MS Reference Number:	CSHK	CET	MS	C	2024	000086
ACC Reference Number:	1701	W	000	CSC	760	000411

METHOD STATEMENT TITLE	Rev. -
Installation of Sheet Pile within 10m from nearest track	

	Prepared by:	Checked by:	Reviewed by:	Reviewed by:
Signature:				
Name:	Sam Tsang	Vincent Li	Leung Kwok Fung /Hui Wai Kwan	MH Isa / ~~WH Lam~~
Position:	Engineer	Construction Manager	SM/SO	QM/QE
Date:	26 APR 2024	26/APR/2024	26. APR. 2024	26/04/24
	Reviewed by:	Reviewed by:	Reviewed by:	Approved by:
Signature:		WL Yeung	M. Freeman	
Name:	James Ma / Iris Ho	Yeung Wai Lun	Paul Freeman/ Mark McGleenon	Eric Fong
Position:	EM/EO	A. Project Director	Sr. Project Director / A. Project Director	Project Director
Date:	26/04/24	27 Apr 2024	03 MAY 2024	03 May 2024

CONTENT

1. Introduction (Overview of the operation/works)

Following the mobilisation of predrilling works at the Bifurcation and Oyster Bay (OYB) Station (Southern platform), sheet pile installation for ELS Packages 1A to 1C and Oyster Bay Station (Southern platform) will commence. This method statement describes the method, sequence and logistic arrangement required for sheet pile construction and any precautionary measures necessary when working within 10m from the nearest rail of the Mainline, test track and depot track. Sheet pile installation may only commence after the completion of RP fencing, I&M installation (with initial readings taken and agreed), predrilling and UU diversion. These activities are subject to separate method statements which have been submitted separately. Any lifting work necessary shall be included in a detailed Lifting Plan which shall be submitted separately prior to starting the works.

The detail of the procedures and methods contained herewith shall be reviewed periodically and updated where necessary based on the actual site condition. The principle methods as described in the following sections are subject to review during construction and may be amended if required.

2. Reference Documents (Identify relevant documents by name and reference number)

- (Library) Working Paper No.6 – Railway Protection
- General Specification for Civil Engineering Works (NEC4) (MTR Corporation Limited - 2022)
- Scope for Contract 1701
- Approved BUGN and pending BUGN for General Lifting Works.

3. Details of Sub-Contractor/Specialist Sub-Contractor

The works will be carried out by our subcontractor and supervised by our front-line staff such as foreman and engineer. We will also provide full time CP(T) (Railway Safety Rules and Requirements) on site with 1 CP(T) appointed for 20 workers at the same work area. All persons shall be RSI trained as the works area is within 10m from the existing rail. Access to the work site will be via the site entrance from the depot slip similar to that used by Advanced Works Contract 1731. A CP(T) shall be provided for supervision of all works less than 10m from the existing rail. In addition, a WPIC will be assigned to supervise the construction works at each work site.

4. Responsibilities for Activities described within Method Statement

CSHK is responsible to inspect, supervise and carry out the construction works. The following persons, as listed in the table below, will attend the specific tool-box talk and be responsible for the activities:

Company	Name	Position
CSHK	Vincent Li	Construction Manager
	Nana Chung	Assistant Construction Manager
	Lewis Ng	Assistant Section Agent
	David Lam	Senior Engineer
	Johnson Chung	Senior Engineer
	Sam Tsang	Engineer
	Edmond Man	Engineer
	Li Weng Guang	Engineer
	Kingsley Zhao	Assistant Engineer
	Li Man Hin	Graduate Engineer
	Leung Kwok Fung	Safety Manager
	Hui Wai Kwan	Assistant Safety Officer
	Cheung Siu Kei	Superintendent (WPIC)
	Benny Yeung	General Foreman
	Jacky To	Foreman
	TBC	CP(T)

5.	**Programme and Working Hours** (Start & finish date of operation/works)

The works are planned to commence from late June 2024 and be completed by June 2025 in accordance with schedule of declared Construction Areas (CA). For sheet pile installation from Gridline (G.L.) A1 to 40 within Area W2, this may only commence after the removal of the existing test track and OHL equipment including wire and masts. The location of the sheet piles is shown in **Figures 5.1 to 5.5**. the height of all construction vehicles shall be restricted to no higher than 4m by the temporary height gauge constructed under a separate method statement submission.

Northern work area at SHD Depot (Area W2, W3, W11 & W12)

Access will be via the existing emergency gate 4 (EAG 4) and 5 (EAG 5) or the temporary level crossing to be installed on the test track (at proposed Gate TT06, Gate TT07 and Gate TT0A, the method statement for the level crossing installation will be submitted separately). As the RP fencing will have been completed, all work areas will have been declared as CA and the working hours shall be 08:00 to 19:00 from Monday to Saturday. It may be necessary to carry out works from 19:00 to 23:00 on Sunday and Public Holidays if essential speeding up of the working progress is required. CSHK will check internally to fulfil the Construction Noise Permit Requirement.

To access work area W2 it will be necessary for the backhoe / piling rig to pass across the test track and lift materials over the test track from South Road. CSHK will carry out these activities during NPH, tentatively 11:00 am to 3:00 pm, subject to the PA works approval. For any lifting over the OHL, an approved BUGN for General Lifting works shall be issued by MTR in advance.

Southern work area near Depot Access Road and Shun Long Road (Area W1)

Access to the work area will be via the existing Depot Access Road. The works will be carried out from 08:00 – 19:00 on Monday to Saturday after completion of the RP fencing installation. It may be necessary to carry out works from 19:00 to 23:00 on Sunday and Public Holidays in case of essential speeding up of the working progress. CSHK will check internally to fulfil the Construction Noise Permit Requirement.

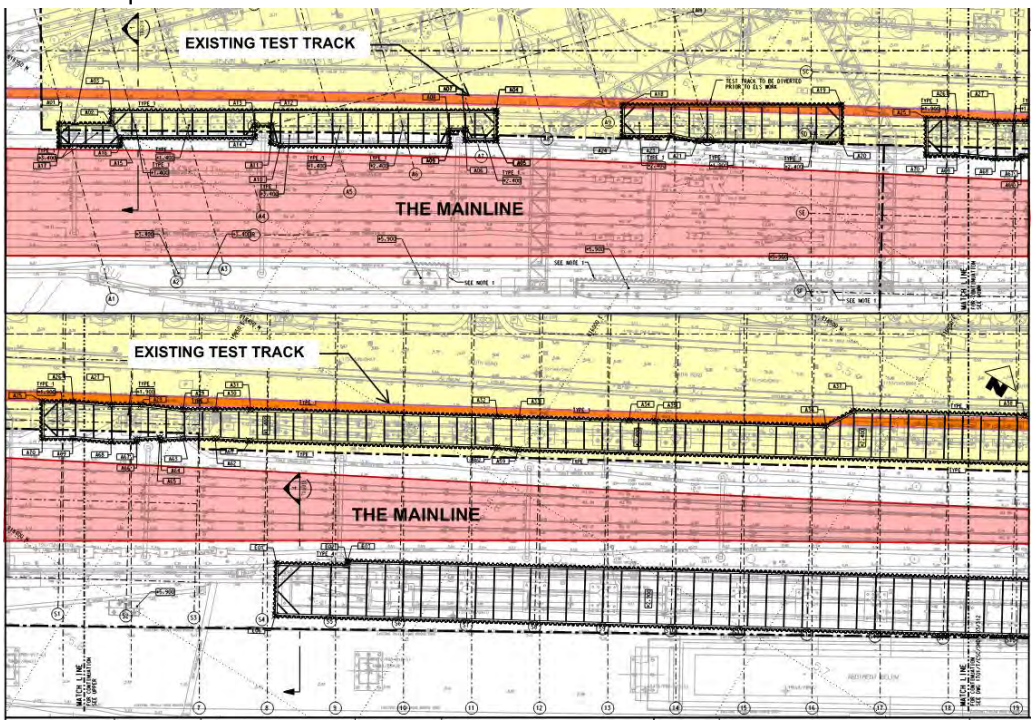

Figure 5.1 Sheet Pile Layout Plan – G.L. A1-6/P-Q (Top) and G.L. 6-19/P-Q (Bottom)

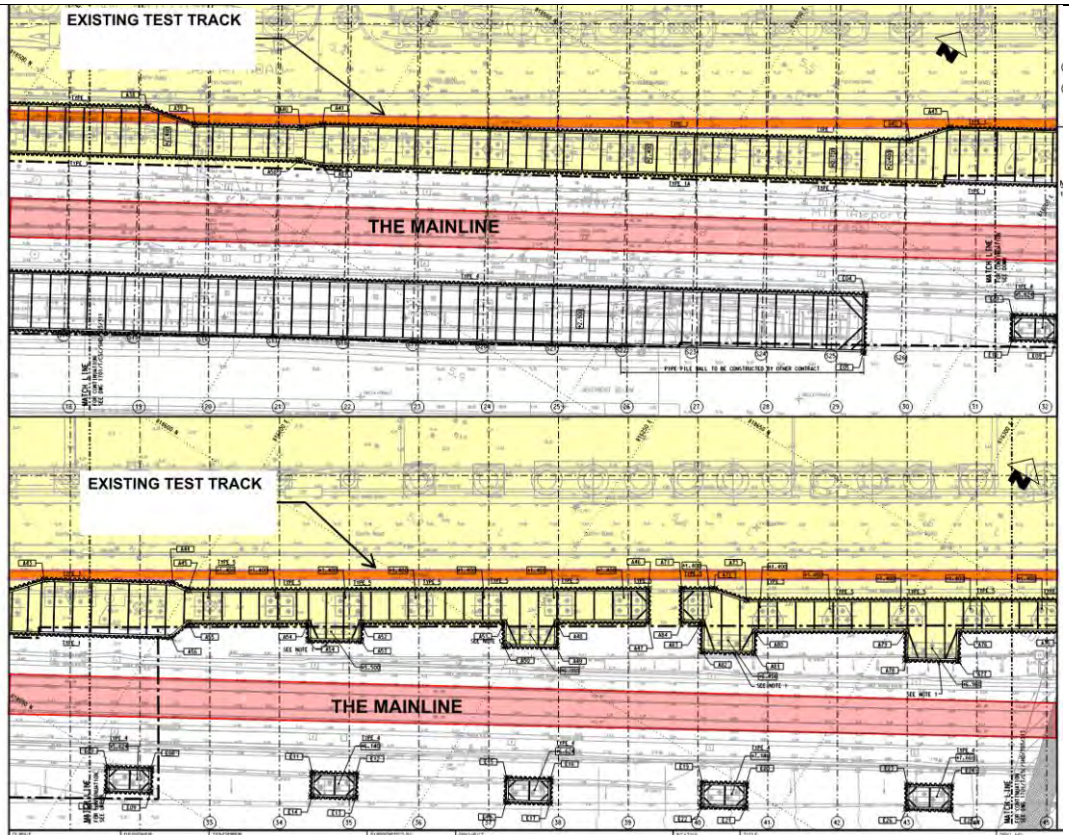

Figure 5.2 Sheet Pile Layout Plan – G.L. 18-32/P-Q (Top) and G.L. 31-45/P-Q (Bottom)

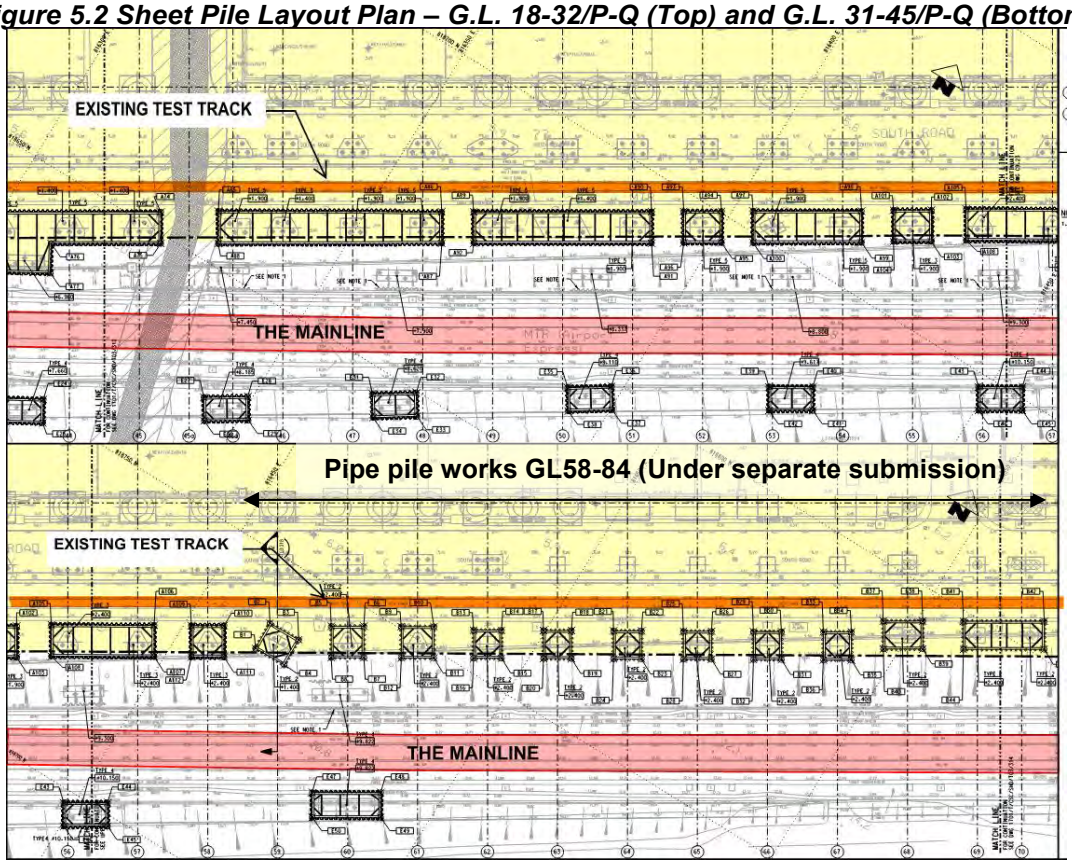

Figure 5.3 Sheet Pile Layout Plan – G.L. 44-57/P-Q (Top) and G.L. 56-70/P-Q (Bottom)

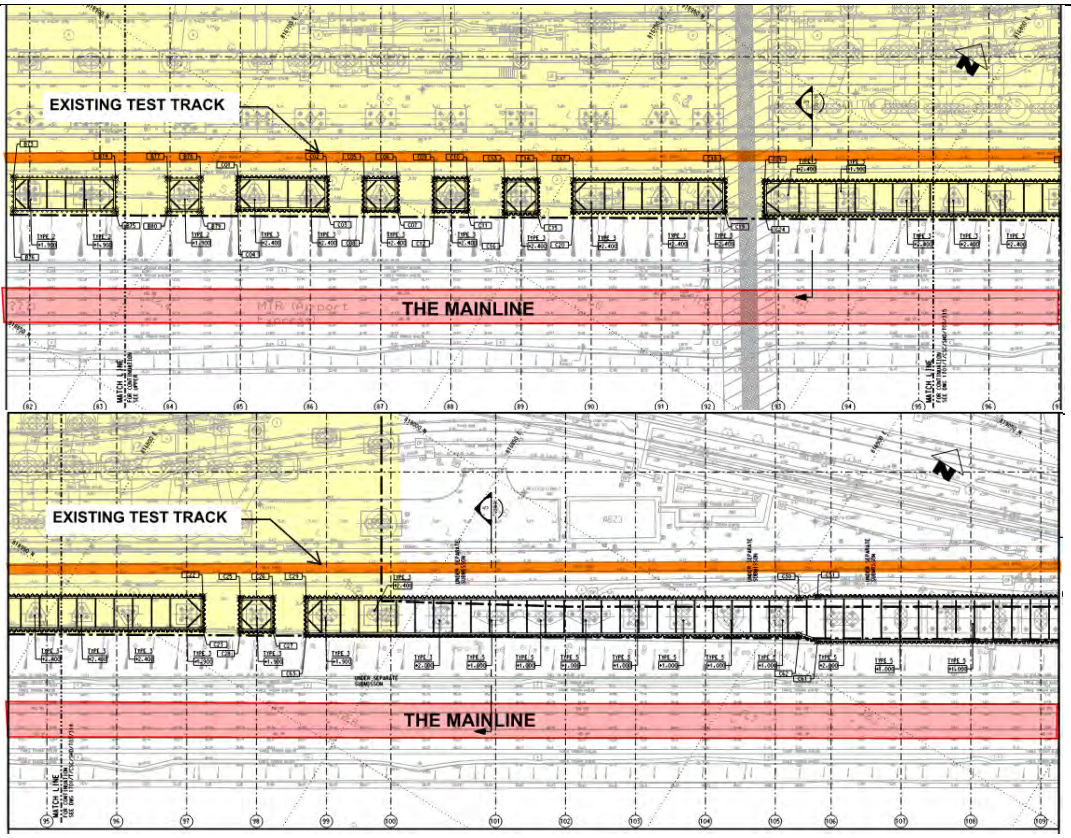

Figure 5.4 Sheet Pile Layout Plan – G.L. 85-97/P-Q (Top) and G.L. 95-109/P-Q (Bottom)

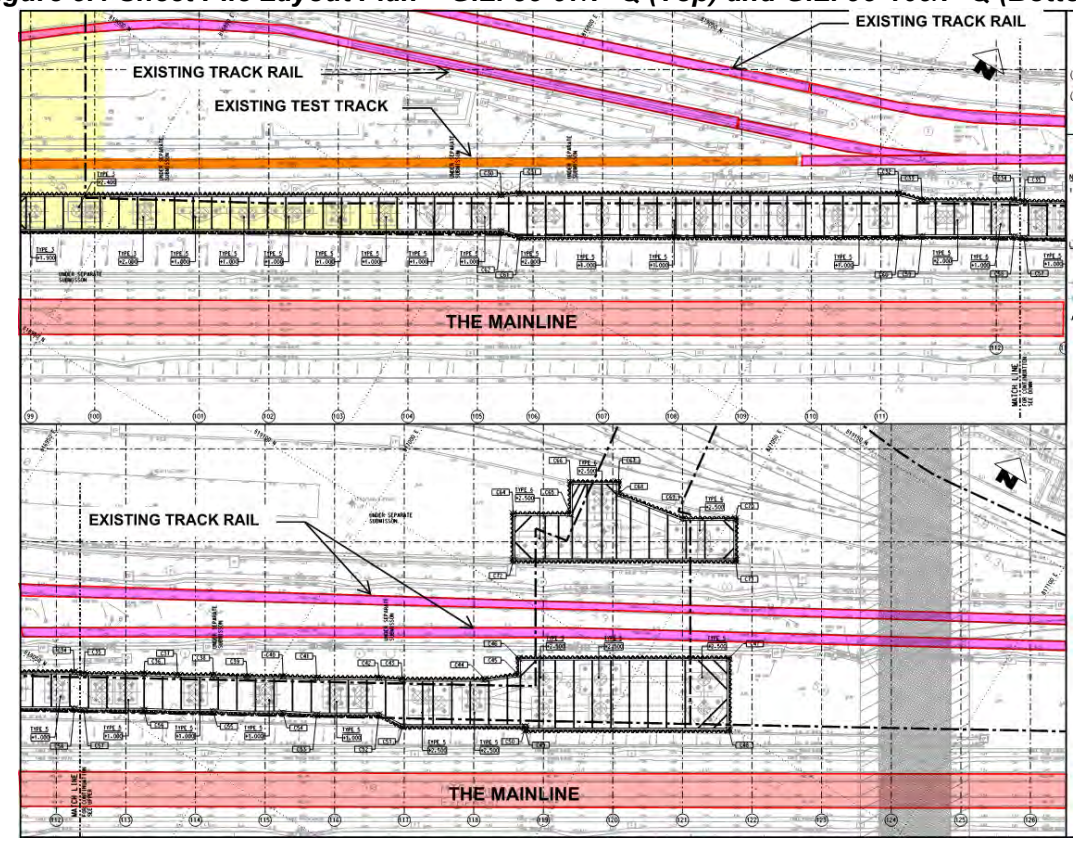

Figure 5.5 Sheet Pile Layout Plan – G.L. 99-112/P-Q (Top) and G.L. 112-122/P-Q (Bottom)

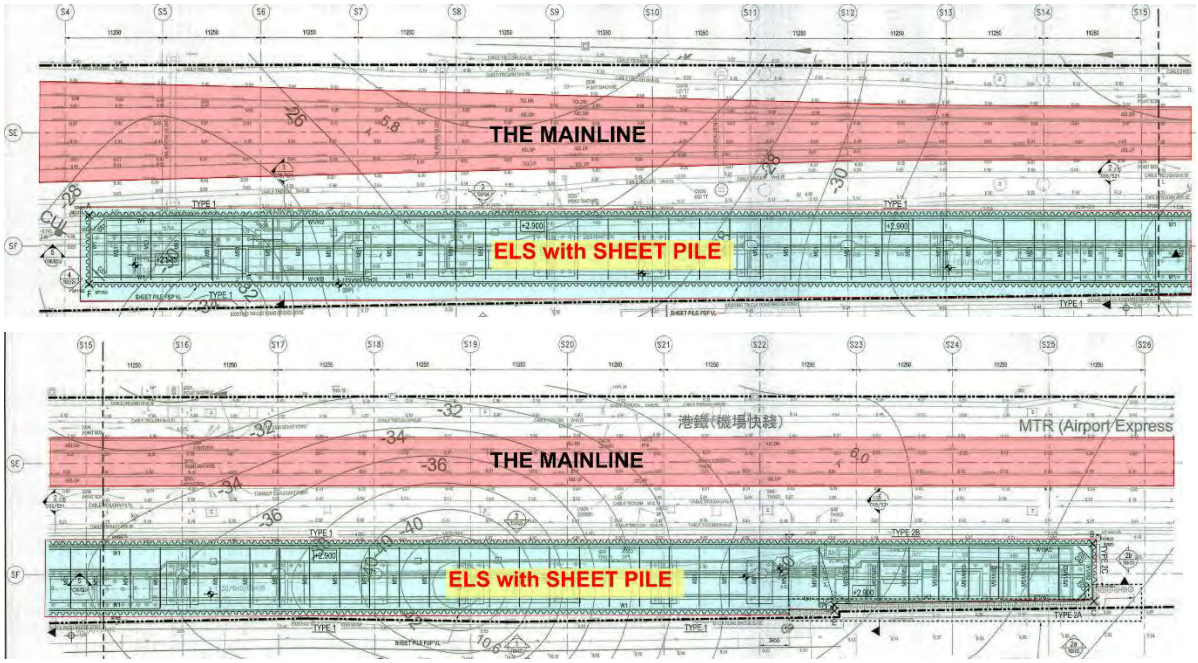

Figure 5.6 ELS – OYB Southern Structure Layout Plan
G.L. S4-S15/SE-SF (Top) and G.L. S15-S26/SE-SF (Bottom)

6. Plant, Equipment & Material (Identify type, model and specification of MAJOR plant & equipment)

All plant and equipment will be inspected by a Registered Professional Engineer prior to mobilization on site to ensure they are in good working condition and comply with all current regulations. A plant permit system will be adopted to ensure the condition of the lifting crane and appliances are checked before use.

To meet the programme requirement, 3 workfronts will be arranged at OYB South and 6 workfronts for the North of the bifurcation. The major plant and equipment deployed to carry out the works are as follows : -

Southern work area near Depot Access Road and Shun Long Road (Area W1, W1A and W1B) - 3 nos. Workfront

Plant / Equipment	Quantity
Backhoe	3
Mobile Crane/Crane Lorry	3
Silent piler	3

Manpower	Quantity
General Labour	15
Driver	3
Rigger	6
Operator	3
Banksman	3
Fire Marshall / WPIC	3

Northern work area at SHD Depot (Area W2A1, W2B, W2A2, W2A3) - 6 nos. Workfront

Plant / Equipment	Quantity
Backhoe (Northern work area at SHD Depot)	6
Mobile Crane (Northern work area at SHD Depot)	6
Silent piler	6

Manpower	Quantity
General Labour	40
Driver	6
Rigger	12
Operator	6
Banksman	3
Fire Marshall / WPIC	3

Lifting Arrangement

No part of the mobile crane/crane lorry will work beyond the water filled barrier or RP fence and the maximum lifting load shall be <80% of the SWL.

The ground condition shall be checked to ensure firm and level ground in advance of the arrival of the lifting equipment to site by the WPIC / banksman. The outrigger positions will be marked and the ground shall be thoroughly checked to ensure sufficient load bearing capacity at the working location to support the crane. A visual inspection and utility detection will be carried out to ensure that the mobile crane/crane lorry is not bearing onto any underground services. If this cannot be avoided, the utility will be protected by means of steel plates or spreader mats designed to safeguard against any damage.

The weight of the lifting gear must be counted as part of the lifting load.

For all lifting operations, the mobile crane / crane lorry outriggers must be fully extended and the unsafe zone fenced off.

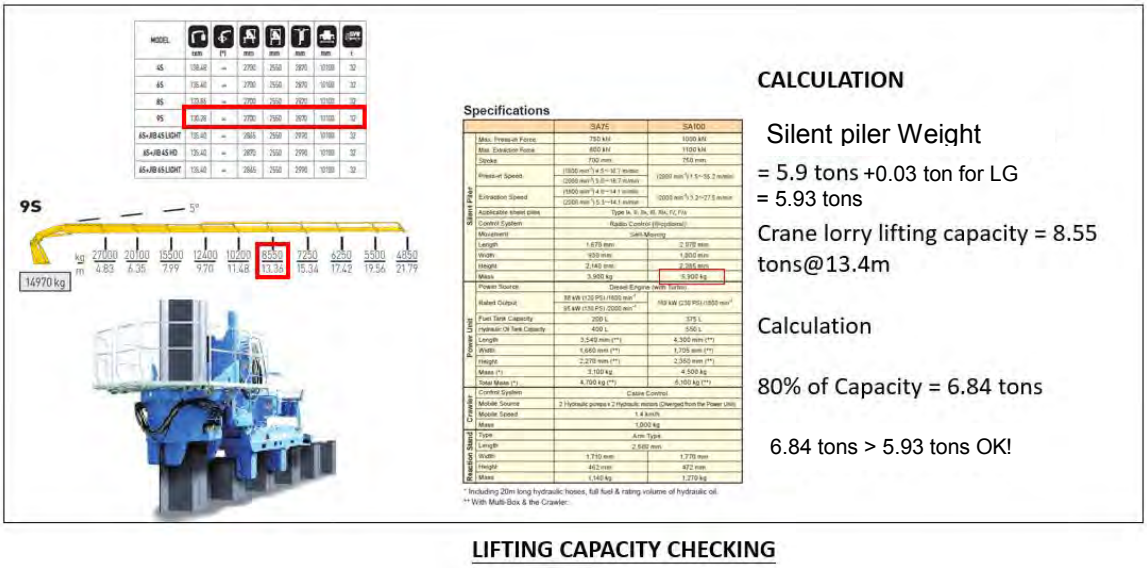

Figure 6.1 Lifting for 50 ton crane lorry

A 50 Ton crane lorry for W1 works with working radius of 13.4m shall be available for lifting work for Figure 6.1 as shown above and 90 ton mobile crane for W2 works with working radius of 20m for lifting

from the South Road across the closed Test Track for GLA1 to GL45 under Figure 6.2. Tower crane usage shall be under separate method statement submission shall be used for normal lifting works within the construction area with a maximum lifting radius of 10m for all sheet pile works.
Temporary power will be supplied by generators located at the sheet pile work construction area. A fire extinguisher will be placed at every piling rig / drilling rig.

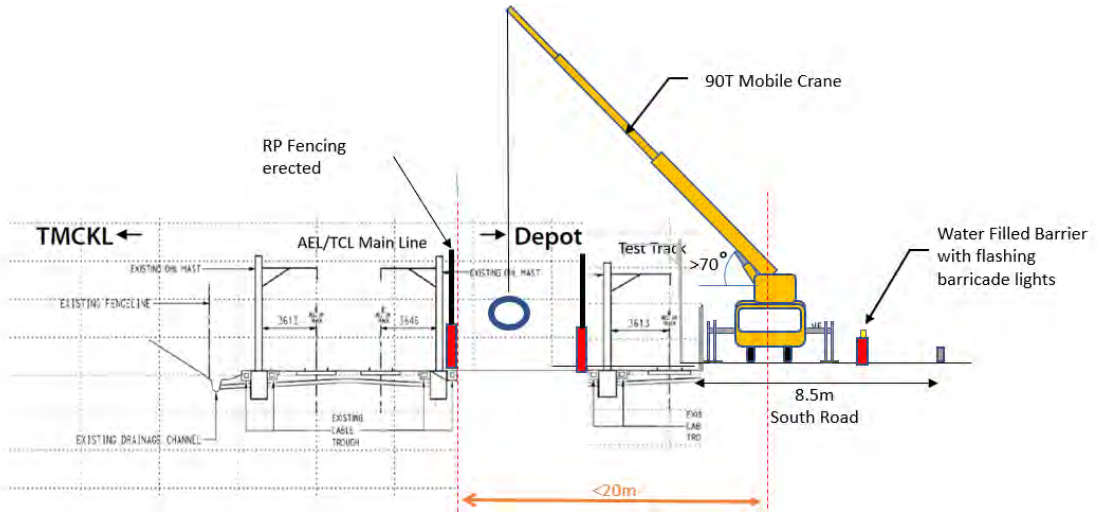

Figure 6.2 Lifting Section Layout at W2 (For closed Test Track from GLA1 to GL45)

7. Traffic and Security Management

Access to the site shall be as follows:

Contractor Vehicle Arrangement

- Access to the OYB southern station structure and associated bifurcation works will be via the site entrance at the Depot Access Road and Shun Long Road as shown in Figure 7.1.

Figure 7.1 Access to the OYB Southern Station Structure

- Access to the Northern Work site in the existing depot area will be from the East gate and the temporary steel vehicle bridge as shown in Figure 7.2.

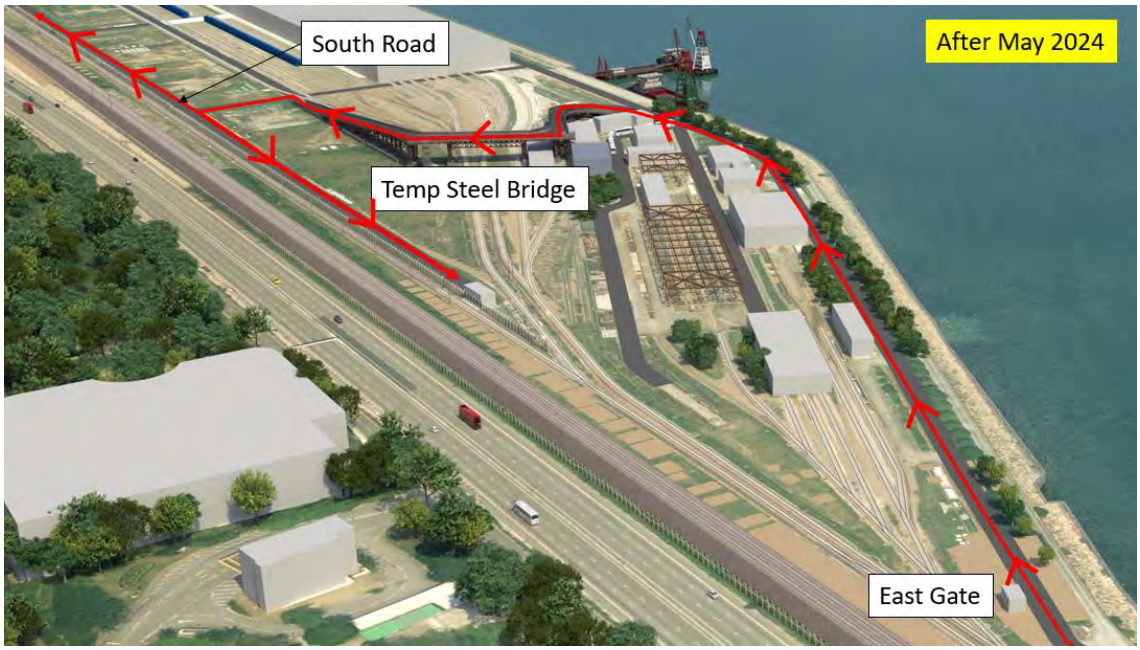

Figure 7.2 Access to Northern work area via East Gate after August 2024

Worker Verification

- All workers will be bored shuttle buses from a designated area such as Tung Chung Station.
- During boarding of the shuttle bus, hand-held facial recognition will be performed to verify the worker's qualification.
- The facial recognition system will check if the person has passed the RSI and possesses a green card.
- A list of workers shall be submitted to MTR for registration before starting of works. The list shall be updated weekly and available for MTR as requested.

Uniform and Safety Equipment: All workers shall wear PPE with standard uniform and safety helmet for easy recognition by the security guards and YM.

Template of Label for Safety Helmet

Identify the color for the Safety Helmet

Reflective Vest (MTR Approved Type) 反光衣(港鐵指定款)

Figure 7.3 Worker Verification information

Gate Arrangement

During construction, access to the work areas will be via the existing Gate EAG4, EAG5 and Proposed Gate TT06, TT07 and TT0A. All the gates will be closed and locked by our C-SMART security system outside of NPH and we will provide the key to the Depot DCC/IMD for the proposed gates TT06, TT07 and TT0A.

Logistics Arrangement

We will primarily use the East Gate and level crossing at Gate TT06, Gate TT07 and Gate TT0A for the Sheet Pile works in Works Area W2. From gridlines 40-100 in W2 area the test track remains operational.

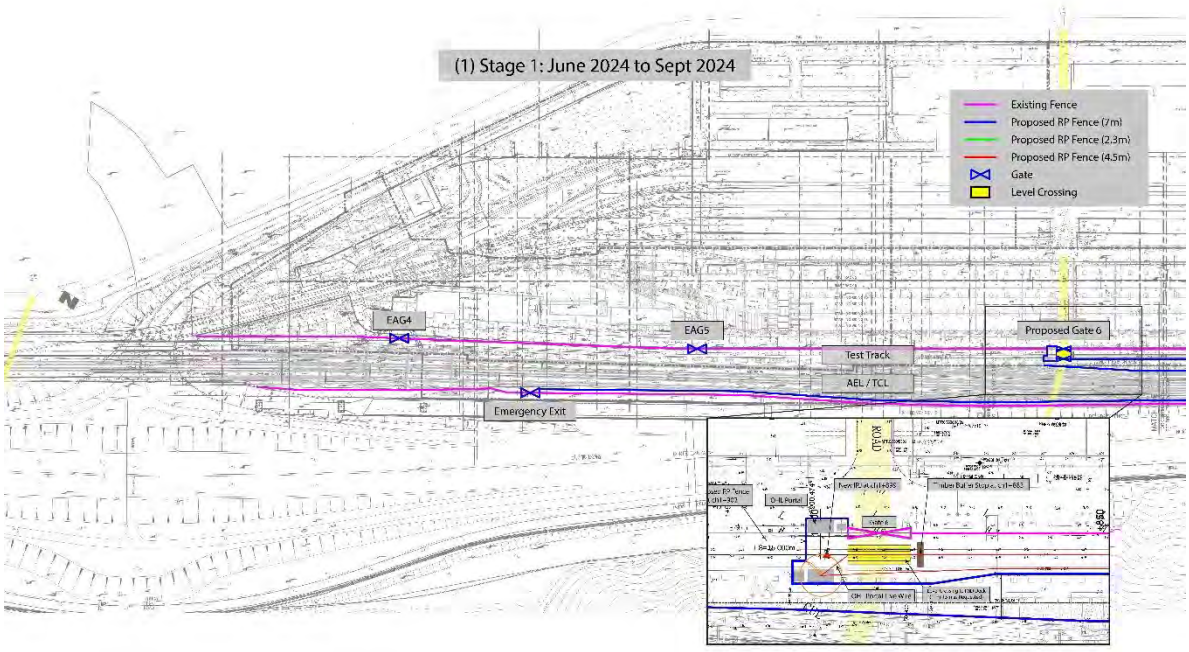

Figure 7.4 General logistic routing from the East Gate to the construction area (1) (Stage 1: June – Sep 2024)

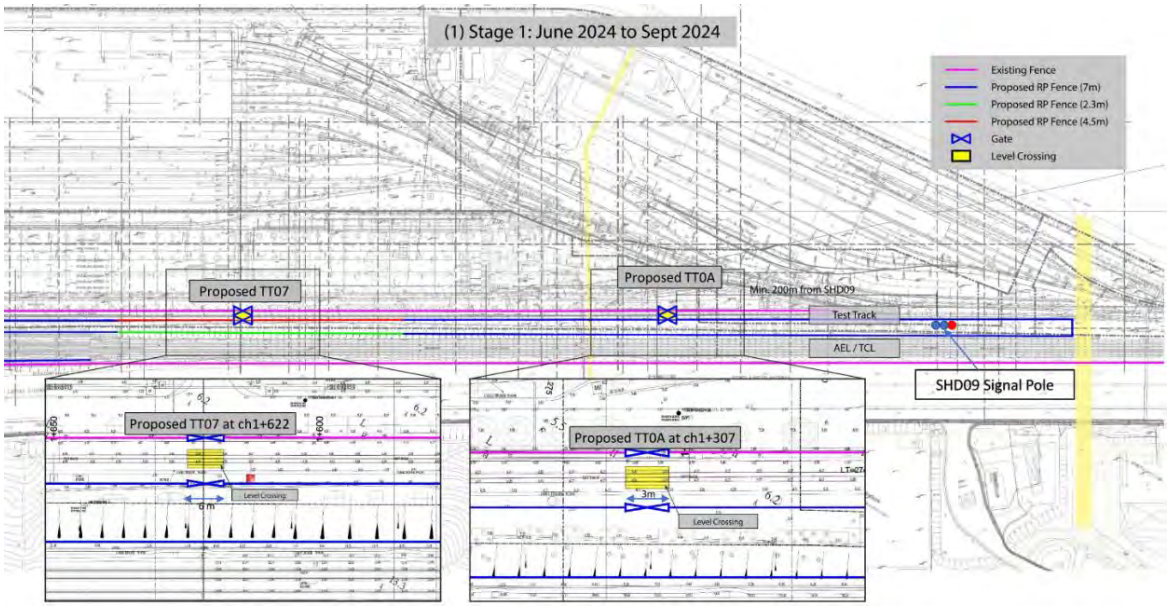

Figure 7.5 General logistic routing from the East Gate to the construction area (2) (Stage 1: June – Sep 2024)

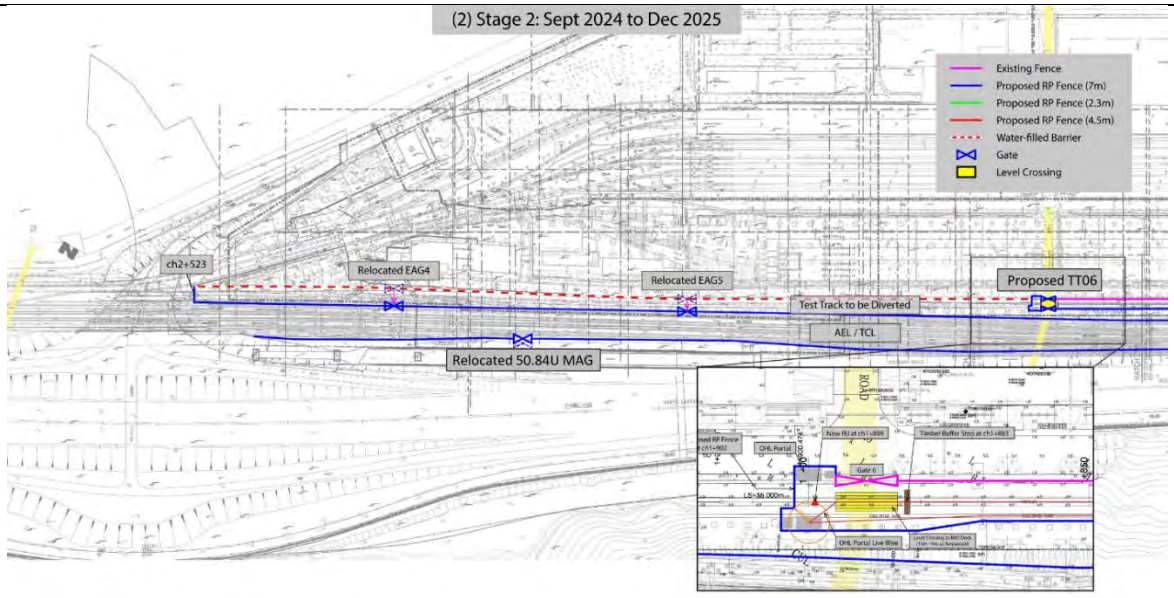

Figure 7.6 General logistic routing from the East Gate to the construction area (1) (Stage 2: Sep 2024 – Dec 2025)

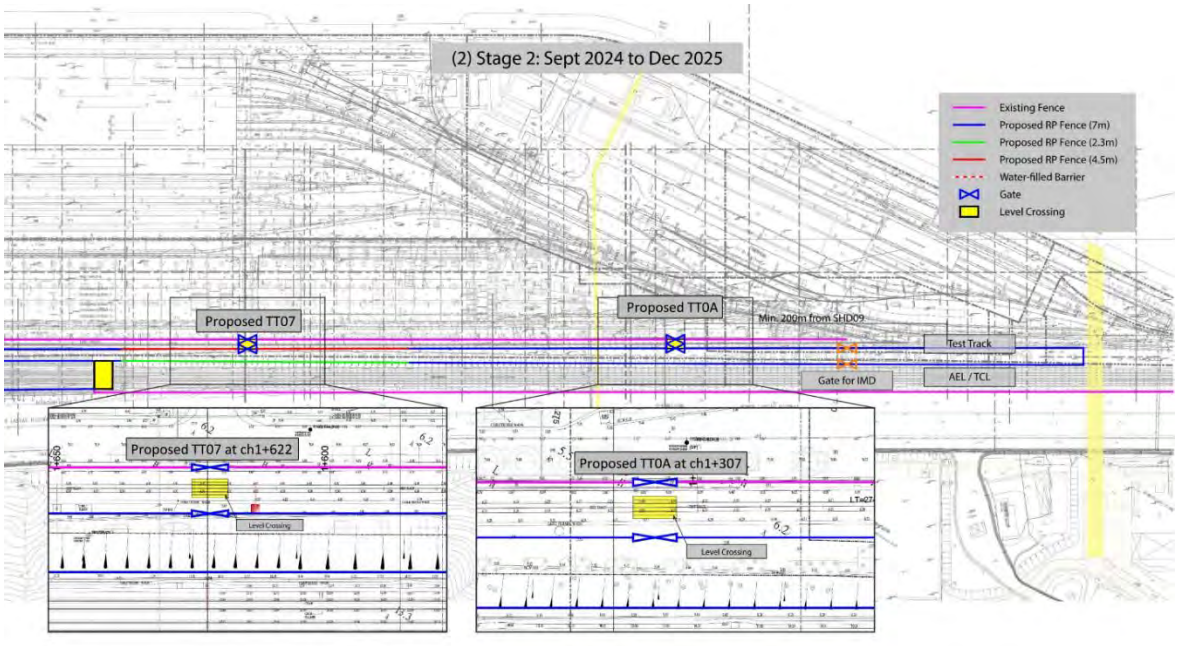

Figure 7.7 General logistic routing from the East Gate to the construction area (2) (Stage 2: Sep 2024 – Dec 2025)

Sheet pilings rigs need to cross the level crossing to access the working location in Works Area W2. The maximum height of the silent piler is 3.645m which is lower than 4m, no Permit-to-Move is required by CWBU to DCC for approval under Clause B4 iv in BUGN2023/21 as shown in the catalogue included in **Appendix C**. The height of all plant at Gate 6 & 7 shall be reduced to no higher than 2m below the OHL of the Test Track (i.e. 4.5m) when travelling across the live Test track.

Figure 7.5 Travelling across level crossing Gate TT06 & TT07

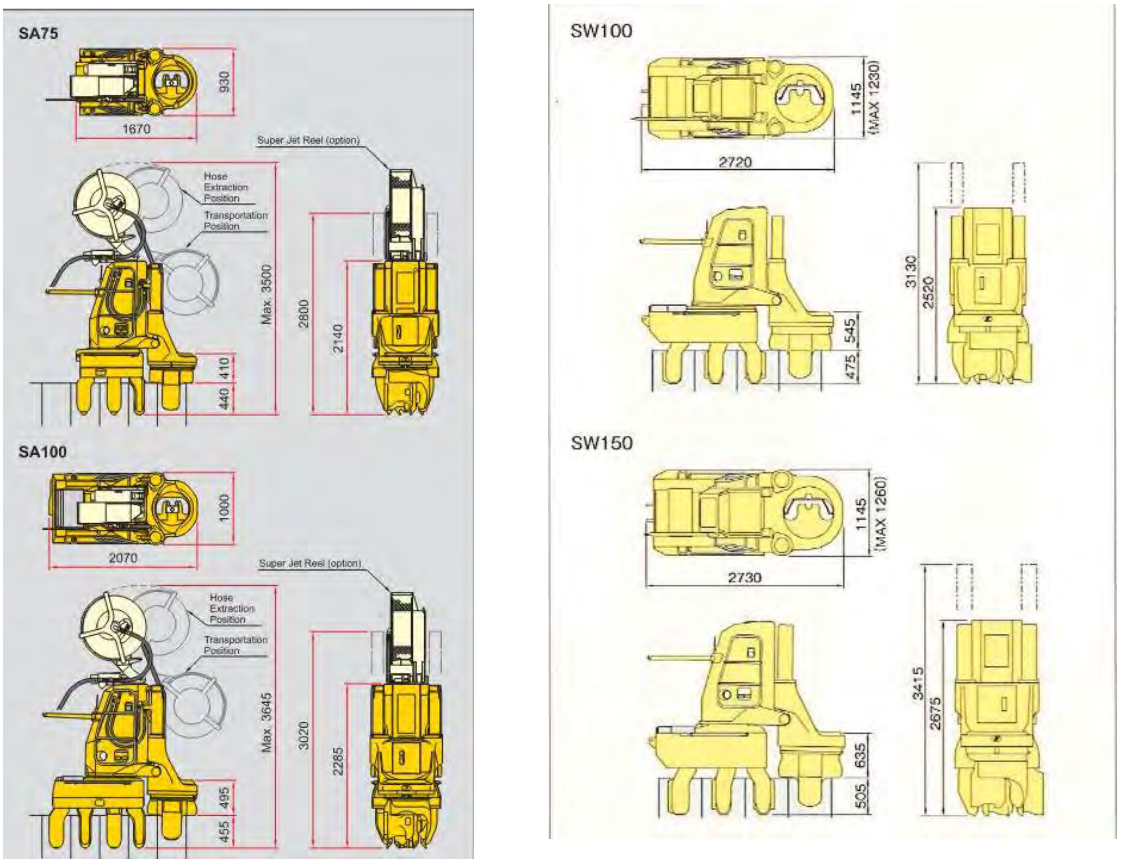

Figure 7.6 Dimension of Silent Piler (SA75, SA100, SW100 and SW150)

8. Construction Methods / Construction Sequence Drawings

All required I&M shall be installed, initial readings taken and agreed and submitted to the Building Authority. After the completion of the RP fencing, the works areas shall be declared as a Construction Area before installation of Sheet Piles commences.

8.1.1 Location of OYB Station Southern Structure

The sheet pile work at the South Area includes OYB Station Southern Structure (GL's S4 to S26 with mini-pile works and TCL Down track 2 to 4 bifurcation OHL portals (GL's A1 to S2 and S31 to S61) with pre-bored socketed-H piles and the related pile cap construction works. The location of the works is at W1, W1A and W1B near Depot Access Road and Shun Long Road as shown in Figure 8.1.1-1 and **Appendix D.**

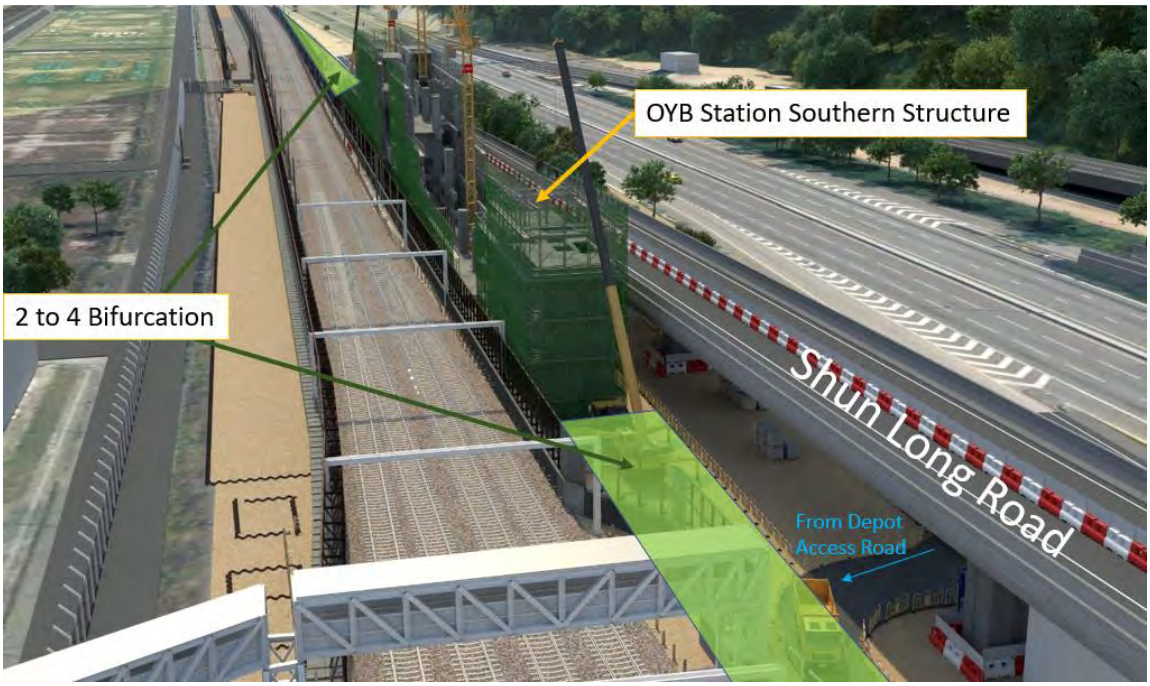

Figure 8.1.1-1 Location of the Proposed OYB Station Southern Structure

Workfront and Construction Sequence

All sheet pile installation works will be carried out from 08:00-19:00 on Monday to Saturday after the Construction Area has been declared after completion of the RP fencing.

4 workfronts starting from GLS14 and GLS15 and working east and west respectively towards the site entrances will be arranged for the site clearance works at the South Area as shown in Figure 8.1.1-2.

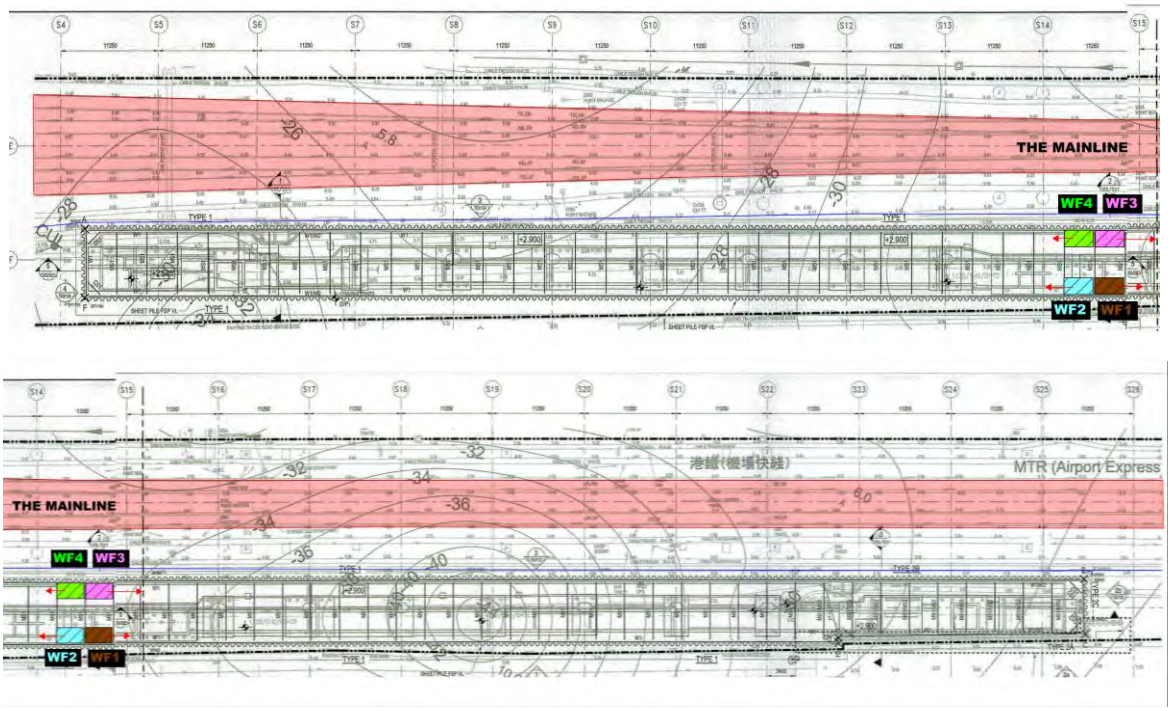

Figure 8.1.1-2 - 4 Workfront arrangement for South Area

8.1.2 Location of Northern Area for Sheet Pile Works

The North Area includes OYB Station Northern Structure and the 2 to 4 bifurcation for the TCL down track. It is located within the depot area at work area W2 which is sandwiched between the mainline and the test track from GLA1 to GL120 as shown in Figure 8.1.2-1.

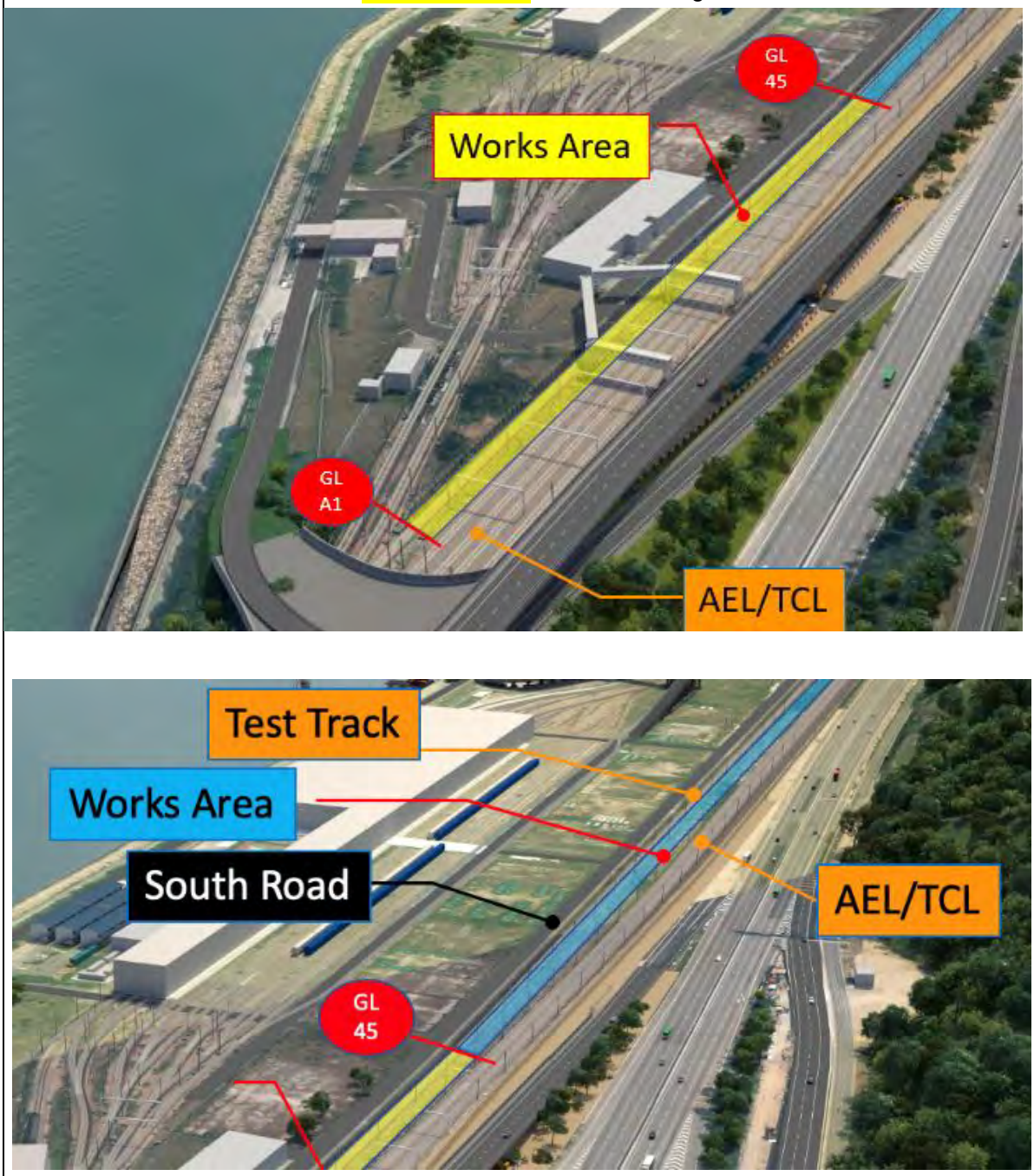

Figure 8.1.2-1 Location Plan for North Area include OYB Station Northern Structure, 2 to 4 Bifurcation for TCL Down Track and Depot Edge Pile at Gridline A1 to 100

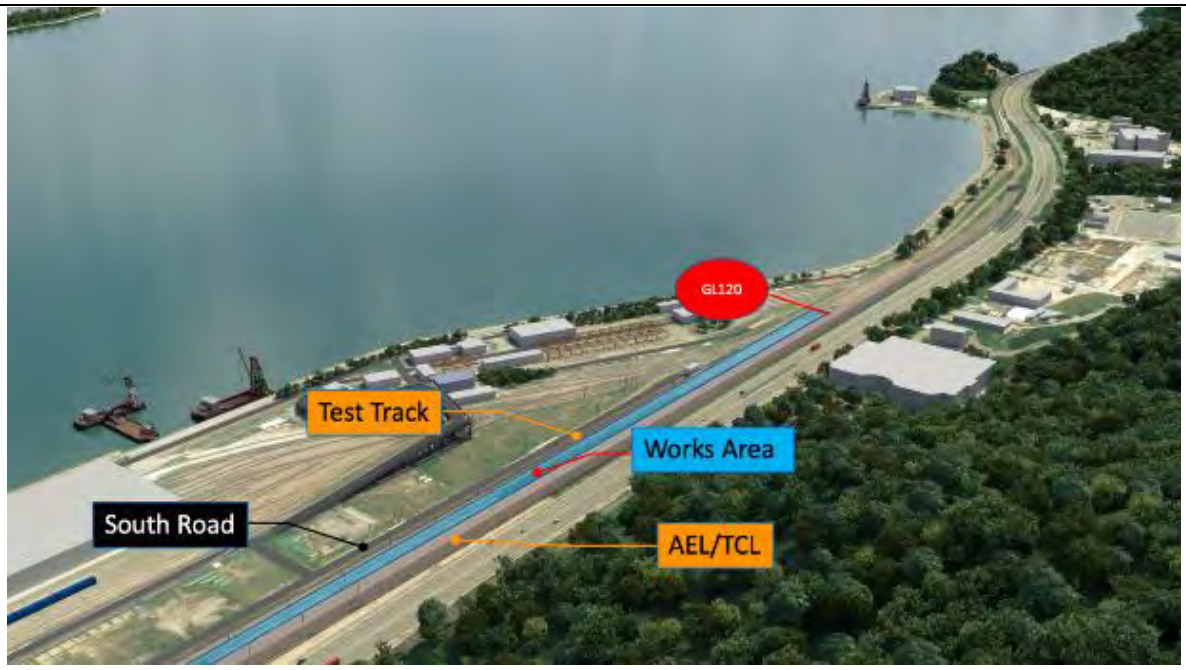

Figure 8.1.2-1A Location Plan for North Area include OYB Station Northern Structure, 2 to 4 Bifurcation for TCL Down Track and Depot Edge Pile at Gridline 60 to 120

Workfront and Construction Sequence

Working Time for North Area

Item	Works	
1	Installation of Sheet Pile	TH
*	Backhoe/piling rig pass across the test track	NPH
*	Material lifting over the test track (GL45 to GL120)	NTH

The sheet pile work shall commence within TH (08:00 – 19:00) and be extended with an approved CNP if required as described in Section 5.

For the movement of the Backhoe or piling rig across the test track during NPH (11:00 – 15:00) approved PA works shall be obtained from the Depot in advance. For material lifting over the Test Track, the work may only be carried out during the Mainline NTH (02:00 – 04:00) with an approved EDOC under separate submission.

The sheet pile works will be divided into 6 work fronts in peak time as shown in the Figure 8.1.2-2 below.

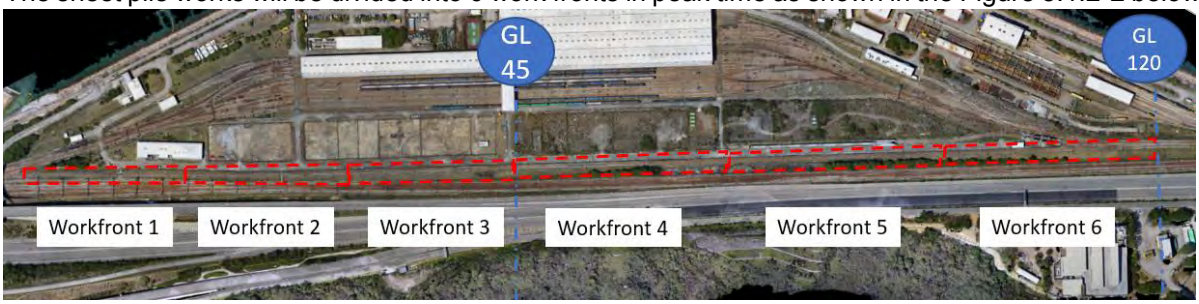

Figure 8.1.2-2 - 6 Workfront will be arranged for North Area

During the initial stage, workers and material access/delivery to the works areas will be via existing gates no 4 or 5 across the test track. Material delivery will be primarily by manual handling under

supervision of the CP(T) & WPIC. The CP(T) shall report to the yard master for daily works, and obtain permission before opening the gate to cross the test track. The gate shall be locked once all workers and equipment have accessed the works area. Workers needing to access from work front to work front shall be escorted by CP(T) at all times. When the level crossing and proposed gates 6 & 7 have been installed, access to the works areas shall be from gates 5, 6 & 7 as illustrated in **figure 8.1.2.3**.

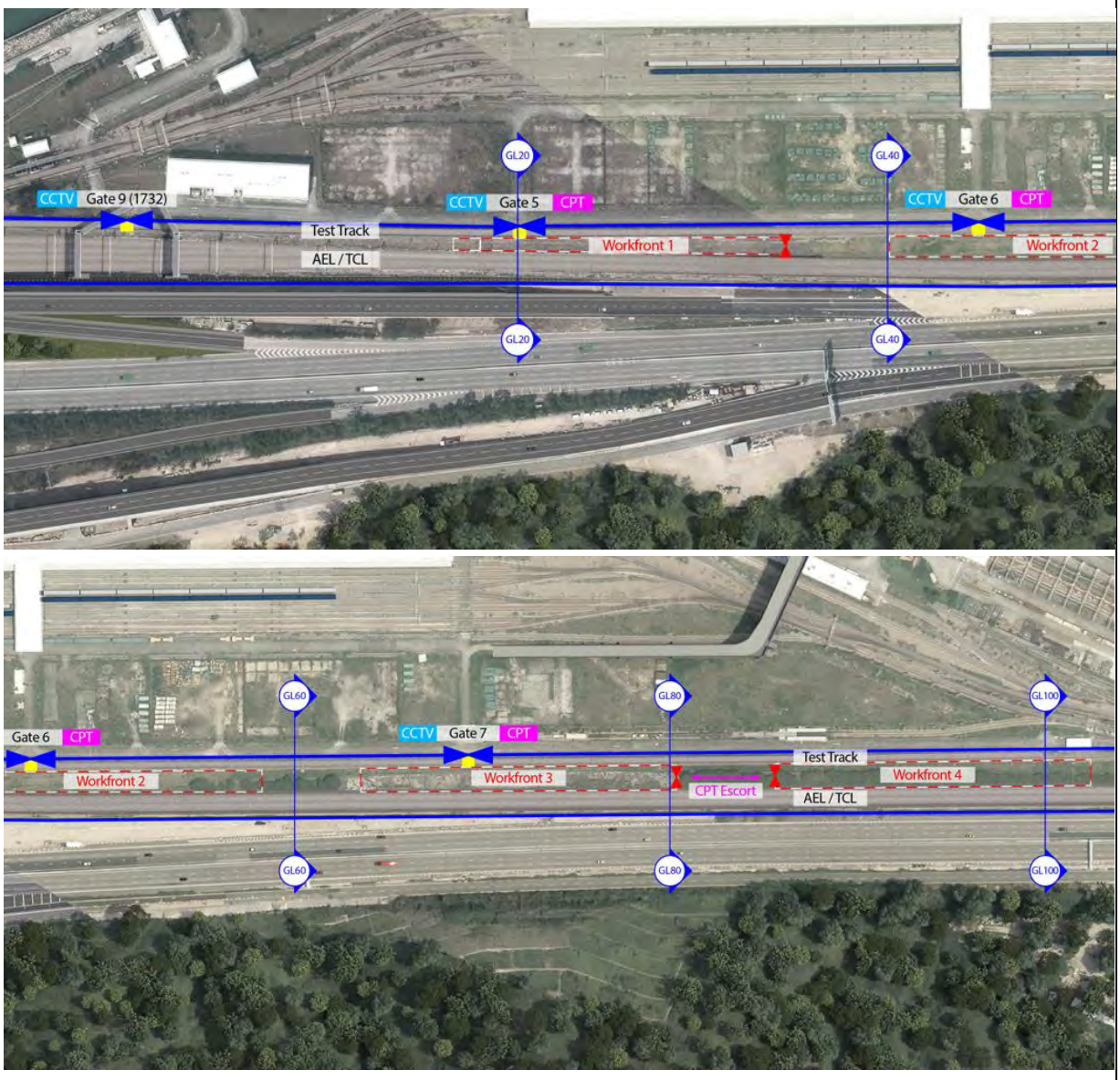

Figure 8.1.2.3- Location of Sections for the General layout plan

The method statement, design and details of the temporary working platform at W2 for sitting of the silent piler shall be submitted for comment and approval under a separate submission. The sheet piles at GL45 – GL100 shall be installed after completion of the working platform to create a level and stable surface. The current site condition is shown in **Figure 8.1.2.4**

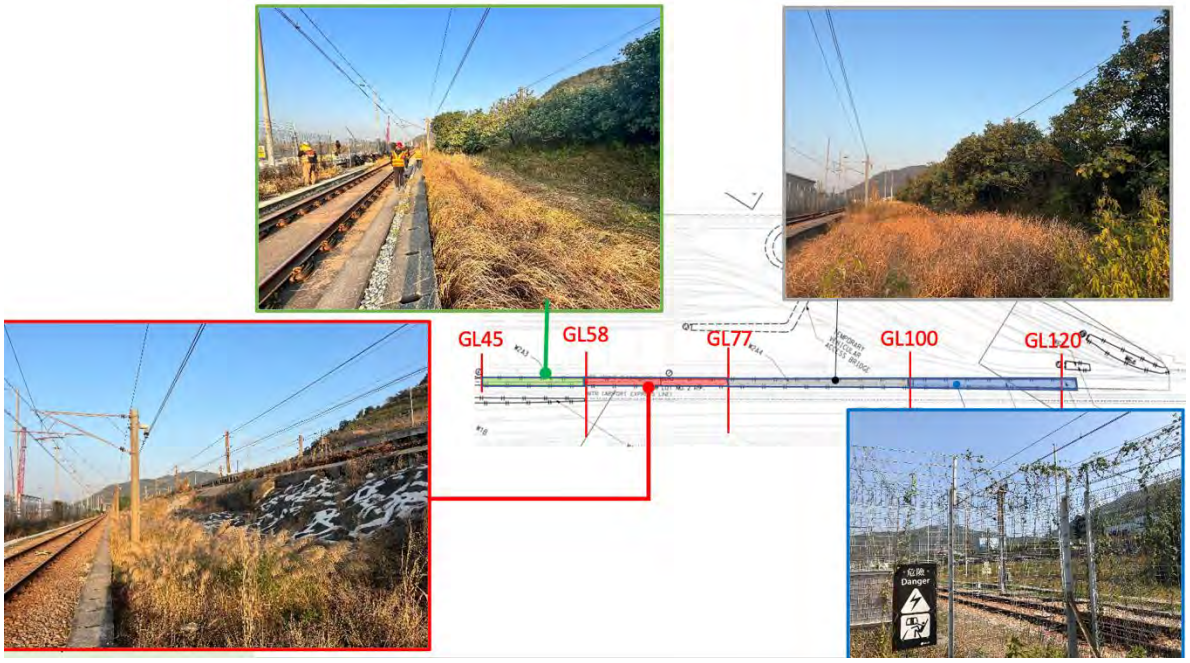

Figure 8.1.2-4 Existing Ground Condition of Northern Area

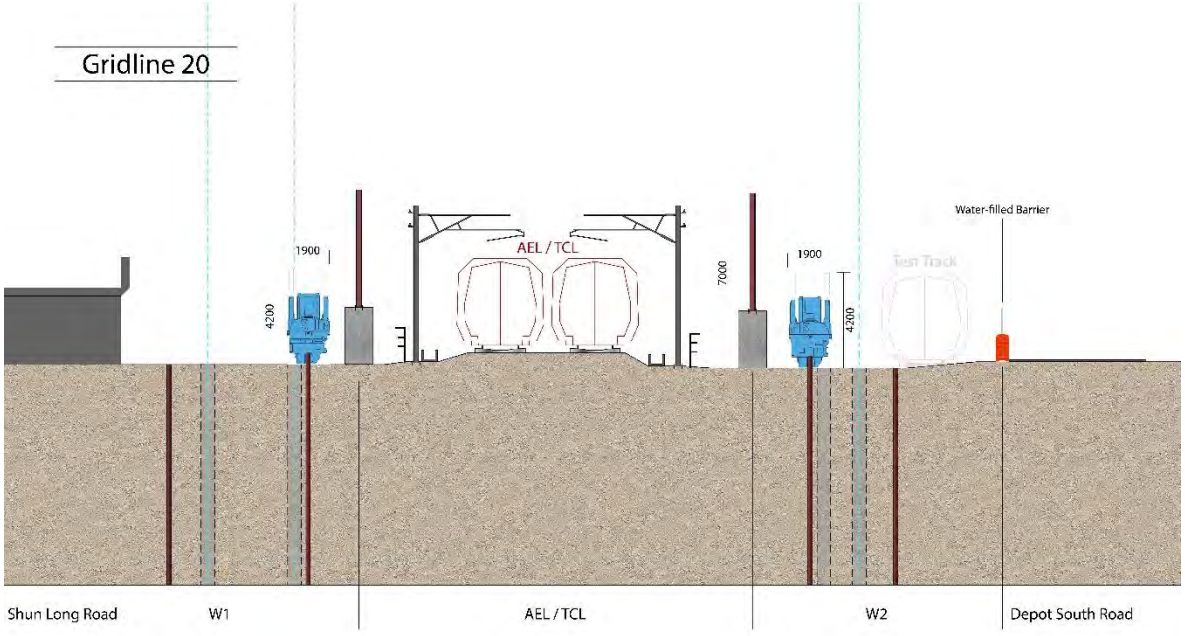

Figure 8.1.2.5- Sections at G.L. 20 with Silent piler

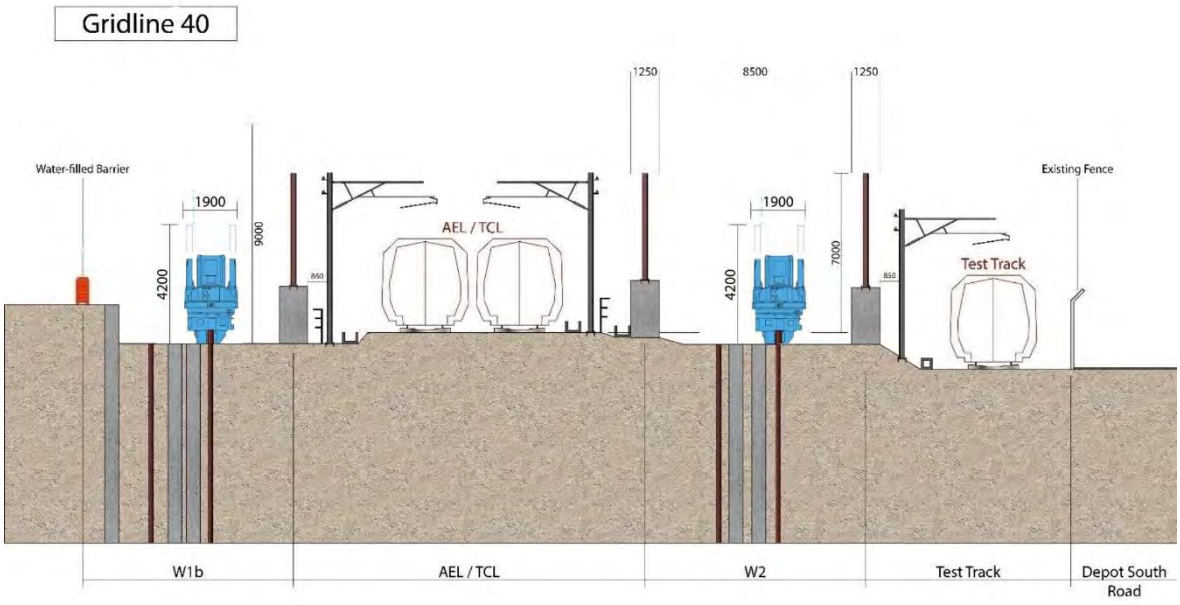

Figure 8.1.2.6- Sections at G.L. 40 with Silent piler

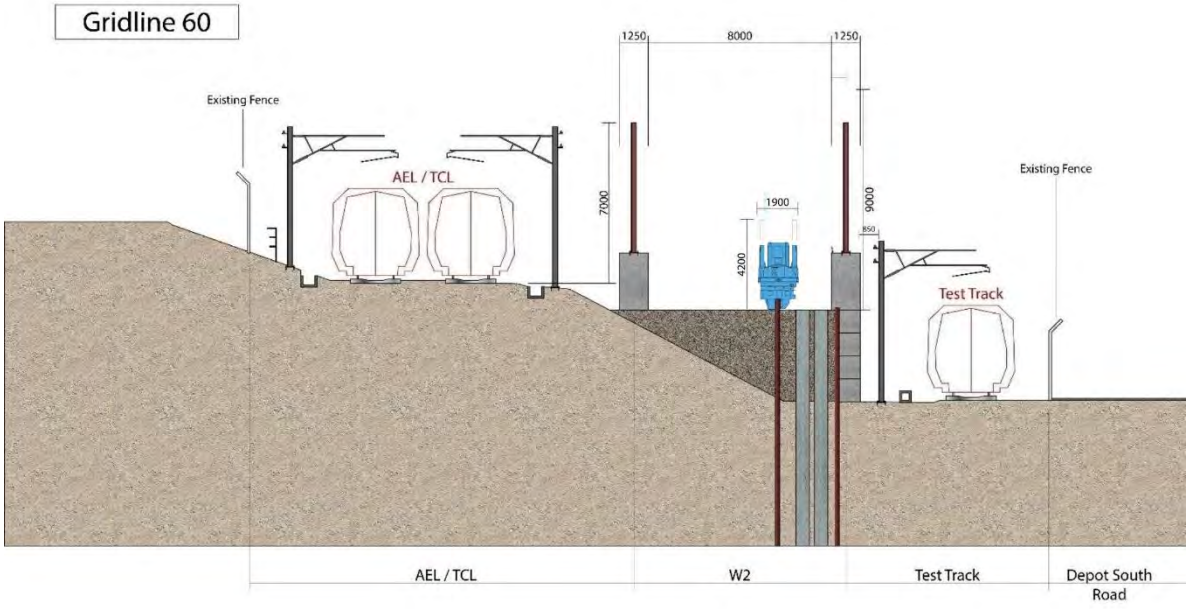

Figure 8.1.2.7- Sections at G.L. 60 with Silent piler

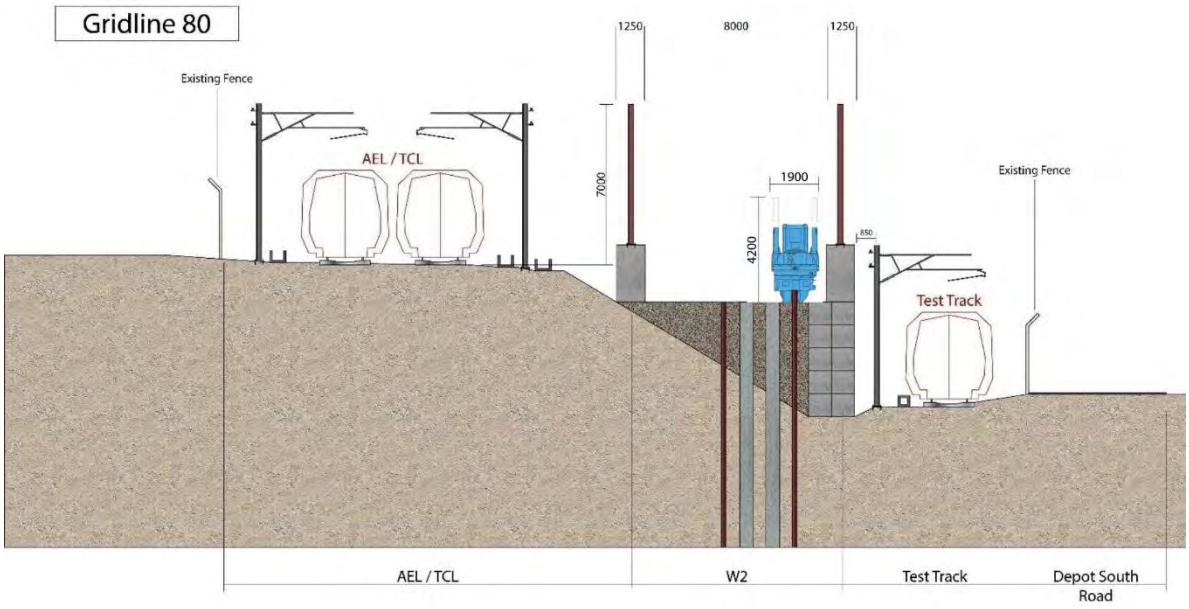

Figure 8.1.2.8- Sections at G.L. 80 with Silent piler

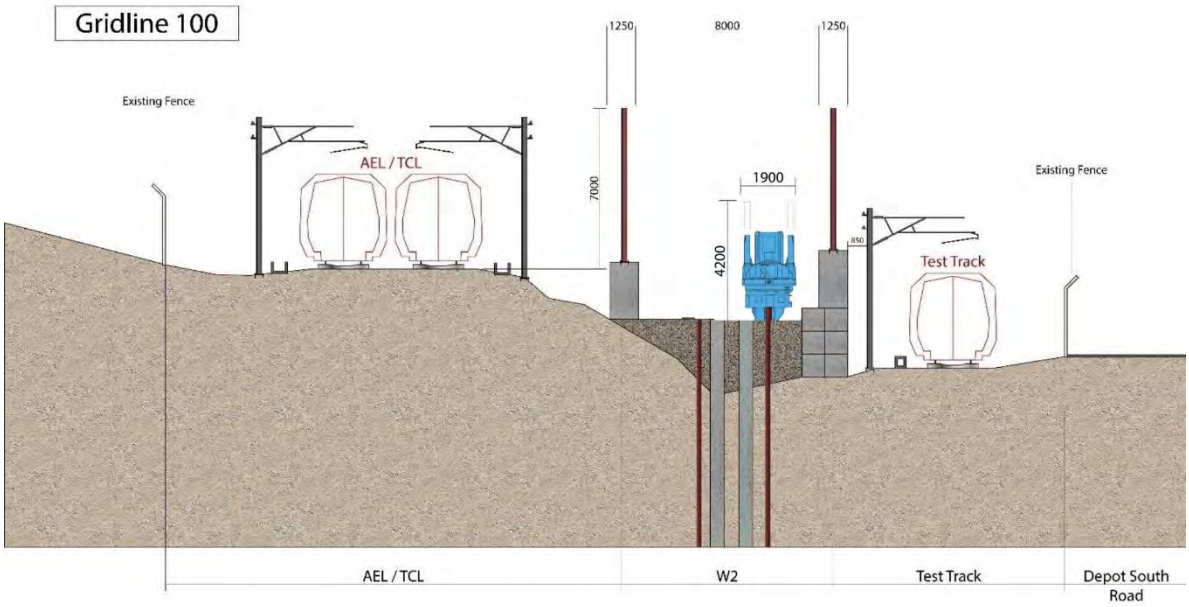

Figure 8.1.2.9- Sections at G.L. 100 with Silent piler

8.2 Construction Sequence

8.2.1 Setting Out

8.2.1.1 The location for sheet pile installation shall be set out in advance for UU detection and checked to ensure no underground live services and utilities are present. UU detection and inspection is described under a separate method statement submission.

8.2.1.2 Inspection pits shall be excavated by hand to identify any existing underground utility services where required.

8.2.1.3 The piling area shall be prepared as reasonably level and firm for the safe manoeuvring of the sheet piles and heavy plant by on site inspection conducted by the WPIC / Foreman. The adequacy of the ground bearing capacity for the loads imposed by the mobile crane/ crane lorry shall be checked and wooden spreader pads shall be provided as required at each outrigger position before the plant / crane enters the work area. The briefing record given before commencement of lifting work shall considered as the endorsed confirmation record.

8.2.1.4 The setting out points shall be confirmed by the architectural and structural drawings.

8.2.1.5 A pre-work condition record and non-destructive utilities' service detection by UU competent person of the Cable bridge shall be taken and submitted for future reference prior to commencing work. The excavation extent shall be marked on site before commencement of works near the existing Cable Bridges.

8.2.2 Installation Method of Steel Sheet Piles

8.2.2.1 The sheet piles shall be installed into the ground by press-in method with a silent piler mounted on piling rig and 12 ton crawler crane as assisted with min. 2m in width for transportation and 3.81m for working status as lifted over test track by 75 ton mobile crane. The sheet pile layout plan is enclosed in **Appendix D** and **Figure 5.1 to 5.6** above for easy reference. The work shall be undertaken in accordance with the BD approved plan.

8.2.2.2 The standard press-in method shall be adopted for the silent pile. In case any hard material is encountered during sheet pile installation, the super crush mode, rotary drilling or equivalent method shall be adopted as attached in the catalogue in **Appendix C.**

8.2.2.3 In the event of an obstruction being encountered during the installation of the sheet pile wall, pre-boring will be necessary.

8.2.2.4 Welding procedures shall be submitted and approved by the AP/RSE/RGE before commencement of works. All welders shall be qualified and will have demonstrated their competence in welding to this agreed procedure and have been tested as descried in BS EN 287 Part 1: 2004.

8.2.3 Pre-boring works (If necessary)

8.2.3.1 Pre-boring shall be carried out where necessary to overcome an underground obstruction. Pre-boring is also required at locations where sheet pile installation can cause vibration on adjacent structures exceeding the requirement stipulated in PNAP APP-137 with the vibration limit as stipulated in APP-24 shall also be complied with.

8.2.3.2 Pre-bored holes shall be sunk along the alignment of the sheet pile wall. The pre-bored holes shall be supported by a temporary steel casing along the full depth of the drilling.

8.2.3.3 Pre-bored holes shall be drilled in accordance with the following requirements –

i. Deviation from the correct line for the location of the pre-bored holes at existing ground level within 25mm.

ii. Deviation from vertically of individual pre-bored holes in any direction: less than 1:100.

8.2.3.4 After drilling through to the required depth of obstructions, the interior of each casing shall be filled with approved granular material as the temporary casing is withdrawn. Any drop in

backfill material shall be topped up immediately.

8.2.3.5 Upon completion, the sheet pile wall shall be driven to the required toe level by the approved method.

8.2.3.6 AAA Monitoring shall be applicable during pre-boring, refer to **Figure 8.2.4 & 8.2.5**.

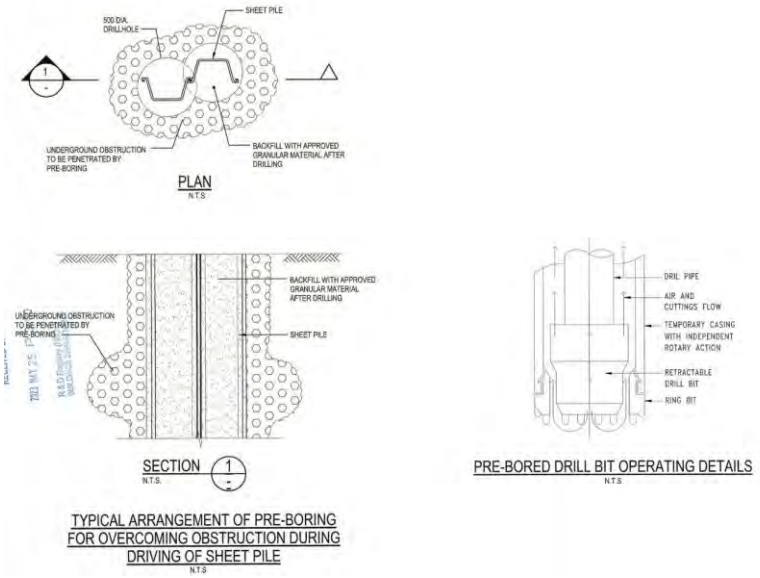

Figure 8.2.1 Typical arrangement of pre-boring works

8.2.4 Procedures for Installation of Steel Sheet Piles

8.2.4.1 The length of the sheet pile shall comply with the approved BD drawings with length of 6m to 12m depending on proximity to the track. The pile shall be marked in 1 m intervals before use. Sitting plan for the 12T crawler crane as attached in **Appendix C** and lifting arrangement is shown in **Figure 8.2.1A and 8.2.1B.** The lifting plan and general lifting plan across the Test Track shall be approved under separate submission.

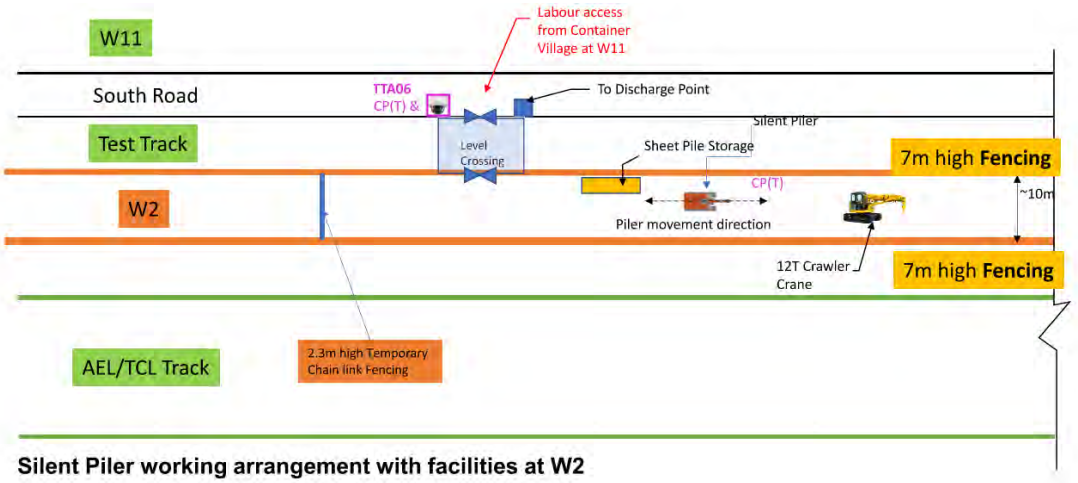

Figure 8.2.1A Sitting plan and Sequence for each Workfronts at Area W2

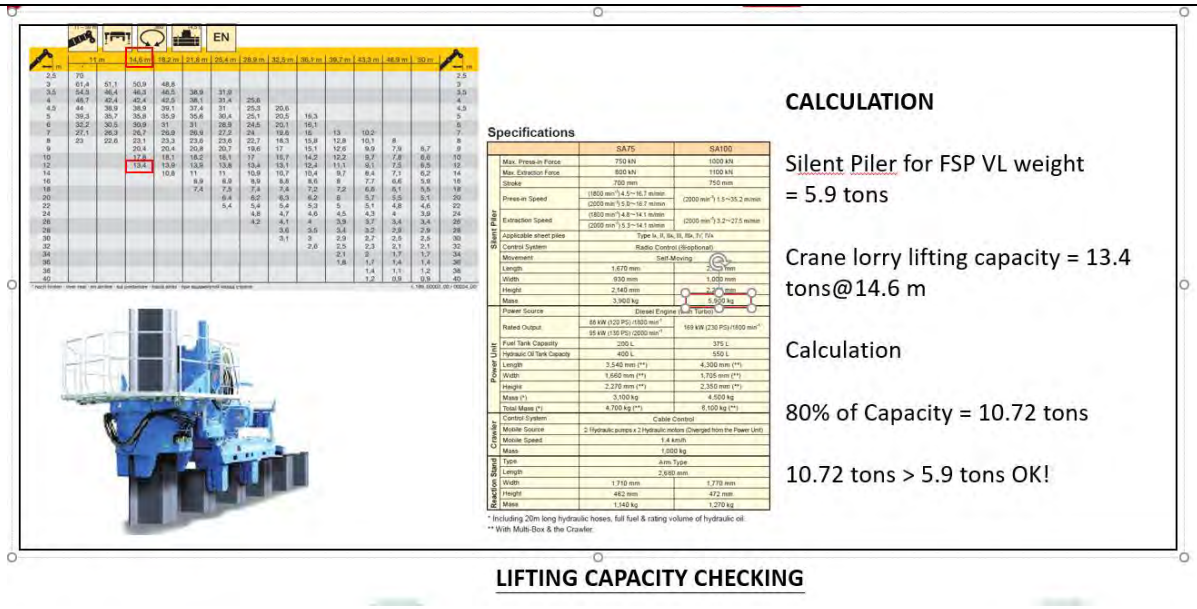

Figure 8.2.2 Lifting capacity checking for silent piler at Area W2, W3, W11 & W12 for FSP III

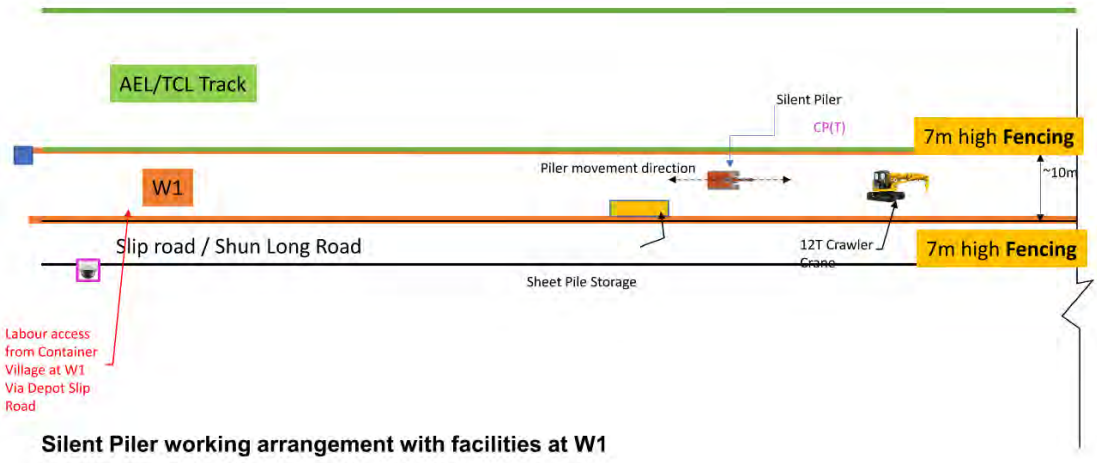

Figure 8.2.1B Sitting plan and Sequence for each Workfronts at Area W1

8.2.4.2 Position the Sheet Pile along the setting out alignment and start installation from one end by silent piler mounted on the piling rig.

8.2.4.3 Press the Sheet Pile into ground until the desired sheet pile toe level is reached.

8.2.4.4 Splice each sheet pile by full penetration butt weld all round and a Grade 275 75x100x8mm thick splice plate and inspect on completion as shown **Figure 8.2.3** with non-destructive test frequency as shown in **Figure 8.2.6**.

8.2.4.5 The verticality of the sheet pile wall will be measured by spirit level.

8.2.4.6 The founding levels of the sheet pile wall shall be confirmed and agreed with the AP/RSE/RGE representative by site inspection.

8.2.4.7 Each sheet pile is to be welded together with 6mm fillet weld (weld length = 500mm from top of sheet pile) during excavation of the first 1m (maximum) below existing ground as refer to the BD approved drawings as shown in **Figure 8.2.3**. A lifting eye shall be designed for sheet pile installation and approved by our Independent Checking Engineer. The crawler crane is to hold the sheet piles with the lifting eyes during welding and hold for 15 minutes

after completion of the welding works.

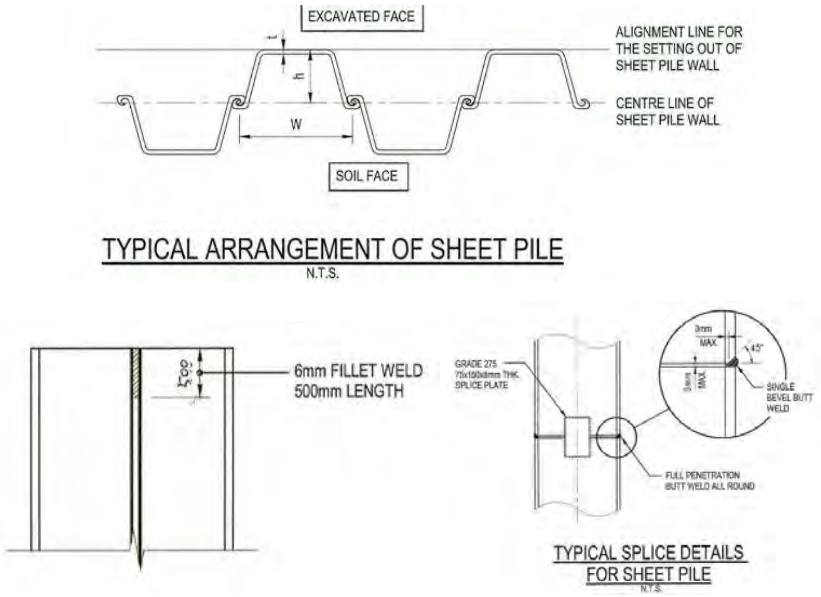

Figure 8.2.3 Sheet pile wall top & typical splice detail for sheet pile

MONITORING STATION	ALERT	ALARM	ACTION
GROUND SETTLEMENT (GS401-GS429) (GS401-GS421, SP-GS1 - SP-GS3)	12mm	18mm	25mm
VIBRATION MONITORING (VM401-VM403)	7.5mm/s	10.5mm/s	15mm/s
STANDPIPE AND PIEZOMETER (SP401 TO SP403, SF-SP1 - SF-SP3) (WATER DRAW DOWN AND RISE UP)	0.5m	0.7m	1m
STANDPIPE / PIEZOMETER GROUNDWATER LEVEL (SP401-SP403, SF-SP1 - SF-SP3)	2.31mPD	3.01mPD	3.31mPD
UTILITY SETTLEMENT (UMP401 TO UMP403)	12mm	18mm	25mm
TILTING MARKERS (T002 TO T005)	1:1000	1:750	1:500

*NOTE: THE AAA LEVELS SHALL BE MEASURED FROM THE LOWEST MEASURED HISTORICAL GROUNDWATER RECORD (i.e. +1.50mPD).

Figure 8.2.4 AAA level for monitoring (Except MTR Structure)

AAA LEVEL FOR MONITORING
(FOR MTR STRUCTURES)

INSTRUMENT (AT MTR STRUCTURES)	ALERT	ALARM	ACTION
SETTLEMENT MARKER (TSA118-TSA141, TSA403-TSA426)	10mm	14mm	20mm
BUILDING TILTING MARKER (T126, T132, T138, T141, T143-T147, T184-T185)	1:2000	1:1428	1:1000
VIBRATION MONITORING (VM404-VM406) (OVERHEAD POWER LINE MAST, SIGNALLING AND TELECOMMUNICATION FURNITURE OF RAILWAY)	5mm/s	7mm/s	10mm/s
VIBRATION MONITORING (VM404-VM406) (AT-GRADE RAILWAU STRUCTURE AND TRACK)	7.5mm/s	10.5mm/s	15mm/s

Figure 8.2.5 AAA level for monitoring (For MTR Structure)

8.2.4.8 The AAA level for monitoring the installed I&M works shall comply with the **B**D approved drawings. The contingency plan for exceedance of the AAA levels shall comply with BD requirement and will be submitted in advance of the works for approval by the RSE/RGE.

NON-DESTRUCTIVE TESTING SHALL BE CARRIED OUT AS FOLLOWED :

TYPE OF WELD	NON-DESTRUCTVE TESTING RATE
ALL TYPE OF BUTT WELD (FPBW)	100% VI, MPI & U/S
FILLET WELD WITH LEG LENGTH EXCEEDING AND INCLUDING 10mm	100% VI
	10% MPI, 10% U/S
FILLET WELD WITH LEG LENGTH NOT EXCEEDING 10mm	100% VI, 10% MPI

NOTES : VI = VISUAL INSPECTION IN ACCORDING TO BS EN ISO 17637 : 2011
MPI = MAGNETIC PARTICLE INSPECTION IN ACCORDANCE TO BS EN ISO 17368 : 2009
U/S = ULTRASONIC EXAMINATION TO BS EN ISO 17640 : 2010

Figure 8.2.6 – NDT test for welding – Frequency of Test

8.2.5 Record Documentation

8.2.5.1 Record plans showing the actual penetration and location of the pile wall shall be submitted to the satisfaction or acceptance of BD with the approved of ELS plan (Stage 2 Strutting details and bulk excavation works) in order to obtain the consent for commencement of bulk excavation works.

8.2.6 Ground bearing check for temporary storage work

For ground bearing capacity check, as referred to in the Code of Practice of Foundation 2017, Clause 2.2.2 (5) states that the presumed value for ground bearing capacity for temporary works is 50kPa.

As the ground bearing for 12m x 6m area for storage, 50 x 12 x 6 = 3,600 kN for bearing capacity

A 12m sheet pile's weight = 720 x 9.81 / 1000 = 7.0632 kN,

No. of 12m FSP III required= 3600 / 7.0632 = 509.68 pcs

Therefore we shall limit the number of sheet pile to 500 pcs for temporary storage with 12m x 6m area to keep the ground bearing as valid.

8.2.7 The Registered slope features maintained by MTRC are shown in **Appendix E** and listed below:

Slope Feature No.	Maintenance Party	Work Area for 1701
10NW-C/F18	MTRCL	W2
10NW-C/F19	MTRCL	W2
10NW-C/C52	MTRCL	W2

9. Safety (Risk Assessments)

The Risk Assessment attached in **Appendix A** has been prepared for all activities. Specific safety procedures and precautions have been developed for all site operatives to follow. The Construction Manager together with the RSO, will supervise the implementation and make adjustment according to the actual site operations, in order to maintain a safe and amicable working environment.

Plant

No part of the mobile crane/crane lorry will work beyond the RP Fence/water filled barrier and the

maximum lifting load shall be <80% of the Safe Working Load (SWL).
The weight of any lifting gear must be included as part of the lifting load.
For any lifting operation by crane lorry, the mobile crane / crane lorry outriggers must be fully extended and the unsafe zone will be fenced off.

Material & Ground Condition

Firm ground locations will be selected for lifting. An on-site assessment on the adequacy of the ground bearing capacity for the loads imposed by the crane shall be conducted and wooden pads shall be provided as required for spreading out the crane support on the ground.

Stacking of sheet pile shall be arranged as shown below with max. 1.6m stacking height

Figure 9.0.1 – Stacking of steel casing with steel plate

Smoking Arrangement

- All workers shall possess the qualification Railway Safety training (RSI), and can only smoke at the designated smoking area provided by CSHK.

Facilities for Smoke Area
-Cigarette Butt Receptacle
-Fire Extinguisher
-Sand Bucket

Risk Assessment

All the potential hazards, consequences and mitigations will be analysed in the risk assessment attached in the **Appendix A**.

10.	**Environmental** (Environmental aspect & impact identification as well as mitigation measures)
	- General works shall be carried out during normal hours from 07:00 to 19:00 on normal working days. No PME will be use after 19:00 on normal working days and Sundays and public holiday with unless with a valid construction noise permit.

	- The works shall follow all relevant mitigation measures as required under the Environmental Permit (EP) / EP submission and the *Contractor*'s Environmental Management Plan (EMP). - ULSD diesel will be used in all PME. - Plant with QPME label will be deployed, if available. - All chemicals will be placed on a drip tray. - For site clearance, water spray will be carried out during the work to prevent dust generation. - Waste water treatment and discharge will be installed on site. The details shall refer to the Method statement which will be submitted separately. - Only regulated NRMM with approved NRMM label to be used on site
11.	**Quality Control** (Inspection and Test Plan including hold points)
	Refer to **Appendix B** for Inspection and Test Plan. To ensure the attainment of the required standard of works, the methods of working and the required works standards / acceptance criteria are defined in the method statement and inspection & test plans, which are communicated to the relevant staff and workers carrying out the works. Day to day routine inspections of the works will be carried out by the Construction Team Leader, Site Engineers and Foreman as appropriate, to ensure that all works are performed following the requirements of these documents. Specific quality checks shall be carried out in accordance with the approved Inspection & Test Plan with "Hold Points" at critical elements for confirmation of compliance before proceeding further. Request for Inspection and Survey Check (RISC) shall be issued to the RSS following inspection of the works by the CSHK's project team. The Inspection & Test Plan for the works (**Appendix B**) will identify all Hold Points and Witness Points. Following the Inspection & Test carried out, inspection and / or test records are to be prepared to indicate whether the specified requirements have been met. Records of Inspection and testing will be maintained and kept available for inspection and final handover as appropriate. All materials used shall be approved by the Project Manager.
12.	**Appendices** (Identify and include additional information in the submission package)
	Appendix A – Risk Assessment Appendix B – Inspection and Test Plan (ITP) Appendix C – Catalogue for Equipment Appendix D – Drawings of Mini-pile Works (For information only) Appendix E – Slope Feature Information under Slope Information System Appendix F – Response to comment on the draft method statement of sheet pile through email