

**DEENDAYAL PORT AUTHORITY**  
**(Erstwhile: DEENDAYAL PORT TRUST)**



[www.deendayalport.gov.in](http://www.deendayalport.gov.in)

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EG/WK/5202 (D)/ Part/ *55*

Dated: *30/07*/2025

To,  
The Director (Env.) & Member Secretary,  
Forest & Environment Department,  
Govt. of Gujarat,  
Gujarat Coastal Zone Management Authority,  
Block No.14, 8<sup>th</sup> floor, Sachivalaya,  
Gandhinagar - 382 010.

**Sub:** CRZ Clearance for the Construction of Interchange cum Road Over Bridge (ROB) at LC-236 [Kutch salt junction] on N.H-141 to Nehru gate of Kandla port, Gandhidham, Kutch proposed by M/s Deendayal Port Authority (Erstwhile: Deendayal Port Trust) - **Compliance of stipulated conditions mentioned in the CRZ recommendations reg.**

**Ref.:** GCZMA CRZ recommendation vide Letter No- ENV-10-2017-74-E dated 21.01.2018

Sir,

It is requested to kindly refer the above cited reference for the said subject.

In this connection, it is to state that, the Gujarat Coastal Zone Management Authority vide above referred letter dated 21.01.2018 had recommended the subject project of Deendayal Port Authority. Subsequently, the SEIAA, Gujarat had accorded the Environmental & CRZ Clearance vide EC Letter No. SEIAA/GUJ/EC&CRZ/8(b)/728/2020 dated 19.06.2020 for the subject project.

DPT had signed an MOU with M/s IPRCL vide Certificate no. IN-GJ95223355926842S dated 9/06/2020 wherein IPRCL was appointed as the Project Implementation Agency for the project.

Accordingly, as directed under Specific Condition No. 17 mentioned in the CRZ Clearance letter dated 21.01.2018 i.e. A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by the DPT on a regular basis to this Department and MoEF&CC, GoI, please find enclosed herewith compliance report of the stipulated conditions (period October 2024 to March 2025) along with necessary annexure submitted by M/s IPRCL, for kind information & record please **(Annexure 1)**.

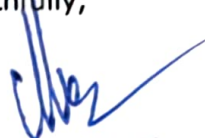
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Further as per MoEF&CC, Notification S.O.5845 (E) dated 26.11.2018, stated that **"In the said notification, in paragraph 10, in sub-paragraph (ii), for the words "soft copy" shall be substituted"**. Accordingly, we are submitting herewith soft copy of the same via e-mail ID [gczma.crz@gmail.com](mailto:gczma.crz@gmail.com) & [direnv@gujarat.gov.in](mailto:direnv@gujarat.gov.in)

This has the approval of the Chief Engineer, Deendayal Port Authority.

Thanking You.

Yours faithfully,



XEN (EMC)

Deendayal Port Authority

**Copy to:**

Shri Amardeep Raju  
Scientist E, Ministry of Environment Forests & Climate change,  
& Member Secretary (EAC-Infra I),  
Indira Paryavaran Bhavan,  
3<sup>rd</sup> Floor, Vayu Wing, Jor Bagh Road, Aliganj,  
New Delhi - 110 003  
Email Id: [ad.raju@nic](mailto:ad.raju@nic)

**Subject: Point-wise Compliance Status Report for CRZ clearance for proposed project for Construction of Interchange cum Road Over bridge at N.H 141 to Nehru Gate of Deendayal Port Trust, Kandla, Dist: Kutch by Deendayal Port Trust-reg.**

**Ref No: - GCZMA CRZ recommendation vide Letter No- ENV-10-2017-74-E dated 21.01.2018**

<b>S. No.</b>	<b>CRZ Conditions</b>	<b>Compliance Status</b>
	<b>SPECIFIC CONDITIONS</b>	
1.	The DPT shall strictly adhere to the provisions of the CRZ Notification, 2011	For the compliance of point 1 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
2.	Necessary permissions from different departments/ agencies under different laws/ acts shall be obtained before commencing any activity including the construction activities	For the compliance of point 2 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
3.	The DPT shall ensure that adequate culvert/passages are provided during construction of road and there shall be no obstruction of free flow of water.	For the compliance of point 3 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
4.	The DPT shall ensure that there shall not be any blockage of creek and free flow of water is maintained	For the compliance of point 4 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
5.	The DPT shall construct settling ponds and the installation of the oil receptor to prevent the entry of the surface run-off from fuel and other contaminants into the wells and other surface bodies along the corridor.	For the compliance of point 5 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
6.	No vehicle or equipments shall be parked or re fuelled near the water-body, so as to avoid contamination from fuel and lubricants	For the compliance of point 6 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
7.	Hot mix plants/concrete mix plants shall be located and operated in such a way that there shall be no Air pollution.	For the compliance of point 7 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
8.	The DPT shall ensure that the quarry works, from which they will purchase raw materials, shall confirm to the	For the compliance of point 8 please find attached herewith compliance submitted by

S. No.	CRZ Conditions	Compliance Status
	norms and having necessary clearances from the respective authorities.	IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
9.	The DPT shall make MOU with raw material supplier quarry/hot mix plants e.t.c in such a way that they will comply with all the terms and conditions mentioned in the CCA/NOC issued by the Gujarat Pollution Control Board.	For the compliance of point 9 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
10.	The DPT shall explore the possibility for using the fly ash @ 5%-10% to comply with the Fly Ash Notification.	For the compliance of point 10 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
11.	The DPT shall make sure that all the wastes arising from the project shall be disposed of at identified sites in environmentally sound manner.	For the compliance of point 11 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
12.	There shall no discharge of any kind of wastewater/sewage/effluent into the creek/sea or in the CRZ areas.	For the compliance of point 12 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
13.	The DPT shall implement all the suggestions/recommendations given in the EIA report by their consultant M/s. Mantech Consultant Pvt. Ltd.	For the compliance of point 13 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
14.	No ground water shall be taped to meet with the water requirements during the construction and/or operation phases.	For the compliance of point 14 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
15.	The DPT shall not discharge any kind of waste including the construction debris into the river/estuary or into the CRZ areas.	For the compliance of point 15 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
16.	The DPT shall ensure that the construction camps are kept outside the CRZ areas and the construction labour are provided with adequate	For the compliance of point 16 please find attached herewith compliance submitted by



<b>S. No.</b>	<b>CRZ Conditions</b>	<b>Compliance Status</b>
	amnesties like drinking water, fuel, sanitation etc. to ensure that the existing environmental condition is not deteriorated by them.	IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
17.	The DPT shall regularly submit the half-yearly compliance report on the conditions stipulated by this department/SEIAA	For the compliance of point 17 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>
18.	Any other conditions that may be stipulated by this department/SEIAA from time to time for environmental protection/management purpose.	For the compliance of point 18 please find attached herewith compliance submitted by IPRRCL (Executive agency) placed herewith as <b>Annexure A</b>

# **Annexure –A**

**[Compliance report submitted  
by IPRRCL (Executive agency)]**

## Annexure -I (1)

**Subject:** Point-wise Compliance Status Report for CRZ clearance for proposed project for "Construction of Interchange cum Road Over bridge at N.H 141 to Nehru Gate of Deendayal Port Trust, Kandla, Dist: Kutch by Deendayal Port Trust"-reg.

**Ref No:** - GCZMA CRZ recommendation vide Letter No- ENV-10-2017-74-E dated 21.01.2018.

S. No.	CRZ Conditions	Compliance Status
	<b>SPECIFIC CONDITIONS</b>	
1.	The DPT shall strictly adhere to the provisions of the CRZ Notification, 2011	IPRRCL (Project Implementation Agency) was adhered to all the provisions of CRZ Notification -2011.
2.	Necessary permissions from different departments/ agencies under different laws/ acts shall be obtained before commencing any activity including the construction activities	The Consent to Establish (CTE) from the GPCB had already been obtained vide CTE No. 89489 granted by the GPCB vide letter no. PC/CCA-KUTCH 1449/GPCB ID 56869 dated 03/10/2017 attached as <b>Copy Annexure II(in 4 pages) of the EC Compliance.</b> Copy of approved GAD enclosed as <b>Annexure III(in 2 pages) of the EC Compliance.</b>
3.	The DPT shall ensure that adequate culvert/passages are provided during construction of road and there shall be no obstruction of free flow of water.	The Construction of the project has been completed on 29/05/2023. IPRCL Total 15 culverts has been constructed for the continuous free flow of water. <b>(Copy of GAD of Culverts attached as Annexure VI (in 16 pages)of the EC Compliance).</b>
4.	The DPT shall ensure that there shall not be any blockage of creek and free flow of water is maintained	The Construction of the project has been completed on 29/05/2023. IPRCL Total 15 culverts has been constructed for the continuous free flow of water.
5.	The DPT shall construct settling ponds and the installation of the oil receptor to prevent the entry of the surface run-off from fuel and other contaminants into the wells and other surface bodies along the corridor.	The Construction of the project has been completed on 29/05/2023.  Also, there were no wells in the project area and no spillage of fuel occurred in past at project area. The same will also be ensured in Maintenance period of project i.e. 4 years.
6.	No vehicle or equipment shall be parked or re fuelled near the water-body, so as to avoid contamination from fuel and lubricants	The Construction of the project has been completed on 29/05/2023.  Also, the Vehicles and equipment are parked and refuelled at the site office area during maintenance period, and there is no sweet water body near the site office.
7.	Hot mix plants/concrete mix plants shall be located and operated in such a way that there shall be no Air pollution.	The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.  Hot Mix Plant and Concrete mix plant is located 7 km away from project site and GPCB approval of same is

  
**Addl. GENERAL MANAGER. (P)**  
**IPRCL/GANDHIDHAM**

## Annexure -I (2)

S. No.	CRZ Conditions	Compliance Status
		enclosed as <b>Annexure VII (in 6 pages)</b> .
8.	The DPT shall ensure that the quarry works, from which they will purchase raw materials, shall confirm to the norms and having necessary clearances from the respective authorities.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>IPRCL has ensured that the quarry works, from which raw materials are purchased, conforms to the norms and had necessary clearances from the respective authorities.</p>
9.	The DPT shall make MOU with raw material supplier quarry/hot mix plants etc.in such a way that they will comply with all the terms and conditions mentioned in the CCA/NOC issued by the Gujarat Pollution Control Board.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>The raw materials are being purchased by the contractors directly hence M.O.U by DPT with supplier is not required. However, conditions mentioned in NOC by GPCB was complied too.</p>
10.	The DPT shall explore the possibility for using the fly ash @ 5%-10% to comply with the Fly Ash Notification.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>Fly ash @ 5% to 10% was used in the Concrete as well as in Reinforced Earth Filling.</p>
11.	The DPT shall make sure that all the wastes arising from the project shall be disposed of at identified sites in environmentally sound manner.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>The solid waste generated from construction site &amp; labour camp was disposed off as per solid waste management Rules-2016.</p>
12.	There shall no discharge of any kind of wastewater/sewage/effluent into the creek/sea or in the CRZ areas.	<p>The Construction of the project has been completed on 28/05/2023. The maintenance period is 4 years</p> <p>During construction phase there was no discharge of any kind of wastewater/sewage/effluent into the creek/sea or in the CRZ areas.</p>
13.	The DPT shall implement all the suggestions/recommendations given in the EIA report by their consultant M/s. Mantech Consultant Pvt. Ltd.	All the suggestions/ recommendations given in the EIA report by consultant are implemented by IPRCL (Project Implementation Agency).
14.	No ground water shall be taped to meet with the water requirements during the construction and/or operation phases.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>Fresh water requirement during the construction</p>

  
**Addl. GENERAL MANAGER. (P)**  
**IPRCL/GANDHIDHAM**



**Annexure -I (3)**

S. No.	CRZ Conditions	Compliance Status
		phase was fulfilled with Private Tanker supplying agency. It was ensured that no ground water was tapped in the construction phase.
15.	The DPT shall not discharge any kind of waste including the construction debris into the river/estuary or into the CRZ areas.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>During construction phase there was no discharge of any kind of wastewater/sewage/ effluent into the creek/sea or in the CRZ areas.</p>
16.	The DPT shall ensure that the construction camps are kept outside the CRZ areas and the construction labour are provided with adequate amenities like drinking water, fuel, sanitation etc. to ensure that the existing environmental condition is not deteriorated by them.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>It was provided adequate amenities like drinking water, fuel, sanitation, etc. to the construction labourers to ensure that the existing environmental condition is not deteriorated by them.</p>
17.	The DPT shall regularly submit the half-yearly compliance report on the conditions stipulated by this department/SEIAA	IPRCL is being compiled the compliance report periodically.
18.	Any other conditions that may be stipulated by this department/SEIAA from time to time for environmental protection/management purpose.	Noted please.

  
Addl. GENERAL MANAGER. (P)  
IPRCL/GANDHIDHAM



इंडियन पोर्ट रेल एंड रोपवे कॉर्पोरेशन लिमिटेड  
(पत्तन, पोत परिवहन एवं जलमार्ग मंत्रालय, भारत सरकार के अधीन संयुक्त उद्यम)

**Indian Port Rail & Ropeway Corporation Ltd.**  
(A JV Company under Ministry of Ports, Shipping & Waterways, Government of India)  
CIN No: U60300DL2015PLC282703  
(An ISO 9001, 14001, 45001 & 37001 Certified Company)



No: IPRCL / GIMB/DPT/ROB/6002/711

Date: 02.04.2025

To,  
Executive Engineer (TD),  
Deendayal Port Authority,  
Gandhidham.

**Sub:** Construction of Interchange cum Road over Bridge (ROB) at LC-236(Kutch Salt Junction) on NH-141 (Phase-1) in the state of Gujarat under EPC Mode.  
- **"Six Monthly compliance report of conditions stipulated in Environmental & CRZ Clearance & Monitoring Report in Data sheet". Reg.**

**Ref:** 1. DPT Letter np. HW/WK/1008-V/105 dated 05.04.2020  
2. IPRCL Letter no. IPRCL/Mumbai/DPT/ROB/03 dated 25.08.2020  
3. DPA E-mail dated 04.12.2023.

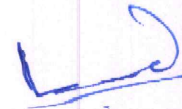
Sir,

With reference to the above subject, it is to inform that Six Monthly (Period from **October 2024 to March 2025**) compliance report of conditions stipulated in Environmental & CRZ Clearance & Monitoring Report in Data sheet as per condition stipulated in EC and CRZ clearance issued by SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC&CRZ/8(b)/728/2020 dated 19<sup>th</sup> June 2020 is attached as Annexures **I to VIII in 77pages.**

This is for your information and necessary action please.

Thanking You.

Yours Sincerely,

 02.03.2025

(S Revanasiddappa)  
Addl. General Manager (P)  
Gandhidham.

Copy: CGM (P)/ADI for kind information please.



Corporate Office: 4<sup>th</sup> Floor, Nirman Bhavan, Mumbai Port Trust Building, M. P. Road, Mazgaon (E), Mumbai - 400 010 Ph. No. : 022 - 6656 6335; Fax No. : 022 - 6656 6336;  
Email id: [s.revanasiddappa@iprcl.in](mailto:s.revanasiddappa@iprcl.in) Website : [www.iprcl.in](http://www.iprcl.in)  
Regd. Off. : 1<sup>st</sup> Floor, NBCC Place, Bhishma Pitamah Marg, Lodhi Road, New Delhi-110003.



समुदाय एकता  
ONE EARTH - ONE FAMILY - ONE FUTURE



**Subject:** Point wise compliance of stipulated conditions of EC & CRZ Clearance for **"Construction of Interchange cum Road Over Bridge (ROB) at LC-236 [Kutch Salt Junction] on NH-141 to Nehru gate of Kandla port, Gandhidham, Kutch by M/s Deendayal Port Trust"**.

**Reference:** EC & CRZ Clearance issued by SEIAA, Gujarat vide EC Letter No. SEIAA/GUJ/EC&CRZ/8(b)/728/2020 dated 19<sup>th</sup> June, 2020

**A. 1 Specific Conditions: -**

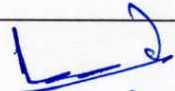
Sl. No.	Stipulated Conditions	Compliance
1.	All the provisions of CRZ Notification - 2011 shall be strictly adhered to and no activity in contradiction to the provisions of CRZ Notification - 2011 shall be carried by the project proponent.	It is hereby assured that IPRRCL (Executive agency) will adhere to all the provisions of CRZ Notification -2011. Pointwise compliance to the CRZ recommendation issued by the GCZMA is attached as <b>Annexure I( in 3 pages)</b> .
2.	The project proponent shall strictly ensure that no creeks or flow of water are blocked due to any activity at the project site.	It is hereby assured that IPRRCL (Executive agency) has ensured that no creeks or flow of water are blocked due to any activity at the project site. The pipe culverts were constructed at required location in creek for free flow of water.
3.	The project proponent shall obtain all other necessary clearances / permissions from concerned authorities / agencies required for undertaking the proposed project.	The Consent to Establish (CTE) from the GPCB had already been obtained vide CTE No. 89489 granted by the GPCB vide letter no. PC/CCA-KUTCH 1449/GPCB ID 56869 dated 03/10/2017 attached as <b>Copy Annexure II(in 4 pages)</b> .
4.	It will be the responsibility of the project proponent to obtain prior clearances/approval & ensure compliances under all other relevant Acts/ Rules/ Regulations/ Guidelines/ instructions' Court orders/ Tribunal orders as applicable to this project as per the prescribed time limits. All the Terms & Conditions Stipulated in the clearances/ approvals shall be strictly adhered to.	The Consent to Establish (CTE) from the GPCB had already been obtained vide CTE No. 89489 granted by the GPCB vide letter no. PC/CCA-KUTCH 1449/GPCB ID 56869 dated 03/10/2017 attached as <b>Copy Annexure II</b> . Copy of approval of GAD enclosed as <b>Annexure III(in 2 pages)</b> . Terms & Conditions Stipulated in the clearances/ approvals are being strictly adhered too.
5.	The approval of competent authority shall be obtained for structural safety of the bridge due to earthquake, including protection measures from lightening etc. Copy of approved structural drawings & certificate from the concerned competent authority shall be submitted to SEAC/ SEIAA before commencement of work for the project.	The Structural design done by design consultant and checked by proof consultant and safety consultant. A third-party independent design audit is done by I.I.T, B.H.U, for the design of bridges and structure with a span of 15.0m or more. The audit report is attached as <b>Annexure IV(in 14 pages)(</b> .
6.	Structural design of the project shall strictly adhere to the seismic zone norms for earthquake resistant structures.	The Structural design of the project is done considering seismic zone-V for earthquake resistant structure.
7.	Traffic study shall be carried out periodically to develop & implement the	Traffic diversion plan has been prepared considering smooth flow of traffic and same

  
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	scheme to ensure smooth flow of traffic from & to the proposed ROB.	is approved by NHAI. The approval letter is attached as <b>Annexure V(in 3 pages)</b> .
8.	DPT shall ensure that there shall not be any blockage of creek and free-flow of water is maintained.	It was ensured that no creeks or flow of water are blocked during execution of the project work.
9.	The DPT shall construct settling ponds and the installation of the oil receptor to prevent the entry of the surface run-off from fuel and other contaminants into the wells and other surface water bodies along the corridor.	There are no wells in the project area and it is ensured that there is no spillage of fuel at project area.
10.	No vehicles or equipment shall be parked or refuelled near the water- body, so as to avoid contamination from fuel and lubricants.	There was no water body near the site office.
11.	The DPT shall implement all the suggestions/ recommendations given in the EIA report by their consultant M/S Mantec Consultant Pvt Ltd.	All the suggestions/ recommendations given in the EIA report by consultant are implemented by IPRCL (Executive agency).

#### A.2 CONSTRUCTION PHASE:

12.	The traffic diversion plan shall be finalized in consultation with CE (NH), Gujarat & RO, Gandhinagar and get approved from the concerned competent authority before starting the construction activity for the proposed ROB. Copy of the same shall be submitted to SEAC/ SEIAA.	Traffic diversion plan approved by National highway Gujarat & RO Gandhinagar vide Letter dated: RW/GNR/NH/HA/NOC/03/782 dated 14.10.2020. The same is attached as <b>Annexure V(in 3 pages)</b> .
13.	DPT shall ensure that adequate culvert/passages are provided during construction of road and there shall be no obstruction of free flow of water.	IPRCL has ensured that adequate culvert, Passages are provided provided during construction of road and there is no obstruction of free flow of water.
14.	Hot-mix plants/Concrete mix plants shall be located and operated in such a way that there shall be no Air Pollution.	Only GPCB approved Hot-mix plants/Concrete mix plant was allowed to operate for the project.
15.	The DPT shall ensure that the quarry works, from which they will purchase raw materials, shall conform to the norms and having necessary clearances from the respective authorities.	IPRCL has ensured that the quarry works, from which raw materials are purchased, conforms to the norms and had necessary clearances from the respective authorities.

  
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16.	The DPT shall make MOU with the raw material supplier quarry/hot mix plants etc., in such a way that they will comply with all the terms and conditions mentioned in the CCA/NOC issued by the Gujarat Pollution Control Board.	The raw materials are being purchased by the contractors directly hence M.O.U by DPT with supplier is not required. However, conditions mentioned in NOC by GPCB was compiled too.
17.	Fresh water requirement during the construction phase shall be 95.0 KL/day and it shall be met through the water tankers for water supply from Gujarat water supply and sewerage board. No ground water shall be tapped during the construction phase.	Fresh water during the construction phase was met with Gujarat water supply and sewerage board. It was ensured that no ground water was tapped during the construction phase.
18.	There shall no discharge of any kind of wastewater/sewage/ effluent into the creek/sea or in the CRZ areas.	IPRCL was ensured that no discharge of any kind of wastewater/sewage/ effluent into the creek/sea or in the CRZ areas.
19.	Sewage generated during the construction phase shall be treated in septic tanks connected to water recycling chambers of adequate capacity & comprising of adequate treatment facilities as proposed. Treated water ~ 20.0 KL/day conforming to GPCB norms shall be used for greenbelt development and dust suppression.	Sewage generated during the construction phase was treated in septic tank.
20.	No construction debris and / or any other type of waste / wastewater shall be disposed of in CRZ areas.	No construction debris and / or any other type of waste / wastewater was disposed of in CRZ areas.
21.	Construction materials and debris shall be properly stored and handled to avoid negative impacts such as air pollution and public nuisances by blocking the roads and public passages. The debris shall be removed from the construction site immediately after the construction is over.	The generated debris was removed from the site regularly to avoid any blocking the roads and public passages.
22.	It shall be ensured that there is no adverse impact on the drainage of the area due to the construction activities.	IPRCL was ensured that there was no adverse impact on the drainage of the area during construction activities.
23.	Solid waste likely to be generated from construction site and labour camps during construction phase will be collected and disposed of as per the Solid Waste Management Rules — 2016.	The EPC contractor has collected, handled & disposed off, the above substances as per GPCB guidelines regularly. Solid waste generated from construction site & labour camp was disposed off as per solid waste management Rules-2016.
24.	The construction camps shall be kept outside the CRZ areas and the construction labour shall be provided with adequate amenities like drinking water, fuel, sanitation, etc. to ensure that the existing environmental condition is not deteriorated by them.	EPC contractor has provided adequate amenities like drinking water, fuel, sanitation, etc. to the construction labourers.

  
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25.	Ready Mix Concrete should be used so far as possible. Water demand during construction should be reduced by use of curing agents, plasticizers and other best practices.	Ready mix concrete plant was ensured in contractors premises to reduce use of water carrying agent and plasticizers used for works.
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### **A. 3 OPERATION PHASE:**

#### **A. 3.1 WATER**

26.	Total water requirement during the operation phase for dust suppression & greenbelt development shall be 15.0 KL/day which shall be met through water supply system of Gujarat Water Supply and Sewerage Board.	It is being ensured that during operation phase water is being purchased from GWSSB.
27.	No bore well shall be constructed and existing bore well/s, if any, shall be either sealed or converted into the recharge well.	It was ensured that no bore-well is being constructed in the project area.
28.	The storm water from the bridge shall be properly channelized. Provisions shall be made for ground water recharge through rain water harvesting as per the details submitted. Before recharging the run off pre-treatment must be done to remove suspended matter.	The project site area has saline water and impervious soil strata. The ground water recharge for rain water harvesting not required.
29.	Rainwater harvesting system shall be properly maintained & kept functional and periodical cleaning of the same shall be undertaken specifically including the period before onset of the monsoon.	The project site area has saline water and impervious soil strata. The ground water recharge for rain water harvesting not required.
30.	The water meter shall be installed and records of monthly water consumption shall be maintained regularly.	Not applicable

#### **A. 3.2 AIR**

31.	D. G. sets (3 x 500 KVA) proposed as backup power shall be of enclosed type and confirm to prescribe standards under EPA rules. Necessary acoustic enclosures shall be provided at diesel generator set to mitigate the impact of noise.	The D.G set conforming to emission limit prescribed under EPA rules was ensured.
32.	The gaseous emissions from the D.G. Sets shall conform to the emission limits prescribed under EPA rules as amended from time to time. At no time, the emission levels shall go beyond the stipulated standards.	The D.G set conforming to emission limit prescribed under EPA rules was ensured.

  
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33.	The stack height of the D.G. sets shall be equal to the height needed for the combined capacity of all proposed D.G. sets.	It was ensured that the stack height of the DG sets equal to the height required for the DG set.
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#### **A. 3.3 SOLID / HAZARDOUS WASTE**

34.	The project must strictly comply with the rules and regulations with regards to handling and disposal of hazardous waste in accordance with the Hazardous Waste (Management, Handling and Transboundary) Rules 2008. Authorization from the GPCB must be obtained for collection / treatment / storage / disposal of hazardous wastes.	No hazardous waste was generated during the project construction.
35.	Discarded Containers, /Carboys and Used/ Lubricating Oil shall be sold to the authorized recyclers.	IPRCL was ensured that Container/ Carboys and Used/Lubricating oil sold to the authorized recyclers only.
36.	The project proponent shall have to ensure that plastic waste is segregated and disposed of by selling it to the registered recyclers.	It was ensured that plastic waste was segregated and disposed off by selling it to the registered recyclers.
37.	Necessary arrangements shall be made for safe disposal of municipal solid wastes as per the provisions of the Solid Wastes Management Rules, 2016 as amended from time to time and solid wastes shall not be released in marine water / coastal area in any case.	It was ensured that the Solid wastes are disposed in compliance to the Solid Waste Management rules- 2016.

#### **A. 3.4 SAFETY:**

38.	Dedicated power back up system shall be provided in the case of power failure & emergency of fire water pumps.	It was ensured that the Dedicated power back up system during construction of the Project.
39.	Compulsory training, for the first aid and firefighting along with regular mock drill shall be imparted to the Security personnel and D.G. Operator.	It was ensured that the training for the first aid to security person and DG operator.
40.	First Aid Boxes shall be provided in adequate quantity at strategic locations.	Sufficient First aid boxes was provided at site office during construction of Project.
41.	Transportation of materials shall be as per the Motor Vehicle Act & Rules.	It was ensured that the Transportation of materials are done as per Motor Vehicle Act & Rules.

#### **A. 3.5 CLEANER PRODUCTION, ENERGY CONSERVATION AND WASTE MINIMISATION:**

42.	Energy conservation measures like maximum use of natural light, wind & ventilation through architectural design, solar based LED lights in landscaped and drive way areas, LED/CFL light for walk way areas etc. shall be provided as proposed.	It was ensured that the LED lights are provided in all the offices & site for energy conservations during construction of the project.
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**A. 3.6 PARKING / TRAFFIC CONGESTION:**

43.	No public space shall be used or blocked for the parking and the trained staff shall be deployed to guide the visitors for parking and helping the senior citizens and physically challenged people.	It was ensured that the Parking of equipment's are done at site office area and the visitors are guided by trained staff.
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**A. 3.7 GREEN BELT**

44.	Green belt area of 25,000 m <sup>2</sup> shall be developed as proposed. Plantation along the bridge and road shall be done with native varieties.	It was ensured that the Green belt area was developed as per the tender provision.
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**B. GENERAL CONDITIONS:****1. PRE -CONSTRUCTION AND CONSTRUCTION**

45.	Environment Management Cell shall be formed, which shall supervise and monitor the environment related aspects of the project during construction and operational phases in addition to observance of Gujarat Building and other Construction Workers' (Regulation of Employment & Conditions of Service) Rules 2003.	The environment related aspects of the project during construction and operational phase are supervised by project implementation agency. Also, a dedicated Environment Management Cell has been formed for day-to-day supervision and monitoring of the environment related aspects of the project during construction and operational phases.
46.	Prior permission from the competent authority shall be obtained for cutting of the existing trees before site preparation work is commenced.	The permission was obtained from the competent authority for cutting of the existing trees before the commencement of the project work.
47.	Water demand during construction shall be reduced by use of curing agents, super plasticizers and other best construction practices.	It was ensured that to reduce the water consumption, curing agents and super plasticizers was used for construction of the project work.
48.	Temporary wind shield shall be done to prevent dust emission spreading outside the project premises. Barricade of adequate height shall be provided on the periphery of the construction site with adequate signages, Individual building within the project site shall also be provided with barricades.	There was no building with in the project site area. However temporary wind shield was provided at required locations.
49.	Regular water sprinkling shall be done in vulnerable areas for controlling fugitive emission.	Water sprinkling was done in vulnerable area on need basis.
50.	The roads inside the project area and roads connected to the main road shall be paved or shall be water sprinkled to	Water sprinkling are done in diversion road to avoid the fugitive emissions during vehicular movement.



	avoid the fugitive emissions during vehicular movement.	
51.	Material shall be covered during transportation to avoid the fugitive emission.	Materials are covered by tarpaulin during transportation for particular items.
52.	Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured.	Sand was stored properly to avoid fugitive emission.
53.	Structural design of the project shall strictly adhere to the seismic zone norms for earthquake resistant structures.	Structural design considering seismic zone-V and checked by proof consultant and safety consultant. A third-party independent design audit is done by IIT, BHU, Varanasi for design of bridges, and structure with span of 15.00m or more.
54.	The planning, designs and construction of all buildings shall be such as to ensure safety from fire.	N/A as this is a road project.
55.	The project proponent shall ensure maximum employment to the local people.	It was ensured that the local people employed considering the nature of work.
56.	All required sanitary and hygienic measures shall be provided before starting the construction activities and to be maintained throughout the construction phase.	It was ensured that all required sanitary and hygienic measures were provided before starting the construction activities.
57.	Provision shall be made for housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical healthcare, crèches, electricity & ventilation, canteen, rest rooms, safe disposal system for garbage, first aid, medical and emergency facilities etc. to ensure that they do no ruin the existing environmental condition. The housing may be in the form of temporary structures to be removed after completion of the project.	Temporary houses were constructed for labour at work site area with necessary infrastructure & facilities.
58.	Adequate personal protective equipments shall be provided to the construction workers to ensure their safety and the project proponent shall ensure its usage by the labourers.	Sufficient PPE kits were provided to the workers for safety.
59.	First Aid Box shall be made readily available in adequate quantity at all the times.	Sufficient First aid boxes were provided at work site office.
60.	First Aid Box shall be made readily available in adequate quantity at all the times.	Sufficient First aid boxes were provided at work site office.

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61.	The project proponent shall strictly comply with the Building and other Construction Workers' (Regulation of Employment & Conditions of Service) Act 1996 and Gujarat rules made there under and their subsequent amendments.	It was ensured that the Building and other Construction Workers' (Regulation of Employment & Conditions of Service) Act 1996 and Gujarat rules made there under and their subsequent amendments
62.	The overall noise level in and around the project area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures vibration dampers etc. on all sources of noise generation.	All the necessary arrangements were adopted for regulating the noise generation even though the project site is far away from the residential area.
63.	Ambient noise levels shall conform to residential standards both during day and night. Incremental pollution load on the ambient air and noise quality shall be closely monitored during construction phase.	All the necessary arrangements were adopted for regulating the noise generation even though the project site is far away from the residential area.
64.	The noise generating equipments, machinery and vehicles shall not be operated during the night hours and shall be maintained properly to avoid generation of high noise due to wear and tear.	All the necessary arrangements were adopted for regulating the noise generation even though the project site is far away from the residential area.
65.	Use of diesel generator sets during construction phase shall be strictly with acoustic enclosure and shall conform to the EPA Rules for air and noise emission standards.	D.G set with acoustic enclosure was provided conforming to the EPA rules.
66.	Safe disposal of wastewater and municipal solid wastes generated during the construction phase shall be ensured.	Solid wastes and water waste were disposed properly by making soak pits.
67.	All topsoil excavated during construction activity shall be used in horticultural / landscape development within the project site.	As excavated material is saline in nature, it cannot be used for horticulture/ Landscape.
68.	The municipal solid wastes shall be properly collected and segregated at source.	Solid wastes are segregated at source and then collected and disposed at designated places.
69.	Recyclable solid waste [paper, cartons, plastic, polythene bags, glass etc.] shall be sold to the scrap vendors.	Collected Solid waste were sold to the scrap vendors.
70.	Non-recyclable municipal solid waste shall be transferred to the nearest designated waste collection point of the concerned local authority.	Collected Solid waste were sold to the scrap vendors.
71.	Provisions of Solid Waste Management Rules-2016 shall be strictly adhered to.	Solid waste management Rules- 2016 were strictly adhered.
72.	The project must strictly comply with the rules and regulations with regards to handling and disposal of hazardous waste in accordance with the Hazardous Waste (Management, Handling and	It was ensured that the rules and regulations with regards to handling and disposal of hazardous waste in accordance with the Hazardous Waste (Management, Handling and Transboundary) Rules 2008.



	Transboundary) Rules 2008. Authorization from the GPCB must be obtained for collection / treatment / storage / disposal of hazardous wastes.	Authorization from the GPCB must be obtained for collection / treatment / storage / disposal of hazardous wastes
73.	Construction materials and debris shall be properly stored and handled to avoid negative impacts such as air pollution and public nuisances by blocking the roads and public passages.	Construction of project work is completed on 29.05.2023 and here is no construction materials and debris are available at work site.
74.	Construction debris shall be reused in construction of roads, levelling the site etc. Waste packaging material (like used cement bags, waste paper, cardboard packing material), metal scraps etc. shall be sold to recyclers or shall be sent to the nearest municipal solid waste landfill site.	Construction debris were removed from work site.
75.	The area temporarily used for storing the construction material and other activities shall be reclaimed by adequate Plantation.	Construction debris were removed from work site and reclaimed with plantation.
76.	Excavated earth to be generated during the construction phase shall be utilized within the premises to the maximum extent possible and balance quantity of excavated earth shall be disposed of with the approval of the competent authority after taking the necessary precautions for general safety and health aspects. Disposal of the excavated earth during construction phase shall not create adverse effect on neighbouring communities.	The excavated earth debris were removed from work site.
77.	Provisions of Construction & Demolition Waste Management Rules-2016 shall be strictly adhered to.	Noted please.
78.	Vehicles hired for bringing construction material at the site shall be in good conditions and conform to applicable air and noise emission standards and shall be operated only during day time and non-peak hours.	Noted please.
79.	Project proponent shall ensure use of eco-friendly building materials including fly ash bricks, fly ash paver blocks, Ready Mix Concrete [RMC] and lead-free paints in the project.	Fly ash was used for ready mix concrete work.
80.	Fly ash shall be used in construction wherever applicable as per provisions of Fly Ash Notification under the E.P. Act, 1986 and its subsequent amendments from time to time.	Fly ash was used for ground improvement work and RE wall construction work.
81.	Use of glass shall be minimal and only low emissive glass shall be used in the project	Used as per requirement.

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	to reduce the electricity consumption and load on air conditioning.	
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## **B2. OPERATION PHASE AND LIFE TIME:**

82.	Low water consuming devices shall be provided. Fixtures for showers, toilet, flushing and drinking shall be of low flow either by use of aerators/ diffusers or pressure reducing devices etc.	Low water consuming devices were provided at places whenever required.
83.	A water meter shall be installed on rain water harvesting & ground water recharge well system & compliance report of the same shall be submitted to concerned authorities.	As the project site area is saline in nature rain water harvesting is not possible.
84.	Used oil shall be sold only to the registered recycler.	Used oil was sold to the registered recycler.
85.	Provisions of Solid Waste Management Rules-2016 shall be strictly adhered to.	Solid waste management Rules- 2016 are strictly followed.
86.	Requisite firefighting facilities as per the requirement of NBC and Gujarat Fire Prevention and Life Safety Measures Act- 2013 along with the rules & regulations made there under shall be provided.	It was provided at site office as is a road project.
87.	First Aid Box shall be made readily available in adequate quantity at all the times.	Sufficient First aid boxes were provided at site office.
88.	Necessary emergency lighting system along with emergency power back up system shall be provided. Further, necessary auto glow signage at all appropriate places shall be provided to guide the people towards exits and assembly points during emergency.	Necessary sign boards were provided for vehicular traffic and stand by power supply was also provided wherever necessary.
89.	The overall noise level in and around the project area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures vibrations dampers etc. on all sources of noise generation including D.G. Sets. The ambient noise levels shall confirm to the standards prescribed under the Environment (Protection) Act and Rules.	Stand by power supply arrangements were provided confirming to the standards prescribed under the Environment (Protection) Act and Rules.
90.	Traffic congestion near the entry and exit points from the roads adjoining the proposed project site shall be avoided. No public space including the service	Proper diversion road with signages as approved by NH Authorities are provided without parking space so that no blocking occurs.



	road shall be used-or blocked for the parking.	
91.	The project proponent shall install energy efficient devices, appliances, motors, and pumps conforming to the Bureau of Energy Efficiency norms.	The same was provided wherever required.
92.	The transformers and motors. shall have minimum efficiency of 85%.	The same was provided wherever required.
93.	Only variable frequency motor drives shall be used in project.	The same was provided wherever required.
94.	Application of solar energy shall be incorporated for illumination of common areas, lighting for gardens and street lighting: In addition, the provision for solar water heating system shall also be provided.	The same was provided wherever required.
95.	The area earmarked as green area shall be used only for plantation and shall not be altered for any other Purpose.	The area earmarked as green area were used only for the plantation purpose.
96.	Drip irrigation/flow volume, low angle sprinkler system shall be used for the lawns and other green area including tree plantation.	Sprinkler system is being used for the lawns and other area including tree plantation.
97.	The project proponent shall inform to SEAC. / SEIAA regarding the transfer of management responsibility to the Society/Association to be formed for the proposed Project with all the supporting documents. The Society Association formed for further management of the proposed project shall be responsible for compliance of all the conditions stipulated in the Environmental Clearance order.	N/A
98.	Environmental Clearance granted for the project on the basis of documents related to land possession submitted shall become invalid in case the actual land for the project site turns out to be different from the land considered at the time of appraisal of the project and mentioned in the EC.	The project is executed within the land already under possession of DPT, as submitted in the application for Environment Clearance.
99.	All other statutory clearances such as NLA. permission, approvals for storage of diesel from PESO, Fire Department, Airports Authority of India etc., if applicable, shall be obtained by the project proponent from the competent authorities.	N/A.

  
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100.	All the conditions as may be stipulated in the NLA. order, Development permission, Building Use permission, NOC obtained from Fire Department etc. shall be strictly complied with.	N/A.
101.	The project management shall also comply with all the environment protection measures, risk mitigation measures and safeguards proposed by them.	The environment protection measures, risk mitigation measures and safeguards proposed are complied.
102.	All the commitments/ undertakings given to the SEAC during the appraisal process for the purpose of environmental protection and management shall be strictly adhered to.	Noted please.
103.	The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose for the environmental protection and management.	Noted please.
104.	At the terms & conditions prescribed in the amendment of EIA Notification — 2006 published by the MoEF&CC vide its Notification No, S.O. 3999(E) dated 9th December, 2016 shall be complied with letter & spirit.	Conditions prescribed in the EIA notification 2006 are complied.
105.	The project proponent shall strictly comply with the Gujarat Building and other Construction Workers' (Regulation of Employment & Conditions of Service) Rules 2003 as well as Gujarat Lifts & Escalators Rules as amended from time to time.	Noted please.
106.	No further expansion or modifications in the project likely to cause environmental impacts shall be carried out without obtaining prior Environment Clearance from the concerned authority.	Construction work is completed as per the approved environment clearance.
107.	The above conditions shall be enforced, inter-alia under the provisions of the water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act 1986 and the Hazardous Wastes (Management Handling and Tran boundary) Rules, 2008, Building and Other Construction Workers' (Regulation of Employment & Conditions of Service) Act-1996, The Gujarat Lifts and Escalators Act-2000 along with their amendments and rules.	As clarified in above points.

  
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## B. OTHER CONDITIONS

108.	The project proponent shall allocate the separate fund for Corporate Environment Responsibility (CER) in accordance to the MoEF&CC's Office Memorandum No. F.No.22-65/2017-IA.IN dated 01/05/2018 to carry out the activities under CER in affected area around the project. The entire activities proposed under CER shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to district collector. The monitoring report shall be posted on the website of the project proponent.	An amount of Rs. 1.75 Cr, has been earmarked as the CER budget for the project. The same shall be spent in different phases and the same shall be notified.
109.	The project authorities shall earmark adequate funds to implement the conditions stipulated by Forest & Environment Department, GOG / SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Noted please.
110.	The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen at the Website of SEIAA/SEAC/GPCB. This shall be advertised within seven days from the date of the clearance letter, in at least two local newspapers that are widely circulated in the region, one of which shall be in the Gujarati language and the other in English. A copy each of the same shall be forwarded to the concerned Regional Office of the Ministry.	Advertisement published in EXIM INDIA (in English) and Kutchuday (in Gujarati) newspapers on dated 26/06/2020 and newspaper cuttings already sent to Regional office, Bhopal, MoEF&CC vide letter No.: EG/WK/4847(D)/III/922 dated 30/06/2020. The newspaper cuttings are attached as <b>Annexure - VIII(in 2 pages)</b> .
111.	It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in soft copies to the regulatory authority concerned and shall be uploaded on website of Gujarat Real Estate Regulatory Authority, on 1 <sup>st</sup> June and 1 <sup>st</sup> December of each calendar year.	Compliance report is being submitted periodically.

  
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112.	The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board.	It is ensured that GPCB stipulations are adhered to.
113.	The project authorities shall inform the GPCB, Regional Office of MoEF&CC and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	(a) Date of start of project 01/10/2020. (b) Schedule date of completion 30/03/2023. (c) Actual date of completion 29/05/2023.
114.	The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not found satisfactory. This environmental clearance is valid for seven years from the date of issue.	It is hereby ensured that conditions provided in the clearance issued by SEIAA will be implemented properly.
115.	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 2 period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Point Please.
116.	Submission of any false or misleading information or data which is material to screening or scoping or appraisal or decision on the application makes this environment clearance cancelled.	--

  
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# **Annexure -I**

**(in 3 pages)**



## Annexure -I (1)

**Subject:** Point-wise Compliance Status Report for CRZ clearance for proposed project for "Construction of Interchange cum Road Over bridge at N.H 141 to Nehru Gate of Deendayal Port Trust, Kandla, Dist: Kutch by Deendayal Port Trust"-reg.

**Ref No:** - GCZMA CRZ recommendation vide Letter No- ENV-10-2017-74-E dated 21.01.2018.

S. No.	CRZ Conditions	Compliance Status
	<b>SPECIFIC CONDITIONS</b>	
1.	The DPT shall strictly adhere to the provisions of the CRZ Notification, 2011	IPRRCL (Project Implementation Agency) was adhered to all the provisions of CRZ Notification -2011.
2.	Necessary permissions from different departments/ agencies under different laws/ acts shall be obtained before commencing any activity including the construction activities	The Consent to Establish (CTE) from the GPCB had already been obtained vide CTE No. 89489 granted by the GPCB vide letter no. PC/CCA-KUTCH 1449/GPCB ID 56869 dated 03/10/2017 attached as <b>Copy Annexure II(in 4 pages) of the EC Compliance.</b> Copy of approved GAD enclosed as <b>Annexure III(in 2 pages) of the EC Compliance.</b>
3.	The DPT shall ensure that adequate culvert/passages are provided during construction of road and there shall be no obstruction of free flow of water.	The Construction of the project has been completed on 29/05/2023. IPRCL Total 15 culverts has been constructed for the continuous free flow of water. <b>(Copy of GAD of Culverts attached as Annexure VI (in 16 pages)of the EC Compliance).</b>
4.	The DPT shall ensure that there shall not be any blockage of creek and free flow of water is maintained	The Construction of the project has been completed on 29/05/2023. IPRCL Total 15 culverts has been constructed for the continuous free flow of water.
5.	The DPT shall construct settling ponds and the installation of the oil receptor to prevent the entry of the surface run-off from fuel and other contaminants into the wells and other surface bodies along the corridor.	The Construction of the project has been completed on 29/05/2023.  Also, there were no wells in the project area and no spillage of fuel occurred in past at project area. The same will also be ensured in Maintenance period of project i.e. 4 years.
6.	No vehicle or equipment shall be parked or re fuelled near the water-body, so as to avoid contamination from fuel and lubricants	The Construction of the project has been completed on 29/05/2023.  Also, the Vehicles and equipment are parked and refuelled at the site office area during maintenance period, and there is no sweet water body near the site office.
7.	Hot mix plants/concrete mix plants shall be located and operated in such a way that there shall be no Air pollution.	The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.  Hot Mix Plant and Concrete mix plant is located 7 km away from project site and GPCB approval of same is

  
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## Annexure -I (2)

S. No.	CRZ Conditions	Compliance Status
		enclosed as <b>Annexure VII (in 6 pages)</b> .
8.	The DPT shall ensure that the quarry works, from which they will purchase raw materials, shall confirm to the norms and having necessary clearances from the respective authorities.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>IPRCL has ensured that the quarry works, from which raw materials are purchased, conforms to the norms and had necessary clearances from the respective authorities.</p>
9.	The DPT shall make MOU with raw material supplier quarry/hot mix plants etc.in such a way that they will comply with all the terms and conditions mentioned in the CCA/NOC issued by the Gujarat Pollution Control Board.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>The raw materials are being purchased by the contractors directly hence M.O.U by DPT with supplier is not required. However, conditions mentioned in NOC by GPCB was complied too.</p>
10.	The DPT shall explore the possibility for using the fly ash @ 5%-10% to comply with the Fly Ash Notification.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>Fly ash @ 5% to 10% was used in the Concrete as well as in Reinforced Earth Filling.</p>
11.	The DPT shall make sure that all the wastes arising from the project shall be disposed of at identified sites in environmentally sound manner.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>The solid waste generated from construction site &amp; labour camp was disposed off as per solid waste management Rules-2016.</p>
12.	There shall no discharge of any kind of wastewater/sewage/effluent into the creek/sea or in the CRZ areas.	<p>The Construction of the project has been completed on 28/05/2023. The maintenance period is 4 years</p> <p>During construction phase there was no discharge of any kind of wastewater/sewage/effluent into the creek/sea or in the CRZ areas.</p>
13.	The DPT shall implement all the suggestions/recommendations given in the EIA report by their consultant M/s. Mantech Consultant Pvt. Ltd.	All the suggestions/ recommendations given in the EIA report by consultant are implemented by IPRCL (Project Implementation Agency).
14.	No ground water shall be taped to meet with the water requirements during the construction and/or operation phases.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>Fresh water requirement during the construction</p>

  
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**Annexure -I (3)**

S. No.	CRZ Conditions	Compliance Status
		phase was fulfilled with Private Tanker supplying agency. It was ensured that no ground water was tapped in the construction phase.
15.	The DPT shall not discharge any kind of waste including the construction debris into the river/estuary or into the CRZ areas.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>During construction phase there was no discharge of any kind of wastewater/sewage/ effluent into the creek/sea or in the CRZ areas.</p>
16.	The DPT shall ensure that the construction camps are kept outside the CRZ areas and the construction labour are provided with adequate amenities like drinking water, fuel, sanitation etc. to ensure that the existing environmental condition is not deteriorated by them.	<p>The Construction of the project has been completed on 29/05/2023. The maintenance period is 4 years.</p> <p>It was provided adequate amenities like drinking water, fuel, sanitation, etc. to the construction labourers to ensure that the existing environmental condition is not deteriorated by them.</p>
17.	The DPT shall regularly submit the half-yearly compliance report on the conditions stipulated by this department/SEIAA	IPRCL is being compiled the compliance report periodically.
18.	Any other conditions that may be stipulated by this department/SEIAA from time to time for environmental protection/management purpose.	Noted please.

  
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# **Annexure II**

## **(In 4 Pages)**

**Subject: Point-wise Compliance status report for CTE for proposed project for construction of Interchange cum Road Over bridge at N.H. 141 to Nehru Gate of Deendayal Port Trust, Kandla, Dist: Kutch by Deendayal Port Trust-reg.**

**Ref No: - GPCB CTE-89489 vide letter No-PC/CCA-KUTCH-1449/GPCBID-56869 dated 03.10.2017.**

**DPT had signed an MOU with M/s IPRCL vide Certificate no. IN-GJ952233559268925 dated 09.06.2020 wherein it was IPRCL was appointed as the Project Implementation Agency for the project.**

S.No.	CTE Conditions	Compliance Status
<b>SPECIFIC CONDITIONS</b>		
1.	This CTE 89489 is granted subject to the condition that you shall not stall any construction activities prior to obtaining of EC and CRZ clearance from competent authority for their interchange cum road over bridge at 14.892 km.	EC & CRZ Clearance has been issued by SEIAA, Gujarat vide EC letter No. SEIAA/GUJ/ EC&CRZ/ 8(b)/728/2020 dated 19/06/2020. Date of start of commencement of the project 01/10/2020 and completed by 29.05.2023
2.	No ground water to all condition of ToR issued by SEIAA vide order No. SEIAAGUJ/ToR/8(b)/471/2017 dated 29.04.2017.	It was ensured that no ground water was tapped during the construction phase.
3.	Unit Shall adhere to all condition of TOR issued by SEIAA vide order No. SEIAAGUJ/TOR/8(b)/471/2017 dated 29.04.2017.	IPRCL was adhere to all condition of ToR issued by SEIAA vide order No. SEIAAGUJ/ToR/8(b)/471/2017 dated 29.04.2017.
1.	<b>CONDITIONS UNDER WATER ACT 1974:</b>	
1.1	The generation of effluent construction operators shall not exceed of 16 kl/day and water shall be used for sprinkling purpose by dust suppression purpose.	IPRCL had used that the water sprinkling in vulnerable area on need basis.
1.2	The sewage shall be disposed through septic tank.	The Sewage generated during the construction phase was treated in septic tank.
2.	<b>CONDITIONS UNDER AIR ACT 1981:</b>	
4.1	There shall be no flue gas emission and process emission from construction activity and other ancillary emission.	There was no flue gas emission and process emission from construction activity and other ancillary emission.
4.2	The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per national Ambient Air Quality Emission Standards issues by Ministry of Environment, Forest and Climate change date 16 <sup>th</sup> November, 2009.	The concentration of the various parameters in the ambient air within the premises of the construction camp was not exceeded the limits specified hereunder as per national Ambient Air Quality Emission Standards.

**Addl. GENERAL MANAGER. (P)  
IPRCL/GANDHIDHAM**



## Annexure II (2)

	No.	Pollutant	Time Weight Average	Concentration in Ambient Air in Ug/M3	
	1.	SO2	Annuual 24 hrs	50 80	
	2.	NO2	Annuual 24 hrs	40 80	
	3.	PM10	Annuual 24 hrs	60 100	
	4.	PM2.5	Annuual 24 hrs	40 60	
a.	The applicant shall provide potholes, ladder , platform etc. at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney (s) attached to various source of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.				This segment is not applicable as it is a road project.
b.	The concentration of Noise in Ambient Air within the premises of industrial unit shall not exceed following levels: Between 6 A.M. and 10 P.M. :75 dB(A) Between10 P.M. and 6 A.M. :75 dB(A)				The concentration of noise in Ambient Air within the premises of construction camp was not exceeded the prescribed levels.
CONDITIONS UNDER HAZARDOUS WASTE					
5.1	Applicant shall have to comply with provisions of Hazardous Waste (Management, handling & Trans-boundary Movement Rule-2016)				The provisions of Hazardous Waste (Management, Handling & Trans -boundary Movement Rule-2016) was adhered.
5.2	The applicant shall obtain membership of common TSDF site for disposal of Hazardous Waste (Management ,Handling & Trans-boundary Movement Rule-2016)				The necessary permission was obtained as and when required.
5.3	The applicant shall obtain membership of common Hazardous waste incinerator for disposal of incinerable waste.				The necessary permission was obtained as and when required.
5.4	The applicant shall provide temporary storage facilities for each type of hazardous waste as per Hazardous Waste (Management , Handling & Transboundary movement) Rule-2016.				Noted Please.
GENERAL CONDITION					
6.1	Unit shall develop greenbelt on road side as per the GPCB guidelines. However if the adequate land is not available with the premises , the unit shall the up with local				The Horticulture is provided in the median and greenbelt development area.

  
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**Annexure II (3)**

	agencies like gram panchayat, school , social forestry office etc. for the plantation at suitable open land in nearby locality and submit an action plan of plantation for next three years to GPCB.	
<b>6.2</b>	In case of change of ownership/management the name and address of the new owners/partners/directors/proprietor should immediately be intimated to the Board.	Noted Please.
<b>6.3</b>	The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to the Board for this purpose in the prescribed forms under the provisions of the Water Act 1974, the Air Act 1981 and the Environment (Protection) Act,1986.	Noted Please.
<b>6.4</b>	The overall noise level in and around the plant area shall be kept well within the standards by providing noise control measures including engineering control like acoustic insulation hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise level shall conform to the standards prescribed under the Environment (Protection) Act, 1986 & Rules.	The overall noise level in and around the construction camp area was kept well within the standards by providing various noise control measures.
<b>6.5</b>	Applicant is required to comply with the manufacturing, storage and Import of Hazardous chemicals Rules -1989 formed under the Environment (Protection) Act 1986.	Noted Please.
<b>6.6</b>	If it is established by any competent authority that the damage is caused due to their industrial activities to any person or his property in that case they are obliged to pay the compensation as determined by the competent authority.	Noted Please.
<b>6.7</b>	Applicant shall have to comply with all guidelines , Directive issued/being issued by MoEF /CPCB/DoEF from time to time .	Noted Please.

  
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**Annexure II (4)**

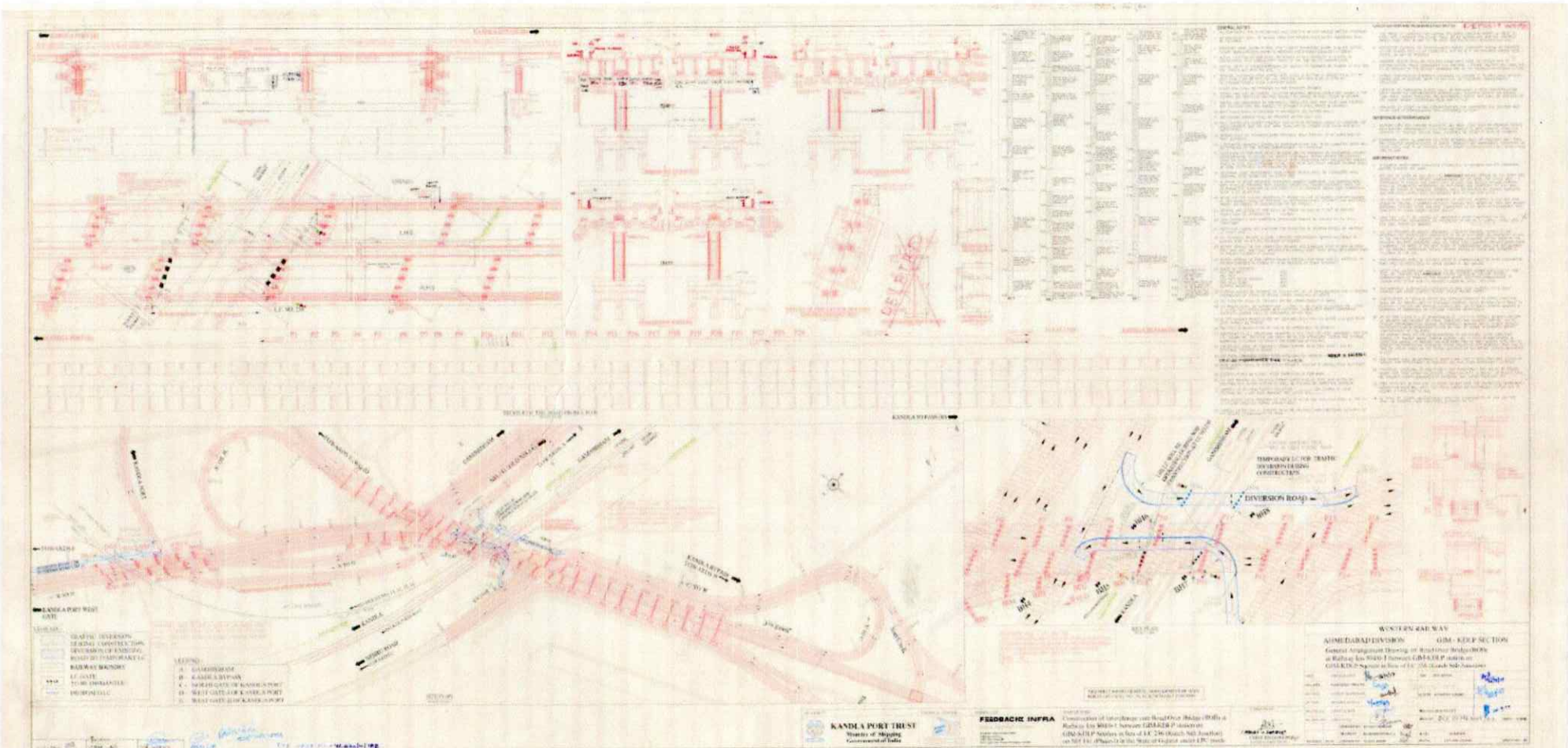
<b>6.8</b>	Applicant shall not use/withdraw ground water either during construction and / operation phase.	Noted Please.
<b>6.9</b>	Environmental cell shall be setup and shall be responsible for the total Environmental management.	All the environment related aspects of the project during construction and operational phase was supervised by Project Implementation Agency. DPT has signed an MOU with M/s. IPRCL vide Certificate no. IN-GJ952233559268425 dated 09.06.2020 wherein IPRCL was appointed as the Project Implementation Agency for the project.
<b>6.10</b>	Monitoring in respect to Air, Water, Noise level shall be carried out and results shall be submitted to this Board on quarterly basis.	Noted Please.

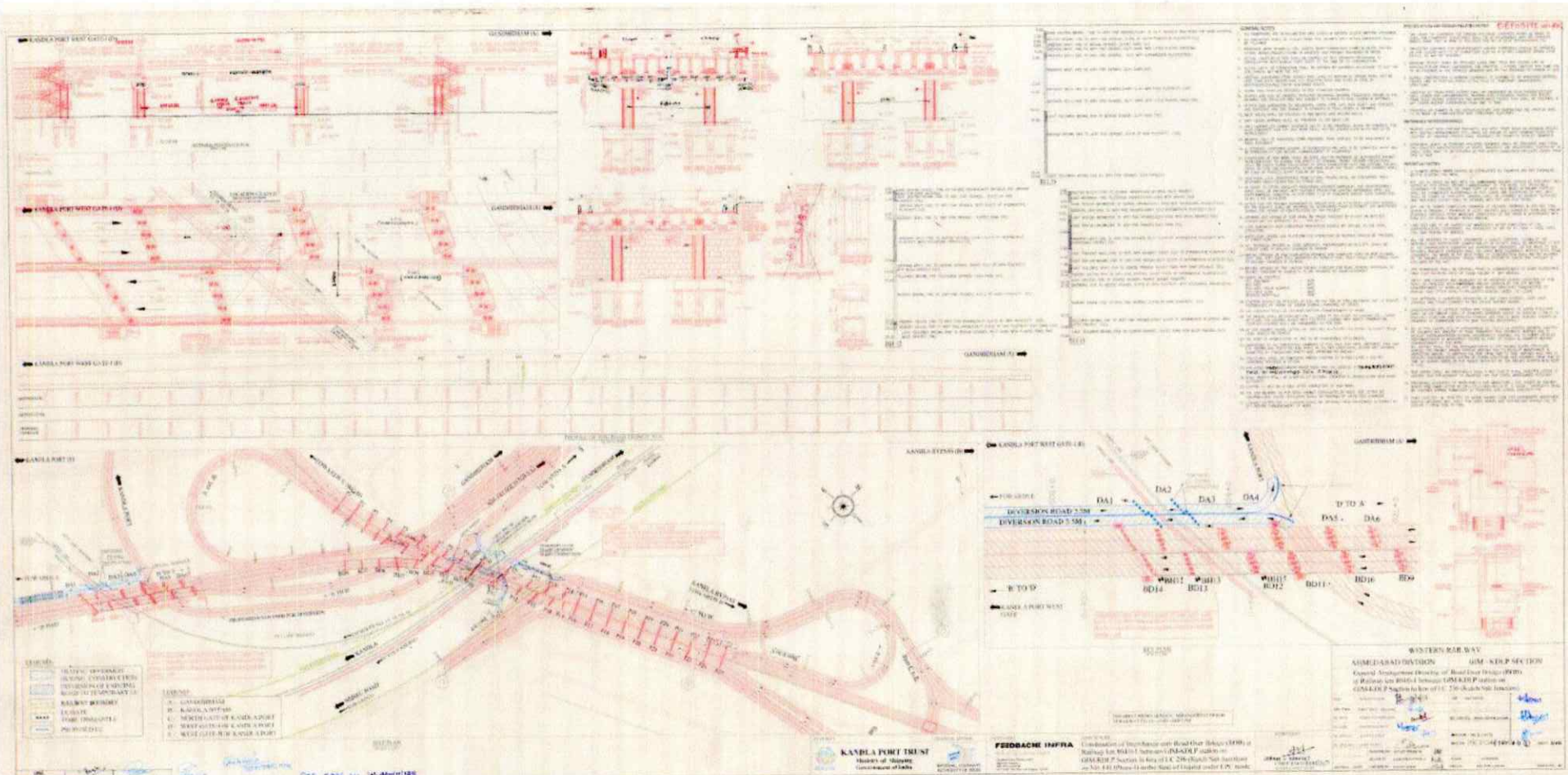
  
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**IPRCL/GANDHIDHAM**

# **Annexure III**

## **(In 2 Pages)**









# **Annexure IV**

## **(In 14 Pages)**



इंडियन पोर्ट रेल कारपोरेशन लिमिटेड  
(भारत सरकार का उपक्रम)  
Indian Port Rail Corporation Ltd.  
(A Government of India Enterprise)  
CIN No: U60300DL2015GOI282703

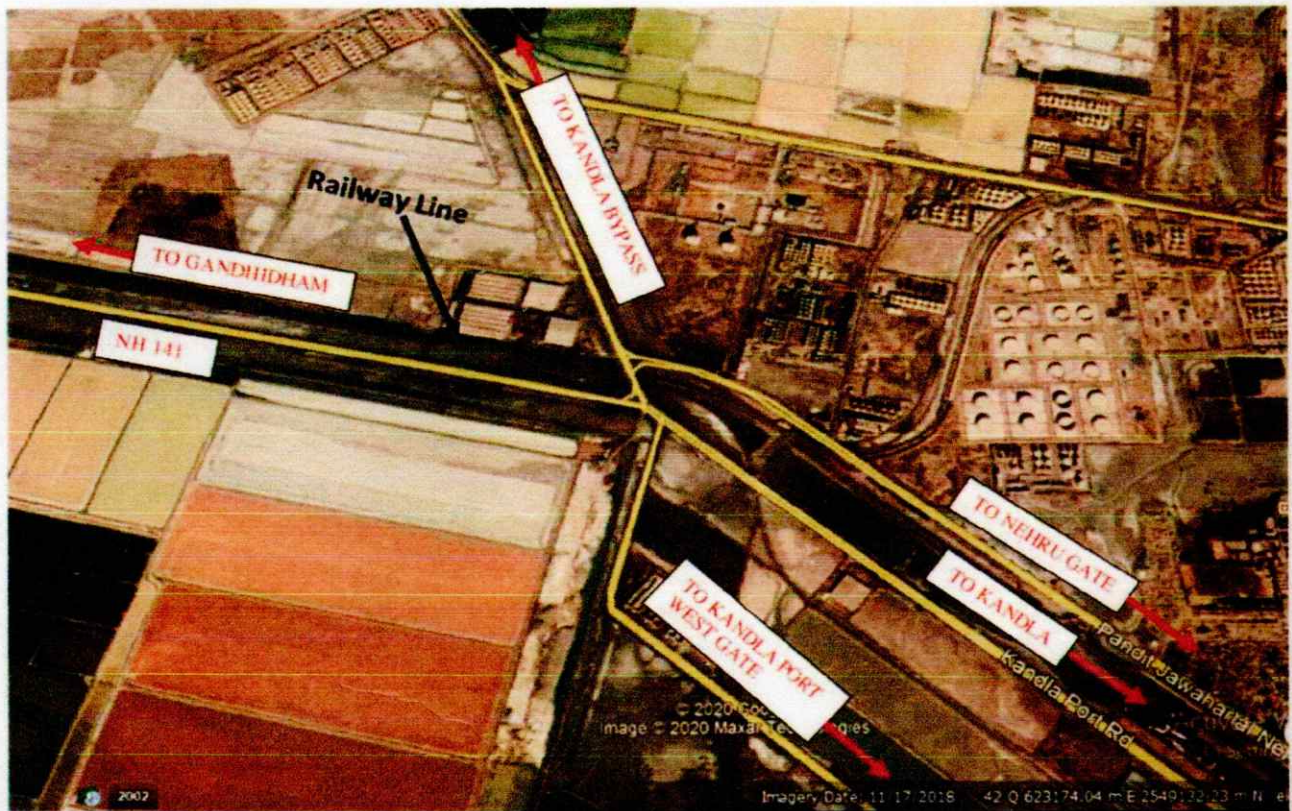


Construction of Interchange cum Road Over Bridge (ROB) at LC 236 (Kutch Salt - Junction) on NH 141 (Phase- I) in the State of Gujarat under EPC mode.

EPC Contractor:

**Niraj - Patel JV**

BBZ S 60, "NEELKANTH", ZANDA CHOWK,  
GANDHIDHAM, KUTCH, GUJARAT - 370201.



**Design of ROB Super Structure @ Ch.0+639**

**Sep 2020**

Design Consultants:



**Nivedita Consultants**

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**AUTHORITY:**

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**Indian Port Rail Corporation Ltd.**  
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**PROJECT: Construction of Interchange cum ROB**

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**EPC CONTRACTOR:**

**M/S NIRAJ-PATEL JV**

BBZ S 60, "Neelkanth" Zanda chowl, Gandhidhsm, Kutch, Gujrat- 370201

**THIRD PARTY PROOF CONSULTANT:**

**Indian Institute of Technology (BHU) Varanasi**

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**PROOF CONSULTANT:**

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1/70, TF-1, MIG SEC-1, Vasundhra, Ghaziabad - 201 012, Uttar Pradesh, India

**TITLE OF DOCUMENT:**

**Design of ROB Super structure at CH:0+639.1**

Doc. Number:	KUT-SUP STR-ROB-RLY-CH*0+639.1-DN-01	Prepared By:	CN
Rev. No:	R0	Checked By:	NK
Date:	29/8/2020	Approved By:	NK

Date:	Rev No.	Revision	By
29/8/2020	R0	For Review and Approval	CN

**DESIGN CONSULTANT:**

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**Nivedita Consultants**

**Nivedita Consulting**

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Project:	Construction of Interchange cum ROB	 Nivedita Consultants
Doc. Title	Design of ROB Super structure at CH:0+639.1	
Doc. no.	KUT-SUP STR-ROB-RLY-CH"0+639.1-DN-01	Rev. R0

Design of Super Structure
Table of Contents

Sl. No.	Title	Page No.		
1	Design of PSC I Girder and Diaphragm	1	-	383
2	Design of RCC I Girder and Diaphragm	389	-	486
3	Design of RCC Deck Slab	487	-	510

*Design of PSC I - Girder*

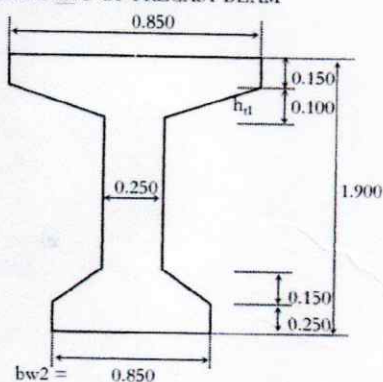


Project:	Construction of Interchange cum ROB	 <b>Nivedita Consultants</b>	Rev.	-	RO
Doc. Title	Design of ROB Super structure at CH:0+639.1				
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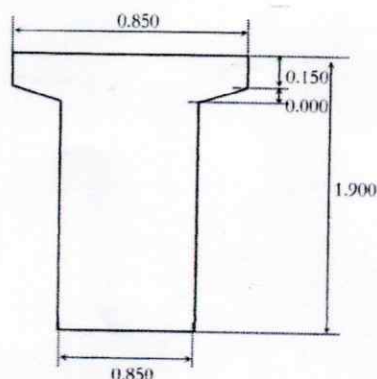
## SALIENT FEATURES OF THE BRIDGE DECK:

Skew angle	=	20 deg.	
Span c/c of Exp. J.	=	30.0 m	
Exp. Gap	=	42.6 mm	
c/L of brg. to c/L of exp. J	=	0.69 m	
Span c/c of brg.	=	28.617 m	(SK)
Overall span	=	29.957 m	(SK)
Overhang beyond c/L brg.	=	0.670 m	(SK)
Thickness of End Cross-Girder	=	0.851 m	(SK)
Thickness of Intermediate Cross-Girder	=	0.319 m	(SK)
Girder overhang beyond c/l brg.	=	0.000 m	
Overall Length of Girder	=	28.10 m	(SK)
c/L of temporary brg. from face of girder	=	0.65 m	
c/L of permanent brg. to face of end cross girder	=	0.426 m	
Overall carriageway width	=	13.4 m	
Wearing Coat Thickness	=	65 mm	
Depth of Precast Beam	=	1.900 m	
Thickness of Cast-in-situ deck	=	0.230 m	
Overall depth Beam +slab	=	2.130 m	
c/c of girder (transvers direction)	=	3.5 m	
Nos. of Girder	=	4 Nos.	
Deck cantilever in transverse direction	=	1.45 m	
Density of Concrete	=	2.5 t/m <sup>3</sup>	
Size of bearing	=	0.600 x 0.600 m	
		(Long)	(Trans)

## PROPORTIONING OF PRECAST BEAM




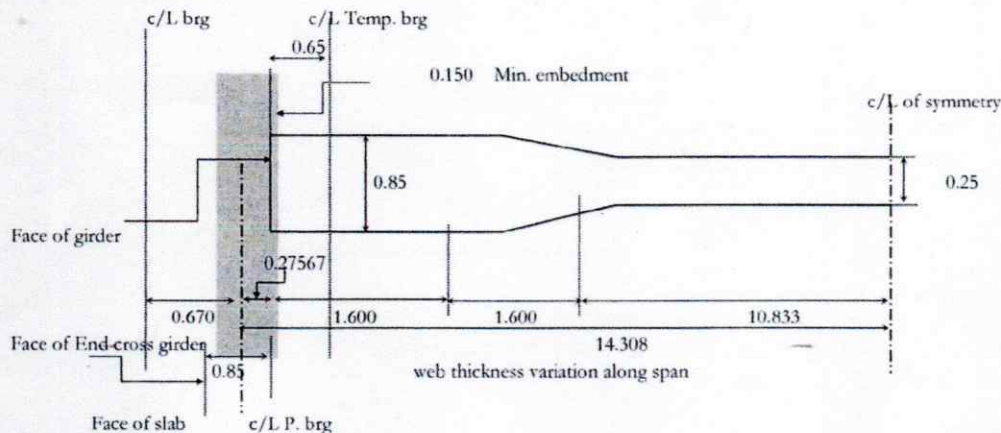
Section at Mid Span



Section at Support



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## Web Thickening

Section At	Face	Jacking	c/L brg.	c/L brg.	Te	deff	L/8	TS	2L/8	3L/8	4L/8
Dist. From c/L Permanent brg. (m)	0.00	0.15	0.00	0.00	1.60	1.81	3.58	3.20	7.15	10.73	14.31
Dist. From face of girder (m)	0.00	-0.15	0.00	0.00	1.60	1.81	3.51	3.20	7.02	10.54	14.05
Dist. From jacking point (m)	-0.15	0.00	0.28	0.28	1.45	1.66	3.36	3.05	6.87	10.39	13.90
Dist. From c/L temp. brg. (m)	0.00	-0.15	-0.65	-0.65	0.95	1.16	2.86	2.55	6.37	9.89	13.40
bw	m	0.85	0.85	0.85	0.85	0.78266	0.250	0.3381832	0.25	0.25	0.25

Overall depth of composite girder

2.130 m

 $d_{eff}$ 

=

1.811 \*/ Assumed 0.85 times of overall depth

## MATERIAL USED :

Grade of Reinforcement

=

Fe 500

fyk

=

500 Mpa

Modulus of Elasticity

Es

=

200000 Mpa

Cast insitu deck

=

M 40

fck

=

40 Mpa

fcm

=

50 MPa

Ecm

=

33000 MPa

Precast Beam

=

M 45

fck

=

45

fcm

=

55 MPa

Ecm

=

34000 MPa

fctk,0.05

=

Characteristic axial tensile strength of concrete

=

2.3 MPa

## ANALYSES ASSUMPTION

Environmental parameters

Relative humidity

=

57 %

Exposure condition

=

SEVERE

  
MANAGER (P) / IPRCL  
GANDHIDHAM

Proof Checked


  
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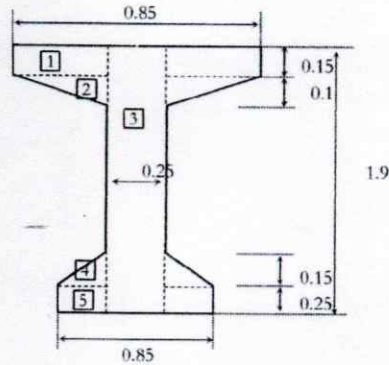
  
Design Director  
Niraj Patel JV



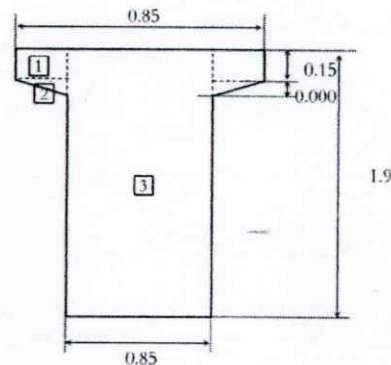




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**PROPERTY CALCULATION OF PRECAST BEAM:-**Density of concrete = 2.5 t/m<sup>3</sup>INNER/ OUTER GIRDER:

Section at Mid Span



Section at Support

## Section Property At Mid Span

Element No.	Factor	B m	D m	Nos.	A m <sup>2</sup>	cg <sub>y'</sub> m	I <sub>zz</sub> m <sup>4</sup>	cg <sub>x'</sub> m	I <sub>yy</sub> m <sup>4</sup>
1	1	0.300	0.15	2	0.0900	0.075	0.080	0.275	0.00748
2	0.5	0.300	0.1	2	0.0300	0.18333	0.021	0.225	0.00167
3	1	0.25	1.9	1	0.475	0.95	0.145	0	0.00247
4	0.5	0.3	0.15	2	0.045	1.60	0.015	0.275	0.00363
5	1	0.3	0.25	2	0.150	1.78	0.087	0.225	0.00872
Total					0.7900	1.015	0.348		0.0240

$$\text{UDL} = 0.790 \times 2.5 = 1.98 \text{ t/m}$$

## Section Property At Support Section

Element No.	Factor	B m	D m	Nos.	A m <sup>2</sup>	cg <sub>y'</sub> m	I <sub>zz</sub> m <sup>4</sup>	cg <sub>x'</sub> m	I <sub>yy</sub> m <sup>4</sup>
1	1	0.000	0.15	2	0.000	0.075	0.000	0.425	0
2	0.5	0.000	0.00	2	0.0000	0.15	0.000	0.425	0
3	1	0.85	1.9	1	1.615	0.95	0.486	0	0.09724
Total					1.615	0.950	0.486		0.0972

$$\text{UDL} = 1.615 \times 2.5 = 4.04 \text{ t/m}$$

Section At	unit	Face	lacking	c/L brg.	c/L brg.	deff	Tc	L/8	TS	2L/8	3L/8	4L/8
Dist. From c/L brg.	m	0	0.15	0	0	1.8105	1.600	3.577	3.200	7.154	10.731	14.308
web width bw	m	0.85	0.85	0.85	0.85	0.78266	0.85	0.25	0.33818	0.25	0.25	0.25
Area A	m <sup>2</sup>	1.615	1.615	1.615	1.615	1.522	1.615	0.790	0.911	0.790	0.790	0.790
I <sub>zz</sub>	m <sup>4</sup>	0.486	0.486	0.486	0.486	0.470	0.486	0.348	0.368	0.348	0.348	0.348
I <sub>yy</sub>	m <sup>4</sup>	0.097	0.097	0.097	0.097	0.089	0.097	0.024	0.035	0.024	0.024	0.024
y <sub>b</sub>	m	0.950	0.950	0.950	0.950	0.943	0.950	0.885	0.895	0.885	0.885	0.885
y <sub>t</sub>	m	0.950	0.950	0.950	0.950	0.957	0.950	1.015	1.005	1.015	1.015	1.015

MANAGER (P) / IPRL  
GANDHIDHAM


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Design Director  
Niraj Patel JV

PROOF  
NAYRA CIVIL SOLUTIONS  
BHOPAL

FORGIVING ROADS LLP  
Safety Consultant  
GURUGRAM



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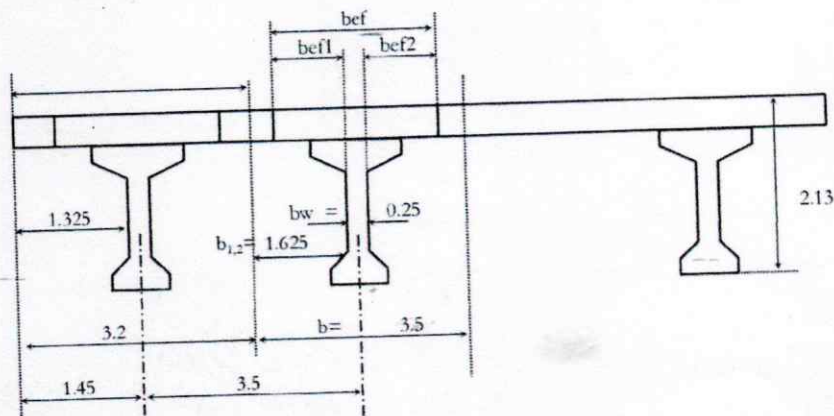
**EFFECTIVE WIDTH CALCULATION:**

$$\text{Effective Span } l_0 = \text{Min} \begin{cases} \text{Distance from bearing to bearing} \\ \text{Clear distance b/w supports + Effective depth} \end{cases}$$

$$\text{Bearing Size in Longitudinal dir.} = 0.6 \text{ m}$$

$$l_0 = \text{Min} \begin{cases} 28.6166 \\ 28.0166 + 1.8105 \text{ */ (Effective depth assumed 0.85 times of Overall depth)} \end{cases}$$

$$l_0 = 28.617 \text{ m}$$

**beff. CALCULATION FOR INNER GIRDER:**

$$b_{1,2} = 1.625$$

$$\text{beff}_{1,2} = \text{Min} \begin{cases} 0.2 b_i + 0.1 l_0 = 3.2 \text{ m} \\ 0.2 l_0 = 5.72331 \text{ m} \end{cases}$$

$$\text{beff}_{1,2} = 3.18666 \text{ m}$$

$$\text{beff} = \text{Min} \begin{cases} \sum \text{beff}_{i,j} + b_w = 6.62331 \text{ m} \\ b = 3.5 \text{ m} \end{cases}$$

$$\boxed{\text{beff} = 3.5 \text{ m}}$$

**beff. CALCULATION FOR OUTER GIRDER:**

$$b_1 = 1.325 \text{ m}$$

$$b_2 = 1.63 \text{ m}$$

$$\text{beff}_1 = \text{Min} \begin{cases} 0.2 b_i + 0.1 l_0 = 3.1 \text{ m} \\ 0.2 l_0 = 5.72331 \text{ m} \end{cases}$$


$$\text{beff}_1 = 3.12666 \text{ m}$$

$$\text{beff}_2 = \text{Min} \begin{cases} 0.2 b_i + 0.1 l_0 = 3.2 \text{ m} \\ 0.2 l_0 = 5.7 \text{ m} \end{cases}$$

$$\text{beff}_2 = 3.18666 \text{ m}$$

$$\text{beff} = \text{Min} \begin{cases} \sum \text{beff}_{i,j} + b_w = 6.56331 \text{ m} \\ b = 3.2 \text{ m} \end{cases}$$

$$\boxed{\text{beff} = 3.2 \text{ m}}$$

Project	Construction of Interchange cum ROB											 Nivedita Consultants		
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												Rev.	-	R0

**D) CHECK FOR SHEAR :** (IRC 112 / clause 10.3.2 (2))

Check of Shear Reinforcement Requirement

Load comb.	$V_{ED}$	$\beta$	$\beta V_{ED}$	d	bw	$k = \text{Min} [1 + \sqrt{200/d}, 2]$	Asl	$\rho 1 = \text{Min} [Asl/bw d, 0.02]$	$V_{min} = 0.031 k^{3/2} f_{ck}^{1/2}$	$\sigma_{cp}$	$V_{Rdc} = \text{Max} [ (0.12 k (80 \rho 1 f_{ck})^{0.33} + 0.15 \sigma_{cp}) bw d, (V_{min} + 0.15 \sigma_{cp}) bw d ]$	Check
	T		T	mm	mm		mm <sup>2</sup>			Mpa	Tonne	
<b><u>Cantilever Portion</u></b>												
Cantilever (Girder Top Flange Face)	10.06	1	10.06	179	1000	2.000	1330.557	0.0074	0.555	0	12.2251	No Shear reinf. Required
Cantilever (Girder Web Face)	13.98	1	13.98	429	1000	1.683	1330.557	0.0031	0.428	0	18.4751	No Shear reinf. Required
<b><u>Intermediate supports</u></b>												
Girder Top Flange Face	11.17	1	11.17	179	1000	2.000	1330.557	0.0074	0.555	0	12.2251	No Shear reinf. Required
Girder web Face	17.41	1	17.41	429	1000	1.683	1330.557	0.0031	0.428	0	18.4751	No Shear reinf. Required
<b><u>Intermediate span</u></b>												
Intermediate Mid Span	8.55	1	8.55	179	1000	2.000	1330.557	0.0074	0.555	0	12.2251	No Shear reinf. Required

MANAGER (P) IPRCL  
GANDHIDHAM

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Department of Civil Engineering  
Banaras Hindu University  
Varanasi-221005

Proof Checked



Design Director  
Niraj Patel JV

Approved by RCL





इंडियन पोर्ट रेल कार्पोरेशन लिमिटेड  
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BEZ S 60, "NEELKANTH", ZANDA CHOWK,  
GANDHIDHAM, KUTCH, GUJARAT - 370201.



**Design of ROB Test Pile @ Ch.0+639**

**Sep 2020**

Design Consultants:



**Nivedita Consultants**

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**AUTHORITY:**

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CIN No: U80300DL2015GOI282703

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**EPC CONTRACTOR:**

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**M/s Nitya Nayra Civil Solution PVT. LTD**

1/70, TF-1, MIG SEC-1, Vasundhara, Ghaziabad - 201 012, Uttar Pradesh, India

**TITLE OF DOCUMENT:**

**Design of ROB TEST PILE at CH:0+639.1**

Doc. Number:	KUT-TEST PILE-ROB-RLY-CH"0+639.1-DN-01	Prepared By:	CN
Rev. No:	R0	Checked By:	NK
Date:	8/9/2020	Approved By:	NK

Date:	Rev No.	Revision	By
8/9/2020	R0	For Review and Approval	CN

**DESIGN CONSULTANT:**

email: [nivcons@gmail.com](mailto:nivcons@gmail.com)



**Nivedita Consultants**

**Nivedita Consulting**

B - 98, Sector - A, Sanik Vihar Colony, Nandanagar, Kunraghat,  
Gorakhpur - 273008 (UP) Phone: +91-0124-4054562;

Project:	Construction of Interchange cum ROB	Vireddi Consultants
Doc. Title	Design of ROB TEST PILE at CH:0+639.1	
Doc. no.	KUT-TEST PILE-ROB-RLY-CH"0+639.1-DN-01	
		Rev R0

**DESIGN OF TEST PILE :****Vertical Test Load**

Vertical Load Capacity for test pile = 400 T

Test Load for test Pile = 400 x 2.5  
= 1000 Ton

**Calculation of lateral load**

\*Non-seismic & submerged condition is considered

\*Calculating depth of fixity

Dia of pile = 1200 mm  
Grade of concrete fck = M 35 Mpa  
E = 320000 kg/cm<sup>2</sup>  
I = 1E+07 cm<sup>4</sup>

Stiffness factor for P.C. Cohesive soil R =  $\sqrt[4]{EI/K B}$   
= 460.00 cm

*Niraj Patel JV*  
Design Director  
Niraj Patel JV

Total Length of Pile = 24 m  
Free Length of Pile,  $L_f$  = 0.0 m  
Embedded length of pile,  $L_e$  = 24.0 m  
 $L_f/T$  = 0.000  
Corresponding value of  $L_f/T$  = 1.95  
Depth of fixity,  $L_f$  = 8.97 m



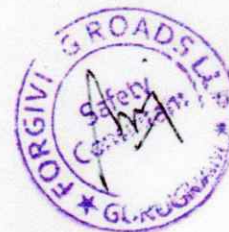
Total free length  $L_f + L_e$  = 8.97 m

Design Load Q = 10 Tonne \*/ For fixed head pile

Deflection at pile head top  $y = Q * (L_f + L_e)^3 / 12 EI$  = 1.85 mm

\*/ Calculation for equivalent force for free head pile

$L_f/T$  for free head pile = 1.6  
 $L_f$  for free head pile = 7.36 m  
 $L_f + L_e$  for free head pile = 7.36 m



*[Signature]*  
MANAGER (P)/IPRCL  
GANDHIDHAM

Proof Checked

*[Signature]*  
Prof. K. K. Pathak  
Department of Civil Engineering  
Indian Institute of Technology  
Banaras Hindu University  
Varanasi-221005



Project:	Construction of Interchange cum ROB	Nivedita Consultants
Doc. Title	Design of ROB TEST PILE at CH:0+639.1	
Doc. no.	KUT-TEST PILE-ROB-RLY-CH"0+639.1-DN-01	
		Rev R0

Equivalent load for free head pile  $Q_{free} = \gamma \cdot 3 EI / (L_1 + L_f)^3 = 4.53 \text{ Tonne}$   
 Say = 5.00 Tonne

Factored design load = 5 x 2.5 = 12.5 Tonne

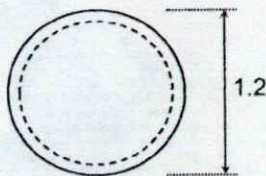
Free Head moment  $M = Q_{free} \cdot (L_1 + L_f) = 92.0 \text{ Tm}$

Moment reduction factor  $m = 0.400 \text{ Tm}$

Modified design Bending Moment  $M_d = 36.8 \text{ Tm}$

ULS Modified design Bending Moment  $M_d = 55.2 \text{ Tm}$

**R/F Calculation of test Pile**

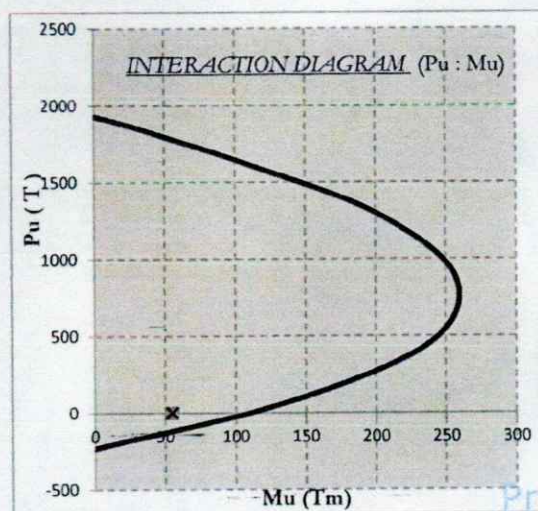


Pile Dia D	=	1200 mm
Clear cover	=	75 mm
Dia of bar	=	16 mm
Nos. of Bars	=	24 Nos
Effective cover	=	83 mm
Reinf Circular dia	=	1034 mm
Spacing	=	135.4 mm
Area of steel provided	=	4825 mm <sup>2</sup>

**Material Properties:**

fck	=	35 N/mm <sup>2</sup>	% steel provided	=	0.43 %
fyk	=	550 N/mm <sup>2</sup>	Minimum % steel	=	0.4 % OK
Es	=	200000 N/mm <sup>2</sup>			

xu/D	Pu T	Mu Tm
1E-27	-229.8	0.7
0.2	65.2	136.0
0.4	457.8	239.6
0.6	892.8	256.4
0.8	1305.0	198.3
1	1624.3	106.1
1.2	1775.7	56.4
1.4	1854.9	29.0
1.6	1899.8	11.8
1.8	1925.2	1.1
2	1938.4	-5.0



Pu	=	0 T
Mu	=	55.2 Tm
Mu capacity	=	106 Tm > 55.2 Tonne OK

Design Director  
Niraj Patel JV



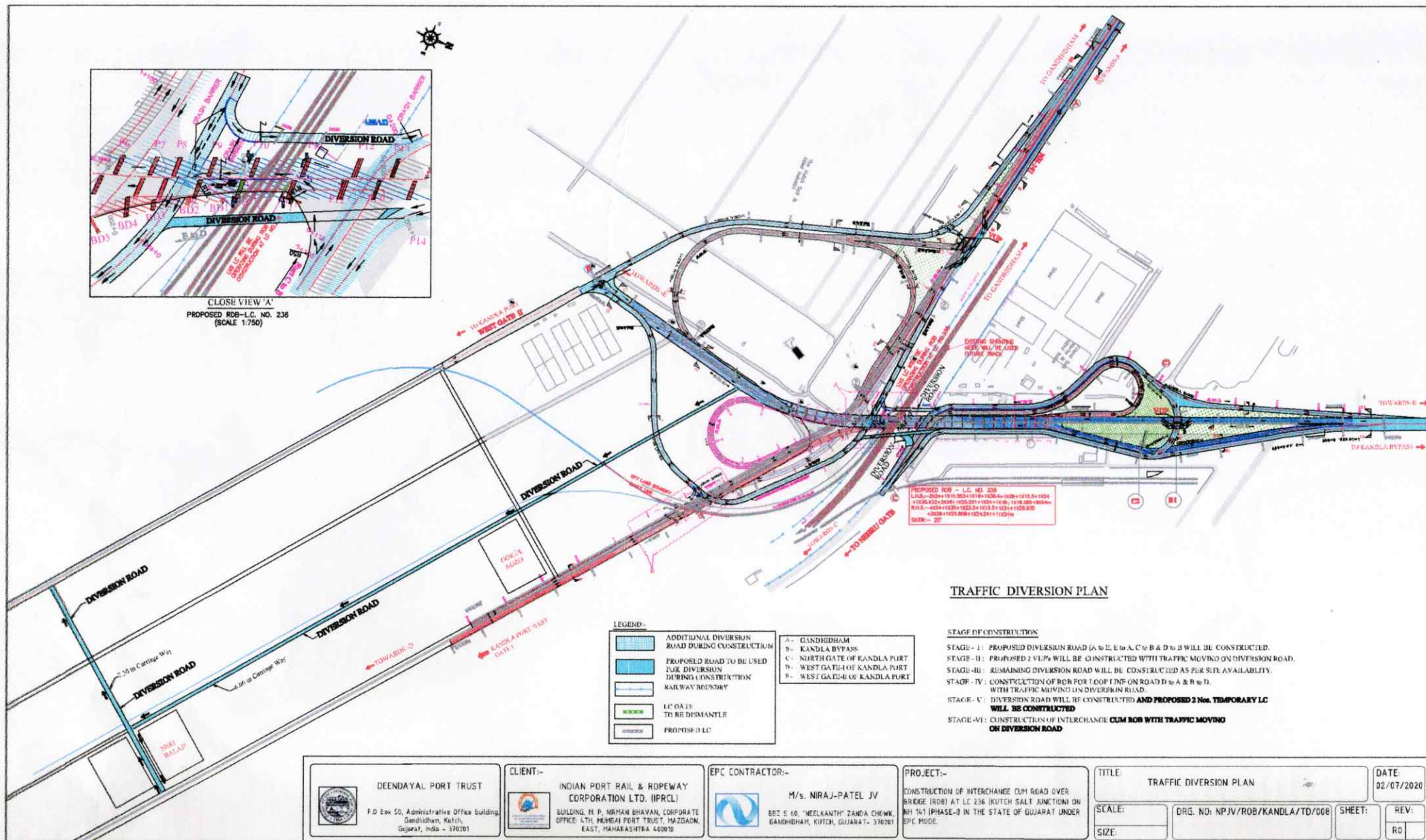
MANAGER (P) / IPRCL  
GANDHIDHAM

Proof Checked  
Prof. K. K. Path  
Department of Civ  
Indian Institute of  
Banaras Hindu U  
Varanasi-221005

# **Annexure V**

## **(In 3 Pages)**





Annexure II (C)



URGENT/ BY EMAIL

भारत सरकार  
सड़क परिवहन एवं राजमार्ग मन्त्रालय

कार्यालय, क्षेत्रीय अधिकारी,  
न्यू सचिवालय, ब्लॉक नं०-14  
चतुर्थ तल, गान्धीनगर-382010  
गुजरात  
फोन/फैक्स-079-23220705



सत्यमेव जयते

GOVERNMENT OF INDIA  
Ministry of Road Transport & Highways

Office of the Regional Officer  
New Sachivalaya, Block No.14,  
4<sup>th</sup> floor, Gandhinagar 382010  
Gujarat.  
Phone/Fax No. 079-23220705

Dated : October 14, 2020

RW/GNR/NH/HA/NOC/03/782

To,

The Under Secretary  
Roads & Building Department  
Sachivalaya  
Gandhinagar, Gujarat

SUB: Construction of Interchange cum Road Over Bridge (ROB) at km 367.924, LC 236 (Kutchh Salt Junction) on NH-141 in the State of Gujarat - Approval of Revised Temporary Traffic Diversion Plan Reg.

Sir,

Please refer to your letter no. RLY-13-2016-2631-M dated 16/09/2020, submitting therewith the revised proposal for Temporary Traffic Diversion for the work cited under subject above, to this office for approval.

2. The proposal has been examined and the same is found to be in order. Accordingly, in supersession of this office letter no. RW/GNR/Works/529/GJ/2017/393 dated 08/12/2017, the Revised Temporary Traffic /Diversion Plan for Construction of Interchange cum Road Over Bridge (ROB) at km 367.924, LC 236 (Kutchh Salt Junction) on NH-141 in the State of Gujarat, is hereby granted by the Competent Authority, subject to the following conditions.

2.1 M/s IPRCL will follow the provisions for the approved revised traffic diversion plan as per IRC SP:55.

2.2 During construction and operation of the diversion road, traffic safety provisions as per IRC SP:88 shall be strictly followed, under the supervision of concerned Executive Engineer, National Highway Division, Gujarat.

2.3 There shall be no restriction on NH ROW by M/s IPRCL and future development of the National Highway.

2.4 There shall be sufficient provision for drainage arrangement made by M/s IPRCL on the diversion road and restored existing National Highway, so that no water stagnation occurs.

2.5 The diversion road shall be constructed and maintained operational by M/s IPRCL under the direct supervision of concerned Executive Engineer, National Highway Division, Gujarat. Further restoration of existing NH road shall be done under the direct supervision of concerned Executive Engineer, National Highway Division, Gujarat. Failure to adhere stipulation will warrant action against M/s IPRCL by concerned Executive Engineer, National Highway Division, Gujarat under Section 36 of The Control of National Highway (Land and Traffic) Act, 2002.

CH  
HARSHI PRABHAKAR  
EXECUTIVE ENGINEER  
OFFICE, GANDHINAGAR  
MINISTRY OF ROAD TRANSPORT & HIGHWAYS  
GOVERNMENT OF INDIA



URGENT/ BY EMAIL

2.6 Any deviation to the instant approval shall be approved by MoRTH prior to execution at site.

2.7 All order related to Temporary closure of traffic on Highway for construction of instant ROB along with diversion of traffic on diversion road shall be issued by the concerned Executive Engineer, National Highway Division, Gujarat under Section 30 and Section 33 of The Control of National Highway (Land and Traffic) Act, 2002.

2.8 Three copies of 'as laid drawings' of work (hard and soft copies) with geotagged photographs and geo-tagged video recordings of work executed (with respect to the NH) and after complete restoration shall be submitted to the Authority for verification.

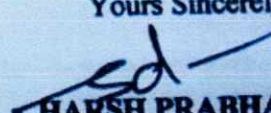
2.9 Properly designed direction sign boards as per IRC guidelines should be fixed at appropriate locations for safety of road users.

2.10 24x7 deployment of trained manpower for traffic regulation at desired locations to avoid the conflict of traffic and for ensuring smooth flow of traffic as per approved diversion plan, should be ensured by M/s IPRCL.

2.11 A detailed pamphlet should be prepared in Hindi/ Gujarati language indicating origin and destination along with route as per approved diversion plan. The same should be circulated during the execution of project to all road users for proper traffic management.

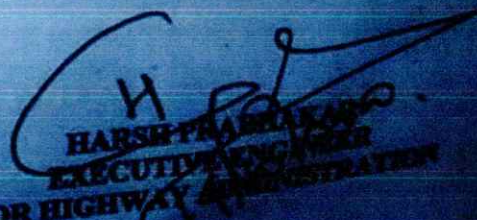
Encl: Approved Revised Temporary Traffic Diversion Plan.

Yours Sincerely,

  
**HARSH PRABHAKAR**  
**EXECUTIVE ENGINEER**  
**FOR HIGHWAY ADMINISTRATION**

Copy To:

1. The Executive Engineer, National Highway Division, Gandhidham., for information and necessary action.
2. The Addl. General Manager (P), Ahmedabad, Indian Port Rail & Ropeway Corporation Ltd., Nirman Bhawan, Mumbai Port Trust Building, Mazgaon, Mumbai., for information and necessary action.

  
**HARSH PRABHAKAR**  
**EXECUTIVE ENGINEER**  
**FOR HIGHWAY ADMINISTRATION**

# **Annexure VI**

## **(In 16 Pages)**



Annexure VI C1)



# INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL)



BUILDING, M. P, NIRMAN BHAVAN, CORPORATE  
OFFICE: 4TH, MUMBAI PORT TRUST, MAZGAON,  
EAST, MAHARASHTRA 400010

## CONSTRUCTION OF INTERCHANGE CUM ROAD OVER BRIDGE (ROB) AT LC 236 (KUTCH SALT JUNCTION) ON NH 141 (PHASE-I) IN THE STATE OF GUJARAT UNDER EPC MODE.

### DRAWINGS PIPE CULVERT

**DESIGN CONSULTANT:-**



M/s. NIVEDITA CONSULTANTS  
ARCHITECTURAL, CIVIL AND STRUCTURAL  
ENGINEERING CONSULTANTS

**PROOF CONSULTANT:-**



M/S NITYA NAYRA CIVIL  
SOLUTIONS PVT. LTD.  
BHOPAL

**CLIENT :-**



INDIAN PORT RAIL & ROPEWAY  
CORPORATION LTD. (IPRCL)  
BUILDING, M. P, NIRMAN BHAVAN, CORPORATE  
OFFICE: 4TH, MUMBAI PORT TRUST,  
MAZGAON, EAST, MAHARASHTRA 400010

**EMPLOYER :-**



DEENDAYAL PORT TRUST  
P.O. BOX NO - 50, ADMIN. OFFICE BUILDING,  
TAGORE ROAD, GANDHIDHAM (KUTCH)  
GUJARAT - 370201

**EPC CONTRACTOR:-**

M/s. NIRAJ-PATEL JV  
BBZ 5 60, "NEELKANTH" ZANDA CHOWK,  
GANDHIDHAM, KUTCH, GUJRAT - 370201

**SAFETY CONSULTANT:-**

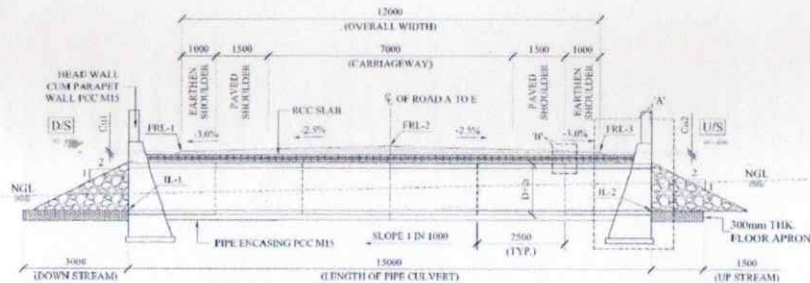


M/S FORGIVING ROADS LLP  
GURUGRAM

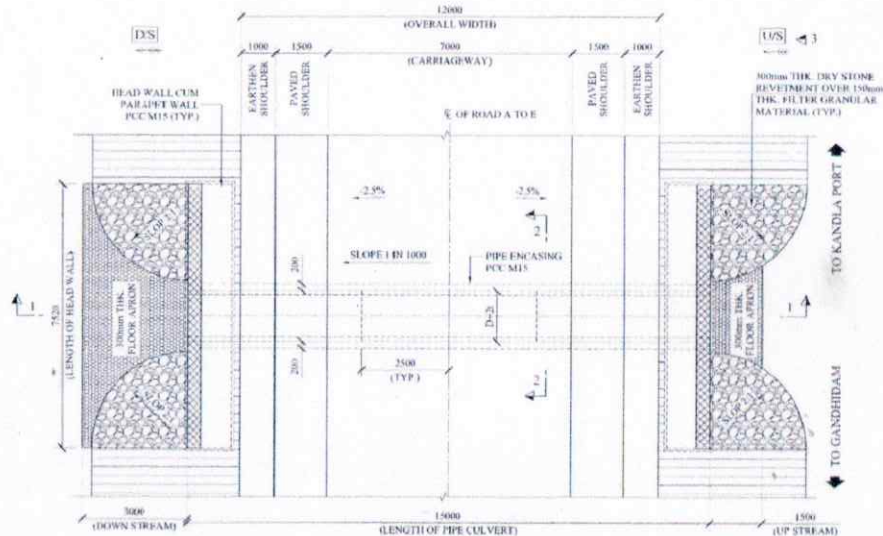
**THIRD PARTY PROOF CONSULTANT:** Indian Institute of Technology  
(BHU) Varanasi  
IIT-BHU, Banaras Hindu University Campus,  
Uttar Pradesh 221005



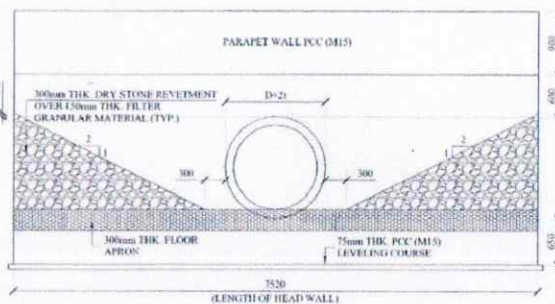
Annexure II (C2)



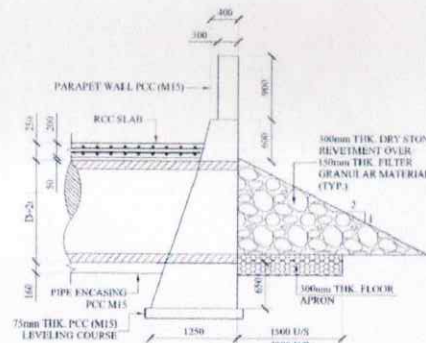
SECTION 1-1  
(SCALE 1:100)



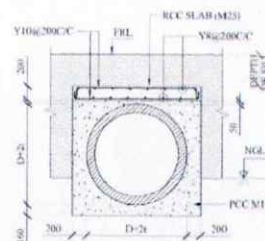
PLAN  
(SCALE 1:100)



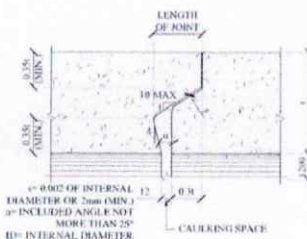
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



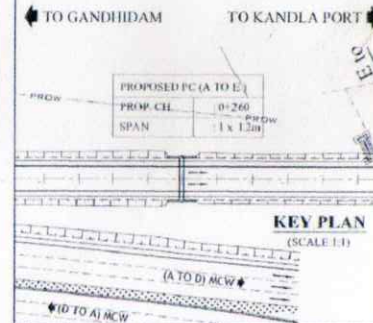
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)

#### SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (Ø) (m)	THK. OF PIPE (t) (mm)	FRL-1 (H/S) (m)	FRL-2 (H/S) (m)	FRL-3 (H/S) (m)	NGL (MIN.) (m)	IL-1 (H/S) (m)	IL-2 (H/S) (m)	DEPTH OF FILL (m) AT OUTER EDGE:	
											Col (H/S)	Col (H/S)
01	0+260	1	1.200	0.120	9.165	9.320	9.165	7.970	7.494	7.509	0.100	0.088



KEY PLAN  
(SCALE 1:1)

#### NOTES:-

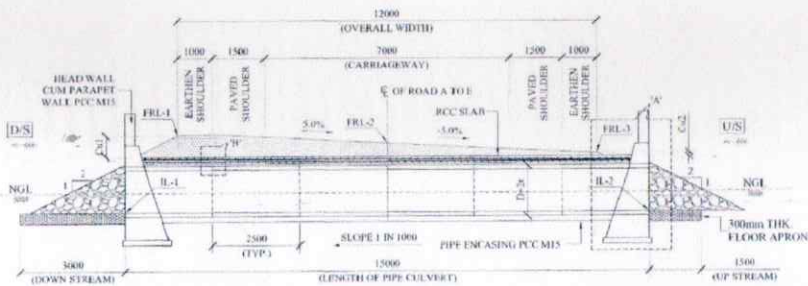
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
- THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
- PITCHING AND REVESTMENT SHALL BE DONE AS PER IRC SP 13.
- ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 438.
- 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
- CULVERT HEADWALLS ARE AS PER SP-43 OF IRC.
- THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
- IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
- PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 438 & MORTH SPECIFICATIONS CL 2900.
- THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
- ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
- AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- SEISMIC ZONE - V
- AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:
  - WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS
  - WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
- GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
- LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION

#### FOR REVIEW & APPROVAL

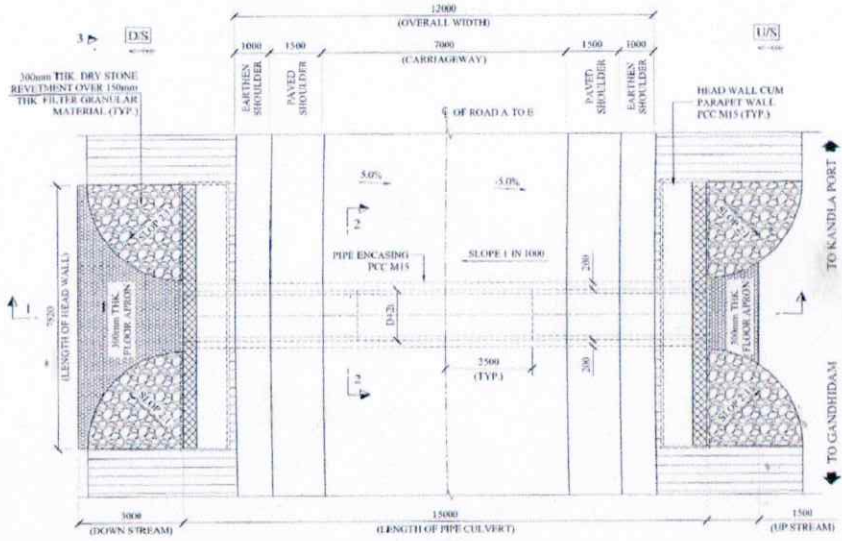
FOR REVIEW & APPROVAL											
 <b>EMPLOYER</b> DEENDRAYAL PORT TRUST P.O. BOX NO. 12, ADVEN OFFICE BUILDING, RAGDOL ROAD GANDHIDHAM DISTRICT GUJARAT-360301	 <b>CLIENT</b> INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) PLOT NO. 12, ADVEN OFFICE BUILDING, RAGDOL ROAD GANDHIDHAM DISTRICT GUJARAT-360301	 <b>EPC CONTRACTOR</b> M/S. NIRA-PATEL JV RPS & S. NIKHILANATH ZAMBA CHAV GANDHIDHAM, DISTRICT GUJARAT-360301	 <b>DESIGN CONSULTANT</b> M/S. ADVANTA CONSULTANTS ADDITIONAL CIVIL AND STRUCTURAL ENGINEERING CONSULTANTS	 <b>PROOF CONSULTANT</b> M/S. NIRA-PATEL FOR SOLUTIONS PVT. LTD. BHEDEL	 <b>SAFETY CONSULTANT</b> M/S. FORGIVING ROADS LLP GUJARAT	 <b>THIRD PARTY PROOF CONSULTANT</b> Rishi Institute of Technology (RIT) Varanasi At 18th Mile on Road (Muzaffarpur) Varanasi, Uttar Pradesh (U.P.)	<b>PROJECT</b> CONSTRUCTION OF INTERMEDIATE ROAD OVER SHIELD BUILT AT 1/2 IN. MATCH: SALT JUNCTION ON SH-101 (UP) IN THE STATE OF GUJARAT (NEED EPC HERE)	<b>PREPARED</b> DESIGNED CHECKED APPROVED	<b>PRINT</b> DATE	<b>TITLE</b> GAD OF PIPE CULVERT AT CH: 0+260 (A TO E) SCALE: AS SHOWN SHEET: 1 OF 1	<b>DATE</b> 18-09-2022
										<b>OFFC. NO.</b> LC236-KUTCH-JUN-NH-141-ST-PC-101	<b>REV.</b> 1 OF 1



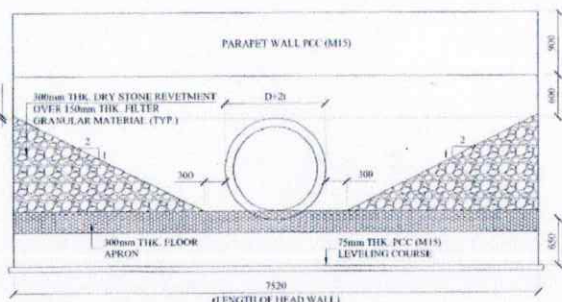
Annexure II (3)



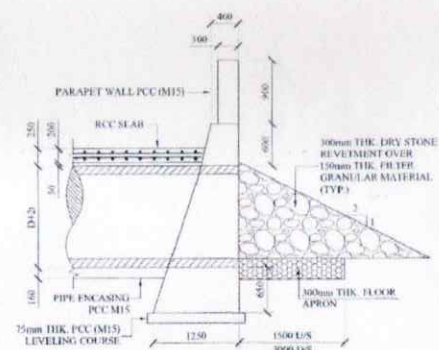
SECTION 1-1  
(SCALE 1:100)



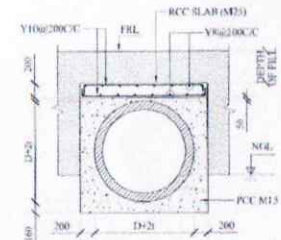
PLAN  
(SCALE 1:100)



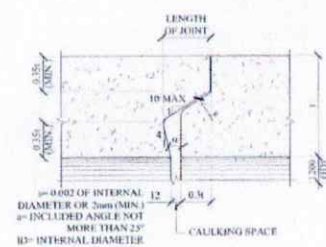
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



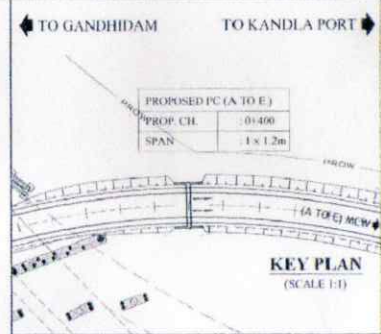
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (mm)	THK. OF PIPE (mm)	FRL-1 (HWS)	FRL-2 (CWS)	FRL-3 (HWS)	NGL (MIN.)	IL-1 (HWS) (m)	IL-2 (HWS) (m)	DEPTH OF FILL (m) AT OUTER EDGE	Cut (HWS)	Cut (HWS)
01	0+400	1	1200	120	9.342	9.112	8.832	7.600	7.148	7.163	0.612	0.100	0.100



KEY PLAN  
(SCALE 1:1)

NOTES:-

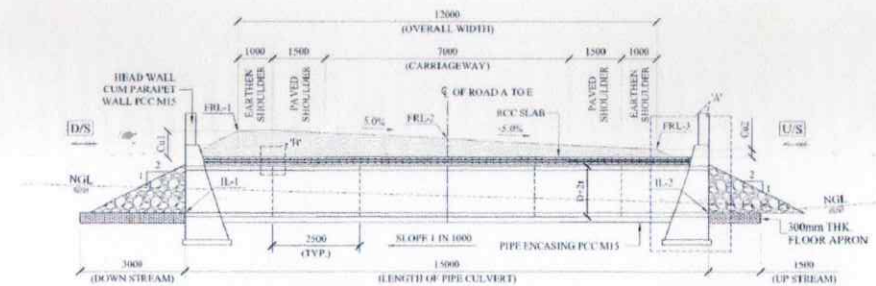
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
4. PITCHING AND REVEMENT SHALL BE DONE AS PER IRC SP-13.
5. ALL RCC PIPES TO BE OF GRADE MP4 CONFORMING TO IS 458.
6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
9. IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (FROM DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL-2000.
11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
16. SEISMIC ZONE - V
17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL.
18. GRADE OF STEEL SHALL BE F-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
19. LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION.

FOR REVIEW & APPROVAL

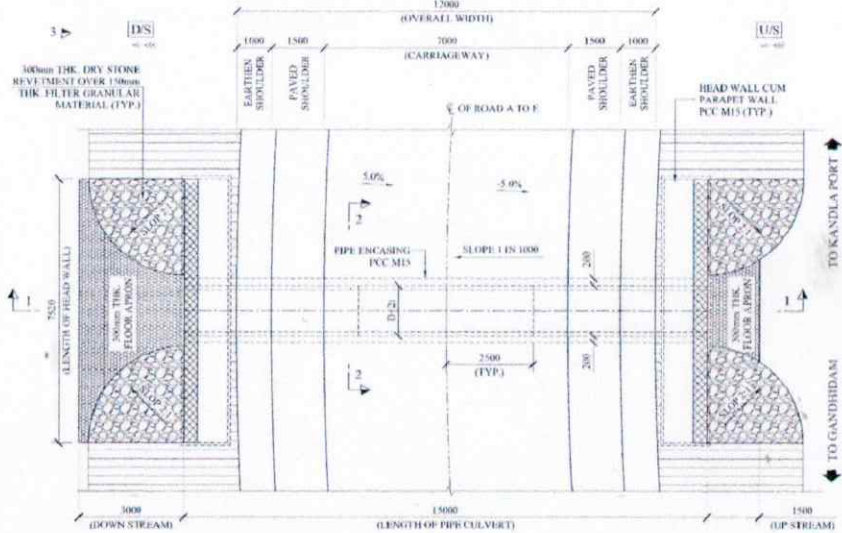
EMPLOYER DEENDAYAL PORT TRUST P.O. BOX NO. - 3, ADRA KOTLA BARRAGE, TADGA ROAD, GANDHIDHAM DISTRICT, GUJARAT - 380001	CURRENT INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) PLOT NO. 12, MIDC AREA, KUTCH DISTRICT, GUJARAT - 370001	EPC CONTRACTOR M/S. NIRAJI PATEL JV PLOT NO. 12, MIDC AREA, KUTCH DISTRICT, GUJARAT - 370001	DESIGN CONSULTANT M/S. NIRAJI PATEL JV PLOT NO. 12, MIDC AREA, KUTCH DISTRICT, GUJARAT - 370001	PROOF CONSULTANT M/S. NIRAJI PATEL JV PLOT NO. 12, MIDC AREA, KUTCH DISTRICT, GUJARAT - 370001	SAFETY CONSULTANT M/S. NIRAJI PATEL JV PLOT NO. 12, MIDC AREA, KUTCH DISTRICT, GUJARAT - 370001	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology BHOPAL P.O. BOX - 50, BHOPAL - 462018 GUJARAT - 370001	PROJECT CONSTRUCTION OF INTERCHANGE OVER ROAD NO. 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	DESIGNED A.C.	CHECKED A.C.	APPROVED A.C.	TITLE GAD OF PIPE CULVERT AT CH- 0+400 (A TO E)	SCALE AS SHOWN	DATE 18-09-2020	SHEET 1 OF 1
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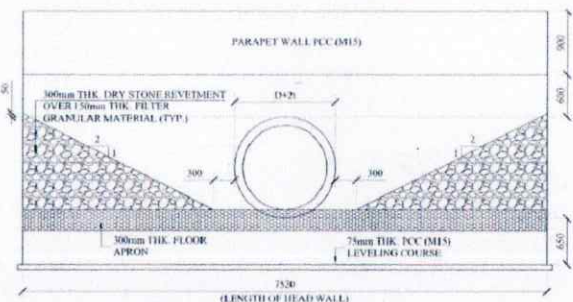
Annexure VI (4)



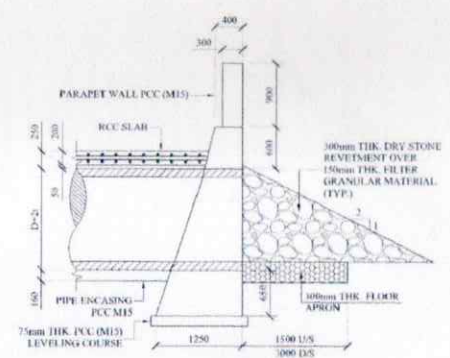
SECTION 1-1  
(SCALE 1:100)



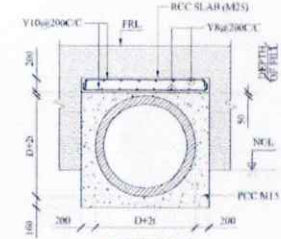
PLAN  
(SCALE 1:100)



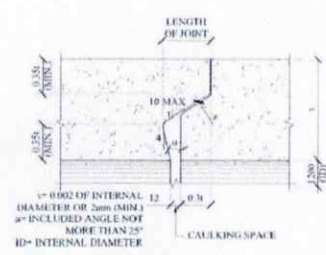
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



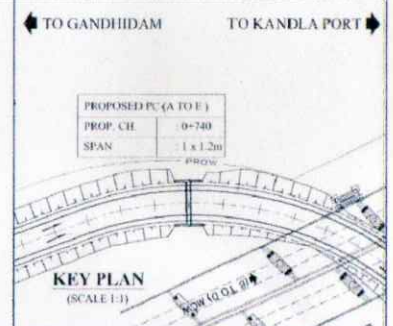
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (D) (m)	THK. OF PIPE (t) (m)	FRL-1 (H/S) (m)	FRL-2 (C/S) (m)	FRL-3 (H/S) (m)	NGL (MMN) (m)	IL-1 (H/S) (m)	IL-2 (H/S) (m)	DEPTH OF FILL (m) AT OUTER EDGE	Col (H/S) (m)	C/S (H/S) (m)
01	0+740	1	1.200	0.120	9.902	9.682	9.402	7.870	7.584	7.599	0.746	0.234	



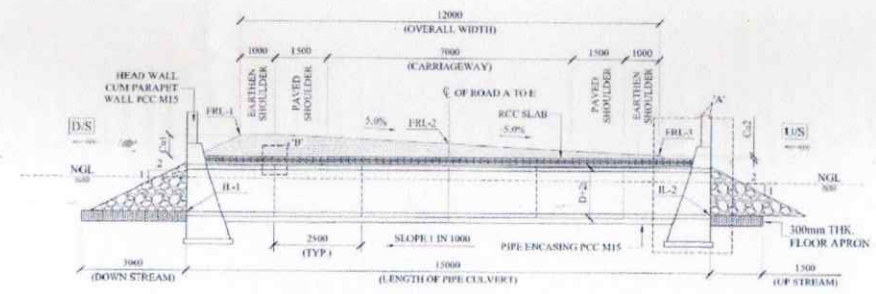
- NOTES:-
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
  4. PITCHING AND REVTMENT SHALL BE DONE AS PER IRC SP-13.
  5. ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 438.
  6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
  8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  9. IN BLACK COTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (FROM DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
  10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 438 & MORTH SPECIFICATIONS CL-2900.
  11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC-SP-64-2014.
  14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  16. SEISMIC ZONE - V
  17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
  18. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786. CLEAR COVER TO ENCASING SLAB SHALL BE 25mm.
  19. LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION.

FOR REVIEW & APPROVAL

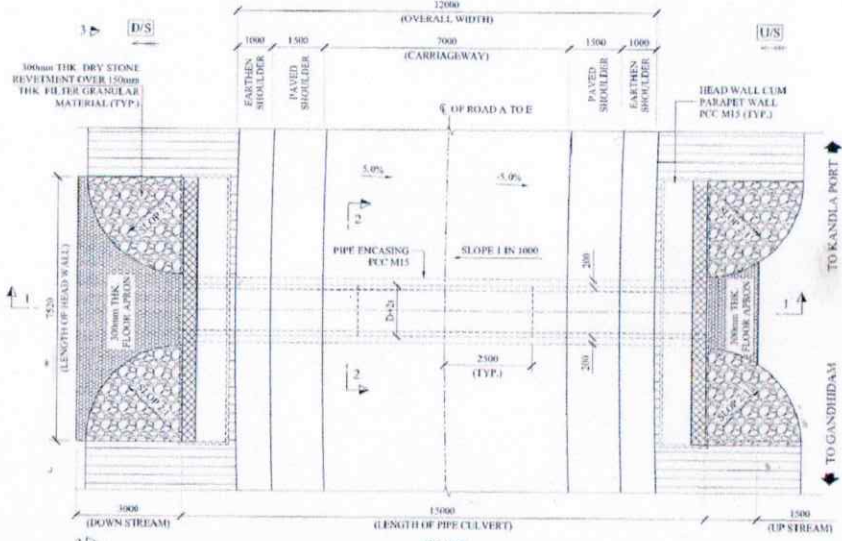
EMPLOYER GANDHIDHAM PORT TRUST P.O. BOX NO. - 50, GANDHIDHAM PORT TRUST, GANDHIDHAM (GANDHIDHAM - 500001)	CLIENT INDIAN PORT & ROPEWAY CORPORATION LTD. (IPRCL) M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	EPC CONTRACTOR M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	DESIGN CONSULTANT M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	PROOF CONSULTANT M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	SAFETY CONSULTANT M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	THIRD PARTY PROOF CONSULTANT M/S. NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. PLOT NO. 1, NITTA NAYRA CIVIL SOLUTIONS PVT. LTD., GANDHIDHAM (GANDHIDHAM - 500001)	PROJECT CONSTRUCTION OF INTERCITY EXPRESS ROAD OVER BRIDGE (GAD) AT L. 256, GANDHIDHAM PORT TRUST, GANDHIDHAM (GANDHIDHAM - 500001)	PREPARED DATE: 10-09-2020 BY: NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. CHECKED DATE: 10-09-2020 BY: NITTA NAYRA CIVIL SOLUTIONS PVT. LTD. APPROVED DATE: 10-09-2020 BY: NITTA NAYRA CIVIL SOLUTIONS PVT. LTD.	TITLE GAD OF PIPE CULVERT AT CH- 0+740 (A TO E) SCALE: AS SHOWN SIZE: A2 SHEET NO: 1 OF 1 REV: 01
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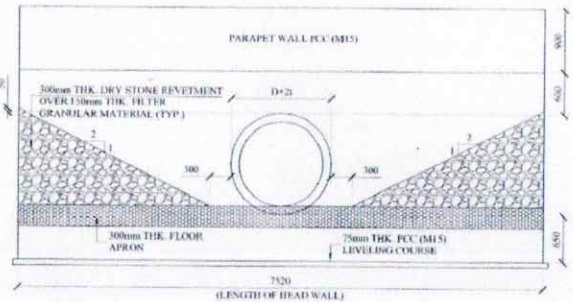
Annexure VI (5)



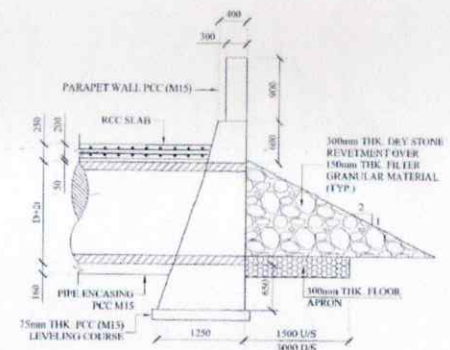
SECTION 1-1  
(SCALE 1:100)



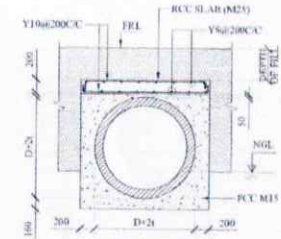
PLAN  
(SCALE 1:100)



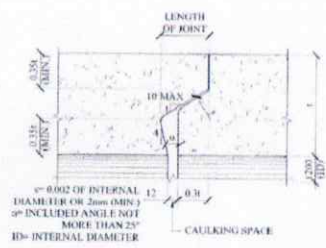
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:5)

Jt. GENERAL MANAGER (P)  
IPRCL/GANDHIDHAM

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN 'Km'	NO. OF PIPES	DIA. OF PIPE (Ø) (m)	THK. OF PIPE (Ø) (m)	FRL-1 (HIS) (m)	FRL-2 (CEN) (m)	FRL-3 (OHS) (m)	NGL (MIN.) (m)	IL-1 (HIS) (m)	IL-2 (HIS) (m)	DEPTH OF FILL @ AT OUTER EDGE (C1) (HIS) (m)	(C2) (HIS) (m)
01	0+997	1	1.200	0.120	9.402	9.182	8.902	8.100	7.219	7.234	0.612	0.100

TO GANDHIDHAM

TO KANDLA PORT

PROPOSED PC (A TO E)	
PROP. CH	0+997
SPAN	1 x 1.2m

KEY PLAN  
(SCALE 1:1)

NOTES:-

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
- THIS DRAWING SHOULD NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
- PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13
- ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 438.
- 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
- CULVERT HEADWALLS ARE AS PER SP-13 OF IRC
- THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
- IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (from DOWN IS STIFF) AND BOULDERS WITH 95% COMPACTION.
- PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 438 & MORTH SPECIFICATIONS CL-2000
- THE LENGTH OF PIPE IS MENTIONED 2500 (TYP) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
- ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
- AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- SEISMIC ZONE - V
- AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
- GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
- LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISIONS.

FOR REVIEW & APPROVAL

DESIGNED	MDN
CHECKED	AC
APPROVED	

GAD OF PIPE CULVERT AT CH: 0+997 (A TO E)

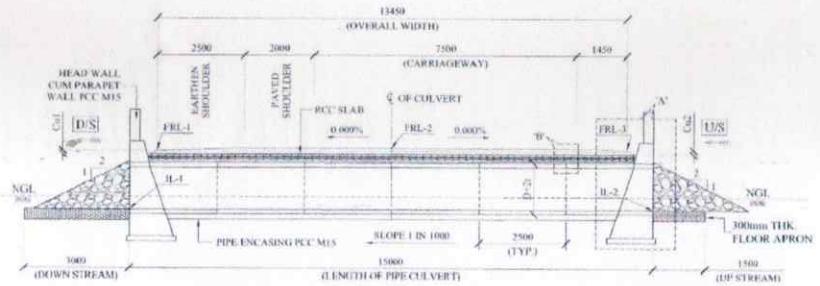
SCALE: AS SHOWN

DATE: 16-08-2020

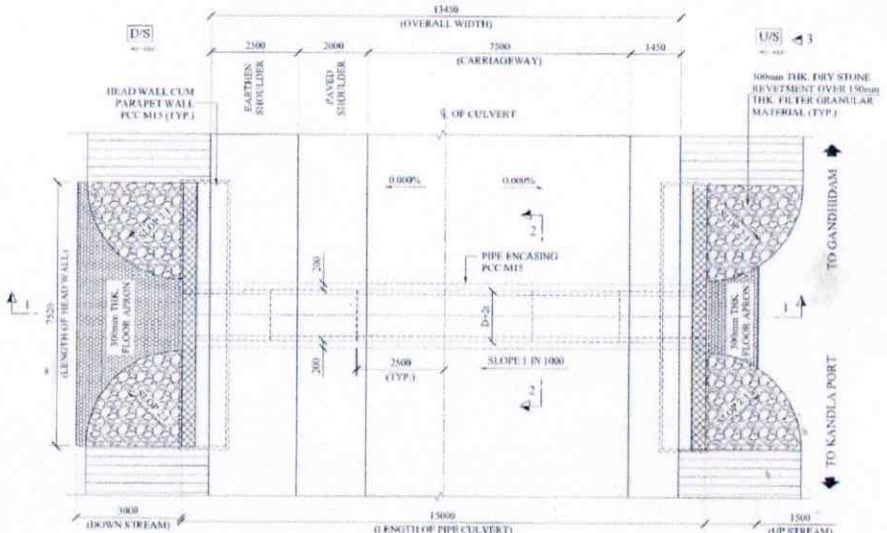
1 OF 1



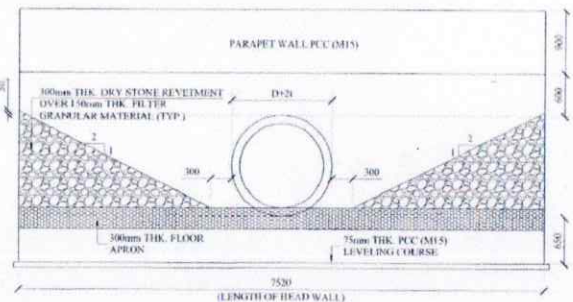
Annexure VI (C6)



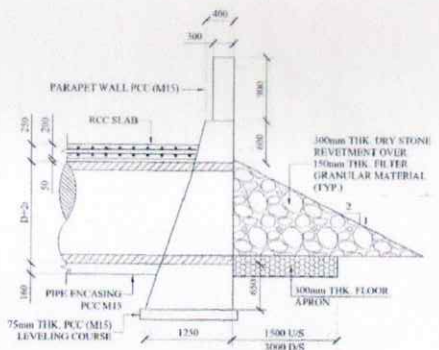
SECTION 1-1  
(SCALE 1:100)



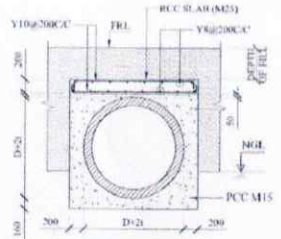
PLAN  
(SCALE 1:100)



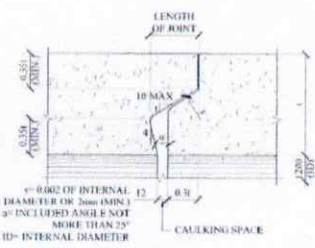
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



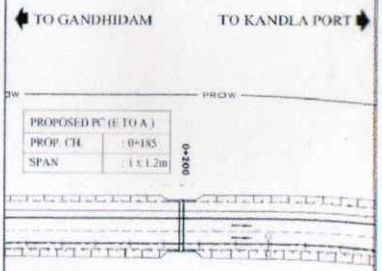
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:5)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO OF PIPES	DIA OF PIPE (mm)	THK OF PIPE (mm)	FRL-1 (HWS)	FRL-2 (HWS)	FRL-3 (HWS)	NGL (MIN.)	H-1 (HWS) (mm)	H-2 (HWS) (mm)	DEPTH OF FILL (mm) AT OUTER EDGE
01	0+185	1	1200	0.120	9.554	9.630	9.589	8.240	7.882	7.897	0.101



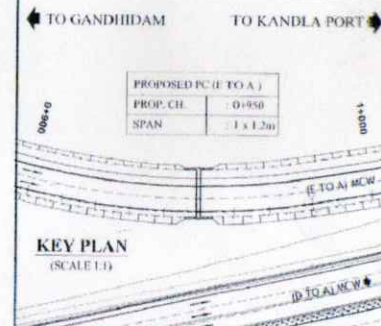
KEY PLAN  
(SCALE 1:1)

- NOTES:-
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
  - THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  - LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
  - PITCHING AND REVTMENT SHALL BE DONE AS PER IRC SP-13
  - ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 438
  - 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING
  - CULVERT HEADWALLS ARE AS PER SP-13 OF IRC
  - THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA
  - IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (60mm DOWN IN SEIVE) AND BOULDERS WITH 95% COMPACTION
  - PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 438 & MORTH SPECIFICATIONS CL-2900
  - THE LENGTH OF PIPE IS MENTIONED 2500 (TYP) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  - ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014
  - AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR
  - DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  - SEISMIC ZONE - V
  - AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
  - GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
  - LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION

FOR REVIEW & APPROVAL

EMPLOYER GANDHIDAM PORT TRUST PLOT NO. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 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GANDHIDAM DIST. JAMNAGAR, GUJARAT	EPC CONTRACTOR M/S. NIRAJ PATEL JV OFFICE: 101, NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	DESIGN CONSULTANT M/S. NITAJ NAYRA OFFICE: 101, NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	PROOF CONSULTANT M/S. NITAJ NAYRA OFFICE: 101, NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	SAFETY CONSULTANT M/S. NITAJ NAYRA OFFICE: 101, NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology (IIT) Varanasi OFFICE: 101, NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	PROJECT CONSTRUCTION OF INTERCHANGE ON ROAD OVER BRIDGE AT JCT OF D/100 SALT NARAYAN CHANDI TRADING COMPANY, GANDHIDAM PORT TRUST, GANDHIDAM DIST. JAMNAGAR, GUJARAT	DESIGNED NITAJ NAYRA	SCALE AS SHOWN	TITLE GAD OF PIPE CULVERT AT CH- 0+185 (E TO A)	DATE 10.09.2020
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- NOTES:-**
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
  2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
  4. PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13
  5. ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458.
  6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC
  8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  9. IN BHACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
  10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & NORTH SPECIFICATIONS CL-2900
  11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
  14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  16. SEISMIC ZONE - V
  17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.
    - A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS
    - B) WHERE UNSUITABLE SOIL IS REPLACED BY GRANULAR MATERIAL.
  18. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786
  19. CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
  19. LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION.

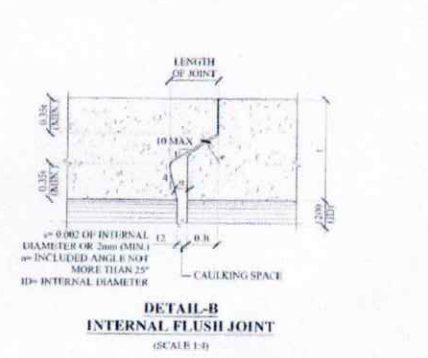
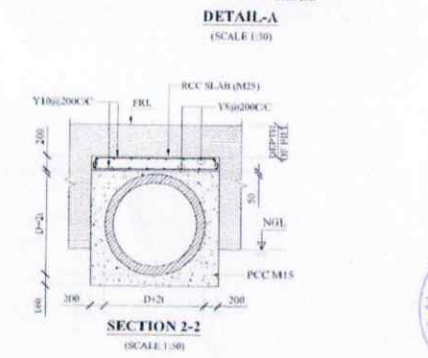
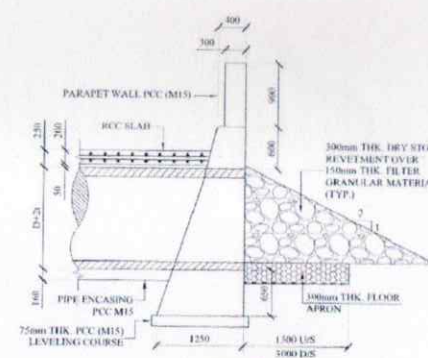
**FOR REVIEW & APPROVAL**

PREPARED	DESIGNED	CHECKED	APPROVED
NAME	NAME	NAME	NAME
DATE	DATE	DATE	DATE
16-09-2020			

**GAD OF PIPE CULVERT AT CH:- 0+950 (E TO A)**

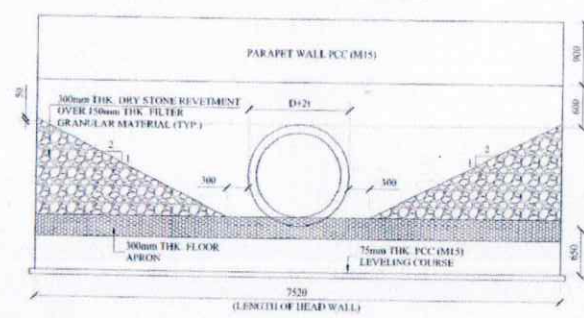
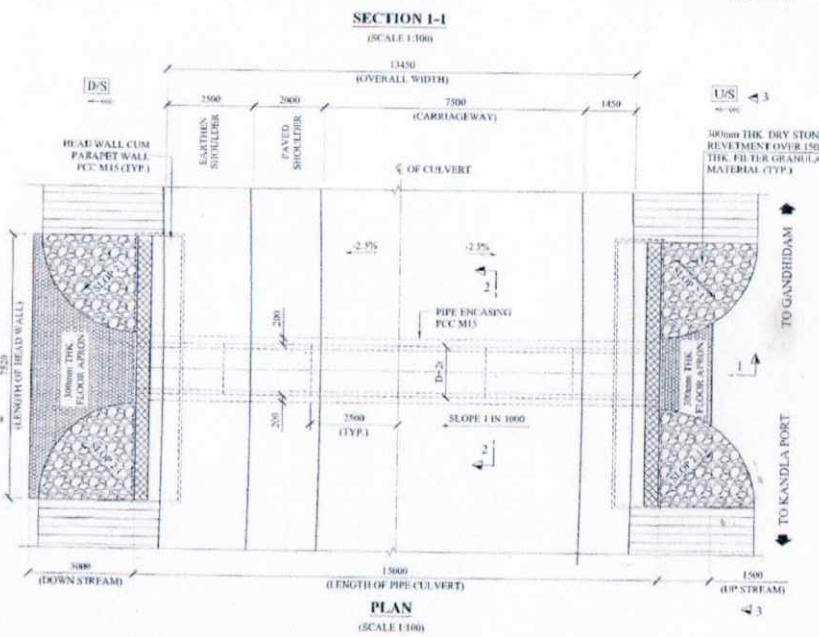
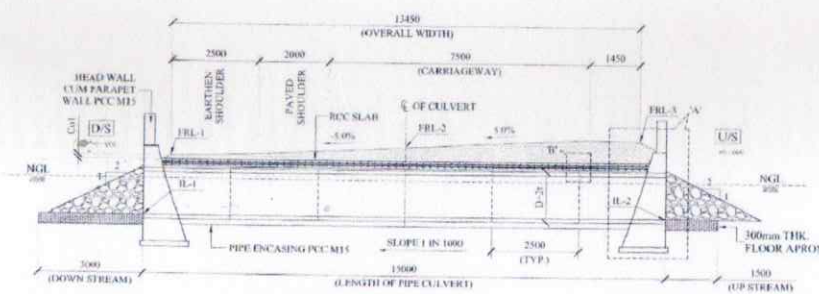
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1 OF 1



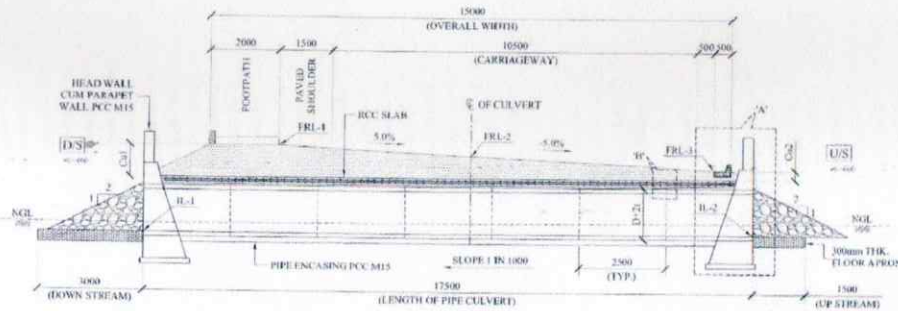
**SCHEDULE OF PIPE CULVERT**

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (Ø) (mm)	THK. OF PIPE (Ø) (mm)	FRL-1 (LHS)	FRL-2 (CES)	FRL-3 (RHS)	NGL (MIN.)	IL-1 (LHS) (m)	IL-2 (RHS) (m)	DEPTH OF FILL (m) AT OUTER EDGE
01	0+950	1	1200	0.120	8.867	9.153	9.374	8.220	7.183	7.198	0.114      0.406

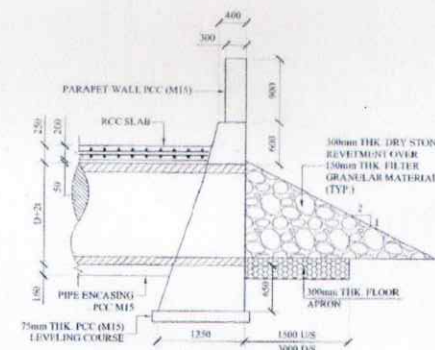


EMPLOYER	CLIENT	EPC CONTRACTOR	DESIGN CONSULTANT	PROJECT CONSULTANT	SAFETY CONSULTANT	THIRD PARTY PROJECT CONSULTANT	PROJECT	PREPARED	DESIGNED	CHECKED	APPROVED
INDIAN PORT TRUST P.O. BOX NO. - 02, ADRAH, GATEWAY BUILDING, THANE ROAD, BOMBAY-400005 (022)437-12020	INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000										

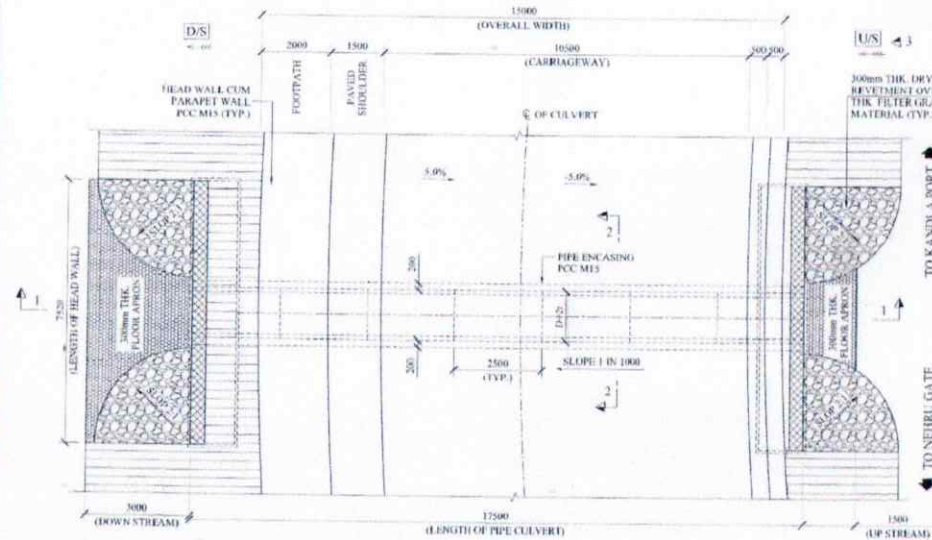




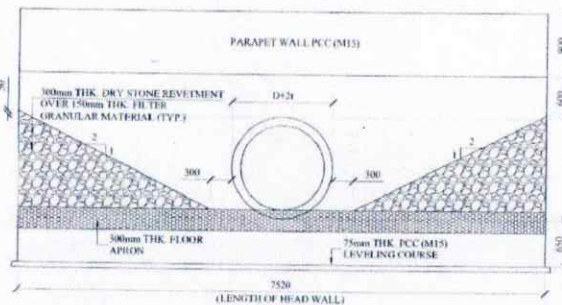
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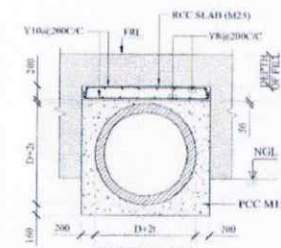
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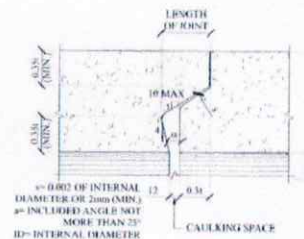
**PLAN**  
(SCALE 1:100)



**VIEW 3-3**  
(SCALE 1:50)



**SECTION 2-2**  
(SCALE 1:50)

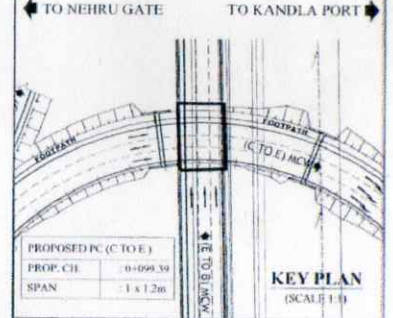


**DETAIL-B**  
**INTERNAL FLUSH JOINT**  
(SCALE 1:4)

**J. GENERAL MANAGER (P)**  
**IPRCL/CANDHIDHAM**

**SCHEDULE OF PIPE CULVERT**

SNO	DISSECTION CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (D) (mm)	THK. OF PIPE (t) (mm)	FRL-1 (LHS) (m)	FRL-2 (RHS) (m)	FRL-3 (RHS) (m)	NGL (MIN) (m)	I.L-1 (LHS) (m)	I.L-2 (RHS) (m)	DEPTH OF FILL (m) AT OUTER EDGE	Cut (LHS)	Cut (RHS)
01	0+099.39	1	1200	0.120	10.158	9.883	9.533	7.960	7.672	7.690	0.912	0.774	



**KEY PLAN**  
(SCALE 1:1)

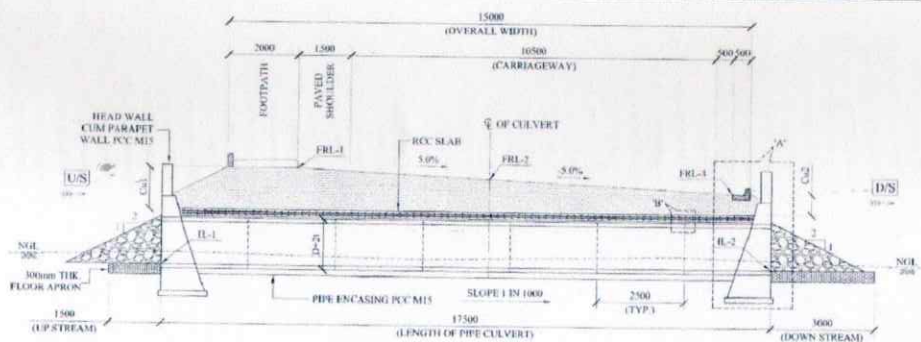
- NOTES:-**
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  - THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  - LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
  - PITCHING AND REVELMENT SHALL BE DONE AS PER IRC SP-13.
  - ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 458.
  - 150mm THK MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  - CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
  - THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  - IN BLACKCOTTON REGION PROVIDE 300mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
  - PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL-2900.
  - THE LENGTH OF PIPE IS MENTIONED 2500 (TYP) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  - ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-34-2014.
  - AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  - DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  - SEISMIC ZONE - V
  - AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
  - GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786. CLEAR COVER TO ENCASING SLAB SHALL BE 25mm.
  - LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION.

**FOR REVIEW & APPROVAL**

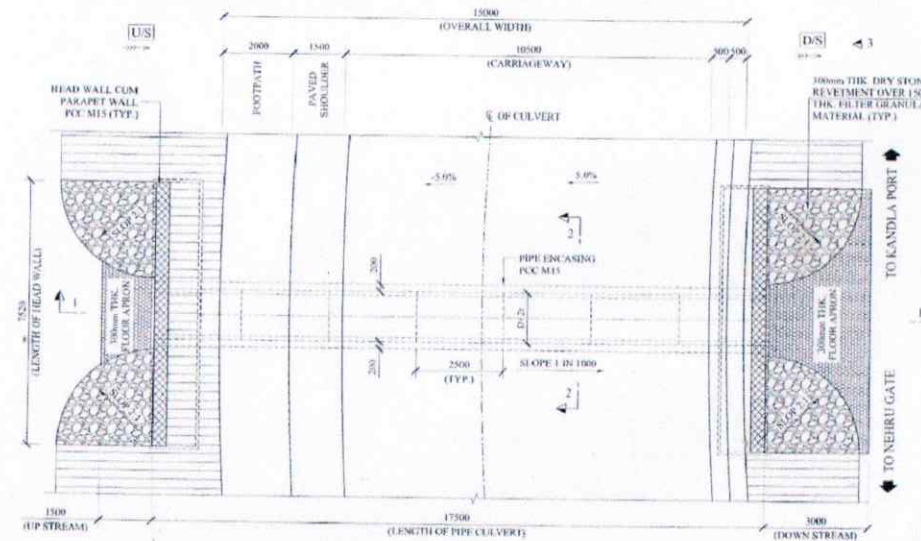
<b>EMPLOYER</b>  DECADATAL PORT TRUST P.O. BOX NO. 10, KACHH GATE BUILDING THAKUR SARDAR KACHH GATE SURAT-392 001	<b>CLIENT</b>  INDIAN PORT RAIL & ROADWAY CORPORATION LTD (IPRCL) BUILDING NO. 1, JAMNAN DUTTA CORPUS ROAD, V.V. KACHH GATE BUILDING SURAT-392 001	<b>EPC CONTRACTOR</b> M/S. NIRAJ PATEL JV 607-5, 10, NEELKANTH TANKER (KACHH) SARDAR KACHH GATE BUILDING - 1, JAMNAN	<b>DESIGN CONSULTANT</b>  Nivanta Engineering P.O. BOX NO. 1, JAMNAN DUTTA CORPUS ROAD, V.V. KACHH GATE BUILDING SURAT-392 001	<b>PROJECT CONSULTANT</b>  M/S. NIRAJ PATEL JV CIVIL SOLUTIONS PVT. LTD. CHOPAL	<b>SAFETY CONSULTANT</b>  M/S. FORGING ROADS LLP CHOPAL	<b>THIRD PARTY PROJECT CONSULTANT</b>  Indian Institute of Technology (IIT) Varanasi 221 005, Varanasi (U.P.) INDIA	<b>PROJECT</b> CONSTRUCTION OF BETHCHANGA CUM ROAD OVER BRIDGE OVER RAIL L.G. RAILWAY L.G. SECTION IN NEELKANTH TANKER (KACHH) AT THE STATE OF GUJARAT (INDIA) (EPC)	<b>PREPARED</b> NEN <b>DESIGNED</b> A.C. <b>CHECKED</b> A.C. <b>APPROVED</b> A.C.	<b>TITLE</b> <b>GAD OF PIPE CULVERT AT CH- 0+099.39(C TO E)</b> SCALE: AS SHOWN SIZE: A3	<b>DATE</b> 28-09-2025 <b>SHEET</b> 1 OF 1 <b>REV.</b> 01
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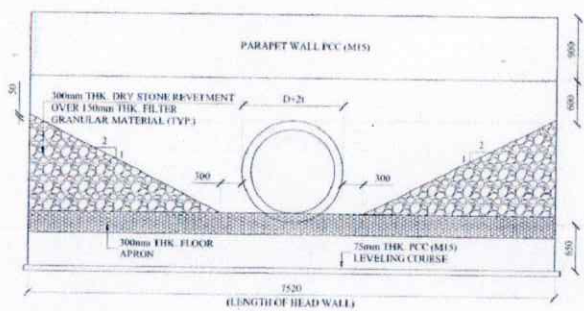
Annexure D (C.9)



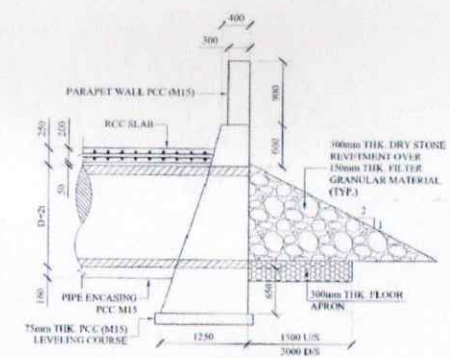
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(SCALE 1:100)



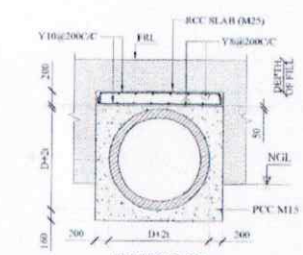
PLAN  
(SCALE 1:100)



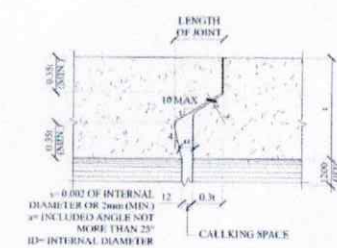
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



SECTION 2-2  
(SCALE 1:50)



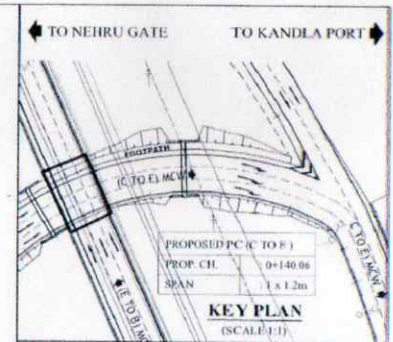
DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:5)

JE GENERAL MANAGER (P)  
IPRCL/GANDHIDHAM

SCHEDULE OF PIPE CULVERT

S.NO	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (m)	THK. OF PIPE (mm)	FRL-1 (HHS)	FRL-2 (HHS)	FRL-3 (HHS)	NGL (HHS)	H-1 (HHS) (m)	H-2 (HHS) (m)	DEPTH OF FILL (m) AT OUTER EDGE
01	0+140.06	1	1.200	0.120	10.323	10.048	9.698	7.770	7.560	7.342	1.197

Design Director  
Niraj Patel JV



NOTES:-

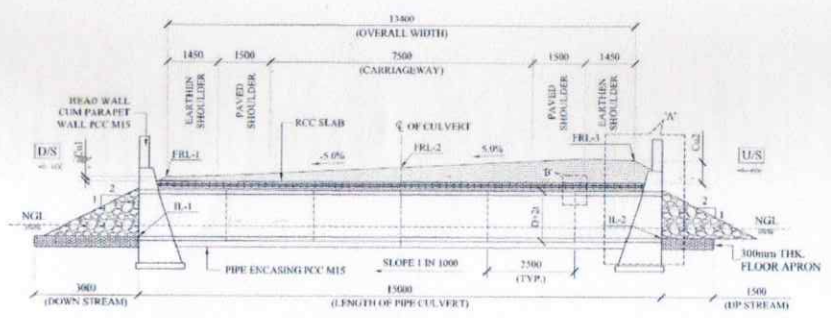
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
4. PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13
5. ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 458.
6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
9. IN BLACKCOTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (9mm DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL-2500
11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
12. THIS DRAWING SHALL BE READ IN CONDUCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
14. AFTER INSTALLATION OF PIPES, THE GAPS BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
16. SEISMIC ZONE - V
17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
18. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 75mm
19. LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISIONS.

FOR REVIEW & APPROVAL

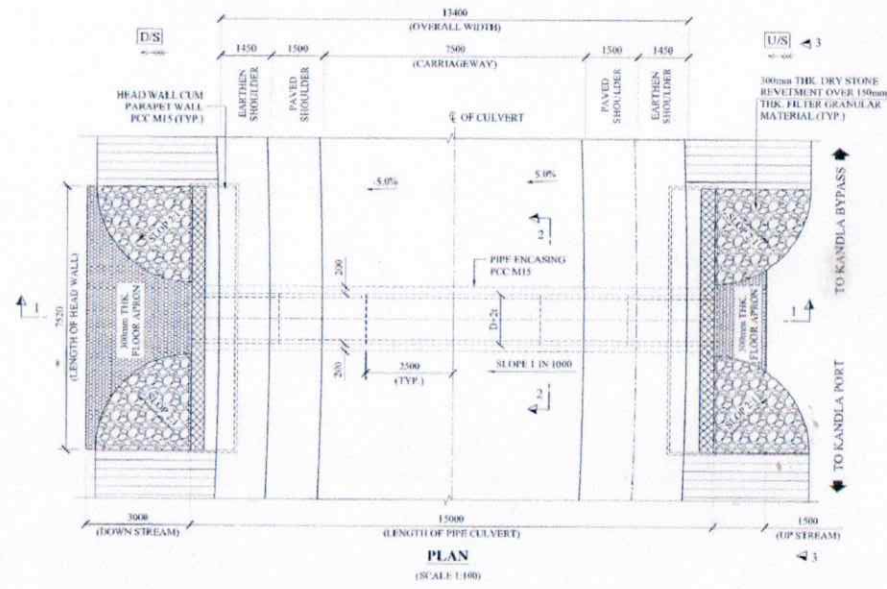
EMPLOYER DEENDAYAL PORT TRUST P.O. BOX NO. 15, 10TH FLOOR, TOWER, TANKER ROAD, CHANDANWADI, GUJARAT-390015	CLIENT INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) P.O. BOX NO. 15, 10TH FLOOR, TOWER, TANKER ROAD, CHANDANWADI, GUJARAT-390015	EPC CONTRACTOR M/S. NIRAJ PATEL JV P.O. BOX NO. 15, 10TH FLOOR, TOWER, TANKER ROAD, CHANDANWADI, GUJARAT-390015	DESIGN CONSULTANT M/S. NIVEDITA CONSULTANTS P.O. BOX NO. 15, 10TH FLOOR, TOWER, TANKER ROAD, CHANDANWADI, GUJARAT-390015	PROOF CONSULTANT M/S. MITYA NAYRA CIVIL SOLUTIONS PVT. LTD. BHOPAL	SAFETY CONSULTANT M/S. FORGIVING ROADS LLP GUJRAGRAM	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology (IIT) Varanasi K. T. Joshi, Varanasi, India, 221005	PROJECT CONSTRUCTION OF INTERCHANGE FOR ROAD OVER RAILWAY AT CH. 0+140.06 (C TO E) TYPE: PI	PREPARED NIRAJ PATEL CHECKED AC APPROVED AC	TITLE GAD OF PIPE CULVERT AT CH: 0+140.06 (C TO E) SCALE AS SHOWN SHEET 1 OF 1	DATE 28-09-2020 REV. NO
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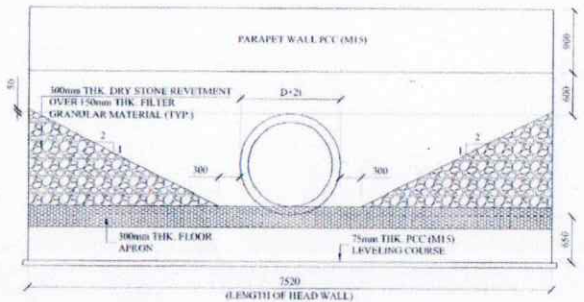
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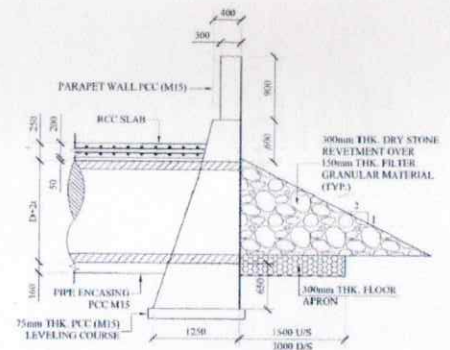
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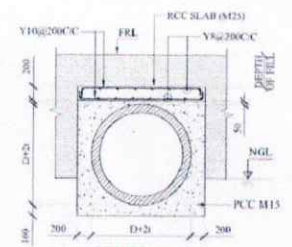
PLAN  
(SCALE 1:100)



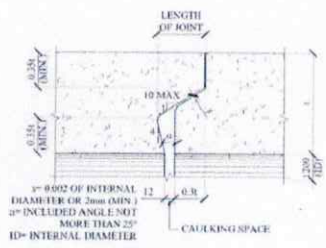
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



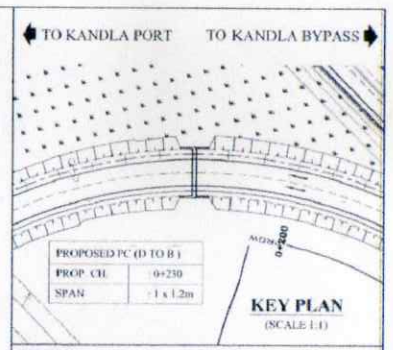
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN 'Km'	NO. OF PIPES	DIA. OF PIPE (Ø) (mm)	THK. OF PIPE (t) (mm)	FRL-1 (HIS)	FRL-2 (CES)	FRL-3 (OHS)	NGL (MIN.)	IL-1 (LHS) (mm)	IL-2 (RHS) (mm)	DEPTH OF FILL (mm) AT OUTER EDGE	Cal (LHS)	Cal (RHS)
01	0+230.00	1	1200	0.120	9.575	9.869	10.160	8.220	7.891	7.906	0.113	0.625	



KEY PLAN  
(SCALE 1:1)

NOTES:-

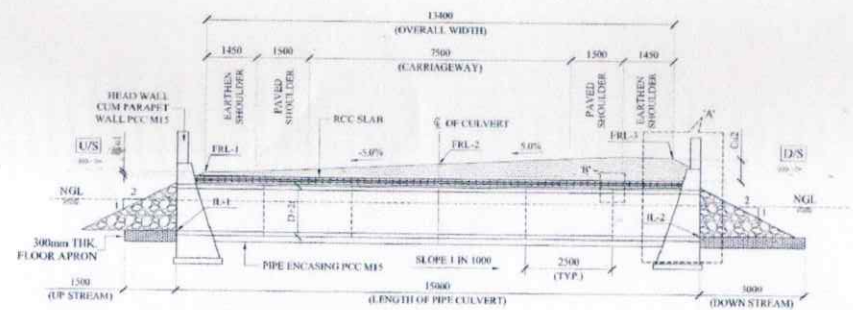
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
- THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
- PITCHING AND REVTMENT SHALL BE DONE AS PER IRC SP-13.
- ALL RCC PIPES TO BE OF GRADE M40 CONFORMING TO IS 458.
- 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
- CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
- THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
- IN BLACK COTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
- PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL. 2900.
- THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
- ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84:2014.
- AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
- DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- SEISMIC ZONE - V
- AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
- GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 4766 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
- LAP LENGTH TO BE PROVIDED AS PER CODED PROVISION.

FOR REVIEW & APPROVAL

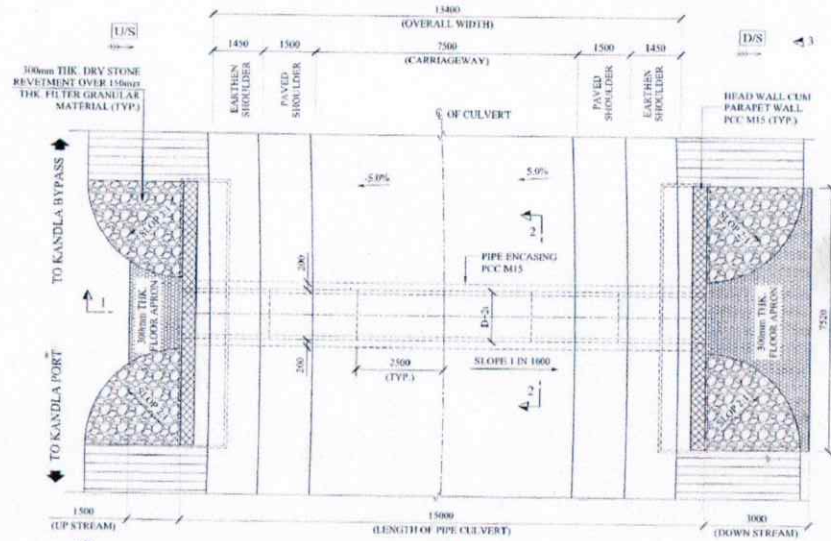
EMPLOYER BANDRA PORT TRUST P.O. BOX NO. 10, BANDRA OFFICE BUILDING BANDRA, MUMBAI - 400 050	CLIENT BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL)	EPC CONTRACTOR M/S. BHAI PATEL JV BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL)	DESIGN CONSULTANT M/S. BHAI PATEL JV BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL)	PROOF CONSULTANT M/S. BHAI PATEL JV BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL)	SAFETY CONSULTANT M/S. BHAI PATEL JV BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL) BANDRA PORT RAIL & HIGHWAY CORPORATION LTD. (BHEL)	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology (IIT) Varanasi B-100, Varanasi Uttar Pradesh - 221 005	PROJECT CONSTRUCTION OF INTERCHANGE ON ROAD OVER RAILWAY BRIDGE AT 14.75% GRADE (S&T) AND 100M IN R&T BRIDGE IN THE STATE OF GUJARAT UNDER EPC MODE	PREPARED DESIGNED CHECKED APPROVED	DATE 10-05-2020	TITLE GAD OF PIPE CULVERT AT CH: 0+230 (D TO B)	SCALE AS SHOWN A2	DRG. NO. LC236-KUTCH-JUN-NH-141-ST-PC-109	SHEET 1 OF 1	REV 00
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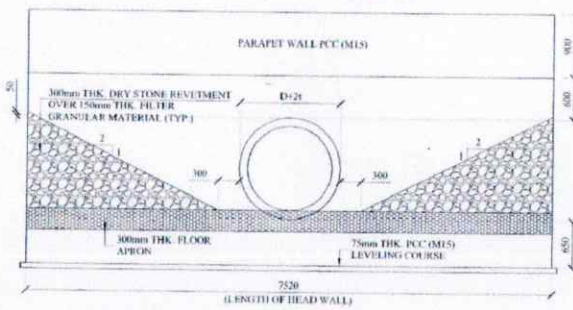
Annexure VI (11)



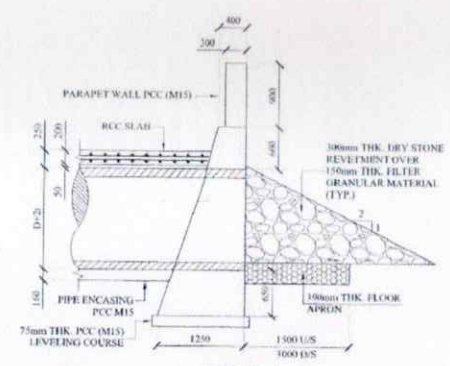
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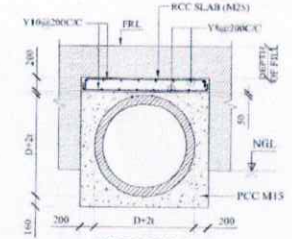
PLAN  
(SCALE 1:100)



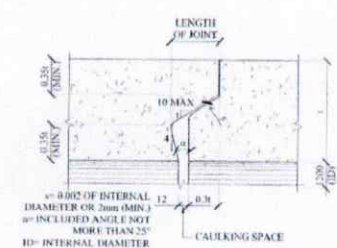
VIEW 3-3  
(SCALE 1:50)



DETAIL-A  
(SCALE 1:50)



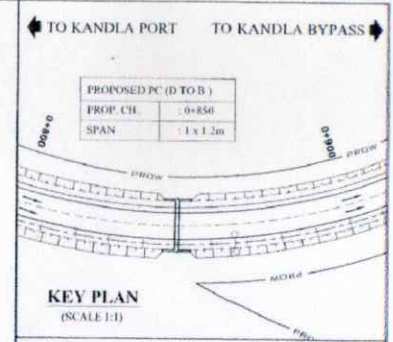
SECTION 2-2  
(SCALE 1:50)



DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)

SCHEDULE OF PIPE CULVERT

S.NO	DESIGN CHAIRAGE IN T.M	NO OF PIPES	DIA. OF PIPE (D) (mm)	THK. OF PIPE (t) (mm)	FRL-1 (LHS) (mm)	FRL-2 (RHS) (mm)	FRL-3 (RHS) (mm)	NGL (MIN.) (mm)	IL-1 (LHS) (mm)	IL-2 (RHS) (mm)	DEPTH OF FILL (mm) AT OUTER EDGE
01	0+850.00	1	1200	9.120	9.090	9.195	9.615	8.290	7.421	7.400	0.100 0.638



KEY PLAN  
(SCALE 1:1)

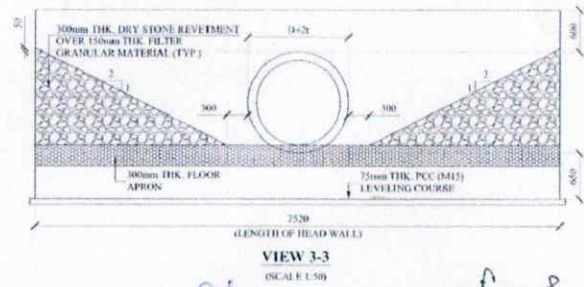
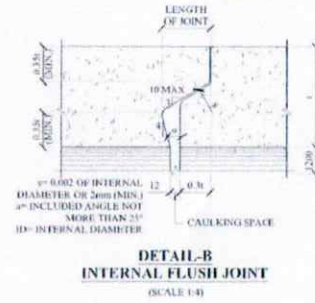
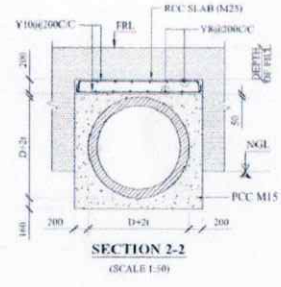
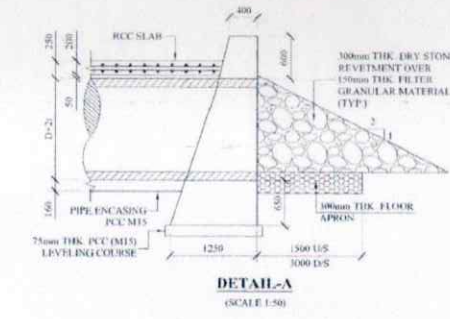
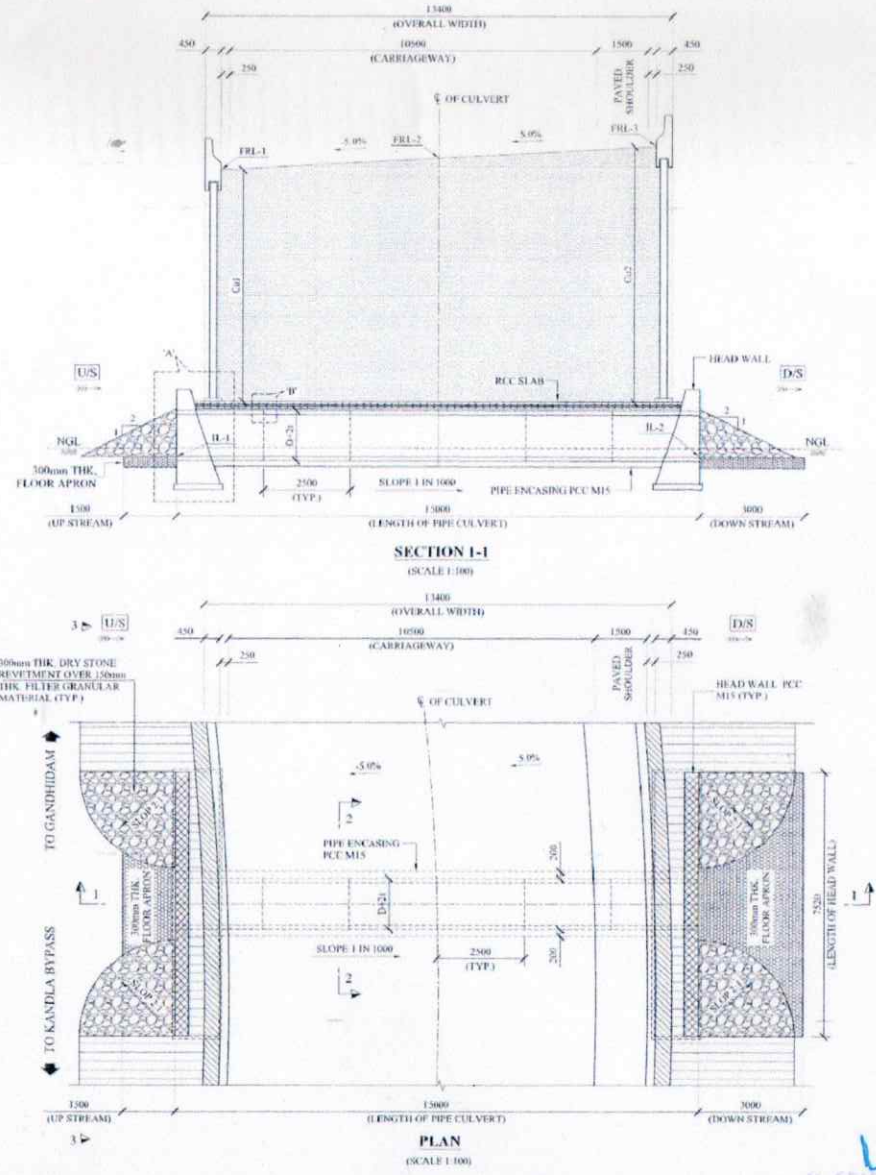
- NOTES:-
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
  4. PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13
  5. ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458
  6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC
  8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  9. IN BLACK COTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST 6mm DOWN IS (SIVE) AND BOULDERS WITH 95% COMPACTION.
  10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL 2900
  11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CLASHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-64-2014.
  14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  16. SEISMIC ZONE - V
  17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
  18. GRADE OF STEEL SHALL BE Fe-360D CONFORMING TO IS 1786  
CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
  19. LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION.

FOR REVIEW & APPROVAL

EMPLOYER DEENDIYAL PORT TRUST P.O. BOX NO. 50, JALPAIGIRI DISTRICT TAKHUR ROAD, SANDHURPUR DISTRICT SILIGURHI (734001)	CLIENT INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) BUILDING, 4/F, ANANDAN KAPUR CORPORATE TOWER, 100, NARAYAN PURI ROAD, NARAYAN PURI, KOLKATA-700016	EPC CONTRACTOR M/S. NIRAJ-PATEL JV SRI L. S. MEHANTANI (2008) CIVIL SANDHURPUR DISTRICT, SILIGURHI	DESIGN CONSULTANT M/S. NIVEDITA CONSULTANTS APRILKOTI, 100, NARAYAN PURI ROAD, NARAYAN PURI, KOLKATA-700016	PROJECT MANAGER M/S. NIVEDITA CONSULTANTS PVT. LTD. BHOPAL	SAFETY CONSULTANT M/S. FORGIVING ROADS LLP GURUKRAM	THIRD PARTY PROJECT CONSULTANT Indian Institute of Technology (IIT) Kharagpur 813001, Kharagpur, West Bengal (Contact: Mr. Pradyumn K. SINGH)	PROJECT CONSTRUCTION OF INDIAN PORT RAIL ROAD OVER BRIDGE NO. 112, 228, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	PREPARED DESIGNED CHECKED APPROVED	DATE 18-09-2023	TITLE GAD OF PIPE CULVERT AT CH: 0+850 (D TO B)	SCALE AS SHOWN A2	SHEET 1 OF 1	REV NO
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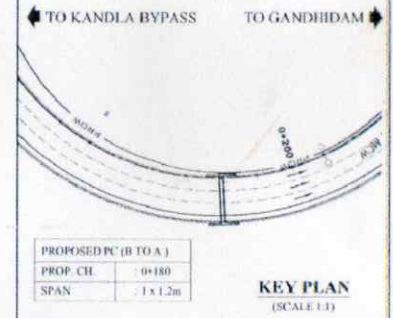


Annexure VI (12)



GENERAL MANAGER (P)  
SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (Ø) (mm)	THK. OF PIPE (t) (mm)	FRL-1 (LHS) (mm)	FRL-2 (RHS) (mm)	FRL-3 (RHS) (mm)	NGL (mm)	IL-1 (LHS) (mm)	IL-2 (RHS) (mm)	DEPTH OF FILL (m) AT OUTER EDGE
01	0+180.00	1	1200	0.120	15.707	16.045	16.382	7.800	7.556	7.341	6.595

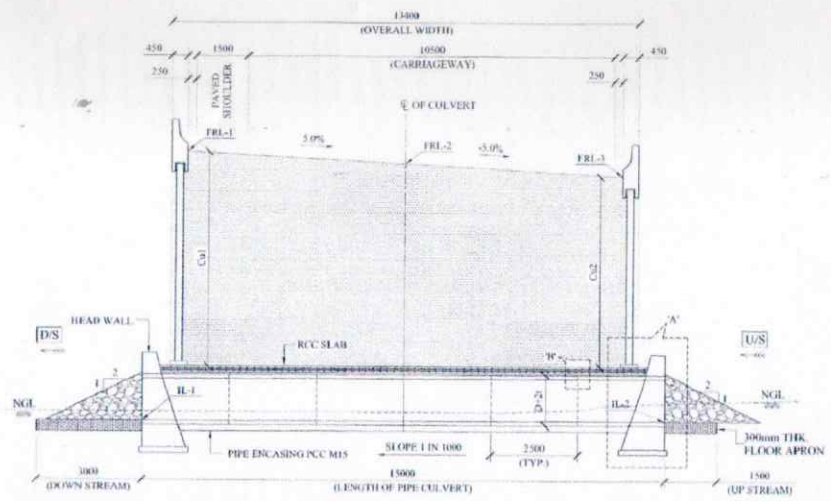


- NOTES:-
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  - THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  - LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
  - PITCHING AND REVENMENT SHALL BE DONE AS PER IRC SP-13.
  - ALL RCC PIPES TO BE OF GRADE NP-4 CONFORMING TO IS 438.
  - 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  - CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
  - THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  - IN BLACKCOTTON REGION PROVIDE 300mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SEIVE) AND BOULDERS WITH 95% COMPACTION.
  - PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 438 & MORTH SPECIFICATIONS CL. 2900.
  - THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  - ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84:2014.
  - AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  - DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  - SEISMIC ZONE - V.
  - AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL.
  - GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 186. CLEAR COVER TO ENCASING SLAB SHALL BE 25mm.
  - LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION.

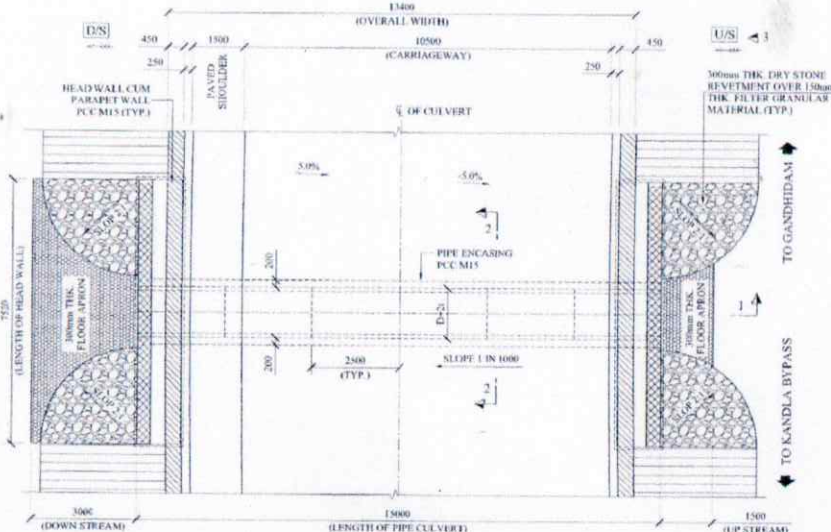
FOR REVIEW & APPROVAL



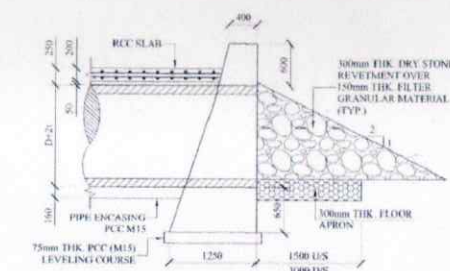
Annexure II (13)



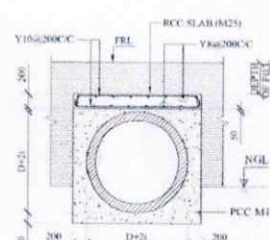
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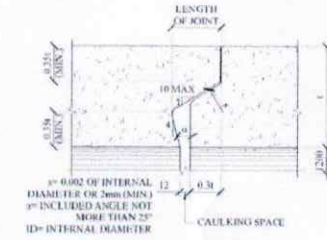
PLAN  
(SCALE 1:100)



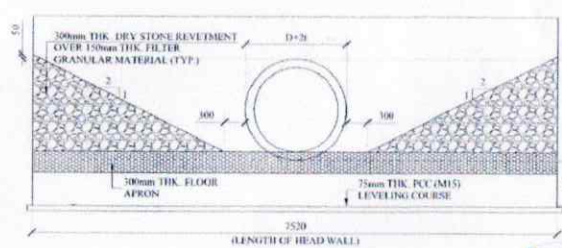
DETAIL-A  
(SCALE 1:50)



SECTION 2-2  
(SCALE 1:50)



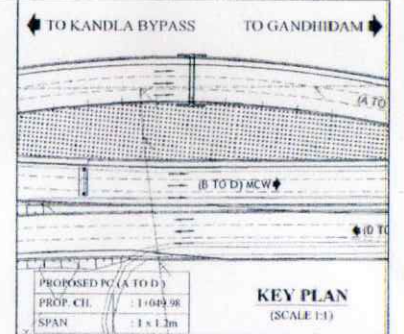
DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)



VIEW 3-3  
(SCALE 1:50)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DOA OF PIPE (D) (m)	THK. OF PIPE (t) (m)	FRL-1 (LHS) (m)	FRL-2 (RHS) (m)	FRL-3 (RHS) (m)	NGL (MIN.) (m)	IL-1 (LHS) (m)	IL-2 (RHS) (m)	DEPTH OF FUL (m) AT OUTER EDGE
01	1+049.98	1	1.200	0.120	15.021	14.708	14.396	7.650	7.379	7.394	6.070 5.833



KEY PLAN  
(SCALE 1:1)

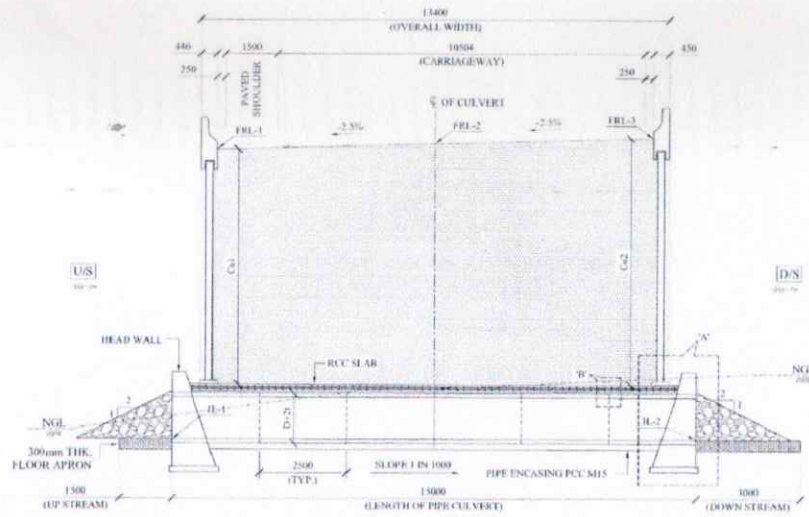
- NOTES:-
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  - THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  - LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
  - PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13.
  - ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458.
  - 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  - CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
  - THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  - IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
  - PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL 2900.
  - THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER/SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  - ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84:2014.
  - AFTER INSTALLATION OF PIPES, THE GAPS BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  - DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  - SEISMIC ZONE - V
  - AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:  
a) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
b) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL.
  - GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm.
  - LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION.

FOR REVIEW & APPROVAL

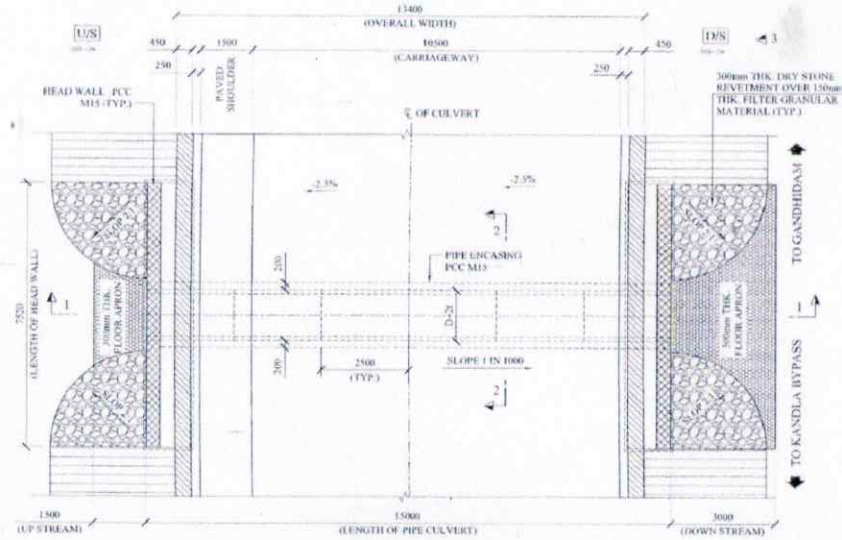
<b>EMPLOYER</b>  DEENDAYAL PORT TRUST P.O. BOX NO. - 56, KUTCH OFFICE BUILDING, TADODI ROAD, GANDHIDHAM DISTRICT, KUTCH, GUJARAT	<b>CLIENT</b>  INDIAN PORT RAIL & ROADWAY CORPORATION LTD (IPRCL) BUILDING, M. P. NEHRU BHAVAN, CORPORATE OFFICE, 4TH FLOOR, POST BOX NO. 1000, E-15, PRADESHNAGAR, NEW DELHI	<b>EPC CONTRACTOR</b> M/S. NIRAJ-PATEL JV 101/1, S/O. 'NEELKANTH' ZAMDA CHOWK, GANDHIDHAM, KUTCH, GUJARAT - 370029	<b>DESIGN CONSULTANT</b>  M/S. NIRAJ ASSOCIATES ARCHITECTURAL, CIVIL AND STRUCTURAL ENGINEERING CONSULTANTS	<b>PROJECT CONSULTANT</b>  M/S. NITPA NAYRA CIVIL SOLUTIONS PVT. LTD. BHOPAL	<b>SAFETY CONSULTANT</b>  PVS FORGING ROADS LLP GURUGRAM	<b>THIRD PARTY PROOF CONSULTANT</b>  Indian Institute of Technology Gandhinagar 67-68/2, Gandhinagar, Gandhinagar Campus, Gandhinagar, Gandhinagar	<b>PROJECT</b> CONSTRUCTION OF INTERCHANGING CIVIL ROAD OVER SHARDA ROAD AT PC 1+049.98 (A TO D) AND 1+049.98 (B TO D) IN THE STATE OF GUJARAT UNDER EPC MODE	<b>PREPARED</b> DESIGNED CHECKED APPROVED	<b>REVIEW</b> BY DATE	<b>TITLE</b> GAD OF PIPE CULVERT AT CH- 1+049.98 (A TO D) SCALE AS SHOWN SIZE	<b>DATE</b> 18-09-2020 <b>SHEET</b> 1 OF 1 <b>REV</b> 00/00
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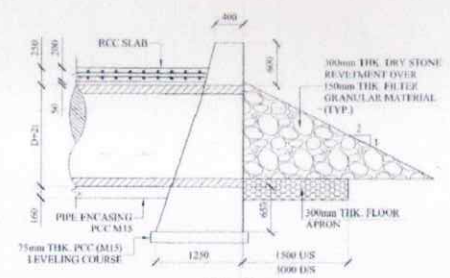
Annexure D (14)



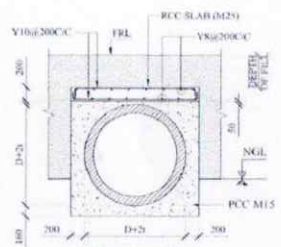
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(SCALE 1:100)



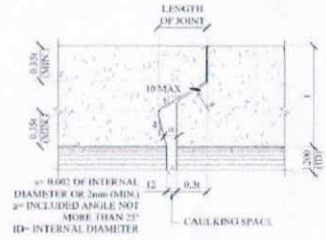
PLAN  
(SCALE 1:100)



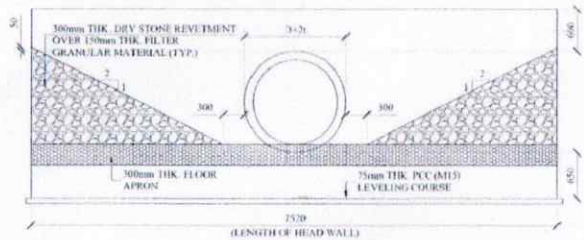
DETAIL-A  
(SCALE 1:50)



SECTION 2-2  
(SCALE 1:50)



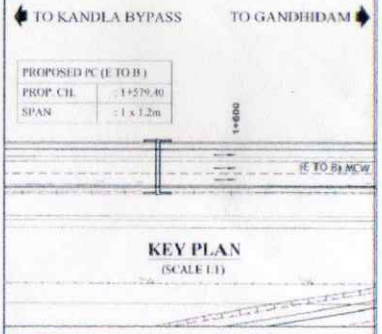
DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)



VIEW 3-3  
(SCALE 1:50)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN "Km"	NO. OF PIPES	DIA. OF PIPE (mm)	THK. OF PIPE (mm)	FRL-1 (HIS)	FRL-2 (HIS)	FRL-3 (HIS)	NGL (MIN.)	IL-1 (HIS) (mm)	IL-2 (HIS) (mm)	DEPTH OF FILL (mm) AT OUTER EDGE
01	1+579.40	1	1200	6120	15.853	16.009	16.166	8.340	7.606	7.591	6.674



KEY PLAN  
(SCALE 1:1)

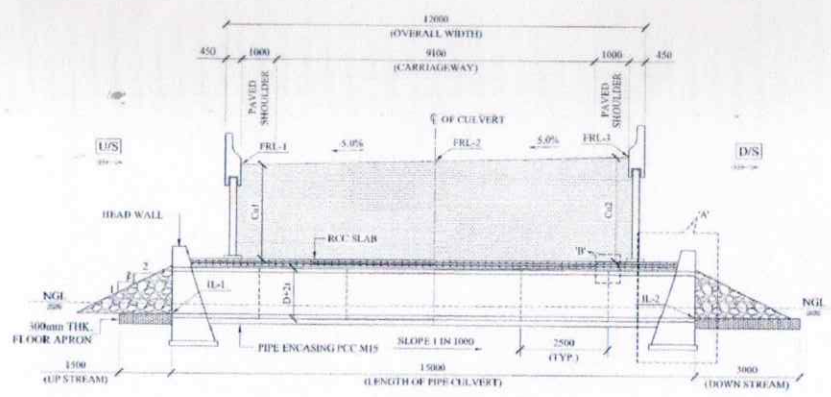
- NOTES:-
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
  2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
  3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
  4. PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13.
  5. ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458.
  6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
  7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
  8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
  9. IN BLACK COTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
  10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL 2900.
  11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
  12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
  13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-44:2014.
  14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
  15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
  16. SEISMIC ZONE - V
  17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDED IN FOLLOWING CASES:  
a) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
b) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
  18. GRADE OF STEEL SHALL BE Fe-50SD CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
  19. LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION

FOR REVIEW & APPROVAL

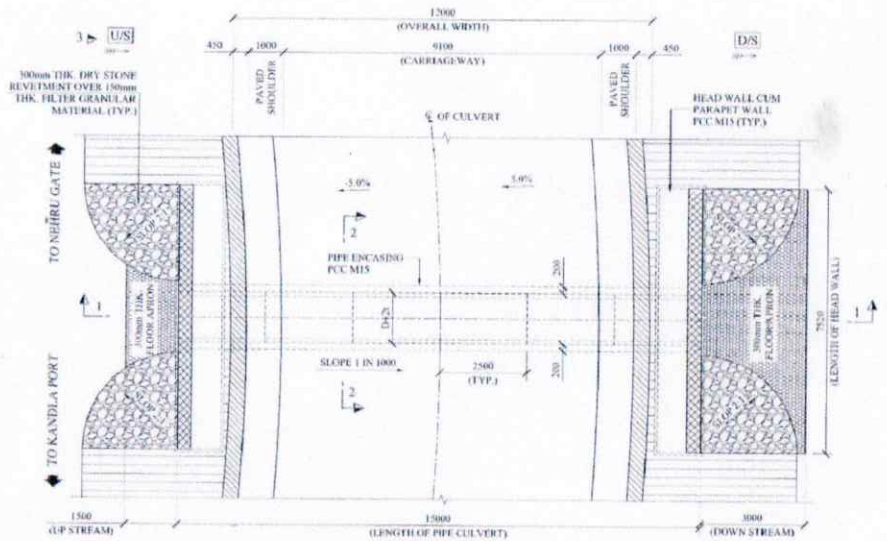
EMPLOYER BEINDAYAL FORT TRUST P.O. BOX NO. - 52 ADRA OFFICE BUILDING TANGRA ROAD GANDHIDHAM DISTRICT GUJARAT 382001	CLIENT INDIAN PORT RAIL & ROPEWAY CORPORATION LTD. (IPRCL) HEADQUARTERS, P.O. GANDHIDHAM (GUJARAT) DISTRICT GANDHIDHAM, GUJARAT 382001 DATE: 03-10-2020	EPC CONTRACTOR M/S. NIRA-I-PATEL JV PLOT NO. 1, GANDHIDHAM INDUSTRIAL ESTATE, GANDHIDHAM, GUJARAT 382001	DESIGN CONSULTANT M/S. NIRA-I-PATEL JV PLOT NO. 1, GANDHIDHAM INDUSTRIAL ESTATE, GANDHIDHAM, GUJARAT 382001	PROOF CONSULTANT M/S. NIRA-I-PATEL JV PLOT NO. 1, GANDHIDHAM INDUSTRIAL ESTATE, GANDHIDHAM, GUJARAT 382001	SAFETY CONSULTANT M/S. NIRA-I-PATEL JV PLOT NO. 1, GANDHIDHAM INDUSTRIAL ESTATE, GANDHIDHAM, GUJARAT 382001	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology (IIT) Varanasi 221 005, Varanasi, India	PROJECT CONSTRUCTION OF INTERCHANGE OVER ROAD OVER BRIDGE ROAD AT CH 1+579.40 (E TO B) AND ON 1+579.40 (E TO B) IN THE STATE OF GUJARAT UNDER IPRCL	PREPARED DESIGNED CHECKED APPROVED	DATE 03-10-2020	TITLE GAD OF PIPE CULVERT AT CH- 1+579.4 (E TO B)	SCALE AS SHOWN A2	DESIGN NO. LC236-KUTCH-JUN-NH-141-ST-PC-112	SHEET 1 OF 1	REV 06
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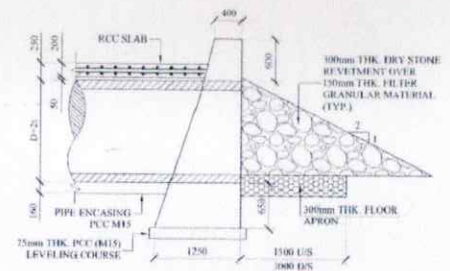
Annexure D (15)



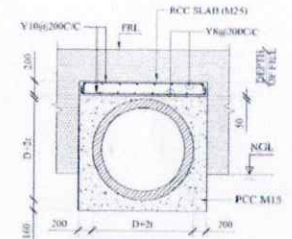
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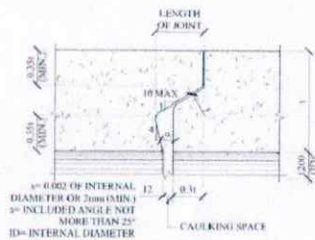
PLAN  
(SCALE 1:100)



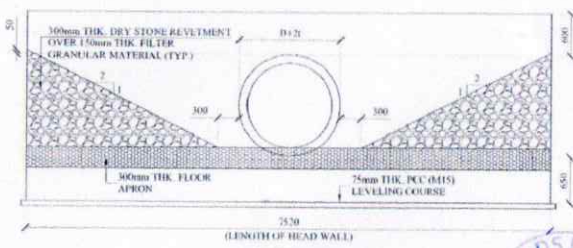
DETAIL-A  
(SCALE 1:50)



SECTION 2-2  
(SCALE 1:50)



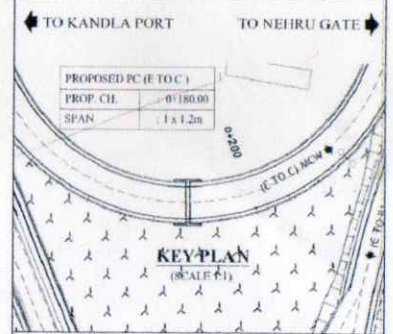
DETAIL-B  
INTERNAL FLUSH JOINT  
(SCALE 1:4)



VIEW 3-3  
(SCALE 1:50)

SCHEDULE OF PIPE CULVERT

S.NO.	DESIGN CHAINAGE IN 'K.m'	NO. OF PIPES	DIA. OF PIPE (Ø) (m)	THK. OF PIPE (t) (m)	FRL-1 (LHS) (m)	FRL-2 (RHS) (m)	FRL-3 (RHS) (m)	NGL (MIN.) (m)	IL-1 (LHS) (m)	IL-2 (RHS) (m)	DEPTH OF BELL (m) AT OUTER EDGE
01	0+180.00	1	1.200	0.120	11.977	12.116	12.255	7.860	3.718	7.703	Co1 (LHS) 2.691 Co2 (RHS) 2.979



KEY PLAN  
(SCALE 1:1)

NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
4. PITCHING AND REVETMENT SHALL BE DONE AS PER IRC SP-13.
5. ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458.
6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC.
8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
9. IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (60mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL 2900.
11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP.) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRL & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84:2014.
14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
16. SEISMIC ZONE - V
17. AT THE ENDS OF CULVERT ADEQUATE CUTOFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES:  
A) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS  
B) WHERE UNSUITABLE SOIL IS REPLACE BY GRANULAR MATERIAL
18. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO IS 1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
19. LAP LENGTH TO BE PROVIDED AS PER CODE PROVISION.

FOR REVIEW & APPROVAL

EMPLOYER DEENDATAI PORT TRUST P.O. BOX NO. 18, KUTCH DISTRICT, GUJARAT GUJARAT-362021	CLIENT INDIAN PORT RAIL & ROEWAY CORPORATION LTD. (IPRCL) BUILDING, 11, P. NARAYAN, CHANDAN, GUJARAT 362021, GUJARAT	EPC CONTRACTOR M/S. NRIJA-PATEL JV PLOT NO. 11, NRIJA-PATEL JV CHANDAN, GUJARAT-362021	DESIGN CONSULTANT M/S. NRIJA-PATEL JV PLOT NO. 11, NRIJA-PATEL JV CHANDAN, GUJARAT-362021	PROOF CONSULTANT M/S. NRIJA-PATEL JV PLOT NO. 11, NRIJA-PATEL JV CHANDAN, GUJARAT-362021	SAFETY CONSULTANT M/S. NRIJA-PATEL JV PLOT NO. 11, NRIJA-PATEL JV CHANDAN, GUJARAT-362021	THIRD PARTY PROOF CONSULTANT Indian Institute of Technology (IIT) Varanasi K-400, Varanasi, Uttar Pradesh-221005	PROJECT CONSTRUCTION OF INTERCHANGE ON ROAD OVER RAIL IN PHASE II IN THE STATE OF GUJARAT UNDER IPRCL	PREPARED DESIGNED CHECKED APPROVED	SCALE AS SHOWN	TITLE GAD OF PIPE CULVERT AT CH- 0+180 (E TO C)	DATE 18-09-2020
DRG NO. LC236-KUTCH-JUN-NH-141-ST-PC-113										SHEET 1 OF 1	REV 0



The diagram illustrates the cross-section of a culvert structure. Key dimensions and components include:

- Overall Width:** 13000
- Carriageway:** 7000
- Shoulders:** 1000 (each side)
- Head Wall:** 3000 (down stream)
- Structure Length:** 15000 (length of pipe culvert)
- Structure Components:**
  - Head Wall cum Parapet Wall (PCC M15)
  - Earth Shoulder
  - Paved Shoulder
  - RCC Slab
  - Earth Shoulder
  - Paved Shoulder
  - Head Wall
- Gradients:**
  - 2.35% (up stream)
  - 2.35% (down stream)
  - SLOPE 1 IN 1000
- Other Labels:**
  - NGL (Normal Ground Level)
  - W.L. (Water Level)
  - 300mm THK. FLOOR APRON
  - PIPE ENCASING PCC M15
  - IS (Indian Standard)

Technical drawing of a culvert cross-section. The drawing includes the following details:

- Overall Width:** 12000
- Dimensions:**
  - Left side: 1000 (Earthen Shoulder), 1500 (Paved Shoulder), 7000 (Carriage Way), 1500 (Paved Shoulder), 1000 (Earthen Shoulder).
  - Bottom: 3000 (Down Stream), 15000 (Length of Pipe Culvert), 1500 (Up Stream).
  - Internal: 2500 (TYP.) for the main pipe section.
- Materials and Layers:**
  - 300mm THK. DRY STONE REVESTMENT OVER 150mm THK. FILTER GRAVELLAR MATERIAL (TYP.)
  - HEAD WALL CUM PARAPET WALL PCC M15 (TYP.)
  - PIPE ENCASING PCC M15
- Structural Details:**
  - Length of Head Wall: 7520
  - Length of Floor Apron: 3000 THK.
  - Length of Head Wall: 3000 THK.
  - Length of Floor Apron: 3000 THK.
  - Length of Head Wall: 3000 THK.
  - Length of Floor Apron: 3000 THK.
- Other Labels:**
  - OF CULVERT
  - SLOPE 1 IN 100
  - 2.5%
  - 2
  - 1
  - 1

Diagram illustrating the cross-section of a Parapet Wall PCC (M15) structure. The wall is shown with a height of 50 units and a length of 7520 units. The structure includes a 300mm thick floor apron, a 75mm thick PCC (M15) leveling course, and a 300mm thick dry stone revetment over a 150mm thick filter granular material (TYP). The wall is topped with a 150mm thick PCC (M15) parapet. The diagram also shows a circular opening with a diameter of 100 units and a depth of 100 units.

S.NO	DESIGN CHARGE IN "Kc"	NO. OF PIPES	DIA. OF PIPE (Ø) (m)	THK. OF PIPE (t) (mm)	FRL-1 (LHS)	FRL-2 (CEN)	FRL-3 (RHS)	NGI (MIN.)	IL-1 (LHS) (m)	IL-2 (RHS) (m)	DEPTH OF FILL (m) AT CUT-THRU EDGE
											Cut (LHS)      Cut (RHS)
01	1+100.00	1	1.200	0.120	9.397	9.552	9.647	8.070	7.588	7.664	0.237      0.475

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.
2. THIS DRAWING SHOULD NOT BE SCALED, ONLY WRITTEN DIMENSION TO BE FOLLOWED.
3. LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
4. PITCHING AND REVESTMENT SHALL BE DONE AS PER IRC SP-13
5. ALL RCC PIPES TO BE OF GRADE NP4 CONFORMING TO IS 458.
6. 150mm FILTER MEDIA SHALL BE PLACED BENEATH STONE PITCHING.
7. CULVERT HEADWALLS ARE AS PER SP-13 OF IRC
8. THE BEDDING BELOW THE PIPE AND FOUNDATION FOR HEADWALL SHALL BE PLACED OVER A FIRM STRATA.
9. IN BLACKCOTTON REGION PROVIDE 500mm THICK BOULDER FILLING BELOW PIPE BEDDING AND BELOW HEADWALL. BOULDER FILLING CONSIST OF QUARRY DUST (6mm DOWN IS SIEVE) AND BOULDERS WITH 95% COMPACTION.
10. PIPE LAYING AND PIPE SHALL BE JOINED BY INTERNAL FLUSH JOINT AS PER IS 458 & MORTH SPECIFICATIONS CL-2900
11. THE LENGTH OF PIPE IS MENTIONED 2500 (TYP) BUT IN CASE IF LENGTH REQUIRED IS LESS THAN 2500 THEN LENGTH OF CULVERT ADJUSTED ACCORDINGLY.
12. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS FRI. & CAMBER SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWING.
13. ENCASING SHALL BE PROVIDED AS MENTIONED IN DRAWING. IN CASE CUSHION OVER PIPE IS LESS THAN 600mm EXCLUDING ROAD CRUST AS PER IRC SP-84-2014.
14. AFTER INSTALLATION OF PIPES, THE GAPS IN BETWEEN THE PIPES SHALL BE FILLED WITH CEMENT SAND MORTAR.
15. DISCREPANCY IF ANY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
16. SEISMIC ZONE - V
17. AT THE ENDS OF CULVERT ADOPT A FIVE CUT OFF WALL SHOULD BE PROVIDE IN FOLLOWING CASES.
  - a) WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERTS
  - b) WHERE UNSUITABLE SOIL IS REPLACT BY GRANULAR MATERIAL.
18. GRADE OF STEEL SHALL BE Fe-560D CONFORMING TO IS-1786 CLEAR COVER TO ENCASING SLAB SHALL BE 25mm
19. LAP LENGTH TO BE PROVIDED AS PER CODEL PROVISION.

DATE \_\_\_\_\_

SCALE: \_\_\_\_\_ DRG. NO. \_\_\_\_\_ SHEET \_\_\_\_\_

SIZE	A2	LC236-KUTCH-JUN-NH-141-ST-PC-114	1 OF
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# **Annexure VII**

## **(In 6 Pages)**



GPCB

**GUJARAT POLLUTION CONTROL BOARD**

PARYAVARAN BHAVAN  
Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

(079) 23232152

Fax : (079) 23232156

Website : www.gpcb.gov.in

By R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 6(2) of the Hazardous & Other Waste (Management & Transboundary Movement) Rules-2016, framed under the Environmental (Protection) Act-1986.

And whereas Board has received application inward No.118092 dated 23/03/2017 for the **Consolidated Consent and Authorization (CC&A)** of the Board under the provisions / rules of the aforesaid Acts. Consents & Authorization are hereby granted as under:

**CONSENTS AND AUTHORISATION:**

(Under the provisions /rules of the aforesaid environmental acts)

To  
M/s Patel Construction Co,  
Plot No:- S.No:- 932,,  
Tal:- Anjar,  
Dist: Kutch-370 410.

1. Consent Order No. AWH- 85951 Date of Issue: 11/05/2017
2. The consent shall be valid up to 22/03/2022 for manufacturing of the following product:

Sr. No.	PRODUCT	QUANTITY MT/ MONTH
1.	Road Paving Material (Hot mix plant)	2500 MT/Month

**3. SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:**

- 3.1 No ground water shall be withdrawal without obtaining prior permission from competent authority.

**4. CONDITIONS UNDER WATER ACT 1974:**

- 4.1 Industrial effluent generation from manufacturing process and other ancillary operations shall be Nil, as generated waste water shall be recycled & there shall not be waste water discharge.
- 4.2 The quantity of the Sewage effluent from the factory shall not exceed 0.5 KL/day.
- 4.3 The quality of the sewage shall conform to the following standards:

PARAMETER	PERMISSIBLE LIMIT
BOD (3 days at 27° C)	20 mg/L
Suspended Solid	30 mg/L
Residual Chlorine	Minimum 0.5 mg/L

**Clean Gujarat Green Gujarat**

ISO-9001-2008 & ISO-14001 - 2004 Certified Organisation



4.4 Unit shall provide sprinkling system to mitigate dusting and also provide pacca road in premises to prevent dusting.

4.5 Sewage shall be disposed off through septic tank / soak pit system.

#### 5. CONDITIONS UNDER AIR ACT 1981:

5.1 The following shall be used as fuel in D.G. Set.

Sr.No.	Fuel	Quantity
1.	LDO	45 ltr/hr

5.2 The flue gas emission through various stack / Vent of DG sets / Boiler / Furnace Heater shall conform the following standards

Sr. no.	Stack attached to	Stack height in Meters	APCM	Parameter	Permissible limit
1.	D. G. Set-500 KVA (stand by)	11	----	PM SO <sub>2</sub> NOx	150 mg/Nm <sup>3</sup> 100 ppm 50 ppm

5.3 The process gas emission from the manufacturing process as well as other ancillary operations shall be as following:-

Sr. no.	Stack attached to	Stack height in meters	Air Pollution Control System	Parameter	Permissible limit
1.	Dryer	11	Dust collector & circulation scrubber	SPM SO <sub>2</sub> NOx	150 mg/NM <sup>3</sup> 100 ppm 50 ppm

5.4 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per National Ambient Air Quality Standards issued by MOEF & CC dated 16<sup>th</sup> November-2009.

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air in µg/M <sup>3</sup>
1.	Sulphur Dioxide (SO <sub>2</sub> )	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO <sub>2</sub> )	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10 µm) OR PM <sub>10</sub>	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 µm) OR PM <sub>2.5</sub>	Annual 24 Hours	40 60





# GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

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5.5 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted / displayed to facilitate identification.

5.6 The concentration of Noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6 A.M. to 10 P.M.: 75 dB (A)

Between 10 P.M. to 6 A.M.: 70 dB (A)

6. Authorization under Hazardous and other waste [Management, Transboundary Movement] Rules, 2016 & amended.

6.1 Authorization Number: AWH – 85951 and shall valid up to 22/03/2022.

6.2 M/s Patel Construction Co, is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at, Plot No:- S.No:- 932, Tal:- Anjar, Dist: Kutch-370 410.

Sr. No.	Waste	Quantity per Annum	Category	Mode of Disposal
1.	Used Oil	0.2 T	5.1	Collection, storage, Transportation, Disposal by selling out to registered recyclers/re-processor

6.3 The 4.authorization is granted to operate a facility for collection, storage, within factory premises, transportation, and ultimate disposal of Hazardous wastes at TSDF.

6.4 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

## 6.5 GENERAL CONDITIONS OF AUTHORIZATION:

1. The authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the State Pollution Control Board.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization.



4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
5. Hazardous Waste generated shall be disposed off in accordance with the Hazardous Waste & other waste(Management & Transboundary Movement) Rules, 2016 as amended and unit shall have to obtain authorization of the Board for all applicable categories of Hazardous wastes.
  - (a) Used oil / spent oil shall be disposed off by selling it to registered re-refiner units only.
  - (b) Oily sludge from separators shall be dispose or of selling it to registered re-refiners unit only.
  - (c) ETP sludge shall be disposed of at TSDF approved by the Board.
  - (d) Used batteries shall be sold to the GPCB authorized dealers.
6. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
7. It is the duty of the authorized person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
9. The record of consumption of hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
11. An application for the renewal of an authorization shall be made as laid down under these Rules.
12. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
13. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

## 7. GENERAL CONDITIONS

- 7.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.





## GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

Sector-10-A, Gandhinagar 382 010

Phone : (079) 23222425

(079) 23232152

Fax : (079) 23232156

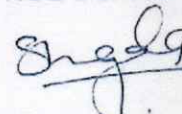
Website : www.gpcb.gov.in

- 7.2 The waste generator shall be totally responsible for (i.e. Collection, storage, transportation and ultimate disposal) of the wastes generated.
- 7.3 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form – 4 by 31<sup>st</sup> January of every year.
- 7.4 In case of any accident, details of the same shall be submitted in Form – 5 to Gujarat Pollution Control Board.
- 7.5 Applicant shall comply relevant provision of "Public Liability Insurance Act – 91".
- 7.6 Empty drums and containers of toxic and hazards material shall be treated as per guideline published for "management & handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
- 7.7 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority.
- 7.8 Adequate plantation shall be carried out all along the periphery of the industrial premises in such a way that the density of plantation is at least 1000 trees per acre of land and a green belt of 10 meters width is developed.
- 7.9 The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge of effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to this Board for this purpose in the prescribed forms under the provisions of the Water Act-1974, the Air Act-1981 and the Environment (Protection) Act-1986.
- 7.10 The over all noise level in and around the plant area shall be kept well within the standards by providing noise control measures including engineering control like acoustic insulation hoods, silencers, enclosures etc on all sources of noise generation. The ambient noise level shall conform to the standards prescribed under the Environment (Protection) Act, 1986 & Rules.
- 7.11 The concentration of Noise in ambient air within the premises of industrial unit shall not exceed following levels:
  - Between 6 A.M. and 10 P.M.: 75 dB (A)
  - Between 10 P.M. and 6 A.M.: 70 dB (A)
- 7.12 In case of transport of hazardous waste to a facility for (i.e. Treatment, Storage and disposal) existing in a state other than the state where hazardous waste are generated, the occupier shall obtain "No Objection certificate" from the state pollution Control Board, the Committee of the concerned state or Union territory Administration where the facility exists.



- 7.13 Unit shall take all concrete measures to show tangible results in waste generation reduction, avoidance, reuse and recycle. Action taken in this regards shall be submitted within 03 months and also along with Form 4.
- 7.14 You shall have to display the relevant information with regard to hazardous waste as indicated in the Hon. Supreme Court's order in W.P. No.657 of 1995 dated 14th October 2003.
- 7.15 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.

For and on behalf of  
GUJARAT POLLUTION CONTROL BOARD



(Sushil Vegda)

Senior Environment Engineer

NO: PC/CCA- KUTCH- 1273/GPCB ID: 46211/ 415000 Date: 15/6/17

ISSUED TO:

M/s Patel Construction Co,  
Plot No:- S.No:- 932,,  
Tal:- Anjar,  
Dist: Kutch-370 410.

# **Annexure VIII**

## **(In 2 Pages)**



EXIM

Gujarat, Friday, June 26, 2020

**DEENDAYAL PORT TRUST****N.I.T No. 04 / S.E. (DESIGN)**

The State Level Environment Impact Assessment Authority, Government of Gujarat has accorded Enviromental and CRZ Clearance for the Deendayal Port Trust Project "Construction of Interchange cum Road Over Bridge (ROB) at LC236 (Kutch Salt Junction) on NH 141 to Nehru Gate of Kandla Port, Gandhidham, Kutch and copies of the clearance letters are available with the Gujarat Pollution Control Board and may also be seen on the Website of the SEIAA / SEAC / GPCB

Sd/-  
Chief Engineer  
Deendayal Port Trust

**NOTICES****NOTICE TO CONSIGNEES**



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કે અન્ય વાહનમાં મુસાફરી કરતા પ્રવાસીઓ માસ્ક, સેનિટાઈઝરનો ઉપયોગ ન કરતા હોવા છતાં આસાનીથી મુસાફરી કરે છે. કચ્છમાં ફરી કોરોનાનો ડંખ તિલાંજલિ બન્યો છે, ત્યારે જો તકેદારી નહીં રાખવામાં આવે તો સ્થિતિ બેકાબૂ બનતા વાર નહીં લાગે.

કે, લોકડાઉન-૪થી એસટી વિભાગ દ્વારા પ્રાયોગીક પોરબે ડેપો ટુ ડેપોના રૂટ શરૂ કરવામાં આવ્યા હતા અને હવે જિલ્લામાં ૧૭ પીકઅપ સ્ટેન્ડ પણ બનાવામાં આવ્યા છે. જ્યાં પ્રવાસીઓ બસમાં ચડી શકે છે. તો હવે કચ્છમાં જનજીવન સામાન્ય બની રહ્યું છે. ત્યારે કચ્છમાં એસટીની સેવા રાખેતા મુજબ શરૂ કરવાની

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## દીનદયાલ પોર્ટ ટ્રસ્ટ

ગુજરાત સરકારના સ્ટેટ લેવલ એનવાયરમેન્ટ ઇમ્પ્રુવમેન્ટ એસેસમેન્ટ ઓથોરીટી દ્વારા દીનદયાલ પોર્ટ ટ્રસ્ટની પરિયોજના “કન્સ્ટ્રક્શન ઓફ ઇન્ટરયેજ કમ રોડ ઓવરબ્રિજ (આર.ઓ.બી.) એટ એલસી-૨૩૬ (કચ્છ સોલ્ટ જંકશન) ઓન એન.એચ. ૧૪૧ ટુ નેહરૂ ગેટ ઓફ કંડલા પોર્ટ ગાંધીધામ, કચ્છને પર્યાવરણ અને સી.આર.ઝોનની મંજૂરી આપવામાં આવેલ છે. આ મંજૂરી સંદર્ભેના પત્રોની નકલો રાજ્ય પોલ્યુશન કંટ્રોલ બોર્ડ પાસેથી મળી શકશે. તેમજ એસ.ઈ.આઈ.એ.એ./એસ.ઈ.એસી./ જી.પી.સી.બી.ની વેબસાઈટ પર જોઈ શકાશે.

**મુખ્ય ઇજનેર**  
**દીનદયાલ પોર્ટ ટ્રસ્ટ**

રોયલ પ્લોટ્સ એલ.એલ.પી.  
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# **Progress Report -2025**

**March-2025**

## Monthly Project Status Report

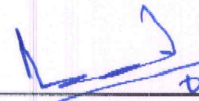
(To be submitted for each PPP and non-PPP projects by 10<sup>th</sup> of every month for the project's progress of previous month)

1	Port Name	Deendayal Port Authority		
2	Project Name	Construction of Interchange cum Road Over Bridge (ROB) at LC-236 (Kutch Salt Junction) on NH-141 in the State of Gujarat under EPC mode.		
3	Period of this report	March' 2025		
4	Project Mode	EPC Mode	Project Cost (Port's Scope)	Rs. 284.00 Cr.
5	Concessionaire/EPC	M/s Niraj-Patel JV, Gandhidham, Kutch, Gujarat has been appointed by M/s IPRCL.	Project Cost (by PPP/Captive)	N.A.
6	Ministry's Approval	i) Project approved by the SFC on 24.04.2017 (SFC Meeting held on 16.01.2017). ii) Ministry vide OM dtd: 26.6.2018 directed to DPT to transfer the project to IPRCL, accordingly Board of Deendayal Port vide R. No. 64, dtd: 07/08/2018 has transferred the project to IPRCL, Mumbai IPRCL on direct cost plus basis.		
7	Port's Nodal officer for project	Shri Srinivas Rao, Dy Chief Engineer, Deendayal Port Authority.		
8	Start Date of RFQ	N.A.	Completion Date of RFQ	N.A.
9	Start Date of RFP	02.11.2018	Completion Date of RFP	24.07.2019
10	LOI Date/LUA Date	25.02.2020	Date of Signing of Concession	23.03.2020
11	Award Date of Concession/EPC	23.03.2020	Start Date of Construction	01.10.2020
12	Target COD date	29.05.2023	Implementation time (as per DPR)	32 Months
13	Cumulative Project Progress achieved till date	Physical Progress (Port's Scope) N.A. Physical Progress (PPP/captive/EPC's Scope) 100%	Financial Progress (Port's Scope) N.A. Financial Progress (PPP/captive/EPC's Scope) 98%	
14	Delay in Overall Project, If any (Provide updated Annexure-A and Annexure-B with this report)	Shortfall in Physical Progress (Port's Scope) N.A. Shortfall in Physical Progress (PPP/captive/EPC's Scope) N.A.	Shortfall in Financial Progress (Port's Scope) N.A. Shortfall in Financial Progress (PPP/captive/EPC's Scope) N.A.	
15	Project Progress achieved in Last Month	Physical Progress (Port's Scope) N.A. Physical Progress (PPP/captive/EPC's Scope) -	Financial Progress (Port's Scope) N.A. Financial Progress (PPP/captive/EPC's Scope) -	
16	Main Accomplishments in the Last Month (Port's Scope)	1 Nil 2 Nil 3 Nil 4 Nil 5 Nil		
17	Main Accomplishments in the Last Month (PPP/captive/EPC's Scope)	Construction of ROB at LC-236 has been Completed and Maintenance work is in Progress.		
18	Scope Change, if any	N.A.		
19	Schedule Change, if any	N.A.		
20	Cost Change, if any	N.A.		
21	Issues/impediments, if any	N.A.		
22	Issue pending, with any central Govt ministry, causing delay	N.A.		
23	Safety Performance	Number of Safe Man-hours N.A. Near Misses N.A. First Aid Cases N.A.	N.A. Lost Time Incidents N.A. Number of Fatalities N.A.	
24	Employment Details	Direct Employment (Port's Scope) N.A. Direct Employment (PPP/captive/EPC's Scope) N.A.	Direct Employment (Port's Scope) N.A. Direct Employment (PPP/captive/EPC's Scope) N.A.	

  
 Addl. GENERAL MANAGER. (P)  
 IPRCL/GANDHIDHAM



25	This Report Prepared by	Shri Srinivas Rao, Dy Chief Engineer, Deendayal Port Authority.
26	This Report Reviewed by	Shri Srinivas Rao Dy Chief Engineer, <a href="mailto:kphdivision@gmail.com">kphdivision@gmail.com</a>

  
 02.04.2025

(S. Revanasiddappa)

Addl. General Manager(P)

IPRCL / Gandhidham.

**Addl. GENERAL MANAGER. (P)**  
**IPRCL/GANDHIDHAM**

Note; Annexure-A and Annexure-B shall be provided along with this report

## Annexure-A

**Project Milestones (Port's Scope)**

(All milestones to be planned and indicated below from Ministry's approval date to COD of project)

Month	Milestone Description	Target/Planned completion date	Actual Completion Date	Reason for Delay, if any
		A	B	C
October 2020 to March 2021	Project Milestone I (10%)	31.03.2021	31.01.2021	N.A.
April 2021 to September 2021	Project Milestone II (20%)	30.09.2021	28.02.2021	N.A.
October 2021 to March 2022	Project Milestone III (45%)	31.03.2022	31.03.2022	N.A.
April 2022 to September 2022	Project Milestone IV (70%)	30.09.2022 (Extension granted upto 31.01.2023)	31.01.2023	N.A.
October 2022 to March 2023	Project Milestone V (100%)	31.03.2023 (Extension granted upto 29.05.2023)	29.05.2023	Maintenance work is in Progress.

Notes:

1. Column 'A' above should be filled only once based on original project schedule
2. Only Column 'B' to be updated on monthly basis for respective row
3. Detailed reasoning to be provided in column 'C'

12.04.2025  
 Addl. GENERAL MANAGER. (P)  
 IPRCL/GANDHIDHAM



## Annexure-B

**Project Milestones (PPP/Captive/EPC's Scope)**

(All milestones to be planned and indicated below from the Ministry's approval date to COD of project)

Month	Milestone Description	Target/Planned completion date	Actual Completion Date	Reason for Delay, if any
		A	B	C
October 2020 to March 2021	Project Milestone I (10%)	31.03.2021	31.01.2021	N.A.
April 2021 to September 2021	Project Milestone II (20%)	30.09.2021	28.02.2021	N.A.
October 2021 to March 2022	Project Milestone III (45%)	31.03.2022	31.03.2022	N.A.
April 2022 to September 2022	Project Milestone IV (70%)	30.09.2022 (Extension granted upto 31.01.2023)	31.01.2023	N.A.
October 2022 to March 2023	Project Milestone V (100%)	31.03.2023 (Extension granted upto 29.05.2023)	29.05.2023	Maintenance work is In Progress.

**Notes:**

1. Column 'A' above should be filled only once based on original project schedule
2. Only Column 'B' to be updated on monthly basis for respective row
3. Detailed reasoning to be provided in column 'C'

 02. Dec. 2025  
Addl. GENERAL MANAGER. (P)  
IPRCL/GANDHIDHAM