GSM Network Planning Cell, BSNL Corporate office 7th Floor, Bharat Sanchar Bhawan Harish Chandra Mathur Lane, New Delhi-110001,



No.58-07/2013-CMTS/Corr./Dir.(CM)/01

Date-(3 - 0-2013

To,

The Chief General Manager

All Telecom Circles N/S/E/W Zones

<u>Subject:</u> Guidelines for granting right of way permissions to telecom service licensees

/ Infrastructure providers for laying of telecom cables/ducts on NH land.

Kindly find enclosed herewith a copy of guidelines No. RW/NH-33044/27/2005/S&R (R)(Pt) received from Ministry of Road Transport & Highways regarding Guidelines for granting right of way permissions to telecom service licensees/ Infrastructure providers for laying of telecom cables/ducts on NH land.

(S.K. Samanta Addl.GM (NWP M-H)

Encld.: Copy of above guidelines 17 pages. (1+16)

No. F.W/NH-33044/27/2005/S&R(R) (Pt.)

Government of India

Ministry of Road Transport & Highways

(Highways Section)

1. Sansad Marg, Transport Bhawan,

New Delhi – 110001 dated 06.08.2013

The Secretaries, PWD of all States/ UTs.

2. The Chief Engineers of all States/ UTs, PWD

3. Director General (Border Roads), Seema Sadak Bhawan, Ring Roads

for inform I SUBJECT

New Delhi - 110010.

4. Chairman, NHAI

SUBJECT: GUIDELINES FOR GRANTING RIGHT OF WAY PERMISSIONS
TO TELECOM SERVICE LICENSEES / INFRASTRUCTURE
PROVIDERS FOR LAYING OF TELECOM CABLES/ DUCTS
ON NH LAND.

This Ministry vide letter No. RW/NH-33044/17/2000-S&R dated 29.09.2000, issued guidelines allowing existing private telecom licensees to lay optical fibre cables for cellular mobile/ basic telephone services at par with the Department of Telecommunications (DOT). Subsequently, revisions in the guidelines were effected and communicated to all concerned vide this Ministry's letters No.RW/NH-33044/27/2005-S&R(R) dated 21st March, 2006 and 21st September, 2010 etc. In view of representations made by public & private sector telecom service providers before the Ministry in recent past PD (CN) Highway (NH) land, changing environment, requirement to bring about desired clarity in this regard, a fresh set of guidelines have been finalized in this regard and is enclosed as Annexure - I. These guidelines to be followed uniformly across the country, are in supersession of all concerned earlier letters in this regard including those mentioned above.

2. The agreement (format enclosed as Annexure - II) may be executed by the State Chief Engineers / NHAI / BRDB or his designated representatives

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Not related to Adm. cell.

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GM (NWP-GSM)

Page 1 of 16

on behalf of the Authority. For any relaxation on the provisions of the guidelines and / or agreement, prior approval from the Ministry shall be obtained.

- Before recommending for such permission, the State PWDs are required to keep in view the requirement of 4-/6- laning of National Highways (NHs)
- 4. The Highway Administrators/ Nodal Officers as per the guidelines shall keep a register of record or right of way permissions to the licensees who have been permitted access to the National Highway under his jurisdiction in the format enclosed (Annexure III) with this letter. A copy of the record should be sent to the Circle Office as well as to the Regional Officer of the Ministry. The record should be periodically checked by inspecting officials.
- 5. These guidelines shall come into force with immediate effect.

Yours faithfully,

Under Secretary to the Government of India Telephone No. 23353141

Encl: As above.

Copy forwarded for information to :

- PS to Hon'ble Minister (RT&H)/ PS to Hon'ble MOS TAC (RT&H)/ PS to Hon'ble MOS - SS (RT&H)
- 2. The Secretary, Department of Telecommunications, New Delhi.
- 3. Director, PMO, New Delhi.
- All ROs / ELOs.
- 5. All SEs/EEs in the State PWDs.
- 6. Indian Roads Congress
- 7. Director, IAHE

Copy also for information to : PPS to Secy (RT&H)/ PPS to AS & FA, RT&H/ PPS to JS (H)/ Dir (H)

Copy also for information to : PPS to DG (RD) & SS/ All ADGs/ All SEs/ All EEs

Annexure - I

GUIDELINES FOR GRANTING RIGHT OF WAY PERMISSIONS TO TELECOM SERVICE LICENSEES / INFRASTRUCTURE PROVIDERS FOR LAYING OF TELECOM CABLES/DUCTS ON NH LAND

Government has realized the need for creating a robust telecommunication infrastructure with adequate bandwidth at affordable rates in order to promote development and proliferation of Information Technology, Electronic Governance, E-Commerce, convergence of Information, Communication and Entertainment sectors so as to improve the state of economy, enhance the quality of life of the citizens and to ensure development of urban and rural areas with equity throughout the country.

The Department of Telecom (DoT), Ministry of Communications, Government of India has issued the National Telecom Policy 2012 in the recent past which enunciates the need to review and simplify sectoral policy for granting Right of Way (RoW) for laying cable networks among others.

Keeping the above objectives in view, the following broad guidelines are being recommended by the Ministry of Road Transport & Highways (MoRTH), under which RoW permissions may be granted to licensed telecom operators and registered infrastructure providers for laying Telecom Cables including Optical Fibre Cables (OFC)/ducts under, over, along, across, in or upon a property vested in or under the control or management of a local authority or of any other person including public authority, public corporation, autonomous body, State Govt. or Central Govt. in their respective licensed service area during the currency of their license.

- Any authorized Licensee of DoT/Registered Infrastructure Provider is eligible to seek/avail RoW facility/permission. However, enforceability of the permission so granted shall be restricted to the extent of provisions/scope of service contained/defined in the license agreement of that Licensee & for the purpose for which it is granted.
- Either by content or by intent, the purpose of extending RoW facility is not to enhance the scope of license of a Licensee and such RoW permissions are only enabling/facilitating in nature.
- 3. The cable shall always be laid at the edge of the RoW. In case of restricted width of RoW, which may be adequate only to accommodate the carriageways, central verge, shoulders, slopes of embankment and drains, the cables shall be laid beyond the toe line of the embankments and clear of the

drain. In cases where cable ducts with sufficient space are already available along NH, the cables shall be laid in such ducts subject to technical requirements being fulfilled. Present policy of the MoRTH is to provide a 2.00 m wide utility corridor on either side of the extreme edge of RoW where required RoW of at least 45m is available, which includes provision for OFC Ducts.

- 4. The facility of RoW for laying underground Telecom Cables, shall be available to all Licensees (irrespective of existing or future) and registered/licensed infrastructure providers, without discrimination and without payment of any compensatory charges/levy/lease rentals/license fee/free bandwidth/revenue share/cashless equity etc. subject to the condition that this RoW shall be available to Licensees to the extent of provisions contained in their license agreements and the reinstatement charges shall be borne by such Licensees.
- 5. A Performance Bank Guarantee @ Rs.100 per route metre with a validity of one year initially (exter dable if required till satisfactory completion of work) shall have to be furnished by each 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. The above charge of Rs.100/m is liable to be reviewed every 5 years. For clarification, it is hereby mentioned that 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. 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. 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/ ts designated agency for any damage sustained by them by reason of the exercise of the RoW facility.

2001

6. In order to expedite RoW clearances to the Licensees in a time-bound manner through an appropriate and effective approval mechanism, a committee under the chairmanship of Chief Secretary to the respective State Govts. may act as single window to coordinate all activities in this regard. Each State Govt. may select a Nodal Person/Secretary of a Deptt. to function as Secretary to this Single Window Clearance Committee. However, in case of NH land, Licensees would be required to take permission from the highway administration for laying of cables. As regards NH routes executed by the State PWD, the concerned state Chief Engineer (INH) may act as nodal point/single window to coordinate the activities whereas in respect of the NH routes held by NHAI & BRDB, the designated officers of NHAI & BRDB may be assigned this task.

For work involving laying of cables along National Highways in different States or National Highway Project of length exceeding 500 km. in one state, Chief Engineer (Standards, Research & Technology) (R), MoRTH shall be the approving authority under whom a Single Window Facilitation Committee will be created.

Highway Administrator.' Nodal Officer shall maintain a record of all RoW permissions granted in the Format given in **Annexure** - III including permissions given at Ministry level.

- 7. RoW permissions may be granted by the said nodal office to a Licensee within a period of four weeks from the date of submission of completed application subject to the Licensee's application being complete with route details (including authority/ownership of concerned sections of the route) and compliance to eligibility requirement, furnishing of requisite Bank Guarantee and execution of an Agreement having operational details. The above stated Single Window Clearance Committee may be responsible to co-ordinate in case of any dispute for ownership of property and to expedite grant of RoW clearance thereof so as to adhere to the stipulated time-frame.
- 8. In case any shifting or alteration in the position of the laid Telecom Cables is required due to widening of highways and constructing of flyovers or bridges, the Licensee shall do the same at his own cost at a later date within specified period indicated by the respective agency.
- 9. In order to avoid repeated digging on the same routes, in cases where cable ducts with sufficient space are already available along NH, laying of cables shall be encouraged in such ducts subject to technical requirements being fulfilled. In cases where such ducts are not available, the first incumbent shall be allowed to lay voluntarily extra ducts/conduits with extra capacity so as to take care of future needs. The capacity/excess capacity can be commercialized by the incumbent with suitable mutual agreements with the respective State Government / utility agencies. However, the creation of

24

excess capacity by the first incumbent shall not be a pre-condition for giving RoW clearances. The Central/State roadways authorities may consider laying ducts/conduits at the time of construction of roads to facilitate laying Telecom Cables for which suitable charges could be imposed.

- Licensee shall ensure safety and security of all underground installations/ 10. responsible solely facilities and shall be utilities/ for damage concerned authority compensation/indemnification of caused/claims or replacements sought for at the cost and risk of Licensee.
- Licensee shall be liable to give a notice of 15 days with route details prior to trenching for fresh or maintenance/repair works. A separate performance Bank Guarantee for maintenance/repair works shall be furnished by Licensee.
- The period of validity of RoW permission shall be co-terminus with the validity of license.

Annexure - II

AGREEMENT REGARDING GRANTING OF RIGHT OF WAY PERMISSIONS FOR LAYING TELECOM CABLES/DUCTS

| Agreement to lay Telecom Cables/OFC /ducts fromtoKm ofland. |
|--|
| This Agreement made thisday of(month) of(year) |
| betweenacting in his executive capacity through(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 |
| M/s, 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. |
| Whereas the Authority is responsible, inter-alia, for development and maintenance of lands in |
| |
| Whereas the Licensee proposes to lay Telecom Cables/ducts in |
| Whereas the Licensee has applied to the Authority for permission to lay |
| Telecom Cables/ducts from Kmto Kmof road/route up toand |
| from Kmto Kmof road/route up to |
| And whereas the Authority has agreed to grant such permission on the terms and conditions hereinafter mentioned. |

Now this agreement witnesseth 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 Telecom Cables/ducts as per the approved drawing attached hereto subject to the following conditions, namely.

- 1) The cable shall always be laid at the edge of the RoW. In case of restricted width of RoW, which may be adequate only to accommodate the carriageways, central verge, shoulders, slopes of embankment and drains, the cables shall be laid beyond the toe line of the embankments and clear of the drain. In cases where cable ducts with sufficient space are already available along NH, the cables shall be laid in such ducts subject to technical requirements being fulfilled. Present policy of the MoRTH is to provide a 2.00 m wide utility corridor on either side of the extreme edge of RoW where required RoW of at least 45m is available, which includes provision for OFC Ducts;
- 2) The top of the casing/conduit pipe containing the cables shall be at least 1.2 m 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 Annexure IV. Any structure above ground shall be aesthetically provided for / landscaped with required safety measures as directed by the concerned Authority;
- 3) The Licensee shall ensure making good the excavated trench for laying cables 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 50 m away from the edge of the right of way;
- A Performance Bank Guarantee @ Rs.100 per route metre 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. The above charge of Rs.100/m is liable to be reviewed every 5 years. For clarification, it is hereby mentioned that 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. 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. 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.

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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;

- 5) 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 cables/ducts may be carried outside the railings/parapets and supported on brackets fixed to the outside of the bridge superstructure. The fixing and supporting arrangement with all details shall be required to be approved in advance from the concerned Authority which has granted such permission. Additional cost on account of fixing and supporting arrangement as assessed by the Authority shall be payable by the Licensee.
- 6) The Licensee shall shift the cables/ducts 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 cables/ducts, 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.
- 7) The Licensee shall be responsible to ascertain from the respective agency in co-ordination with Authority, regarding the location of other cables, cable duct, underground installations/ utilities/facilities etc. The Licensee shall ensure the safety and security of already existing cables/underground installations/ utilities/facilities etc. before commencement of the excavation/using the existing cable ducts.
- 8) 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 to make good such damages / recover the claims by forfeiture of Bank Guarantee.
- 9) If the Licensee fails to comply with the condition (6) and (7) above to the satisfaction of the Authority, the same shall be executed by the Authority at the cost and risk of the Licensee.
- 10) 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. Whether the technical requirements are fulfilled or not, shall be decided by Highway Administration/Government in their sole discretion. In case of any disruption/damage

caused to any existing user by the subsequent user, the Authority would not be accountable or liable in any manner whatsoever.

- The Licensee shall procure insurance from a reputed insurance company against damages to already existing cables/underground installations/utilities/facilities etc. during trenching.
- 12) 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 a cable, the Licensee has to execute the corresponding restoration work in a time bound manner. For clarification, it is hereby mentioned that 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. 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.
- 13) 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.
- 14) Each day, the extent of digging the trenches should be strictly regulated so that cables are laid and trenches filled up before the close of the work that day. Filling should be completed to the satisfaction of the concerned agency designated by the Authority.
- 15) 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.
- 16) This permission shall be co-terminus with the validity of license awarded by the Department of Telecommunications (DoT). The permission granted under this Agreement will automatically cease in case of premature termination of the license granted to by the DoT. The Authority also has a right to terminate the permission or to extend the period of Agreement. In case the Licensee wants shifting, repairs or alteration to Telecom Cables/ducts, he will have to furnish a separate Bank Guarantee.

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- 17) That the Licensee shall not without prior permission in writing of the concerned agency in co-ordination with Authority undertake any work of shifting, repairs or alterations to the said Telecom Cables/ducts.
- 18) In order to avoid repeated digging on the same routes, in cases where cable ducts with sufficient space are already available along NH, laying of cables shall be encouraged in such ducts subject to technical feasibility in terms of interference etc. In cases where such ducts are not available, the Licensee is free to lay voluntarily extra ducts/conduits with extra capacity so as to take care of future needs. The capacity/excess capacity can be commercialized by the Licensee with suitable mutual agreements with the Authority or his designated agency. However, the creation of excess capacity by the Licensee is not a precondition for RoW permission granted herein.
- 19) The permission granted shall not in any way be deemed to convey to the Licensee any ownership right or any interest in route/road/highway land /property, other than what is herein expressly granted. No use of NH RoW will be permitted for any purpose other than that specified in the Agreement.
- 20) During the subsistence of this Agreement, the Telecom Cables/Ducts 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.
- The Licensee shall bear the Stamp Duty charged on this Agreement.
- 22) The Telecom Cables shall not be brought into use by the Licensee unless a completion certificate to the effect that the Telecom Cables/ducts 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. Three copies of 'as laid drawings' of utilities (hard and soft copies) with geotagged photographs and geotagged 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 with in a month of completion of works.
- 23) Notwithstanding anything contained herein, this Agreement may be cancelled at any time by the 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.
- 24) The Licensee shall have to provide safety measures like barricading, danger lighting and other necessary caution boards while executing the work.
- 25) If any traffic diversion works are found necessary during the working period, such diversion shall be provided at the cost of Licensee.

242

- 26) After the termination /expiry of the agreement, the Licensee shall remove the cable/ducts 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 cables/ducts. However, before taking up the work of removal of cables the Licensee shall furnish a Bank Guarantee to the Authority for a period of one year for an amount assessed by the Authority as a security for making good the excavated trench by proper filling and compaction, clearing debris, loose earth produced due to excavation of trenching at least 50 m away from the edge of the RoW.
- 27) The enforceability of the RoW permission granted herein shall be restricted to the extent of provisions /scope of service contained/defined in the license agreement of the Licensee with DoT and for the purpose for which it is granted. Either by content or by intent, the purpose of extending this RoW facility is not to enhance the scope of License of the Licensee with the DoT.
- 28) Any disputes in interpretation of the terms and conditions of this Agreement or their implementation shall be referred to the High Level Committee comprising the designated representatives of the Authority, Licensee and the concerned agencies and the decision of the committee shall be final and binding on all.
- 29) For PPP projects, in case of any financial loss incurred by the respective project concessionaires due to such laying/ shifting of cables/ cable ducts 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) |

| SIGNED ON BEHALF OF M/S | | | | | (LICENSEE) | | | | | |
|-------------------------|----------|------------------|-------|-----|------------|---|--|-----|-------|--|
| | | | | | 14 | | | | | |
| BY SHRI_ | | | | | | | | | | |
| (Signatue, r | name & a | ddress with | stamp | o) | | | | | | |
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Page 13 of 16

Annexure - III

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| ı | Format fo | or maintai | ning R | ecords | of Righ | | permissio | n granted | for layir | ng |
| (| to be m | aintained | separa | itely for | | NH and S | State, eve | ery PWD [| Division (| or |
| 1. | Ν | lame of S | tate | | | | : | | | 21 |
| 2. | Name of Agency (PWD/BRO/NHAI) : | | | | | | | | | = |
| 3. | N | ame of P | WD Di | vision c | r Equiv | alent | : | | | 1 88 |
| ١. | N | H Numbe | er | | | | : | | | 23 |
| i. | Location (chainage in km) | Left or right side of NH (towards increasing chainage/ | Section and reach | Kind of service | Name of licensee and contract address | Date of signing of agreement | Date of validity of agreement | Date of last inspection agreement of site | Any deviation from MoRTH standard norms | Remarks |

Action

direction)

Annexure-IV TOP OF THE ROAD TOP OF 1.20 M (MIN.) OVER FILL SUBGRADE (GRANULAR MATERIAL IN LAYERS NOT GREATER THAN 15CM in EACH LAYER 15 to 30 CM CASING SIDE FILL PIPE 15 to 30 CM BED FILL SIDE FILL (GRANULAR MATERIAL IN LAYERS NOT GREATER THAN 15CM IN EACH LAYER) (GRANULAR. MATERIAL FREE FROM LUMPS, COLDS AND CABBLES) Figure not to scale

FIGURE-1 INSTALLATION OF CASING PIPE FOR CROSSING THE ROAD

Page 15 of 16

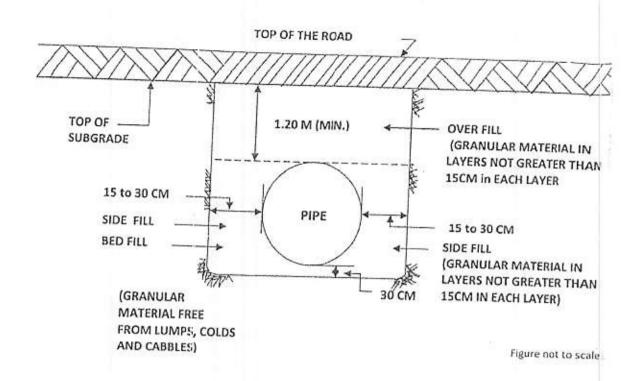


FIGURE-2 INSTALLATION OF PIPE FOR ALONG THE ROAD