




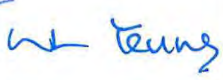
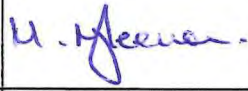



MS Reference Number:	CSHK	CET	MS	C	2024	000100
ACC Reference Number:	1701	W	000	CSC	760	000473


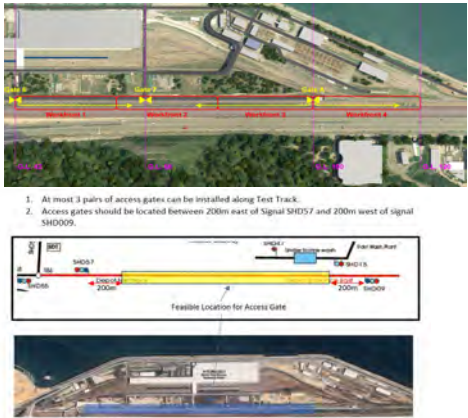
METHOD STATEMENT TITLE	Rev.0 -
<p>Site Entrance, Level Crossing and Cross Road Duct at Test Track for OYB Station Northern Structure, Bifurcation Area and Depot Edge Pile</p>	

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Document Title: 1701 - MS of Site Entrance and Level Crossing

Document Revision:

Deadline:

Item	Section	Reference	Comment	Contractor's Response
1	SHD Dev.	1. Introduction Figure 1.3	<p>The height of access gate should align with the test track fencing for depot security propose and test track safety. Barbed wire should be installed at the top of access gate.</p> 	<p>Noted. The height of access gate is align with the test track fencing.</p>
2	SHD Dev.	1. Introduction Figure 1.4 – Layout Plan for Gate 6, 7 and A	<p>According to BUGN2023/21, "the access gates are located 200m East of Signal SHD57 and 200m West of signal SHD009 unless agreed otherwise."</p> <p>From the layout plan of MS, Gate A is within West of signal SHD009. Please relocate this gate.</p> 	<p>Noted. The updated gate A location are located 200m west of signal SH009.</p>

3	SHD Dev.	7.2.1 Erect the water filled barrier with top panel at proposed Gate 6, Gate 7 and Gate A Figure 7.2.1	<p>While the work involves removal of existing test track fencing, water filled barrier cannot serve as a proper measures to prevent unauthorized track access . Please propose another method to demarcate worksite.</p> <p>For reference, 1732 installed temporary test track gate when removal of test track fencing is required.</p> 	Noted. We will erect the temporary chain link fence instead of water filled barrier when removal of test track fencing.
4	SHD Dev.	7.2.2 Remove the existing facilities at test track for install level crossing	<p>Existing trackside equipment should NOT be removed or relocated.</p> <p><b>Site Condition at Gate 6</b></p> 	Noted. The level crossing will not affect the existing trackside equipment.
5	SHD Dev.	General	Please provide the details of test track access gate locking mechanism.	Noted. Please refer to the update MS.
6	SHD Dev.	General	Since vehicles may cross test track during night time, please ensure that sufficient lighting and road marking is provided to ensure road safety	Noted. The lighting, road marking and traffic controller will be provided.
7	SHD-Dev.	2.Details of Sub-Contractor/Specialist Sub-Contractor	<p>CP(T)/ CCTV/ Smart Initiatives/ Lookoutman/ Height Gauges are required for managing the Test Track Access Gates.</p> <p><b>BUGN Requirements</b></p> <p>"CP(T) will be positioned at each access gate to manage the access control and operate the gate manually along with possession of the gate key. Permissions need to be granted via phone calls from YMs before the opening of the access gates. In addition to the CP(T), CCTV systems should be deployed at all gates, to provide real time monitoring of traffic conditions by YMs. Vehicles and workers crossing the test track will be led by CP(T) and lookoutman. Further, height gauge will be installed at each access gate, and the height of vehicles using the access gates is to be checked by the CP(T). Permitted vehicles must be driven through the track crossings at a speed of not over 10kph.</p> <p>Additional provisions of CCTVs at level crossings will be available in the Depot DCC to ensure the continuous monitoring of traffic conditions in real time. Further, some smart (I&amp;T) initiatives will be explored for the prevention of CP(T) human errors in traffic management at all crossings."</p>	Noted. CCTV will be installed at each access gate and level crossing for real time monitoring.
8	SHD-Dev.	7.1 Prior to commence the works	A site survey should also be conducted to ensure the planned locations for newly added strail level crossings would have cause any impacts on existing test track equipment, especially signalling equipment. Proper protections to the identified test track equipment near the crossing shall be protected (with MTR agreed protections).	Noted. The initial survey record will be submitted separately.
9	SHD-Dev.	7.2.2 Remove the existing facilities at test track for install level crossing	<p>As discussed in the RP meeting on 1 Mar 2024, kindly list out all the affected MTR facilities at test track and conduct a separately meeting with all Stakeholders for discussing the way for dealing with the equipment.</p> <p>Pls don't remove any MTR equipment without any agreements with MTR.</p>	Noted. The location of access gate and level crossing is revised. The access gate and level crossing will not affect the existing trackside equipment.

10	SHD-Dev.	7.2.5 Construct the level crossing on test track	<p>Unlike mainline tracks, traffics at test track are even more heavier at NTH than NPH. Further, the tracks are often booked by other MTR Stakeholders for train testing at NPH. The best time slot for having construction works at test track is: Sat 10:00 to 16:00 or Weekdays 17:00 to 20:00.</p> <p>Kindly discuss with SHD Depot and agree the work schedule prior to work commencement.</p>	Noted. We will discuss with SHD Depot and agree the work schedule prior to work commencement.
11	SHD-Dev.	General	<p>The newly installed strail level crossing systems at test track shall not have any impacts on regular MTR rail temping works.</p> <p>1701 shall be fully responsible for the regular maintenance of all the newly installed equipment, especially height gauges and strail level crossing systems. Kindly amend the document to include the propose maintenance regime for the equipment into document for comments.</p>	Noted. The level crossing system at test track shall not have any impacts on regular MTR rail temping works. We will carry out regular monitoring and maintenance of all the newly installed equipment.
12	IMD P-Way	General	<p>Please clarify whether there are 3 new level crossings for Gate 6, Gate 7 and Gate A respectively and their length.</p> <p>Furthermore, as these level crossings are for construction vehicle use, 1701 should be responsible for their inspection and maintenance, and finally dismantling.</p> <p>The design, while checking by CWBU project team, should also be vetted by T&amp;ES-PWE team in an EDOC, in addition to structural gauge checking.</p>	Noted. The legnth of each level crossing please refer to the updated MS. Three level crossings are for construction vehicle use, we will carry out regular inspection and maintenance.
13	SHD	General	To protect the OHL equipment, a height gauge of the OYB worksite is recommended.	Noted. The 3.8m height gauge will be installed at each access gate to protect the OHL equipment.
14	SHD	General	Please advise any partition or barrier between each workfronts. If no solid partition, it is suggested reducing the number of level crossing across the depot test track.	The works area is about 1.2km, the number of level crossing can not reduce.
15	SHD	General	Please share the protection between OYB worksite and the mainlines. This method station couldn't show the prevention of intrusion, unauthorised track access. It could lead to fatal consequence.	We will provide CP(T) on site, and WPIC will be assigned to supervise the construction works at each work site / each work front. WPIC will provide pre work briefing to the worker, that the work area for Level crossing and access gate is within Test Track area.

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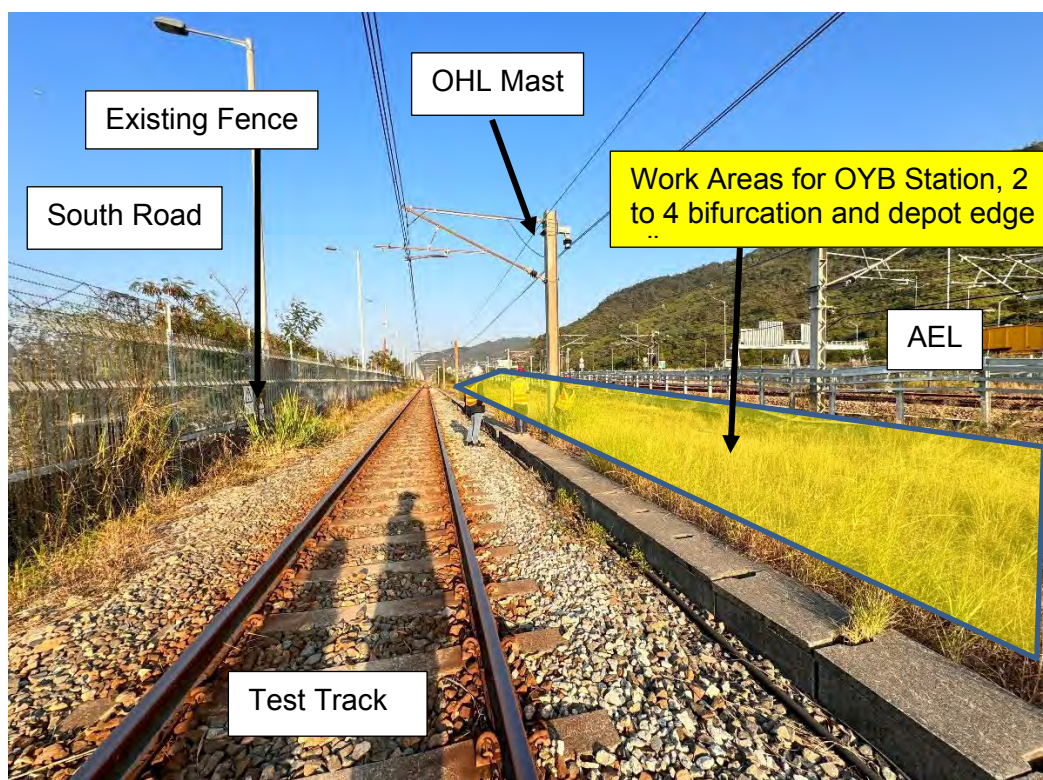


## 1. Introduction (Overview of the operation/works)

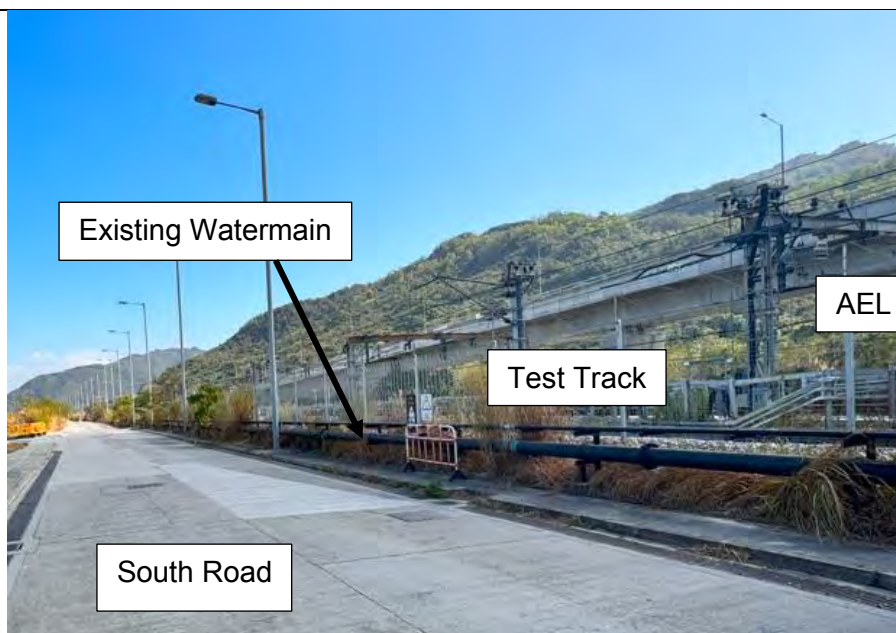
The work area for OYB Station Northern Structure, the 2 to 4 bifurcation for TCL Down Track and the depot edge piles along grid line 'R' are inside the depot area, located between the Mainline and the Test Track. New access gates will be provided to access the works area (Gate TT06, Gate TT07 and Gate TT0A) from the existing depot south road. At each access gate, a temporary diversion of the existing watermain and installation of the level crossings across the Test Track are required to access the construction area. Figures 1.1 and 1.2 show the existing condition of the work areas. In order to supply water, power and concrete to discharge waste water back to the south road, temporary cross road ducts will be installed within the top ballast of the test track at each access gate.

The construction area between the Test Track and the Mainline is very narrow (8.5m to 12m wide), therefore once piling work commences, internal access through the works area will be constrained requiring the use of the level crossings together with a well-planned sequence of piling works to be adopted.

The works area will initially be fenced off with water filled barriers followed by a temporary railway protection fence. Controlled ingress & egress at each access gate is required to prevent unauthorized entrance onto the Test Track and Main Line area. The method statement for the installation of the water filled barrier / railway protection fence will be submitted separately.



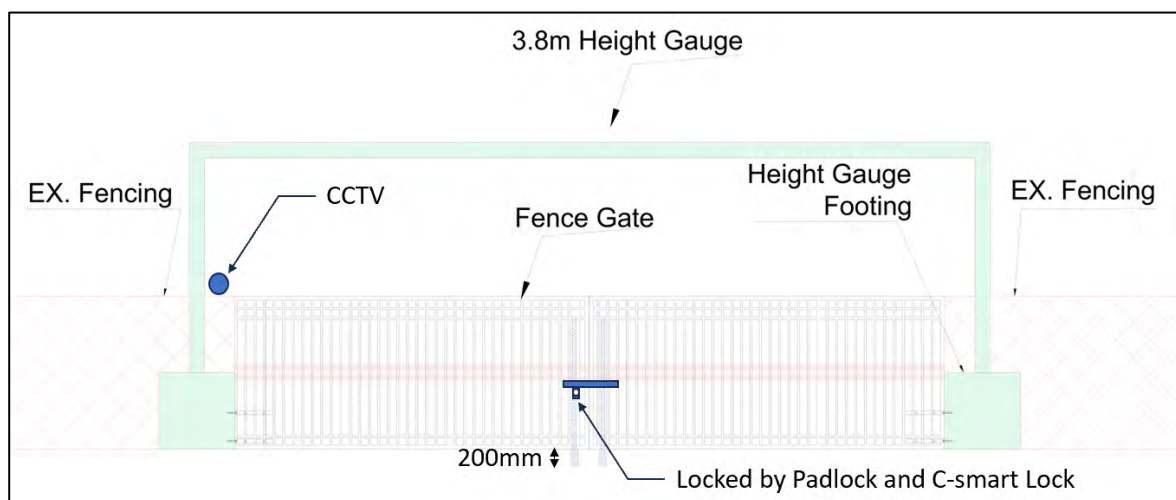
**Figure 1.1 – Existing Condition of Work Areas**



**Figure 1.2 – Existing Condition of South Road**

In order to protect the existing railway infrastructure of the Test Tack, such as the track and OHL mast/wire, a temporary 3.8m height gauge will be installed at each site entrance together with the level crossings.

Figure 1.3 shows the arrangement for the temporary height gauge, access gate and level crossing at each site entrance. Figure 1.4 shows the location of Gates TT06, TT07 and TT0A; the access gates are located at least 200m East of Signal SHD57 and at least 200m West of signal SHD009, the level crossings will not affect the existing trackside equipment.



**Figure 1.3 - Arrangement for Height Gauge, Access Gate, Level Crossing for Each Site Entrance**





**Figure 1.4 – Layout Plan for Gate TT06, TT07 and TT0A**

The “innoSTRAIL” Level crossing is designed to a max. train speed of 160 Km/h and allows for 55 tons wheel load which is suitable for all the plant to be used accessing the work area. Once installed, the level crossings will be inspected and maintained weekly.

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

(Library) Working Paper No.6 – Railway Protection  
Approved EDOC (pending) for level crossing, height gauge installation  
Approved BUGN (pending) for height gauge installation, if required  
The supplier for level crossing is innoSTRAIL, please refer to ACC no. 1701-W-000-CSC-770-000079 for the material submission for the level crossing.

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

The works will be carried out by our subcontractor (pending award) and supervised by our front-line staff such as foreman and engineer.  
A full time CP(T) (Railway Safety Rules and Requirements) will be provided on site with 1 CP(T) appointed for every 20 workers at the same work area and at each work front. All workers shall possess the Railway Safety Training (RSI) qualification. In addition, a WPIC will be assigned to supervise the construction works at each work site / each work front.

**4. Responsibilities for Activities described within Method Statement**



CSHK is responsible to supervise, inspect 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 Wenguang	Engineer
	Kinsley Zhao	Assistant Engineer
	Li Man Hin	Graduate Engineer
	Cheung Siu Kei	Superintendent (WPIC)
	Benny Yeung	General Foreman
	Ng Tsz Chung	Senior Foreman
	Jacky To	Foreman
	TBC	CP(T)

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

Approval for the works shall be obtained from the Depot YM's prior to commencement. Track access shall be booked and approved in advance via ETMS and the CP shall obtain DOC permission to start the works.

**For diversion of watermain, Installation of Height Gauge, Access Gate**

The works are planned to commence from Jul 2024.

The works will be carried during day time from 08:00 am to 07:00 pm, Monday to Saturday.

**For Construct Level Crossing**

The works are planned to be commence from Jul 2024, after completion of the height gauge, existing fence modification and access gate installation.

The works will be carried during NPH, tentatively 11:00 to 15:00, from Monday to Saturday, subject to PA possession approval of the depot test track.

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

**Plant and Equipment Condition**

The major plant and equipment deployed to carry out the works are as follow:

**For diversion of watermain**

Plant / Equipment	Quantity
Crane Lorry	1
Backhoe with Breaker (~3 ton)	1

Manpower	Quantity
General Labour	6
Driver	1
Rigger	2

Operator	1
Plumber	2

**For Installation of Height Gauge, Access Gate**

Plant / Equipment	Quantity
Crane Lorry	1

Manpower	Quantity
General Labour	6
Driver	1
Rigger	2

**For Level Crossing**

Plant / Equipment / Workfront	Quantity
Crane Lorry	1
Forklift	1

Manpower	Quantity
Skilled Labour	6
Driver	1
Rigger	2
Operator	1

**For Crane Lorry and Lifting Gear**

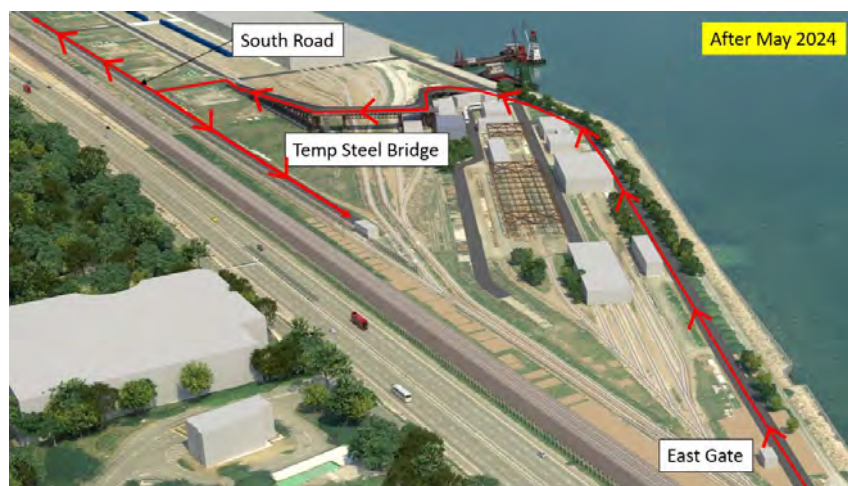
- Maximum lifting load shall be <80% of SWL of the crane lorry
- The weight of the lifting gear must be counted as part of the lifting load
- For any lifting operation by crane lorry, the crane lorry outriggers must be fully extended/ in accordance with working catalogue of the crane lorry, and the unsafe zone fenced off
- All plant and equipment will be inspected prior to mobilization on site to ensure they are in good working condition and comply with all current regulations. All statutory forms/certificates for Lifting Appliances (LA) and Lifting Gear (LG) must be valid
- Subject to good working condition, CSHK will arrange mobilization to site
- Before operation of the plant, CSHK will arrange a plant inspection with MTR CWBU inspector.
- Subject to good working condition, CSHK will submit the permit to lift (for crane lorry, grab lorry lifting gear) and plant permit (for backhoe/forklift).

## 7. Traffic and Security Management

### Contractor Vehicle Arrangement

Access to the site shall be as follows:

- Access to W2: From July 2024, access to W2 will be from the east gate and the steel vehicle bridge as shown in Figure 7.1.



**Figure 7.1 Access to W2 After May 2024**

CCTVs will be installed at each entrance gates to monitor workers/construction vehicles in and out. CPT will be deployed to control in and out during the construction of entrance gates and the level crossings. C-smart locks will be installed for the entrance gates.

### Worker Verification

- All workers will be picked up at a designated collection point 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 and the standard uniform and safety helmet for easy recognition by the security guards and YM.

**Contract 1701** 中國建築工程(香港)有限公司  
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LIMITED

分判商Contractor: \_\_\_\_\_  
姓名Name: \_\_\_\_\_  
綠卡號碼 Green Card no.: \_\_\_\_\_

MTR COM028: \_\_\_\_\_  
MTR RSI: \_\_\_\_\_  
入職訓練 Site Induction Training: \_\_\_\_\_  
有效期/Expiry date: \_\_\_\_\_

**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)

### Gate Arrangement

During site clearance and construction of the RP Fence, access to the work area will be via the existing gates EAG4, EAG5 and proposed gates TT06, TT07 and TT0A. All the gates will be closed and locked when not in use. The key will be provided to the Depot DCC/IMD for proposed gates TT06, TT07 and TT0A.

## 8. Construction Methods / Construction Sequence Drawings

### 8.0 Location, Usage Time of Access Gate and Level Crossing at TT06, TT07 and TT0A

The location and usage time for the proposed access gates and level crossings is shown in the table below. CSHK plan to use these access gates and level crossings from June 2024 to July 2025. Gate TT06 will be maintained for use by IMD to carry out their railway infrastructure work until Dec 2029. Detail condition survey has been conducted to ensure there is no trackside equipment/facilities around the proposed entrance gates and level crossing need to relocation. There are only two signalling sensors near proposed level crossing near entrance gate TT06 were found close to the proposed level crossing. They are about 250mm from the level proposed level crossing and it has been discussed and the distance are confirmed acceptable to the signalling team. During the west test track closure period, 1701 will reduce the usage of level crossing at TT06 by using access from west test track side.

Gate	Width of Level Crossing (m)	Chainage	Programme		
			Jun 2024	Jul 2025	Dec 2029
Gate TT06	6.3m	Ch1+895.59 to Ch1+888.99			
Gate TT07	6.3m	Ch1+625 to Ch1+619			
Gate TT0A	7m	Ch1+397 to Ch1+390			

Legend:

CSHK  
MTR-IMD

The location and 12m swept path for the gate and level crossing at TT06 is shown in Figures 8-1 to 8-2.

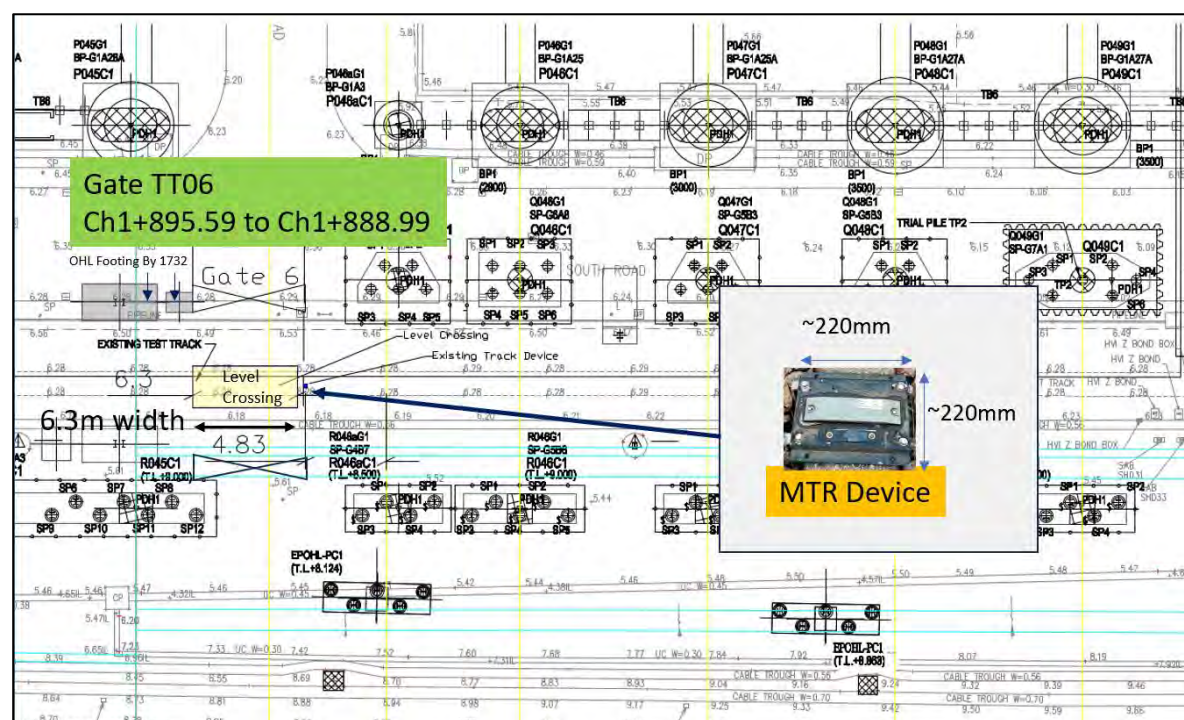
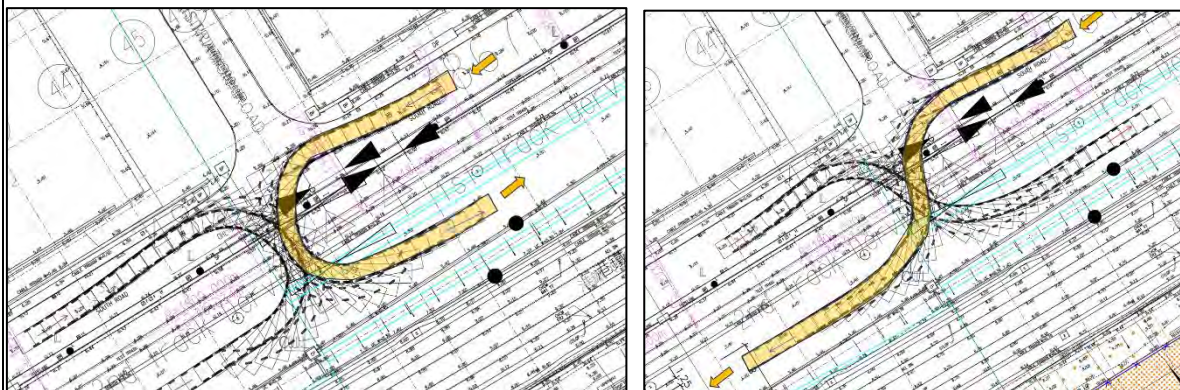


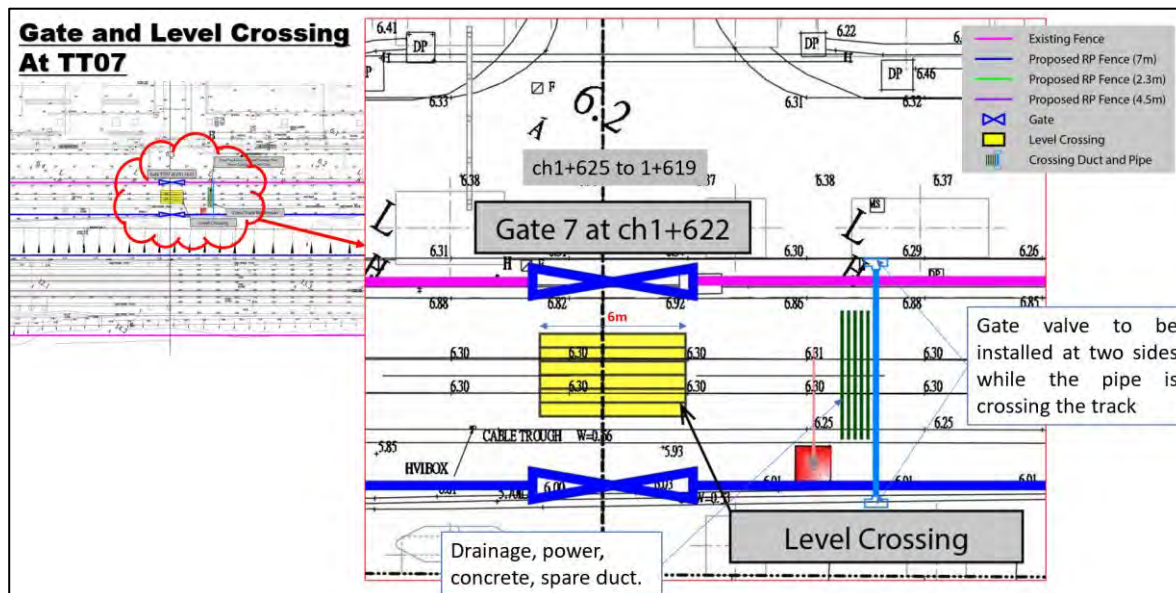
Figure 8-1 Location of Gate TT06





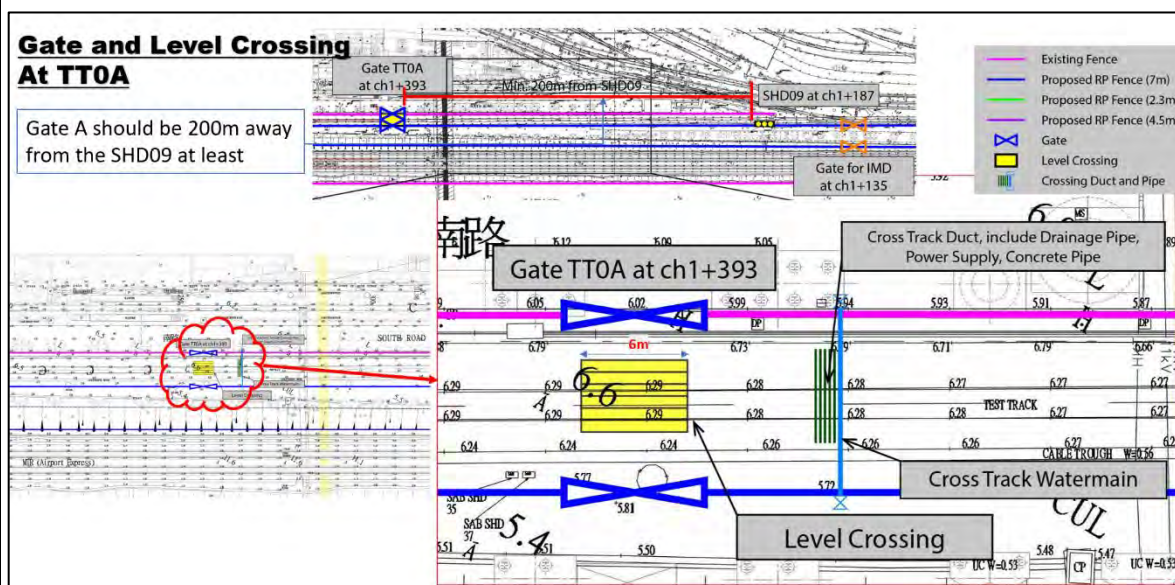
**Figure 8-2 12m swept path for Gate TT06**

The location for the gate and level crossing at TT07 is shown in Figure 8-3.



**Figure 8-3 Location of Gate TT07**

The location for the gate and level crossing at TT0A is shown in Figure 8-4.



**Figure 8-4 Location of Gate TT0A**

### 8.1 Prior to commencing the works

- CSHK will provide information of works planned to MTR CWBU Inspector, in order to submit the work notice to SOC/DCC every Friday.
- ETMS track access shall be booked & approved with approved by the depot YM prior to commencement.
- A topographic survey will be completed in advance to identify the location of all existing structures, fixtures, equipment, manholes etc. Suitable protection measures will be agreed with MTR and provided
- All workers/CSHK staff shall possess the qualification Railway Safety Induction (RSI).
- All workers/CSHK staff can only smoke at the designated smoking area.
- The approved method statement and EDOC (with Chinese version) shall be displayed on site for workers reference.

### 8.2 Construction Sequence

The construction sequence for the installation of the site entrance and level crossing for Gate 6, Gate 7 and Gate A is as follows:

1. Erect a temporary chain link fence at the south road to enclose the construction area
2. Divert the existing watermain below the site entrance to provide access from the South Road to the work area
3. Installation of height gauge at south road side
4. Remove the existing fence locally to form the site entrance.
5. Construct the level crossing across the test track
6. Install the 2m height roller gauge and connect to the height gauge
7. Construct the cross-track duct below the Test Track
8. Installation of height gauge at test track side
9. Remove the temporary chain link fence

The detailed construction method and sequence are shown as follows.

#### 8.2.1 Erect the 2.3m Temporary Chain Link Fence with Access Gate at South Road

The location of the proposed access gates TT06, TT07 and TT0A will be set out clearly on site. The temporary chain link fence will be installed to fence off the work area. The chain link fence will be mounted on the South Road and secured with precast concrete blocks lifted into position with a crane lorry. This will then provide the 15m long and 3m wide work area needed for the watermain diversion, the setup as shown in Figure 8.2.1-1.

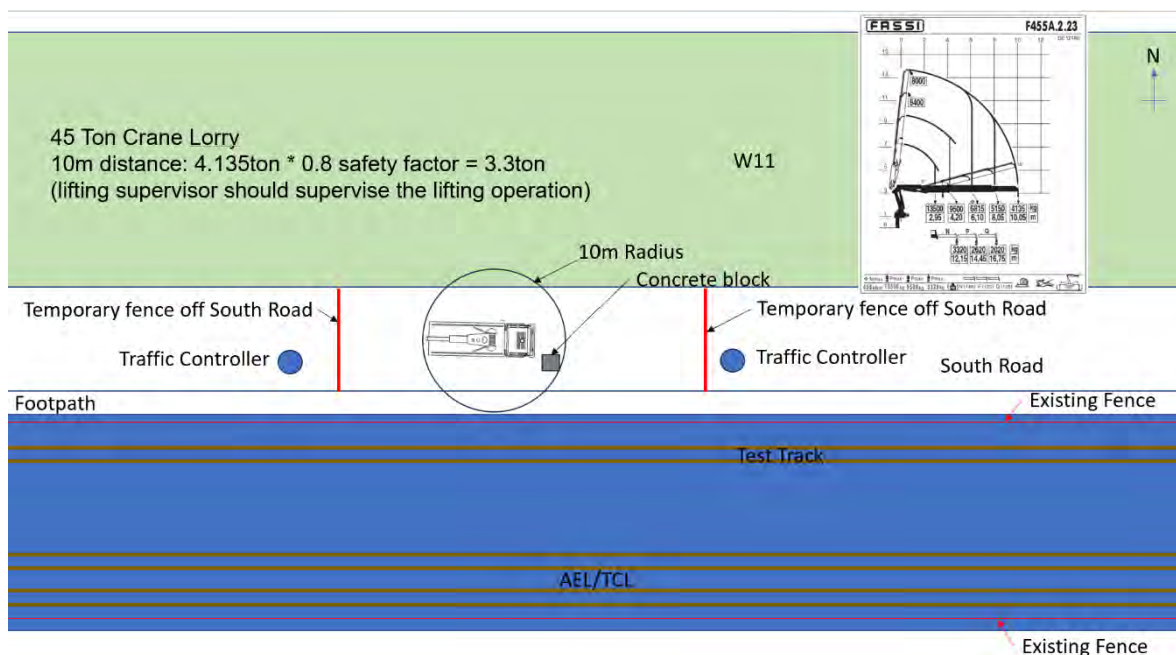




**Figure 8.2.1-1 Erect the 2.3m Temporary Chain Link Fence with Access Gate at South Road for Gate 6, Gate 7 and Gate A**

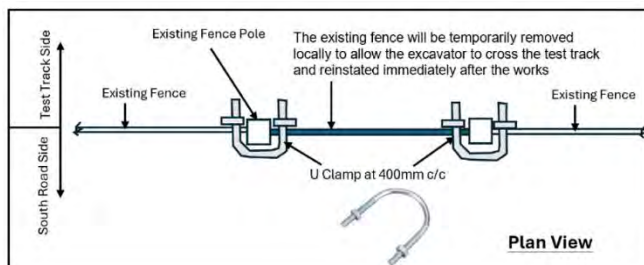
The sequence for erecting the temporary chain link fence and access is as follows

1. Set out the locations of proposed Gates TT06, TT07 and TT0A
2. Lift 5nos. of 1m x 1m x 1m concrete blocks on to the south road which requires the south road to be fenced off during the lifting operation. Approval will be obtained from the Depot prior to starting the lifting work. Traffic controllers will be provided at either side of the lifting area, as shown in Figure 8.2.1-2. If necessary, the lifting works can be suspended and the road returned to MTR/other parties within 5 minutes if needed.



**Figure 8.2.1-2 Temporary Chain Link Fence Lifting Arrangement**

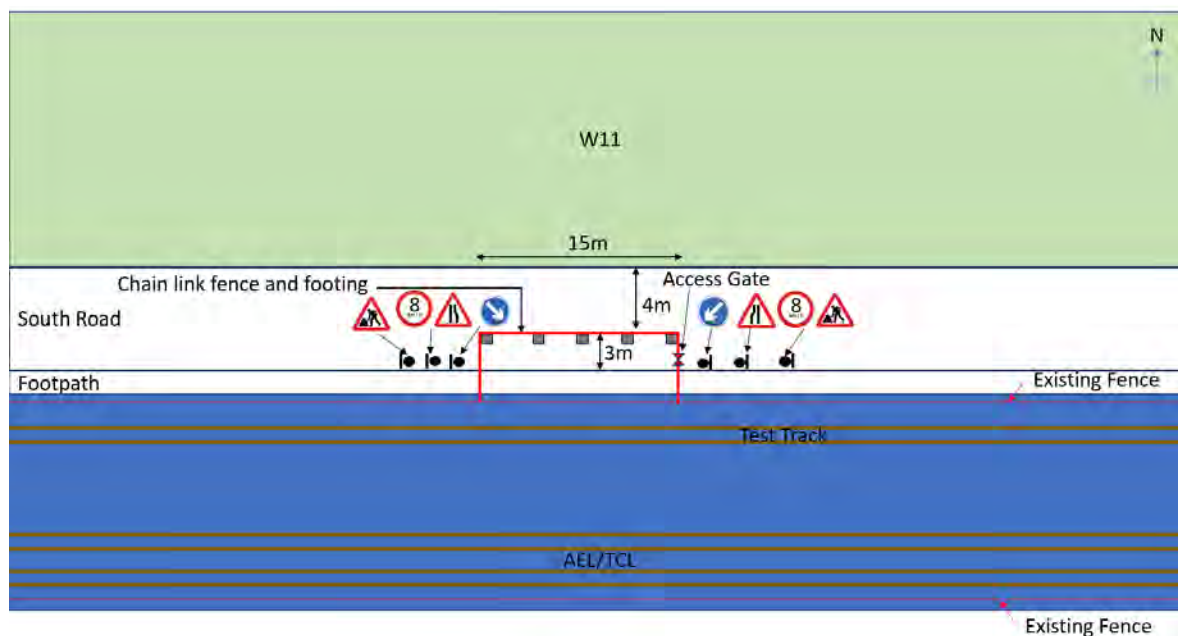
3. After erecting the concrete block, the 2.3m height PFC steel will be installed on each concrete block. The 2.3m chain link fence will be fixed on the PFC steel by bolt and nut with the edge of the chain link fence connected to the existing RP fence as shown in Figure 8.2.1-3. The access gate will be installed at each temporary chain link fence and the gate locked by padlock and C-smart lock and the key kept by CSHK and MTR.



**Figure 8.2.1-3 Connection Details of Temporary Chain Link Fence and Existing RP Fence**

4. CCTV and C-smart facilities (under separate submission) will be installed at the temporary chain link fence for real time monitoring.

The layout plan and TTA for the temporary fence at the South Road is shown in Figure 8.2.1-4, with traffic use maintained on the south road.



**Figure 8.2.1-4 TTA after erection of the Temporary Fence at South Road**

### **8.2.2 Temp. diversion of the existing watermain to the underground area to provide the access from South Road to work area**

The existing watermain is located along the existing fence adjacent to the South Road as shown in Figure 8.2.2-1.

This watermain is planned to be diverted to AB23 by Contractor 1732 by April 2024, however CSHK intend to maintain this route for our temporary water supply. The water main will be diverted below ground locally at each site entrance by removal of the existing concrete road surface and reinstatement after completion of the diversion works.





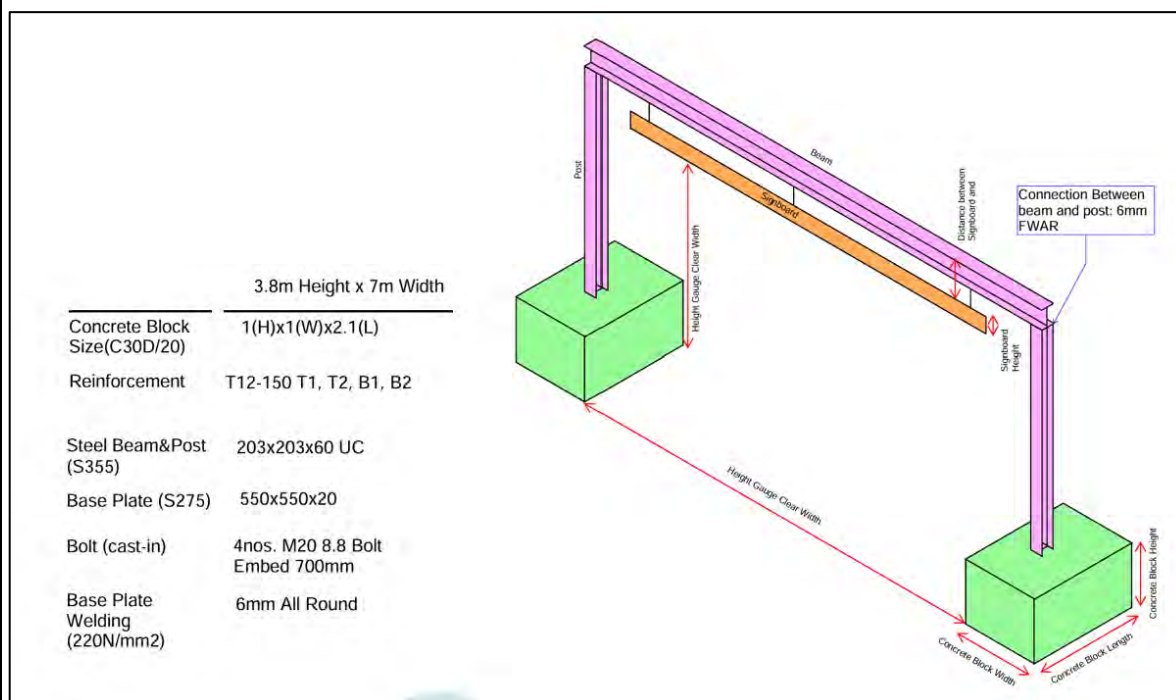
**Figure 8.2.2-1 Watermain along the fence at South Road**

The sequence for the watermain diversion is as follows:

- Before carrying out excavation works, UU detection (Under separate submission) is to be carried out by a CP, and a permit to dig issued.
- A pre-job briefing is required to be given prior to the commencement of works between the CP(T), WPIC, workers and Site Engineer for the excavation work
- Saw cut the road surface to be removed using a road saw or sthll saw.
- Remove the concrete road surface using a backhoe with breaker and excavate a 200mm wide ,500mm deep and 8m long trench. 20mm Plywood protection board will be installed on the existing RP fence.
- Compact the ground by vibration platre and install the watermain in the trench.
- Inform MTR/Depot, Temporary shutdown the existing watermain
- Cut the existing watermain and connect the existing and new watermain.
- Backfill and compact sand on top of the diverted watermain and place a 150mm wide, 6mm thick steel protection plate on top of the sand.
- Backfill and compact with 100mm thick granular subbase
- Place steel mesh and concrete the reinstatement of the pavement. The concrete grade is 40/20D, thickness is 250mm and shall be placed manually.

### **8.2.3 Erect the height gauge**

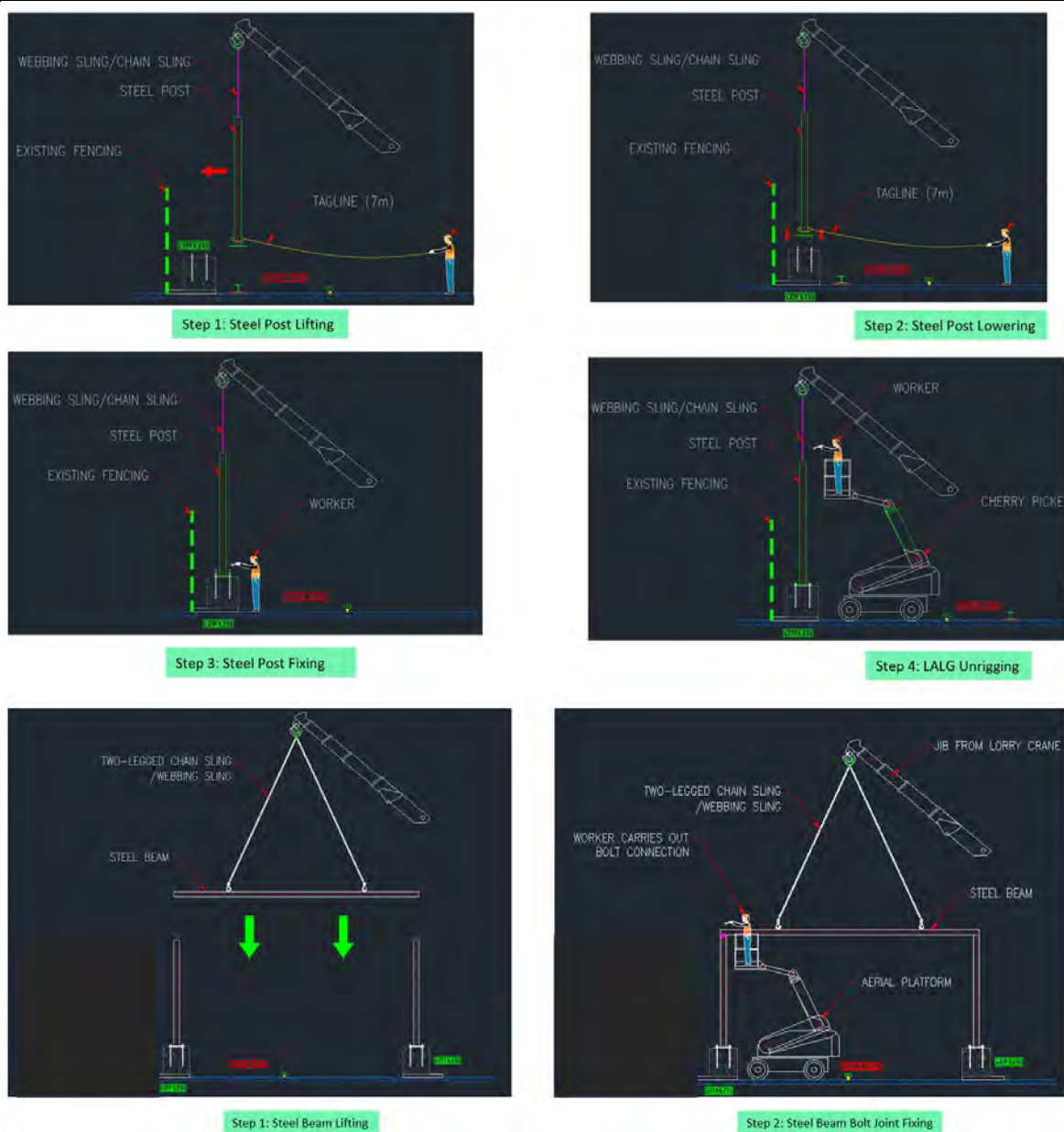
The footing of the height gauge will sit at the existing ground level with the steel frame installed on the footing by bolt and nut. The arrangement for the height gauge is shown in Figure 8.2.3-1 with the construction sequence shown in Figures 8.2.3-2 to 8.2.3-4. Once installed, a temporary chain link fence will be installed to close the gap between the existing fence and the height gauge frame.



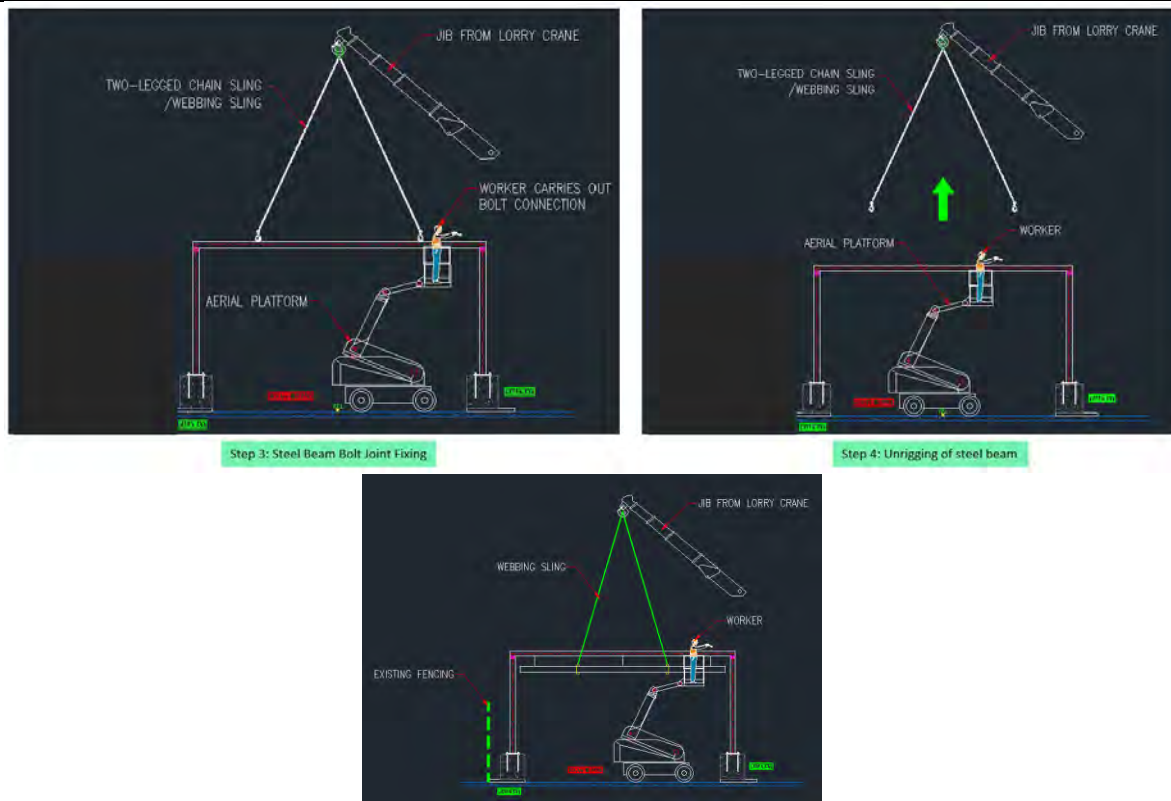
**Figure 8.2.3-1 – Sketch and Size of Height Gauge**



**Figure 8.2.3-2 – Construction Sequence for Height Gauge Footing – Step1 to 3**



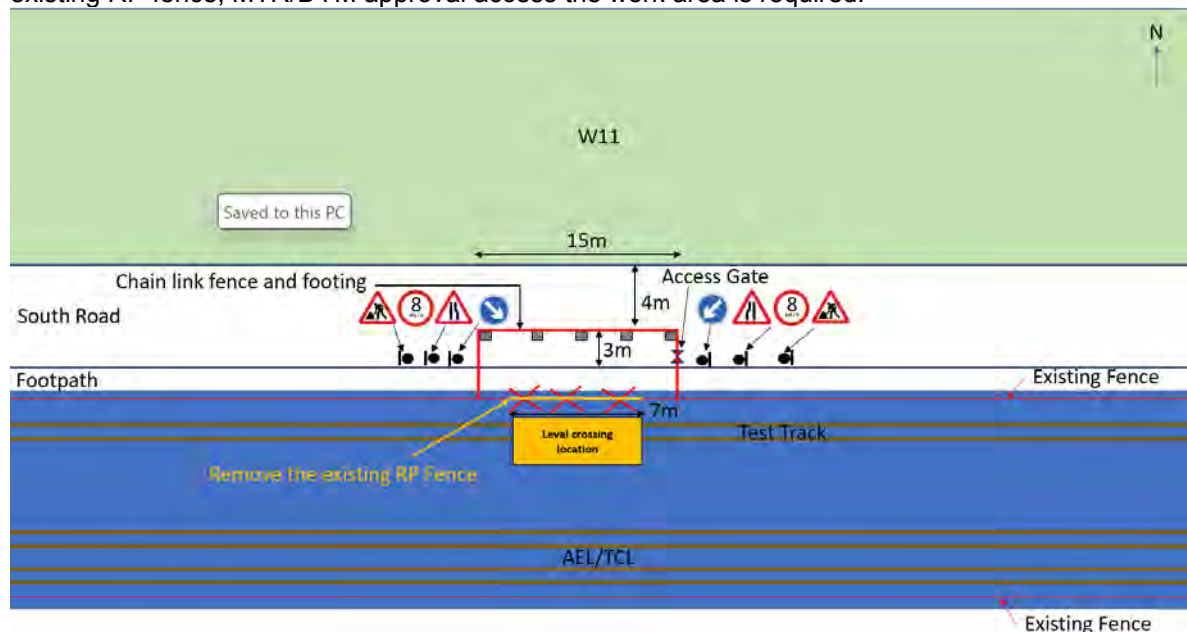
**Figure 8.2.3-3 – Construction Sequence for Height Gauge steel post – Step 1 and 4**



**Figure 8.2.3-4 – Construction Sequence for Height Gauge steel beam and signboard – Step 1 to 5**

#### 8.2.4 Remove the affected part of the existing fence

After diverting the watermain, a 7m long section of the existing fence will be removed as shown in Figure 8.2.4-1. Prior to starting the removal work, the WPIC/CP(T) shall inform MTR/DYM with workers positioned in the south road and not required to access the test track. After removal of the existing RP fence, MTR/DYM approval access the work area is required.



**Figure 8.2.4-1 Remove the existing RP Fence**



### 8.2.5 Construct the level crossing on test track

As the test track is a live track, installation of the level crossings will be carried out during NPH, with the planned schedule as follow, The working schedule will be subjected to the final coordination and confirmation with Depot Yard master:

#### Schedule of Installation of Level Crossing for Test Track at NPH

Item	Works	Time
1	Preparation works, deliver material and prepare for work at South Road	09:00 a.m. to 10:00 a.m.
2	Pework briefing to workers	10:00 a.m. to 10:30 a.m.
3	CP(T) report to TC/DYM to obtain authorization to set up	10:30 a.m. to 10:45 a.m.
4	Possession of test track	11:00 a.m. to 11:10 a.m.
2	Temporary fence off the working area and move in materials	11:10 a.m. to 11:30 a.m.
3	Start installation work at level crossing	11:30 a.m. to 2:20 p.m.
4	Inspect installed works for satisfactory fixity and safety, clean up the site area, remove material and tools from test track. Remove temporary fence and carry out final checking before leaving site.	2:20 p.m. to 2:50 p.m.
5	Leave Site	2:50 p.m. to 3:00 p.m.

Structural guage checking of the level crossing installation shall be carried out and submitted for MTR approval before installation. For details refer to the Structural guage submission.

#### Installation Process for Level Crossing - Manual installation:

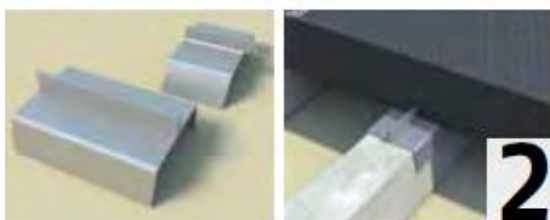
- The existing cable trough along test track will be covered with a 6mm steel plate on top of the cable trough for protection
- A Forklift (height of forklift is less than 3.3m) as shown in Figure 8.2.5-1: will be used to assist the delivery and installation of the level crossing
- approx. 4 - 6 workers will be deployed to ensure an effective and smooth installation process



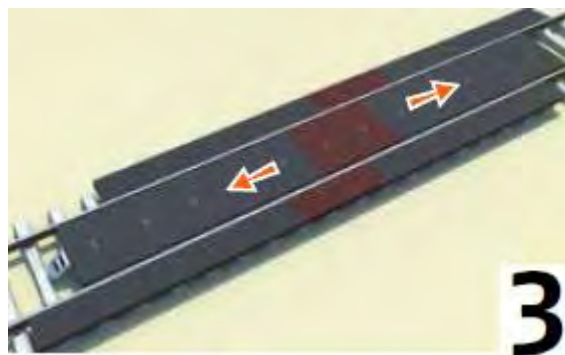
**8.2.5-1 Installation level crossing with Forklift**

- Clean the sleepers and rails and check the sleeper spacing with a tape measure.
- Level the ballast

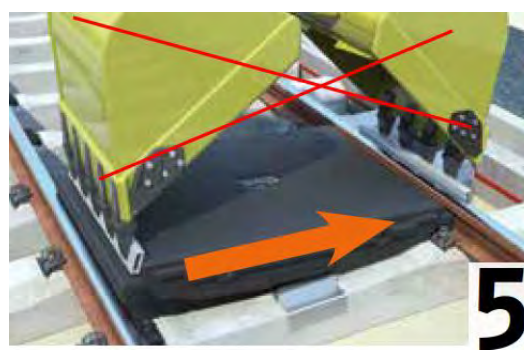
- To facilitate ease of installation, brush the rail foot, and innoSTRAIL panels with lubricant\* after cleaning them first. (Image 1).
- Insert the shift protectors. The shift protectors' clasp around the sleeper from above. (Image 2) The division bar in the middle protrudes from two **innoSTRAIL** panels and thus prevents the panel rows from shifting.



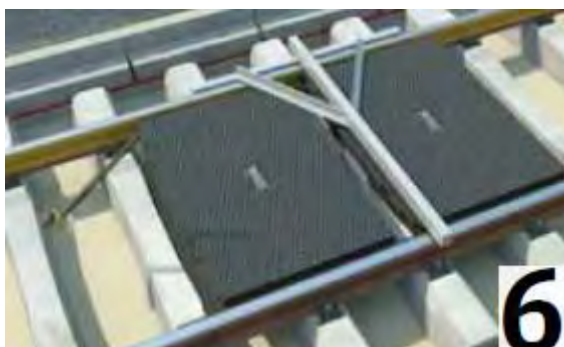
- To avoid excessive abrasive wear, the shift protectors should not be positioned directly underneath main tracks (rut) but between them.
- When installing the first two inner and outer panels always start in the middle and from there continue to the right and left side. (Image 3)



- Push the panel edge of inner panels underneath the rail head using the innoSTRAIL installation lever\*. (Image 4). Please note an excavator cannot be used to press the panels together due to the OHL constraint. (Image 5).



- (For reference the weight of the innoSTRAIL inner panel: 255kg/Piece or 284kg/m; outer panel: 85kg/Piece or 95kg/m. A forklift will be used for the placement of panels before fixing instead of a Grab Lorry)
- During the installation process and when interlocking the tie rods, release possible tension by continuously knocking onto the panel surface with a plastic sledge hammer.
- Screw together with the designated tie rods (middle piece, marked in red). Always make sure that the panels are interlocked evenly and without gaps.
- Check the position of the first two screwed panels with a track angle and correct it if necessary with a plastic sledge hammer (90° degrees to the rail). (Image 6)



- Install the next two inner and outer panels. Join these two panels with a plastic sledge hammer
- and screw together with tie rods.
- For outer panel, the concrete pavement as shown in image 7 shall be placed prior to installing the outer panel. A polyethylene membrane will be placed on top of the existing ballast with A393 steel mesh and cast the grade 40/20D concrete pavement by manual handling
- Between the outer panel and the concrete pavement, as well as between the longitudinal joints of the concrete pavement, a permanent elastic joint sealant or a tape must be applied (Image 7)
- Install the end restraint or tie rod for each end piece.



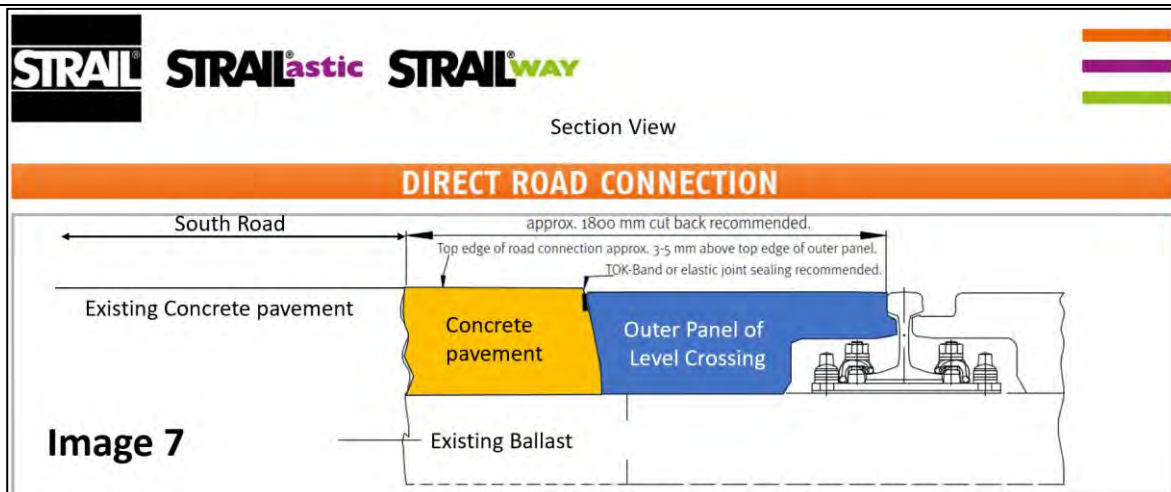


Image 7

Figure 8.2.5-2 below shows the completed Level Crossing.



**Figure 8.2.5-2 Completion of Level Crossing across the Test Track**

#### **8.2.6 Erect the 2m height roller gauge and connect to the height gauge**

Finally, an 2m height roller access gate will be erected, sample as shown in Figure 8.2.6-1. The access gate will be locked by padlock and C-smart lock and the key kept by CSHK and MTR. MTR will be informed each time the access gates need to be opened.



**Figure 8.2.6-1 2m Height Roller Gauge**

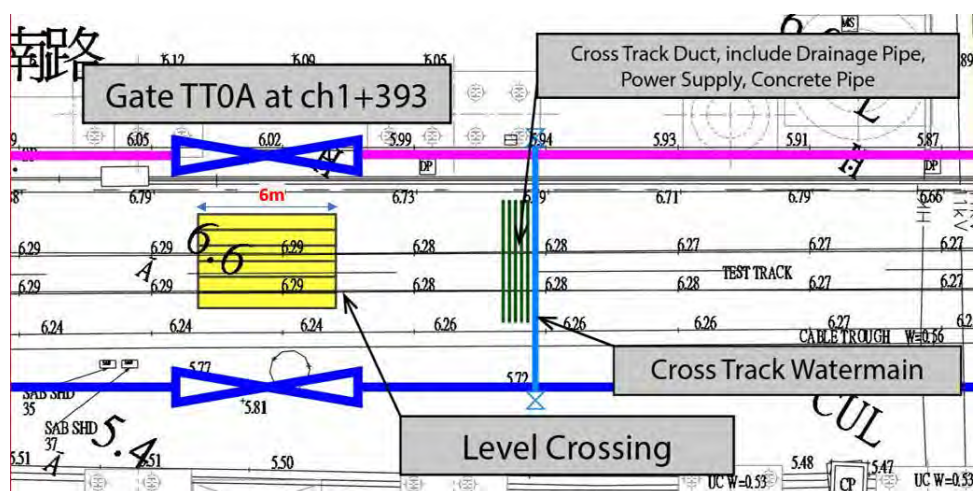


### 8.2.7 Construct the Cross Track Duct

There is no existing power, water supply, drainage etc., connecting to the construction area. The construction area is in an island site between the test track and mainline To support the construction works 6 nos. 150mm cross track ducts for temporary services are proposed to be installed in the test track ballast at each access gate TT06, TT07 and TT0A as shown in Figure 8.2.7-1 and Appendix C. The details are shown in Figure 8.2.7-2 to 8.2.7-4. The usage period for the cross track duct is expected from June 2024 to Jul 2025, after which the cross track ducts will be removed. Only one cross track duct will be installed between sleepers as discussed in the review meeting with IMD, T&ES.

Gate valve will be installed to the water pipe at both side test track to stop the water supply for emergency. Flow meter will be installed to monitoring water leakage. water pipe will be to the concrete pavement or concrete pipe.

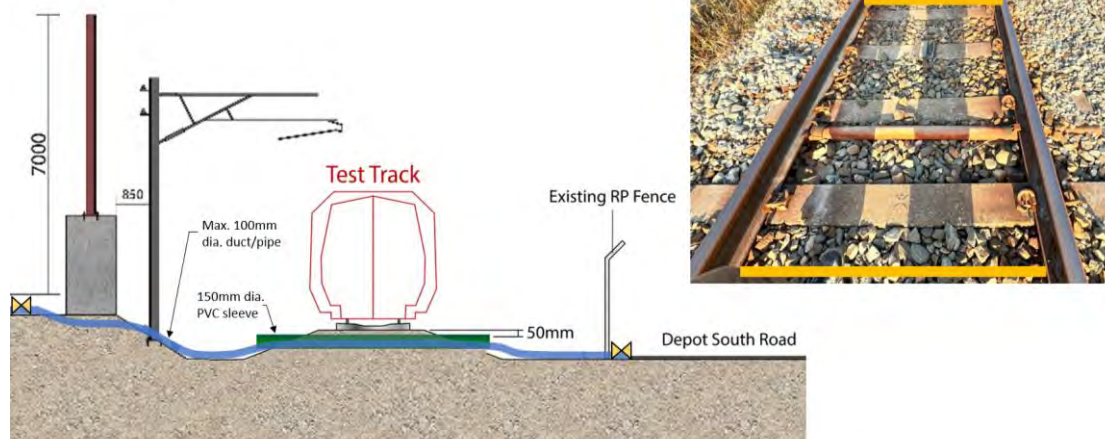
Weekly inspection will be conducted for the cross track ducts to ensure the condition.



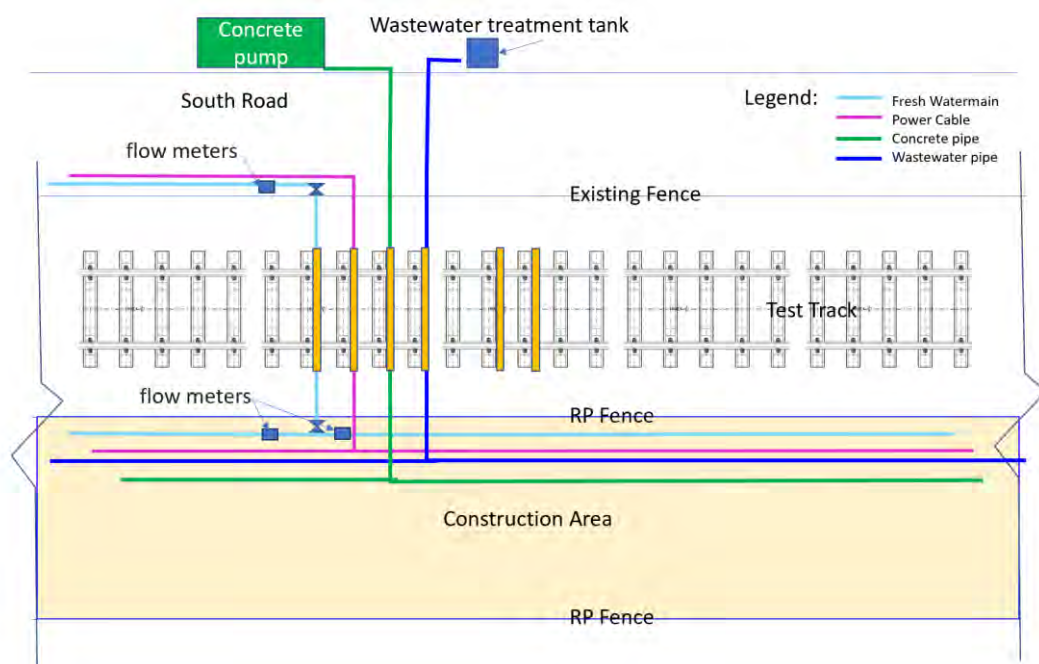
**Figure 8.2.7-1 Cross Track Duct next to Gate TT0A**

- As shown in Figure 8.2.6-2, the proposed cross track duct is located within the ballast. Prior to excavation, UU detection will be completed and a permit to dig issued. Hand tools will be used to excavate an approximate 160mm deep trench between the rail and the ballast followed by installation of the 150mm dia. pipe sleeve under the rail and backfill the ballast. The power cable, PE pipe (for watermain, drainage) and rubber cement grouting hose will be installed in the pipe sleeve. For the watermain, a flow meter will be installed either side of the duct to monitor the watermain pipe.

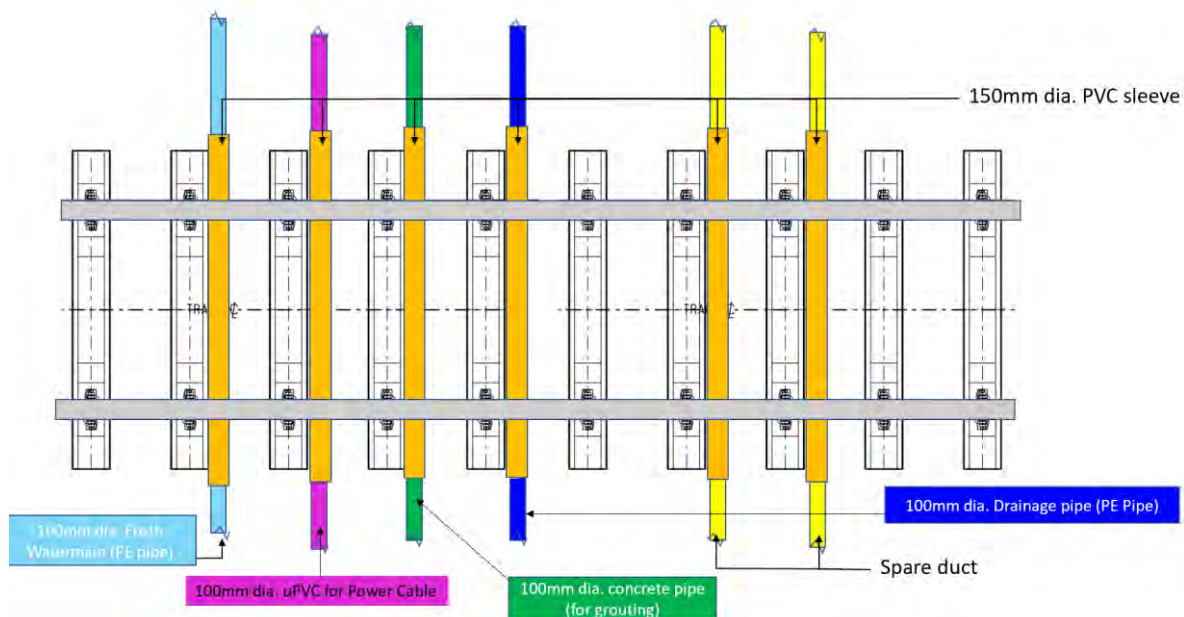
#### Cross Track Ducts



**Figure 8.2.7-2 Section Plan for Cross Track Duct**



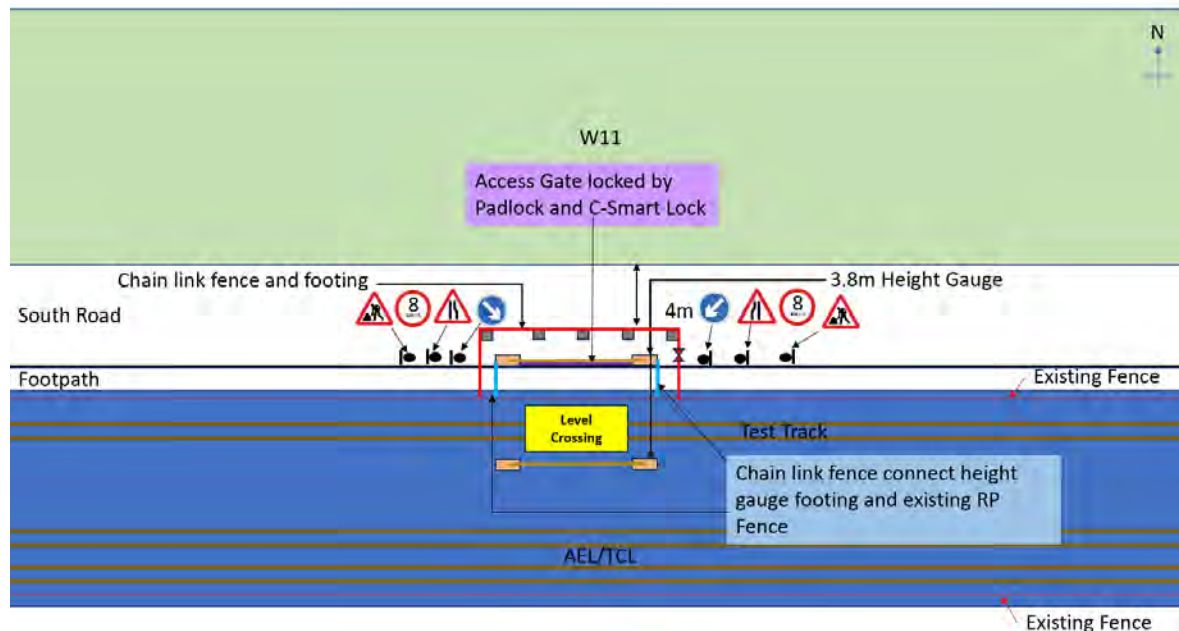
**Figure 8.2.7-3 Details for Cross Track Duct**



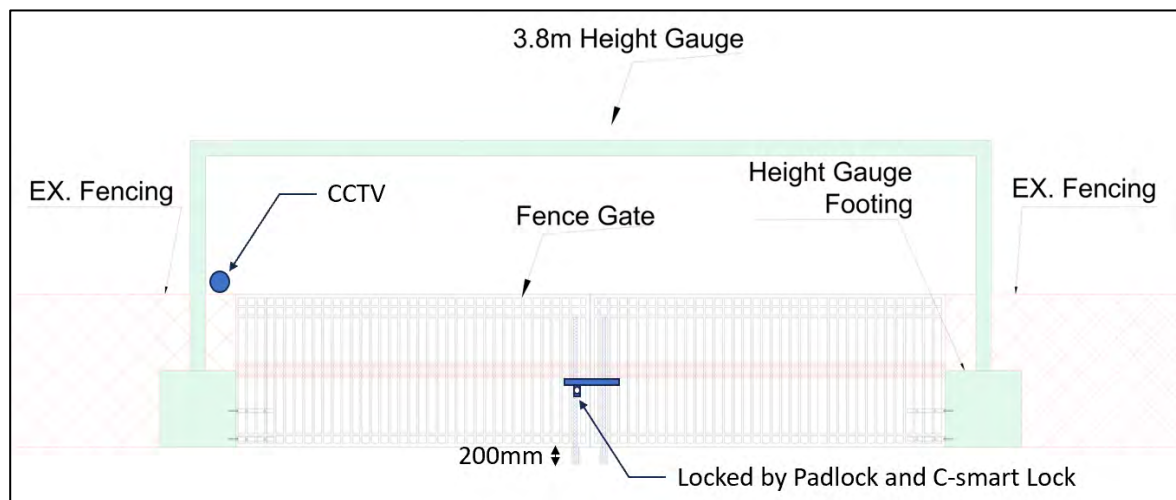
**Figure 8.2.7-4 Details for Cross Track Duct**

### 8.2.8 Erect the height gauge

Same as 8.2.3, we will install the height gauge at the test track side, the layout plan as shown in Figure 8.2.8-1 to 8.2.8-4.

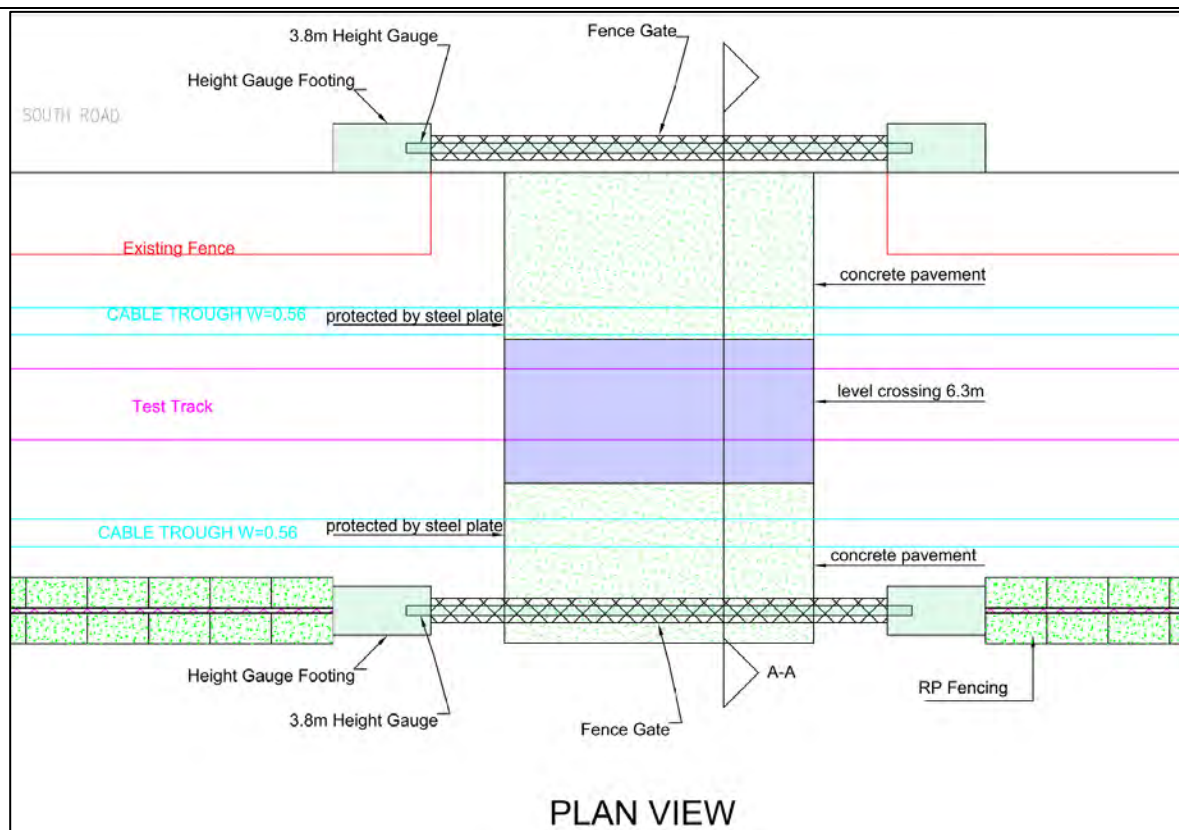


**Figure 8.2.8-1 – Access Gate and Height Gauge Arrangement**

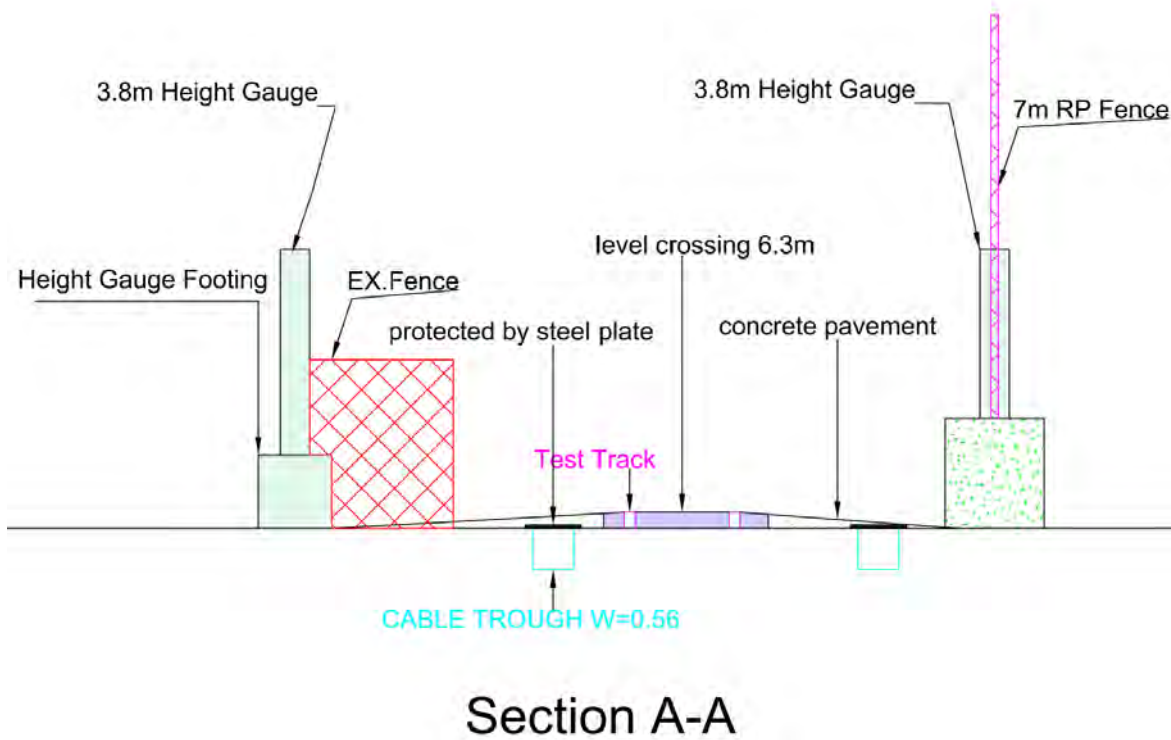


**Figure 8.2.8-2 – Access Gate Arrangement**





**Figure 8.2.8-3 – Access Gate Arrangement**



**Figure 8.2.8-4 – Access Gate Arrangement**



	<p><b>8.2.9 Remove the Temporary Chain Link Fence</b></p> <p>The temporary chain link fence will be removed when the height gauge, access gate and level crossing are completed. As a reverse of the installation method, the chain link fence PFC steel will be removed from the concrete block. Then fence off the South Road to lift the concrete block by crane lorry for removal off site.</p>
<b>9.</b>	<p><b>Safety</b> (Risk Assessments)</p> <p>The Risk Assessment attached in Appendix A has been prepared for all general 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.</p>
<b>10.</b>	<p><b>Environmental</b> (Environmental aspect &amp; impact identification as well as mitigation measures)</p> <ul style="list-style-type: none"> <li>• Works will be carried out during normal hours from 08:00 am to 07:00 pm and outside of normal hours after 07:00 pm on Monday to Sunday with an approved construction noise permit.</li> <li>• ULSD Diesel will be use in all PME;</li> <li>• Plant with QPME label will be used if available;</li> <li>• Only plant with NRMM label will be used unless exempted;</li> <li>• All chemicals will be placed on a drip tray;</li> <li>• Any wastewater produced during the work will be treated prior to disposal;</li> <li>• The works shall follow relevant mitigation measures as required under the Environmental Permit (EP) / EP submission and Contractor's Environmental Management Plan (EMP).</li> </ul>
<b>11.</b>	<p><b>Quality Control</b> (Inspection and Test Plan including hold points)</p> <p>Refer to Appendix B for the Inspection and Test Plan.</p> <p>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 &amp; 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.</p> <p>Specific quality checks shall be carried out in accordance with the approved Inspection &amp; Test Plan with "Hold Points" at critical elements for confirmation of compliance before proceeding further.</p> <p>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 &amp; Test Plan for the works (Appendix B) will identify all Hold Points and Witness Points.</p> <p>As each Inspection &amp; Test is completed, 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.</p>

<b>12.</b>	<b>Appendices</b> (Identify and include additional information in the submission package)
	Appendix A – Risk Assessment Appendix B – Inspection and Test Plan (ITP) Appendix C – Layout Plan Appendix D – Emergency Contact List