

Government of India

Ministry of Road Transport & Highways

(Project Implementation Unit, Araku)

ZP Colony, Near CBM Church, Araku Valley, Visakhapatnam - 531149

Dated the 10th August, 2021

INVITATION OF PUBLIC COMMENTS

Subject: Right of Way (ROW) permission for laying of underground Slurry Pipeline for carrying iron ore concentrate (in slurry form) and Water Pipeline along with Optical Fibre Cable (OFC) at Km 23.430 in Kotarubilli Village across Bowdara to Vizianagaram section (Km 0.00 to Km 26.937) of NH-516E in the State of Andhra Pradesh- Reg.

Please find enclosed herewith the proposal in accordance with Ministry's guidelines dated 22.11.2016 received from Project Manager (Phase-II), Slurry Pipeline Project, NMDC Limited vide letter no./SPL/Phase-2/AP/2021/1623 dated 07.04.2021 for laying of underground Slurry Pipeline for carrying iron ore concentrate (in slurry form) and Water Pipeline along with Optical Fibre Cable (OFC) from Bailadila to Visakhapatnam across Bowdara to Vizianagaram section (Km 0.00 to Km 26.937) at Km 23.430 in Kotarubilli Village in Gantyada Mandal coming under NH-516E project in the State of Andhra Pradesh.

2. As per the guidelines, issued by the Ministry vide Circular No. RW/NH-33044/29/2015/S&R(R) dated 22.11.2016, the proposal for highway crossing permission along & across National Highways shall be put out in the public domain for 30 days for seeking claims and objections on grounds of public inconvenience, safety and general public interest.

3. In view of the above, comments of the public on the above mentioned proposal is invited on the address mentioned below:

The Project Director,
Project Implementation Unit, Araku
Ministry of Road Transport and Highways,
ZP Colony, Near CBM Church, Araku Valley,
Visakhapatnam - 531149
Email ID: morthpiuaraku@gmail.com

Yours faithfully,

Encl.: As above.


[Gulshan]

Project Director,
Project Implementation Unit, Araku

1. Senior Technical Director, NIC, MoRTH, New Delhi: for uploading on Ministry's website

Copy for information to:

1. Regional Officer, MoRTH, Vijayawada
2. The Project Manager (Phase-II), Slurry Pipeline Project - NMDC Limited, Hyderabad



एनएमडीसी लिमिटेड NMDC Limited

(भारत सरकार का उद्यम) (A GOVT. OF INDIA ENTERPRISE)

Fax : 07782-222770

Ph. : 07782-225599

स्लरी पाईपलाईन प्रोजेक्ट SLURRY PIPELINE PROJECT Email : spljdp@nmdc.co.in

बैलाडीला भवन, गीदम रोड, जगदलपुर, बस्तर (छ.ग.) 494001 Bailadila Bhawan, Geedam Road, Jagdalpur, Bastar, C.G. 494001

निगम पहचान संख्या / Corporate Identity Number : L13100AP1958 GOI 001674

No. /SPL/Phase-2/AP/2021/1623

Dt. 07.04.2021

To,
The Project Director,
Project Implementation Unit, Araku
Ministry of Road Transport & Highways,
Andhra Pradesh.

*Pl. examine & put up
Gulshan
11/6/2021
AEE (PIU-Araku)*

Sub: - Laying of underground Slurry Pipeline for carrying iron ore concentrate (in slurry form) - Permission for crossing the **National Highway** - NH-516E at Km 10/4 Kotarubilli Village Gantyada Mandal - reg.

Ref: - Gazette Notification published by Government of India vide Notification Dt. 23.08.12 (enclosed)

Dear Sir,

NMDC a Navaratna category PSU under the Ministry of Steel, is operating iron ore mines at Bailadila sector situated in Dist. Dantewada, Chhattisgarh State. As a forward integration of its iron ore mining activity, NMDC is also setting up a 3 MTPA Integrated Iron and Steel Plant at Nagarnar in the State of Chhattisgarh.

Now, NMDC has taken up construction of Slurry Pipeline Project which is as an alternate mode of transport for transportation of iron ore fines in slurry form subsequent to its conversion into iron ore concentrate. This Slurry Pipeline Project involves construction of Slurry Pipeline system from Bailadila to Vizag via Nagarnar passing through three states Chhattisgarh, Odisha and Andhra Pradesh. This pipeline will be laid besides roads to the maximum extent feasible and will follow the guidelines as per Petroleum and Minerals Pipelines Act, 1962.

In the above context, as required, Gazette Notification (enclosed) was published by Government of India to enable NMDC proceed with various activities as per Petroleum and

Minerals Pipelines Act, 1962. The detailed Route Survey was done by WAPCOS (a Govt of India u/t), under the supervision of our Consultant, Mecon (a Govt of India u/t).

NMDC has obtained all the required statutory clearances viz Road crossings, water body crossings & Railway crossings in the state of Chhattisgarh to enable first phase of construction of the Pipeline system between Bailadila and Nagarnar.

To continue with construction of the portion of the slurry pipeline system between Nagarnar and Vizag, we are applying for various clearances by adopting similar procedures as done in Chhattisgarh State.

Under your jurisdiction, in Vizianagarm District, in the State of Andhra Pradesh, the proposed Slurry Pipeline enroute has to cross the National Highway-516E at Kotarubilli village in Gantyada mandal. The drawing of National Highway Road crossing indicating RoU, XY co-ordinates, is enclosed.

Earlier the above said road was under the purview of Executive Engineer, R&B (NH Division) Marripalem, Visakhapatnam. Application was submitted to E.E., R&B along with the following documents: -

- (1) Affidavit (2) Agreement (3) Power of Attorney (4) Checklist
(5) Method of Crossing (6) Crossing Drawings (7) Route Map (8) Cadastral Map

Subsequently joint inspection was conducted and at the time of giving clearance the purview of the road has been transferred to PIU, MoRTH, Visakhapatnam. E.E, R&B had forwarded all the documents to the Assistant Project Director, PIU, MoRTH, Visakhapatnam vide letter No. 067/Birla Group/326-A/ATO/2020, Dt. 25.11.2020.

In view of the above, NMDC requests your good office to kindly accord permission to lay the Slurry Pipeline and Water Pipeline along with Optical fiber cable crossing these Roads at these locations.

Thanking you,

Yours faithfully,

(M. Rajgopal)

Project Manager (Phase - II)

Slurry Pipeline Project

Mail Id: mrjgopal@nmdc.co.in

Contact No.- 9425266449

Encl:-

- (1) Letter from E.E. (R&B) NH Division, Marripalem.
(2) Method of Crossing
(3) Crossing Drawings



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Fax : 07782-222770

Ph. : 07782-225599

स्लरी पाईपलाईन प्रोजेक्ट SLURRY PIPELINE PROJECT Email : spljdp@nmdc.co.in

बैलाडीला भवन, गीदम रोड, जगदलपुर, बस्तर (छ.ग.) 494001 Bailadila Bhawan, Geedam Road, Jagdalpur, Bastar, C.G. 494001

निगम पहचान संख्या / Corporate Identity Number : L13100AP1958 GOI 001674

No./SPL/Phase-2/AP/2021/

Dt. 13.07.2021

To

The Assistant Executive Engineer,
Project Implementation Unit, Araku
Ministry of Road Transport & Highways,
Andhra Pradesh-531149

Sub:- Right of Way(RoW) permission for laying of underground Slurry Pipeline for carrying Iron ore concentrate (in slurry form) and Water Pipeline along with Optical Fibre Cable (OFC) at Km.23/430 in Kotarubilli Village across Bowdara to Vizianagaram section (Km.0.00 to Km 26.937 of NH-516E in the sate of Andhra Pradesh-Reg.

Ref:- 1. This office letter no./SPL/Phase-2/AP/2021/1623 dated 07.04.2021

2. Your office letter No.MoRTH/PIU/ARAKU/NMDC/RoWpermission/NH-516E/1 dated 23.06.2021.

Madam,

With reference to the above cited letter at Sl.no.2 the following documents are submitted here with for your kind reference and further needful action.

1. The chainage of NH-516E where ROW permission for crossing the NH has been incorporated in the drawing enclosed.
2. The RoW width and the No.of Existing and proposed lanes corrected in the checklist.
3. Furnished construction Methodology of laying/crossing of pipeline.
4. Enclosed an undertaking/certificate intimating therein that the laying of above lines will not have any material effect on the safety of the road users as per Ministry's circular no.RW/Nh-33044/29/2016/S&R(R) dated 22.11.2016.
5. Enclosed revised checklist along with all the relevant data.

NMDC requests your good offices to kindly accord permission to lay the Slurry Pipeline and Water Pipeline along with CFC crossing of this road at above mentioned location.

Thanking you,

Yours faithfully,

(M. Rajgopal)

Copy to: The Project Director, PIU

Project Manager (Phase – II)

Slurry Pipeline Project

Mail Id: mrajgopal@nmdc.co.in

Contact No. - 9425266449



एनएमडीसी लिमिटेड **NMDC Limited**

(भारत सरकार का उद्यम) (A GOVT. OF INDIA ENTERPRISE)

Fax : 07782-222770

Phone : 07782-225599

स्लरी पाईपलाइन प्रोजेक्ट **SLURRY PIPELINE PROJECT**

Email : spljdp@nmdc.co.in

बैलाडीला भवन, गीदम रोड, जगदलपुर, बस्तर (छ.ग.) 494001 Bailadila Bhawan, Geedam Road, Jagdalpur Bastar (C.G.) 494001

निगम पहचान संख्या **Corporate Identity Number . L13100TG1958GOI001674**

No.SPL/Phase-II/NH/2021/65

Date: 15/07/2021

To,

The Assistant Executive Engineer,
Project Implementation Unit (PIU), Araku
Ministry of Road Transport & Highways.

Subject: Right of Way (ROW) permission for laying of underground Slurry Pipeline for carrying iron ore concentrate (in slurry form) and Water Pipeline along with Optical Fibre Cable (OFC) at Km 10.400 in Kotarubilli Village across Bowdara to Vizianagaram section (Km 0.00 to Km 26.937) of NH-516E in the State of Andhra Pradesh - Reg.

Ref: Your letter Dtd: 23rd June 2021.

Madam,

With reference to the above I am forwarding the following documents.-

1. Detailed Drawing.
2. Certificate.
3. Checklist.

This is for your kind information and further needful action please.

Thanking you

R.A.
15/07/2021.

(M.Rajgopal)

Project Manager/Phase-II

NMDC Ltd.

Slurry Pipeline Project



SL. NO. 120 TELANGANA

Sold to K. Sri. Murali Krishna

S/o/W/o. Venkatacharyulu

For Whom P.K. Satpathy Limited

GENERAL POWER OF ATTORNEY

R 976370
JAWAD ALI KHAN
LICENSED STAMP VENDOR
Lic.No.26/2012, Ren. No.14/2
Shop No.10, # 5-9-58, Gupta E
Basheerbagh, Hyderabad
Cell: 9701471276

WHEREAS NMDC Ltd, a Government of India Enterprise, incorporated under the Companies Act, 1956 and having its Registered office at Khanij Bhawan, 10-3-311/A, Masab Tank, Hyderabad – 500 028 (herein after referred to as NMDC) is setting up of Slurry Pipe Line Project consisting of ore beneficiation plants at Bailadila, Slurry Pipeline between Bailadila and Vizag, Pellet Plant at Nagarnar and Vizag and associated facilities for its II phase.

WHEREAS in the course of its business, it is required to submit application for acquisition of land for the Plant and obtain necessary Permits, Licenses, Leases, Statutory Certificates / Clearances etc., as contemplated by the Laws in existence AND WHEREAS Shri V. Ajit Kumar has been posted as General Manager for Slurry Pipeline Project.

Now by these presents witness that I, P.K. Satpathy Director (Production) NMDC do hereby constitute, nominate and appoint Shri V. Ajit Kumar, General Manager, as my true and lawful attorney in the name of NMDC and for and on behalf of NMDC, to do, inter alia, the followings acts, deeds and things in relation to the said Projects:

Contd..2..

h. almy



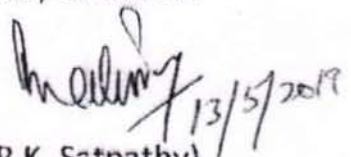
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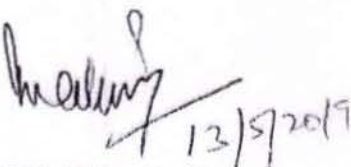
1. To correspond, negotiate, enter into agreement, execute and sign all agreements, documents, deeds with Department of Forests, Department of Mines and Geology, Electricity authorities such as Power Distribution Companies and Power Transmission Companies, Revenue and other Local Authorities of Government of Odisha, Government of Andhra Pradesh and also with their undertakings in furtherance of the purpose of setting up and operating the said projects.
2. To correspond, negotiate, enter into agreements, execute and sign all agreements, deeds with other Government Departments Concerned and private parties for acquisition of the land required for the said Project.
3. To sign the Vachan Patra accepting to implement the Rehabilitation Policy of Government of Odisha, Government of Andhra Pradesh.
4. To appoint such Surveyors, Engineers, Contractors, Advocates or any other persons as may be necessary in that behalf for execution of the said works.
5. To do all other acts, deeds and things that may be necessary for complying with the requirements in furtherance of the above subject;

IN WITNESS WHEREOF, I, P.K. Satpathy, Director (Production), NMDC, hereunto set and subscribed my hand and seal this the 13th day of May 2019.

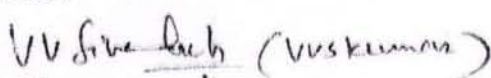
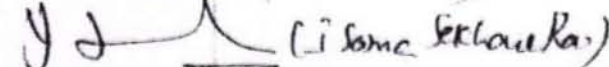


Specimen signature of
Shri V. Ajit Kumar


(P.K. Satpathy)
Director (Production)

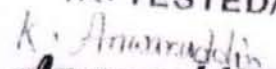

(P.K. Satpathy)
Director (Production)

Witness :

1.  (V.V. Srinivas Acharya)
2.  (J. J. Srinivas Acharya)



Entered into Notarial Register on
Sl.No: 6242 Date: 13 MAY 2019

//ATTESTED//

K. Anwaruddin Iqbal
B.Sc., LL.B.
ADVOCATE & NOTARY
Appointed by Govt. of A.P. INDIA
G.O.M.S. No. 2747, Lt. No. HR/135/7/2011
H.No. 16-1-24/2, Saidabad Colony,
HYDERABAD

CHECK LIST

Guidelines for processing the proposal for laying slurry pipeline in the land across National Highway vested with NHAI

Relevant Circulars

- 1.Ministry Circular No. NH-41 (58)/68 dated 31-01-1969
- 2.Ministry Circular No. NH-III/P/66/76 dated 18-11-1976
- 3.Ministry Circular No. RW-NJ-III/P/66/76 dated 01-05-1982
- 4.Ministry Circular No. RW-NH-11037/1/86-DOI(II) dated 28-07-1993
- 5.Ministry Circular No. RW-NH-11037/1/86-DOI dated 19-01-1995
- 6.Ministry Circular No. RW-NH-34066/2/95/S&R dated 25-10-1999
- 7.Ministry Circular No. RW-NH-34066/7/2003 S&R (B) dated 17-09-2003
- 8.Ministry Circular No. RW-NH-34044/29/2015/S&R dated 22.11.2016

Checklist for getting approval for laying of Slurry pipeline along with Water Pipeline & OFC across NH land

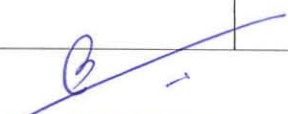
S.NO	Item	Information/Status	Remarks
1	General Information	Proposal for permission for laying of Slurry pipeline(Mineral) of 559mm dia. along with 305mm dia. Water Pipeline and 150mm dia. Carbon Steel casing pipe for laying OFC	
1.1	Name and Address of the Applicant/Agency	Chief General Manager, Slurry Pipeline Project, NMDC Ltd, Bailadila bhavan, Geedam road, Jagdalpur,494001,Chhattisgarh	
1.2	National Highway Number	NH-516E	
1.3	State	ANDHRA PRADESH	
1.4	Location	KOTARUBILLI	
1.5	(Chainage in KM)	23/430KM	
1.6	Length in Meters	25	RoW
1.7	Width of available Row	25m crossing	
	(a) Left side from center line towards increasing chainage/Km direction	10m	
	(b) Right side from center line towards increasing chainage/Km direction	15m	
1.8	Proposal to lay underground mineral slurry		
	(a) Left side from center line towards increasing chainage/Km direction	NH crossing	
	(iii) Right side from center line towards increasing chainage/Km direction	NH crossing	
1.9	Proposal to acquire land		
	(a) Left side from center line	NA	
	(b) Right side from center line	NA	
1.10	Whether Proposal is in the same side where land is not to be acquired	NA	
	if not then where to lay the cable.	NA	
1.11	Details of already laid services, if any along the proposed route	NIL	
1.12	Number of existing lanes (2/4/6/8 lanes).	2	


V. AJIT KUMAR
 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR

1.13	Proposed number of lanes (2 Lane with paved shoulders/4/6/8 lanes).	2	
1.14	Service road existing or not	NO	
	if yes then which side		
	(a) Left side from the center line		
	(b) Right side from the center line		
1.15	Proposed service road	NA	
	(a) Left side from the center line		
	(c) Right side from the center line		
1.16	Whether proposal to lay the Mineral slurry pipeline is after the service road or between the service road and main carriageway	NA	
1.17	Whether carrying of sewage/slurry pipeline has been proposed on Highway bridges. If Yes, then mention the methodology proposed for the same.	NA	
1.18	Whether carrying of sewage/slurry pipeline has been proposed on the parapet/ any part of the bridges. If Yes, then mention the methodology proposed for the same.	NA	
1.19	If crossing of the road involved. If yes, it shall be either encased in pipes of through structure or conduits specially built for the purpose at the expenses of the agency owing the line	YES	
	(a) Whether existing drainage structures are allowed to carry mineral pipeline	NO	
	(b) It is on a line normal to NH	YES	
	(c) What is the distance of crossing the mineral pipeline from the existing structures. Crossing shall not be too near the existing structures on the National Highway, minimum distance being 15 meter.	20m	
	(d) The casing pipe (or conduit pipe in the case of electric cable) carrying the mineral 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.	150mm Carbon Steel Casing pipe will be used for crossing of OFC cable.	
	(e) Ends of casing/conduit pipe shall be sealed from the outside, so that it does not act as a drainage path.	YES	
	(f) the casing/conduit pipe should, as minimum extend from drain to drain in cuts and toe of slope in the fills.	YES	


V. AJIT KUMAR
 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR

	The top of the casing/conduit pipe should be at least 1.2 meters below the surface of (g) the road subject to being at least 0.3 m below the drain inverts. Mention the proposed details.	YES	
	Mention the methodology proposed for crossings of road for the proposed Sewage/mineral pipeline. Crossing shall be (h) by boring method (trenchless Technology), specially, where the existing road pavement is of cement concrete of dense bituminous concrete type	The pipeline will be laid by Horizontal Directional Drilling (HDD)	
	The casing /conduit pipe shall be installed with an even veering throughout its length and in such a manner as to prevent the formation of a waterway along it. (i)	YES	
2	Document/Drawing to be enclosed with the proposal	YES	
2.1	Crossing section showing the size of trench for open trenching method (Is it normal size of 1.2m deep *0.3m wide)	NA	
	i. Should not be greater than 60cm wider than the outer diameter of the pipe		
	ii. Located as close to the extreme edge of the right of way as possible but not less than 15m from the center lines of the nearest carriageway		
	iii. Shall not be permitted to run along the National Highways when the road formation is situated in double cutting. Nor shall be laid over the existing culverts and bridges.		
	iv. These should be so laid that their top is least 0.6m below the ground level so as not to obstruct drainage of the land.		
2.2	Cross section showing the size of pit and location of cable for Cased Crossing Method	YES	
2.3	Strip plan/route plan showing the mineral pipe line, chainage, width of ROW, distance of proposed pipe line from the edge of ROW, important mile stone, intersections, cross drainage work etc.	YES	
2.4	Methodology for laying of the mineral pipe line	The pipeline will be laid by Horizontal Directional Drilling (HDD)	
2.4.1	Open trenching method. (may be allowed in the mineral Corridor only where pavement is neither cement concrete nor dense bituminous concrete type. If yes, what is the methodology of refilling of trench.	NA	
	The trench width should be at least 30cm, (a) but not more than 60cm wider than the outer diameter of the pipe.	NA	


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 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR

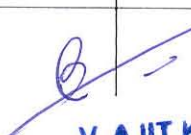
	(b) For filling of the trench, bedding shall be at a depth of not less than 30cm. It shall consist of granular material, free of lumps, clods and cobbles and graded to yield a firm surpace without a sudden change in the bearing value. Unsuitable soil and rock edged should be excavated be selected material	NA	
	(c) The backfill shall be completed in two stages (i) side fill to level of the top of the pipe and (ii) overfill to the bottom of the road crust.	NA	
	(d) The side fill shall consist of granular material laid in 15cm layers each consolidated by mechanical tempering and controlled addition of moisture to 95% of the proctor's density overfill shall be compacted to the same density as the material that has been remove. Consolidation by saturation or ponding eill not be permitted	NA	
	(e) the road crust shall be built to the same strength as the existing crust on either side of the trench. Care shall be taken to avoid the formation of a dip at the trench.	NA	
	(f) The excavation shall be protected by flagman, signs and barricades, and red lights during night hours.	NA	
	(g) If required, a diversion shall be constructed at the expense of agency owing the mineral line	NA	
2.4.2	Horizontal Directional Drilling (HDD) method.	YES	
2.4.3	Methodology for laying of pipe line through CD works and method of laying. In cases where the carrying of mineral pipe line on the bridge becomes inescapable.	NA	
3	Draft license Agreement is signed by two witnesses	YES	
3.1	The license fee estimate as per Ministry's guidelines issued vide circular no.RW/NH-33044/29/2015/S&R (R) dated 22.11.2016	Enclosed	
4	Whether perormance Bank gurantee as per Ministry's circular no.RW/NH-33044/29/2015/S&R (R) dated 22.11.2016 is obtained	An undertaking for agreement is attached here with	
4.1	Confirmation of BG has been obtained or not as per MORTH/NHAI guidelines	YES	
5	Affidavit/ Undertaking from the Applicant for the following is to be furnished		
5.1	Undertaking for not to damage any other utility, if damaged then to pay the losses eithe to NHAI or to the concerned agency	YES	


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 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR

5.2	Undertaking for Renewal of bank guarantee as and when asked by MoRTH/NHAI.	YES	
5.3	Undertaking for confirming all standard condition of Ministry Circulars and NHAI's guidelines	YES	
5.4	Undertaking for Indemnity against all damages and claims.	YES	
5.5	Undertaking for management of traffic movement during laying of Mineral Pipe line without hampering the traffic	YES	
5.6	Undertaking that if any claim is raised by the concessionaire/contractor then the same has to be paid by the applicant.	YES	
5.7	Undertaking that prior approval of the NHAI shall be obtained before undertaking any work for installation, shifting or repairs, or alterations to the Mineral located in the National Highway right-of-ways.	YES	
5.8	Undertaking that expenditure, if any, incurred damage caused to the National Highway by the laying, maintenance or shifting of the Mineral Pipe Line will be borne by the applicant agency owing the line.	YES	
5.9	Undertaking that text of the license deed is as per verbatim of MoRTH formate (issued vide circular no.RW/NH- 33044/29/2015/S&R (R) dated 22.11.2016	YES	
5.10	Undertaking that the applicant has obtained various safety clearances from the representative authorities such as Directorate of Electricity, Chief controller of Explosives, Petroleum and Explosive safety organization, Oil industry safety Directorate, State/Central pollution control board and any other statutory clearances as applicable, before applying to Highway Administration	YES	
5.11	If the MoRTH/NHAI consider it necessary in future to move the Mineral PipeLine for any work of improvement or repairs to the road, it will be carried out as desired by the MoRTH/NHAI at the cost of the agency owing the mineral Pipe Line within a reasonable time (not exceeding 60 days)of the intimation given	YES	
5.12	Certificate from the applicant in the following format (i) Laying of pipe line will not have any deleterious effects on any of the bridge components and roadway safety for traffic.	Enclosed	
6	Who will sign the agreement on behalf of pipe agency	Chief General Manager, Slurry Pipeline Project, NMDC Ltd, Bailadila bhavan, Geedam road, Jagdalpur, 494001, Chhattisgarh	
	Power of Attorney to sign the agreement is available or not	YES	


V. AJIT KUMAR
 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR

7	The project Director will submit the following Certificates			
7.1	Certificate that the proposal is confirming to all standard conditions issued vide Ministry's circular no.RW/NH- 33044/29/2015/S&R (R) dated 22.11.2016		YES	
7.2	Certificate from PD in the following formate			
	(h)	"It is certified that any other location of the Mineral Pipe line would be extremely difficult and unreasonable constly and the installation of Mineral Pipe Line within ROW will not adversely affect the desigh, stability & traffic safety of the Highway not the likely future improvement such as widening of the carriageway easing of curve etc"	YES	
	(ii)	For 6-lanning		
	(a)	Where feasibility is available "I do certify that there will be no hindrance to proposed six-laning based on the feasibility report considering proposed structures at the said location"		
	(b)	In case feasibility report is not available "I do certify that sufficient ROW is availabe at site for accommodating proposed six-lining		
8	If NH section proposed to be taken up by NHA1 on BOT basis - a clause is to be inserted in the agreement. "The permitted Highway on which License has been granted the right to lay pipeline/duct has also been granted as a right of way to the concessionaire under the concession agreement for up-gradation of [-----section from Km-----to Km-----of NH no.----- on Build: operate and transfer basis] and therefore, the license shall honour the same."		YES	
9	Who will supervise the work of laying of Mineral Pipe Line			
	(a)	On behalf of the Applicant	NMDC appointed Third Party	
	(b)	On Behalf of the MoRTH/NHA1	PD/Consultant	
10	Who will ensure that the defects in road portion after laying of Mineral Pipe line are corrected then what action will be taken			
	(a)	On behalf of the Applicant	Chief General Manager, Slurry Pipeline Project, NMDC Ltd, Bailadila bhavan, Geedam road, Jagdalpur,494001,Chhattisgarh	
	(b)	On Behalf of the NHA1	PD/Consultant	


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 NMDC LTD., JAGDALPUR

11	Who will pay the claims for damage done/disruption in working of concessionaire if asked be the concessionaire on behalf of the applicant	Chief General Manager, Slurry Pipeline Project, NMDC Ltd, Bailadila bhavan, Geedam road, Jagdalpur, 494001, Chhattisgarh	
12	A certificate from PD that the will enter the proposed permission in the register of record of the permission in the prescribed proforma (copy enclosed)	YES	
13	If any various approvals are accorded for laying of underground mineral pipe line then Photocopy of register of records of permission accorded (as maintained by PD) be enclosed.	YES	


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 CHIEF GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JAGDALPUR



छत्तीसगढ़ CHHATTISGARH

L 161959

CERTIFICATE

Name of the Work :- Jagdalpur – Visakhapatnam Slurry Pipeline Project : Request for granting permission for laying 22" Dia. Slurry Pipeline along with 12" Dia. Water Pipeline & 150mm Dia. OFC Pipe by standard HDD method across NH 516E at 23+430 Km between Bowdara – Vizianagaram section of Kotarubilli Village, Gantyada Mandal, Vizianagaram district in the state of Andhra Pradesh.

- 1) Laying of utility line will not have deleterious effects on any of the bridge components road way safety for traffic.
- 2) For 6-laning, we do undertake that NMDC will relocate service road/approach road/utilities (Slurry pipeline along with Water pipeline & OFC) at our own cost notwithstanding the permission granted with in such time as will be stipulated by MoRTH for future 6 – laning or any other development.
- 3) This proposal implemented now will not affect any likely future improvement to geometrics.
- 4) We undertake that permission does not lead to the adverse impact on the safety and stability of the highway structure.


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CHIEF GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR



अनु. क्र. 4436 दिनांक 3-6-2021

स्टाम्प का मूल्य 100 (शब्दों में)

वास्तविक क्रेता का नाम श्री. एन. के. शर्मा

पिता/पति श्री. एन. के. शर्मा

तह. जिला प्रान्त

द्वारा निवासी तह. जिला

द्वितीय पक्षकार का नाम

पिता/पति

तह. जिला प्रान्त

प्रयोजन प्रतिफल या मूल्य

हस्ताक्षर

हस्ताक्षर स्टाम्प वेण्डर

नाम

ला. नं.

श्रीमती एकता जाधव
स्टाम्प वेण्डर
लायसेंस क्र. 148/2011
बबोरमा फोटो कॉपियर्स
बैंगन रोड, जगदलपुर (छ.ग.)

- 5) It is also certified that the alignment as proposed is the best available option for Laying the underground utility line across NH in Vizianagaram.
- 6) It is certifying that any other location of the underground utility line would be extremely difficult (proposed spot being located notified pipe line RoU) and the installation of underground utility line with in RoW will not adversely affect the design, stability and traffic safety of the highway nor the likely future improvement such as widening of the carriage way, easing of curve.

Yours sincerely



(V. AJIT KUMAR)

Chief General Manager
NMDC Slurry Pipeline Project
Jagdalpur

V. AJIT KUMAR
CHIEF GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR



छत्तीसगढ़ CHHATTISGARH

H 408899

UNDERTAKING

Name of the work: Proposal to lay 22 inches diameter Slurry Pipeline, 12 inches Water Pipeline and OFC duct of 150mm diameter across Km ^{23/430}10/4 chainage on NH-516E of kotarubilli village, Gantyada mandal, Vizianagaram District, Andhra Pradesh.

Undersigned, V Ajit Kumar, Chief General Manager/Nodal Officer, Slurry Pipeline Project, NMDC Ltd, Jagdalpur on behalf of NMDC Ltd. undertake that:

1. Not to damage other utility, if any and if damaged then to pay the losses either to NHAI or to the concerned agency.
2. NMDC agrees to submit Performance Bank Guarantee and Licensee fee estimate.
3. The work will be carried out, confirming to all standard conditions of NHAI's guidelines.
4. Shifting of utility Slurry Pipeline and Water Pipeline as and when required by NHAI at the cost of the NMDC Ltd.
5. For NH six-laning/widening, we do undertake that we will relocate the underground Slurry and Water pipeline at our own cost notwithstanding the


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NMDC LTD., JAGDALPUR

निवेदन स्टांप देखें। के-आ के प्रस्ताव

31/10/20

S.K. Kushwaha
STAMP VENDOR
L.NO.-40/94-5
JAGDALPUR

V. ALTI KUMAR
GENERAL MANAGER
BLURRY LINE PROJECT
INDIA CO. POCOLAPUR

permission granted within such time as will be stipulated by NHAI for future six-laning or any other development.

6. Indemnity against all damages and claims.
7. Traffic movement during the laying of Slurry pipeline to be managed by the NMDC Ltd.
8. If any claim is raised by the Concessionaire, then the same has to be paid by NMDC Ltd.
9. Prior approval of the NHAI shall be obtained before undertaking any work of installation, shifting, repairs, or alterations to the Slurry and Water Pipelines any other utility located in the National Highway right-of-ways.
10. Expenditure if any, incurred by NHAI for repairing any damage caused to the National Highway by the laying, maintenance or shifting of slurry and water pipelines will be borne by the agency owning the line.
11. If the NHAI considers it necessary in future to move the utility line for any work of improvement or repairs to the road, it will be carried out as desired by the NHAI at the cost of the agency owning the utility line within a reasonable tie (not exceeding 60 days) of the intimation given.
12. In case of burst of Slurry and Water pipeline, NMDC Ltd will bear the entire cost for restoration of damage caused to the road.
13. During the crossing of the pipeline across the road, NMDC Ltd will take preventative steps and keep the caution boards at the point of crossing and sign boards & reflective boards for the traffic to make aware of auger boring activity so that traffic can go cautiously.
14. NMDC Ltd. will be liable for any damage caused to the road during execution of work and during service life of the Slurry and Water pipeline.
15. The permission granted to NMDC Ltd shall not in any way to be deemed to convey to NMDC Ltd any right or any interest in Government land other than what is granted for.
16. The NMDC Ltd shall not without the prior permission in writing to NHAI authority, undertake any of fitting/repair or alteration of the proposed pipeline.
17. The NMDC Ltd shall be responsible for restoring the road at their own cost to its original condition after laying the Slurry pipeline or any damage caused due to inadequate operation / maintenance of the pipeline.
18. Slurry and Water pipelines will cross the road at 74 degrees, as cased crossing in trenchless method, maintaining minimum cover/ depth of 1.5m in National Highway RoW. The length of casing pipes shall be extended beyond National Highway RoW so as to meet MoRTH as well as NMDC safety requirements.
19. The text of the license deed is as per verbatim of MoRTH format (issued vide Ministry's circular no. RW/NH-33044/29/205/S&R(R) dated:22.11.2016).


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20. Undertaking that NMDC shall obtain various safety clearances from the respective authorities such as Directorate of Electricity, Chief Controller of Explosives, Petroleum and Explosive Safety Organization, Oil industry Safety Directorate, State/Central pollution Control Board and any other statutory clearances applicable (if any).
21. Undertaking that laying of Slurry pipeline will not have any deleterious effects on any of the bridge components and roadway safety for traffic.


(V Ajit Kumar)

Chief General Manager/Nodal Officer,
Slurry Pipeline Project,
NMDC Ltd, Jagdalpur.

V. AJIT KUMAR
GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR



ఆంధ్రప్రదేశ్ ఆంధ్ర ప్రదేశ్ ANDHRA PRADESH

SL.No. 19137 Date: 13/6/2019

Sold To: General Manager

For Whom: Slurry Pipeline Projects NMDC LTD. #18-36-2A, Kothasali Peta, MR Peta, Visakhapatnam, cell : 9492643868.

CO 560336
I. RAVI SHANKAR

Licenced Stamp Vendor

L.No.03/11/12/2011; RL.No:03/11/14/2017

AFFIDAVIT

Jagdalpur.

I, V Ajit Kumar, aged, 58 years, working as General Manager, Slurry Pipeline Project, NMDC Ltd, Jagdalpur, hereby give the following undertaking to the NHAI in connection with the permission for laying of Nagarnar-Visakhapatnam Slurry pipeline (22 Inch diameter) along with laying of water Pipeline (12 Inch diameter) & 150 mm dia. OFC duct across NH-516E at 10/4 km in Andhra Pradesh state being executed by National Mineral Development Corporation Limited :

1. Undertaking for not to damage any other utility, if damaged then to pay the losses either to NHAI or to the concerned agency.
2. Undertaking for renewal of bank guarantee as and when asked by MoRTH/NHAI.
3. Undertaking for confirming all standard condition of Ministry circulars and NHAI's guidelines.
4. Undertaking for indemnity against all damage and claims.
5. Undertaking for management of traffic movement during laying of Mineral pipeline without hampering the traffic.
6. Undertaking that if any claim is raised by concessionaire/contractor then the same to be paid by us.
7. Undertaking that prior approval of NHAI shall be obtained before undertaking any work for installation, shifting or repairs, or alteration to the Mineral pipeline located in the National Highway Right of ways.
8. Undertaking that expenditure, if any, incurred by NHAI for repairing any damage caused to the National Highway by the laying, maintenance or shifting of the Mineral pipeline will be borne by us.

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SLURRY PIPE LINE PROJECT
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9. Undertaking that text of the license deed is as verbatim of MoRTH format (issued vide Ministry's circular no. RW/NH-33044/29/2015/S&R(R) dated 22.11.2016.
10. Undertaking that the applicant has obtained various safety clearances from the representative authorities such as Directorate of Electricity, Chief controller of Explosives, Petroleum and Explosive Safety Organization, Oil Industry Safety Directorate, State/Central pollution control board and any other statutory clearances as applicable, before applying to Highway Administration.
11. If the MoRTH/NHAI considers it necessary in future to move the Mineral pipeline for any work of improvement or repairs to the road, it will be carried out as desired by the MoRTH/NHAI at the cost of the agency owing the Mineral pipeline within reasonable time (not exceeding 60 days) of the intimation given.
12. (i) Certify that laying of Mineral pipeline will not have any deleterious effects on any of the bridge components and roadway safety for traffic.
(ii) "We do undertake that, we will relocate service road / approach road /utilities at our own cost notwithstanding the permission granted within such time as will be stipulated by NHAI" for future six-lanning or any other development.

For National Mineral Development Corporation Limited,


V. AJIT KUMAR
GENERAL MANAGER
Slurry Pipeline Project
NMDC Ltd, Jagdalpur.



ఆంధ్రప్రదేశ్ ఆంధ్ర ప్రదేశ్ ANDHRA PRADESH

CO 560333
I. RAVI SHANKAR

Licenced Stamp Vendor

L.No.03/11/12/2011; RL.No:03/11/14/2017

SL.No. 19134 Date: 13/6/2019

Sold To: General Manager.

For Whom: Slurry Pipeline Projects NMDC LTD. Jagdalpur Visakhapatnam, cell : 9492643868.

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

Agreement to lay mineral product pipeline at the following locations-

(i) NH 516E at 10/4 Km.

This Agreement made this _____ day of _____, 2020 between Project Director acting in his executive capacity through the President of India/ National Highways Authority of India (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 SLURRY PIPELINE PROJECT, NMDC LIMITED, GEEDAM ROAD, JAGDALPUR (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 at 10/4 Km of NH-516E RoW.

Whereas the Licensee proposes to lay mineral product pipeline referred to as utility services in subsequent paras.

Whereas the Licensee has applied to the Authority for permission to lay the underground 22 Inch diameter Slurry pipeline along with a 12 Inch diameter Water pipeline and 150mm OFC duct pipe across NH-516E at the following locations (In the Andhra Pradesh State):

V. AJIT KUMAR
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SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

(i) NH 516E at 10/4 Km.

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

Now this agreement witnesses 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 underground 22 Inch Dia Slurry pipeline along with a 12 Inch diameter Water pipeline and 150mm OFC duct pipe as per the approved drawing attached hereto subject to the following conditions, namely.

1. RoW permissions are only enabling 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/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 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 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 road side furniture etc.; the utility services shall be laid beyond the toe line of the embankments and clear of the drain.


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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 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 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 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 0.3m below the drain inverts. A typical sketch showing the clearances is given in Attachment-I.
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 cm 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.


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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 co-ordination 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 Licensee shall procure insurance from a reputed insurance company against damages to already existing underground installations/utilities/facilities etc.


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23. The Licensee shall be solely responsible/ liable for full compensation/indemnification 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 co-ordination with Authority shall also have a right 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 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 forfeiture 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. 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 is 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. 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 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 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


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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 infeasible 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 geo-tagged photographs and geo-tagged video recordings of laying of cables in the trench (with respect to the NH) and after complete restoration shall be submitted to the Authority for verification and record within a month of completion of works.
36. The Licensee shall allow free access to the Site at all times to the authorised representatives of Authority to inspect the Project Facilities and to investigate any matter within their Authority, and upon reasonable notice, shall provide reasonable assistance necessary to carry out their respective duties and functions.
37. The utility services shall not be made operational by the Licensee unless a completion certificate to the effect that the utility services has been laid in accordance with the approved specifications and drawings and the trenches have been filled up to the satisfaction of the concerned agency in co-ordination 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 10 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


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NMDC LTD., JAGDALPUR

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 50m 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.

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)

V. AJIT KUMAR
GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

SIGNED ON BEHALF OF M/S NMDC Ltd (LICENSEE)
BY SHRI V AJIT KUMAR

(Signature, name & address with stamp)

V. AJIT KUMAR
GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

HOLDER OF GENERAL POWER OF ATTORNEY DATED 13TH MAY 2019.

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.
- 2.

Methodology of Laying Pipes - Open Trenching & Trenchless (HDD)

1. Trenching Method:

Laying of Pipe along the mentioned route will be done by conventional method/manual and machine Trenching method. The Dimension of the Trench will be 1.5m in depth and 1.0m in width. The pipe laying work will be carried out in phased manner in such a way that after the pipes are laid, the trench will be restored to its original surface. Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, from top of pipe including getting out the excavated soil and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 500m.

2. Trench Filling Method:

As a measure of abundant precaution against future settlement and other allied problems, only selected granular material will be used in filling restoration of trenches. The entire depth of cutting will be filled either with coarse sand or the excavated material, compacted in layers not exceeding 20 cm when compacted by ordinary power roller/plate compacter. Special compaction equipment like plate compacter, frog hammer will be utilized besides ordinary power roller.

3. Trenchless Crossing:

HDD Method Horizontal Directional Drilling (HDD) is a Technique for installing product pipes, including utility lines, below ground using a surface-mounted drill rig that launches and places and drill string at a shallow angle to the surface and has tracking and steering capabilities. In recent years HDD has been the preferred methodology due to several government policies conducive to infrastructure growth. Major crossings on the Route will be done by Horizontal Directional Drilling method without disturbing the road surface. Slurry liquid used in HDD will be disposed-off at suitable locations.

NMDC Ltd will adopt the Trenchless Method i.e, HDD method.

 20/6/2020

Write-up on Directional Drilling

Directional drilling, commonly called **horizontal directional drilling or HDD**, is a steerable trenchless method of installing underground pipes, conduits and cables in a shallow arc along a prescribed bore path by using a surface-launched drilling rig, with minimal impact on the surrounding area.

Directional boring is used when trenching or excavating is not practical. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings. Installation lengths up to 2000 m have been completed, and diameters up to 1200 mm have been installed in shorter runs.

Equipment used for Horizontal Directional Drilling

The equipment used in a horizontal directional drilling depends on the outer diameter of the pipe, length of the run, ground conditions and the surroundings above ground. For the large bores, directional drills equipped with as much as 600 tones thrust/pullback (Vermeer D1320x900) is used in conjunction with a mud reclaimer, excavator, and multiple pumps and hoses to supply the drilling fluid to the drill stem.

Directional drilling stem is made from heat-treated high-carbon steel for strength and ships in diameters of 8 -15 cm. Drill stem sections are manufactured in 3.0 or 9.1 meter lengths and have male threading on one end, and female on the other.

It is common for a directional drill to carry as much as 305 m of rod on board. Drilling heads come in multiple designs and depends on the rock or soil being penetrated. The drilling head has multiple water ports to allow removal of material. A talon bit involves the carbide-tipped cutters. These allow for steering and cutting the material. Another head is a mud-motor that is used in rocky landscapes.

Furthermore, supporting equipment is needed to assist directional-drilling or HDD to work smoothly, such as drilling mud recycling system, shale shaker, mud cleaner, centrifugal pump, mud tanks, etc.

Technique

Directional boring is used for installing infrastructure such as telecommunications and power conduits, water lines, sewer lines, gas lines, oil lines, product pipelines, and environmental remediation casings. It is used for crossing waterways, roadways, shore approaches, congested areas, environmentally sensitive areas, and areas where other methods are costlier or not possible. It is used instead of other techniques to provide less traffic disruption, lower cost, deeper and/or longer installation, no access pit, shorter completion times, directional capabilities, and environmental safety.

The technique has extensive use for developing subsurface utilities as it helps in avoiding extensive open cut trenches. Since uncontrolled drilling can lead to damage, different agencies/government authorities owning the urban *right-of-Way* or the utilities have rules for safe work execution. For standardization of the techniques, different trenchless technology promoting organizations have developed guidelines for this technique.

20/6/2020
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NMDC LTD., JAGDALPUR

Starting pit with pilot hole and some drilling fluid in the pit

The process starts with receiving hole and entrance pits. These pits will allow the drilling fluid to be collected and reclaimed to reduce costs and prevent waste. The first stage drills a pilot hole on the designed path, and the second stage (reaming) enlarges the hole by passing a larger cutting tool known as the back reamer.

The reamer's diameter depends on the size of the pipe to be pulled back through the bore hole. The driller increases the diameter according to the outer diameter or the conduit and to achieve optimal production. The third stage places the product or casing pipe in the enlarged hole by way of the drill stem; it is pulled behind the reamer to allow centering of the pipe in the newly reamed path.

Horizontal directional drilling is done with the help of a viscous fluid known as drilling fluid. It is a mixture of water and, usually, bentonite or polymer continuously pumped to the cutting head or drill bit to facilitate the removal of cuttings, stabilize the bore hole, cool the cutting head, and lubricate the passage of the product pipe. The drilling fluid is sent into a machine called a reclaimer which removes the drill cuttings and maintains the proper viscosity of the fluid. Drilling fluids hold the cuttings in suspension to prevent them from clogging the bore. A clogged bore creates back pressure on the cutting head, slowing production.

Location and guidance of the drilling is an important part of the drilling operation, as the drilling head is under the ground while drilling and, in most cases, not visible from the ground surface. Uncontrolled or unguided drilling can lead to substantial destruction, which can be eliminated by properly locating and guiding the drill head.

There are three types of locating equipment for locating the system the wire-line locating system and the gyro guided drilling, where a full inertial navigation system is located close to the drill head.

- Walk-over locating system – In first system a sonde, or transmitter, behind the bore head registers angle, rotation, direction, and temperature data. This information is encoded into an electro-magnetic signal and transmitted through the ground to the surface in a walk-over system. At the surface a receiver (usually a hand-held locator) is manually positioned over the sonde, the signal is decoded and steering directions are relayed to the bore machine operator.
- Wire-line locating system – The wire line system is a Magnetic Guidance System. With a Magnetic Guidance System (MGS), the tool read inclination and Azimuth. The MGS, also has a secondary means of location verification utilizing wire grids laid on the ground surface. It is the only system that has the capability of verifying the location. This information is transmitted through the wire-line fitted within the drill string. At the surface, the Navigator in the drill cab performs the necessary calculations to confirm the parameters have been met. The MGS even without the use of the wire grid has been accurate to almost 2 km with an accuracy of 1.5m.
- Gyro-based locating system – The gyro based system is fully autonomously working and therefore one of the most accurate system where sufficient diameter (200 mm) is available and where long distances (up to 2 km) have to be performed with small deviation (less than 1m position error).

All three systems have their own merits, and a particular system is chosen depending upon the site requirements.

20/6/2020
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GENERAL MANAGER
SURYA PIPE LINE PROJECT
JAGDALPUR

CROSS SECTION DRAWING OF SLURRY PIPELINE ALONG WITH WATER PIPELINE AND OFC
(BY HDD METHOD)

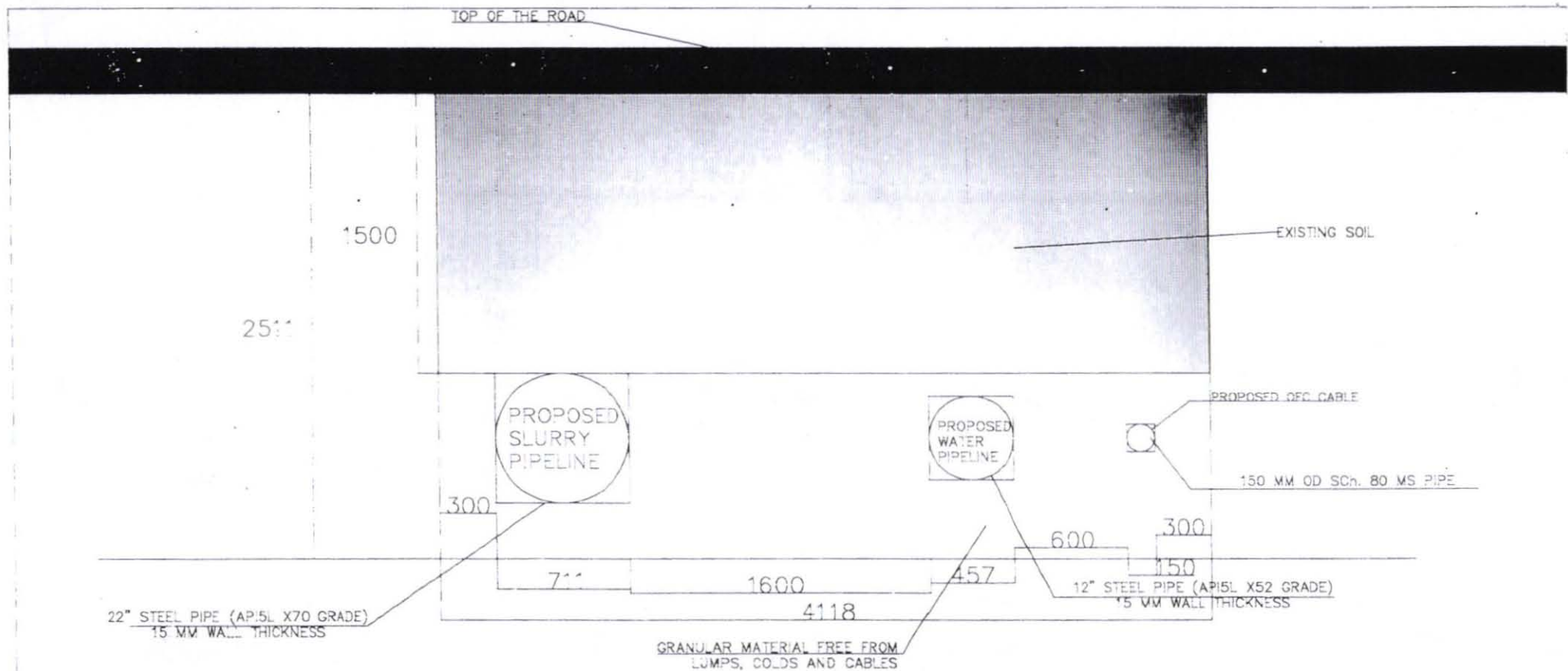
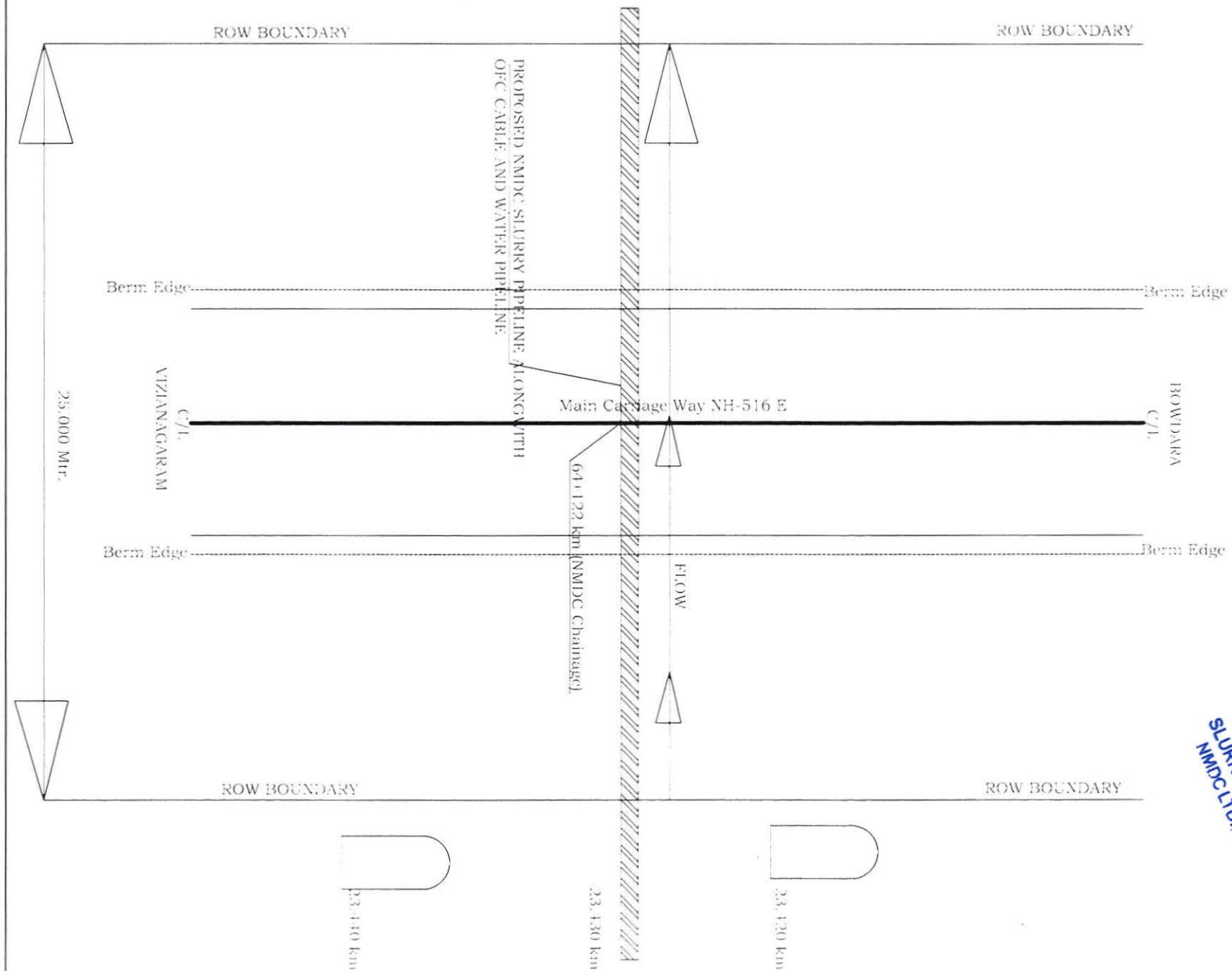


FIGURE – 1 INSTALLATION OF CASING PIPE FOR CROSSING THE ROAD

NOTE: 1. ALL DIMENSIONS ARE IN MILLIMETER


 20/6/2020
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 GENERAL MANAGER
 SLURRY PIPE LINE PROJECT
 NMDC LTD., JACDALPUR

**DETAILED DRAWING OF SLURRY PIPELINE CROSSING
NATIONAL HIGHWAY ROAD (NH - 516E)**



V. AJIT KUMAR
CHIEF GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

map - Gantyada

3



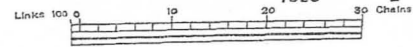
No. 75
KOTARUBILLI
GANTYADA MANU
VIZIANAGARAM TALUK
VIZIANAGARAM DISTRICT
Area by Traverse 657.17 Acres
Area by Fields 652.82 Acres
Scale 8 inches = 1 Mile

AREA IN METRIC MEASURES.

Hectares — 266
Ares — 95
Hectares — 264
Ares — 11

CONVERSION IN METRIC SYSTEM

1
7920 R. F.



- S. No. 10 Venkarama Cheruvu
32 Ragi Banda
36 Mangali Banda
54 Kotta Cheruvu
60 Kotta Banda
64 Kotta Banda
68 Lakshmisangaram Cheruvu
83 Rayi Banda
95 Nadimi Banda
121 Chatayya Cheruvu
130 Bapadu Banda
133 Beetu Cheruvu
153 Nadimi Gedda
158 Padmanabhudu Koneru

No. 70
GANTYADA



No. 69
LAKIDAM

No. 76
RAVIVALASA

No. 74
NARAVA

Year of Survey 1959

Nature of Survey

Date of Notification under Section 5
of the Andhra Pradesh Survey &
Boundaries Act VIII of 1923.

Date of Notification under Section
13 of the Andhra Pradesh Survey &
Boundaries Act VIII of 1923.

N. B. V. No. 75 KOTARUBILLI (Initial Survey) S. No. 1 to 155

Board's Reference No. N. 8053/71
dated 29.10.1979

Published at Page No. 12, 13 & 14 of Part
II of the Andhra Pradesh Gazette
dated 16.2.1959

Published at Page No. 7
of the District Gazette of Visakhapatnam
District dated 28.6.1969

REVENUE-SURVEY.
INITIAL-SURVEY, 1959.

SURVEYED UNDER THE SUPERINTENDENCE OF SRI K. N. RAMA RAO IBA
OFFICER-IN-CHARGE NO. II, SURVEY PARTY VIZIANAGARAM.
MAPPED UNDER THE SUPERINTENDENCE OF SRI S. SOMASEKHARA SASTRY
OFFICER-IN-CHARGE NO. II, SURVEY PARTY VIZIANAGARAM

- REFERENCE
PALLI Parent Village
- Thick or terraced house
 - Curt track
 - Gravelled road
 - Metalled road and mile stone
 - Culvert and bridge
 - Tank
 - Barial ground
 - Round well
 - Telegraph
 - Electric transmission line
 - River and stream with anicut
 - Village boundary station
 - Khandam station
 - Village trilection station
 - Village boundary
 - Survey field boundary

Map No. 75-1/1959-60 (S. No. 1 to 155) (A.P. S.S. 8 inches) 107

Published under the direction of SRI K. N. RAMA RAO IBA
Director of Settlements, Survey and Land Records,
on behalf of the Government of A.P.

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SRI D. K. MISHRA, M.Sc., B.L., M.A., Deputy Director, Survey and Land Records,
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Map Printing Press C. S. G., Hyderabad-39.

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Scale
1:7,920

Legend

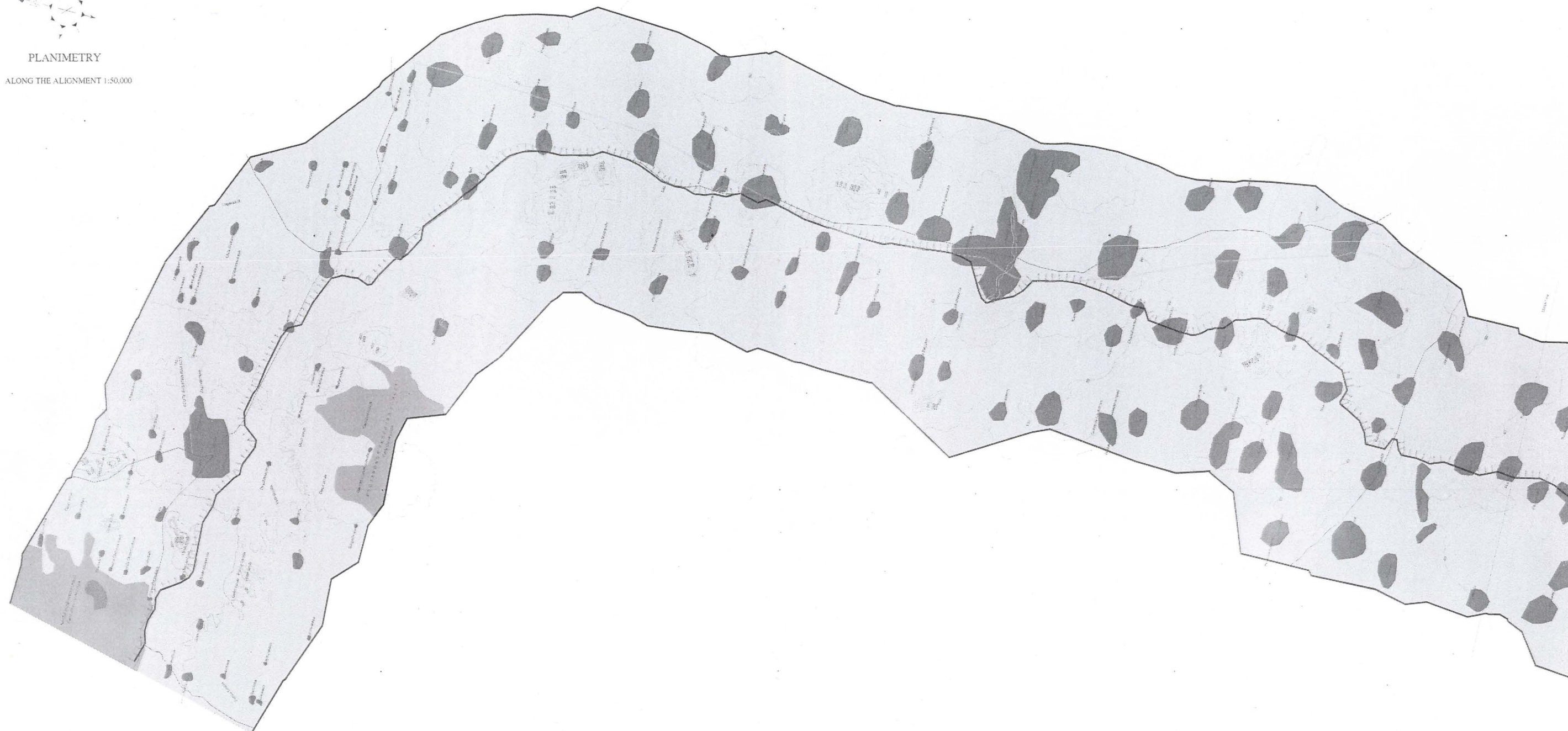
- Pipeline Corridor
- Detour Pipeline Corridor

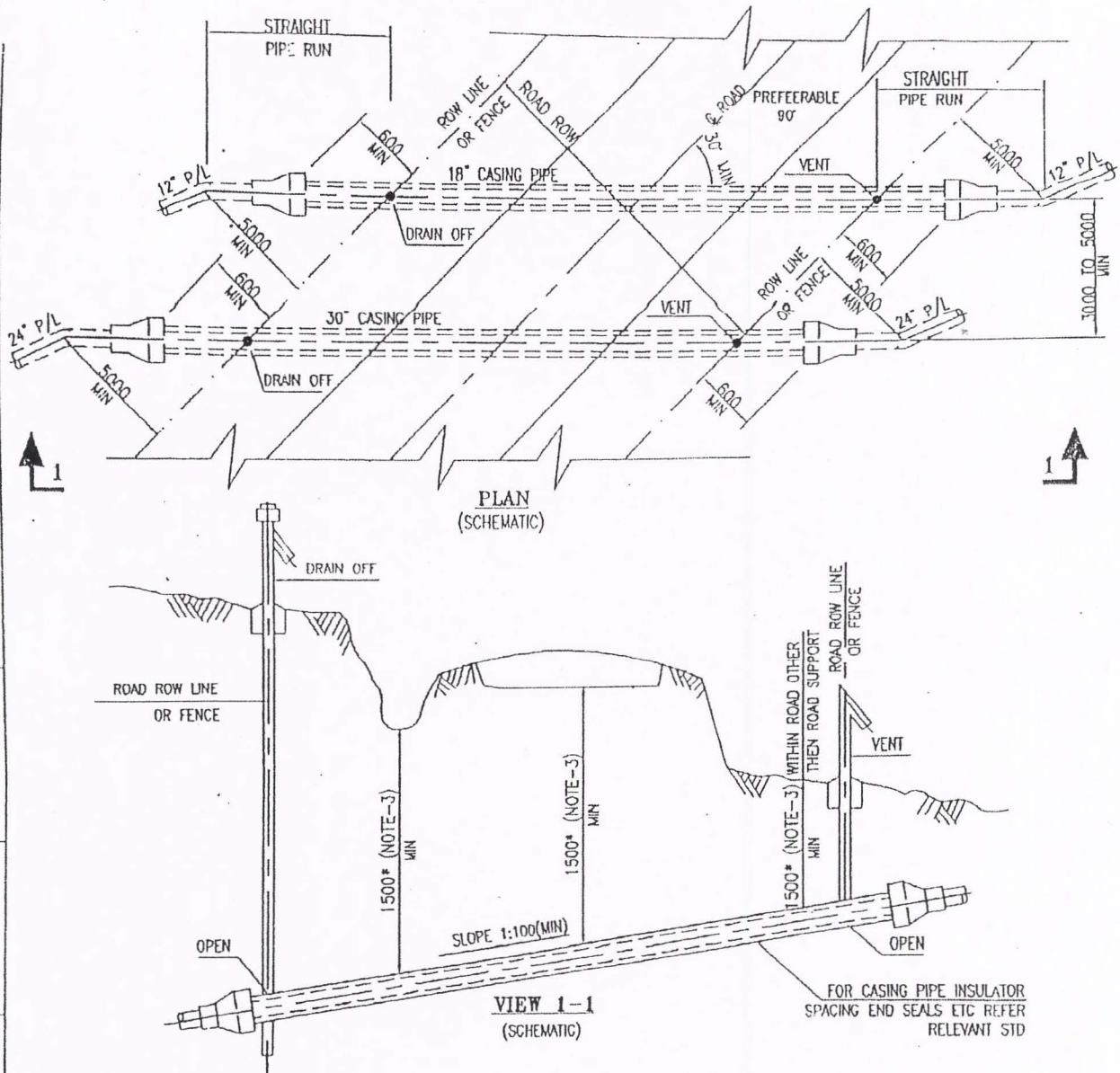
VIZAG



PLANIMETRY

ALONG THE ALIGNMENT 1:50,000

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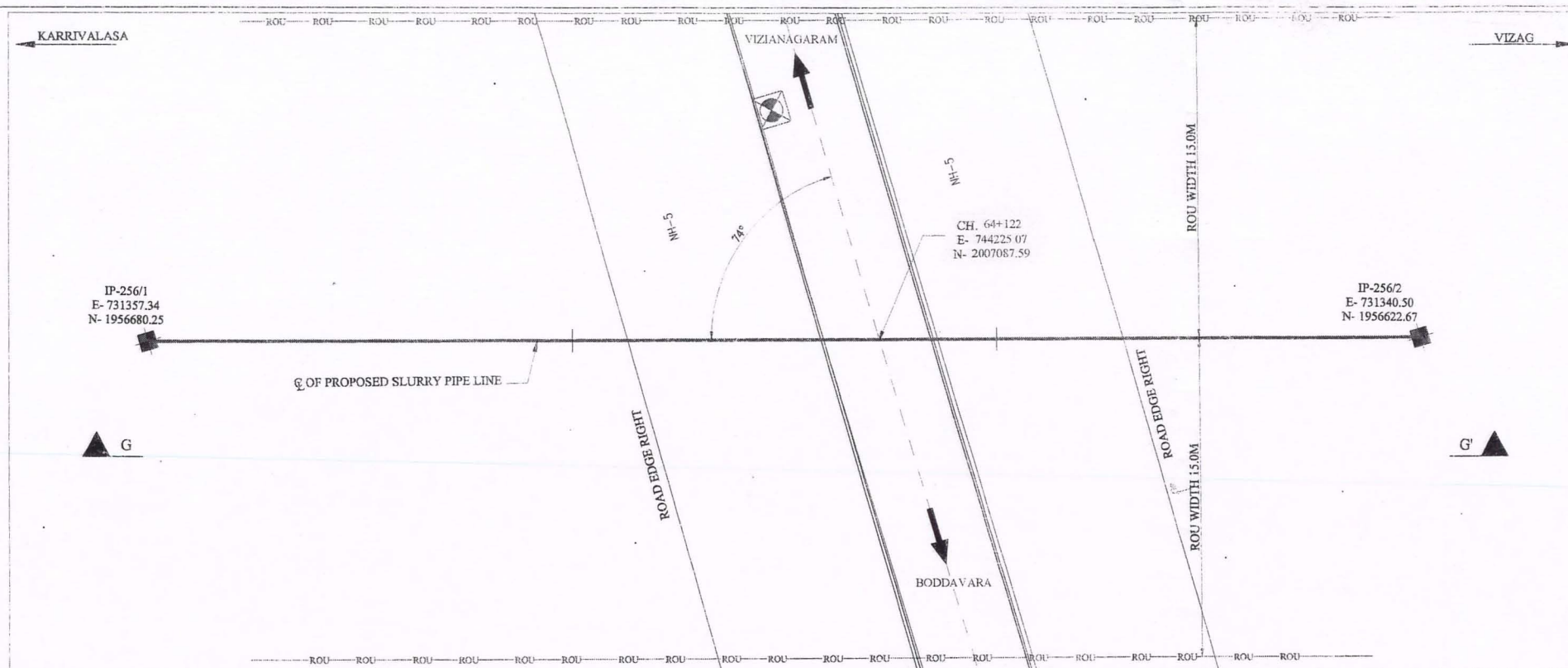
NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2. REFER API RP 1102 (LATEST EDITION) FOR OTHER DESIGN AND INSTALLATION REQUIREMENTS.
3. (*)AS PER REQUIREMENT OF CHHATTISGARH UNDERGROUND PIPELINE ACT 2004
4. CASING PIPE DIAMETER SHALL BE MINIMUM THREE NOMINAL PIPE SIZES LARGER THAN CARRIER PIPE DIAMETER OR AS PER APPROVED DRG OF COMPETENT AUTHORITY.
5. AT EACH CROSSING PIPELINE CROSSING WARNING SIGN SHALL BE INSTALLED ON EITHER SIDE OF CROSSING MAY BE USED FOR MOUNTING OF WARNING PLATE.
6. ALL PIPELINE JOINTS SHALL BE RADIOGRAPHED.
7. AFTER INSTALLATION OF CASING AND CARRIER PIPES THE PIT BESIDE THE ROAD SHALL BE RESTORED TO THE SATISFACTION OF ROAD AUTHORITIES/ COMPANY.
8. PIPELINE SECTION SHALL BE PRETESTED HYDROSTATICALLY SEPARATELY FROM THE MAIN LINE TESTING AS REQUIRED BY ENGINEER INCHARGE OR AS PER THE DIRECTIONS OF THE CLIENT.
9. ANGLE OF INTERSECTION BETWEEN PIPELINE AND THE ROAD/ HIGHWAY SHALL BE AS CLOSED TO 90° AS BUT IN NO CASE LESS THAN 30°.
10. MINOR VARIATION IN PIPE DIAMETER MAY OCCUR AFTER FINAL DESIGN.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				
© THIS DRAWING IS PROPERTY OF MECON AND IS ISSUED FOR THE SPECIFIC PROJECT MENTIONED THEREIN. THIS IS NOT TO BE COPIED OR USED FOR OTHER PROJECTS UNLESS EXPRESSLY PERMITTED BY MECON.							
SECTION:		OIL & GAS		PIPELINE ROAD/ HIGHWAY CASED CROSSING			मेकॉन लिमिटेड
DSGN	AK	CHKD	SK				MECON LIMITED
DRWN	SUNIL						
APPROVED							(R. K. NARAYAN)
						DRG. NO. HEC/U999/05/28/05/001	

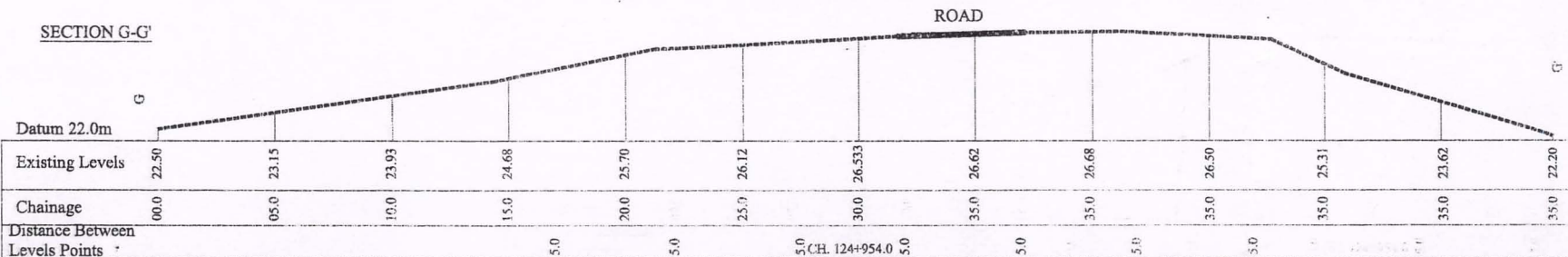


SCALE:
ALONG THE ALIGNMENT 1:100
ACROSS THE ALIGNMENT 1:100



GROUND PROFILE
SCALE:
HORIZONTAL 1:100
VERTICAL 1:100

SECTION G-G'

[illegible]



NMDC LIMITED
HYDERABAD

SLURRY PIPELINE, IRON ORE BENEFICIATION PLANT, PELLET
PLANT AND WATER PIPELINE PROJECT

SLURRY PIPELINE SYSTEM

**TECHNICAL SPECIFICATION
FOR
PIPELINE CROSSINGS USING HORIZONTAL
DIRECTIONAL DRILLING METHOD**



MECON LIMITED
DELHI

No.MEC/05/28/Q794&Q796/TS/SP01

20/6/2020
V. AJIT KUMAR
GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

REV. 04
02/03/2019

MECON LIMITED DELHI	STANDARD TECHNICAL SPECIFICATION OF PIPELINE CROSSINGS USING HORIZONTAL DIRECTIONAL DRILLING METHOD		
	SPECIFICATION NO : MEC/S/05/28/75		
OIL & GAS SECTION	REV 0, EDITION - 1	Page 1 of 11	
	SERVICE – GAS/LIQUID/SLURRY		

1.0 **SCOPE**

- 1.1 This specification covers the minimum requirements for various activities to be carried out by the Contractor for the engineering and construction of pipeline crossing using directional drilling method.
- 1.2 This specification shall be read in conjunction with the requirements of specification and other documents included in the CONTRACT between owner and Contractor.
- 1.3 Contractor shall, execute the work in compliance with laws, by laws, ordinance and regulations. Contractor shall provide all services, labour, inclusive of supervision thereof, supply of all materials (excluding "Owner supplied Material), equipment , appliances etc..
- 1.4 Contractor shall take full responsibility for the stability and safety of all operation and methods involved in the work.
- 1.5 Contractor shall be deemed to have inspected and examined the work area and its surroundings and to have satisfied himself as far as practicable with the surface conditions, hydrological and climatic conditions, the extent and nature of the work and materials necessary for the completion of the work, and the means of access to the work area.
- 1.6 Contractor shall be deemed to have obtained all necessary information with regard to risks, contingencies and all other circumstances, which may influence the work.
- 1.7 Contractor shall, in connection with the work, provide and maintain at his own costs all lights, guards, fencing, as necessary or directed by Owner or their representative.
- 1.8 For the purpose of this specification, the following definitions shall hold.
- The words 'Shall' and 'Must' are mandatory.
 - The words 'Should, May and Will' are non mandatory, advisory, or recommendatory.
- 1.9 Contractor shall provide free of charge reasonable facilities to Owner's personnel to witness all stages of construction.

2.0 **REFERENCE DOCUMENTS**

Reference has been made in this specification to the latest edition (edition enforce at the time of issue of enquiry) of the following codes, standards and specifications :

- a. ASME B 31.4 : Pipeline Transportation Systems for Liquids and Slurries
- ASME B 31.8 : Gas Transmission and Distribution Piping Systems.

20/6/2022
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MECON LIMITED DELHI	STANDARD TECHNICAL SPECIFICATION OF PIPELINE CROSSINGS USING HORIZONTAL DIRECTIONAL DRILLING METHOD		
	SPECIFICATION NO : MEC/S/05/28/75		
OIL & GAS SECTION	REV 0, EDITION - 1	Page 2 of 11	
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- c. OISD 226 : Natural Gas Transmission Pipeline and City Gas Distribution Network.
- d. MECON's Standards : Navigable Waterway Pipeline Crossing Warning Sign MEC/S/05/21/10
- e. MECON's Standards : Standard Specification for Pipeline Construction MEC/S/05/21/01

In case of conflict between the requirements of this specification and the above referred documents, the requirements of this specification shall govern.

3.0 **DESIGN AND ENGINEERING**

3.1 The limits of each crossing shall be determined by the Contractor on the basis of crossing profile based on survey drawings, design, equipment, installation technique and site condition. Contractor shall furnish all engineering design calculation and crossing drawings etc. to owner for their approval prior to execution of the work.

3.2 Within the entire limits of crossing, the minimum cover to top of coated pipe shall be as specified in the Special Conditions of Contract (SCC).

However, wherever the drilled length for a crossing includes the crossings of obstacles such as roads, railroads, canals, streams, etc. The following minimum requirements of cover to the pipe shall be satisfied unless specified otherwise in the scope of work in SCC.

For Road Crossing : 1.4 m from top of road to top of pipe.

For railroad crossing : 1.7 m from base of Rail to top of pipe.

For canal crossing : 1.5 m from lowest bed level to top of pipe.

In case the pipeline crosses other utilities, viz., other pipelines, sewers, drain pipes, water mains, telephone conduits and other underground structures, the pipeline shall be installed with at least 500 mm free clearance from the obstacle or as specified in the drawing or such greater minimum distance as may be required by authorities having jurisdiction. Also in all cases, the minimum covers specified above shall be maintained within the entire limits of crossing.

3.3 The entry and exit points of the pipeline at ground level shall not come within the limits of crossing as defined in the crossing drawings.

3.4 Contractor shall carry out calculations for determining the maximum permissible overburden on pipe, to check that the empty pipeline is safe from collapse at any point along the drilled crossing section. Contractor shall submit these calculations to Owner for approval.

20/6/2008
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OIL & GAS SECTION	REV 0, EDITION - 1	Page 3 of 11	
	SERVICE – GAS/LIQUID/SLURRY		

3.5 Pipeline Axis

The plane containing the pipeline route axis shall be perpendicular to the horizontal plane. There shall be no bending of the pipeline route axis at depths shall lower than 2 meters below ground level.

3.6 Back-reamed hole and Pipeline Interface

3.6.1 Contractor shall derive combination of:

- Back-reamed hole diameter
- Bentonite density
- Pipeline submerged weight in bentonite (and means to achieve that weight)

to optimise the crossing design in terms of pipeline stresses and power requirement

3.6.2 Contractor shall indicated what maximum shear stress in the pipeline coating will result from his choice of above parameters and other characteristics described in this section.

3.6.3 Contractor shall furnish all calculations for Owner's approval. If shear stress in pipe coating is, in the opinion of Owner, beyond the permissible limits, Contractor shall revise his choice of parameters to reduce shear stress on pipe coating to permissible value.

3.7 Contractor shall determine in the minimum allowable elastic bend radius for pipe from the following consideration:

3.7.1 Maximum Longitudinal Stress During Installation

Total maximum longitudinal stress in the pipeline due to tension and bending at any location shall not exceed 90% of the SMYS of the pipe material.

Contractor shall, in order to check this requirement, evaluate the maximum tensile forces to which the pipeline is subjected to at any phase of its installation during the pulling operation.

3.7.2. Maximum Equivalent Stress During Final Hydrostatic Test

After installation, the pipeline shall be hydrostatically tested to a minimum test pressure equal to 1.4 times the design pressure or at a pressure stipulated in the Special Conditions of Contract whichever is higher. However, during hydrostatic testing, the combined equivalent stress in the pipeline due to bending and test pressure shall not exceed 90% of the SMYS of pipe material.

20/6/2020
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GENERAL MANAGER
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MECON LIMITED DELHI	STANDARD TECHNICAL SPECIFICATION OF PIPELINE CROSSINGS USING HORIZONTAL DIRECTIONAL DRILLING METHOD		
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3.7.3 Maximum Equivalent Stress During Service

Permissible values of maximum equivalent stress during services shall be governed by the requirements of ANSI B 31.8/B 31.4 as applicable. The details of pipeline operating parameters are provided in the Special Conditions of Contract.

3.7.4 The minimum allowable radius of curvature for the pipeline shall be the highest value of the minimum pipeline elastic radius as computed from the considerations outlined in clause 2.7.1 to 2.7.3 above after correction for drilling inaccuracies or multiplication by the factor 1.85, whichever results in the highest permissible value of minimum elastic bend radius.

3.7.5 Contractor shall submit all calculations for Company's approval alongwith procedure.

3.8 **Pipeline Configuration along the Support String Before Entry Point**

3.8.1 Contractor shall determine the required pipeline configuration in order to allow smooth pull in the crossing entry point and admissible stress in the supported pipeline string. Pipeline combined stress shall not exceed 95% of the specified minimum yield strength for line pipe material.

3.8.2 Contractor shall furnish all calculation and specify the number of required supports, description of the supports, their co-ordinates and capacity in metric tons.

3.8.3 Contractor shall also furnish a drawing of the launching ramp indicating the pipeline configuration.

3.8.4 The distance between each roller shall also be specified and justified.

3.9 Contractor shall, based on result of design and engineering carried out by him, prepare construction drawings for the crossing and shall submit the same for Owner's approval. Construction drawings shall indicate the pipeline profile with levels furnished at sufficient intervals for proper control during construction. Other relevant details viz., entry and exit angles, radius of bends, etc. shall also be indicated. Contractor shall also calculated the total length of pipeline required as well as the maximum tension required on the pull head of the rig.

3.10 All construction works shall be carried out in accordance with the construction drawings approved by Owner.

3.11 Before commencement of any field work, Contractor shall furnish for Owner's approval all design calculations and construction drawings as stipulated in the above clauses.

CONSTRUCTION

Contractor shall comply with all the conditions and requirements issued by Authorities having jurisdiction in the area where the work is to be performed.

20/6/2022
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GENERAL MANAGER
SLURRY PIPE LINE PROJECT
MDC LTD., JAGDALPUR

MECON LIMITED DELHI	STANDARD TECHNICAL SPECIFICATION OF PIPELINE CROSSINGS USING HORIZONTAL DIRECTIONAL DRILLING METHOD		
	SPECIFICATION NO : MEC/S/05/28/75		
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	SERVICE – GAS/LIQUID/SLURRY		

If no public road exists, Contractor shall arrange on his own for access to his work area at no extra cost to owner.

4.1.0 **Installation Procedure**

4.1.1 Contractor shall, before commencing any work at site, submit for Owner's approval a detailed installation procedure.

4.1.2 The installation procedure as a minimum shall include the following:

a) **Project Organisation Chart:**

This shall indicate Contractor's organisational set-up at site and manpower deployment.

b) Details of fabrication yard and launching areas.

c) **Details of Equipment :**

Contractor shall furnish the complete list of all equipment to be deployed for preparation of pipe string and installation of crossing. Technical characteristics and capacity of each equipment including instrumentation, monitoring and control equipment shall be furnished in details.

d) Pipeline string preparation details (hauling, stringing, welding etc.)

e) Hydrostatic test procedure (pre and post installation)

f) Disposal methodology of bentonite slurry.

g) Method of installation covering all steps of construction, viz. Rig up, Pilot hole, Back-Reaming, Pulling Down, Backfilling etc.

h) Calculation for maximum pulling force on the rig and recommended maximum pulling velocity.

i) Time schedule for construction.

4.1.3 The time schedule shall be in accordance with overall time schedule for the project.

4.1.4 Approval by Owner of the methods used by Contractor shall in no way relieve Contractor from the sole responsibility for safe and satisfactory installation, working and operational use of the pipeline crossing.

4.2

Pipe String Preparation

Complete pipe string shall be prepared as a single string for pulling. Welding,

20/6/2010
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 SLURRY PIPE LINE PROJECT
 JAGDALPUR

MECON LIMITED DELHI	STANDARD TECHNICAL SPECIFICATION OF PIPELINE CROSSINGS USING HORIZONTAL DIRECTIONAL DRILLING METHOD		
	SPECIFICATION NO : MEC/S/05/28/75		
OIL & GAS SECTION	REV 0, EDITION - 1	Page 6 of 11	
	SERVICE – GAS/LIQUID/SLURRY		

radiographic inspection of joints and joint coating of the string shall be performed in accordance with the respective applicable specifications included in the Contract document.

4.3 Pre-testing

4.3.1 Contractor shall hydrostatically pre-test the complete pipe string of each crossing before installation as per approved procedure for a minimum period of 24 hours.

4.3.2 After pre-testing, joint coating of the welds shall be done as per specification for specific field joint coating of pipeline for HDD crossing included in the contract document

4.3.3 The section of the pipeline corresponding to the crossing shall, before installation, be subjected to hydrostatic test pressure as stipulated in the Special Conditions of Contract. During the test, Contractor shall check all welds for leakage. Failure, if any, during the test shall be rectified by the Contractor.

4.4 Gauging

4.4.1 Before pre and post installation hydrostatic testing, Contractor shall prove the diameter of the pipeline by passing a gauging pig through the pipeline. The gauging pig shall have a diameter equal to 95% of the nominal internal diameter of the pipe. Contractor shall supply and install all temporary scraper launchers/ receivers and other equipment, piping and materials and consumables required for the purpose.

4.5 Installation

4.7.1 Installation shall be done in accordance with approval installation procedure.

4.7.2 The lateral offset of the actual exit point of the pilot hole from the calculated and theoretical exit point shall not exceed half per cent (0.5%) of the length of the crossing.

4.7.3 The length tolerance shall not exceed one per cent of the crossing length, subject to the condition that the actual exit point shall not be within the limits of crossing as defined in the approved drawings.

4.7.4 Back reaming shall be done separately from the pipeline pulling operation. The size of the back-reamed hole shall be adequate (approximately 1.5 times the pipeline diameter) to allow enough clearance for a smooth pull-back of the pipeline.

4.7.5 Contractor shall be responsible for maintaining the drilled hole till such time the pipeline is pulled in.

During pulling operation, the buoyancy of the pipeline shall be controlled by suitable approved methods so as to maintain the buoyancy as close as possible to zero during pull-back in order to reduce friction forces of the pipeline in the hole.

28/6/2020
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GENERAL MANAGER
SLURRY PIPE LINE PROJECT
NMDC LTD., JAGDALPUR

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4.7.7 Bentonite slurry of specified viscosity shall be pumped into the hole, preventing the wall from collapsing and protecting the pipeline coating.

4.6 **Contractor shall be responsible for the integrity of the corrosion coating.**

4.6.1 Before pull-back operation, megger test shall be done for the entire pipeline (externally corrosion coated) string made for crossing by HDD method.

4.6.2 After pull-back operation to ensure the integrity of pipeline coating, again megger test shall be done for the bored string before tied-in to the mainline pipe. The megger value before & after pulling operation of the pipeline string shall be nearly same and acceptable to Owner.

4.6.3 However, if, in Owner's opinion, the integrity of external corrosion coating of bored pipeline string is not established by above (Clause No: 3.6.1 & 3.6.2), then further in order to ensure the integrity of coating of the bored pipeline string, megger test of the coating shall be carried out in accordance with the following steps:

- The test must be carried out before the bored pipe is tied-in to the mainline pipe
- Measure the natural potential of the bored pipe at both ends.
- Set up the temporary impressed current system with a digital multimeter connected to measure the output current. Position the test electrode anode as far from the bored pipe as interconnecting cable will allow and no closer than 10 meters.
- Place the reference electrode at the remote end (opposite to impressed current system) to monitor the bored pipe potential
- Impress a current into the bored pipe start at Zero amp. and increase slowly until the bored pipe potential is depressed to 1.5 V with respect to the reference electrode.
- Note the current from the digital multimeter and calculate the current density.
- The desirable value of calculated current density should be less than 70 micro ampere per square meter of drilled pipe surface in contact with the soil.

4.6.4 If Contractor again fails to establish the integrity of coating of the bored pipeline string and the same is not acceptable to Owner, the above works shall not be continued further until the cause analysed and rectified by the Contractor to the entire satisfaction of Owner.

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4.7 Final Hydrostatic Test

4.7.1 The complete crossing section shall be tested after installation. The test pressure shall be as stipulated in the Special Conditions of Contract. After temperature stabilisation, pressure shall be retained in the pipeline for a period of 6 hours and recorded by manothermograph. The hydrostatic testing shall be carried out in accordance with approved procedures and specification detailed elsewhere in the document.

4.7.2 Test Procedure

Contractor shall prepare for Company's approval a hydrostatic test procedure manual for pre-testing and post-installation testing of pipeline. The test procedure manual shall include, but shall not be limited to, the following items:

- a. For the pipe section to be tested, a diagram indicating all fittings, vents, valves, temporary connections, relevant elevations and ratings. The diagram shall also indicate injection locations and intake and discharge lines.
- b. Estimated amount of test water, water source, including required concentration of corrosion inhibitors and additives, procedure for inhibitor injection and control of concentration.
- c. Filling and flushing procedures, including a complete description of all proposed equipment and instruments (including spares), their location and set-up.
- d. The type and sequence of pigs and the pig tracking system for cleaning and removal of air pockets, pig inspection procedures, including procedure to be followed in case the gauging pig indicates damage.
- e. Procedures for levelling and stabilization after filling and for pressurization and to allow for temperature stabilization.
- f. Pressure testing procedure including a complete description of all proposed equipment and instruments (including spares), their location and set-up, and proposed system for observation and recording of data during the pressure test.
- g. All calculations including air-volume calculations and pressure change due to temperature change calculations.
- h. Procedure for detection and location of leaks.
- i. Procedure for safe dewatering the pipeline section after testing, including a complete description of all proposed equipment and instruments (including spares), their location and set-up, the type and sequence of pigs and the pig tracking system along with the pig specifications.

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j. Forms for recording the testing data.

- 4.7.3 Contractor shall furnish all necessary equipment & instrumentation for performing the work including all temporary piping, hydro test header and scraper launcher / receiver etc.
- 4.7.4 The test medium shall be fresh water to be arranged by the Contractor. The water to be used shall be filtered, shall not be contaminated, and free from sand or silt. Contractor shall submit laboratory test reports of water used for testing. Contractor shall provide Company approved corrosion inhibitors, oxygen scavengers and bactericides to be added to the test water. Contractor shall furnish and install all temporary piping, which may be necessary to connect from source of water to its pumps and manifolds / tankage.
- 4.7.5 Before filling operation, Contractor shall clean the pipeline by air driven pigs provided with spring loaded brushes and cups to remove all mill scale, rust / sand from the internal of pipe sections.
- 4.7.6 The hydrostatic test shall be considered as positive if pressure has kept a constant value throughout the test duration, except for changes due to temperature effects, and there is no abrupt pressure drop throughout the test duration.

If test section fails to maintain the specified test pressure after isolation, Contractor shall determine by search the location of leakage or failure. All leaks and failures within the pipe wall or longitudinal seam shall be repaired by replacement of entire joint or joints in which leakage or failure occurs. In those cases where leaks occur in circumferential welds the method of repair shall be determined by Company. Contractor shall comply with instructions of the Company whether to replace a section of the line pipe that includes the line leak or whether to repair the circumferential weld. This repair should, however, meet the requirements of welding specification contained herein. Where failures occur in pipeline field bends, bends shall be replaced with same degree of bends. After completion of repairs, the hydrostatic test shall be repeated in full, as per the approved procedures.

All work of reinstating line pipe, to replace failures, shall be done in accordance with the specifications contained herein.

Contractor shall haul and stockpile all damaged and defective pipes to storage locations designated by the Company. All cracks and splits resulting from failures shall be coated with an application of grease to preserve the characteristics of failures from corrosion. Joints of failed pipes shall be marked with paint, with a tag indicating failure details, date and location of failure and pressure at which failure occurred.

4.7.7

After completion of successful hydrotest of the above portion, the pipeline shall be capped and buried. Pipeline end position on the banks shall be marked on the ground by installing location markers on both banks approved by Company.

20/6/2020
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UNIT RATES - VILLAGE WISE

District Name	VIZIANAGARAM	Mandal Name	GANTYADA
City/Town/Village	KOTARUBILLI	Survey No.	Select ▼ ←To view Survey No. Wise Details

S.No.	Habitation	Nature Of Use	Land Rate Rs. per Acre	Effective Date (dd/mm/yyyy)
1.	KOTARUBILLI	Dry land	900,000	10/08/2020
2.	KOTARUBILLI	Wet Land double crop	900,000	10/08/2020
3.	KOTARUBILLI	Coconut Garden	900,000	10/08/2020
4.	KOTARUBILLI	House Sites	8,712,000	10/08/2020
5.	KOTARUBILLI	Agricultural Land fit for H.S.	3,500,000	10/08/2020
6.	KOTARUBILLI	Land abutting NH/SH/ZPP/MPP	950,000	10/08/2020

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Note :

1.This is provisional information as per records maintained by registration department for the purpose of helping the registering public to estimate the stamp duty only, subject to change due to revision of market value once in a year OR adhocly due to anomalies.

2.For further details contact Sub Registrar office

VIJAYANAGARAM (WEST),

NEARCOLLEC,ROFFICE,CON,NMENT, Vizlanagaram

Vizlanagaram

Phone : 230259