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- 16.4.2 Some of these utilities may require to be locally diverted and/or supported and adequately protected over the Works area due to space constraints. The Contractor shall liaise with the respective Utility Agencies for the diversion and/or support of these utilities during the course of the Works to the acceptance of the Engineer and the approval of Utility Agencies. All costs and time associated with the works shall be borne by the Contractor.
- 16.4.3 The Contractor shall comply with the relevant agencies' requirements on the notice for commencement of earth works near to existing services.
- 16.4.4 Prior to any work activity, the Contractor shall identify any utilities which are in close proximity to the proposed work activity and propose mitigation measures to protect these utilities; and submit this in a report to the Engineer for acceptance. Upon acceptance, the Contractor shall monitor these utilities and submit a daily report indicating the status of these utilities to the Engineer for record.
- 16.4.5 The Contractor shall take over and maintain the 2.4m diameter pipe culvert and sumps built by CR2016 and remove the pipe culvert and sumps upon completion of permanent drainage subject to relevant authorities/agencies approval.

16.5 Utility Diversions and Schedule

- 16.5.1 Utilities that are affected and to be supported/protected or diverted are identified in **Appendix Z** of the Particular Specification. The utilities diversion scheme shown on the Authority's Drawings and those included but not limited to those stipulated in **Table 1** of **Appendix Z** of the Particular Specification are as pre-consulted with Utility Agencies. The utilities diversion routes and support schemes are for reference only. The Contractor shall determine the final alignment of the utilities based on his design and obtain the relevant agencies approval. The Contractor shall have included the coordination time required, with the Utility Agencies, for their approval of the utility diversion. The Authority will not accept any claim from the Contractor for additional cost and time due to any delay in the approval of the Contractor's design submissions by the respective Utility Agencies.

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- 16.11.11 All proposed temporary diverted drain and existing drain affected by the proposed construction activities shall be maintained and cleansed regularly by the Contractor to remove all obstructions, silt and rubbish during the construction period.
- 16.11.12 All proposed temporary or permanently diverted drains shall be maintained in a free-flowing condition at all times.
- 16.11.13 All proposed roadside drains and box culverts across roads shall be designed in accordance with the relevant codes and practices including the Authority's Civil Design Criteria (CDC), and to comply with the latest Standard Details of Road Elements (SDRE).
- 16.11.14 Sumps of sufficient sizes shall be provided where the proposed temporary diverted drain converge. The minimum internal width of the sump shall not be less than 1.5 times the width of the drain leading away from the sump. Drains shall enter the sump at angles less than a right angle and at different levels wherever possible. The invert level of the downstream drains shall be lower than the invert level of the sump so that no stagnant water will collect in the sump.
- 16.11.15 The Contractor shall ensure his design of all the Temporary Works associated with temporary utilities diversion and reinstatement including ERSS is submitted to the relevant authorities (e.g. BCA) for approval prior commencement of Works.
- 16.11.15A In the event where permanent drains are to be constructed above the MRT infrastructure, the Contractor shall design and install the necessary provisions, and obtain approval from PUB for the permanent drain maintenance and alterations works in future.
- 16.11.16 Upon completion of the Works, all the affected drains / box culverts and other existing drains / box culverts are to be fully reconstructed to their original size, or to the revised sizes as approved by PUB, the relevant landowners and acceptance of the Engineer. All costs and time implications arising from revised sizes shall be borne by the Contractor. The Contractor is required to be present during the joint site inspection prior to handing over the completed drains to PUB.