOR-9, R.K. PURAM

- 35. Three copies of 'as laid drawings 'of utilities (hard and soft copies) with geo tagged photographs and gee tagged vide or recording so flaying 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 authorized representatives of Authority to inspect the Project Facilities and to investigate any Matter with in their Authority, and up on 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 co-ordination with the Authority has been obtained. Not with standing anything contained herein, this Agreement may be cancelled at anytime by Authority for breach of any condition of the same and the Licensee shall neither been titled to any compensation for any loss caused to it by such cancellation not 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, method sand 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 kept open to traffic at all times. In case of single lane road, a diversion shall construct. If any traffic diversion Works found necessary during the working period, such diversion shall provide at the Cost of Licensee.

41. After the termination/expiry of the agreement, the Licensee shall remove the utility services within 90days and the site shall brought back to the original condition failing which * the Licensee will use 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 form a king good the excavated trench by proper filling and Compaction clearing debris Loose earth produced due to excavation of trenching at least 50maway from the edge of the RoW.

Vice President (Projects) APRASTHA GAS LIMITED

HOLDHAWAN".

- 42. Any disputes in interpretation of the terms and conditions of this Agreement or the reimplementation shall be referred to the redress mechanism prevailing in the Ministry and the decision of their dress mechanisms hall be final and binding on all.
- 43. For PPP Projects, in case of any financial loss in cured by the respective project concessionaires due to such laying/shifting of utility services by the Licensee, compensation for the same shall be required to 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.

This agreement has been made in duplicate, each one Stamp Paper; each party to this Agreement has retained one stamped copy each.

IN WITNESS WHERE OF THE PARTIES HERE TO 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 M/S – Indraprastha Gas .Ltd. (LICENSEE)

BY SHRI-

Ajai Tyagi Sr. Vice President Sr. Vice President (Projects) Indraprastha Gas Ltd. INDRAPRASTHA GAS LIMITED PLOT NO. 4 COMMUNITY CENTRE, SECTOR-9, R.K. PURAM NEW DELHI-110 022

(Signature, name & address with stamp)



IN THE PRESENCE OF (WITNESSES):

1.

2.

ATTESTED NOTARY PUBLIC GOVT. OF INDIA

0 3 APR 2022





directorate of electricity, chief controller of explosive safety of directorate, state/ central pollution control board and any other statutory clearances applicable before applying tog Highway Administration.

AFAITVAGE





Laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km- 6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New NH-09) in NCT of Delhi.

Indraprastha Gas Ltd, IGL Bhawan, Plot No-4, Community Centre, R.K. Puram, Sector-9, New Delhi-110022, Sr. Vice President - Ajai Tyagi here by undertake that-

For management of traffic movement during laying of Gas pipe line without hampering the traffic.

LIMITED Statutory Alert The authenticity of this Stamp certificate should be verified at www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid. 2022 05:57

PM 01-May-2022 06:57 PM 01-May-2022

05:57

2022 06:57 PM 0

1022 05:57 PM 01-Max



Please write or type below this line

UNDERTAKING

Laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km- 6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New NH-09) in NCT of Delhi.

Indraprastha Gas Ltd, IGL Bhawan, Plot No-4, Community Centre, R.K. Puram, Sector-9, New Delhi-110022, Sr. Vice President – Ajai Tyagi here by undertake that-

For Indemnity against all damages and claims.

resident (Projects) HAGASLIMITED Statutory Alert: tatutory Alert: The authenticity of the Stamp certificate should be verified at vivw shollestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website Mobile App renders it invalid.

ED INDRAPRASTHA GAS LIMITED INDRAPRASTHA GAS LIMI

LIMITED INDRAPRASTHA GAS LIMITED INDRAPRASTHA GAS LIMITED INDRAPRASTHA GAS LIMITED INDRAPRASTHA GAS LIMI



For shifting of Gas Pipeline as and when asked by MoRTH/ NHAI within a month at our own? cost.

IMITED

MO 4

1. The authenticity of this Stamp certificate should be verified at 'www.isncilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.

DRAPRASTHA

Delhi-110022, Sr. Vice President - Ajai Tyagi here by undertake that-

0 *

1

•

\$

(Zero)

NHAI ٠

50

(Fifty only)

Consideration Price (Rs.)

First Party

Second Party

Stamp Duty Paid By

Stamp Duty Amount(Rs.)

-2022 (6:00 PM 01

Mav-

022 06-50 PM 01



INDRAPRASTHA GAS LIMITED

INDRAPRASTHA GAS LIMITED

Please write or type below this line

UNDERTAKING

Laying of 8" Carbon Steel Gas Pipeline (RHS) from NH Ch. Km- 6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24

Indraprastha Gas Ltd, IGL Bhawan, Plot No-4, Community Centre, R.K. Puram, Sector-9, New

For confirming all standard condition of MoRTH/ NHAI Guidelines.

Delhi-110022, Sr. Vice President – Ajai Tyagi here by undertake that-

(New NH-09) in NCT of Delhi.

sident (Projects) HAGAS LIMUTED Statutory Aler Stamp certificate should be verified af www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. details on this Certificate and as available on the website / Mobile App renders it invalid. 1. The authenticity of this Any discrepancy in the

PASTHA GAS LIMITED INDRAF

INITED





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG |
|---------|---|
| Name | Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- |
| | 24 (New NH- 09) in NCT of Delhi. |
| Client | M/s. INDRAPRASTHA GAS LTD |

Job Procedure for TRENCHING

INDEX

| Sr. No. | Description | Page No. |
|---------|----------------------|----------|
| 1 | Purpose | 1 |
| 2 | Scope | 1 |
| 3 | Equipment & Manpower | 1 |
| 4 | Method | 1-3 |
| 5 | HSE | 3-4 |

AJAI TYAGI Sr. Vice President (Strojecto) INDRAPRASTHA GAS LIMITED "IGLEHAWAN", PLOT NO. 4, COMMUNITY DENTRE, SUCTORS, R.K. PURAM NEW DELHI-110 022



| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG | |
|---------|---|--|
| Name | Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- | |
| | 24 (New NH- 09) in NCT of Delhi. | |
| Client | M/s. INDRAPRASTHA GAS LTD | |

1.0 PURPOSE

The purpose of this work instruction is to establish guidelines and requirements to control the trenching activity to be used for laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km-6.650 (IGL CNG Station) to NH Ch. Km-7.100 (Near Metro Yard) along the National Highway No-24 (New NH-09) in NCT of Delhi.

2.0 SCOPE

This scope covers the Trenching in all type of soil or in rock for pipeline for Construction. It also covers the blasting of trench and removal of scattered rock and debris from ROW.

3.0 EQUIPMENTS & MAN POWER

| JCB | : As Per Requirement |
|--------------|----------------------|
| Civil Labour | : As Per Requirement |
| Supervisor | : 01 Nos. |

4.0 METHODOLOGY

 $\left(\right)$

As a sequence operation trenching is to start with a reference line marked as the centerline of the trench. Trail Pits shall be prepared wherever required to locate the OFC, Power Cable, existing pipeline crossing or any other obstacles. If deemed necessary by IGL or concerned authorities where numerous utilities may be encountered, IGL should carry out the excavation normally. The areas identified for existing utilities shall be marked with temporary painted post and uncovering/exposing of same shall be done manually. Use of excavator bucket is not permitted. In case of damage of any existing utilities IGL and concerned authority should be informed immediately without any delay. Rectification for same shall be done by the contractor at his own cost. For normal soil trench shall be prepared as per detail TYPE 1 (typical trench detail in normal soil) as stipulated in standard drawing, TEIND-STD-G-M-2002 (released for construction). For rocky and seismic fault zone trench will be prepared as per specification/ drawings (as applicable).





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG |
|---------|---|
| Name | Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- |
| | 24 (New NH- 09) in NCT of Delhi. |
| Client | M/s. INDRAPRASTHA GAS LTD |

Excavation to additional depth may be done if pipeline approaches or crosses other pipelines, sewer, drain pipes, telephone conduits, permission from concerned authority shall be obtained by the contractor removing, shifting of existing utilities like cables, pipelines, poles or pylons etc during excavation. The pipeline is laid at a minimum clearance unless otherwise stated in particular crossing drawing (This clearance shall be at least 0.3m when the pipeline crosses the existing line and 3.0m when they are parallel). Or as per statutory requirement whichever is more stringent shall be followed.

Ditches, sewers, drains and other natural waterways shall be maintained open & functional. Where ever in the execution, work shall be maintained if not possible facility would be provided using temporary pipeline crossings. The trench excavated should have a minimum width as indicated in the job drawing / specifications. The depth of the cover should be measured from the top of the pipe. Corrosion coating to the top of undisturbed surface of the soil or top of rail or top of road whichever is lower. The depth should be sufficient provided maximum coverage is mentioned below.

The trench shall be dug in such a way that is symmetrical in relation to the axis of the channel actually marked out.

Directional changes on the trench floor should tally with the draft longitudinal profile perfectly –both horizontally and vertically – and with changes in pipe direction so that welded pipe sections lie in a continuous and uniform manner along the trench floor.

The depth of the trench will be such as to provide minimum cover from the generetrix of pipe and top of the surface as stipulated below for reference:

- i) Normal surface i.e. Road & Residential Area 1.20 meter
- ii) Minor Water Crossings/Canal (Open cut / boring) 1.50 meter
- iii) Drainage ditches at Road

1.50 meter





ProjectLaying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG
NameNameStation) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No-
24 (New NH- 09) in NCT of Delhi.ClientM/s. INDRAPRASTHA GAS LTD

| - | 1.00 meter |
|---|-------------------------------|
| - | 1.50 meter |
| - | 3.5 meter |
| - | 1.20 meter |
| - | 5 meter (below scour depth) |
| - | 2.5 meter (below scour depth) |
| | - - - |

Prior approval shall be taken for trench profile at special crossings stated above.

In rocky soil, the trench must be excavated with a mechanical trencher fitted with suitable teeth which assured maximum fragmentation of the excavated material. Any Explosive material should not be used. If blasting is required at some hard rocky area, the work will be done as per approved procedure & with prior permission of concerned authority.

If the use of mechanical trencher is unfeasible for technical reasons, excavation is to be carried out with excavator equipped with a bucket/breaker.

Wherever required Dewatering from trench should be carried out with dewatering pumps and drain water should be discharge to nearest Nala /river /canal or in proper location so it should avoid difficulties in local area. The Trench walls/bottom must be free of hard and protruding points to avoid damaging of the pipeline coating when it is being lowered in.

Pipeline must be laid in the trench without any interruption i.e. the completed section at the time and the activity may be carried out to avoid any accidents.

5.0 HEALTH, SAFETY & ENVIRONMENT

- Machine operator involved shall be an experienced person.
- PPE shall be used in this activity.





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG |
|---------|---|
| Name | Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- |
| | 24 (New NH- 09) in NCT of Delhi. |
| Client | M/s. INDRAPRASTHA GAS LTD |

- Only trained operators to be deployed for this activity.
- Personnel around the machine (if any) should be cautious about overhead falling objects.
- During the movement of earth moving equipment the operator should blow horn to caution the people around.
 - All Measuring & Test Equipment used shall be well maintained.
- Excavated Area should be barricaded.
- Provide ladders wherever possible for better approach to the working area if Depth is > 1Mtr.
- Shoring all around the pit shall be checked prior to start of excavation and if required adequate amount of shoring to be done.
- Minimum persons should go in to the pit.
- Only certified and validated tools & tackles to be used.
- Underground pipe to be located by pipe locators prior to start of Trenching.
- First aid box to be maintained at site.

AJAI TYAGI Sr. Vice President (Projects) NDRAPRASTIC LAS LIMPTED HOL 4, K. PURAM HGL BHA COMMUNITY



| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) | |
|---------|--|--|
| Name | to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New | |
| | NH- 09) in NCT of Delhi. | |
| Client | M/s. INDRAPRASTHA GAS LTD | |

Job Procedure for HORIZONTAL DRIECTIONAL DRILLING (HDD)

INDEX

| 1 |
|-----|
| 1 |
| - |
| 1-4 |
| 4 |
| |

AJAI TYAGI USR. Vice President (V ojects) NDRAPRASTHA GAS LIMITED "IGL B'IAWAN", PLOT NO. 4, OMMUNIT: "TRE, SECTOR-9. R.K. PURAM EW DELHI-110 022 COMMUNIT



| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) |
|---------|--|
| Name | to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New |
| | NH- 09) in NCT of Delhi. |
| Client | M/s. INDRAPRASTHA GAS LTD |

1.0 SCOPE:

2.0

This procedure covers the minimum requirements of various activities to carry out for the Engineering and construction of pipeline crossing using Horizontal Directional Drilling along the route of laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New NH- 09) in NCT of Delhi.

EQUIEPMENT & MAN POWER

- HDD Machine & Silicon Roller
- 🛥 Hydra
- Holiday Crew
- Supervisor
- Holiday Machine
- Welding Machine
- Grinding Machine
- Welding Crew

3.0 METHOD Pre Construction Survey

IGL will carry out a pre construction survey along the width of the crossing and prepare a construction drawing accordingly. During pre-construction survey existing underground facilities if any will be located and protected. After completion of Preconstruction survey a detailed drawing & Design calculation will be prepared with all relevant data such as elevation, levels etc. and will submitted to IGL for approval.

Design & Engineering

Based on site conditions, survey drawing, equipment & installation technique the limits of each crossing will be determined. The minimum cover of the pipeline after crossing will be maintained as per approved drawings. If any underground facilities like pipeline, cable etc. are encountered during survey, the same will be crossed with a minimum clearance of 500 mm from the buried utilities or as required by authorities having jurisdiction. The entry & exit point of the section will be fixed on ground level as per approved drawings. Calculation for determining the maximum permissible overburden on pipe to check that the empty pipeline is safe from collapse at any points in the drilled crossing section will be submitted to IGL for approval. Calculation will be made to determine the stresses & power requirements considering following facts and submitted to IGL for their approval.

- o Back reamed diameter.
- o Bentonite density
- Pipeline submerged weight in bentonite





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) | |
|---------|--|--|
| Name | | |
| | NH- 09) in NCT of Delhi. | |
| Client | M/s. INDRAPRASTHA GAS LTD | |

Minimum allowable elastic bend radius will be calculated considering the following conditions.

- The maximum longitudinal stress due to tension & bending in the pipeline section will not exceed 90% of SYMS of the pipe material.
- The combined equivalent stress in the pipeline section due to bending & hydrotest will not exceed 90% of SYMS of the pipe material.
- Maximum permissible equivalent stress during service as per the pipeline operating parameters.

Pipeline configuration

Construction drawing will be prepared with levels, profiles, entry angle, exit angle, radius of bend, total length, and maximum tension required on the pull head of the rig etc. and submitted to IGL for approval. All the works will be carried out in accordance with the approved construction drawings only.

Construction

IGL will comply with all the conditions and requirements issued by authorities having jurisdiction in the area where the work is to be performed.

Installation procedure

IGL will submit a detailed installation procedure for approval before commencing any work at site comprising of project organization chart, details of equipment, hydrostatic test procedure, method of installation, calculations, time schedule etc.

String Preparation

Pipe string will be prepared as a single one for pulling. Welding, Radiographic inspection of joints and field joint coating of the string will be done in accordance with the respective applicable procedures.

Pre-Testing

The complete pipe string will be hydrostatically pre-tested as per the approved procedure. All the welds and pipes will be checked for leakage and the failure if any will be rectified and the hydro test will be repeated after rectification.

After successful completion of pre-hydro testing, the joint coating of the joints will be carried out as per HDD crossing joint coating procedure.





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) | |
|---------|--|--|
| Name | to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New | |
| | NH- 09) in NCT of Delhi. | |
| Client | M/s. INDRAPRASTHA GAS LTD | |

Site Preparation

The centerline of the crossing will be marked and stacked properly.

The HDD machine centerline will be marked with respect to survey.

A pit will be opened for collecting the used betonies slurry & cuttings which will be further connected to the entry point.

Entry & Exit points will be prepared for easy approach and movement of equipment & manpower. Pipe section will be placed over rubber lined rollers to avoid any coating damages during pulling operation.

HDD Drilling Operation

The Drill Rig will be anchored in position at entry side.Drilling operation will start with Pilot drilling. During drilling operation, the high-pressure bentonite slurry will be pumped through the drill bit and the drilling is to be carried out continuously equivalent to one length of drill pipe. A new length of drill pipe will be added at the end of each finished drill pipe.

The line of drilling will be monitored using tracker system, the sensing unit fixed at the rear of the steering tool. The sensing unit transmits the location of the drill bit back to the tracking unit on the surface. The information will be conveyed to the driller for the necessary corrective action if any. Once the drill bit exits at the exit point of the drill hole, the drill bit, steering tools etc. will be detached and reamer will be attached to the drill steering. During the reaming process betonies slurry will be pumped under high-pressure through the reamer. As the drill rig pulls the reamer back, drill pipes will be attached continuously behind the reamer for the subsequent reaming and pipe pulling operations. The reaming operation will be repeated to achieve the required size of the hole.

Exit point offset of the pilot hole from the theoretical exit point will be maintained as less than 0.5% of string length. Length tolerance will be controlled within 1% of crossing length3. The size of the back reamed hole will be maintained approximately at 1.5 times the pipeline diameter.

Pulling

A pull head will be welded with the hydro tested pipe section.

The pull head will be connected to the drill rig.





| Project | Laying of 8" Carbon Steel Gas Pipeline from NH Ch. Km- 6.650 (IGL CNG Station) |
|---------|--|
| Name | to NH Ch. Km- 7.100 (Near Metro Yard) along the National Highway No- 24 (New |
| | NH- 09) in NCT of Delhi. |
| Client | M/s. INDRAPRASTHA GAS LTD |

It will be ensured that the pipe section is longer than the drilled hole.

The pipe string is then pulled from the exit point to entry point by using rig.

During pulling, buoyancy of the pipeline will be controlled by suitable method so as to maintain the buoyancy as close as possible to zero during pull back.

Betonies slurry of specified viscosity will be pumped into the hole to prevent hole from collapsing & protect the coating.

Integrity of the corrosion coating

Before pull back operation, meager test will be done for the entire pipeline string made for the crossing. After pull back operation, again meager test will be done for the installed string before tie-in with the mainline. The observed meager value before and after pulling has to be almost same. However, if the integrity of coating cannot be established by the above method, temporary impressed current system will be set up and current density will be calculated to establish the integrity.

Post Hydro-test

After installation, the complete string will be hydrostatically tested for 24 Hrs. (if needed).

Final Clean up

After completion of HDD operations, the site will be cleared off all balance materials, debris & betonies slurry.

4.0 Health, Safety & Environment:

- Proper barricading has to be done for this work
- PPE is a must in this activity
- Machine operator involved shall be an experienced person.
- It is to be noted that the special care to be adopted against snake / insects bite.
- Only trained rigging personnel to be deployed for this activity.
- All Measuring & Test Equipment used shall be well maintained.
- All lifting devices & Tolls used shall be well maintained











Receipt No : 679310/2023/RO Delhi



U 5