11.7.11.13.7 All sanitary waste within this station shall be collected and discharged to public manhole via a dedicated inspection chamber network at Ground Level.

11.7.11.13.8 The Contractor shall provide high air pressure and low air pressure test to all the sanitary pipes installed. High air pressure test refers to test to be performed prior to the installation of water closets and floor traps and low air pressure test refers to test to be conducted after water closets and floor traps are installed.

11.7.11.13.9 The Contractor shall note that the proposed station sewer pipes may be required to discharge to the PUB's DTSS manhole (MH4A). The Contractor is required to ensure that the sewer design comply with PUB COPSSW and shall submit to PUB(WRN) for approval prior to commencement of works.

11.7.11.13.10 The Contractor shall ensure that ejector pump discharge pipes routing shall not encroach above public access area.

11.7.11.14 Station and Tunnel Drainage System

11.7.11.14.1 The station and tunnel drainage sump pumping system including sumps and pumping installation shall comply with the latest Code of Practice on Surface Water Drainage from PUB, the Authority, BCA and other relevant local authorities and agencies.

11.7.11.14.2 The Contractor shall provide drainage system in accordance to the Specifications and design requirement as specified in the Authority's Drawings, LTA Civil Design Criteria for Roads & Rail Transit Systems and the Materials and Workmanship Specification for Civil & Structural Works.

11.7.11.14.3 The Contractor shall design and provide seepage water holding tanks to meet his design. Any locations and sizes stated in the Authority's Drawings are for reference.

11.8 Interface Requirements

11.8.1 E&M Interfaces

11.8.1.1 The Contractor shall comply with the following interface requirements with E&M System Wide Contractors (SWCs). In the event of discrepancy with **Clause 7** of the Particular Specification, the Contractor shall advise the Engineer accordingly, whose resolution of the discrepancy shall be final and have no impact to the Contract Price or programme.

Within this Clause, the term SWC shall be deemed to include the Authority's Consultants and in-house designers until such time as the Authority appoints the SWCs.

11.8.1.2 Isolators and associated cabling from the power supply source to the isolators or fuse connection units for various equipment such as drainage pumps, sewage ejector, hydrant pumps, toilet sensors, shutters, etc. shall be provided by the SWC (Electrical Services). The Contractor shall coordinate with the SWC (Electrical Services) regarding the exact locations of the isolator mountings on the wall and related cable routings.

11.8.1.3 The Contractor shall coordinate with the SWC (WHE) on all relevant matters relating to the supply and installation of WHE including but not limited to the locations of the pumps and pump discharge connections, pump motor control panel (PMCP), sump pit and pump sump cover requirement. The typical interface and installation requirements of the Water Services, Sewerage & Sanitary System, Station Drainage Sump Pumping System and Tunnel Sump Pumping System are indicated in **Figures 11.1** to **11.5** below. The Contractor shall work up the necessary flowrates & heads for SWC for selection of their pumps.

11.8.1.4 The Contractor shall also be responsible to confirm the pressure and flow of the existing nearest water main so as to verify the adequacy for direct feed for the Cooling Tower System or the requirement of additional pump feed system. All calculations are to be submitted with Contractor QP's stamp to Engineer's record & review.

11.8.1.5 The Contractor shall conduct site coordination and provide attendance to SWC (WHE) for the installation of all equipment including to those in stations and tunnels. The contractor shall take lead to resolve any interfacing issue between WHE, and to make adjustment to his provisions to suit the connection to the WHE and other installations.

11.8.1.6 The Contractor's QP or Licensed Plumber shall be responsible for the submission to the relevant local authorities and agencies and complete installation, testing and commissioning of the water services, Sewerage & Sanitary Works and Station & Tunnel Drainage Sump Pumping systems including WHE.

11.8.9 Interface with Fire Protection System (FPS)

11.8.9.1 The Contractor shall provide a voltage free signal via ITBs (supplied and installed by the SWC (FPS)) when the fire shutter is activated by localised smoke detector provided by the Contractor. The SWC (FPS) will provide one ITB to each group of fire shutters that are located within close proximity. The SWC (FPS) shall supply and install the wiring and connections between the fire alarm system and the ITBs. The Contractor shall supply and install the localized smoke detectors, and the wiring and connection to the ITBs and the fire shutter control panels.

11.8.9.2 The Contractor shall coordinate with the SWC (FPS) for the interfacing requirements between the fire shutters and the fire alarm system.

11.8.9.3 The Contractor shall coordinate with SWC (FPS) on the locations of puddle flanges to be cast-in and ensure that the position of the flanges is at the correct FFL for the combined sprinkler/hosereel RC water tanks. In the event where the SWC (FPS) has yet to be appointed, the Contractor shall provide the cast-in pipe sleeves c/w puddle flanges and shall coordinate with the Authority's In-house Designers on the locations and positions to be cast-in items.

11.8.9.4 The Contractor shall supply, install and terminate the cables from the hydrant pump control panels to the Fire Alarm System via the ITB (supplied and installed by the SWC (FPS)) for monitoring. The ITB shall be located within the hydrant pump room but the exact location shall be co-coordinated between the Contractor and the SWC (FPS).

11.8.9.5 The Contractor shall provide the following status monitoring points to the Fire Alarm System in the form of voltage free contacts.

(a) Tank low Level for each fire hydrant tank compartment.

(b) Tank high Level for each fire hydrant tank compartment.

(c) Pump Start/Stop for each fire hydrant pump.

(d) Pump Trip for Jockey Pump.

(e) Fire hydrant pump control power status.