



DEPARTMENT OF IRRIGATION
AND DRAINAGE MALAYSIA

Minutes of Meeting

**The 38th Meeting of Thailand - Malaysia
Joint Evaluation Team
On the Golok River Mouth Improvement Project**

July 27th, 2023
Online Conference

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AGENDA 1: OPENING ADDRESS

Mr. Kanchadin Srapratoom, the leader of Thai delegates, welcomed Malaysian delegates to the 38th Meeting of Thailand - Malaysia Joint Evaluation Team (JET) on the Golok River Mouth Improvement Project on July 27th, 2023. Mr. Kanchadin was assigned to be this meeting co-chairman because Mr. Surachart Malasri had an urgent assignment on the meeting day.

Ir. Mohd Sha'ri bin Mohammed, the leader of Malaysian delegates, expressed his appreciation for the warm welcome and arrangements for the Meeting.

Both sides introduced their delegates to the Meeting. Lists of delegates are shown in **APPENDIX A**.

AGENDA 2: ADOPTION OF AGENDA

The Meeting adopted the proposed agenda as shown in **APPENDIX B**.

AGENDA 3: MATTERS FOR CONSIDERATION

3.1 Report of Monitoring and Evaluation of Golok River Mouth

The Malaysian side reported the result of the pre-monsoon surveys, which were done by the Malaysian side on September 2022, and found that the sea bed level at the Malaysia breakwater tip increased from -2.7m MSL (post-monsoon survey in April 2022) to -3.0m MSL (pre-monsoon survey in September 2022) while erosion at Thailand breakwater tip decreased from -5.9 m MSL (post-monsoon survey in April 2022) to -5.8m MSL (pre-monsoon survey in September 2022). The deepest riverbed level around Transit Point B also increased from -7.3m MSL (post-monsoon survey in April 2022) to -7.4m MSL (pre-monsoon survey in September 2022). Due to the lack of essential information, the Malaysian side would like to postpone the report on sedimentation and erosion area within the navigation channel of the post-monsoon survey year 2022/2023 to the next JET Meeting (The 39th JET Meeting). Additional details are shown in **APPENDIX C**.

The Malaysian side presented the result of the 2nd Technical Meeting of the task force on October 26th – 27th, 2022. The presented details are as appear in **APPENDIX D**.

Consequently, both sides presented the 3rd revised member of the task force as shown in **APPENDIX E**. The Malaysian side also informed the meeting about the task force's timeline and the next planned task force meeting, which is "The 3rd Technical Meeting". The mentioned meeting was proposed to be held in September 2023 at Kota Bharu, Kelantan, Malaysia. Details are as in **APPENDIX F**.

Discussion by JET

The Meeting acknowledged:

1. The report of year 2022/2023 post monsoon sea bed level surveys at both sides' breakwater tips and at Transit Point B, which were done by Malaysian side.
2. The result of the 2nd Technical Meeting of task force, which was held between October 26th – 27th, 2022.
3. The operation timeline and the proposed date of the 3rd Technical Meeting of task force.

The Meeting agreed that:

1. Malaysian side would postpone reporting the result of year 2022/2023 post-monsoon seabed level in the navigation channel, which was done by Malaysian side.

3.2 Maintenance Dredging of Golok River Mouth

As agreed in the 25th JET Meeting, 32nd JTWG Meeting, and 14th JSC Meeting, the maintenance dredging is required based on the following criteria:

- i. When the cross-section area of the river mouth between Thai and Malaysian breakwater tips is blocked by sediment up to 30% (based on Thai study); or
- ii. When the riverbed level of the river mouth is at -2.0 m MSL or shallower (based on Malaysian study);

The sediment patterns are to be monitored for at least 2 consecutive monsoon seasons to identify the need for maintenance dredging.

For the drainage criteria, the Malaysian side reported that the information from the cross-section survey between the Thai and Malaysia breakwaters still needed to be analyzed and rechecked. Then, the Malaysian side would report the result of this survey in the next task force meeting and JET meeting.

For the navigation criteria, the survey at CH400 and CH425 in the proposed navigation channel, done in September 2022 (pre-monsoon), showed that the sea bed level was under -2.0m MSL, which did not affect the navigation in Golok River, according to the agreed criteria. The survey results are shown in **APPENDIX G**.

In summary, there is no need for dredging the Golok River Mouth at the time being.

Discussion by JET

The Meeting acknowledged:

1. The 2022 pre-monsoon survey (September 2022) showed that there is no need to dredge the Golok River mouth at the moment.

3.3 Mutual Calibration of Golok River Mouth

The Thai side presented the calibration method to the meeting that both sides used their own M9 equipment to survey across Golok River, and compared their results.

Both sides presented their rating curves, but could not compare them, because of their different time frame usage. While the Thai side used water year (April 2021 – March 2022) to plot the rating curve, the Malaysian side used calendar year (January 2022 – December 2022). This issue would be discussed further in the next task force meeting. The rating curves are shown in **APPENDIX H1** and **APPENDIX H2**.

Discussion by JET

The Meeting acknowledged:

1. The mutual Golok River calibration method.
2. Rating curves, plotted by both sides, from the data collected in 2022.

3.4 Real-Time Monitoring System and Joint Website for Golok River Basin

Both sides presented the report of rainfall and water level telemetry stations as appeared on the joint website. The mentioned website is <http://h2o.water.gov.my/golok/main.html>.

The Thai side reported that because of equipment failure, their six new telemetry stations have stopped sending rainfall and water level data. These stations are in the repair and improvement process, which budget is inquired in the year 2025 budget plan. Meanwhile, the Thai side informed the meeting that they planned to install four new telemetry stations in Golok River basin to provide further information on rainfall and water level. Locations for these new telemetry stations are:

- i. Ri-Goh Canal, Sungai Golok
- ii. Wang Canal, Wang
- iii. Lowest reach of Golok River, Sungai Golok
- iv. Bang Nara River, Sungai Golok

These four new telemetry stations are small-sized stations and are expected to be installed in 2024.

Discussion by JET

The Meeting acknowledged:

1. The sharing of rainfall and water level information from telemetry stations to joint website.
2. Six telemetry stations in Thailand are out of service because of equipment failure, and Thai side plans to maintenance them in 2025.
3. Thai side plan to install four small telemetry stations in order to collect further hydrological information in 2024.

3.5 Rehabilitation and Protection Works at Golok River Mouth

The Thai side presented proposed rehabilitation and protection works at the Golok River Mouth that both sides planned and designed together. The proposed works presented at the meeting are shown in **APPENDIX I**.

Consequently, the Thai side compared the former construction roadmap (**APPENDIX J**) with the revised construction roadmap (**APPENDIX K**). The difference is the beginning time of construction. The former roadmap indicated that the Malaysian side would begin construction in 2022, and the Thai side would begin in 2024. After the 17th JSC Meeting on June 22nd, 2023, the roadmap was revised, and both sides agreed to begin their construction in 2023. In details, the Thai side would mobilize construction equipment and machineries to prepare the site until the end of the monsoon season, then begin the construction in 2024. The Malaysian side accepted the revised roadmap and expected both sides could process their construction following the roadmap.

Discussion by JET

The Meeting acknowledged:

1. The proposed rehabilitation and protection works at the Golok River Mouth that both sides planned and designed together.
2. The revision of rehabilitation and protection works construction roadmap
3. The revised roadmap of rehabilitation and protection works construction

3.6 Protection Work at Transit Point B

The Meeting acknowledged that the 16th JSC Meeting in April 2019 indicated that:

- i. Based on the presentation of the detailed design, the Malaysian side found that the proposed protection works involve new specifications and components which need to be further deliberated since it is not in line with the provisions in the 1997 Agreement. Hence, the Malaysian side proposed that a new agreement needed to be drafted and be discussed by both sides.

- ii. The Thai side confirmed that the 1997 Agreement includes the proposed protection works which are stated as protection works to transit point B under ANNEX 1 Paragraph 3.0 (b) of the 1997 Agreement.
- iii. The meeting agreed that JTWG and JET would discuss the matter, and report in the next JSC meeting.

In 35th JET meeting on September 2019, the Malaysian side proposes to classify protection works to be done as upgrades of the existing facility of Transit Point B. Afterward, at the 37th JTWG meeting on March 2020, the Malaysian side requested the Thai side to consider adding a landing point or jetty for maintenance works of Transit Point B. The Malaysian side agreed in the 36th JET Meeting with the design of the jetty and will propose this matter in the next JTWG meeting (The 38th JTWG Meeting). The designs are shown in **APPENDIX L**.

The Thai side informed that Thai side JET committee has no representative from the Ministry of Foreign Affairs (MOFA) to thoroughly consider the agreement. The meeting agreed to let this matter be further discussed in the next JTWG meeting (The 39th JTWG Meeting).

Discussion by JET

The Meeting acknowledged:

1. The necessity to postpone the discussion about 1997 Thailand – Malaysia MOU related issues to the JTWG meeting as there is no Ministry of Foreign Affairs officer in Thai side JET to consider and discuss about MOU related contents.

The Meeting agreed that:

1. To postpone the discussion about 1997 Thailand – Malaysia MOU related issues to the 39th JTWG Meeting.

3.7 Integrated River Basin Management (IRBM) Plan for Golok River

The Meeting noted that the 17th JSC Meeting agreed to remove the agenda of the Integrated River Basin Management (IRBM) Plan for Golok River from the JSC Meeting, and this matter would be further discussed in the different platform. The Meeting adopted that the agenda about IRBM will be dropped from the next JET Meeting.

Discussion by JET

The Meeting acknowledged:

1. The resolution of the JSC Meeting to remove the agenda about Integrated River Basin Management (IRBM) Plan for Golok River from the next JSC Meeting, and to let this agenda be discussed further in another platform.

The Meeting agreed that:

1. To remove the agenda about Integrated River Basin Management (IRBM) Plan for Golok River from the next JET Meeting.

AGENDA 4: OTHER MATTERS

4.1 Flood Problems in Golok River Basin

Refer to the Minutes of the 37th JTWG Meeting that:

- i. The Malaysian side informed that Tumpat district in Kelantan suffered severe flooding, which lasted for 2 weeks. The Thai side also informed that they also experienced severe flooding in Sungai Kolok and Tak Bai districts.
- ii. The Malaysian side informed the meeting that they have initiated a flood bund project and this project is now at the construction stage.
- iii. The Malaysian side requested data sharing regarding flood bund level and flood mitigation planning by both sides. The Thai side informed that Narathiwat province would appoint for a meeting with relevant agencies and the outcome would be discussed further at the next JTWG meeting (The 38th JTWG Meeting).

Both sides reported that they finished exchanging their necessary information on the flood wall with each other. The Meeting proposed and agreed to drop this agenda from the next JET Meeting.

Discussion by JET

The Meeting acknowledged:

1. The progression of Thailand and Malaysia's Golok River flood protection wall information exchange.

The Meeting agreed that:

1. To remove the agenda about Golok River basin flood problem from the next JET Meeting.

4.2 Date and Venue for the Next Meeting

The meeting proposed date and venue for the next JET meeting (The 39th JET Meeting) are as follows:

Date: January/February 2024

Venue: Melaka, Malaysia

The meeting also proposed the date and venue for the next JTWG meeting (The 39th JTWG Meeting) as follows:

Date: September 11th – 12th, 2023

Venue: Phuket, Thailand

AGENDA 5: MATTERS TO BE REFERRED TO THE JTWG

Matters for information

1. Report of Monitoring and Evaluation of Golok River Mouth
2. Maintenance Dredging of Golok River Mouth
3. Mutual Calibration of Golok River Mouth
4. Real-Time Monitoring System and the Joint Website for Golok River Basin
5. Flood Problems in Golok River Basin
6. Integrated River Basin Management (IRBM) Plan for Golok River Basin

Matters for Consideration

1. Rehabilitation and Protection Works at Golok River Mouth
2. Protection Works at Transit Point B

Agenda 6: ADOPTION OF MINUTES OF THE MEETING

The Meeting agreed to adopt the minutes of meeting of the 38th Meeting of Thailand – Malaysia Joint Evaluation Team (JET) on the Golok River Mouth Improvement Project.



(Mr. Kanchadin Srpratoom)
Co-chairman
Joint Evaluation Team, Thailand



(Mr. Mohd Sha'ri bin Mohammed)
Co-chairman
Joint Evaluation Team, Malaysia

APPENDIX A

THE 38th MEETING OF THAILAND - MALAYSIA JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF THAI DELEGATES







	<p>Name: Mr. Kanchadin Srapratoom Designation: Advisor (Foreign Relations) Department: Royal Irrigation Department Contact no.: +668 1721 0034 E-mail: kanchadin@yahoo.com</p>
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	<p>Name: Acting Lt. Tanasakda Tuptone Designation: Director Department: Hydrology Irrigation Center (Southern Region), Royal Irrigation Department Contact no.: +666 4546 3888, +669 9481 5558 E-mail: ridmanhydro@gmail.com</p>
	<p>Name: Mr. Apiwat Chana-songkram Designation: Director Department: Golok River Basin Operation and Maintenance Project, Regional Irrigation Office 17, Royal Irrigation Department Contact no.: +668 1678 2030, +667 353 0891 E-mail: lum44nano@yahoo.co.th</p>
	<p>Name: Mr. Rut Innupat Designation: Director Department: Construction Project for Large Scale Irrigation 16, Bureau of large-scale water resources development, Royal Irrigation Department Contact no.: +668 1712 2598 E-mail: rut_w50@yahoo.com</p>







	<p>Name: Mr. Soratorn Panluan</p> <p>Designation: Survey Engineer Professional Level</p> <p>Department: Survey and Engineering Bureau, Marine Department</p> <p>Contact no.: +668 3921 7986, +668 3232 6905</p> <p>E-mail: soratorn@yahoo.com</p>
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	<p>Name: Mr. Attapan Diloksopon</p> <p>Designation: Director</p> <p>Department: Foreign Project Management and International Affairs Division, Bureau of Project Management, Royal Irrigation Department</p> <p>Contact no.: +668 0270 9997</p> <p>E-mail: atpdlk@gmail.com</p>
	<p>Name: Mrs. Janjira Buddhawong</p> <p>Designation: Chief of Foreign Programing Branch</p> <p>Department: Bureau of Project Management, Royal Irrigation Department</p> <p>Contact no.: +668 6397 7873</p> <p>E-mail: janjirab@yahoo.com</p>
	<p>Name: Mr. Kanis Mahittimahawong</p> <p>Designation: Foreign Relations Officer, Practitioner Level Bureau of Project Management</p> <p>Department: Royal Irrigation Department</p> <p>Contact no.: +668 9992 2673</p> <p>E-mail: kanism@rid.go.th</p>
	<p>Name: Ms. Chitchaya Tissaro</p> <p>Designation: Foreign Relations Officer, Practitioner Level Bureau of Project Management</p> <p>Department: Royal Irrigation Department</p> <p>Contact no.: +668 1969 1872</p> <p>E-mail: chitchaya.tis@gmail.com</p>

APPENDIX A

THE 38th MEETING OF THAILAND - MALAYSIA JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF MALAYSIAN DELEGATES

	<p>Name: Ir. Mohd. Sha'ri bin Mohammed Designation: Deputy Director Department: Division of Coastal Zone Management, Department of Irrigation and Drainage Contact no.: +601388935273 E-mail: mohdshari@water.gov.my</p>
	<p>Name: Ir. Yuhaslin binti Yusof Designation: Senior Engineer Department: Division of Water Resources Management and Hydrology Contact no.: +60126512180 E-mail: yuhaslin@water.gov.my</p>
	<p>Name: Mrs. Kalsom binti Mean Designation: Senior Engineer Department: Division of Coastal Zone Management Department of Irrigation and Drainage Contact no.: +6019 3034624 E-mail: kalsom@water.gov.my</p>
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	<p>Name: Ir. Ts. Wan Zaidi Bin Wan Mahamood Designation: Engineer Department: Kelantan Federal Project Implementation Unit Contact no.: +6010 9099199 E-mail: wanzaidi@water.gov.my</p>

	<p>Name: Mr. Muhammad Khairil Izwan</p> <p>Designation: Engineer</p> <p>Department: Department of Irrigation and Drainage Kelantan</p> <p>Contact no.: +60135190291</p> <p>E-mail: khairilizwan@water.gov.my</p>
	<p>Name: Mr. Mohd Eizam Bin Yusof</p> <p>Designation: Engineer</p> <p>Department: Division of Water Resources Management and Hydrology</p> <p>Contact no.: +6016 4844359</p> <p>E-mail: eizam@water.gov.my</p>
	<p>Name: Mr. Mohd Nasyarul bin Ahmad Rizan</p> <p>Designation: Engineer</p> <p>Department: Division of Coastal Zone Management Department of Irrigation and Drainage</p> <p>Contact no.: +60135125289</p> <p>E-mail: nasyarul@water.gov.my</p>
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	<p>Name: Mr. Ahmad Nasiruddin bin Ismail</p> <p>Designation: Assistant Engineer</p> <p>Department: Kelantan Federal Project Implementation Unit</p> <p>Contact no.: +60179106113</p> <p>E-mail: nasiruddin@water.gov.my</p>
	<p>Name: Mr. Mohammad Firdaus Yong</p> <p>Designation: Assistant Engineer</p> <p>Department: Division of Coastal Zone Management Department of Irrigation and Drainage Malaysia</p> <p>Contact no.: +60148542549</p> <p>E-mail: firdausyong@water.gov.my</p>

APPENDIX B

THE 38th MEETING OF THAILAND - MALAYSIA JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

PROPOSED AGENDA

Agenda 1: Opening Session

Agenda 2: Adoption of Agenda

Agenda 3: Matters for Consideration

- 3.1 Report of Monitoring and Evaluation of Golok River Mouth
- 3.2 Maintenance Dredging of Golok River Mouth
- 3.3 Mutual Calibration of Golok River Mouth
- 3.4 Real-Time Monitoring System and the Joint Website for Golok River Basin
- 3.5 Rehabilitation and Protection Works at Golok River Mouth
- 3.6 Protection Work at Transit Point B
- 3.7 Integrated River Basin Management (IRBM) Plan for Golok River Basin

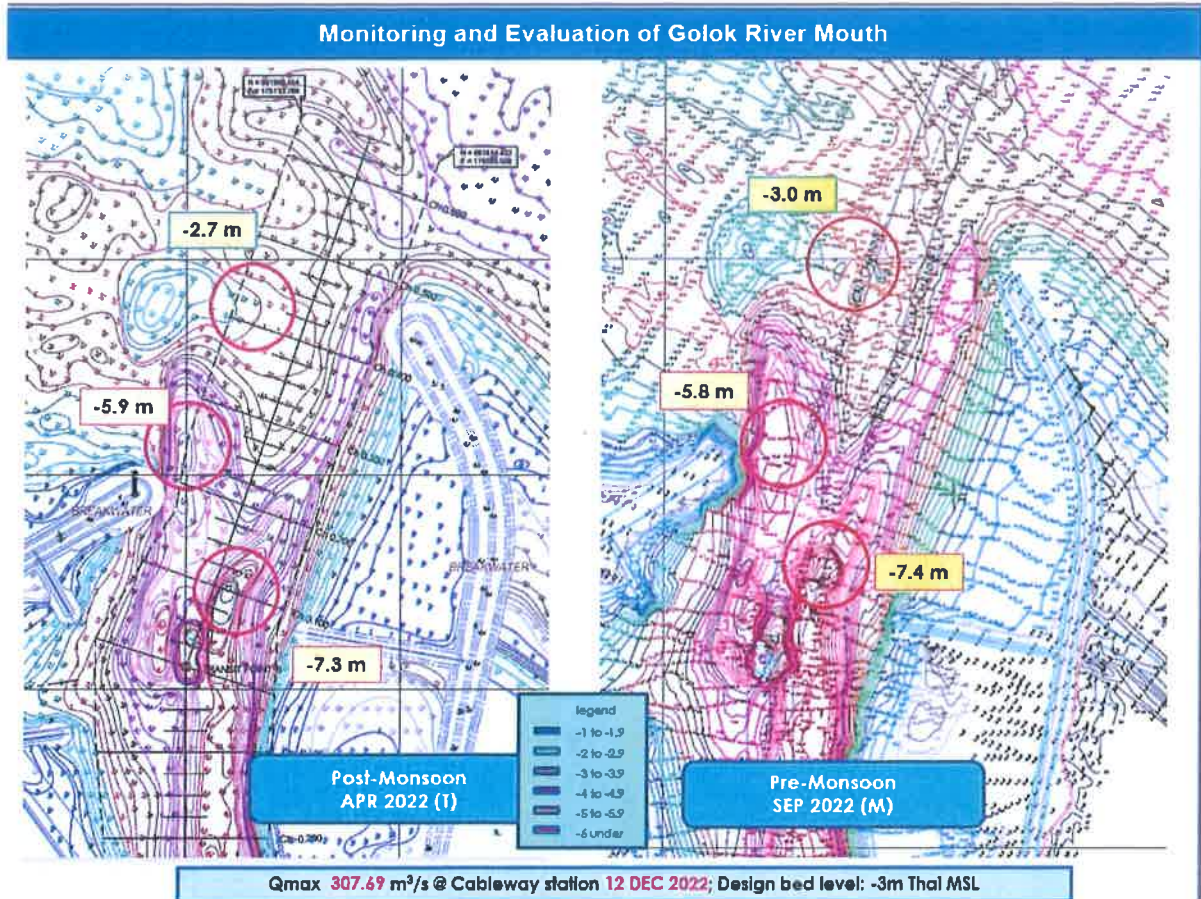
Agenda 4: Other matters

- 4.1 Flood Problem in Golok River Basin
- 4.2 Date and venue for next meeting

Agenda 5: Matters to Be Referred To JTWG

Agenda 6: Adoption of Minutes of Meeting

APPENDIX C



Summary Monitoring and Evaluation of Golok River Mouth

1. The **maximum** sea bed level @ design channel for pre -post monsoon as shown in table.

Mar 2015 (M)	Sept 2015 (T)	Apr 2016 (T)	Oct 2016 (M)	Mar 2017 (M)	Oct 2017 (T)	Apr 2018 (T)	Oct 2018 (M)	Jun 2019 (M)	Oct 2019 (T)	Mar 2020 (T)	Nov 2020 (M)	Mar 2021 (M)
-2.1 MSL.	-2.3 MSL.	-2.6 MSL.	-3.1 MSL.	-3.0 MSL.	-3.1 MSL.	-3.1 MSL.	Not survey	-2.8 MSL.	-3.0 MSL.	Covid	-2.1 MSL.	-3.0 MSL.
											Survey only MAS side	
Oct 2021 (T)	Apr 2022 (T)	Sept 2022 (M)										
Covid	-2.7 MSL.	-3.4 MSL.										

2. **Sedimentation & Erosion area** within navigation channel Post monsoon (2022)

Deposit - cu.m. and **Erosion** - cu.m.

APPENDIX D

TASK FORCE TEAM 2ND TECHNICAL MEETING

1. The 2nd Technical Meeting and Site Visit of the Task Force Team (TFT) was held from 26 until 27 October 2022 at Kolok Operation & Maintenance Project, Narathiwat, Thailand.
2. The meeting was co-chaired by Mr. Supat Sripaiwan, Deputy Director of Regional Irrigational Office 17, Royal Irrigational Department of Thailand, and Madam Ir. Yuhaslin binti Yusof, Deputy Director of Water Resources Management and Hydrology Division, Department of Irrigation and Drainage, Malaysia.
3. The meeting discussed the availability of data for hydrological stations within the catchment area, studies done by DID Malaysia, and the proposed location for flowmeter measurement at the river mouth.
4. On the following day, 28 October 2022, Task Force Team visited the Nam Bang floodgate (middle gate) and Bang Nara River Basin Smart Water Operational Centre (upper gate) to learn the RID technical experience in operating water resources at Bang Nara River Basin.

APPENDIX D

TASK FORCE TEAM 2nd TECHNICAL MEETING & SITE VISIT ON GOLOK RIVER BASIN

(26- 27 OCTOBER 2022)

1. TECHNICAL MEETING AT KOLOK OPERATION
AND MAINTENANCE, NARATHIWAT, THAILAND
ON 26 OCT 2022



2. SITE VISIT TO X.119A GOLOK RIVER
CABLEWAY STATION ON 26 OCTOBER 2022



3. SITE VISIT TO PROPOSED FLOWMETER
INSTALLATION LOCATION NEAR TO GOLOK
RIVER MOUTH



4. SITE VISIT TO NAM BANG DIVERSION
CANAL AT BANG NARA RIVER BASIN ON
27 OCTOBER 2022











5. TECHNICAL VISIT TO SMART WATER
OPERATIONAL CENTRE, RIO 17 ON
27 OCTOBER 2023



6. TECHNICAL VISIT TO BANG NARA RIVER
UPPER FLOOD GATE ON 27 OCTOBER 2022

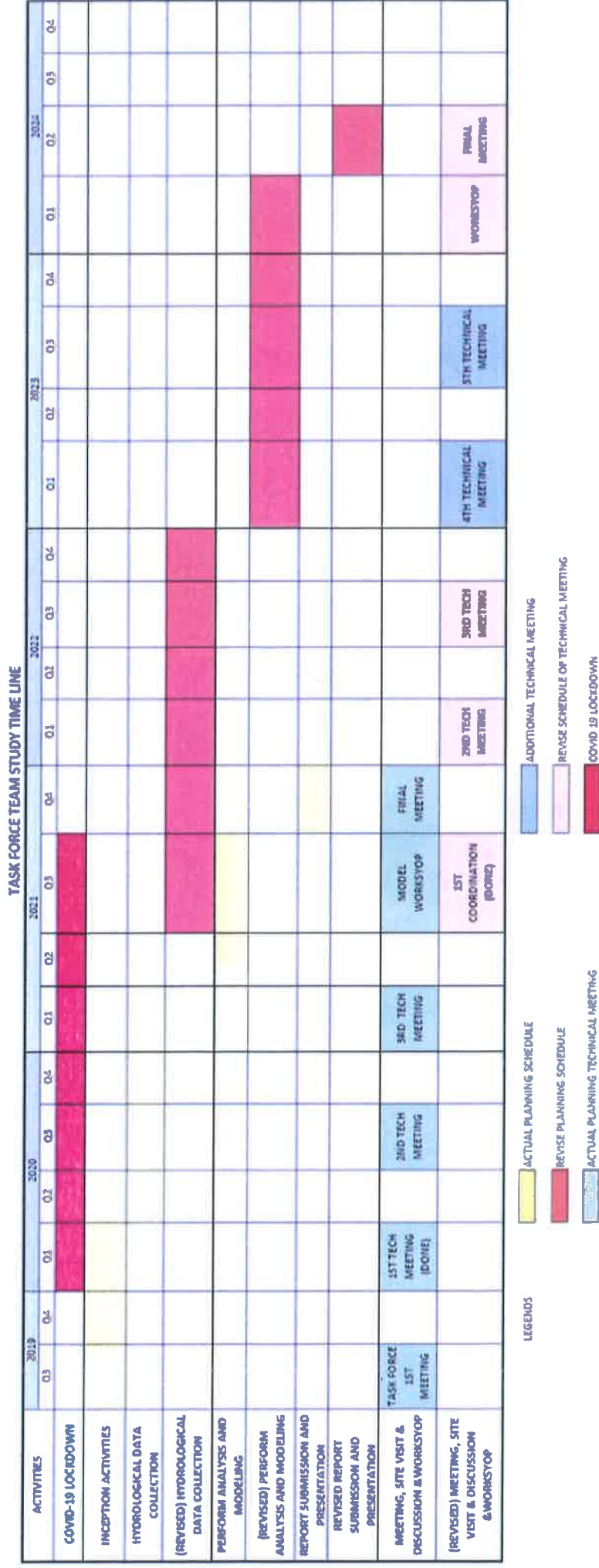


APPENDIX E

3rd Revised of Task Force Team			
THAILAND TEAM		MALAYSIA TEAM	
	Acting Lt. Tanasakda Tuptone Director, Hydrology Irrigation Center (Southern Region), Royal Irrigation Department		Mr. Roslan Bin Sukimin Deputy Director Water Resources Management and Hydrology Division, Department of Irrigation and Drainage Malaysia
	Mr. Apiwat Chanasongkram Director, Golok River Basin Operation and Maintenance Project Regional Irrigation Office 17		Ir. Ahmad Fazili Bin Abdul Hamid Senior Engineer Coastal Zone Management Division, Department of Irrigation and Drainage Malaysia
	Mr. Soratorn Panluan Survey Engineer Professional Level Survey and Engineering Bureau, Marine Department		Mr. Zaidi bin Deraman Engineer Department of Irrigation and Drainage Kelantan
	Mr. Attapan Diloksoyon Director, Foreign Project Management and International Affairs Division, Bureau of Project Management, Royal Irrigation Department (Secretariat)		Mr. Mohd Elizam bin Yusof Engineer Division of Water Resources Management and Hydrology, Department of Irrigation and Drainage Malaysia (Secretariat)

APPENDIX F

Task Force Team Revised Timeline



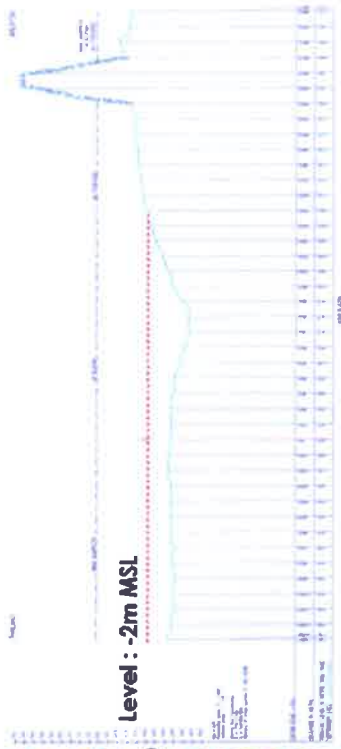
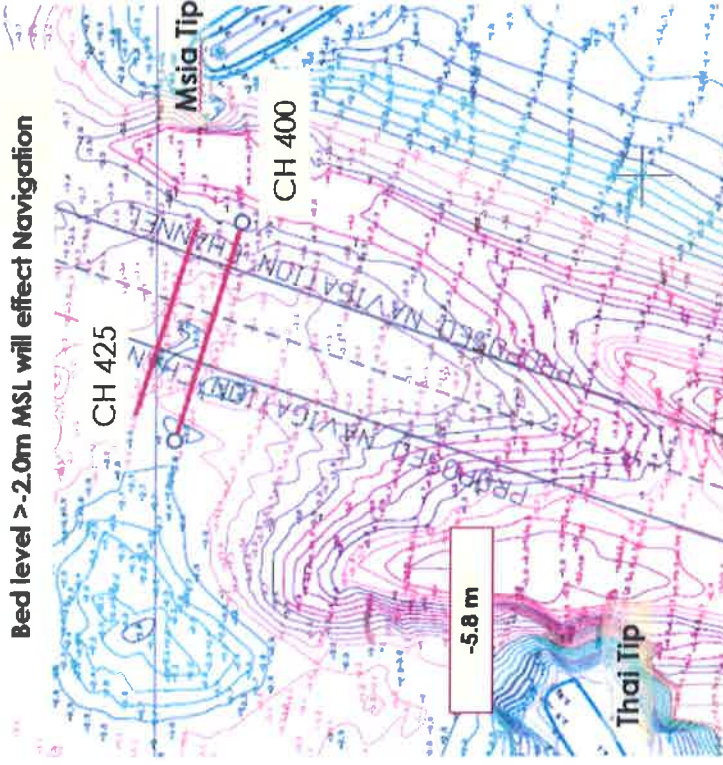
Task Force Team's Way Forward

1. Propose to hold a physical meeting for the 3rd Technical Meeting at Kota Bharu, Kelantan on September 2023.
2. Proposed Agenda for Discussion:
Matter for Information
 - Objective, scope, and revised timelineMatter for Discussion
 - Data & Information (hydrology, land use, survey, etc.)
 - Updating the progress study by the Department of Irrigation and Drainage (National Flood Forecasting and Warning System for Golok River Basin)
 - Method of flow measurement.

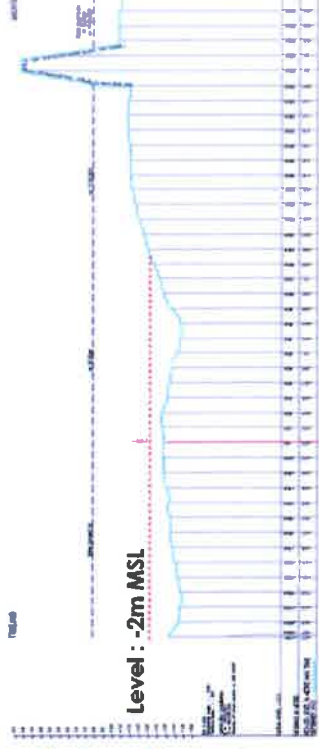
APPENDIX G

CRITERIA FOR NAVIGATION (MSIA)

Bed level $> -2.0\text{m}$ MSL will effect Navigation



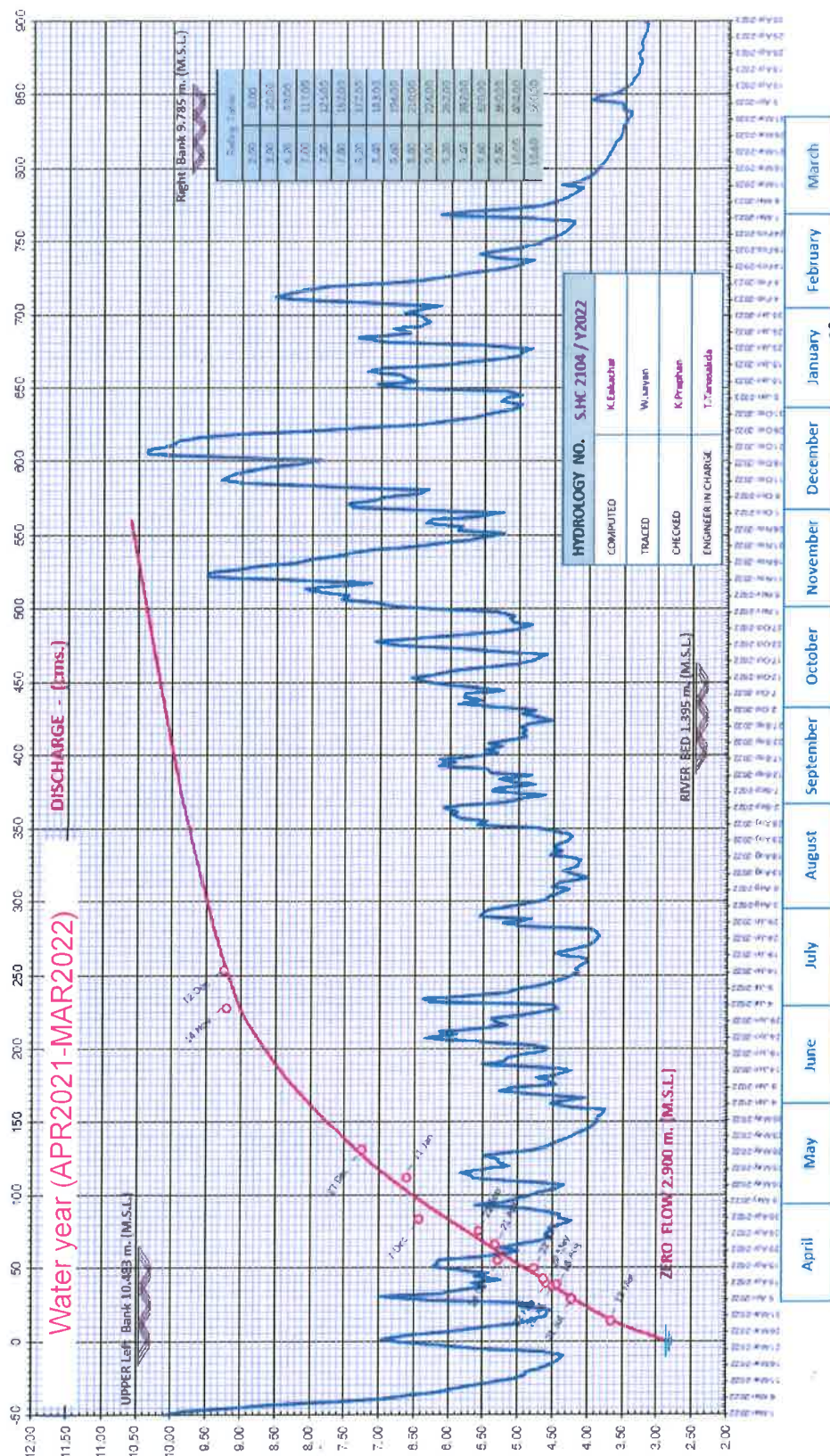
Sediment level @ Ch 0 +425 m $< -2.0\text{m}$



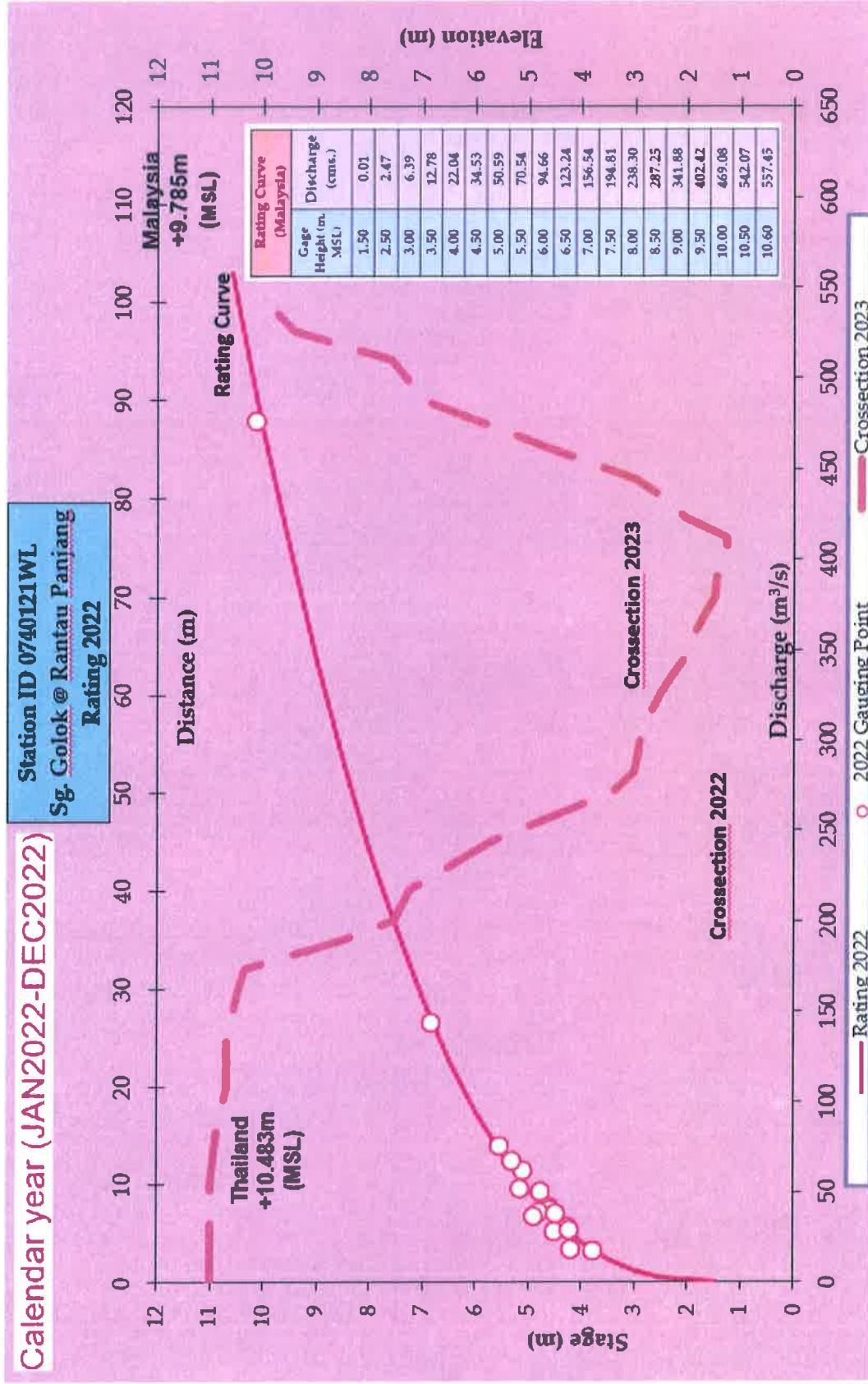
Sediment level @ Ch 0 +400 m $< -2.0\text{m}$

Pre MONSOON (SEP 2022)
Sediment **DOES NOT**
effect navigation

GAGE HEIGHT - m. (M.S.L.)

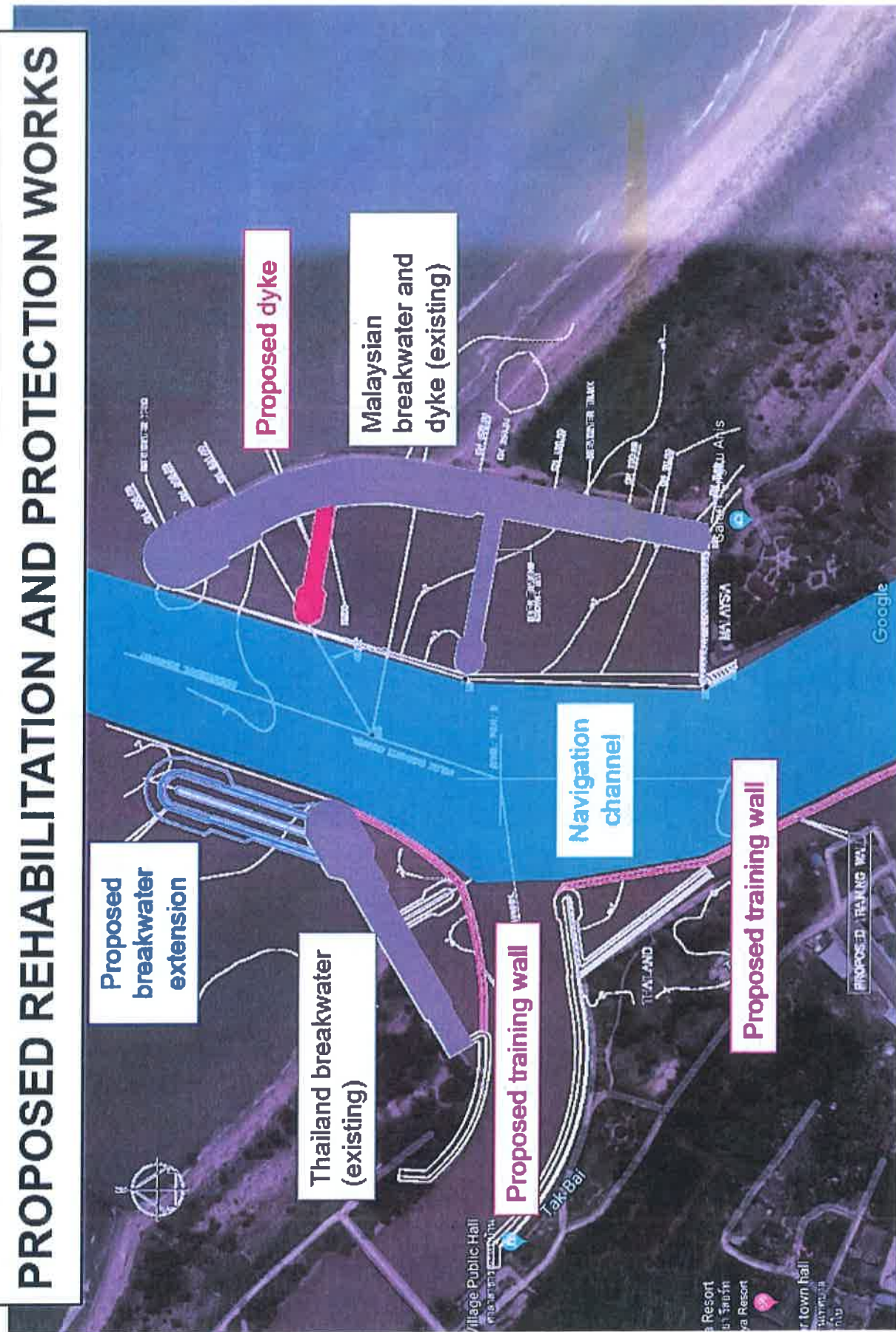


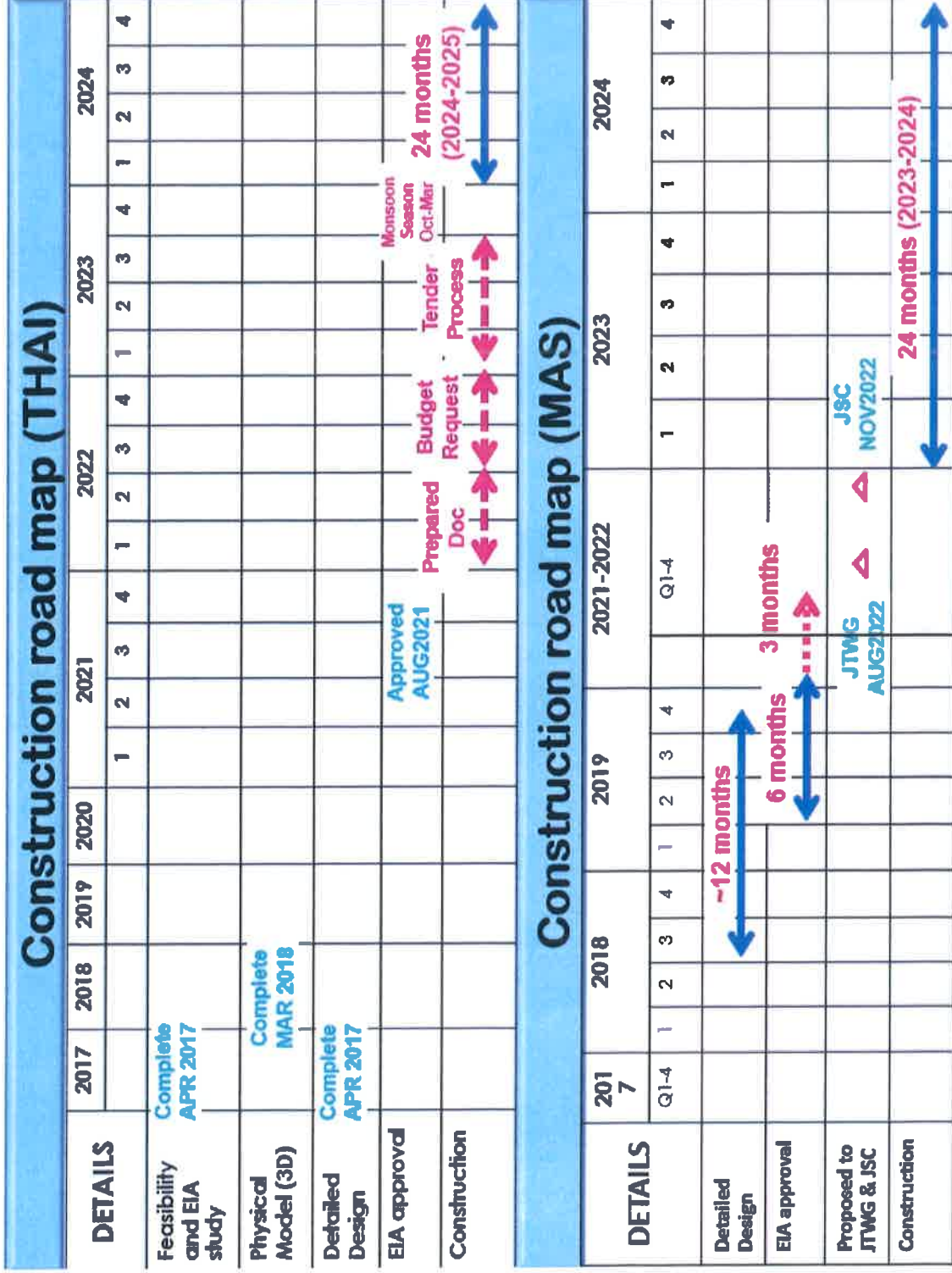
APPENDIX H2



APPENDIX I

PROPOSED REHABILITATION AND PROTECTION WORKS



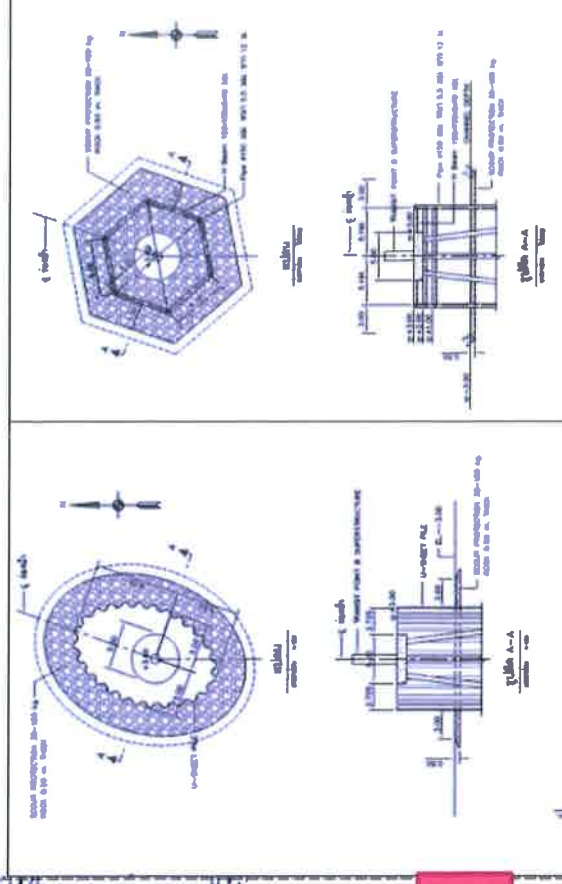
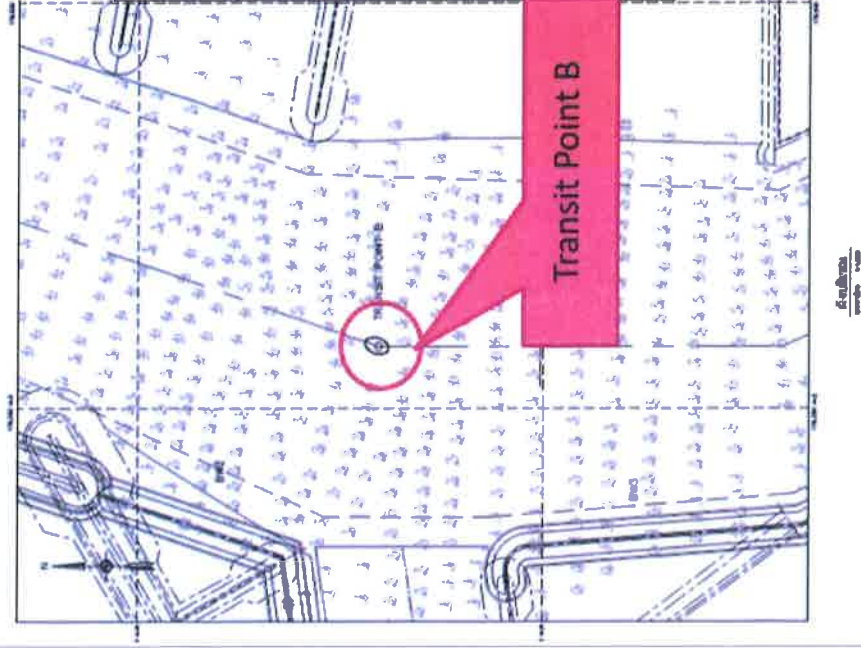


APPENDIX K

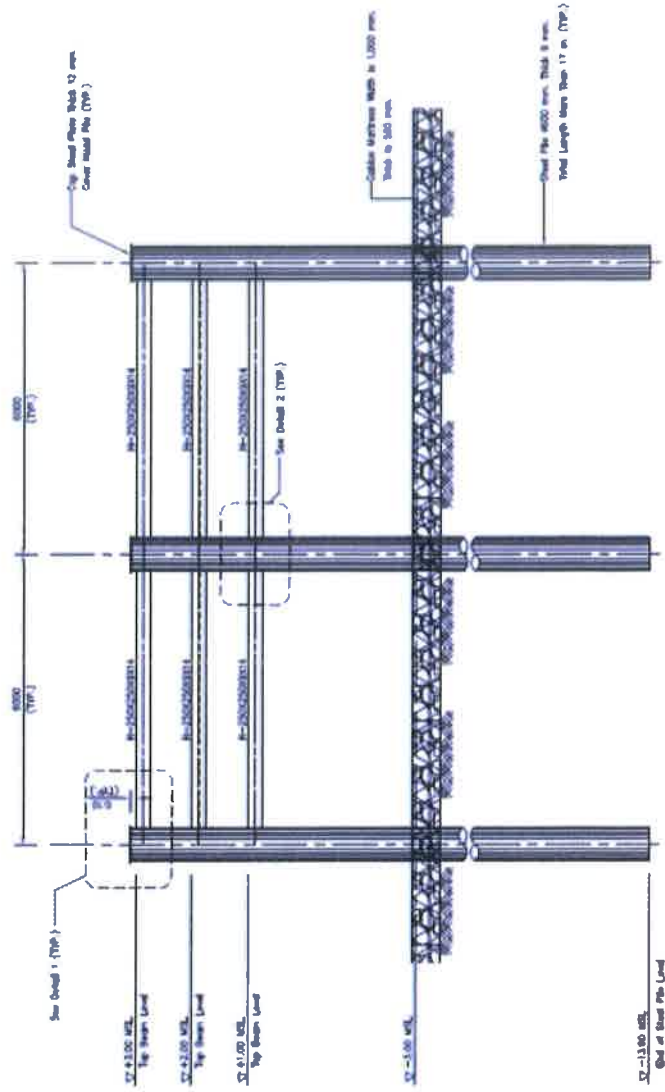
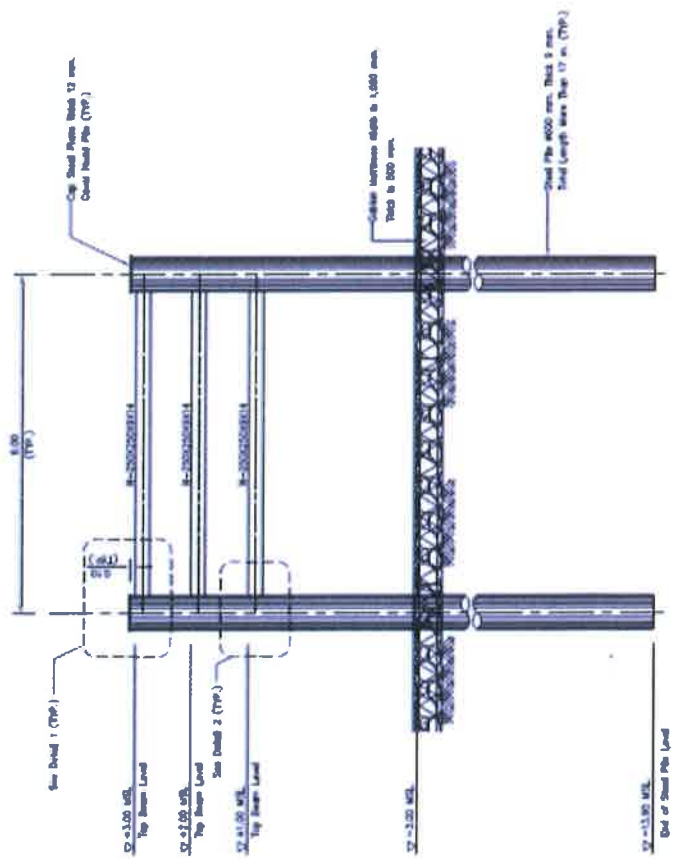
Revised Construction road map (THAI)																									
DETAILS		2017		2018		2019		2020		2021				2022				2023				2024			
Feasibility and EIA study	Complete										1	2	3	4	1	2	3	4	1	2	3	4			
Physical Model (3D)	Complete																								
Detailed Design	Complete																								
EIA approval																									
Construction																									

APPENDIX L

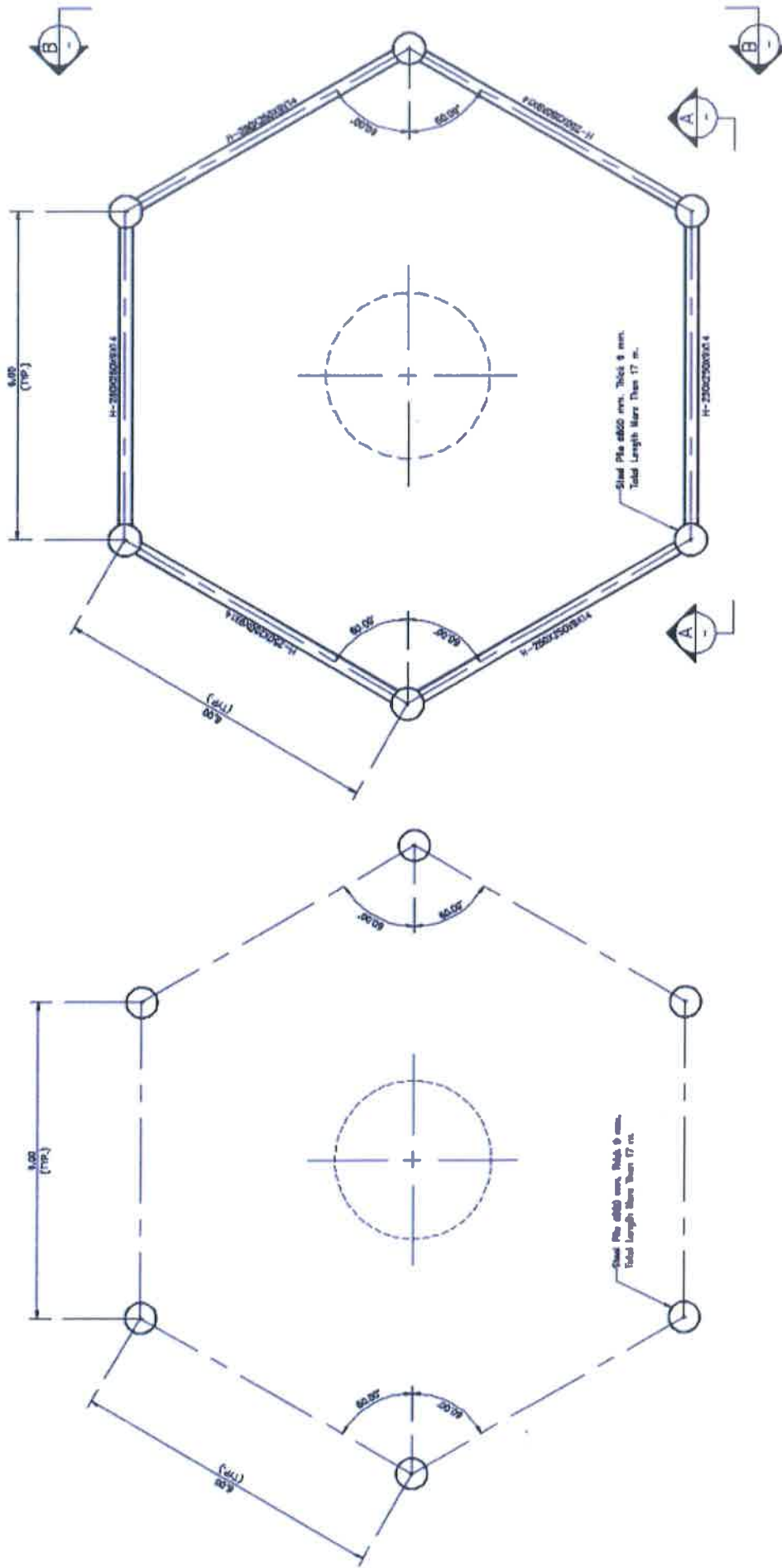
The optimum design for Protection Work of Transit Point B shall be confirmed by physical modelling.



APPENDIX L



APPENDIX L



Steel Pile Layout
Scale 1:50

Top Beam at +1.00, +2.00 and +3.00 m.(MSL.)
Scale 1:50

APPENDIX L

