

15 April 2025

To  
The Secretary,  
Petroleum and Natural Gas Regulatory Board,  
Tower E, Fourth Floor (E-400),  
NBCC World Trade Centre, Nauroji Nagar,  
New Delhi – 110029

**Sub:** Laying of a dedicated pipeline under Regulation 19(2) of “Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Petroleum and Petroleum Product Pipelines) Regulations, 2010”

Dear Sir,

We are in receipt of request from M/s. Reliance Industries Ltd (RIL) to implement a dedicated pipeline system to transport liquid Ethane from storage located at its Manufacturing Division in Dahej, Gujarat (DMD) for delivery to its Manufacturing Division located in Hazira, Gujarat (HMD) through Parvat where it shall be hooked up with the existing pipeline facilities.

The total length of the Dahej-Parvat-Hazira Ethane Pipeline is 100.4 km (57 km long new pipeline between DMD to Parvat + 43.4 km long existing pipeline between Parvat to HMD installed earlier) and the pipeline capacity is 0.78 MTPA.

Reliance Ethane Pipeline Limited (REPL) accordingly proposes to build, own and operate a dedicated pipeline from DMD to HMD.

The relevant details and documents pertaining to the dedicated pipeline are enclosed for your kind perusal.

Thanking you,

Yours Faithfully,



Alok Gurtu  
(Director)

Encl.

1. Annexure 1 – Copy of Request Letter from RIL
2. Annexure 2 - Salient Details of Dahej-Parvat-Hazira Ethane Pipeline
3. Annexure 3 – DFR of the project



1<sup>st</sup> April 2024

To,

The Director,  
Reliance Ethane Pipeline Limited,  
101, Saffron, Near Centre Point,  
Panchwati Panch Rasta, Ambavadi,  
Ahmedabad, Gujarat- 380 006

Sub: Laying, building and operating dedicated pipeline for transportation of Liquid Ethane from our Dahej Manufacturing Division (DMD) in Gujarat to Hazira Manufacturing Division (HMD) in Gujarat.

Dear Sir,

Reliance Industries Limited (RIL) operates its petrochemical plants located in Dahej & Hazira using liquid ethane sourced from global markets as its feedstock.

RIL has further initiated efforts to upgrade its gas cracker units in Hazira requiring increased liquid ethane feedstock.

The resultant ethane demand at Hazira plant is estimated to be ~0.78 MMPTA.

Reliance Ethane Pipeline (REPL) is accordingly requested to build, own, install and operate a dedicated pipeline network from DMD thru Parvat for liquid ethane delivery to HMD using earlier installed facilities. The subject pipeline shall be commissioned on or before 31-Dec-2025.

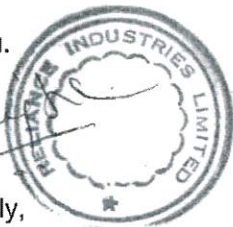
The proposed Dahej-Parvat-Hazira Ethane Pipeline is for RIL's captive usage of liquid ethane as feedstock for the HMD Plant and not intended for any re-sale.

The required commercial and contractual terms and conditions for the above shall be finalized in due course.

Should you require further information / clarification in this regard, please do not hesitate to contact us.

Thanking you.

A handwritten signature in black ink, appearing to read "Rajesh Rawat", written over a circular stamp.



Yours faithfully,  
Sh. Rajesh Rawat  
Sr.VP Head- Olefins Business  
Reliance Industries Ltd



## Annexure 2

### Salient Details of Dahej-Parvat-Hazira Ethane Pipeline (DPHEPL)

Description	UoM	Details
Design Throughput	MMTPA	~ 0.78
Pipeline Length	Km	~ 100.4 (New 57 + 43.4 km existing)
Pipeline Diameter (NPS)	Inch	8
Pipeline Design Life (for Economic Evaluation)	Years	25
Design Pressure	bar(g)	112
Pressure at the Pipeline Inlet Battery Limit at DMD	bar(g)	108.6
Temperature at the Pipeline Inlet Battery Limit at DMD	° C	9
Delivery Pressure at Hazira	bar(g)	55
Delivery Temperature at Hazira	° C	30
Type of External Anti-corrosion Coating	-	Three-layer polyethylene (3-LPE)
Pipeline Design Codes	-	PNGRB T4S (PPPL), OISD 214, ASME B31.4
Entry Point Location	-	DMD, Gujarat
Exit (Delivery) Point Location	-	HMD, Gujarat
Mainline Valve Stations (MLVs)	No.	8

It is certified that the above information / data is factually correct. I / we undertake to provide any further information / explanation requested for by the Board within such time as may be prescribed.

Date : 15<sup>th</sup> April 2025

Place : Navi Mumbai

Alok Gurtu  
(Director)



**Reliance**  
Ethane Pipeline  
Limited

# **Dahej-Parvat-Hazira Ethane Pipeline Project**

## **Detailed Feasibility Report**

**DPHEP000-Z10-J45-502**

REV	DATE	DESCRIPTION	ORIG	REVIEW	APPROVAL
00	22.01.2025	Issued for Use	NV	SMP	SJ
1A	10.01.2025	Issued for Review	NV	SMP	SJ

**RELIANCE ETHANE PIPELINE LIMITED**  
**DAHEJ-PARVAT-HAZIRA ETHANE PIPELINE PROJECT**  
**DETAILED FEASIBILITY REPORT**

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**Appendices**

- Appendix-1: Overall Pipeline Route Map
- Appendix-2: Overall Pipeline Schematic Arrangement
- Appendix-3: Project Implementation Schedule

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**1. EXECUTIVE SUMMARY**

**1.1 Background**

Reliance Industries Limited (RIL) has been operating its various cracker plants located in Dahej & Hazira using liquid ethane as its feedstock sourced from global markets since long based on favourable economics supporting the usage.

RIL, as part of its ongoing recent business development expansion plan, is undertaking efforts of upgrading of existing infrastructure at its cracker plant in Hazira.

It is therefore, proposed to transport liquid ethane through a dedicated pipeline to be built from RIL's Dahej Manufacturing Division (RIL-DMD) to RIL Hazira Manufacturing Division (RIL-HMD) through Parvat in Gujarat where it shall be hooked up with existing pipeline facilities installed earlier. The pipeline shall be designed to transport ~ 0.78 MMTPA of liquid ethane.

Reliance Ethane Pipeline Limited (REPL), a fully owned subsidiary of RIL proposes to build, operate and maintain the pipeline for delivering Ethane to RIL-HMD.

Overall Dahej-Parvat-Hazira pipeline system comprises of 100.4 km cross-country pipeline between RIL-DMD and RIL-HMD (New 57 km pipeline between RIL-DMD and Parvat + existing 43.4 km long interconnect pipeline between Parvat and RIL-HMD). The pipeline traverses through the state of Gujarat. The Dahej Parvat Ethane Pipeline System is for dedicated use of the manufacturing division of RIL.

The new pipeline route (DMD – Parvat section) selected after appraisal of various route options is approximately 57 km in length. Selected pipeline route map is attached vide **Appendix-1** which also include the details of the existing pipeline from Parvat to HMD.

**1.2 Feasibility Report Basis**

Following inputs formed the overall basis for performing the detailed feasibility study of the proposed pipeline:

- a) Pipeline Entry point considered as DMD, Gujarat
- b) Pipeline Exit point shall be HMD, Gujarat
- c) Liquid Ethane at the battery limit in DMD will be available at pressure of ~ 108.6 bar(g) while minimum delivery pressure at HMD battery limit shall be 55 bar(g).
- d) Liquid Ethane temperature at the entry point shall be at minimum 9 Deg. C
- e) Design Pressure of the pipeline will be 112 bar (g).

**1.3 Summary of Findings**

**Pipeline Configuration**

Considering the pressure and throughput requirements at entry point and exit point, the optimum initial pipeline configuration consists of:

- i. Pipeline of 8.625" dia x 100.4 km (57 km (New) + 43.4 km (Existing))

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**Details of pipeline and associated facilities**

The Dahej-Parvat Ethane Pipeline (DPEPL) system, shall broadly comprise of cross-country pipeline of 8.625" diameter x 100.4 km long with 8 mainline block valve (MLV) stations, Cathodic protection system, Supervisory Control and Data Acquisition (SCADA) system, dedicated optical fibre cable based telecommunication system, mobile/permanent flaring systems at MLVs, leak detection system / pipeline application software, emergency shutdown system, flow measurement and control instrumentation, fire and gas detection system, fire protection system, control and auxiliary buildings and associated facilities.

The pipeline shall be designed, constructed, tested, commissioned and operated in accordance with PNGRB T4S(PPPL)- Technical Standards and Specifications including safety standards for petroleum and petroleum product pipelines, ASME B31.4 - "Pipeline Transportation Systems for Liquids & Slurries" and OISD 214- "Cross Country LPG Pipelines".

**Construction**

Pipeline shall be buried throughout its length. Majority of the new pipeline between DMD-Parvat (~40.2 km) shall be laid within the combined existing acquired RoU. 12.2 km of pipeline shall be laid in GIDC land. Only for ~ 2.4 km, new 20-m wide Right of Use (RoU) shall be acquired under the provisions of PMP Act 1962. Necessary agreements for sharing of RoU shall be executed as per statutory requirements.

Based on the reconnaissance survey, it is assessed that pipeline can be constructed using conventional installation techniques except for crossings where specialized construction methodology viz. HDD will be required.

**Operation**

Pipeline operations centre shall be located within DMD. Environment Management Plan and Disaster Management Plan will be developed based on environment impact and risk assessment as per latest MoEF guidelines. Web based Emergency Response Support System and Facility Management System will be implemented for managing pipeline integrity and rapid response during an emergency.

**Project Schedule**

The proposed pipeline project is targeted to be completed by Dec-2025.

**Project Cost**

Preliminary cost estimated for the new pipeline section (DMD-Parvat) is approximately Rs. 216 Crore.

**Means of Finance**

The required finance will be arranged through a suitable combination of debt and equity.

**Revenue Assurance**

Pipeline being for dedicated use of RIL, REPL will enter into a long-term firm agreement with RIL to ensure adequate revenue assurance.

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**2. INTRODUCTION**

Reliance Industries Limited (RIL) has been operating its various cracker plants located in Dahej & Hazira using liquid ethane as its feedstock sourced from global markets since long based on favourable economics supporting the usage.

RIL, as part of its ongoing recent business development expansion plan, is undertaking efforts of upgrading of existing infrastructure at its cracker plant in Hazira.

Ensuring uninterrupted and safe supply of Ethane warrants laying of a dedicated pipeline connecting RIL's plant at Dahej (DMD), where imported ethane will be stored, with the gas crackers located at Hazira Manufacturing Division (HMD).

Pipelines are the most eco-friendly, safest and most efficient method of transporting hydrocarbons. All throughout the pipeline, pressure of Ethane is maintained well above its critical value so that it always remains in liquid state.

**3. SCOPE**

Broad scope of Detailed Feasibility Report encompassed the following:

- i) Firming up of basis of feasibility study, demand assessment, battery limit conditions, entry and exit locations etc.
- ii) Pipeline route study for selection of optimal route.
- iii) Techno-economic evaluation for selection of optimal pipeline configuration.
- iv) Financial evaluation of selected pipeline configuration.
- v) Project definition of selected pipeline configuration covering details of associated facilities.
- vi) Development of preliminary project implementation plan
- vii) Preparation of cost estimate and project schedule

**4. BASIS FOR FEASIBILITY STUDY**

**4.1 Codes, Standards and Regulations**

Pipeline system and facilities shall be designed, engineered and implemented in accordance with following codes, standards and regulations:

**Oil Industries Safety Directorate (OISD)**

OISD 214 : Cross Country LPG Pipelines

**American Society of Mechanical Engineers (ASME)**

ASME B 31.4 : Pipeline Transportation Systems for Liquid & Slurries

**Petroleum and Natural Gas Regulatory Board (PNGRB)**

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**PNGRB Regulations**

- PNGRB Regulation, 2010 : Authorizing Entities to Lay, Build, Operate or Expand Petroleum and Petroleum Products Pipelines
- PNGRB Regulation, 2008 : Codes of Practices for Emergency Response and Disaster Management Plan (ERDMP)
- T4S (PPL) : Technical Standards and Specifications including Safety Standards for Petroleum and Petroleum Products Pipelines
- PMP Act** : Petroleum and Mineral Pipelines (Acquisition of Right of User in Land) Act, 1962

**4.2 Liquid Ethane Supply Scenario**

**4.2.1 Liquid Ethane Source**

Liquid Ethane in cryogenic form will be sourced from various global suppliers and transported through cryogenic marine tankers by RIL. It will be offloaded at existing GCPL jetty located at Dahej and stored in RIL's cryogenic tank at DMD.

**4.2.2 Composition and Properties**

Composition (mole %) of Ethane envisaged to be imported is as under:

Liquid Ethane Composition Details	
Components	Volume in Mole (%)
Ethane	99.5
Methane	0.5

Other vital properties of Ethane are listed below:

- Critical Pressure : 48.8 bar
- Critical Temperature : 32.2 °C
- Vapour Pressure at 21° C : 38.3 bar (g)
- Viscosity at 1.013 barg and 0 °C : 0.0085 cP
- Density at 30°C and 65 barg : 290 kg/m<sup>3</sup>

**4.2.3 Design Throughput**

The pipeline shall be designed to transport 0.78 MMTPA of liquid ethane.

**4.3 Battery Limit Conditions**

Following battery limit conditions have been considered:

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**4.3.1 Source Location – D/s of Pump Station at DMD (at Pipeline Battery Limit)**

Pressure (Max) : 108.6bar (g)  
Temperature (Max) : 9 °C

**4.3.2 Delivery Location –HMD (at Pipeline Battery Limit)**

Pressure (Min) : 55 bar (g)  
Temperature (Max) : 30°C

**4.4 Entry and Exit Locations**

The Entry and Exit locations of the proposed pipeline are tabulated below (refer the pipeline schematic attached as **Appendix-2**):

Entry Point	DMD (Gujarat) of RIL
Exit Point	HMD(Gujarat) of RIL

**5. PIPELINE ROUTE**

**5.1 Route Selection Process**

Considering the pipeline entry and exit locations, pipeline route optimization study was undertaken.

The preliminary pipeline route was identified using Google Earth's satellite imagery and available Survey of India (SOI) topographical maps. Pipeline route has been optimised to maximize use of existing ROU of pipelines.

Proposed DMD – Parvat section of the 57 km long pipeline will be laid in common RoU of existing Hazira –Dahej rich and lean Gas Pipelines (HDPL) for ~ 21.5 km length, followed by existing Dahej-Nagothane Ethane Pipeline (DNEPL) for ~9.7 Km and existing Pipeline Infrastructure Limited (PIL) pipeline for a length of about 9.0 km.

For balance 2.4 Km length of the new pipeline route, 20.0 m wide RoU shall be acquired under the provisions of the PMP Act. For balance route length, pipeline shall be laid for ~ 2.2 km in DMD and ~12.2 km in GIDC.

**5.2 Selected Route**

The proposed DMD – Parvat section of the pipeline route encounters 2 Nos. major river crossings, which are tidal influenced and comes under CRZ, namely Bhukhi river (80 m), Narmada River (2,100 m). The route also crosses through 4 Nos. of locations where it encounters Social Protected Forest located besides State Highways and Irrigation canal.

Overall DMD – Parvat section of the pipeline route length is ~ 57 km.

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**Salient Features of Selected Route**

Particulars		Total
<b>A</b>	<b>Length (km)</b>	57.0
<b>B</b>	<b>Terrain (km)</b>	
	1 Flat	56.0
	2 Undulating	0.0
	3 Hilly area	0.0
	4 Marshy / Wet Land	1.0
	Total	57.0
<b>C</b>	<b>Soil Strata (km)</b>	
	1 Normal	57.0
	2 Rocky	0.0
	Total	57.0
<b>D</b>	<b>Land Use (km)</b>	
	1 RIL DMD	2.2
	2 Dahej GIDC	12.2
	3 Cross-Country (New RoU)	2.4
	4 Cross-Country (Existing RoU)	40.2
	Total	57.0
<b>E</b>	<b>Major Crossings (Nos)</b>	
	1 National Highway	1
	2 State Highway	3
	3 Other Roads	19
	4 Railway	0
	5 Major River	2
	6 Major Canal	28
	7 Major Drains	28
	8 Foreign Pipeline	192
	Total	273
<b>F</b>	<b>HDD Crossings (M)</b>	
	1 HDD (Rock)	-
	2 HDD (Soil)	5600
<b>G</b>	<b>CRZ Crossings (Nos)</b>	
	1 CRZ Crossings	2
<b>H</b>	<b>Forest Details</b>	
	1 Crossing Locations (Nos)	4
<b>I</b>	<b>Eco-Sensitive Area/ Sanctuary/National Parks</b>	
	1 Details	Nil
<b>J</b>	<b>Revenue Details (Nos)</b>	
	1 State	1
	2 District	1
	3 Tahesil	3

**6. TECHNO-ECONOMIC ANALYSIS**

Following pipeline configurations were evaluated for Dahej-Parvat section in combination with 8.625" OD for existing Parvat-Hazira section:

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- i) 6.625" OD uniform diameter
- ii) 8.625" OD uniform diameter
- iii) 10.75" OD uniform diameter

### **6.1 Screening Parameters**

Following screening parameters were evaluated for shortlisting the configurations:

- i) Design throughput volume is met.
- ii) Inlet and Outlet battery limit conditions are met.
- iii) Liquid Ethane pressure is maintained well above the critical pressure all along the pipeline.
- iv) All parameters viz. velocity etc. as per PNGRB regulations are within the prescribed limits.

### **6.2 Estimated Costs**

#### **6.2.1 CAPEX**

All basic costs were based on in-house database, industry benchmarks and budgetary offers. Estimated cost computed was also updated factoring in relevant economic indices.

The overall cost estimation consists of the following cost heads viz. Plant and Machinery, Engineering, Site Related, Owner's Costs, Start-up, Statutory payments, taxes and duties, Contingency, Pre-operative, Interest During Construction and Financing Charges.

#### **6.2.2 OPEX**

Operating costs covering the salaries and wages, periodic repair and maintenance, utilities cost (power, water etc.), consumables, office and other administrative overheads, statutory fees, insurance, IT and communication etc., has been considered on factor basis, based on industry benchmark and in-house cost database. Fuel costs have been considered.

#### **6.2.3 Exclusions**

Following costs have been excluded while working out the overall project cost estimation.

- i) Currency Fluctuations
- ii) Inflation during Construction

### **6.3 Selection of Optimal Pipeline Configuration**

Relative life cycle cost of each shortlisted pipeline configuration was worked out considering corresponding Parametric Capex and Opex over the economic life of the pipeline using discounted cash flow technique. Pipeline configuration with least Parametric LCC was selected as optimal for the project.

## **7. SELECTED PIPELINE SYSTEM**

Pipeline system configuration having line size of 8.625" dia x 100.4 (57 km (New) + 43.4 km (Existing)) km has been selected as the optimal system for the Dahej-Parvat-Hazira Pipeline.

### **7.1 Salient Features of Selected Pipeline Configuration**

Salient details of the selected pipeline configuration are as under:

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Dahej-Parvat-Hazira Ethane Pipeline Project – Salient Details		
Description	UoM	Details
Design Throughput	MMTPA	~ 0.78
Pipeline Design Life (for Economic Evaluation)	Years	25
Design Pressure	bar(g)	112
Max Pressure at the Pipeline Inlet Battery Limit at DMD	bar(g)	108.6
Max Temperature at the Pipeline Inlet Battery Limit at DMD	°C	9
Min Delivery Pressure at HMD	bar(g)	55
Delivery Temperature at HMD	°C	30
Type of External Anti-corrosion Coating	-	Three-layer polyethylene (3-LPE)
Pipeline Design Code	-	ASME B31.4, OISD-214 & PNGRB T4S (PPPL)
Entry Point Location	-	DMD, Gujarat
Exit (Delivery) Point Location	-	HMD, Gujarat
Mainline Valve Stations (MLVs)	No.	08

## 8. PROJECT DEFINITION

For an overall pipeline system, refer to the Pipeline Schematic Arrangement attached as **Appendix-2**. Details are presented below:

### 8.1 Pipeline

#### 8.1.1 Line Pipe Material

Pipeline and its appurtenances shall be of carbon steel. Line pipe conforming to API 5L Gr X65, PSL2 shall be used.

The process of manufacture of line pipe shall be High Frequency Electric Welded (EW) type.

#### 8.1.2 Line Pipe Wall Thickness

Line pipe wall thickness corresponding to location class-3 has been considered. Accordingly, thickness of 7.4 mm has been selected.

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**8.1.3 Valves**

Valves shall be in accordance with API 6D and other design code requirement based on class locations for the purpose of isolation during emergency and routine maintenance.

**8.1.4 Corrosion Protection**

Line pipe used in the buried portion of the pipeline shall be provided with factory applied 3-layer polyethylene coating conforming to DIN 30670 as primary external corrosion protection measure.

Secondary external corrosion protection shall be by Cathodic Protection (CP). Sacrificial anode based temporary CP shall be provided during construction. After completion of construction, pipeline shall be cathodically protected by a permanent Impressed Current Cathodic Protection (ICCP) System.

**8.1.5 Pigging Facilities**

Pigging facilities suitable for regular maintenance pigging as well as intelligent pigging shall be provided.

**8.1.6 Pipeline Right-of-Use**

For construction and maintenance of pipeline, new RoU of 20 -m width for ~ 2.4 km length shall be acquired along the pipeline while existing available RoU of pipelines shall be utilized for laying pipeline in the common corridor, where applicable. Minimum depth of cover of pipeline shall be 1.2 mtr all along the pipeline.

**8.1.7 Pipeline Construction**

Pipeline construction shall be done using conventional method. At crossing locations, the pipeline construction will be done using specialized techniques.

**8.2 Station facilities**

Broad list of associated facilities (New & Existing) is as below:

**8.2.1 Dahej-Parvat Section (New)**

**8.2.1.1. Scraper Launcher at DMD(Co-located)**

- a) Scraper Launcher with by-pass and blowdown
- b) SCADA and Telecom (Existing)
- c) Cathodic Protection System
- d) Leak Detection System (Existing)
- e) Flaring System (Existing)
- f) Control Building (Existing)

**8.2.1.2.) Facilities at Mainline Valve Stations (Co-located) (5 No).**

Broad list of facilities at MLV station is given below:

- a) Mainline valve with bye-pass & blowdown
- b) SCADA & Telecom

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- c) Mobile Flaring (Existing)
- d) Equipment Shed (Existing)
- e) CP System (Existing)

**8.2.1.3. Scraper Receiver (Co-located with MLV-05@Parvat)**

- a) Scraper Receiver
- b) SCADA & Telecom
- c) Mobile Flaring (Existing)
- d) Control Building (Existing)
- e) CP System (Existing)

**8.2.2 Parvat-HMD section (Existing)**

**8.2.2.1. Scraper Launcher (Co-located with MLV-05 @Parvat)**

- a) Scraper Launcher
- b) SCADA & Telecom
- c) Mobile Flaring
- d) Control Building
- e) CP System

**8.2.2.2. Facilities at Mainline Valve Stations, (3 No.)**

- a) Mainline valve with bye-pass & blowdown
- b) SCADA & Telecom
- c) Mobile Flaring
- d) Equipment Shed
- e) CP System

**8.2.2.3. Metering & Regulating Station at HMD**

- a) Scraper Receiver with by-pass and flare hook-up
- b) Filters, Metering & Regulating
- c) SCADA & Telecom
- d) Lead Detection System
- e) Control Building
- f) CP System

**9. PROJECT IMPLEMENTATION PLAN**

**9.1 Pre-project Development**

**9.1.1 Survey**

Detailed route survey, including additional surveys and investigations required for the design of crossing river, road and railway etc., have been completed.

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**9.1.2 RoU Acquisition**

A 20-m wide Right of User (RoU) shall be acquired under the provisions of Petroleum and Minerals Pipelines (Acquisition of Right of User in Land) Act, 1962 for ~ 2.4 km route length. Existing RoU vested with DNEPL, HDPL and PIL shall be shared, after entering into appropriate agreements with the entities having the RoU vested in.

**9.1.3 Land Purchase**

Sufficient land for setting up of Mainline Valve Stations is available at respective locations. No new land parcel purchase is envisaged.

**9.1.4 Statutory Approvals**

Necessary statutory clearances and approvals, as broadly listed below, shall also be obtained:

**9.1.4.1. Consent for Establishment under Air and Water Acts**

Consent for Establishment under Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of pollution) Act, 1974 shall be obtained from the State Pollution Control Boards.

**9.1.4.2. Protected Forest along Road RoW**

Permission to lay pipeline in protected forest within road ROW corridor will be obtained as per Indian Forest (Conservation) Act, 1980.

**9.1.4.3. CRZ Clearance**

Requisite clearance shall be obtained in accordance with Coastal Regulatory Zone Notification, 2011 from the Ministry of Environment and Forests (MoEF) since pipeline will be passing through CRZ area.

**9.1.4.4. Other Permissions**

Permissions, as applicable, from relevant authorities viz. road, rail, water body, foreign pipelines/utilities crossings, PESO, etc. shall be obtained.

**9.2 Engineering**

Engineering of the project will be undertaken through a reputed and experienced Engineering Consultant experienced.

**9.3 Procurement/Contracting, Construction and Project Management**

Procurement/Contracting, Construction and Project Management plan encompassing all activities required for the project shall be developed and implemented leveraging the RIL's in-house capabilities.

Project Management and Control teams shall be formed, which shall have the overall responsibility of delivery of project in accordance with schedule and required quality.

**9.4 Project Implementation Schedule**

Project schedule is attached as **Appendix-3**.

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**9.5 Health, Safety and Environment**

A detailed Health, Safety and Environment management plan shall be prepared and adopted for the project.

Risk Analysis for the pipeline shall be undertaken. Based on the outcome of Risk Analysis, appropriate mitigation measures shall be adopted.

**10. COST ESTIMATE OF SELECTED PIPELINE CONFIGURATION**

Total Project capital cost of the selected pipeline configuration (DMD-Parvat (New)) is estimated at Rs. 216 Crore.

The costs have been estimated based on in house data, past experience of executing similar cross-country pipeline and budgetary quotations etc.

**Means of Finance**

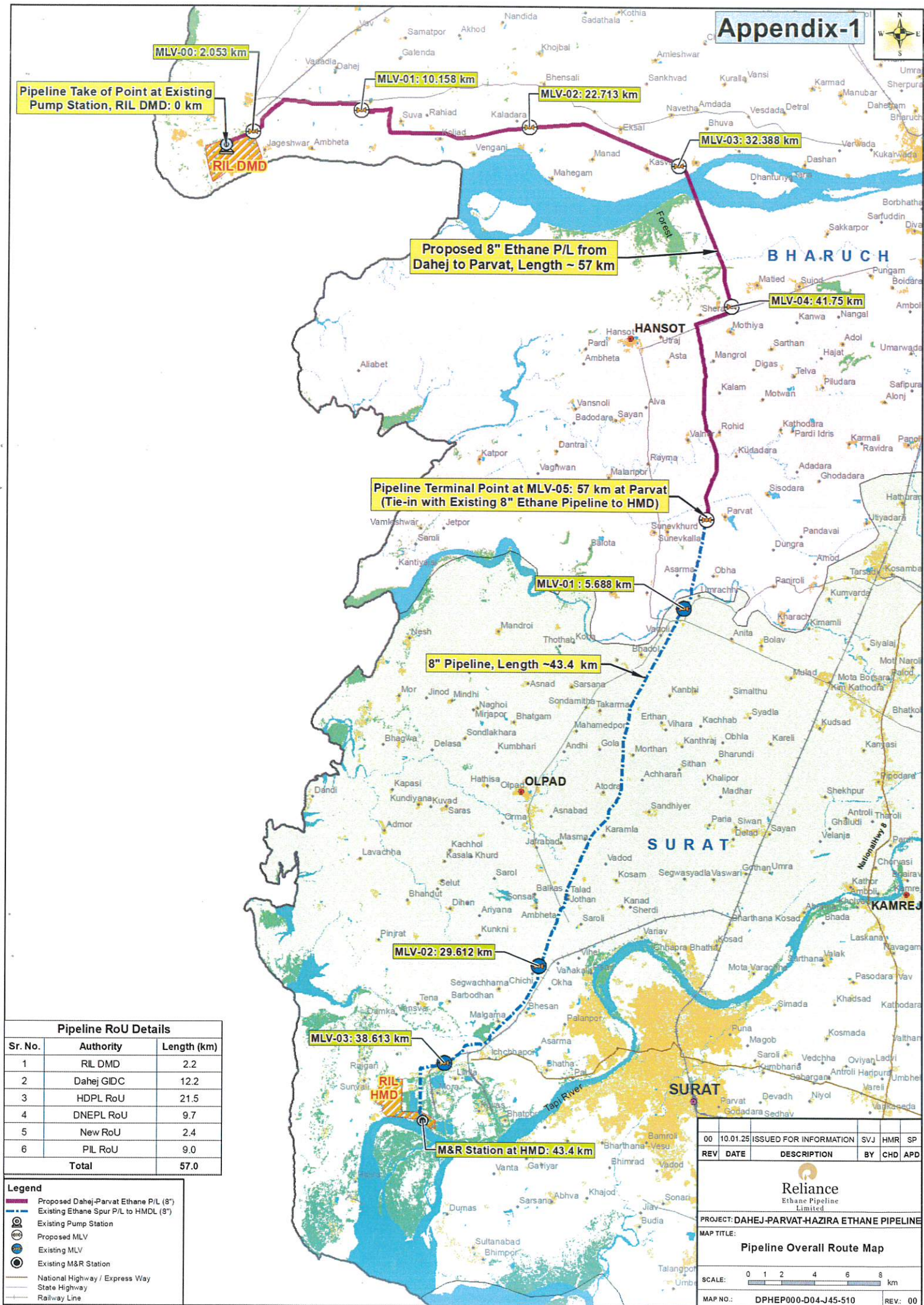
The required finance will be arranged through a suitable combination of debt and equity.

**Revenue Assurance**

Pipeline being for dedicated use of RIL, REPL will enter into a long-term firm agreement with RIL to ensure adequate revenue assurance.

**11. CONCLUSION AND RECOMMENDATIONS**

- i) Pipeline system configuration pipeline of 8.625" dia x 57 km has been recommended to be adopted as the selected configuration for the Dahej-Parvat section and use of the existing 8.625" x 43.4 km Parvat – HMD section for transportation of liquid ethane from Dahej to HMD.
- ii) DPHEPL project, based on Detailed Feasibility Study, as entailed above, has been assessed feasible to be executed within scheduled cost and times lines.



Pipeline Take of Point at Existing Pump Station, RIL DMD: 0 km

Proposed 8" Ethane P/L from Dahej to Parvat, Length ~ 57 km

Pipeline Terminal Point at MLV-05: 57 km at Parvat (Tie-in with Existing 8" Ethane Pipeline to HMD)

8" Pipeline, Length ~43.4 km

M&R Station at HMD: 43.4 km

Pipeline RoU Details

Sr. No.	Authority	Length (km)
1	RIL DMD	2.2
2	Dahej GIDC	12.2
3	HDPL RoU	21.5
4	DNEPL RoU	9.7
5	New RoU	2.4
6	PIL RoU	9.0
<b>Total</b>		<b>57.0</b>

Legend

- Proposed Dahej-Parvat Ethane P/L (8")
- - - Existing Ethane Spur P/L to HMDL (8")
- Existing Pump Station
- Proposed MLV
- Existing MLV
- Existing M&R Station
- National Highway / Express Way
- State Highway
- Railway Line

00	10.01.25	ISSUED FOR INFORMATION	SVJ	HMR	SP
REV	DATE	DESCRIPTION	BY	CHKD	APD

**Reliance**  
Ethane Pipeline Limited

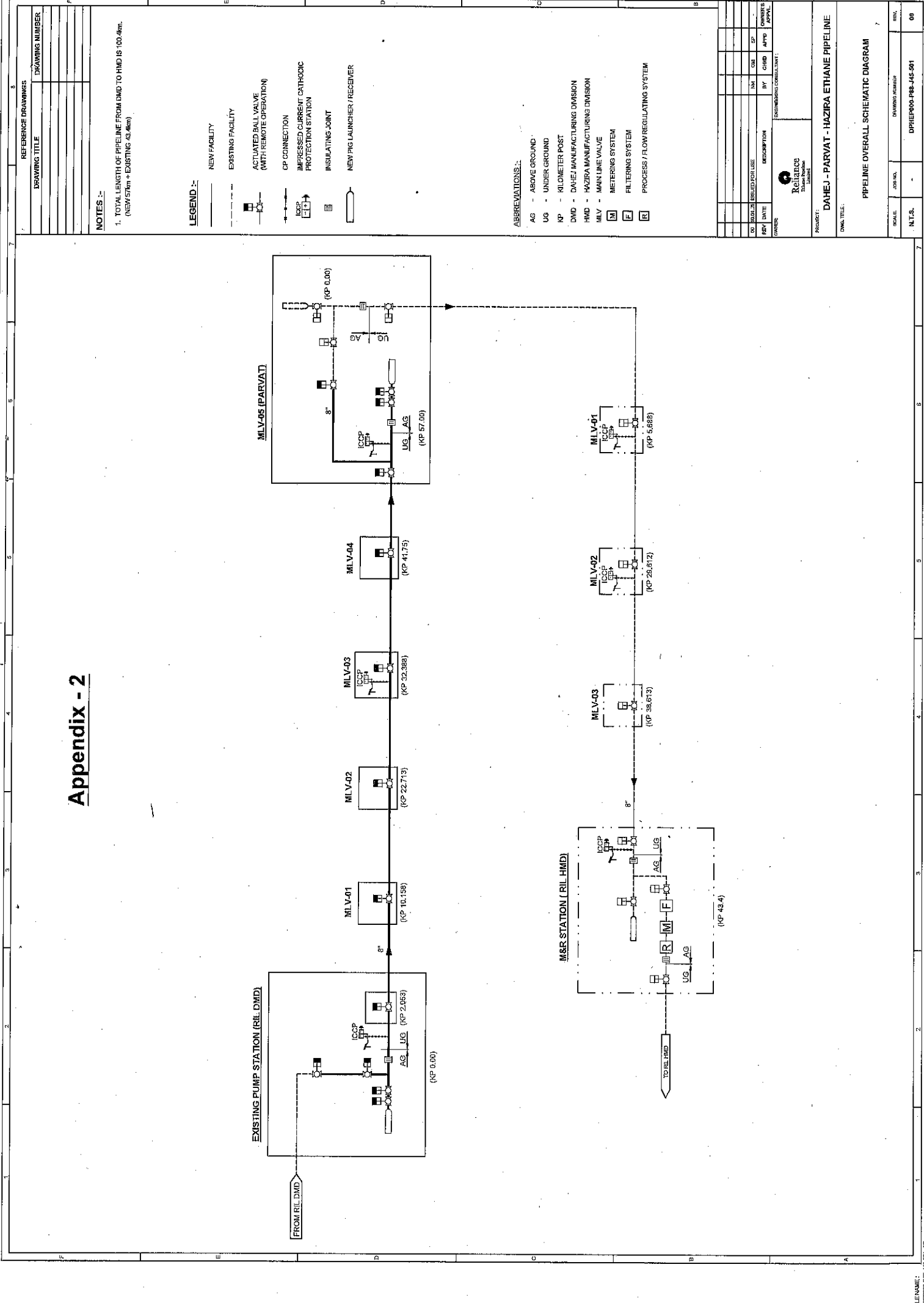
PROJECT: DAHEJ-PARVAT-HAZIRA ETHANE PIPELINE

MAP TITLE: Pipeline Overall Route Map

SCALE: 0 1 2 4 6 8 km

MAP NO.: DPHEP000-D04-J45-510      REV: 00

# Appendix - 2



**NOTES :-**

1. TOTAL LENGTH OF PIPELINE FROM DMD TO HMD IS 100.4km.  
(NEW 57km + EXISTING 43.4km)

**LEGEND :-**

- NEW FACILITY
- EXISTING FACILITY
- ACTUATED BALL VALVE (WITH REMOTE OPERATION)
- CP CONNECTION
- IMPRESSED CURRENT CATHODIC PROTECTION STATION
- INSULATING JOINT
- NEW FIG LAUNCHER / RECEIVER

**ABBREVIATIONS :-**

- AG - ABOVE GROUND
- UG - UNDER GROUND
- KP - KILOMETER POST
- DMD - DAHEJ MANUFACTURING DIVISION
- HMD - HAZIRA MANUFACTURING DIVISION
- MLV - MAIN LINE VALVE
- M - METERING SYSTEM
- F - FILTERING SYSTEM
- R - PROCESS / FLOW REGULATING SYSTEM

REFERENCE DRAWINGS	DRAWING NUMBER

NO.	REV.	DATE	BY	CHKD	APPR	APPROVAL

ENGINEERING CONSULTANT	
PROJECT:	
DAHEJ - PARVAT - HAZIRA ETHANE PIPELINE	
Dwg. TITLE:	
PIPELINE OVERALL SCHEMATIC DIAGRAM	
SCALE:	JOB NO.
N.T.S.	DRAWING NUMBER
	DPRIE000-P88-146-501
	REV.
	00

