Initial Environmental Examination

June 2017

IND: Green Energy Corridor and Grid Strengthening Project

(320 kV VSC-HVDC power transmission lines between Pugalur, Tamil Nadu and North Trichur, Kerala)

Annexures 9-10

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ANNEXURE - 9 ESTIMATED BUDGET

Budget Estimate

Total line length (Overhead Portion) - 127.4 km
Total line length (Underground Portion) - 26.5 km

A. Compensation

- 1 Forest Involvement (5 km in UG portion with RoW @ 4 meter) 2.0 ha.
 - Forest compensation Rs. 20.00 lakhs

2. Crop & Trees

- Line length in Private /Revenue land 127.4 km.
- Crop/tree compensation (@Rs.5 lakhs/km) Rs. 637.00 lakhs
- 3. Land Compensation for Tower Base & RoW corridor 153.9 km
 (Considering line corridor as 'mostly agricultural land in rural Rs 4228.00 lakhs setting' with compensation @ 15 lakhs/acre)
 - Sub Total A 1+2+3 Rs. 4885.00 lakhs

B. Implementation Monitoring & Audit

 i) Man-power involved for EMP implementation & Monitoring in entire route of Transmission lines (Rs.10,000/-x 153.9 km)

- Rs. 15.39 lakhs

ii) Independent Audit (LS) if needed

- Rs. 10.00 lakhs

Sub Total B-

Rs. 25.39 lakhs

GrandTotal (A+B)

= Rs. 4910.39 lakhs

EXHIBIT - 1

SCHEMATIC MAP SHOWING PROPOSED SUBPROJECTS

EXHIBIT -1

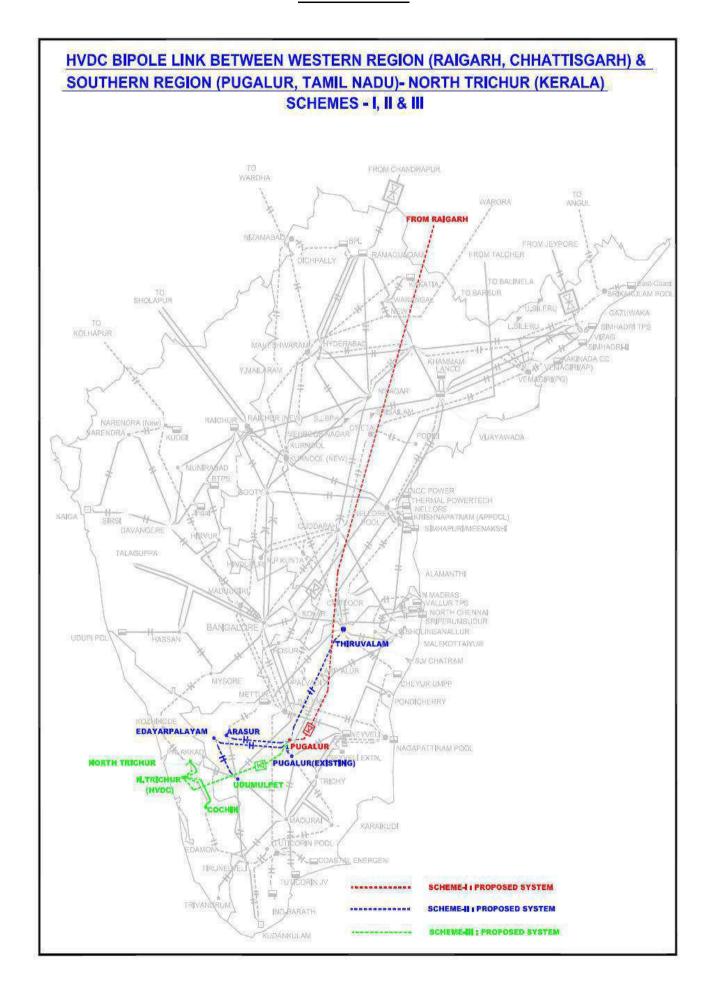


EXHIBIT - 2

ORGANISATIONAL SUPPORT STRUCTURE FOR EMP & ESPP IMPLEMENTATION

ORGANISATIONAL SUPPORT STRUCTURE FOR ESPP IMPLEMENTATION & MONITORING

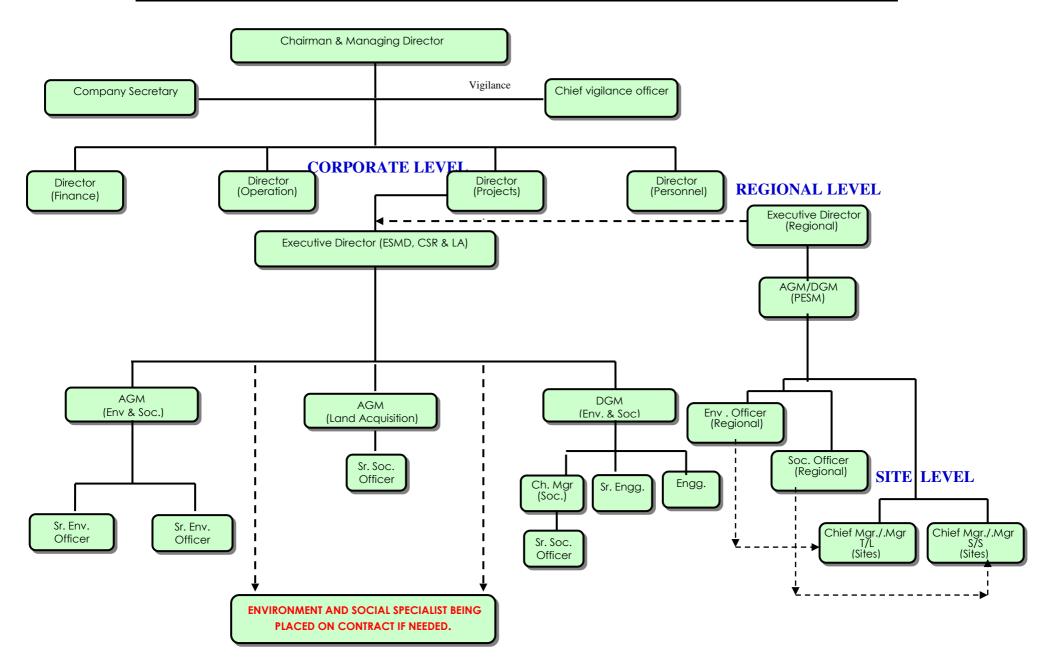
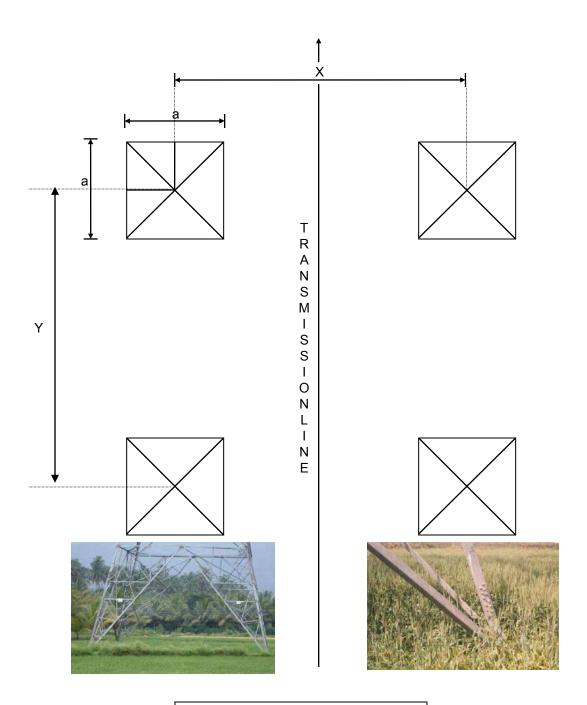


FIGURE - 1

TYPICAL PLAN OF TRANS. LINE TOWER FOOTINGS SHOWING ACTUAL GROUND POSITION AND EXTENT OF IMPACT

TYPICAL PLAN OF TRANSMISSION LINE TOWER FOOTINGS SHOWING ACTUAL GOUND POSITION AND EXTENT OF IMPACT



ACTUAL POSITION ON GROUND

INDICATIVE MEASURES

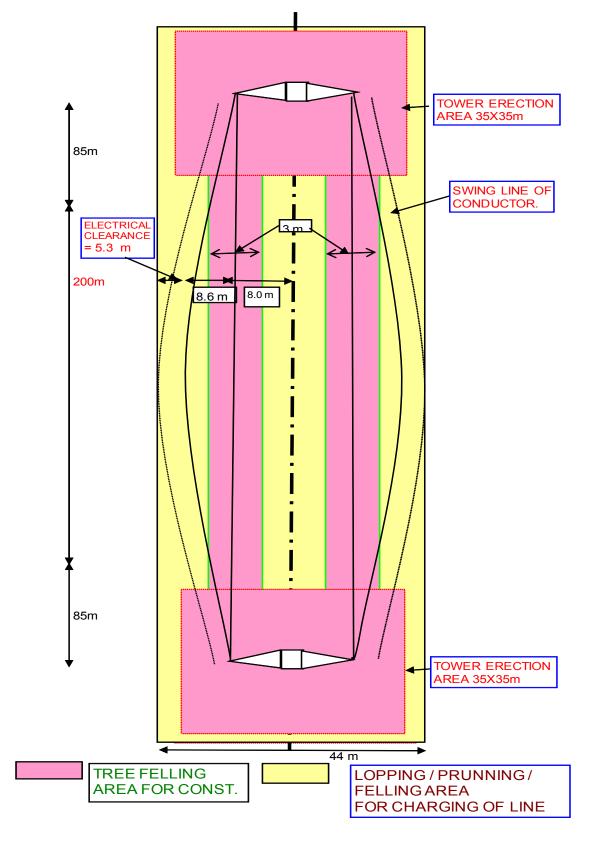
X & Y = 10-15 METERS
a = 300-450 mm

FIGURE - 1 a

SCHEMATIC DIAGRAM INDICATING AREA OF INFLUENCE/IMPACT OF ±320 KV TRANSMISSION LINE

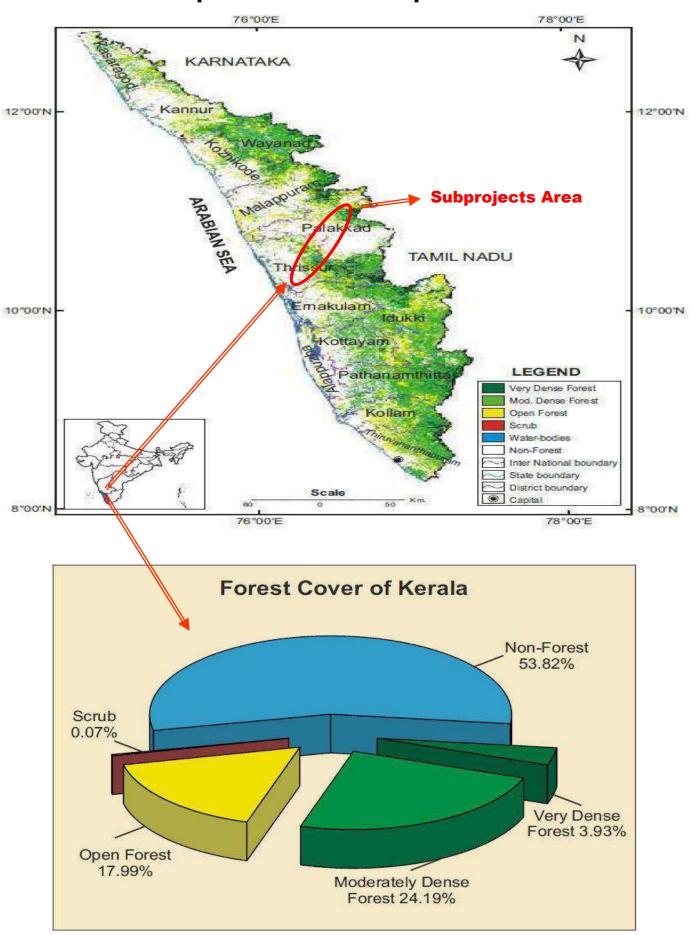
Fig.-1a

TREE FELLING AREA FOR ±320 KV TRANS. LINE



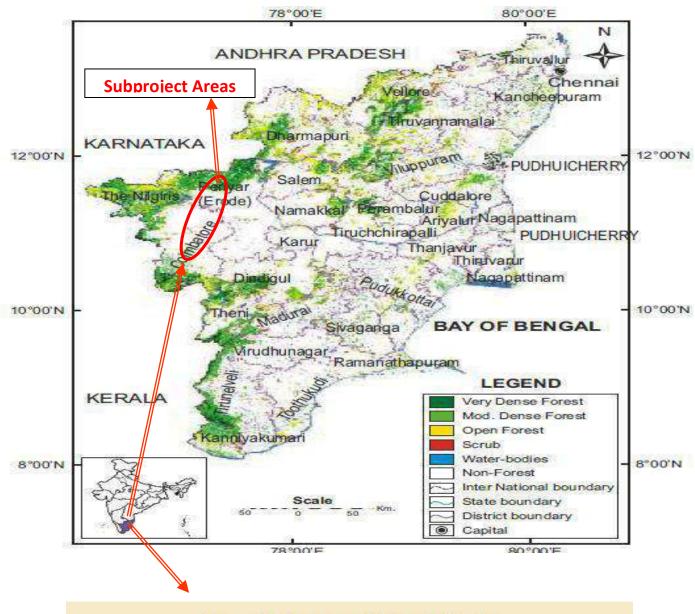
MAP - 1 FOREST COVER MAP OF KERALA

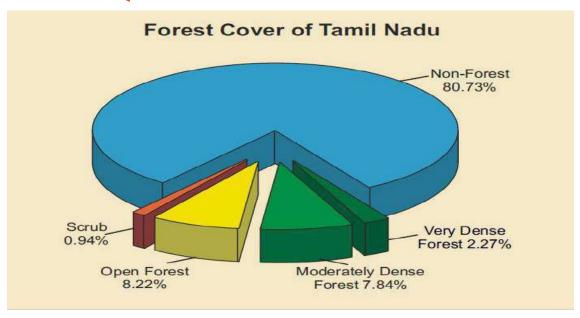
Map-1: Forest Cover Map of Kerala



MAP - 2 FOREST COVER MAP OF TAMIL NADU

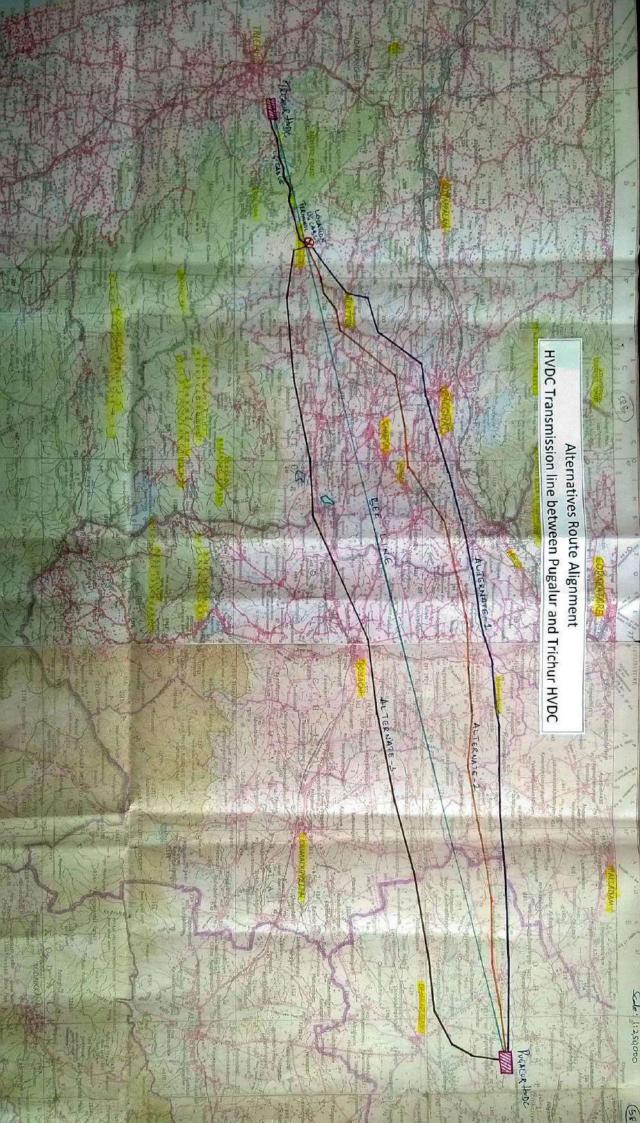
Map-2: Forest Cover Map of Tamil Nadu





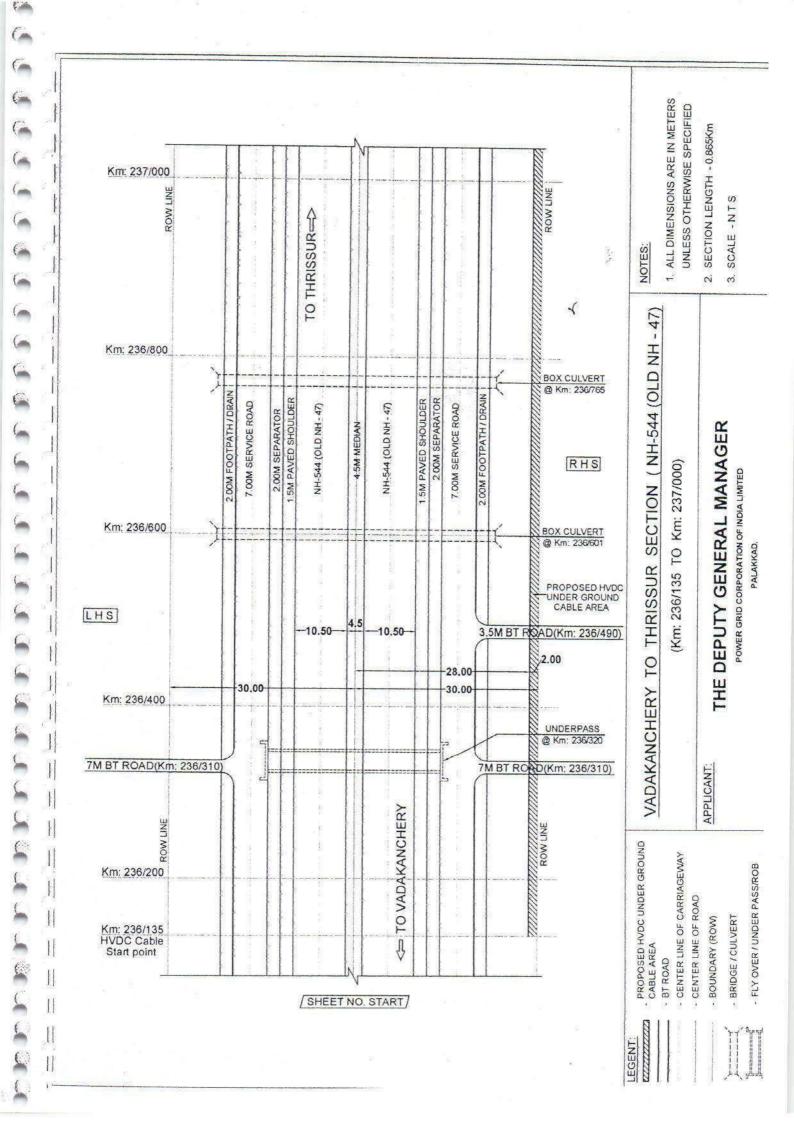
MAP - 3

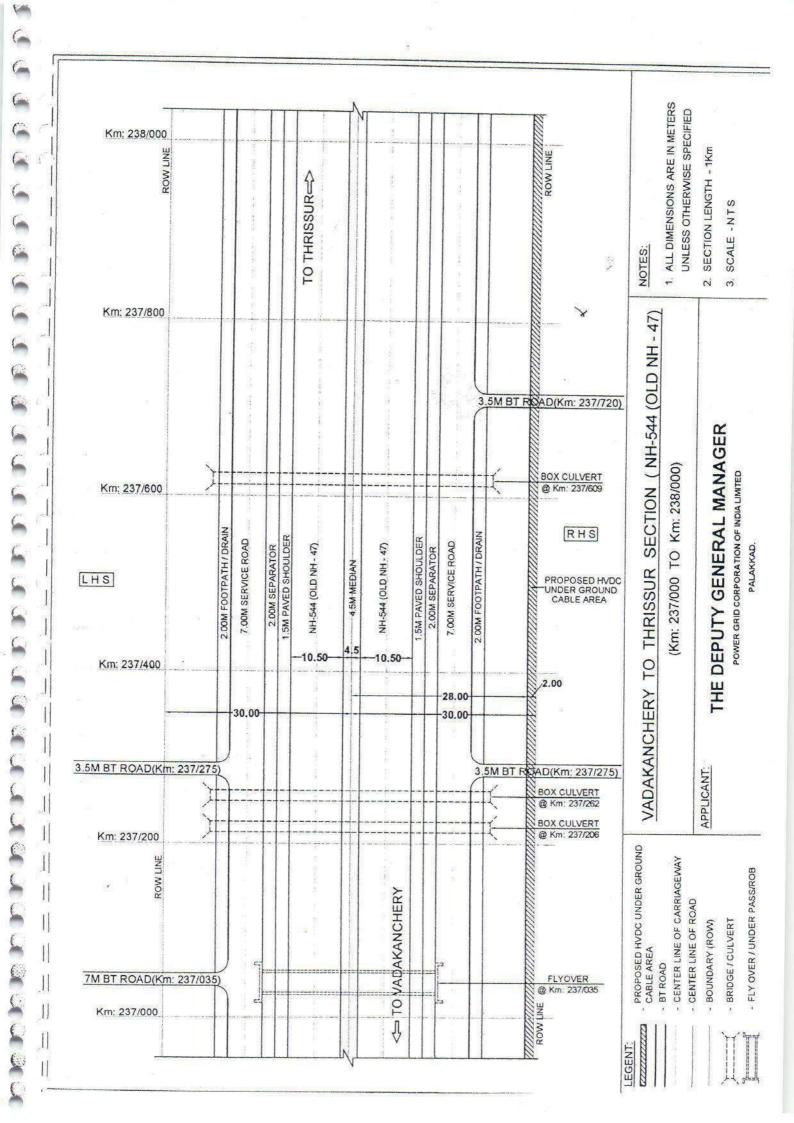
ALTERNATIVES ROUTE ALIGNMENT OF ±320 KV HVDC BIPOLE LINK BETWEEN NORTH THRISSUR AND PUGALUR

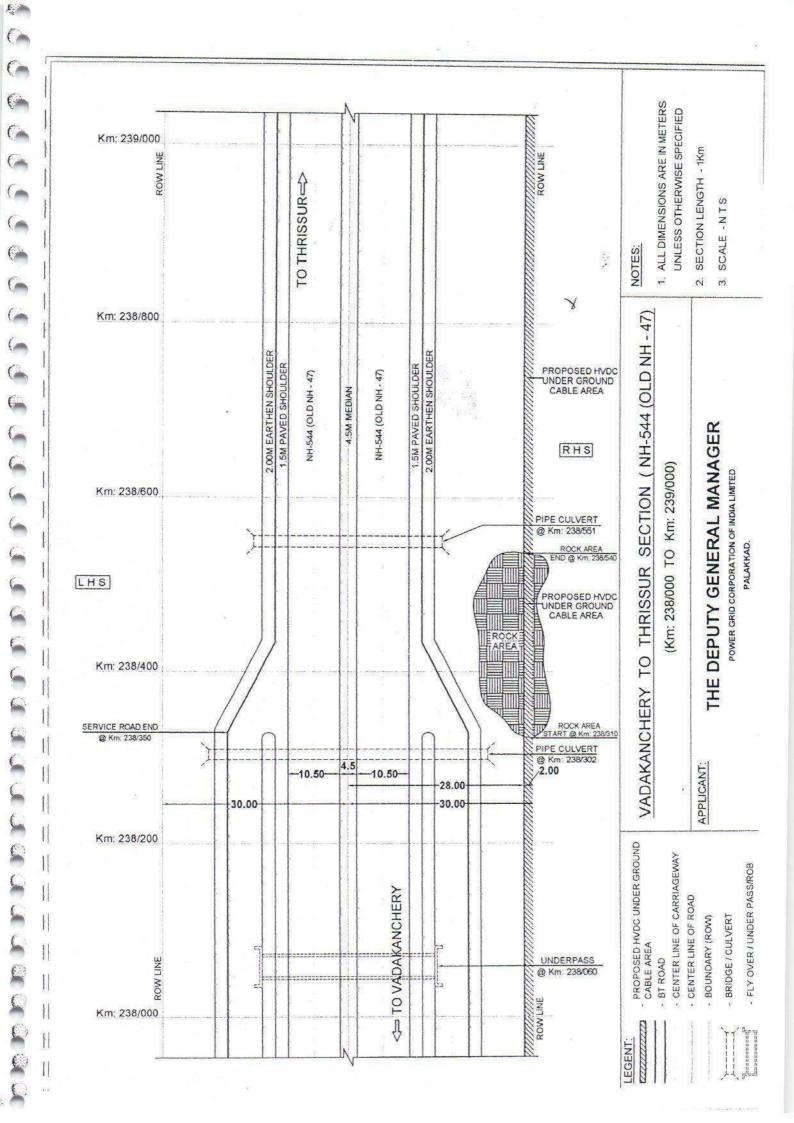


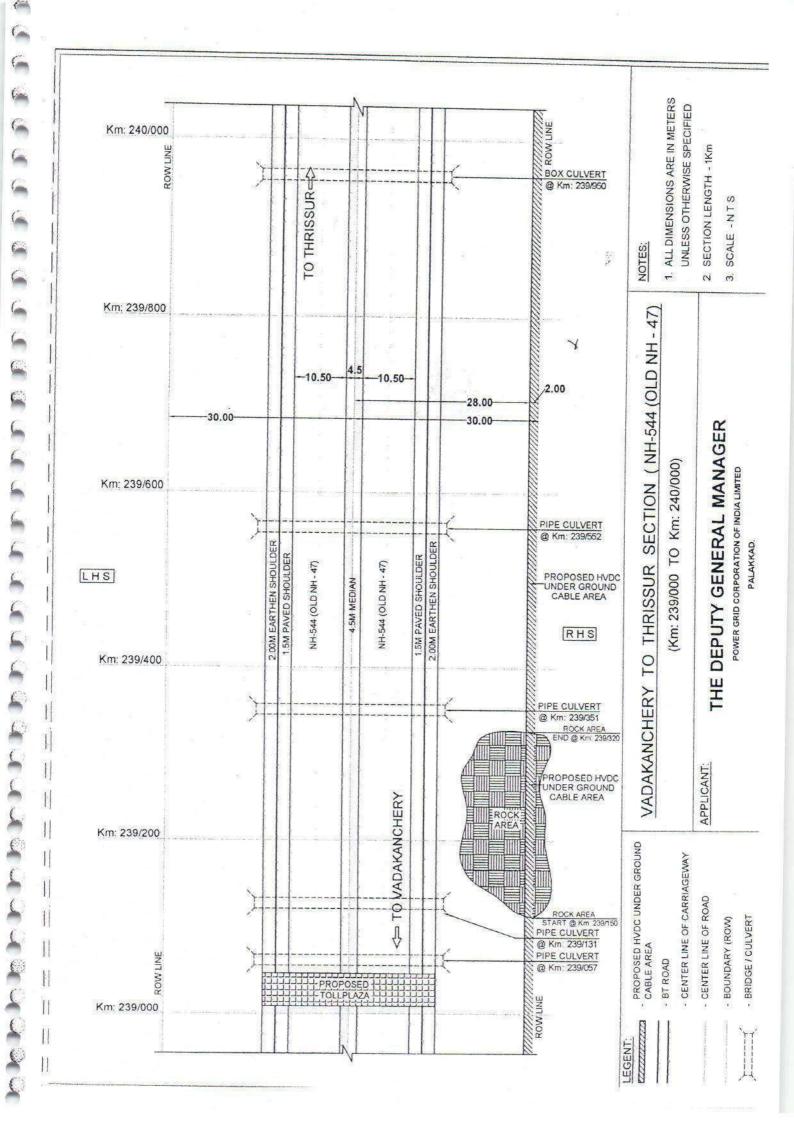
MAP - 4

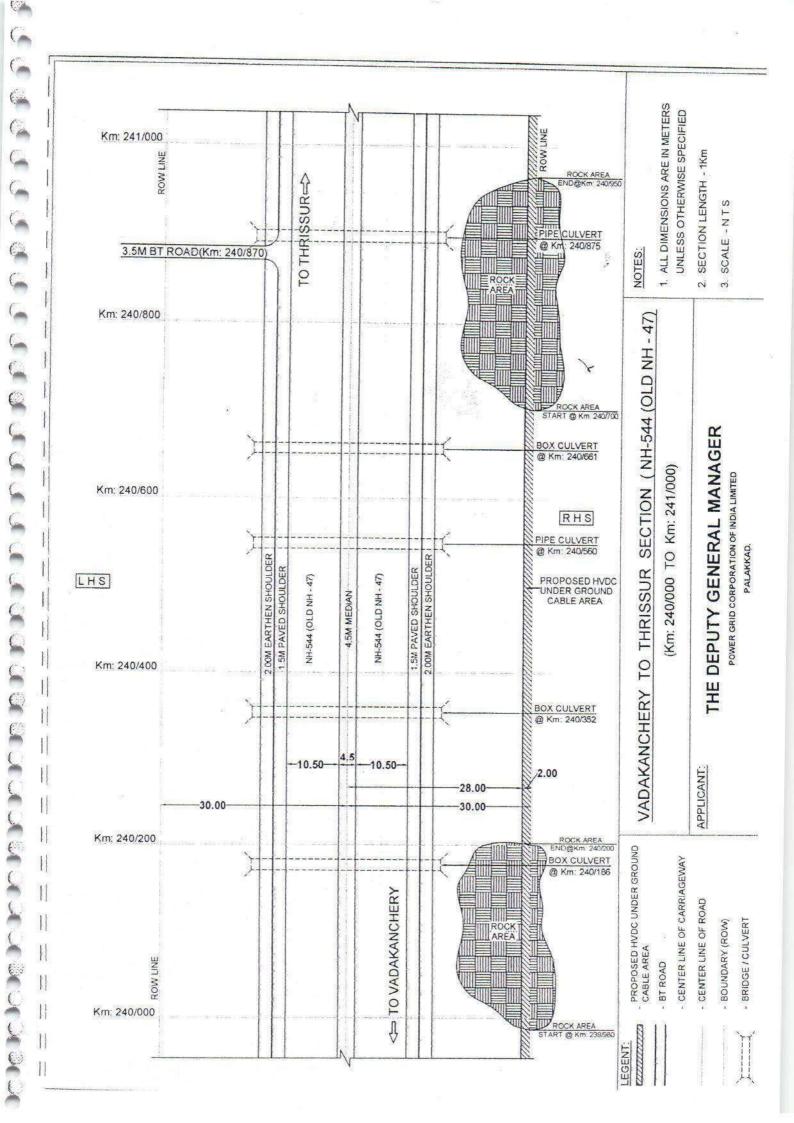
SECTION WISE DRAWING OF PROPOSED UNDERGROUND CABLE ROUTE

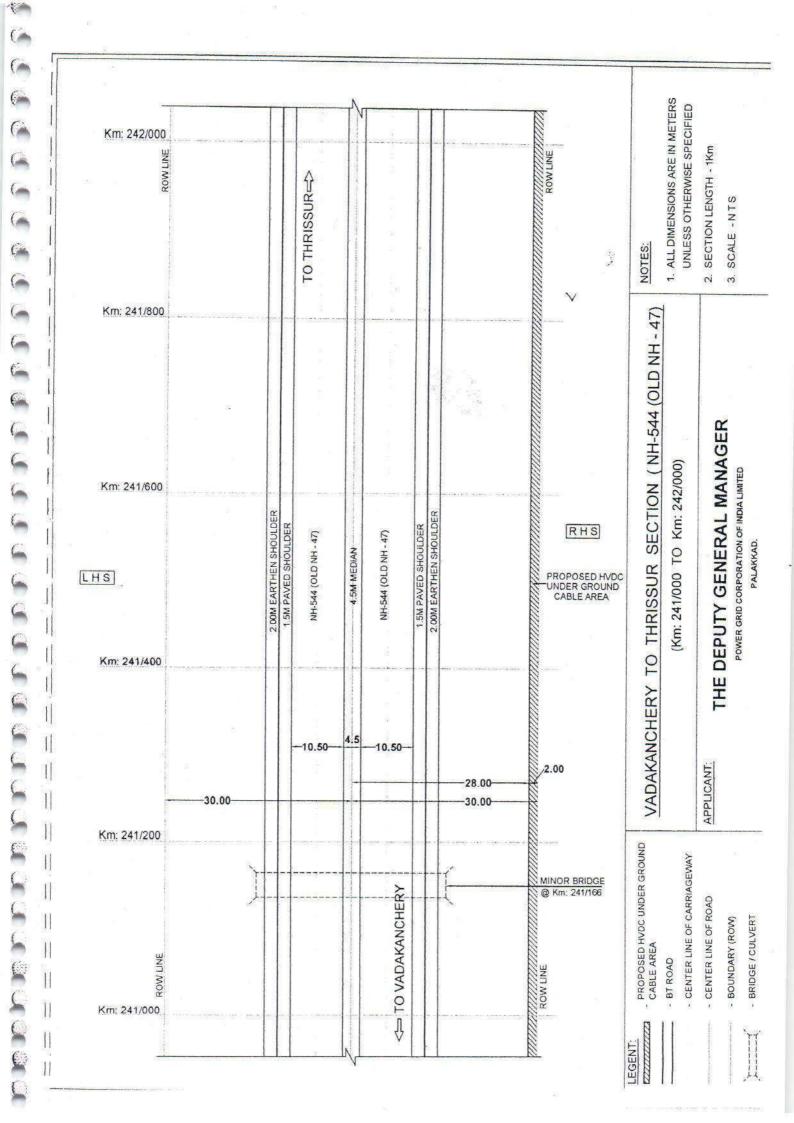


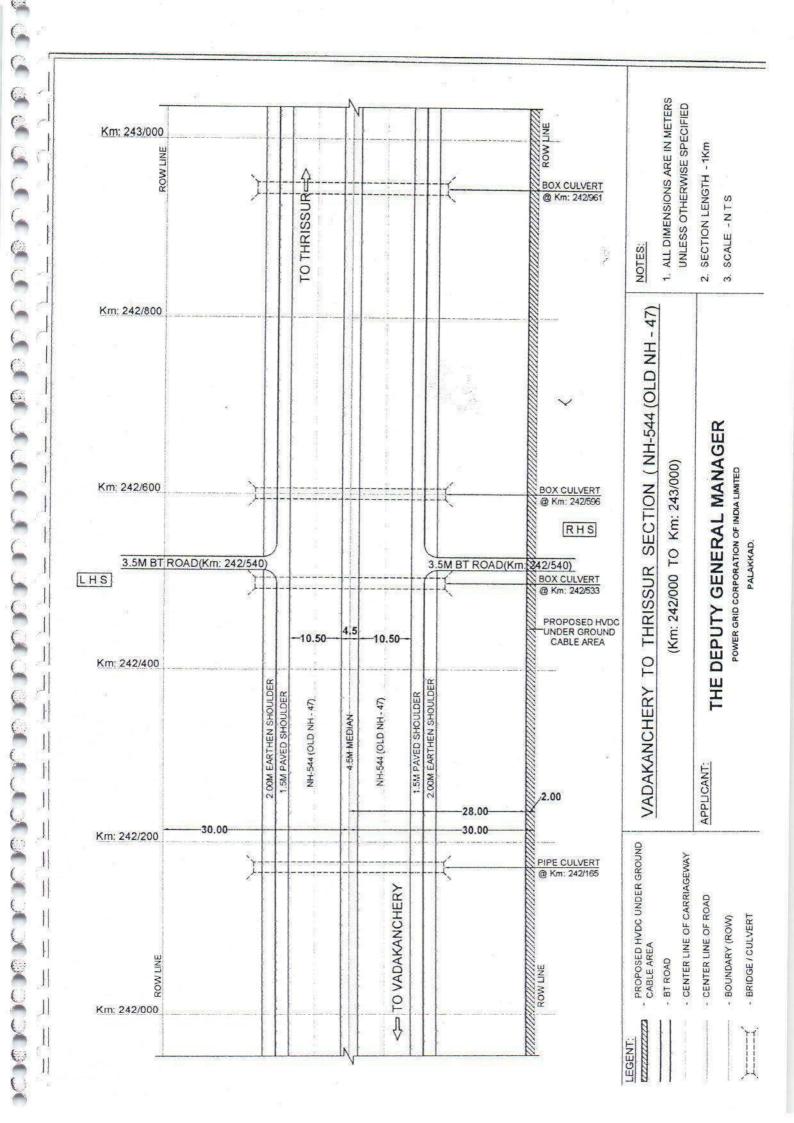


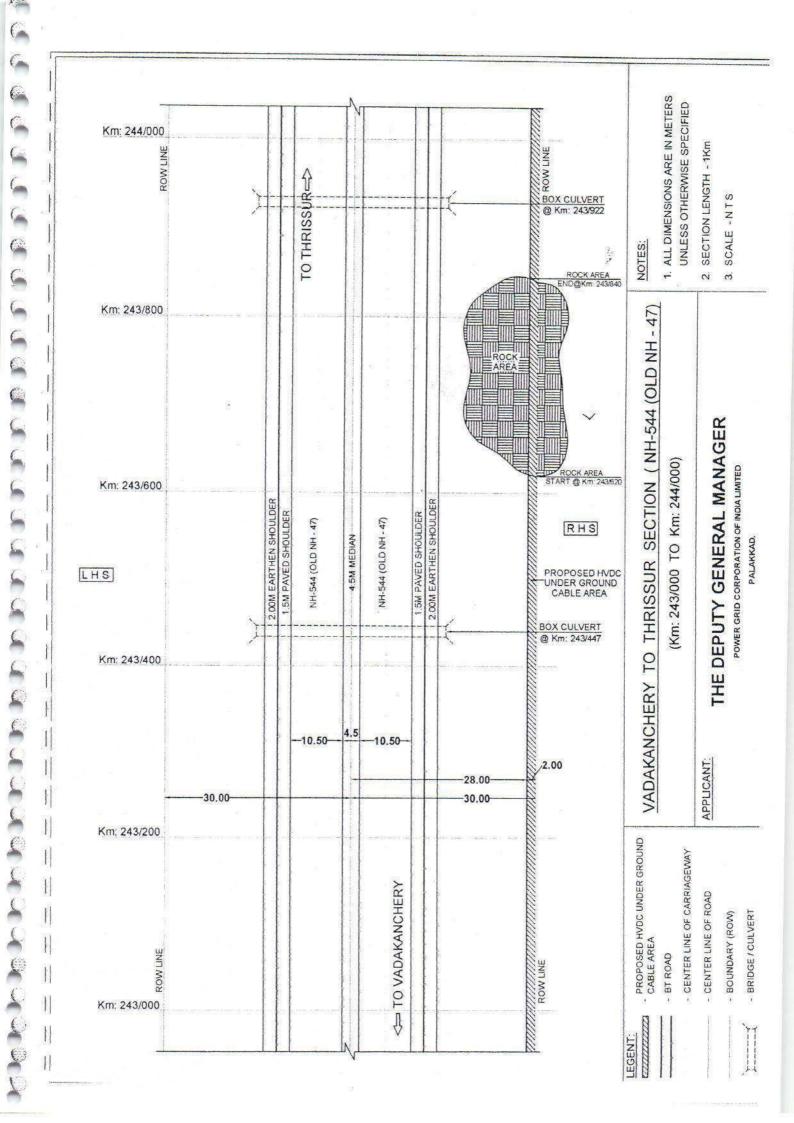


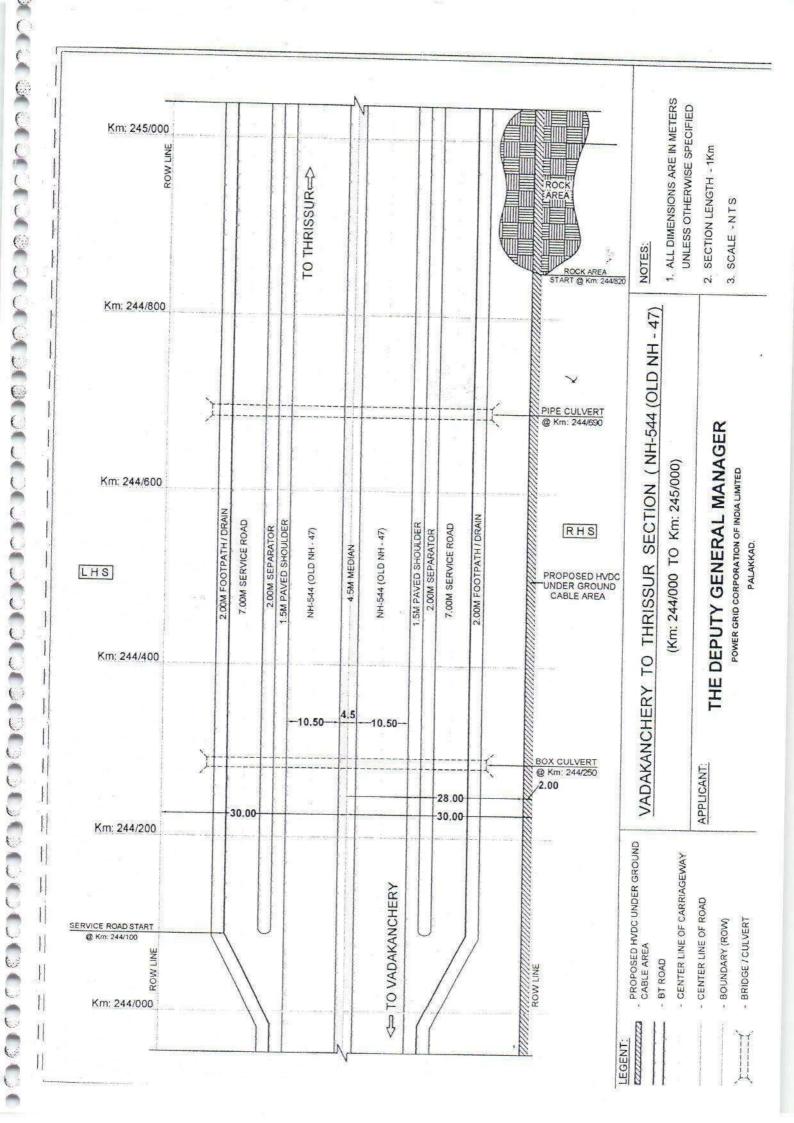


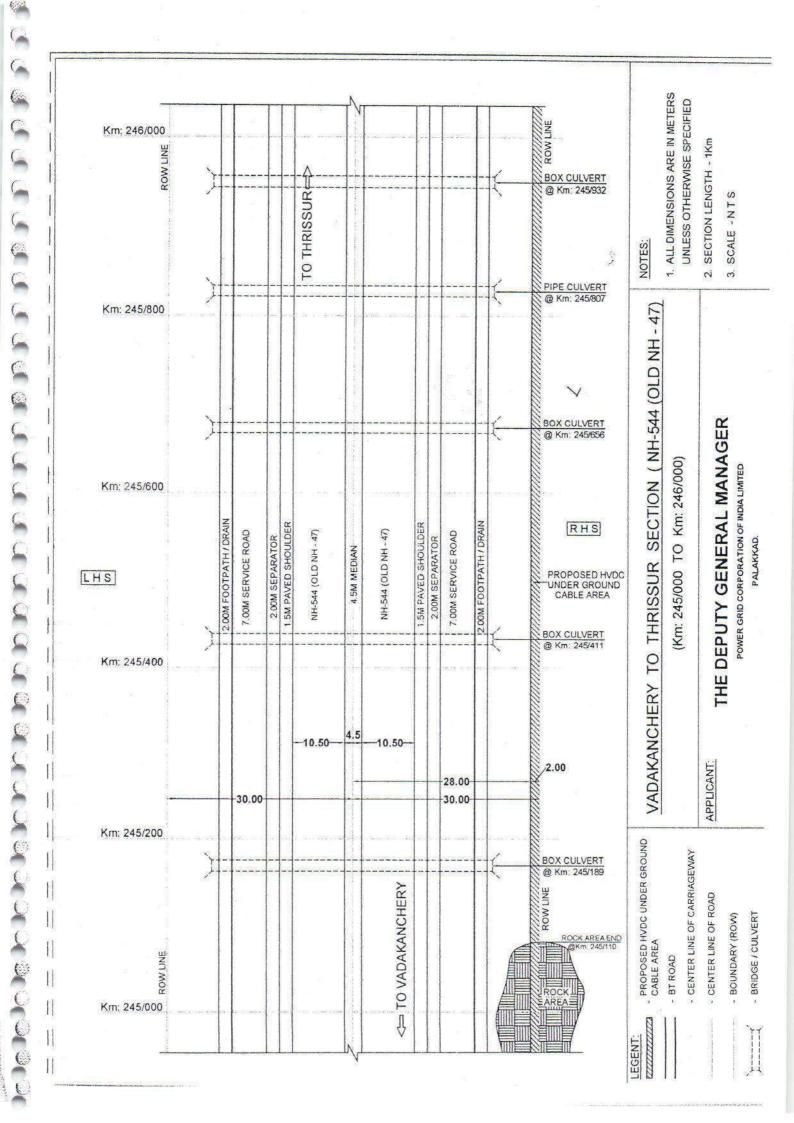


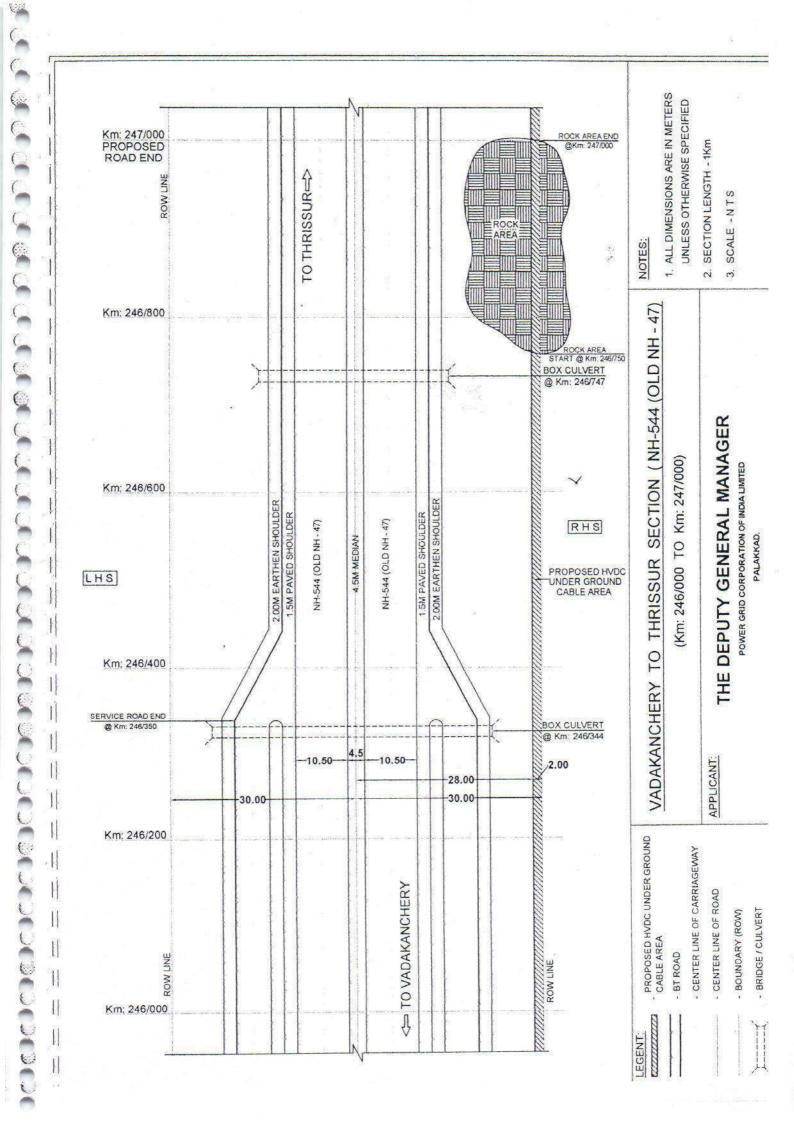


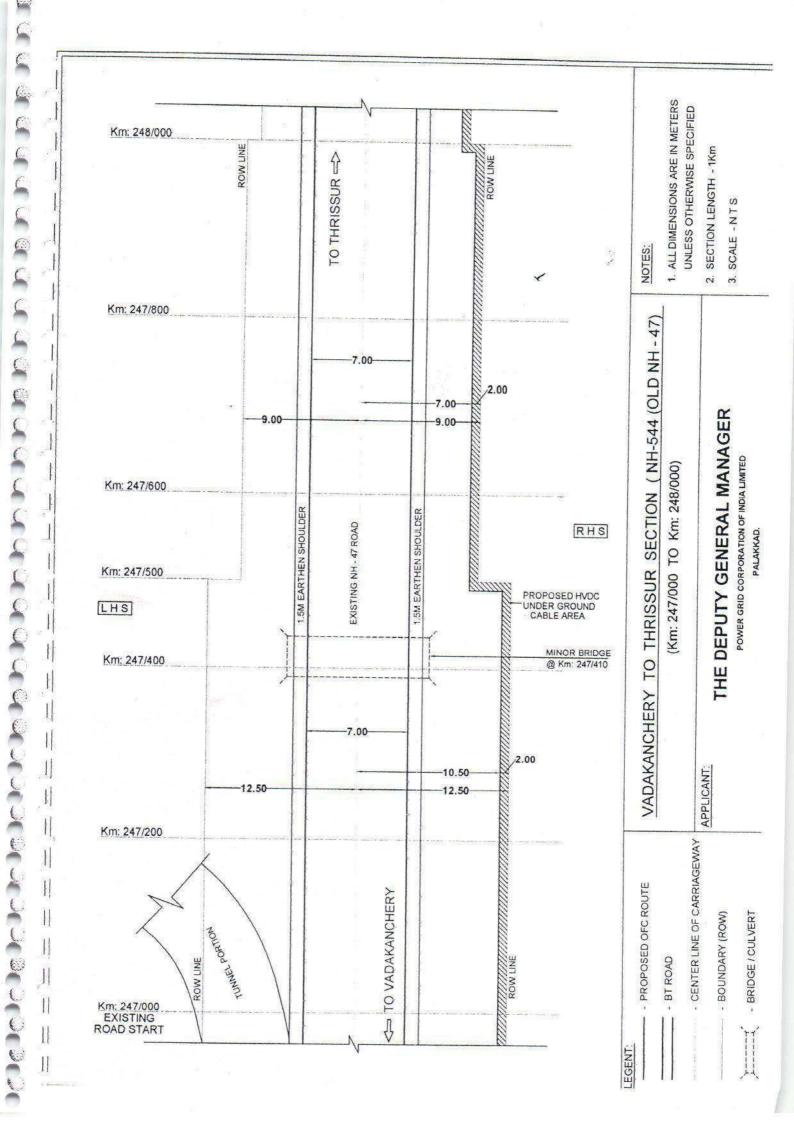


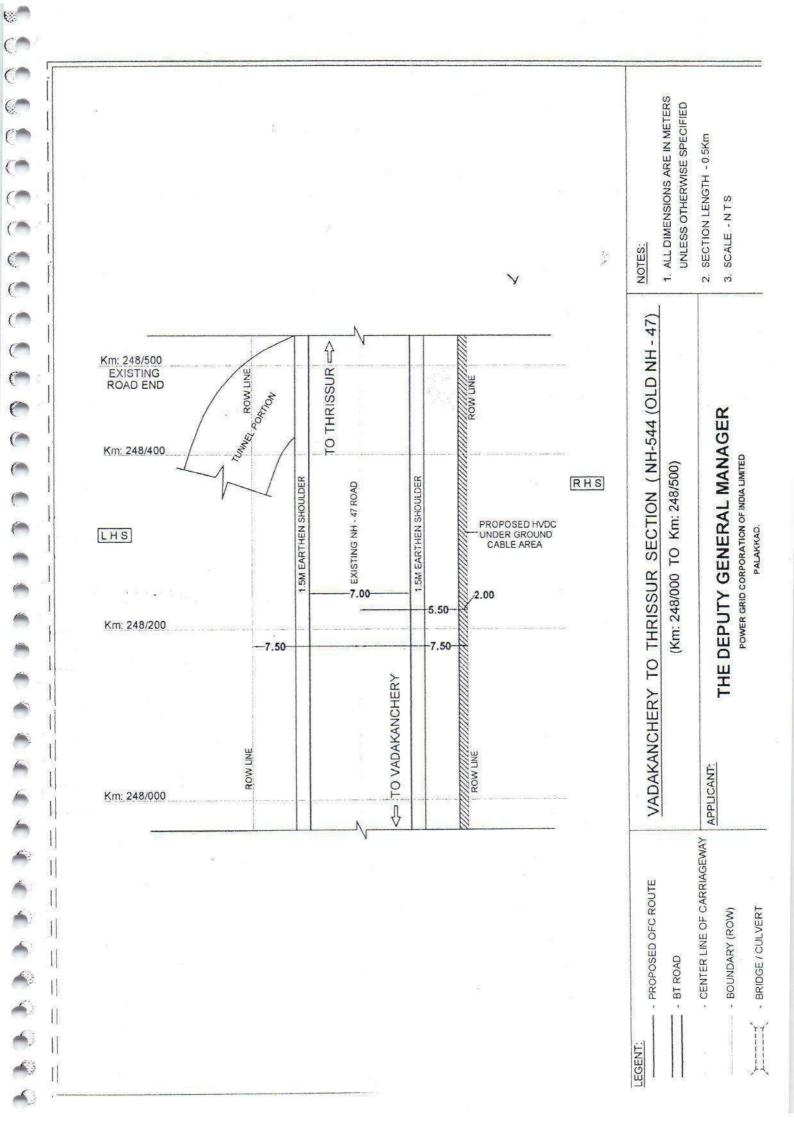


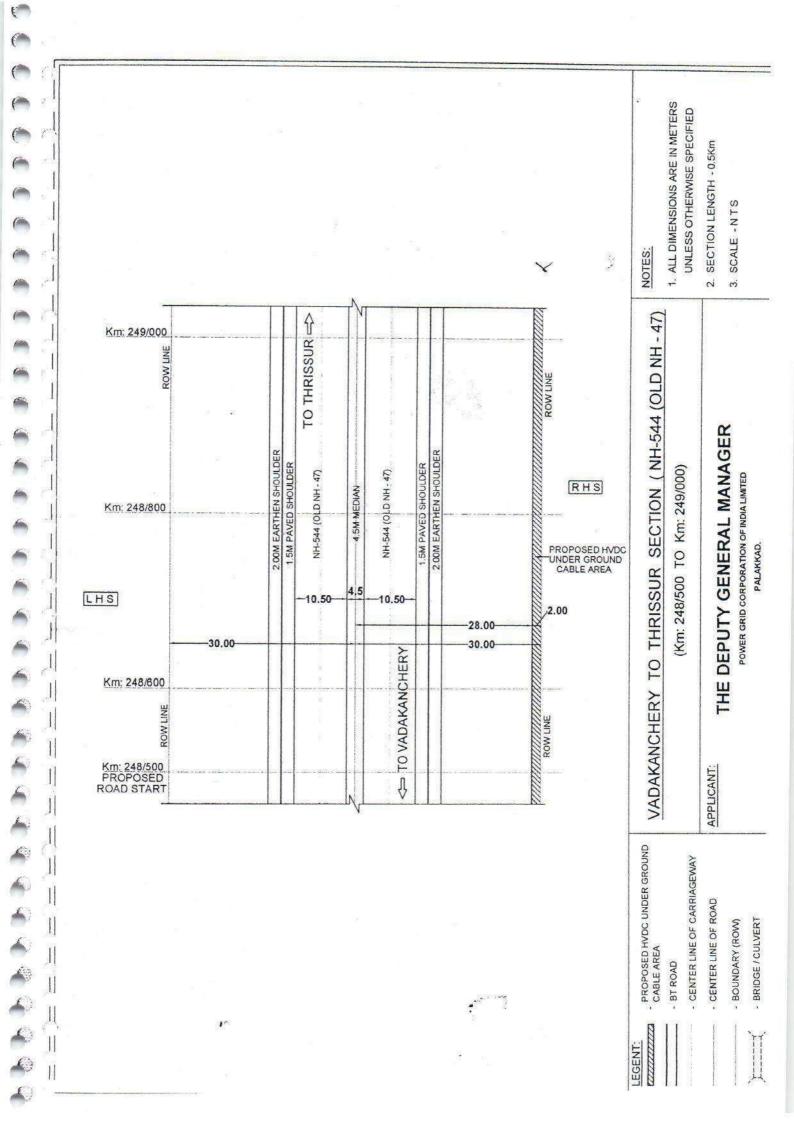


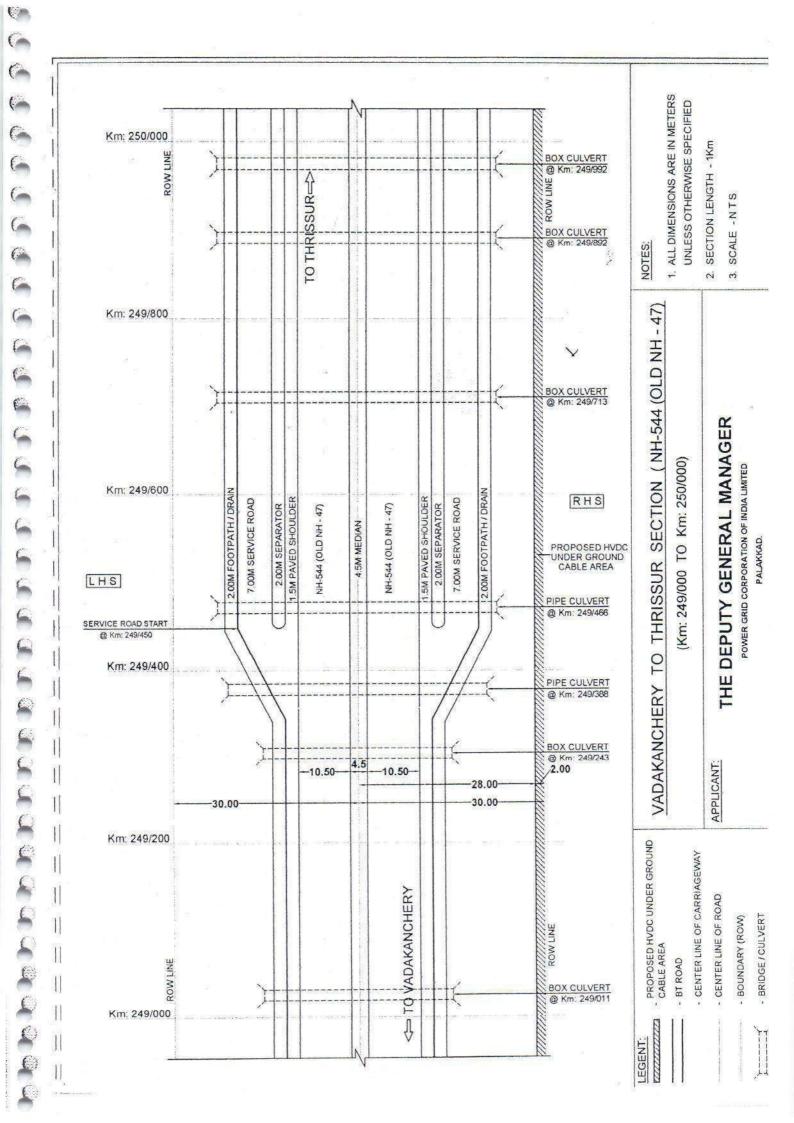


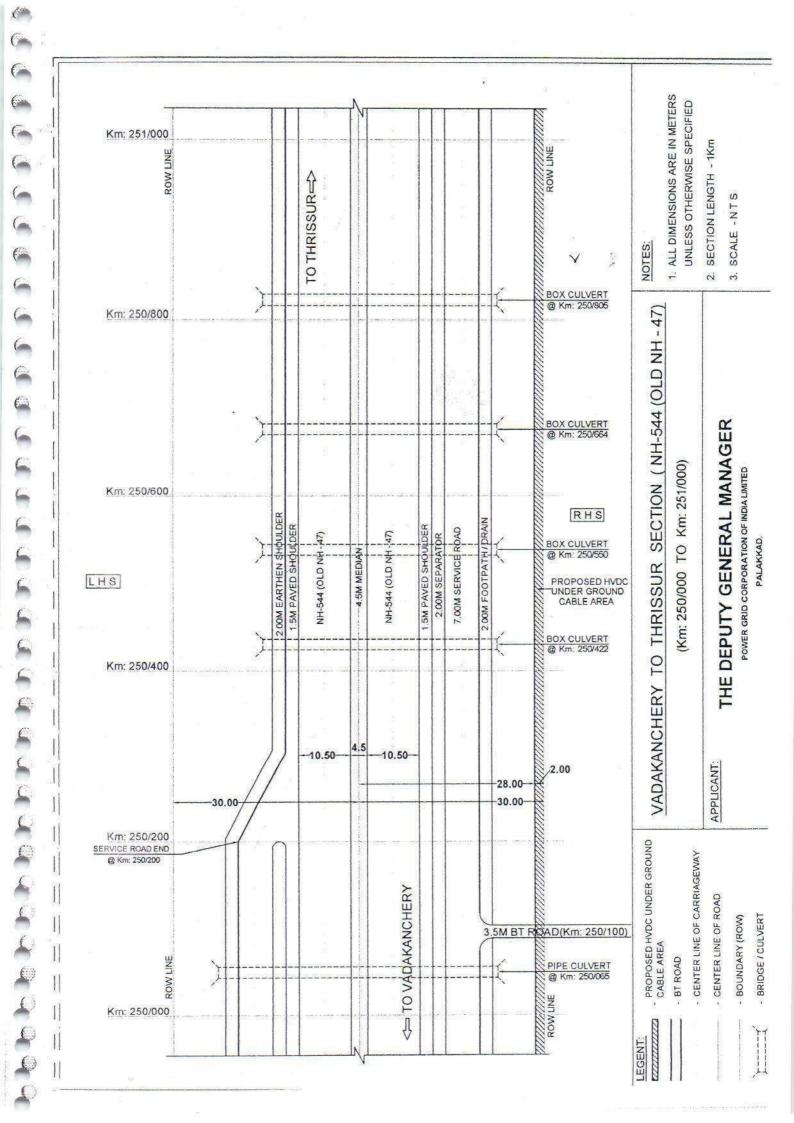


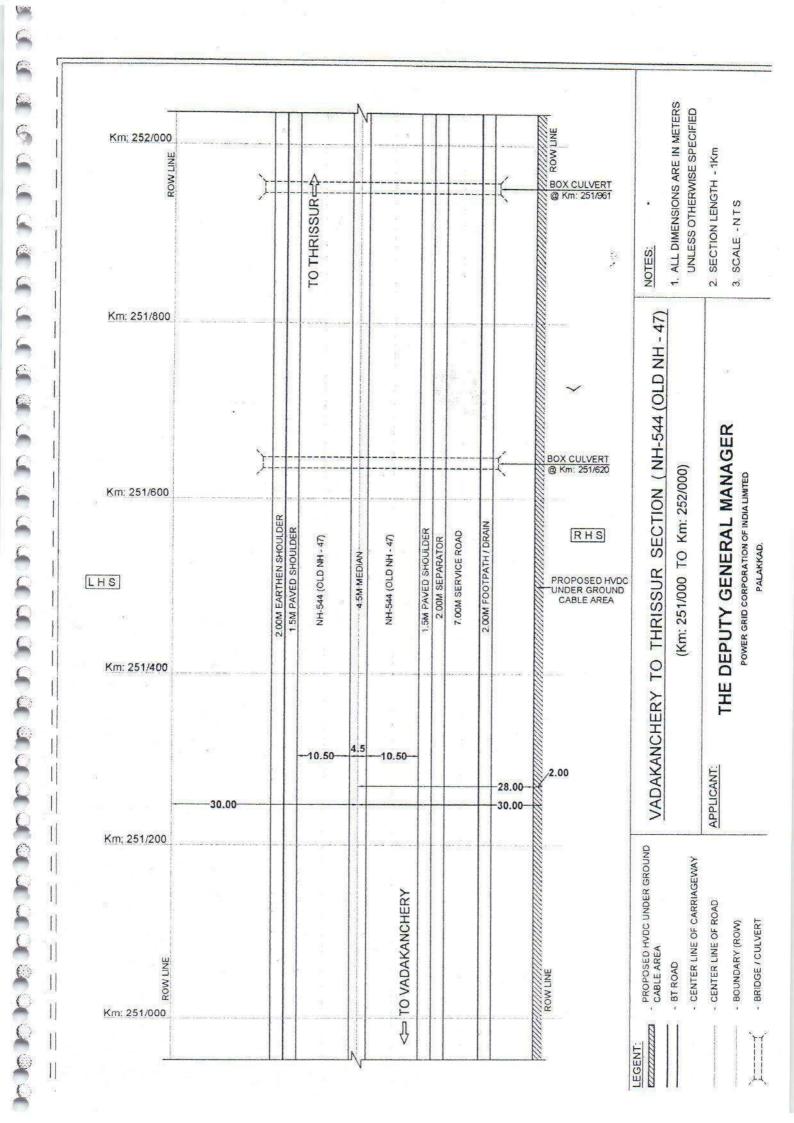


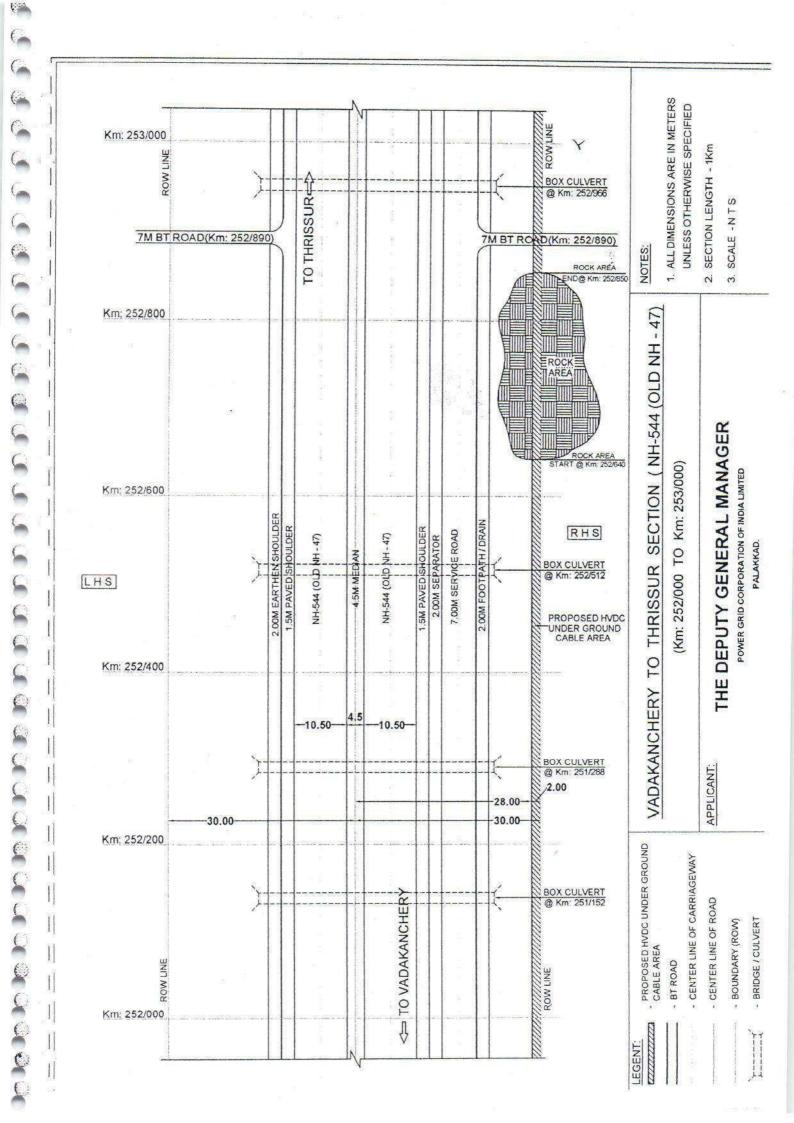


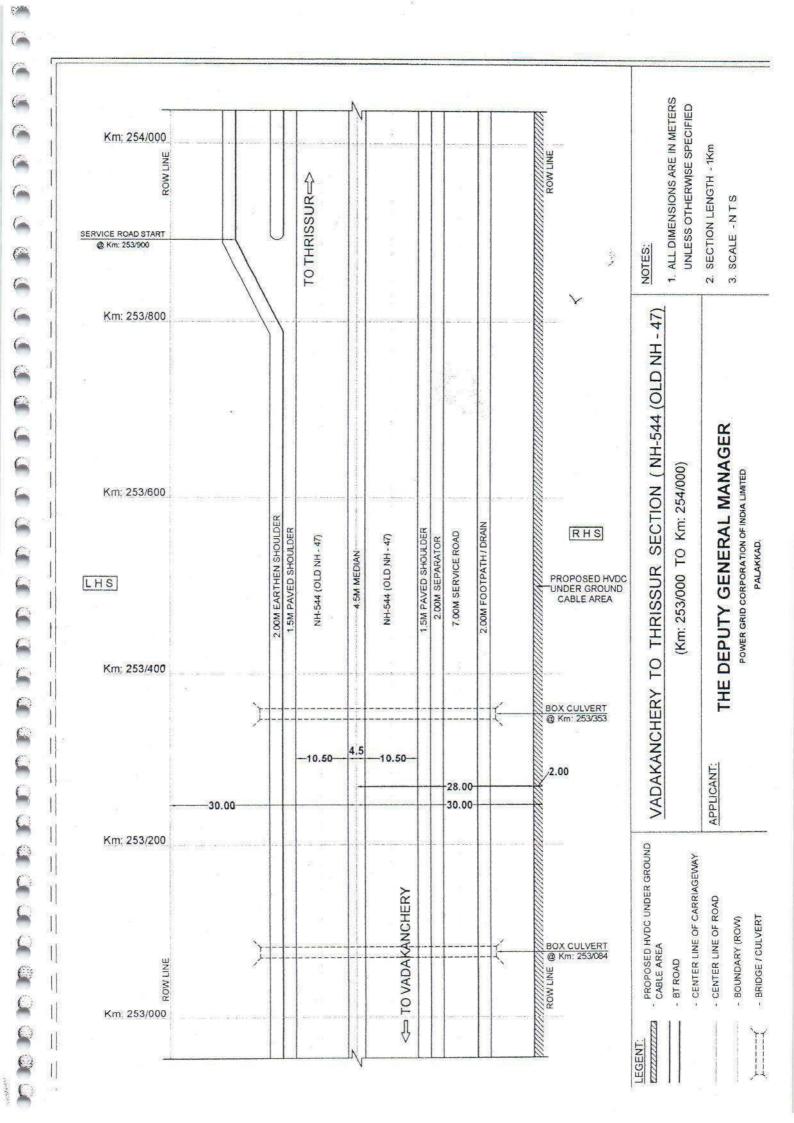


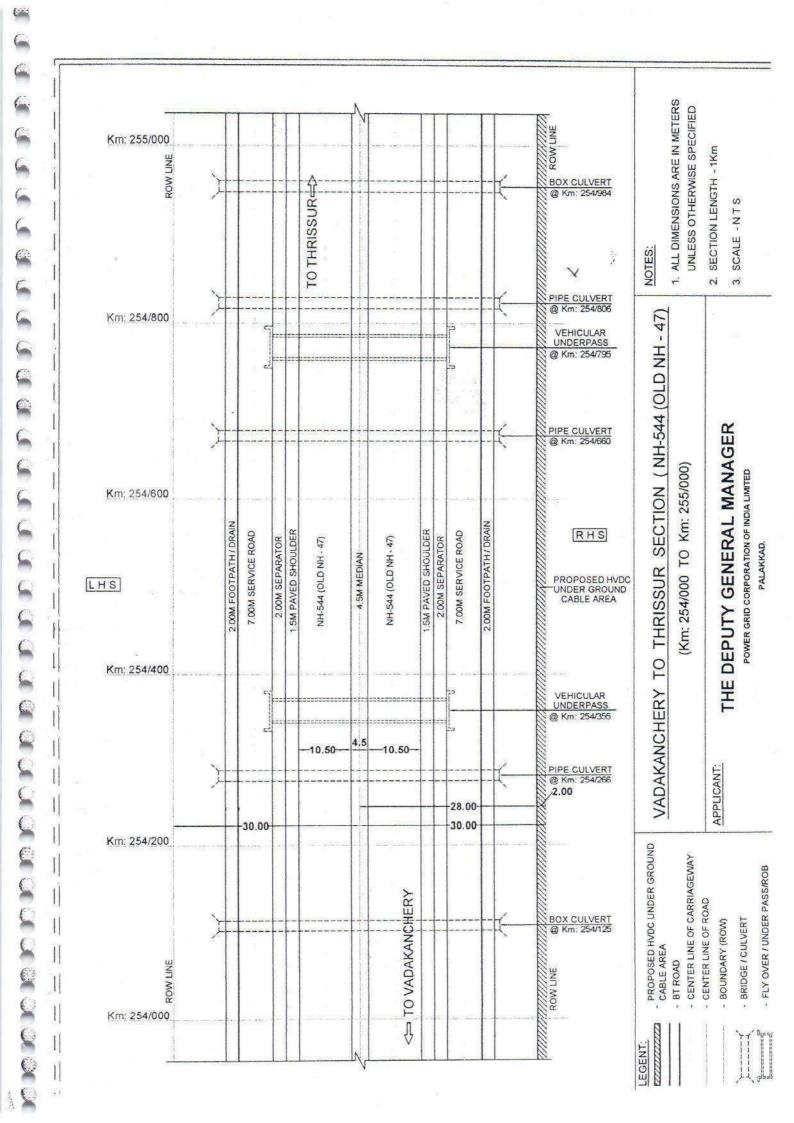


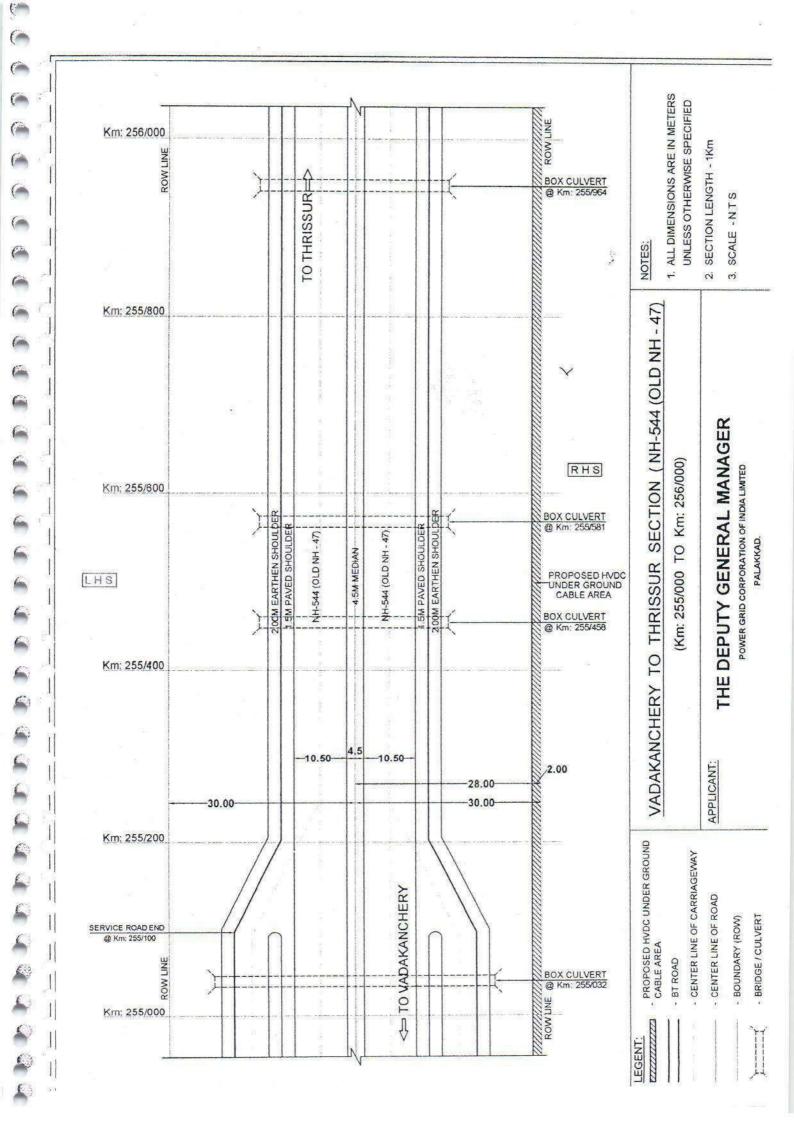


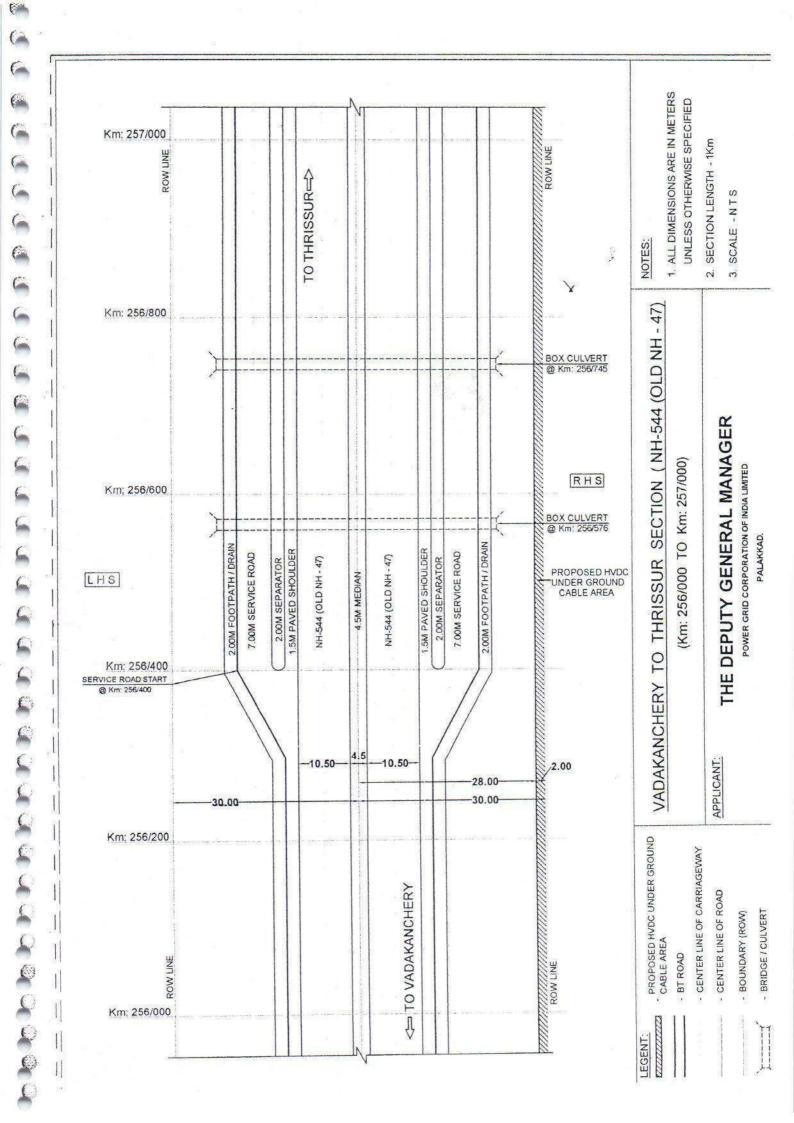


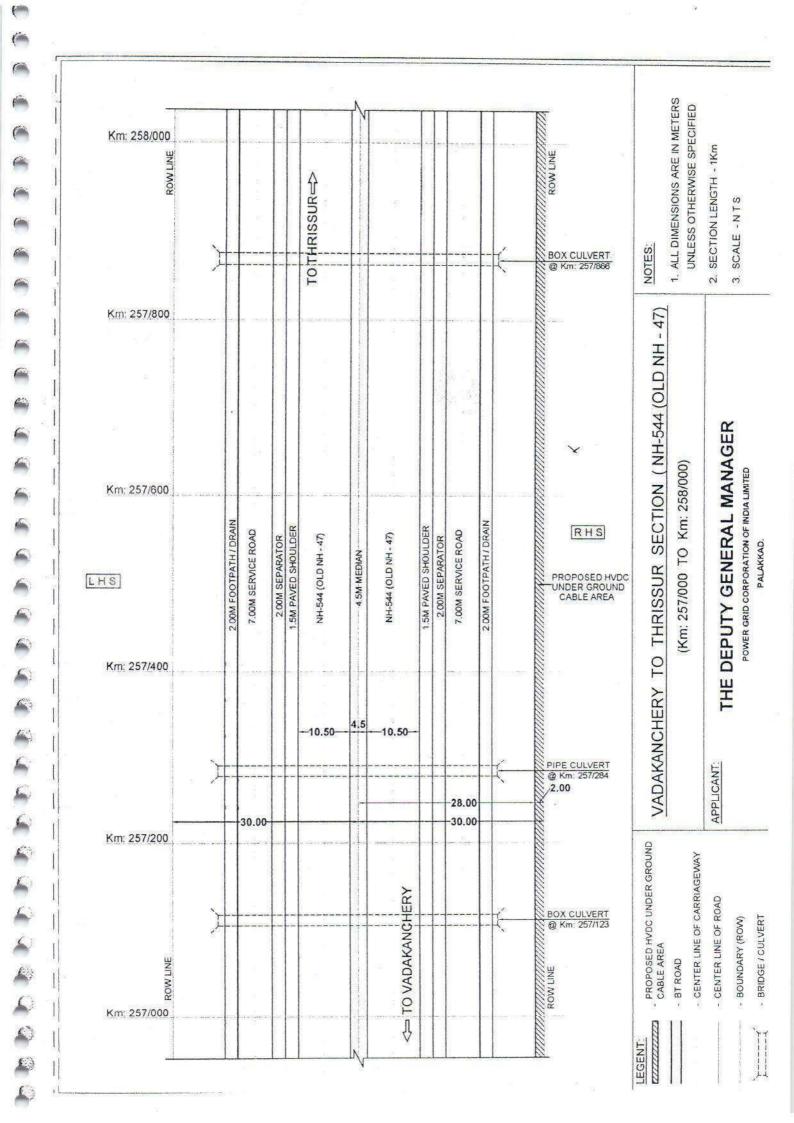


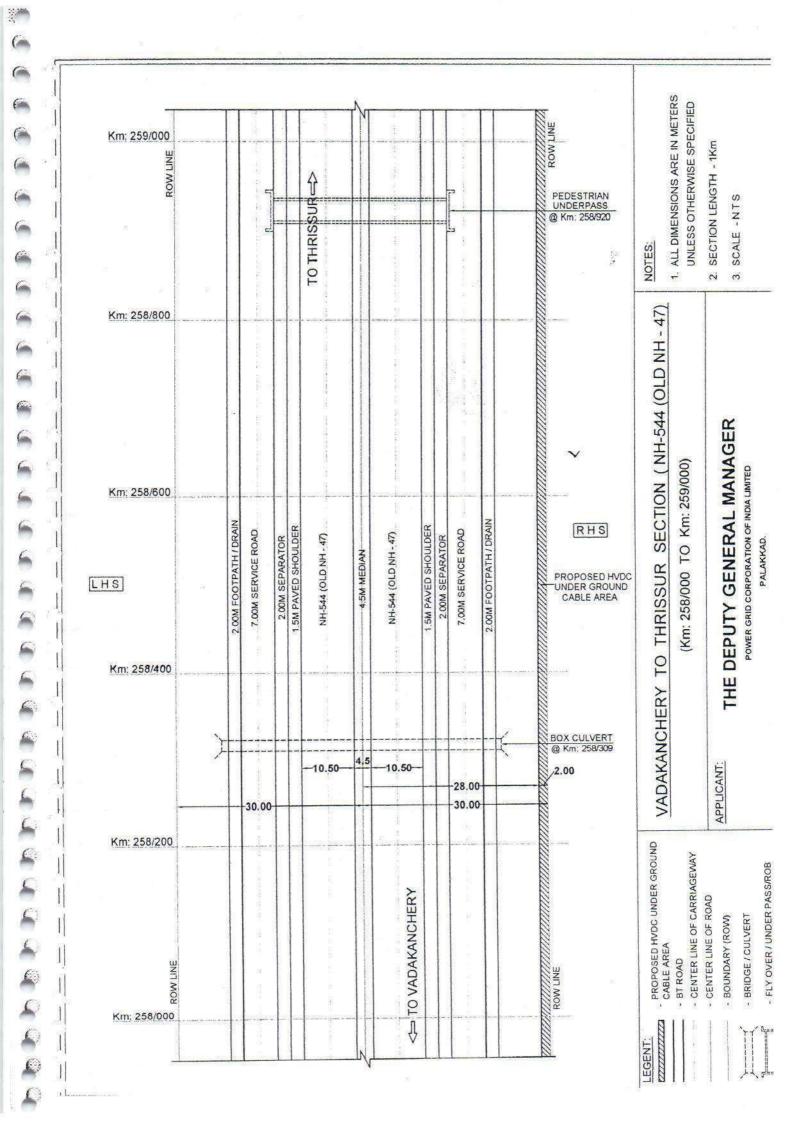


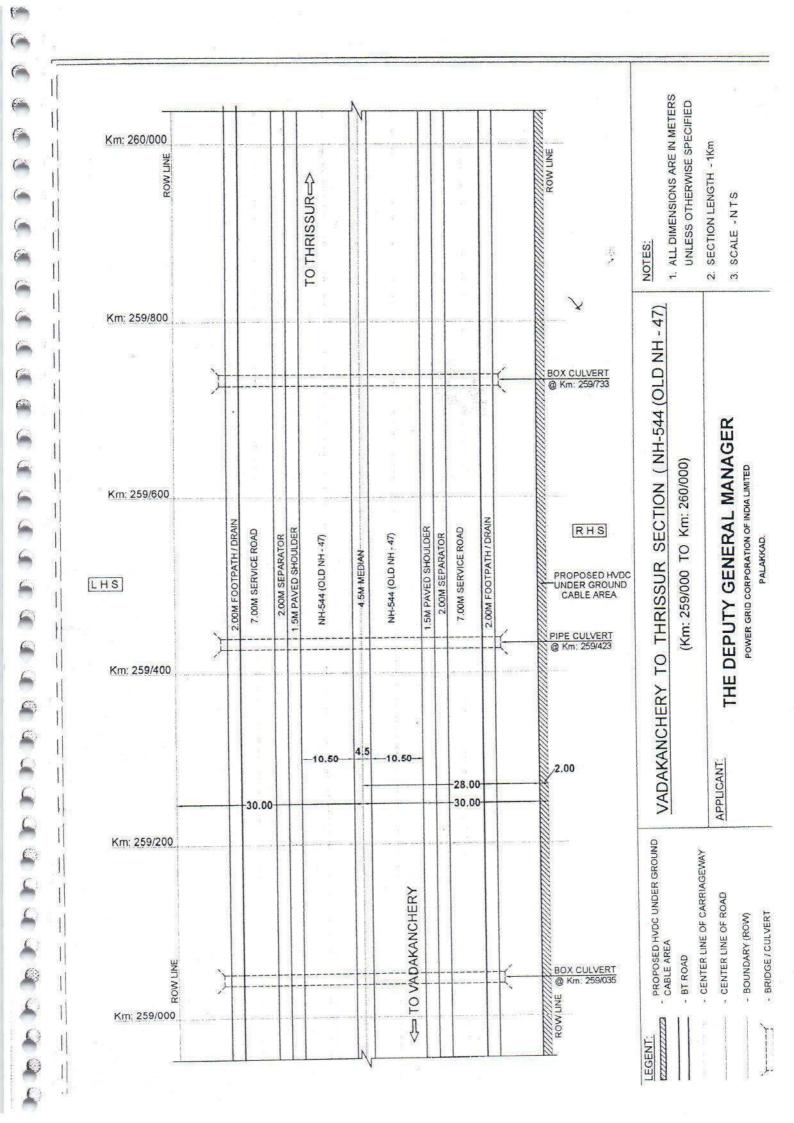


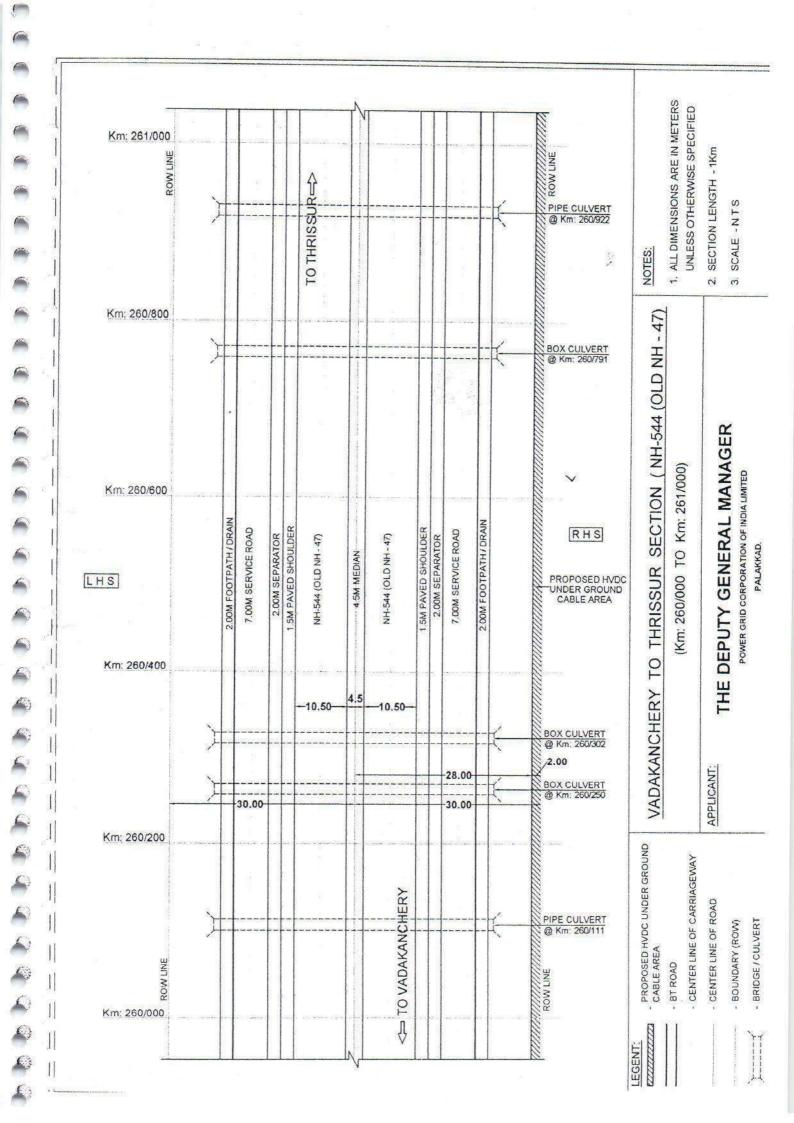


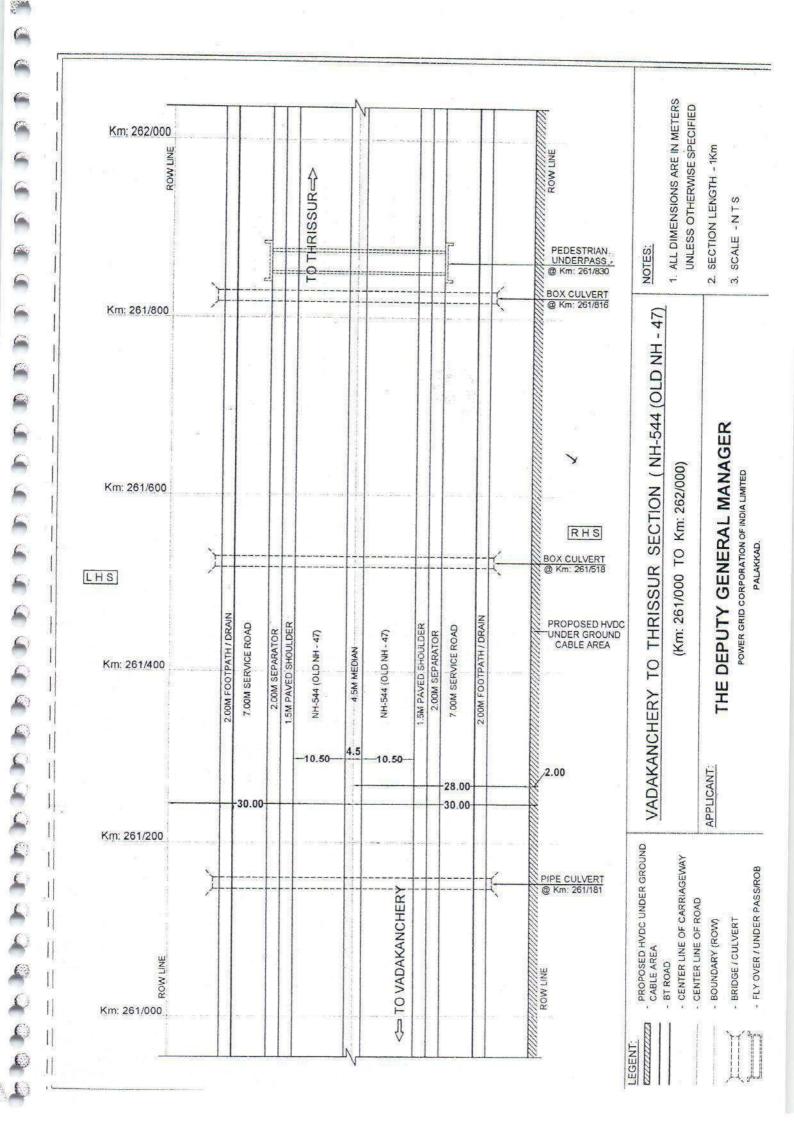












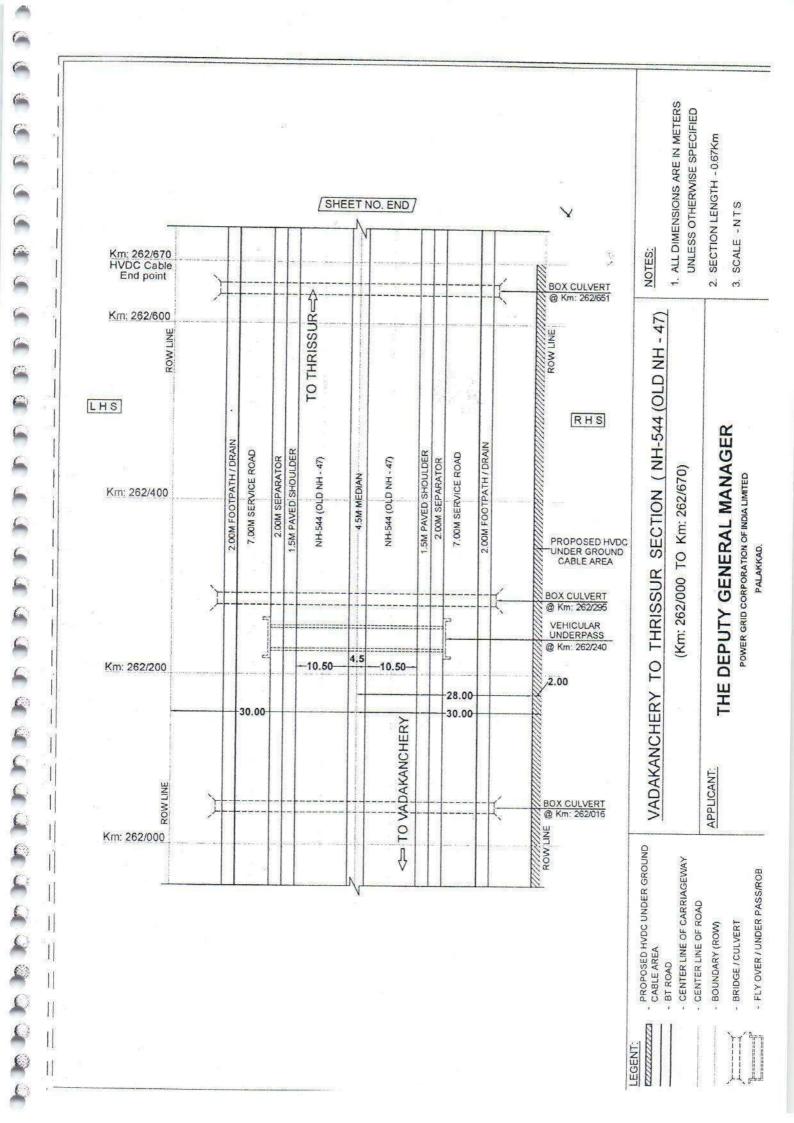


PLATE - 1 PROPOSED TRANSITION STATION LOCATION

Transition Station at Vadakancheri



Environmental Safeguard Monitoring Report

Reporting Period {From Month, Year to Month, Year} Date {Month, Year}

IND: Green Energy Corridor and Grid Strengthening Project

Prepared by Power Grid Corporation of India Limited for the Asian Development Bank

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1.0 Introduction

- 1.1 Brief Project Description
- 1.2 Project Progress Status and Implementation Schedule

2.0 Compliance to Applicable Statuary Requirements /National Regulations

3.0 Compliance to Environmental Covenants from the ADB Loan Agreement

3.1 Schedule 5 Environment (prepare a matrix to show how compliance was achieved)

4.0 Compliance to Environmental Management Plan

(Refer to the EMP of the Project)

5.0 Safeguards Monitoring Results and Unanticipated Impacts

(Refer to the Environmental Monitoring Plan and document any exceedence to environmental standards (if any), or any unanticipated impact not included in the EMP and any correction action/measures taken)

6.0 Implementation of Grievance Redress Mechanism and Complaints Received from Stakeholders

(Summary of any complaint/grievance and the status of action taken)

7.0 Conclusion

8.0 Recommendations (if applicable)