



Environmental Audit for “Trespass control FOB works on Central & Western Railway under MUTP-III Project” in Mumbai

Mumbai Railway Vikas Corporation Limited

16 Aug 2023

Environmental Audit for "Trespass control
FOB works on Central & Western Railway
under MUDP-III Project" in Mumbai

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Key Abbreviations

S. No.	Abbreviation	Extension
1.	AAQ	Ambient Air Quality
2.	AIIB	Asian Infrastructure Investment Bank
3.	ANQ	Ambient Noise Quality
4.	BIS	Bureau of Indian Standards
5.	CA	Contract Agreement
6.	C&D	Construction and Demolition
7.	COP	Cover over platforms
8.	CPCB	Central Pollution control board
9.	CR	Central Railway
10.	Db	Decibel
11.	DGMS	Director General of Mines Safety
12.	EA	Environmental Assessment
13.	EMU	Electrical Multiple Units
14.	EPF	Employees provident fund
15.	ESAP	Environmental and social action plan
16.	ESIC	Employees State Insurance Corporation
17.	ESMP	Environmental and social management plan
18.	ESMF	Environmental and Social Management Framework
19.	ESP	Environmental and Social Policy
20.	ESS	Environmental and Social Standard
21.	FOB	Foot Over Bridge
22.	GOI	Government of India
23.	GOM	Government of Maharashtra
24.	GRP	Government Railway Police
25.	GW	Ground water
26.	Km.	Kilometre
27.	MCGM	Municipal Corporation of Greater Mumbai
28.	MoEFCC	Ministry Of Environment, Forest And Climate Change
29.	MOR	Ministry of Railways
30.	MMRDA	Mumbai Metropolitan Region Development Authority
31.	MRVC	Mumbai Railway Vikas Corporation Ltd.
32.	MSW	Municipal Solid Waste
33.	MUTP	Mumbai Urban Transport Project
34.	NAAQS	National Ambient Air Quality Standards
35.	NAAQSN	National Ambient Air Quality Standards in respect to Noise
36.	NABL	National Accreditation Board for Laboratory
37.	NV	Noise and Vibration
38.	O&M	Operation and Maintenance
39.	PRS	Passenger Reservation System
40.	RPF	Railway Protection Force
41.	RCA	Root cause analysis
42.	SW	Surface water
43.	TOR	Terms of Reference
44.	WR	Western Railway

1. Introduction

Mumbai's suburban railway network is the busiest commuter train system with 8.2 million people using the trains to commute daily. Annually, the suburban railways transport 2.95 billion passengers, which is about a third of the world's population. Due to extensive reach of Mumbai Suburban Railway across the Mumbai Metropolitan Region, and its intensive use by the local urban population, the Mumbai Suburban Railway suffers from excessive overcrowding. Over 6,000 passengers travel in a 12-car rake during peak hours against the rated carrying capacity of 3,600. Given the geographical constraints, spread of the population and location of business areas, the rail network will continue to be the principal mode of mass transport in Mumbai¹. To strengthen the railway network in the Mumbai and its suburban area, MMRDA has initiated numerous projects under MUTP. MUTP (rail component) so far has 3 phases i.e., Phase-I, Phase-II and Phase-III. The capacity enhancement work under Mumbai Urban Transport Project (MUTP) I & II have resulted in increase in Railway corridors and conversion of all 9 car rakes into 12 car rakes. Further, augmentation of services by quadrupling of Virar -Dahanu section, doubling of Panvel-Karjat section and increase of length of trains to 15 coaches is underway. These additional services have increased commuter volume at the station and therefore station capacities are required to be upgraded. MUTP III is in progress and will lead to similar capacity enhancements. There is urgent need for additional circulating space by provision of elevated decks, interconnection between Foot Over Bridges (FOBs) and improving entry/exit points².

Mumbai Railway Vikas Corporation (MRVC) will be the implementing agency, responsible for execution of the project. MRVC will be supported in implementation activities by Mumbai Metropolitan Regional Development Authority (MMRDA). The cost of the project is shared equally by MoR & GoM. MRVC has accordingly completed MUTP Phase I in 2012; works of MUTP Phase II & MUTP III are under progress and expected to be completed by 2024-25.

MUTP III comprises of following components³:

- a) Quadrupling of Virar-Dahanu Road section admeasuring 63 Running Kilometer (Rkm) on Western Railway.
- b) Double line corridor on Panvel-Karjat section admeasuring 28 Rkm on Central Railway.
- c) Elevated corridor link between Airoli-Kalwa admeasuring 3 Rkm on Central Railway.
- d) Trespass control in Mid-section on suburban system of Mumbai at 22 locations.
- e) Procurement of additional rolling stocks comprising of 565 EMU cars (47 rakes of 12 Car rakes).

MRVC has decided to carry out Environment Assessment (EA) of components under MUTP-III with an objective to minimize the overall environmental impacts during the construction and operation phases of these projects.

MRVC (hereafter referred to as 'client') wanted to undertake Environmental Assessment/ Audit (EA) for Trespass control FOB works on Central Railway & Western Railway Project. MRVC has appointed AECOM India Pvt. Ltd. (hereafter referred to as 'AECOM') as Environmental Consultants for the same.

¹ As per the terms of reference "Environmental Assessment/Audit for "Trespass control FOB works on CRly & WRly under MUTP-III project"

² Rites report on Environmental & Social Impact Assessment, Resettlement Action Plan and Land Acquisition For Improvement Of 19 Suburban Railway Stations On Mumbai Suburban Sections, January 2022

³ As per the terms of reference "Environmental Assessment/Audit for "Trespass control FOB works on CRly & WRly under MUTP-III project"

2. Project Description

Every year thousands of people lose their life or are injured due to trespassing on the railway tracks in the mid sections⁴. To minimize or eliminate the trespassing there is a need to study the suburban railway system focusing on accessibility issues, reasons for trespassing, existing facilities, further development as per development plans, at the mid sections. As informed by Government Railway Police (GRP) and Railway Protection Force (RPF), the number of accidental deaths & injuries are increasing day by day as the numbers of passengers are increasing.

The main reasons of mid- section trespassing are⁵:

- Low risk perception about getting hit by trains while trespassing
- Damaged compound walls along the railway boundary at the stations
- Lack of access-controlled boundary walls along the railway RoW boundaries
- Absence of barriers to trespassing like fencing; inadequate provisions of alternatives to trespassing like FOB/underpasses etc.
- Limited connectivity (flyovers, skywalks) connecting Eastern and Western sides of the station and areas other than platform results in trespassing
- Poorly designed station layout (approach road, PRS counter, toilet blocks, parking, etc.)
- Human settlement along the track also leads to regular trespassing by the inhabitants
- Social indifference/acceptance and perceived legality of trespassing as default behaviour.

Main reasons for trespassers⁶ fatality are⁷:

- Poor conspicuousness of approaching trains due to sharp curves.
- Overconfidence and lack of alertness.
- Many of the fatalities occurred when victim was busy in mobile/earphones/electronic device.
- The conflict between light emanating from the human settlement parallel to the railway track and the main headlight of the moving train confuses the trespasser to judge the distance of the train during night-time.
- Suicide accounts for about 20-30% of trespassing fatalities and out of remaining trespassing accidents⁸, majority are taking place near busy stations where both level of trespassing and train.
- Trespassing cases increases during festival seasons like Ganesh Chaturthi, Diwali, Viswakarma puja, etc.

Taking the trespassing issue into prime consideration, MRVC had undertaken various projects in the past for providing remedial measures to minimize the trespassing on railway tracks. The primary objective of MRVC in this project is to ensure commuter safety by providing an effective solution to reduce mid- trespassing is to create facilities that ensure East West connectivity. The trespass control facilities include: Foot over bridges (FOB), railing & barricades, fenced pathways, link ways (connecting decks), boundary walls, re-organization of built-spaces such as booking office, toilet blocks, etc. and providing facilities, which improve East West connectivity and easy movement of commuters e.g. Escalators, elevators and walkways.

⁴ Terminology used by Indian Railways to demarcate the railway sections in between two consecutive stations within the railway ROW.

⁵ [Microsoft Word - irsc2013Final00102.docx \(international-railway-safety-council.com\)](#)

⁶ This practice is punishable under Section 147 of the Railways Act, "Nobody should cross the track at any given instance," the public must use rail overbridges, underground subways, and foot-over bridges to cross railway track.

⁷ Environment Assessment of MUTP III Projects Volume III- Final Environment Assessment Report for Trespass Control In Mid-Section On Suburban Section Of Mumbai submitted in September 2018

⁸ Accident/Incident data for Ambernath, Badlapur and Ghatkopar sites are provided by MRVC and mentioned in the Appendix A2

2.1 Project Background

Trespass control in Mid-section on suburban system of Mumbai" EA study at 36 locations has been carried out and EMP has been finalized to mitigate potential impacts of the project. This component mainly involves reduction of death/injury due to trespass by commuters/local people across Railway tracks, by provision of FOB, boundary wall, pathways, link-ways etc. Further, FOB's have been constructed/under construction/planned at following 09 locations. FOBs, platforms, connecting decks and other facilities will be created which will prevent overcrowding, improve access to platform and facilitate dispersal of commuters. Escalators/ elevators will be beneficial to the persons with special needs. The trespass control activities will also improve East West connectivity. The improved infrastructure will provide safe access to commuters and will reduce accidents and deaths due to trespassing as mentioned in the table 2-1 below.

Table 2-1: Outline of the project components for trespass control work

Sl. No.	Name of Site (As per TOR)	Geographical Co-ordinates
I. Environmental Assessment Study		
a.	Km 67/6, BUD (M) FOB with deck- Planned	19.166789°N, 73.239561°E
b.	Km 60/4-6: Virar FOB – planned	19.45806 °N, 72.81157° E
c.	Km 68/14-16: Badlapur-Vangani FOB– Planned.	19.16254°N, 73.24629° E
d.	Km 35/3-4 Kalwa FOB connecting west side with platforms – Planned.	19.19530° N, 72.99627° E
e.	Km 59/26-28 Ambernath (KJT end) FOB– Planned.	19.20936°N, 73.1867°E
II. Environmental Audit		
a.	Km 59/26-28: Ambernath (N) FOB - Commissioned	19.21068°N, 73.1836° E
b.	Km 67/16-18: Badlapur (S) FOB – Commissioned	19.166500°N, 73.240936°E
c.	Km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction	19.166889°N, 73.239571°E
d.	Km 19.300, Ghatkopar (M) FOB with deck on east side – under construction.	19.08559°N, 72.90862°E
III - Replacement locations for Environmental Assessment Study⁹		
a.	Km 67/20, BUD home platform- Planned considered instead of Km 67/6, BUD (M) FOB with deck- Planned	19.16697°N, 73.23883°E
b.	Km 59/37-39 Ambernath (KJT end) FOB– Planned considered instead of Km 59/26-28 Ambernath (KJT end) FOB– Planned.	19.20936°N, 73.1867°E

Source: TOR provided by the client

The locations and details of trespass control measures were finalized after site visits, studying alternatives available, studying the feasibility at site and consultation with stakeholders by MRVC..

Considering that the project components listed above are geographically scattered and are fairly large & if not carefully designed and constructed, can have environmental impacts, MRVC intends to carry out a detailed Environmental Assessment /Environmental Audit (Environmental Assessment at those locations where FOBs are at planning stage & Environmental Audit at those locations where FOBs are Commissioned/under construction) of the above 09 additional component of trespass control works. The Environmental Management Plan (EMP) shall be developed as a part of EA study and will be integrated into the relevant project contracts for implementation. However, during the time of site visit and consultation with client, AECOM was informed about the following replacement locations which are to be assessed/audited for the project

As per the current regulations of Government of India, Railway projects do not require conducting Environmental Impact Assessment (EIA) studies for obtaining Environmental Clearance (EC) under EIA Notification 2006.

This report provides details about Environmental Audit components.

⁹ Confirmation of locations and scope shared by client. Email dated: 03/04/2023, 9:10 PM

2.1.1 Land Details

As per information shared, the land for all FOB locations is under the possession of MRVC. The fresh land acquisition has reportedly taken place for only one FOB location. The land detail of all the FOB locations is given below:

Table 2-2: Land Details

FOB Location	Project land (in meter ²)	Status
Km 59/26-28: Ambarnath (N) FOB - Commissioned	110.10	<p>The given FOB was reportedly commissioned on 31st March 2021; and no fresh land has been acquired for the project/ construction of FOB. The MRVC site team informed that the land for railway line and associated facilities was acquired before year 1853 (<i>year since Mumbai sub-urban railways started its operations</i>); and is under possession of Indian Railways; however, no land document pertaining to it was shared with AECOM for review.</p> <p>AECOM team also carried out detailed consultations with identified fence-line communities, trespassers, etc.</p>
Km 67/16-18: Badlapur (S) FOB – Commissioned	270.00	<p>The construction for the given FOB had started on 25th March 2022 and the FOB was commissioned on 23rd December 2022.</p> <p>Reportedly, no fresh land was procured for the project/ construction of FOB, as the land was reportedly under possession of Indian Railways.</p> <p>The project was identified to be under operational phase. AECOM carried out detailed consultations with identified fence-line communities, trespassers, etc..</p>
Km 67/3, Ambarnath-Badlapur Home-PF BUD - under construction	270.00	<p>The given FOB was identified to be under construction phase; and the land for the given FOB is reportedly under possession of Indian Railways.</p> <p>MRVC site team further added that an additional 135 sq-meter land was acquired in year 2021 for the upcoming FOB. The MRVC site team further added that land compensation pertaining to it has been given to respective SDO/ RO in year 2001 by MRVC.</p>
Km 19.300, Ghatkopar (M) FOB with deck on east side – under construction.	902.40	<p>The construction for the FOB with deck was identified to be under process. The site team informed that the construction work had started 29th October 2021 and shall be completed by 30th November 2023.</p> <p>The MRVC site team further added that the land for the given FOB was acquired before year 1853 (<i>year since Mumbai sub-urban railways started its operations</i>); and is under possession of Indian Railways; however, no land document pertaining to it was shared with AECOM for review.</p>

Source: MRVC Site team

During site reconnaissance and further consultation with contractors and identified migrant workers it was reported that the migrant workers were engaged by their respective contractors directly in some other construction work located in Mumbai and not through any sub-contractor/ Khatadar/ Sardar; also, they did not migrate from their respective home state for this particular FOB construction/employment opportunity, thus AECOM understands that they shall not be considered as "inter-state migrant workmen" as per Section 2 (b) and 2(e) of the "The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979".

2.1.2 Workforce Details

MRVC has developed team for managing the site level construction and operation activities. The Project Head and Project Engineer appointed by MRVC are reportedly the key personnel who looks after the overall construction and operational activities.

MRVC has also engaged one (1) external EHS person for providing EHS trainings to MRVC site team and contract workers engaged for construction and operational activities. Further, details of pay-roll staff, contractors and contract workers are given below.

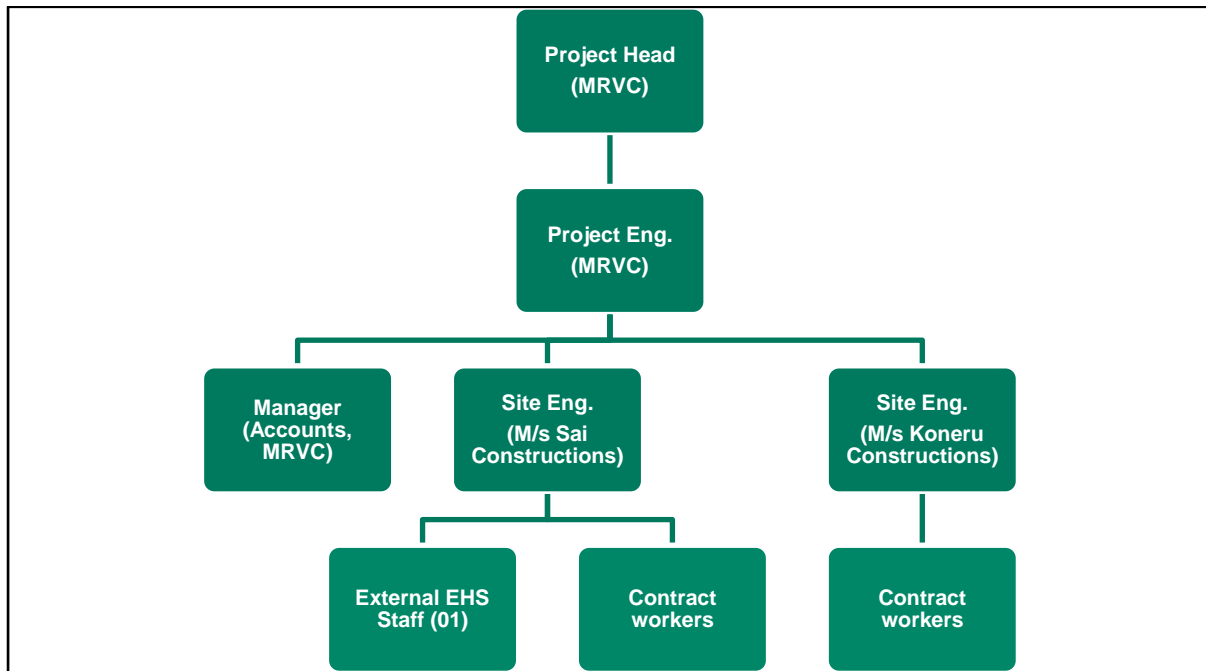


Figure 2-1: Site level Organization Structure

Source: MRVC Site Team

2.1.2.1 Direct staff

As per information, MRVC has engaged four staff (04) at site level. The site level activity is being headed by Project Head and day-to-day activity is managed by Project Engineer. In-addition MRVC has also appointed one (1) staff for Accounts and one (1) external EHS person for overall training of staff and contract workers on EHS aspect.

2.1.2.2 Contract workers

During site visit and consultation with MRVC site team and contractors it was identified that MRVC has engaged two contractors namely M/s Sai Construction Pvt. Ltd for FOB at km. 67/4 Ambarnath-Badlapur Home-PF-BUD and M/s Koneru Constructions Pvt. Ltd for FOB at km. 19.30 Ghatkopar (M) FOB with deck on east side.

The two other FOB locations namely, 59/26-28 and 67/16-18 were identified to be under operational stage during site visit, thus no contract workers were reported to be engaged at these locations. The *Table 2-3* below, gives a detail of total contractors at both the under-contracting FOB locations visited by AECOM.

Table 2-3: List of Contractors Currently Engaged

FOB Locations	Contractors	Activity
	M/s Sai Construction Pvt. Ltd.	Contractor
	M/s Manish workers	Sub-contractor for fabrication work

FOB Locations	Contractors	Activity
Km 67/3, Ambarnath-Badlapur Home-PF BUD - under construction	M/s Krishna Workers	Sub-contractor for civil work
	M/s Bacchu Workers	Sub-contractor for piling work
	M/s Chhabban Workers	
	M/s Banwari workers	Sub-contractor for furnishing & tile work
Km 19.300, Ghatkopar (M) FOB with deck on east side – under construction.	M/s Koneru Constructions Pvt. Ltd.	Contractor
	M/s Bilal Sheikh	Sub-contractor for civil work
	M/s Khen Infra	Sub-contractor for civil work

Source: AECOM site visit

Note: No details pertaining to contract workers engaged at the time of site visit was shared with AECOM, thus no details pertaining to it has been shared in the report.

During site reconnaissance and further consultation with contractors and identified migrant workers it was reported that the migrant workers were engaged by their respective contractors directly in some other construction work located in Mumbai and not through any sub-contractor/ Khatadar/ Sardar; also, they did not migrate from their respective home state for this particular FOB construction/employment opportunity, thus AECOM understands that they shall not be considered as "inter-state migrant workmen" as per Section 2 (b) and 2(e) of the "The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979".

2.2 Progress of work

Work on various aspects of the EA began in Mid -March 2023 and reconnaissance survey was completed in Mid-April 2023. Activities covered during the reconnaissance survey includes the following:

- Site visit on all the proposed locations by Social, Environment and Ecology teams
- Collection of site-specific drawings and Contract Agreement (CA).
- Collection of documents prepared by the Contractors (onboard)
- Consultation with the various stakeholders.
- Consultation with MRVC officials and daily commuters.
- Identification of locations for baseline Environmental Monitoring.
- Finalisation of NABL/MoEF&CC approved third party monitoring laboratory.
- Collection of trespassing accident data from GRP/RPF.
- Consultation with relevant GRP/RPF teams to identify the RCA of trespassing accidents.

2.3 Methodology Adopted for EA

Methodology:

Environment audit report helps to identify the relevant environmental concerns and focuses on potential impacts observed during site visit of project activities. The approach and methodology applied for undertaking the environmental audit was mentioned in the inception and interim reports submitted to MRVC. However, a flowchart of the EA/EIA methodology adopted for this project is shown in fig 2-2 below.

Based on the site observations and risk categorization of impacts observed, an environmental and social action plan (ESAP) has been developed to address the identified risks and issues which is mentioned in chapter 5 of this report.

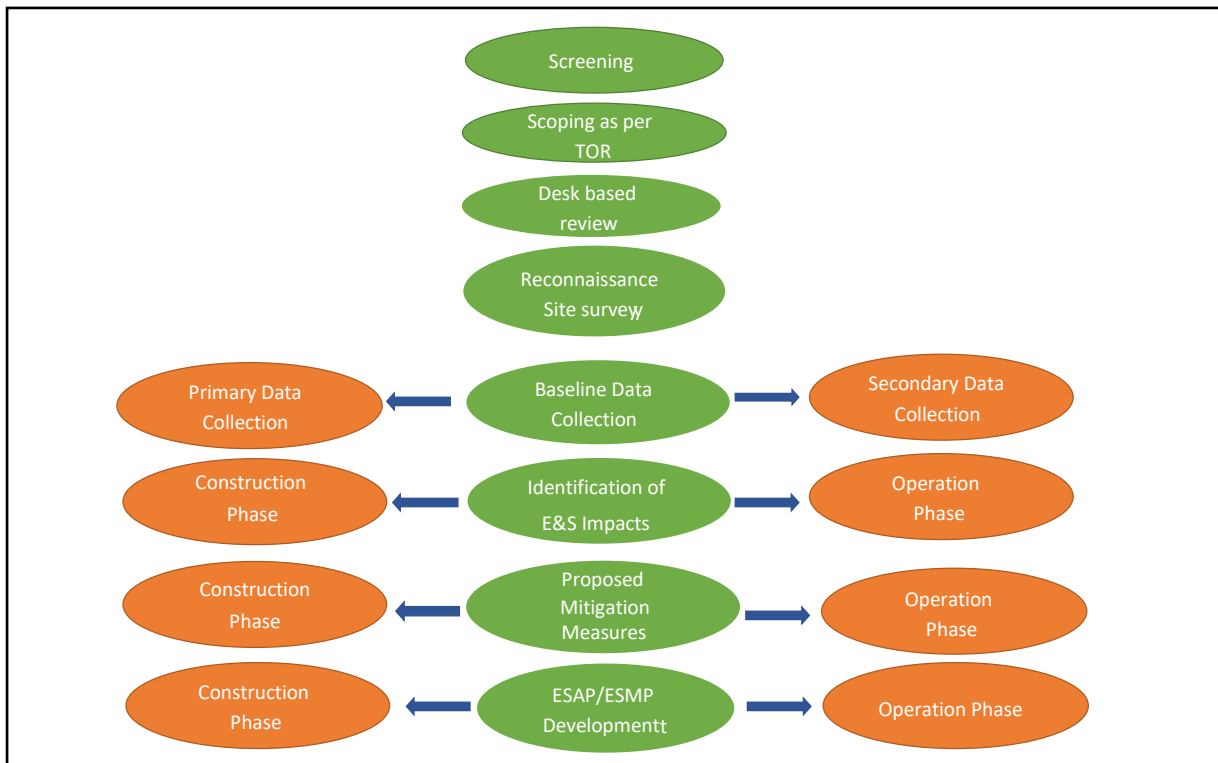


Figure 2-2: Approach and Methodology adopted for EA/EIA Study of the Project

3. Applicable Legal / Reference Framework

It is understood that the proposed trespassing control for FOB projects at various locations are not covered under the Environmental Regulatory Framework of the Ministry of Environment, Forests and Climate Change (MoEF&CC) for Environmental Impact Assessment. The Asian Infrastructure Investment Bank Safeguard Policies which are applicable to the Project were reviewed such that the project gets designed and implemented with full compliance to the requirements of these policies.

3.1 Applicable Legislation

Given below are the applicable legislations/ requirements for this project.

3.1.1 Applicable Indian Legal Requirements

The Project will be implemented within the Indian legal framework (both Central and State / Region level). All the key applicable Policies, Rules and Regulations by Government of India (GOI), Government of Maharashtra (GOM) and Indian Railways and other best practices in Occupational Health and Safety and Disaster Management will be considered while preparing ESAP of the project. There are various Acts, Rules, and Notifications applicable for different environmental components such as air pollution, water pollution, noise pollution, construction & demolition (c&d) waste management, hazardous materials handling and transport, forest and wildlife. The applicable acts and regulations, during construction & operation of projects, are tabulated below:

Table 3-1: Applicable Legal Regulations for the project

Sl. No. Applicable Legal Regulation

1.	Air (Prevention and control of Pollution) Act, 1981
2.	Water (Prevention and control of Pollution) Act, 1974
3.	The Noise Pollution (Regulation & Control) Rules, 2000
4.	Environmental Protection Act, 1986 Environment (Protection) Rules, 1986 (Schedule VI, Part E)
5.	Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
6.	Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016
7.	Municipal Solid Waste Management Rules, 2016
8.	Construction and Demolition Waste Management Rules 2016
9.	Indian Electricity Act 2003 and Rules, 1956
10.	Protection and preservation of Trees Act, 1985.
11.	Plastic Waste Management Rules, 2022
12.	The Railways (Amendment) Act, 2008
13.	Maharashtra Felling of Trees (Regulation) Act, 1964 (as amended) Maharashtra felling of Trees (Regulations) Amendment Rules 2005
14.	MAHARASHTRA ACT No. XLIV OF 1975. The Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 (As amended upto the 5th July, 2021)
15.	The Wildlife (Protection) Act, 1972 (as amended)
16.	Maharashtra Groundwater (Development and Management) Act, 2009 (as amended)
17.	Central Motor Vehicles Rules, 2015 & amendments
18.	Gas Cylinder rules, 2016
19.	Municipal Corporation of Greater Mumbai Act, 1888
20.	Maharashtra Regional and Town Planning Act, 1966
21.	Development Control Rules for Mumbai Metropolitan Region 1999
22.	Railways Act, 1989; and Land Acquisition (Special Railway Projects) Rules, 2016
23.	The Land Acquisition Act, 1894;
24.	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013; and Maharashtra Land Revenue Code (Amendment) Act, 2016
25.	Minimum Wages Act, 1948, The Payment of Wages Act, 1936, amended in 2005
26.	The Equal Remuneration Act 1976, Workmen's Compensation Act, 1923
27.	Inter-State Migrant Workmen's (Regulation of employment & Conditions of Service) Act, 1979
28.	The Child Labor (Prohibition and Regulation) Act, 1986, The Bonded Labor (Abolition) Act 1976

Sl. Applicable Legal Regulation

No.

29.	Maharashtra Labour Welfare Fund Act, 1953 (as amended)
30.	Contract Labour (Regulation & Abolition) Act 1970 & Central Rules, 1971
31.	The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
32.	PSARA License for Security Agency (Requirement as per "The Private Security Agencies Regulation Act, 2005)
33.	Registration under EPF under The Employees' Provident Funds and Miscellaneous Provisions Act, 1952
34.	Registration under "ESIC" under The Employees State Insurance Act, 1948

3.1.2 Applicable Asian Infrastructure Investment Bank (AIIB) Environmental and Social Framework

AIIB requires environmental assessment (EA) of projects proposed for its financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The Environmental and Social Standards, together with their Annexes, sets out the mandatory requirements that apply to the Borrower and projects¹⁰.

Table 3-2: Environmental and Social Framework Applicable for the Project

Sl. No. Applicable Environmental and Social Framework Applicability

1.	ESS1: Environmental and Social Assessment and management	ESS1 is to achieve the environmental and social soundness and sustainability of Projects and to support the integration of environmental and social considerations into the Project decision-making process and implementation. It applies to all projects supported by the Bank. Applicability of ESS1 will be assessed for this project.
2.	ESS2: Labour acquisition and involuntary resettlement	ESS2 sets out to address impacts of Project-related land acquisition, including restrictions on land use and access to assets and natural resources, which may cause physical displacement (relocation, loss of land or shelter), and/or economic displacement (loss of land or assets, or restrictions on land use, assets and natural resources leading to loss of income sources or other means of livelihood). It applies to all project workers, be it direct, contracted, community and primary supply workers. Not applicable as project does not involve any land acquisition and is being developed on existing railway land.
3.	ESS3: Indigenous people	This ESS sets out the requirements to respect for Indigenous Peoples' identity, dignity, human rights, economies and cultures, as defined by the Indigenous Peoples themselves, so that they: (a) receive culturally appropriate social and economic benefits; (b) do not suffer adverse impacts as a result of Projects; and (c) can participate actively in Projects that affect them. It applies to all projects supported by the Bank. Applicability of ESS3 will be assessed for this project. Not applicable as project does not involve any land acquisition and is being developed on existing railway land.

¹⁰ [AIIB-Environmental-and-Social-Framework ESF-November-2022-final.pdf](#)

4. Environment Audit Assessment

Work on various aspects of the Environment Audit study began in Mid -March 2023 and site visit/audit (as per conditions mentioned in the TOR provided by the client) was completed in Mid-April 2023. Activities covered during the audit includes the following:

- Site visit on all the project locations by Social, Environment and Ecology teams
- Collection of site-specific drawings and CA's.
- Collection of documents prepared by the Contractors (onboard)
- Consultation with the various stakeholders.
- Consultation with MRVC officials and daily commuters.
- Collection of trespassing accident data from GRP/RPF.
- Consultation with relevant GRP/RPF teams to identify the RCA of trespassing accidents.

Brief description of the project sites comprising various activities and their implementation and detailed site observations/gap assessment are mentioned in the table 4.1 and table 4.2 respectively.

Table 4-1: Site details for Environment audit study

Sl. No.	Name of Site (As per TOR)	Site Co-ordinates	Status as per TOR	Status during site visit
1	Km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction	19.16697°N 73.23883°E	Under construction	Under-construction stage
2	Km 59/26-28: Ambarnath (N) FOB - Commissioned	19.21068°N 73.1836° E	Operational	Commissioned on 31 st March 2021
3	Km 67/16-18: Badlapur (S) FOB – Commissioned	19.166500°N 73.240936°E	Operational	Commissioned on 23rd December 2022.
4	Km 19.300, Ghatkopar (M) FOB with deck on east side – under construction.	19.08559°N 72.90862°E	Under construction	Under-construction stage

Source: AECOM site visit

The risk prioritization is done as per table below.

Table 4-2: Priority Categorization of Identified Risks

Priority	Remarks
ss	Red Flag Issues These are risks which pose high impact on the environment, health, safety and social aspects and may have legal and/or significant business disruption implications.
Medium	Orange Flag Issues These are risks which pose moderate impact on the environment, health, safety and social aspects.
Low	Yellow Flag Issues These are risks which pose low or least impact on the environment, health, safety and social aspects.
No Information	Potential Red/Orange Flag Risk Couldn't be assessed due to lack of/ no information available for the aspects.

Table 4-3: Detailed Site Observations and Gap Assessment - Environment Audit

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
Regulatory Requirements & Approval					
1.	BOCW License	<p><u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction and km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> As per the review of documents and consultation with MRVC site team, the BOCW license for the under-construction FOBs have not been obtained till date; however, the MRVC site team informed that they are working on the same. 	<ul style="list-style-type: none"> The BOCW license for the under-construction FOBs has not been obtained till date 	MRVC is recommended to obtain BOCW license for their under-construction sites	High
2.	Principal Employer License	<p><u>All sites</u></p> <ul style="list-style-type: none"> As per the review of document MRVC has obtained Principal employer license having its Registration No.: CLRA/ ALCMUMBAI3/ 2020/R-18, and Acknowledgement No.: ACKCLRA2020-3732426, for engaging maximum 100 contract workers on any day provided by M/s Koneru Construction Pvt. Ltd.; however, no details regarding M/s Sai Constructions Pvt. Ltd. were identified in the license copy. MRVC also shared an application copy/ Form XIII given to concerned labour department for registration of establishment employing contract labour. The application copy was identified to have details of M/s Sai Construction Pvt. Ltd. however, no details regarding number of workers to be engaged by M/s Sai Constructions Pvt. Ltd. and final approval/ license copy awarded by department was shared with AECOM. 	<ul style="list-style-type: none"> MRVC to update Principal Employer License having details of both the contractors 	MRVC is recommended to ensure that they obtain updated Principal Employer license having details of both the contractors from labour department.	Medium
3.	Contract Labor License	<p><u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction and km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> As per consultation with contractors engaged at both the under-construction sites and further review of attendance records it was identified that currently M/s Sai Constructions Pvt. Ltd and M/s Koneru Constructions Pvt. Ltd. have been engaged. 	<ul style="list-style-type: none"> The contractors namely M/s Sai Constructions Pvt. Ltd and M/s Koneru Constructions Pvt. Ltd. have not obtained contract labor licenses for engaging 50 or more than 50 workers on any working day 	The Contractors namely M/s Sai Constructions Pvt. Ltd and M/s Koneru Constructions Pvt. Ltd. are recommended to obtain contract labor license for engaging 50 or more than 50 workers on any working day considering principal employer license clearly indicates that maximum 100 workers can be engaged through M/s Koneru	Low

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<ul style="list-style-type: none"> It was further informed that the number of workers provided by each contractor shall remain below 50 on any working day. The review of principal employer license having its Registration No. CLRA/ALCMUMBAI3/2020/R-18 and Acknowledgement No. ACKCLRA2020-3732426, further indicates that M/s Koneru Construction Pvt. Ltd. has been engaged for providing maximum 100 workers on any day, no details regarding M/s Sai Contractors Pvt. Ltd was identified in the Principal employer license copy; however, it was identified that they have not obtained contract labor licenses for engaging 50 or more than 50 workers on any working day considering principal employer license clearly indicates that maximum 100 workers can be engaged through M/s Koneru Constructions Pvt. Ltd. on any working day. 		<p>Constructions Pvt. Ltd. on any working day.</p>	
Environmental and EHS Aspects					
4.	Air Quality	<ul style="list-style-type: none"> Fugitive dust emissions were observed at Ch.67/20 and Ch. 19.300. Stacks > 3m height of loose sand and aggregates was scattered on site Maintenance records of vehicles and the Construction machinery were not available for review. Ambient Air quality monitoring was not conducted on Ch.67/20 and Ch. 19.300. Demolition of existing structures like booking offices, PRS counter, and existing COP's at platform nos.1,2 and 3 was in progress at Ch.19.300. C&D waste generated was found stacked under the staircase at platform nos. 2 and 3. Records for procurement of raw materials like sand and aggregates were not available for review. Contractors informed that construction & demolition waste will be used on site to the maximum extent. 	<ul style="list-style-type: none"> No specific dust control measures were observed at Ch.67/20 and Ch. 19.300 where FOB, deck and platform construction works were ongoing. Non -availability of AAQM records at site. No MOU/tie-up with any NABL and MOEF accredited lab to conduct AAQM. 	<ul style="list-style-type: none"> The excavated material shall be stored properly so that it does not generate fugitive emissions. Water sprinkling to be done as required. Contractor to ensure that all the machinery and equipment shall be regularly maintained and maintenance records of vehicles and construction machinery to be maintained on site. Air quality monitoring for the parameters as per NAAQS 2009 shall be monitored on quarterly basis by the Contractor by hiring the services of the NABL accredited and MoEF&CC Notified laboratory. The Contractor shall procure material only from the approved quarry areas (approved by 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
				MPCB) with prior consent from MRVC.	
5.	Water Quality	<ul style="list-style-type: none"> Records water usage is not maintained for all the three sites (KM 67/16-18, KM 67/3 and KM 19.300) <u>KM 67/16-18 and KM 67/3</u> Drains near the recently constructed FOB were observed to be open and all the nearby waste was getting entered in the drain which can during the time of rainy season affect the hygiene of the nearby area. Wastewater stagnation with uncovered drains was observed near the labour accommodation camps. No toilet soak pit, /septic tank arrangement was available near labor camp 20 liters jerry cans are used for drinking purpose and on an average 6 bottles are procured on daily basis <u>19.300 Ghatkopar</u> 20 liters jerry cans are provided to the workers for drinking, agreement copy of the vendor was not maintained. No borewell was known to be present at site, challans of the water tankers are maintained which are used for the construction purpose, ready mix concrete is used for construction for which the plant is located at Prism Ghatkopar and Dev Infra Bhiwandi. 	<ul style="list-style-type: none"> Water consumption records to be maintained All the drains connecting the labour camps, storage area and near the FOB is recommended to be properly covered. Construction water procured to be ensured that it is not a borewell water and if yes MRVC to ask for vendor's CGWB certificate and maintain in records. 	<ul style="list-style-type: none"> Site team/Contractors to ensure that all the drains are covered so that no MSW enters and chokes it which can create problems during monsoon season. Contractors should ensure that wherever the labour camps are provided, the toilet soak pit should be covered with natural soil and should not be open to air Contractor to maintain water usage records If ground water is used for project, then the CGWB authorization to be kept as a record. 	Medium
6.	Noise Levels	<p><u>KM 19.300</u></p> <ul style="list-style-type: none"> Environmental monitoring was known to be conducted by the by contractor which is finalized through MRVC However the document for any of the past records are yet to be reviewed. Noise monitoring needs to be performed especially at the platform locations during the daytime when the traffic is more on the platforms <u>KM 67/16-18 and KM 67/3</u> Environmental monitoring records were not available Demolition of existing platform with non-acoustic breaker head was in progress.. 	<ul style="list-style-type: none"> Non acoustic breaker head was in operation at site Construction and demolition activity (heavy noise generation activity) without any control measures was observed Construction site was not barricaded and labors working at site were not provided with ear plugs 	<ul style="list-style-type: none"> Noise quality monitoring especially at the location where commuters cross from the area of construction should be carried out. It shall be monitored by the Contractor by hiring the services of the NABL accredited and MoEF&CC Notified laboratory. Monitoring should include the noise levels during the day and night in dB as per CPCB standards Breaker heads of all the JCB's should be wrapped/insulated with acoustic materials to 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
				<p>control the excessive noise generated due to their operation.</p> <ul style="list-style-type: none"> • Contractor to avoid heavy noise generation activities/work during peak hours commuter movement at site. • Construction site should be properly barricaded and insulated to attenuate heavy noise generation activities. • Contractor to ensure that ear plugs should be provided to workers during the time of construction activities. 	
7.	Waste Management	<p><u>KM 19.300</u></p> <ul style="list-style-type: none"> • C&D waste at the site was collected consisting of debris and steel which gets disposed in the nearby area outside railway boundary • No records of the C&D were maintained. There were no bins observed at the MRVC office and near the labor camps • It was informed that the existing PRS counter at PF-4 will be demolished which will generate C&D waste <p><u>KM 67/16-18 and KM 67/3</u></p> <ul style="list-style-type: none"> • All the construction waste was seen at the site • Waste from the labour camps go to the municipality on the daily basis • Details of disposal of any hazardous waste were not available. Generally, all waste is disposed with municipal waste. 	<ul style="list-style-type: none"> • Records were not maintained for type and quantity of waste generated and disposed. 	<ul style="list-style-type: none"> • C&D waste generated on sites to be cleared as per C&D Waste Management Rules, 2016 on sites identified by Municipal Corporation/ ULBs by Contractor. • Recycle the debris as much as possible. • Contractors to ensure that hazardous waste is stored at a dedicated area with secondary containment. • Contractor needs to ensure that the hazardous waste is getting disposed within 90 days of generation through MPCB authorised vendor. 	Medium
8.	Land Contamination	<p><u>KM 67/16-18 and KM 67/3</u></p> <ul style="list-style-type: none"> • At the time of site visit it was observed that all the types of materials like fuel/oil (hazardous or non-hazardous) were stored in a room very close to the bathing area where no secondary contamination was provided. (KM 67/16-18) 	Contractors to ensure that no waste is stored or disposed in such a way to find the natural soil or stream to avoid contamination of water, soil.	<ul style="list-style-type: none"> • MRVC/contractor to ensure that the no waste and waste oil being generated at the site is disposed / stored/ used is stored / disposed in way to lead to land/water contamination. 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<ul style="list-style-type: none"> All the wastes getting generated were also discarded in the nearby area, with open drains and natural soil Ducts being made at the platform were not covered because of which all the waste either getting generated by the construction activities or due to the passing by of the common public were getting dumped though not in huge quantity. <p><u>KM 19.300</u></p> <ul style="list-style-type: none"> It was observed at the platforms where the foundation work was happening, oil used as lubrication purpose for shuttering (construction work) or regular maintenance of machines, was kept in open near to the excavated soil. 		<ul style="list-style-type: none"> All waste such as C&D waste, oils generated will be collected, segregated, and stored at a dedicated place At the time of construction activities, no hazardous oil/waste will be kept near natural soil/stream. 	
9.	EHS Plans and Documents	<ul style="list-style-type: none"> The contractors (M/s Sai Projects) working at Ch.67/20 and (M/s Koneru Constructions) at Ch.19.300 have not framed any Site specific SHE plan and have no SHE policy. As informed a Third party EHS consultant has been deployed by M/s Sai Projects to look after all the on-going construction sites of M/s Sai projects in Mumbai. However, no dedicated EHS staff has been deployed by the civil contractors to supervise the ongoing works. 	<ul style="list-style-type: none"> Site specific SHE policy, SHE plan and ESMS is yet to be developed by civil contractors. Non availability of dedicated EHS Personal on site. 	<ul style="list-style-type: none"> Civil Contractor's shall comply with the conditions specified in the MRVC SHE manual and develop a site specific SHE Plan and ESMS. Recruitment/appointment of an EHS Manager and Safety Engineer is required to be done by the civil contractors. 	Medium
10.	Emergency Preparedness and Response	<ul style="list-style-type: none"> Emergency response plan has not been prepared by the civil contractors. Emergency evacuation maps, Emergency contact numbers were not displayed at the work site. Safety briefings were not provided to the site workers. Training records in the form of Toolbox talks (TBT) were not available for review. 	<ul style="list-style-type: none"> Site specific emergency response plan with roles and responsibilities of site personals is yet to be developed. Emergency preparedness and response plan (EPRP) was not in place. 	<ul style="list-style-type: none"> Civil Contractor to ensure that a site-specific Emergency plan should be prepared and submitted to MRVC for their approval. Contractor is recommended to display the emergency contact numbers in local language / language understood by workers at all site locations. 	Medium
11.	Training to workers	<ul style="list-style-type: none"> No training calendar is developed to provide training on Health & Safety Aspects to workers. 	<ul style="list-style-type: none"> No daily toolbox talk undertaken; no formal trainings provided on EHS aspects. 	<ul style="list-style-type: none"> Contractor should develop a training calendar covering all the aspects of Health & Safety and make sure training records are available for review. 	Low

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
				<ul style="list-style-type: none"> Contractors to further ensure that daily toolbox talks should be imparted on site as per job specific requirements. 	
12.	Medical Preparedness	<ul style="list-style-type: none"> During site reconnaissance it was identified that first-aid boxes having sterile dressing kit, bandage, burn relief ointment, pair of scissors, cotton, antiseptic cream, paracetamol tablets etc. was made available at MRVC site office, construction area, accommodation facility and with the supervisors engaged by respective contractors. The workers were reportedly aware of the first-aid boxes and have availed the same whenever required. Tie up with nearby hospital/ medical centre is yet to be done by M/s Sai Projects and M/s Koneru Constructions. Pre-medical records and fitness certificates for site workers were not available for review. 	<ul style="list-style-type: none"> No tie up with nearby hospitals. Worker's health records were not maintained. 	<ul style="list-style-type: none"> Contractors to conduct tie up with the nearest hospital /medical centre for countering the emergency situations Civil Contractors to ensure that pre-medical checkup & related records of workers should be maintained. 	Low
13.	Electrical Safety	<p>Following issues were noted with Electrical installations at Ch. 67/20 and Ch. 19.300:</p> <ul style="list-style-type: none"> Electrical distribution boards and main electrical panel present in construction phase area were not provided with electrical mats. Danger notice and signs were not displayed at DB's and Electrical panels exceeding 250 Volts at site. Loose, spliced electrical wires at multiple locations like material storage rooms, rest shelters, labour camps. Fire infrastructure at site was limited to ABC type of fire extinguishers (04 at Ch.67/20 and 03 at Ch.19.300) and sand buckets. Fire extinguishers were provided at the labour accommodation camps on both the sites. However, no fire evacuation plan was prepared by the Contractor As observed all the fire buckets were filled with fine gravel instead of sand. 	<ul style="list-style-type: none"> Unsafe Electrical Installations 	<p>Contractor to ensure that:</p> <ul style="list-style-type: none"> All non-current carrying metal parts of switchgear and control panels shall be properly earthed and insulating floors or mat conforming to IS-15652: 2006, (As per CEA Regulation 2010). Danger notice on all installations exceeding 250V – Danger and skull & bone sign should be pasted. Loose, spliced electrical wires to be replaced immediately and training on electrical safety to be imparted to the workers. 	Medium
14.	Fire Safety	<ul style="list-style-type: none"> It was observed that flammables like diesel, petrol, grease, paints, hydraulic oil and lube oils etc. were 	<ul style="list-style-type: none"> Lack of fire infrastructure 	<p>Contractor to ensure that:</p>	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<p>found stored in the common storeroom on unpaved surfaces, no whether protection, measures, no dip trays were in place at HW/ chemical storage area at Ch.67/20 and Ch. 19.300.</p> <ul style="list-style-type: none"> It was observed during the site visit that no canopy was provided to fire buckets stand kept at raw material storage area, labor camp and site office at Ch.67/20 and Ch. 19.300. Further it was observed that sand was filled inside the fire bucket instead of gravels. 		<ul style="list-style-type: none"> MSDS of the chemicals stored should be displayed outside the storage room. Storage of metal and other construction materials to be done as per IS 7969: 1975. Maintain records of Adequate number of fire extinguishers should be provided at all areas as per suitability defined in IS 2190:1992. Fire evacuation plan should be prepared for the site. Fire evacuation route/map should be displayed in labor camps and material storage area. Sand (inert material) should be filled inside the fire buckets instead of gravels 	
15.	PPE, Work Permit & records	<ul style="list-style-type: none"> Workers have been provided with Job specific PPEs. However, implementation of wearing of safety shoes on site was found to be poor. As observed, Work permit system is not followed for any categories of hot work, work at height etc. being carried out by the contractors. Data on near miss and accident reporting was not available for review. As informed no major accident has occurred till date. However, records for the same were not available for review. Gas cutting and welding operations were in progress at Ch.67/20. However, it was observed that: No work permit system is in place, No flashback arrestor/flame arrestor was provided in the LPG cylinder and flame torch used for welding. Also, it was observed that plastic pipe was used instead of ISI9573 LPG pipe hose to connect flame torch and LPG gas cylinder. Face screen and eyewear were not provided to the welder 	<ul style="list-style-type: none"> Lack of awareness in site workers. Work permit system was not in place. No Accident/Incident Records were available 	<ul style="list-style-type: none"> Follow work permit process Contractor to ensure the availability of job specific PPE's on site. Also, workers should be Contractors to develop work permit system to ensure the safety of personnel and clear understanding between the working agencies /departments involved. Records of near miss and accident reporting should be done Job specific PPEs like facemask and glasses should be provided to the welder. Flashback arrestors should be installed in cylinder as well as flame torch. 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
				<ul style="list-style-type: none"> LPG hose pipe as per ISI 9573 should only be used for connecting the cylinder with the torch and automatic flame torch should be used. Portable fire extinguisher should be kept near the gas welding assembly/trolley. 	
Social Aspects					
16.	Project level Grievance disclosure mechanism	<ul style="list-style-type: none"> As per the review of previous EIA reports shared with AECOM (reference to EA of MUTP III Projects), it was identified that the given report has detailed GRM, which cover details pertaining to escalation matrix, timeframe, anonymity etc.; It was identified during consultation with MRVC site team, that MRVC or the respective contractors have not adhered to the given "Grievance Redressal Mechanism" for recording and redressing grievances or queries received from any staff, worker, commuter, or trespasser at the site level. The contractor's M/s Sai Construction Pvt. Ltd. and M/s Koneru Constructions Pvt. Ltd. informed AECOM team during consultation that the grievances, if any by workers, are reported verbally to their respective supervisors. No grievance registers or grievance boxes have been maintained by contractors till date. 	<ul style="list-style-type: none"> MRVC or the respective contractors have not adhered to the "Grievance Redressal Mechanism" for recording and redressing grievances or queries received from any staff, worker, commuter, or trespasser at the site level. Also, no grievance registers or grievance boxes were identified to be maintained by contractors at site level. 	<ul style="list-style-type: none"> MRVC is recommended to ensure that the contractors refer/ adhere to the existing GRM, (given as part of their previous EA of MUTP III projects), for recording and redressing the site level grievances. MRVC shall ensure that the contractors maintain a grievance register/ or install grievance boxes at the site level and key locations of trespassing; and ensure that all grievances are documented in the same with its redressal status. Sample "Grievance Form" and "Grievance Register Format" has been given below in Appendix – A5 and A6. 	Medium
17.	Labour Management Relationships/ System	<ul style="list-style-type: none"> MRVC has a policy on "The Code of Business Conduct & Ethics but is not applied to site level contractors and workers under its ambit. Further, the MRVC site team reported that they refer to the applicable Indian Acts and Regulations for Payment of Wages, working hours, etc. It was also identified during consultation that the contract workers are not given any employment letter at the time of joining, also there are no policies on given below aspect: 	<p>It was identified that MRVC has not developed any Labour/ Contractor Management policy or SOP at site level;</p> <p>The contractors engaged by MRVC do not provide employment letter to their staff and workers;</p> <p>There are no policies on given below aspect:</p> <ul style="list-style-type: none"> Timely payment for Project work; 	<ul style="list-style-type: none"> MRVC is recommended to ensure that the engaged contractors develop a Labour/ Contractor Management policy or SOP for under-construction sites, covering <ul style="list-style-type: none"> Timely payment for Project work; Adequate periods of rest; 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<ul style="list-style-type: none"> ➤ Timely payment for Project work; ➤ Adequate periods of rest; ➤ Timely written notice of termination of the working relationship; ➤ Policy on equal opportunity, fair treatment and non-discrimination; ➤ Compliance with national law relating to workers' organizations and collective bargaining. 	<ul style="list-style-type: none"> • Adequate periods of rest; • Timely written notice of termination of the working relationship; • Policy on equal opportunity, fair treatment and non-discrimination; • Compliance with national law relating to workers' organizations and collective bargaining. 	<ul style="list-style-type: none"> - Timely written notice of termination of the working relationship; - Policy on equal opportunity, fair treatment and non-discrimination; - Compliance with national law relating to workers' organizations and collective bargaining. • The contractors engaged by MRVC are recommended to maintain records workers employed with wage and contractor detail for all workers; • MRVC shall ensure that the contractors develop a site level policy 	
18.	Working hours and overtime compensation	<p>As per the review of documents MRVC or the contractors have not developed any policy on working hours and overtime compensation.</p> <p><u>Wages:</u> <u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction and km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> • During consultation with contract workers engaged at both the under-construction sites it was reported that they are given a monthly wage as per the lump-sum contract amount and man-days. The contractors do not adhere to the "minimum wage Notification/ amount" for giving the minimum wage; • The contract workers are given wage in the form of cash and thus no details pertaining to it i.e., wage record, salary slip etc. was shared with AECOM for review; <p><u>Working hours and Overtime compensation</u> <u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction</u></p> <ul style="list-style-type: none"> • The workers informed that they are engaged for 9 hours x 6 days duty (i.e., 54 hours a week, which is 	<ul style="list-style-type: none"> • No policy on working hours and overtime compensation; <u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction and km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u> • Non-adherence to minimum wage Notification for payment of wages; • No wage-record maintained at site level by contractors; • Workers are engaged for more than 54 hours/ week duty and not given overtime compensation. <u>km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u> • Workers are not given weekly-off 	<p>Contractors to develop a policy on working hours and overtime compensation</p> <p><u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction and km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> • contractors to adhere to minimum wage notification for payment of wages; and the workers are given minimum wage for their work. • Contractor to ensure workers are not engaged for more than 48 hours/ week duty; and given overtime compensation as applicable (double the per day minimum wage rate; • The contractors shall maintain wage-record at site level 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<p>non-compliance as per Section 47 of the "Maharashtra BOCW (Regulation of Employment and Conditions of Service) Rules, 2007". The workers reportedly take a week-off after 6 days of work;</p> <ul style="list-style-type: none"> During consultation with Project Engineer and Supervisor of M/s Sai Construction Pvt. Ltd. it was reported that the overtime duty hours of workers are not recorded and there is no provision of giving overtime compensation for duty exceeding 48 hours/ week. <p><u>km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> The workers informed that they are engaged for 11 hours x 7 days duty (i.e., 77 hours a week, which is non-compliance as per Section 47 of the "Maharashtra BOCW (Regulation of Employment and Conditions of Service) Rules, 2007". The workers reportedly are not given any weekly-off, which is a non-compliance as per Section 48 (1) of the "Maharashtra BOCW (Regulation of Employment and Conditions of Service) Rules, 2007". During consultation with Supervisor of M/s Koneru Constructions Pvt. Ltd. it was reported that the overtime duty hours of workers are not recorded and there is no provision of giving overtime compensation for duty exceeding 48 hours/ week. 		<p><u>km 19.300, Ghatkopar (M) FOB with deck on east side – under construction</u></p> <ul style="list-style-type: none"> contract workers to ensure workers are given weekly-off. 	
19.	Accommodation	<p><u>km 67/3, Ambarnath- Badlapur Home-PF BUD - under construction</u></p> <p>Ambarnath accommodation facility:</p> <ul style="list-style-type: none"> During site visit it was identified that the migrant workers engaged by sub-contractor M/s Banwari workers and other sub-contractors have been given accommodation facility in the under-construction site office building and one associated room/ structure in the site office compound at Ambarnath station. As per site reconnaissance and further confirmation by migrant workers, five workers live in one room. The toilet and bathroom facility provided to those migrant workers were not identified to be in a good condition, i.e., broken gate of toilet, no gate in 	<p>Ambarnath accommodation facility:</p> <ul style="list-style-type: none"> No proper/ adequate toilet and bathroom facility provided to workers; <p>Badlapur accommodation facility:</p> <ul style="list-style-type: none"> It was identified that no separate bathroom, toilet and room facility has been provided to migrant worker's family (including one child and one female member). 	<p>Ambarnath accommodation facility:</p> <ul style="list-style-type: none"> Contractors are recommended to ensure that an adequate i.e., clean and gated toilet and bathroom facility provided to workers at the Ambarnath accommodation facility. <p>Badlapur accommodation facility:</p> <ul style="list-style-type: none"> Contractors are recommended to ensure that a separate bathroom, toilet and room 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<p>bathroom, no proper ventilation in one associated room/ structure.</p> <p>Badlapur accommodation facility:</p> <ul style="list-style-type: none"> During site reconnaissance it was identified that nearly 10-12 migrant workers have been provided temporary accommodation facility near the under-construction site of Ambarnath-Badlapur Home-PF BUD at km 67/3. The AECOM team during site visit identified one female and one child (<i>reportedly a family member of one engaged worker</i>) in the labor accommodation. The family of the construction labour, including female and child was reportedly staying/ sharing room with two more migrant workers. It was identified that no separate bathroom, toilet and room has been provided to migrant worker's family. 		<p>facility is provided, in-case any worker stays with a family at the accommodation provided by company.</p> <ul style="list-style-type: none"> It was identified that no separate bathroom, toilet and room has been provided to migrant worker's family. 	
Ecology and Biodiversity Aspects					
20.	Protection and Conservation of Biodiversity	<p><u>Km 67/20 Ambernath- Badlapur Home-PF BUD</u></p> <ul style="list-style-type: none"> Vide letter KBNP/Garden/3142/2022-2023 dated 12 April 2022, client has obtained permission for cutting one tree of <i>Ficus racemosa</i> (Umber) which was obstructing the PF construction. Client has submitted the declaration regarding compensatory plantation and deposited the fees. As per condition no. 3 in the tree cutting permission letter, the client should plant 5 trees of the same species which has been cut down or other native species in the appropriate area within 30 days of tree felling. Client should submit a report of such trees to garden department in every 6 months. Client should nurture and manage these saplings up to 7 years after plantation. <p><u>Km 19.300, Ghatkopar (M) FOB with deck on east side</u></p> <ul style="list-style-type: none"> Two trees, each of <i>Tabebuia rosea</i> and <i>Ficus religiosa</i> are located within Project Site towards east side of the FOB. As informed by the site representatives, both the trees would be retained and used for beautification of the entry. 	<p><u>Km 67/20 Ambernath- Badlapur Home-PF BUD</u></p> <ul style="list-style-type: none"> No plantation of trees as stated in the tree cutting permit have been done. <p><u>Km 19.300, Ghatkopar (M) FOB with deck on east side</u></p> <ul style="list-style-type: none"> As observed during the site visit, some branches of the trees have been trimmed for construction work. No permission obtained from relevant authorities for tree trimming. 	<ul style="list-style-type: none"> Client should obtain the applicable permissions prior to tree cutting or trimming Client should ensure compliance with all the conditions mentioned in tree cutting permits Annual raining program designed for all project proponents should include a training on protection and conservation of biodiversity in the project affected areas 	Medium

S. No.	Aspect	Site Observations	Gap/s Identified as per E&S regulations	Recommendations	Risk Category
		<ul style="list-style-type: none"> • Other tree species located within the Study Area include <i>Ficus religiosa</i>, <i>Polyalthia logifolia</i>, <i>Terminalia catappa</i> and <i>Moringa oleifera</i> • As informed by the site representative the site representatives, no tree felling is anticipated in the study area <p><u>Km 59/26-28: Ambernath (N) FOB - Commissioned</u></p> <ul style="list-style-type: none"> • No trees observed within the project site <p><u>Km 67/16-18: Badlapur (S) FOB – Commissioned</u></p> <ul style="list-style-type: none"> • As informed by the site representative, no tree was cut for the construction of FOB. However, few trees are present near the entry/exit point of the FOB, on the east side. Tree trimming was needed at the FOB, for which relevant permissions were obtained (letter no.: KBNP/ Garden/4952/2022-2023 dated 13/06/2022). 			

Environmental, Commuter's safety and social aspects of operational FOB's

AECOM team had developed a checklist for understanding and rating the Environmental, Commuter's safety and social aspects of operational FOB's i.e. a) Km 59/26-28: Ambernath (N) FOB – Commissioned and b) Km 67/16-18: Badlapur (S) FOB on the basis of Order no. 2018/EnHM/01/02/Vol. II (Environmental Performance based rating of Railway stations) Issued by Government of India Ministry of Railways, Railway Board Dated, 20/12/2020. Based on the above order, CPCB guidelines and template for assessment of railway stations, site observations and consultations with the daily commuters a weightage/ performance-based rating is done in table 4-3 and 4-4 below.

Table 4-4: Template for Environmental Performance Based Rating of Operational FOB's

Sl. No.	Name of the site	Item	Marks Obtained	Remarks
1.	Km 59/26-28: Ambernath (N) FOB - Commissioned	a. Solid Waste Management	03	
		Whether twin bin system adopted for collection of dry/wet waste from FOB: (Yes/No)	0	Yes-1 No- 0
		Whether numbers of bins provided adequate to collect the waste (Yes/No):	0	Yes-1 No- 0
		Is dry/wet waste transported separately (Y/N)	0	Yes-1 No- 0
		Use of Asbestos sheets as the roofing /cover over the FOB. (Y/N)	1	Yes-0 No- 1
		Was open dumping of waste observed in and around FOB area (Y/N)	1	Yes-0 No- 1
		Was burning of waste observed in and around FOB area (Y/N)	1	Yes-0 No- 1
		b. Energy Efficiency	02	
		Has LED lightening system been provided at the FOB (Y/N)	1	Yes-1 No- 0
		Have Solar panels been provided at FOB to harness solar energy (Y/N)	1	>70%- 3; 40-70%- 2; <40%- 1
		c. Finishing and Cleanliness	08	
		Was encroachment on railway land observation with FOB areas? (Y/N)	1	Yes-0 No- 1
		Stagnation of wastewater, Mosquito breeding under FOB	1	Yes-0 No- 1
		Act of Public nuisance observed near/at FOB	1	Yes-0 No- 1
		Cleanliness level of the newly commissioned FOB	2	Poor-0 Average-1 Good-2 Very Good-3
		General passenger feedback (Positive/Negative/Neutral)	2	Negative-0 Neutral-1

Sl. No.	Name of the site	Item	Marks Obtained	Remarks
				Positive-2
		Display of Information boards on FOB? (Y/N)	1	Yes-1 No- 0
		d. General Safety Measures at FOB	11	
		Trespassing activities at the FOB site (Y/N)	0	Yes-0 No- 1
		Have CCTVs been provided to monitor routine activities at the FOB (Y/N)	0	Yes-1 No- 0
		Access control measures to FOB	2	Poor-0 Average-1 Good-2 Very Good-3
		Ease of access/egress to FOB from platforms	2	Poor-0 Average-1 Good-2 Very Good-3
		Availability of Staircase for excess and egress to FOB (Y/N)	1	Yes-1 No- 0
		Availability /Quality of Handrails in Staircases	2	Poor-0 Average-1 Good-2 Very Good-3
		Availability of Escalators for excess and egress to FOB (Y/N)	0	Yes-1 No- 0
		Availability of Public Address system at FOB (Y/N)	0	Yes-1 No- 0
		Presence of hawkers and squatters etc. at FOB (Y/N)	1	Yes-0 No- 1
		Availability of GRP/RPF teams to control the emergency situations in case of stampede etc.	2	Poor-0 Average-1 Good-2 Very Good-3
		Control of TPRO Accidents at FOB site	1	Poor-0 Average-1 Good-2 Very Good-3
		Total Score	24	
2.	Km 67/16-18: Badlapur (S) FOB – Commissioned	a. Solid Waste Management	03	
		Whether twin bin system adopted for collection of dry/wet waste: (Yes/No)	0	Yes-1 No- 0
		Whether numbers of bins provided adequate to collect the waste (Yes/No):	0	Yes-1 No- 0
		Is dry/wet waste transported separately (Y/N)	1	Yes-1 No- 0
		Use of Asbestos sheets as the roofing /cover over the FOB. (Y/N)	1	Yes-0 No- 1

Sl. No.	Name of the site	Item	Marks Obtained	Remarks
		Was open dumping of waste observed in and around FOB area (Y/N)	0	Yes-0 No- 1
		Was burning of waste observed in and around FOB area (Y/N)	1	Yes-0 No- 1
b. Energy Efficiency			02	
		Has LED lightening system been provided at the FOB (Y/N)	1	Yes-1 No- 0
		Have Solar panels been provided at FOB to harness solar energy (Y/N)	1	>70%- 3; 40-70%- 2; <40%- 1
c. Finishing and Cleanliness			04	
		Was encroachment on railway land observation with FOB areas? (Y/N)	1	Yes-0 No- 1
		Stagnation of wastewater, Mosquito breeding under FOB	0	Yes-0 No- 1
		Act of Public nuisance observed near/at FOB	0	Yes-0 No- 1
		Cleanliness level of FOB (Very Good/Good/Average/Poor) (3/2/1/0)	2	Poor-0 Average-1 Good-2 Very Good-3
		General passenger feedback (Positive/Negative/Neutral)	1	Negative-0 Neutral-1 Positive-2
		Display of Information boards on FOB? (Y/N)	0	Yes-1 No- 0
d. General Safety Measures at FOB			08	
		Trespassing activities at the FOB site (Y/N)	0	Yes-0 No- 1
		Have CCTVs been provided to monitor routine activities at the FOB (Y/N)	0	Yes-1 No- 0
		Ease of access/egress to FOB from platforms	1	Poor-0 Average-1 Good-2 Very Good-3
		Availability of Staircase for excess and egress to FOB (Y/N)	1	Yes-1 No- 0
		Availability /Quality of Handrails in Staircases	2	Poor-0 Average-1 Good-2 Very Good-3
		Availability of Escalators for excess and egress to FOB (Y/N)	0	Yes-1 No- 0
		Availability of Public Address system at FOB (Y/N)	0	Yes-1 No- 0

Sl. No.	Name of the site	Item	Marks Obtained	Remarks
		Presence of hawkers and squatters etc. at FOB (Y/N)	0	Yes-1 No- 0
		Availability of GRP/RPF teams to control the emergency situations in case of stampede etc. (Y/N)	3	Poor-0 Average-1 Good-2 Very Good-3
		Control of TPRO Accidents at FOB site	1	Poor-0 Average-1 Good-2 Very Good-3
Total Score			17	

Table 4-5: Rating of Commissioned FOB's based on Environmental Performance

Sl. No.	Weightage	Rating
a.	10-20	1
b.	20-40	2
c.	40-60	3
d.	60-80	4
e.	80-100	5

Source: CPCB Template for assessment and performance rating of stations.

5. Compliance Risk Status of Identified Gaps and Environmental and Social Action Plan

The present section delineates the compliance status of gaps identified in above gap assessment table as per Priority of issues. The following Environmental and Social Action Plan (ESAP) has been developed to address the identified risks and issues.

Table 5-1 given below presents the priority categories of identified risks.

Table 5-1: Priority Categorization of Identified Risks

Priority	Remarks	
High	Red Flag Issues	These are risks which pose high impact on the environment, health, safety and social aspects and may have legal and/or significant business disruption implications.
Medium	Orange Flag Issues	These are risks which pose moderate impact on the environment, health, safety and social aspects.
Low	Yellow Flag Issues	These are risks which pose low or least impact on the environment, health, safety and social aspects.
No Information	Potential Red/Orange Flag Risk	Couldn't be assessed due to lack of/ no information available for the aspects.

Table 5-2 given below presents the Environmental and Social Action (ESAP) Plan has been developed for the Project to address the identified risks and issues. The timelines suggested in the ESAP is to be adhered with respect to Contract agreement signed between the Client and the Contractor.

Table 5-2: Environmental & Social Action Plan

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
	BOCW License	MRVC is recommended to obtain BOCW license for their under-construction sites	Copy of BOCW License	High	MRVC site team and Contractors	Apply immediately	Cost as per the existing Application fees
	Principal Employer License	MRVC to update Principal Employer License having details of both the contractors	Copy of updated Principal Employer license having details of both the contractors	Medium	MRVC site team	Apply immediately	Cost as per the existing Application fees
	Contract Labor License	The Contractors namely M/s Sai Constructions Pvt. Ltd and M/s Koneru Constructions Pvt. Ltd. are recommended to obtain contract labour license for engaging 50 or more than 50 workers on any working day considering principal employer license clearly indicates that maximum 100 workers can be engaged through M/s Koneru Constructions Pvt. Ltd. on any working day.	Copy of Contract Labour licenses	Low	Contractors M/s Sai Constructions Pvt. Ltd and M/s Koneru Constructions Pvt. Ltd	Apply immediately	Cost as per the existing Application fees
	Air Quality	Site specific dust control measures to be adopted at Ch.67/20 and Ch. 19.300 where FOB, deck and platform construction works are in progress.	excavated material shall be stored properly so that it does not generate fugitive emissions. Water sprinkling Ambient air quality monitoring as per NAAQ-2009 Standards	Medium	Contractor	1 month	INR 3000/sample (Approx.)
	Handling management and disposal of Construction & Demolition waste	C&D waste generated on sites to be cleared as per C&D Waste Management Rules, 2016 on sites identified by Municipal Corporation/ ULBs by Contractor.	Recycle the debris as much as possible Identification of debris disposal site.	Medium	Contractor	1 month	NA

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
	Ambient Noise Quality Monitoring	MRVC is recommended to undergo Noise quality monitoring for the parameters as per CPCB and NAAQ-2009 Standards through a NABL accredited and MoEFCC Notified laboratory.	Results of Ambient Noise quality monitoring conducted	Medium	Contractor	1 month	1500-2000/sample (Approx.)
	Maintenance of construction equipment's/activity	MRVC is recommended to ensure that all the construction equipment (JCB's, DG set, vibrators, compressors, breaker head, piling heads) should be acoustic. Contractor to ensure that ear plugs should be provided to workers during the time of construction activities.	Acoustic construction equipment's (JCB's, DG set, vibrators, compressors, breaker head, piling heads) at site Availability of ear plugs with labours present at site	Medium	Contractor	1 month	150/- to 200/- per ear plug
	Storage & disposal of hazardous waste	Contractor to have tie up with CPCB/MPCB approved hazardous waste collection vendor for disposal of hazardous waste within 90 days Storage of hazardous waste on impervious surface with secondary containment	Contractor to have tie up with CPCB/MPCB approved hazardous waste collection vendor along with records of disposal as per hazardous waste management regulations Dedicated storage of hazardous waste on impervious surface with secondary containment	Medium	Contractor	3 months	NA
	Wastewater stagnation and uncovered drains	Drains near the recently constructed FOB to be covered properly to avoid mixing of waste./trash during the time of rainy season affect the hygiene of the nearby area. Dewatering of stagnated water near the labor camp followed by pucca	Covering of drains to avoid mixing of waste/trash. Dewatering of stagnated water,	Medium	Contractor	1 month	NA

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
		drains and spray of larvicides to avoid mosquito breeding.	Pucca drains and spray of larvicides				
1.	Deployment of EHS Personal	EHS Personnel to be deployed at Ch.67/20 and Ch.19.300	Deployment of EHS Personal on site	Medium	Contractor	1 month	NA
2.	Emergency preparedness & Response	Emergency preparedness and response plan (EPRP) is yet to be prepared for Ch.67/20 and Ch. 19.300. Emergency contact numbers to be displayed at site. Emergency Evacuation route and Assembly points to be demarcated at site.	EPRP for the site to be submitted to MRVC for their approval. Emergency contact numbers displayed in vernacular language at all site locations. Demarcation of assembly point and display of emergency evacuation map	Medium	Contractor	1 month	NA
3.	Medical preparedness	For Ch.67/20 and Ch. 19.300.: Tie up with nearby hospital/Medical centre to be done. Pre -medical/Post medical records and fitness certificates of workers to be obtained/maintained.	Tie up with the nearest hospital /medical centre Availability of first aid boxes at site offices, labor camps, rest shelters and other conspicuous locations. Pre-medical records of workers should be maintained. Periodical medical check-ups like lung function test etc. shall be carried out. Records for the same should be made available for review.	Low	Contractor	1 month	NA
4.	Electrical Safety	For Ch.67/20 and Ch. 19.300:	Insulating floors or mat conforming to IS-	Medium	Contractor	15 days	NA

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
		All non-current carrying metal parts of switchgear and control panels shall be properly earthed and insulating floors or mat conforming to IS-15652: 2006, (As per CEA Regulation 2010). Danger Notice on all installations exceeding 250V – Danger and skull & bone sign should be pasted. Loose, spliced electrical wires to be replaced immediately and training on electrical safety to be imparted to the workers	I5652: 2006, provided under the electrical DB's and panels. Pasting of Danger sign/notice on installations exceeding 250V. Replacement of loose and spliced wires.				
5.	Fire Safety	Adequate number of fire extinguishers should be provided at all areas as per suitability defined in IS 2190:1992. Fire evacuation plan should be prepared for the site. Fire evacuation route/map should be displayed in labor camps and material storage area. Contractor to use fine sand (inert material) instead of fine gravel in all the fire buckets.	Availability of fire extinguishers at conspicuous locations Submission of fire evacuation plan to MRVC. Display of fire evacuation map at worksite and labor rest shelters/camps Presence of inert material in fire buckets.	Medium	Contractor	1 month	Procurement of fire extinguishers depending upon the inventory available with the Contractor.
6.	PPE, Permitting and Accident Reporting	Contractor to ensure the availability of Job specific PPE's on site. Develop work permit system, which has a standardized & uniform procedure for obtaining authorization to perform high risk jobs which require special consideration to ensure the safety of personnel. Contractors to ensure that a separate register for recording	Ensuring PPE usage on site Work permit system for high-risk jobs with records. Records/Register of Accidents/Incidents and near miss on work site.	Medium	Contractor	1 month	NA

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
		Accidents/Incidents to be maintained at the worksites.					
7.	Infrastructure and Materials Safety	Contractors to ensure that flammables like diesel, petrol, grease, paints, hydraulic oil and lube oils etc. to be stored separately on paved surfaces with whether protection. Dip trays and mobile spill arrest kits should be made available at HW/ chemical storage area at Ch.67/20 and Ch. 19.300.	Separate storage rooms for flammable and non-flammable materials on site. Weather protection/paved surface storage for Hazardous chemicals storerooms. Availability of spill arrest kits and dip trays.	Medium	Contractor	1 month	NA
8.	Project level Grievance disclosure mechanism	MRVC is recommended to ensure that the contractors refer the existing GRM, (given as part of their previous EA of MUTP III projects), for recording and redressing the site level grievances. Contractors to maintain a grievance register/ or install grievance boxes at the site level and key locations of trespassing; and ensure that all grievances are documented in the same with its redressal status.	Copy of detailed Project level "Grievance Redressal Mechanism" Copy of grievance register/ or record of grievances reported if any, along with their redressal status; Photo-doc of grievance box displayed at key locations	Medium	MRVC site team and contractors	1 month	NA
9.	Labor Management Relationships/ System	MRVC is recommended to ensure that the engaged contractors develop a Labour/ Contractor Management policy or SOP for under-construction sites The given policy shall have details pertaining to given below aspect: Non-Discrimination & Equal Opportunity. Non-engagement of Child labor and forced labor at workplace	Copy of Labor/ Contractor Management policy / SOP Copy of records of workers engaged and wage and contractor detail given to contract workers	Medium	MRVC site team and contractors	1 month	NA

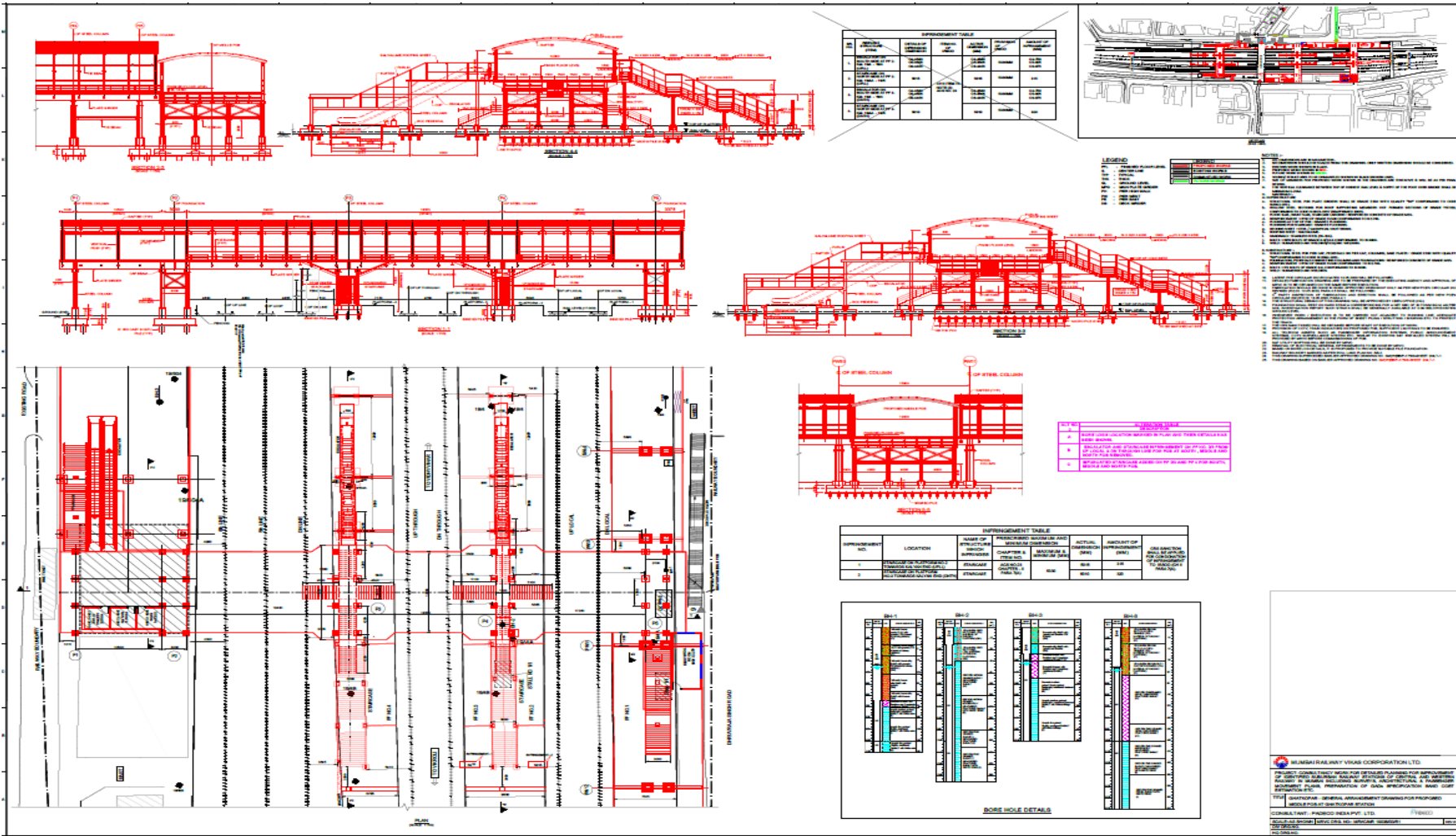
Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
		<p>Timely payment for Project work; Adequate periods of rest; Timely written notice of termination of the working relationship; Policy on equal opportunity, fair treatment and non-discrimination; Compliance with national law relating to workers' organizations and collective bargaining. The contractors engaged by MRVC are recommended to provide I-Card/ or a any joining document with wage and contractor detail to all their staff and workers.</p>					
10.	Working hours and overtime compensation	<p>MRVC is recommended to ensure that the contractors develop a policy on working hours and overtime compensation Contractors to adhere to minimum wage MRVC is recommended to ensure that the workers are not engaged for more than 48 hours/ week duty; and given overtime compensation (double the per day minimum wage rate; The contractors shall maintain wage-record at site level</p>	<p>Copy of a Policy on "working hours and overtime compensation". Record of working hours and overtime compensation</p>	Medium	MRVC site team and contractors	1 month	As per minimum wages notification and no. of workers
11.	Accommodation	<p>Ambarnath Accommodation facility: - Contractors to ensure that an adequate i.e., clean, and gated toilet and bathroom facility provided to workers. Badlapur accommodation facility: - Contractors to ensure that a separate bathroom, toilet, and room facility is provided, in-case any worker stays</p>	<p>Ambarnath accommodation facility: Adequate and gated toilet and bathroom facility to workers (i.e., 1 toilet, 1 hand wash basin, 1 urinal and 1 bathroom with</p>	Medium	MRVC site team and contractors	1 month	Included in contractors contract

Sl. No.	Gaps Identified	Recommended Corrective Action	Compliance Indicator	Priority Status	Responsibility	Timeline	Tentative Cost Estimate INR (wherever applicable)
		<p>with a family at the accommodation provided by company.</p> <ul style="list-style-type: none"> - It was identified that no separate bathroom, toilet and room has been provided to migrant worker's family. 	<p>bench per 15 male workers¹¹). Badlapur accommodation facility: Separate bathroom, toilet, and room facility provided to migrant worker with family.</p>				
12.	Vegetation clearings and maintenance	<p>Tree cutting or pruning, shrubs and herbs clearings should be done with prior permissions from relevant authorities Clearing of vegetation and trimming of trees and vegetation maintenance should be done in accordance with latest available version of Indian Railway Works Manual</p> <p>Tree plantation of at least 5 native tree species should be done and maintained at Km 67/20 Ambernath-Badlapur Home-PF BUD site. Submit the 6 monthly progress report on maintenance along with GPS locations of planted trees to Garden Department of Kulgaon- Badalapur Nagar Parishad</p>	<p>Tree cutting permission letters, maintenance records 6 monthly tree plantation progress reports submitted to relevant authorities</p>	Medium	MRVC and contractor	1 month	Approximately INR 5000-10,000

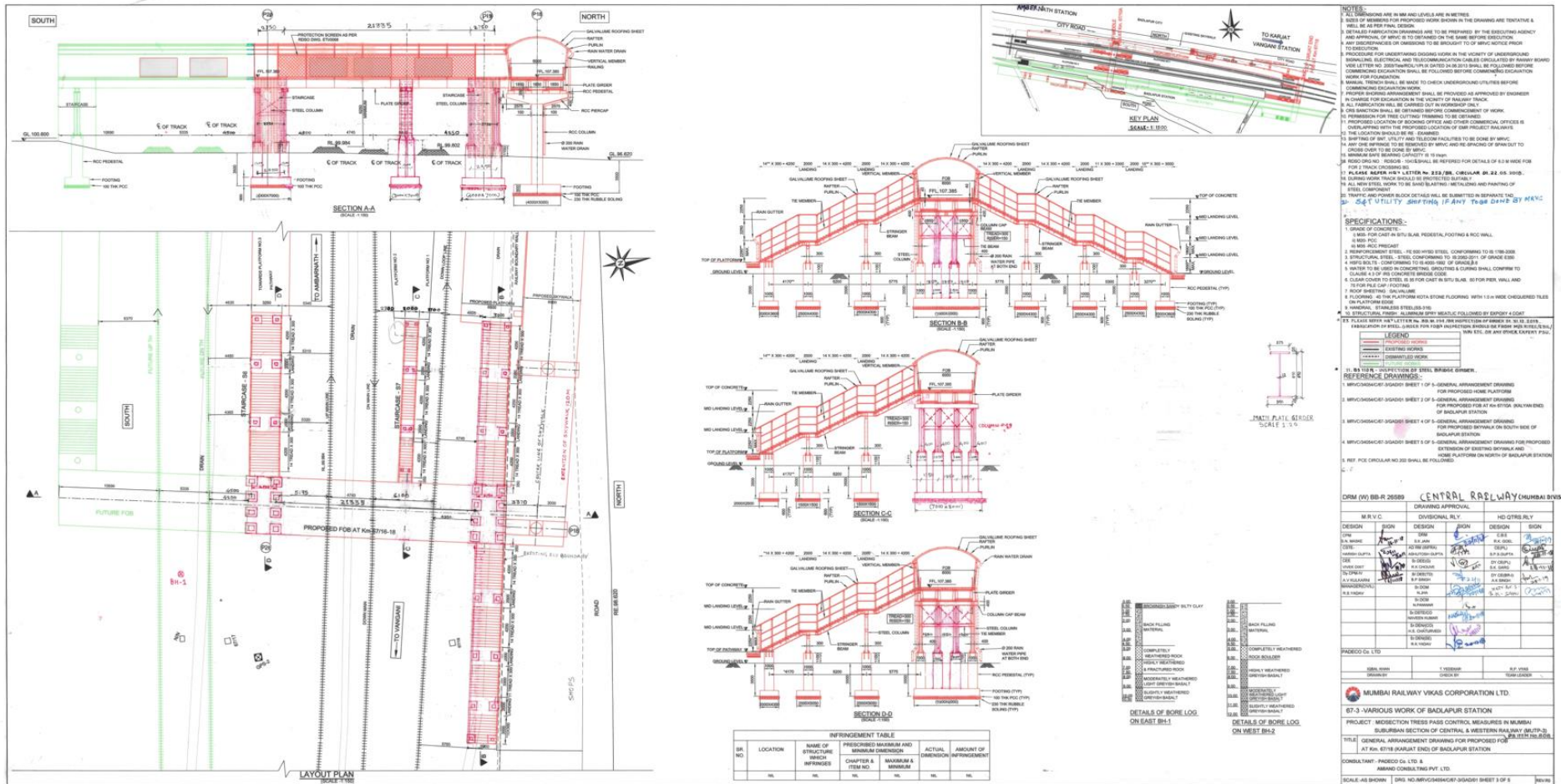
¹¹ Box 3. [Workers' accommodation: processes and standards \(ifc.org\)](http://ifc.org)

Environmental Audit for "Trespass control FOB works on Central & Western Railway under MUTP-III Project" in Mumbai

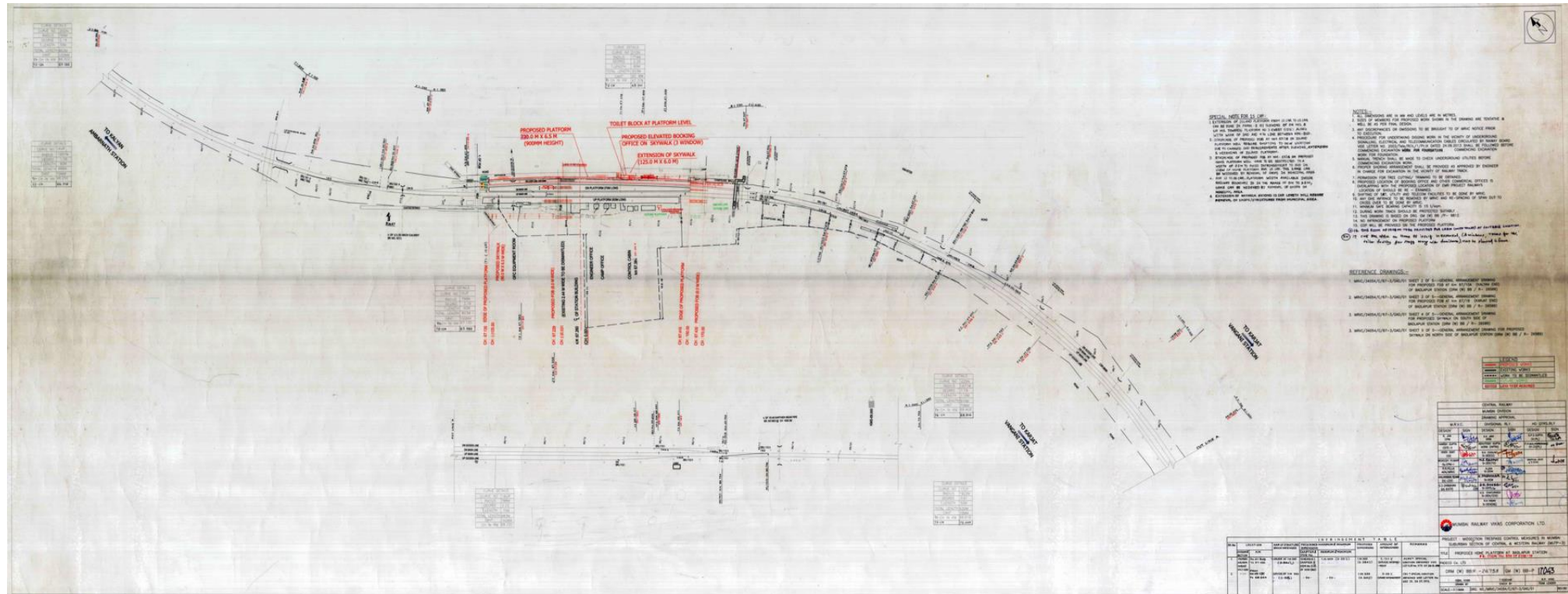
GHATKOPAR- GENERAL ARRANGEMENT DRAWING FOR MIDDLE FOB



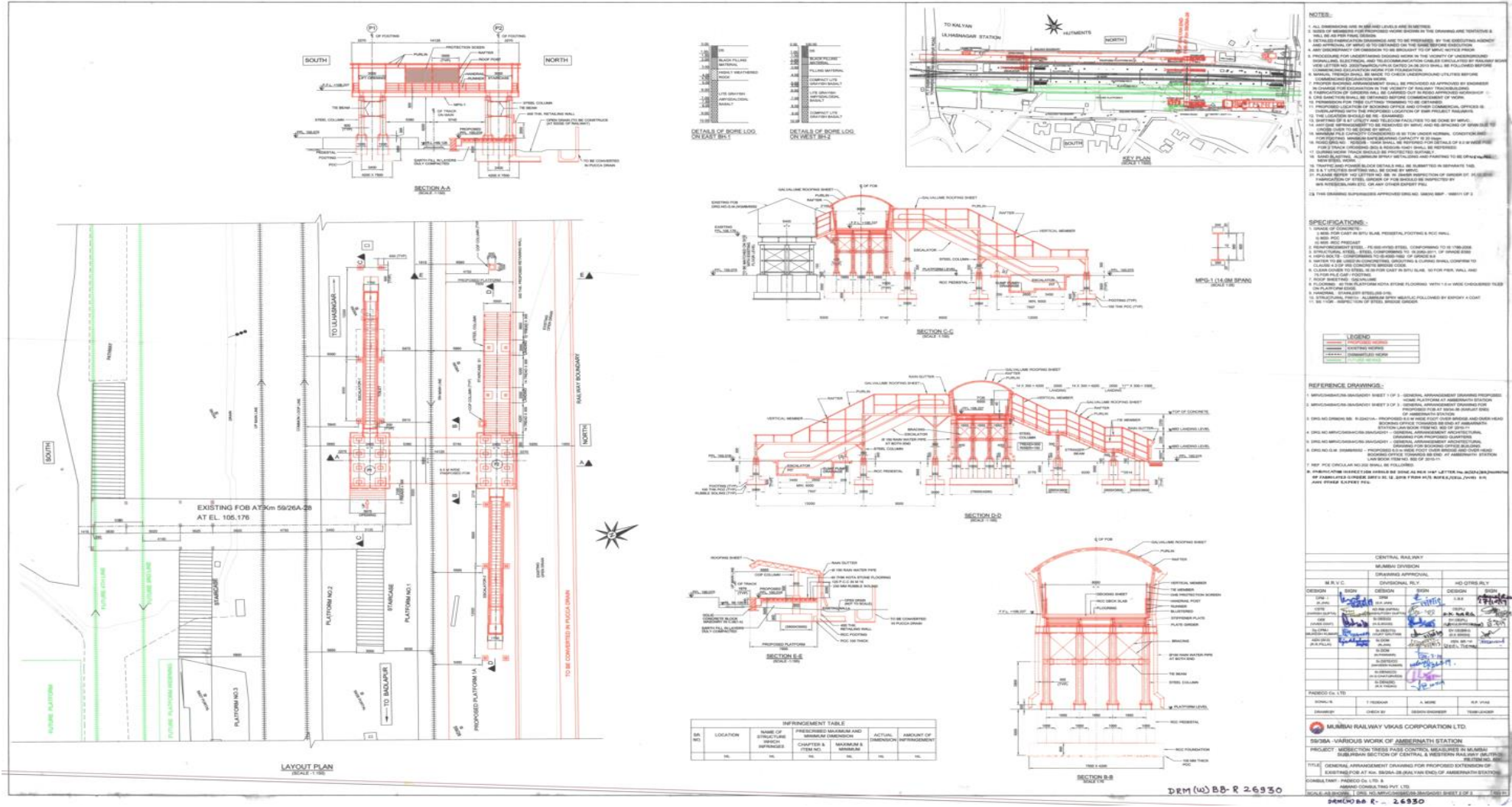
BADLAPUR- GENERAL ARRANGEMENT DRAWING FOR Km. 67/16-18 (S) FOB



BADLAPUR- PROPOSED HOME PLATFORM AT Km.67/20 BADLAPUR STATION



AMBERNATH- GENERAL ARRANGEMENT DRAWING FOR Km. 59 FOB



A.2 Accident Data

SI No.	Name of the Station	Chainage	Year	Total Number of Incidents /Accidents	Categorization of Incidents /Accidents
1.	Ambarnath	Km. 59/21 to 60/1	2020	07	04 natural deaths at Ch. 59/80, 59/25, 59/26A, 59/31-33, 02 run over cases at 59/26 and 59/36-38 and 01 fallen down case at Ch. 59/35.
2.	Ambarnath	Km. 59/21 to 60/1	2021	06	05 TPRO* cases at 60/01-02,59/21-24A, 59/26 A-B, 59/19-20, 59/39 ABH PF3 and 01 others case recorded at Ch. 59/38
3.	Ambarnath	Km. 59/21 to 60/1	2022	17	06 TPRO* cases at 59/27, 59/37-39, 59/39, 59/37,59/26 ,59/29-27. 02 fallen down cases at 59/33 and 59/28. 02 Natural deaths at 59/26 B and 59/35 A (Injury) followed by other miscellaneous cases at 59/31, 59/36-38, 59/37, 59/24 ,59/26 B, and at Ch. 59/26.
4.	Badlapur	Km. 67/03 to 67/33	2020	07	05 TPRO* cases at 67/26, 67/27-30, 67/08, 67/15,67/20 and 02 other miscellaneous cases at 67/17-19 and at Ch. 67/17.
5.	Badlapur	Km. 67/03 to 67/33	2021	07	06 TPRO* cases at 67/17, 67/27, 67/04, 67/28,67/20-18,67/07 BUD to ABH and 01 natural death case at Ch. 67/19.
6.	Badlapur	Km. 67/03 to 67/33	2022	21	05 TPRO* cases at 67/30,67/17,67/28,67/08,67/05 followed by 01 fallen down cases at 67/08, 02 Natural deaths at 67/09 and 67/12 (Injury) followed by other miscellaneous cases at 67/08, 67/10, 67/06-07, 67/25, 67/03 and at Ch. 67/12
7.	Ghatkopar	Km. 19.100 to 19.400	2021	37	26 TPRO* cases and 11 cases of Injuries were recorded.
8.	Ghatkopar	Km. 19.100 to 19.400	2022	39	26 TPRO* cases and 13 cases of Injuries were recorded.

Accident/Incident data for year 2020,2021 and 2022 provided by MRVC

*TPRO- Trespassing runover

A.3 Sample Audit Checklist referred for the project¹²

Sl. No.	List of Documents/ Items	Status	MRVC Comment
1.	Site co-ordinates marked on FOB drawings/lay out plans.	Available	
2.	Auto Cad drawings with final versions.	Not Available	
3.	List of existing structures and common property resources traversing across the alignment of proposed FOBs		
4.	Superimposition of existing structures, CPRs, and trees on the final/working drawings.	In Process	
5.	Strip maps presenting all the environmental features and sensitive receptors, Structures, Religious Structures, Schools, Colleges, Hospital, Utility Lines, other sensitive structures	Not Available	
6.	Trees enumeration data for proposed locations. (if any)	Not Available	
7.	Tree cutting permission/status for proposed locations. (if any)	Not Available	
8.	Accident/ Incident data of the proposed FOB sites collected from GRP (if any)	Available	
9.	Source of Drinking water at the proposed FOB sites.	Available	
10.	Power back up (source and capacity) at the proposed sites	Not Available	
11.	Social Consultation conducted at proposed sites /minutes of meeting. (if any)		
12.	Environmental Consultation conducted at proposed sites. (if any)	Conducted by AECOM	
13.	List of Contractors (with contact details) deployed at the ongoing FOB worksites.	Shared	
14.	Copy of contract labour license obtained by respective contractors (deployed at under-construction site)?	Not Available	
15.	Copy of Principal employer license?	Not Available	
16.	Detail of contract workers engaged at under-construction FOB sites	Shared	
17.	Any security guard engaged at site, if yes share PSARA license	Not Available	
18.	Total land required/ used for constructing FOBs	Shared	
19.	Typology of land, i.e., Govt. land/ private land?	Shared	
20.	Survey No./ Khasra No. of land on which FOBs are being constructed/ or planned to be constructed	Not shared	
21.	When was land acquired by IR? In-case it is IR land	Not Available	

¹² Developed as per the requirements mentioned in order No. 2018/EnHM/01/02/Vol.II and TOR

22.	Any accommodation facility given to workers by contractors at any under-construction FOB sites?	Shared
23.	HR policy if any, or any internal policy referred for staff?	Not Available
24.	Detail of per day minimum wage given to contract workers?	Not Available
25.	How is daily working hour of contract worker (at under-construction site) recorded?	Not Available
26.	How is overtime compensation given to contract workers?	Not Available
27.	Is there any grievance mechanism at site level?	Not Available
28.	Copy of Grievance redressal mechanism?	Not Available
29.	Debris disposal site identified (if any) for any of the proposed FOB sites.	Not Available
30.	EIA reports of associated facilities like laying of new railway tracks, construction of new platforms, Car sheds etc. at the proposed FOB sites.	Not Available
31.	Compensatory and/or avenue plantation Plan (if any)	Not Available

A.4 List of Documents Reviewed

Document Title	Issue Date
Terms Of Reference for Environmental Assessment/Audit For "Trespass Control Fob Works On Central Rly & Western Rly Under Mutp-iii Project	March 2023
Environmental & Social Impact Assessment, Resettlement Action Plan And Land Acquisition For Improvement Of 19 Suburban Railway Stations On Mumbai Suburban Sections	January 2022
Environment Assessment Of Mutp Iii Projects Volume Iii- Final Environment Assessment Report For Trespass Control In Mid-Section On Suburban Section Of Mumbai	September 2018
Environment Assessment Of Mutp Iii Projects Volume Iii – Inputs To The Bid Document And Emp For Trespass Control In Mid-Section On Suburban Section Of Mumbai	May 2018
Environment Assessment Of Mutp-iii Projects Volume Iv - Inputs To The Bid Document And Emp For Double Line Elevated Rail Link Between Airoli-Kalwa	June 2018
Resettlement Policy Framework (Rpf) Version-1 For Social Impact Assessment For Mutp-iii Mutp	May 2019
Order No. 2018/Enhm/01/02/Vol. Ii Issued By Government Of India Ministry Of Railways, Railway Board	Dec. 2020
Indian Railways Works Manual Issued By Government Of India Ministry Of Railways, Railway Board	May 2000
Mrcv She Manual	August 2017
Letter From Brihanmumbai Nagarpalika, Vide Their Letter No. Acn/25267/Mn For Utilizing The Portion Of Jawahar Road, Ghatkopar (E) -77 For Construction Of 03 New Rob's Along The Deck On East And West Side Of Ghatkopar Railway Station	February 2023
Drinking Water Consumption Details/Bills By M/S Koneru Constructions Pvt.Ltd.	Oct-Nov. 2022
Contract Agreement Signed Between Mrcv And M/S Sai Projects (Mumbai) Pvt.Ltd.	February 2022
Contract Agreement Signed Between Mrcv And M/S Koneru Constructions Pvt.Ltd.	December 2018
Accident/Incident Data For Ambarnath Station	2020,2021,2022
Accident/Incident Data For Badlapur Station	2020,2021,2022
Accident/Incident Data For Ghatkopar Station	2021,2022
Asbestos Waste Management Plan By Sai Projects Pvt.Ltd.	November 2022
Contractors Esmp Submitted By Sai Projects Pvt.Ltd.	December 2022
Letter Kbnp/Garden/3142/2022-2023	April 2022
Letter No.: Kbnp/ Garden/4952/2022-2023	June 2022

A.5 Sample Grievance Form

GRIEVANCE REGISTRATION		
Case No.:	Date:	
Name: (Optional)		
City/ Location (optional):	Phone no. (optional)	
Details of grievance:		
Name of person recording grievances:		
Proposed date of response to grievance:		
Signature of recording person	Signature/ thumb impression of grievant: (Optional)	
GRIEVANCE REDRESSAL RESPONSE		
Date of redresses:		
Decision of Grievance Redressal Officer/ GRO (give full details):		
Claimant accepts the outcome:	Accepted	Not accepted
Signature/ thumb impression of grievant:		
Signature of GRO:		

Source: AECOM

A.6 Grievance Register Format

S. No	Date	Grievance number	Name of Grievant	City/ Location	Details of Grievance	Concerned Department (if internal)	Name of Recording Person	Present Status	Remarks
1.									
2.									
3.									

Source: AECOM

