



सत्यमेव जयते

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार)

National Highways Authority of India

(Ministry of Road Transport and Highways, Government of India)

परियोजना कार्यान्वयन इकाई : कृष्णागिरी

Project Implementation Unit : Krishnagiri

259/1, सेलम मेन रोड, केएकेसी पेट्रोल बंक के पास, कृष्णागिरी (तमिलनाडु) - 635 001.

259/1, Salem Main Road, Near KAKC Petrol Bunk, Krishnagiri (Tamil Nadu) - 635 001.

टेलीफोन / Tel: 04343 234250

फैक्स / Fax : 04343 236208

ईमेल / Email : nhaikrishnagiri@gmail.com,

kri@nhai.org

वेब : www.nhai.gov.in



No. NHAI/11013/TWAD/2022/PIU-K'giri/ 729

28th March 2022

Invitation of Public Comments

Sub: NHAI, PIU, Krishnagiri- Laying of underground sewerage pipe line along the road from km.119/320 to km.120/350(RHS), km.120/950 to km.121/191(RHS), km.122/300 to km.122/935(RHS), km.122/900 to km.125/250(RHS), km.120/556 to km.120/646(LHS), km.122/300 to km.122/430(LHS), km.124/725 to km.125/150(LHS) and road crossing at km.120/080, km.122/300 & 125/150 and 179 nos of Machine holes on Krishnagiri – Walahpet section of NH-48 (Old NH-46) by Executive Engineer, Vellore City Municipality Corporation, Vellore – Reg.

The proposal is regarding permission for Laying of underground sewerage pipe line along the road from km.119/320 to km.120/350(RHS), km.120/950 to km.121/191(RHS), km.122/300 to km.122/935(RHS), km.122/900 to km.125/250(RHS), km.120/556 to km.120/646(LHS), km.122/300 to km.122/430(LHS), km.124/725 to km.125/150(LHS) and road crossing at km.120/080, km.122/300 & 125/150 and 179 nos of Machine holes on Krishnagiri – Walahpet section of NH-48 (Old NH-46) by Executive Engineer, Vellore City Municipality Corporation, Vellore submitted to this office on 18.03.2022.

2. The details of the proposal is as under:

- The above proposal pertains to the Laying of Underground Sewer System pipeline along the road from km.119/320 to km.120/350(RHS), km.120/950 to km.121/191(RHS), km.122/300 to km.122/935(RHS), km.122/900 to km.125/250(RHS), km.120/556 to km.120/646(LHS), km.122/300 to km.122/430(LHS), km.124/725 to km.125/150(LHS) and road crossing at km.120/080, km.122/300 & 125/150 and 179 nos of Machine holes on Krishnagiri – Walahpet section of NH-48 (Old NH-46)
- The details of ROW available along with the distance at which water pipeline is proposed to lay from the centerline is as follows:

G:\KRISHNAN -2\Access Permission\TWAD\PIU to CGM (T) & RO for approval-2.docx

(Signature)

कॉर्पोरेट कार्यालय: जी-5 और 6, सेक्टर-10, द्वारका, नई दिल्ली - 110 075. फोन: 011 - 25074100 वेबसाइट: www.nhai.gov.in
Corp. Office : G-5 & 6, Sector - 10, Dwarka, New Delhi - 110 075. Ph : 011 - 25074100 website : www.nhai.gov.in

S.no	Chainage Km.		Side	Length in m	ROW in Meters		Distance of Sewer pipeline from centreline of the Main Carriageway	
	from	To			RHS	LHS	RHS	LHS
1	119.320	119.400	RHS	0.080	31.50	29.48	30.50	-
2	119.400	119.600	RHS	0.200	30.29	30.95	29.29	-
3	119.600	119.800	RHS	0.200	32.38	30.95	31.38	-
4	119.800	120.000	RHS	0.200	32.38	30.95	31.90	-
5	120.000	120.200	RHS	0.200	31.98	32.30	31.98	-
6	120.200	120.350	RHS	0.150	30.10	30.95	29.10	-
7	120.950	121.000	RHS	0.050	22.50	23.44	21.50	-
8	121.000	121.191	RHS	0.191	25.60	23.00	24.60	-
9	122.300	122.400	RHS	0.100	27.00	22.00	27.00	-
10	122.400	122.600	RHS	0.200	27.00	23.00	26.00	-
11	122.600	122.800	RHS	0.200	27.60	30.00	27.00	-
12	122.800	122.935	RHS	0.135	27.00	23.00	26.00	-
13	122.900	123.000	RHS	0.100	27.00	23.00	26.00	-
14	123.000	123.200	RHS	0.200	26.00	23.00	25.00	-
15	123.200	123.400	RHS	0.200	22.00	25.00	21.00	-
16	123.400	123.600	RHS	0.200	24.80	24.34	23.80	-
17	123.600	123.800	RHS	0.200	25.20	25.83	24.20	-
18	123.800	124.000	RHS	0.200	25.20	26.44	24.20	-
19	124.000	124.200	RHS	0.200	24.80	23.88	23.80	-
20	124.200	124.400	RHS	0.200	25.20	25.34	24.20	-
21	124.400	124.600	RHS	0.200	25.00	29.71	24.00	-
22	124.600	124.800	RHS	0.200	26.30	28.25	25.30	-
23	124.800	125.000	RHS	0.200	26.10	29.54	25.10	-
24	125.000	125.150	RHS	0.150	25.00	31.8	24.00	-
25	125.150	125.250	RHS	0.100	25.00	27.59	24.00	-
42	120.556	120.646	LHS	0.090	34.60	33.60	-	32.60
43	122.300	122.430	LHS	0.130	27.00	22.00	-	21.00
44	124.725	124.800	LHS	0.075	26.3	28.25	-	28.25
45	124.800	125.000	LHS	0.200	26.1	29.54	-	28.54
46	125.000	125.150	LHS	0.150	25	31.80	-	30.80
				4.901				
Road Crossings at km.120/080, km.122/300 & 125/150 and 179 nos of Machine holes.								

3. Executive Engineer, Vellore City Municipality Corporation, Vellore proposed to lay sewerage pipe line along the road by open trench method and road crossings by HDD method. It is proposed to lay various dia pipes i.e. 200mm dia, 300mm dia,



400mm dia, 450mm dia & 500mm dia along the road by open trench method duly keeping the top of the pipe from 2.71m to 3.92m below the top of sub grade level. Further, the applicant has proposed to lay the various dia pipes i.e 500mm dia & 600mm dia pipes across NH by HDD method duly keeping the top of the pipe at a depth of various from 2.00m to 2.70m below the top of sub grade level.

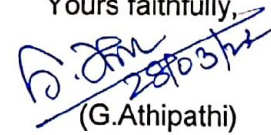
.4. Executive Engineer, Vellore City Municipality Corporation, Vellore furnished an undertaking to indemnify the concerned agency in coordination with NHAI, against all damages and claims if any, for laying water pipeline.

5. As per the guidelines issued by the Ministry vide letter No.RW/NH33044/29/2015/ S&R(R) dated 22.11.2016, the proposal submitted by Executive Engineer, Vellore City Municipality Corporation, Vellore will be made available for 30 days seeking public comments/objections and the comments shall be furnished within 30 days from the day of closure of public objections.

In view of the above, comments of the public on the above proposal are invited any may be sent to the below mentioned address:

The Project Director,
National Highways Authority of India,
Project Implementation Unit,
No.259/1, Salem Main Road,
Near KAKC Petrol Bunk,
Krishnagiri (T.N) - 635 001

Yours faithfully,


(G.Athipathi)

Project Director

Copy to:

1. Regional Officer, NHAI, Chennai Region, Chennai – for kind information.
2. NHAI website.
3. The NIC, New Delhi- for uploading in the Ministry's website.

To
The Project Director,
National Highway Authority of India,
Krishnagiri,
Tamilnadu.

Through Proper Channel

Sir,

Sub: Request for permission to lay underground sewerage pipe line on NH- 48 Along the Road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; & 122/300; & 120/080 & No of Machine holes – 179 nos of (Krishnagiri – Walajahpet Section) in the state of Tamilnadu, National Highways, Krishnagiri.

We M/s. Vellore City Municipal Corporation are a public service provider holding a category "A" License, National long distance license, Government of India, offering house sewerage line service throughout Vellore city.

Currently M/s. Vellore City Municipal Corporation is gearing for expansion of its service strength in Tamilnadu. In this regards we propose to lay underground sewer pipe line for a length of 4901 meters of NH-48 along the road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; & 122/300; & 120/080. & No of Machine holes – 179 nos of (Krishnagiri – Walajahpet section) in the state of Tamilnadu, National Highways, Krishnagiri, the copy of D.O.T along with location drawings in triplicate enclosed.

We kindly request your good self to give us permission to lay underground sewer pipe line, covering a length of 4901 meters & No of Machine holes – 179 nos as per the drawing enclosed. We will do the trenching as per the guidelines and remit the applicable charge on receipt of your demand note. We assure you that utmost care will be taken while laying our sewer pipe line, manhole as specified by the National Highways.

Thanking you,

Yours truly,

For M/s Vellore City Municipal Corporation,

Authorized Signatory

EXECUTIVE ENGINEER
VELLORE CITY MUNICIPAL CORPORATION

Dy. No.	2362
Date.	18/03/22
PD	<i>[Signature]</i> 21/05
Mgr (T)	
M (F & A)	

CHECK LIST FOR GETTING APPROVAL FOR LAYING OF
UNDERGROUND PIPE SEWER LINE AND CONSTRUCTION MANHOLE ON NH LAND

Permission for laying of Under Ground Sewer Pipe Line in NH - 48 Along the Road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. of (Krishnagiri - Walajahpet Section) by open trench and HDD method.

S.No	Item	Information/Status	Remarks
1.0	General Information		
1.1	Name and address of the Applicant	M/s. Vellore City Municipal Corporation, No - 1, Infantry road, Vasanthapuram, Vellore, 632001, Tamilnadu State.	
1.2	National Highway Number	NH-48 Road (Krishnagiri - Walajahpet Section)	
1.3	State	Tamilnadu	
1.4	Location	NH-48 Road (Krishnagiri - Walajahpet Section)	
1.5	Chainage in Km	Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS) ; Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; &120/080.	
1.6	Length in meters & No of Machine holes	4901m & 179 nos	
1.7	Width of available ROW		
	a) Left side center line towards increasing chainage / km direction	Marked in the Drawing	
	b) Right side center line towards increasing chainage / Km direction	Marked in the Drawing	
1.8	Proposal to lay the sewer pipe line		
	a) Left side from the center line of main carriageway	-	
	b) Right side from the center line of main carriageway	-	
1.9	Proposal to acquire land		
	a) Left side from Center line	Nil	
	b) Right side Center line		

1.10	Whether proposal is in the same side where land is not to be acquired	No	
	If not then where to lay the sewer	The sewer pipe line shall be laid at the extreme end of ROW	
1.11	Details of already laid service , if any along the proposed route	Nil	
1.12	Number of lanes (2/4/6/8 lanes) existing	6 lane with service road	

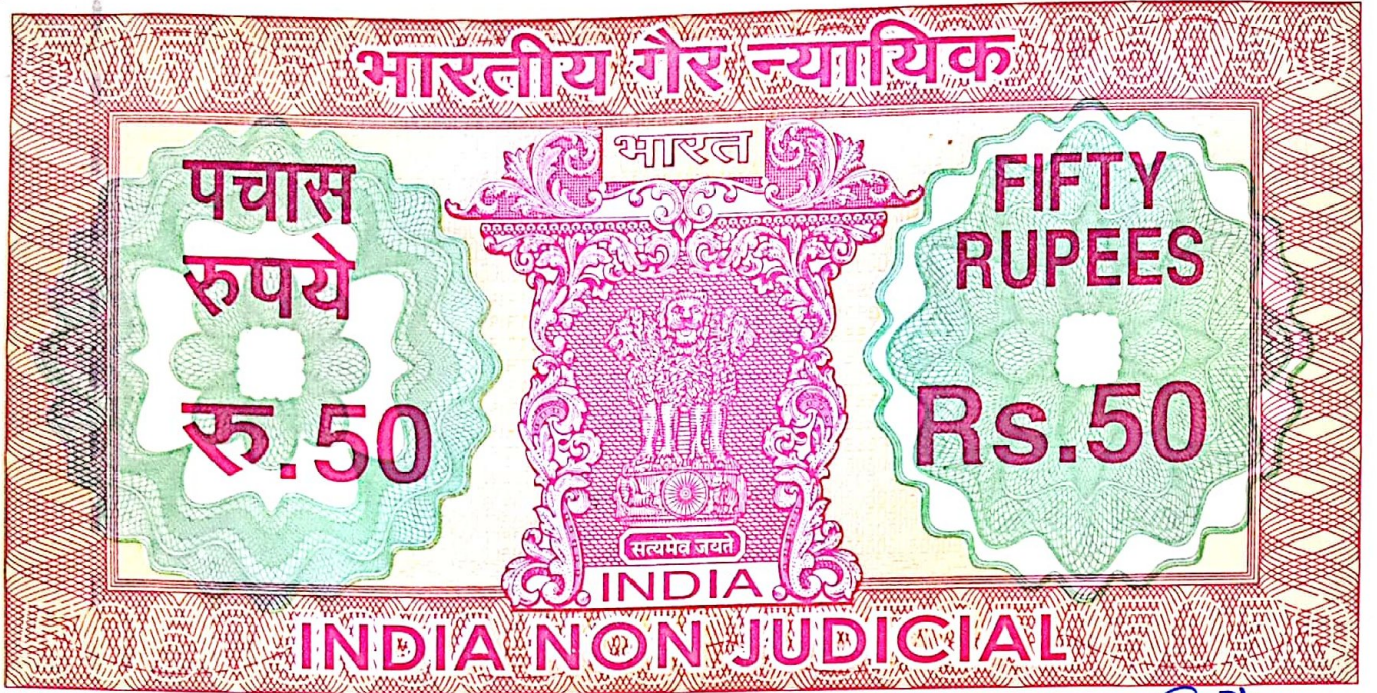
1.13	Proposed number of lanes (2 lane with paved shoulders / 4/6/8 lanes)		
1.14	Service Road existing or not	Yes	
	If yes, then which side		
	a) Left side from center line	Shown in the Diagram	
	b) Right side from center line	Shown in the Diagram	
1.15	Proposed service road	-	
	a) Left side from center line	-	
	b) Right side from center line	-	
1.16	Whether proposal to lay cable is after the service road or between the service road and main carriageway	After the service road along utility corridor at ROW edge.	
1.17	The permission for laying Underground sewer line shall be considered for approval / rejection	Considered for approval based on the ministers circular.	
	i) Whether the ROW is more than 45mts then the underground sewer line shall be laid at the edge of right of way within the utility corridor 2m width , duly keeping in view the future widening.	Yes	
	ii) Where the land is yet to be acquired for 4laning and the position of new carriageway has been decided than the cable shall be laid at the edge of right way within the utility corridor of 2m width, on that side of existing carriageway where extra land is not proposed to be acquire for 6 laning	NA	
	iii) Where the widening plan for 4- laning is not yet decided and available ROW is around 30m or less, a judicious decision would need be taken for permitting the laying of cable / duct. This could be within 1.5m to 2.0m of utility corridor at the edge of existing ROW , duly keeping in view the possible widening plans.	NA	
	iv) Where the ROW is restricted and adequate only to accommodate the carriageway, central verge, shoulders and drains (e.g. Highway in cutting through hilly/rolling terrain), the sewer line shall be laid clear of the drain.	NA	
1.18	Number of applicants on the same stretch	First	

1.19	Whether the case of multiple licenses	Single license	
1.20	If so furnish a joint implementation program to lay their respective ducts within stipulated time frame	NA	

1.21	If crossing of the road involved, if yes it shall only be through trench-less technology	Yes	
2.0	Document / Drawing enclosed with the proposals	Yes	
2.1	Cross section showing the size of trench for open trenching method (is it normal size of 1.65m deep × 1m wide) should not be greater than 1.5m in width in multiply cable for HDD method.	Yes	
2.2	Cross section showing the size of pit and location of cable for HDD method	Yes, Enclosed	
2.3	Strip plan / route plan showing the underground sewer line, chainage, width of ROW, distance of proposed, cable form the edge of ROW, important mile stone , intersection, cross drainage work etc.	Yes, showing in the diagram	
2.4	Methodology of laying of underground sewer line	Open trench and HDD	
2.4.1	Open trenching method. If yes, methodology of refilling of trench	Back fill the soil excavated with compaction @ every 300mm	
2.4.2	Horizontal direction drilling (HDD) method	Yes	
2.4.3	Laying of Underground Sewer Lines through Cd works.	NA	
3.0	Draft license agreement signed by two witnesses.	Yes	
4.0	Performance Bank Guarantee	Would be obtained after approval of the proposal.	
4.1	Performance BG as per ministry's circular no. RW/NH/33044/29/2015/S&R (R) (pt.) dated 22.11.2016 to be obtained @ Rs.100/- per meter length	Applicable at later date	
4.2	Confirmation of BG has been obtained as per NHAI guidelines.	BG shall be submitted as per NHAI guidelines.	
5.0	Affidavit/ undertaking from the applicant for	Yes	
5.1	Not to damage to other utility, if damage then to pay the losses either to NHAI or to the concerned agency.	Yes, Enclosed	
5.2	Renewal of Bank Guarantee	Yes, will be obtained after submission of BG	
5.3	Conforming all standard condition of NHAI's guidelines.	Yes, Enclosed	
5.5	Shifting due to 4laning / widening of NH	Yes, Enclosed	

5.6	Indemnity against all damages and claims as per clause (xxiv)	Yes, Enclosed	
6.0	Power of attorney in favor of authorized signatory	Yes, Enclosed	
7.0	Copy of DOT license	Yes, Enclosed	
8.0	Certificate from the Project Director	Yes	
8.1	Certificate for conforming of all standard condition vide ministry circular No. RW/NH-33044/17/2000- S&R dated 29.09.2000 and NHAI's guidelines issued vide No. NHAI/OEC/2k/vol.II dated 07.11.2000 and ministry's circular No. RW/NH-330044/27/2000-S&R® dated 21.03.2006 and ministry's guidelines Lr.No.RW/NH-33044/27/2005-S&R ® dated 21.09.2010 and Minister's circular No. RW/NH/33044/27/2005/ S&R ® (pt.) dated 06.08.2013 & RW/NH-33044/29/2015/ S&R ® (Pt.) dated 22.11.2016	Yes	
8.2	Certificate for six-laning 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 available at site for accommodating proposed six-laning.	Yes, Enclosed	
9.0	The agreement fee of Rs.1 shall be charged	Yes	
10.0	If NH section proposed to be taken up by NHAI on BOT basis-a clause in para-17 to be inserted in the agreement. "the permitted highway on which licenses has been granted the right of way to the concessionaire under the concession agreement for up-gradation of NH-48 along the road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. of (Krishnagiri- Walajahpet section) on build, operate and transfer basis and therefore the licenses shall honor the same.	N.A	
11	Who will supervise the work of laying of underground sewer line and construction manhole	Consultants	

12	Who will ensure that the defect in road portion after laying of underground Sewer Pipe Line area be rectified and if not rectified then what action will be taken.	M/s. Vellore City Municipal Corporation, No - 1, Infantry road, Vasanthapuram, Vellore, 632001, Tamilnadu State.	
13	Who will pay the claims of damages done/disruption in working of concessionaire, if asked by the concessionaire.	M/s. Vellore City Municipal Corporation, No - 1, Infantry road, Vasanthapuram, Vellore, 632001, Tamilnadu State.	
14	A certificate from PD that he will enter the proposed permission in the register of record of the permission in the prescribed preform (copy enclosed) issued viewed ministry circular no.RW/NH/33044/17/2000/S&R @ (Pt.) dated 22.11.2016	Enclosed	
15	If any pervious approval is accorded for laying of underground sewer pipe line then photocopy of register of records of permissions accorded as maintained by PD (per Ministry circular no. RW/NH/33044/17/2000/S&R, dated 23.07.2003 & 06.08.2013) & RW/NH-33044/29/2015/S&R @ (Pt.) dated 22.11.2016 as referred in para 13 above is enclosed or not	Yes	



தமிழ்நாடு தமில்நாடு TAMILNADU

10/03/2022

VELLORE CORPORATION

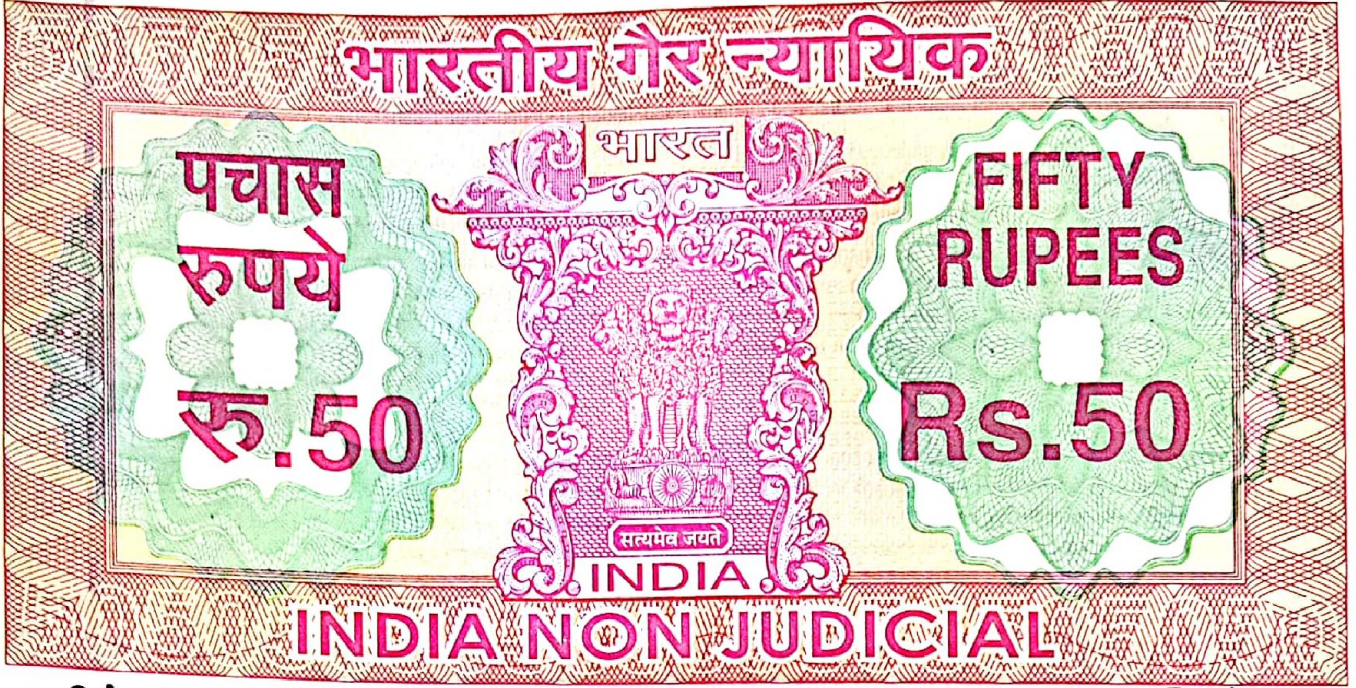
G. Ph
BE 730403
G. ராமலிங்கரன்
முத்திரைத்தாள் விற்பனையாளர்
L.No. 7/MLR/2021
No. 79, மாணியம்மன் கோவில் தெரு.
அடுக்கம்பாறை, வேலூர் - 632 001

AGREEMENT REGARDING GRANTING OF RIGHT OF WAY
PERMISSION FOR UTILITY SERVICE ON NATIONAL HIGHWAYS

Agreement to lay Underground Sewer Pipe Line and Construction Manhole in NH-48 Along the road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); Km.120/915 to Km.120/990 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. for a total length of 4901m & No of Machine holes – 179 nos of (Krishnagiri – Walajahpet section) in the state of Tamilnadu, National Highways, Krishnagiri.

This Agreement made this _____ day of _____ (month) _____ of (year) between _____ acting in this executive capacity through _____ (herein after 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, an M/s. Vellore Municipal Corporation, No – 1, Infantry road, Vasanthapuram, Vellore, 632001, Tamilnadu State, a company registered under the companies Act, 1956 and having its Registered Office at (hereinafter called the "Licensee") Which expression shall unless excluded by repugnant to the context, include his successors/ administrator assignees on the second part.

EXECUTIVE ENGINEER
VELLORE CITY MUNICIPAL CORPORATION



தமிழ்நாடு தமிழ்நாடு TAMILNADU

10/03/2022

VELLORE CORPORATION

G.Rh

BE 730401

ச.ராமநாதன்

முத்திரைத்தாள் விற்பனையாளர்

L.No. 7/VLR/2021

No. 79, மாணியம்மன் கோவில் தெரு.

அடுக்கம்பாறை, வேலூர் - 632 001

Whereas the authority is responsible, inter-alia, for development and maintenance of lands in NH-48 Along the Road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. for a total length of 4.90 km & No of Machine holes - 179 nos of (Krishnagiri - Walajahpet section) in the state of Tamilnadu, National Highway, Krishnagiri.

Whereas the licensee proposes to lay Underground Sewer Pipe line and construction manholes, referred to as utility service in subsequent paras.

Whereas the licensee has applied to the authority for permission to lay Underground Sewer Lines and Construction Manhole in NH-48, Along the Road from Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. for a total length of 4.90 km & No of Machine holes - 179 nos of (Krishnagiri - Walajahpet section) in the state of Tamilnadu, National Highways, Krishnagiri.

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 witness that in consideration of the conditions hereinafter contained and on the part of the Licensee to be observed and performed, the Authority hereby grants to the Licensee permission to lay utility service as per the approved drawing attached here to subject to the following condition, namely;

- 1) ROW permission 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 provision / 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 licensee fee shall become payable from the date of handling over of Row land to the licensee, for laying of utilities / cable / conduits/ pipelines for infrastructure/ service provider. As regards tariff and terms and condition for providing common utility ducts along National Highway's, 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 license agreements. In case of renewal, rate prevailing at the time of renewal shall be changed. Delay in deposition of fee shall attract interest @ 15% per annum compounded annually.
- 6) Present policy of the MORTH is to provide a 2.00 m a wide utility corridor on either side of the extreme edge of Row. In case where utility ducts with sufficient space are already available along NH, the utility service shall be laid in such ducts subjects 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, shoulder, slopes of embankment, drains, other road side furniture etc.; the utility services shall be laid beyond the toe line of the embankment and clear of the drains.
- 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 service may be carried outside the railing / 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. Addition 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 service can be allowed beneath the carriageway of service road, if available subject to be 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 need to ensure that the maintenance of the utility service 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 service shall be at least 0.6 meter below the ground level. However, any structure above ground shall be aesthetically provided for / landscaped with required safety measures as direction by the concerned Authority.
- 11) The utility service shall be permitted to cross the National Highways 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 specification of the ministry.
- 12) Existing drainage structure shall not be allowed to carry the lines across.
- 13) The top of the casing/conduit pipe containing the utility service to cross the road shall be at least 1.2m above the top of the subgrade 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. Installed by boring method shall be preferred.
- 16) In case of trenching, the side of the trench should be done as nearly vertical as possible. The trench width should be at least 30cm, but not more than 60cm wider than the outer diameter of the pipe. Filling of the trench shall conform to the specification contained here-in-below or as supplied by the Highway Authority.
 - (i) Bedding shall be to a depth not less than 30cm. it shall consist of granular materials, 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.
 - (ii) The backfill shall be completed in two stages a) side-fill to the level of the top of the pipe. b) overfill to the bottom of the road crust.
 - (iii) The side fill shall consist of granular material laid in 15cm. Layers each consolidated by mechanical tamping and controlled addition of moisture to 95% of the proctor's density. Overfill shall be compacted to the same density as the material that has been removed. Consolidation by saturation or ponding will not be permitted.
 - (iv) The road crust shall be built to the same strength as the existing crust on either side of the trench or to thickness and specification 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 50cm away from the edge of the right of way.

- 18) All required restoration work subsequent to laying of the underground sewer line and construction manhole 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 any services etc. in case of 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.
- 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 Licensee 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 days in advance with route details prior to digging trenches, for fresh or maintenance/repair works. A separate performance Bank guarantee for maintenance/repair works shall have to be furnished by the Licensee.
- 27) Each day, the extent of digging the trenches should be strictly regulated so that utility service 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 deposit of fee shall attract interest @ 15% per annum compounded annually.
- 30) The permission shall be valid only for 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 co-ordination 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/and/property. Other than what is herein expressly granted. No use of NH ROW will be permitted for any purpose other than that specified in the Agreement.
- 33) During the subsistence of this Agreement, the utility services located in highway land /

property shall be deemed to have been constructed and continued only by the consent and permission of the Authority so that the right of the Licensee to the use thereof shall not become absolute and indefeasible by lapse of time.

- 34) The Licensee shall bear the Stamp Duty charged on this Agreement.
- 35) Three copies of 'as laid drawings' of utilities (hard and soft copies) with 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 authorized 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 have been laid in accordance with the approved specifications and drawings and the trenches have been filled up to the satisfaction of the concerned agency in co-ordination with the Authority has been obtained. Not 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 cancellations 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 condition at the site, and
 - d. The safety of operating personnel and human beings.
- 39) The Licensee shall have to provide safety measures like barricading, danger lighting and other necessary caution boards while executing the work.
- 40) While laying utility services, at least one lane of road shall be kept open to traffic at all times. In case of single lane roads, a diversion shall be constructed. If any traffic diversion works are found necessary during the working period such diversion shall be provided at the cost of Licensee.

- 41) After the termination/ expiry of the agreement, the Licensee shall remove the utility services within 90 days and the site shall be brought back to the original condition failing which the Licensee will lose the right to remove the utility services. However before taking up the work of removal of utility services the Licensee shall furnish a Bank Guarantee to the Authority for a period of one year for an amount assessed by the Authority as a security for making good the excavated trench by proper filling and compaction, clearing debris, loose earth produced due to excavation of trenching at least 50m away from the edge of the Row.
- 42) Any disputes in interpretation of the terms and condition 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/NHA/ 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)

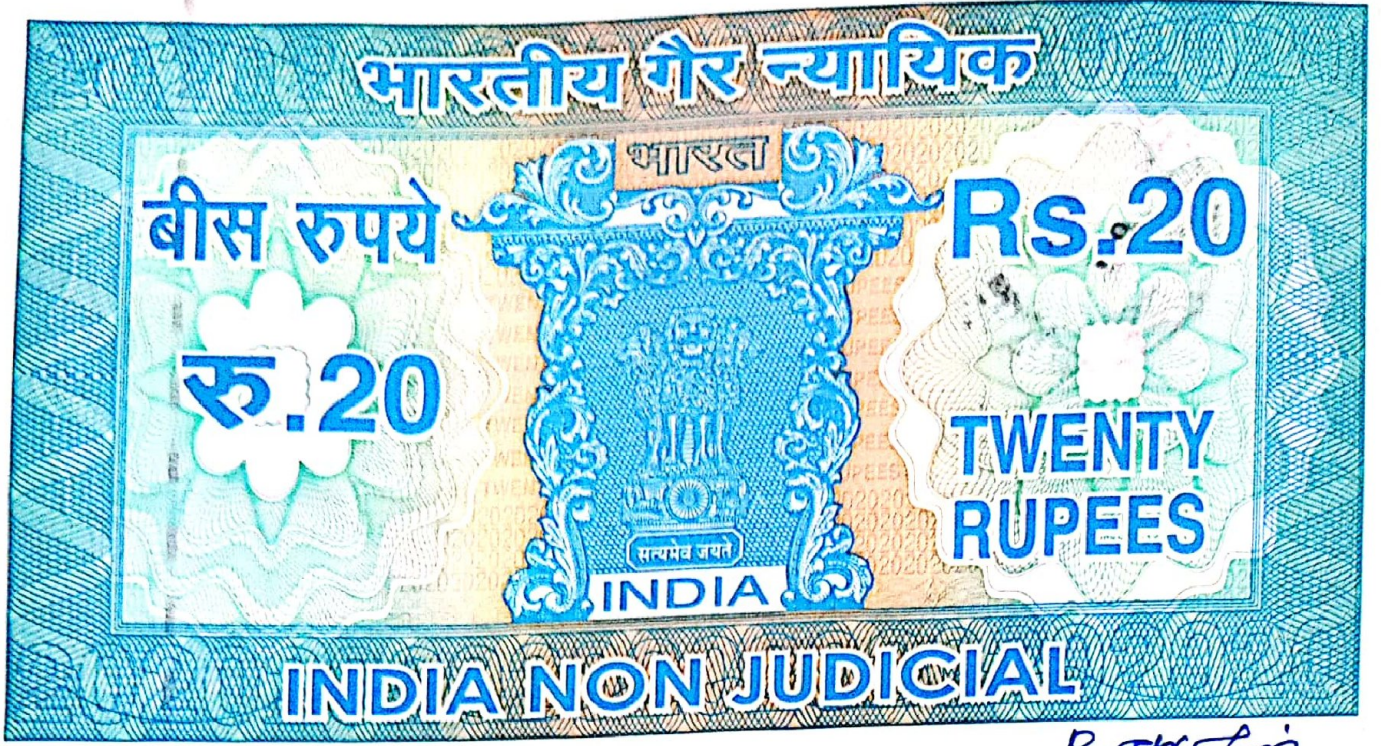

EXECUTIVE ENGINEER
VELLORE CITY MUNICIPAL CORPORATION

SIGNED ON BEHALF OF M/s, VELLORE MUNICIPAL CORPORATION, NO - 1, INFANTRY ROAD, VASANTHAPURAM; VELLORE-632001, TAMILNADU STATE (LICENSEE).

BY SHRI _____

(Signature, name & address with stamp)

HOLDER OF GENERAL POWER OF ATTORNEY DATED _____ EXECUTED
IN ACCORDANCE WITH THE RESOLUTION NO. _____ DATED _____
PASSED BY THE BOARD OF DIRECTION IN THE MEETING HELD ON _____ IN
THE PRESENCE OF (WITNESSES)



10/03/2022

தமிழ்நாடு தமிழ்நாடு TAMIL NADU
VELLORE CORPORATION.

R. கோபிநாதன்
00AC 503804
R. கோபிநாதன்
முத்திரைத்தாள் சிற்பனையாளர்
L.No. 15/KNB/2008
நெ. 79, மாரியம்மன் கோவில் பாதை,
அடுக்கம்பாறை, வேலூர் - 632 011.

UNDERTAKING

We, M/s.Vellore City Municipal Corporation, No - 1, Infantry road, Vasanthapuram, Vellore, 632001, Tamilnadu State., Laying of Underground Sewer and Construction Manholes in NH-48 Along Km.122/900 to Km.125/250 (RHS); Km.120/950 to Km.121/191 (RHS); Km.122/300 to Km.122/935 (RHS); Km.119/320 to Km.120/350 (RHS); Km.124/725 to Km.125/150 (LHS); Km.122/300 to Km.122/430 (LHS); Km.120/556 to Km.120/646 (LHS); And also crossing road at Km. 125/150; &122/300; & 120/080. for a total length of 4901m & No of Machine holes - 179 nos of (Krishnagiri - Walajahpet section) in the state of Tamilnadu, National Highways, Krishnagiri.

We here by undertake the Standard Conditions of NHAJ Guidelines:

1. Not to damage to other utility, if damaged then to pay the losses either to NHAJ or to the concerned agency : regarding the location of other cables, underground installation/utilities etc, M/s Vellore City Municipal Corporation shall be responsible to ascertain from the respective agency in coordination with NHAJ, M/s Vellore City Municipal Corporation shall ensure the safety and security of already existing cables/underground installation/utilities facilities etc. before commencement of the excavation.

J.P.
EXECUTIVE
VELLORE CITY MUNICIPAL CORPORATION

2. **Renewal of Bank Guarantee:** M/s. Vellore City Municipal Corporation shall furnish a Bank Guarantee @Rs. 100/- per running meter to the NHAI, for a period of one year initially (extendable if required till satisfactory completion of work) as a security for ensuring/making good the excavated trench for laying the sewage pipe line by proper filling and compaction, clearing debris/loose earth produced due to execution of trenching at least 5m away from the edge of the right of way. No payment shall be payable by the NHAI to M/s. Vellore City Municipal Corporation for clearing debris/loose earth. In case the work contemplated herewith is not completed to the satisfaction of the NHAI, which has granted the permission, within a period of 11 months from the date of issue of the bank guarantee, M/s. Vellore City Municipal Corporation shall either furnish a fresh guarantee or extend the guarantee for a further period of one year. In case of M/s. Vellore City Municipal Corporation failing to discharge the obligation of making good the excavated trench, the NHAI shall have a right to make good the damages caused by excavation, at the cost of M/s. Vellore City Municipal Corporation and recover the amount by invoking the bank guarantee furnished by M/s. Vellore City Municipal Corporation.
3. **Confirming all standard conditions of NHAI;**
 - I. The period of validity of Way permission shall be co-terminus with the validity of license given by the Ministry of Municipal Administration and Water Supply
 - II. The Underground Sewer Line shall be laid at the edge of the right of way within 2m utility corridors.
 - III. The top of the casing conduit pipe containing the Sewer line pipe shall be atleast 1.65m below the surface of the road subject to being at least 0.3m below the drain inverts.
 - IV. The licensee has to cross the NH by horizontal drilling method (trenchless technology only). In case any damage is caused to the road pavement in this process, M/s. Vellore City Municipal Corporation will be required to restore the same to the original condition at his own cost.
 - V. Existing CD works shall not be allowed for laying the Underground Sewer line and shall be crossed by HOD method only.
 - VI. No trenching will be done on link road, boring method will be used in link road and cable will be laid at the extreme edge of the road in the non-BT surface only.

VII. The licensee shall inform/give a notice to the NHAI, Govt. of India or its authorized agency atleast 90 days in advance with route details prior to digging trenches for fresh or maintenance/repair work. A separate work plan and a separate performance Bank Guarantee @ Rs100/- per meter length or maintenance/ repair work shall have to be furnished by M/s.Vellore City Municipal Corporation

VIII. Each day, the extent of digging the trenches should be strictly regulated so that Sewer are laid and trenches filled up before the close of the work that day. Filling should be completed to the satisfaction of the concerned agency designated by the NHAI.

IX. The Licensee shall indemnify the concerned agency in co-ordination with NHAI, against all damages and claims, if any, due to the digging of trenches for laying Sewer lines and construction Manhole.

X. The NHAI has a right to terminate the permission or to extend the period agreement. In case the M/s. Vellore City Municipal Corporation wants shifting, repairs or alteration to Sewer Line and Construction Manhole, he will have to furnish a separate bank guarantee.

XI. The Licensee shall not without prior permission in writing from the NHAI Govt. of India or its authorized agency undertake any work of shifting, repairs or alterations to the said Underground Sewer Lines and Construction Manhole.

XII. The permission granted shall not in any way be deemed to convey to M/s. Vellore City Municipal Corporation any ownership right or any interest in route/road/ highway/ land/ property, other than what is herein expressly granted.

XIII. During the subsistence of this agreement, the laying Underground Sewer Lines and Construction Manhole located in highway land/ property shall be deemed to have been constructed and continued only by the consent and permission of the NHAI so that the right of M/s. Vellore City Municipal Corporation to the use there of shall not become absolute and indefeasible by laps of time.

XIV. M/s. Vellore City Municipal Corporation shall bear the stamp duty charged for the agreement.

XV. The shall not be brought in to use by M/s. Vellore City Municipal Corporation unless a completion certificate to the effect that the laying Underground Sewer Line and Construction Manhole has been laid in accordance with the approved specifications and drawings and the trenches have been filled up to the satisfactions of the concerned

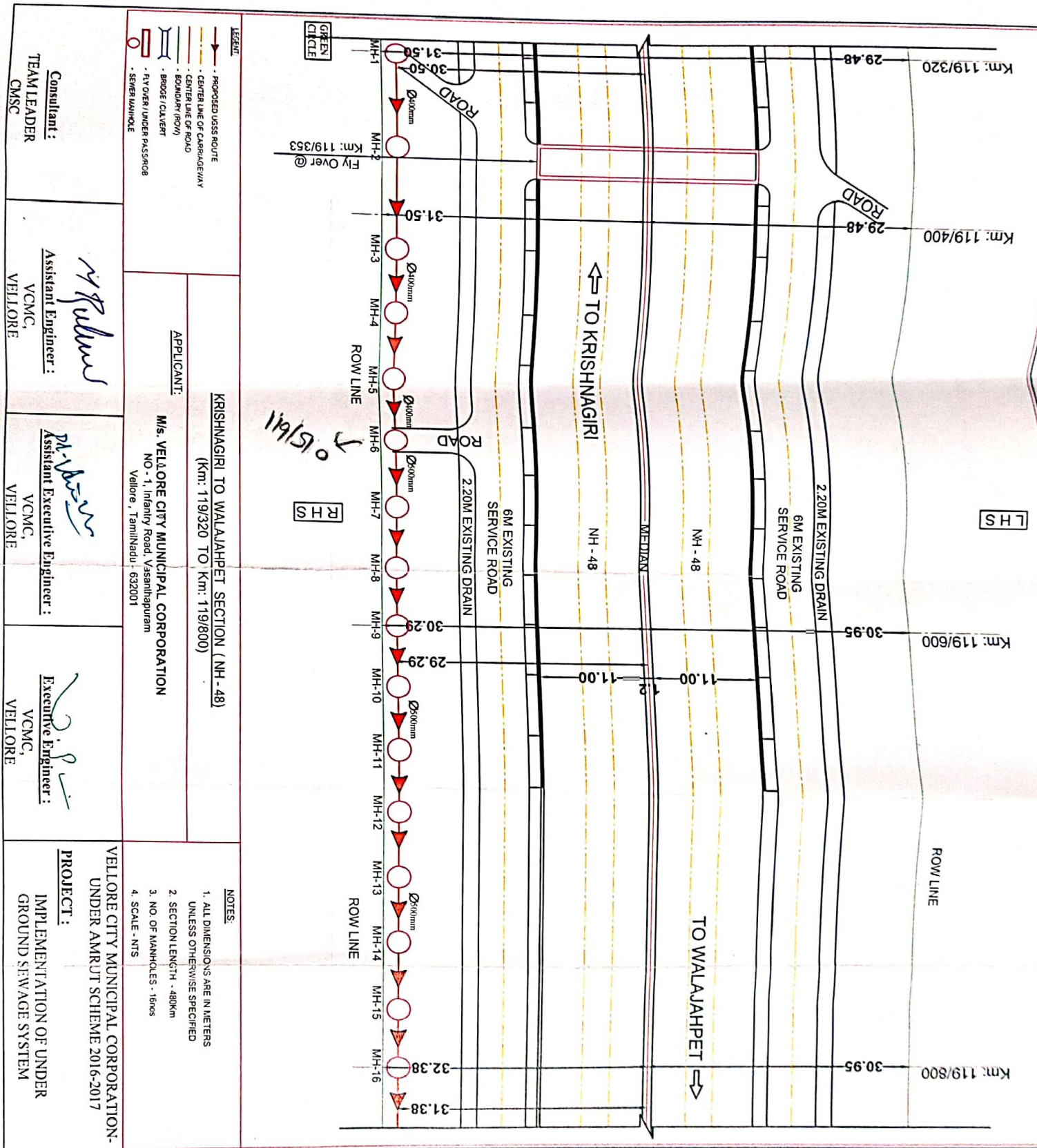
agency in co-ordination with the owner has been obtained.

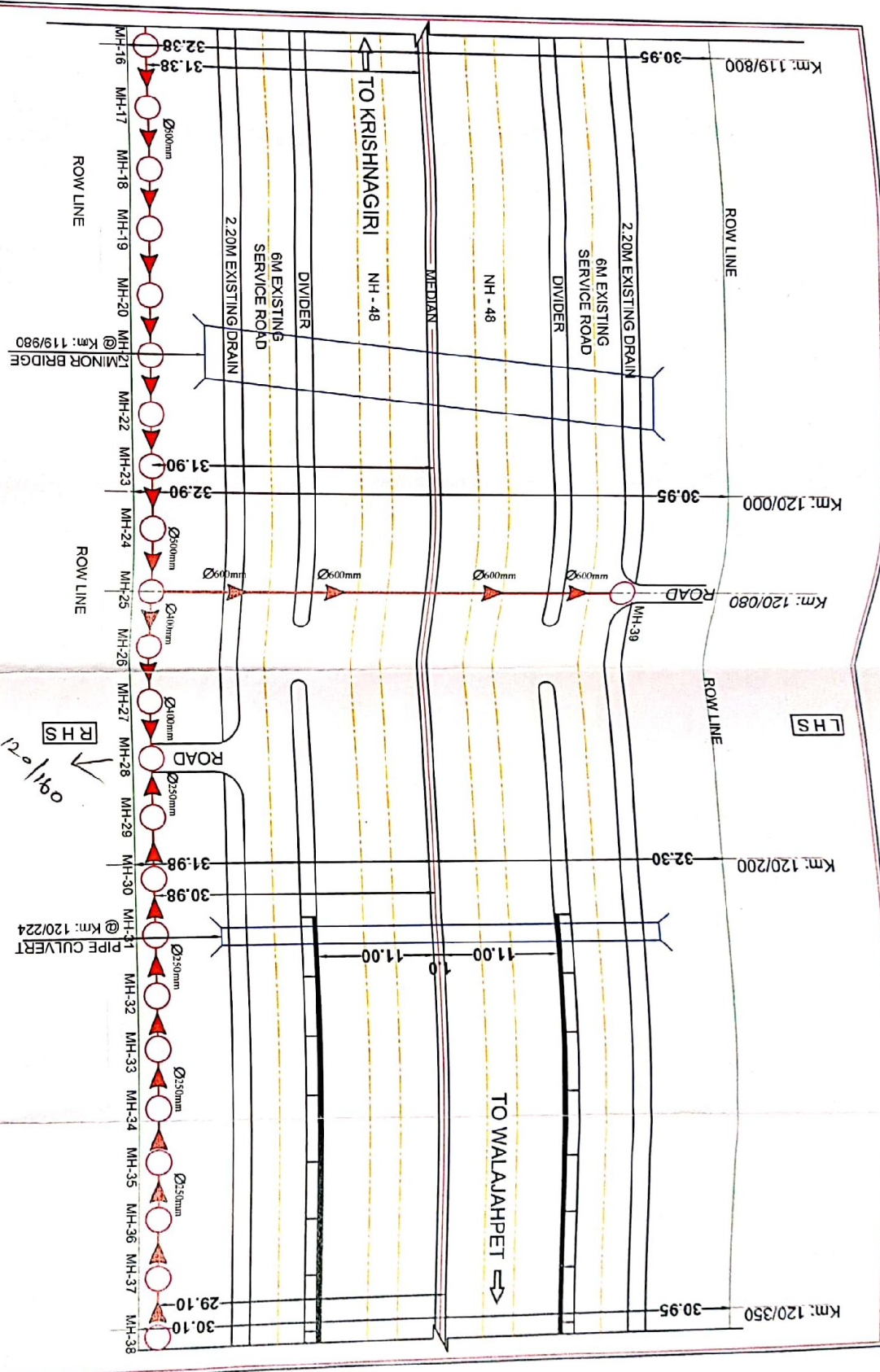
XVI. Notwithstanding anything NHAI contained herein this agreement may be cancelled at any time by the for breach of any condition of the same and the M/s. Vellore City Municipal Corporation shall neither be entitled to any compensation for any loss caused to it by such cancellation nor shall it be absolved from any liability already incurred.

XVII. The licenses shall have to provide barricading, danger lighting and other necessary caution boards while executing the work and during maintenance. If NHAI is required to do some emergent work M/s. Vellore City Municipal Corporation will provide an observer within 24 hours. NHAI will not be responsible for any damage of kind by what so ever means natural or otherwise.

XVIII. The enforceability of the Right-of Way permission granted here in shall be restricted to the extent of provisions/scope of service contained/defined inthe license agreement of the License with Department of Vellore City Municipal Corporation and for the purpose for which it is granted. Either bycontent or by intent, the purpose extending this Right-of Way facility is notto enhance the scope of M/s. Vellore City Municipal Corporation of the departmentof Vellore City Municipal Corporation.

4. Shifting of Underground Sewer Lines as and when required by NHAI: M/s. Vellore City Municipal Corporation shall shift the Underground Sewer Line within 1 year (or as specified by the respective agency/ owner) from the date of issue of the notice by the NHAI, Govt of India to shift/ relocate the cables/ ducts, in case it is so required for the purpose of improvement/widening of the road/route/highway or construction of flyover/bridges and restore the road/land to its original condition at his own cost and risk.
5. Shifting due to 6 lining / widening of NH: After the termination/expiry of the agreement, M/s. Vellore City Municipal Corporation shall remove the Underground Sewer Line within 1 year and the site shall be brought back to the original condition failing which the M/s. Vellore City Municipal Corporation will lose the right to remove the underground sewer line. However, before taking up the work of removal of cables the M/s. Vellore City Municipal Corporation shall furnish a bank guarantee to the owner for a period of one year for an amount assessed by the owner 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 right of way.
6. Traffic movement during laying of Underground Sewer Lines and Construction Manhole to be managed by the applicant: If any traffic diversion





LEGEND:

- PROPOSED UOSS ROUTE
- CENTER LINE OF CARRIAGEWAY
- CENTER LINE OF ROAD
- BOUNDARY (ROW)
- BRIDGE / CULVERT
- FLY OVER / UNDER PASSAGE
- SEWER MANHOLE

APPLICANT:
M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Infantry Road, Vasanthapuram
 Vellore, TamilNadu - 632001

NOTES:

- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
- SECTION LENGTH - 500m
- NO. OF MANHOLES - 22nos
- SCALE - NTS

Consultant:
 TEAM LEADER
 CMSC

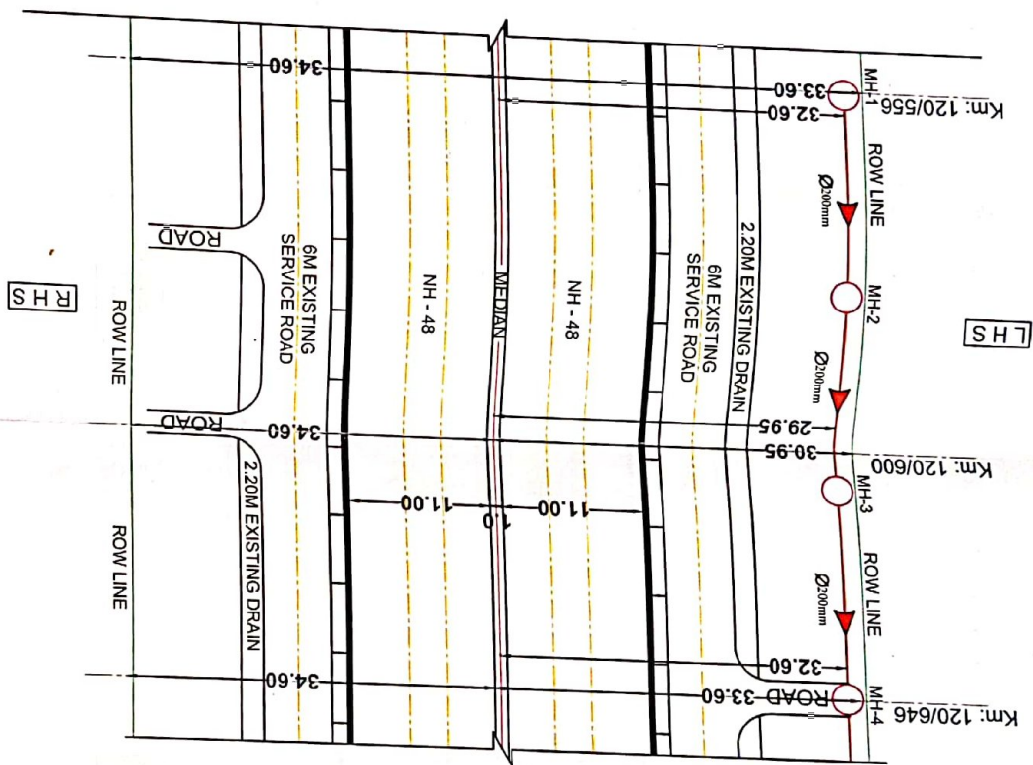
Assistant Engineer:
 VC/MC,
 VELLORE

Assistant Executive Engineer:
 VC/MC,
 VELLORE

Executive Engineer:
 VC/MC,
 VELLORE

PROJECT:
 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM

VELLORE CITY MUNICIPAL CORPORATION - UNDER AMRUIT SCHEME 2016-2017



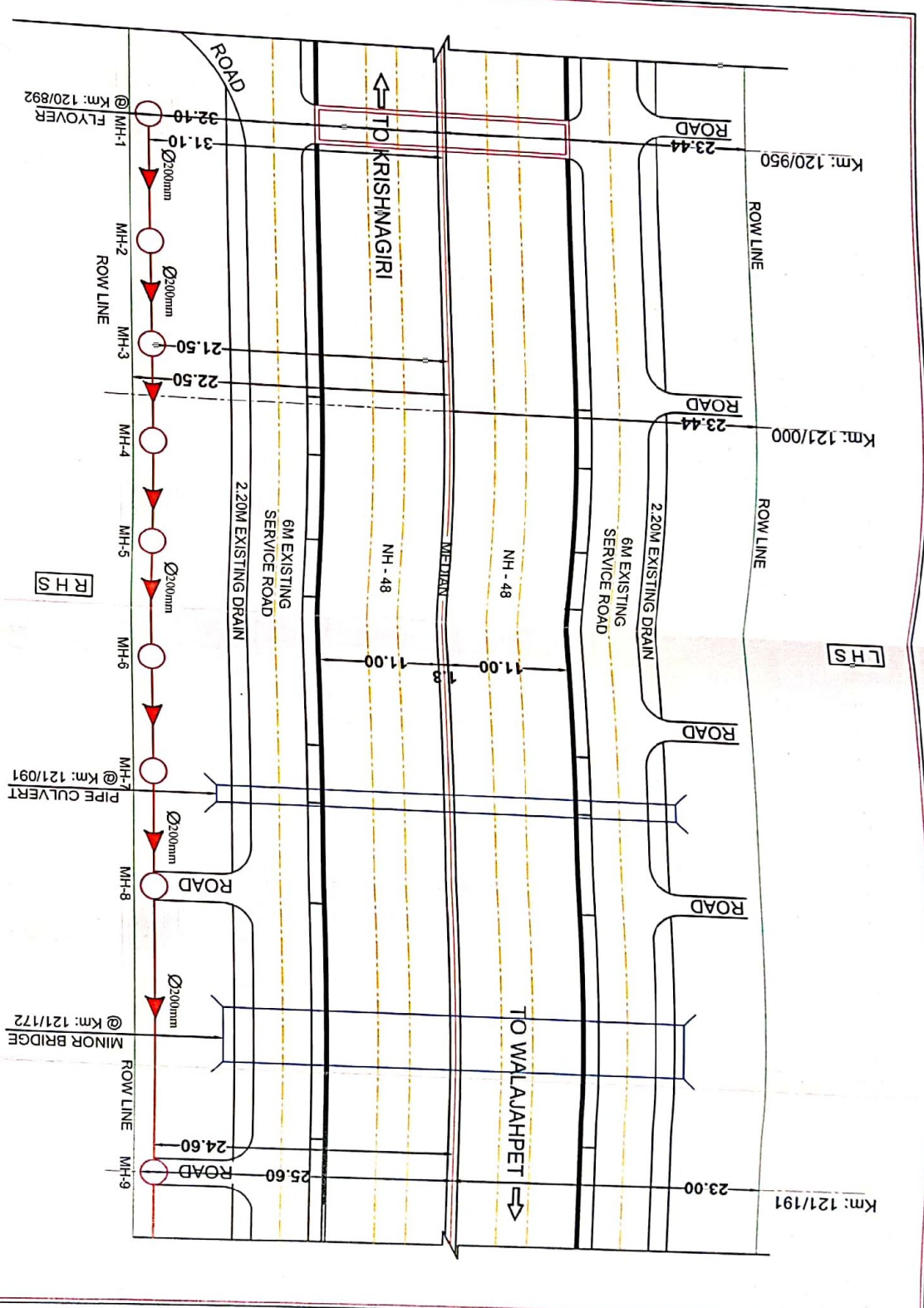
- LEGEND:**
- PROPOSED UGS ROUTE
 - CENTER LINE OF CARRIAGEWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CLAVERT
 - FLY OVER / UNDER PASS/ROB
 - SEWER MANHOLE

APPLICANT:
KRISHNAGIRI TO WALALAHPET SECTION (NH - 48)
 (Km: 120/556 TO Km: 120/646)

M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Infantry Road, Vasantnagar
 Vellore, Tamilnadu - 632001

- NOTES:**
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 2. SECTION LENGTH - 100m
 4. NO. OF MANHOLES - 04
 3. SCALE - NTS

Consultant: TEAM LEADER CMSC	Assistant Engineer: VCMC, VELLORE	Assistant Executive Engineer: VCMC, VELLORE	Executive Engineer: VCMC, VELLORE	PROJECT: VELLORE CITY MUNICIPAL CORPORATION - UNDER AMRUT SCHEME 2016-2017 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM
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- LEGEND**
- PROPOSED UOSS ROUTE
 - CENTER LINE OF CARRIAGEWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - FLY OVER / UNDER PASSAGE
 - SEWER MANHOLE

APPLICANT:
M/S. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Iniany Road, Vasanthapuram
 Vellore - Tamilnadu - 632001

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. SECTION LENGTH - 241m
3. NO. OF MANHOLES - 10nos
3. SCALE - NTS

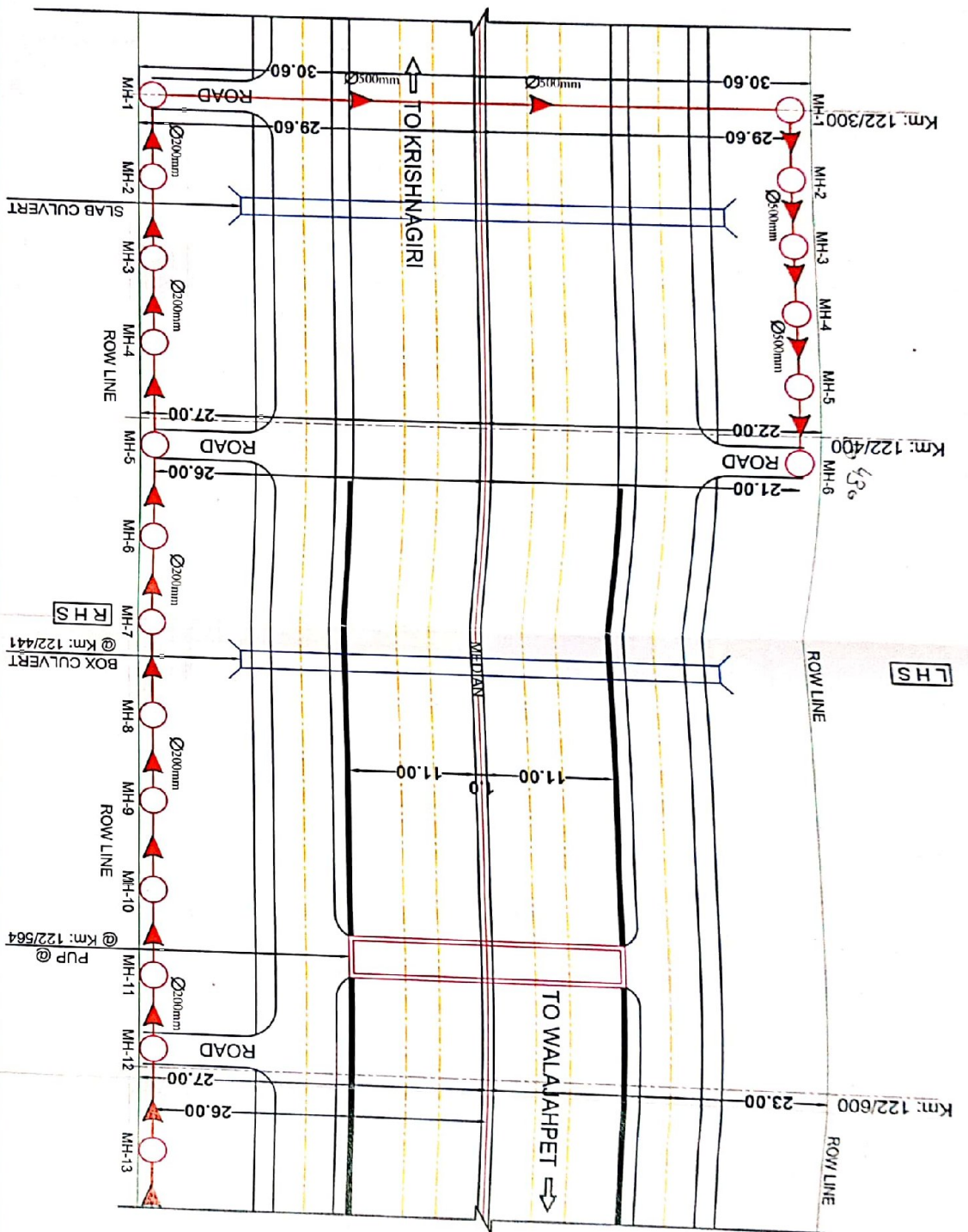
Consultant:
 TEAM LEADER
 CMS/C

Assistant Engineer:
 VCMC,
 VELLORE

Assistant Executive Engineer:
 VCMC,
 VELLORE

Executive Engineer:
 VCMC,
 VELLORE

PROJECT:
 VELLORE CITY MUNICIPAL CORPORATION - UNDER AMRUT SCHEME 2016-2017
 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM



- LEGEND**
- Proposed sewer route
 - Center line of canal/river
 - Center line of road
 - Boundary (road)
 - Bridge / culvert
 - Eye open / under passage
 - Sewer manhole

APPLICANT:
KRISHNAGIRI TO WALAHPET SECTION (NH - 49)
 (Km: 122/300 TO Km: 122/600)
M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Infantry Road, Vessantheppuram
 Vellore - 1amlnadu - 632001

- NOTES:**
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 - SECTION LENGTH - 241m
 - NO. OF MANHOLES - 13nos
 - SCALE - MTS

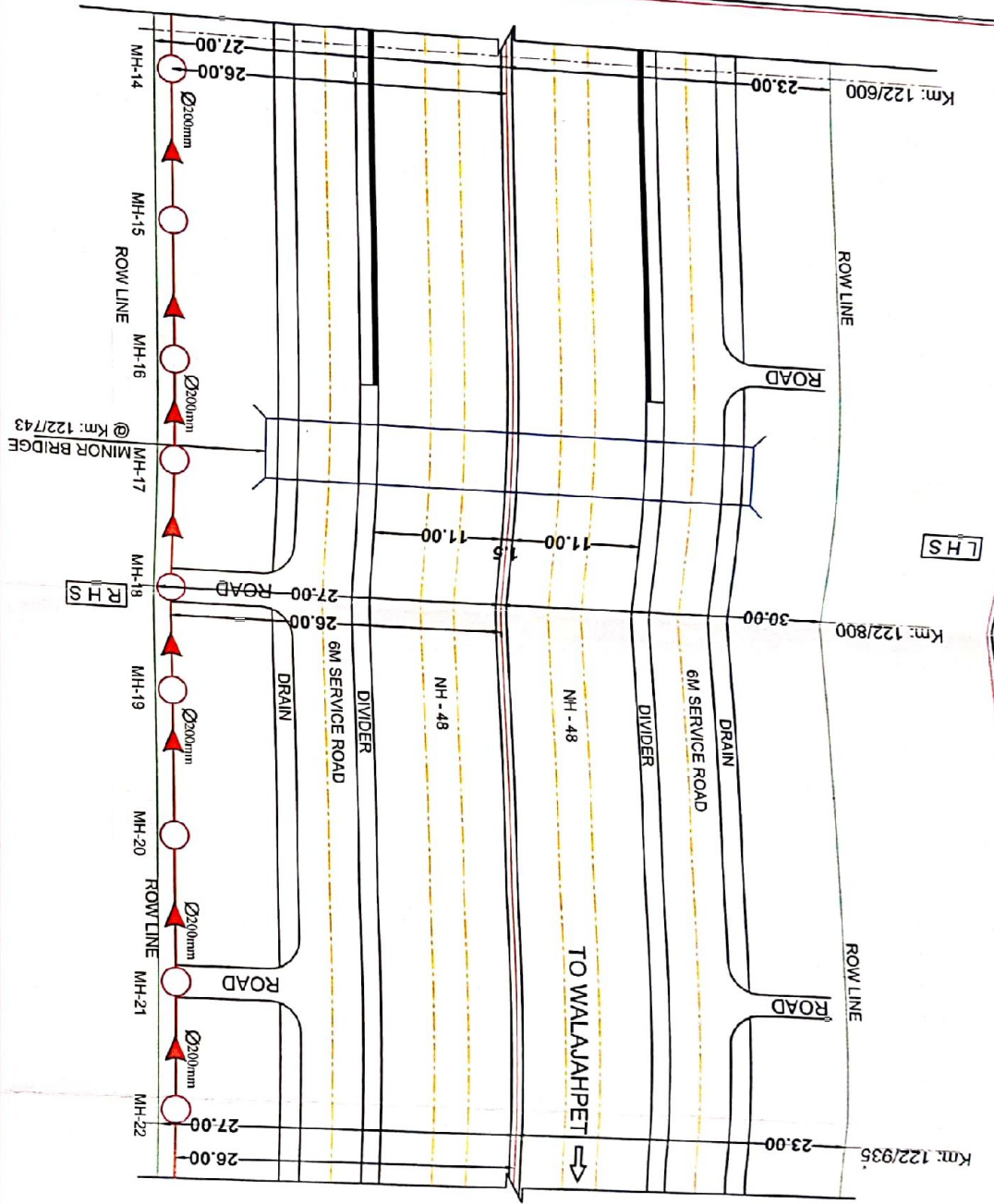
Consultant:
TEAM LEADER:
 CMSC

Assistant Engineer:
 VCNC,
 VELLORE

Assistant Executive Engineer:
 VCNC,
 VELLORE

Executive Engineer:
 VCNC,
 VELLORE

PROJECT:
 VELLORE CITY MUNICIPAL CORPORATION - UNDER
 AMRUT SCHEME 2016-2017
 IMPLEMENTATION OF UNDER GROUND
 SEWAGE SYSTEM



- LEGEND:**
- PROPOSED UGSS ROUTE
 - CENTER LINE OF CARRIAGEWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - FLY OVER / UNDER PASSAGE
 - SEWERMANHOLE

KRISHNAGIRI TO WALAJHPET SECTION (NH-48)
(Km: 122/600 TO Km: 122/935)

APPLICANT:
M/s. VELLORE CITY MUNICIPAL CORPORATION
NO - 1, Infantry Road, Vasanthipuram
Vellore, Tamilnadu - 632001

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. SECTION LENGTH - 335m
4. NO. OF MANHOLES : 11
3. SCALE - NTS

VELLORE CITY MUNICIPAL CORPORATION,
UNDER AMRUT SCHEME 2016-2017

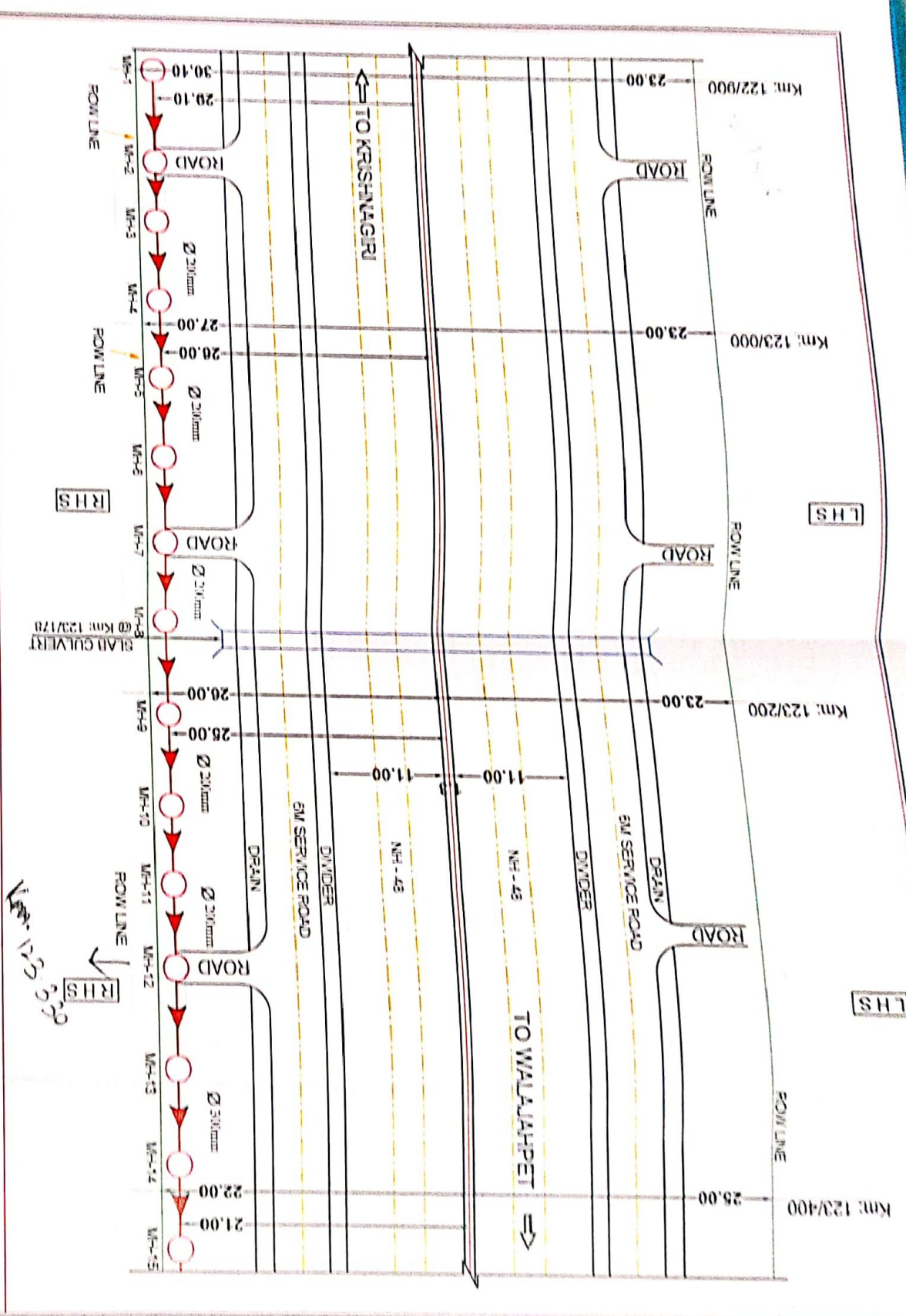
PROJECT:
IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM

Consultant:
TEAM LEADER
CMSC

M. R. Subramanian
Assistant Engineer:
VCMC,
VELLORE

P. S. Srinivasan
Assistant Executive Engineer:
VCMC,
VELLORE

S. S. Srinivasan
Executive Engineer:
VCMC,
VELLORE



- LEGEND**
- Proposed Sewer Line
 - Existing Sewer Line
 - Proposed Road
 - Existing Road
 - Proposed Drain
 - Existing Drain
 - Proposed Service Road
 - Existing Service Road
 - Proposed Right of Way (ROW) Line
 - Existing Right of Way (ROW) Line

APPLICANT: M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Training Road, Jambathuram
 Vellore, Tamilnadu - 620021

PROJECT: WALAJAHPET SECTION (NH-48)
 (Km: 122/900 TO Km: 123/400)

- NOTES:**
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 2. SECTION LENGTH - 500M
 3. NO. OF MANHOLES - 15nos
 4. SCALE - NTS

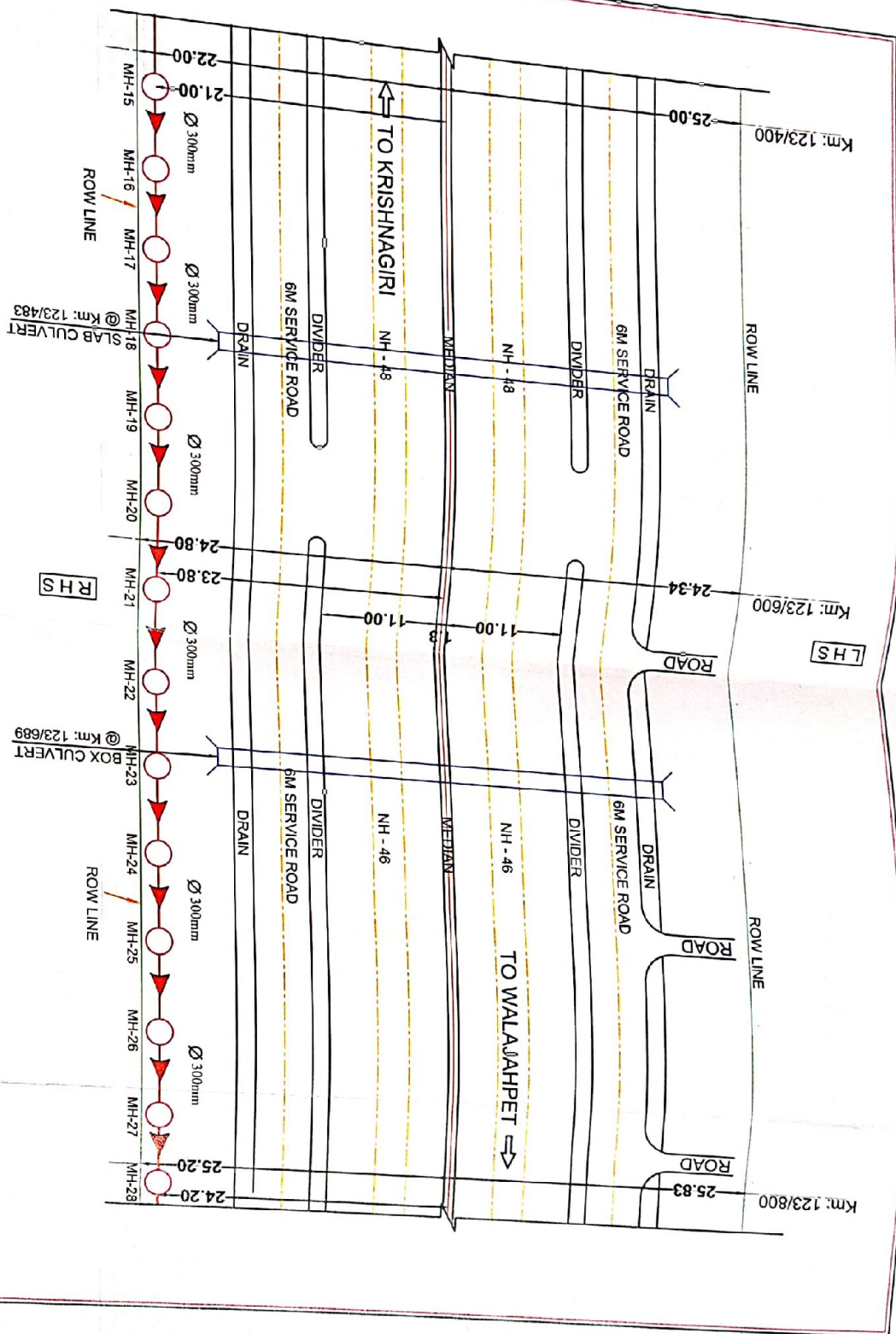
Consultant:
 TEAM LEADER
 CHIEF

M. R. Subramanian
 Assistant Engineer:
 V.O.M.C.
 VELLORE

S. K. Srinivasan
 Assistant Executive Engineer:
 V.O.M.C.
 VELLORE

V. S. Srinivasan
 Executive Engineer:
 V.O.M.C.
 VELLORE

PROJECT:
 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM



- LEGEND**
- PROPOSED SEWER ROUTE
 - CENTER LINE OF CARRIAGEWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - RAY OVER / UNDER PASSAGE
 - SEWER MANHOLE

KRISHNAGIRI TO WALAJHPET SECTION (NH - 48)
 (Km: 123/400 TO Km: 123/800)

APPLICANT: M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Infantry Road, Vasanthapuram
 Vellore, TamilNadu - 632001

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. SECTION LENGTH - 400m
3. NO. OF MANHOLES - 14nos
4. SCALE - NTS

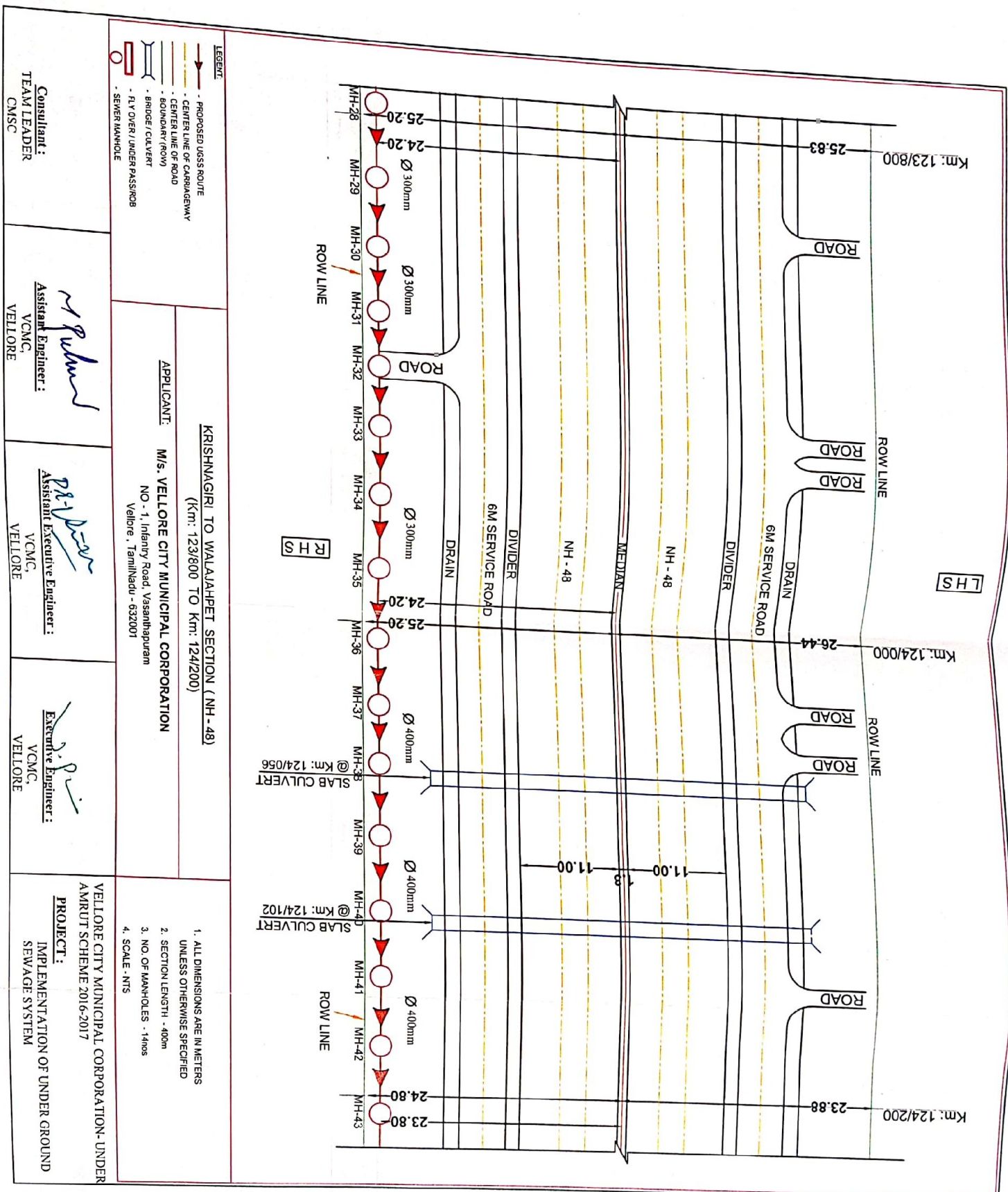
Consultant:
 TEAM LEADER
 CMSC

Assistant Engineer:
 VCMC,
 VELLORE

Assistant Executive Engineer:
 VCMC,
 VELLORE

Executive Engineer:
 VCMC,
 VELLORE

PROJECT:
 VELLORE CITY MUNICIPAL CORPORATION- UNDER
 AMRUT SCHEME 2016-2017
 IMPLEMENTATION OF UNDER GROUND
 SEWAGE SYSTEM



- LEGEND:**
- PROPOSED USSS ROUTE
 - CENTER LINE OF CARBAGERWAY
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - FLY OVER / UNDER PASSAGE
 - SEWER MANHOLE

KRISHNAGIRI TO WALAJAPET SECTION (NH - 48)
(Km: 123/800 TO Km: 124/200)

APPLICANT: M/s. VELLORE CITY MUNICIPAL CORPORATION
NO - 1, Infantry Road, Vasanthapuram
Vellore, Tamilnadu - 632001

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
2. SECTION LENGTH - 400m
3. NO. OF MANHOLES - 14nos
4. SCALE - NTS

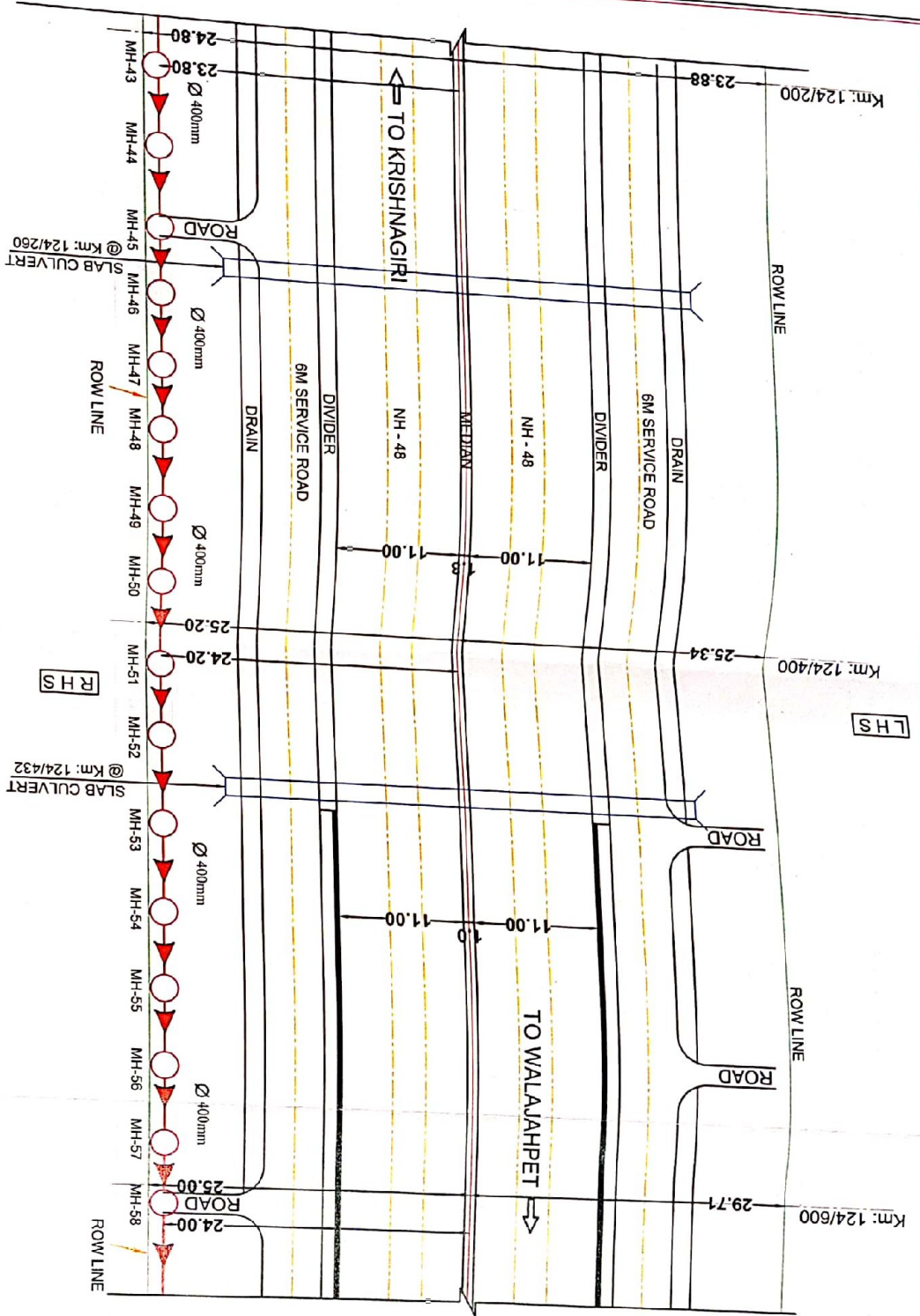
Consultant:
TEAM LEADER
CMSC

Assistant Engineer:
VCMC,
VELLORE

Assistant Executive Engineer:
VCMC,
VELLORE

Executive Engineer:
VCMC,
VELLORE

PROJECT:
VELLORE CITY MUNICIPAL CORPORATION- UNDER
AMRUT SCHEME 2016-2017
IMPLEMENTATION OF UNDER GROUND
SEWAGE SYSTEM



- LEGEND:**
- PROPOSED UGSS ROUTE
 - CENTER LINE OF CARPARKWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - FLY OVER / UNDER PASS/ROB
 - SEWER MANHOLE

APPLICANT: M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Inlenty Road, Vasanthapuram
 Vellore - Tamilnadu - 632001

- PROJECT:** IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 2. SECTION LENGTH - 400m
 3. NO. OF MANHOLES - 16nos
 4. SCALE - NTS

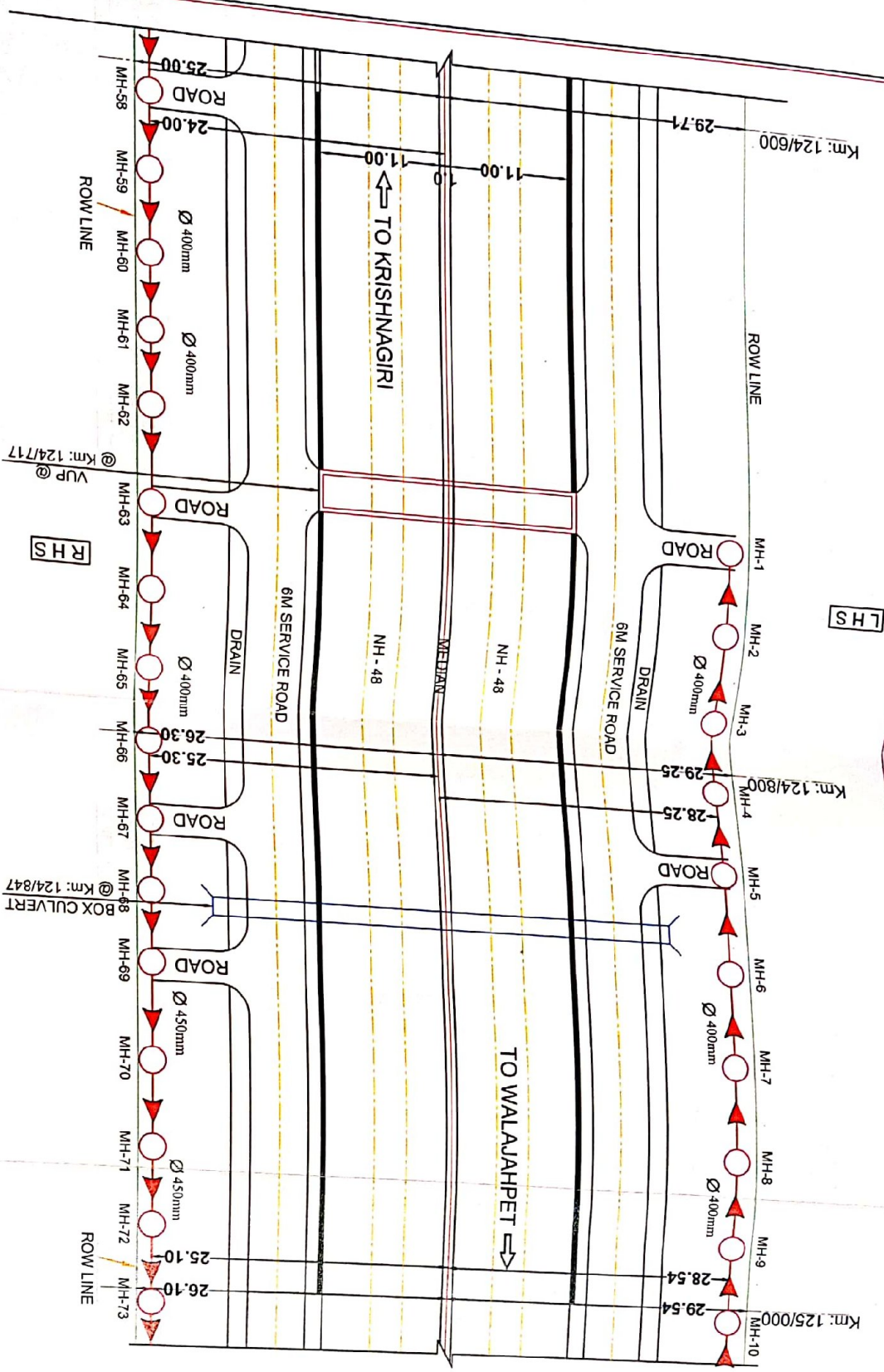
Consultant:
 TEAM LEADER
 CMSC

Assistant Engineer:
 VCMC,
 VELLORE

Assistant Executive Engineer:
 VCMC,
 VELLORE

Executive Engineer:
 VCMC,
 VELLORE

VELLORE CITY MUNICIPAL CORPORATION - UNDER AMRUT SCHEME 2016-2017



- LEGEND:**
- PROPOSED USSS ROUTE
 - CENTER LINE OF CARPARK/GENWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - T.V OVER / UNDER PASSAGE
 - SEWER MANHOLE

APPLICANT:
M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO. - 1, Infantry Road, Vasanthapuram
 Vellore, Tamilnadu - 632001

- PROJECT:**
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
 2. SECTION LENGTH - 400m
 3. NO. OF MANHOLES - 15nos
 4. SCALE - NTS

Consultant:
 TEAM LEADER:
 CMSC

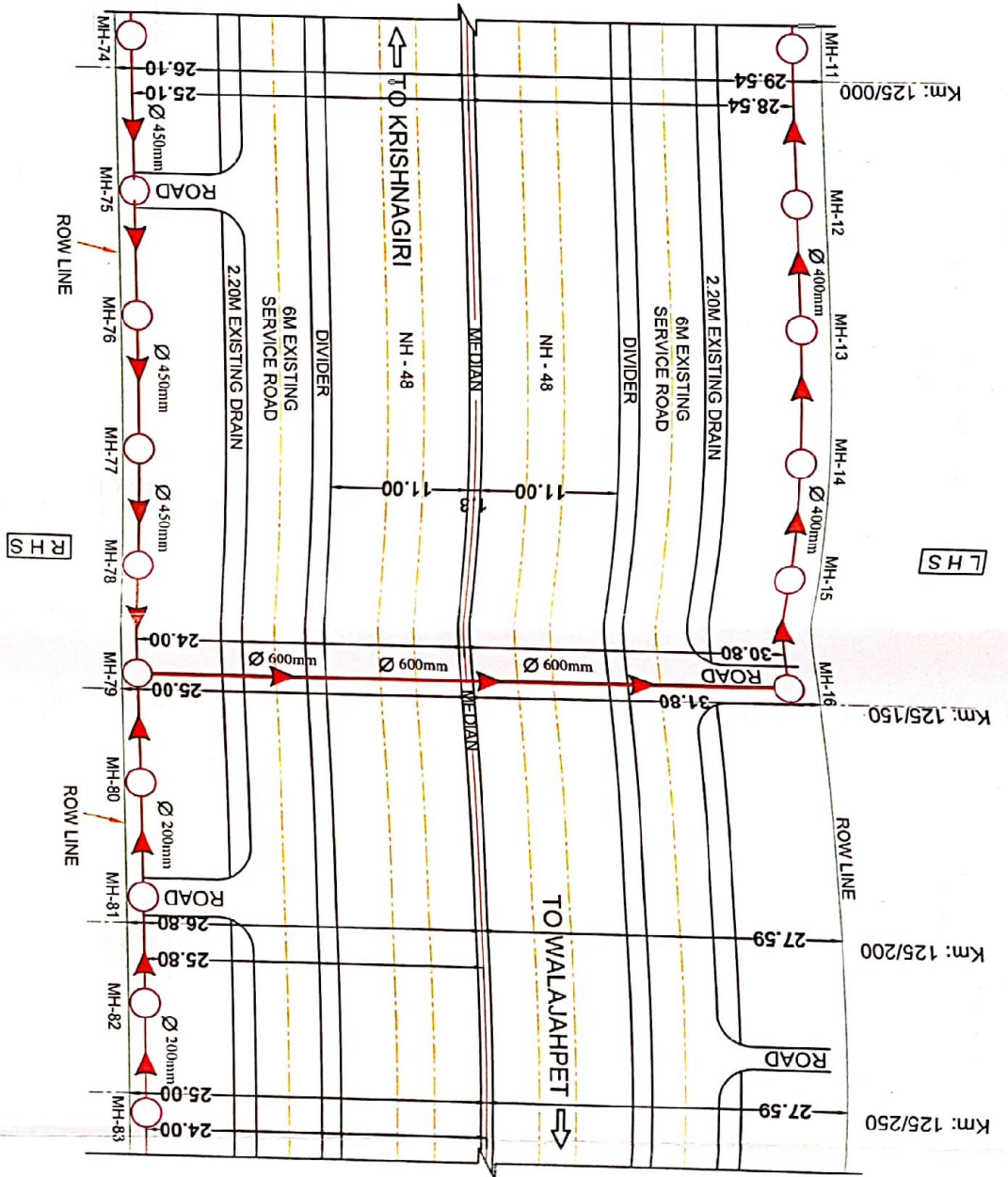
Assistant Engineer:
 VC/MC,
 VELLORE

Assistant Executive Engineer:
 VC/MC,
 VELLORE

Executive Engineer:
 VC/MC,
 VELLORE

VELLORE CITY MUNICIPAL CORPORATION - UNDER AMRUT SCHEME 2016-2017

IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM



- LEGEND:**
- PROPOSED UDSR ROUTE
 - CENTER LINE OF CARRIAGEWAY
 - CENTER LINE OF ROAD
 - BOUNDARY (ROW)
 - BRIDGE / CULVERT
 - FLY OVER / UNDER PASS/ROB
 - SEWER MANHOLE

APPLICANT:
KRISHNAGIRI TO WALAJAPET SECTION / (NH-48)
 (Km: 125/000 TO Km: 125/250)

APPLICANT:
M/s. VELLORE CITY MUNICIPAL CORPORATION
 NO - 1, Infantry Road, Vasanthapuram
 Vellore, TamilNadu - 632001

- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED
- SECTION LENGTH - 250m
- NO. OF MANHOLES - 16nos
- SCALE - NTS

Consultant:
TEAM LEADER
 C/MSC

Assistant Engineer:
 VCMC,
 VELLORE

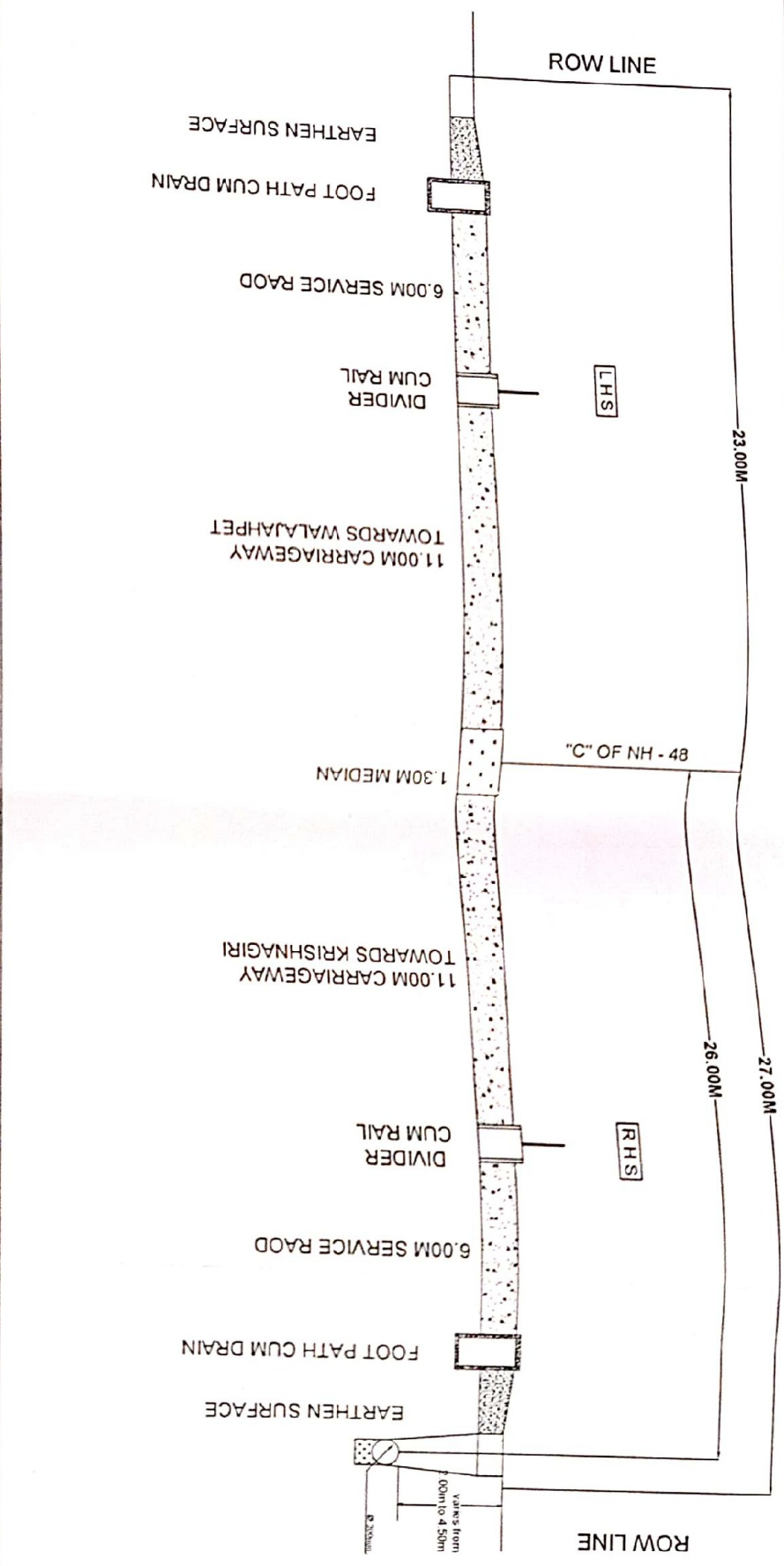
Assistant Executive Engineer:
 VCMC,
 VELLORE

Executive Engineer:
 VCMC,
 VELLORE

PROJECT:
 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM
 VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017

Under Ground Sewerage Scheme to Vellore Municipal Corporation

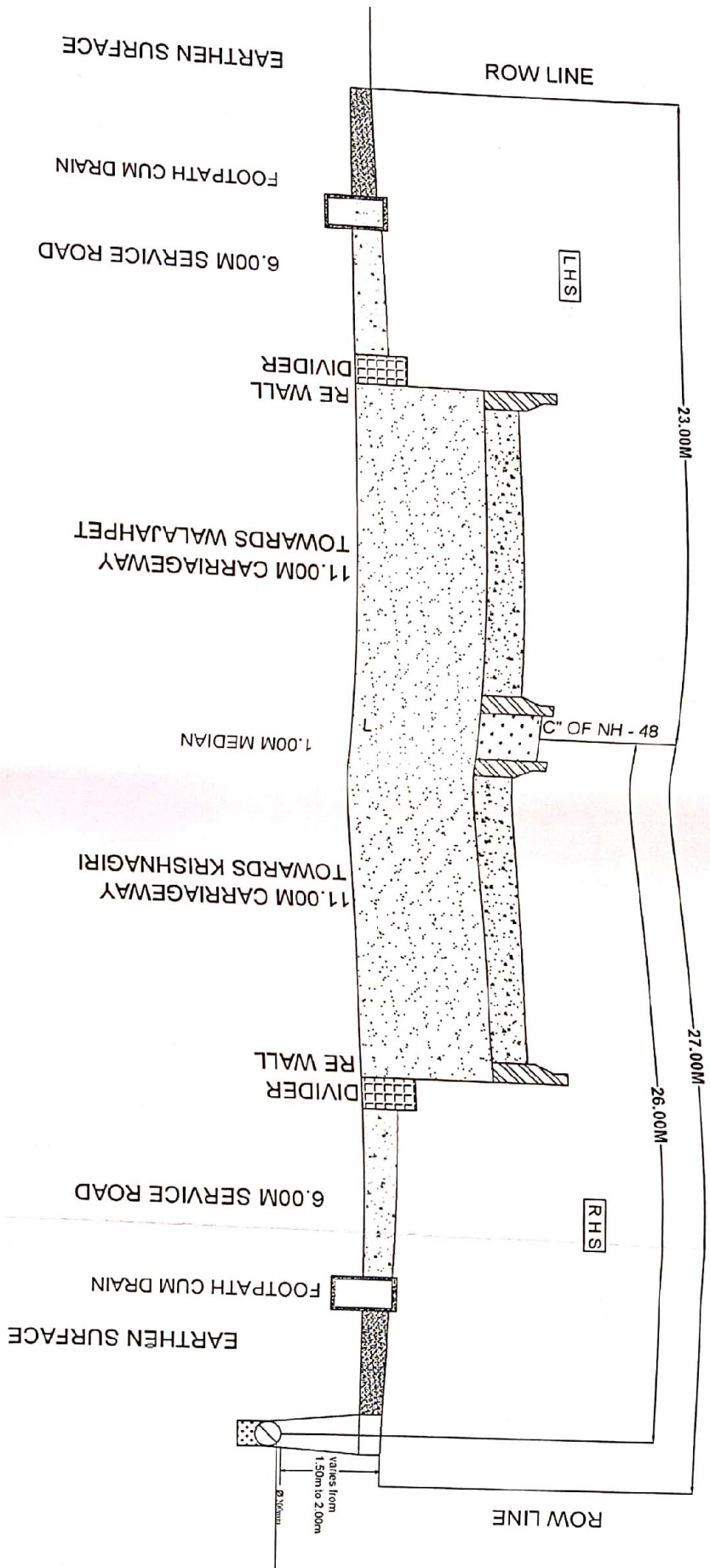
Proposed Pipeline Alignment in NHAI (NH-48)
(CROSS SECTION OF CHAINAGE @ 123/000 KM)



Consultant: TEAM LEADER CMSC	<i>M. P. Subramanian</i>	Assistant Engineer: VCMC, VELLORE	<i>P. Pradeep</i>
Assistant Executive Engineer: VCMC, VELLORE	<i>P. Pradeep</i>	Executive Engineer: VCMC, VELLORE	<i>P. Pradeep</i>
PROJECT: IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM		VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017	

Under Ground Sewerage Scheme to Vellore Municipal Corporation

Proposed Pipeline Alignment in NHAI (NH-48)
 (CROSS SECTION OF CHAINAGE @ 122/564 KM)



Consultant:
 TEAM LEADER
 CMSC

[Signature]
Assistant Engineer:
 VCMC,
 VELLORE

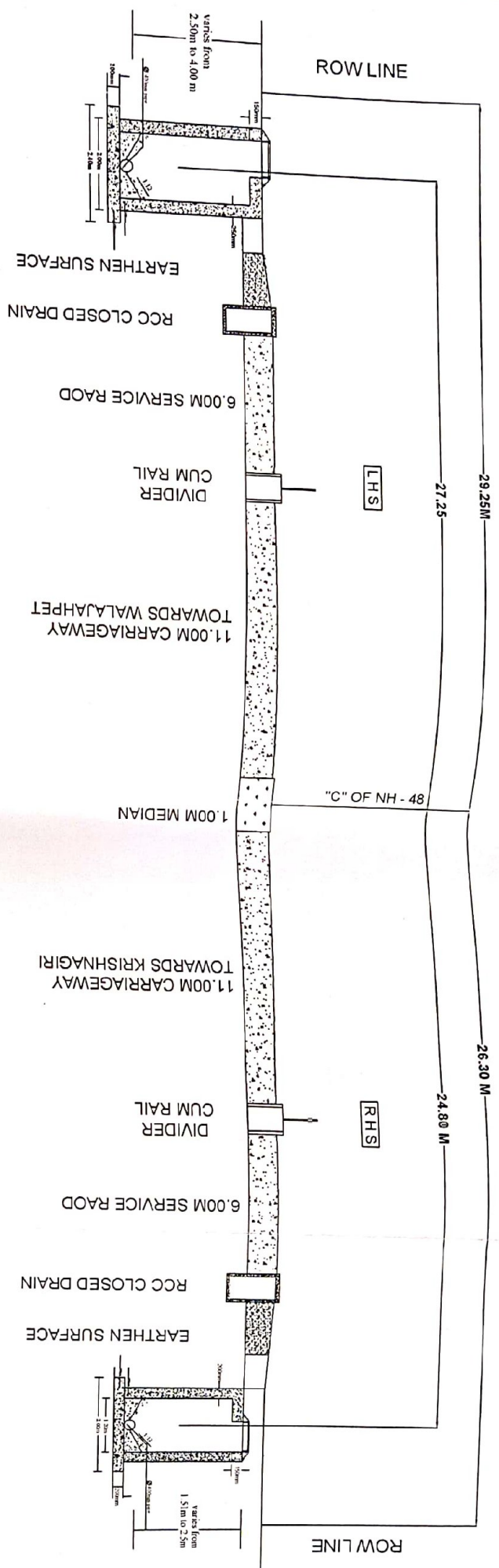
[Signature]
Assistant Executive Engineer:
 VCMC,
 VELLORE

[Signature]
Executive Engineer:
 VCMC,
 VELLORE

PROJECT:
 VELLORE CITY MUNICIPAL CORPORATION-
 UNDER AMRUT SCHEME 2016-2017

**IMPLEMENTATION OF UNDER GROUND
 SEWAGE SYSTEM**

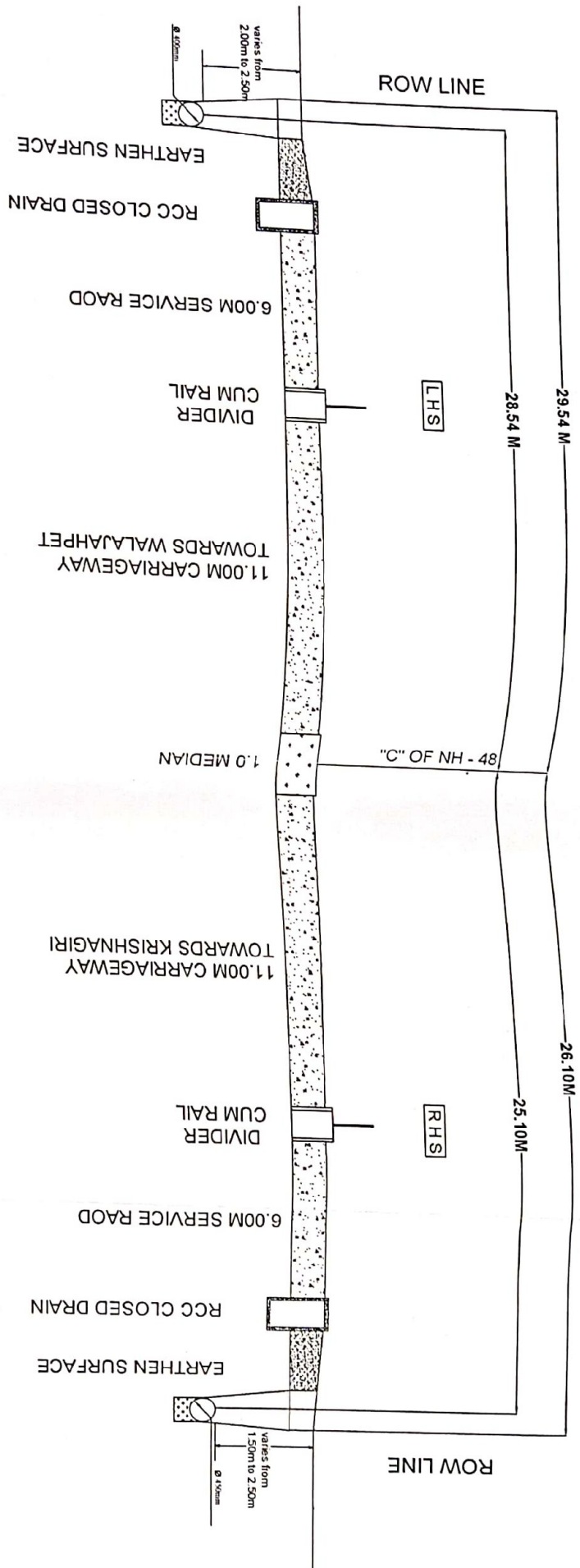
Under Ground Sewerage Scheme to Vellore Municipal Corporation
 Proposed Pipeline Alignment in NHAI (NH-48)
 (CROSS SECTION OF CHAINAGE @ 124/800 KM)



<p>Consultant: TEAM LEADER CMSC</p>		<p>Assistant Engineer: VCMC, VELLORE</p>		<p>Assistant Executive Engineer: VCMC, VELLORE</p>		<p>Executive Engineer: VCMC, VELLORE</p>		<p>PROJECT: VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017</p> <p align="center">IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM</p>
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Under Ground Sewerage Scheme to Vellore Municipal Corporation

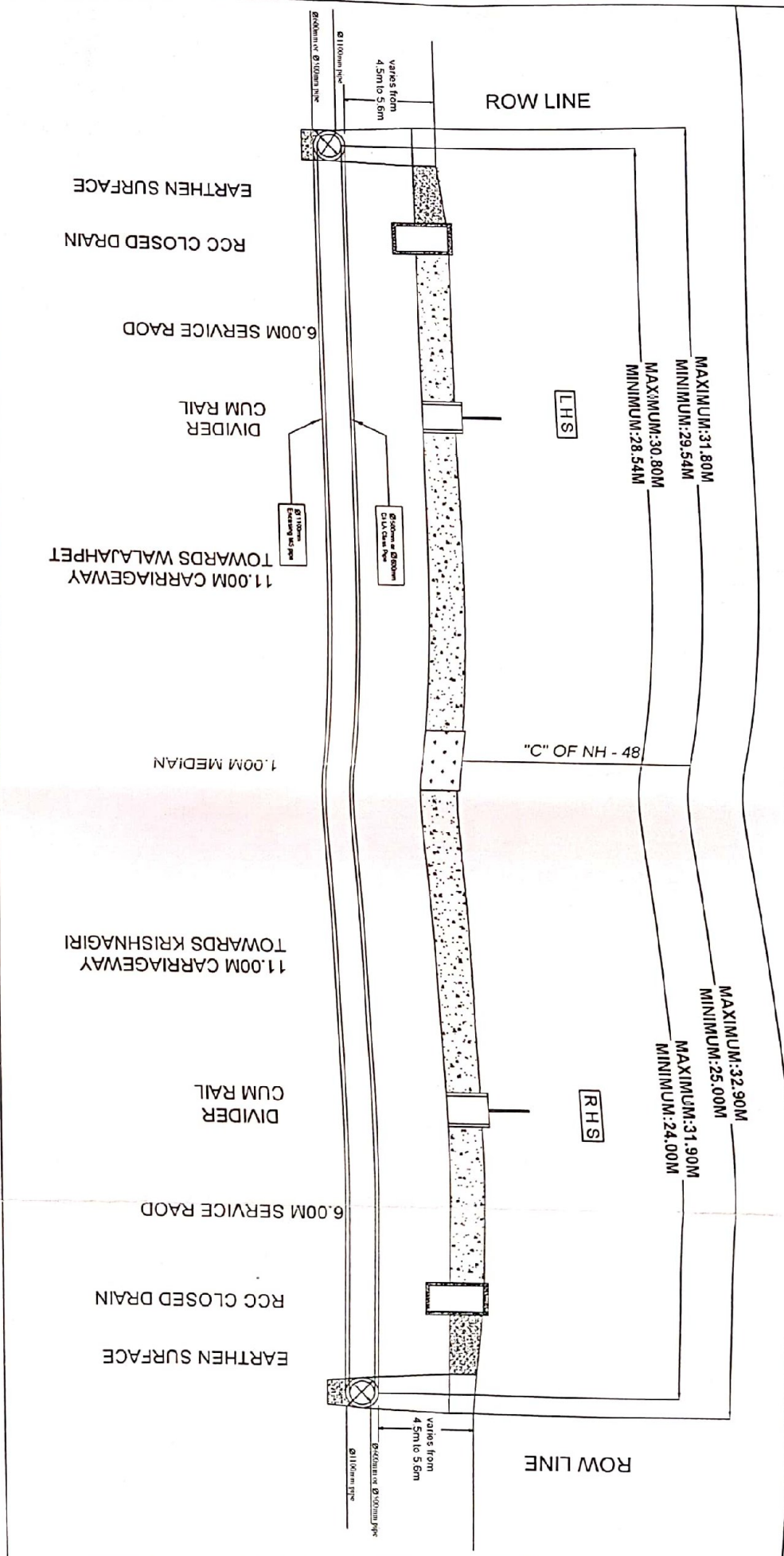
Proposed Pipeline Alignment in NHAI (NH-48)
 (CROSS SECTION OF CHAINAGE @ 125/000 KM)



<p>Consultant : TEAM LEADER CMSC</p>	<p><i>[Signature]</i> Assistant Engineer : VCMC, VELLORE</p>	<p><i>[Signature]</i> Assistant Executive Engineer : VCMC, VELLORE</p>	<p><i>[Signature]</i> Executive Engineer : VCMC, VELLORE</p>	<p>PROJECT : IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM</p>
<p>VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017</p>				

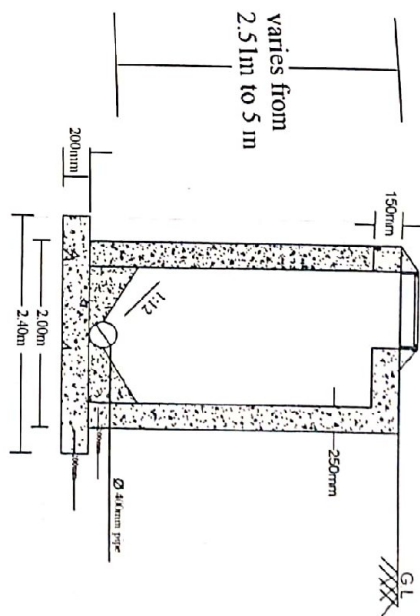
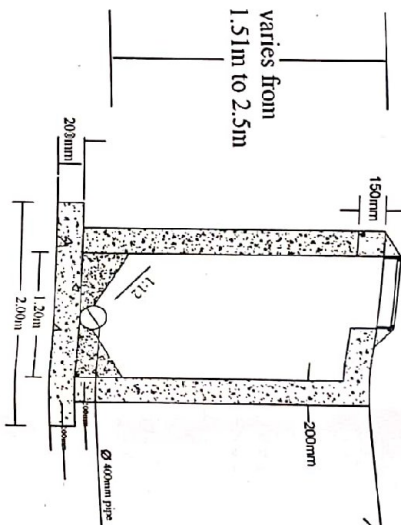
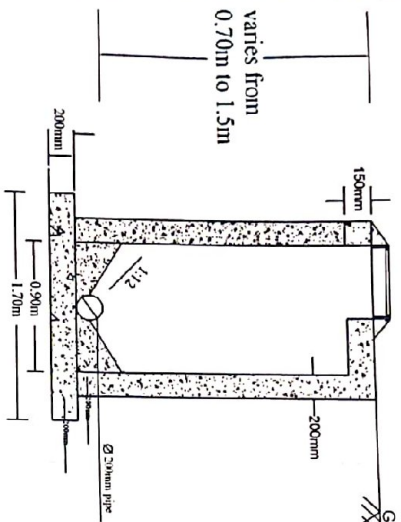
Under Ground Sewerage Scheme to Vellore Municipal Corporation

Proposed Pipeline Alignment in NHAI (NH-48)
 Road Crossing By Trenchless Method @ 120/080, 122/300, & 125/150



Consultant: TEAM LEADER CMSC	<i>M. Prabhu</i> Assistant Engineer: VCMC, VELLORE	<i>P.V. Srinivas</i> Assistant Executive Engineer: VCMC, VELLORE	<i>S.P. Reddy</i> Executive Engineer: VCMC, VELLORE
PROJECT: VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017		IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM	

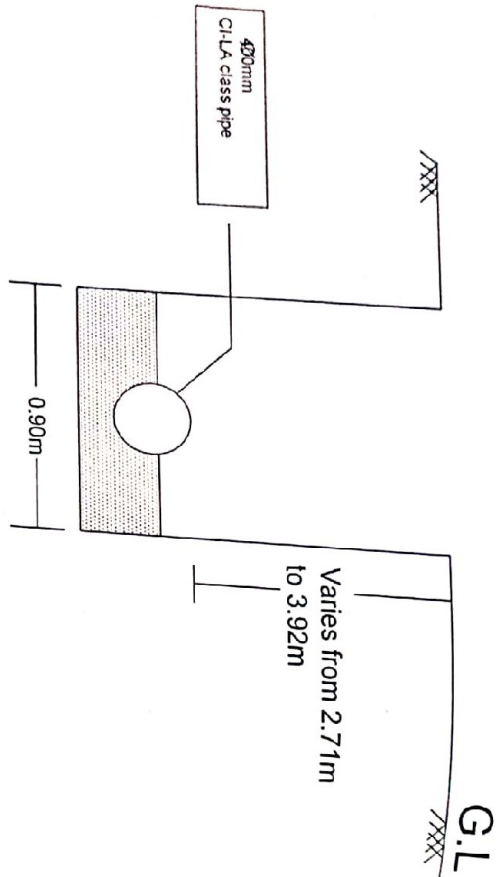
Under Ground Sewerage Scheme to Vellore Municipal Corporation
 Proposed Pipeline Alignment in NHAI (NH-48)
MANHOLE CROSS SECTION
 (Cross Section of Manholes along with varies depth & diameter)



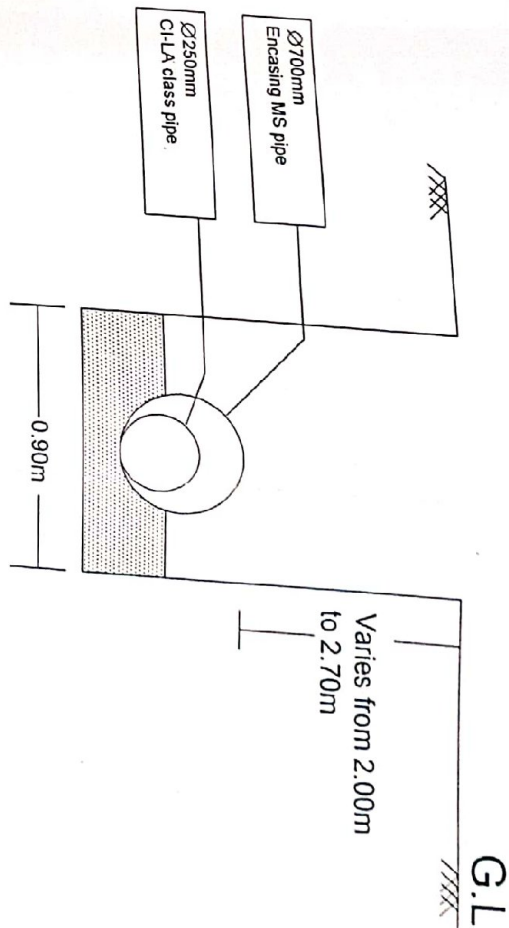
Consultant : TEAM LEADER CMSC	Assistant Engineer : VCMC, VELLORE	Assistant Executive Engineer : VCMC, VELLORE	Executive Engineer : VCMC, VELLORE
VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017			
PROJECT : IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM			

Under Ground Sewerage Scheme to Vellore Municipal Corporation
 Proposed Pipeline Alignment in NHAI (NH-48)
 Cross Section of Pipe For Along the Road and Crossing the Road

Along the Road Section



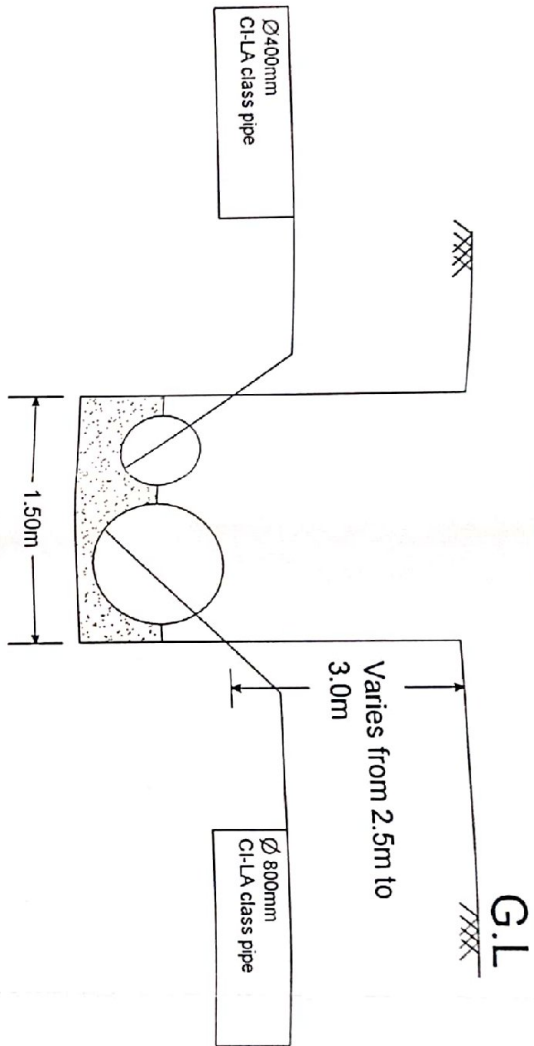
Crossing the Road Section



Consultant : TEAM LEADER CMSC	Assistant Engineer : <i>M. Subramanian</i> VCMC, VELLORE	Assistant Executive Engineer : <i>P. Subramanian</i> VCMC, VELLORE	Executive Engineer : VCMC, VELLORE
PROJECT : IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM			
VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017			

Under Ground Sewerage Scheme to Vellore Municipal Corporation

Proposed Pipeline Alignment in NHAI (NH-48)
Cross Section of Pipe For Along the Road and Crossing the Road



Consultant : TEAM LEADER CMSC	<i>M. Subramanian</i> Assistant Engineer : VCMC, VELLORE	<i>P. S. Srinivasan</i> Assistant Executive Engineer : VCMC, VELLORE	<i>S. P. Srinivasan</i> Executive Engineer : VCMC, VELLORE
PROJECT : VELLORE CITY MUNICIPAL CORPORATION- UNDER AMRUT SCHEME 2016-2017 IMPLEMENTATION OF UNDER GROUND SEWAGE SYSTEM			

ABSTRACT			
PACKAGE - 1 TOTAL SQUARE METER OF MANHOLES			
S.NO	CHAINAGE DETAILS	NUMBER OF MANHOLES	TOTAL (Sq.m)
1	CHAINAGE : KM 119/320 to KM 120/350 (RHS)	39	224.64
2	CHAINAGE : KM 120/556 to KM 120/646 (LHS)	4	23.04
3	CHAINAGE : KM 120/950 to KM 121/191 (RHS)	9	26.01
4	CHAINAGE : KM 122/300 to KM 122/430 (LHS)	6	34.56
5	CHAINAGE : KM 122/300 to KM 122/935 (RHS)	22	82.18
6	CHAINAGE : KM 124/725 to KM 125/150 (LHS)	16	78.08
7	CHAINAGE : KM 122/900 to KM 125/250 (RHS)	83	311.49
	GRAND TOTAL	179 nos	780.00 Sq.m

M. P. Kumar

P. V. Aravamudan

P. V. Aravamudan
EXECUTIVE ENGINEER
VELLORE CITY MUNICIPAL CORPORATION

CHAINAGE : KM 119/320 TO 120/350 (RHS)			
Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	2.4X2.4	5.76	
MH = 2	2.4X2.4	5.76	
MH = 3	2.4X2.4	5.76	
MH = 4	2.4X2.4	5.76	
MH = 5	2.4X2.4	5.76	
MH = 6	2.4X2.4	5.76	
MH = 7	2.4X2.4	5.76	
MH = 8	2.4X2.4	5.76	
MH = 9	2.4X2.4	5.76	
MH = 10	2.4X2.4	5.76	
MH = 11	2.4X2.4	5.76	
MH = 12	2.4X2.4	5.76	
MH = 13	2.4X2.4	5.76	
MH = 14	2.4X2.4	5.76	
MH = 15	2.4X2.4	5.76	
MH = 16	2.4X2.4	5.76	
MH = 17	2.4X2.4	5.76	
MH = 18	2.4X2.4	5.76	
MH = 19	2.4X2.4	5.76	
MH = 20	2.4X2.4	5.76	
MH = 21	2.4X2.4	5.76	
MH = 22	2.4X2.4	5.76	
MH = 23	2.4X2.4	5.76	
MH = 24	2.4X2.4	5.76	
MH = 25	2.4X2.4	5.76	
MH = 26	2.4X2.4	5.76	
MH = 27	2.4X2.4	5.76	
MH = 28	2.4X2.4	5.76	
MH = 29	2.4X2.4	5.76	
MH = 30	2.4X2.4	5.76	
MH = 31	2.4X2.4	5.76	
MH = 32	2.4X2.4	5.76	
MH = 33	2.4X2.4	5.76	
MH = 34	2.4X2.4	5.76	
MH = 35	2.4X2.4	5.76	
MH = 36	2.4X2.4	5.76	
MH = 37	2.4X2.4	5.76	
MH = 38	2.4X2.4	5.76	
MH = 39	2.4X2.4	5.76	
	TOTAL	224.64	

CHAINAGE : KM 120/950 TO 121/191 (RHS)			
Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	1.7X1.7	2.89	
MH = 2	1.7X1.7	2.89	
MH = 3	1.7X1.7	2.89	
MH = 4	1.7X1.7	2.89	
MH = 5	1.7X1.7	2.89	
MH = 6	1.7X1.7	2.89	
MH = 7	1.7X1.7	2.89	
MH = 8	1.7X1.7	2.89	
MH = 9	1.7X1.7	2.89	
	TOTAL	26.01	

CHAINAGE : KM 122/300 TO 122/430 (LHS)			
Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	2.4X2.4	5.76	
MH = 2	2.4X2.4	5.76	
MH = 3	2.4X2.4	5.76	
MH = 4	2.4X2.4	5.76	
MH = 5	2.4X2.4	5.76	
MH = 6	2.4X2.4	5.76	
	TOTAL	34.56	

CHAINAGE : KM 120/556 TO 120/646 (LHS)			
Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	2.4X2.4	5.76	
MH = 2	2.4X2.4	5.76	
MH = 3	2.4X2.4	5.76	
MH = 4	2.4X2.4	5.76	
	TOTAL	23.04	

CHAINAGE : KM 122/300 TO 122/935 (RHS)

Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	2.4X2.4	5.76	
MH = 2	2.0x2.0	4.0	
MH = 3	2.0x2.0	4.0	
MH = 4	2.0x2.0	4.0	
MH = 5	2.4X2.4	5.76	
MH = 6	2.4X2.4	5.76	
MH = 7	2.0x2.0	4.0	
MH = 8	2.0x2.0	4.0	
MH = 9	2.0x2.0	4.0	
MH = 10	2.0x2.0	4.0	
MH = 11	2.0x2.0	4.0	
MH = 12	2.0x2.0	4.0	
MH = 13	1.7X1.7	2.89	
MH = 14	1.7X1.7	2.89	
MH = 15	1.7X1.7	2.89	
MH = 16	1.7X1.7	2.89	
MH = 17	1.7X1.7	2.89	
MH = 18	1.7X1.7	2.89	
MH = 19	1.7X1.7	2.89	
MH = 20	1.7X1.7	2.89	
MH = 21	1.7X1.7	2.89	
MH = 22	1.7X1.7	2.89	
	TOTAL	82.18	

CHAINAGE : KM 124/725 TO 125/150 (LHS)			
Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	2.4X2.4	5.76	
MH = 2	2.4X2.4	5.76	
MH = 3	2.4X2.4	5.76	
MH = 4	2.4X2.4	5.76	
MH = 5	2.4X2.4	5.76	
MH = 6	2.4X2.4	5.76	
MH = 7	2.4X2.4	5.76	
MH = 8	2.4X2.4	5.76	
MH = 9	2.0x2.0	4.0	
MH = 10	2.0x2.0	4.0	
MH = 11	2.0x2.0	4.0	
MH = 12	2.0x2.0	4.0	
MH = 13	2.0x2.0	4.0	
MH = 14	2.0x2.0	4.0	
MH = 15	2.0x2.0	4.0	
MH = 16	2.0x2.0	4.0	
	TOTAL	78.08	

CHAINAGE : KM 122/900 TO 125/250 (RHS)

Manhole Number	Manhole (LENGTH X BREADTH)	Manhole (Sq.m)	REMARKS
MH = 1	1.7X1.7	2.89	
MH = 2	1.7X1.7	2.89	
MH = 3	1.7X1.7	2.89	
MH = 4	1.7X1.7	2.89	
MH = 5	1.7X1.7	2.89	
MH = 6	1.7X1.7	2.89	
MH = 7	1.7X1.7	2.89	
MH = 8	2.0x2.0	4.0	
MH = 9	1.7X1.7	2.89	
MH = 10	1.7X1.7	2.89	
MH = 11	1.7X1.7	2.89	
MH = 12	1.7X1.7	2.89	
MH = 13	1.7X1.7	2.89	
MH = 14	1.7X1.7	2.89	
MH = 15	1.7X1.7	2.89	
MH = 16	1.7X1.7	2.89	
MH = 17	1.7X1.7	2.89	
MH = 18	1.7X1.7	2.89	
MH = 19	1.7X1.7	2.89	
MH = 20	1.7X1.7	2.89	
MH = 21	1.7X1.7	2.89	
MH = 22	1.7X1.7	2.89	
MH = 23	1.7X1.7	2.89	
MH = 24	1.7X1.7	2.89	
MH = 25	1.7X1.7	2.89	
MH = 26	1.7X1.7	2.89	
MH = 27	1.7X1.7	2.89	
MH = 28	1.7X1.7	2.89	
MH = 29	1.7X1.7	2.89	
MH = 30	1.7X1.7	2.89	
MH = 31	1.7X1.7	2.89	
MH = 32	1.7X1.7	2.89	
MH = 33	1.7X1.7	2.89	
MH = 34	1.7X1.7	2.89	
MH = 35	1.7X1.7	2.89	
MH = 36	1.7X1.7	2.89	
MH = 37	1.7X1.7	2.89	
MH = 38	1.7X1.7	2.89	
MH = 39	2.4X2.4	5.76	
MH = 40	2.4X2.4	5.76	
MH = 41	2.4X2.4	5.76	

MH = 42	2.4X2.4	5.76	
MH = 43	2.4X2.4	5.76	
MH = 44	2.4X2.4	5.76	
MH = 45	2.4X2.4	5.76	
MH = 46	2.4X2.4	5.76	
MH = 47	2.4X2.4	5.76	
MH = 48	2.4X2.4	5.76	
MH = 49	2.4X2.4	5.76	
MH = 50	2.4X2.4	5.76	
MH = 51	2.4X2.4	5.76	
MH = 52	2.4X2.4	5.76	
MH = 53	2.4X2.4	5.76	
MH = 54	2.4X2.4	5.76	
MH = 55	2.4X2.4	5.76	
MH = 56	2.4X2.4	5.76	
MH = 57	2.4X2.4	5.76	
MH = 58	2.0x2.0	4.0	
MH = 59	2.0x2.0	4.0	
MH = 60	2.0x2.0	4.0	
MH = 61	1.7X1.7	2.89	
MH = 62	1.7X1.7	2.89	
MH = 63	1.7X1.7	2.89	
MH = 64	1.7X1.7	2.89	
MH = 65	1.7X1.7	2.89	
MH = 66	1.7X1.7	2.89	
MH = 67	1.7X1.7	2.89	
MH = 68	1.7X1.7	2.89	
MH = 69	2.0x2.0	4.0	
MH = 70	2.0x2.0	4.0	
MH = 71	1.7X1.7	2.89	
MH = 72	2.0x2.0	4.0	
MH = 73	2.0x2.0	4.0	
MH = 74	2.0x2.0	4.0	
MH = 75	2.0x2.0	4.0	
MH = 76	2.0x2.0	4.0	
MH = 77	2.0x2.0	4.0	
MH = 78	2.0x2.0	4.0	
MH = 79	2.0x2.0	4.0	
MH = 80	2.0x2.0	4.0	
MH = 81	2.0x2.0	4.0	
MH = 82	2.0x2.0	4.0	
MH = 83	2.0x2.0	4.0	
	TOTAL	311.49	