

मंगलूर रिफाइनरी एण्ड पेट्रोकेमिकल्स लिमिटेड
MANGALORE REFINERY & PETROCHEMICALS LTD.

(ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड की सहायक कंपनी)
(A Subsidiary of Oil and Natural Gas Corporation Ltd.)

PRE-TENDER MEET (PTM) FOR
SLOPE STABILIZATION WORK AT MRPL REFINERY



Document NO.: MRPL/PROJECTS/02/2022

Mangalore Refinery and Petrochemicals Limited (MRPL) is a subsidiary of M/s. Oil and Natural Gas Corporation Limited (ONGC). MRPL proposes to invite Pre tender meet. Pre tender Details as follows:

Pre Tender No.	MRPL/Projects/02/2022
Pre Tender on Website	From 13.09.2022 to 18.09.2022
Closing date for submission of any documents if applicable.	Upto 17:00 hrs (IST) on 18.09.2022
Date of Meeting Through VC	19.09.2022 at 10:30AM through Webex using following link: PRE-TENDER MEET FOR SLOPE STABILIZATION WORK AT MRPL REFINERY COMPLEX https://mrpl.webex.com/mrpl/j.php?MTID=mbd7ad54b23a60349b122c447b6d23062 Monday, Sep 19, 2022 10:30 am 3 hours (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi Meeting number: 2512 981 1008 Password: 12345 Join by video system Dial 25129811008@mrpl.webex.com You can also dial 210.4.202.4 and enter your meeting number. Join by phone Use VoIP only
Pre tenders documents available at	www.mrpl.co.in/eoi

Please contact below mentioned personnel for further details:

Designation	Contact No.	Email id
General Manager (Projects)	+91-824-2882041 +91-9448857949	SHRIRANGAM@mrpl.co.in
Ajay kumar	+91-824-2882055 +91-9483509089	Ajay_kumar@mrpl.co.in
Shailendra Singh	+91-824-2882051	Shailendra_singh@mrpl.co.in

All Credentials/ Documents shall be addressed to

General Manager (Projects)
Projects Department, Netravati Building
Mangalore Refinery & Petrochemicals Ltd
Kuthethoor PO, Via Katipalla, Mangalore – 575
030 Karnataka- India

The envelope containing the documents shall be super scribed “SLOPE STABILIZATION WORK”

**SLOPE STABILIZATION WORK
AT MRPL, MANGALORE**



PRE TENDER MEET (PTM)

**MANGALORE REFINERY AND
PETROCHEMICALS LIMITED**

Table of Contents

Sl. No	Title	<i>Page No.</i>
1	Introduction	5
2	Brief Description of the System	5
3	Scope of Work	6
4	Data to be furnished	33
5	Disclaimer	33

1.0 INTRODUCTION

1.1 Mangalore Refinery & Petrochemicals Limited (MRPL) a government of India schedule 'A' CPSE and a subsidiary of ONGC is a State of Art Grassroots Petroleum Refinery located in a beautiful hilly terrain, north of Mangalore city, in Dakshina Kannada region, Karnataka State. The Refinery has got a versatile design with high flexibility to process Crudes of various API and with high degree of Automation. MRPL has high standards in refining and environment protection matched by its commitments to society. MRPL has also developed a Green Belt around the entire Refinery with plant species specially selected to blend with the local flora.

1.2 MRPL has an Aromatics Complex, which is a downstream unit of the refinery which processes naphtha for the production of high quality Px & Bz. MRPL has high standards in refining and environment protection matched by its commitments to society.

MRPL calls for a Pre Tender Meet for **SLOPE STABILIZATION WORK** at MRPL Refinery complex.

2.0 BRIEF DESCRIPTION OF THE WORKS INVOLVED

The scope of work in general covers restoration, strengthening, stabilisation & field instrumentation work of the slopes, but not limited to the following:

Detailed scope of work includes strengthening of existing slopes and installation of piles, gabion wall, wrapped around MSE wall, laying of geotextile & erosion control measures, shotcreting with wire mesh, Stone pitching, PCC, RCC, soil nailing, Self-Drilling Anchor (SDA), grouting, nail head connection, load tests of nails/SDA, grid beams, horizontal drainage pipes, supply of all material & resources (plant/machinery/manpower) and all associated civil works as per drawings, specification and instruction of Engineer-in-charge.

Associated civil works envisaged under the scope of work covers, re-profiling of the slope with cement sand bag, earth work in excavation in all kinds of soil, dewatering, shoring & strutting, filling with available suitable good earth/borrowed earth/sand in layers as per technical specification, sorting segregating boulder/rock of size more than 150mm from excavated earth, centering & shuttering, demolishing of concrete/gabion work/pitching, transporting & disposing surplus earth/debris /unserviceable material etc..

Anchored slopes (Slope reinforced with nails or SDA) are generally constructed from top to down. Soil in front of the designed slope profile is removed in stages and anchors are installed and grouted at each level before proceeding for the next stage soil removal.

But for rectification work of the slopes, soil in front of the designed slope is absent. Hence, temporary working platforms to be constructed by staging or staking additional sand bags in front of working area or by any other suitable method proposed by contractor for carrying out anchoring work and for installation of horizontal drainage pipes. Upon completion of each stage of work, temporary working platform to be reconstructed for next level of anchoring activities. Horizontal drainage pipes shall be installed in such a way that the grout of nails does not choke the perforations of the horizontal drainage pipes.

The scope of work also includes supply & installation of vertical inclinometer to monitor the lateral displacement of the slopes and Piezometer for Groundwater monitoring.

3.0 SCOPE OF WORK

MRPL complex has been set up over hilly terrain, where extensive cutting & filling activities were carried out during general site grading work. This has created several slopes and different types of retaining structures has been adopted for their stability. Stability of slope at MRPL is complex due to lateritic type of subsoil and high intensity of rainfall during monsoon.

Scope of work for this tender includes permanent rectification & monitoring of distressed slopes and strengthening of few critical slopes in/around following units/areas of M/s MRPL For general idea of the areas refer plot plan Dwg. No. B554-000-81- 47-000-00016 as attached **Appendix-IV**.

- i) SRU-7
- ii) J/K/L Crude Tank
- iii) Beta Land & Approach road to Beta Land

Bidder shall visit the site (before submitting the bid) to become fully acquainted with the existing site conditions. No extra claim at a later date shall be entertained due to non-familiarization of site condition.

i) SRU-7

SRU-7 was commissioned in the year 2021 under the BS-VI upgradation of the refinery and Petrochemical complex. During Construction extensive cutting of the area was carried out, which led to formation of several slopes. In existing condition, the slopes are supported with RCC retaining wall, RCC lining, stone pitching and horizontal sub-surface drainage pipes.

The scope of this tender includes the strengthening of all the critical slopes of the unit/area. Area for slope strengthening is inside Mangalore Refinery & Petrochemical Complex (which is under operation). Bidder may refer Dwg. No. B554-000-81-47-1012 (refer **Appendix-IV**) for tentative details of the proposed slope rectification scheme. Photographs of the existing condition of the slope is attached as **Appendix-I**.

ii) J/K/L Crude Tank Area

The J/K/L crude tanks has been commissioned in the year 2012 under the Phase III expansion of refinery. The slopes around the tankage area has been witnessing failures continuously. The J/K/L slope is supported by gabion walls of various cross sections. However, due to slope failure at several locations, bulging of Gabion toe wall and upheaval of road near to the toe of the Slope is encountered.

The scope of this tender includes rectification and strengthening of all the critical slopes of the unit/area. Area for slope strengthening is inside Mangalore Refinery & Petrochemical Complex (which is under operation). Bidder may refer Dwg. No. B554- 000-81-47-1009 (refer **Appendix-IV**) for tentative details of the proposed slope rectification scheme. Photographs of the existing condition of the slope is attached, in **Appendix-II**.

iii) Beta Land

Beta Land was commissioned in the year 2021 under the BS-VI upgradation of the refinery and Petrochemical complex. During Construction extensive cutting of the area was carried out, which led to formation of several slopes. In existing condition, the slopes are supported with RCC retaining wall

with/without Geogrid reinforcement, Gabion wall and stone pitching. An interconnecting piperack (ATF Piperack) is passing across the distressed slope located on the north of Beta Land area and was partially stabilised with the help of pile foundation and retaining wall. A portion of the beta land slope area located towards the west of the ATF piperack receives perennial subsurface water.

The scope of this tender includes the strengthening/rectification of the slopes of the unit/area. Area for slope strengthening is inside Mangalore Refinery & Petrochemical Complex (which is under operation). Bidder may refer Dwg. No. B554-000-81-47- 00001 (refer **Appendix-IV**) for tentative details of the proposed slope rectification scheme. Photographs of the existing condition of the slope and its tentative scheme is attached as **Appendix-III**.

Appendix-I (SRU AREA)





Appendix-II

(J/K/L CRUDE TANK AREA)



Appendix-III (BETA LAND AREA)





4.0 DATA TO BE FURNISHED BY THE BIDDER

1. General Information				
1.1	Name of the BIDDER / Firm			
1.2	Nature or legal status of the Firm			
1.3	Name and address of associated companies to be involved in the project with relationship and role, if any.			
1.5	Registered Address of Firm			
1.6	Contact Person			
1.7	Designation and address of Contact person			
1.8	E.mail			
1.9	Turnover & Net worth of the Firm during last three financial years (Please enclose copy of audited annual reports)	Year	Turn Over (INR)	Net Worth (INR)
		2019-20		
		2020-21		
		2021-22		
2. Past experience of the bidder.				
2.1	<ul style="list-style-type: none"> • Slope stabilization works using self-driven Anchors/soil nailing/ rock anchor/ high tensile cable anchor/ micro piling/ ground anchoring/Gabbion and associated civil works. • Above work shall be executed in any Refinery / Petrochemical/ / Fertilizer Industry PSU/ Govt department or large scale industrial/ Public Ltd / Private Ltd Companies during the last 7 years. • Bidders are advise to provide their maximum executed value of orders. 			
2.2	Bidder should provide necessary documents staining the above clauses. The bidder shall give copies of signed Agreement/ Work order/ Purchase order/ acknowledged final report or any other document to prove the scope of completed works against the order to the satisfaction of MRPL.			

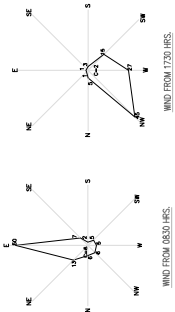
5.0 DISCLAIMER

MRPL has prepared this document to give interested parties background information on the project. While MRPL has taken due care in the preparation of the information contained herein and believes it to be accurate, neither MRPL nor any office authorities, officers, employees, agents/and advisors gives any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information contained in this document or any information which may be provided in connection therewith.

Interested parties are required to make their own inquiries and respondents will be required to confirm in writing that they have done so and they do not rely on the information provided in the Pre Tender document in submitting their response. The information is provided on the basis that it is non-binding on MRPL or any of its authorities or agencies or any of their respective officers, employees, agents or advisors.

MRPL reserves the right not to proceed with the project, to alter the timetable reflected in this document or to change the process or procedure to be applied for listing of enquiry partners. It also reserves the right to decline to discuss the project further with any party expressing interest. No reimbursement of cost of any type whatsoever will be paid to persons, or entities, expressing interest in the project.

Appendix-IV

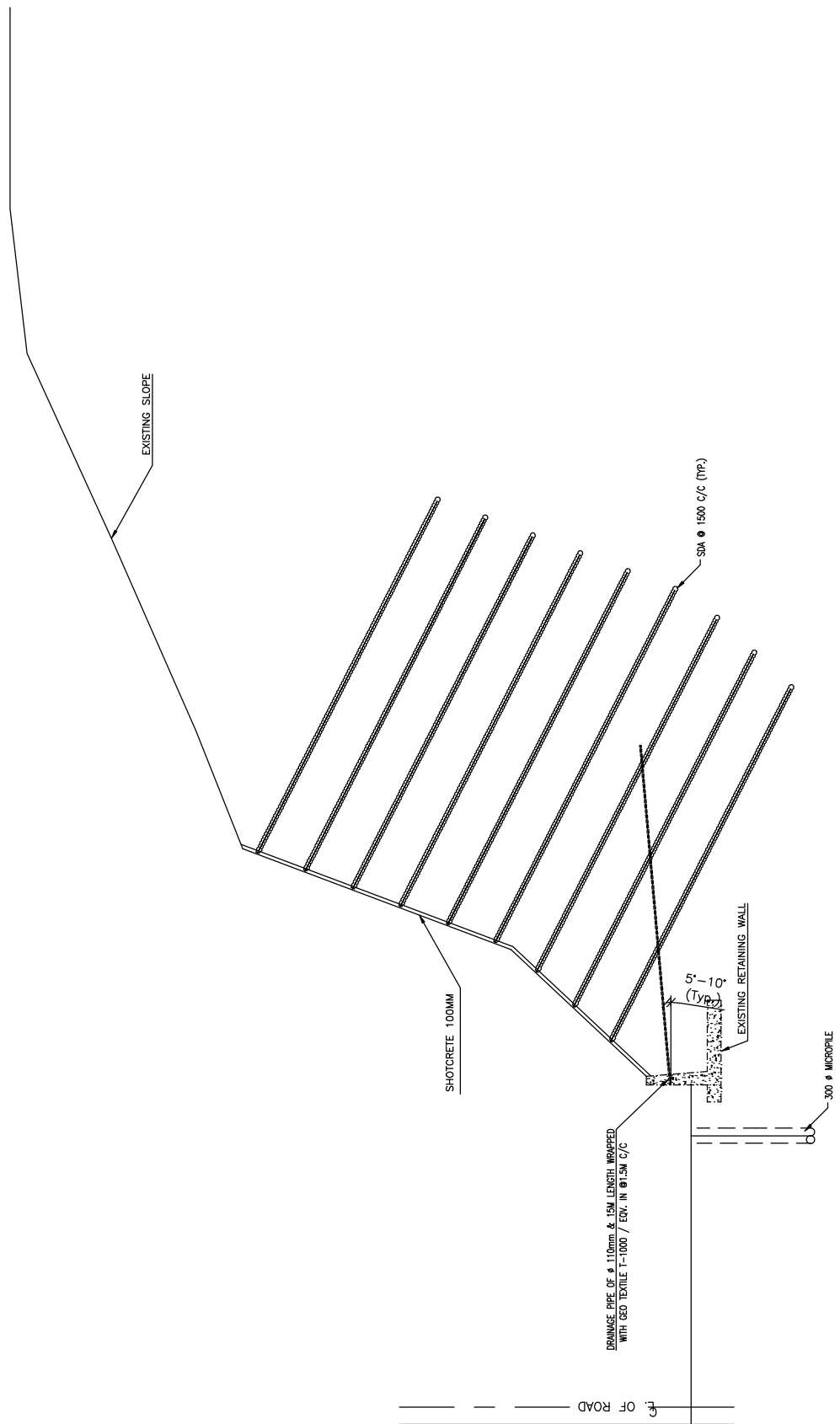


REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.



The drawing, design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are merely loaned on the borrower's express agreement that they will not be reproduced, copied, exhibited or used, except in the limited way permitted by a written consent given by the lender to the borrower for the intended use.



ENGINEERS INDIA LIMITED
NEW DELHI

MANGALORE REFINERY & PETROCHEMICALS LTD.
REFERENCE CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE
STABILIZATION WORKS FOR CRUDE TAN (UPLAND NORTH WEST SITE)
SRIC EAST BEEL AREA LAND NORTH & WEST SIDE OF BMPL

REV.	DATE	ISSUED FOR TENDER	BY	REVISION
A	22.07.22			

CHK	BY	APPROVED
MC/ST		
RB		
W/P		

SLOPE RECTIFICATION SCHEME
FOR STRETCH B-C
(LOCATION - SRU-7)

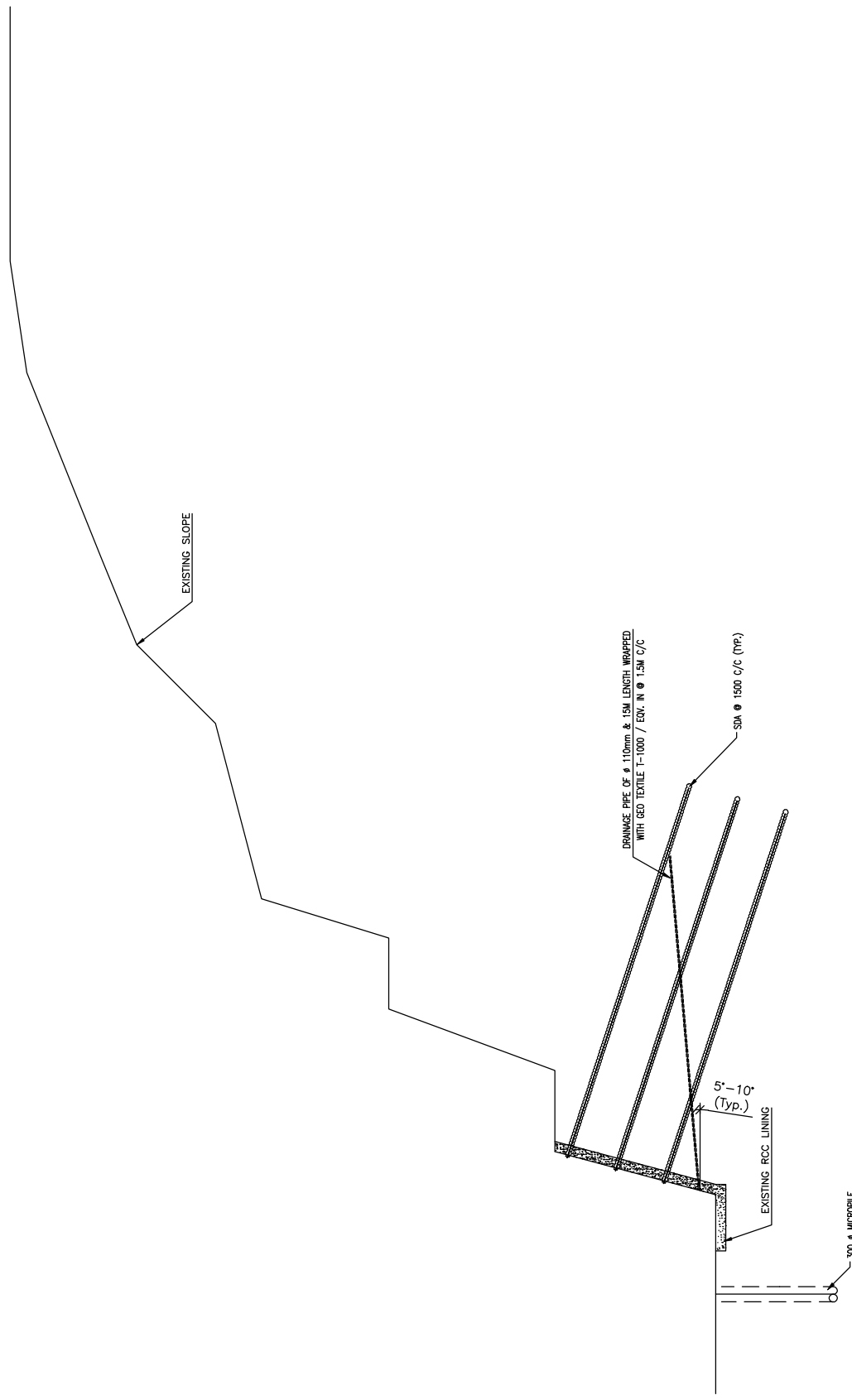
DRAWING NO.	REV.
B554-000-81-47-30013	A

REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.



REV. A

DRAWING NO. B554-000-81-47-30014

SLOPE RECTIFICATION SCHEME FOR STRETCH C-C' (LOCATION - SRU-7)

W/P	APPROVED
RB	APPROVED
MC/ST	CHK
BY	

ISSUED FOR TENDER	DATE
A	22.07.22

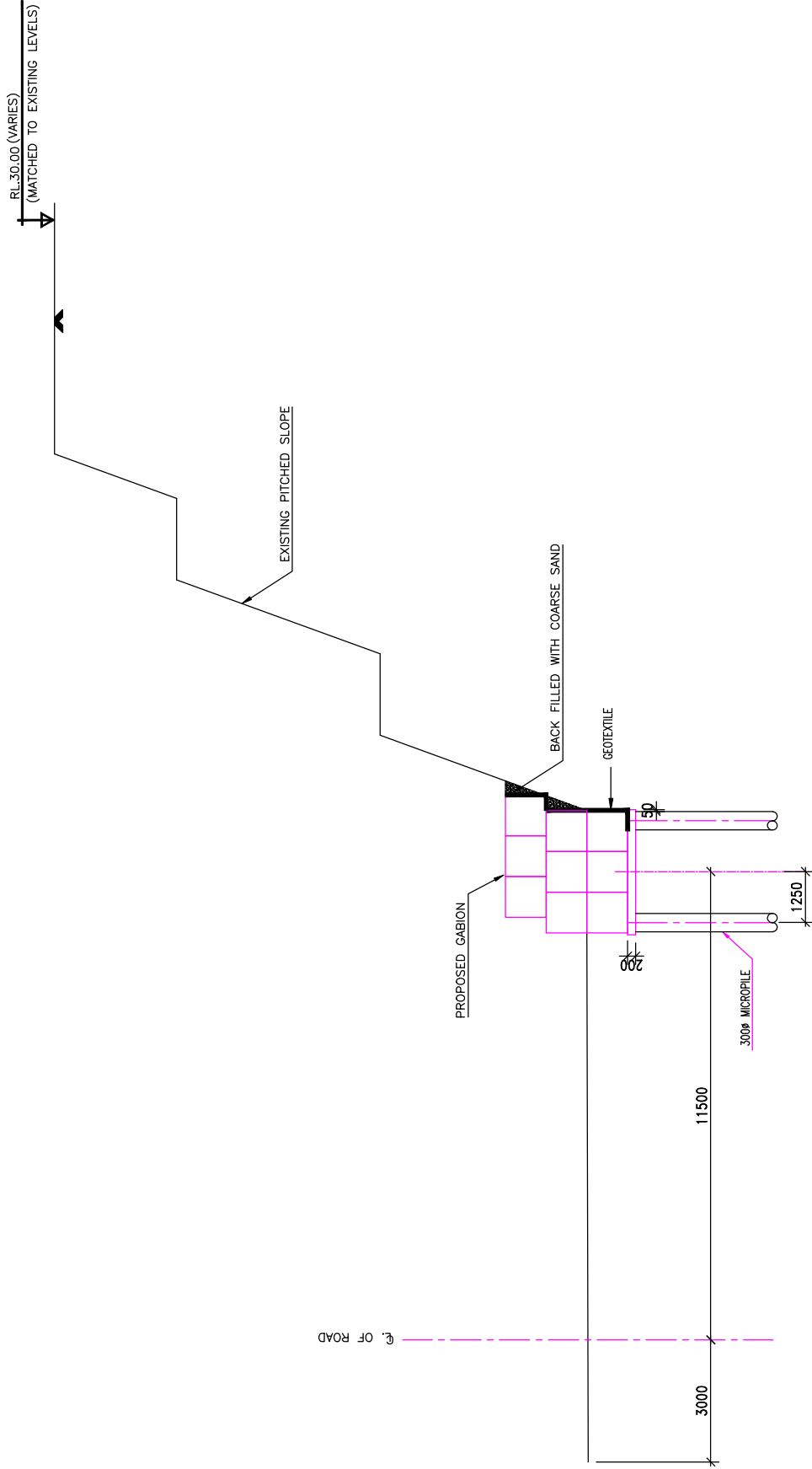
MANGALORE REFINERY & PETROCHEMICALS LTD.
 ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE STABILIZATION WORKS FOR CRUDE TANK (W/L/4) NORTH WEST (SFE) GROUP EAST SIDE & BETA LAND NORTH & WEST SIDE OF BRPL



ENGINEERS INDIA LIMITED
NEW DELHI

NOTES:-

1. ALL DIMENSIONS AND COORDINATES ARE IN METERS (UNO).



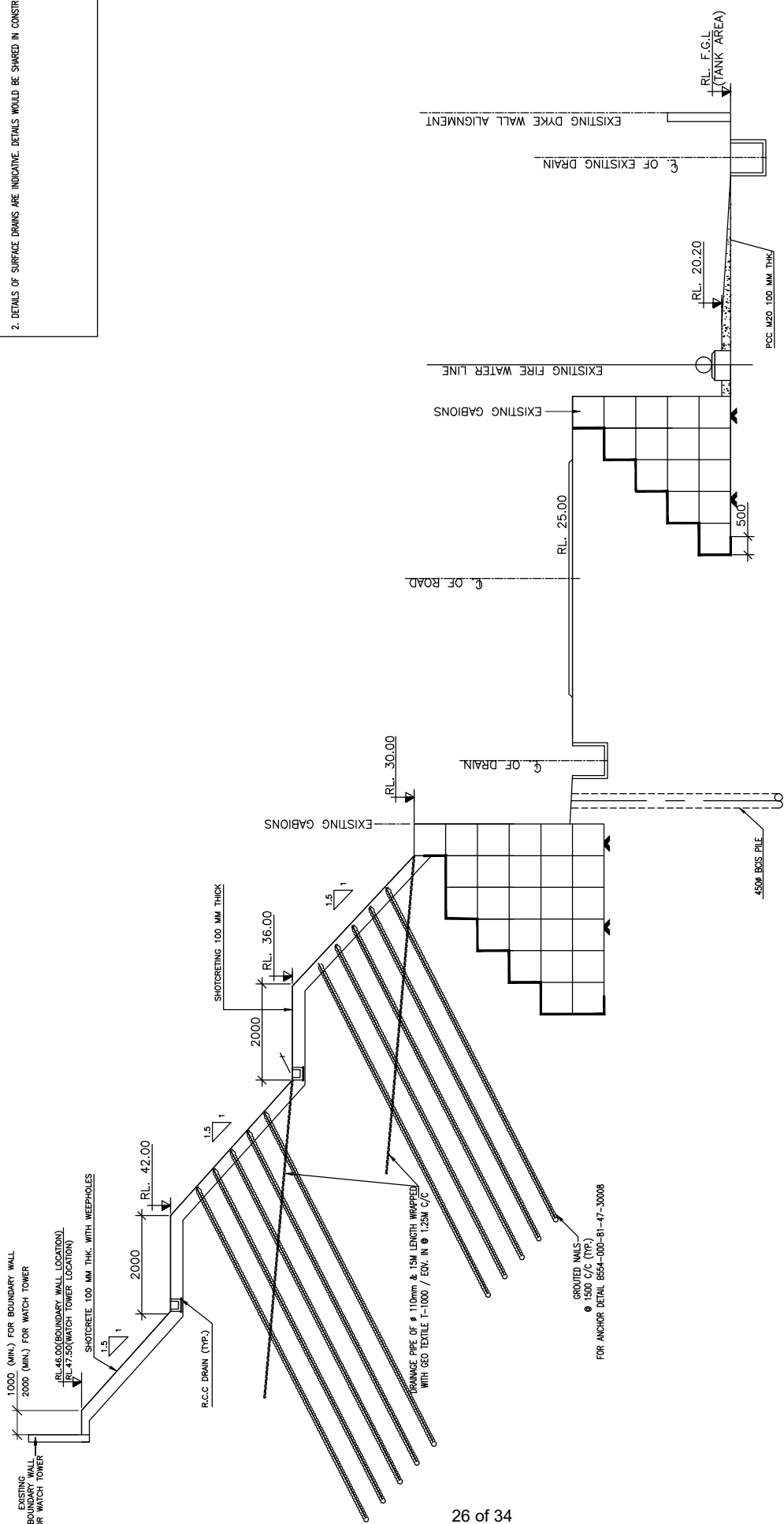
ENGINEERS INDIA LIMITED NEW DELHI		MANGALORE REFINERY & PETROCHEMICALS LTD. ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE STABILISATION WORKS FOR CRUDE TANK (MANGALAPUR WEST SITE) - 3RD & 4TH BAY & BAYLAND NORTH & WEST BAY 1		SLOPE STRENGTHENING SCHEME FOR FOR SRU STRETCH C-E (LOCATION - NORTH OF CRUDE TANK - FB - 7001L)		DRAWING NO. B554-000-81-47-30015	REV. A
REV	A	DATE	22.07.22	ISSUED FOR TENDER	REVISION	BY	APPROVED
						CHK	APPROVED
						MSD	APPROVED
						RB	APPROVED
						WSP	APPROVED

REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.



CROSS SECTION OF GABION WALL IN C-D STRETCH



ENGINEERS INDIA LIMITED
NEW DELHI

MANGALORE REFINERY & PETROCHEMICALS LTD.
ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE STABILISATION WORKS FOR CRUDE TANK (PLAN NORTH WEST SITE) SINGH EAST SIDE & BETA LAND NORTH & WEST SIDE OF IMPCL

REV.	DATE	ISSUED FOR TENDER	BY	MC/ST	RB	W/P	APPROVED
A	22.07.22						

SLOPE RECTIFICATION SCHEME FOR STRETCH (CD) (LOCATION - WEST OF CRUDE TANK - FB - 7001L)

DRAWING NO.	B554-000-81-47-30011
REV.	A

REF. DIM. NO. REFERENCE DRAWING TITLE

- NOTES :-
1. ALL DIMENSIONS ARE IN MM AND LEVELS, ELEVATIONS AND FINISHES IN THESE SLOPE STABILIZATION MEASURES IN THESE SLOPE STRETCH SHALL CONSIST OF EROSION PROTECTION & DRAINAGE WORK.
 2. STABILITY IN THIS STRETCH SHALL CONSIST OF RIGID ROCKFALL BARRIER, CARBON WALL, EROSION CONTROL BLANKET ETC.
 3. DETAILS OF SLOPE PROTECTION BESIDE NATURAL DRAINAGE PATH SHALL BE WITH SOIL CARBON, CARBON WALL, EROSION CONTROL BLANKET ETC. ALL DRAWINGS WILL BE SHARED WITH THE SUCCESSFUL BIDDER.

DATE: 15/08/2024
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

PROJECT: SLOPE STABILIZATION MEASURES FOR SLOPE STABILIZATION WORKS FOR CRUDE TANKS (ALPHA NORTH WEST SITE) SLOPE EAST SIDE & BETA LAND NORTH & WEST SIDE OF MPFL

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

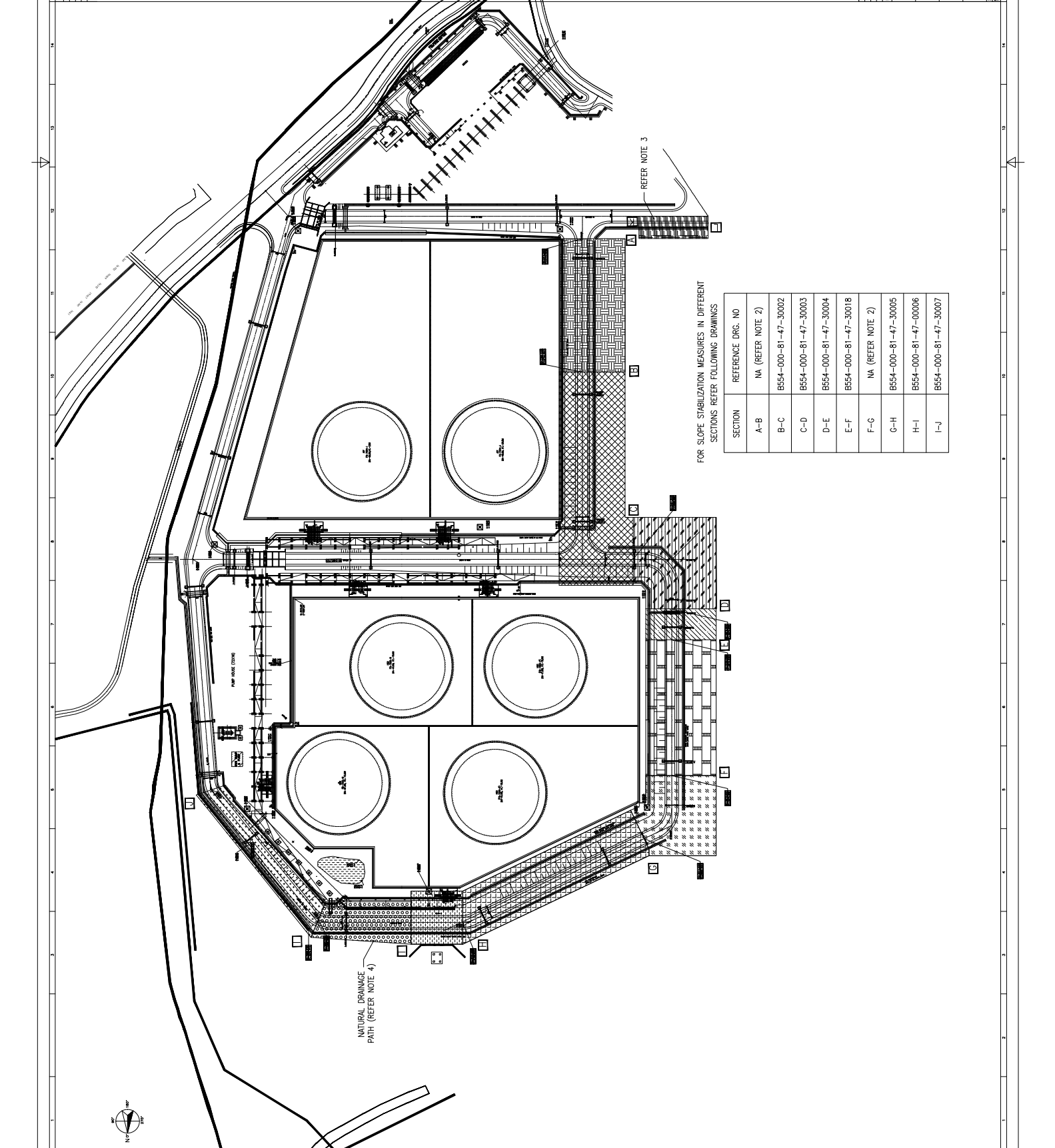
PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024

SCALE: 1:1000

PROJECT NO: B554-000-81-47-00001

DATE: 15/08/2024



FOR SLOPE STABILIZATION MEASURES IN DIFFERENT SECTIONS REFER FOLLOWING DRAWINGS

SECTION	REFERENCE DRG. NO
A-B	NA (REFER NOTE 2)
B-C	B554-000-81-47-30002
C-D	B554-000-81-47-30003
D-E	B554-000-81-47-30004
E-F	B554-000-81-47-30018
F-G	NA (REFER NOTE 2)
G-H	B554-000-81-47-30005
H-I	B554-000-81-47-00006
I-J	B554-000-81-47-30007



B554-000-81-47-00001

This drawing design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are hereby loaned to the borrower's express agreement that they will not be reproduced, copied, modified or used, except in the manner approved by a written consent given by the lender to the borrower. The borrower shall be liable to the lender for any loss or damage caused by the use of this drawing. The borrower shall be liable to the lender for any loss or damage caused by the use of this drawing. The borrower shall be liable to the lender for any loss or damage caused by the use of this drawing. The borrower shall be liable to the lender for any loss or damage caused by the use of this drawing.

REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

- 1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
- 2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.

1000
 RL. 51.68(VARIES)
 MATCHED TO EXISTING LEVELS

SHOTCRETING 100 MM THICK

EXISTING SLOPE

5'-10'
(Typ.)

5'-10'
(Typ.)

PERFORATED DRAINAGE PIPE OF ϕ 100mm & 15M LENGTH
 WRAPPED WITH GEO TEXTILE 1'-1000 / EQV. IN ϕ 1.5m ϕ /6

3' OF ROAD

TANKAGE AREA

28.00 F.G.L.
 (TANK AREA)

The drawing, design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are merely loaned on the borrower's express agreement that they will not be reproduced, copied, exhibited or used, except in the limited way permitted by a written consent given by the lender to the borrower for the intended use.



ENGINEERS INDIA LIMITED
 NEW DELHI

MANGALORE REFINERY & PETROCHEMICALS LTD.
 ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE
 STABILIZATION WORKS FOR CRUDE TANK (W/L/40RTH/WEST SIDE)
 GROUP EAST SIDE & BETA LAND NORTH & WEST SIDE OF M/W/L

REV.	DATE	ISSUED FOR TENDER	BY	CHK	APPROVED	APPROVED
A	22.07.22			ST/MC	RB	W/P

**SLOPE RECTIFICATION SCHEME
 FOR STRETCH (B-C)
 (LOCATION - BETA LAND AREA)**

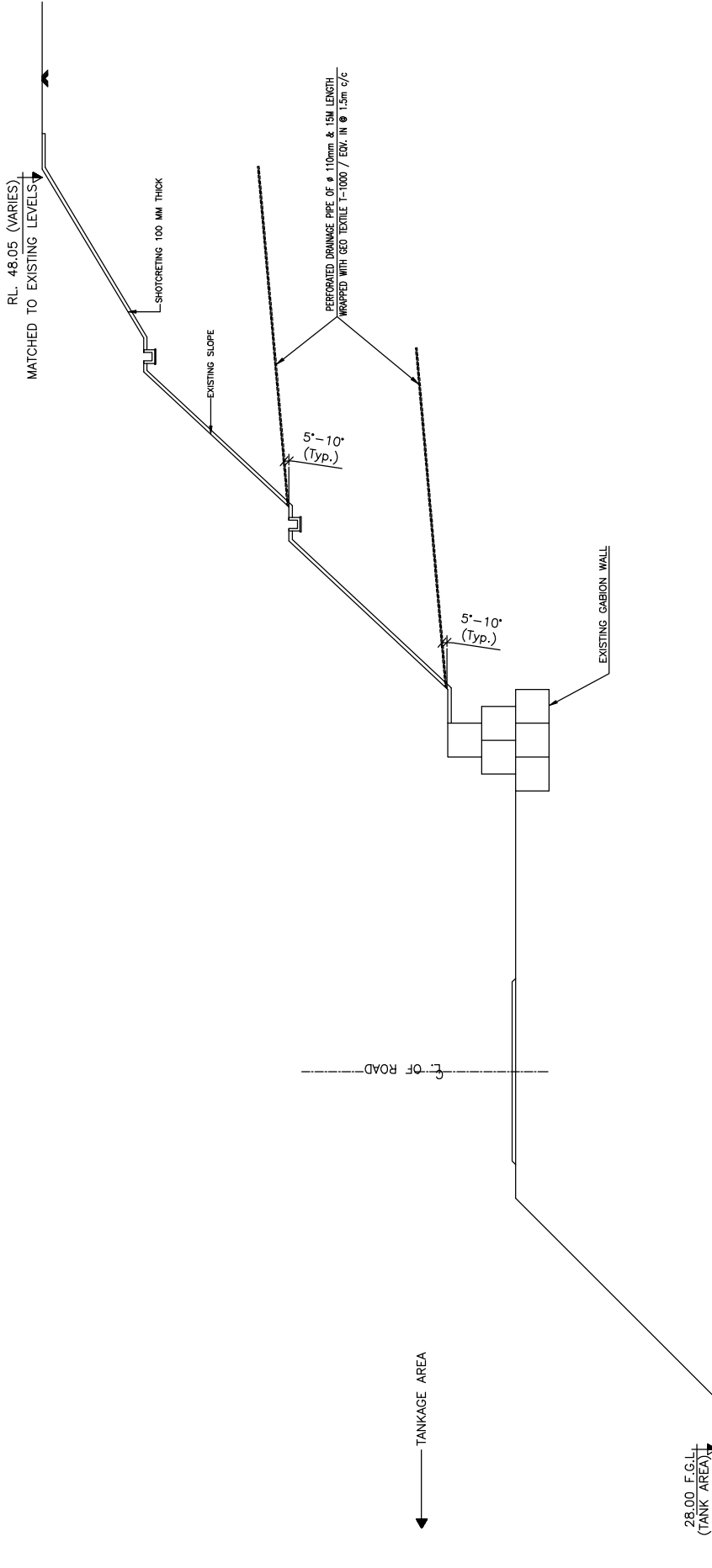
DRAWING NO.	REV.
B554-000-81-47-30002	A

REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

- 1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
- 2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.



The drawing, design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are merely loaned on the borrower's express agreement that they will not be reproduced, copied, exhibited or used, except in the limited way permitted by a written consent given by the lender to the borrower for the intended use.



ENGINEERS INDIA LIMITED
NEW DELHI

MANGALORE REFINERY & PETROCHEMICALS LTD.
ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE
STABILIZATION WORKS FOR CRUDE TANK (W/L/40RTH/WEST SIDE)
GROUP EAST SIDE & BETA LAND NORTH & WEST SIDE OF MBFL

REV.	DATE	ISSUED FOR TENDER	BY	REVISION
A	22.07.22			

CHK	MC/ST	RB	W/P

SLOPE RECTIFICATION SCHEME
FOR STRETCH (C-D)
(LOCATION - BETA LAND AREA)

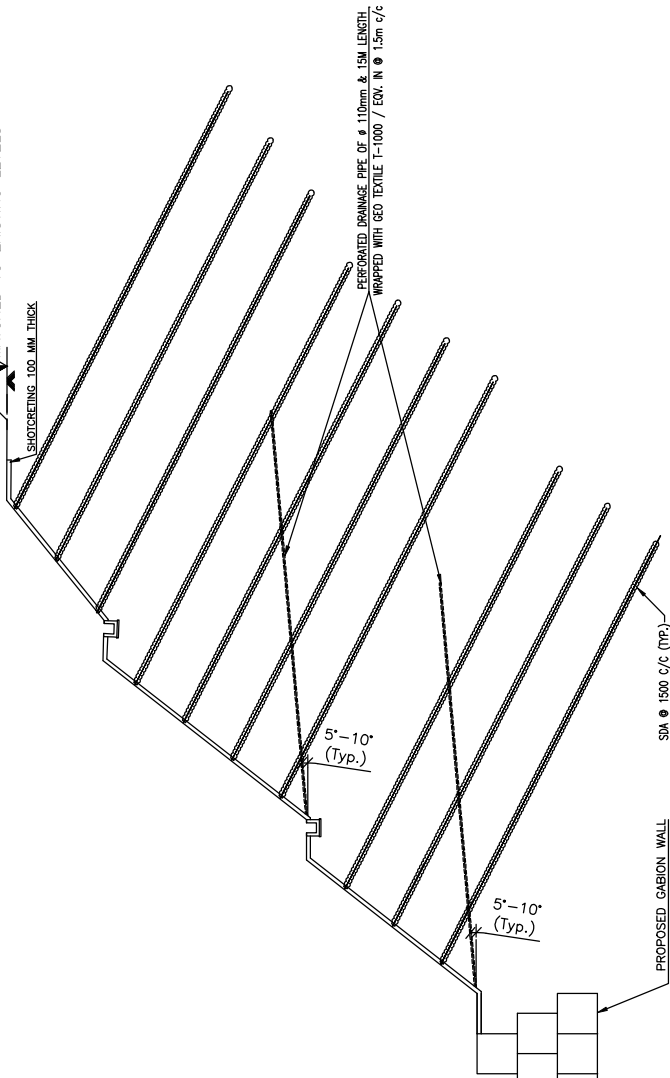
DRAWING NO.	REV.
B554-000-81-47-30003	A

NOTES :-

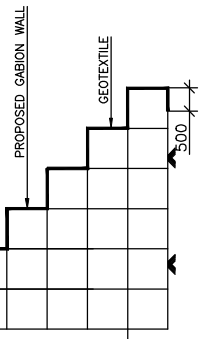
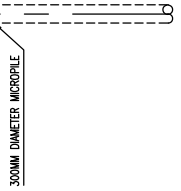
1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.
3. SCOPE OF WORK ALSO INCLUDES RE-PROFILING OF LOCALLY FAILED SLOPE.

EGL (LEVEL VARIES)

RL - 47.84 (VARIES)
 ↓ MATCHED TO EXISTING LEVELS
 SHOTCRETING 100 MM THICK



F. OF ROAD



TANKAGE AREA

REV.	DRAWING NO.	REV.
A	B554-000-81-47-30018	A

**SLOPE RECTIFICATION SCHEME
 FOR STRETCH E-F
 (LOCATION - BETA LAND AREA)**

REV.	DATE	ISSUED FOR TENDER	BY	CHK	APPROVED	APPROVED
A	22.07.22		Mh	ST/MC	RB	W/P

MANGALORE REFINERY & PETROCHEMICALS LTD.
 ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE
 STABILIZATION WORKS FOR CRUDE TANK (NORTH WEST SIDE)
 GROUP EAST SIDE & BETA LAND NORTH & WEST SIDE OF BRPL

ENGINEERS INDIA LIMITED
 NEW DELHI

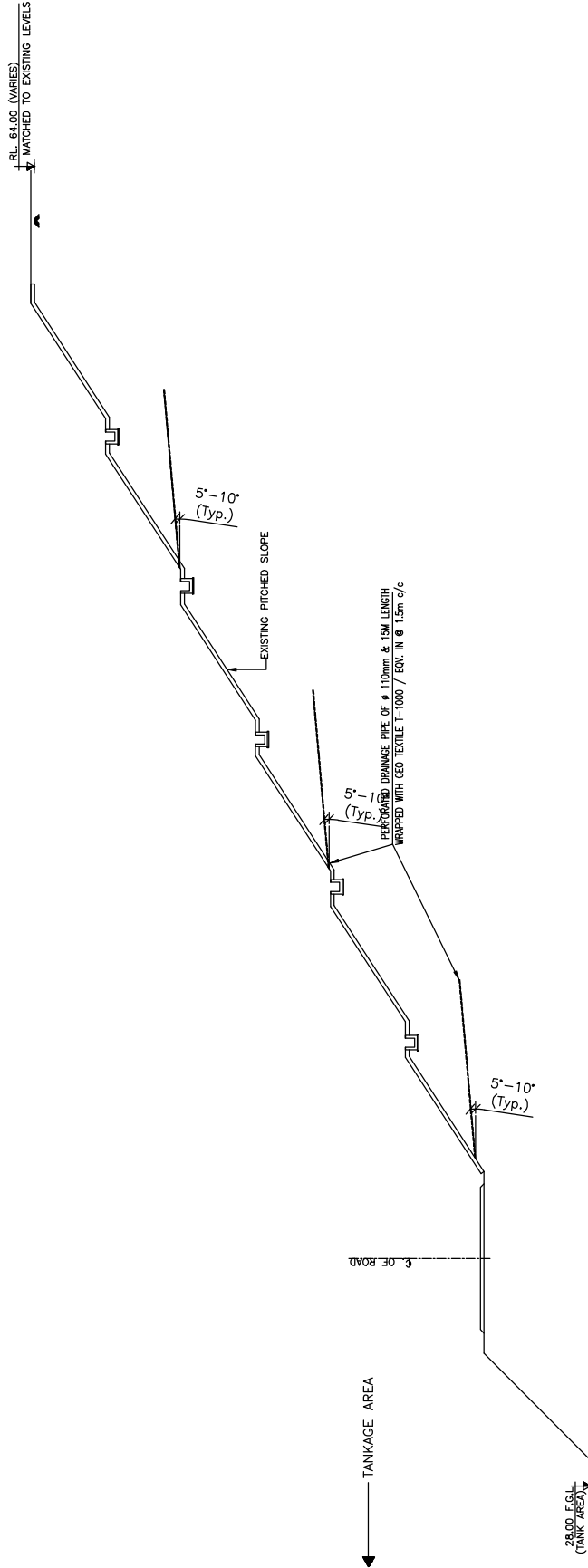


REF. DRG. NO.

REFERENCE DRAWING TITLE

NOTES :-

- 1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
- 2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.
- 3. SCOPE OF WORK ALSO INCLUDES RE-PROFILING OF LOCALLY FAILED SLOPE.



The drawing, design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are merely loaned on the borrower's express agreement that they will not be reproduced, copied, exhibited or used, except in the limited way permitted by a written consent given by the lender to the borrower for the intended use.



ENGINEERS INDIA LIMITED
NEW DELHI

MANGALORE REFINERY & PETROCHEMICALS LTD.
ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE
STABILIZATION WORKS FOR CRUDE TANK (UNPLANNED) WEST (S/E)
GROUP EAST SIDE & BETA LAND NORTH & WEST SIDE OF MRF

REV.	DATE	ISSUED FOR TENDER	BY	CHK	APPROVED
A	22.07.22				

ST/NC	BY	CHK	APPROVED

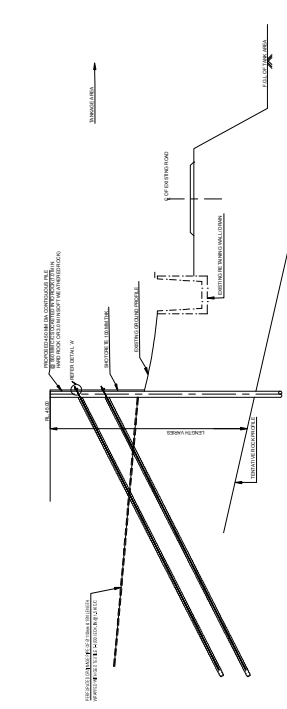
SLOPE RECTIFICATION SCHEME
FOR STRETCH (G-H)
(LOCATION - BETA LAND AREA)

DRAWING NO.
B554-000-81-47-30005

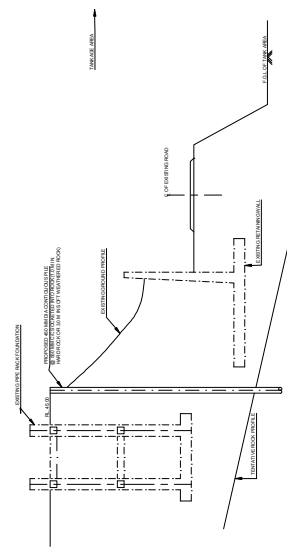
REV.
A



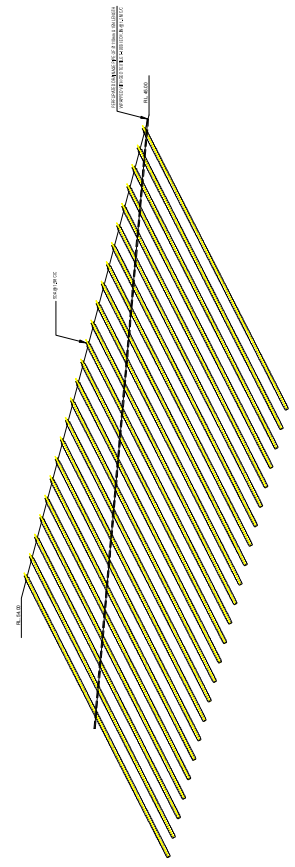
NOTES :-
 1. ALL DIMENSIONS ARE IN MM AND LEVELS, ALL ELEVATIONS ARE IN METER.
 2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHOWN IN CONSTRUCTION DRAWING.



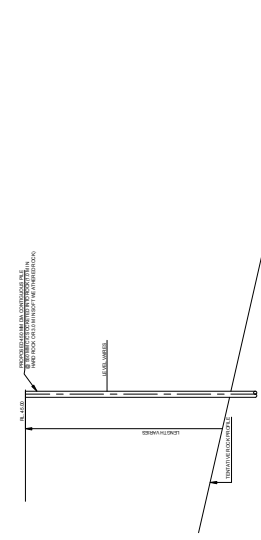
SECTION 2-2



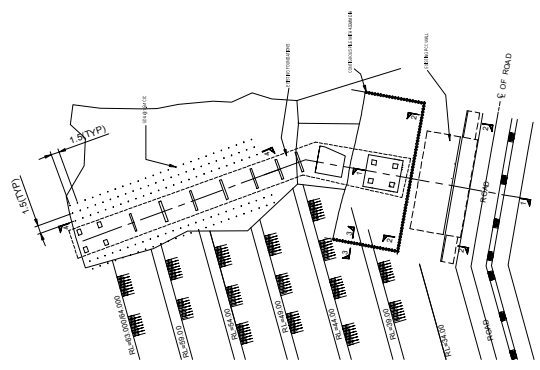
SECTION 1-1



SECTION 4-4



SECTION 3-3



NO.	DATE	BY	CHKD BY	APP'D BY
1	10/10/2023	ANIL K	ANIL K	ANIL K
2	10/10/2023	ANIL K	ANIL K	ANIL K
3	10/10/2023	ANIL K	ANIL K	ANIL K
4	10/10/2023	ANIL K	ANIL K	ANIL K

PREPARED BY
 ANIL K
 PROJECT ENGINEER

PROJECT ENGINEER
 ANIL K

MANAGORE REFINERY & PETROCHEMICALS LTD.
 ENGINEERING CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE STABILIZATION AND DRAINAGE SYSTEMS AT PORT AREA WEST SIDE OF MRP.

SLOPE RECTIFICATION SCHEME
 OF STRETCH (H-I)

SCALE 1:50

DATE 10/10/2023

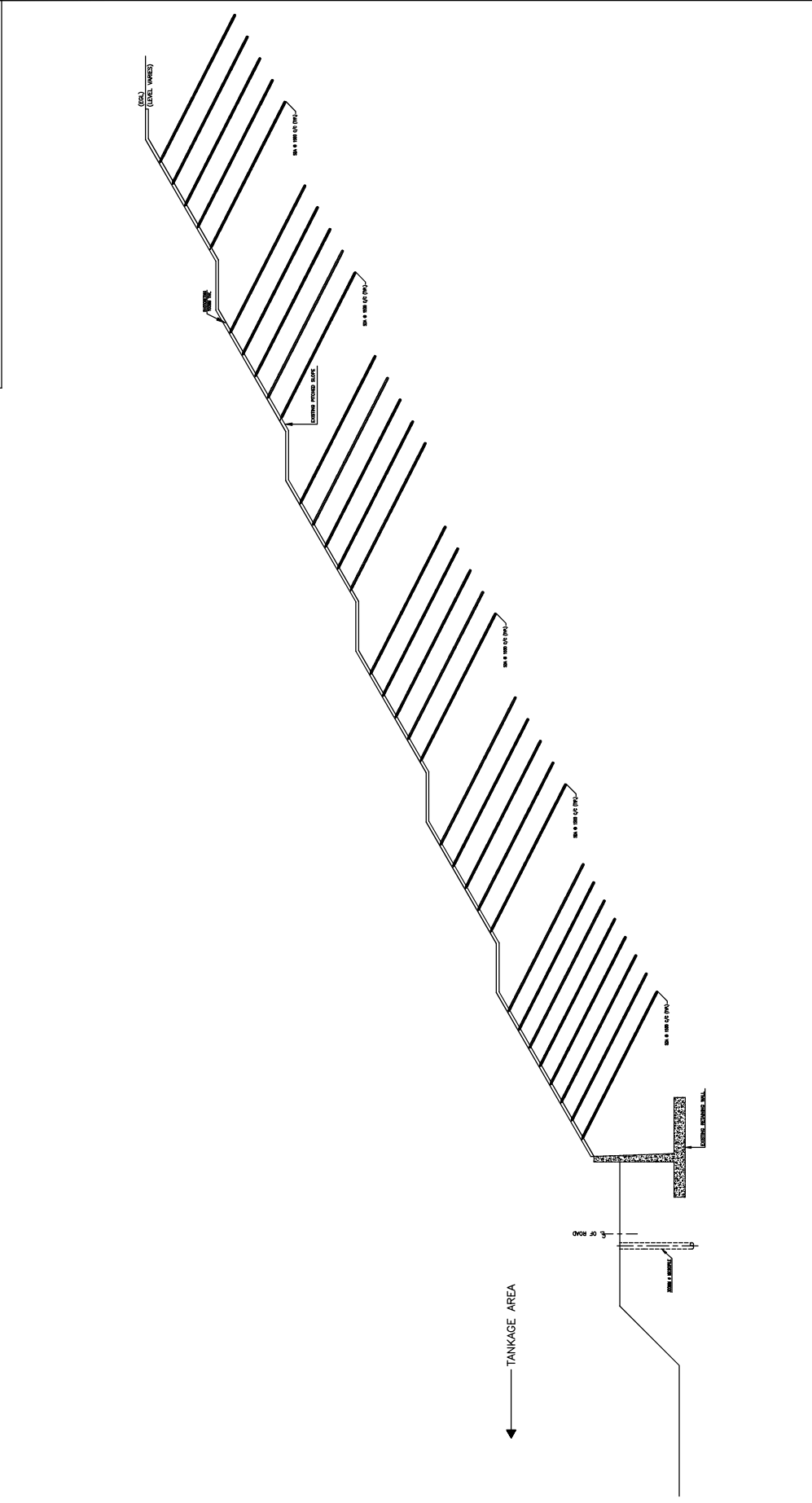
PROJECT NO. B554-000-81-47-00006

REV. 01

REF. DRG. NO. REFERENCE DRAWING TITLE

NOTES :-

- 1. ALL DIMENSIONS ARE IN MM. AND LEVELS IN M.
- 2. DETAILS OF SURFACE DRAINS ARE INDICATIVE. DETAILS WOULD BE SHARED IN CONSTRUCTION DRAWING.



The drawing, design and details given on this format are the property of ENGINEERS INDIA LIMITED. They are merely loaned on the borrower's express agreement that they will not be reproduced, copied, exhibited or used, except in the limited way permitted by a written consent given by the lender to the borrower for the intended use.

		MANGALORE REFINERY & PETROCHEMICALS LTD. ENGINEERING & CONSTRUCTION MANAGEMENT SERVICES FOR SLOPE STABILIZATION WORK (KADURU TANKAGE AREA) (REVISED SITE) FOR SLOPE RECTIFICATION WORK (REVISED SITE)		SLOPE RECTIFICATION SCHEME FOR STRETCH (I-J) (LOCATION - BETA LAND)		DRAWING NO.	REV.
		A 22.07.22 ISSUED FOR TENDER		APJ BY ST/MC RB WKP		B554-000-81-47-30007	A
REV.	DATE	BY	CHK	APPROVED	APPROVED		