



**BHARATMALA**  
ROAD TO PROSPERITY



सत्यमेव जयते

No. RO/UK/Chardham/HPC  
Government of India

**Ministry of Road Transport & Highways**  
(Chief Engineer-Regional Office)

46/1, Canal Road, Jakhan, Dehradun - 248001 (Uttarakhand)  
Phone No. 0135-2738657, email:- romorthddn@gmail.com

Dated:- 25.09.2020

To,

1. The Director General (Borders Roads), Seema Sadak Bhawan, Ring Road, Naraina, New Delhi. (E-mail: bro-dirwest@nic.in, bro-direpc@bro.gov.in).
2. The Managing Director, NHIDCL, 3rd Floor PTI Building, 4, Parliament Street New Delhi. (E-mail: mdnhidcl@gmail.com).
3. Secretary, PWD, Government Uttarakhand Secretariat, 4, Subhash Road, Dehradun-248001. (E-mail: secy-rd-ua@nic.in).

**Subject:** Hon'ble Supreme Court's Order dated 08.09.2020 in the M.A. 1449/2020 and 08.08.2019 in the matter of Citizens for Green Doon & Ors. Vs. Union of India and Ors. - reg.

**Ref:** i. Sh. Ravi Chopra, Chairman, HPC letter dated 11.09.2020.  
ii. This office letter dated 17.09.2020.

Sir,

This is in reference to letter cited above at (i) which was forwarded vide this office letter cited above at (ii) with request to submit the comments/ compliance report in the specified timeline in this office. The same are still awaited.

2. In compliance to letter dated 11.09.2020 of Chairman, HPC it is requested to put the details of vulnerable slopes & muck dumps which were submitted to HPC vide this office RO/UK/CHARDHAM/HPC dated 11.05.2020 (copy enclosed) in public domain on your respective websites. It is also requested to provide road signages as per IRC Specifications at these locations to warn the road users.

**Encl.: As above**

Yours faithfully

  
(Ankit)

Assistant Executive Engineer  
For Chief Engineer-Regional Officer

**Copy for necessary action to:**

1. The Chief Engineer (NH), PWD, Garhwal Mandal, Yamuna Colony, Dehradun. (E-mail: cenhddn@gmail.com).
2. The Chief Engineer (Project Shivalik), Border Road Organization, IDPL Complex, Virbhadara, Rishikesh. (E-mail: bro-svk@nic.in).
3. The Regional Officer, NHIDCL, C-24, Ajabpur Kalan, Near Bengali Kothi, THDCC, Dehradun. (E-mail: ro.dehradun@nhidcl.com).

**Copy for information to:**

1. Director General (RD) & Special Secretary, MoRTH, Transport Bhawan, New Delhi- 110001. (E-mail: indresh.pandey@nic.in).
2. Additional Director General (Zone-1), MoRTH, Transport Bhawan, New Delhi- 110001. (E-mail: d.sarangi@nic.in).
3. The Principal Secretary Forest, Govt. of Uttarakhand, Secretariat, 4 Subash Road, Dehradun -248001. (E-mail: secy-for-ua@nic.in).
4. The Chief Engineer (Zone-I), Transport Bhawan, New Delhi- 110001. (E-mail: rahul.gupta@nic.in).

Yours faithfully

  
(Ankit)

Assistant Executive Engineer  
For Chief Engineer-Regional Officer



Regional Office &lt;romorthddn@gmail.com&gt;

**Submission of details of vulnerable slopes and muck dump sites- reg.**

2 messages



**Regional Office** <romorthddn@gmail.com>

Mon, May 11, 2020 at 12:45 PM

To: environment.spmguk@gmail.com, arvind singh hyanki hyanki <ahyanki@gmail.com>, ikp5@hotmail.com, "I. K. Pandey" <indresh.pandey@nic.in>, cenh ddn <cenhddn@gmail.com>, bro-svk <bro-svk@nic.in>, info@nhidcl.com  
Cc: Virendra Singh Khaira <khairavs@gmail.com>

--  
**Chief Engineer - Regional Officer**  
**Ministry of Road Transport and Highways**  
**Govt. of India**  
**46/1, Canal Road Jakhan**  
**Dehradun**  
**Tel : 0135-2738657**

**2 attachments**

-  **submission of details of vulnerable slopes.pdf**  
9851K
-  **Vulnerable slopes and muck dump sites details.xlsx**  
57K



**Regional Office** <romorthddn@gmail.com>

Mon, Jul 20, 2020 at 4:37 PM

To: rachop@gmail.com

Sir,  
PFA the list of vulnerable slopes and muck dumps.  
[Quoted text hidden]

**2 attachments**

-  **submission of details of vulnerable slopes.pdf**  
9851K
-  **Vulnerable slopes and muck dump sites details.xlsx**  
57K





No. RO/UK/Chardham/HPC  
Government of India

Ministry of Road Transport & Highways  
(Chief Engineer-Regional Office)

46/1, Canal Road, Jakhan, Dehradun - 248001 (Uttarakhand)

Dated:- 11.05.2020

To,

The Secretary, Forest & Environment,  
Member Secretary, Forest (HPC),  
Govt. of Uttarakhand,  
4 Subash Raod, Uttarakhand  
Secretariat,  
Dehradun - 248001

Sub: - Submission of details of vulnerable slopes and muck dump sites- reg.

Sir,

Please refer to your letter no. 05/X-3/19/15(104)/2019 dated 06.03.2020, 12/X-3/19/15(104)/2019 dated 24.04.2020 and 20/X-3/19/15(104)/2019 dated 06.05.2020 vide which it was recommended to undertake survey to identify vulnerable slopes and muck dumping sites.

2. In this regard, the executing agencies has identified the vulnerable slopes and muck dump sites, the details of such vulnerable slopes and muck dumping sites package wise alongwith its chainages and GPS locations, are enclosed herewith of further necessary action. It is to mention that partial details are received from NHIDCL vide letter no. NHIDCL/PMUSRN/HPC/2019-20/CORR/D.2950 dated 13.04.2020 (Copy Enclosed).

Encl.: Excel sheet of details

Yours faithfully

(Kapil Singh)

Executive Engineer

For Chief Engineer-Regional Officer

Copy to:

1. Director General (RD) & Special Secretary, MoRTH, Transport Bhawan, New Delhi- 110001 - for information.
2. The Chief Engineer (NH & Bridge), Yamuna Colony Dehradun.
3. The Chief Engineer (Project Shivalik), BRO, Rishikesh.
4. The Director, NHIDCL, PTI Building, Parliament Street New Delhi- to submit complete details at earliest.

**राष्ट्रीय राजमार्ग एवं अवसंरचना विकास निगम लिमिटेड**

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD  
Ministry of Road Transport & Highways, Government of India  
PMU- Lane No. 1, ward No. 9, Upper Bhaktiyana, Pauri Road, Srinagar Garhwal,  
Uttarakhand, Pin- 246174  
E-mail :- [nhidclddn2@gmail.com](mailto:nhidclddn2@gmail.com),  
Contact no :- 01346-253038



A PUBLIC SECTOR UNDERTAKING

NHIDCL/PMUSRN/HPC/2019-20/CORR/D- 2950

Date: 13.04.2020

To,

CE-RO, MoRT&H,  
46/1 Canal Road, Jakhan,  
Dehradun, Uttarakhand.

**Sub:** Construction and Up-gradation to 2-lane with paved shoulder from Km. 368.00 to 430.000 of Lameri to Chamoli of NH-07 on EPC basis in the State of Uttarakhand.  
Submission of details of vulnerable slopes & muck dumping site.

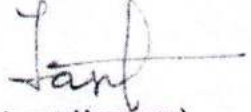
**Ref:**

- (i) CE-RO, MoRT&H, Dehradun letter no. RO/UK/Chardham/HPC dated 11.03.2020.
- (ii) M/s HEC letter no. 980014/Client/Pkg-I/281 dated 17.03.2020 (Copy enclosed).
- (iii) M/s HEC letter no. 980014/Client/Pkg-II/323 dated 17.03.2020 (Copy enclosed).

Sir,

With reference to your letter mentioned above at reference (i), the details of vulnerable slopes and muck dump sites, as submitted by Authority's Engineer, M/s HEC in Association with M/s L Telford Consulting Eng. Pvt. Ltd. under jurisdiction of this office (Km 360.000 to Km 430.000 of NH-58) is enclosed herewith.

**Encl:-** As Above.

  
(Jagat Narayan)  
General Manager (P)

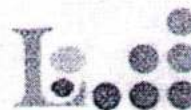
**Copy to:** -

- 1. NHIDCL, site office-Rudraprayag for information please.
- 2. Office copy.





*Highway Engineering Consultant*  
in Association with  
*LTelford Consulting Engineers Pvt. Ltd.*



Project Office: #Flat No. 301, FH-17, GTM Forest & Hills, Handwar Road, Mohkampur, Dehradun-248005  
# Hotel Holidays Home, Shakti Nagar, Main Badmash Road, Karanpryag-246444 (Email: hec@telford.chardham@gmail.com)

Ref: 980014/Client/Pkg-I/281

Date: 17/03/2020

To,  
**General Manager (Projects)**  
National Highways & Infrastructure Development Corporation Limited,  
Lane no.1, Upper Bhaktiyana,  
Opposite G.B.Pant Forestry Institute,  
Pauri Road, Srinagar, Uttarakhand  
Email ID: [nhidclddn2@gmail.com](mailto:nhidclddn2@gmail.com) , [nhidclddn@gmail.com](mailto:nhidclddn@gmail.com)

**Subject:** Consultancy services for supervision of : Construction and up gradation of existing road to 2-lane with paved shoulder from Km 368.00 to km 399.00 of Lameri to Karanpryag (Excluding km 379.100 to km 380.275) of NH-07 under Chardham Priyojna of EPC basis in the state of Uttarakhand.

**Regarding:** submission of details of vulnerable slope and muck dump sites

**Reference:** 1. Your Letter No. NHIDCL/BOSRN/ALL PKG/2018-19/CORR/D-2908

2. Chief Engineer – RO, Dehradun Letter No. Nil

3. Secretary, Forest & Environment Govt. UK DO No. 05/X-3/19/15(104)/2019

Dated: 11-03-2020

Dated: 11-03-2020

Dated: 06-03-2020


Sir,

Kindly refer to your letter dated 11-03-2020 cited at serial (1) regarding the subject enclosing therewith letters dated 11-03-2020 and 06-03-2020 from RO, MORT&H, Dehradun and Secretary, Forest & Environment Department, Uttarakhand cited at serial (2) and (3) respectively wherein the information with regard to identification of vulnerable slopes and muck dumping sites are asked for by undertaking quick survey of the project road.

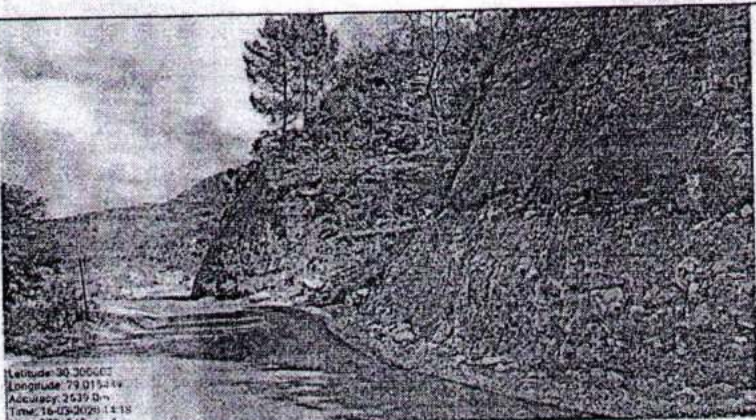
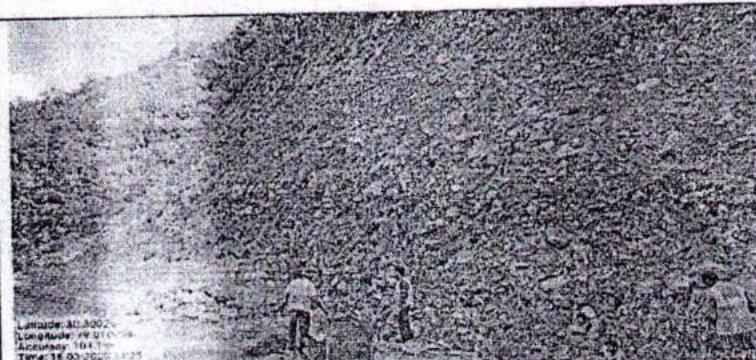
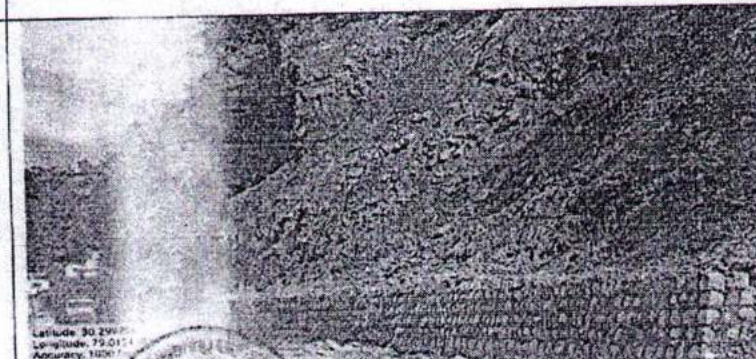
As a follow up action the inspection of above mentioned Contract Package from Km. 368+000 to Km. 399+000 was carried out on 16-03-2020 so as to see physically all such spots/locations which seem to be vulnerable from slide angle or the dump sites which come under the same bracket along with individual photographs.

Our observations and inferences are listed chainage wise as under seriatim: -

1) Vulnerable slope:- ch. 368+942 to 369+000

Sl. No.	Description	Photographs
1	<p>Vulnerable slope (Ch. 368+942 to Ch. 369+000 &amp; 369+000 to 369+180):-</p> <p>The hill slope face at these two locations is very steep in the range of 70 to 80°. The strata comprises of cobble/round stones intermixed with clay. The hill slope is in a fairly stable condition but requires treatment as per expert advise. Seeding mulching may also be an option keeping in view clayey medium where vegetation may</p>	



	grow.	
2	<p><b>Vulnerable slope (Ch. 370+845 to 370+890):-</b></p> <p>The hill cut face comprises of pebble/cobble &amp; round stone in a matrix of clayey medium. The exposed slope face is at an angle of about 70° or more and seems to be in a fairly stable condition. Treatment as per the advise of expert is required. However seeding mulching may also be an option keeping in view clayey medium where vegetation can take roots.</p>	 <p>Latitude: 30.300000 Longitude: 79.015000 Accuracy: 2539 Dm Time: 16-03-2020 11:18 Note: 370+845 photo</p>
3	<p><b>Vulnerable slope (Ch. 371+070 to Ch. 371+100):-</b></p> <p>The slope comprises of rocks, debris intermixed with silty clay and requires treatment for it's stabilization. Height may range from 10-15 mts.</p>	 <p>Latitude: 30.300000 Longitude: 79.015000 Accuracy: 164 Dm Time: 16-03-2020 11:20 Note: 371+070 photo</p>
4	<p><b>Dumping zone (Ch. 370+130 to Ch. 370+222):-</b></p> <p>Although toe gabions have been placed for holding the muck/mulba safely; yet raising of their height is required to create free board &amp; restraint against roll over.</p>	
5	<p><b>Vulnerable Slope (Ch. 371+460 to Ch. 371+236):-</b></p> <p>The slope face comprises of soil mixed with debris and needs treatment to arrest any destabilization/ roll over of mulba in future &amp; cause obstruction to project road.</p>	 <p>Latitude: 30.290000 Longitude: 79.015000 Accuracy: 164 Dm Time: 16-03-2020 11:20 Note: 371+460 photo</p>





**6 Dumping Zone (Ch. 371+170 to Ch. 371+236):-**

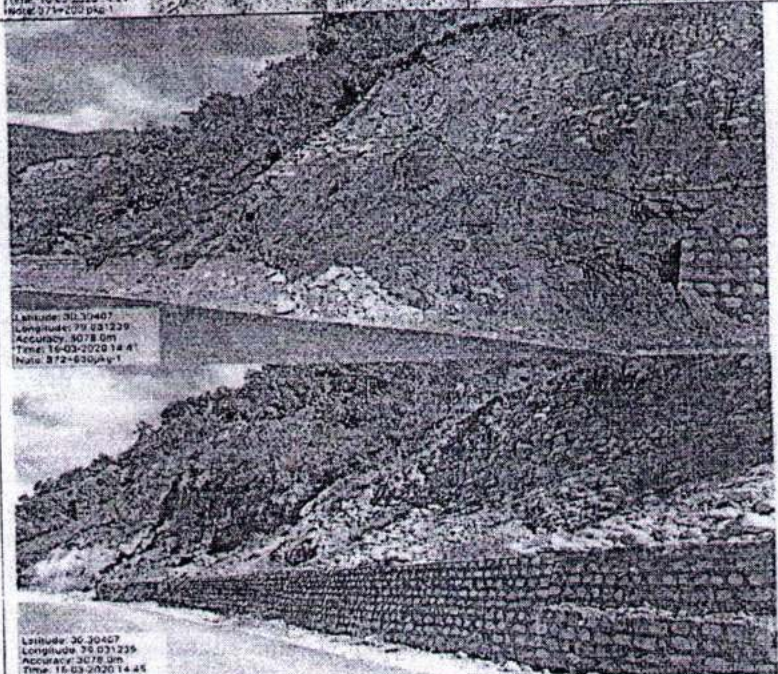
This dumping site is filled up to top of toe gabion and requires their strengthening and raising so that a free board is created as a restraint against rollover of muck/mulba beyond the bottom limit of the gabions.



Latitude: 30.30457  
Longitude: 75.031235  
Accuracy: 30.78 m  
Time: 16-03-2020 14:29  
Note: 371+236.jpg-1

**7 Vulnerable Slope (a) Ch. 372+630 to Ch. 372+650  
(b) Ch. 372+770 to Ch. 372+810**

The cut faces of hill slopes at both these locations comprises of cobble stones/boulders in a clayey medium. Presently these slopes seem to be in a fairly stable condition but treatment with seeding mulching may be an option besides other stabilization measures as per expert advice.



Latitude: 30.30457  
Longitude: 75.031235  
Accuracy: 30.78 m  
Time: 16-03-2020 14:41  
Note: 372+630.jpg-1

Latitude: 30.30457  
Longitude: 75.031235  
Accuracy: 30.78 m  
Time: 16-03-2020 14:45  
Note: 372+770.jpg-1

**8 Vulnerable Slope (Ch. 372+950 to Ch. 372+970):-**


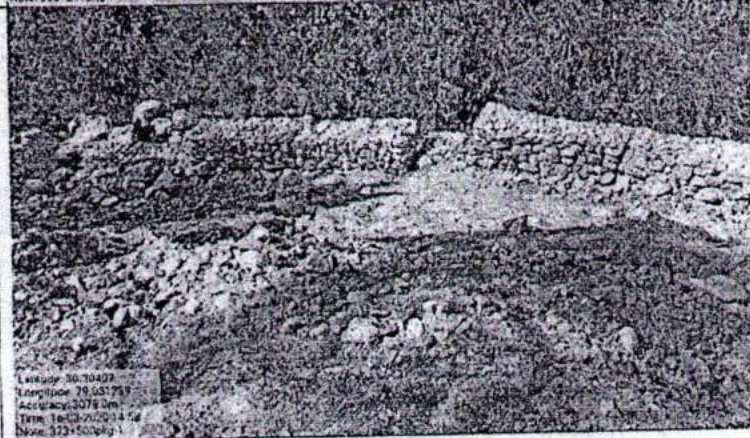
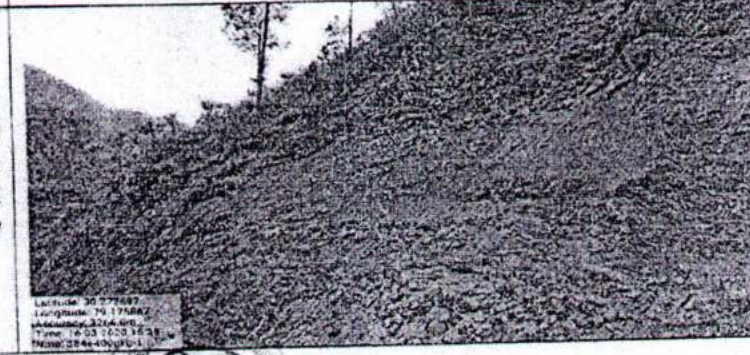
The cut face of hill slope comprises of big rocks/stones interspersed with soil & with a steep slope. Although the face slope seems stable at present yet some treatment needs to be visualized for its stability in future as per expert advise



Latitude: 30.30457  
Longitude: 75.031235  
Accuracy: 30.78 m  
Time: 16-03-2020 14:46  
Note: 372+950.jpg-1









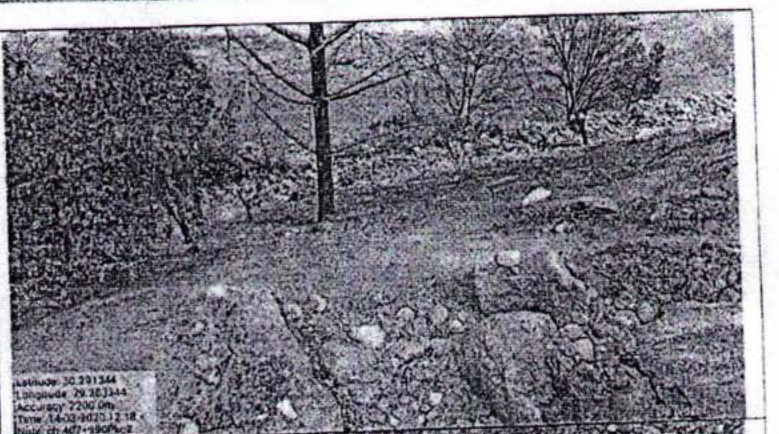


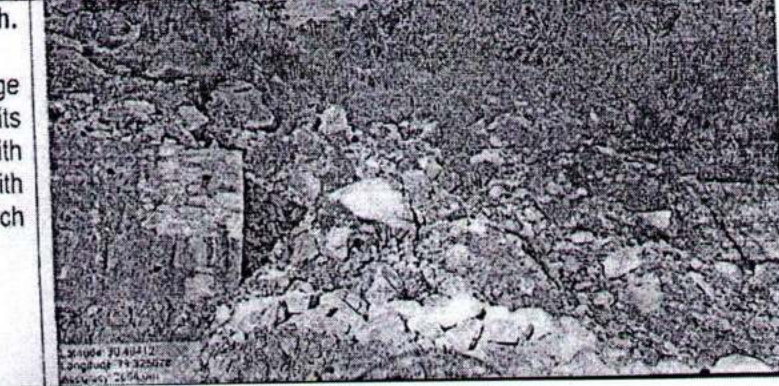
9	<p><b>Vulnerable Dumping Site (Ch. 373+250 to 373+290):-</b> The slope as usual is in a parabolic shape comprising of big boulders and clay mixture slope is steep &amp; seems fairly stable at present but requires treatment for its sustained stability to avoid road blocks in future.</p>	 <p>Latitude: 30.30407 Longitude: 79.23123 Accuracy: 3075.0m Time: 16-03-2020 14:55 Note: 373+250 to 373+290</p>
10	<p><b>Vulnerable Dumping Site (Ch. 374+000 to 374+080):-</b> The dumped mulba/muck needs to be properly secured by toe/protection gabions as it seems to be vulnerable at present. This is essential to avoid any likely hazards on this account.</p>	 <p>Latitude: 30.30407 Longitude: 79.23123 Accuracy: 3075.0m Time: 16-03-2020 14:55 Note: 374+000 to 374+080</p>
11	<p><b>Vulnerable Dumping Site (Ch. 375+000 to 375+065):-</b> Although this dumping site seems to be in a fairly good condition yet it requires strengthening/raising of gabions to maintain this site in proper shape.</p>	
12	<p><b>Vulnerable Slope (Ch. 384+400 to Ch. 384+430):-</b> The hill slope configuration is in the form of fractured/weathered rock with soil/silt mixture. The slope angle is fairly steep &amp; requires treatment for its stability as per expert advise.</p>	 <p>Latitude: 30.30407 Longitude: 79.23123 Accuracy: 3075.0m Time: 16-03-2020 14:55 Note: 384+400 to 384+430</p>





2	<p><b>Vulnerable Dumping Site (Ch. 400+750 to 400+830):-</b> This dumping site is observed to be vulnerable as mulba/dumped material is over shooting the toe gabions and as such raising of these protection gabions is required to arrest over shooting of mulba.</p>	 <p>Latitude: 23.270631 Longitude: 78.225716 Elevation: 824.93m Accuracy: 4.6m Time: 03-17-2023 13:11 Notes: dumping site Ch. (400+750) to (400+830)</p>
3	<p><b>Vulnerable Slope (Ch. 401+920 to Ch. 401+970):-</b> Within these limits the slope on hill side of road has formed a parabolic slide of about 40 mts. Height at apex enclosed by vegetation/trees on its outer periphery. The composition of material seems silty clay / rock debris.</p>	 <p>Latitude: 23.269529 Longitude: 78.225299 Accuracy: 3.66m Time: 14-03-2023 11:30 Notes: Ch. 401+920 to 401+970</p>
4	<p><b>Vulnerable Dumping Site (Ch. 405+520 to Ch. 405+603):-</b> Here also the muck/mulba is over flowing the toe gabion on valley side atop the Kaleshwar village. A culvert is also located at ch. 405+550 raising of toe gabion is required to arrest over shooting of mulba.</p>	 <p>Latitude: 23.265719 Longitude: 78.225299 Accuracy: 3.66m Time: 14-03-2023 11:30 Notes: ch. Kaleshwar PA 32</p>
5	<p><b>Vulnerable Slope (Ch. 406+320 to Ch. 406+350):-</b> On the hill slope the exposed base rock can be observed with mulba/vegetation growth at its top end. However at times some shooting stone/debris rolls down the slope and could hit the shop of local resident across the other end of road on valley side causing public outcry.</p>	 <p>Latitude: 23.265752 Longitude: 78.224252 Accuracy: 2.186m</p>




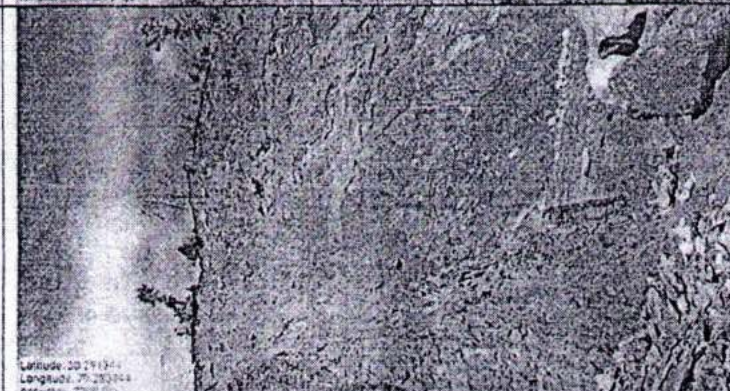


6	<p><b>Vulnerable Dumping Site (Ch. 407+950 to Ch. 408+100):-</b> Here again the problem of over shooting of dumped mulba/debris is observed which can directly fall into river below and as such requires raising/strengthening of toe gabions to create headroom/restraint to debris flow beyond its limits.</p>	 <p>Latitude: 30.291344 Longitude: 79.283344 Accuracy: 22.90 m Time: 14-03-2020 12:18 Note: Ch 407+950Page 2</p>
7	<p><b>Vulnerable Dumping Site (Ch. 408+185 to Ch. 408+260):-</b> Here the dump site management is observed to be in fairly better condition but still gabions require raising. A culvert is located within this dump site and cascading arrangement is required to regulate its out flow on valley site to arrest erosion.</p>	 <p>Latitude: 30.291344 Longitude: 79.283344 Accuracy: 22.90 m Time: 14-03-2020 12:24 Note: Ch 408+200Page 2</p>
8	<p><b>Vulnerable Dumping Site (Ch. 409+160 to Ch. 409+260):-</b> Presently no over shooting of mulba is taking place but it is filled up to brim and requires raising of gabion along with their extension as well where no protection has been done as yet so that the mulba does not drop into river below. Moreover culvert is also located within the dumping area and needs to be extended to take its outlet outside the dump site.</p>	 <p>Latitude: 30.291344 Longitude: 79.283344 Accuracy: 22.90 m Time: 14-03-2020 12:30 Note: Ch 409+260Page 2</p>
9	<p><b>Vulnerable Slope (Ch. 409+720 to Ch. 409+740):-</b> This slide spot falls in village Sonla, Nandprayag and its composition is soil mixed with big boulders accompanied with seepage of water due to which its stability is aggravated.</p>	 <p>Latitude: 30.291344 Longitude: 79.283344 Accuracy: 22.90 m Time: 14-03-2020 12:30 Note: Ch 409+740Page 2</p>





The Infra Advisor

10	<p><b>Vulnerable Slope (Ch. 410+540 to Ch. 410+580):-</b> The slope apparently seems venerable and needs to be enlisted as such.</p>	 <p>Latitude: 30.215039 Longitude: 78.202683 Elevation: 852.51m Accuracy: 3.5m Time: 17-03-2020 14:52 Note: Hill side at Ch. 410+540 to 580</p>
11	<p><b>Vulnerable Slope (Ch. 410+640 to Ch. 410+700):-</b> The slope apparently seems venerable and needs to be enlisted as such.</p>	 <p>Latitude: 30.215039 Longitude: 78.202683 Elevation: 852.51m Accuracy: 3.5m Time: 17-03-2020 14:52 Note: Hill side at Ch. 410+640 to 700</p>
12	<p><b>Vulnerable Slope (Ch. 411+400 to Ch. 411+430):-</b> This is a vulnerable slide reach where material composed of clay and round boulders has already slipped down. It is located just before the existing bridge. A village road taking off before this location passes over top of the slide and can threaten the stability of this link road as well.</p>	 <p>Latitude: 30.215039 Longitude: 78.202683 Elevation: 852.51m Accuracy: 3.5m Time: 17-03-2020 14:52 Note: Hill side at Ch. 411+400 to 430</p>
13	<p><b>Vulnerable Slope (Ch. 411+480 to Ch. 411+520):-</b> The slope angle is 50°+ composed of exposed rock on bottom portion and clayey media with boulders and debris on its upper portion. An electric transmission tower is located just a few meters at top edge of this slide and may have safety concerns any time. This location is Devlibaagarh.</p>	 <p>Latitude: 30.215039 Longitude: 78.202683 Elevation: 852.51m Accuracy: 3.5m Time: 17-03-2020 14:52 Note: Hill side at Ch. 411+480 to 520</p>



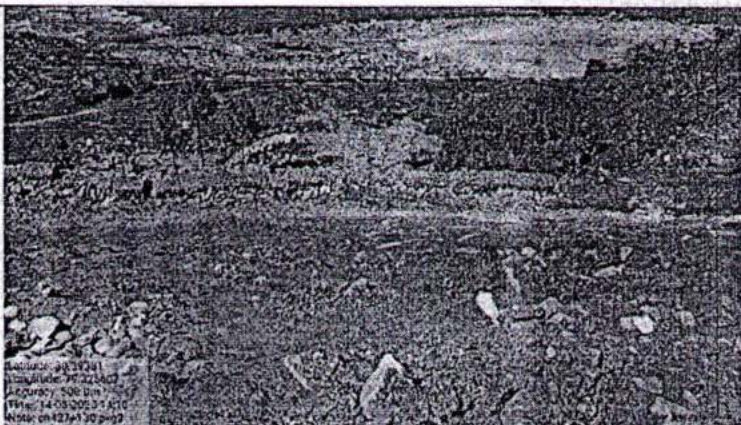


"The Infra Advisor"

20

**Vulnerable Dumping Site (Ch. 427+130 to Ch. 427+265):-**

This dumping site is observed to be in good shape and no over shooting was observed.



The information with regard to vulnerable slopes and dumping sites as above is submitted for favor of further necessary action at your end.

Thanking you and assuring you of our best services always.

Yours faithfully  
Shadi Lal Bhat  
Team Leader  
HEC-LTCEPL

CC. 1. M/s SCCPL-HCCPL, Contract Package - 2



**13 Vulnerable Slope (Ch. 386+500 to Ch. 3386+540):-**

The hill slope comprises of sandy soil & rocks and requires treatment for stabilizing this slope for avoiding any rock fall/slip accumulation on project road



**14 Vulnerable Slope (Ch. 387+270 to Ch. 387+310):-**

The slope height up to its apex is approximately 15 mts. and comprises of soil, weathered rock, debris & is a naturally occurred slide. The spot requires treatment as per expert advise to avoid any interference with traffic on project road in future.



The information with regard to vulnerable slopes and dumping sites as above is submitted for favor further necessary action at your end.

Thanking you and assuring you our best services.

Yours faithfully,  
Shadi Lal Bhat  
Team Leader  
HEC-LTCEPL





Highway Engineering Consultant

in Association with

**L Telford Consulting Engineers Pvt. Ltd.**

Project Office: #Flat No. 301, FH-17, GTM Forest & Hills, Haridwar Road, Mohkampur, Dehradun-248005

# Hotel Holidays Home, Shakti Nagar, Main Badrinath Road, Karanprayag-246444 (Email: hectelford.chardham@gmail.com)



Ref: 980014/Client/Pkg-II/323

Date: 17-03-2020

To,

**The General Manager (Project)**

National Highways & Infrastructure Development Corporation Limited,

Lane No.1, Upper Bhaktiyana, Opp. G.B. Pant Forestry Institute,

Pauri Road, Srinagar, Uttarakhand

Email: [nhidclddn2@gmail.com](mailto:nhidclddn2@gmail.com)

**Subject:** Construction and Upgradation of existing road to 2-lane with paved shoulder from Km.399.000 to Km.430.000 of Karanprayag to Chamoli (Excluding Km. 420.250 to Km.420.500 and Km.423.300 to Km.423.650) of NH-7(Old-58) under Chardham Pariyojna on EPC basis in the State of Uttarakhand (Regarding submission of details of vulnerable slope and muck dump sites)

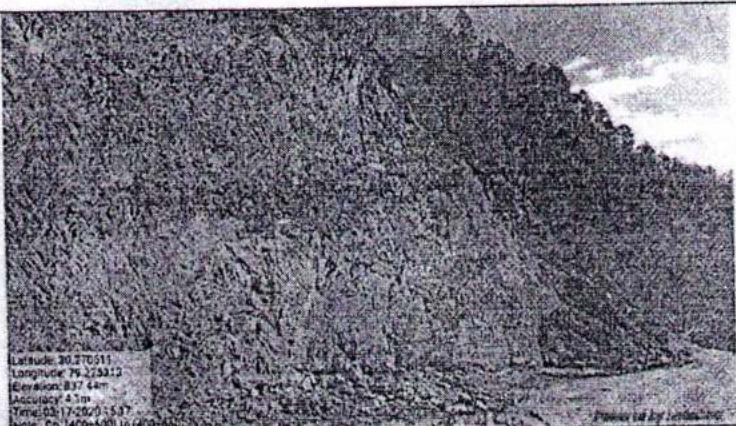
**Reference:** 1. Your Letter No. NHIDCL/BOSRN/ALL PKG/2018-19/CORR/D-2908 Dated: 11-03-2020  
2. Chief Engineer – RO, Deheradun Letter No. Nil Dated: 11-03-2020  
3. Secretary, Forest & Environment Govt. UK DO No. 05/X-3/19/15(104)/2019 Dated: 06-03-2020

Sir,

Kindly refer to your letter dated 11-03-2020 cited at serial (1) regarding the subject enclosing therewith letters dated 11-03-2020 and 06-03-2020 from RO, MORT&H, Deheradun and Secretary, Forest & Environment Department, Uttarakhand cited at serial (2) and (3) respectively wherein the information with regard to identification of vulnerable slopes and muck dumping sites are asked for by undertaking quick survey of the project road.

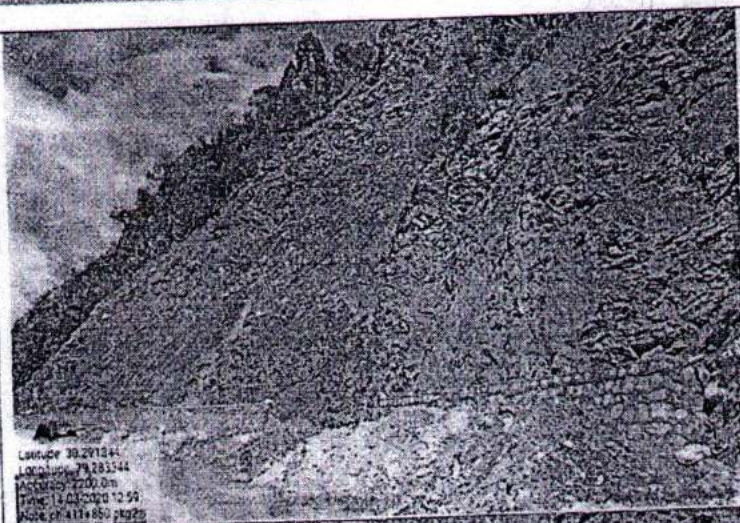
As a follow up action the inspection of above mentioned Contract Package from Km. 399+000 to Km. 430+000 was carried out on 14-03-2020 so as to see physically all such spots/locations which seem to be vulnerable from slide angle or the dump sites which come under the same bracket along with individual photographs.

Our observations and inferences are listed chainage wise as under seriatim: -

Sl. No.	Description	Photographs
1	Vulnerable Slope (Ch. 400+600 to Ch. 400+660):- The slope at this spot is observed to be vulnerable on hill side of the project road between above mentioned limits. The composition of slope is characterized by fractured rock/debris which seemingly has slipped from height of about 50 mts.	 Latitude: 30.270511 Longitude: 79.273212 Elevation: 837.44m Accuracy: 4.7m Time: 03/17/2020 15:57 Note: Ch. 400+600 to 400+660



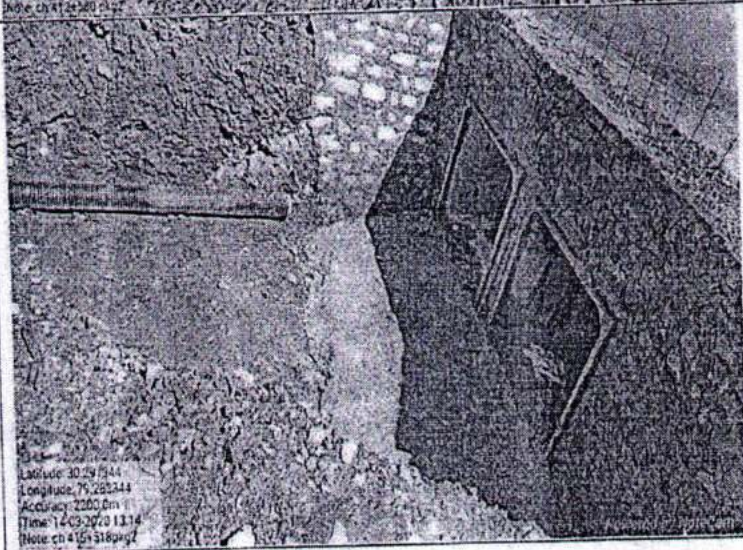
- 14 **Vulnerable Slope (Ch. 411+850 to Ch. 411+900):-**  
The slope material is composed of sandy malba with fractured debris. The slide area height shall be in the range of about 40 mtrs. and its periphery has vegetation and forest trees




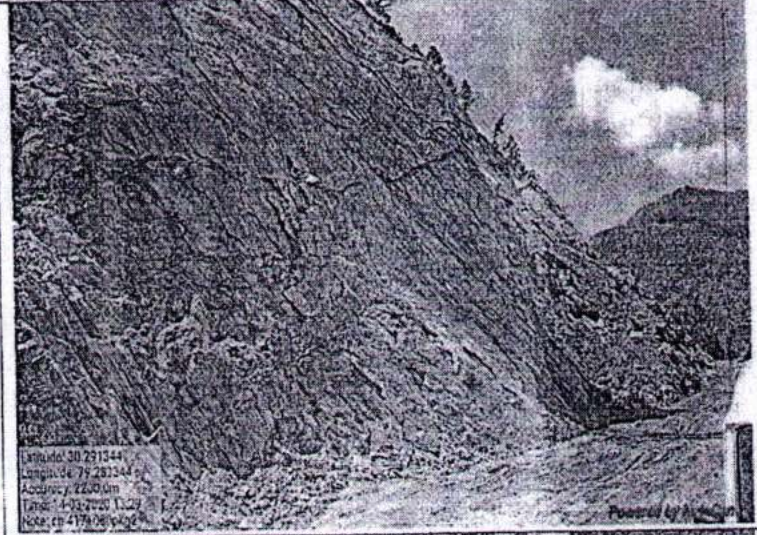

- 15 **Vulnerable Dumping Site (Ch. 412+550 to Ch. 412+730):-**  
The toe gabions are at present retaining the dumped mulba but require raising for creation of free board to arrest any roll over of muck. Three nos. of culverts fall within the dumping zone which require widening as well as cascading beyond their outlet on valley side to avoid erosion.



- 16 **Vulnerable Dumping Site**  
a) Ch. 415+085 to Ch. 415+110  
b) Ch. 415+140 to Ch. 415+194  
c) Ch. 415+330 to Ch. 415+420  
d) Ch. 415+500 to Ch. 415+600  
e) Ch. 415+880 to Ch. 415+977  
Five number dumping sites are included within these chainages close by. Both extending and raising of toe gabions are required for creation of free board to arrest roll over of muck. A culvert at chainage 415+558 is located within the dumping zone and cascading has to be done to regulate its out flow on valley side.





17	<p><b>Vulnerable Dumping Site (Ch. 415+980 to Ch. 416+110):-</b>                  This dumping site is fairly well managed. Two nos. culverts at chainage 416+030 and chainage 416+000 shall require cascading on valley side to regulate its out flow discharge.</p>	 <p>Latitude: 30.251344                  Longitude: 79.251344                  Accuracy: 2200.0m                  Time: 13-03-2020 12:19                  Note: ch 416+000 to 416+110</p>
18	<p><b>Vulnerable Slope (Ch. 417+000 to Ch. 417+100):-</b>                  This disturbed slope on hill side is composed of layered rock with adversed dip of about 45° or more towards project road. However full road formation width has already been achieved up to sub-grade level. Although the configuration of slope face is vulnerable, yet at present the toe restraint is in place. An electric tower is located just on top of this exposed slope and is vulnerable.</p>	 <p>Latitude: 30.251344                  Longitude: 79.251344                  Accuracy: 2200.0m                  Time: 13-03-2020 12:29                  Note: ch 417+000 to 417+100</p>
19	<p><b>Vulnerable Dumping Site (Ch. 419+500 to Ch. 419+600):-</b>                  This dumping site is filled up/exhausted and is closed. Two nos. of culverts at Ch. 419+700 and Ch. 419+800 fall within this dump site and require cascading on valley side as anti-erosion measure for regulating out flow on valley side.</p>	 <p>Latitude: 30.252644                  Longitude: 79.251344                  Accuracy: 100.0m                  Time: 14-03-2020 12:45                  Note: ch 419+500 to 419+600</p>



### Package-1 : Rishikesh (km 228) to Rudraprayag (km 368) of NH- 58 (old)

Name of Project: Widening and Strengthening / Reconstruction of Existing 2-Lane to 2 Lane with Paved Shoulder Configuration from Existing Km 235+615 (Design Km 235+306) to Km 268+000 (Design Chainage Km 266+100) of NH-58 in the State of Uttarakhand through an Engineering, Procurement and Construction (EPC) Mode.

Special Protection work Against Land Slide (Pkg-I)							
S. No	Chainage		Coordinate[Northing & Easting]		Length (in mtr.)	Nearst Dumping Zone	Remarks
	From	To	From	To			
1	246+020	246+120	30°07'59" N 78°24'57" E	30° 07'	100	247+170	Proposed
	246+140	246+190	30°07'57" N 78°25'00" E	30° 07'	40	247+170	Proposed
	257+080	257+180	30°04'07" N 78°27'35" E	30° 04'	100	265+010	
	259+740	259+880	30°03'40" N 78°28'55" E	30° 03'	140	265+010	
Total Length					380		

Name of Project: Widening and Strengthening / Reconstruction of Existing 2-Lane to 2 Lane with Paved Shoulder Configuration from Km 268.00 to Km 300.00 on NH-58 in the State of Uttarakhand (EPC) Mode.

Special Protection work Against Land Slide (Pkg-I)							
S. No	Chainage		Coordinate[Northing & Easting]		Length (in mtr.)	Nearst Dumping Zone	Remarks
	From	To	From	To			
2	266+200	266+800	30°03'39.37" N 78°03'13.85" E	30°03'31.85" N	600	268+900	Proposed
	283+200	283+600	30°05'39.26" N 78°34'42.76" E	30°05'41.80" N	400	287+720	
	284+900	285+100	30°06'4.81" N 78°34'30.80" E	30°06'13.47" N	200	287+720	
	291+300	291+600	30°07'38.74" N 78°35'51.12" E	30°07'43.33" N	300	291+100	
Total Length					1500		

Sinkig Zone (Pkg-ii)							
S. No	Chainage		Coordinate[Northing & Easting]		Length (in mtr.)	Nearst Dumping Zone	Remarks
	From	To	From	To			
3	283+200	283+600	30°03'39.26" N 78°34'42.76" E	30°03'41.80" N	400	1	Proposed
Total Length					400		

Name of Project: Widening and Strengthening / Reconstruction of Existing 2-Lane to 2 Lane with Paved Shoulder Configuration from Km 300.00 to Km 338.00 on NH-58 in the State of Uttarakhand (EPC) Mode.



Special Protection work Against Land Slide (Pkg-I)							
S. No	Chainage		Cordinate[Northing & Easting]		Length (in mtr.)	Nearst Dumping Zone	Remarks
	From	To	From	To			
4	298+360	298+750	30°09'8.54" N 78°37'3.47"E	30°09'30.49 " N	390	301+400	Proposed
	304+100	304+370	30°11'31.47" N 78°38'21.29" E	30°11'38.00 " N	270	308+650	
	305+000	305+100	30°11'50.79" N 78°38'18.18" E	30°11'52.54 " N	100	309+900	
Total Length					760		

Sinkig Zone (Pkg-iii)							
S. No	Chainage		Cordinate[Northing & Easting]		Length (in mtr.)	Nearst Dumping Zone	Remarks
	From	To	From	To			
5	323+300	323+600	30°12'56.77" N 78°44'40.37"E	30°12'51.18 " N	300	327+000	Proposed
	323+800	324+100	30°12'45.61" N 78°44'48.40" E	30°12'44.70 " N	300		
Total Length					600		

Reconstruction with Geometric Improvement of existing 2 lane/intermediate lane to 2 lanes with paved shoulder configuration from km 338.000 to Km368.000 of NH-58 in the state of Uttara hand in EPC mode.

Special Protection work against Land slide (Pkg II)							
S.no.	Chainage		coordinate (Northing ,Easting)		length (mtr)	Nearest Dumpig Zone	Remark
	From	To	From	To			
6	335+350	335+450	78,50,29 E 30,14,02 N	78,50,45 E 30,14,06 N	100	341+250	
	350+750	350+850	78,55,49E 30,15,08N	78,55,52 E 30,15,11 N	100	351+100	
	356+200	356+800	78,57,53 E 30,16,25 N	78,58,08 E 30,16,34	600	357+300	



### Vulnerable Slope Details

**Construction of Kaliasaur Bypass having provision of 3 no bridges (182.10m, 250.00m & 162.10m) land 2 lane with paved shoulders configuration & strengthening of NH 58 from Km 349.800 to Km 355.495 (Total 3.22Km) in the State of Uttarakhand on EPC mode.**

Sl.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
	2	3	4	5	6	7	8	9
7	345+400	345+600	200	30°14'40.96"	78°54'5.85"	Gabion Wall/Other protection measures needs to be taken.	YES	Contractor is already instructed to submit COS proposal after detail geotechnical investigation.

### Package-2 : Rudraprayag (km 368) to Mana (km 528) of NH- 58 (old)

S/No	Name of road	Name of District	Stretch (Km)	Location	Latitude	Longitude	Remarks
8	Joshimath-Mana NH-58 PKG-2	Chamoli	Stabilization of landslide at Hatipahar including construction & upgradation of existing road to 2-lane with paved shoulder from existing chainage Km 489.350 to Km 491.600 (Design chainage Km 471.400 to km 473.675) (Shingdhar Bridge to Vishnuprayag Bridge) of NH-07, (Old NH-58) on EPC mode under improvement to NH connectivity to Chardham in the state of Uttarakhand. (Design length 2.275 Km) (Job No. NH-07(58)-UR-2017-18-531)	471.400 - 473.675	30°33'47"	79°34'01"	S/protection wks under progress.
9			Construction and upgradation of existing road to 2 lane with paved shoulder from existing chainage km 491.600 to km 504.475 (design chainage km 473.675 to km 486.100) of NH-07 (old NH-58) ( Benakuli bend to Mana ) Under Chardham Programme on EPC mode in the state of Uttarakhand (Package No -02)	473.810- 481.175- 485.630- 485.700	30°33'48" 30°37'19" 30°39'06"	79°33'31" 79°33'54" 79°31'24"	Proposal for specialized land slide treatment fwd to CE- RO on 25 Mar 2020. Approval awaited
10			Construction and upgradation of existing road to 2 lane with paved shoulder from existing chainage km 509.700 to km 528.00 (design chainage km 490.550 to km 507.850) of NH-07 (old NH-58) ( Benakuli bend to Mana ) Under Chardham Programme on EPC mode in the state of Uttarakhand	494.480- 501.100- 507.580- 510.200- 510.400 (Existing ch)	30°41'53" 30°43'42" 30°46'04" 30°41'54"	79°30'45" 79°29'48" 79°29'54" 79°30'37"	Proposal for specialized land slide treatment fwd to CE- RO on 09 Apr 2020. Approval awaited

### Package-3: Rishikesh (Ch.1.90) to Dharashu Bend (km 144.00) of NH- 94(old)

S/No	Name of road	Name of District	Chainage From	Chainage To	Side	Length (m)	Height	Reference Chainage	Reference X	Reference Y	Remarks
11	Reconstruction with geometric improvement of existing intermediate lane to 2 lane with paved shoulder configuration from km. 1.95 to 28.60m (excluding the stretch from km 13.800 to km 18.550 of NH-94 in the state of Uttarakhand (Job No. NH-94-UR-201-17-473)	Tehri	18+020	18+440	RHS	150+90	45-60	18020	239360.376	3340032.07	Required from- 18+020 to 18+170 & 18+350 to 18+440
						240		18170	239423.062	3340165.473	
								18350	239526.983	3340303.673	
								18440	239548.725	3340389.641	
			20+700	20+900	RHS	200	40-50	20700	240224.263	3341397.562	
								20900	240037.584	3341414.546	
			21+050	21+180	RHS	130	35-40	21050	239928.832	3341475.473	
								21180	239978.969	3341584.131	
			22+350	22+550	RHS	200	50-60	22350	240870.839	3341921.441	
								22550	241044.506	3342008.837	
			23+200	23+300	LHS	100	40-50	23200	241376.238	3342395.333	
								23300	241454.723	3342429.84	
			23+500	23+600	LHS	100	35-45	23500	241562.04	3342577.756	
								23600	241602.581	3342490.346	
			24+450	24+550	LHS	100	50-60	24450	241946.068	3342857.429	
								24550	241916.526	3342952.445	
			25+400	25+700	RHS	300	50-60	25400	241957.729	3343741.989	
								25700	241740.672	3343922.671	
			26+700	26+780	RHS	80	35-45	26700	242412.324	3344240.698	
								26780	242479.706	3344280.43	
			27+340	27+600	RHS	260	50-60	27340	242669.971	3344695.704	
								27600	242579.333	3344929.769	
			28+100	28+200	RHS	100	40-50	28100	242698.823	3345349.591	
								28200	242744.321	3345424.046	
		Total Length (Lumsum)=				1810 M					



Sl. No.	Name of Road	Name of District	Name of Work	Chainage	Latitude	Longitude	Remarks
12	Rishikesh-Dharasu NH-94	New Tehri	Reconstruction with geometric improvement of existing intermediate lane to 2 lane with paved shoulder configuration from existing km 28.600 to km 59.420 (design chainage 28.320 to km 58.603) of NH-94 in the state of Uttarakhand (Job. No. NH-94-UR-201-17-491)	29.76 to 29.82	30°13'19.24"	78°19'53.05"	Proposal for specialized land slide treatment fwd to CE-RO on 19 Feb 2020. Approval awaited
				30.64 to 30.74	30°13'41.96"	78°20'04.84"	
				35.00 to 35.10	30°14'27.70"	78°21'12.52"	
				38.24 to 38.36	30°15'14.43"	78°22'08.71"	
				38.36 to 38.50	30°15'18.42"	78°22'08.69"	Proposal for specialized land slide treatment fwd to CE-RO on 19 Feb 2020. Approval awaited
				39.46 to 39.54	30°15'40.36"	78°21'51.80"	
				40.46 to 40.51	30°15'55.83"	78°21'53.08"	
				43.50 to 43.68	30°17'01.16"	78°22'05.52"	
				44.22 to 44.26	30°17'19.80"	78°21'55.04"	
				45.90 to 46.10	30°17'44.80"	78°21'08.01"	
				52.615 to 52.70	30°19'48.73"	78°22'30.18"	
				62.90 to 62.98	30°21'21.29"	78°23' 25.49"	Proposal for specialized land slide treatment fwd to CE-RO on 20 Feb 2020. Approval awaited
				63.31 to 63.39	30°21'30.64"	78°23' 27.22"	
13	New Tehri	New Tehri	Rehabilitation and upgradation of Rishikesh-Dharasu road (NH-94) with 2-lane with paved shoulders from design chainage km. 58.603 to km. 58.853 (existing Chainage km. 59.420 to km. 59.650), from Design Chainage km. 61.630 to km. 63.950 (existing chainage km. 62.630 to km. 65.000) and new construction of 2-lane with paved shoulders Chamba Bypass of design length 2.035 km. including 440m long tunnel on EPC Mode under improvement to NH Connectivity to Chardham in the State of Uttarakhand (Design length 4.605 km) (Job No. NH-94-UR-2017-18-533)	62.90 to 62.98	30°21'21.29"	78°23' 25.49"	Proposal for specialized land slide treatment fwd to CE-RO on 20 Feb 2020. Approval awaited
				63.31 to 63.39	30°21'30.64"	78°23' 27.22"	
				75.20 to 75.40	30°40'49.29"	78°41'48.51"	
				78.54 to 78.72	30°41'41.12"	78°41'61.93"	
				80.73 to 80.83	30°42'35.45"	78°40'68.83"	
				88.00 to 88.08	30°44'21.72"	78°38'28.21"	
14	Rishikesh-Dharasu NH-94	New Tehri	Proposal of rehabilitation and upgradation of road Rishikesh-Dharasu (NH-94) with 2-lane with paved shoulders from km. 76.00 to km. 110.00 (Design chainage from km. 74.733 to km. 107.347 including construction of Kamand re-alignment from existing Chainage km. 105.200 to km. 108.600 (design chainage km. 103.436 to km. 105.949 - length 2.513 km) and land slide treatment work between design chainage km. 73.800 to km. 74.000 (200 m) on EPC mode under improvement to NH Connectivity to Chardham in the State of Uttarakhand for total project cost of Rs. 281.37 Cr. (Design Length 32.614 kms.) (Job No. NH-94-UR-2017-18-527)	75.20 to 75.40	30°40'49.29"	78°41'48.51"	Slope protection works in progress
				78.54 to 78.72	30°41'41.12"	78°41'61.93"	
				80.73 to 80.83	30°42'35.45"	78°40'68.83"	
				88.00 to 88.08	30°44'21.72"	78°38'28.21"	

15	Rishikesh-Dharasu NH-94	New Tehri	Proposal of rehabilitation and upgradation to 2 lane with paved shoulder configuration for design Chainage km. 107.347 to km. 129.208 & km. 133.878 to km. 138.570 (existing chainage km. 110.000 to km. 133.020 & km. 137.330 to km. 142.028) excluding Chiniyalisaur bypass and land slide treatment at existing km. 138.500 (Design chainage km. 134.970) on Rishikesh - Dharasu section of NH-94 on EPC mode under improvement to NH connectivity to Chardham in the State of Uttarakhand for total project cost of Rs. 356.13 Crore (Length -26.553 km.) (Job No. NH-94-UR-2017-18-526)	121.340 to	30°53'31.6"	78°34'35.2"	Proposal of specialized land slide treatment fwd to CE-RO on 08 Apr 2020. Approval awaited
				122.15 to	30°53'31.8"	78°34'02.5"	
				125.32 to	30°55'34.3"	78°33'61.9"	
				126.50 to	30°55'57.7"	78°32'82.7"	
	Rishikesh-Dharasu NH-94	Uttarkashi		128.230 to	30°55'56.7"	78°32'34.3"	Slope protection works in progress
				135.67 to	30°61'20.7"	78°31'48.2"	
				135.87			Proposal of CoS for shifting alignment on valley side to prevent hill cutting and triggering of land slide submitted to CE-RO on 31 Mar 2020
				138.320 to	30°37'43"	78°19'48"	

**Package-4: Dharasu (Ch.124.00) to Gangotri (km 0.00) of NH- 108(old)**

Sl. No.	Name of Road	Name of District	Name of Work	Chainage	Latitude	Longitude	Remarks
			Rehabilitation and upgradation of Gangotri-Dharasu (NH-108) to 2-lane with paved shoulders from Km 101.06 to Km 110.860 (Design chainage from Km 87.730 to Km 97.400) on EPC mode under improvement to NH connectivity to Chardham in the state of Uttarakhand. (Job No. NH-94-UR-2017-18-533)	108.063 to 108.255	30°43'23"	78°21'19"	Proposal of specialized land slide treatment fwd to CE-RO on 31 Mar 2020. Approval awaited
			REHABILITATION AND UPGRADATION OF GANGOTRI-DHARASU	120.800 to	30°38'41.45"	78°19'39.78"	Proposal of



**Package-4: Dharasu (Ch.124.00) to Gangotri (km 0.00) of NH- 108(old)**

Sl. No.	Name of Road	Name of District	Name of Work	Chainage	Latitude	Longitude	Remarks
15	Gangotri-Dharasu NH-108	Uttarkashi	Rehabilitation and upgradation of Gangotri-Dharasu (NH-108) to 2-lane with paved shoulders from Km 101.06 to Km 110.860 (Design chainage from Km 87.730 to Km 97.400) on EPC mode under improvement to NH connectivity to Chardham in the state of Uttarakhand. (Job No. NH-94-UR-2017-18-535)	108.063 to 108.255	30°43'23"	78°21'19"	Proposal of specialized land slide treatment fwd to CE-RO on 31 Mar 2020. Approval awaited
			REHABILITATION AND UPGRADATION OF GANGOTRI-DHARASU (NH-108) TO 2-LANE WITH PAVED SHOULDERS FROM KM 110.86 TO KM 124.00 (DESIGN CHAINAGE FROM KM 97.400 TO KM 109.400) ON EPC MODE UNDER IMPROVEMENT TO NH CONNECTIVITY TO CHARDHAM IN THE STATE OF UTTARAKHAND (Package No -04)	120.830 to 122.140 to 122.260	30°38'41.45" 30°38'41.45"	78°19'39.78" 78°19'39.78"	Proposal of specialized land slide treatment fwd to CE-RO on 30 Mar 2020. Approval awaited
			Land slide treatment of Nalupani from km. 123.080 to km. 123.970 on NH-108 under Chardham Pariyojna in State of Uttarakhand on EPC mode under improvement to NH Connectivity to Chardham.	-	30°38'30.53"	78°19'37.92"	Area .28 Ha dumping Zone 1
				-	30°38'28.95"	78°19'40.58"	Area .375 Ha dumping Zone 2
			Land slide treatment of Barethi from km. 100.300 to km. 101.060 on NH-108 under Chardham Pariyojna in State of Uttarakhand on EPC mode under improvement to NH Connectivity to Chardham.	-	30°43'57.50"	78°24'33.73"	Area .28 Ha dumping Zone 2
				-	30°44'05.77"	78°24'37.80"	Area .678 Ha dumping Zone 3
				-	30°44'16.21"	78°24'30.21"	Area .027 Ha dumping Zone 3

**Package-5: Dharashu Bend (km 144) to Yamunotri (km 220) of NH- 94(Existing/old chainages)**

Sl. No.	Name of Road	Name of District	Name of Work	Chainage	Latitude	Longitude	Remarks
16	Dharasu bend to Yamunotri	Uttarkashi	Construction, Operation and Maintenance of 2- lane Bi-Directional Silkyara Bend- Barkot Tunnel with escape passage including approaches on Dharasu- Yamunotri Section Between ch. 25.400 km and Ch. 51.00 km falling along NH-134 (old NH-94 ) in the State of Uttarakhand	-	30°44'28.040"	78°15'28.380"	
				-	30°47'55.900"	78°14'20.380"	
				-	30°44'55.810"	78°13'50.360"	

**Name of the work: Rehabilitation and up-gradation to 2-Lane with paved shoulder configuration from existing Km. 122.00 (Dharasu Bend) to Km. 147.23 (Silkyara Bend) (Design Chainage Km 0.00 to Km 24.30) of NH-94 in the state of Uttarakhand on EPC mode under improvement of NH connectivity to Chardham**

List of Vulnerable slopes(Land Slide sites)							
S. No.	Location	Chainage		Length (m)	GPS Location		Remarks
		From	To		North	East	
Provision in Contract							
17	Near km 0+750	0+520	0+720	200	30° 37' 35.35"	78° 19' 36.45"	
	Near km 1+500	1+450	1+700	250	30° 36' 18.88"	78° 17' 45.02"	
	Near km3+000	3+030	3+280	250	30° 37' 34.31"	78° 18' 56.74"	
				700			
New Land slide sites							
	Upper Primary School, Bindhula near Sila Gaon	5+700	5+800	100	30° 38' 41.35"	78° 18' 25.5"	Proposals to be submitted
	Kalyani Market	7+000	7+300	300	30° 39' 3.69"	78° 18' 4.89"	Proposals to be submitted
	Near Harethi Village	8+875	8+975	100	30° 39' 38.21"	78° 18' 10.49"	Proposals to be submitted
	Talag Village	16+900	17+050	150	30° 42' 28.8"	78° 17' 34.22"	Proposals to be submitted
	Shivgufa	20+020	20+100	80	30° 43' 45.97"	78° 16' 47.62"	Proposals to be submitted
	Total Length (m)			730			



Package No	S. No.	Name of Project	Description of Vulnerable Items	Chainage	Coordinates	Remark
18	1	Rehabilitation and up gradation of 2 lane with paved shoulder from existing km. 172.900 (Paulgaon) to km. 194.150 (Paligaad) (Design Chainage km. 49.300 to km. 70.300) on Dharasu to Yamunotri Road of NH-134 (Old NH- 94) in the state of Uttarakhand under EPC mode under improvement to NH connectivity to Chardham	Slope	Km 50.830	30° 47' 57" N 78° 13' 47" E	Adjoining to our ROW affected due to hill cutting
	2		Slope	Km 55.130	30° 48' 53" N 78° 13' 24" E	Adjoining to our ROW affected due to hill cutting
	3		Muck Dumping Zone	Km 66.330 to Km 66.450	30° 51' 48" N 78° 17' 46" E	Sinking zone due to erosion at the bottom of the river. It is already
	4		Slope	Km 68.075 to Km 68.175	30° 52' 26" N 78° 18' 06" E	-----Do-----
	5		Slope	Km 68.750 to Km 68.850	30° 52' 16" N 78° 18' 11" E	Existing Road Sinkage towards Yamuna river side



4	Slope	Km 68.075 to Km 68.175	30° 52' 26" N 78° 18' 06" E	-----Do-----
5	Slope	Km 68.750 to Km 68.850	30° 52' 16" N 78° 18' 11" E	Existing Road Sinkage towards Yamuna river side

**Package-6: Rudraprayag (km 0.00) to Gaurikund (km 76.00) of NH-109 (old)**

**Widening and strengthening of exiting intermediate/ 2 lane with paved shoulder configuration From Km 0.000 (Design Km 0.000) to Km 16.440 (Design Km 18.700) including existing 3.470 Km Rudraprayag Bypass of NH 109 in the State of Uttarakhand on EPC mode.**

SL.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
19	0+180	0+300 (R/H Hill Side)	120	30°16'56.69"	78°58'7.99"	Special treatment is required after detailed study	YES	For immediate measures gabion wall is done up to 12 mtr height.
	2+130	2+260 (B/S DFO)	130	30°17'15.14"	78°58'25.19"	Special treatment is required after detailed study	YES	1. At Hill side gabionprotection work is completed. 2. At Velly side partially gabion work is done.
	13+000	13+450 (R/H Hill Side)	450	30°21'46.12"	78°58'45.84"	Under Observation	YES	After removing loose mass/scaling no further landslide observed it is still under observation.

**Reconstruction with Geometric Improvement of existing single/Intermediate lane to 2 lane with earthen shoulder configuration from existing km. 16.545 to km. 33.130 & Km. 41.260 to km. 57.975 (Design chainage 18.700 to km 35.130 & km 47.700 to 63.700) excluding khat village from km. 53.425 to 55.530 (Design chainage 59.390 to km 61.150) of NH-109 in the state of Uttarakhand on EPC Mode under improveinent of NH connectivity to Chardham.**

SL.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
1	2	3	4	5	6	7	8	9
1	28+900	29+300	400	30°15'57.24"	79°2'36.60"	Special treatment is required after detailed study	YES	<b>Sliding zone</b> at Banswada. Height of embankment & steep slope upto 60 mtr is there For immediate measures gabion wall work is in progress up to 8 mtr hight.
2	30+100	30+500	400	30°16'22.08"	79°2'36.96"	Special treatment is required after detailed study	YES	<b>Sliding zone</b> at Banswada. Height of embankment & steep slope upto 65 mtr is there For immediate measures gabion wall work is in progress up to 4 mtr hight.
3	34+000	34+200	200	30°17'29.04"	79°3'2.52"	Special treatment is required after detailed study	YES	<b>Sinking zone</b> at Kakdagad. For immediate measure vulnerable slope has been protected by providing gabion wall upto 8 ntr height.
SL.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
1	2	3	4	5	6	7	8	9
4	48+940	49+020	80	30°19'9.48"	79°3'0.12"	Special treatment is required after detailed study	YES	<b>Sinking zone</b> at Nala.
5	53+290	53+600	310	30°19'57.36"	79°2'17.16"	Special treatment is required after detailed study	YES	<b>Sinking zone</b> at Devidhar.
6	54+630	55+300	670	30°19'57.72"	79°1'59.28"	Special treatment is required after detailed study	YES	<b>Sinking zone</b> at Byungad, Khumera.



7	55+100	55+300	200	30°19'53.76"	79°1'53.34"	Special treatment is required after detailed study	YES	Sliding zone at Khumera. Height of embankment & steep slope upto 45 mtr is there For immediate measures gabion wall work is completed up to 8 mtr height.
8	63+010	63+040	30	30°21'3.24"	79°0'55.08"	Special treatment is required after detailed study	YES	Sliding zone at Janu. Height of embankment & steep slope upto 20 mtr is there Land slide continue and under observation.

Construction of Kund Bypass from Existing Chainage Km. 33+130 to Km. 41+260 (Existing Length - 8.130 Km.), Design Chainage Km. 35+130 to Km. 47+700 (Design Length - 12.570 Km.) of NH-109 (New NH - 107) in the State of Uttarakhand on EPC Mode.								
Sl.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
1	3	4	60	30°30'29.91"	79°03'23.62"	Design Required	YES	Sinking Zone at Lwara.
1	42+490	42+550						

Reconstruction with Geometric Improvement of existing single/Intermediate lane to 2 lane with earthen shoulder configuration from existing Km. 57.975 to km. 68.600(Fata to Sitapur) on NH-109 (New no 107) in the state Uttarakhand under EPC Mode.								
Sl.No.	Vulnerable slope / sinking zone chainage		Length (m)	Co-ordinates		Action taken or needed	COS Notice has been issued to	Remarks /
	From	To		N	E			
1	2	3	4	5	6	7	8	9
1	65+410	65+460	50	30°35'28.87793	79°1'47.86903"	Special slope protection Treatment for Sliding	YES	Sliding zone at Chandikadhar. Height of embankment & steep slope upto 50 mtr is there For immediate measures gabion wall work is completed up to 8 mtr height.
2	65+520	65+560	40	30°35'30.23236	79°1'46.02263"	Special slope protection Treatment for Sliding	YES	Sliding zone at Chandikadhar. Height of embankment & steep slope upto 45 mtr is there For immediate measures gabion wall work is completed up to 8 mtr height.
3	69+850	69+980	130	30°36'42.69337	79°0'55.43161"	Special slope protection Treatment for Sliding	YES	Sliding zone at Sersi. Height of embankment & steep slope upto 45 mtr is there Land sliding continue.
4	71+400	71+520	120	30°37'8.2794"	79°0'34.92806"	Special treatment for Sinking zone	YES	Sinking zone at Rampur.



## DETAILS OF VULNERABLE SLOPES AND MUCK DUMP SITE

Downloaded from [www.sagepub.com](http://www.sagepub.com) at University of California, San Francisco on 06/06/16

29	
Total Length As per Agreement	

125-UR-2016-17494)

Total Length As per Agreement

NH-125-LR-2016-17-485

Total Length As per Assignment

CDIS - PAH

**Additional Required**

930



Reconstruction with geometric improvement of existing single lane to 2lane with paved shoulder configuration from existing km 163.000 to 194.800 (design chainage 160.880 to km 192.320) of NH-125 in the State of Uttarakhand under EPC mode under improvement of NH connectivity to Chardham (Job No. NH-125-UR-2016-17-490)

S.N.	CHAINAGE	LOCATION NAME	LENGTH	PROJECT NAME, SITE/COL	CHAINAGE	LOCATION NAME	LENGTH	VULNERABLE SLOPE LOCATION	SLOPE	GPS LOCATION OF VULNERABLE SLOPE / EASTING	GPS LOCATION OF VULNERABLE SLOPE / NORTHING	GPS LOCATION OF VULNERABLE SLOPE / EASTING	GPS LOCATION OF VULNERABLE SLOPE / NORTHING	REMARK
1	161500 to 161600	Near Churani	100	CHURANI to Pithoragarh (160-880 TO 163-320)	191-920 TO 191-876	Toli Road near Dhamsara	65.624	191.920	57° 14' 19"	3270408.679	423157.79	3270393.806	423134.676	VILLY SIDE
2	165410 to 165510	near Tinta bend	100	CHURANI to Pithoragarh (160-880 TO 163-320)	191-920 TO 191-988	near petrol pump	100.227	191.876	41° 22' 48"	3270404.316	423167.978	3270388.607	423153.609	VILLY SIDE
3	170400 to 170500	Near Musa Rajar	100	CHURANI to Pithoragarh (160-880 TO 163-320)	191-920 TO 191-988	manjushala House	34.94	191.920	16° 29' 19"	3270445.31	423169.953	3270325.665	423175.734	VILLY SIDE
4	179850 to 179950	Near tappar	100	CHURANI to Pithoragarh (160-880 TO 163-320)	190-800 TO 190-776	Hamman Mandir Lampata	71.94	191.920	58° 40' 24"	3270445.368	423138.004	3270448.325	423133.474	Hill side
5				CHURANI to Pithoragarh (160-880 TO 192-320)	186-050 TO 186-188	simsara	136.486	191.954	50° 17' 17.4"	3270436.557	423146.715	3270418.204	423168.813	Hill side
6				CHURANI to Pithoragarh (160-880 TO 185-847)	185-917 TO 185-847	simsara	105.565	191.988	1° 17' 25"	3270419.557	423174.095	3270352.677	423173.442	Hill side
7				CHURANI to Pithoragarh (160-880 TO 185-576)	185-620 TO 185-576	Igardevi Navam pandey Home	63.899	190.800	27° 44' 39.73"	3270203.971	422689.459	3270223.682	422679.089	Hill side
8				CHURANI to Pithoragarh (160-880 TO 185-520)	185-520 TO 185-422	Igardevi	145.281	190.788	34° 36' 20.43"	3270212.584	422677.075	3270227.285	422666.936	Hill side
9				CHURANI to Pithoragarh (160-880 TO 179-100)	179-100 TO 179-056	dhanda	66.447	190.776	2° 58' 36.12"	3270218.019	422657.467	3270221.303	422657.439	Hill side
10				CHURANI to Pithoragarh (160-880 TO 176-550)	176-550 TO 176-518	chopkot	46.97	190.150	76° 14' 40.62"	3269904.354	422268.121	3269897.532	422240.252	Hill side
11				CHURANI to Pithoragarh (160-880 TO 170-252)	170-252 TO 170-176	DSB bend	113.984	190.174	86° 44' 3"	3269869.372	422250.613	3269868.599	422237.066	Hill side
12				CHURANI to Pithoragarh (160-880 TO 168-626)	168-580 TO 168-626	Ghat Band	67.657	190.198	57° 17' 20.25"	3269837.714	422242.544	3269843.094	422234.168	Hill side
13				CHURANI to Pithoragarh (167-350 TO 167-355)	167-350 TO 167-355	Ghat Pul	5.103	186.050	28° 0' 46.72"	3268318.737	419748.133	3268334.109	419730.95	Hill side
14				CHURANI to Pithoragarh (165-090 TO 165-186)	165-090 TO 165-186	Tinta Bend	142.318	186.096	63° 36' 20.92"	3268266.73	419721.879	3268272.825	419709.595	Hill side
15				CHURANI to Pithoragarh (164-275 TO 164-311)	164-275 TO 164-311	Madan Hotel	53.268	186.142	75° 46' 20.99"	3268243.132	419674.371	3268249.025	419697.611	Hill side
16				CHURANI to Pithoragarh (163-900 TO 163-974)	163-900 TO 163-974	Near Tej singh HOUSE	110.115	186.188	55° 20' 40.6"	3268193.17	419694.642	3268188.981	419688.561	Hill side
17				CHURANI to Pithoragarh (185-059 TO 185-074)	185-059 TO 185-074	Igardevi near toli road	14.839	185.917	80° 50' 36.46"	3268064.376	419684.208	3268061.727	419667.774	Hill side

Sanctioned length 400 mtr  
COS 361.867 mtr  
Additional 582.833 mtr

1344.663



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Headquarters  
Chief Engineer  
Project Shivalik  
Pin 931 718  
C/O 56 APO

85000/HPC/ 36 /EPC Cell

24 Sep 2020

HQ DGBR/EPC Cell  
Seema Sadak Bhawan  
Ring road, Delhi Cantt  
New Delhi - 110010

Subject: Hon'ble Supreme Court's order dated 08.09.2020 in the M.A. 1449/2020 and 08.08.2019 in the matter of Citizens for Green Doon & Ors. Vs. Union of India and Ors.- reg

1. Please refer CE-RO, MoRT&H, Dehradun letter No.RO/UK/Chardham/HPC dated 17 Sep 2020.
2. Replies Para wise are as under:-
  - (i) May be submitted by O/o the CE-RO, MoRT&H, Dehradun.
  - (ii) Full inventory of vulnerable slopes and muck dumps along the Rishikesh-Dharasu Road and Joshimath- Mana Road being executed by BRO are enclosed as Annexure- I & II.
  - (iii) Presently all the approved restoration/protection of landslide zones are in progress. CoS proposals/Power Point Presentation for sustainable restoration of vulnerable slopes of balance locations have been initiated to O/o the CE-RO, MoRT&H, Dehradun. On approval of same, restoration can be taken up.

  
(Vivek Srivastava)  
EE (Civil) SG  
SO-1 (EPC)  
For Chief Engineer

Encls: As above

NOO

Copy to:

Office of the Chief Engineer - For information please.  
Regional Office MoRT&H  
46/1 Canal Road, Jakhn  
Dehradun-248001  
Uttarakhand  
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HQ 21 BRTF  
C/O 56 APO  
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HQ 36 BRTF  
C/O 56 APO  
Pin-930036

} For information and necessary action please.  
Following information may also be checked at your  
end and confirm correctness.



DETAILS OF VULNERABLE SLOPES

S/No	Name of road	Name of District	Stretch (Km)	Location (Designed Ch) in (Km)	Remarks
(i)	Joshimath-Mana NH-58	Chamoli	489.350 to KM 491.600 (design ch Km 471.400 to Km 473.675)	471.400 - 473.675	Slope protection wks under progress at Hatipahar as standalone landslide treatment project.
(ii)			491.600 to 504.371 (Design Ch 473.675 - 486.060)	481.056	CoS initiated for increase in Bridge span.
(iii)				481.44 & 481.770	CoS for chute drain to prevent damages to hill slope on d/s side initiated.
(iv)				485.630-485.700	
(v)			509.725-528 (Design ch 490.550 - 507.850)	494.480-494.520	Proposal for specialized land slide treatment fwd to CE-RO on 25 Mar 2020. Approval awaited.
(vi)				501.100-501.280	
(vii)				507.580-507.850	In view of delay in approval of DPR of Benakuli rehabilitation, proposal of CoS for specialized land slide treatment initiated to CE-RO on 09 Apr 2020. Approval awaited.
(viii)				510.200-510.400 (Existing ch)	
(ix)				493.970-494.070	Proposal to be forwarded to GSI for detailed geological study and recommendation of mitigative measures.
(x)				494.350-494.450	
(xi)				495.340-495.440	
(xii)	Rishikesh-Dharasu NH-94	New Tehri	28.600 - 59.42	29.76 to 29.82	Proposal for specialized land slide treatment fwd to CE-RO on 19 Feb 2020. Approval awaited
(xiii)				30.64 to 30.74	
(xiv)				34.865-34.965	
(xv)				35.00 to 35.10	Slope protection wks under progress.
				38.24 to 38.36	
(xvi)					



S/No	Name of road	Name of District	Stretch (Km)	Location (Designed Ch) in (Km)	Remarks
(xvii)				38.36 to 38.50	Proposal for specialized land slide treatment fwd to CE-RO on 19 Feb 2020. Approval awaited
(xviii)				39.46 to 39.54	
(xix)				40.46 to 40.51	
(xx)				43.50 to 43.68	
(xxi)				44.22 to 44.26	
(xxii)				45.90 to 46.10	
(xxiii)				52.615 to 52.70	
(xxiv)		New Tehri	59.42 - 65.00	63.31 to 63.39	Proposal to be approved by CE-RO (Forwarded on 20 Feb 2020). CoS approval awaited. Slope protection works in progress
(xxv)				75.20 to 75.40	
(xxvi)				78.54 to 78.72	
(xxvii)				80.73 to 80.83	
(xxviii)				88.00 to 88.08	
(xxix)				88.20 to 88.30	
(xxx)	Rishikesh-Dharasu NH-94	New Tehri	110.00 - 132.00	121.340 to 121.510	Proposal of specialized land slide treatment fwd to CE-RO on 08 Apr 2020. Approval awaited
(xxxi)				122.15 to 122.25	
(xxxii)				125.32 to 125.85	
(xxxiii)				126.50 to 126.90	
(xxxiv)				128.230 to 128.510	
(xxxv)	Rishikesh-Dharasu NH-94	Uttarkashi	132.00 -142.00	135.67 to 135.87	Slope protection works in progress at Dharasu landslide. Proposal of CoS for shifting alignment on valley side to prevent hill cutting and triggering of land slide approved under CoS.
(xxxvi)				138.320 to 138.520	
(xxxvii)	Rishikesh-Dharasu NH-94	Uttarkashi	Km 133.020-137.330 (Chinyalisour Bypass)	133.760-133.830	CoS proposal initiated.
(xxxviii)	Gangotri-Dharasu NH-108	Uttarkashi	Km 101-110	108.063 to 108.255	Proposal of specialized land slide treatment fwd to CE-RO on 31 Mar 2020. Approval awaited
(xxxix)			110.86 - 124.00	120.830 to 120.960 122.140 to 122.260	



## DETAILS OF MUCK DUMPING SITES (MDSs)

S/No.	Name of road	Name of District	Stretch (Km)	Location	Latitude	Longitude	Details of land transfer	Remarks
1	Joshimath-Mana NH-07	Chamoli	471.400-473.675	488.200	30°40'50"	79°30'33.90"	Forest land transferred to BRO. Forest proposal No. 3036/FP/UK/ROAD/39348/2019. Forest proposal approval (Vidhivat Swikriti) Addl Secy, Dehradun letter No 462(1)/X-4-19/01(26)/2019 dt 20 Jun 2019.	
2	Joshimath-Mana NH-07		473.675-486.060	475.800	30°34'46.086"	79°34'13.11"		
				476.750	30°35'15.995"	79°34'10.957"		
				477.200	30°35'31.344"	79°34'7.206"		
				479.240	30°36'26.1"	79°34'8.706"		
3	Joshimath-Mana NH-07		490.550-507.850	495.650	30°41'56.682"	79°30'28.65"		
				497.310	30°42'34.71"	79°30'1.098"		
1	Rishikesh-Dharasu Road (NH-94)	Tehri Garhwal	28.600 to 59.420	30.720	30.22834	78.33375	Forest land transfer under proposal No. FP/UK/ROAD/20521/2016	
2				31.615	30.22731	78.33871	-do-	
3				36.400	30.24089	78.36253	-do-	
4				37.080	30.24470	78.36557	-do-	
5				37.410	30.24783	78.36730	-do-	
6				37.860	30.25018	78.36522	-do-	
7				38.070	30.25182	78.36475	-do-	
8				39.350	30.25934	78.36726	-do-	
9				39.430	30.25964	78.36702	-do-	
10				39.630	30.26030	78.36584	-do-	
11				40.120	30.26223	78.36317	-do-	
12				46.275	30.29785	78.34904	Govt/Private land	
13				46.830	30.30233	78.34722	Private/Govt Land (land acquired under NH-Act)	
14				47.380	30.30643	78.34463	Govt/Private land	
15				47.610	30.30817	78.34369	Govt/Private land	
16				48.050	30.31105	78.34481	Govt/Private land	
17				52.250	30.33045	78.36733	Forest land transfer under proposal No. FP/UK/ROAD/20521/2016	
18				52.110	30.32997	78.36972	Govt/Private land	
19				52.600	30.32954	78.37299	Govt/Private land	
20				54.750	30.23278	78.39198	Govt/Private land	
21				55.710	30.32503	78.39389	Govt/Private land	
1	Rishikesh-Dharasu Road (NH-94)	Tehri Garhwal	59.420 to 65.000	63.520	30.35560	78.39391	Forest land transfer under proposal No. FP/UK/ROAD/ 29381/2017	
2				63.980	30.35605	78.39045	Private/Govt (Govt land approved by DM Tehri Garhwal and pvt land acquired under NH-Act)	



S/No.	Name of road	Name of District	Stretch (Km)	Location	Latitude	Longitude	Details of land transfer	Remarks
1	Rishikesh-Dharasu Road (NH-94)	Tehri Garhwal	76.000 to 110.000	76.840	30.405322	78.415206	Land aquired under NH-Act	
2				78.700	30.408920	78.422147	Forest land transfer under proposal No.FP/UK/ROAD/29916/2017	
3				79.420	30.416134	78.419341	-do-	
4				79.880	30.414291	78.414542	-do-	
5				80.150	30.414133	78.409628	-do-	
6				88.140	30.445909	78.389681	Pvt Land acquisition progress under NH-Act and Govt land Approved by DM Tehri	
7				90.270	30.445410	78.385099	Pvt Land acquisition progress under NH-Act and Govt land Approved by DM Tehri	
8				90.920	30.450977	78.386625	Land aquired under NH-Act	
9				91.360	30.453335	78.390473	Pvt Land acquisition progress under NH-Act and Govt land Approved by DM Tehri	
10				94.400	30.464731	78.393125	Forest land transfer under proposal No.FP/UK/ROAD/29916/2017	
11				94.555	30.463986	78.392192	-do-	
12				94.620	30.463895	78.390690	-do-	
13				95.525	30.464661	78.386198	-do-	
14				95.720	30.463825	78.384679	-do-	
15				98.030	30.471518	78.378705	-do-	
16				98.920	30.467434	78.376871	-do-	
17				103.800	30.472636	78.358985	-do-	
18				108.000	30.478810	78.354804	Land aquired under NH-Act	
1		Tehri Garhwal	110.000 to 142.000	111.200	30.48751	78.37368	Forest land transfer under proposal No.FP/UK/ROAD/29916/2017	
2				112.100	30.48852	78.38304	-do-	
3				112.500	30.48885	78.38723	-do-	
4				117.150	30.50356	78.37284	Forest land transfer under proposal No.FP/UK/ROAD/45194/2020	
5				117.530	30.50385	78.36955	Govt Land (Approved by DM Tehri) and Pvt land aquired under NH-Act	
6				121.750	30.52145	78.35114	Forest land transfer under proposal No.FP/UK/ROAD/29916/2017 & extension under proposal No.FP/UK/ROAD/45194/2020	
7				121.930	30.52042	78.35030	-do-	
8				122.850	30.52073	78.34824	-do-	
9				123.230	30.52360	78.34888	-do-	Abandoned due to very steep slope
10				125.650	30.53381	78.34025	-do-	
11				125.980	30.53606	78.34040	Land aquired under NH-Act	
12				127.430	30.54377	78.33730	Govt land and Pvt land (Govt land approved by DM Tehri Garhwal and Pvt land acquisition under progress)	



S/No.	Name of road	Name of District	Stretch (Km)	Location	Latitude	Longitude	Details of land transfer	Remarks
13				127.520	30.54451	78.33762	Land acquired under NH-Act	
14				128.200	30.54873	78.34040	Land acquired under NH-Act	
15				131.620	30.55305	78.32118	Govt land and Pvt land (Govt land approved by DM Tehri Garhwal and Pvt land acquired under NH-Act)	
16				138.000	30.61647	78.32286	Govt land acquired by DM Uttarkashi	Dumping yard located on Dharasu-Rauntal Motor road at Km 1 near ITI Dharasu.
17				140.650	30.61865	78.32635	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	
18				140.730	30.61908	78.32684	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	
1	Rishikesh-Dharasu Road (NH-94)	Uttarkashi	133.020 to 137.330	132.020	30.55722	78.32498	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	
2				133.020	30.56664	78.32766	Govt land Approved by DM Uttarkashi	
1	Gangotri-Dharasu Road (NH-34)	Uttarkashi	101.060 to 110.860	106.400	30.74227	78.36170	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	
2				107.555	30.74201	78.35909	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	
3				109.185	30.73553	78.35021	Forest land transfer under proposal No.FP/UK/DEF/40343/2019	