

BEFORE THE NATIONAL GREEN TRIBUNAL
WESTERN BENCH, PUNE

Original Application No. 26 of 2023 (WZ)

Vanashakti and Anr. ...

Applicant

V/s.

Thane Municipal Corporation & Ors. ...

Respondents



Additional Affidavit-in-Reply On behalf of Respondent No.1, TMC

I, Dr. Rani Ramrao Shinde the Health Officer of Thane Municipal Corporation, do hereby state on solemn affirmation as under :

1. I say that pursuant to order date 16th February, 2024, I have filed affidavit in reply on behalf of TMC, Respondent No. 1 on dated 04th March, 2024. The said affidavit is at Page No. 181 to 183. In said affidavit I placed on record the Action Plan in respect of Diva Site which was in earlier use by Respondent No. 1, TMC for landfill. I further said that, I already said in my earlier affidavit that the landfill activity at the said Diva Site was closed from 31st January, 2024 and TMC has appointed M/s MaRS Planning and Engineering Consultant for work of scientific restoration of aforesaid site.

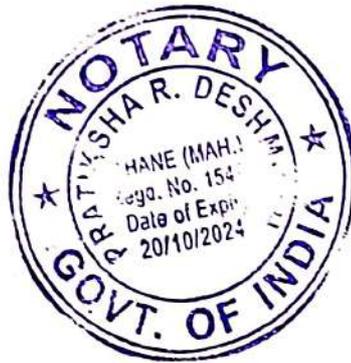
2. I say that the M/s MaRS Planning and Engineering Consultant had submitted the Detailed Project Report (DPR) for the work of bio mining and restoration of site to Thane Municipal Corporation and the Hon'ble Commissioner of Respondent No. 1, TMC approved said DPR on dt. 08.05.2024. A copy of Detailed Project Report (DPR) is enclosed herewith and marked as Exhibit - A.

3. I say that the said Detailed Project Report (DPR) is submitted to Maharashtra Jeevan Pradhikaran (MJP) for technical approval. Further proceeding will be carried out as

per action plan submitted earlier in affidavit dt. 04th March, 2024. A copy of the letter dt.08.05.2024 address to MJP is enclosed herewith and marked as Exhibit - B.

4. I say that, what is stated hereinabove is true and correct to the best of my knowledge, information and belief.

Solemnly affirmed at Thane
on this ___ day of May, 2024.



Deponent

आरोज्य अधिकारी
सार्व. आरोज्य विभाग
तारी कानूनमंडळ, ठाणे

Identified by me.

Advocate

Before me.

BEFORE ME

PRATIKSHA R. DESHMUKH
ADVOCATE & NOTARY GOVT. OF INDIA
Gala No. 1, Bhiwandiwala Terrace
Building, Near Axis Bank,
Court Naka, Thane (W) - 400 601



NOTED & REGISTERED

Sr. No. 2865 Date. _____

8 MAY 2024



Detailed Project Report (DPR) for Processing & Disposal of Legacy Waste in Thane

[Division Konkan, District Thane]



Submitted To

Municipal Corporation Thane

New Administrative Building, Chandan Wadi, Pachpakhadi,
Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)



Submitted By

MaRS Planning & Engineering Services Pvt. Ltd.

Nr. Serene Elegancy, B/h Rajthal,
S.P. Ring Road, Bopal-Ambli
Ahmedabad - 380 058. Gujarat (INDIA)



MARCH 2024 / REVISION 6

Detailed Project Report (DPR)

Name of Project	:- Processing & Disposal of Legacy Waste at an existing dumpsite in Thane [Division Konkan, District Thane]
Estimated Legacy Waste	:- ~ 13.19 Lakh MT
Estimated Time of Completion	:- ~ 27 Months
Estimated Project Cost	:- ₹ 125,51,25,206.00 (~Rs. 12551.25 Lakhs)



Technical support

MaRS Planning & Engineering Services Pvt. Ltd.
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CIN No. : U74210G32904PTC44447

ADDING VALUE THROUGH
INNOVATION



Disclaimer

This report is prepared on the basic data produced, analysed and obtained from the secondary sources like CDP, DPR, site visit and consultation with the stakeholder & ULB Officials. Every effort has been taken to check the accuracy of the data source however this cannot be construed as fully reliable. The objective of the report is to firm up the policy level decision making for the project. However, Consultants cannot be held responsible for the decision taken solely based on this report.

EXECUTIVE SUMMARY

The present Detailed Project Report (DPR) has proposed an appropriate system for Processing & Disposal of Legacy Waste for Thane Municipal Corporation.

[1.0] IDENTIFICATION OF SITES

As of ULB records, the total 4 sites are identified within the limits of Thane Municipal Corporation for Processing & Disposal of Legacy Waste. The Details of Sites are given in the following table

Details	Location	Area
DIVA DUMPIG GROUND	19°10'31.50"N 73° 2'18.93"E	68,373
DIVA SHIL ROAD	19°10'39.52"N 73° 2'43.17"E	43,553
DIVA DESAI KHADI	19°10'25.04"N 73° 2'53.29"E	46,351
BHANDARLI	19°10'34.24"N 73° 2'37.51"E	40,351

[2.0] WASTE QUANTIFICATION

To determine the quantity of legacy waste, DGPS surveys have been carried out at each of the four legacy waste sites in Thane Municipal Corporation. First, the original ground level was obtained by creating a contour map with the help of the Digital Elevation Model (DEM), which was obtained from the SRTM-3. Information that is publicly accessible. Differential Global Positioning System (DGPS) surveys are used to identify the existing ground level profile. L-sections are generated for each Chainage using Level Difference between the original ground level and the existing ground level. The total quantity of waste for each of the four sites in Thane Municipal Corporation has been determined using all Calculated data and density of waste adopted as 1 MT/Cum are given in the following table.

[1] ACTUAL QUANTITY

Detail of site	Volume (In Cum)	Quantity (In MT)	Waste Spread Area
DIVA DUMPING GROUND	9,17,791	9,17,791	68,372.76
DIVA SHIL ROAD	4,31,887	4,31,887	43,552.65
DIVA DESAI KHADI	1,81,104	1,81,104	46,351.40
BHANDARLI	1,60,088	1,60,088	21,547.00
Total	16,90,870	16,90,870	1,79,823.81

As per the NEER's study "Assessment of Status of Municipal Solid Wastes Management in Metro Cities and State Capitals" in 2004-2005 assessed 59 cities (35 metro cities and 24 state capitals). Studies have revealed that waste generation rate varies from 0.12 to 0.60 kg/capita/day. Analysis of physical composition indicates that total compostable matter in the waste is 40%-60%, while recyclable fraction is 10%-25%. The moisture content in the MSW is 30%-60%, while the C/N ratio is 20-40. During Stabilization 20-25% of the moisture loss is occurred.

[2] QUANTITY AFTER MOISTURE LOSS

Detail of site	Quantity (In MT) (A)	Moisture Loss (B)	Final Quantity (A-B)
DIVA DUMPING GROUND	9,17,791	~22%	7,15,877.00
DIVA SHIL ROAD	4,31,887	~22%	3,36,872.00
DIVA DESAI KHADI	1,81,104	~22%	1,41,261.00
BHANDARLI	1,60,088	~22%	1,24,869.00
Total	16,90,870		13,18,879.00

[3.0] WASTE CHARACTERIZATION AND QUANTIFICATION

Four samples have been collected from every site in order to identify the characteristics of waste, and waste quantification is carried out based on the lab report. The quantity of material based on the report is given in the following table.

Site	Total RDF Generation in MT	Total Inert Generation in MT	Total Recyclable Generation in MT
Site - 1	178182	528747	8948
Site - 2	90012	231802	15058
Site - 3	38494	97702	5065
Site - 4	6918	115279	2672
Total	3,13,605	9,73,530	31,744
% of Total Waste Quantity	23.78%	73.81%	2.41%

EXECUTIVE SUMMARY

[4.0] PROPOSED REQUIREMENT FOR BIOREMEDIATION

REQUIREMENTS FOR BIOREMEDIATION

[i] PROPOSED MACHINERY FOR BIOREMEDIATION

Sr. No	Components	No of Units Required	Ref. from Table no. 21
1	Excavation & Loading / Excavator For Excavation and Windrow Formation	11	1
2	Transportation / Dumper	18	2
3	Screening / Rotary Trommels with Vibrating Screen	2	4
4	Loading / Backhoe Loader	20	5
5	Transportation / Dumper (For Inert)	6	6
6	Transportation / Dumper (For RDF)	13	7
7	Recyclable Processing /Plastic Dusting Machine	28	10
8	Recyclable Processing /Shredding Machine	28	11
9	Recyclable Processing /Bailing Machine	28	12

[ii] PROPOSED OTHER FOR BIOREMEDIATION

Sr. No	Detail	No. Of Units	Ref. from Table no. 21
1	Stabilization / Bioculture Preparation & Spraying	1318879 Liter	3
2	Manpower/ Site Supervisor	4 Nos Per Screening Unit	8
3	Manpower/ Labour	33 Nos.	9
4	Other / Electricity Charge	811.8 HP Per Hr	13

[5.0] STAGES OF DUMPSITE RECLAMATION

The Dumpsite remediation divided into 3 Milestone as per given below

SITE - 1: DIVA DUMPIG GROUND

Milestone No.	Chinage		Quantity of Waste		Area to be cleared	
	From	To	In MT	%age of Total	In SQM	%age of Total
1	10	160	283074	40%	27041.43	40%
2	165	245	215943	30%	20621.22	30%
3	250	425	216860	30%	20710.11	30%
	Total		715877	100%	68372.76	100%

SITE - 2: DIVA SHIL ROAD

Milestone No.	Chinage		Quantity of Waste		Area to be cleared	
	From	To	In MT	%age of Total	In SQM	%age of Total
1	25	140	136195	40%	17630.11	40%
2	145	210	100990	30%	13048.37	30%
3	215	325	99687	30%	12874.16	30%
	Total		336872	100%	43552.65	100%

SITE - 3: DIVA DESAI KHADI

Milestone No.	Chinage		Quantity of Waste		Area to be cleared	
	From	To	In MT	%age of Total	In SQM	%age of Total
1	65	215	56811	40%	18651.80	40%
2	220	270	42400	30%	13905.42	30%
3	275	380	42050	30%	13794.18	30%
	Total		141261	100%	46351.40	100%

SITE - 4: BHANDARLI

Milestone No.	Chinage		Quantity of Waste		Area to be cleared	
	From	To	In MT	%age of Total	In SQM	%age of Total
1	30	130	49386	39%	8392.56	39%
2	135	165	32235	28%	5964.21	28%
3	170	235	33872	33%	7190.23	33%
	Total		115493	100%	21547.00	100%

EXECUTIVE SUMMARY

[6.0] UNIT RATE ADOPTED FOR BIOREMEDIATION

No.	Detail	Unit Rate Adopted	Source of Rate
1	Clearing Dumping site using Bio-remediation of Old Dumped waste including transporting and disposal of RDF & Inert	Rs. 951.66 /- Per MT	As per Detail estimate (Table number_21)

[7.0] PROJECT COMPLITION TIMELINE

No	Activity	Minimum Time Period in Months
1	Construction & Commissioning Period	1
2	Completion of Bioremediation Works	26
Total		27

Ref.
Lumsum
Table no. 21_(4)



Project Cost Summary

Name of the Project: Processing & Disposal of Legacy Waste in Thane. (Scientific Dumpsite Land Reclamation through Bio-mining, Resource Recovery and Scientific Rejects Disposal)
[Division Konkan, District Thane]

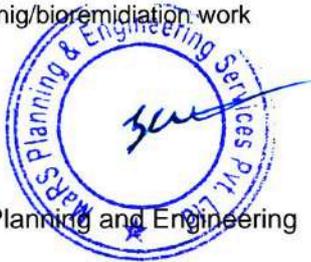
Sr No	Name of the Work	Unit/ Percentage	Amount in Rupees
A	Processing & Disposal of Legacy Waste in Thane as per detailed cost estimation table no 26 of DPR	Rs	1,25,51,25,206.00
B	Consultancy Fees for preparation of DPR-Milestone-1 as per annexure A of LoE MUDM/SMM/1410/2022-23, dated 24/Feb/2023 (A X 0.76%)	0.76%	95,38,951.57
C	Consultancy Fees for Transaction Advisory and Bid Process Management- Milestone-2 as per as per annexure A of LoE MUDM/SMM/1410/2022-23, dated 24/Feb/2023 (A X 0.19%)	0.19%	23,84,737.89
D	Consultancy Fees for Supervision and Monitoring of works- Milestone-3 as per annexure A of LoE MUDM/SMM/1410/2022-23, dated 24/Feb/2023 (A X 0.95%)	0.95%	1,19,23,689.46
E	GST Charges on Consultancy fees((B+C+D) X 18%)*	18%	42,92,528.20
F	Total Cost (A+B+C+D+E)		1,28,32,65,113.12
G	Say		1,28,32,65,113.00

In Words: Rupees one hundred twenty-eight crore thirty-two lakh sixty-five thousand one hundred thirteen only

*As per Notification No.12.2017 Central Tax (Rate) date 28 June 2017 GST is exempted for

Note: biominig/bioremediation work

Prepared by



Checked By

M/s. MaRS Planning and Engineering
Consultant

Thane Municipal Corporation

Summary of Cost for Bioremediation					
No.	Description of Work	Quantity		Unit Rate	Total Estimated Project Cost
1	Dumpsite Reclamation which includes following				
[A]	The works for scientific dump site reclamation through Bioremediation of legacy waste/ unprocessed municipal solid waste, Resource Recovery and Rejects Disposal which includes following activities- (i) Biomining/ Excavation of complete mixed MSW from the dumpsite which underwent biological and physical degradation. (ii) Resource recovery by using suitable mechanical sieving machine or any other suitable equipment / method, segregating, sorting, retrieving recoverable materials, storing, selling, diverting for recycling etc. (iii) Rejects disposal / Backfilling of reject at Suitable area within 10 Kilometres from the site or Staking				
	Site - 1 DIVA DUMPING GROUND	7,15,877.00	In MT	₹ 951.66	₹ 68,12,71,949.46
	Site - 2 DIVA SHIL ROAD	3,36,872.00	In MT	₹ 951.66	₹ 32,05,87,816.28
	Site - 3 DIVA DESAI KHADI	1,41,261.00	In MT	₹ 951.66	₹ 13,44,32,530.80
	Site - 4 BHANDARLI	1,24,869.00	In MT	₹ 951.66	₹ 11,88,32,909.92
Total Project Cost :					₹ 1,25,51,25,206.00



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A. Project Background

1. Introduction

1. The most prevalent method of disposal of Municipal Solid Waste has been open dumping, for most of India's history. The accelerated growth of urban population and increasing economic activities rule out the viability of this method any longer.
2. Swachh Bharat Mission since 2014 has introduced several scientific methods in MSWM. Environmental adjudication has also mandated the scientific remediation of dumpsites. The fact that many old dumpsites and landfills in the country pose threat to public health and the environment necessitates action to remediate dumpsites and reclaim the land being degraded.
3. After decades of use, the open dumps have grown larger and higher, becoming huge point sources of pollution. Waste rotting in these dumps produces leachate, a foul dark liquid concentrate that kills vegetation in its path and irreversibly pollutes groundwater. The heaps of garbage also produce methane, a greenhouse gas that causes 21 times more global warming than carbon dioxide. Methane often auto-ignites, causing fires in the dumpsites, generating smoke and emissions thereby severe air pollution.
4. It is estimated that more than 10,000 hectares of urban land is locked in these dumpsites in India. In the absence of exposure to air, these dumpsites in the absence of oxygen generate methane (a greenhouse gas) and other landfill gases, which contribute to global warming. They also produce leachate (liquid generated by dumped) waste) which pollutes groundwater. Frequent outbreaks of fire at the dumpsites lead to air pollution. The presence of these dumps encourages further dumping at these sites, even though they are filled beyond capacity to take any more waste.
5. The Directorate, Urban Administration and Development (UADD) has appointed MaRS Planning & Engineering Services Pvt. Ltd. for Preparation of Detailed Project Report (DPR), Transaction Advisory and Provide Supervision & Monitoring Services for Implementation of Solid Waste Management Projects for ULBs in the State of Maharashtra for **Konkan Division under SBM-Urban 2.0 vide Letter of Empanelment executed on date 14.02.2023 for Konkan Division**
6. The Consultant has undertaken the field survey and data collection on 20/04/2023, 21/04/2023 & 23/02/2024. This report outlines the survey data, analysis, methodology and finally gives the quantity of waste which needs to be cleared through bioremediation.

2. Project formulation Justification (need for the project)

7. The Government of India has notified the Solid Waste Management Rules (SWM) Rules, 2016 for proper and effective management of municipal solid waste (MSW). Under the SWM Rules, 2016, following provisions have been made to manage old dumps of MSW.

Rule 15 - Duties and responsibilities of local authorities and village Panchayats of census towns and urban agglomerations. - *The local authorities and Panchayats shall,*

- *investigate and analyze all old open dumpsites and existing operational dumpsites for their potential for bio-mining and bio-remediation and wherever feasible, take necessary actions to bio-mine or bioremediate the sites;*
- *in absence of potential of bio-mining and bioremediation of dumpsites, they shall be scientifically capped as per landfill capping norms to prevent further damage to the environment.*

Further, provisions under Schedule I (j) are given below:

- **Schedule-I (j)** – Closure and Rehabilitation of Old Dumps-Solid waste dumps which have reached their full capacity or those which will not receive additional waste after setting up of new and properly designed landfills should be closed and rehabilitated by examining the following options:
 - o *i. Reduction of waste by bio-mining and waste processing followed by placement of residues in new landfills or capping as in (ii) below.*
 - o *ii. Capping with solid waste cover or solid waste cover enhanced with geomembrane to enable collection and flaring / utilization of greenhouse gases.*
 - o *iii. Capping as in (ii) above with additional measures (in alluvial and other coarse-grained soils) such as cut-off walls and extraction wells for pumping and treating contaminated ground water.*
 - o *iv. Any other method suitable for reducing environmental impact to acceptable level.*

8. The Advisory on Landfill Reclamation released by Central Public Health and Environmental Engineering Organization (CPHEEO) in June 2020 clearly suggest to undertake a total station survey or drone mapping of all dumping site for estimating the quantity of Dump prior to start of the project.
9. The major deficiencies associated with the dumpsite in **ULB** are as under.
 - The current dumpsite is growing in size, becoming an eyesore for these cities, causing considerable social, economic and environmental losses to surroundings.
 - The Municipal administration will soon have to deal with the fact that these dumpsites will soon be unable to take in any more waste, and it is imperative that they are proactive in tackling this issue.
 - The current dumpsite has neither a lining nor a daily covering and receive mixed and untreated waste which has a large organic fraction. The open dumpsites pose serious health risks such as groundwater pollution caused by leachate seeping into the ground, air pollution, vector-borne diseases, hazardous landfill fires, and unaesthetic appearance. in addition to the environmental losses, the dump site causes social and economic losses to the nearby people due to the stigma around dumpsites.

3. Project Objective

10. The following are the project objectives-
 - To study the existing legacy dump and its surroundings and delineate the area for undertaking a topography survey in consultation with ULB Officials.

- To take a sample of waste and undertake waste characterization.
- To undertake a Topographical and Contour Survey at the delineated site.
- To Generate Contour Maps and Relevant Drawings
- To undertake required analysis for estimating the Quantity of Legacy Waste
- To clear legacy waste dumps in as per Government guidelines and to reclaim the land for other infrastructure creation.

4. *Consultant Scope of Work*

11. The following are the scope of work for the assignment-

- a) Preparation of Detailed Project Report (DPR)
 - Quantifying the complete waste at the legacy site
 - Description/ estimates of volume, area, average heights, type of waste
 - Carryout total station survey of complete project site including area earmarked in which reclamation is to be done.
 - Take relevant sample of waste and undertake waste characterization for resource recovery estimations
 - Prepare preliminary assessment of dumpsite on the basis of the data obtained from survey
 - Provide maps, calculations of legacy waste at site
 - Present technical solutions for the reclamation of Land.
 - Prepare Detailed Project Report (DPR) for chosen technology option with timelines, steps, Engineering Design, Requirements, detailed costs and implementation models etc.
 - Guide the ULB on the future course of action
- b) Tender Preparation, Evaluation and Awarding of work Contracts
 - Prepare Tender Document in consultation with the official in charge.
 - Prepare & assist in finalization of Bid Documents for Uploading on e-procurement portal of Government of Maharashtra (GoMH) or GeM portal.
 - Answering the technical queries raised by the contractors in the pre bid meeting.
 - Preparing all the pre bid questionnaire and clarifications.
 - Assisting in evaluation of bids received by ULB.
 - Recommendation for award of work contracts.
 - Issue of letter of intent, preparation and signing of contract for appointment of contractors for goods and services.
- c) PMC services for Project Monitoring and Supervision during Implementation period
 - Review and approve all the Contractor's design, drawings and implementation schedules.
 - Visit the site of works, at intervals and as instructed, and collect information with photographs related to physical progress of implementation.
 - Undertake Proof checking of designs or completed works with scrutiny of supporting documentations etc. in order to make a compliance report and grant approval on completed works.
 - Prepare and submit progress report on progress of works.

B. Details of Existing Dumpsite and its surroundings

1. City profile

12. Thane also known as Thana, the official name until 1996 is a metropolitan city located on the northwestern side of the state of Maharashtra in India, an immediate neighbor of Mumbai city proper, and a part of the Mumbai Metropolitan Region. It is situated in the north-eastern portion of the Salsette Island. Thane is a city and Municipal Corporation in thane district in the state of Maharashtra, India.
13. Thane is located at 19.13°N 72.58°E. It has an average elevation of 11 metres (36 feet).



14. The population of Thane according to the 2011 census is 1,886,941. The average literacy rate of Thane city is 91.36 percent for where male and female literacy was 94.19 and 88.14 percent respectively. The sex ratio of Thane city is 882 females per 1000 males. Child sex ratio is 900 girls per 1000 boys. Total children (0–6) in Thane city are 186,259 as per Census India report on 2011. There were 98,017 boys while 88,242 are girls. Children form 10.24% of total population of Thane City.

2. Details of existing Waste Dumpsite

15. The following is the location details of the existing Waste Dumpsite-

Table 2: Location of Existing Waste Dumpsite



Site Name	Location	Area	Current Dumping
DIVA DUMPIG GROUND	19°10'31.50"N 73° 2'18.93"E	68372.76	NO
DIVA SHIL ROAD	19°10'39.52"N 73° 2'43.17"E	43552.65	NO
DIVA DESAI KHADI	19°10'25.04"N 73° 2'53.29"E	46351.40	NO
BHANDARLI	19° 7'34.68"N 73° 2'56.77"E	21,486.38	NO

Source: ULB

16. The following are the details of site surrounding and its distances to the existing dumpsite.

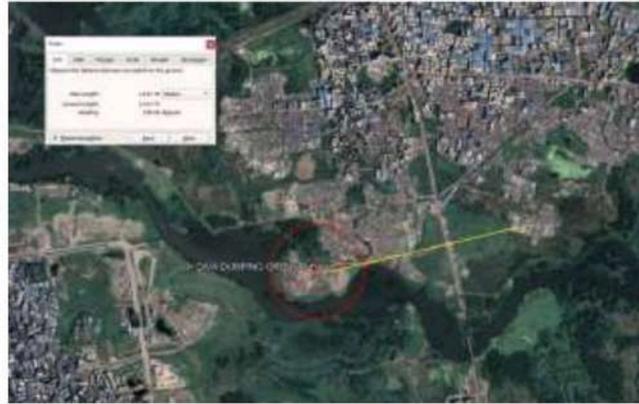
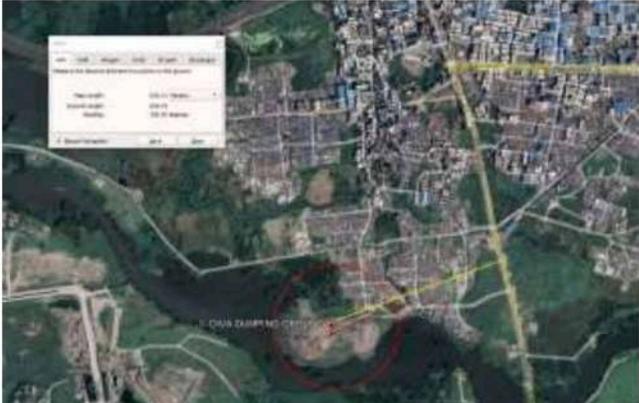
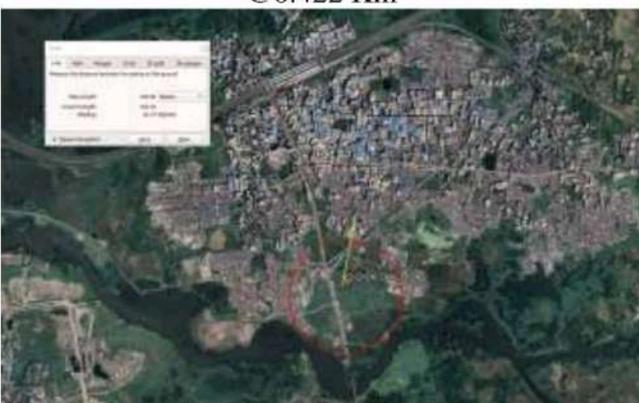
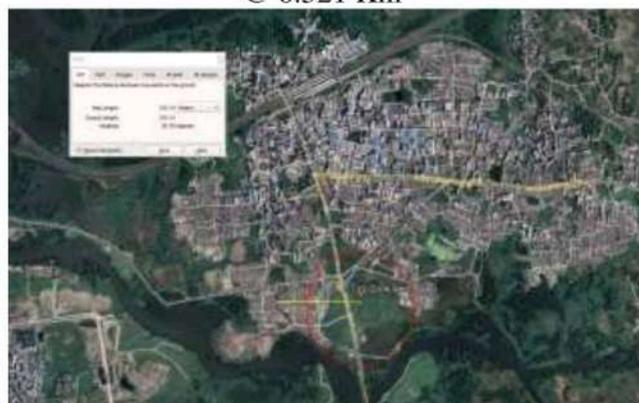
Table 3: Surrounding Site Environment around Existing Dumpsite	
1. Diva dumping ground	
<p>Nearest Residential Settlement @0.75 Km</p> 	<p>Nearest Village @ 1.01 Km</p> 
<p>Nearest Highway @ ~0.633 Km</p> 	<p>Nearest Waterbody @ ~ 0.35 Km</p> 
2. Diva Sile Road	
<p>Nearest Residential Settlement @0.422 Km</p> 	<p>Nearest Village @ 0.521 Km</p> 

Table 3: Surrounding Site Environment around Existing Dumpsite

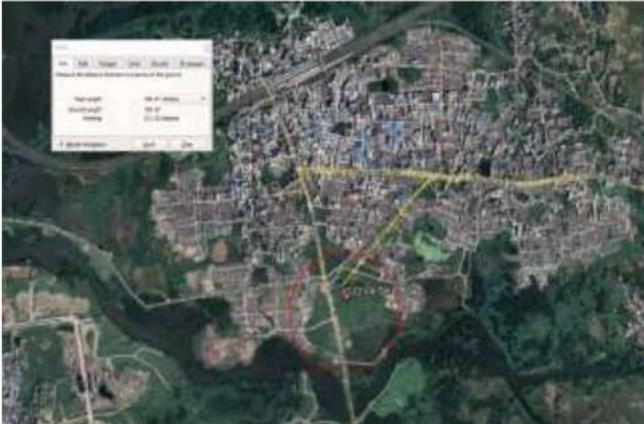
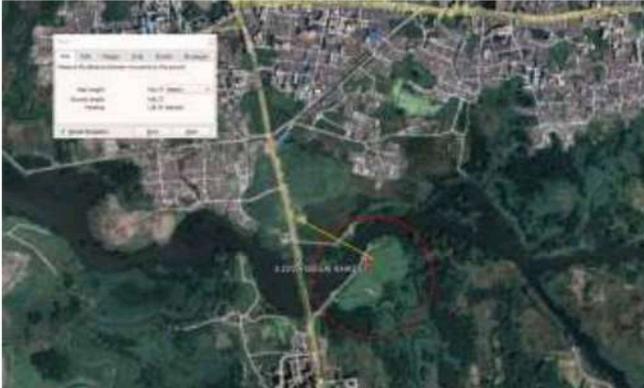
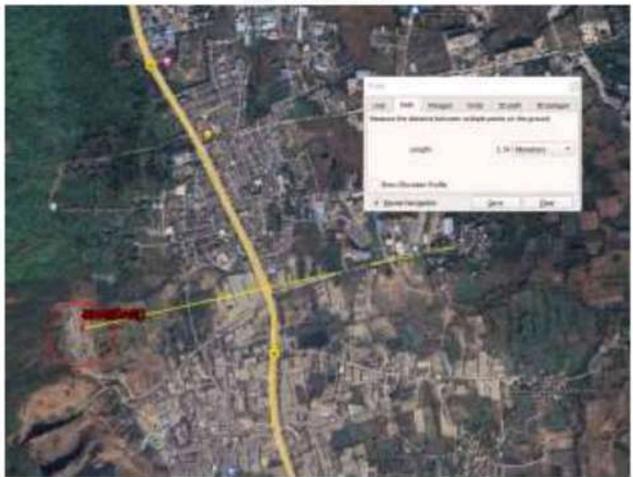
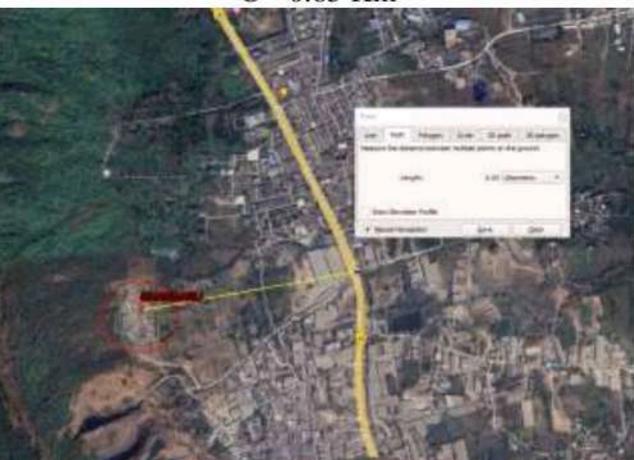
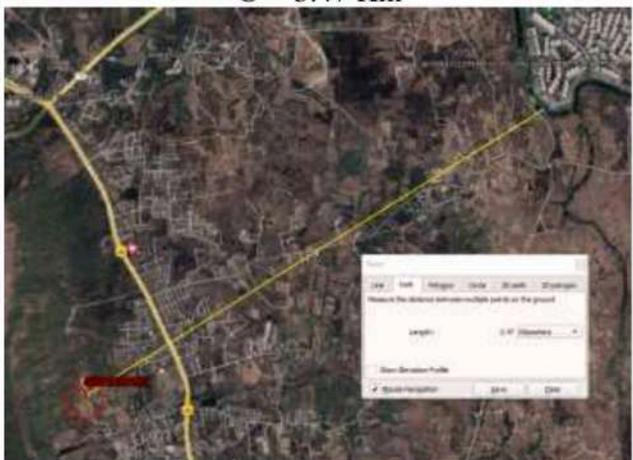
<p style="text-align: center;">Nearest Highway @ ~0.79 Km</p> 	<p style="text-align: center;">Nearest Waterbody @ ~ 0.535 Km</p> 
<p>3.Divya Desai khadi</p>	
<p style="text-align: center;">Nearest Residential Settlement @0.425 Km</p> 	<p style="text-align: center;">Nearest Village @ 0.357 Km</p> 
<p style="text-align: center;">Nearest Highway @ ~0.416 Km</p> 	<p style="text-align: center;">Nearest Waterbody @ ~ 0.667 Km</p> 
<p>4.Bhandarli</p>	

Table 3: Surrounding Site Environment around Existing Dumpsite

<p style="text-align: center;">Nearest Residential Settlement @0.520 Km</p> 	<p style="text-align: center;">Nearest Village @ 1.34 Km</p> 
<p style="text-align: center;">Nearest Highway @ ~0.65 Km</p> 	<p style="text-align: center;">Nearest Waterbody @ ~ 3.47 Km</p> 

Source:- Consultant

3. *Historical Imagery of Existing Dumpsite*

17. The following are the details of details of Historical imagery of the existing dumpsite.

Table 4: Historical imagery of the existing dumpsite	
1. Diva dumping ground	
February Year 2022	March Year 2022
	
March Year 2022	October Year 2022
	
2. Diva Shil Road	
February Year 2022	March Year 2022
	

Table 4: Historical imagery of the existing dumpsite

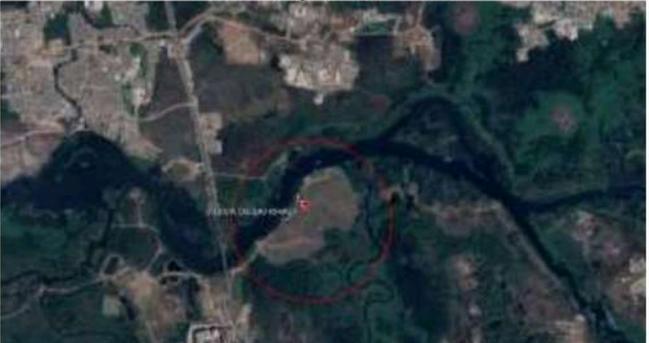
<p style="text-align: center;">March Year 2022</p> 	<p style="text-align: center;">October Year 2022</p> 
<p>3.Divya Desai Khadi</p>	
<p style="text-align: center;">February Year 2022</p> 	<p style="text-align: center;">March Year 2022</p> 
<p style="text-align: center;">March Year 2022</p> 	<p style="text-align: center;">October Year 2022</p> 
<p>4.Bhandarli</p>	
<p style="text-align: center;">November Year 2021</p> 	<p style="text-align: center;">April Year 2022</p> 

Table 4: Historical imagery of the existing dumpsite

4. Existing Situation of Dumpsite and its surrounding

18. The general field observations made during the site visit are as under-
- Present open dumpsite consists of waste from several sources.
 - The waste deposited is also not covered or compacted and in most cases in these open dumpsites, waste remains susceptible to open burning.
 - The existing dumpsite pose significant health threats both to the people involved in the operations and to the general public living in the neighborhood.
 - Large number of animals are attracted around the dumpsite, many times purposefully by their owners, in order to have access to food, for free. That usually results in food-chain pollution.
 - Fauna, plants or vegetation are impacted directly from the direct contamination by waste or leachate, the migration of gases, or as a result of burning or smoke.
 - The dumped waste is not engineered at all, with no leachate management and no landfill gas (LFG) collection. in Addition, they are poorly managed without any controls on accepting incoming materials or record keeping. Exposed wastes are open to all weathers and needless to say are often not engineered at all, with no leachate management and no landfill gas (LFG) collection.
 - The site permits scavengers or waste pickers for collecting recyclables without any protection measures and in most cases allowing even living within dump sites or sometimes even scavenging for food leftovers.





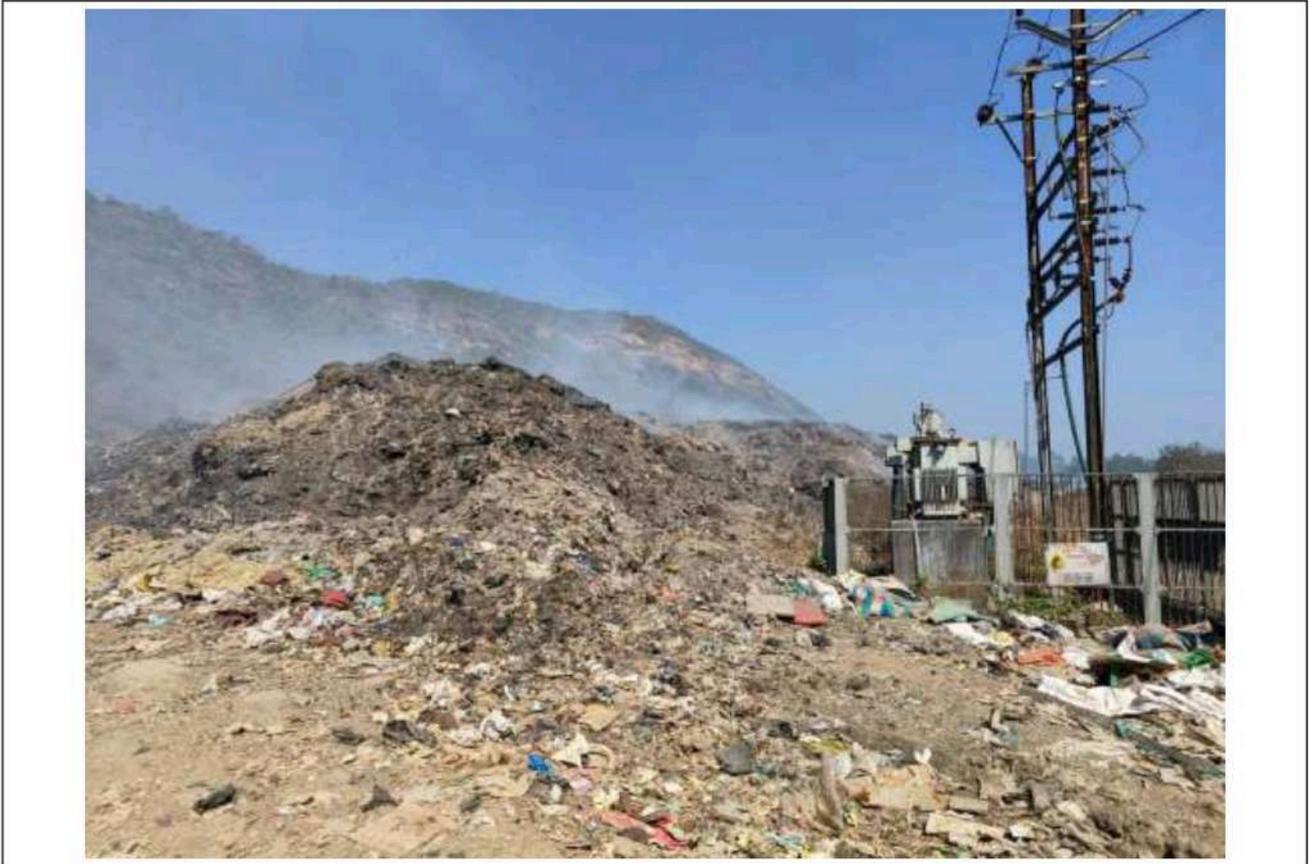
52GQ+MP7, Sabe Gaon, Thane, Maharashtra 400612, India

Latitude
19.17566351°

Longitude
73.03870581°

Local 02:29:25 PM
GMT 08:59:25 AM

Altitude 4 meters
Thursday, 13.04.2023



19. The following is the status of infrastructure available at the existing dumpsite-

Table 5: Status of Infrastructure at the existing Dumpsite				
No.	Details	Available	Functional	Remarks
1	Electricity Connections	No	No	
2	Water Connection	No	No	
3	Processing Infrastructure	No	No	
4	Boundary Wall	No	No	
5	Office cum Security Cabin	No	No	
6	Gate	No	No	
7	Faecal Sludge Treatment Plant	No	No	
8	Composting Pit	No	No	

Source: Field Survey by Consultant



Processing Machines not in working



Dumping area

C. Waste Quantity Estimates & Field Investigations

I. Adopted Approach and Methodology

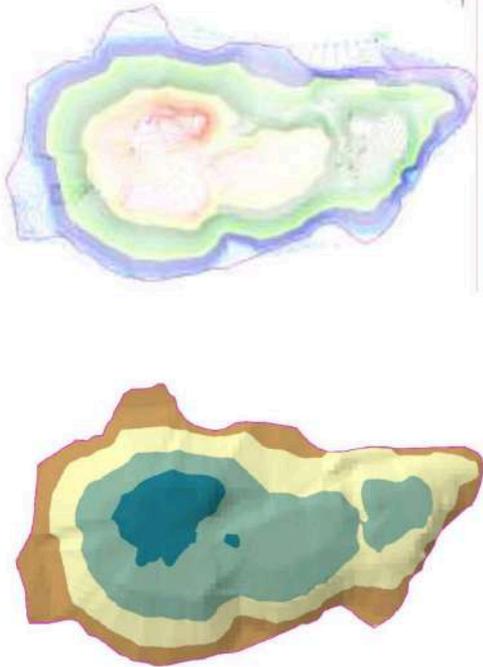
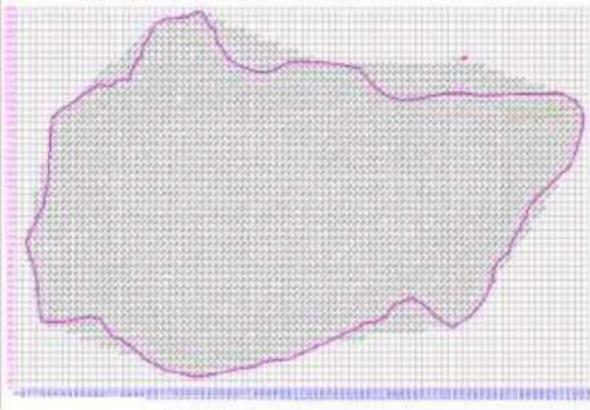
20. Two major activities were undertaken during field investigations i.e. (1) Estimations of Quantity of Legacy Waste and (2) Waste Characterisation. The following are the step-by-step approach and methodology adopted for both the activity.

a) Approach for Estimation of Quantity of Legacy Waste

21. The following step by step approach and methodology adopted for volume estimation of the legacy waste by DGPS Survey.

Table 6: Step by step Activities undertaken for Estimation of Quantity of Legacy Waste	
Original Ground Contour Map Generation	
The first step is to derive the original ground level (OGL) profile of the identified area before the beginning of dumping of waste. This is done by preparing a contour map using DEM (Digital Elevation Model) derived from SRTM-3 data available as open access. After the Generation of Contour Map Natural Ground Profile of the site is prepared. UTM Projection used are [a]. Code Type- EPSG; [b]. Category- UTM, WGS84 Datum; [c]. Code- UTM84-44N; [d]. Categories-UTM, WGS84 Datum; [e]. Unit -Meter; f. Description-UTM-WGS 1984 datum, Zone 43 North, M cent. Meridian 81d E. The existing contour drawings are attached in the report.	
Existing Ground Contour Map Generation	
The second step is to derive Existing Ground Level Profile of the identified area. This is done by undertaking a Differential Global Positioning System (DGPS) survey on field by using the same UTM projections which were used to derive Natural Ground Profile.	
(I) Instrument Set Up 	(II) TBM Marking 
Differential Global Positioning System (DGPS) Instrument called Base with an accuracy of 3 mm + 0.6 ppm for long lines long observations was set on field for receiving data from receiver instrument called Rover.	Fixed the TBM on permanent stone for continue survey and will consider during the time of next survey work in future.

Table 6: Step by step Activities undertaken for Estimation of Quantity of Legacy Waste

<p style="text-align: center;">(III) Taking Level</p>  <p>Level was taken at different height of existing dump heap with the Rover. Around 900 levels were taken from various location of dump site.</p>	<p style="text-align: center;">(IV) Existing Ground Contour Map Generation</p>  <p>After the field survey, contour map and 3d Model of existing site was generated with 0.5-meter interval</p>																																																																																															
<p>Deriving Original Ground & Existing Ground Profile of Site</p>																																																																																																
<p>The next step is to derive the following</p> <p>a. Original Ground Profile (OGP): Contours from DEM Based on SRTM 3 data.</p> <p>b. Existing Ground Profile (EGP): Contours from Survey Data.</p>																																																																																																
<p style="text-align: center;">(I) Grid and Spot Map Generation</p>  <p>Using contour line extract 5m x 5m spot level and finalize the Grid with respect to chainage.</p>	<p style="text-align: center;">(II) Level data sheet</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>20</th> <th colspan="2">0</th> <th>0</th> <th></th> </tr> <tr> <th>Dist.</th> <th>G.LS</th> <th>F.L.</th> <th>0</th> <th></th> </tr> </thead> <tbody> <tr> <td>45</td> <td>94.862</td> <td>98.867</td> <td>4.005</td> <td>80</td> </tr> <tr> <td>50</td> <td>94.862</td> <td>98.867</td> <td>4.005</td> <td></td> </tr> <tr> <td>55</td> <td>94.862</td> <td>99.271</td> <td>4.409</td> <td></td> </tr> <tr> <td>60</td> <td>94.862</td> <td>99.303</td> <td>4.441</td> <td></td> </tr> <tr> <td>65</td> <td>95.629</td> <td>99.418</td> <td>3.789</td> <td></td> </tr> <tr> <td>70</td> <td>95.629</td> <td>99.534</td> <td>3.905</td> <td></td> </tr> <tr> <td>75</td> <td>95.629</td> <td>99.574</td> <td>3.945</td> <td></td> </tr> <tr> <td>80</td> <td>95.629</td> <td>99.457</td> <td>3.828</td> <td></td> </tr> <tr> <td>85</td> <td>95.629</td> <td>99.199</td> <td>3.57</td> <td></td> </tr> <tr> <td>90</td> <td>95.629</td> <td>99.138</td> <td>3.509</td> <td></td> </tr> <tr> <td>95</td> <td>95.629</td> <td>99.077</td> <td>3.448</td> <td></td> </tr> <tr> <td>100</td> <td>95.629</td> <td>98.913</td> <td>3.284</td> <td></td> </tr> <tr> <td>105</td> <td>95.629</td> <td>98.776</td> <td>3.147</td> <td></td> </tr> <tr> <td>110</td> <td>95.629</td> <td>98.553</td> <td>2.924</td> <td></td> </tr> <tr> <td>115</td> <td>95.629</td> <td>98.328</td> <td>2.699</td> <td></td> </tr> <tr> <td>120</td> <td>95.629</td> <td>98.354</td> <td>2.725</td> <td></td> </tr> <tr> <td>125</td> <td>95.629</td> <td>98.525</td> <td>2.896</td> <td></td> </tr> </tbody> </table> <p>The Level data sheet was generated for preparing L sections for each chainage</p>	20	0		0		Dist.	G.LS	F.L.	0		45	94.862	98.867	4.005	80	50	94.862	98.867	4.005		55	94.862	99.271	4.409		60	94.862	99.303	4.441		65	95.629	99.418	3.789		70	95.629	99.534	3.905		75	95.629	99.574	3.945		80	95.629	99.457	3.828		85	95.629	99.199	3.57		90	95.629	99.138	3.509		95	95.629	99.077	3.448		100	95.629	98.913	3.284		105	95.629	98.776	3.147		110	95.629	98.553	2.924		115	95.629	98.328	2.699		120	95.629	98.354	2.725		125	95.629	98.525	2.896	
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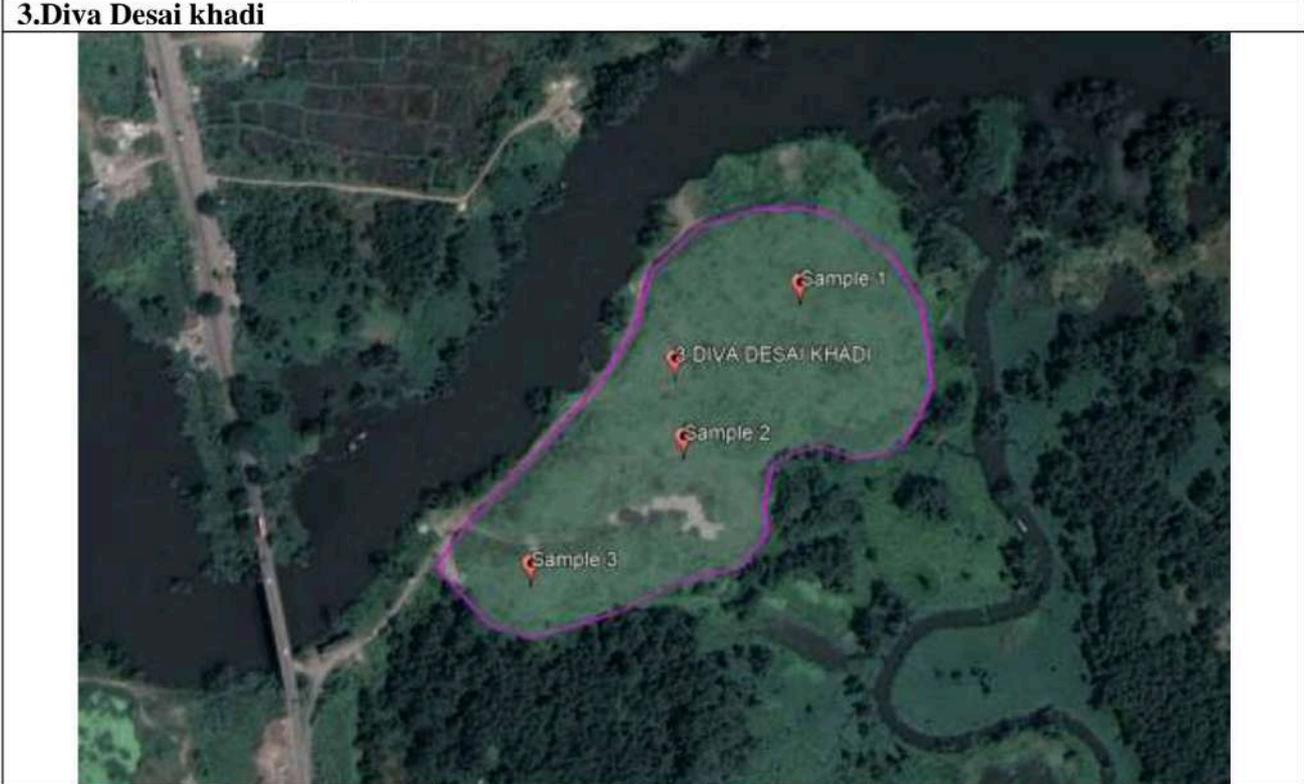
24. The following aspects shall be considered: Take 10 kg of municipal waste mixed from outside and inside of the waste pile, sourced from random entities in an identified sampling location at dump site. Samples from all heterogeneous sampling points shall be mixed thoroughly. The sample is placed as a uniform heap. The heap is divided into four portions using straight lines perpendicular to each other. Waste from opposing corners of the divided heap is removed to leave half of the original sample. The remaining portions are again thoroughly mixed and the quartering process is repeated until a desired size is obtained (10 kg of waste can be handled or segregated efficiently). The last remaining opposing fractions of waste shall be mixed and analysed for identifying physical and chemical properties of the waste. Chemical analysis of the waste sample follows the physical constituent analysis and shall be performed in a laboratory accredited by the Ministry of Environment, Forests and Climate Change (MoEFCC).

Table 7: Step by step Activities undertaken for Waste Characterisation study	
<p style="text-align: center;">(I) Sample collection</p>  <p>3 sample was taken at dumpsite from different location (Near about 10 kg of waste sample was taken)</p>	<p style="text-align: center;">(II) Sample Preparation</p>  <p>Quartering and coning method was done</p>
<p style="text-align: center;">(III) Fraction Segregations</p>  <p>All the waste were segregated into various fractions and weightments were done for each of the fractions</p>	<p style="text-align: center;">(IV) Fraction Weighing</p>  <p>All the segregated fractions were weighed for each samples for physical and chemical composition</p>
<p>Source: Consultant</p>	

25. The following are locations of samples taken for the study.

Table 8: Locations of samples collected		
1. Diva dumping ground		
		
Sample 1 Location 19°10'31.91"N 73° 2'23.46"E	Sample 2 Location 19°10'33.01"N 73° 2'19.69"E	Sample 3 Location 19°10'30.64"N 73° 2'15.00"E
2. Diva Shil Road		
		
Sample 1 Location 19°10'38.18"N 73° 2'48.72"E	Sampl Location 19°10'37.79"N 73° 2'45.10"E	Sample 3 Location 19°10'38.20"N 73° 2'41.17"E

Table 8: Locations of samples collected



Sample 1 Location 19°10'26.64"N 73° 2'56.06"E	Sample 2 Location 19°10'23.40" 73° 2'53.48"E	Sample 3 Location 19°10'20.75"N 73° 2'50.11"E
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4.Bhandarli



Sample 1 Location 19° 7'35.89"N 73° 2'57.02"E	Sample 2 Location 19° 7'32.09"N 73° 2'55.60"E	Sample 3 Location 19° 7'29.19"N 73° 2'57.65"E
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2. *Estimation of Quantity of Legacy Waste*

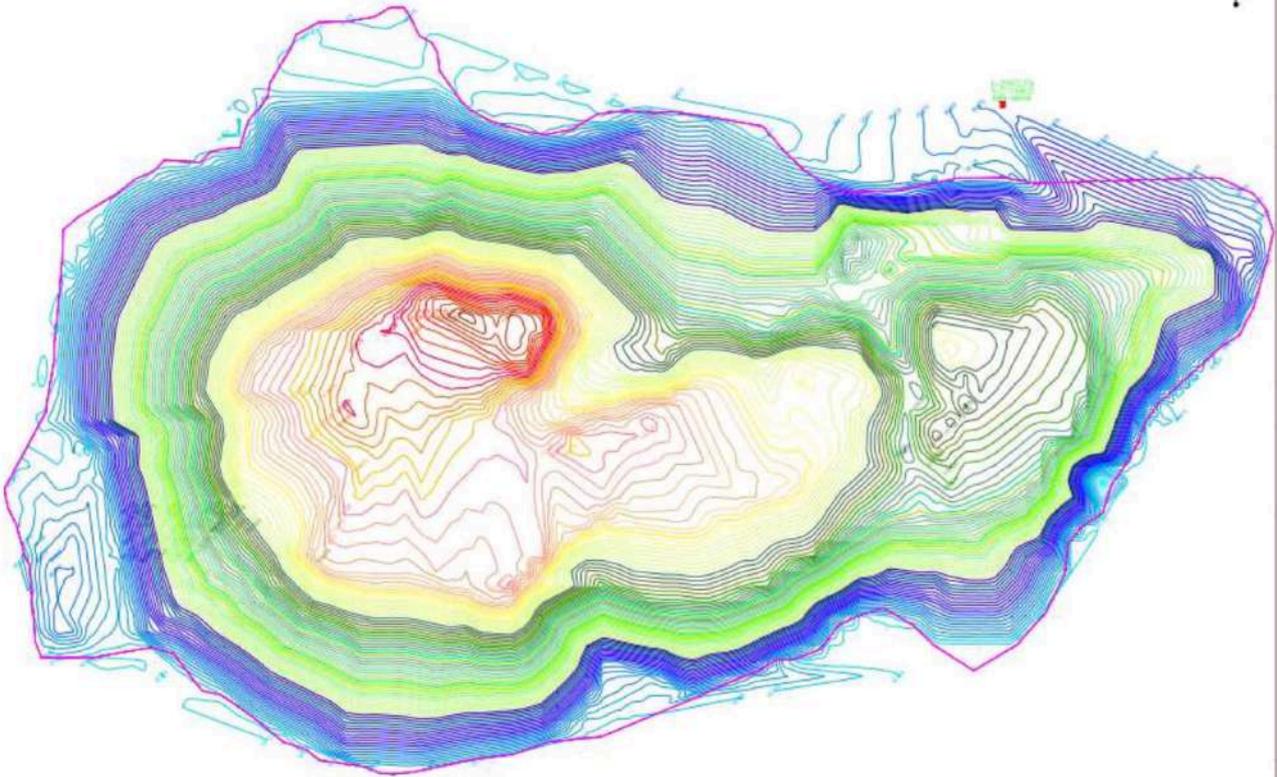
26. The present site 1 has started receiving crude waste since 2015 and other site i.e.; 2,3 receiving crude waste since 2009 and site 4 have crude waste of seven to 8 months as per the discussion with officials of Thane. However, Thane don't have data on the amount of waste dump at site.
27. The density of the legacy waste is required to be derived or assumed for calculating the weight of the legacy waste in terms of Metric Ton. Based on the field observations and the height of the heap, it is presumed that most of the waste is highly compacted and higher density is assumed for calculating the Weight of the Legacy Waste. Further, the density is assumed with average moisture content during dry season except monsoon season.

Delineation of Waste Spread Area

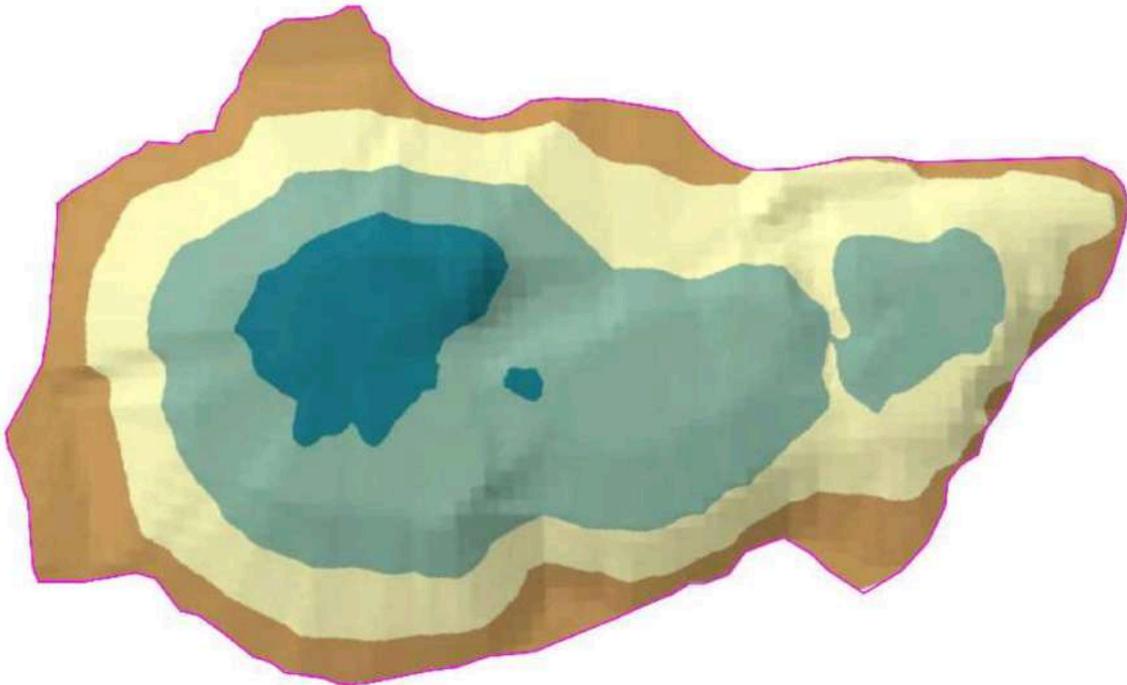
1. Diva Dumpsite



Drawings of Survey conducted on 20 & 21 April 2023



3d Imagery Generated



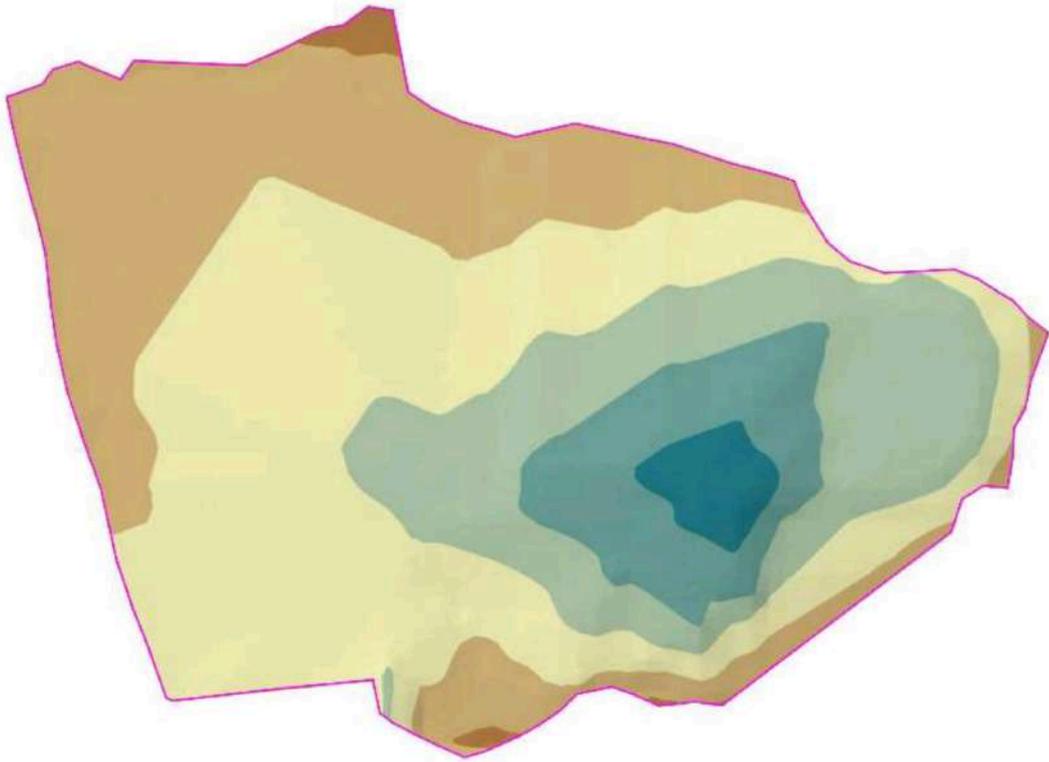
2. Diva Shil Road



Drawings of Survey conducted on 20 & 21 April 2023



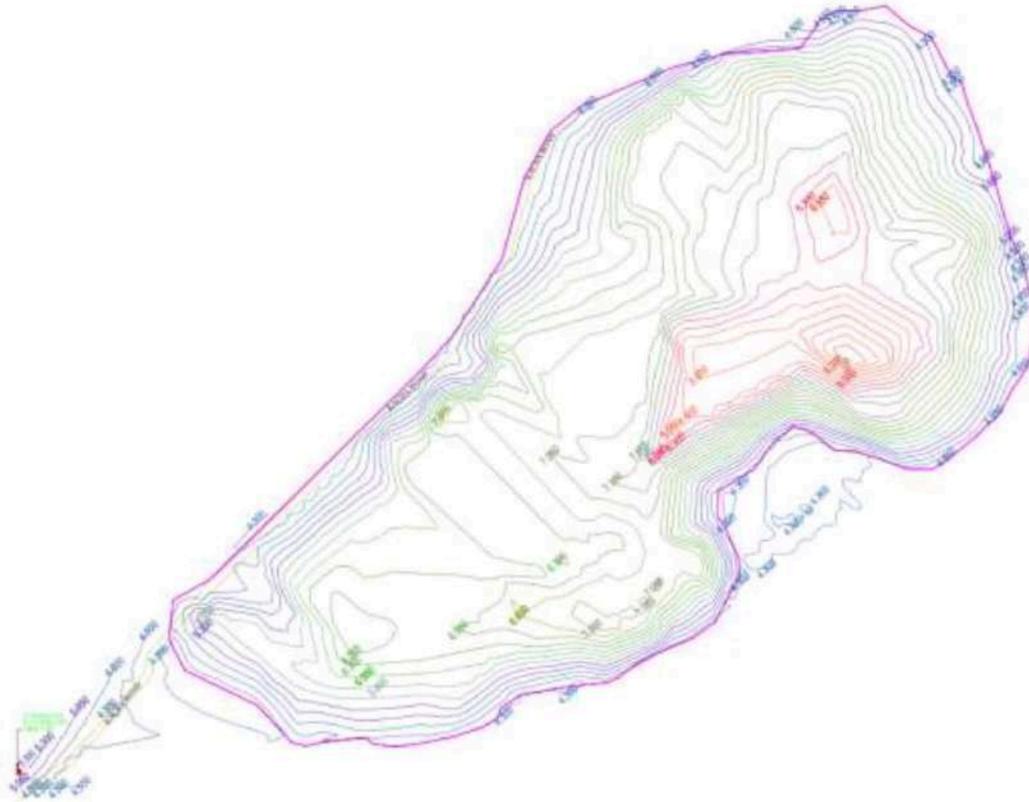
3d Imagery Generated



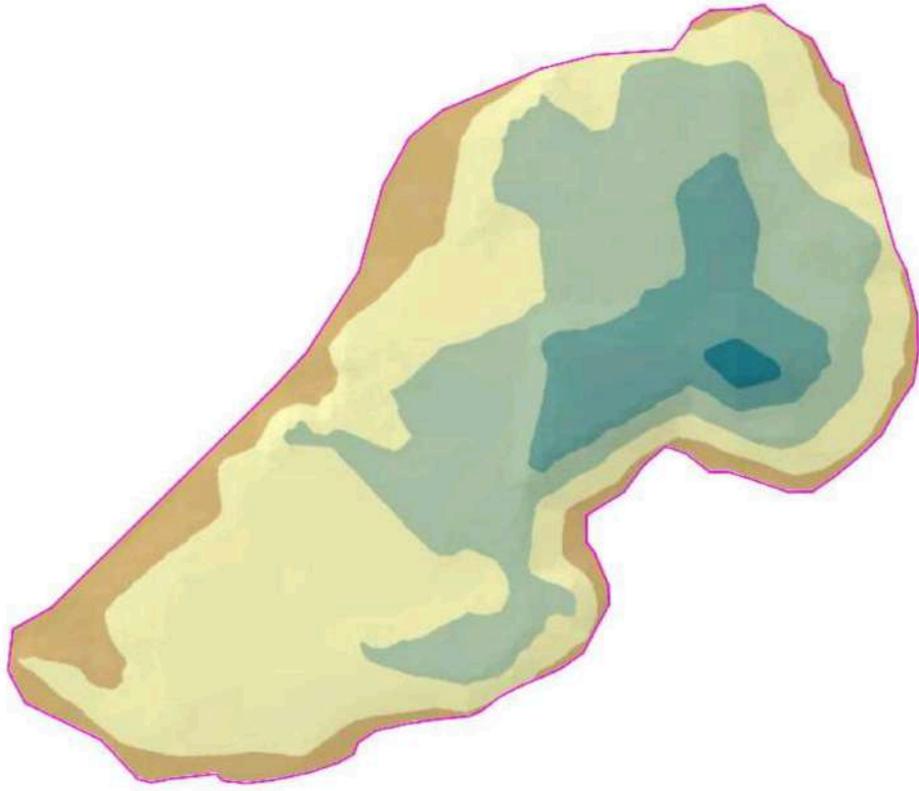
3.Div. Desai Khadi



Drawings of Survey conducted on 20 & 21 April 2023



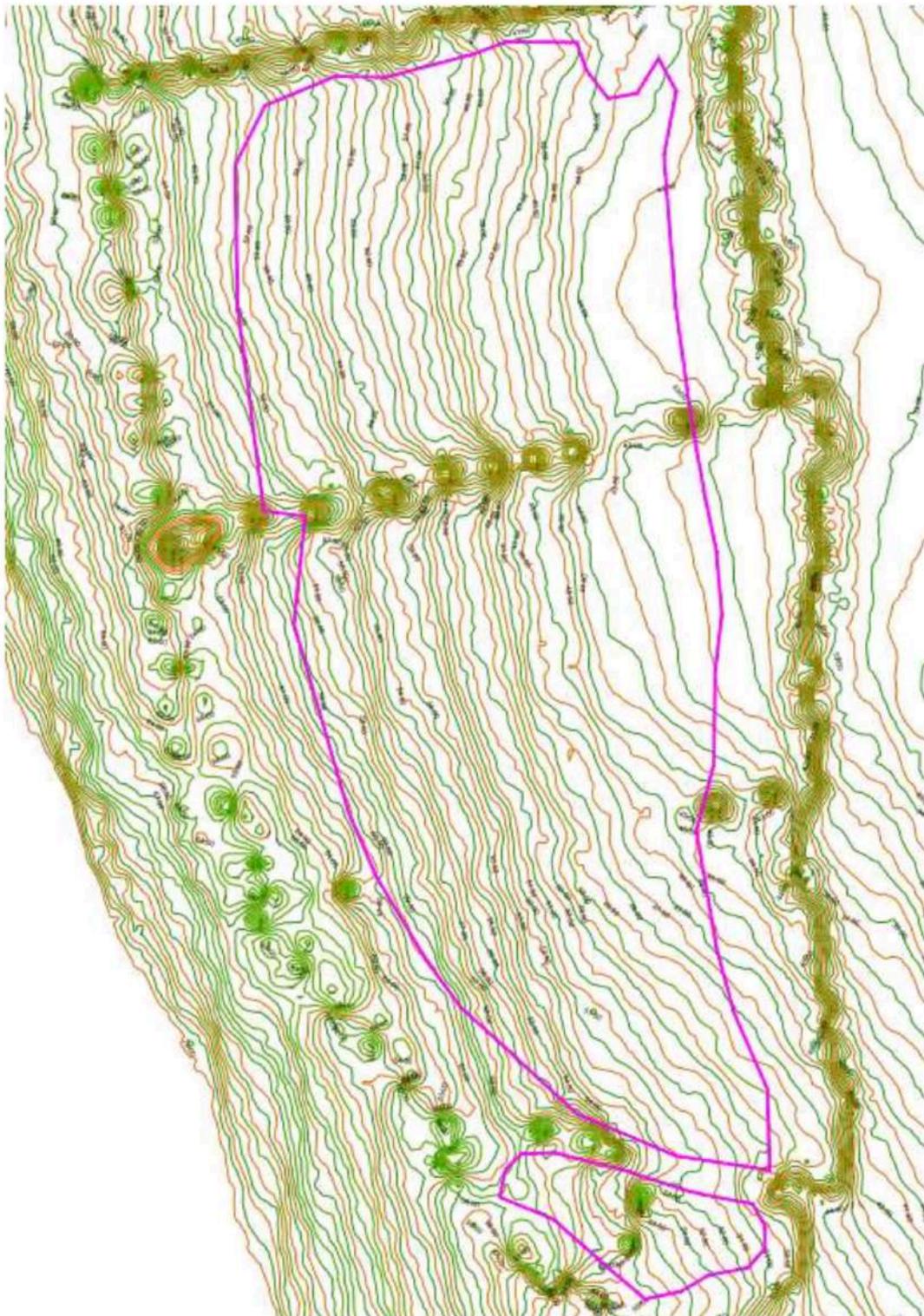
3d Imagery Generated



4. Bhandarli



Drawings of Survey conducted on 23 February 2024



3d Imagery Generated



28. The following is the overall Area and Volume Calculation for each chainage (Refer Drawings each Chainage L section) as per undertaking the Field Investigations and Survey.

1 Diva Dumping Ground										
Sr No	Chainage	Previous Chainage	Difference	Width	Area in Sqm	Previous Area in Sqm	Average area in Sqm	Volume in cum	Density	Quantity in tone
A	B	C	D	E	F	G	H (F+G/2)	I (H X D)	J	K (I X J)
1	10	0	0	20	56.8	0.0	28.4	0	1.00	0
2	15	10	5	55	164.3	56.8	110.6	552.81	1.00	552.81
3	20	15	5	80	285.4	164.3	224.9	1124.31	1.00	1124.31
4	25	20	5	120	405.6	285.4	345.5	1727.46	1.00	1727.46
5	30	25	5	145	527.6	405.6	466.6	2333.01	1.00	2333.01
6	35	30	5	150	601.0	527.6	564.3	2821.64	1.00	2821.64
7	40	35	5	155	689.5	601.0	645.3	3226.38	1.00	3226.38
8	45	40	5	150	798.3	689.5	743.9	3719.61	1.00	3719.61
9	50	45	5	155	1002.6	798.3	900.5	4502.39	1.00	4502.39
10	55	50	5	160	1209.6	1002.6	1106.1	5530.67	1.00	5530.67
11	60	55	5	165	1411.7	1209.6	1310.7	6553.33	1.00	6553.33
12	65	60	5	170	1597.3	1411.7	1504.5	7522.49	1.00	7522.49
13	70	65	5	175	1792.2	1597.3	1694.8	8473.87	1.00	8473.87
14	75	70	5	180	2373.4	1792.2	2082.8	10414.09	1.00	10414.09
15	80	75	5	180	2546.5	2373.4	2459.9	12299.64	1.00	12299.64
16	85	80	5	185	2744.1	2546.5	2645.3	13226.46	1.00	13226.46
17	90	85	5	205	2958.0	2744.1	2851.0	14255.23	1.00	14255.23
18	95	90	5	220	3166.6	2958.0	3062.3	15311.42	1.00	15311.42
19	100	95	5	225	3332.5	3166.6	3249.6	16247.87	1.00	16247.87
20	105	100	5	240	3530.5	3332.5	3431.5	17157.49	1.00	17157.49
21	110	105	5	245	3680.5	3530.5	3605.5	18027.49	1.00	18027.49
22	115	110	5	250	3838.7	3680.5	3759.6	18798.16	1.00	18798.16
23	120	115	5	250	3942.1	3838.7	3890.4	19452.03	1.00	19452.03
24	125	120	5	250	4003.3	3942.1	3972.7	19863.54	1.00	19863.54
25	130	125	5	250	4017.3	4003.3	4010.3	20051.48	1.00	20051.48
26	135	130	5	260	4012.7	4017.3	4015.0	20074.98	1.00	20074.98
27	140	135	5	255	3989.8	4012.7	4001.3	20006.34	1.00	20006.34
28	145	140	5	245	4009.7	3989.8	3999.7	19998.73	1.00	19998.73
29	150	145	5	240	4013.8	4009.7	4011.7	20058.67	1.00	20058.67
30	155	150	5	225	3960.5	4013.8	3987.2	19935.76	1.00	19935.76
31	160	155	5	220	3898.7	3960.5	3929.6	19648.14	1.00	19648.14
32	165	160	5	220	3884.5	3898.7	3891.6	19458.1	1.00	19458.1
33	170	165	5	210	3819.0	3884.5	3851.7	19258.69	1.00	19258.69
34	175	170	5	210	3809.4	3819.0	3814.2	19070.86	1.00	19070.86
35	180	175	5	210	3730.6	3809.4	3770.0	18849.91	1.00	18849.91
36	185	180	5	205	3586.9	3730.6	3658.8	18293.85	1.00	18293.85
37	190	185	5	200	3382.7	3586.9	3484.8	17424.18	1.00	17424.18
38	195	190	5	205	3264.5	3382.7	3323.6	16618.06	1.00	16618.06
39	200	195	5	205	3153.5	3264.5	3209.0	16044.91	1.00	16044.91
40	205	200	5	210	3078.6	3153.5	3116.0	15580.08	1.00	15580.08
41	210	205	5	205	3018.8	3078.6	3048.7	15243.4	1.00	15243.4

Table 9: Area and Volume Calculation for Each Chainage

42	215	210	5	205	2991.8	3018.8	3005.3	15026.59	1.00	15026.59
43	220	215	5	205	2951.5	2991.8	2971.7	14858.29	1.00	14858.29
44	225	220	5	195	2854.2	2951.5	2902.8	14514.05	1.00	14514.05
45	230	225	5	200	2861.5	2854.2	2857.8	14289.12	1.00	14289.12
46	235	230	5	190	2858.5	2861.5	2860.0	14300.08	1.00	14300.08
47	240	235	5	190	2799.1	2858.5	2828.8	14143.98	1.00	14143.98
48	245	240	5	190	2751.5	2799.1	2775.3	13876.48	1.00	13876.48
49	250	245	5	185	2654.9	2751.5	2703.2	13516.13	1.00	13516.13
50	255	250	5	185	2582.5	2654.9	2618.7	13093.47	1.00	13093.47
51	260	255	5	180	2486.0	2582.5	2534.2	12671.13	1.00	12671.13
52	265	260	5	175	2455.8	2486.0	2470.9	12354.51	1.00	12354.51
53	270	265	5	165	2379.6	2455.8	2417.7	12088.49	1.00	12088.49
54	275	270	5	165	2206.7	2379.6	2293.2	11465.78	1.00	11465.78
55	280	275	5	155	2113.9	2206.7	2160.3	10801.6	1.00	10801.6
56	285	280	5	150	2061.2	2113.9	2087.5	10437.64	1.00	10437.64
57	290	285	5	145	1965.0	2061.2	2013.1	10065.48	1.00	10065.48
58	295	290	5	145	1868.2	1965.0	1916.6	9582.96	1.00	9582.96
59	300	295	5	145	1779.5	1868.2	1823.8	9119.22	1.00	9119.22
60	305	300	5	150	1783.0	1779.5	1781.3	8906.28	1.00	8906.28
61	310	305	5	150	1837.3	1783.0	1810.1	9050.57	1.00	9050.57
62	315	310	5	155	1924.2	1837.3	1880.7	9403.53	1.00	9403.53
63	320	315	5	165	1987.8	1924.2	1956.0	9779.82	1.00	9779.82
64	325	320	5	170	1997.2	1987.8	1992.5	9962.29	1.00	9962.29
65	330	325	5	170	1981.1	1997.2	1989.1	9945.68	1.00	9945.68
66	335	330	5	165	1923.4	1981.1	1952.2	9761.21	1.00	9761.21
67	340	335	5	160	1852.0	1923.4	1887.7	9438.29	1.00	9438.29
68	345	340	5	150	1758.4	1852.0	1805.2	9025.75	1.00	9025.75
69	350	345	5	145	1673.7	1758.4	1716.0	8580.11	1.00	8580.11
70	355	350	5	140	1574.0	1673.7	1623.9	8119.35	1.00	8119.35
71	360	355	5	130	1441.4	1574.0	1507.7	7538.57	1.00	7538.57
72	365	360	5	120	1295.3	1441.4	1368.4	6841.76	1.00	6841.76
73	370	365	5	120	1160.4	1295.3	1227.9	6139.37	1.00	6139.37
74	375	370	5	110	999.1	1160.4	1079.8	5398.8	1.00	5398.8
75	380	375	5	100	867.4	999.1	933.2	4666.16	1.00	4666.16
76	385	380	5	80	696.2	867.4	781.8	3908.89	1.00	3908.89
77	390	385	5	80	626.0	696.2	661.1	3305.49	1.00	3305.49
78	395	390	5	75	551.4	626.0	588.7	2943.65	1.00	2943.65
79	400	395	5	65	464.9	551.4	508.2	2540.93	1.00	2540.93
80	405	400	5	60	408.3	464.9	436.6	2182.98	1.00	2182.98
81	410	405	5	55	340.2	408.3	374.2	1871.14	1.00	1871.14
82	415	410	5	55	298.4	340.2	319.3	1596.51	1.00	1596.51
83	420	415	5	40	210.0	298.4	254.2	1271.14	1.00	1271.14
84	425	420	5	10	50.1	210.0	130.1	650.4	1.00	650.4
							Total Volume	917791	Total Quantity	917791
2 Diva Shil road										
Sr No	Chainage	Previous Chainage	Difference	Width	Area in Sqm	Previous Area in Sqm	Average area in Sqm	Volume in cum	Density	Quantity in tone
A	B	C	D	E	F	G	H (F+G/2)	I (H X D)	J	K (I X J)

Table 9: Area and Volume Calculation for Each Chainage

1	25	0	0	15	134.3	0.0	67.1	0	1.00	0
2	30	25	5	35	311.0	134.3	222.7	1113.34	1.00	1113.34
3	35	30	5	70	618.7	311.0	464.9	2324.34	1.00	2324.34
4	40	35	5	95	843.2	618.7	730.9	3654.72	1.00	3654.72
5	45	40	5	110	982.1	843.2	912.6	4563.13	1.00	4563.13
6	50	45	5	125	1124.7	982.1	1053.4	5266.77	1.00	5266.77
7	55	50	5	145	1320.0	1124.7	1222.3	6111.59	1.00	6111.59
8	60	55	5	165	1514.5	1320.0	1417.2	7086.2	1.00	7086.2
9	65	60	5	180	1666.6	1514.5	1590.6	7952.87	1.00	7952.87
10	70	65	5	195	1823.0	1666.6	1744.8	8724.18	1.00	8724.18
11	75	70	5	190	1795.1	1823.0	1809.1	9045.36	1.00	9045.36
12	80	75	5	190	1809.3	1795.1	1802.2	9011.16	1.00	9011.16
13	85	80	5	190	1730.7	1809.3	1770.0	8850.17	1.00	8850.17
14	90	85	5	185	1709.7	1730.7	1720.2	8600.97	1.00	8600.97
15	95	90	5	185	1727.1	1709.7	1718.4	8591.89	1.00	8591.89
16	100	95	5	190	1764.3	1727.1	1745.7	8728.46	1.00	8728.46
17	105	100	5	190	1730.3	1764.3	1747.3	8736.35	1.00	8736.35
18	110	105	5	195	1841.1	1730.3	1785.7	8928.34	1.00	8928.34
19	115	110	5	195	1833.6	1841.1	1837.4	9186.75	1.00	9186.75
20	120	115	5	200	1899.0	1833.6	1866.3	9331.59	1.00	9331.59
21	125	120	5	200	1915.8	1899.0	1907.4	9537.01	1.00	9537.01
22	130	125	5	195	1883.5	1915.8	1899.7	9498.29	1.00	9498.29
23	135	130	5	210	2061.5	1883.5	1972.5	9862.56	1.00	9862.56
24	140	135	5	190	1899.9	2061.5	1980.7	9903.4	1.00	9903.4
25	145	140	5	190	1950.5	1899.9	1925.2	9625.87	1.00	9625.87
26	150	145	5	190	1933.8	1950.5	1942.1	9710.6	1.00	9710.6
27	155	150	5	190	1938.4	1933.8	1936.1	9680.51	1.00	9680.51
28	160	155	5	185	1919.8	1938.4	1929.1	9645.63	1.00	9645.63
29	165	160	5	185	1950.2	1919.8	1935.0	9674.99	1.00	9674.99
30	170	165	5	180	1957.8	1950.2	1954.0	9769.99	1.00	9769.99
31	175	170	5	180	1970.5	1957.8	1964.2	9820.78	1.00	9820.78
32	180	175	5	175	1933.4	1970.5	1952.0	9759.82	1.00	9759.82
33	185	180	5	175	1906.7	1933.4	1920.0	9600.2	1.00	9600.2
34	190	185	5	170	1673.3	1906.7	1790.0	8949.96	1.00	8949.96
35	195	190	5	170	1650.7	1673.3	1662.0	8310.05	1.00	8310.05
36	200	195	5	165	1631.9	1650.7	1641.3	8206.58	1.00	8206.58
37	205	200	5	165	1662.3	1631.9	1647.1	8235.64	1.00	8235.64
38	210	205	5	170	1730.9	1662.3	1696.6	8483.11	1.00	8483.11
39	215	210	5	170	1743.9	1730.9	1737.4	8687.15	1.00	8687.15
40	220	215	5	170	1785.3	1743.9	1764.6	8823.05	1.00	8823.05
41	225	220	5	165	1731.1	1785.3	1758.2	8790.95	1.00	8790.95
42	230	225	5	160	1686.4	1731.1	1708.7	8543.68	1.00	8543.68
43	235	230	5	155	1625.6	1686.4	1656.0	8279.91	1.00	8279.91
44	240	235	5	150	1537.8	1625.6	1581.7	7908.48	1.00	7908.48
45	245	240	5	145	1461.3	1537.8	1499.6	7497.77	1.00	7497.77
46	250	245	5	140	1387.2	1461.3	1424.2	7121.12	1.00	7121.12
47	255	250	5	135	1377.9	1387.2	1382.5	6912.61	1.00	6912.61
48	260	255	5	120	1230.0	1377.9	1304.0	6519.86	1.00	6519.86
49	265	260	5	105	1076.9	1230.0	1153.5	5767.31	1.00	5767.31
50	270	265	5	105	1058.9	1076.9	1067.9	5339.48	1.00	5339.48

Table 9: Area and Volume Calculation for Each Chainage

51	275	270	5	95	961.1	1058.9	1010.0	5050	1.00	5050
52	280	275	5	90	911.6	961.1	936.3	4681.64	1.00	4681.64
53	285	280	5	85	861.3	911.6	886.4	4432.22	1.00	4432.22
54	290	285	5	85	851.0	861.3	856.2	4280.76	1.00	4280.76
55	295	290	5	80	797.1	851.0	824.0	4120.09	1.00	4120.09
56	300	295	5	75	734.4	797.1	765.7	3828.68	1.00	3828.68
57	305	300	5	60	594.4	734.4	664.4	3322.14	1.00	3322.14
58	310	305	5	60	547.8	594.4	571.1	2855.48	1.00	2855.48
59	315	310	5	55	465.0	547.8	506.4	2531.92	1.00	2531.92
60	320	315	5	30	234.5	465.0	349.7	1748.74	1.00	1748.74
61	325	320	5	10	69.9	234.5	152.2	760.93	1.00	760.93
							Total Volume	431887	Total Quantity	431887
3 Diva Desai khadi										
Sr No	Chainage	Previous Chainage	Difference	Width	Area in Sqm	Previous Area in Sqm	Average area in Sqm	Volume in cum	Density	Quantity in tone
A	B	C	D	E	F	G	H (F+G/2)	I (H X D)	J	K (I X J)
1	65	0	0	20	28.9	0.0	14.5	0	1.00	0
2	70	65	5	30	46.0	28.9	37.5	187.28	1.00	187.28
3	75	70	5	35	66.6	46.0	56.3	281.52	1.00	281.52
4	80	75	5	40	117.4	66.6	92.0	460.02	1.00	460.02
5	85	80	5	50	107.7	117.4	112.5	562.64	1.00	562.64
6	90	85	5	55	124.6	107.7	116.1	580.71	1.00	580.71
7	95	90	5	65	146.7	124.6	135.7	678.26	1.00	678.26
8	100	95	5	75	171.9	146.7	159.3	796.55	1.00	796.55
9	105	100	5	85	204.4	171.9	188.2	940.79	1.00	940.79
10	110	105	5	90	237.5	204.4	221.0	1104.81	1.00	1104.81
11	115	110	5	95	268.5	237.5	253.0	1265.08	1.00	1265.08
12	120	115	5	100	298.5	268.5	283.5	1417.41	1.00	1417.41
13	125	120	5	105	329.6	298.5	314.0	1570.07	1.00	1570.07
14	130	125	5	110	425.2	329.6	377.4	1886.89	1.00	1886.89
15	135	130	5	115	445.7	425.2	435.5	2177.35	1.00	2177.35
16	140	135	5	120	474.6	445.7	460.2	2300.92	1.00	2300.92
17	145	140	5	125	507.7	474.6	491.2	2455.93	1.00	2455.93
18	150	145	5	130	535.6	507.7	521.7	2608.32	1.00	2608.32
19	155	150	5	135	559.2	535.6	547.4	2736.94	1.00	2736.94
20	160	155	5	140	597.1	559.2	578.2	2890.76	1.00	2890.76
21	165	160	5	145	630.3	597.1	613.7	3068.56	1.00	3068.56
22	170	165	5	145	681.7	630.3	656.0	3279.92	1.00	3279.92
23	175	170	5	155	727.5	681.7	704.6	3522.97	1.00	3522.97
24	180	175	5	165	778.9	727.5	753.2	3766.04	1.00	3766.04
25	185	180	5	165	804.2	778.9	791.5	3957.59	1.00	3957.59
26	190	185	5	175	837.4	804.2	820.8	4103.98	1.00	4103.98
27	195	190	5	190	921.1	837.4	879.3	4396.39	1.00	4396.39
28	200	195	5	200	953.3	921.1	937.2	4686.00	1.00	4686.00
29	205	200	5	205	996.4	953.3	974.8	4874.21	1.00	4874.21
30	210	205	5	210	1024.2	996.4	1010.3	5051.51	1.00	5051.51

Table 9: Area and Volume Calculation for Each Chainage

31	215	210	5	215	1066.1	1024.2	1045.1	5225.69	1.00	5225.69
32	220	215	5	215	1094.3	1066.1	1080.2	5400.93	1.00	5400.93
33	225	220	5	215	932.5	1094.3	1013.4	5067.11	1.00	5067.11
34	230	225	5	215	960.7	932.5	946.6	4733.23	1.00	4733.23
35	235	230	5	215	977.7	960.7	969.2	4846.19	1.00	4846.19
36	240	235	5	215	1004.0	977.7	990.8	4954.2	1.00	4954.2
37	245	240	5	215	1035.6	1004.0	1019.8	5098.87	1.00	5098.87
38	250	245	5	215	1057.5	1035.6	1046.6	5232.86	1.00	5232.86
39	255	250	5	215	1064.0	1057.5	1060.8	5303.83	1.00	5303.83
40	260	255	5	210	1031.0	1064.0	1047.5	5237.5	1.00	5237.5
41	265	260	5	210	802.5	1031.0	916.8	4583.78	1.00	4583.78
42	270	265	5	205	757.5	802.5	780.0	3899.87	1.00	3899.87
43	275	270	5	195	727.9	757.5	742.7	3713.27	1.00	3713.27
44	280	275	5	155	692.5	727.9	710.2	3551.01	1.00	3551.01
45	285	280	5	150	687.4	692.5	690.0	3449.86	1.00	3449.86
46	290	285	5	145	675.8	687.4	681.6	3408.04	1.00	3408.04
47	295	290	5	140	664.2	675.8	670.0	3350.05	1.00	3350.05
48	300	295	5	145	679.9	664.2	672.1	3360.34	1.00	3360.34
49	305	300	5	155	714.3	679.9	697.1	3485.63	1.00	3485.63
50	310	305	5	160	751.9	714.3	733.1	3665.45	1.00	3665.45
51	315	310	5	160	769.7	751.9	760.8	3803.93	1.00	3803.93
52	320	315	5	165	744.9	769.7	757.3	3786.46	1.00	3786.46
53	325	320	5	165	551.4	744.9	648.2	3240.75	1.00	3240.75
54	330	325	5	165	525.4	551.4	538.4	2691.96	1.00	2691.96
55	335	330	5	165	484.5	525.4	504.9	2524.63	1.00	2524.63
56	340	335	5	165	28.9	484.5	256.7	1283.54	1.00	1283.54
57	345	340	5	160	406.3	28.9	217.6	1087.96	1.00	1087.96
58	350	345	5	150	353.2	406.3	379.7	1898.68	1.00	1898.68
59	355	350	5	135	307.9	353.2	330.6	1652.85	1.00	1652.85
60	360	355	5	125	248.5	307.9	278.2	1391.04	1.00	1391.04
61	365	360	5	105	185.9	248.5	217.2	1085.97	1.00	1085.97
62	370	365	5	85	125.1	185.9	155.5	777.59	1.00	777.59
63	375	370	5	60	64.6	125.1	94.9	474.32	1.00	474.32
64	380	375	5	40	26.4	64.6	45.5	227.44	1.00	227.44
							Total Volume	181,104	Total Quantity	181,104

3 Bhandarli

Sr No	Chainage	Previous Chainage	Difference	Width	Area in Sqm	Previous Area in Sqm	Average area in Sqm	Volume in cum	Density	Quantity in tone
A	B	C	D	E	F	G	H (F+G/2)	I (H X D)	J	K (I X J)
1	5	0	0	10	50.0	0.0	25.0	0	1.00	0
2	10	5	5	25	125.0	50.0	87.5	437.5	1.00	437.5
3	15	10	5	40	203.8	125.0	164.4	821.88	1.00	821.88
4	20	15	5	45	251.3	203.8	227.5	1137.5	1.00	1137.5
5	25	20	5	55	308.8	251.3	280.0	1400	1.00	1400

Table 9: Area and Volume Calculation for Each Chainage

6	30	25	5	40	241.3	308.8	275.0	1375	1.00	1375
7	35	30	5	55	308.8	241.3	275.0	1375	1.00	1375
8	40	35	5	30	180.0	308.8	244.4	1221.88	1.00	1221.88
9	45	40	5	40	240.0	180.0	210.0	1050	1.00	1050
10	50	45	5	45	270.0	240.0	255.0	1275	1.00	1275
11	55	50	5	50	300.0	270.0	285.0	1425	1.00	1425
12	60	55	5	55	330.0	300.0	315.0	1575	1.00	1575
13	65	60	5	55	330.0	330.0	330.0	1650	1.00	1650
14	70	65	5	60	360.0	330.0	345.0	1725	1.00	1725
15	75	70	5	60	360.0	360.0	360.0	1800	1.00	1800
16	80	75	5	65	390.0	360.0	375.0	1875	1.00	1875
17	85	80	5	70	420.0	390.0	405.0	2025	1.00	2025
18	90	85	5	70	420.0	420.0	420.0	2100	1.00	2100
19	95	90	5	70	490.0	420.0	455.0	2275	1.00	2275
20	100	95	5	80	560.0	490.0	525.0	2625	1.00	2625
21	105	100	5	75	525.0	560.0	542.5	2712.5	1.00	2712.5
22	110	105	5	75	525.0	525.0	525.0	2625	1.00	2625
23	115	110	5	85	595.0	525.0	560.0	2800	1.00	2800
24	120	115	5	85	595.0	595.0	595.0	2975	1.00	2975
25	125	120	5	85	595.0	595.0	595.0	2975	1.00	2975
26	130	125	5	90	630.0	595.0	612.5	3062.5	1.00	3062.5
27	135	130	5	90	630.0	630.0	630.0	3150	1.00	3150
28	140	135	5	90	630.0	630.0	630.0	3150	1.00	3150
29	145	140	5	90	630.0	630.0	630.0	3150	1.00	3150
30	150	145	5	95	665.0	630.0	647.5	3237.5	1.00	3237.5
31	155	150	5	95	665.0	665.0	665.0	3325	1.00	3325
32	160	155	5	95	665.0	665.0	665.0	3325	1.00	3325
33	165	160	5	95	665.0	665.0	665.0	3325	1.00	3325
34	170	165	5	95	665.0	665.0	665.0	3325	1.00	3325
35	175	170	5	95	665.0	665.0	665.0	3325	1.00	3325
36	180	175	5	95	665.0	665.0	665.0	3325	1.00	3325
37	185	180	5	100	700.0	665.0	682.5	3412.5	1.00	3412.5
38	190	185	5	105	892.5	700.0	796.3	3981.25	1.00	3981.25
39	195	190	5	100	850.0	892.5	871.3	4356.25	1.00	4356.25
40	200	195	5	100	850.0	850.0	850.0	4250	1.00	4250
41	205	200	5	100	850.0	850.0	850.0	4250	1.00	4250
42	210	205	5	100	850.0	850.0	850.0	4250	1.00	4250
43	215	210	5	105	892.5	850.0	871.3	4356.25	1.00	4356.25
44	220	215	5	105	892.5	892.5	892.5	4462.5	1.00	4462.5
45	225	220	5	105	892.5	892.5	892.5	4462.5	1.00	4462.5
46	230	225	5	100	850.0	892.5	871.3	4356.25	1.00	4356.25
47	235	230	5	100	850.0	850.0	850.0	4250	1.00	4250

Table 9: Area and Volume Calculation for Each Chainage

48	240	235	5	100	850.0	850.0	850.0	4250	1.00	4250
49	245	240	5	100	850.0	850.0	850.0	4250	1.00	4250
50	250	245	5	100	850.0	850.0	850.0	4250	1.00	4250
51	255	250	5	100	850.0	850.0	850.0	4250	1.00	4250
52	260	255	5	95	807.5	850.0	828.8	4143.75	1.00	4143.75
53	265	260	5	95	807.5	807.5	807.5	4037.5	1.00	4037.5
54	270	265	5	90	765.0	807.5	786.3	3931.25	1.00	3931.25
55	275	270	5	75	637.5	765.0	701.3	3506.25	1.00	3506.25
56	280	275	5	25	212.5	637.5	425.0	2125	1.00	2125
							Total Volume	160088	Total Quantity	160088

Source: Field Survey

*- The above Volume are for the Heaps only

29. The following is the summary of Legacy Waste Dump Quantity Estimates at the presented site based on the Topographical and contour Survey. The presented waste in Metric Ton is calculated based on densities analyzed as per Legacy waste sampling during field survey. Due to high height of the heap, it is difficult to measure the density in the inner core. Further, the densities also vary based on weathering effect. Hence, it is recommended to consider the volume of the heap for any actions to be taken through this survey. The following estimates are presented just for an understanding based on certain assumptions.

Table 10: Summary of Legacy Waste Quantity Estimates

Site Name	Volume (in CuM)	Quantity (in Metric Ton)	Waste Spread Area (in SQM)
Diva dumping ground	9,17,791.00	9,17,791.00	68372.76
Diva Shil road	4,31,887.00	4,31,887.00	43552.65
Diva Desai khadi	1,81,104.00	1,81,104.00	46351.40
Bhandarli	1,60,088.00	1,60,088.00	21,486.38
Total	16,90,870.00	16,90,870.00	1,79,763.19

Source: Consultant Derived through survey

30. NEERI's study "Assessment of Status of Municipal Solid Wastes Management in Metro Cities and State Capitals" in 2004-2005 assessed 59 cities (35 metro cities and 24 state capitals). Studies have revealed that waste generation rate varies from 0.12 to 0.60 kg/capita/day. Analysis of physical composition indicates that total compostable matter in the waste is 40%-60%, while recyclable fraction is 10%-25%. The **moisture content in the MSW is 30%-60%**, while the C/N ratio is 20-40. During Stabilization 20-25% of the moisture loss is occurred.



Site Name	Quantity (A) (in Metric Ton)	Moisture loss (B) (20 - 25%) (Say 22%)	Final Quantity (A – B) (in Metric Ton)
Diva dumping ground	9,17,791.00	~22%	7,15,877.00
Diva Shil road	4,31,887.00	~22%	3,36,872.00
Diva Desai khadi	1,81,104.00	~22%	1,41,261.00
Bhandarli	1,60,088	~22%	1,24,869.00
Total	16,90,870	~22%	13,18,879.00

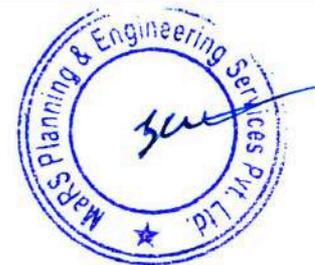
Source: CPHEEO Guidelines Part – 2

3. Waste Characterisation

31. The following are the finding of waste Characterization study conducted on site.

Type	Site 1 Diva dump site	Site 2 Diva shil road	Site 3 Diva Desai khadi	Site 4 Bhandarli	
Combustible (A)	Plastic, Polythene, Tetra Packs Etc	18.70%	20.00%	19.20%	3.21%
	Paper and Card Board	0.95%	0.81%	0.78%	0.25%
	Horticulture Waste & Wooden Piece	1.16%	2.71%	2.92%	0.80%
	Textiles	4.08%	3.20%	4.35%	1.28%
Recyclables (B)	Metal	0.19%	0.18%	0.22%	0.08%
	Glass	1.04%	4.26%	3.35%	2.05%
	Leather, Rubber Etc	0.02%	0.03%	0.02%	0.01%
Stone/Silt/ Debris etc. (C)	Heavy Fractions	34.20%	17.80%	24.47%	32.08%
	Coarser fraction	6.16%	8.81%	6.63%	8.05%
	Fine Fractions	33.50%	42.20%	38.06%	52.19%
Total (A+B+C)	~100%	~100%	~100%	~100%	

Source: - Field verification by consultant and Lab report
Note: - waste characterisation result is obtain based on sample taken from different three locations at dump site.



D. Proposed Approach for Dumpsite Remediation

32. The remediation of dumpsites leads to the following advantages:

- Elimination of foul odour to benefit the citizen living nearby
- Decline in vector borne diseases arising out of the dumpsite
- Significant Reduction in Air pollution of the entire area
- Elimination of dump fires and leachate generation
- Uplifting of the environmental, aesthetic and social parameters of entire area
- Reduction in Green House Gas Emissions, soil pollution and Ground water contamination
- Increase in nearby real state value and rental values.
- Dumpsite land becomes available for other use

1. Options available for Dumpsite Remediation

a) Capping Model without Land Recovery

33. The dumpsite is profiled, covered with soil, surface drainage system, leachate management and gas collection systems and capped. The land becomes a green space. Has environmental monitoring systems. This is adopted in absence of viable reclamation options.

Table 13: Advantages & Disadvantages for Capping Model without Land Recovery

Advantages	Disadvantages
<ul style="list-style-type: none"> - Can be completed fast - Process requires less environmental clearances - Relatively cheaper - Land capped can be developed into parks /recreational areas 	<ul style="list-style-type: none"> - No land recovery, no financial benefit from land capped (except parks/ recreation) - Regular operation and maintenance required, thus recurring expenditure. - Problems with leachate collection and gas generation - Post closure O&M

Before

After



Partial land reclamation and capping project carried out at Nashik, Maharashtra.

Source: Advisory on Landfill Reclamation issued by CPHEEO, Ministry of Housing and Urban Affairs Government of India

34. Although capping is mentioned as a method in this advisory, it must be noted that SWM Rules

2016 and NGT have mandated that for remediation of legacy waste dumpsites Bioremediation is preferred over Capping.

b) Bioremediation and Capping model with part Land recovery

35. In this process, approximately **50- 60 % waste is excavated**, which is then processed as per CPCB guidelines. The useful fractions derived from this process can be sold to relevant buyers and the inert material with rest of the dumpsite will be capped to prevent further degradation of the environment.

Table 14: Advantages & Disadvantages for Bioremediation and Capping model with part Land recovery

Advantages	Disadvantages
<ul style="list-style-type: none"> - Cheaper than 100% reclamation & Can be faster than 100% reclamation - Waste segregated is utilized onsite - Disposal of segregated portions becomes easy - Land capped can be developed into parks /recreational areas 	<ul style="list-style-type: none"> - No 100% land recovery - Difficult to quantify the waste - Less Post closure O&M compared to 100% capping

Source: Advisory on Landfill Reclamation issued by CPHEEO, Ministry of Housing and Urban Affairs Government of India

c) Reclamation with complete Land recovery

36. This refers to the excavation of old dumped waste and making windrow of legacy waste to stabilize of the waste through bio-remediation i.e. exposure of all the waste to air along with use of composting bio-cultures, followed by screening of the stabilized waste to recover all valuable resources (like organic fines, bricks, stones, plastics, metals, clothes, rags etc.) followed by sustainable management through recycling, co-processing, road construction etc.

Table 15: Advantages & Disadvantages of Reclamation with complete Land recovery

Advantages	Disadvantages
<ul style="list-style-type: none"> - 100% Land recovery - Volume of waste is reduced - Waste segregated is utilized onsite - End to Environmental management (air,water, soil) and Compliance to SWM Rules & NGT orders 	<ul style="list-style-type: none"> - Expensive, requires heavy machinery - Methodology is time taking, extensive work - Disposal of segregated portions is a challenge (transportation etc.) - Difficult to quantify the waste. Expensive to weigh all recovered fractions



Complete land recovery project at Poonamallee, Tamil Nadu

Source: Advisory on Landfill Reclamation issued by CPHEEO, Ministry of Housing and Urban Affairs Government of India

37. The SWM Rules 2016 and NGT clearly mandate clearing of sites as a first option, by bio-mining and bio-remediation. Still, capping is often proposed or considered an option in India merely because it is done in the West. But clearing a dumpsite almost to ground level rather than capping is a far better option for permanent pollution prevention, as well as for the following additional reasons:
- Clearing by bio-mining recovers the entire base area of a dump at almost ground level. Capping gives only one-third of the base area as usable area at an inconvenient height for future use.
 - Cleared sites require no after-care. Capping requires at least 15 years of continuous leachate pump-out and treatment in a dedicated effluent treatment plant nearby. Gas extraction is very difficult and inefficient when attempts are made to insert suction pipes into dumped waste instead of before dumping begins.
 - Capping of open dumps (wrongly called SLFs or Sanitary Landfills) requires intake of fresh waste to be stopped and permanently diverted to a fresh site before capping begins. With increasing protests against fresh waste disposal sites, getting started elsewhere can often delay capping plans indefinitely. Bio-remediation and Bio-mining to clear a site can start immediately at one part of an actively used dump while fresh waste continues to be received and stabilized at another part. Clearing can be done in phases to match available funds.
 - Bioremediation and reclamation of part of land by utilizing part of retrieved fractions and the leftovers heaped in stable profile and capped appropriately. In this process, approximately 50- 60 % waste is excavated, which is then processed as per CPCB guidelines. The useful fractions derived from this process can be sold to relevant buyers and the inert material with rest of the dumpsite will be capped to prevent further degradation of the environment.

2. *Proposed Approach for Dumpsite Remediation*

38. 100% Bioremediations and resource recovery and its utilization is possible. Henceforth it is proposed to undertake a Bioremediation. Bioremediations of the waste needs to be done for the entire quantity of waste. Efforts should more be focussed to recover maximum resources from the legacy waste and utilise them for various purpose.
39. The proposed project adopts an integrated approach (Bioremediation) with the following objective-
- Valuable land (**100%**) of the waste spreader on site shall be reclaimed through the approach.
 - **Lowest Natural** Ground Level is proposed to be reached.
 - Raking of garbage layer through long spike harrow operating in cross directions shall be done regularly to pull out rags, plastic, rubber, textiles etc.
 - Legacy waste shall be screened through rotary/ horizontal screens. The recovered fractions shall be put to use onsite only to the maximum extent possible.
40. Below is the indicative overview of dumpsite remediation process.



3. Material Balance & Disposal Strategies

41. A materials balance is prepared for each fraction required for to be managed for dumpsite reclamation is given in the following table.

Table 16: Material Balance and disposal strategies for fractions recovered						
Site 1 - Diva dump site						
Type		% Share		Estimated Quantity of Products (in MT)		Disposal Strategy of Screened Material
Organic Fraction (includes Horticulture waste, Paper and cardboard, Fine fraction)	Biodegraded Fraction	39.10%	39.10%	2,79,908	279908	Soil / Good Earth: - To be used for Landscaping/ Farming / Soil Conditioner On site
Combustible	Plastic, Polythene, Tetra Packs Etc	18.70%	24.89%	1,33,869	178182	Combustible: - RDF Preparation or to be sent to Cement Factory for Co-processing or Balance to be sent to Landfill site
	Paper and Card Board	0.95%		6,801		
	Horticulture Waste & Wooden Piece	1.16%		8,304		
	Textiles	4.08%		29,208		
Recyclables	Metal	0.19%	1.25%	1,360	8948	Recyclables: - To be Directly sent to authorize recyclers
	Glass	1.04%		7,445		
	Leather, Rubber Etc	0.02%		143		
Stone/Silt/ Debris etc.	Heavy Fractions	34.20%	73.86%	2,44,830	528747	Used for Onsite Construction plinth filling or Balance to

Table 16: Material Balance and disposal strategies for fractions recovered						
						be sent to Landfill site
	Coarser fraction	6.16%		44,098		To be Used as filling Material or Balance to be sent to Landfill site
	Fine Fractions	33.50%		2,39,819		To be Used as filling Material or Balance to be sent to Landfill site
Site 2 - Diva Shil road						
Type		% Share		Estimated Quantity of Products (in MT)		Disposal Strategy of Screened Material
Organic Fraction (includes Horticulture waste, Paper and cardboard, Fine fraction)	Biodegraded Fraction	48.10%	48.10%	1,62,035	162035	Soil / Good Earth: - To be used for Landscaping/ Farming / Soil Conditioner On site
Combustible	Plastic, Polythene, Tetra Packs Etc	20.00%	26.72%	67,374	90012	Combustible: - RDF Preparation or to be sent to Cement Factory for Co-processing or Balance to be sent to Landfill site
	Paper and Card Board	0.81%		2,729		
	Horticulture Waste & Wooden Piece	2.71%		9,129		
	Textiles	3.20%		10,780		
Recyclables	Metal	0.18%	4.47%	606	15058	Recyclables: - To be Directly sent to authorize recyclers
	Glass	4.26%		14,351		
	Leather, Rubber Etc	0.03%		101		
Stone/Silt/ Debris etc.	Heavy Fractions	17.80%	68.81%	59,963	231802	Used for Onsite Construction plinth filling or Balance to be sent to Landfill site
	Coarser fraction	8.81%		29,678		To be Used as filling Material or Balance to be sent to Landfill site
	Fine Fractions	42.20%		1,42,160		To be Used as filling Material or Balance to be sent to Landfill site
Organic Fraction (includes Horticulture waste, Paper and cardboard, Fine fraction)	Biodegraded Fraction	46.11%	46.11%	65,135	65136	Soil / Good Earth: - To be used for Landscaping/ Farming / Soil Conditioner On site

Table 16: Material Balance and disposal strategies for fractions recovered						
Combustible	Plastic, Polythene, Tetra Packs Etc	19.20%	27.25%	27,122	38494	Combustible: - RDF Preparation or to be sent to Cement Factory for Co-processing or Balance to be sent to Landfill site
	Paper and Card Board	0.78%		1,102		
	Horticulture Waste & Wooden Piece	2.92%		4,125		
	Textiles	4.35%		6,145		
Recyclables	Metal	0.22%	3.59%	311	5065	Recyclables: - To be Directly sent to authorize recyclers
	Glass	3.35%		4,732		
	Leather, Rubber Etc	0.02%		22		
Stone/Silt/ Debris etc.	Heavy Fractions	24.47%	69.16%	34,567	97702	Used for Onsite Construction plinth filling or Balance to be sent to Landfill site
	Coarser fraction	6.63%		9,372		To be Used as filling Material or Balance to be sent to Landfill site
	Fine Fractions	38.06%		53,764		To be Used as filling Material or Balance to be sent to Landfill site
Site 4 - Bhandarli						
Type		% Share		Estimated Quantity of Products (in MT)		Disposal Strategy of Screened Material
Organic Fraction (includes Horticulture waste, Paper and cardboard, Fine fraction)	Biodegraded Fraction	53.60%	53.60%	66,930	66930	Soil / Good Earth: - To be used for Landscaping/ Farming / Soil Conditioner On site
Combustible	Plastic, Polythene, Tetra Packs Etc	3.21%	5.54%	4,008	4,008 312 999	Combustible: - RDF Preparation or to be sent to Cement Factory for Co-processing or Balance to be sent to Landfill site
	Paper and Card Board	0.25%		312		
	Horticulture Waste & Wooden Piece	0.80%		999		
	Textiles	1.28%		1,598		
Recyclables	Metal	0.08%	2.14%	100	2672	Recyclables: - To be Directly sent to authorize recyclers
	Glass	2.05%		2,560		
	Leather, Rubber Etc	0.01%		12		

Table 16: Material Balance and disposal strategies for fractions recovered						
Stone/Silt/ Debris etc.	Heavy Fractions	32.08%	92.32%	40,058	115259	Used for Onsite Construction plinth filling or Balance to be sent to Landfill site
	Coarser fraction	8.05%		10,052		To be Used as filling Material or Balance to be sent to Landfill site
	Fine Fractions	52.19%		65,169		To be Used as filling Material or Balance to be sent to Landfill site
Total RDF, Inert and Recyclable material recovered from all four site						
Description	Total RDF Generation in MT		Total inert generation in MT		Total Recyclable in MT	
Site 1	178182		528747		8948	
Site 2	90012		231802		15058	
Site 3	38494		97702		5065	
Site 4	6918		115279		2672	
Total	313605		973530		31744	
% to the total Waste quantity	23.78%		73.81%		2.41%	
Source: Consultant						

42. The Biodegraded Waste Fraction in all the sites is as follows:

Table 17: Biodegradable Waste Fraction								
Description	Site 1		Site 2		Site 3		Site 4	
	% Share	(in MT)	% Share	(in MT)	% Share	(in MT)	% Share	(in MT)
Horticulture Waste & Wooden Piece	1.16%	8304.17	2.71%	9129.23	2.92%	4124.82	0.80%	998.95
Paper and Card Board	0.95%	6800.83	0.81%	2728.66	0.78%	1101.84	0.25%	312.17
Textiles	4.08%	29207.78	3.20%	10779.90	4.35%	6144.85	1.28%	1598.32
Fine Fractions	33.50%	239818.80	42.20%	142159.98	38.06%	53763.94	52.19%	65169.13
Total Biodegradable Waste	39.10%	284131.58	48.10%	164797.78	46.11%	65135.45	54.52%	68078.58

4. Proposed Outputs to be achieved in the project

43. The following are the output to be achieved through the proposed project-

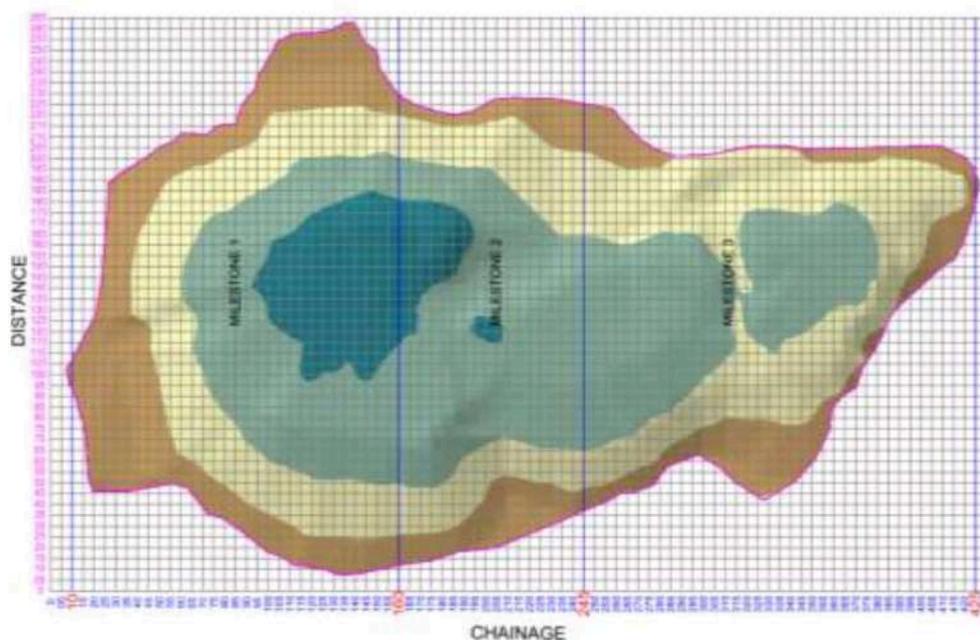
Table 18: Output proposed to be achieved			
No.	Details	Output	Remarks
1	Waste Spread Area of Diva dumpsite	68372.76 Sqm	

No.	Details	Output	Remarks
2	Waste Spread Area of Diva Shil Road	43552.65 Sqm	
3	Waste Spread Area of Diva Desai khadi	46351.40 Sqm	
4	Waste Spread Area of Bhandarli	21,486.38 Sqm	
5	Total waste spread area of all four site	1,79,763.19 Sqm	
6	Area to be reclaimed	1,79,763.19 Sqm	~ 100% of the Waste Spread Area

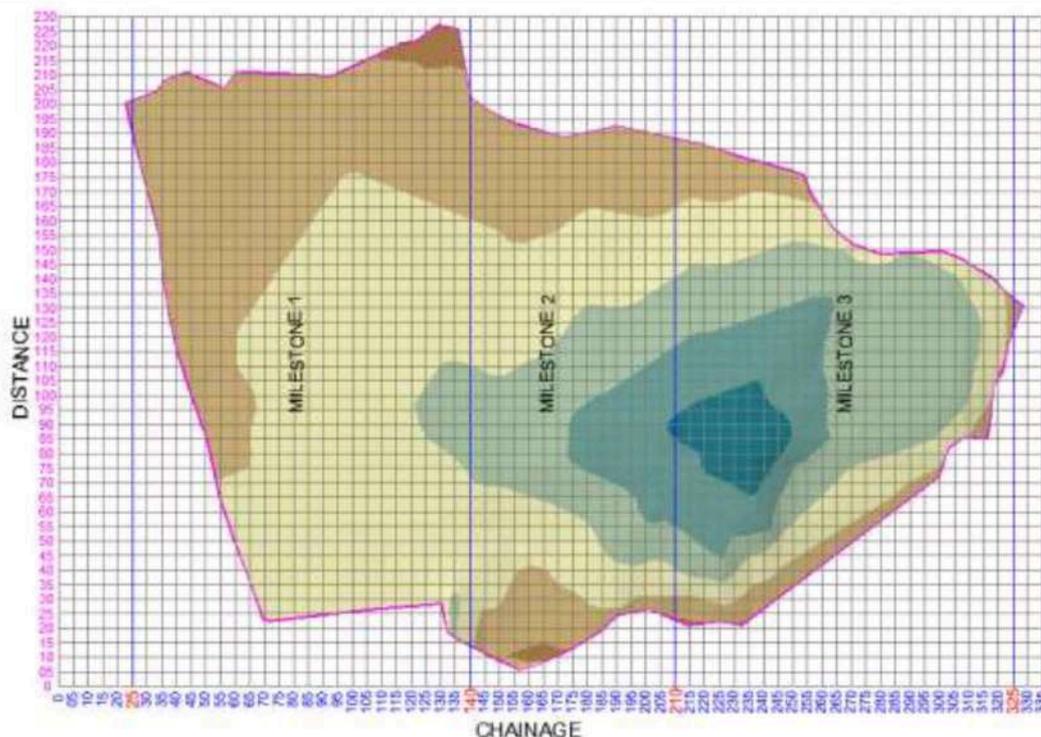
Source: Consultant

44. The dumpsite reclamation is divided into **3 Milestone** as under

1.Div a Dumping ground						
Milestone No.	Chainage		Quantity of Waste		Area to be Cleared through Bioremediation*	
	From	To	In MT	%age of total	In SQM	%age of total
1	10	160	283074	39.54%	27041.43	39.55%
2	165	245	215943	30.16%	20621.22	30.16%
3	250	425	216860	30.29%	20710.11	30.29%
			7,15,877	100%	68372.76	100%

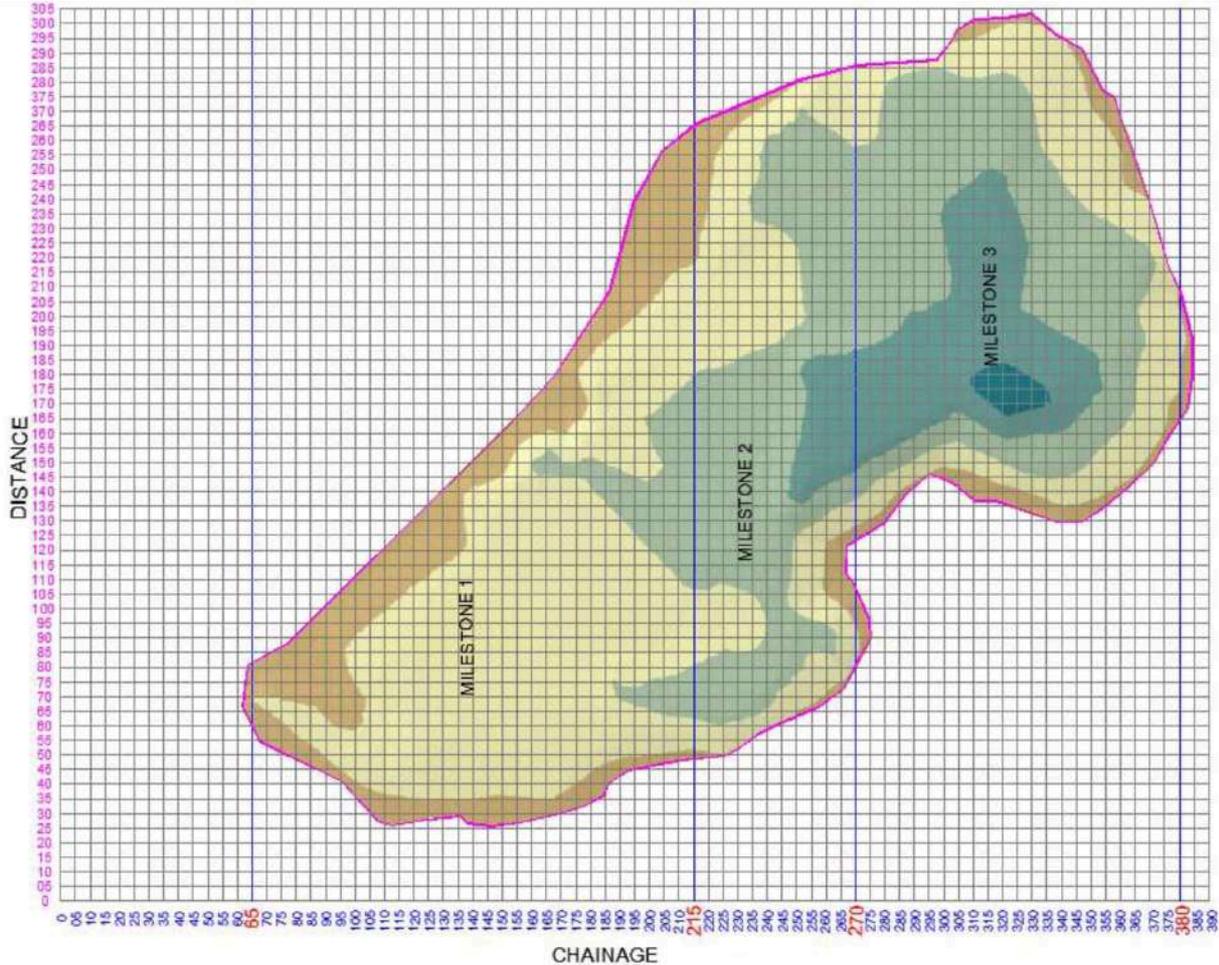


2.Div a Shil Road						
Milestone No.	Chainage		Quantity of Waste		Area to be Cleared through Bioremediation*	
	From	To	In CuM	%age of total	In SQM	%age of total
1	25	140	136195	40.43%	17630.12	40.48%
2	145	210	100990	29.98%	13048.37	29.96%
3	215	325	99687	29.59%	12874.16	29.56%
			3,36,872	100%	43552.65	100%

Table 19: Proposed Milestones to be achieved**3. Diva desai khadi**

Milestone No.	Chainage		Quantity of Waste		Area to be Cleared through Bioremediation*	
	From	To	In CuM	%age of total	In SQM	%age of total
1	65	215	56811	40.22%	18651.80	40.24%
2	220	270	42400	30.01%	13905.43	30.00%
3	275	380	42050	29.77%	13794.17	29.76%
			1,41,261	100%	46351.40	100%

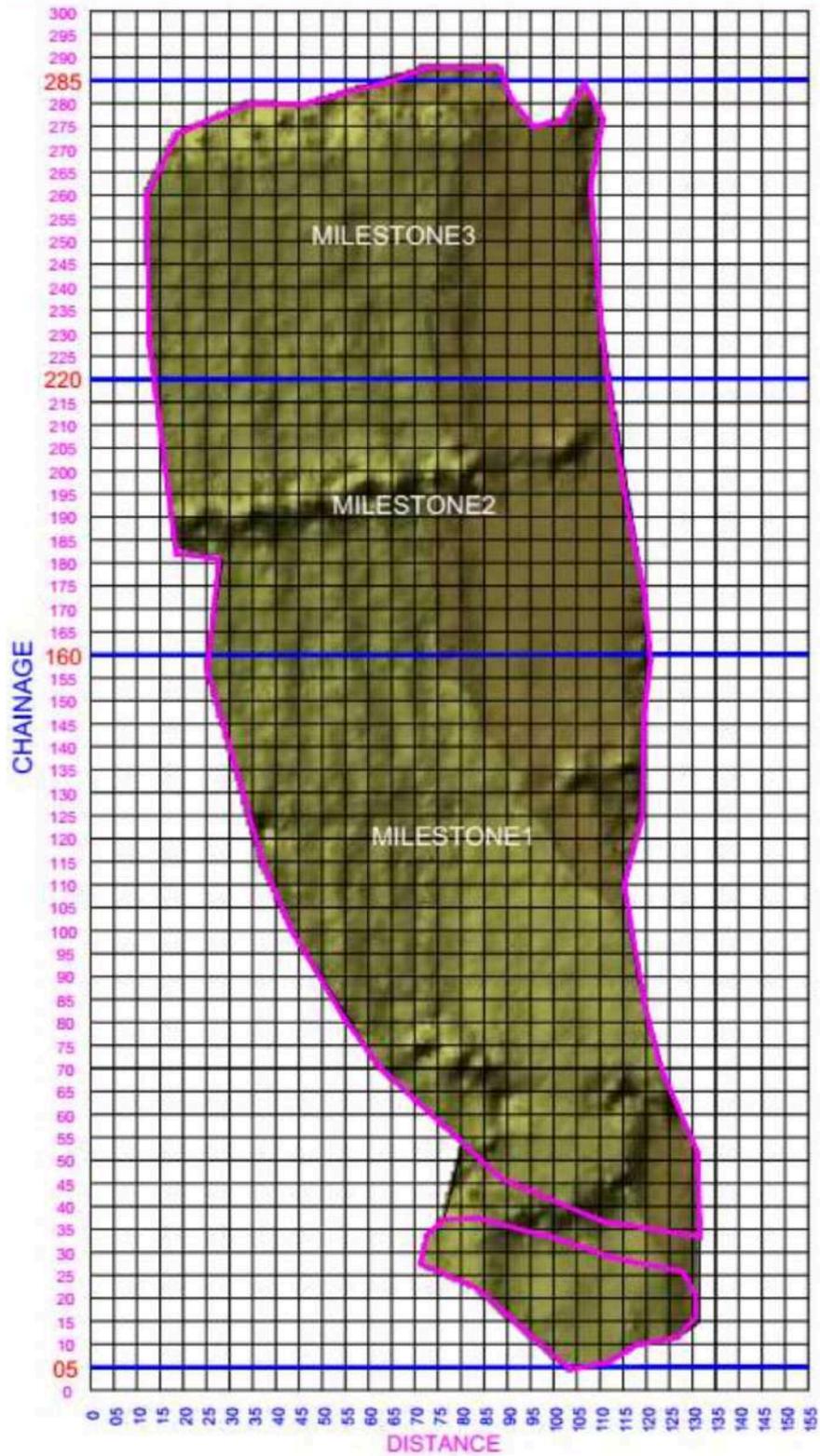
Table 19: Proposed Milestones to be achieved



4. Bhandarli

Milestone No.	Chainage		Quantity of Waste		Area to be Cleared through Bioremediation*	
	From	To	In CuM	%age of total	In SQM	%age of total
1	5	160	51208.78	41.01%	9810.85	45.66%
2	165	220	36361.85	29.12%	5793.13	26.96%
3	225	285	37298.37	29.87%	5882.40	27.38%
			1,24,869.00	100%	21486.38	100%

Table 19: Proposed Milestones to be achieved



E. Requirements for Bioremediation

1. Proposed Approach

45. The step-by-step activities for Bioremediation is shown below:

Table 20: Step by step proposed activities for Bioremediations	
<p>Excavation</p> 	<p>The first step is to excavate legacy waste, loosen it and make windrows so as the leachate can be dried of through solar exposure and all the entrapped methane is removed from the heap.</p> <p>All biodegradable waste, like discarded food, fruit, flower and garden waste, needs air to decompose it in an odourless way without producing leachate. So, the first step in stabilizing and bringing down airless legacy waste is to expose as much of it as possible to air.</p>
<p>Spreading Bio culture</p> 	<p>Addition of composting bio-cultures speeds up decomposition and rapidly creates biological heat within the waste that helps to dry it out and reduce its volume by 35-40%. This happens through loss of moisture and by decomposition of some of the aerated waste to carbon dioxide and water vapour. This is called bio-remediation and makes the waste dry enough for screening. Waste is called stabilized when there is no more generation of heat or landfill gas or leachate, and seeds are able to germinate in it.</p>
<p>Windrow Turning</p> 	<ol style="list-style-type: none"> i. Sprinkle the newly exposed surfaces with a composting bio culture solution or a dilute solution of 5% fresh cow dung in water. This will control smell and speed up decomposition. With the help of Back Hoe loader, the waste in the demarcated area should be loosened up. ii. Usually, the top layer has several materials in the active biological state. This layer shall be stabilised through composting bio-cultures, as well as herbal/biological sanitizers if found necessary for odour control. iii. Raking of garbage layers by a long spike harrow operating in cross directions may be done as needed to pull out large rags, plastic, rubber, textiles etc. iv. Waste pickers or labour will manually pick out bulky waste like coconut shells, banana stems, tyres and rocks prior to screening for bio-mining. Store in separate heaps for sale or use. v. Turn the windrow heaps once a week until no more volume reduction is observed in the heaps and no more heat is generated. If the garbage is stabilized, there will be no smell or leachate formation and the material will be dry enough for sieving.
<p>Waste Stabilisation</p> 	
<p>Waste Screening</p>	<p>It means the screening of such stabilized waste into different size</p>

Table 20: Step by step proposed activities for Bioremediations	
	<p>fractions that can be usefully used off-site or disposed of without affecting the environment. Screen sizes commonly used are one or more of the following: 150 mm, 80 to 100 mm, 24 to 50mm, 12-16 mm and 4-6. The finest fraction is called bio-earth or good earth. It contains a mixture of humus-rich organics which improve soil fertility along with a high proportion of soil or sand, which is why it cannot meet FCO standards for compost. The coarsest fraction contains bricks, stones, coconut shells, footwear, cloth and larger plastics.</p> <p>vi. <i>Deploy Trommels and/or Horizontal Screens or other types of screens for the purpose of screening. Screen the stabilized waste in a rotary screen or gravity screens of different size openings, preferably 25 mm. A fan can blow out the plastic fraction for use by recyclers.</i></p>
<p>Use of Screened Fraction (Bio Earth / Good Soil / Good Earth)</p> 	<p>vii. <i>Usually, the finest fraction will be organic matter plus fine soil, called 'bio-earth', which can be used as soil improver, especially for restoring alkaline or saline soils to fertility, or to grow some vegetation for erosion control. It is also useful to develop green areas or by farmers.</i></p> <p>viii. <i>In very old garbage layers with high debris content, most of the organic matter may have already been decomposed. Do a seed germination test to ensure it is stabilised. Add bio culture to fully stabilise it if heat is still generated in windrow heaps or volume reduction is observed.</i></p>
<p>Use of Screened Fraction (Combustible to RDF)</p> 	<p>ix. <i>The recyclables like plastic, glass, metals, rags and cloth recovered from the waste during screening shall be sorted out and preferably cleaned before sending to recycling industries or as RDF. The recyclables shall also be randomly sampled by an NABL lab and tested for heavy metals, salinity/electrical conductivity and leachability to ensure no environmental harm during use. FCO standards for pH and contaminants will be provisionally used as a benchmark.</i></p> <p>x. <i>The coarser fraction will have a lot of combustibles (cloth etc.) which can be baled and supplied as Alternate Fuel Resources in cement kilns or boilers.</i></p> <p>xi. <i>Recyclable waste is sent to authorize recyclers.</i></p> <p>xii. <i>Bio-medical waste, hazardous waste, e-waste, construction and debris waste, etc. should be sent to respective authorized disposal sites.</i></p>
<p>Use of Screened Fraction (Rejects from above)</p> 	<p>xiii. <i>The coarser fraction will be gravel and coarse organics, which can be used for road and railway embankments the coarsest fraction may have a lot of combustibles (cloth etc.) which can be baled and supplied as Alternate Fuel Resources in cement kilns or boilers.</i></p> <p>xiv. <i>The heavy fractions may be sand and gravel usable for road shoulders or for plinth filling. Stones and concrete if any can be used for road sub-grade, or for crushing, recycling and reuse for construction industry.</i></p>
<p>Source: Proposed by the Consultant</p>	

2. Proposed Requirements and Cost estimate for Bioremediation

46. The following are the detailed calculation for requirements of infrastructure and costing for Bioremediation.

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit	Amount (in Rs.)
1	Excavation & Loading / Excavator				
	Assumption & Calculations				
	Quantity of Crude Waste	16,90,870.00	CuM		
	Capacity Proposed	30.00	CuM/Hour		
		56,362.00	Hours		
	Total Requirement				
		86.00	Hours/Day		
	Nos. of Units Proposed @ 8 Hours/Day / Unit	11.00	Nos.		
	Total numbers of trip required	256192.00	Trips		
	Total Requirement	659.00	Days		
		659.00	Days		
				₹ 18,024.41	per Day
				₹ 1,46,872.00	per Day
				₹ 7,997.00	per Day
				₹ 1,72,893.41	per Day
					₹ 11,39,36,756.89
2	Transportation / Dumper				

Detailed Project Report (DPR) For Processing & Disposal of Legacy Waste in Thane

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit		Amount (in Rs.)
Purpose Transportation of material to screening unit with lead of 1.5 Kms (8Hr working capacity)	Assumption & Calculations					
	Material Transport (Before Screening)	16,90,870.00	MT			
	Material Transport (After Screening)	-	MT			
	Total	16,90,870.00	MT			
	Capacity Proposed	18.00	MT/Hour			
	Total Requirement	93,937.00	Hours			
		143.00	Hours/Day			
	Nos. of Units Proposed @ 8 Hours/Day / Unit	18.00	Nos.			
	Nos. of Trip per day @ 8Hr Working capacity Lead 1.5 Kms (Ref. PWD DSR 2022-2023, Statement C_page no -557)	6.77	Trip/Day/Vehicle			
	Total Required Nos of Trip Per day for 18 Vehicles	121.86	Trip/Day			
	Total Requirement	80,306.00	Trip			
		80306.00	Trip			
				₹ 524.00	per Trip	
						₹ 4,20,80,344.00
3	Stabilization / Bio culture Preparation & Spraying					
Purpose Preparation & Spraying on the Crude waste for stabilisation and soil enrichment	Assumption & Calculations					
	Material of Waste to be screened	13,18,879.00	MT			
	Solution Quantity Required	1.00	Liter/MT			
	Total Requirement	13,18,879.00	Liter			
	Total Requirement	13,18,879.00	Kg (1 Liter=1Kg)			
	Water in Liter @85%	11,21,047.00	Liter			
	Bio culture in Kg @15%	1,97,832.00	Kg			
				₹ 0.21	per Liter	
						₹ 2,38,783.01
				₹ 85.00	per Kg	
						₹ 1,68,15,720.00
4	Screening / Rotary Trommels with Vibrating Screen					
						₹ 1,70,54,503.01

Detailed Project Report (DPR) For Processing & Disposal of Legacy Waste in Thane

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit		Amount (in Rs.)
	<p>Total Requirement 1,07,088.00 Hours</p> <p>Nos. of Units Proposed @ 8 Hours/Day / Unit 20.00 Nos.</p> <p>Total Numbers of Trips Required 267721.00 Trips</p> <p>Total Requirement 659.00 Days</p>			<p>23_Item no 13_page no_547)</p> <p>Crew Charge per Day (Rs.727 per Day)</p> <p>Hire charge of Driver PWD DSR, YR_2022-23_Item no 169_page no_550</p> <p>₹ 14,540.00 per Day</p>		
		659.00	Days	₹ 3,00,415.53	per Day	₹ 19,79,73,836.44
6	Transportation / Dumper (For Inert)					
Purpose	Assumption & Calculations					
Transportation of Screened material with lead of 10 Kms (For Inert to Dumping site/ Low lying area)	<p>Inert Material (After Stabilisation / Screening) 9,73,530.00 MT</p> <p>Balance RDF Material (After Stabilisation / Screening) - MT</p> <p>Total 9,73,530.00 MT</p> <p>Capacity Proposed 10.00 MT/Hour</p> <p>Total Requirement 97,353.00 Hours</p> <p>148.00 Hours/Day</p> <p>Nos. of Units Proposed @ 24 Hours/Day / Unit 6.00 Nos.</p> <p>Total Requirement of Trip as per Detail estimation sheet 48,676.00 Trip</p>			<p>Transportation of Inert</p> <p>(Cost including Hire, Fuel and Crew charge)</p> <p>Total cost taken as per detail estimation sheet</p> <p>₹ 5,94,86,860.00</p>	Total Trips	₹ 5,94,86,860.00
7	Transportation / Dumper (For RDF)					
Purpose	Assumption & Calculations					
Transportation of Screened material with lead of 150 Kms (For RDF to Cement factories/Iron	<p>Inert Material (After Stabilisation / Screening) - MT</p> <p>Balance RDF Material (After Stabilisation / Screening) 3,13,605.00 MT</p> <p>Total 3,13,605.00 MT</p>					

Detailed Project Report (DPR) For Processing & Disposal of Legacy Waste in Thane

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit		Amount (in Rs.)	
industries)	Capacity Proposed	1.56	MT/Hour				
	Total Requirement	2,01,088.00	Hours				
		305.00	Hours/Day				
	Nos. of Units Proposed @ 24 Hours/Day / Unit	13.00	Nos.				
	Total Requirement	25,088.00	Trip		25088.00	Trip	
				Transportation of RDF (Cost including Hire, Fuel and Crew charge) Total cost taken as per detail estimation sheet	₹ 72,54,23,107.00	Total Trips	₹ 72,54,23,107.00
8	Manpower/ Site Supervisor						
Purpose For Supervision Trips/ operations	Assumption & Calculations						
	Person Required per Screening Unit	4.00	Nos.		₹ 1,172.00	Per Day	
	Total Requirement	5,272.00	Man-days	5,272.00	₹ 1,172.00	Per Day	
				Site Supervisor Charge per Day (Rs.1172 per Day) PWD DSR,YR_2022-23_Item no 85_page no_546			
9	Manpower/ Labour						
Purpose For Manual segregation of Recyclables	Assumption & Calculations						
	Recyclable Material (Before Stabilisation/ Screening)	31,744.00	MT				
	Total recyclable per day	48.17	MT				
	Person Required @ 1.5 MT per person per day	33.00	Nos.		₹ 648.00	Per Day	
	Total Requirement	21,747.00	Man-days	21,747.00	₹ 648.00	Per Day	
				Site Supervisor Charge per Day (Rs.648 per Day) PWD DSR,YR_2022-23_Item no 68_page no_546			
10	Recyclable Processing /Plastic Dusting Machine						
Purpose Removal of dust from the combustible	Assumption & Calculations						
	Plastic, Polythene, Tetra Packs Etc	2,32,373.81	MT				
	Paper and Card Board	10,943.50	MT				

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Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit	Amount (in Rs.)	
	Material like plastic , paper ,rubber , etc.					
	Textiles	47,730.86	MT			
	Total Combustible Material Excluding Horticulture Waste & Wooden Pices (Before Stabilisation/Screening)	2,91,048.17	MT			
	Capacity Proposed	2.00	TPH			
	Total Requirement	1,45,525.00	Hours			
	Total Requirement @ 8 Hours per day	220.83	Hours/Day			
	Total Machine Requirement	28.00	Nos.			
	Life of Machine	60.00	Months			
	Earn Profit on Purchase rate while renting out	30.00	Percentage			
	Total Requirement	659.00	Days			
		659.00	Days	₹ 11,123.17	per Day	
				₹ 11,123.17	per Day	
					₹ 73,30,170.79	
11	Recyclable Processing /Shredding Machine					
Purpose	Assumption & Calculations					
Shredding of Material like plastic, paper ,rubber , etc.	Plastic, Polythene, Tetra Packs Etc	2,32,373.81	MT			
	Paper and Card Board	10,943.50	MT			
	Textiles	47,730.86	MT			
	Total Combustible Material Excluding Horticulture Waste & Wooden Pices (Before Stabilisation/Screening)	2,91,048.17	MT			
	Capacity Proposed	2.00	TPH			
	Total Requirement	1,45,525.00	Hours			
	Total Requirement @ 8 Hours per day	220.83	Hours/Day			
				₹ 16,03,600	per Machine	
				₹ 16,03,600	per Machine	
					₹ 16,03,600	
					₹ 16,03,600	

Detailed Project Report (DPR) For Processing & Disposal of Legacy Waste in Thane

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details			Quantity	Unit	Rate per Unit		Amount (in Rs.)	
						Section-3, Item-3, Page no-34)			
		Total Machine Requirement	28.00	Nos.		Hire Charge for 28 Unit per Day	₹ 32,428.36	per Day	
		Life of Machine	60.00	Months					
		Earn Profit on Purchase rate while renting out	30.00	Percentage					
		Total Requirement	659.00	Days	659.00	Days	₹ 32,428.36	per Day	₹ 2,13,70,286.31
12	Recyclable Processing /Bailing Machine								
Purpose	Assumption & Calculations								
formatting Balls of Material like plastic , paper ,rubber , etc.	Plastic, Polythene, Tetra Packs Etc	2,32,373.81	MT						
	Paper and Card Board	10,943.50	MT						
	Textiles	47,730.86	MT						
	Total Combustible Material Excluding Horticulture Waste & Wooden Pices (Before Stabilisation/Screening)	2,91,048.17	MT						
	Capacity Proposed	2.00	TPH						
	Total Requirement	1,45,525.00	Hours			Bailing Machine Charge			
						(Purchase cost Rs.3,74,147 per Machine)			
	Total Requirement @ 8 Hours per day	220.83	Hours/Day			(Ref. MJP SWM SOR_2023-2024, Statement-2, Item-1 C, Page no-10)			
	Total Machine Requirement	28.00	Nos.			Hire Charge for 28 Unit per Day	₹ 7,566.08	per Day	
	Life of Machine	60.00	Months						
	Earn Profit on Purchase rate while renting out	30.00	Percentage						
	Total Requirement	659.00	Days	659.00	Days		₹ 7,566.08	per Day	₹ 49,86,049.21
13	Other / Electricity Charge								
Purpose	Assumption & Calculations								

Detailed Project Report (DPR) For Processing & Disposal of Legacy Waste in Thane

Table 21: Detailed Calculation of Infrastructure Requirements and costing for Bioremediation

No.	Details	Quantity	Unit	Rate per Unit	Amount (in Rs.)
For Electrifications	Total mechanical HP Requirement	842.99	HP	Electricity charge (Per unit Charge for HT connection is Rs.10.90) (Ref. MSEDCL Petition for tariff in Electricity charge Case no-229 of 2022_Pagae no-467, H1 I (B):-Ht-Industry (Seasonal) Per Unit Rate	per Unit
	Total mechanical Watt Requirement	628869.47	Watt		
	Power consumption @ 8 Hour per day	5030.96	Unit/day		
	No. of Days of Operation	659.00	Days		
	Total power requirement	33,15,399.82	Unit		
		33,15,399.82	Unit	₹ 10.90	₹ 3,61,37,858.07
				Total Cost	₹ 1,25,51,25,206.47
				Say....	₹ 1,25,51,25,206.00
				Total Cost Per MT	₹ 951.66



No	Description	Value	Unit	Source/Remark
1	Vehicle Tipper TATA LPK 2518 BS III Max. Speed	70	KMPH	As per specifications of vehicle
2	Vehicle Tipper TATA LPK 2518 BS III Average. Speed	50	KMPH	
3	Vehicle Tipper TATA LPK 2518 BS III Hire cost	75	RS/KM	GOV. of Maharashtra PWD- SSR (2022-23) Sr. no.-44 , Pg. no-547
4	Vehicle Tipper TATA LPK 2518 BS III Capacity	25	MT	GOV. of Maharashtra PWD- SSR (2022-23) Sr. no.-44 , Pg. no-547
4.1	Vehicle Tipper TATA LPK 2518 BS III (Assume 50% Capacity for RDF)	12.5	MT	50% Assumed capacity for RDF
4.2	Vehicle Tipper TATA LPK 2518 BS III (Assume 80% Capacity for Inert)	20	MT	80% Assumed capacity for Inert
5	Vehicle Tipper TATA LPK 2518 BS III Milage	5	KMPL	As per specifications of vehicle
6	Cost of Diesel	102.88	Rs/Liter	As per current market rate
7	Rent of Driver	727	RS per day	PWD DSR, YR_2022-23_Item no 169_page no_550
8	Distance between dumpsite to cement factory	150	KM	
9	Total Distance for Through and fro journey	300	KM	(8)*2
10	Time required for Through and fro journey	6	Hours	(9)/(2)
11	Break down time (Including Loading unloading and Resting time)	2	Hours	
12	Total Time required for complete one trip for RDF disposal	8	Hours	(10)+(11)
13	Total RDF to be disposed	3,13,605	MT	
14	Total Numbers of trip required for disposal of RDF	25,088	Nos	(13)/(4.1)
15	Total Hours required for Complete all trips for RDF disposal	2,00,704	Hours	(14)*(12)
16	Numbers of Days Required for complete all trips for Disposal of RDF	8,363	Days	(15)/24 Hours
17	Fuel requirement for disposal of RDF	60	Liter	(9)/(5)
18	Total Fuel cost for disposal of RDF	15,48,63,206	RS	(17)*(14)*(6)
19	Total charge of driver for disposal of RDF	60,79,901	RS	(16)*(7)

Table 22: Estimation of Transportation cost for disposal of RDF and Inert				
No	Description	Value	Unit	Source/Remark
20	Total Hire charge for Disposal of RDF	56,44,80,000	RS	(14)*(9)*(3)
21	Distance between dumpsite to Low lying area or SLF	10	KM	
22	Total Distance for Through and fro journey	20	KM	(21)*2
23	Time required for Through and fro journey	1.00	Hours	(22)/(2)
24	Break down time (Including Loading unloading and Resting time)	1	Hours	
25	Total Time required for complete one trip for RDF disposal	2	Hours	(23)+(24)
26	Total inert to be disposed	9,73,530	MT	
27	Total Numbers of trip required for disposal of Inert	48,676	Nos	(26)/(4.2)
28	Total Hours required for Complete all trips for Inert disposal	97,352	Hours	(27)*(25)
29	Numbers of Days Required for complete all trips for Disposal of Inert	4,056	Days	(28)/24 Hours
30	Fuel requirement for disposal of Inert	4	Liter	(22)/(5)
31	Total Fuel cost for disposal of Inert	2,00,31,148	RS	(30)*(27)*(6)
32	Total charge of driver for disposal of Inert	29,48,712	RS	(7)*(29)
33	Total Hire charge for Disposal of Inert	3,65,07,000	RS	(3)*(21)*(27)
34	Total transportation cost required for Disposal of RDF Upto 150 Km Lead	72,54,23,107	RS	(18)+(19)+(20)
35	Total transportation cost required for Disposal of Inert Upto 10 Km Lead	5,94,86,860	RS	(31)+(32)+(33)
36	Grand total of transportation cost required for Disposal of RDF & Inert	78,49,09,967	RS	(35)+(36)
37	Per MT Rate	595.13	Rs/MT	



47. The following are the minimum requirements of infrastructure for Bioremediation.

No.	Details	Infrastructure	Minimum Requirements
1	Excavation & Loading	Excavator	11 Nos.
2	Transportation	Dumper (For internal movement of material at site)	18 Nos.
3	Stabilization	Bio culture Preparation & Spraying	1318879 Liter
4	Screening	Rotary Trommels with Vibrating Screen	2 Nos. of Sets having 1000 TPD Capacity
5	Loading	Backhoe Loader	20 Nos.
6	Transportation	Dumper (For RDF)	13 Nos.
7	Transportation	Dumper (For Inert)	6 Nos.
8	Manpower	Site Supervisor	4 Nos. Per screening Unit
9	Manpower	Labour	33 Nos.
10	Recyclable Processing	Plastic Dusting Machine	28 Nos.
11	Recyclable Processing	Shredding Machine	28 Nos.
12	Recyclable Processing	Bailing Machine	28 Nos.
13	Other	Electricity Connection	811.8 HP

Source: Proposed by the Consultant

48. The following are the specifications for the required infrastructure for Bioremediation.

Specifications for Excavator			
Make	Tata Hitachi / Hyundai / JCB / equivalent		Dimensions
Engine			Shoe Width
Maximum Engine Power	133 hp		500 mm
No. of Cylinder	6		Working Range
Max. Torque	537.588 Nm/min-1		Max digging depth
Weight			5580 mm
Maximum Operating Weight	20000 kg		Maximum dumping height
Performance			6480 mm
Maximum Bucket Capacity	1.5 cum		Boom Length
Gradeability	70 % (35 deg)		5.68 m
Swing Speed	13.7 rpm		Arm Length
Travel Speed	4.2 km / h		2.85 m
			Bucket
			Bucket tearout with boost
			16400 Kgf
			Refiling Capacity
			Fuel Tank
			310 L
			Engine Oil
			221 L

Specifications for Dumper			
Make	TATA / Bharat Benz / Ashok Leyland/ Equivalent	Clutch	380 mm Dia Push type Single Plate Dry Friction Organic Lining
Engine	Cummins ISBe 5.6 BS6	Gearbox	G1150 9 speed Gearbox with crawler & one reverse
Engine Norm	BS-VI	Steering	Power Steering
Power	219 HP	Transmission	Manual
Max Torque	850 NM	Power Steering	Yes
No. of Tyre	10	Body Option	Customizable
Fuel Tank	300 Ltr.	Chassis Type	Chassis with Cabin
GVW	28000 KG	Cabin Type	Day Cabin
Wheelbase	3880 MM	Arm Rest	No
Front Axle	Forged I beam reverse elliot type - drop beam	Tilttable Steering	Yes
Rear Axle	Single reduction, extra heavy duty, hypoid gears, fully floating axle shaft	Front Tyre	295/95 D20
Front Suspension	Semi elliptical leaf spring suspension	Rear Tyre	295/95 D20
Rear Suspension	TML bogie suspension with anti roll bar	Seating Capacity	D+1

Specifications for Bio Culture Preparation & Spraying			
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Table 24: Specifications for Infrastructure Requirements for Bioremediation

As per Market Availability

Specifications for Rotary Trommels with Vibrating Screen (Capacity 1000 TPD)**TECHNICAL INFORMATION**

Feeding unit			
Feed capacity up to approx. (t/h)		500	
Max. feed size (mm)		100 x 160 (150) ¹	
Feed height - foldable slotted grate		3,580	
Hopper volume (m ³)		8	
Hopper discharge conveyor			
Width x Length (mm)		1,200 x 3,500	
Feeding conveyor			
Width x Length (mm)		1,200 x 12,000	
Screening unit			
Type		Triple-deck classifying screen	
Width x Length (mm)		1,550 x 6,100	
Fine grain discharge conveyor			
Width x Length (mm)		1,200 x 8,100	
Discharge height approx. (mm)		3,300 - 4,500	
Side discharge conveyor, right			
Width x Length (mm)		800 x 10,200	
Discharge height approx. (mm)		5,000	
Side discharge conveyor, left			
Width x Length (mm)		800 x 10,200	
Discharge height approx. (mm)		5,000	
Transfer conveyor			
Width x Length (mm)		650 x 1,800	
Oversize grain conveyor			
Width x Length (mm)		500 x 8,900	
Discharge height approx. (mm)		4,900	
Power supply unit			
Drive concept		Diesel-hydraulic	
MS 953: Deutz (Tier 3/Stage IIIA) (kW)		87	
MS 953i: Deutz (Tier 4/Stage IV) (kW)		99	
Transport			
Transport height approx. (mm)		3,385	
Transport length approx. (mm)		17,960	
Transport width approx. (mm)		3,200	
Transport weight of basic plant - max. configuration (kg)		37,000 - 44,500	
			¹ with vibrating grate.

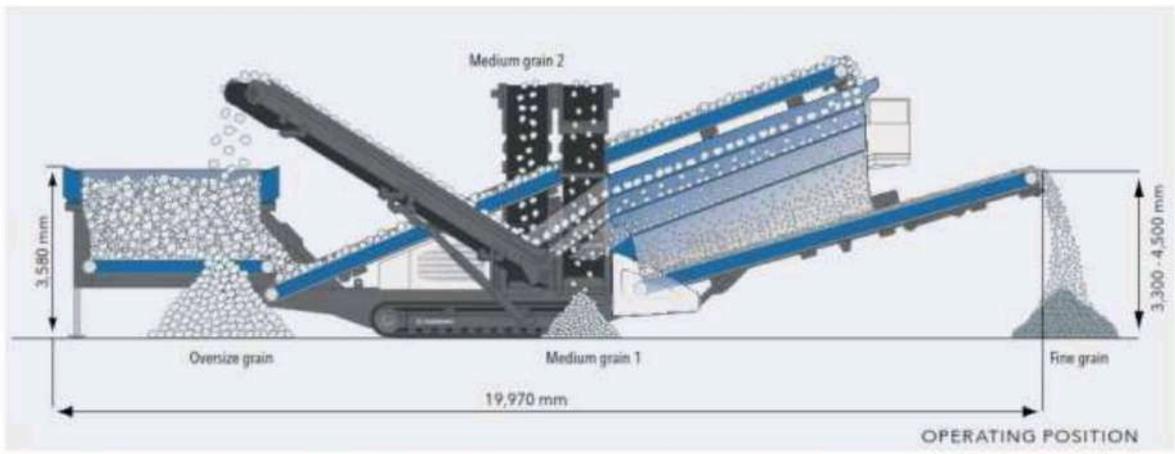
STANDARD EQUIPMENT

- Triple-deck classifying screen
- Hopper unit 8 m³
- Foldable tipping grid, gap width 100 mm, can be folded hydraulically (small remote control)
- Feeding conveyor, smooth belt
- Oversize grain conveyor, belt width 500 mm, discharge height max. 4,900 mm
- Side discharge conveyors, belt width 800 mm, discharge height max. 5,000 mm
- Fine grain discharge conveyor, belt width 1,200 mm, discharge height max. 4,500 mm
- Detachable, wired machine control system with the functions: crawler chassis, operation of discharge conveyors and foldable tipping grid (transport and production position), automatic mode, emergency-off, moving support legs in and out, inclination adjustment for the fine grain conveyor and screen box, shifting and raising of the feeding conveyor, speed setting of hopper discharge conveyor, side discharge conveyors, oversize grain conveyor
- WITOS FleetView telematics system for efficient fleet and service management

OPTIONS

- Hopper unit 10 m³
- Wear lining made from wear-resistant steel (KRS) or rubber (for 8 and 10 m³)
- Vibrating slotted grate for separating feed material, gap width of upper deck 100 mm, gap width of lower deck 32 - 90 mm
- Dosing flap on hopper unit for continuous material flow
- Feeding conveyor, rubber cleated belt prevents material rolling back
- Material brake for feeding conveyor prevents material rolling back
- Material brake for screen prevents feed material leaping from the upper deck
- Oversize grain conveyor can be configured on the left or right, belt width 500 mm, discharge height 4,900 mm (no retrofit possible)
- Belt cover for the feeding conveyor or fine grain discharge conveyor
- External power supply - for efficient mains operation, possible to change between two energy sources: own propulsion (diesel engine) or external power supply
- Start-Stop system (only for Tier 4f engines) for low consumption in idle phases
- Radio remote control: crawler chassis, oversize grain conveyor, slotted grate, emergency stop
- Remote control for foldable tipping grid, can be supplemented for wired remote control (omitted if plant is equipped with radio remote control)
- Line coupling for interlinking with other KLEEMANN plants
- Large selection of screen surfaces for all screens with different mesh widths
- Screen beaters for usage with sticky material
- Water spray system for dust reduction
- Lighting, halogen or LED

Table 24: Specifications for Infrastructure Requirements for Bioremediation



Specifications for Backhoe Loader

Table 24: Specifications for Infrastructure Requirements for Bioremediation

Make	JCB/ Escort / Mahindra/ Equivalent	AXLES	
ENGINE		Front	Drive axle rigidly mounted, incorporates JCB Max – Trac torque proportioning differential, driven by short prop shaft from gear box.
Engine Model	KOEL 4R81 0, NA, water cooled, BS III diesel engine.	Rear	2WD steer axle, centrally pivoted, with oscillation angle of 16
Gross Torque	182 nm @ 1500 RPM	BRAKES	
Gross Power	49.5 HP @ 2200 RPM	ELECTRICAL	
No of Cylinders	4	Electrical	100 Ah 12 Volts battery system with alternator and full road lighting.
TRANSMISSION		WEIGHT	
Torque converter stall ratio is	2.61: 1	Shipping Weight	4530 Kgs
STEERING		6 in 1 clam shovel bucket	Yes
A* Outside Loader Bucket	9.70 m	Cabin	Yes
A** Outside Loader Bucket	11.00 m	Dozer Blade	Yes
B Outside Wheels	7.44 m	Auger	Yes
B** Outside Wheels	7.90 m	Canopy	Yes
HYDRAULIC SYSTEM		High Dump Bucket	3.1 M
Combined Pump Flow	691 pm @ 2200 RPM	TYRES	
System Pressure	2610 PSI	Standard Front	7.5 x 16 – 16 PR
Pump Type	Gear, Double pump	Standard Rear	14.9 x 24 – 12 PR

Specifications for Plastic Dusting Machine

Power	15 HP	Wash Capacity	1 TPH
Phase	3 phase	Motor Power	15 HP
Voltage	415 V	Power Source	Electric
Operating System	Automatic		

Specifications for Shredding Machine

Shredding Machine Type	Double Shaft	Forward / Reverse	Yes
Shredding Material	Rubber, Paper, Waste, Plastic	App. Dimensions	57 inch L x 24 inch W x 53 inch H
Motor Capacity	10 HP	Floor Space	22 sq. Ft
Electric Type	3 PH	Gear Box	130-20(2 Nos.)
No. of Motors	2	Wheels	With Wheel
Stage Size	600 mm	Forward / Reverse Facility	Yes
Capacity	2 to 2.5 Ton / hour	Output Size	5 to 10mm
Blades	WPS / OHNS	Electric Consumption	15.00 KW = 15 units / hr
Safety Pack	Optional		

Specifications Bailing Machine

Capacity	15 Ton	Working Fluid	Hydro Enklo 63
Brand	AIM	Hydraulic Pressure	2700 Psi
Phase	3 Phase	Power	3 HP
Voltage	220-380V	Power Source	Electric

Source: Consultant

F. Cost Estimates & Implementation Plan for Dumpsite Remediations**1. Unit Rates Adopted for Costing**

49. The following are the unit Rates adopted deriving Cost for Bioremediation Works.

No.	Details	Unit Rates Adopted	Source of Rates
1	Clearing Dumping site using Bio-remediation of Old Dumped waste including transporting and disposal of RDF & Inert	Rs. 951.66/- Per MT	As per Detail estimate (Table number_21)

Source: Consultant

50. The following are the Estimation of Transportation cost for disposal of RDF and Inert

2. Cost Estimates

51. The following are the summary of Cost Estimates for **Bioremediation** for Dumpsite Reclamation –

No.	Description of Work	Quantity		Unit Rate	Total Estimated Project Cost
1	Dumpsite Reclamation which includes following works-				
[A]	The works for scientific dump site reclamation through Bioremediation of legacy waste/ unprocessed municipal solid waste, Resource Recovery and Rejects Disposal which includes following activities- (i) Biomining/ Excavation of complete mixed MSW from the dumpsite which underwent biological and physical degradation. (ii) Resource recovery by using suitable mechanical sieving machine or any other suitable equipment / method, segregating, sorting, retrieving recoverable materials, storing, selling, diverting for recycling etc. (iii) Rejects disposal / Backfilling of reject at Suitable area within 10 Kilometres from the site or Staking				
	Site 1 Diva dump site	7,15,877.00	In MT	₹ 951.66	₹ 68,12,71,949.46
	Site 2 Diva shil road	3,36,872.00	In MT	₹ 951.66	₹ 32,05,87,816.28
	Site 3 Diva Desai khadi	1,41,261.00	In MT	₹ 951.66	₹ 13,44,32,530.80
	Site 4 Bhandarli	1,24,869.00	In MT	₹ 951.66	₹ 11,88,32,909.92
Total Project Cost:					₹ 1,25,51,25,206.00

Source: Consultant

3. Proposed Implementation Plan

a) Comparison of various Implementation Model for Dumpsite Reclamation

52. The following are the Comparison of various Implementation Model for Dumpsite Reclamation adopted in India-

Details	Telangana & J & K	Bhopal	Maharashtra
Project Structure	Cluster basis Invitation of Single Tender for Nine Cluster Work Execution at individual ULB level (contract shall be executed by each ULB separately)	Standalone	Standalone
Bidding Parameter	Per Ton (MT) Basis	A. Cost of the portion of the reclaimed land in area (in excess of min. land area of 15 acres). cost of the excess land @ Rs 5.26 Cr per acre) B. Lumpsum Quote of Bidder for Bio-remediation & Capping L1 bid = Lowest (B-A) value	Lumpsum basis on land to be reclaimed (100%)
Payment Milestone- Comparison Matrix	1. Project to be completed in 6 Months 2. Payment on Monthly Legacy Waste Processed (Prorated Basis)	Construction Phase: 80 % Contract Value DPR: 5%; Committed Land Handover 48 % (In Six Milestone of 6% each); Capping: 27% (In two stage 12% & 15%) O & M: 20% (In 10 Milestone of 2% every 6 Months)	40% of proposed Land Reclaimed: 40% Cumulative 70% of Proposed Land reclamation: 30% Cumulative 100% of Lumpsum basis on land to be reclaimed Land reclamation: 30%

Source: Consultant

53. From the above analysis, it can be established that the works of Bioremediation and scientific capping for smaller ULBs can be done for cluster of ULBs at the division level. The following is the model proposed for the project.

Details	Proposed Model for Maharashtra.
Project Structure	Cluster basis Invitation of Tender at Division Level Work Execution at individual ULB level (contract shall be executed by each

Table 28: Selection of appropriate models for dumpsite reclamation	
Details	Proposed Model for Maharashtra.
	ULB separately) Proportionate (of Lumpsum Quote) payment by individual level
Bidding Parameter	Lumpsum basis on land to be reclaimed (100%) The bidder quoting the lowest price will be selected to execute the works.
Payment Milestone-Comparison Matrix	Land Reclamation (100%): - 100% of Contract Value (40%, 30%, 30%) against completion of Bioremediation Works
Source: Consultant	

b) Proposed Implementation timeframe

54. The following are the proposed timeframe for implementation

Table 29: Proposed Implementation timeframes		
No	Activity	Minimum Required Months
1	Construction & Commissioning Period	1
2	Completion of Bioremediation Works	26
Total Time Duration		27
Source: Consultant		

4. Proposed Funding Mechanism

55. As per direction of Urban Administration and Development Department, Govt. of Maharashtra, the following is the fund sharing mechanism under for all the infrastructure to be financed under Swachh Bharat Mission (Urban) 2.0.

Table 30: Proposed Financial Structure & Funding Mechanism				
Type of ULB	Class of ULB	Govt. of India (GoI)	Govt. of Maharashtra	Urban Local Body
		Share	Share	Share
Municipal Corporation	A +	25%	35%	40%
	A	25%	35%	40%
	B	25%	35%	40%
	C	25%	45%	30%
	D	33%	37%	30%
Municipal Council	A	33%	52%	15%
	B	50%	40%	10%
	C	50%	45%	5%
Nagar Panchayat	-	50%	45%	5%
Proposed CAPEX Sharing of Thane Municipal Corporation	A +	₹ 31,37,81,302.00	₹ 43,92,93,822.00	₹ 50,20,50,082.00
Source: महाराष्ट्र शासन, नगर विकास विभाग, शासन निर्णय क्रमांक-स्वमअ-2022/प्र.क्र.73/नभव 34, Date: - 15 July, 2022				

56. The remainder (40%) has to be brought in by ULB which in case can be covered under the grant of 15th Finance Commission (Proposed amount under grant as per the Budget year 2022-2023).

5. Benefits from the Proposed Project:

57. Land is the most valuable asset that will be recovered as output of this Proposed Project, considering the revenue guidelines for the site land value can be assessed as shown in table below.

No.	Details	Benefit	Remarks
1	Waste Spread Area	1,79,763.19 Sqm	Area to be reclaimed
2	Cost of Land	900 Rs. /Sqm	As per ULB or Current Market rate
3	Total cost of Land to be reclaimed (Rs.)	₹ 16,17,86,866.5	

Source: Consultant

58. In addition, the Successful Concessioner can generate the revenue from selling the material recovered from bio remediation process.

59. The remediation of dumpsites leads to the following Benefits:

- Elimination of foul odour to benefit the citizen living nearby
- Decline in vector borne diseases arising out of the dumpsite
- Significant Reduction in Air pollution of the entire area
- Elimination of dump fires and leachate generation
- Uplifting of the environmental, aesthetic and social parameters of entire area
- Reduction in Green House Gas Emissions, soil pollution and Ground water contamination
- Increase in nearby real state value and rental values.
- Dumpsite land becomes available for other use.

G. Environment Mitigation Measures

60. There are several factors that must be kept in mind during implementation of the project.

- **Fresh Waste:** The issue of dumping of fresh waste generated by ULB will be resolved onsite as the remediation work cannot be carried out on any section of the dump site receiving fresh waste.
- **Space Management:** Availability of space is a constant challenge as each of aeration, stabilization, and screening need to be done within the boundaries of the dumpsite, and the solution to this problem varies on a case-to-case basis. Safety will be ensured when trying to manage space.
- **Leachate Management:** Most high heaps of legacy waste are water-logged with leachate even near the topmost layers and all the way to the bottom. This is not just from rainwater entering the heap but is produced by airless rotting within the entire waste heap. So when legacy waste heaps are opened up, some leachate almost always trickles out. This is not produced by the formation of wind-rows or cones, which in fact help to dry out the waste by aerated decomposition. Aeration of the waste leads to reduction in leachate. Channels will be created to lead the oozing leachate rivulets to a lined depression or pond for treatment or for leachate recirculation onto wind-rows as a type of bio culture. Bio-cultures that have been proved successful at other locations will be sprinkled onto the leachate pools.
- **Fire Control and Safety:** Most large dumpsites are smouldering from hidden fires. Methane itself is flammable with a blue flame, and supports the yellow-flame burning of combustible plastics, cloth and oily rags. Sometimes flammable industrial waste finds its way onto dumpsites, aggravating the problem. There is a better way, again requiring creative common-sense and experience and training of earth-mover drivers. Most fires within heaps have a point source – a bag of textile discards or plastic waste or a ball of oily rags. Earthmover drivers must learn to dig in and pluck out these burning balls of fire. These should be laid nearby on the surface of the dump and then rubbed out with the back of the excavator shovel to extinguish the flames and smoke. Wet soil should be kept handy to immediately plug the excavated hole. Adding composting bio-cultures can be tried, to counter the anaerobic conditions around the burning spots. Smoking points must be tackled patiently and systematically, one by one, till the dump is smoke-free to begin stabilizing operations by bio-remediation.
- **Other Measures-** The following general measures should be considered:
 - ***Vector and vermin control:*** *The site might attract vectors and vermin because of the presence of organic waste. To avoid or reduce vectors and vermin, the filling area should be minimised and the waste covered at regular intervals.*
 - ***Litter control:*** *Offsite litter should be picked up on a regular basis.*
 - ***Noise control:*** *Noise in the site arises from operations and waste vehicles entering and*

leaving the site. During operations, equipment with faulty or worn-out exhaust systems can cause high noise levels. Hence, they need to be repaired.

- **Dust control:** *The combination of vehicle movements and winds on temporary and un-surfaced roads can create dust. Dust within and around a landfill site can be a source of annoyance, harm, and physical discomfort to landfill staff and neighbourhood. Therefore, all precautions have to be taken to avoid dust generation.*

- **Odour control:** *The landfill should be operated in a manner that will minimise the odour from waste or associated items. Operational procedures include placing suitable cover material over the waste in a timely manner.*

****End of Report****

Glossary of Terms

1. **“aerobic composting”** means a controlled process involving microbial decomposition of organic matter in the presence of oxygen;
2. **“anaerobic digestion”** means a controlled process involving microbial decomposition of organic matter in absence of oxygen;
3. **“authorisation”** means the permission given by the State Pollution Control Board or Pollution Control Committee, as the case may be, to the operator of a facility or urban local authority, or any other agency responsible for processing and disposal of solid waste;
4. **“biodegradable waste ”** means any organic material that can be degraded by micro-organisms into simpler stable compounds;
5. **“bio-methanation”** means a process which entails enzymatic decomposition of the organic matter by microbial action to produce methane rich biogas;
6. **“brand owner”** means a person or company who sells any commodity under a registered brand label.
7. **“buffer zone”** means zone of no development to be maintained around solid waste processing and disposal facility, exceeding 5 TPD of installed capacity. This will be maintained within total area allotted for the solid waste processing and disposal facility.
8. **“bulk waste generator”** means and includes buildings occupied by the Central government departments or undertakings, State government departments or undertakings, local bodies, public sector undertakings or private companies, hospitals, nursing homes, schools, colleges, universities, other educational institutions, hostels, hotels, commercial establishments, markets, places of worship, stadia and sports complexes having an average waste generation rate exceeding 100kg per day;
9. **“bye-laws”** means regulatory framework notified by local body, census town and notified area townships for facilitating the implementation of these rules effectively in their jurisdiction.
10. **“census town”** means an urban area as defined by the Registrar General and Census Commissioner of India;
11. **“combustible waste”** means non-biodegradable, non-recyclable, non-reusable, non-hazardous solid waste having minimum calorific value exceeding 1500 kcal/kg and excluding chlorinated materials like plastic, wood pulp, etc;
12. **“composting”** means a controlled process involving microbial decomposition of organic matter;
13. **“contractor”** means a person or firm that undertakes a contract to provide materials or labour to perform a service or do a job for service providing authority;
14. **“co-processing”** means use of non-biodegradable and non-recyclable solid waste having calorific value exceeding 1500k/cal as raw material or as a source of energy or both to replace or supplement the natural mineral resources and fossil fuels in industrial processes;

15. **“decentralised processing”** means establishment of dispersed facilities for maximizing the processing of biodegradable waste and recovery of recyclables closest to the source of generation so as to minimize transportation of waste for processing or disposal;
16. **"disposal"** means the final and safe disposal of post processed residual solid waste and inert street sweepings and silt from surface drains on land as specified in Schedule I to prevent contamination of ground water, surface water, ambient air and attraction of animals or birds;
17. **“domestic hazardous waste”** means discarded paint drums, pesticide cans, CFL bulbs, tube lights, expired medicines, broken mercury thermometers, used batteries, used needles and syringes and contaminated gauge, etc., generated at the household level;
18. **"door to door collection"** means collection of solid waste from the door step of households, shops, commercial establishments, offices, institutional or any other non-residential premises and includes collection of such waste from entry gate or a designated location on the ground floor in a housing society, multi storied building or apartments, large residential, commercial or institutional complex or premises;
19. **“dry waste”** means waste other than bio-degradable waste and inert street sweepings and includes recyclable and non-recyclable waste, combustible waste and sanitary napkin and diapers, etc;
20. **“dump sites”** means a land utilised by local body for disposal of solid waste without following the principles of sanitary land filling;
21. **“extended producer responsibility” (EPR)** means responsibility of any producer of packaging products such as plastic, tin, glass and corrugated boxes, etc., for environmentally sound management, till end-of-life of the packaging products;
22. **“facility”** means any establishment wherein the solid waste management processes namely segregation, recovery, storage, collection, recycling, processing, treatment or safe disposal are carried out;
23. **"fine"** means penalty imposed on waste generators or operators of waste processing and disposal facilities under the bye-laws for non-compliance of the directions contained in these rules and/or bye- laws
24. **"Form"** means a F8orm appended to these rules;
25. **“handling”** includes all activities relating to sorting, segregation, material recovery, collection, secondary storage, shredding, baling, crushing, loading, unloading, transportation, processing and disposal of solid wastes;
26. **“inerts”** means wastes which are not bio-degradable, recyclable or combustible street sweeping or dust and silt removed from the surface drains;
27. **“incineration”** means an engineered process involving burning or combustion of solid waste to thermally degrade waste materials at high temperatures;
28. **“informal waste collector”** includes individuals, associations or waste traders who are involved in sorting, sale and purchase of recyclable materials;
29. **"leachate"** means the liquid that seeps through solid waste or other medium and has extracts of dissolved or suspended material from it;

30. "**local body**" for the purpose of these rules means and includes the municipal corporation, nagar nigam, municipal council, nagarpalika, nagarpalika parishad, municipal board, nagar panchayat and town panchayat, census towns, notified areas and notified industrial townships with whatever name they are called in different States and union territories in India;
31. "**materials recovery facility**" (MRF) means a facility where non-compostable solid waste can be temporarily stored by the local body or any other entity mentioned in rule 2 or any person or agency authorised by any of them to facilitate segregation, sorting and recovery of recyclables from various components of waste by authorised informal sector of waste pickers, informal recyclers or any other work force engaged by the local body or entity mentioned in rule 2 for the purpose before the waste is delivered or taken up for its processing or disposal;
32. "**non-biodegradable waste**" means any waste that cannot be degraded by microorganisms into simpler stable compounds;
33. "**operator of a facility**" means a person or entity, who owns or operates a facility for handling solid waste which includes the local body and any other entity or agency appointed by the local body;
34. "**primary collection**" means collecting, lifting and removal of segregated solid waste from source of its generation including households, shops, offices and any other non-residential premises or from any collection points or any other location specified by the local body;
35. "**processing**" means any scientific process by which segregated solid waste is handled for the purpose of reuse, recycling or transformation into new products;
36. "**recycling**" means the process of transforming segregated non-biodegradable solid waste into new material or product or as raw material for producing new products which may or may not be similar to the original products;
37. "**redevelopment**" means rebuilding of old residential or commercial buildings at the same site, where the existing buildings and other infrastructures have become dilapidated;
38. "**refused derived fuel**" (RDF) means fuel derived from combustible waste fraction of solid waste like plastic, wood, pulp or organic waste, other than chlorinated materials, in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting of solid waste;
39. "**residual solid waste**" means and includes the waste and rejects from the solid waste processing facilities which are not suitable for recycling or further processing;
40. "**sanitary land filling**" means the final and safe disposal of residual solid waste and inert wastes on land in a facility designed with protective measures against pollution of ground water, surface water and fugitive air dust, wind-blown litter, bad odour, fire hazard, animal menace, bird menace, pests or rodents, greenhouse gas emissions, persistent organic pollutants slope instability and erosion;
41. "**sanitary waste**" means wastes comprising of used diapers, sanitary towels or napkins, tampons, condoms, incontinence sheets and any other similar waste;
42. "**Schedule**" means the Schedule appended to these rules;

43. "**secondary storage**" means the temporary containment of solid waste after collection at secondary waste storage depots or MRFs or bins for onward transportation of the waste to the processing or disposal facility;
44. "**segregation**" means sorting and separate storage of various components of solid waste namely biodegradable wastes including agriculture and dairy waste, non-biodegradable wastes including recyclable waste, nonrecyclable combustible waste, sanitary waste and non-recyclable inert waste, domestic hazardous wastes, and construction and demolition wastes;
45. "**service provider**" means an authority providing public utility services like water, sewerage, electricity, telephone, roads, drainage, etc;
46. "**solid waste**" means and includes solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste generated in the area under the local authorities and other entities mentioned in rule 2;
47. "**sorting**" means separating various components and categories of recyclables such as paper, plastic, cardboards, metal, glass, etc., from mixed waste as may be appropriate to facilitate recycling;
48. "**stabilising**" means the biological decomposition of biodegradable wastes to a stable state where it generates no leachate or offensive odours and is fit for application to farm land, soil erosion control and soil remediation;
49. "**street vendor**" means any person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, side walk, footpath, pavement, public park or any other public place or private area, from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific; and the words "street vending" with their grammatical variations and cognate expressions, shall be construed accordingly;
50. "**tipping fee**" means a fee or support price determined by the local authorities or any state agency authorised by the State government to be paid to the concessionaire or operator of waste processing facility or for disposal of residual solid waste at the landfill;
51. "**transfer station**" means a facility created to receive solid waste from collection areas and transport in bulk in covered vehicles or containers to waste processing and, or, disposal facilities;
52. "**transportation**" means conveyance of solid waste, either treated, partly treated or untreated from a location to another location in an environmentally sound manner through specially designed and covered transport system so as to prevent the foul odour, littering and unsightly conditions;
53. "**treatment**" means the method, technique or process designed to modify physical, chemical or biological characteristics or composition of any waste so as to reduce its volume and potential to cause harm;
54. "**user fee**" means a fee imposed by the local body and any entity mentioned in rule 2 on the waste generator to cover full or part cost of providing solid waste collection, transportation, processing and disposal services.

55. "**vermi composting**" means the process of conversion of bio-degradable waste into compost using earth worms;

56. "**waste generator**" means and includes every person or group of persons, every residential premises and non-residential establishments including Indian Railways, defence establishments, which generate solid waste;

Drawings & L Sections


Environmental Consultancy & Laboratory

Lab. Gazetted by MoEF&CC-Govt. of India
 Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]
 QCI-NABET Accredited EIA Consulting Organization
 STP/ETP/WTP Project Management Consultants

ISO 9001 : 2015
 ISO 45001 : 2018

Lab : Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India.
 Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: MARS PLANNING & ENGINEERING SERVICES PVT LTD. **REPORT NO.** : UT/ELS/REPORT/3302/05-2023
 "Mars House" Nr. Serene Elegancy **ISSUE DATE** : 12/05/2023
 B/h. Rajthal ,S.P. Ring Road, Ambli Bopal **YOUR REF.** : Verbal Confirmation
 Ahmedabad -380058,Gujarat (India) **REF. DATE** : 05/05/2023

SAMPLE PARTICULARS

Sampling Plan Ref. No. : NA
Sampling Procedure : NA
Sample Registration Date : 05/05/2023
Date & Time of Sampling : 05/05/2023 at 12:15 Hrs
Analysis Starting Date : 05/05/2023
Analysis Completion Date : 12/05/2023
Sample Collected By : CLIENT
Sample Lab Code : UT/ELS/077/05-2023

WASTE QUALITY MONITORING

Sample Type : Municipal Solid Waste
Sample Location : DIVA DUMPING GROUND

Sample Quantity & Packing Details : 9.451kg In Plastic Bag

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits Organic Compost [SWM Rules, 2016]
1.	Ash Content at 900°C	SOP No. UT/LQMS/SOP/S07	81.8	%	--
2.	Loss on Ignition at 550°C [Total Volatile content]	SOP No. UT/LQMS/SOP/S06	12.0	%	--
3.	Calorific value*	IS:1350(Part-II)-1970(RA2015)	958	Cal/g	--
4.	Biodegradable fraction	Physical Verification	39.1	%	--
5.	Plastic, Polythene, Tetra Packs	Physical Verification	18.7	%	--
6.	Paper and Card Board	Physical Verification	0.95	%	--
7.	Horticulture waste & Wooden Piece	Physical Verification	1.16	%	--
8.	Metal	Physical Verification	0.19	%	--
9.	Textile	Physical Verification	4.08	%	--
10.	Glass	Physical Verification	1.04	%	--
11.	Leather, Rubber	Physical Verification	0.02	%	--
12.	Heavy Fraction	Physical Verification	34.2	%	--
13.	Coarser fraction	Physical Verification	6.79	%	--
14.	Fine fraction	Physical Verification	33.5	%	--

Remark/ Statement of Conformity: The given sample confirms with standard specifications as per Solid Waste Management Rule, 2016 [Organic Compost] for above analyzed test parameters.

- Note:**
1. Samples were collected by following laboratory's SOP (UT/LQMS/SOP/S01A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.
 2. This test report refers only to the sample tested.
 3. This test report may not be reproduced in part, without the permission of this laboratory.
 4. Any correction invalidates this test report.
 5. * Test parameter outsourced to competent test laboratory.
 6. This test report shall be referred along with Test Report No. UT/ELS/REPORT/3301/05-2023 Dated 12/05/2023 for final conclusion.

- END OF REPORT -



For **ULTRA TECH**

Rekha Bhagat

Rekha Bhagat
 (Authorized Signatory)

MaRS Planning & Engineering Services Pvt. Ltd.

Corporate Office :

MaRS House, Nr. Serene Elegancy, B/h Rajthal Restaurant,
S. P. Ring Road, Bopal - Ambali, Ahmedabad - 380058, Gujarat.

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CIN No. : U74210GJ2004PTC44447

ADDING VALUE THROUGH
INNOVATION**TEST REPORT**Particulars of the Sample: **DIVA DUMPING GROUND**

Sample Drawn by: The Party
 Sample quantity received: 10.12 Kg
 Sample Condition: Fit for Analysis
 Type of packing: Plastic Pouch

Date of receipt of sample: / /2023
 Date of analysis: / /2023

Physical & Chemical Testing of Sample

Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.37	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Moisture	% w/w	25.7	UT/LQMS/SOP/C04
2	Ash Content	% w/w	61.6	UT/LQMS/SOP/S07
3	Total volatile content (LOI)	% w/w	13	UT/LQMS/SOP/S06
4	Total Organic Carbon (TOC)	% w/w	12.1	UT/LQMS/SOP/C05
5	Calorific value	Cal/Kg	947	IS:1350 (PART-II)-1970 (RA2015)
6	C/N ratio		20	UT/LQMS/SOP/C14
7	Total Nitrogen	mg/kg	0.6	UT/LQMS/SOP/C08
8	Total Phosphates as P2O5	% w/w	0.6	UT/LQMS/SOP/C07
9	Total Potassium as K2o	% w/w	0.4	UT/LQMS/SOP/C06

Checked by**Authorised Signatory**

Note-

1. The Test results relate purely to the sample submitted by customer for analysis. No Liability will be accepted by us regarding any false information or samples drawn by the customer. Perishable sample will be destroyed after testing.
2. Information of submitted samples as provided by Customer.
3. The Report shall not be reproduced in full or part for any purpose and can't be used as evidence in a court of Law without our the written approval and special permissions.
4. Subject to Ahmedabad Jurisdiction.


Environmental Consultancy & Laboratory

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 Tele : +91 22 2547 49 07 / +91 22 2547 62 17 Email : lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: MARS PLANNING & ENGINEERING SERVICES PVT LTD. **REPORT NO.** : UT/ELS/REPORT/3304/05-2023
 "Mars House" Nr. Serene Elegancy **ISSUE DATE** : 12/05/2023
 B/h. Rajthal, S.P. Ring Road, Ambli Bopal **YOUR REF.** : Verbal Confirmation
 Ahmedabad -380058, Gujarat (India) **REF. DATE** : 05/05/2023

SAMPLE PARTICULARS : **WASTE QUALITY MONITORING**

Sampling Plan Ref. No. : NA **Sample Type** : Municipal Solid Waste
Sampling Procedure : NA **Sample Location** : DIVA SHIL ROAD
Sample Registration Date : 05/05/2023
Date & Time of Sampling : 05/05/2023 at 12:15 Hrs
Analysis Starting Date : 05/05/2023
Analysis Completion Date : 12/05/2023 **Sample Quantity & Packing Details** : 9.624 kg In Plastic Bag
Sample Collected By : CLIENT
Sample Lab Code : UT/ELS/078/05-2023

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standard Limits Organic Compost [SWM Rules, 2016]
1.	Ash Content at 900°C	SOP No. UT/LQMS/SOP/S07	77.1	%	--
2.	Loss on Ignition at 550°C [Total Volatile content]	SOP No. UT/LQMS/SOP/S06	19.0	%	--
3.	Calorific value*	IS:1350(Part-II)-1970(RA2015)	925	Cal/g	
4.	Biodegradable fraction	Physical Verification	48.1	%	--
5.	Plastic, Polythene, Tetra Packs	Physical Verification	20.0	%	--
6.	Paper and Card Board	Physical Verification	0.81	%	--
7.	Horticulture waste & Wooden Piece	Physical Verification	2.71	%	--
8.	Metal	Physical Verification	0.18	%	--
9.	Textile	Physical Verification	3.20	%	--
10.	Glass	Physical Verification	4.26	%	--
11.	Leather, Rubber	Physical Verification	0.03	%	--
12.	Heavy Fraction	Physical Verification	17.8	%	--
13.	Coarser fraction	Physical Verification	8.69	%	--
14.	Fine fraction	Physical Verification	42.2	%	--

Remark/ Statement of Conformity: *The given sample conforms with standard specifications as per Solid Waste Management Rule, 2016 [Organic Compost] for above analyzed test parameters.*

- Note:**
1. Samples were collected by following laboratory's SOP (UT/LQMS/SOP/S01A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.
 2. This test report refers only to the sample tested.
 3. This test report may not be reproduced in part, without the permission of this laboratory.
 4. Any correction invalidates this test report.
 5. * Test parameter outsourced to competent test laboratory.
 6. This test report shall be referred along with Test Report No. UT/ELS/REPORT/3303/05-2023 Dated 12/05/2023 for final conclusion.

- END OF REPORT -



For ULTRA TECH

Bhagat

Rekha Bhagat
 (Authorized Signatory)

MaRS Planning & Engineering Services Pvt. Ltd.

Corporate Office :

MaRS House, Nr. Serene Elegancy, B/h Rajthal Restaurant,
S. P. Ring Road, Bopal - Ambali, Ahmedabad - 380058, Gujarat.

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CIN No. : U74210GJ2004PTC44447

ADDING VALUE THROUGH
INNOVATION**TEST REPORT**

Particulars of the Sample: DIVA SHIL ROAD				
Sample Drawn by: The Party Sample quantity received: 10.43 Kg Sample Condition: Fit for Analysis Type of packing: Plastic Pouch			Date of receipt of sample: / /2023 Date of analysis: / /2023	
Physical & Chemical Testing of Sample				
Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.52	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Moisture	% w/w	22.3	UT/LQMS/SOP/C04
2	Ash Content	% w/w	75	UT/LQMS/SOP/S07
3	Total volatile content (LOI)	% w/w	14	UT/LQMS/SOP/S06
4	Total Organic Carbon (TOC)	% w/w	14	UT/LQMS/SOP/C05
5	Calorific value	Cal/Kg	925	IS:1350 (PART-II)-1970 (RA2015)
6	C/N ratio		15	UT/LQMS/SOP/C14
7	Total Nitrogen	mg/kg	0.9	UT/LQMS/SOP/C08
8	Total Phosphates as P2O5	% w/w	0.5	UT/LQMS/SOP/C07
9	Total Potassium as K2o	% w/w	0.2	UT/LQMS/SOP/C06

Checked by**Authorised Signatory**

Note-

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MaRS Planning & Engineering Services Pvt. Ltd.

Corporate Office :

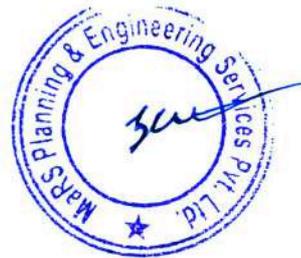
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CIN No. : U74210GJ2004PTC44447

ADDING VALUE THROUGH
INNOVATION**TEST REPORT**Particulars of the Sample: **DIVA DESAI KHADI**Sample Drawn by: The Party
Sample quantity received: 10.15 Kg
Sample Condition: Fit for Analysis
Type of packing: Plastic PouchDate of receipt of sample: 06/05/2023
Date of analysis: 07/05/2023**Physical & Chemical Testing of Sample**

Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.77	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Biodegraded Fraction	% w/w	46.11	On-Site Physical Verification
2	Plastic, Polythene, Tetra Packs Etc	% w/w	19.20	
3	Paper and Card Board	% w/w	0.78	
4	Horticulture Waste & Wooden Piece	% w/w	2.92	
5	Metal	% w/w	0.22	
6	Textiles	% w/w	4.35	
7	Glass	% w/w	3.35	
8	Leather, Rubber Etc	% w/w	0.02	
9	Heavy Fractions	% w/w	24.47	
10	Coarser fraction	% w/w	7.14	
11	Fine Fractions	% w/w	38.06	
	Total		100.00%	

Checked by**Authorised Signatory**

Note-

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CIN No. : U74210GJ2004PTC44447

ADDING VALUE THROUGH
INNOVATION**TEST REPORT**

Particulars of the Sample: DIVA DESAI KHADI				
Sample Drawn by: The Party Sample quantity received: 10.37 Kg Sample Condition: Fit for Analysis Type of packing: Plastic Pouch			Date of receipt of sample: / /2023 Date of analysis: / /2023	
Physical & Chemical Testing of Sample				
Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.77	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Moisture	% w/w	24.6	UT/LQMS/SOP/C04
2	Ash Content	% w/w	61.6	UT/LQMS/SOP/S07
3	Total volatile content (LOI)	% w/w	12	UT/LQMS/SOP/S06
4	Total Organic Carbon (TOC)	% w/w	11.3	UT/LQMS/SOP/C05
5	Calorific value	Cal/Kg	922	IS:1350 (PART-II)-1970 (RA2015)
6	C/N ratio		14	UT/LQMS/SOP/C14
7	Total Nitrogen	mg/kg	0.8	UT/LQMS/SOP/C08
8	Total Phosphates as P2O5	% w/w	0.6	UT/LQMS/SOP/C07
9	Total Potassium as K2o	% w/w	0.4	UT/LQMS/SOP/C06

Checked by**Authorised Signatory**

Note-

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TEST REPORT

Particulars of the Sample: BHANDARLI				
Sample Drawn by: The Party Sample quantity received: 10.00 Kg Sample Condition: Fit for Analysis Type of packing: Plastic Pouch			Date of receipt of sample: 26/02/2024 Date of analysis: 29/02/2024	
Physical & Chemical Testing of Sample				
Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.4	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Biodegraded Fraction	% w/w	53.60	On-Site Physical Verification
2	Plastic, Polythene, Tetra Packs Etc	% w/w	3.21	
3	Paper and Card Board	% w/w	0.25	
4	Horticulture Waste & Wooden Piece	% w/w	0.80	
5	Metal	% w/w	0.08	
6	Textiles	% w/w	1.28	
7	Glass	% w/w	2.05	
8	Leather, Rubber Etc	% w/w	0.01	
9	Heavy Fractions	% w/w	32.08	
10	Coarser fraction	% w/w	8.05	
11	Fine Fractions	% w/w	52.19	
	Total		100%	

Checked by



Authorised Signatory

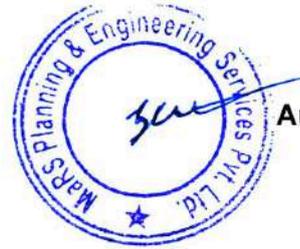
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- Subject to Ahmedabad Jurisdiction.

TEST REPORT

Particulars of the Sample: BHANDARLI				
Sample Drawn by: The Party Sample quantity received: 10.00 Kg Sample Condition: Fit for Analysis Type of packing: Plastic Pouch			Date of receipt of sample: 26/02/2024 Date of analysis: 29/02/2024	
Physical & Chemical Testing of Sample				
Sr No.	Parameter	Unit	Results	Test Method
1	pH		7.4	UT/LQMS/SOP/C01
2	Bulk Density	MT/Cum	1.0	UT/LQMS/SOP/C03
Sr No.	Parameter	Unit	Results	Test Method
1	Moisture	% w/w	22.5	UT/LQMS/SOP/C04
2	Ash Content	% w/w	80.3	UT/LQMS/SOP/S07
3	Total volatile content (LOI)	% w/w	15	UT/LQMS/SOP/S06
4	Total Organic Carbon (TOC)	% w/w	11.5	UT/LQMS/SOP/C05
5	Calorific value	Cal/Kg	932	IS:1350 (PART-II)-1970 (RA2015)
6	C/N ratio		18.3	UT/LQMS/SOP/C14
7	Total Nitrogen	mg/kg	0.6	UT/LQMS/SOP/C08
8	Total Phosphates as P2O5	% w/w	0.7	UT/LQMS/SOP/C07
9	Total Potassium as K2o	% w/w	0.2	UT/LQMS/SOP/C06

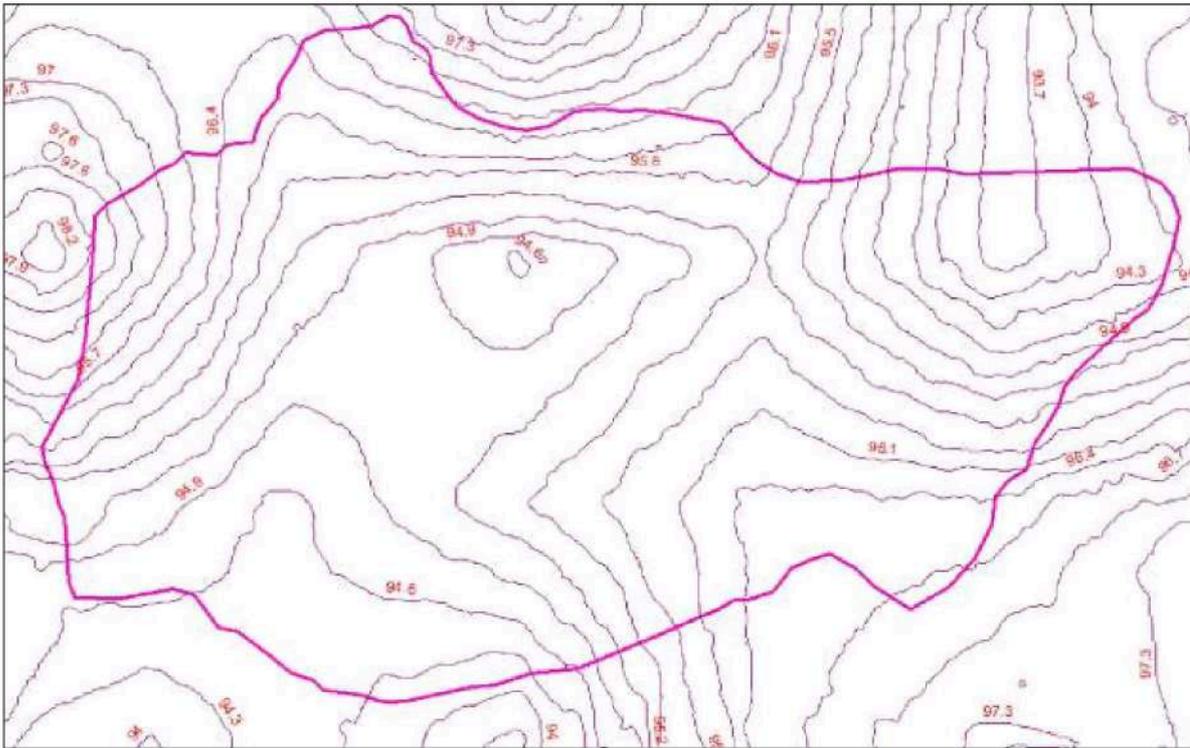
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Authorised Signatory

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INFORMATION	
2011	TERRAIN PROFILE DETAIL

LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	DUMP AREA BOUNDARY

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

- NOTES:**
1. The information must solely and only be used for the coordination and/or approval of the project. And it should not be used for construction or execution purpose.
 2. The consultant does not warrant or take responsibility for the accuracy of the information issued.
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 6. All Dimensions are in M unless specified.

Drawing No. C-001 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
TERRAIN PROFILE

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (CIVIL ENGINEER)	Subodh (Expert)	DHRU (CIVIL ENGINEER)	Team Leader (ENVIRONMENTALIST)

Client

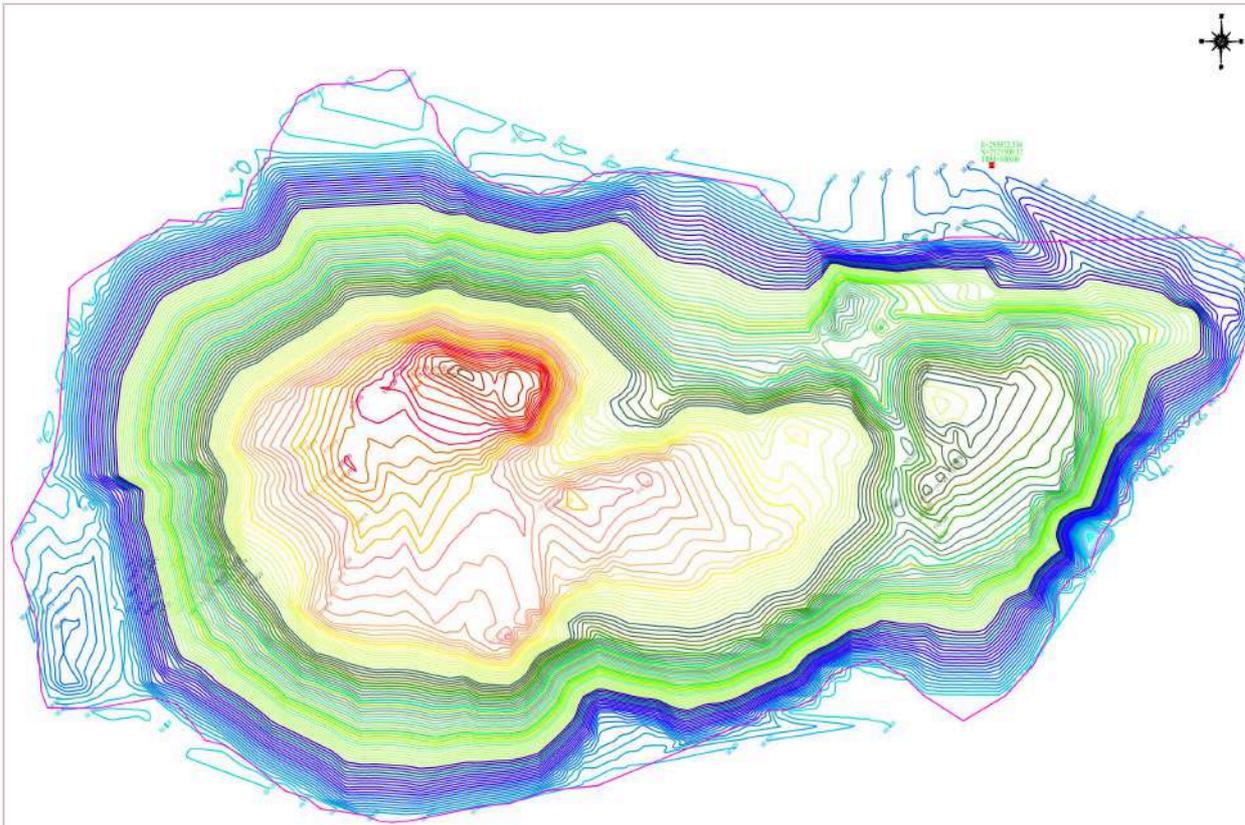
 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400002
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

- NOTES:**
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Drawing No. C-002 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
(DIVA DUMPING GROUND)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Datta (CSE/NT/MS)	Subject Expert	DRM/DRM (SP/KB/MS)	Team Leader (JNP/SP/JS)

Client

Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

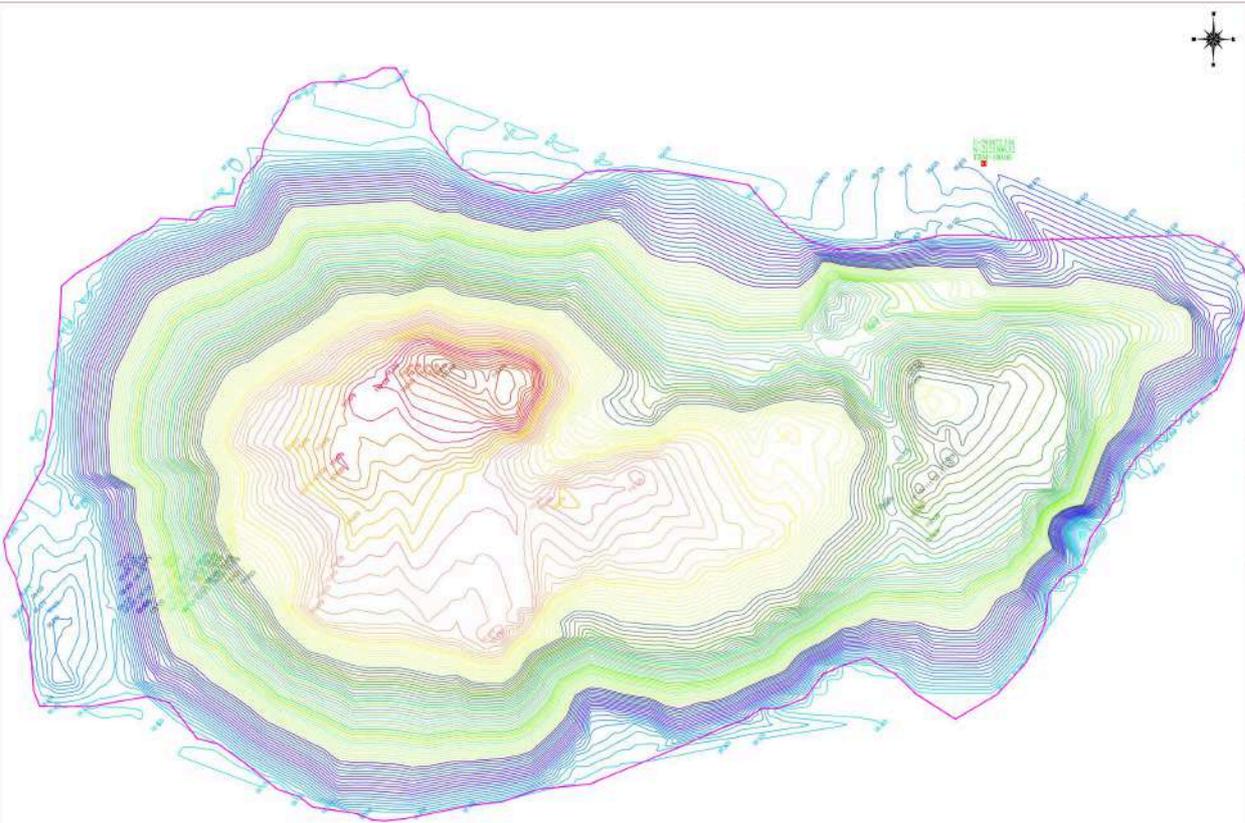
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Size
A4

LEGENDS		INFORMATION	
0.25	INTERVAL	100.000 Mt	TBM LEVEL
	CONTOUR LINE	120.374 Mt	HIGHEST CONTOUR LINE LEVEL
	SHED	95.629 Mt	LOWEST CONTOUR LINE LEVEL
	BUILDING	10.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
	WASTE SPREAD AREA	68372.76 SQM	LAND AREA UNDER LEGACY WASTE
	LEGACY WASTE DUMP HEAP	68372.76 SQM	TOTAL AREA



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

- NOTES:**
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Drawing No. C-003 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
(DIVA DUMPING GROUND)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Sudhanshu (SDS) M/F/N/S	Designed by Sudhanshu Expert	Checked by Sudhanshu (SHP) R/E/N/S	Approved by Team Leader (LSP) (SP) (S)
-------------------------------------	---------------------------------	---------------------------------------	---

Client

Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

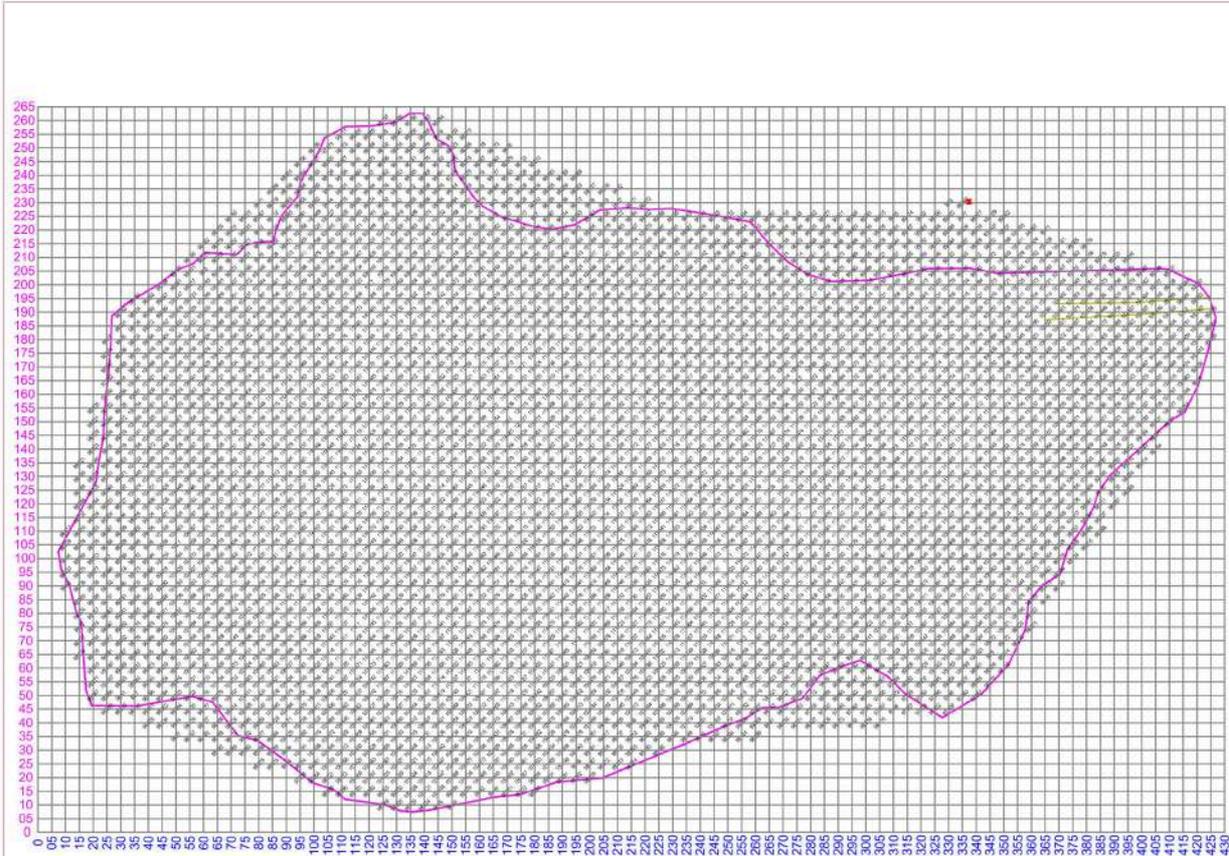
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Size
A2

LEGENDS		INFORMATION	
0.25	INTERVAL	100.000 Mt	TBM LEVEL
	CONTOUR LINE	120.374 Mt	HIGHEST CONTOUR LINE LEVEL
	SHED	95.629 Mt	LOWEST CONTOUR LINE LEVEL
	BUILDING	10.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
	WASTE SPREAD AREA	68372.76 SQM	LAND AREA UNDER LEGACY WASTE
	LEGACY WASTE DUMP HEAP	68372.76 SQM	TOTAL AREA



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Nagar Palika

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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DRAWING NAME
5M X 5M SPOT LEVEL
DIVA DUMPING GROUND

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatray (CSE/NT/MS)	Sudipt	DMM/Deputy (SP/MS/MS)	Team Leader (SNP/SP/AB)

Client

Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

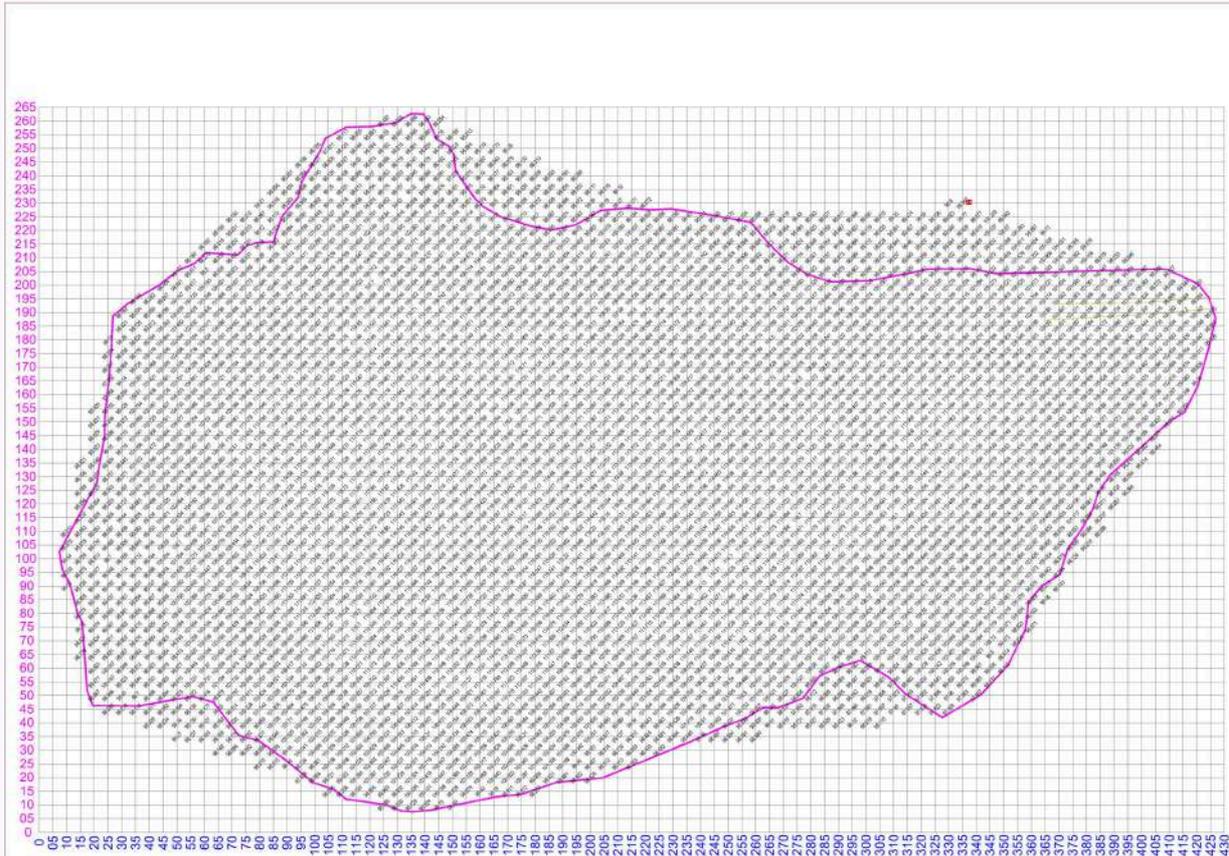
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 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

LEGENDS

—	GRID 0.5 X 0.5
0.25	INTERVAL
XXX.XXX	SPOT LEVELS
—	SHED
—	BUILDING
—	WASTE SPREAD AREA

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Size
A4



LEGENDS	
—	GRID 0.5 X 0.5
0.25	INTERVAL
XXX.XXX	SPOT LEVELS
- - - -	SHED
—	BUILDING
—	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Nagar Palika

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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 6. All Dimensions are in M unless specified.

Drawing No. C-005 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
5M X 5M SPOT LEVEL
DIVA DUMPING GROUND

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by

Client
 Thane Municipal Corporation
 New Administrative Building Chembur Wadi,
 Pachpakhad, Malajpalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400032
 Dist: Thane (Maharashtra)

Consultant

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 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT	THANE	URBAN LOCAL BODY	THANE
----------	-------	------------------	-------

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Drawing No.	C-006 R0 <th>Scale</th> <td>NTS</td> <th>Drawing Status</th> <td>Issued for DPR Approval</td>	Scale	NTS	Drawing Status	Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 010,015,020)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DIP/NTN/RS)	Sudipta Eapen	DHRU DHRU (DIP/NTN/RS)	Team Leader (DIP/NTN/RS)

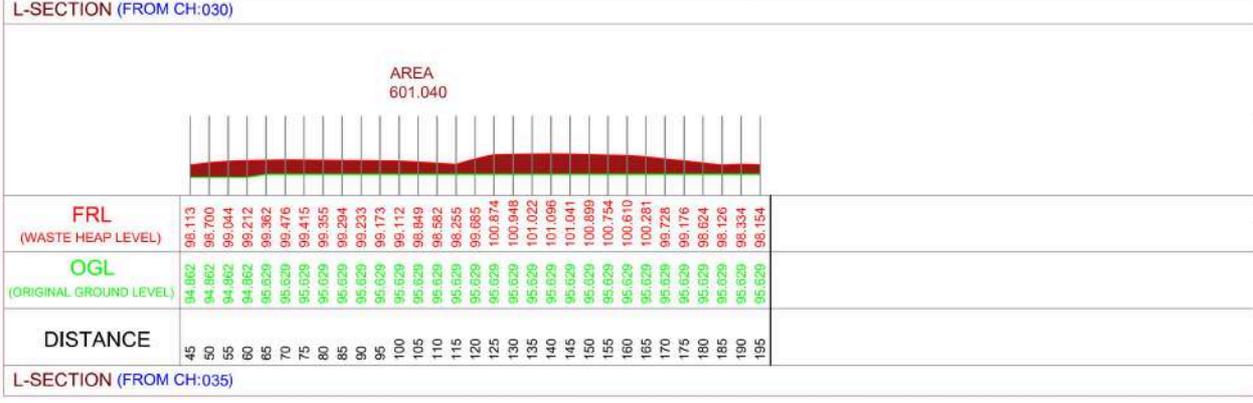
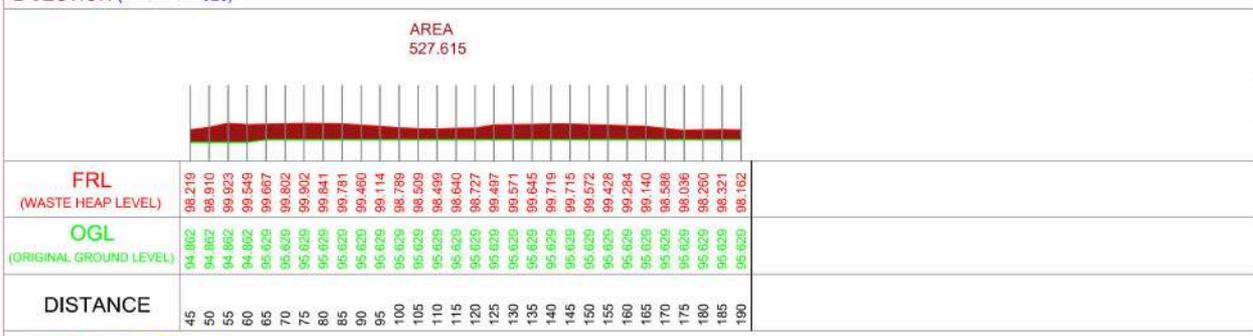
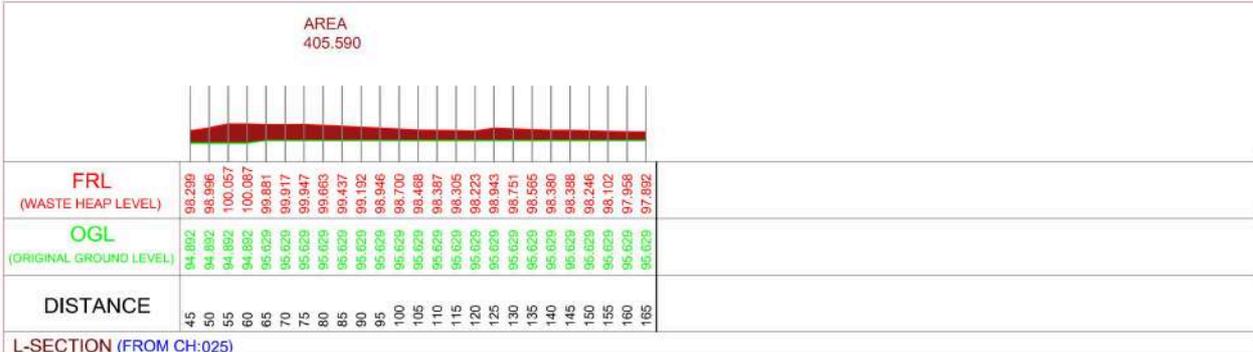
Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi, Pachpakhad, Mahapalika Bhavan Rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath, S. P. Ring Road, Bopal-Ambli, Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

- NOTES:**
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Drawing No.
C-007 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 025,030,035)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatray (SVP/NTN/S)	Sudipt Expert	DRM/Expert (SVP/NTN/S)	Team Leader (SVP/SP/NTN/S)

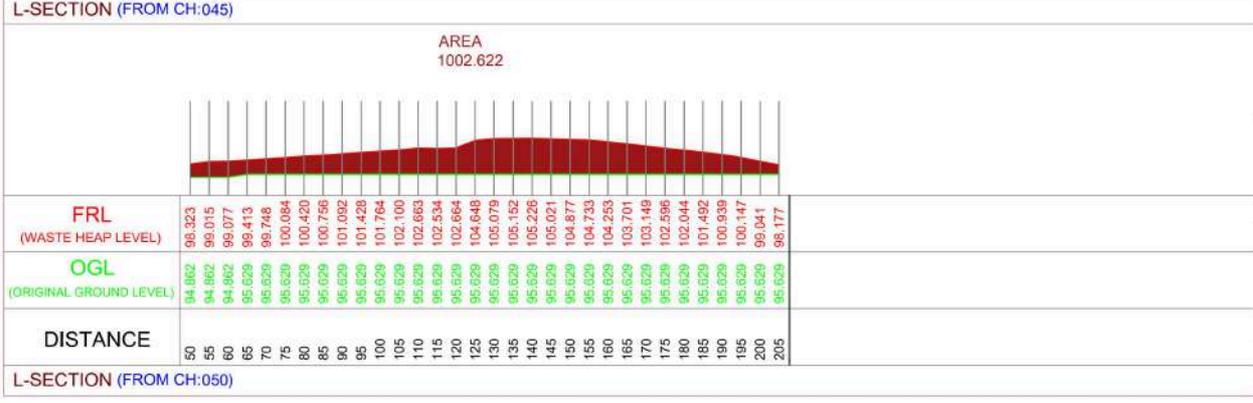
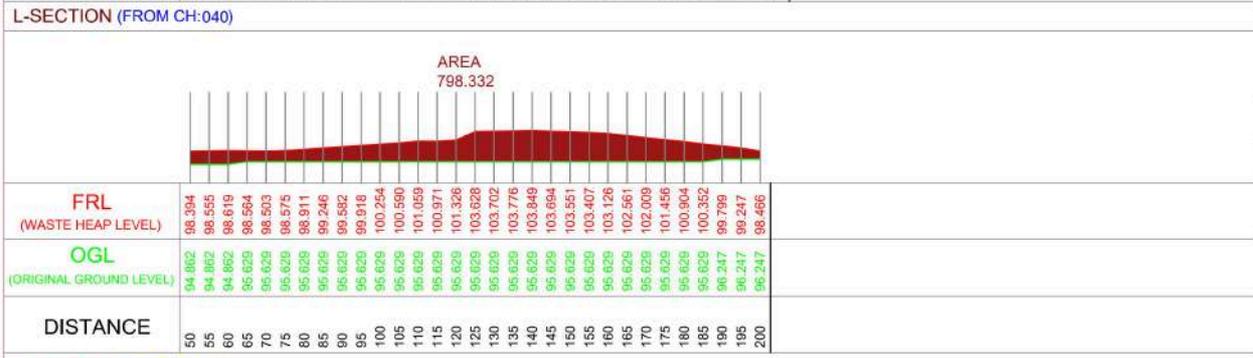
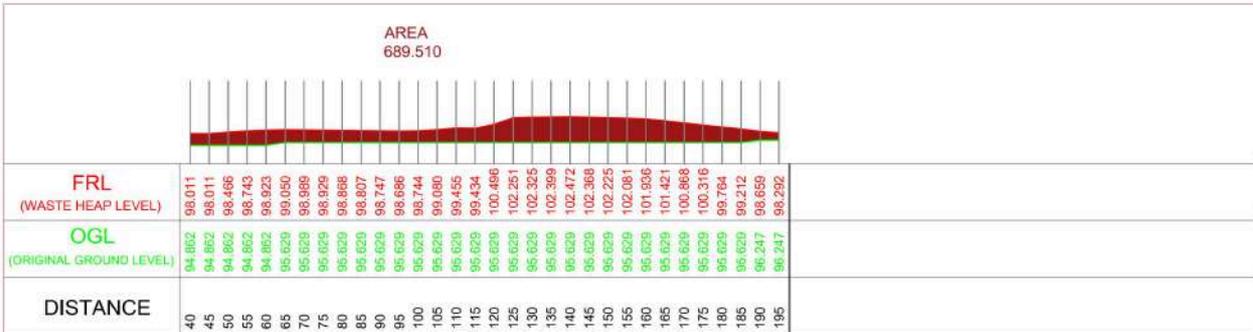
Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpal,
S. P. Ring Road, Bopai-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-008 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 040,045,050)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

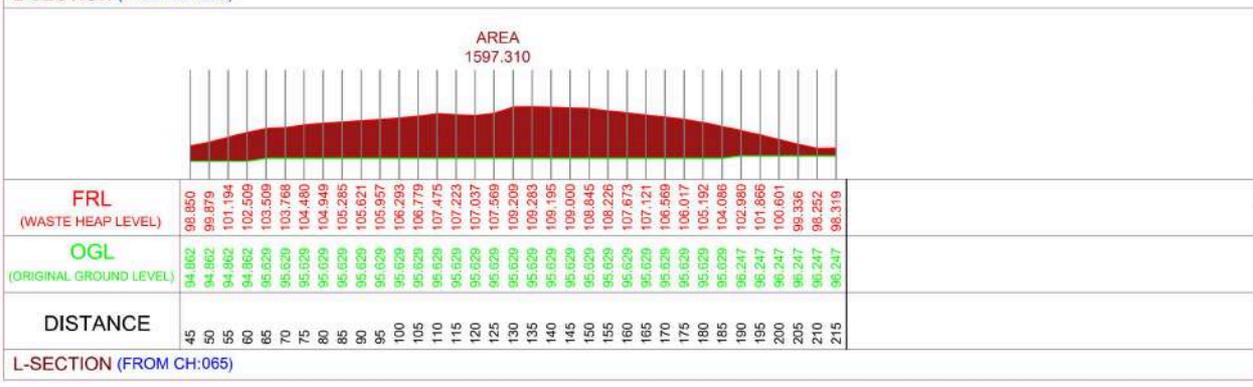
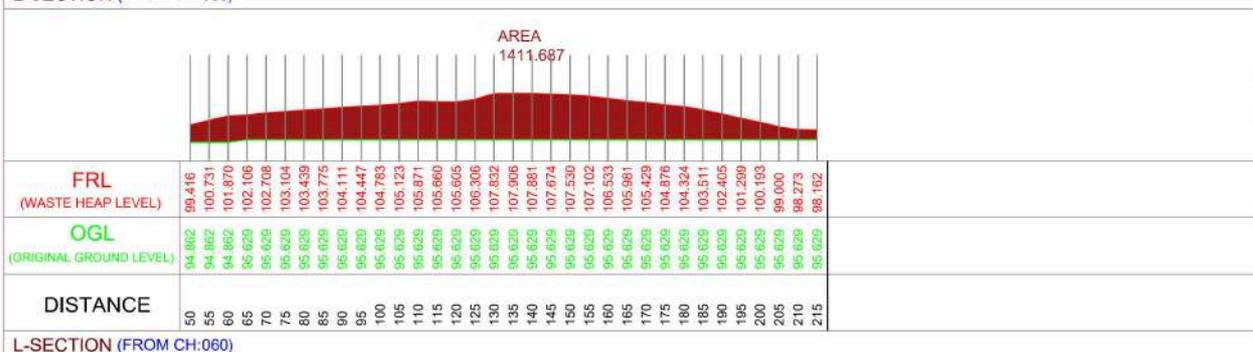
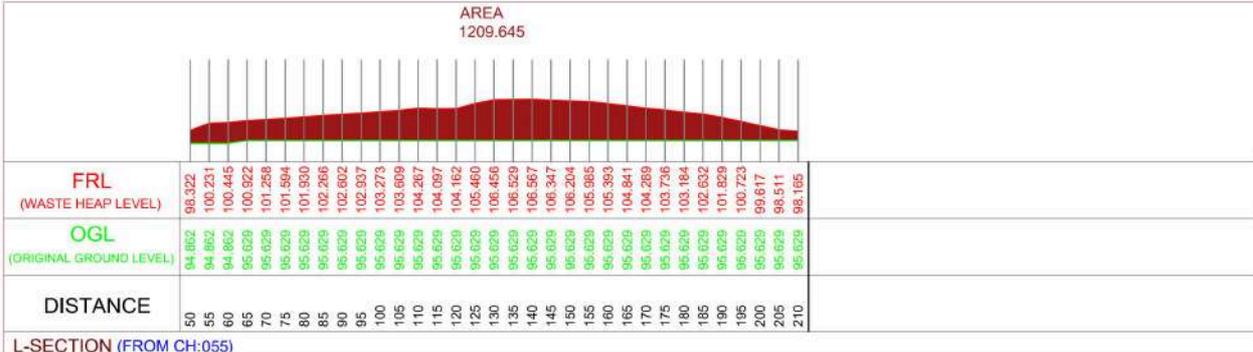
Drawn by: [Signature] **Designed by:** [Signature] **Checked by:** [Signature] **Approved by:** [Signature]

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-009 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 055,060,065)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

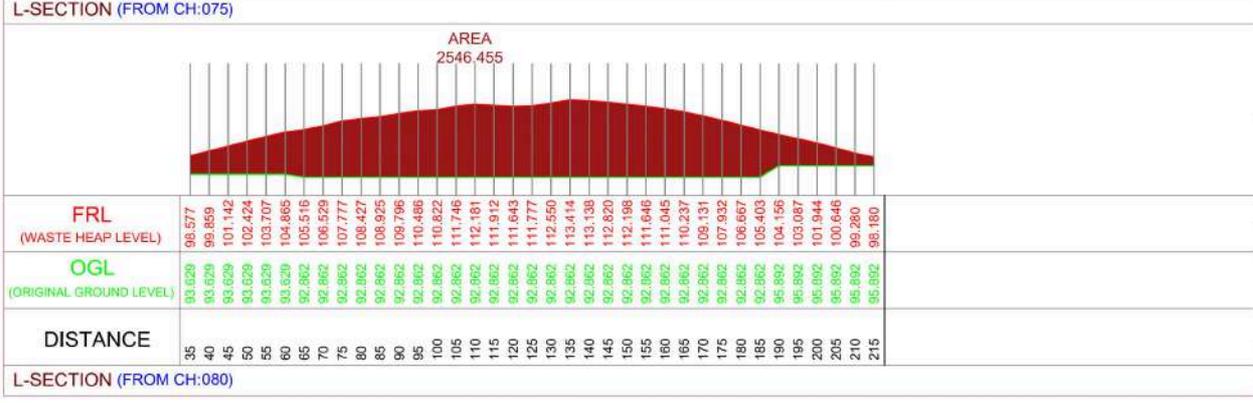
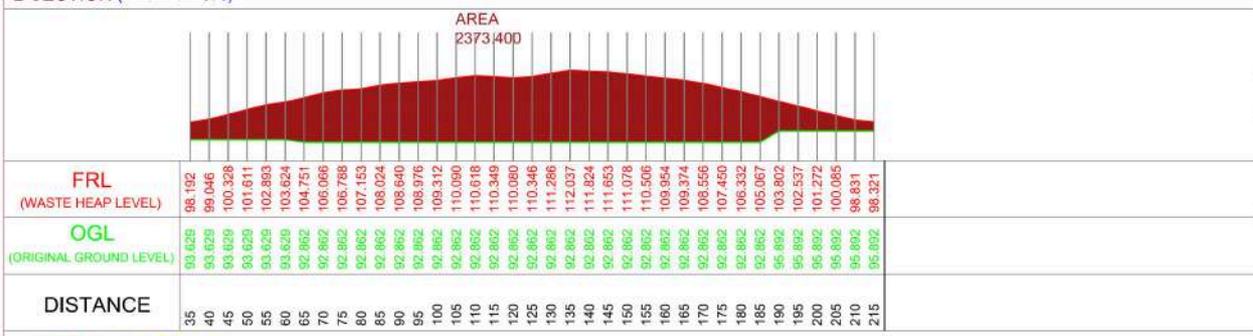
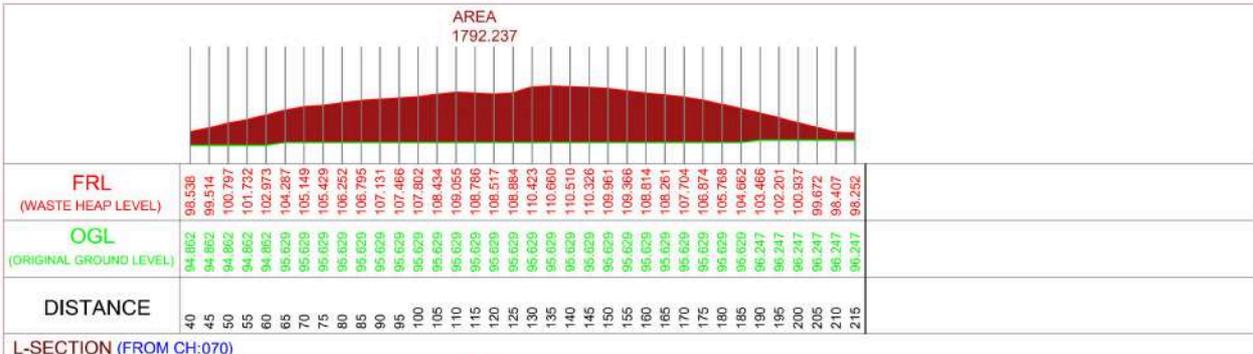
Drawn by	Designed by	Checked by	Approved by
Dattatray (DTP/NTN)	Sudipta	Dattatray (DTP/NTN)	Team Leader (DTP/SP/JS)

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
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Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-010 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 070.075,080)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

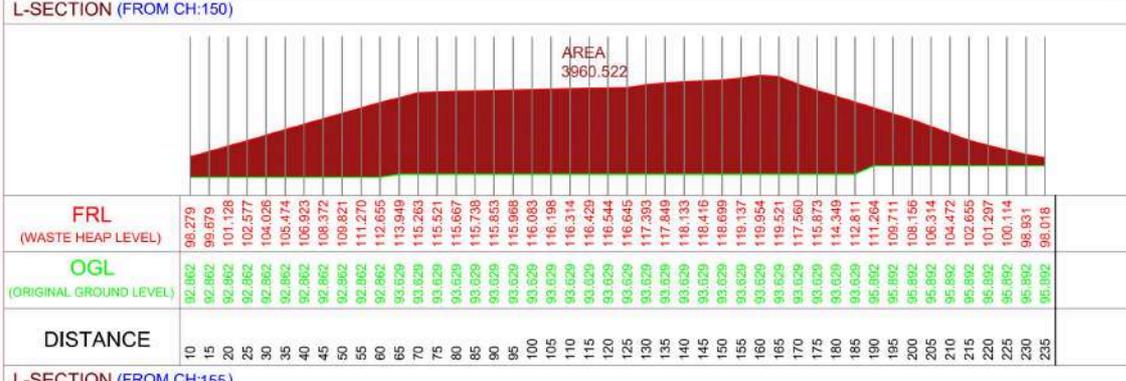
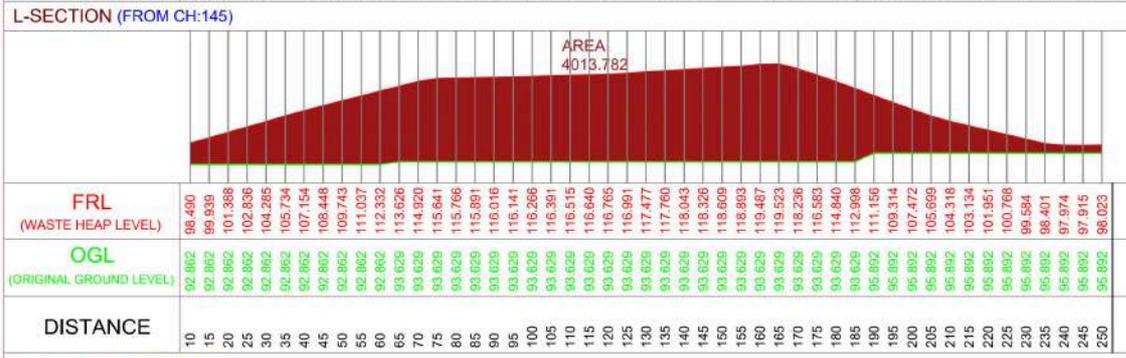
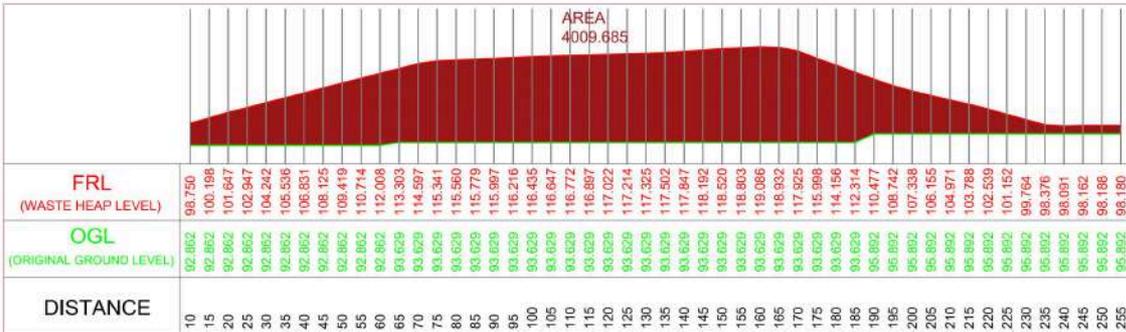
Drawn by	Designed by	Checked by	Approved by
Dharm (DP/NTN)	Sudip Epat	DHRUJ (DP/148/NTN)	Team Leader (DP/SP/28)

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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N
W E
S
Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No. **C-015 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 145,150,155)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

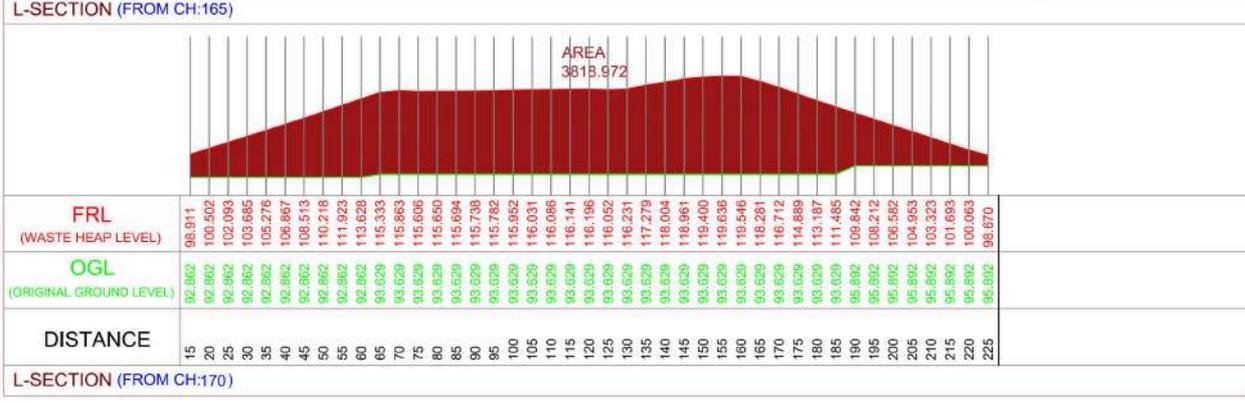
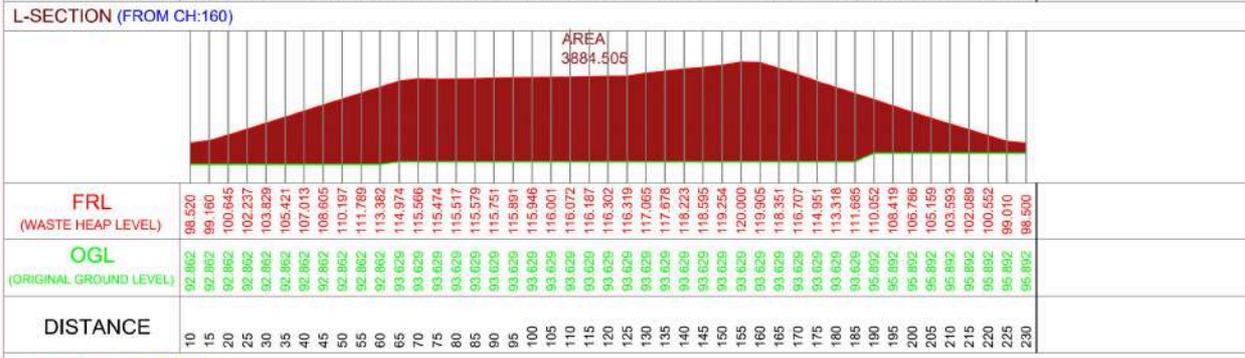
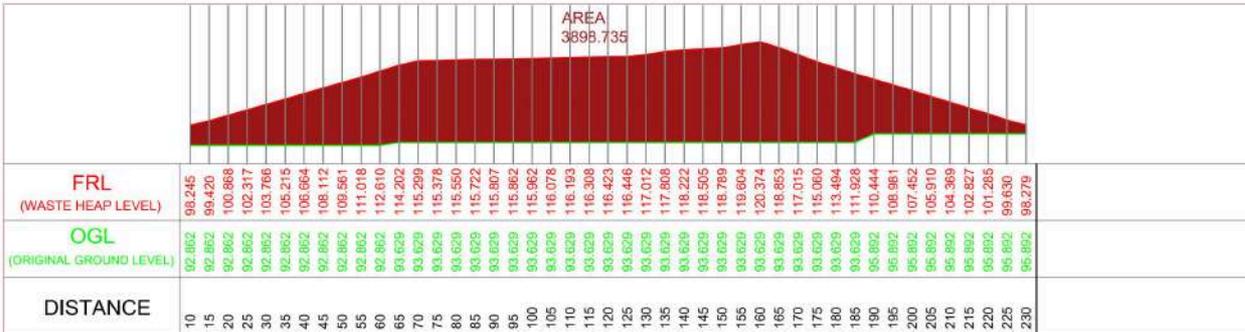
Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DIP/NT/MS)	Sudipta Eapen	DHRUJ DHRUJ (DIP/NT/MS)	Team Leader (DIP/NT/MS)

Client Thane Municipal Corporation
New Administrative Building, Chendani Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size **A4**



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-016 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 160,165,170)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

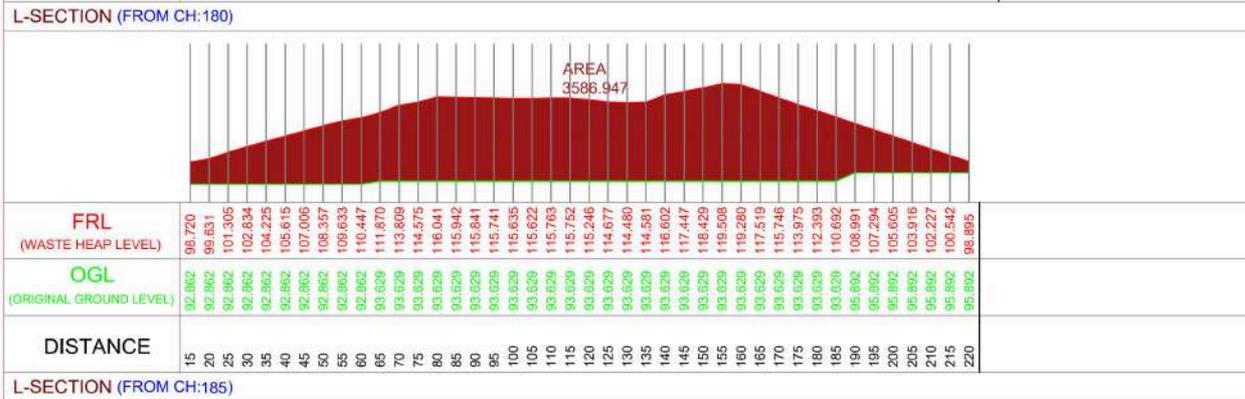
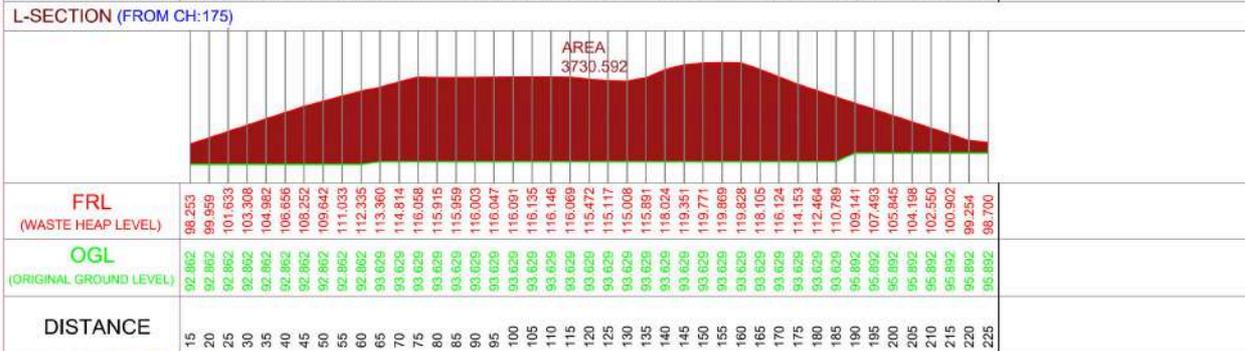
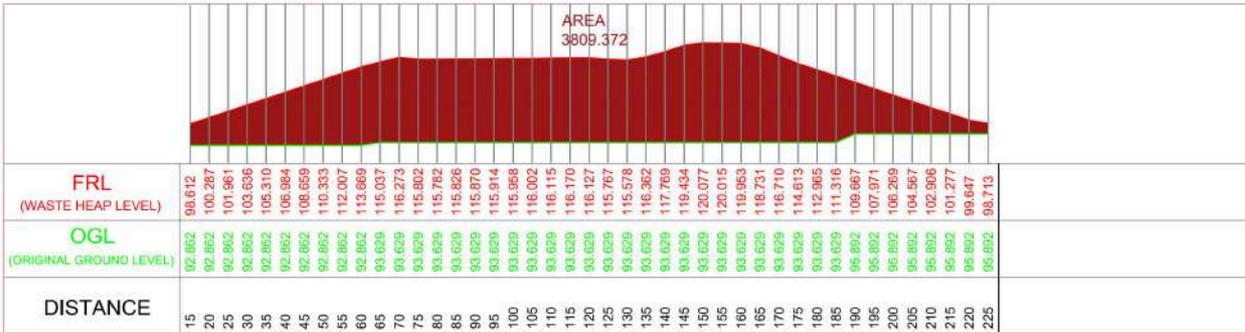
Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DIP/NTN/RS)	Sudipta Eapen	DHRU Dey (DIP/148/NTS)	Team Leader (DIP/SP/RS)

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-017 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 175,180,185)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

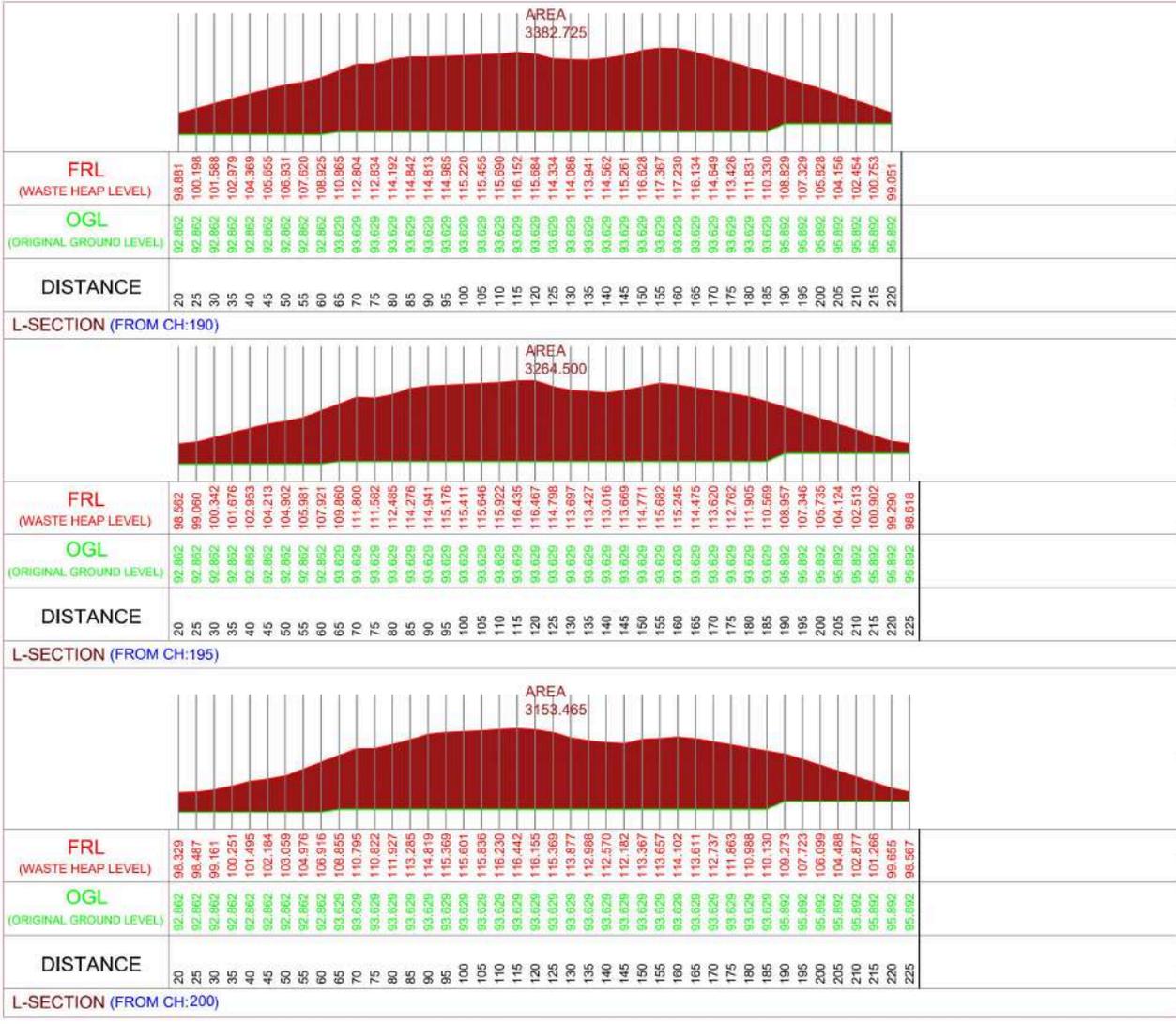
Drawn by Dishant (DP/NTN)	Designed by Sudipt Eapen	Checked by DHRUJ (DP/MB/NS)	Approved by Team Leader (DP/SP/JS)
-------------------------------------	------------------------------------	---------------------------------------	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-018 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 190,195,200)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

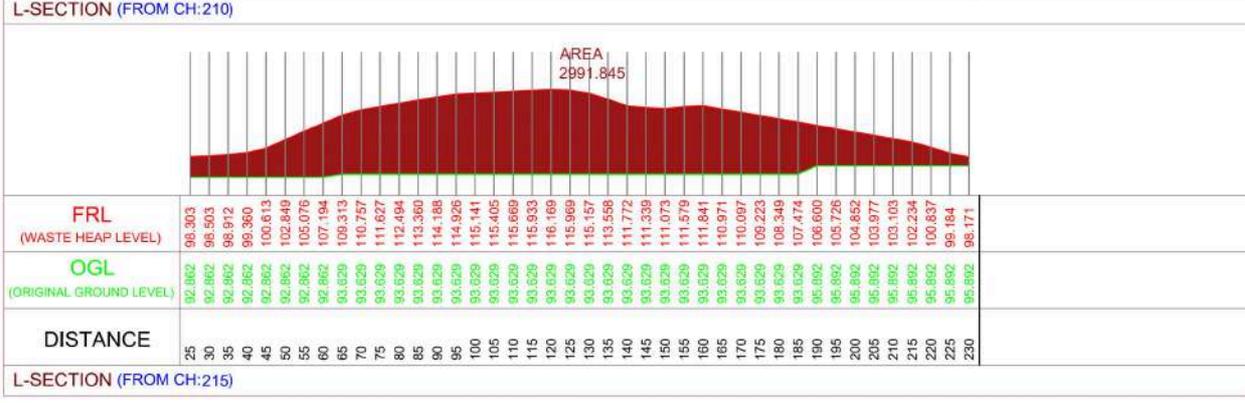
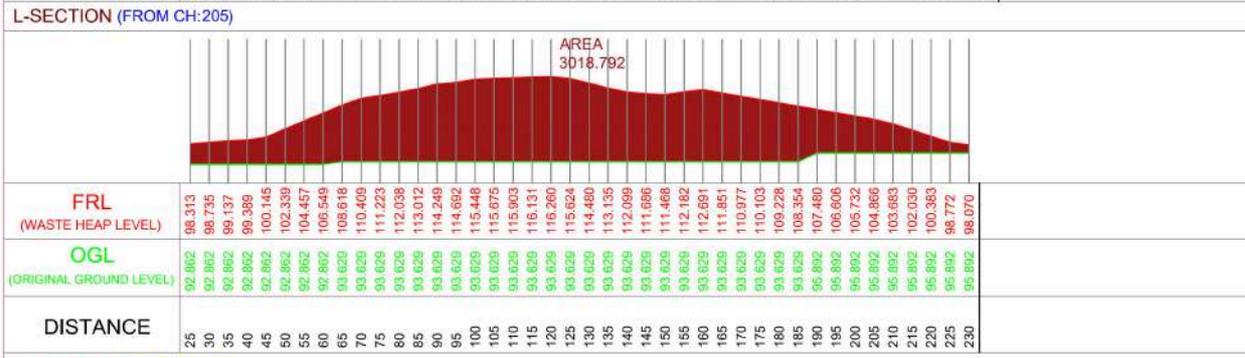
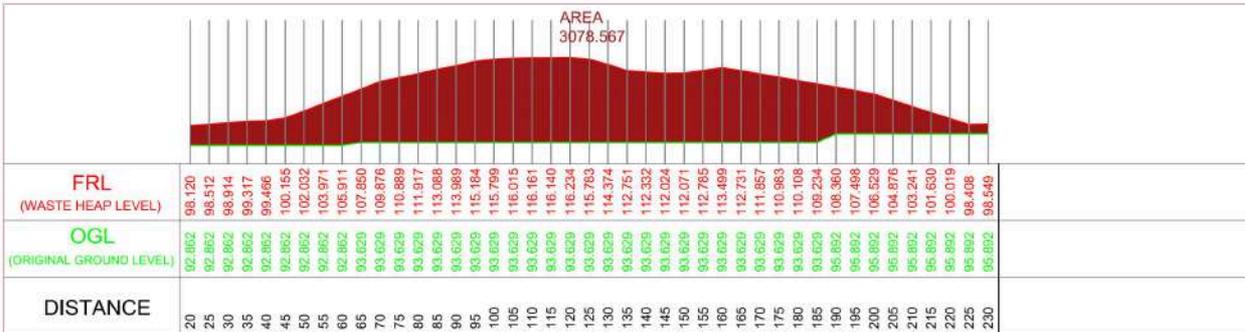
Drawn by Dishant (CIVIL ENGINEER)	Designed by Sudipt	Checked by DHRUJ (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
---	------------------------------	---	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
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Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-019 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 200,205,210)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

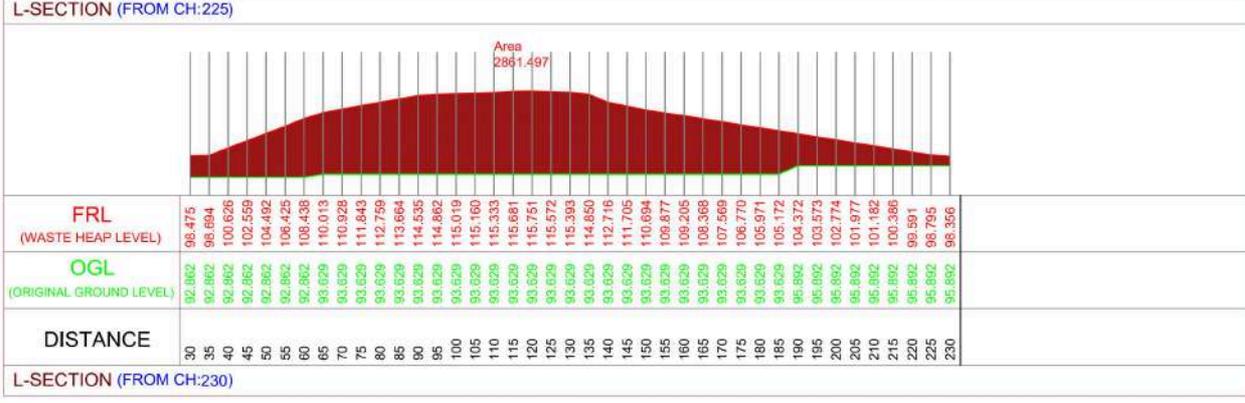
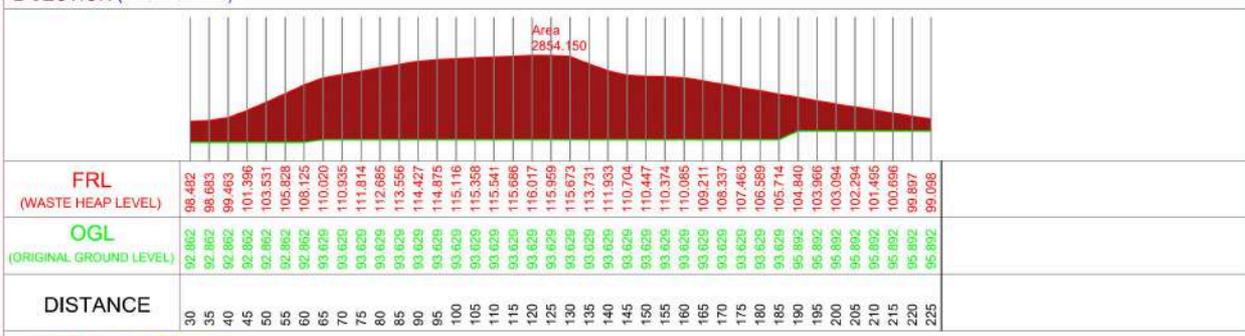
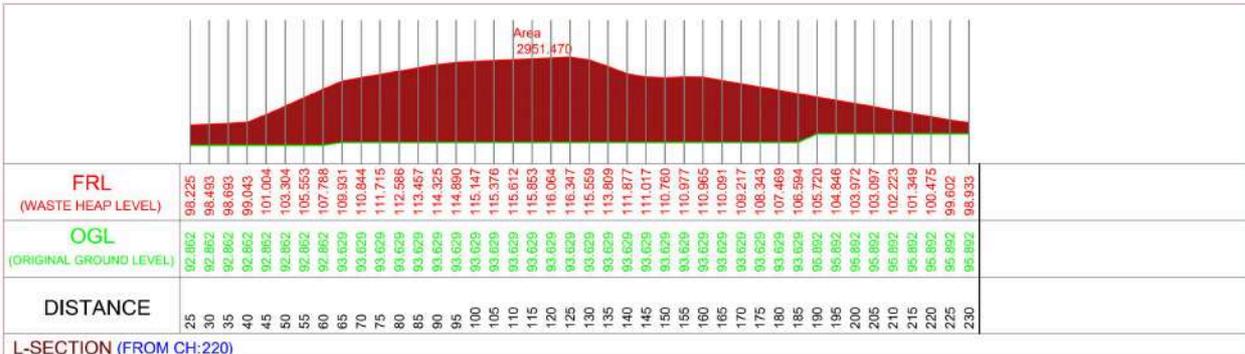
Drawn by Dilipkumar (CIVIL ENGINEER)	Designed by Sudipta	Checked by DHRUJ (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
--	-------------------------------	---	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-020 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 220,225,230)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

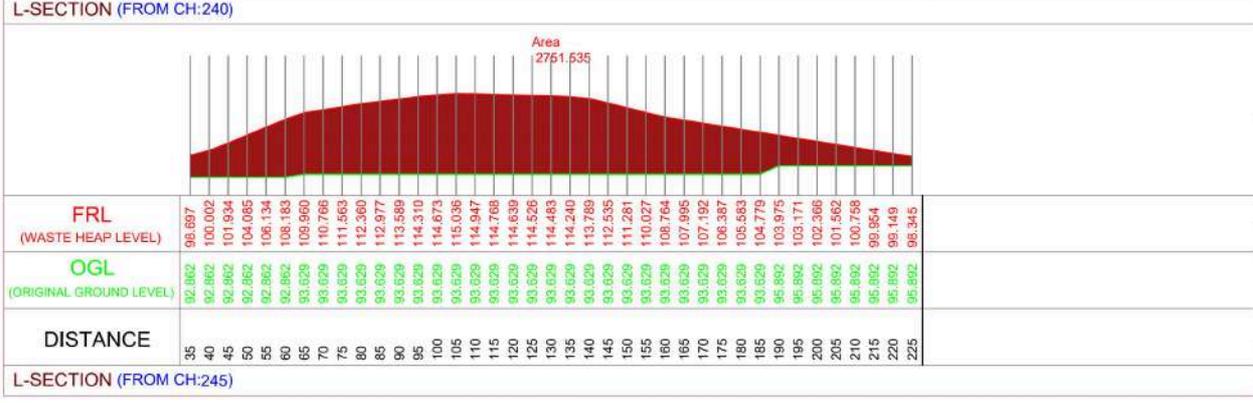
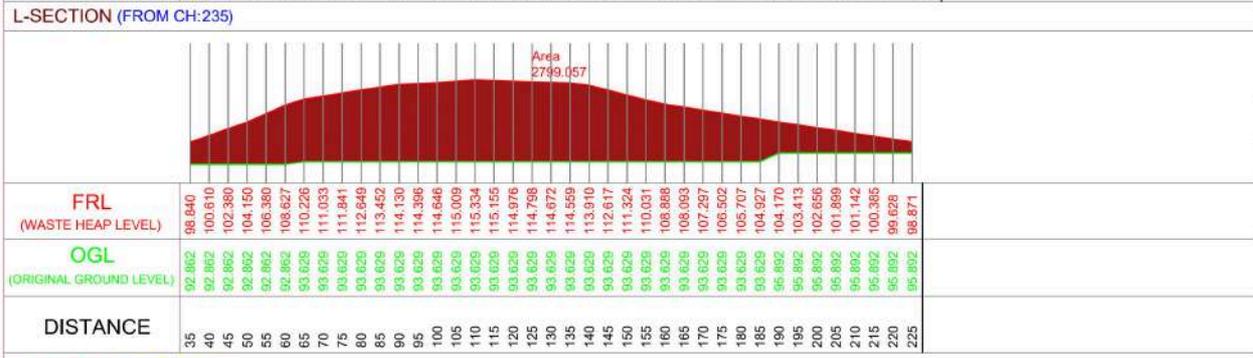
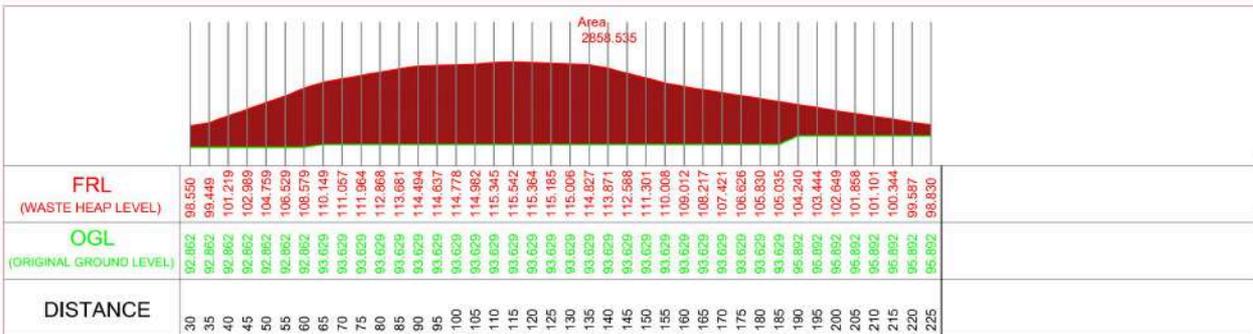
Drawn by Dishant (CIVIL ENGINEER)	Designed by Sudipt	Checked by DHRUJ (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
--------------------------------------	-----------------------	--------------------------------------	---

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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N
W E
S
Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-021 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 235,240,245)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

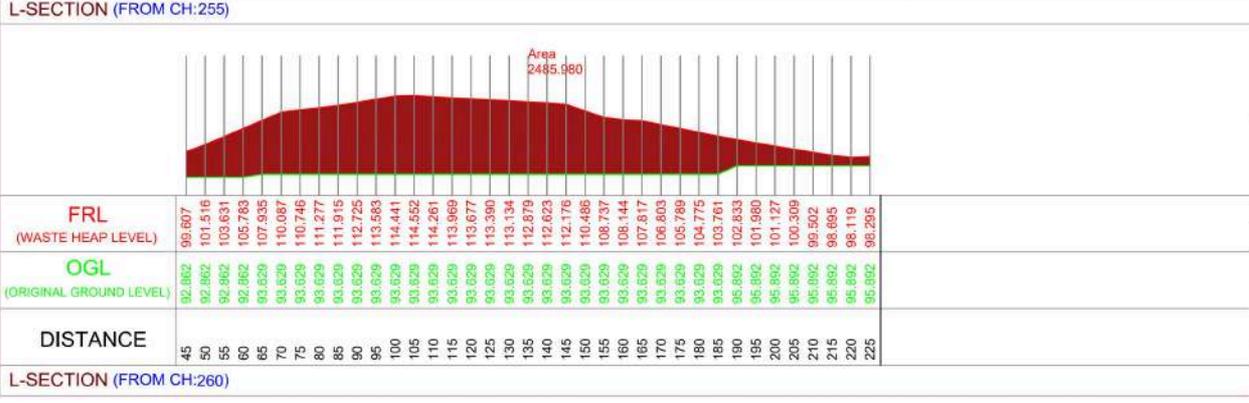
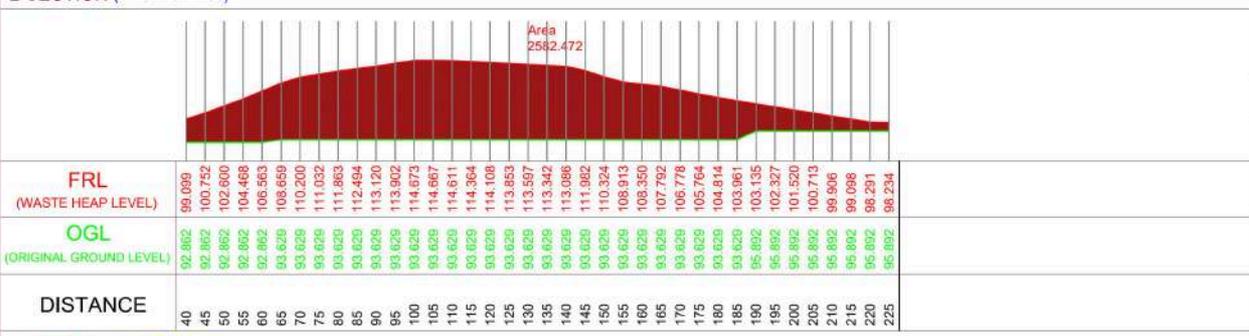
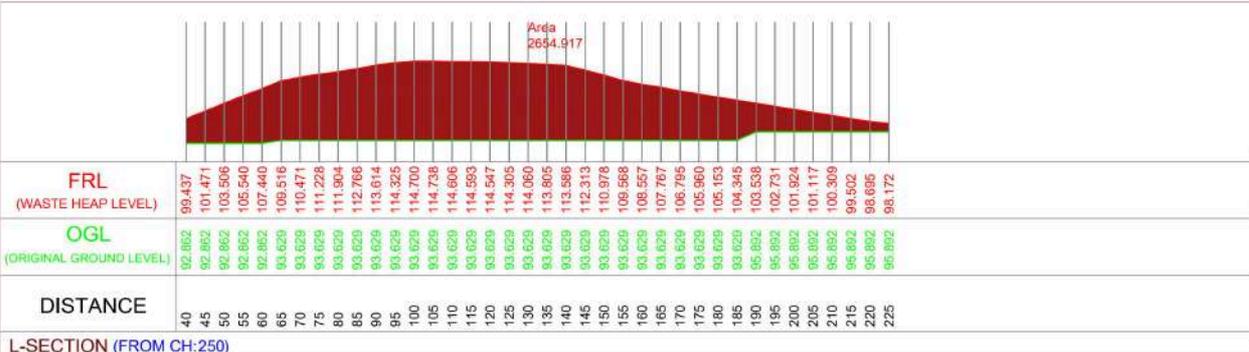
Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhaadi, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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Size
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No. C-022 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 250,255,260)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

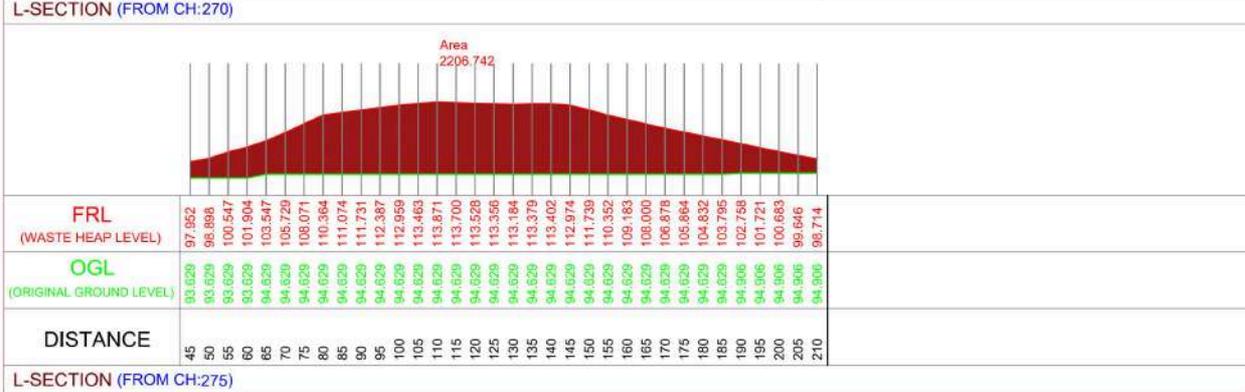
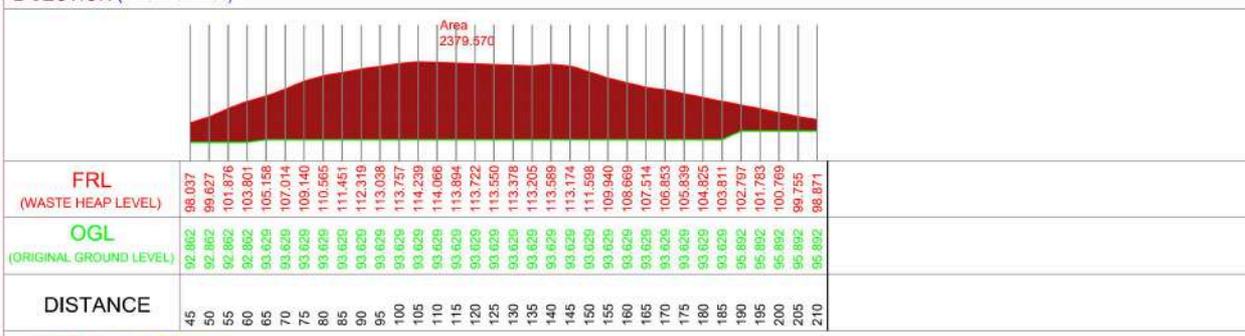
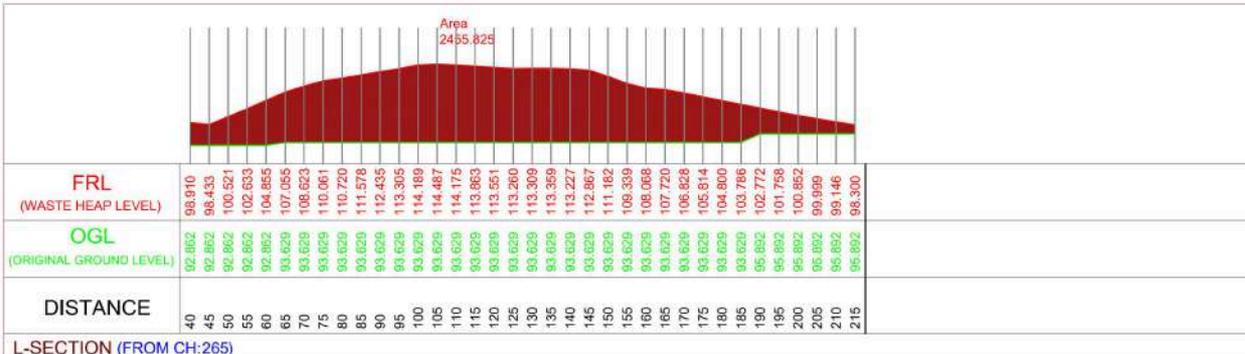
Drawn by Dharmendra (DP/NT/NR)	Designed by Sudipta Esgt	Checked by DMS/Espt (DP/KB/NS)	Approved by Team Leader (DP/SP/JS)
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Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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Size
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No. C-023 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 265.270,275)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dattatray (DTP/NTN)	Designed by Sudipta Esgar	Checked by Dattatray (DTP/NTN)	Approved by Team Leader (DTP/SP/JS)
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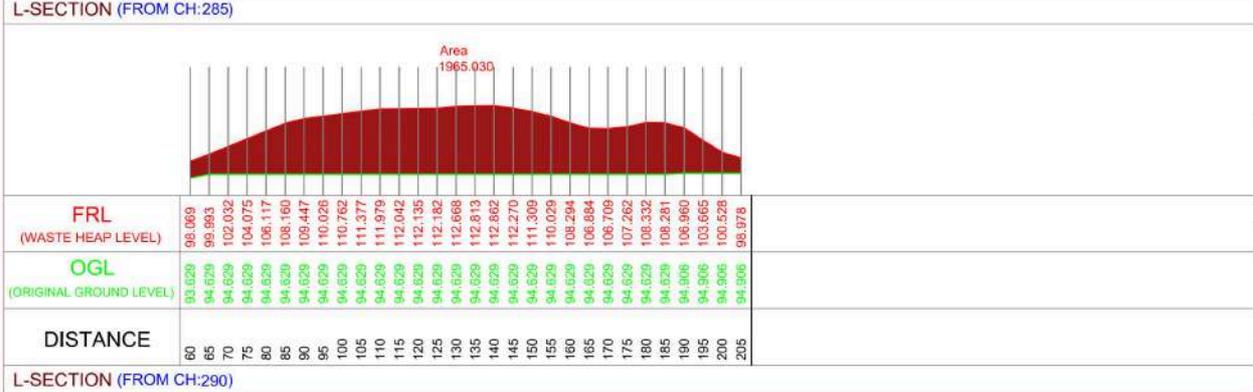
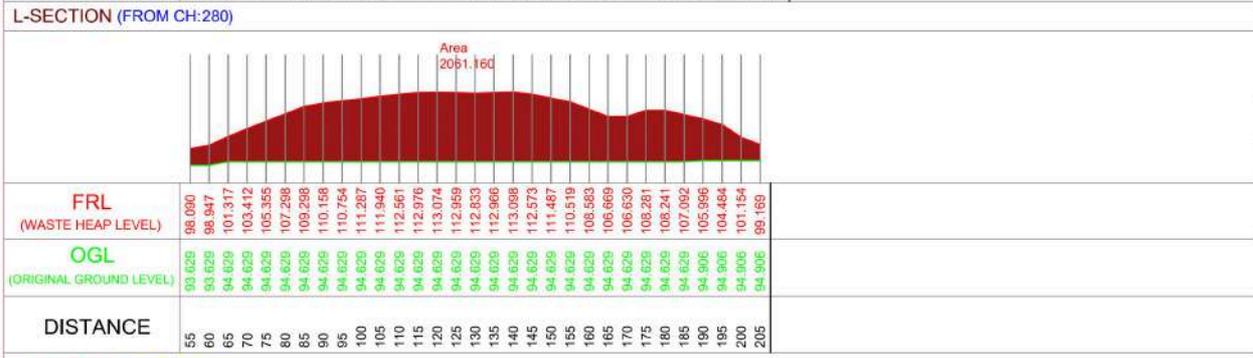
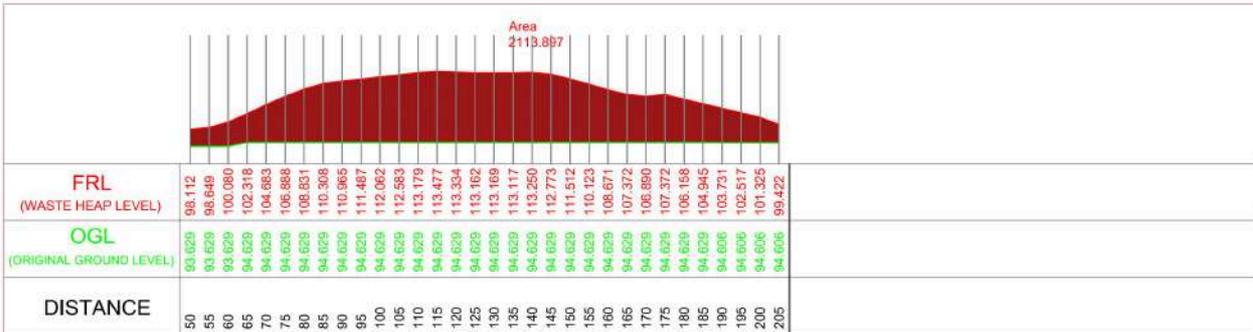
Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
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Mars Planning & Engineering Services Pvt. Ltd.
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N
E
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-024 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 280,285,290)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

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Dattatray (DTP/NTN)	Sudipt Egoet	Dattatray (DTP/NTN)	Team Leader (DTP/SP/JS)

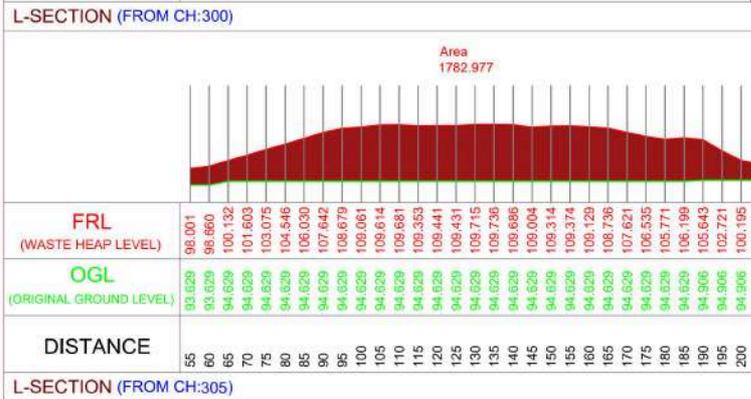
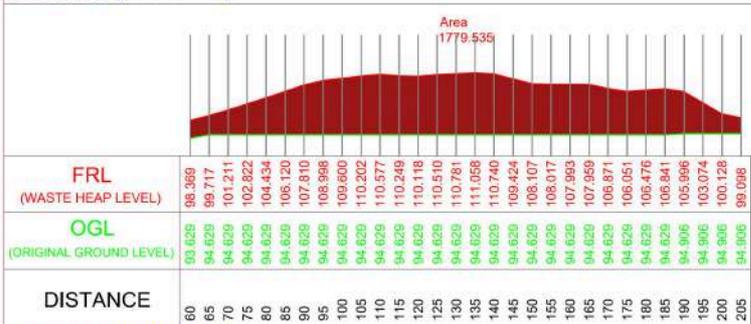
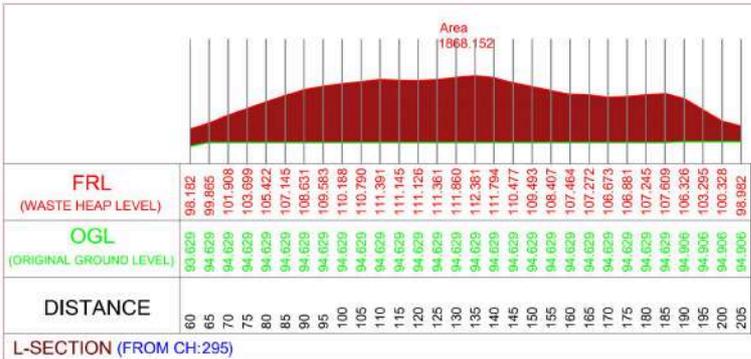
Client
 Thane Municipal Corporation
 New Administrative Building,Chandan Wadi ,
 Pachpakhaadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-025 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 295,300,305)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

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Dattatray (DTP/NT/NS)	Sudipt Esgt	Dattatray (DTP/NT/NS)	Team Leader (DTP/SP/JS)

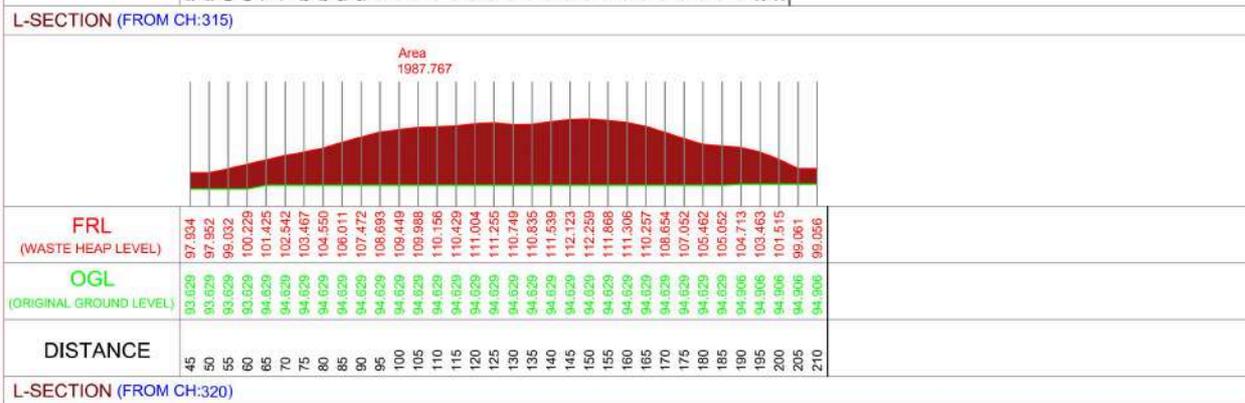
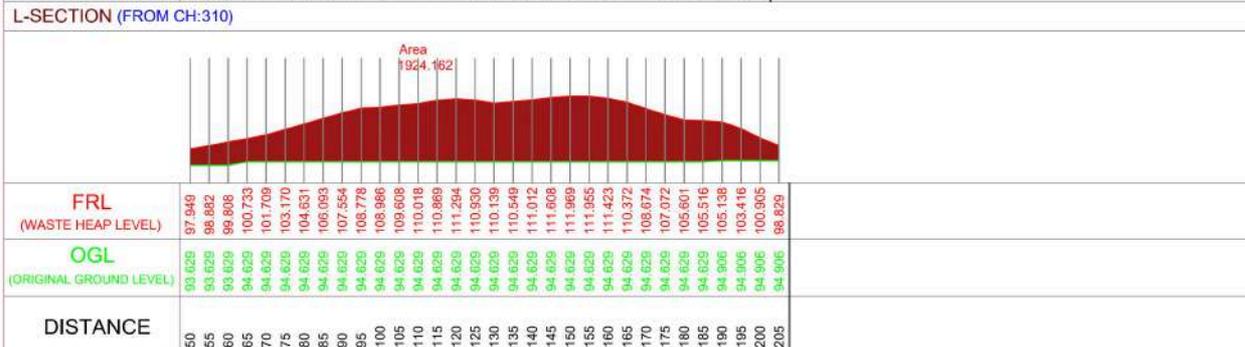
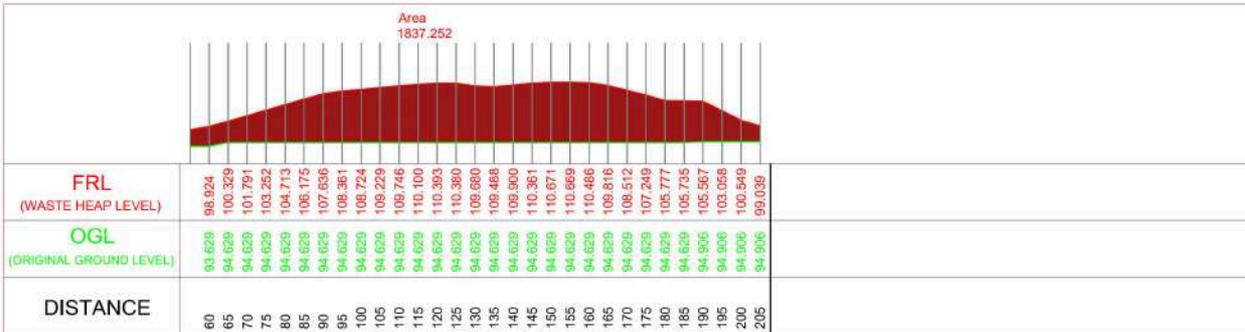
Client
 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-026 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 310,315,320)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NTN)	Sudipta Eapen	Dattatraya (DTP/NTN)	Team Leader (DTP/NTN)

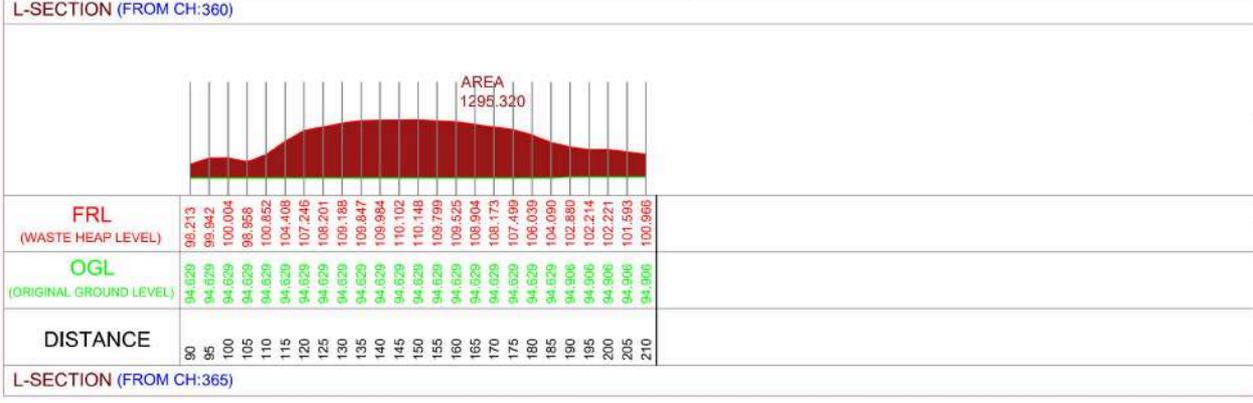
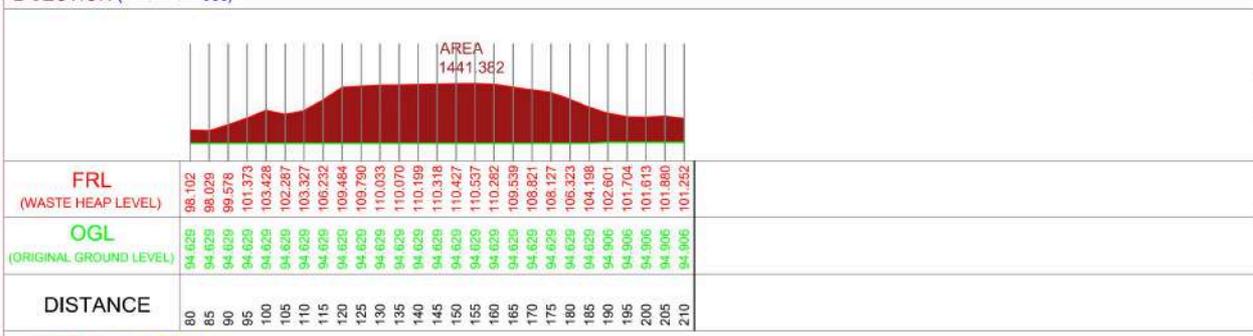
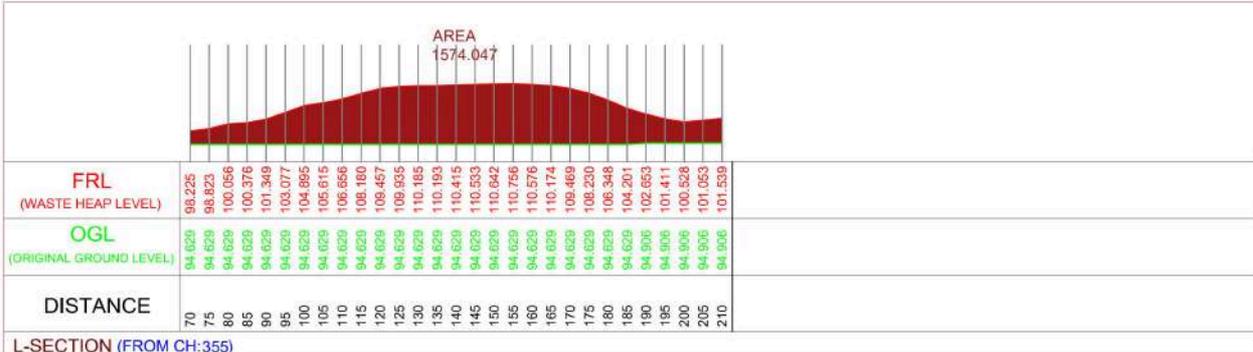
Client
 Thane Municipal Corporation
 New Administrative Building, Chandan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

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Size
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-029 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 355,360,365)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

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Dattatray (DP/NTN/RS)	Sudipt Expert	Dattatray (DP/NTN/RS)	Team Leader (DP/SP/RS)

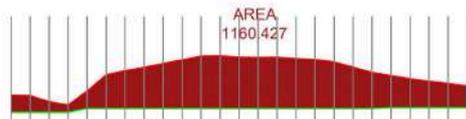
Client
 Thane Municipal Corporation
 New Administrative Building,Chandan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

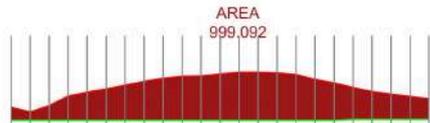
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Size
A4



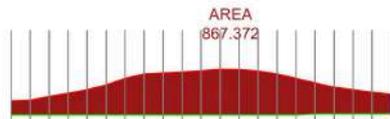
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OGL (ORIGINAL GROUND LEVEL)	93.629	93.629	93.629	93.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629
DISTANCE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210

L-SECTION (FROM CH:370)



FRL (WASTE HEAP LEVEL)	98.134	96.806	98.557	101.117	102.136	103.006	104.003	105.001	105.835	106.409	106.471	106.921	107.388	107.422	107.209	106.779	105.561	104.587	103.371	102.283	101.648	101.020	100.392	
OGL (ORIGINAL GROUND LEVEL)	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629
DISTANCE	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	

L-SECTION (FROM CH:375)



FRL (WASTE HEAP LEVEL)	96.366	96.565	99.581	100.408	101.396	102.643	104.409	105.607	105.841	106.075	106.339	106.806	106.729	106.313	105.611	104.384	103.158	102.066	101.361	100.733	100.106
OGL (ORIGINAL GROUND LEVEL)	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629
DISTANCE	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210

L-SECTION (FROM CH:380)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No. **C-030 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 370,375,380)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

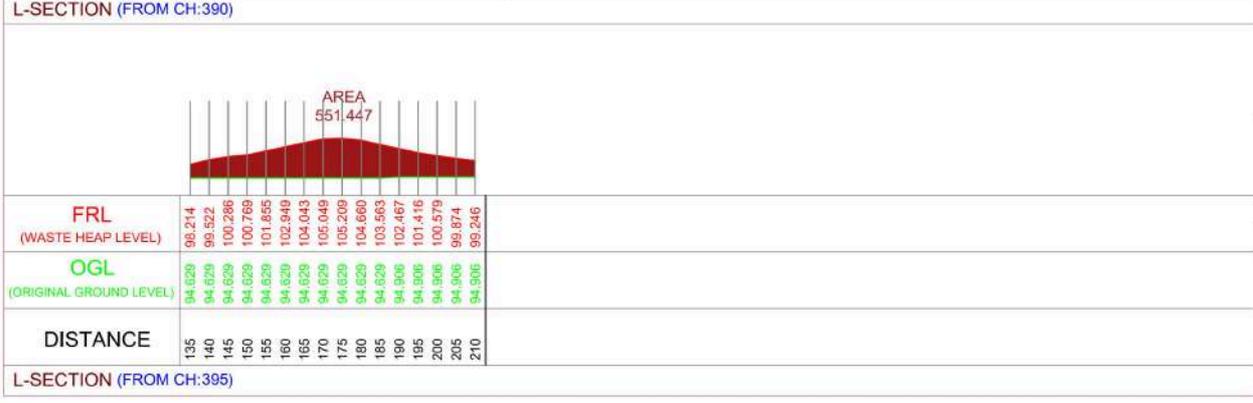
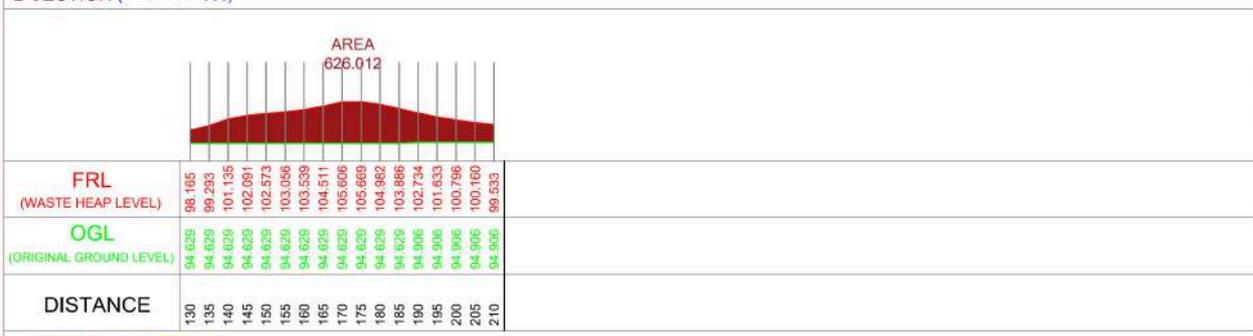
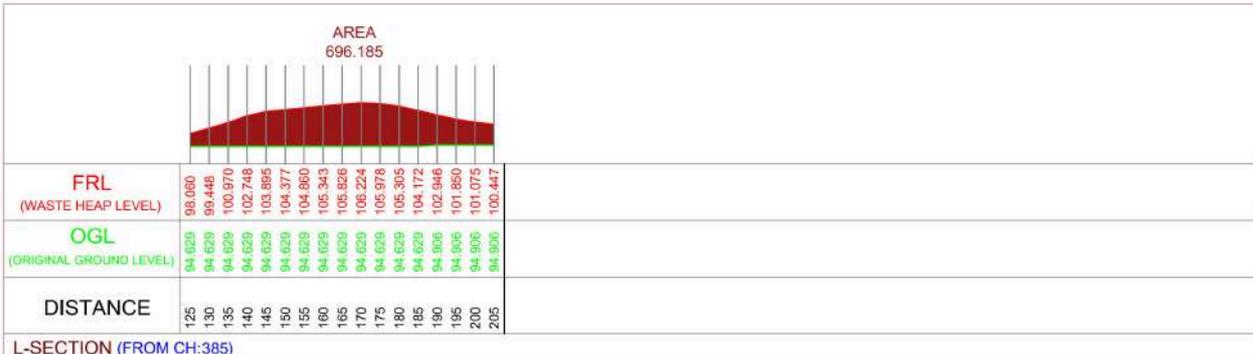
Drawn by Dilip (CIVIL ENGINEER)	Designed by Sudip (CIVIL ENGINEER)	Checked by DHRU (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
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Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
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Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-031 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 385.390,395)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NTN/RS)	Sudipta Esgar	Dattatraya (DTP/NTN/RS)	Team Leader (DTP/SP/JS)

Client
 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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- All Dimensions are in M unless specified.

Drawing No. C-032 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 400,405,410)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dishant (CIVIL ENGINEER)	Designed by Sudipt (CIVIL ENGINEER)	Checked by DHRU (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
---	---	--	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

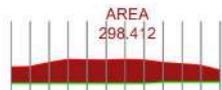
Consultant

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli,
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size

A4



FRL (WASTE HEAP LEVEL)	98.927	99.056	100.198	100.963	100.874	100.764	100.939	100.200	99.649	99.349	98.205
OGL (ORIGINAL GROUND LEVEL)	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.629	94.906	94.906	94.906
DISTANCE	150	155	160	165	170	175	180	185	190	195	200

L-SECTION (FROM CH:415)



FRL (WASTE HEAP LEVEL)	98.725	99.360	99.836	100.311	100.947	100.598	100.007	99.693	99.237
OGL (ORIGINAL GROUND LEVEL)	94.629	94.629	94.629	94.629	94.629	94.629	94.906	94.906	94.906
DISTANCE	160	165	170	175	180	185	190	195	200

L-SECTION (FROM CH:420)



FRL (WASTE HEAP LEVEL)	96.669	96.663	98.815
OGL (ORIGINAL GROUND LEVEL)	94.629	94.629	94.906
DISTANCE	180	185	190

L-SECTION (FROM CH:425)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-033 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 415,420,425)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (DP/NTN/RS)	Designed by Sajid Egeet	Checked by DARU Deyani (DP/168/NTS)	Approved by Team Leader (DP/167/RS)
------------------------------------	----------------------------	--	--

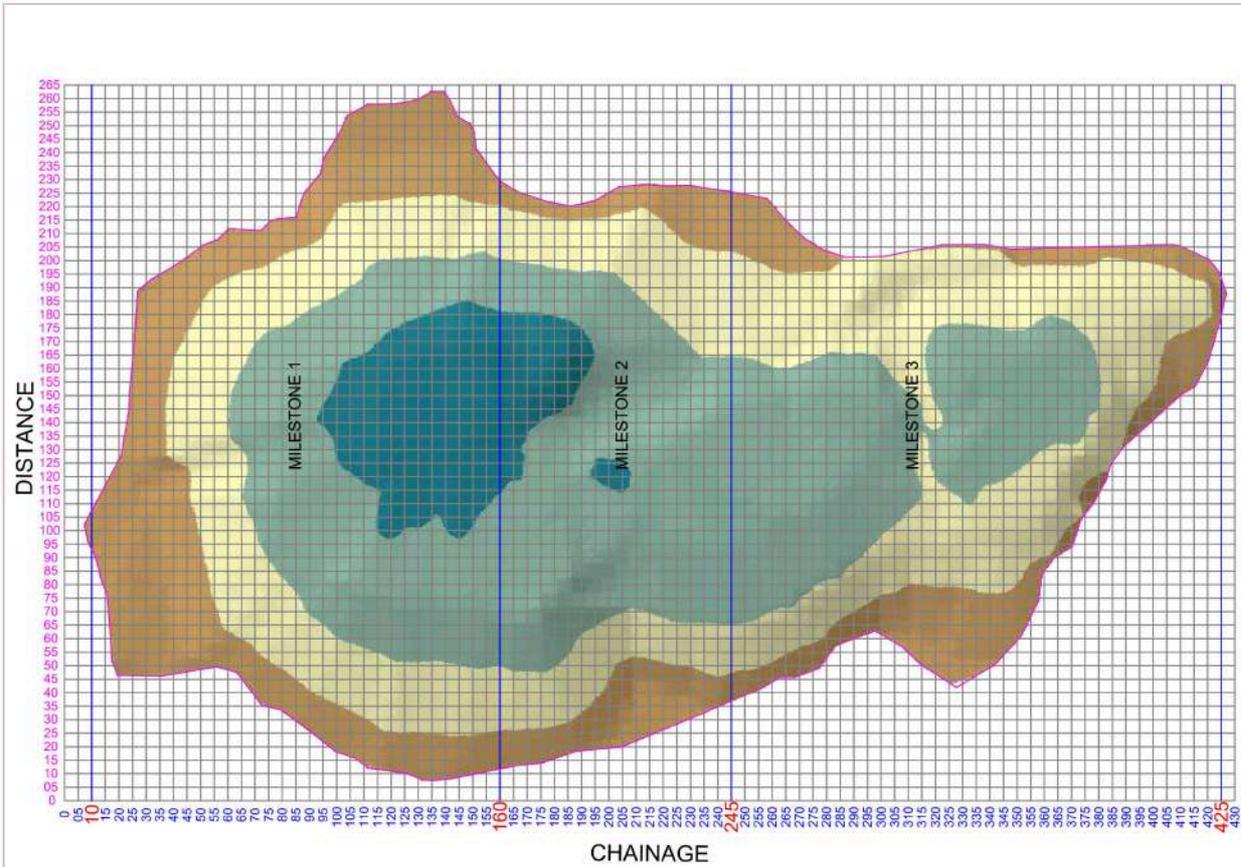
Client
Thane Municipal Corporation
New Administrative Building, Chendani Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. **C-034 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

DRAWING NAME
LAND RECLAMATION PLAN (DIVA DUMPING GROUND)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (SVP/NTS)	Designed by Sudipta Expert	Checked by DMM/Expert (SVP/NTS)	Approved by Team Leader (SVP/SP/2)
----------------------------------	-------------------------------	------------------------------------	---------------------------------------

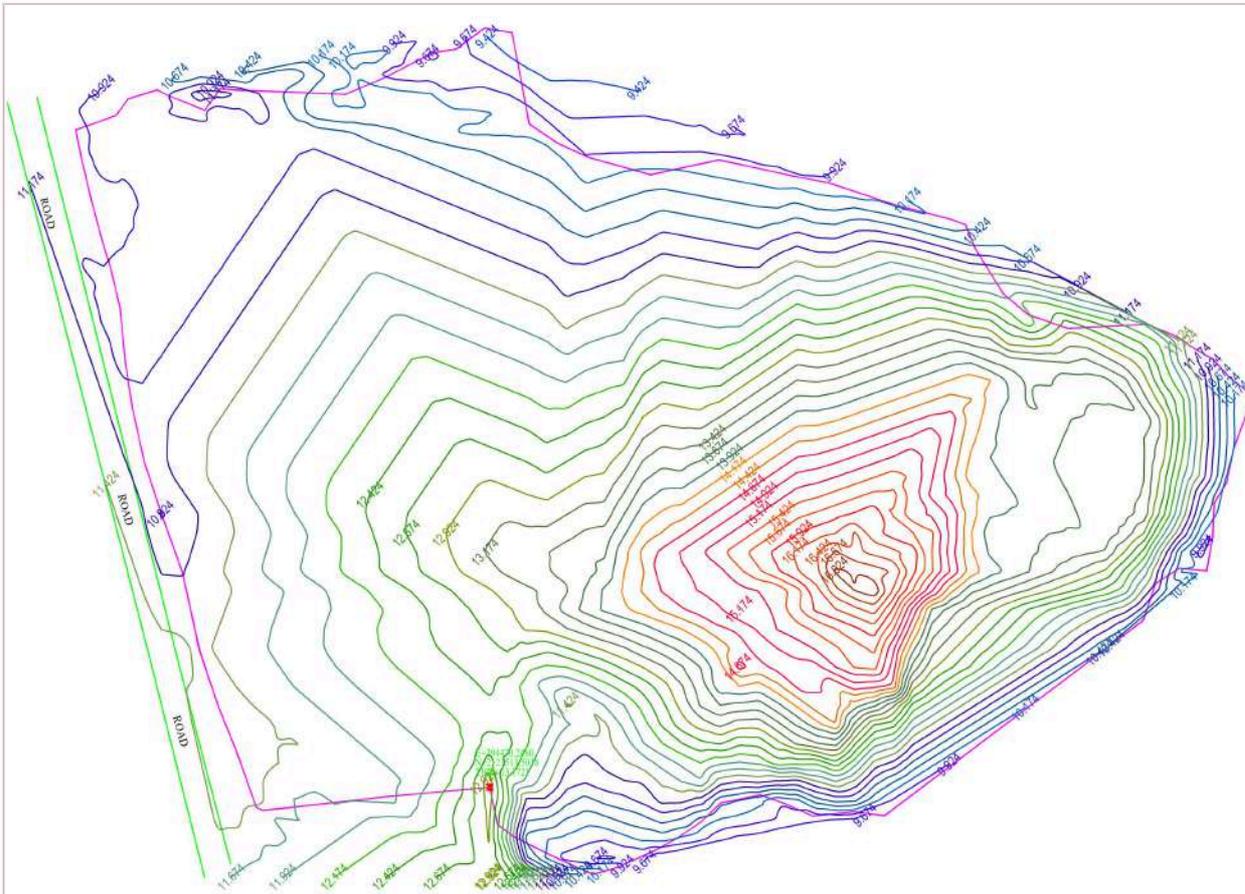
Client
 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
13.172 Mt	TBM LEVEL
17.105 Mt	HIGHEST CONTOUR LINE LEVEL
9.174 Mt	LOWEST CONTOUR LINE LEVEL
8.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
43.552 SQM	LAND AREA UNDER LEGACY WASTE
43.552 SQM	TOTAL AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-002 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
(DIVA SHIL ROAD)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatray (DTP/NT/MS)	Subject Expert	DMM/Design (DTP/MS/MS)	Team Leader (DTP/SP/MS)

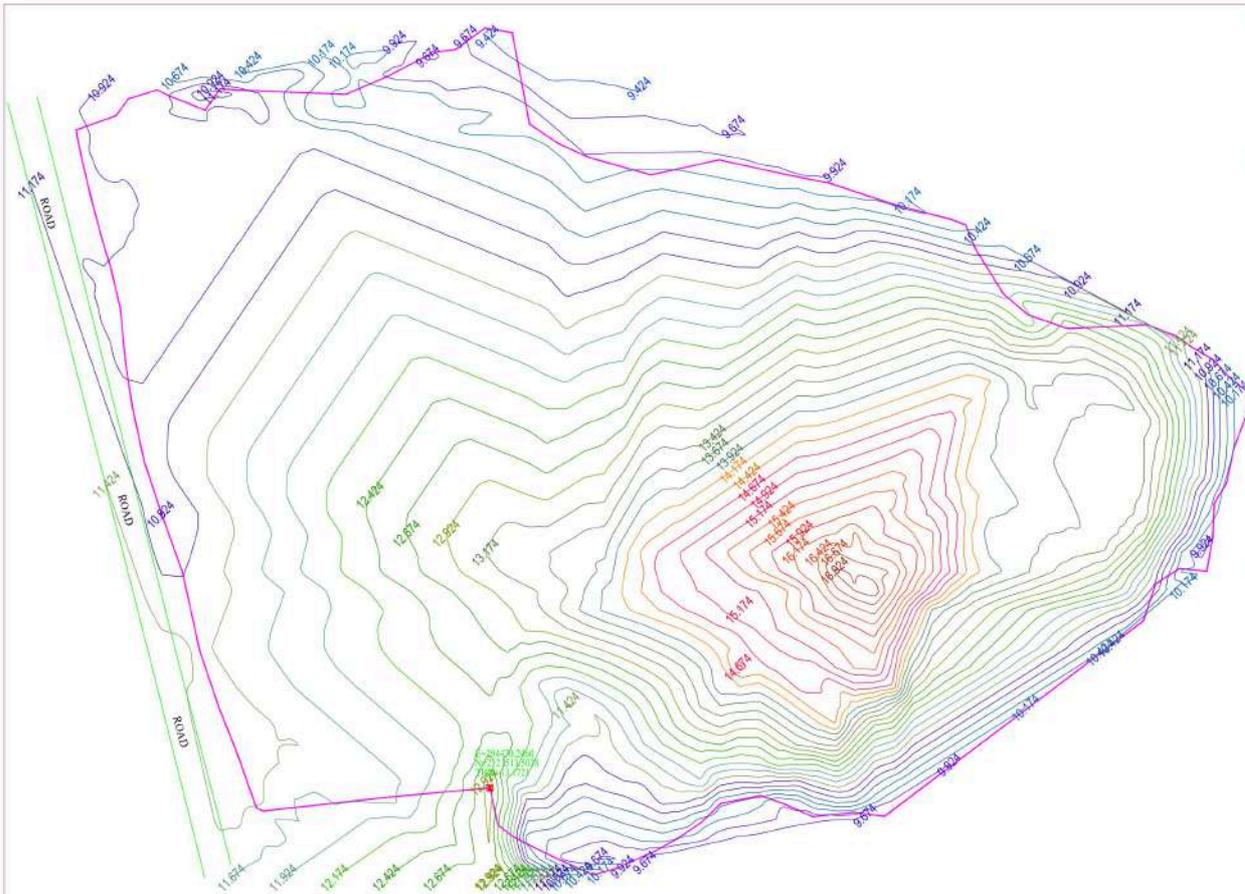
Client
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400002
 Dist: Thane (Maharashtra)

Consultant

 M&RS Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@m&rsc consultancy.com

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Size
A4



LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
13.172 Mt	TBM LEVEL
17.165 Mt	HIGHEST CONTOUR LINE LEVEL
9.174 Mt	LOWEST CONTOUR LINE LEVEL
8.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
43.552 SQM	LAND AREA UNDER LEGACY WASTE
43.552 SQM	TOTAL AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-003 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
(DIVA SHIL ROAD)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Sahilraj (S2) M/F/MS	Sahilraj Expert	DRM/DRM (P/F) RE/MS	Team Leader (JAP) (SP) (SR)

Client

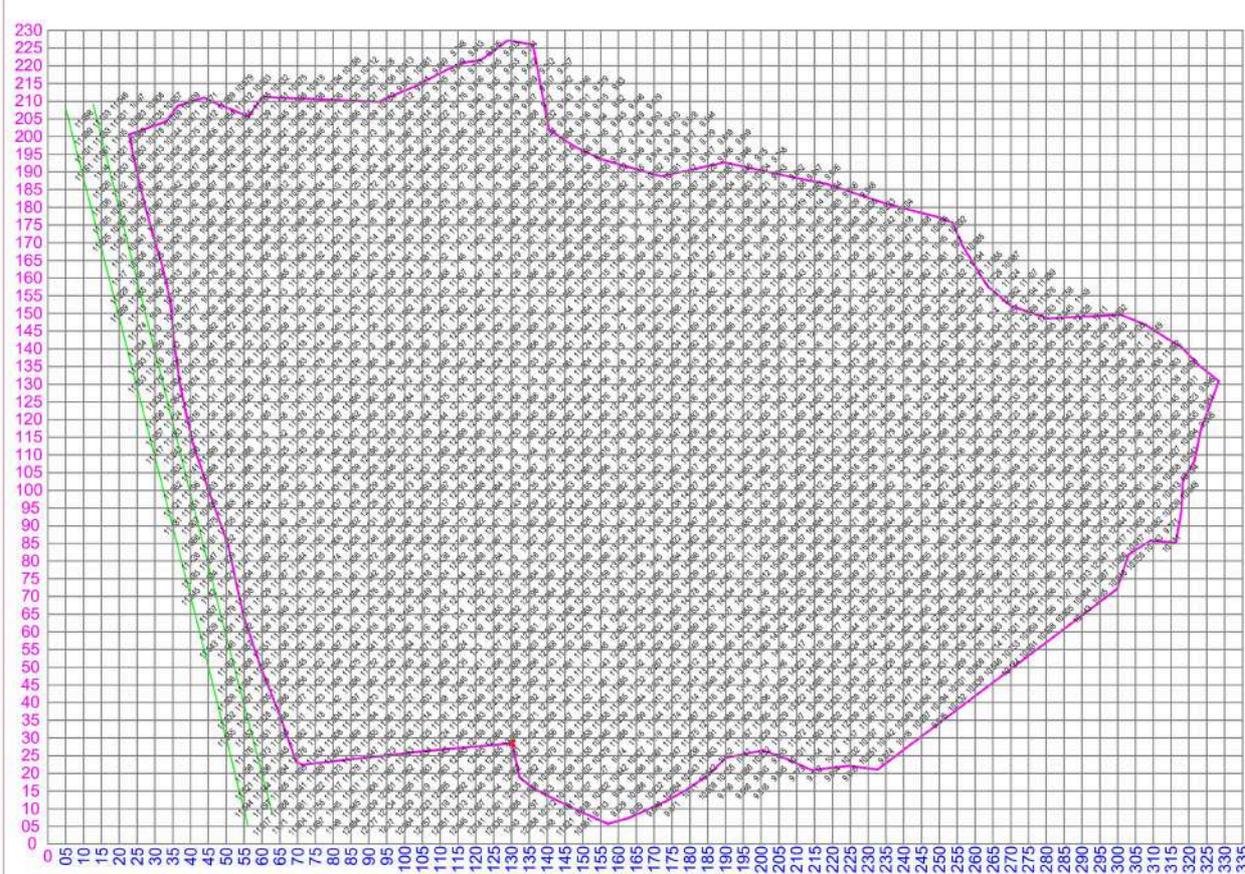
 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhawan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Senora Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
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Size
A2



LEGENDS	
—	GRID 0.5 X 0.5
0.25	INTERVAL
XXX.XXX	SPOT LEVELS
—	SHED
—	BUILDING
—	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-004 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
5M X 5M SPOT LEVEL
DIVA SHIL ROAD

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DSE/NT/MS)	Subodh Expert	DMM/Expert (SP/MS/MS)	Team Leader (SNP/SP/JS)

Client

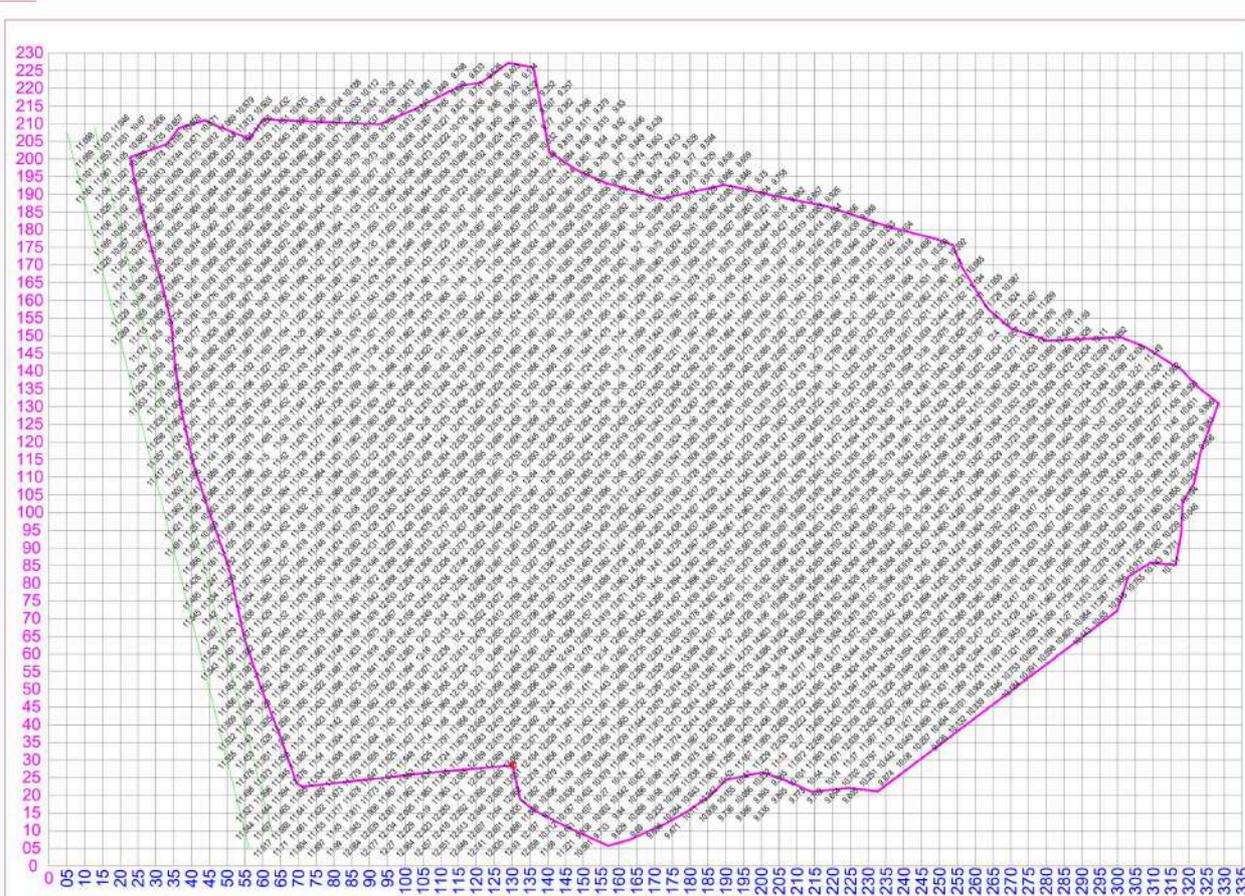
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
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 S. P. Ring Road, Bopal-Ambli
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 E-mail: info@marsconsultancy.com

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LEGENDS	
0.25	GRID 0.5 X 0.5
XXX.XXX	SPOT LEVELS
---	SHED
---	BUILDING
---	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-005 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
5M X 5M SPOT LEVEL
DIVA SHIL ROAD

Revision History

DATE	NO.	REVISION	BY	CHKD/APPV

Drawn by	Designed by	Checked by	Approved by

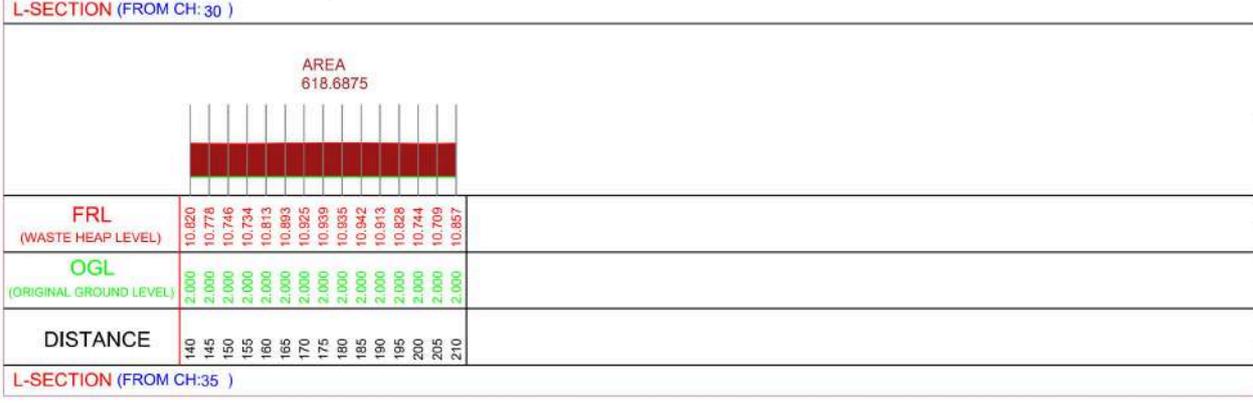
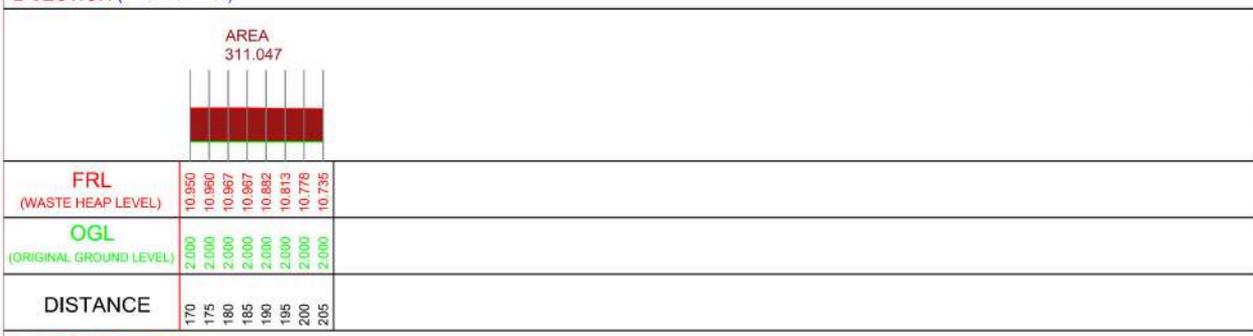
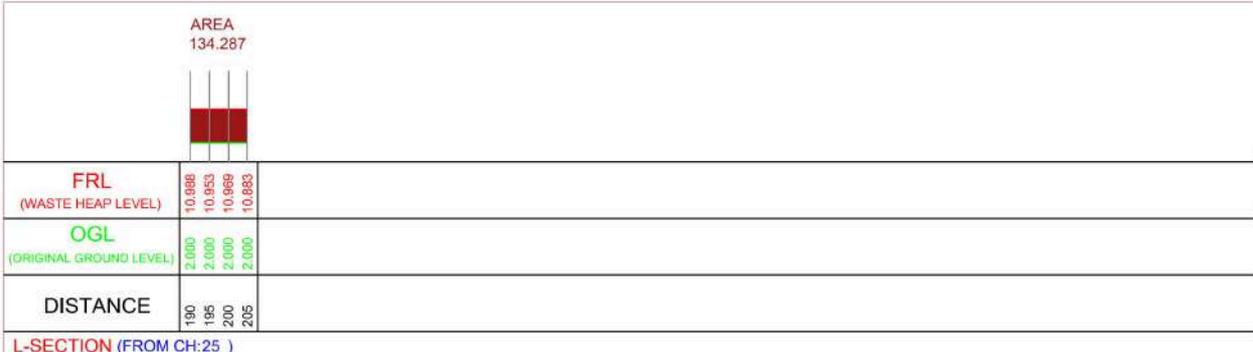
Client
 Thane Municipal Corporation
 New Administrative Building, Chembur Wadi,
 Pachgaonhad, Marjapalka Bhawan Rd.,
 Thane West, Thane
 Maharashtra - 400032
 Dist: Thane (Maharashtra)

Consultant

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 E-mail: info@m&rsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No. **C-006 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 25,30,35)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

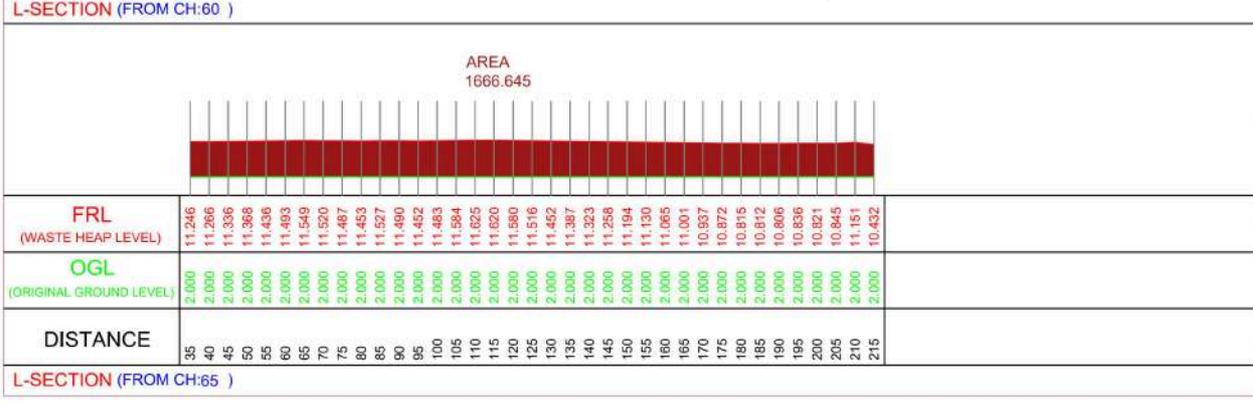
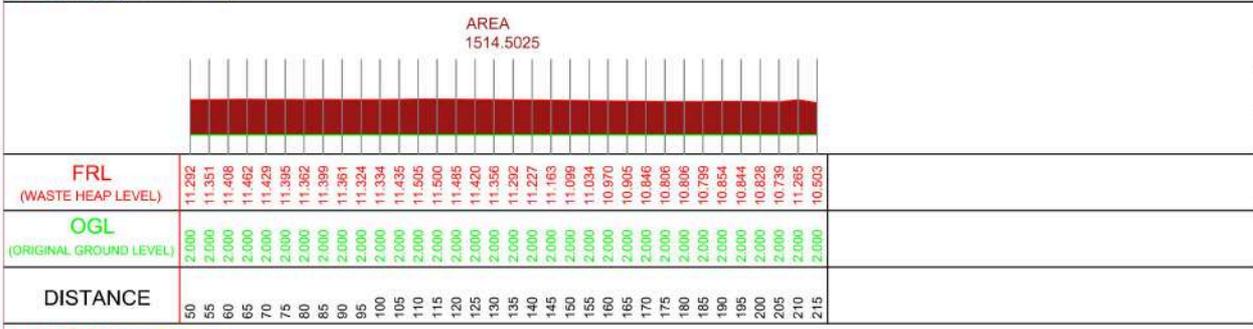
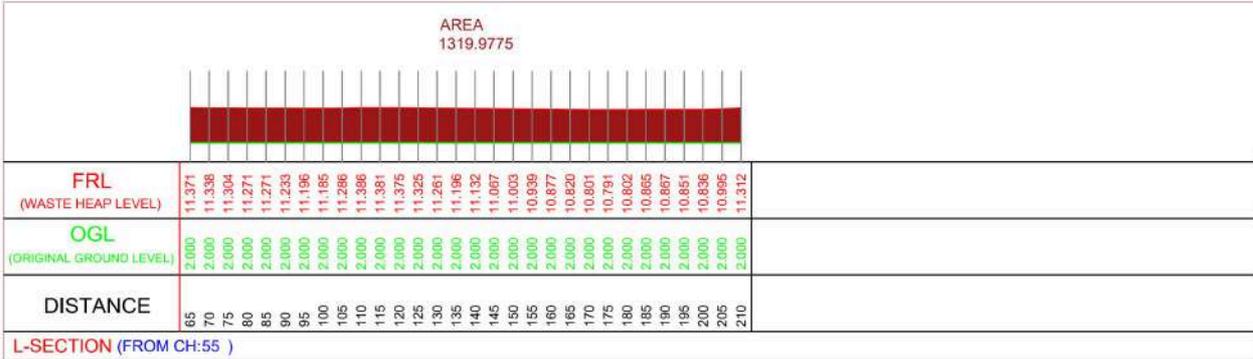
Drawn by Dilipkumar (CSE/NTS/MS)	Designed by Sudipta Esgert	Checked by DMS/Design (SP/MS/MS)	Approved by Team Leader (SP/SP/MS)
-------------------------------------	-------------------------------	-------------------------------------	---------------------------------------

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602 Dist: Thane (Maharashtra)

Consultant
 MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-008 R0

Scale
NTS

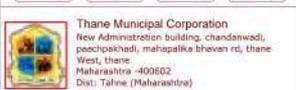
Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 55,60,65)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DP/NTN/RS)	Sudipta Eapen	DRM Dey (DP/168/NTS)	Team Leader (DP/SP/RS)

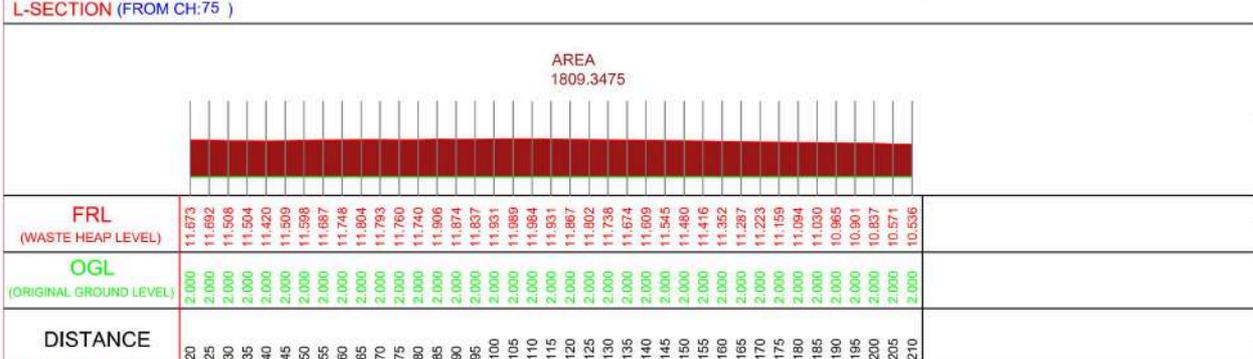
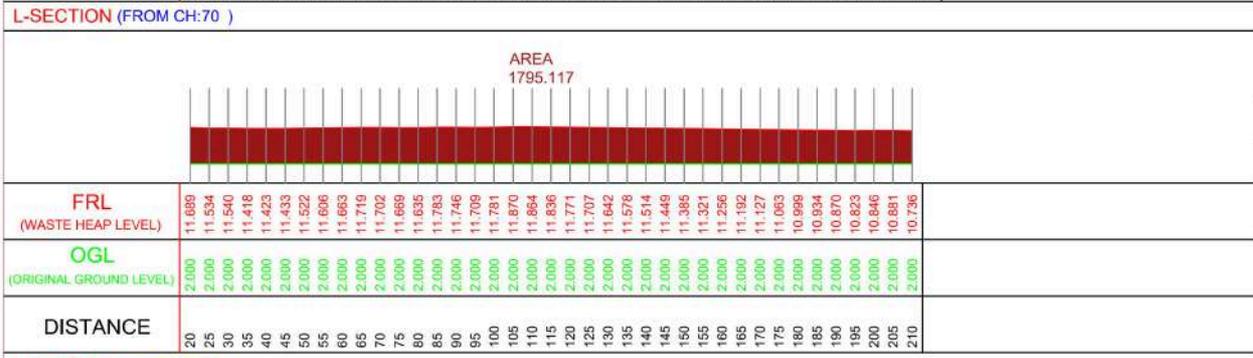
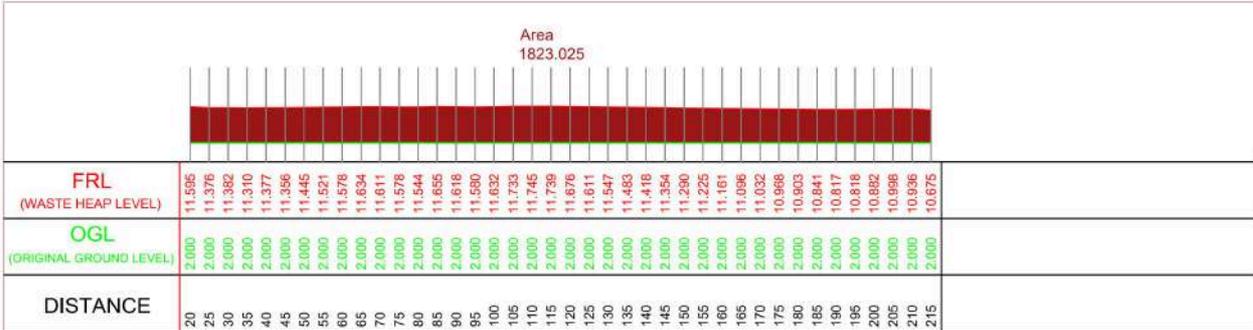


Consultant
MARS

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-009R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 70,75,80)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

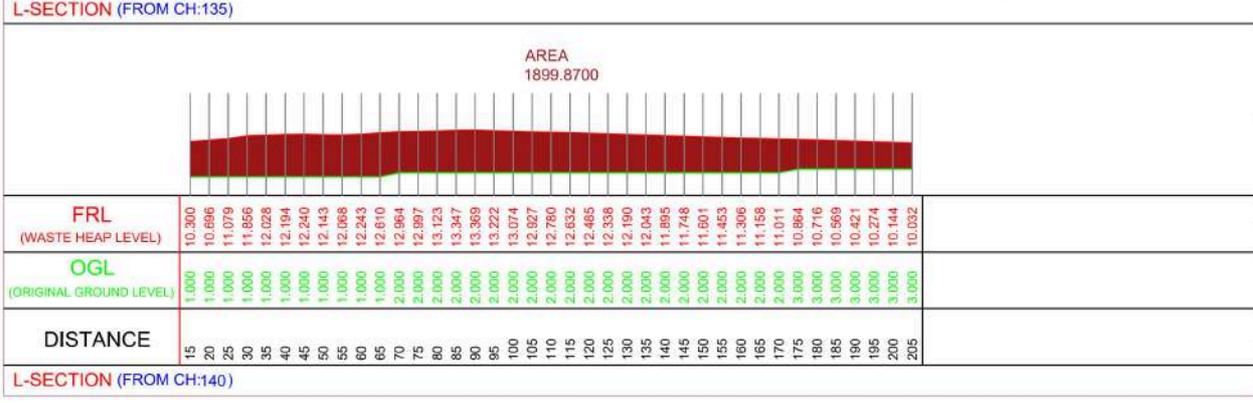
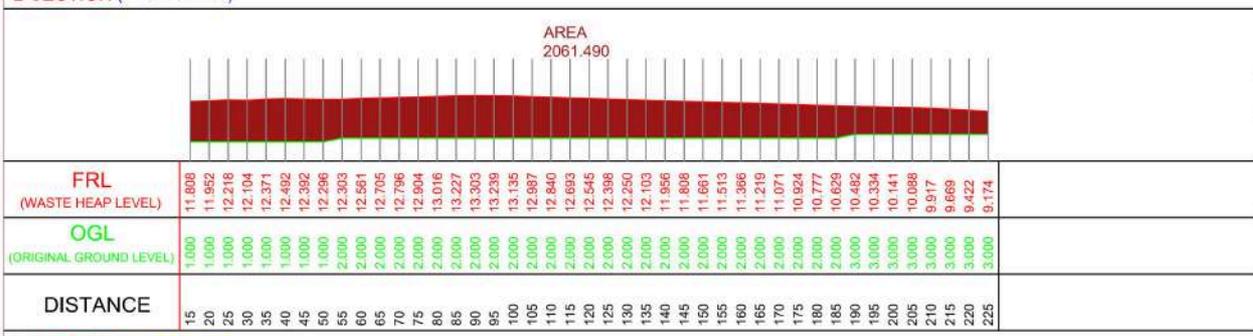
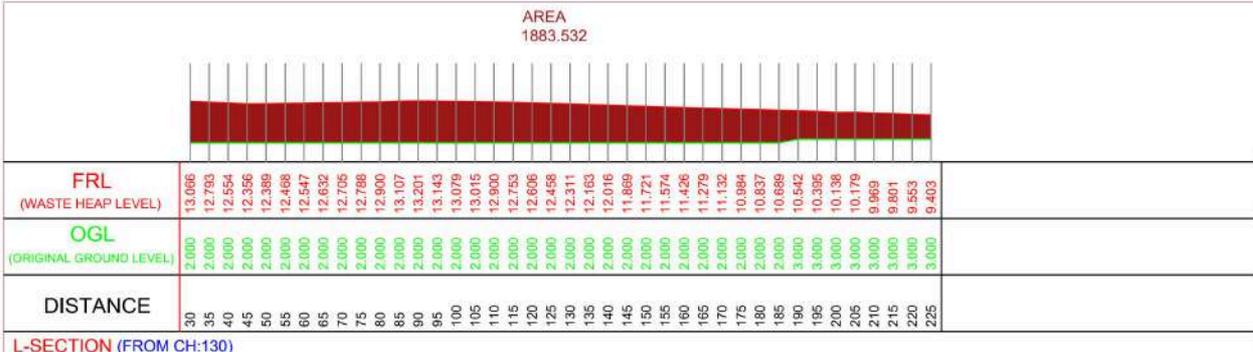
Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DIP/NTN/RS)	Sudipta Eapen	DHRU Deyani (DIP/148/NTS)	Team Leader (DIP/SP/RS)

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400502
Dist: Thane (Maharashtra)

Consultant
M&RS
M&RS Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@m&rscs.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-013 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 130,135,140)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Design by: Dattatraya (DTP/NTN/RS)

Designed by: Sagar Expert

Checked by: DMS/Expert (DTP/RS/NTS)

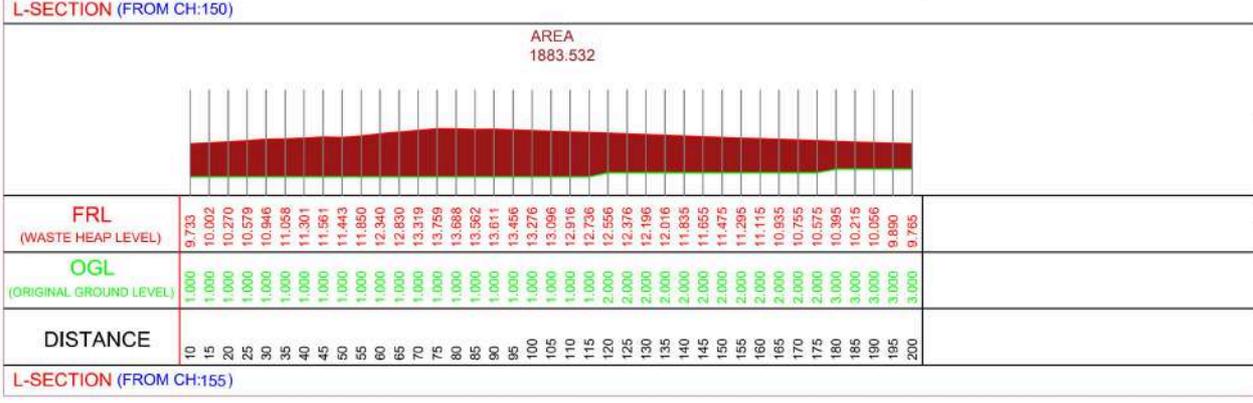
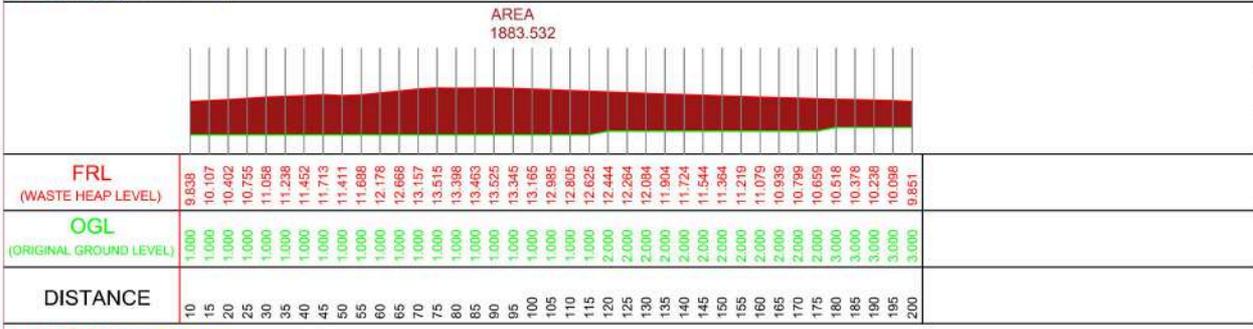
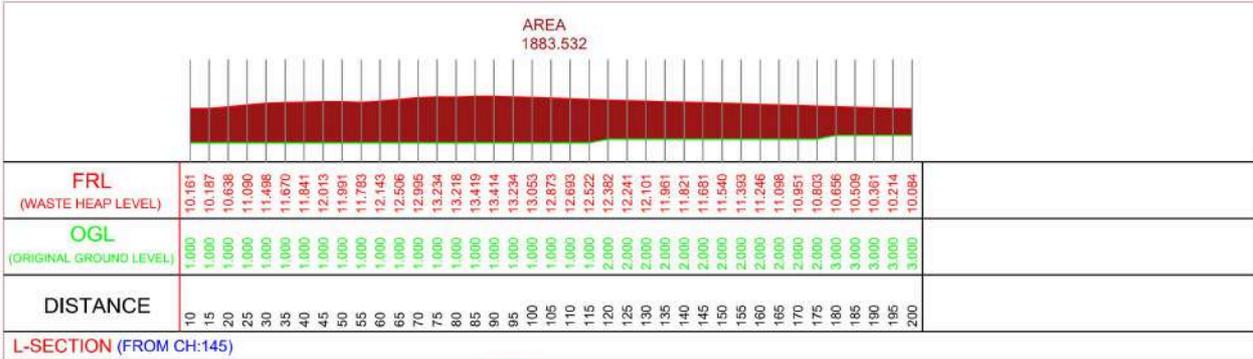
Approved by: Team Leader (DTP/SP/RS)

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602 Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No. C-014 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 145,150,155)

Revision History

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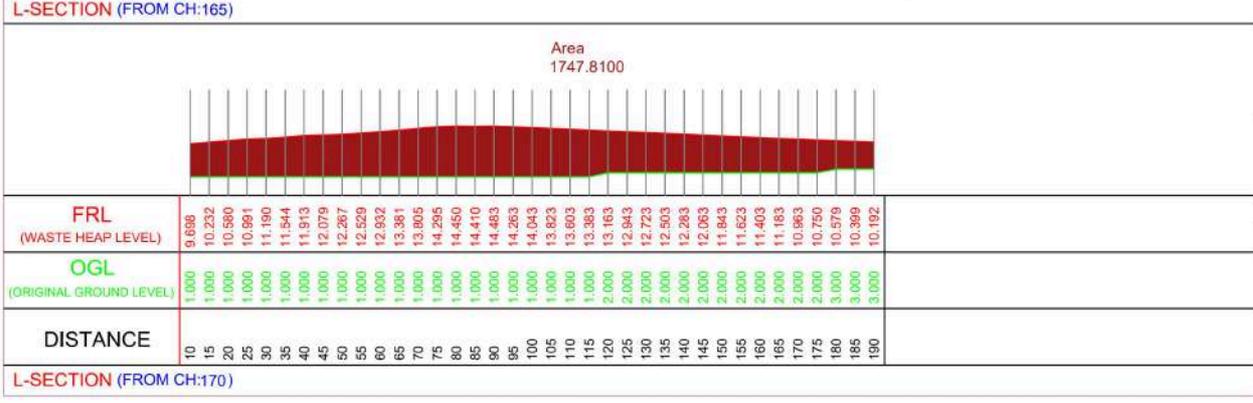
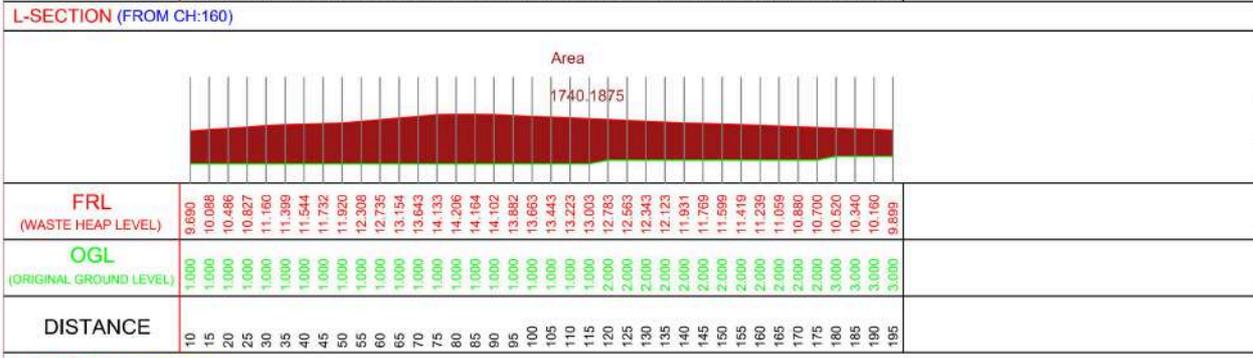
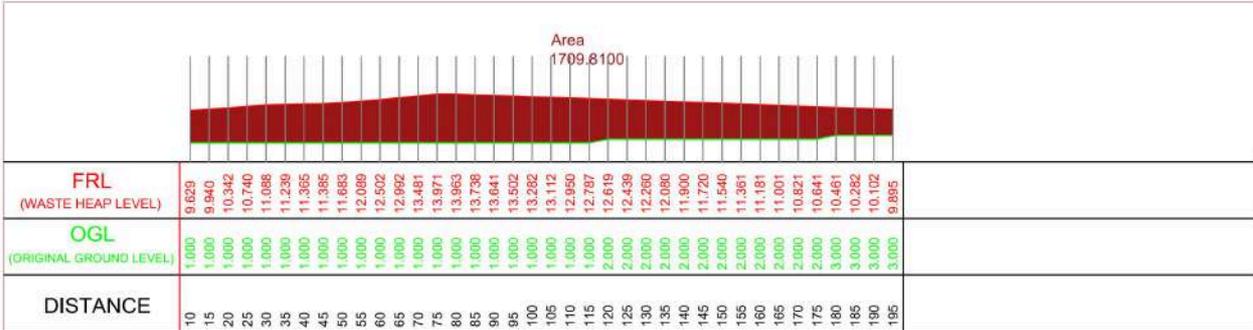
Drawn by Dillem (JSP/NTN)	Designed by Sajid Ezzat	Checked by DHRU Desai (JSP/KB/MS)	Approved by Team Leader (JSP/SP/JB)
-------------------------------------	-----------------------------------	---	---

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
M&RS
Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-015 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 160,165,170)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: Disha (DP/NTN)

Designed by: Sagar Epat

Checked by: DMR/Dept (DP/KB/NS)

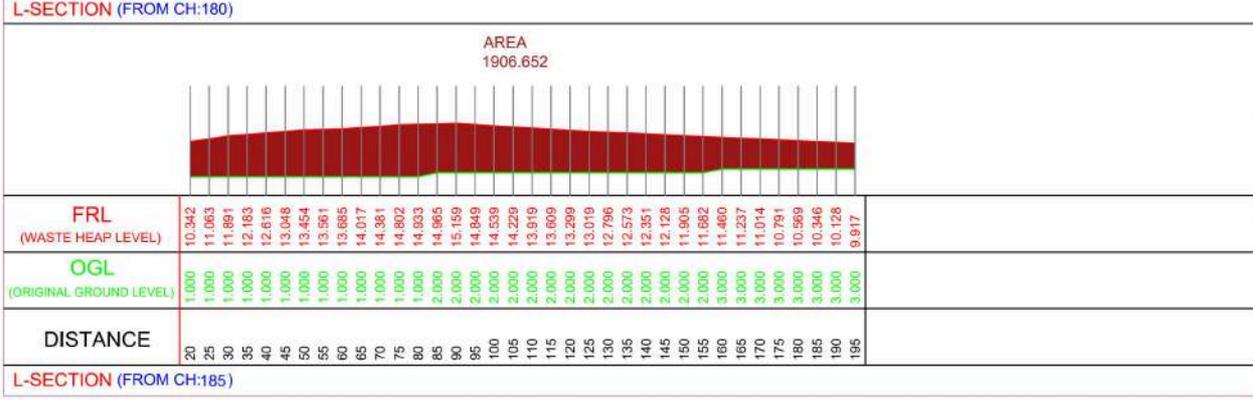
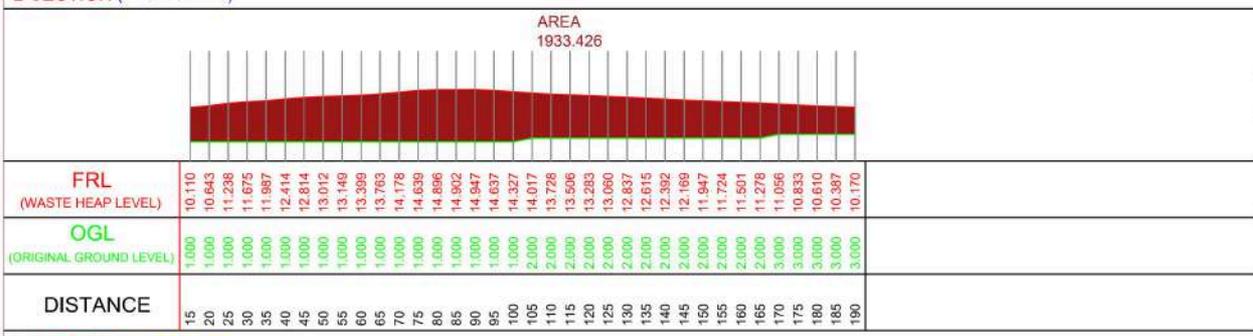
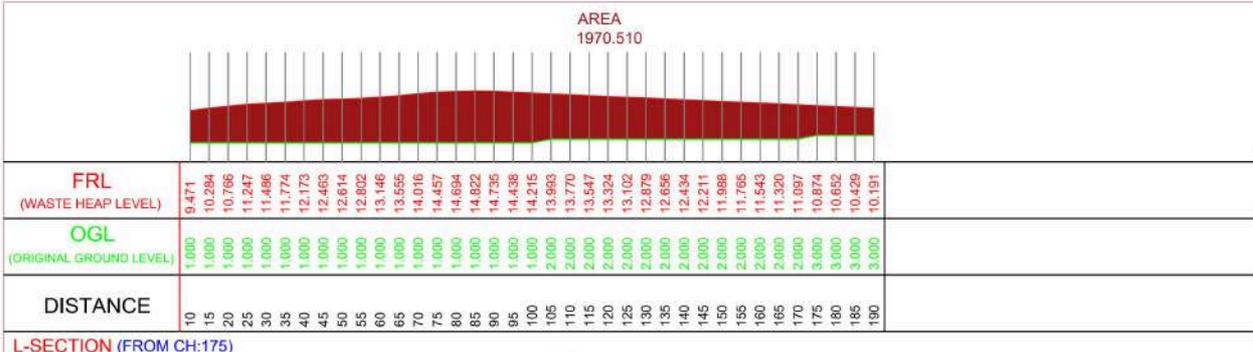
Approved by: Team Leader (DP/SP/JS)

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-016 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 175,180,185)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

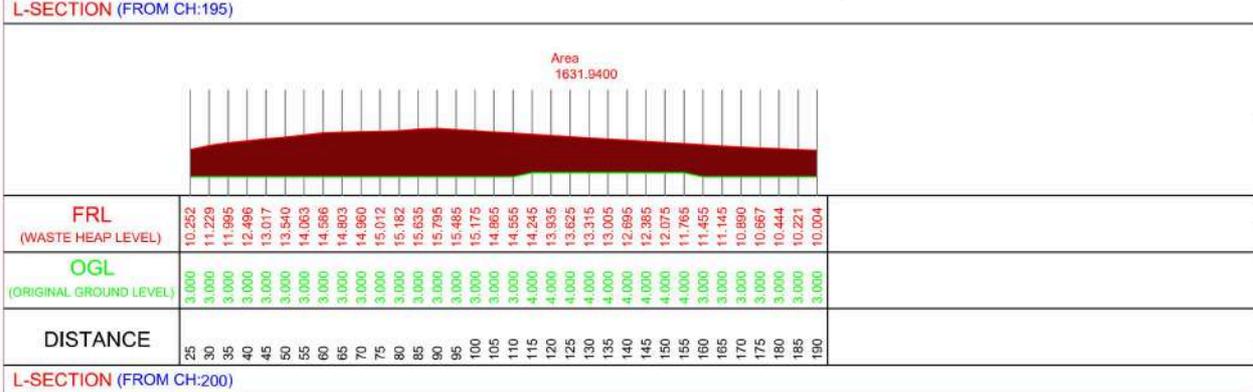
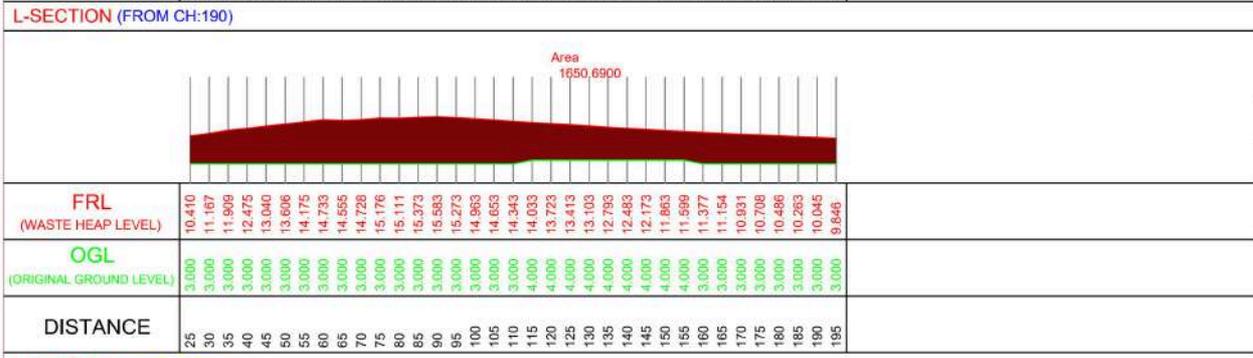
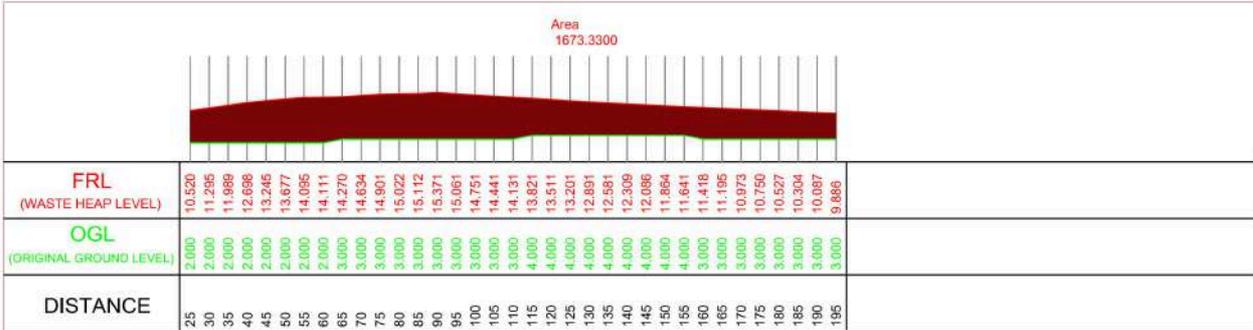
Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NT/MS)	Sudipta Esgut	Dattatraya (DTP/NT/MS)	Team Leader (DTP/SP/JS)

Thane Municipal Corporation
New Administration building, Chandanwadi,
Pachpashiwadi, Mahapalika Bhevan rd, Thane
West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-017 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 190,195,200)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DP/NTN)	Sudipta Esgar	DHRU Doshi (DP/KB/NTS)	Team Leader (DP/SP/NTS)

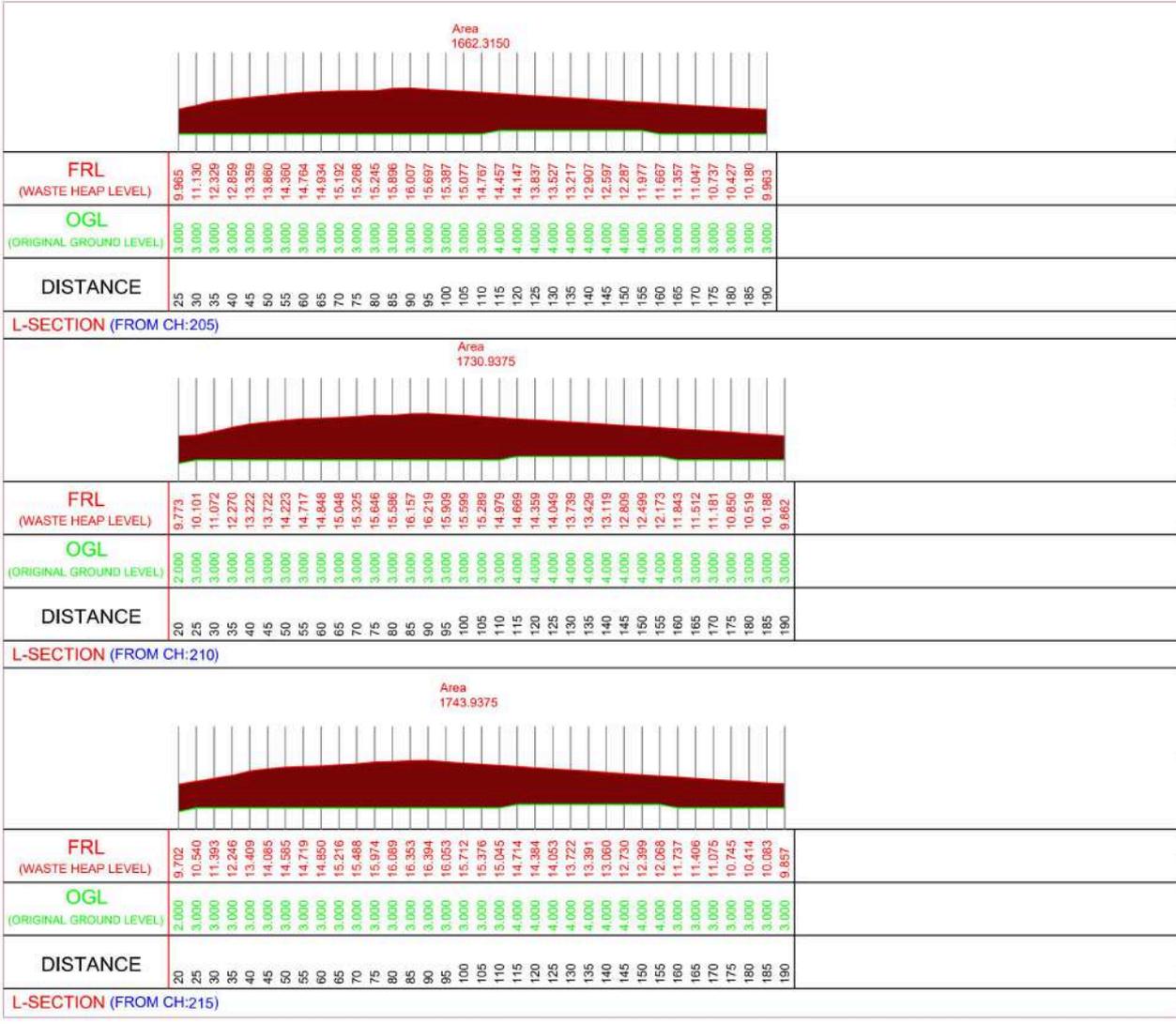
Thane Municipal Corporation
 New Administration building, Chandanwadi,
 Panchsheelnagar, Mahapalika Bhevan rd, Thane
 West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
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 S. P. Ring Road, Bopal-Ambli
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No.
C-018 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no:205,210,215)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

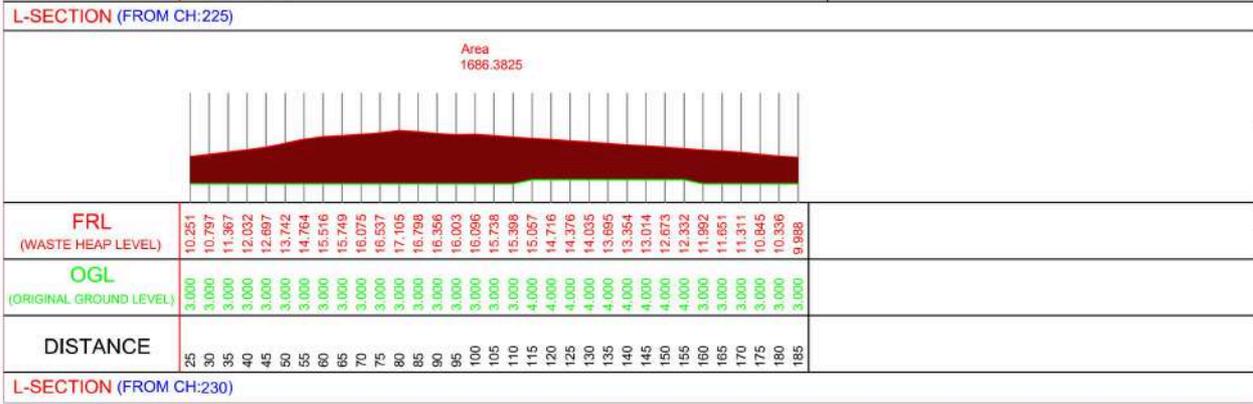
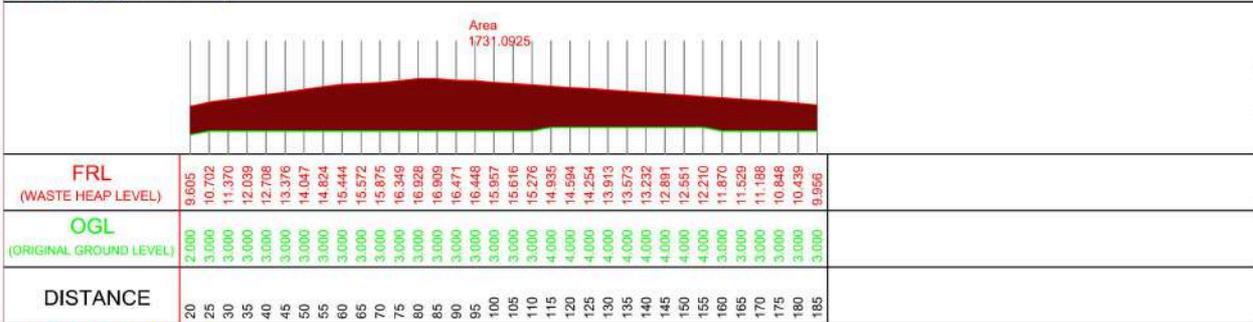
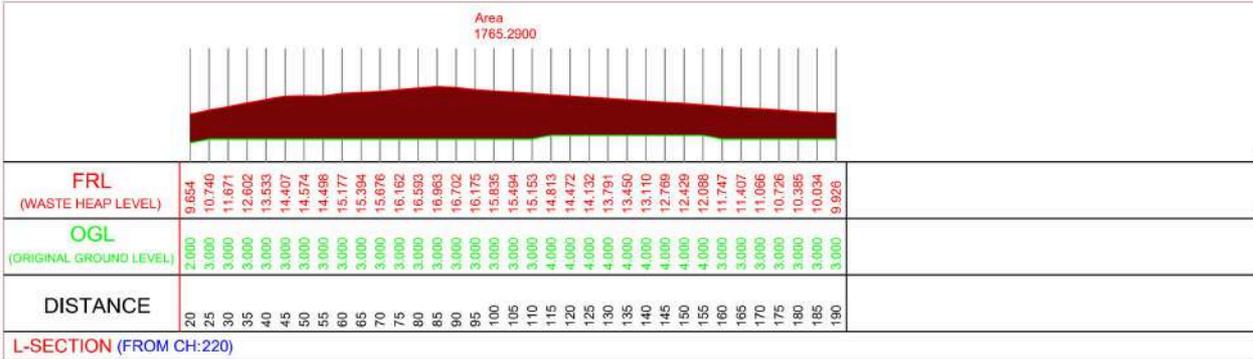
Drawn by Dishant (DIP/NT/MS)	Designed by Sudipt Expert	Checked by DHRU Desai (DIP/MS/MS)	Approved by Team Leader (DIP/SP/MS)
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Thane Municipal Corporation
New Administration building, Chandanwadi, Panchsheelnadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602 Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-019 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
 (Chainage no: 220.225,230)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

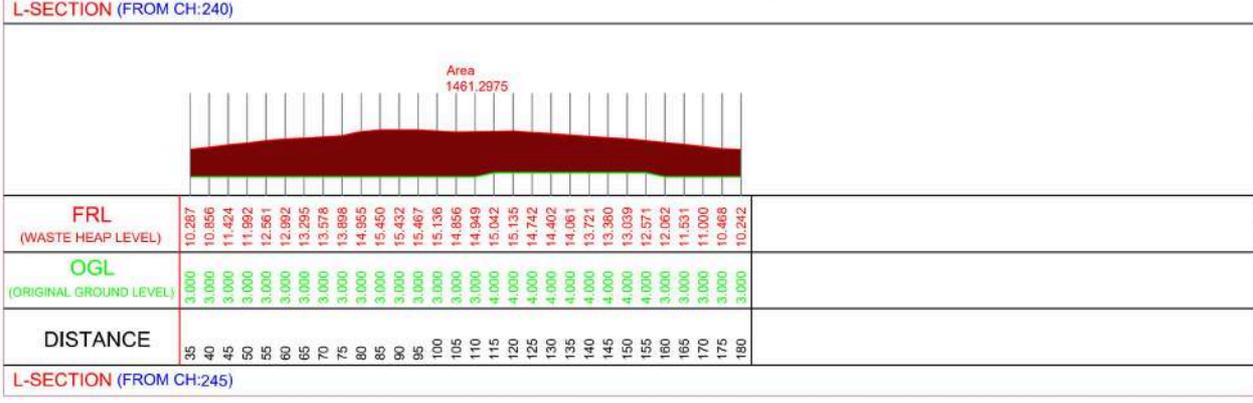
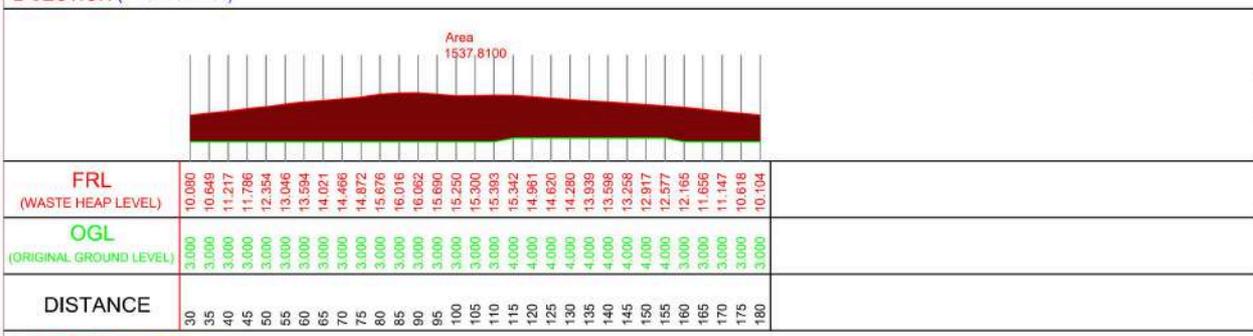
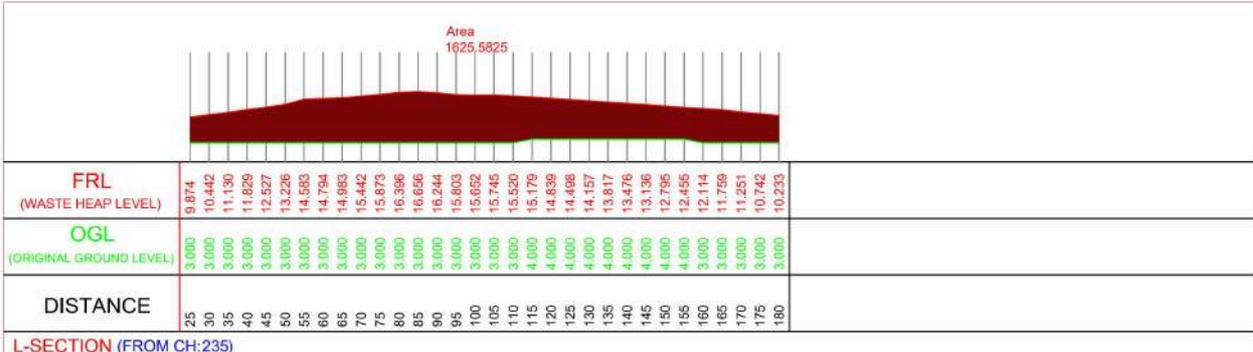
Drawn by	Designed by	Checked by	Approved by
Dharmesh (DPF/NTN)	Sudipt Expert	Dharmesh (DPF/NTN)	Team Leader (DPF/SPF/JS)



Consultant
MARS
 Mars Planning & Engineering Services Pvt. Ltd.
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-020 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 235.240,245)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

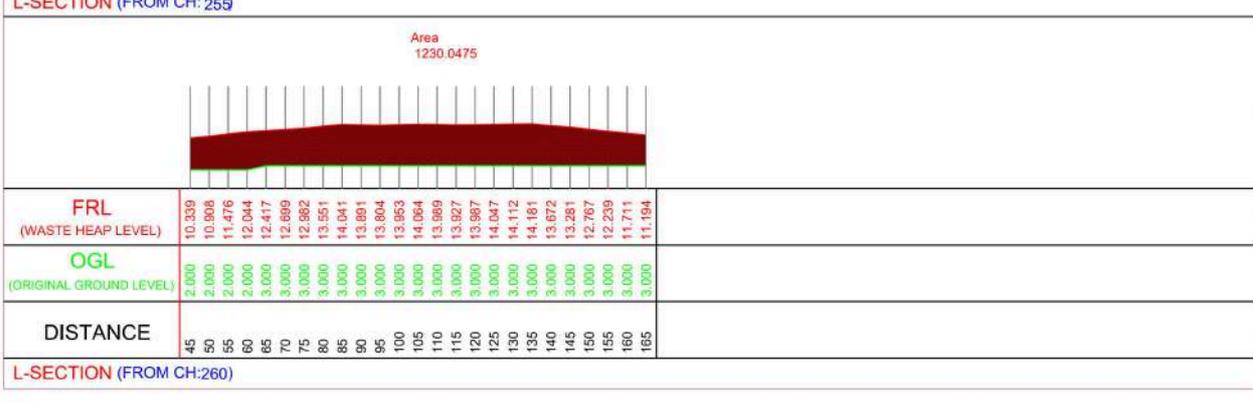
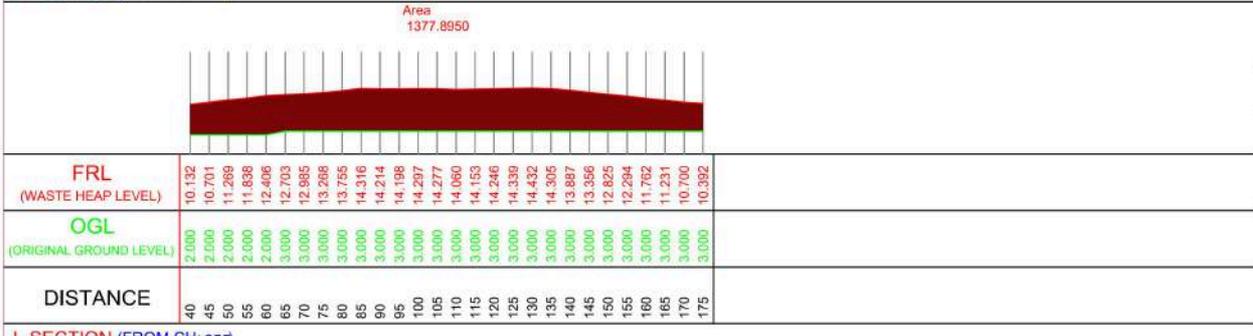
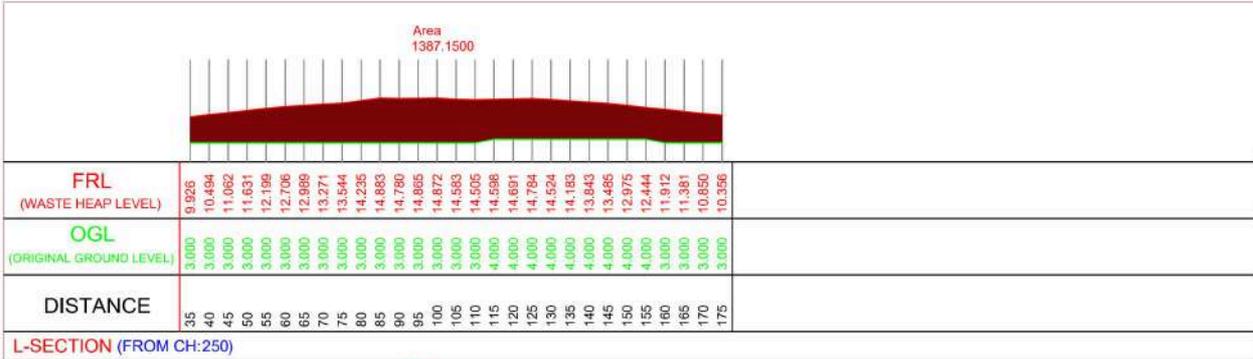
Drawn by Dilipkumar (DP/NTNS)	Designed by Sudipt Expert	Checked by DMS/Expert (DP/NTNS)	Approved by Team Leader (DP/SP/JS)
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Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimchandi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No. C-021 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 250,255,260)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dharmesh (DSE/NT/MS)	Designed by Sudipt Expert	Checked by DMS/Expert (SP/IB/MS)	Approved by Team Leader (SP/SP/IB)
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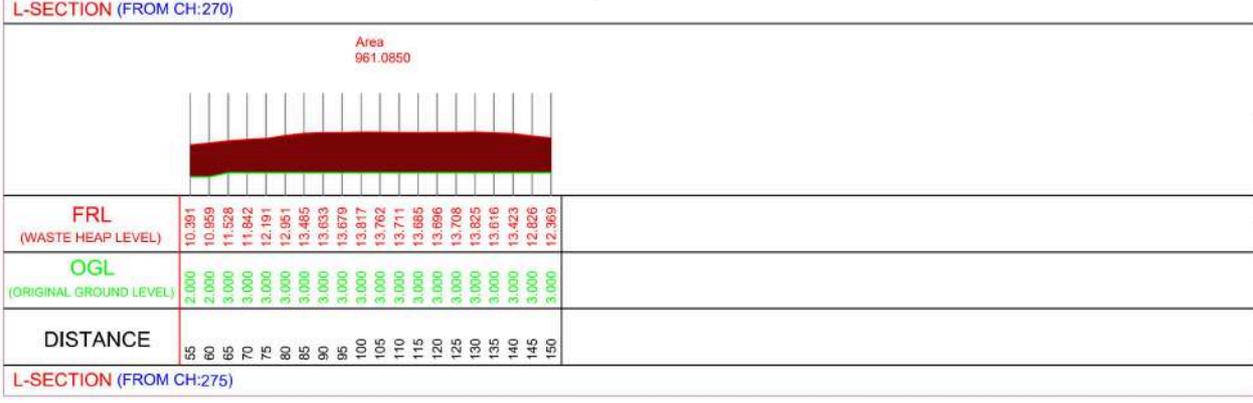
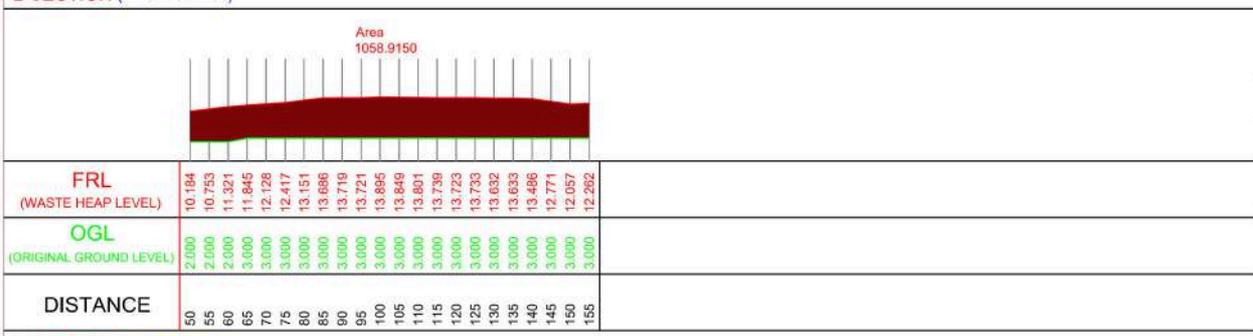
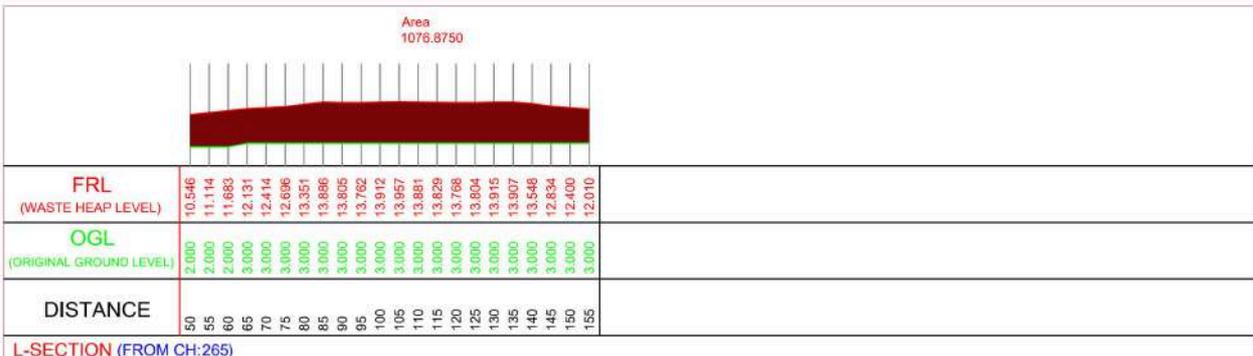
Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
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N
E
S

Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-022 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 265.270,275)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

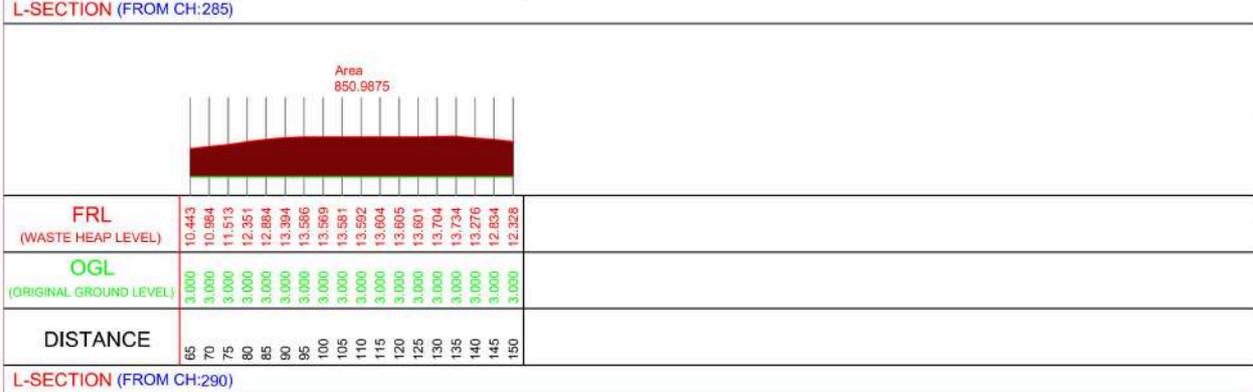
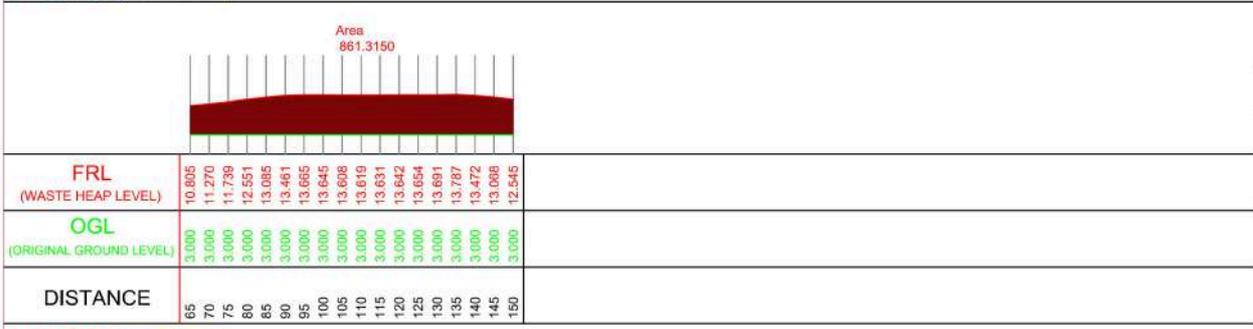
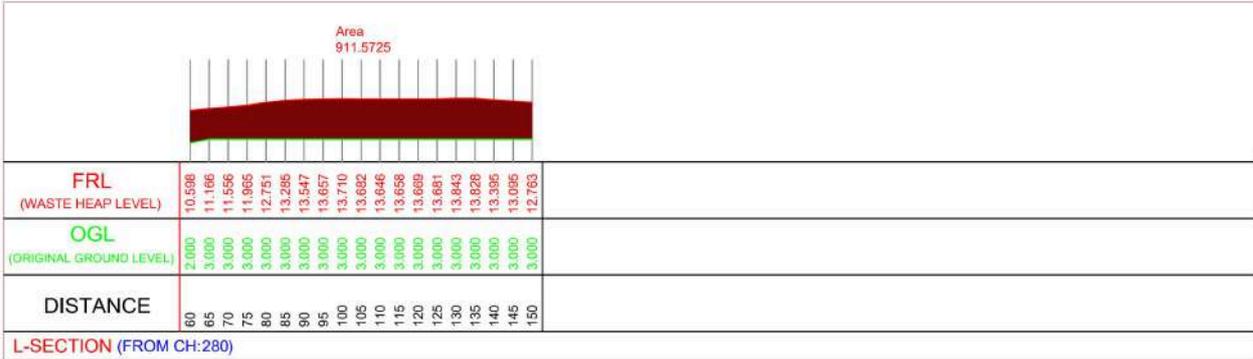
Drawn by Dilipkumar (CSE/NTNRS)	Designed by Sudipt Expert	Checked by DHRU Desai (SP/168/NTS)	Approved by Team Leader (JNP/SP/28)
---	-------------------------------------	--	---

Thane Municipal Corporation
New Administration building, Chandanwadi, Paschimphadi, Mahapalika Bhevan rd, Thane West, Thane Maharashtra -400602 Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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	Size A4
--	-------------------



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

- NOTES:**
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 - All Dimensions are in M unless specified.

Drawing No.
C-023 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 280,285,290)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DP/NT/MS)	Sudipta Eapen	DRM Deyani (DP/MS/MS)	Team Leader (DP/SP/MS)

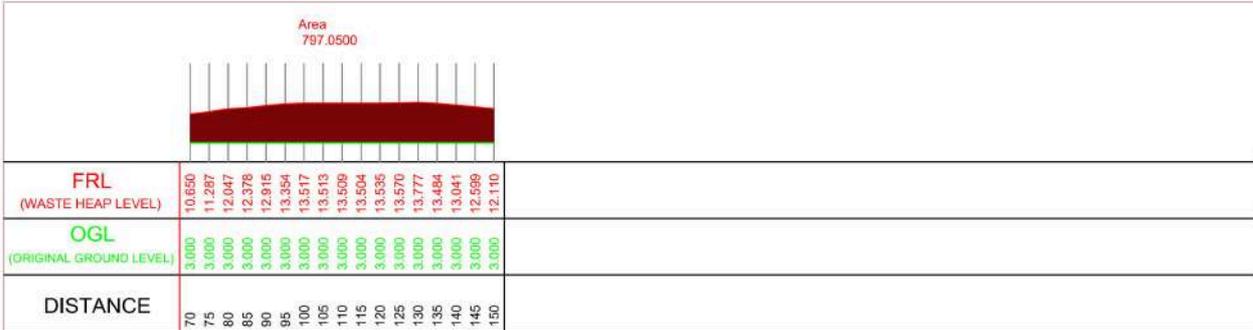
Thane Municipal Corporation
 New Administration building, Chandanwadi,
 Paschimphadi, Mahapalika Bhevan rd, Thane
 West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant
MARS

Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

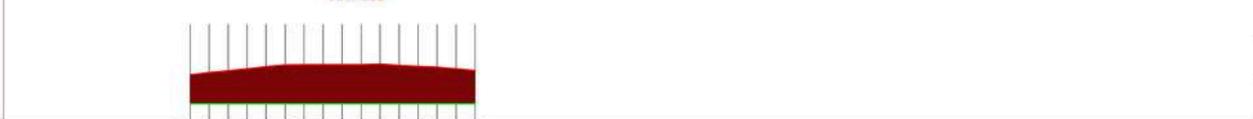
Notes:- This drawing is the sole property of the consultant, and it is subject to their recall and must not be lent or copied or reproduced without their written permission nor used for any purpose other than, for which it is issued.

Size
A4



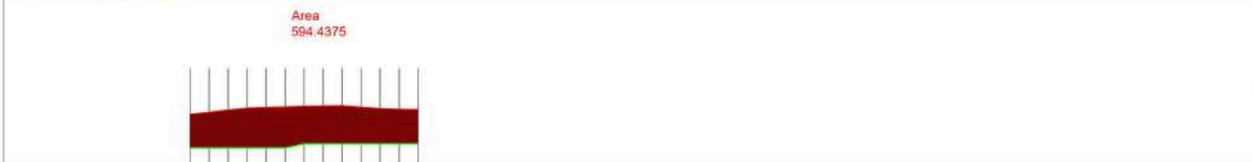
FRL (WASTE HEAP LEVEL)	10.650 11.287 12.047 12.378 12.915 13.354 13.517 13.513 13.509 13.504 13.535 13.570 13.777 13.484 13.041 12.599 12.110
OGL (ORIGINAL GROUND LEVEL)	3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000
DISTANCE	70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150

L-SECTION (FROM CH:295)



FRL (WASTE HEAP LEVEL)	10.818 11.366 11.817 12.344 12.923 13.335 13.407 13.433 13.439 13.431 13.612 13.255 13.095 12.799 12.363 11.892
OGL (ORIGINAL GROUND LEVEL)	3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000
DISTANCE	75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150

L-SECTION (FROM CH:300)



FRL (WASTE HEAP LEVEL)	10.917 11.355 11.989 12.501 12.705 12.620 12.680 13.088 13.091 12.747 12.389 12.210 12.108
OGL (ORIGINAL GROUND LEVEL)	2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000
DISTANCE	85 90 95 100 105 110 115 120 125 130 135 140 145

L-SECTION (FROM CH:305)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-024 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	---

Drawing Name
Longitudinal Section
(Chainage no: 295,300,305)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

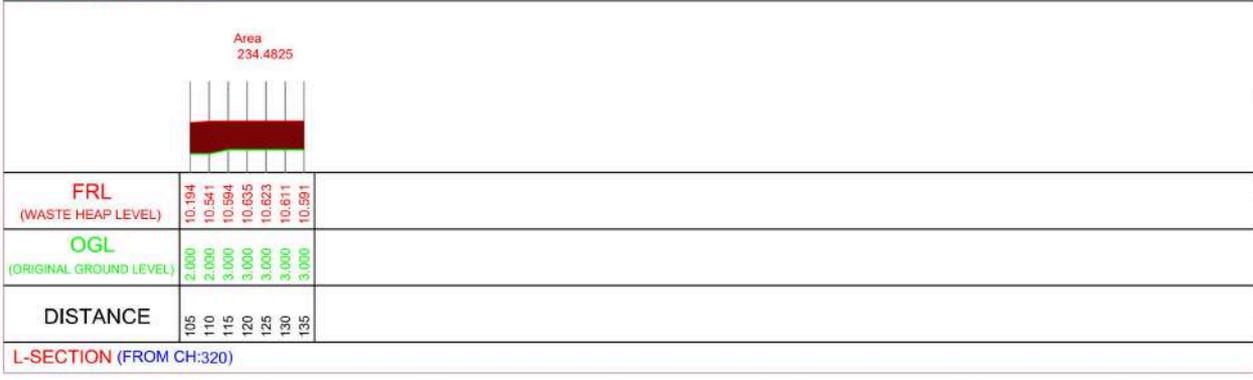
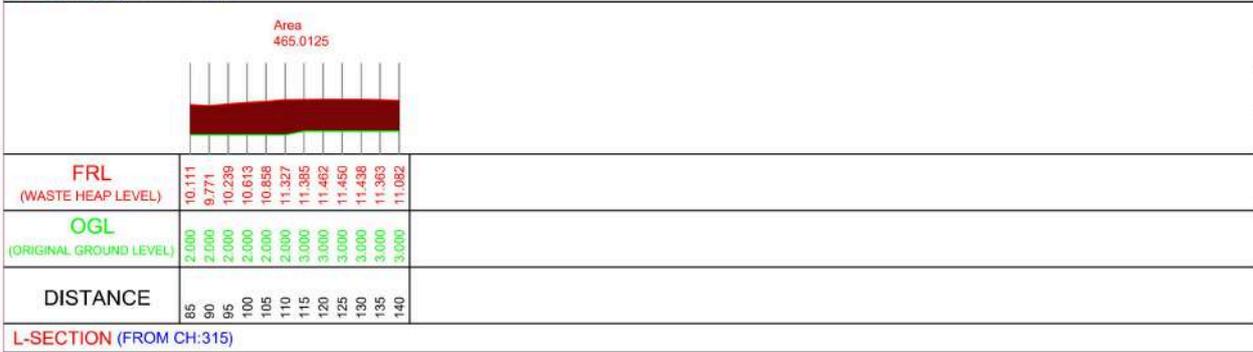
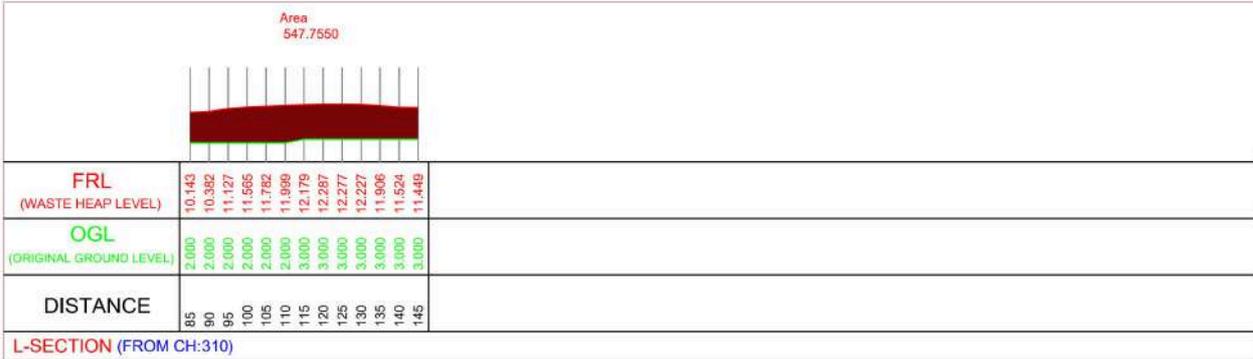
Drawn by Dilipkumar (DP/NT/NS)	Designed by Sudipta Eapen	Checked by DHRU Dabral (DP/KB/NS)	Approved by Team Leader (DP/SP/JS)
-----------------------------------	------------------------------	--------------------------------------	---------------------------------------

Thane Municipal Corporation
New Administration building, chandanwadi, peachipshadi, mahapalika bhevan rd, thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-025 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

Drawing Name
Longitudinal Section
(Chainage no: 310,315,320)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (CSE/NTS)	Sudipt Esgar	DHRU Dabhi (AP/KB/NTS)	Team Leader (JNP/SP/JB)

 **Thane Municipal Corporation**
New Administration building, chandanwadi, pochpadahi, mahapalika bhevan rd, thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant

M&RS Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@m&rscs.com

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 N W E S	Size A4
--	--------------------------

Area
89.8900



FRL (WASTE HEAP LEVEL)	9.998 9.981 9.998
OGL (ORIGINAL GROUND LEVEL)	3.000 3.000 3.000
DISTANCE	120 125 130

L-SECTION (FROM CH:325)

FRL
(WASTE HEAP LEVEL)

OGL
(ORIGINAL GROUND LEVEL)

DISTANCE

L-SECTION (FROM CH:)

FRL
(WASTE HEAP LEVEL)

OGL
(ORIGINAL GROUND LEVEL)

DISTANCE

L-SECTION (FROM CH:)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE URBAN LOCAL BODY THANE

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Drawing No. **C-026 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 325)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

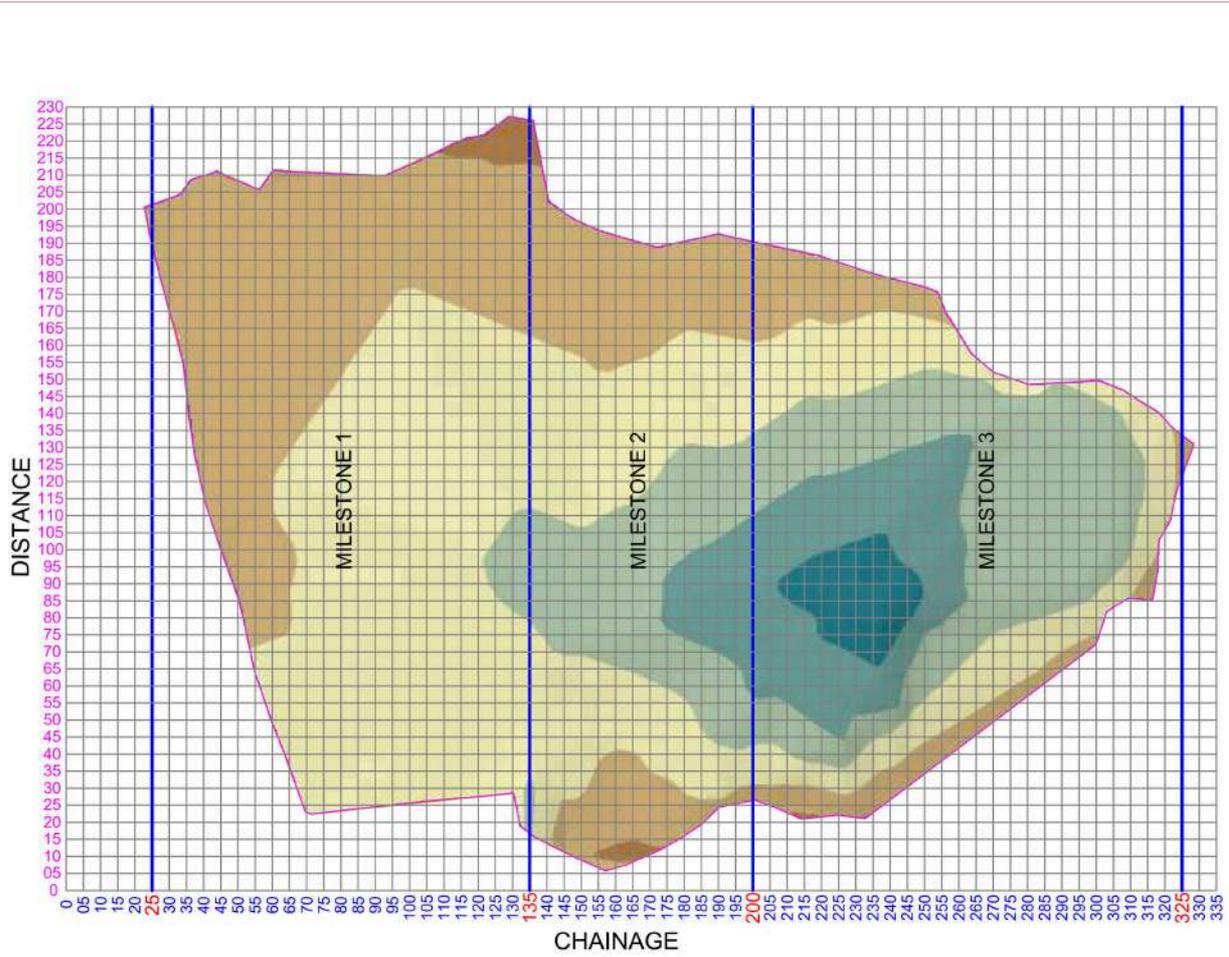
Drawn by Dattaram (DP/NTN)	Designed by Sajid Egeet	Checked by DMS/Dept (DP/KB/NS)	Approved by Team Leader (DP/SP/AB)
-------------------------------	----------------------------	-----------------------------------	---------------------------------------

 **Thane Municipal Corporation**
New Administration building, chandanwadi, pochpada, mahapalika bhevan rd, thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
 **MaRS**
MaRS Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@maRSconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. **C-027 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

DRAWING NAME
LAND RECLAMATION PLAN (DIVA SHIL ROAD)

Revision History

NO.	DATE	REVISION

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (DIP) M/T/N/S	Designed by Sudipta	Checked by DMM/Deputy (DIP) M/T/N/S	Approved by Team Leader (DIP) S/P/J/B
--------------------------------------	------------------------	--	--

Client

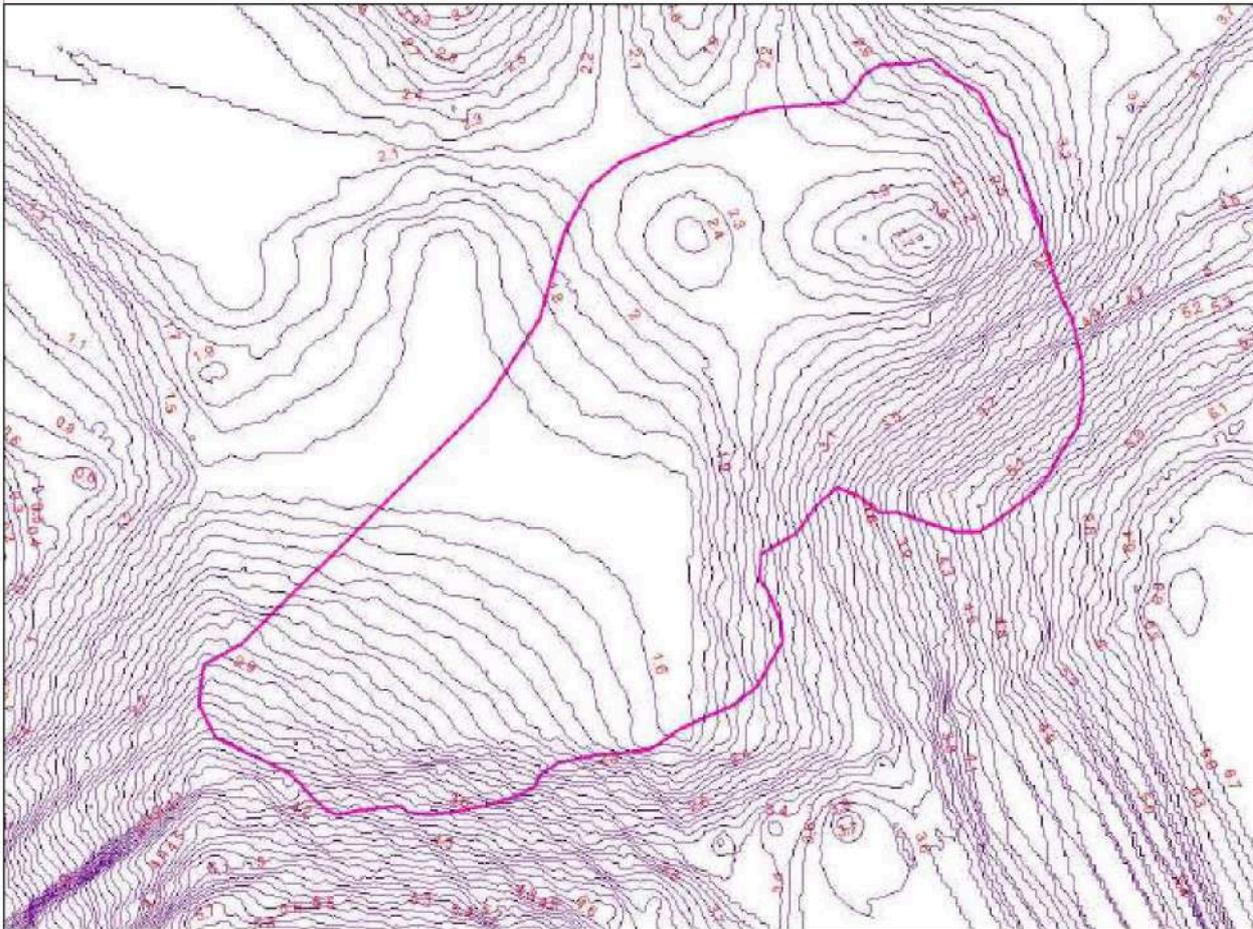
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE URBAN LOCAL BODY THANE

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Drawing No. **C-001 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

DRAWING NAME
 TERRAIN PROFILE
 DIVA DESAI KHADI

Revision History				
DATE	NO.	REVISION	DRAWN	APPROVED

Drawn by	Designed by	Checked by	Approved by
Drishank (CSE/NTS/MS)	Subrat Expert	DMS/Expert (SP/MS/MS)	Team Leader (SP/SP/MS)

Client

 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 MaRS Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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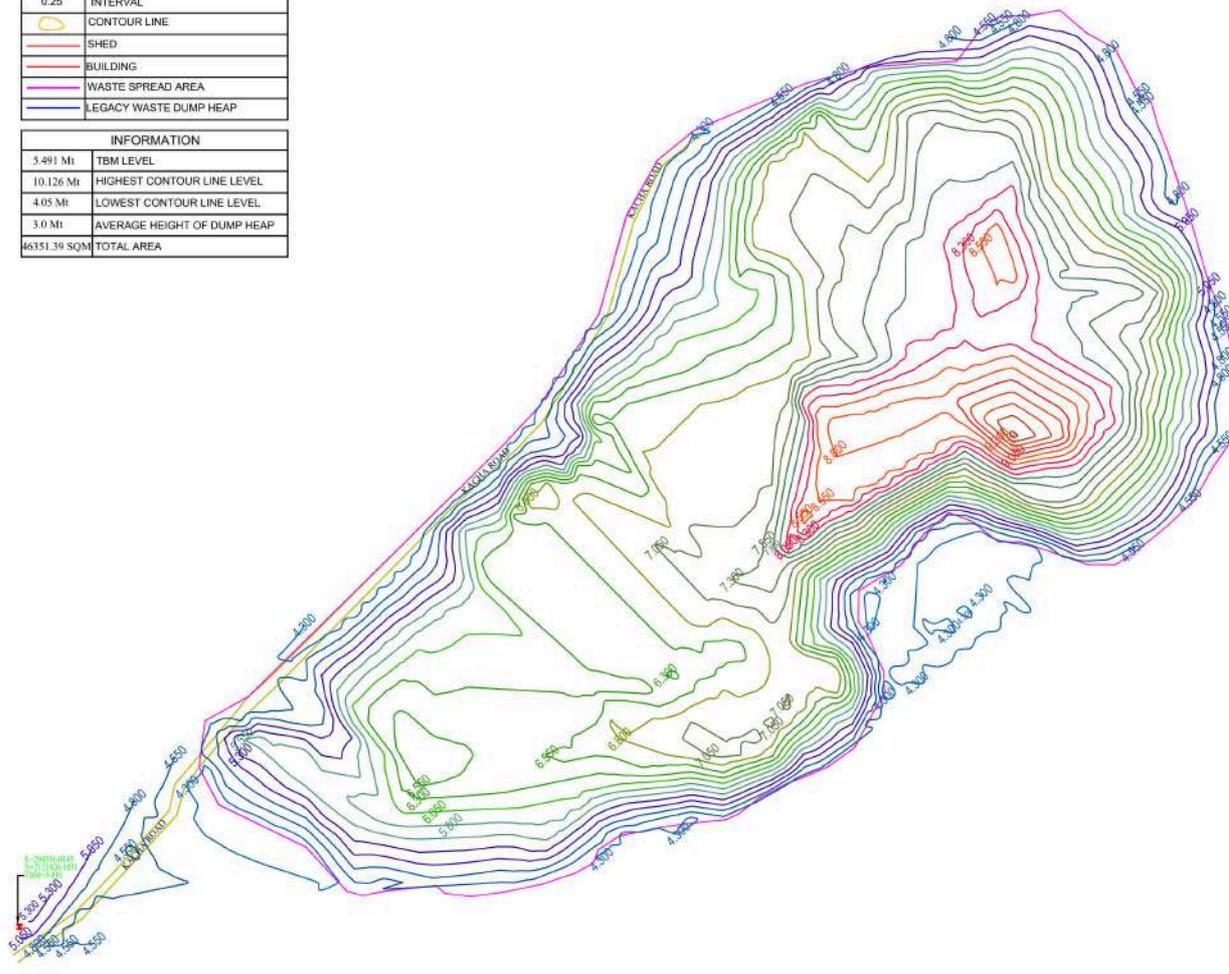

Size A4

INFORMATION	
2010	TERRAIN PROFILE DETAIL

LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	DUMP AREA BOUNDARY

LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
5.491 Mt	TBM LEVEL
10.126 Mt	HIGHEST CONTOUR LINE LEVEL
4.05 Mt	LOWEST CONTOUR LINE LEVEL
3.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
46351.39 SQM	TOTAL AREA



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-002 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
 (DIVA DESAI KHADI)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (DIP) M/T/N/S	Subodh Expert	Dharm Desai (DP) M/T/N/S	Team Leader (DIP) (DP) (B)

Client

 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

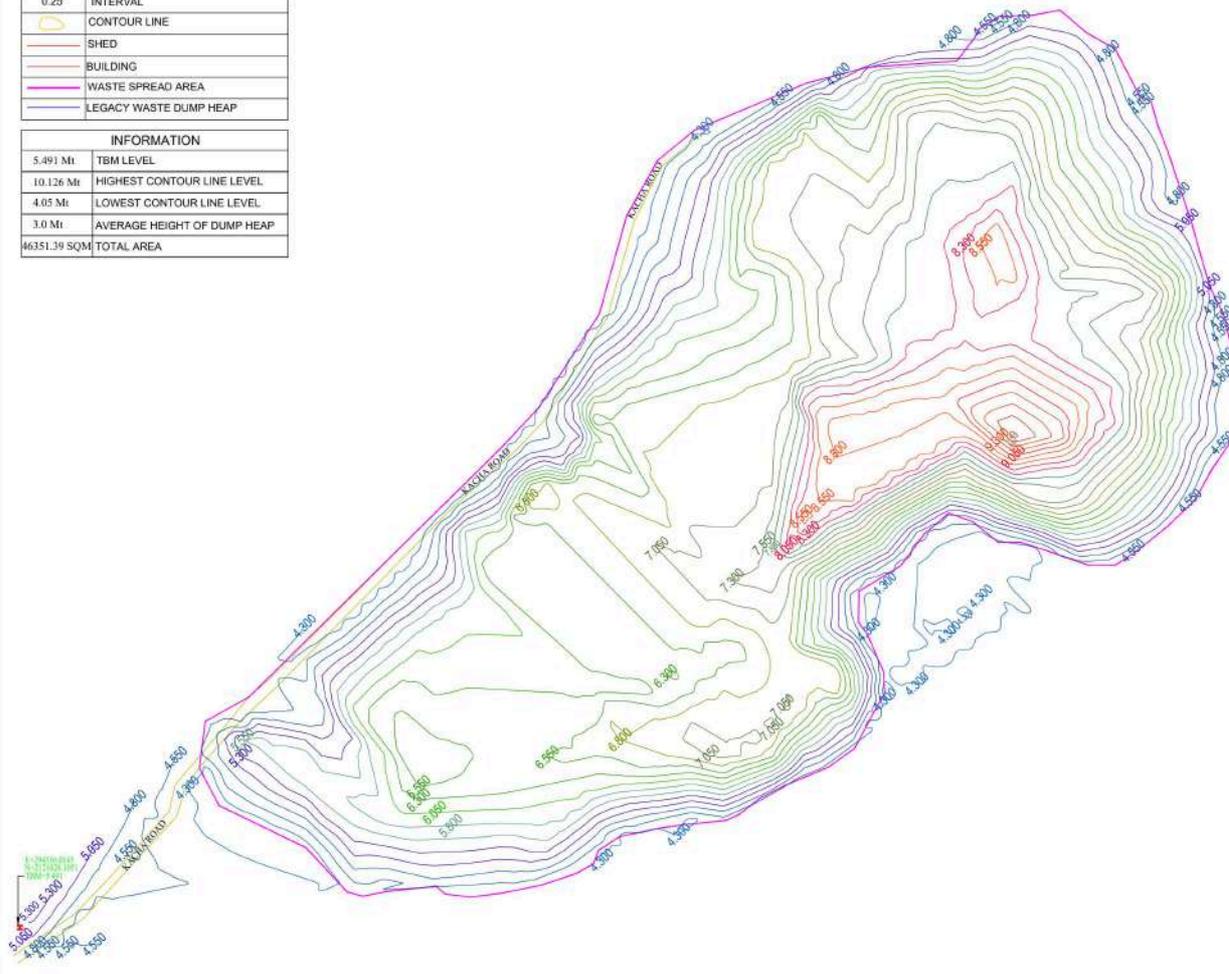
Consultant
MaRS
 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4

LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
5.491 Mt	TBM LEVEL
10.126 Mt	HIGHEST CONTOUR LINE LEVEL
4.05 Mt	LOWEST CONTOUR LINE LEVEL
3.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
46351.39 SQM	TOTAL AREA



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-003 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP
(DIVA DESAI KHADI)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Divya Desai (SP1) RE:MS	Divya Desai	Divya Desai (SP1) RE:MS	Team Leader (SP1) (SP1)

Client

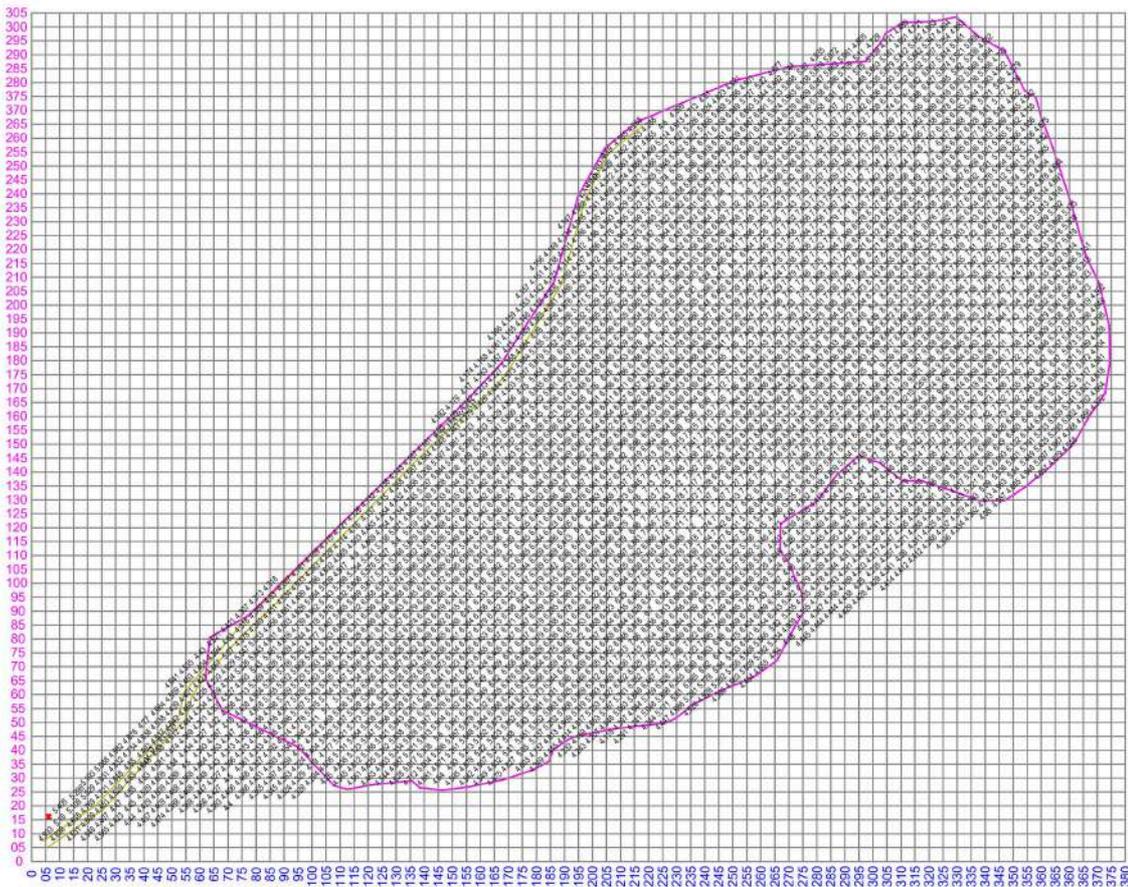
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr: Sereno Elegancy, Bh Rajthal,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A2



LEGENDS	
0.25	GRID 0.5 X 0.5
XXX.XXX	SPOT LEVELS
---	SHED
---	BUILDING
---	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-004 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
5M X 5M SPOT LEVEL
DIVA DESAI KHADI

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dishant (DIP/NT/NS)	Subodh Expert	DMM Dey (DP/KB/NS)	Team Leader (DP/SP/JS)

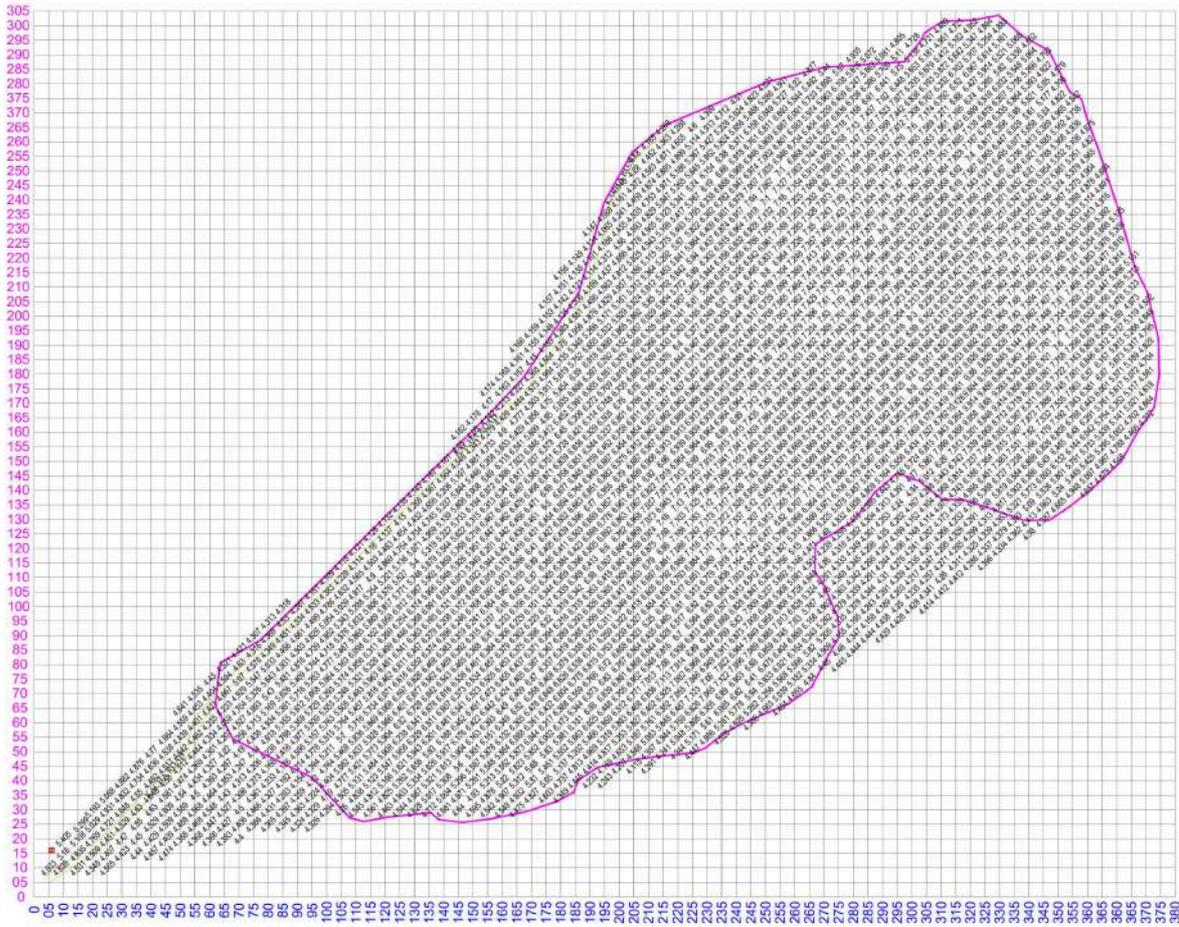
Client
 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr: Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



LEGENDS	
	GRID 0.5 X 0.5
	INTERVAL 0.25
	SPOT LEVELS XXX.XXX
	SHED
	BUILDING
	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-005 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
5M X 5M SPOT LEVEL
DIVA DESAI KHADI

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Chaitan (CS/NT/NR)	Indrajit Egar	DAM Dast (DP/RS/MS)	Tanuj Leader (JNP/SP/JB)

Client
Thane Municipal Corporation
 New Administrative Building, Chavan Wadi,
 Pachgaonkhadi, Mahalalika Bhawan Rd,
 Thane West, Thane
 Maharashtra -400032
 Dist: Thane (Maharashtra)

Consultant

 M&RS Planning & Engineering Services Pvt. Ltd.
 Nr. Sereno Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli,
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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AREA	
28.9200	
FRL (WASTE HEAP LEVEL)	4.059 4.233 4.667 4.594 4.521
OGL (ORIGINAL GROUND LEVEL)	3.000 3.000 3.000 3.000 3.000
DISTANCE	60 65 70 75 80
L-SECTION (FROM CH:065)	
AREA 45.9925	
FRL (WASTE HEAP LEVEL)	4.256 4.527 4.704 4.928 5.070 4.630 4.421
OGL (ORIGINAL GROUND LEVEL)	4.000 4.000 3.000 3.000 3.000 3.000 2.000
DISTANCE	55 60 65 70 75 80 85
L-SECTION (FROM CH:070)	
AREA 66.6150	
FRL (WASTE HEAP LEVEL)	4.140 4.436 4.713 4.993 5.326 5.547 4.578 4.316
OGL (ORIGINAL GROUND LEVEL)	3.000 3.000 3.000 3.000 3.000 3.000 3.000 2.000
DISTANCE	50 55 60 65 70 75 80 85
L-SECTION (FROM CH:075)	

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

NOTES:

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- All Dimensions are in M unless specified.

Drawing No. C-006 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 65,70,75)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (DP/NT/NS)	Designed by Sudipt (DP/KB/NS)	Checked by DHRUJDESI (DP/KB/NS)	Approved by Team Leader (DP/SP/JS)
-----------------------------------	----------------------------------	------------------------------------	---------------------------------------

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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N W E S	Size A4
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-007 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 80,85,90)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (S2/NTN/8)	Sudipt Expert	DHRU Dabholkar (S2/NTN/8)	Team Leader (S2/NTN/8)

Client

Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalka Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

MARS

Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

- NOTES:**
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Drawing No.
C-008 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 95,100,105)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NTN/RS)	Sudipta (DTP/NTN/RS)	Dattatraya (DTP/NTN/RS)	Team Leader (DTP/NTN/RS)

Client

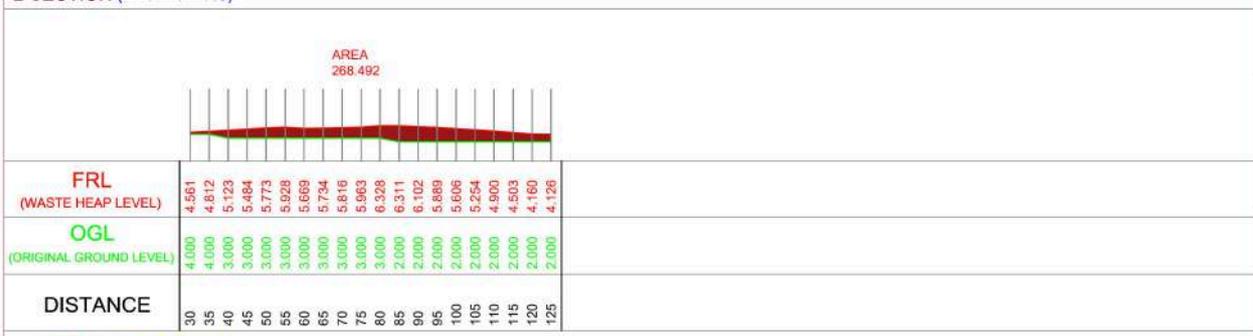
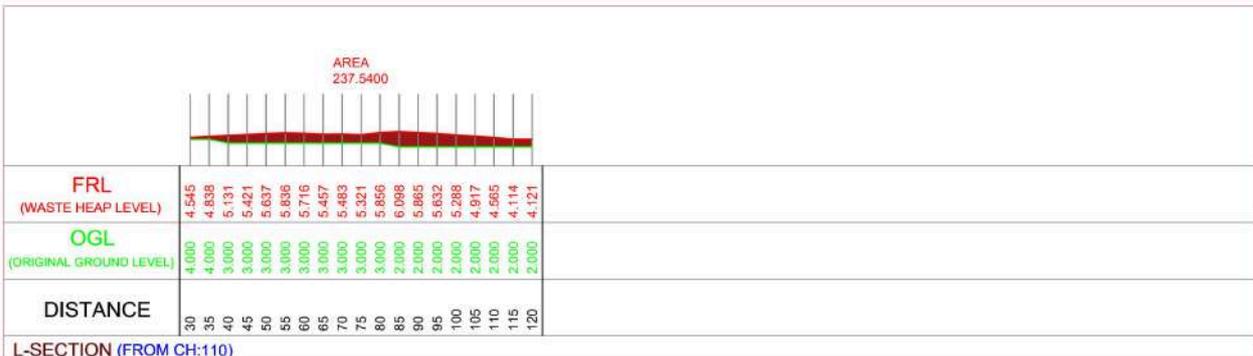
 Thane Municipal Corporation
 New Administrative Building, Chandan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

- NOTES:**
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Drawing No.
C-009 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 110,115,120)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NTN/RS)	Sudipta Ekart	Dattatraya (DTP/NTN/RS)	Team Leader (DTP/SP/JS)

Client
 Thane Municipal Corporation
 New Administrative Building,Chandan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bn Rajpath,
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 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-010 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 125,130,135)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilip (CIVIL ENGINEER)	Designed by Sudipta (CIVIL ENGINEER)	Checked by DHRU (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
---	--	--	--

Client
Thane Municipal Corporation
New Administrative Building, Chavan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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N
W E
S

Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-011 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 140,145,150)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

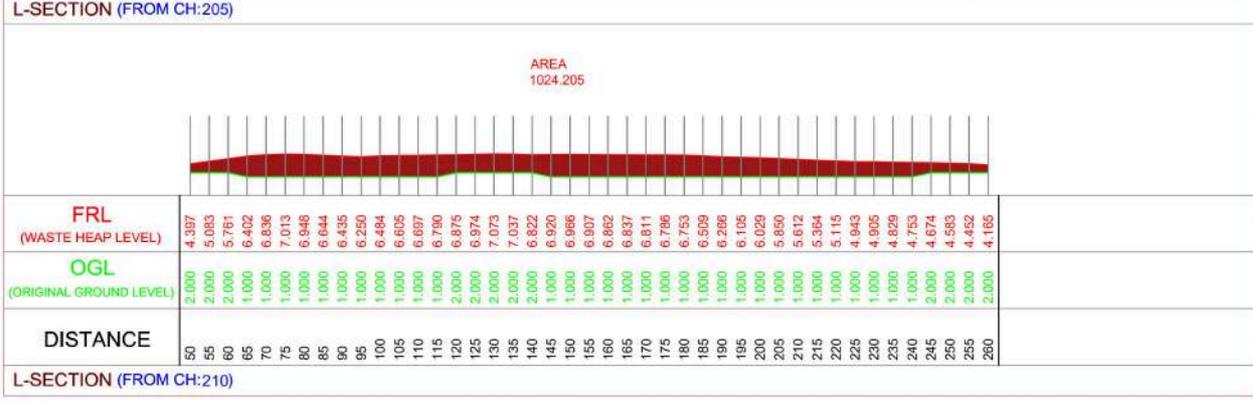
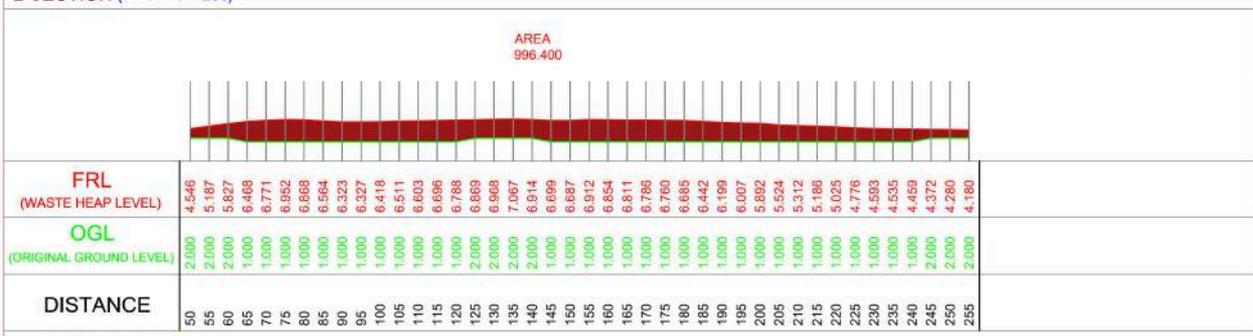
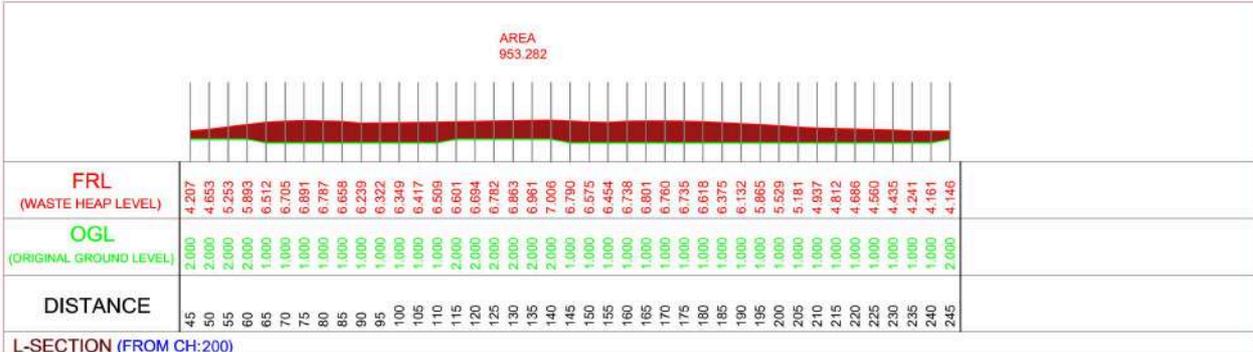
Drawn by Dilipkumar (DIP/NT/NS)	Designed by Sudipta Esgar	Checked by DHRUJ Desai (DIP/KB/NS)	Approved by Team Leader (DIP/SP/JS)
---	-------------------------------------	--	---

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-015 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 200,205,210)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

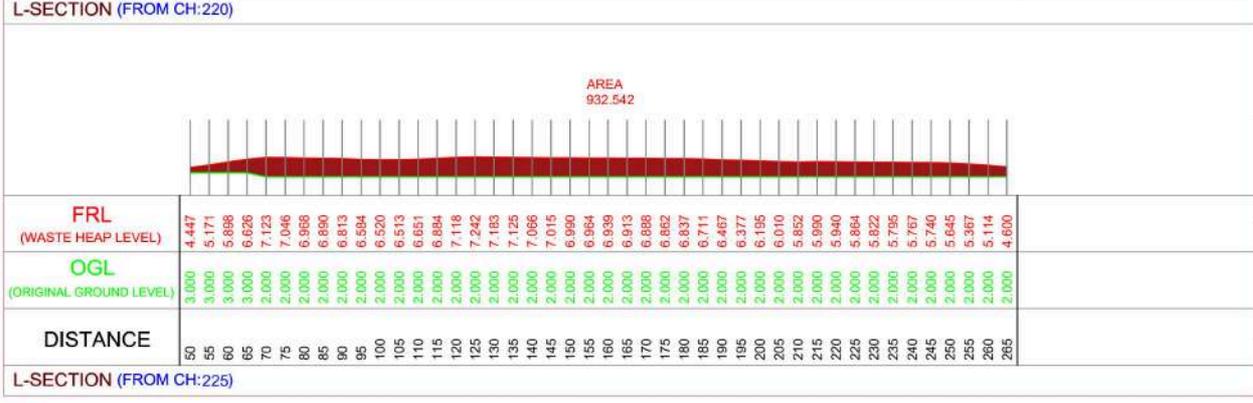
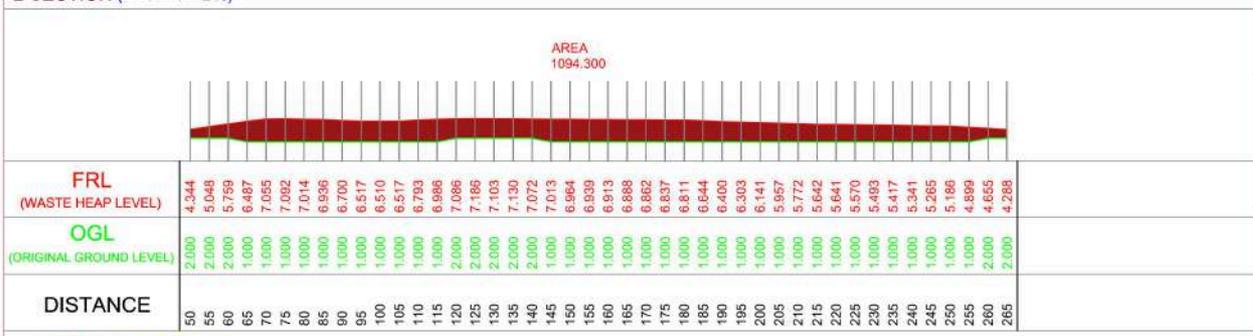
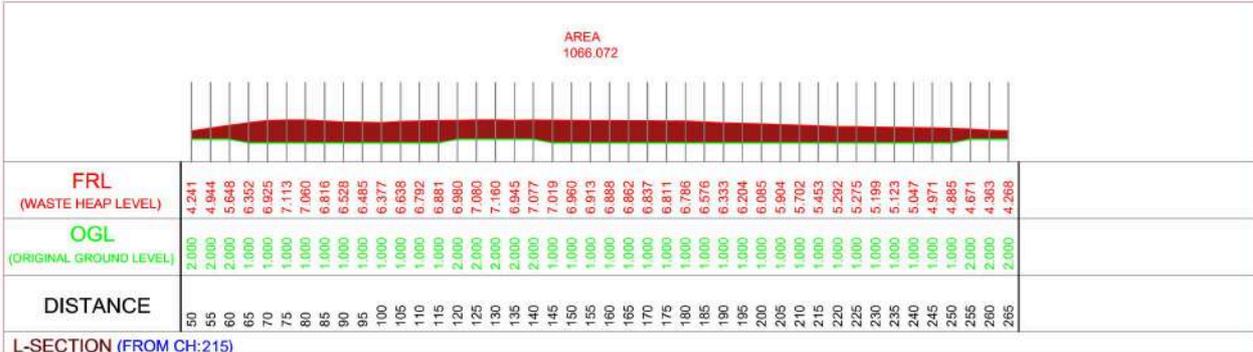
Drawn by Dilip (CIVIL ENGINEER)	Designed by Sudipta (CIVIL ENGINEER)	Checked by DHRU (CIVIL ENGINEER)	Approved by Team Leader (CIVIL ENGINEER)
---	--	--	--

Client
Thane Municipal Corporation
New Administrative Building, Chanden Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No.
C-016 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 215,220,225)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

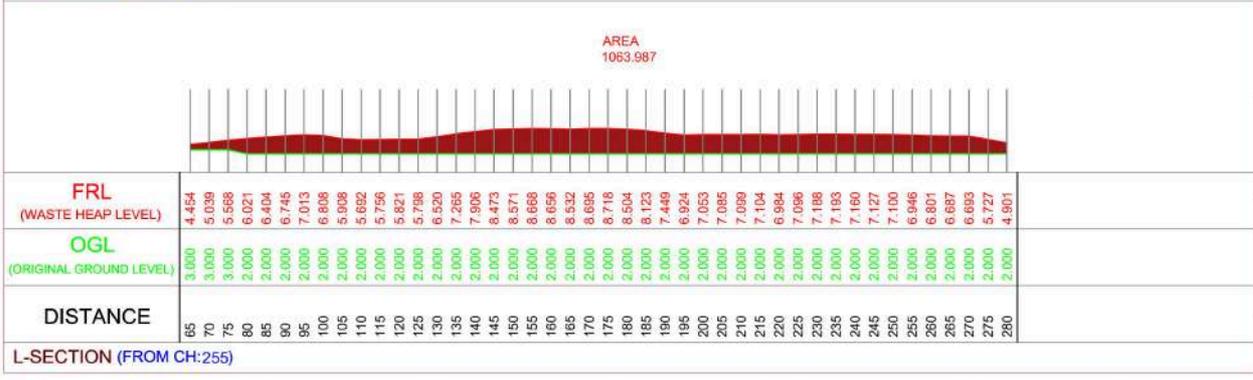
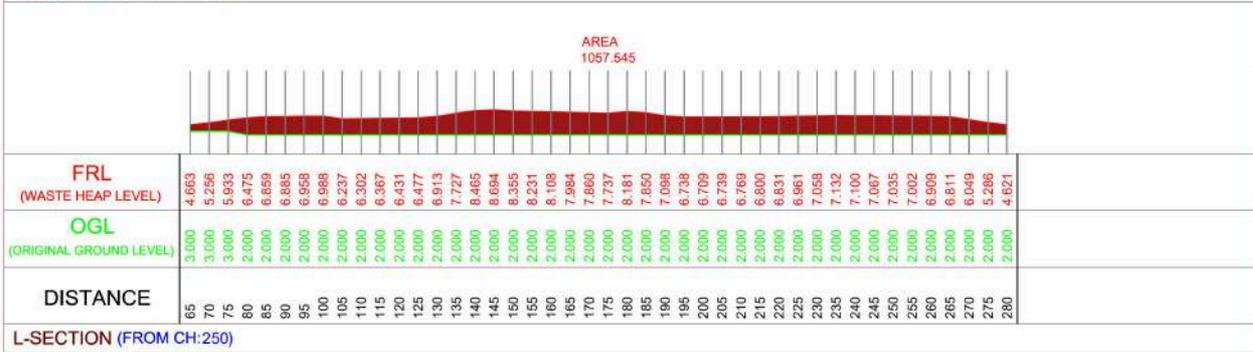
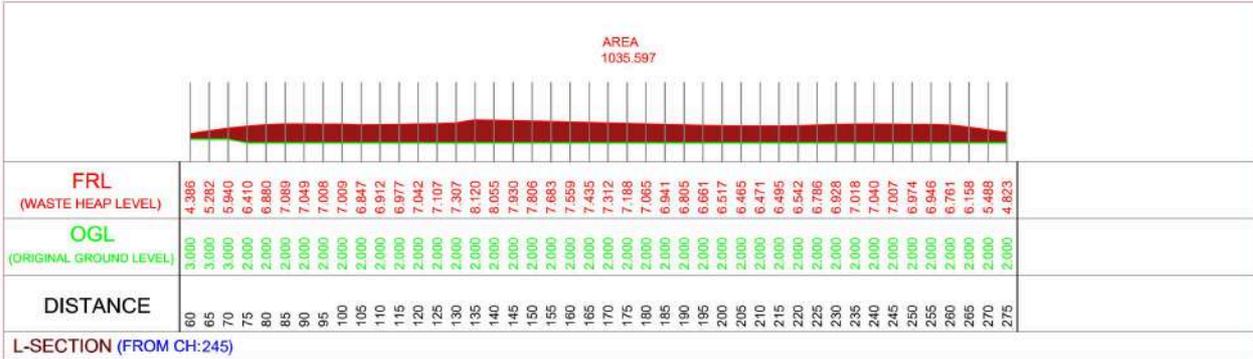
Drawn by Dishant (CSE/NTN)	Designed by Sajid Ejeet	Checked by DNR/Devt (SP/168/NTN)	Approved by Team Leader (JNP/SP/2)
--------------------------------------	-----------------------------------	--	--

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-018 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 245.250,255)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

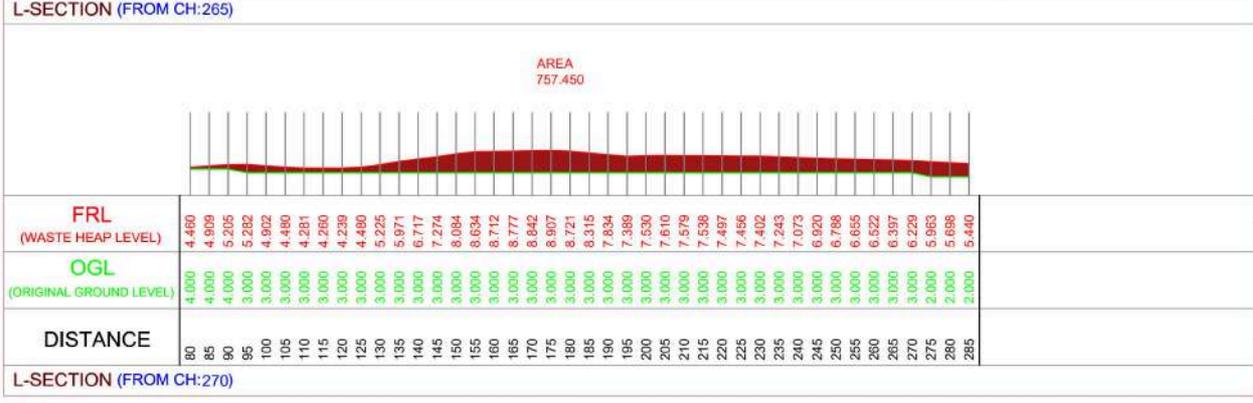
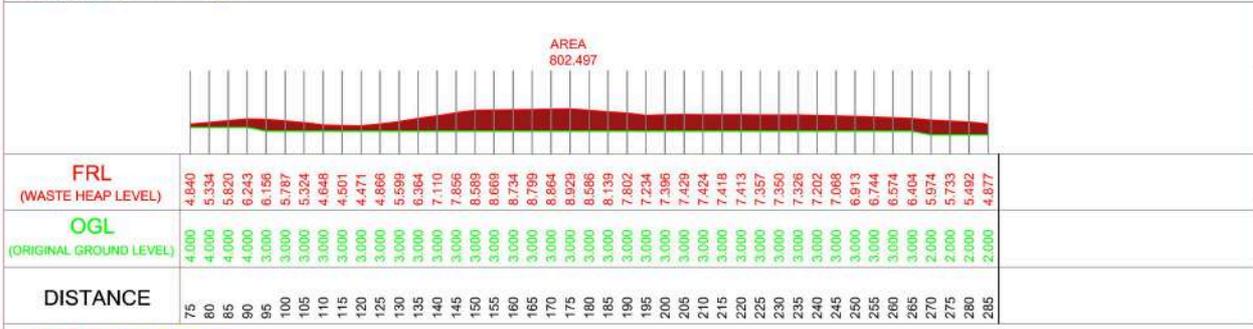
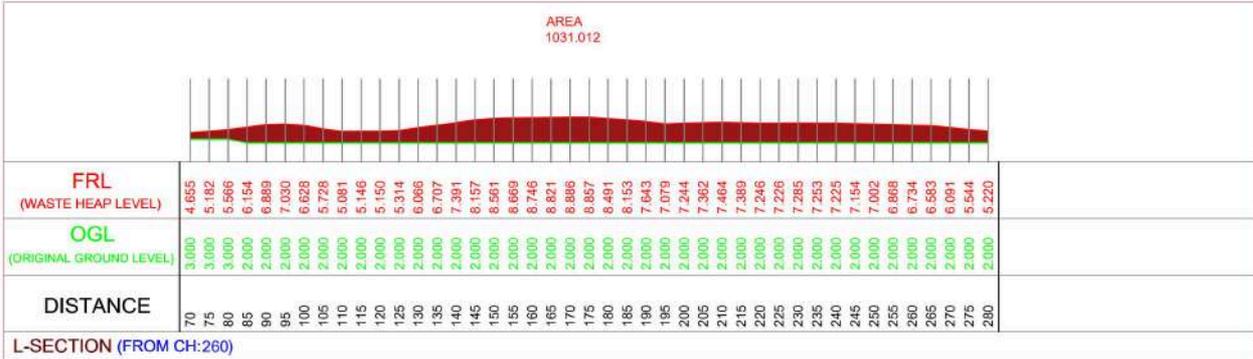
Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-019 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 260,265,270)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: Diksha (CSP/NTN/RS)

Designed by: Sagar Eget

Checked by: DMR/Devt (SP/1/RS/MS)

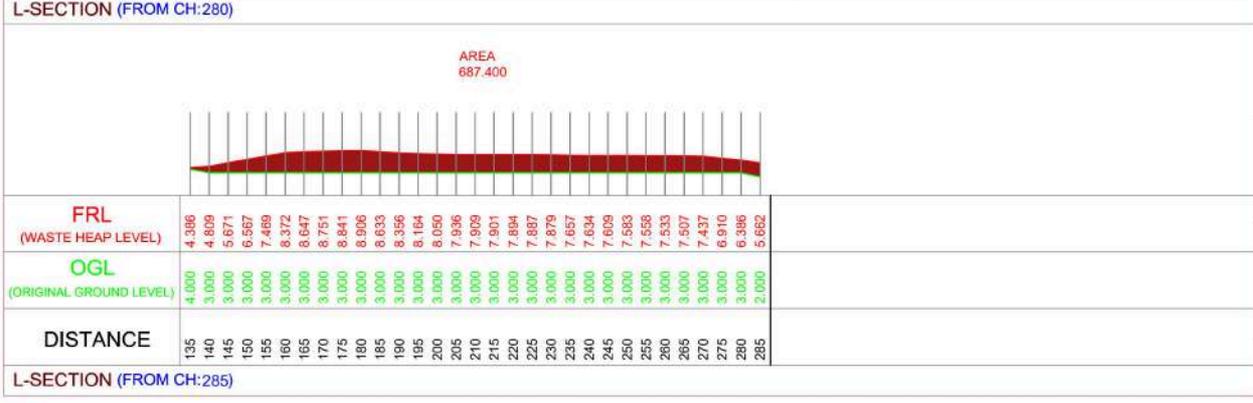
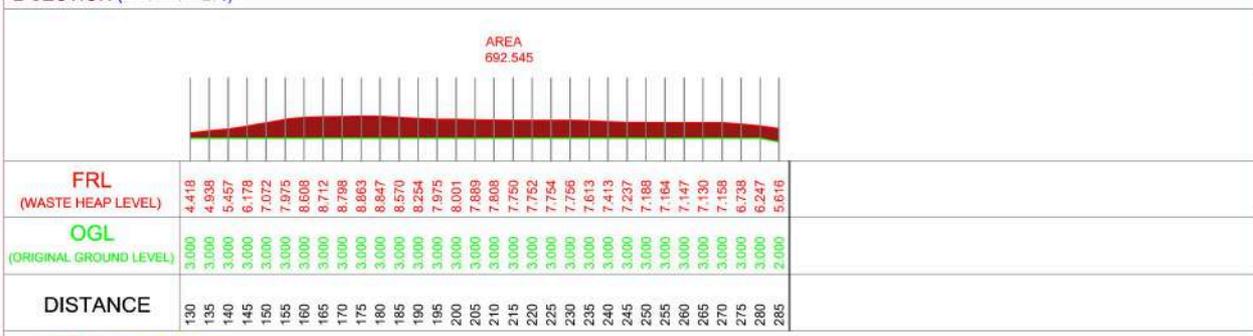
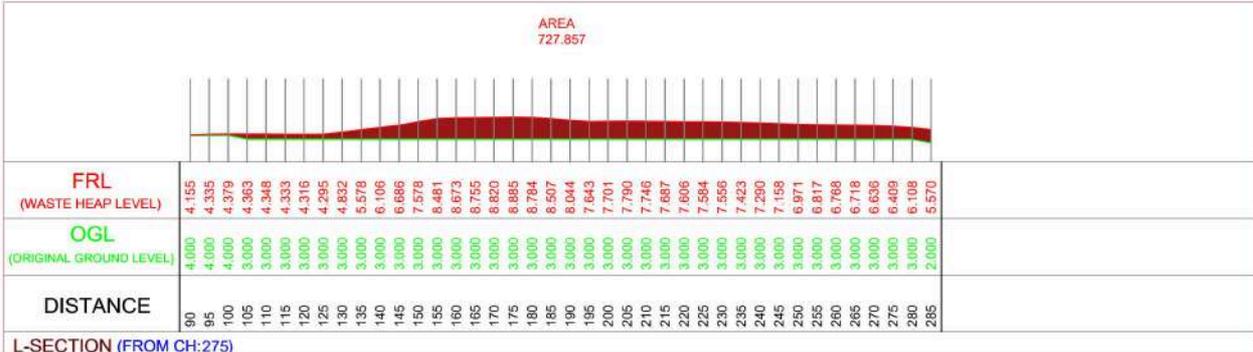
Approved by: Team Leader (JNP/SP/RS)

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi, Pachphakadi, Mahapalika Bhavan Rd, Thane West, Thane Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpath, S. P. Ring Road, Bopal-Ambli Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-020 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 275,280,285)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

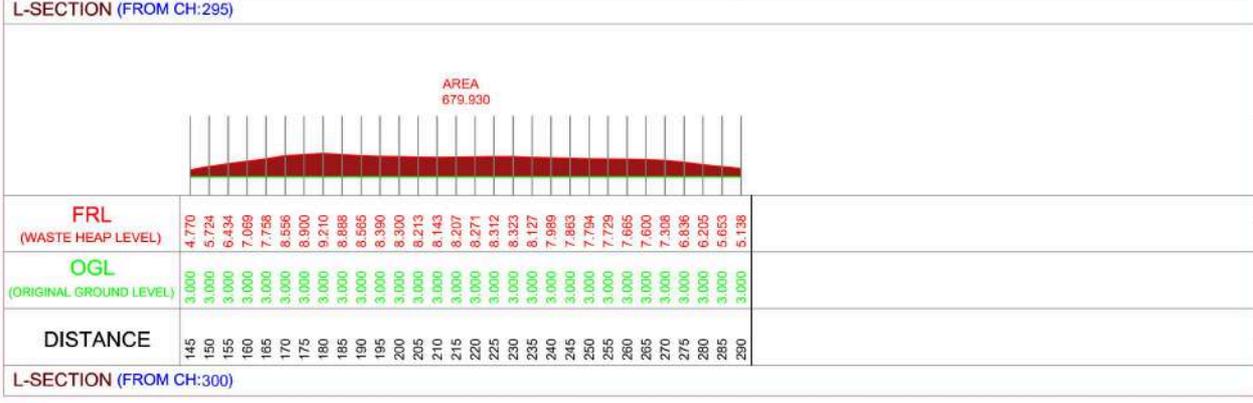
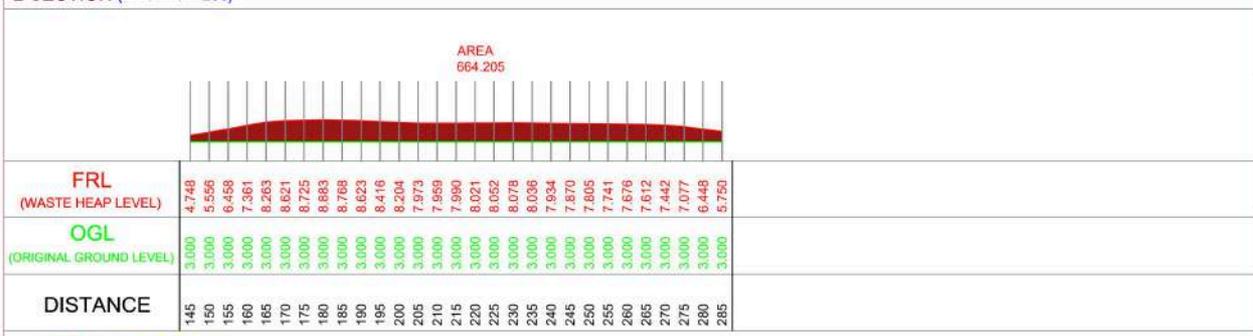
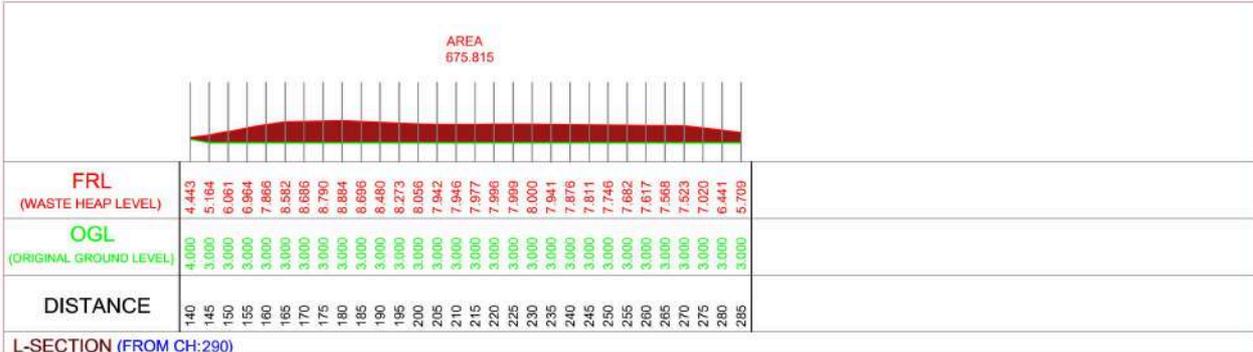
Drawn by Dishant (DP/MT/NR)	Designed by Sudipt Eget	Checked by DHRU Desai (DP/MB/NS)	Approved by Team Leader (DP/SP/JS)
---------------------------------------	-----------------------------------	--	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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- All Dimensions are in M unless specified.

Drawing No. C-021 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 290,295,300)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

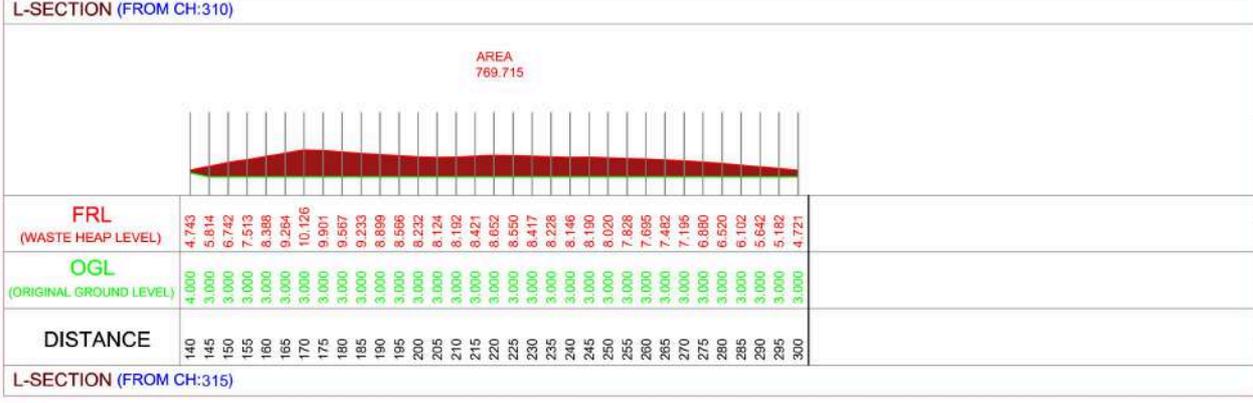
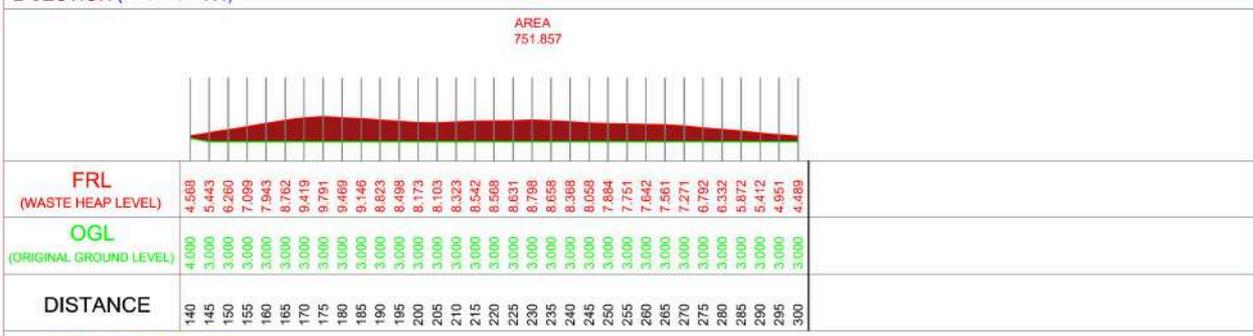
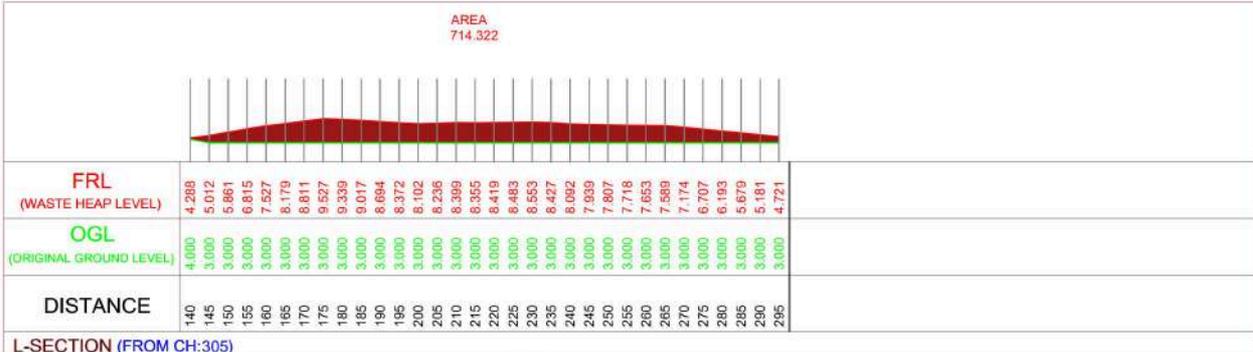
Drawn by Dattatray (CSP/NT/NS)	Designed by Sajid Ejeet	Checked by DHRU Desai (SP/1/KB/NS)	Approved by Team Leader (JNP/SP/JS)
--	-----------------------------------	--	---

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopai-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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	Size A4
--	-------------------



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-022 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 305,310,315)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dakshina (DIP/NTN)	Designed by Sudipt Egoet	Checked by DHRU Desai (DP/KB/NS)	Approved by Team Leader (DP/SP/JS)
---------------------------------------	------------------------------------	--	--

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bih Rajpal,
S. P. Ring Road, Bopai-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-023 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
 (Chainage no: 320.325,330)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bhi Rajpal,
 S. P. Ring Road, Bopal-Ambli
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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No.
C-024 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 335,340,345)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

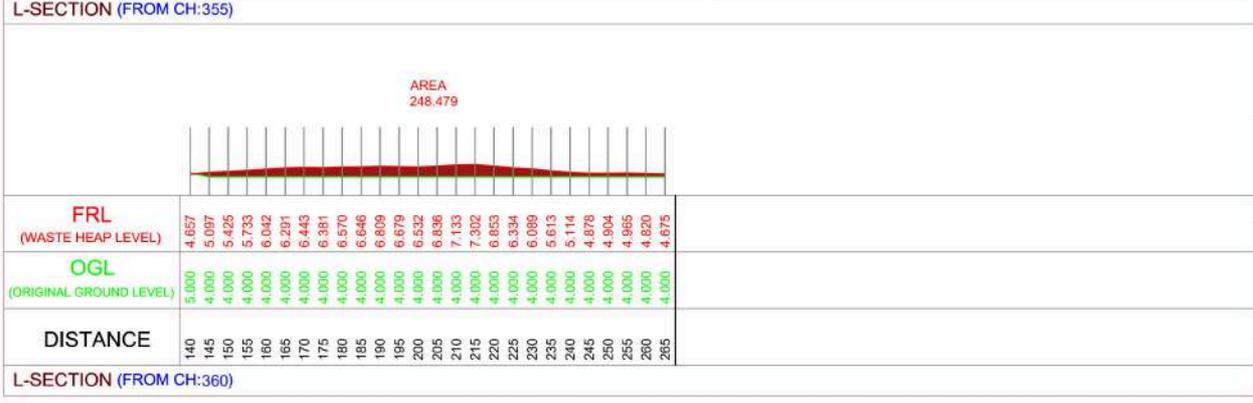
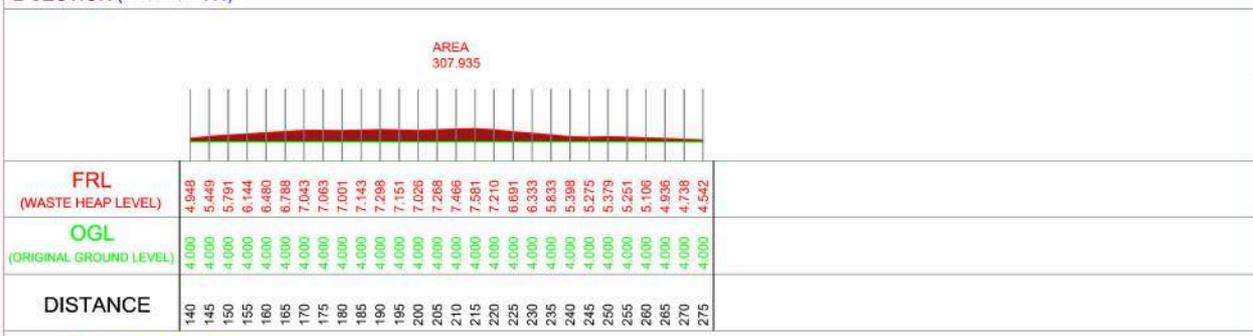
Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
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Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
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Drawing No. C-025 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 350,355,360)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (CSE/NTNRS)	Designed by Sudipt Esgt	Checked by DHRUJDESI (SP/168/NTS)	Approved by Team Leader (SP/SP/28)
---	-----------------------------------	---	--

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpal,
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Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

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Drawing No. C-026 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 365,370,375)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (CSE/NTN/RS)	Designed by Sudipta Esgar	Checked by DHRUJDESI (SP/168/NTS)	Approved by Team Leader (JNP/SP/28)
--	-------------------------------------	---	---

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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	Size A4
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FRL (WASTE HEAP LEVEL)	4.372	4.664	4.618	4.581	4.704	4.828	4.795	4.648	4.502
OGL (ORIGINAL GROUND LEVEL)	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
DISTANCE	165	170	175	180	185	190	195	200	205

L-SECTION (FROM CH:380)

FRL (WASTE HEAP LEVEL)

OGL (ORIGINAL GROUND LEVEL)

DISTANCE

L-SECTION (FROM CH:)

FRL (WASTE HEAP LEVEL)

OGL (ORIGINAL GROUND LEVEL)

DISTANCE

L-SECTION (FROM CH:)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No. **C-027 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 380)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dattaram (DIP/NT/NR)	Designed by Sajant Egert	Checked by DARU Dattam (DIP/KB/NS)	Approved by Team Leader (DIP/SP/AB)
----------------------------------	--------------------------------	--	---

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalka Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant

Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajjalal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size **A4**





INFORMATION	
2010	TERRAIN PROFILE DETAIL

LEGENDS	
0.25	INTERVAL
	CONTOUR LINE
	DUMP AREA BOUNDARY

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-001 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
TERRAIN PROFILE
BHANDARLI

Revision History					
DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (CSE/NTN/RS)	Subodh Expert	DRM/DRM (P/1/RS/MS)	Team Leader (JNP/SP/RS)

Client



Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant



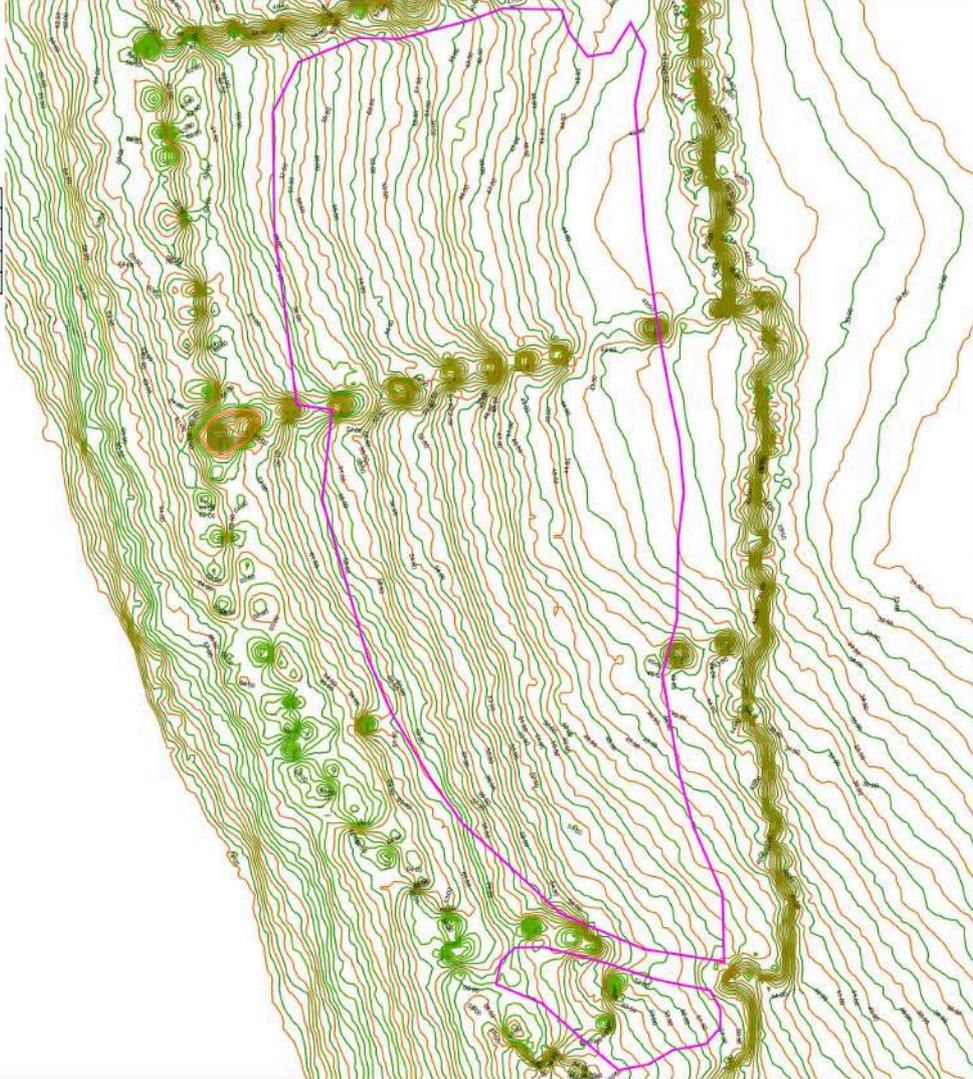
M&RS Planning & Engineering Services Pvt. Ltd.
 Nr. Seene Elegancy, Bih Rathal,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
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LEGENDS	
0.50	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
142.00 Mt	HIGHEST CONTOUR LINE LEVEL
26.50 Mt	LOWEST CONTOUR LINE LEVEL
7.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
21,486.38 SQM	TOTAL AREA



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-002 R0	Scale NTS	Drawing Status Issued for DPR Approval
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DRAWING NAME
CONTOUR MAP (BHANDARLI)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dishant (C2) NTS/MS	Designed by Sudipt Dey	Checked by DRM/Dipak (P) RB/MS	Approved by Team Leader (JNP/SP/JS)
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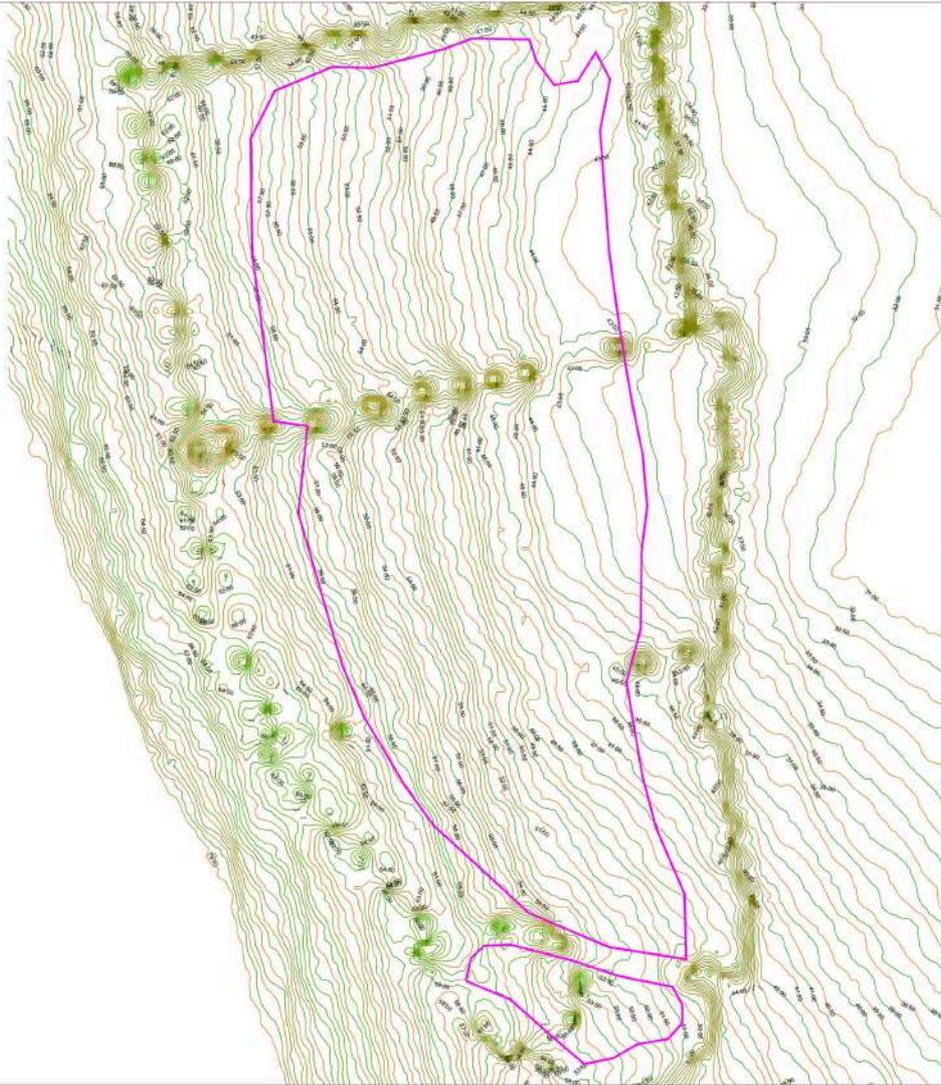
Client
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

MARS
 Mars Planning & Engineering Services Pvt. Ltd.
 Nr: Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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	Size A4
--	--------------------------



LEGENDS	
0.50	INTERVAL
	CONTOUR LINE
	SHED
	BUILDING
	WASTE SPREAD AREA
	LEGACY WASTE DUMP HEAP

INFORMATION	
142.00 Mt	HIGHEST CONTOUR LINE LEVEL
26.50 Mt	LOWEST CONTOUR LINE LEVEL
7.0 Mt	AVERAGE HEIGHT OF DUMP HEAP
21,486.38 SQM	TOTAL AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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 6. All Dimensions are in M unless specified.

Drawing No. C-003 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
CONTOUR MAP (BHANDARLI)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Sudhan (S2) M/F/N/S	Designed by Sudhan Expert	Checked by SMM/Qualif (P/F) RE/N/S	Approved by Team Leader (J/P) (S/F) (S)
---------------------------------	------------------------------	---------------------------------------	--

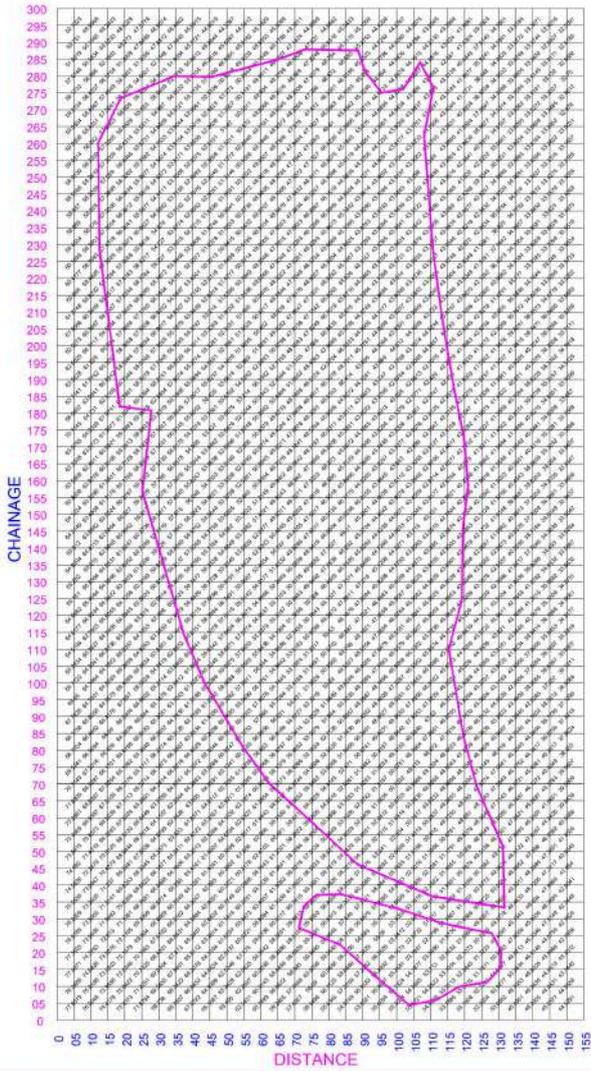
Client
Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr: Sereno Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A2



LEGENDS	
—	GRID 0.5 X 0.5
0.25	INTERVAL
XXX.XXX	SPOT LEVELS
—	SHED
—	BUILDING
—	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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 6. All Dimensions are in M unless specified.

Drawing No. C-004 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
5M X 5M SPOT LEVEL BHANDARLI

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattaram (D) M/N/R	Sudipt Esgt	DMM Dattam (D) M/N/R	Team Leader (D) M/N/R

Client

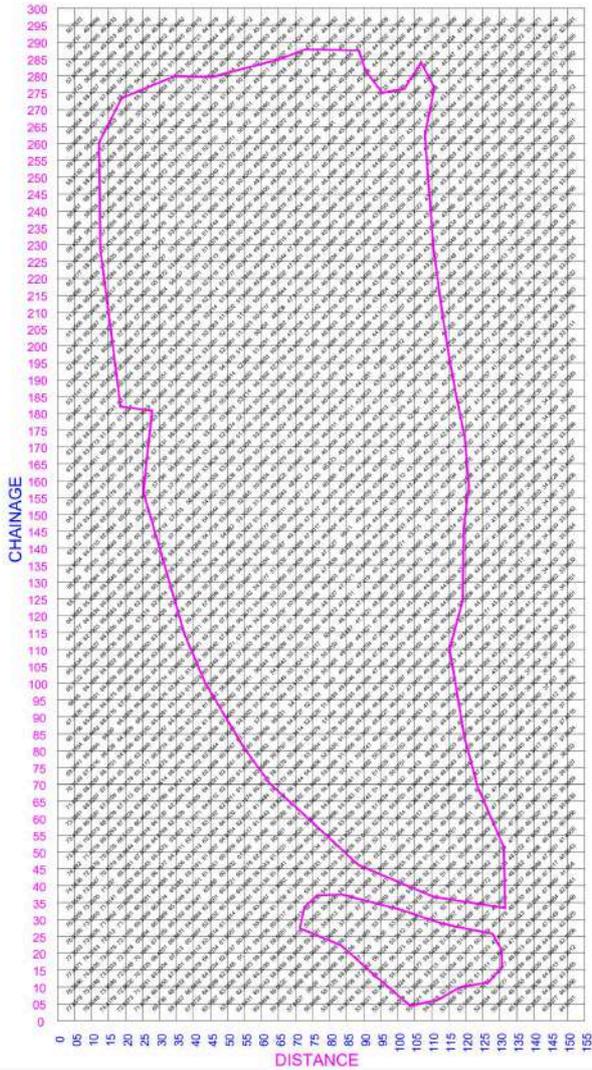
 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalka Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 MaRS Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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 Size
A4



LEGENDS	
—	GRID 0.5 X 0.5
0.25	INTERVAL
XXX.XXX	SPOT LEVELS
—	SHED
—	BUILDING
—	WASTE SPREAD AREA

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

- NOTES:**
1. The information must solely and only be used for the coordination and/or approval of the project. And it should not be used for construction or execution purpose.
 2. The consultant does not warrant or take responsibility for the accuracy of the information issued.
 3. The consultant accept no legal liability or responsibility for any loss or damage suffered by the client arising out of, or in connection with, the use or misuse of the information issued.
 4. The documents may not have been prepared for use by the client and may not fully reflect their needs.
 5. The client is responsible for verifying the correctness and completeness of the information issued. This should be done by consulting all relevant documents supplied during the course of the project and by confirming dimensions on site.
 6. All Dimensions are in M unless specified.

Drawing No. C-005 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
5M X 5M SPOT LEVEL BHANDARLI

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by

Client

Thane Municipal Corporation
 New Administrative Building Chembur Wadi,
 Pachghat, Mahalalika Bhawan Rd,
 Thane West, Thane
 Maharashtra -400032
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Sereno Elegancy, Bh Rajghat,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

Notes: This drawing is the sole property of the consultant, and it is subject to their recall and must not be lent or copied or reproduced without their written permission nor used for any purpose other than, for which it is issued.



FRL (WASTE HEAP LEVEL)	55.300 55.022 54.523
OGL (ORIGINAL GROUND LEVEL)	50.300 50.022 49.523
DISTANCE	100 105 110
L-SECTION (FROM CH:05)	
FRL (WASTE HEAP LEVEL)	55.470 55.132 54.600 54.252 53.511 53.022
OGL (ORIGINAL GROUND LEVEL)	50.470 50.132 49.600 49.252 48.511 48.022
DISTANCE	95 100 105 110 115 120
L-SECTION (FROM CH:010)	
FRL (WASTE HEAP LEVEL)	57.275 56.293 55.258 54.188 48.713 53.713 53.103 52.345 51.731 51.018
OGL (ORIGINAL GROUND LEVEL)	50.775 51.293 50.258 49.188 48.713 53.713 48.103 47.345 46.731 46.018
DISTANCE	90 95 100 105 110 115 120 125 130
L-SECTION (FROM CH:015)	

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

NOTES:

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Drawing No. C-006 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

Drawing Name
Longitudinal Section
(Chainage no: 005,010,015)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (CSE/NTNRS)	Designed by Sajid Ejeet	Checked by DHRU DHEET (SP/16B/NTS)	Approved by Team Leader (SNP/SP/2)
------------------------------------	----------------------------	---------------------------------------	---------------------------------------

Client

 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalka Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpal,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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	Size A4
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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-007 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 020.025,030)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: Diksha (CSE/NTNRS)

Designed by: Sagar Egar

Checked by: DRD/DRP (SP/IB/NTS)

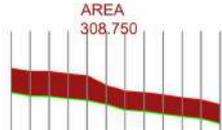
Approved by: Team Leader (DP/SP/IB)

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalka Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpal,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

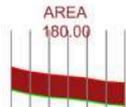
Notes: This drawing is the sole property of the consultant, and it is subject to their recall and must not be lent or copied or reproduced without their written permission nor used for any purpose other than, for which it is issued.

Size
A4



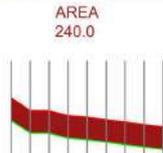
FRL (WASTE HEAP LEVEL)	59.244	58.401	58.304	57.732	57.227	54.670	53.192	52.773	52.143	51.431	50.873	49.569
OGL (ORIGINAL GROUND LEVEL)	62.744	61.901	61.804	61.232	60.727	49.670	48.192	47.773	47.143	46.431	45.873	44.569
DISTANCE	75	80	85	90	95	100	105	110	115	120	125	130

L-SECTION (FROM CH:035)



FRL (WASTE HEAP LEVEL)	54.293	53.031	52.359	51.935	51.317	50.477	50.055
OGL (ORIGINAL GROUND LEVEL)	48.293	47.031	46.359	45.935	45.317	44.477	44.055
DISTANCE	100	105	110	115	120	125	130

L-SECTION (FROM CH:040)



FRL (WASTE HEAP LEVEL)	57.188	53.869	53.786	52.502	51.908	51.496	50.787	50.138	49.563
OGL (ORIGINAL GROUND LEVEL)	51.188	47.869	47.786	46.502	46.108	45.496	44.787	44.138	43.563
DISTANCE	90	95	100	105	110	115	120	125	130

L-SECTION (FROM CH:045)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

- NOTES:**
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Drawing No. C-008 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 035,040,045)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilip (DP/NTN)	Designed by Sajid Ejeet	Checked by DHRUJ (DP/KB/NS)	Approved by Team Leader (DP/SP/JS)
----------------------------	----------------------------	--------------------------------	---------------------------------------

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpal,
S. P. Ring Road, Bopal-Ambli,
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-009 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 050,055,060)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by <small>Dilipkumar (DIP/NTN/R)</small>	Designed by <small>Sajid Ejeet</small>	Checked by <small>DHRU DHEER (DIP/KB/NTS)</small>	Approved by <small>Team Leader (DIP/SP/AB)</small>
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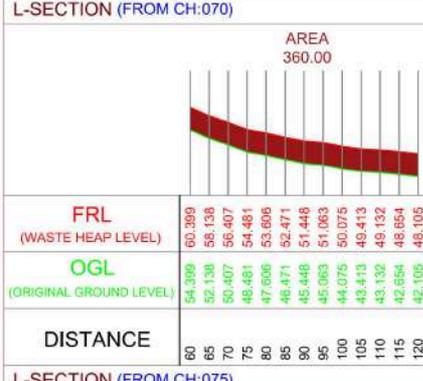
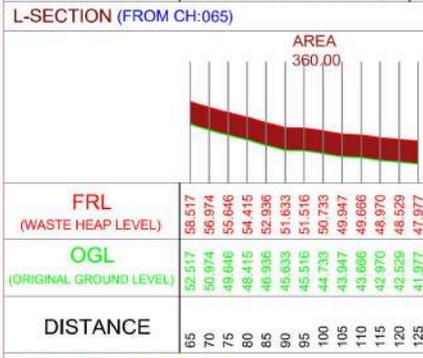
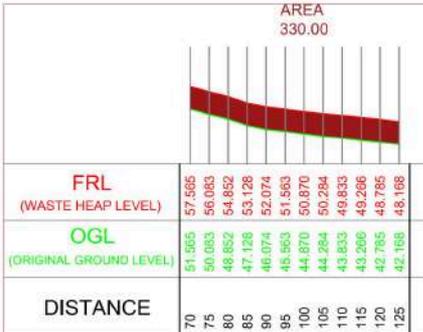
Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhadli, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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N
W E
S

Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

- NOTES:**
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Drawing No.
C-010 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 065.070,075)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dilipkumar (CSE/NTS)	Sudipt Egoet	DHRU Dabhi (SP/KB/NTS)	Team Leader (SP/SP/NTS)

Client

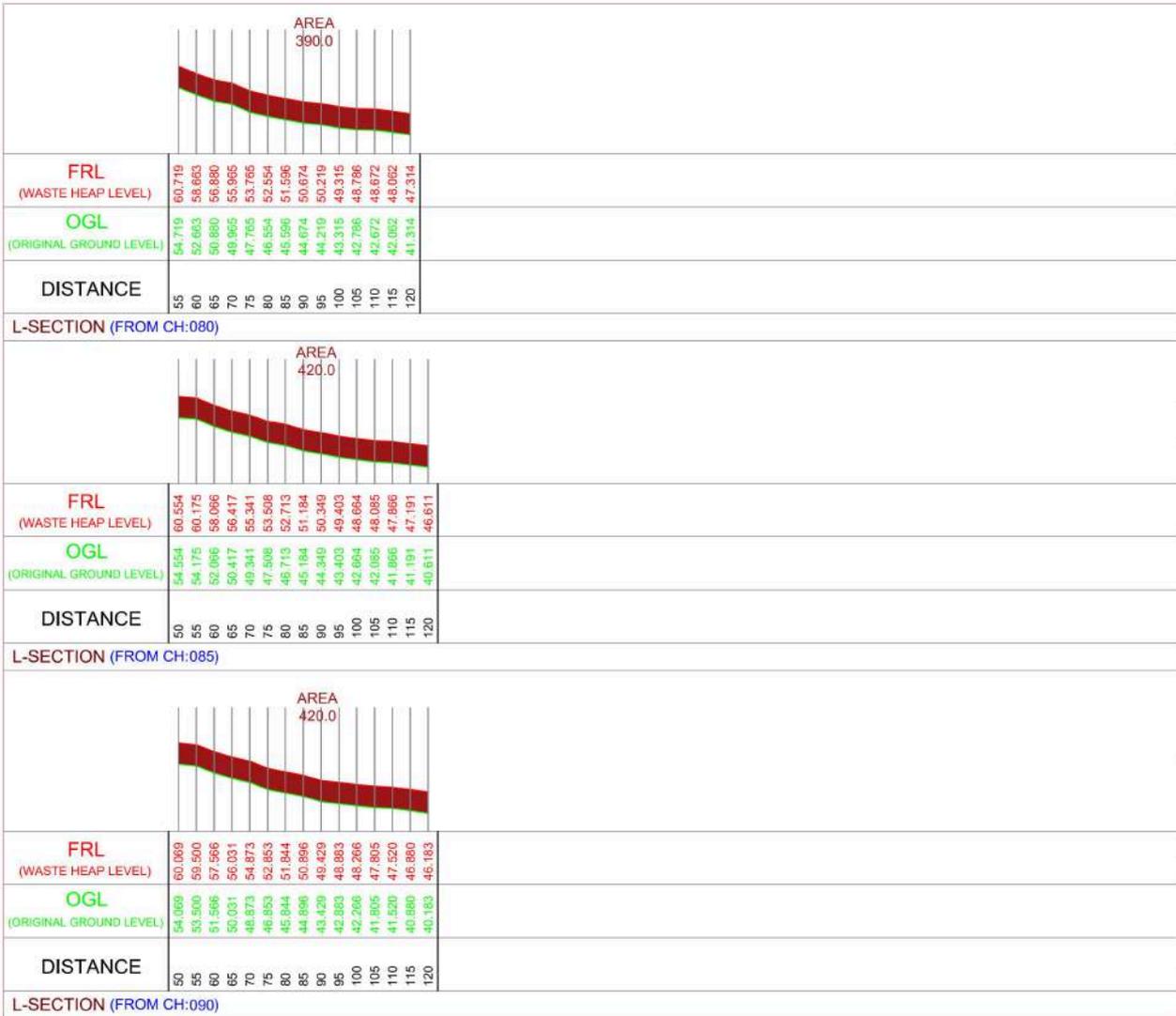
 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-011 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 080,085,090)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (S2/NTNRS)	Designed by Sajid Ejeet	Checked by DHRU Desai (S2/168/NTS)	Approved by Team Leader (S2P/SF/2)
--	-----------------------------------	--	--

Client
Thane Municipal Corporation
New Administrative Building, Chendan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli,
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-012 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

Drawing Name
Longitudinal Section
 (Chainage no: 95,100,105)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (DIP/NTN/R)	Designed by Sajid Egeet	Checked by DARU Deyani (DP/KB/MS)	Approved by Team Leader (DP/SP/JB)
---	-----------------------------------	---	--

Client

 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bn Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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	Size A4
---	-------------------



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

NOTES:

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- All Dimensions are in M unless specified.

Drawing No.
C-013 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
 (Chainage no: 110,115,120)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: Dattatray (DTP/NT/NS)

Designed by: Sagar Egar

Checked by: DMR/Deputy (DP/168/NS)

Approved by: Team Leader (DP/167/NS)

Client
 Thane Municipal Corporation
 New Administrative Building,Chandan Wadi ,
 Pachpakhad, Mahapalka Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-014 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
 (Chainage no: 125,130,135)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by Dilipkumar (S2/NTN/RS)	Designed by Sudipta Esgar	Checked by DHRUJ Desai (S2/168/NTS)	Approved by Team Leader (S2P/S2P/RS)
---	-------------------------------------	---	--

Client

 Thane Municipal Corporation
 New Administrative Building, Chendan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

Notes: This drawing is the sole property of the consultant, and it is subject to their recall and must not be lent or copied or reproduced without their written permission nor used for any purpose other than, for which it is issued.


Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

- The information must solely and only be used for the coordination and/or approval of the project. And it should not be used for construction or execution purpose.
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- All Dimensions are in M unless specified.

Drawing No.
C-015 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 140,145,150)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: Dattatraya (DTP/NTN/RS)

Designed by: Sagar Egar

Checked by: DMR/Deputy (DPT/KB/MS)

Approved by: Team Leader (DNP/SP/JS)

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

Notes: This drawing is the sole property of the consultant, and it is subject to their recall and must not be lent or copied or reproduced without their written permission nor used for any purpose other than, for which it is issued.

Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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Drawing No. C-016 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 155,160,165)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

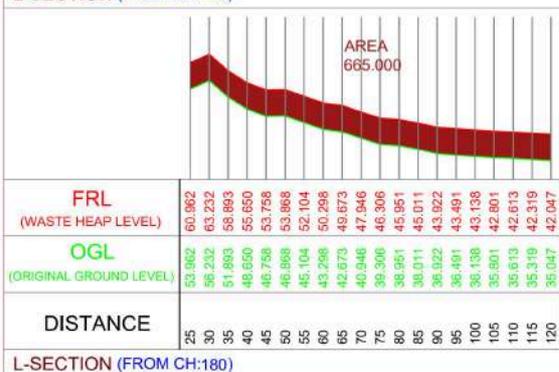
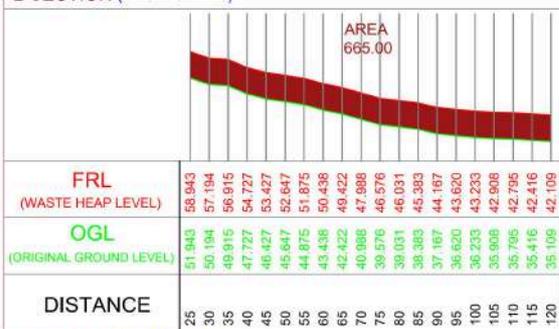
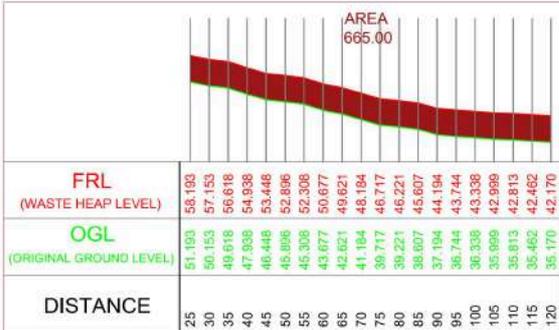
Drawn by Dilipkumar (DIP/NTN/RS)	Designed by Sudipt Eapen	Checked by DHRUJDESI (DIP/168/NTS)	Approved by Team Leader (DIP/SP/RS)
-------------------------------------	-----------------------------	---------------------------------------	--

Client
Thane Municipal Corporation
New Administrative Building,Chandan Wadi ,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bn Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No. **C-017 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
 Longitudinal Section
 (Chainage no: 170,175,180)

Revision History

NO.	DATE	REVISION

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DTP/NT/MS)	Sudipta Esgar	Dattatraya (DTP/NT/MS)	Team Leader (DTP/SP/JS)

Client

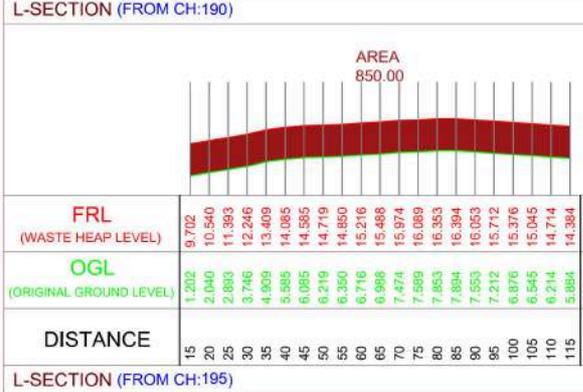
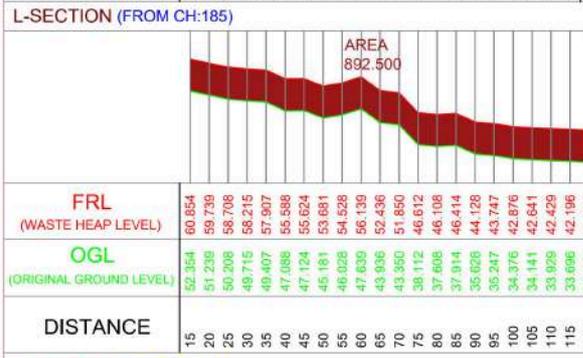
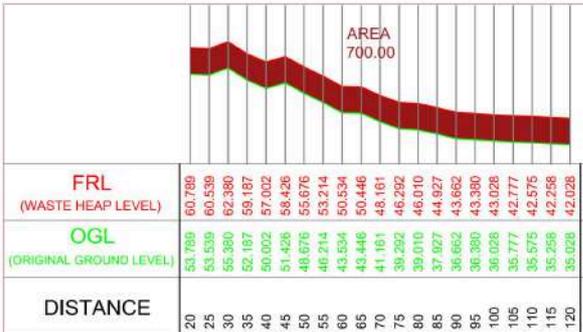
 Thane Municipal Corporation
 New Administrative Building, Chavan Rd,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 M&RS Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bn Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@m&rsc consultancy.com

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Scale:  Size **A4**



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No. **C-018 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
 Longitudinal Section
 (Chainage no: 185,190,195)

Revision History

NO.	DATE	REVISION

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by <small>(Sd/ MTR)</small>	Designed by <small>Subject Expert</small>	Checked by <small>DWR/Client (Sd/ MTR)</small>	Approved by <small>Team Leader (Sd/ SP/ J)</small>
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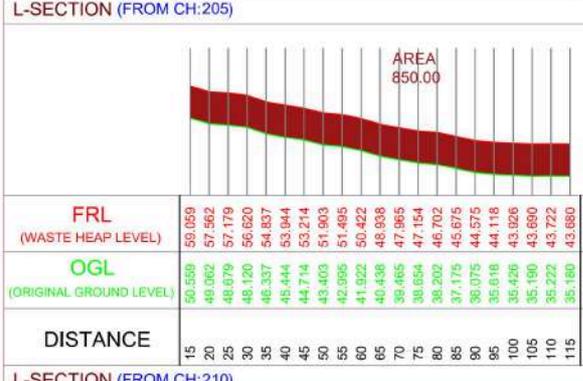
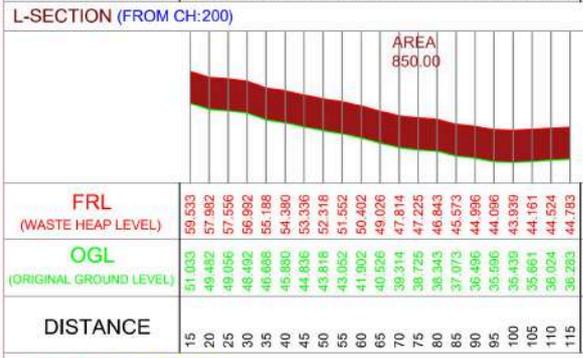
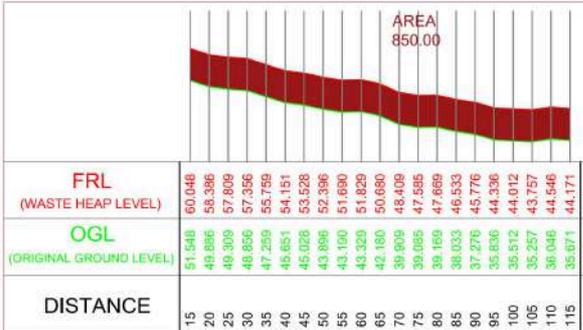
Client
 Thane Municipal Corporation
 New Administrative Building, Chavan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bh Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No. **C-019 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
 Longitudinal Section
 (Chainage no: 200,205,210)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DP/NTNRS)	Sudipta Esgar	Dattatraya (DP/NTNRS)	Team Leader (DP/SP/JP)

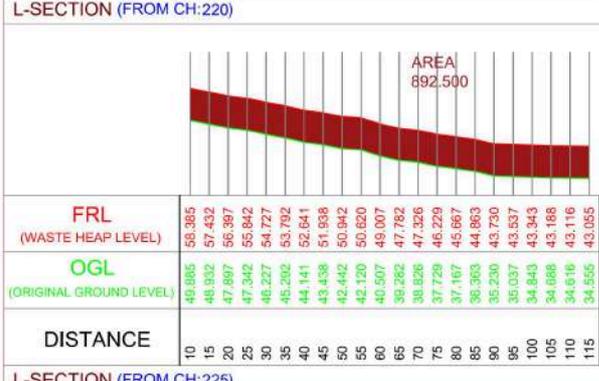
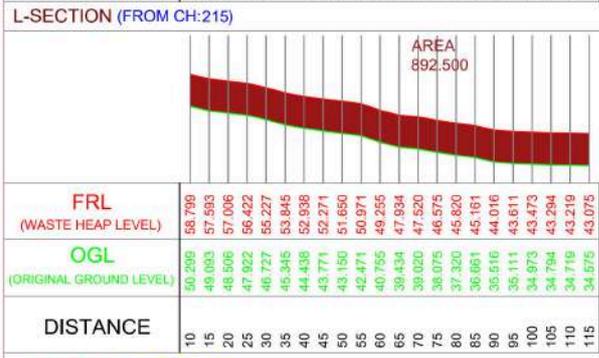
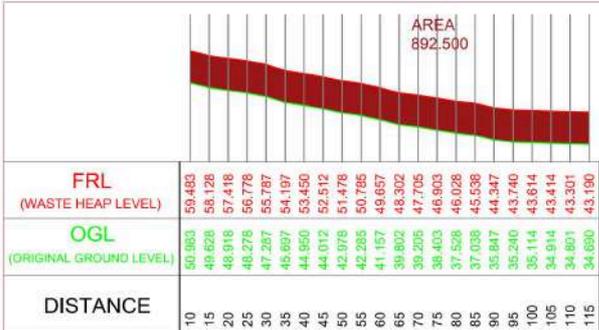
Client
 Thane Municipal Corporation
 New Administrative Building,Chandan Wadi ,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
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Size **A4**



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
 THANE

URBAN LOCAL BODY
 THANE

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Drawing No.
C-020 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
 Longitudinal Section
 (Chainage no: 215.220,225)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattatraya (DP/NTN)	Sudipta Egoet	Dattatraya (DP/NTN)	Team Leader (DP/SP/JP)

Client
 Thane Municipal Corporation
 New Administrative Building, Chandan Wadi,
 Pachpakhad, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra - 400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
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 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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Drawing No.
C-021 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 230,235,240)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bhi Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

NOTES:

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- All Dimensions are in M unless specified.

Drawing No.
C-022 R0

Scale
NTS

Drawing Status
Issued for DPR Approval

Drawing Name
Longitudinal Section
(Chainage no: 245.250,255)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by: [Signature]
Designed by: [Signature]
Checked by: [Signature]
Approved by: [Signature]

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra - 400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
--------------------------	----------------------------------

NOTES:

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Drawing No. C-023 R0	Scale NTS	Drawing Status Issued for DPR Approval
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Drawing Name
Longitudinal Section
(Chainage no: 260,265,270)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

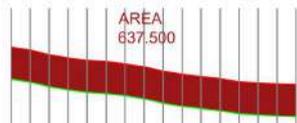
Drawn by Dishant (DIP/NTN/RS)	Designed by Sudipt	Checked by DHRUJ (DP/KB/MS)	Approved by Team Leader (DIP/SP/JS)
---	------------------------------	---------------------------------------	---

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalika Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
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S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size
A4



FRL (WASTE HEAP LEVEL)	53.779	53.010	51.929	50.925	50.294	49.951	49.379	48.999	47.408	46.572	46.020	45.398	44.296	44.041	43.868
OGL (ORIGINAL GROUND LEVEL)	46.279	44.510	43.329	42.425	41.794	41.451	40.879	40.009	38.908	38.072	37.520	36.898	36.092	35.541	35.368
DISTANCE	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110

L-SECTION (FROM CH:275)



FRL (WASTE HEAP LEVEL)	49.561	48.481	47.225	46.784	46.595	45.652
OGL (ORIGINAL GROUND LEVEL)	41.061	39.881	38.725	38.264	38.085	37.152
DISTANCE	65	70	75	80	85	90

L-SECTION (FROM CH:280)

FRL (WASTE HEAP LEVEL)
OGL (ORIGINAL GROUND LEVEL)
DISTANCE

L-SECTION (FROM CH:285)

Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation

Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT
THANE

URBAN LOCAL BODY
THANE

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Drawing No. **C-024 R0** Scale **NTS** Drawing Status **Issued for DPR Approval**

Drawing Name
Longitudinal Section
(Chainage no: 275,280)

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

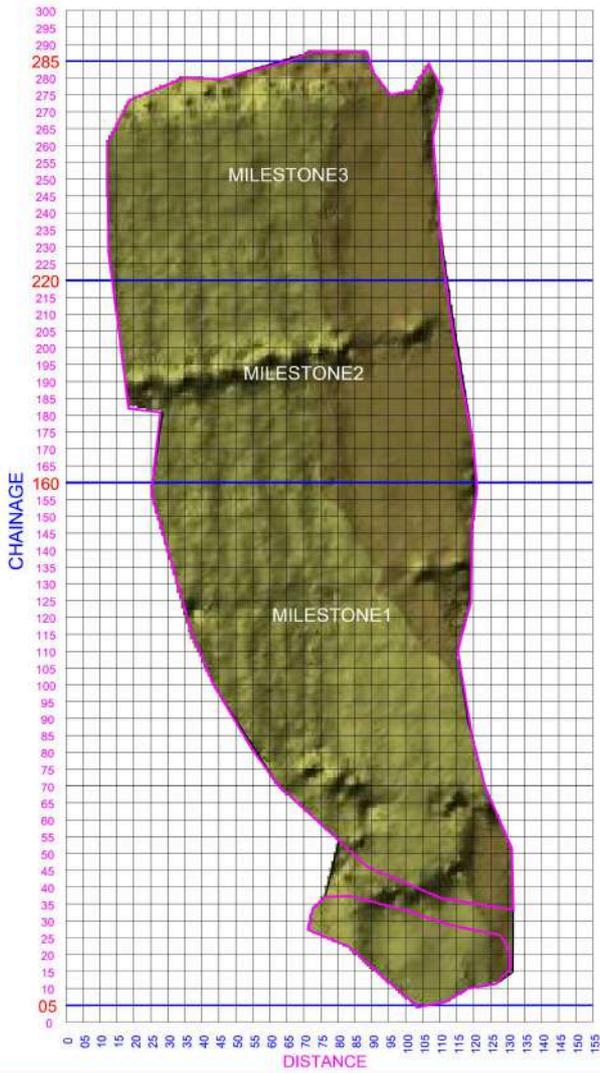
Drawn by Dilruba (DIP/NTN/R)	Designed by Sajid Ejeet	Checked by DHRU DHEET (DP/KB/NS)	Approved by Team Leader (DP/SP/AB)
---------------------------------	----------------------------	-------------------------------------	---------------------------------------

Client
Thane Municipal Corporation
New Administrative Building, Chandan Wadi,
Pachpakhad, Mahapalka Bhavan Rd,
Thane West, Thane
Maharashtra -400602
Dist: Thane (Maharashtra)

Consultant
MARS
Mars Planning & Engineering Services Pvt. Ltd.
Nr. Serene Elegancy, Bh Rajpath,
S. P. Ring Road, Bopal-Ambli
Ahmedabad-380 058, Gujarat
E-mail: info@marsconsultancy.com

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Size **A4**



Project Name
Preparation of Detailed Project Report for Solid Waste Management in Thane Municipal Corporation
 Sub Project
Bioremediation for Disposal of Legacy Waste

DISTRICT THANE	URBAN LOCAL BODY THANE
-------------------	---------------------------

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 6. All Dimensions are in M unless specified.

Drawing No. C-025 R0	Scale NTS	Drawing Status Issued for DPR Approval
--------------------------------	---------------------	--

DRAWING NAME
LAND RECLAMATION PLAN
BHANDARLI

Revision History

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED

Drawn by	Designed by	Checked by	Approved by
Dattaram (D) M/N/R	Sajid Ejeet	Dattaram (D) M/N/R	Team Leader (D) M/N/R

Client

 Thane Municipal Corporation
 New Administrative Building Chandan Wadi,
 Pachpathadi, Mahapalika Bhavan Rd,
 Thane West, Thane
 Maharashtra -400602
 Dist: Thane (Maharashtra)

Consultant

 Mars Planning & Engineering Services Pvt. Ltd.
 Nr. Serene Elegancy, Bih Rajpath,
 S. P. Ring Road, Bopal-Ambli
 Ahmedabad-380 058, Gujarat
 E-mail: info@marsconsultancy.com

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Size
A4

दूरध्वनी :- २५३३१२११
:- २५३३१५९०



ठाणे महानगरपालिका, ठाणे

महापालिका भवन, सरसेनानी जनरल अरुणकुमार वैद्य मार्ग, चंदनवाडी, पांचपाखाडी, ठाणे ४०० ६०२

THE MUNICIPAL CORPORATION OF THE CITY OF THANE

संदर्भ क्र. ठामपा/घ.क.व्य/ ५५आ/५६

दिनांक : ०८/०५/२०२४

प्रति,

मुख्य अभियंता,

महाराष्ट्र जीवन प्राधिकरण,

क्रिष्णा बोरकर मार्ग, कन्या नगर,

कोपरी,

ठाणे - ४००६०३

विषय : ठाणे महानगरपालिका हद्दीतील जुन्या क्षपणभूमी व्यवस्थापनासाठी (LEGACY WASTE) मे.मार्स प्लानिंग अॅण्ड इंजिनिअरिंग सर्व्हिस प्रा.लि. यांनी सादर केलेल्या सविस्तर प्रकल्प अहवालास (DPR) महाराष्ट्र जीवन प्राधिकरण यांची तांत्रिक मान्यता मिळणेबाबत.

संदर्भ : शासन परिपत्रक क्र.स्वमअ-२०२२/प्र.क्र.६(शिकाना)/नवि-३४ दि.१४/०२/२०२३.

उपरोक्त संदर्भीय विषयांन्वये ठाणे महानगरपालिका हद्दीतील दिवा क्षपणभूमी, दिवा शिळरोड क्षपणभूमी, दिवा देसाई खाडी क्षपणभूमी व भंडार्ली क्षपणभूमी याठिकाणच्या जुन्या क्षपणभूमीचे व्यवस्थापन करणेकामी (Legacy Waste) M/S Mars Planning And Engineering Services Pvt Ltd यांनी एकुण १३१८८७९ मेट्रिक टन कचऱ्याचे व्यवस्थापन करणेकामी सविस्तर प्रकल्प अहवाल सादर केलेला असून सदरचा अहवाल स्विकारण्यास मा. आयुक्त सो यांनी मान्यता दिलेली आहे.

प्रकल्पांतर्गत एकुण १३,१८,८७९ मेट्रीक टन कचऱ्याच्या व्यवस्थापनाबाबत अहवाल देण्यात आलेला आहे. उपरोक्त नमुद एकुण कचऱ्यापैकी प्रकल्पाच्या पहिल्या टप्प्यामध्ये दिवा क्षपणभूमी व भंडार्ली क्षपणभूमी येथील ८३०००० मेट्रिक टन कचऱ्याचे व्यवस्थापन करावयाचे असून याकरिता रू. ७८,९८,६७,८००/- इतका खर्च अपेक्षित आहे.

शासन परिपत्रक क्र.स्वमअ-२०२२/प्र.क्र.६(शिकाना)/नवि-३४ दि.१४/०२/२०२३ नुसार जुन्या क्षपणभूमीचे व्यवस्थापन करण्याच्या प्रस्तावास तांत्रिक मान्यता देणेसाठी महाराष्ट्र जीवन प्राधिकरणास प्राधिकृत केलेले आहे. त्यानुसार सदर प्रकल्पातील पहिल्या टप्प्याप्रमाणे ठाणे महानगरपालिका क्षेत्रातील दिवा क्षपणभूमी व भंडार्ली क्षपणभूमी येथील ८३०००० मेट्रिक टन कचऱ्याचे व्यवस्थापन करणेकामी रू. ७८,९८,६७,८००/- इतका खर्चाप्रमाणे तांत्रिक मान्यता मिळणेसाठी आपणाकडे सादर करत आहे.

सोबत मे.मार्स प्लानिंग अॅण्ड इंजिनिअरिंग सर्व्हिस प्रा.लि. यांनी सादर केलेल्या सविस्तर प्रकल्प अहवालाची (DPR) प्रत जोडली आहे.

(डॉ. तुषार पवार)

उपआयुक्त

घनकचरा व्यवस्थापन विभाग

ठाणे महानगरपालिका, ठाणे

मा.आयुक्त सो. यांच्या मान्यतेने.