Specifications - AS2124

LG314/1211/19/163

Construction of the Sewer Rising Main by Horizontal Directional Drilling for Isle of Capri Bridge
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Part A

1. Interpretation

Further to Clause 2 of the General Conditions of Contract and except where the context otherwise requires, the following are applicable:

- ‘give notice’, ‘submit’, ‘furnish’ and similar expressions means give notice, submit, furnish and the like to the Principal or the Superintendent (as the case may be).
- ‘inspection’ and similar expressions have the same meaning as examination and testing.
- ‘responsible authority’ means a local government or any government (state or federal) department or other agency charged with the responsibility of administering or enforcing a Legislative Requirement; and
- ‘Works Inspector’, ‘Principal’s Inspector’ and ‘Job Inspector’ means a duly authorised person required to enter onto the Site to inspect and/or measure some aspect associated with or effected by the Works on behalf of a government or statutory authority or organisation approved by the Superintendent.

1.1 Definitions

In this document, except where the context otherwise requires:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCMP:</td>
<td>Acid Sulphate Construction Spoils Management Procedure.</td>
</tr>
<tr>
<td>Construction &amp; commissioning plan:</td>
<td>The purpose of the commissioning plan is to provide direction for the commissioning process during construction, providing resolution for issues such as scheduling, interaction with other infrastructure, roles and responsibilities, lines of communication and reporting, approvals, and coordination.</td>
</tr>
<tr>
<td>draft:</td>
<td>the stage where a task has been completed and the results submitted for approval (not for checking or verification) by the Principal or the Superintendent (as the case may be), and where the originator is satisfied that it is a fair representation of the intended outcome.</td>
</tr>
<tr>
<td>equipment:</td>
<td>any tools, items of plant, apparatus or machinery used to carry out and complete the scope of work.</td>
</tr>
<tr>
<td>EMP:</td>
<td>Environmental Management Plan (inclusive of Construction and Environmental Management Plan (CEMP)). A site or project specific plan developed to ensure the appropriate environmental management practices are followed during the construction and/or operation of a project.</td>
</tr>
<tr>
<td>experienced:</td>
<td>trained, competent, and having a minimum of 1000 hours of on-the-job current industry experience.</td>
</tr>
<tr>
<td>HDD:</td>
<td>Horizontal Directional Drilling.</td>
</tr>
<tr>
<td>HDPE:</td>
<td>High Density Polyethylene.</td>
</tr>
<tr>
<td>Hold Point:</td>
<td>the stage that the Works has reached, such that it requires a review, comments, action or instruction from the Principal or the Superintendent prior to work continuing.</td>
</tr>
<tr>
<td>maintenance:</td>
<td>is the repair, replacement and upkeep of existing assets. Maintenance work keeps an asset functioning in its current operational state and does not enhance or change the initial design or function of the asset without extending its useful life.</td>
</tr>
<tr>
<td>materials:</td>
<td>any consumables used to carry out and complete the scope of work.</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>preliminary:</td>
<td>the stage where a task has been partially or wholly completed, but the results have not been fully checked / verified, and the desired outcome has not been achieved or determined.</td>
</tr>
<tr>
<td>Principal Contractor:</td>
<td>The entity who carries out and discharges the duties of the “Principal Contractor “under Chapter 6 of the Work Health and Safety Regulation 2011 (Qld).</td>
</tr>
<tr>
<td>PUP:</td>
<td>Public Utility Plant</td>
</tr>
<tr>
<td>SPS:</td>
<td>Sewer Pump Station</td>
</tr>
<tr>
<td>SRM:</td>
<td>Sewer Rising Main</td>
</tr>
<tr>
<td>qualified:</td>
<td>Having undergone formal training.</td>
</tr>
<tr>
<td>WSAA:</td>
<td>Water Services Association of Australia.</td>
</tr>
</tbody>
</table>

2. **Scope of the Works**

The Principal appointed as Principal Contractor for the construction of Isle of Capri Bridge, incorporating ‘Early Works’ requires, the services of a suitably qualified and experienced HDD Contractor to carry out the following Works prior to the bridge construction works:

- Preliminaries and site establishment
- HDD underneath the intersection of Remembrance Drive and Via Roma, Surfers Paradise in the vicinity of the A5 SPS to install a permanent SRM
- HDD underneath the Nerang River to install a permanent SRM crossing

Set up the drill entry and exit sites in accordance with the approved site layout drawings which, as a minimum, must cover the following key aspects:

- temporary access for the plant
- entry and exit points (driving /receiving pit)
- pedestrian walkways and appropriate exclusion zones around moving plant
- equipment, material handling and movement zones
- any underground or overhead power lines and the appropriate exclusion zone and other PUP.
- No lane closure of Remembrance Drive through lanes, noting the northbound left turn slot into Via Roma will be partly used by pedestrians, leading to restricted space for machine set up and operation.

Follow the site layout submitted to and approved by the Superintendent. Any changes to site layout are to be documented and approved by the Superintendent.

Other key requirements are as follows:

- The gradient of the pipe under the river is very steep at both ends leading to difficult machine operating conditions.
- The arc of the pipe as it enters the hole near Amalfi Drive will require the road to be closed. It is important to the Principal that its closure is minimised. Based on advice from the Contractor the Principal will consult with residents.
- Pilot hole is to be drilled along the design alignment using a steerable and trackable drill head.
- Bored hole is to be reamed to the required diameter in one or more passes.
- Carrier pipeline is to be pulled through the enlarged borehole.
- Weld pipe joints on the eastern side of Nerang River without any interference to the driveway at 26 Remembrance Drive Surfers Paradise.
- Weld pipe joints on the western side of Nerang River in the middle of Via Roma, with traffic managed by the Principal. Immediately before pulling the pipe through the reamed bore the welded pipes are shifted from the centre of the road to the southern edge of it.
• Pressure test pipe above ground prior to and after installation (in accordance with Clause 36.5 of the latest edition of WSA 04, Sewage Pumping Station Code of Australia).
• Provide drilling fluid mixing, pumping and cleaning systems.
• Remove all cuttings from site.
• Install all Principal-Supplied Material - the Principal will supply the pipe materials as listed on Attachment 2 - Sewer Rising Main Drawings.
• Principal will not supply fittings required for pipe pressure testing.

No Work is to begin on Site until all relevant permit and approvals have been obtained from the Superintendent.


2.1 Work Milestones

The Contract consists of the following three Milestones:

• Work Milestone One – Preliminaries and Site Establishment
• Work Milestone Two – Construction of OD710 PE100 PN20 SDR9 Sewer Rising Main under Remembrance Drive by HDD
• Work Milestone Three – Construction of OD710 PE100 PN20 SDR9 Sewer Rising Main under the Nerang River by HDD.

Work Milestone One – Preliminaries and Site Establishment

This Milestone includes:

Preparation and submission of a construction program prior to mobilisation to Site and progressively updating it.

Prepare and submit the required Site specific documentation, including but not limited to the following documents:

• CEMP including for the allocation of noise pollution
• Safety/Risk Management Plan in accordance with the requirements of Clause 14.1, Safe Work
• Quality Management Plan including Inspection and Test Plans (ITP)
• ASCMP and contingency plans for shutdown/live connection, commissioning of new main and management of hydrofracture during HDD Works
• Drilling, reaming and pull back plan
• Provide pipe pullback calculations and supporting calculations confirming that the proposed drilling fluid pressures will not exceed the shear strength and confining stress of the surrounding soil, certified by a Registered Professional Engineer of Queensland (RPEQ).
• Spoil Management Plan including temporary spoil storage and disposal
• Dial Before You Dig (DBYD), and other service authorities for service locations, adding to Attachment 6 – Potholing Report
• Planned route, if modified by Contractor, prior to commencement of the Works
• Site establishment plans and after approval, their implementation
• Pre-construction investigation and Site survey works and location of all surface fittings. Undertake additional geotechnical investigations to determine subsurface conditions, as required.

Prior to commencement of any physical work, notify the Superintendent of any additional requirements determined as a result of the Site investigation activities.
Work Milestone Two - Construction of OD710 PE100 PN20 SDR9 Sewer Rising Main under Remembrance Drive by HDD

This Milestone includes:

- Implement and maintain environmental controls, ITP, Safety Management Plan (SMP).
- Provide Safe Work Method Statements (SWMS) for all activities not less than seven days before the commencement of each respective activity to the Superintendent and gain approval of the same.
- Set out alignment for the proposed Work with coils grids as required to assist guiding the bore, noting there is 110kV power in the centre of Remembrance Drive and 11kV crossing Remembrance Drive near Enderley Avenue.
- Construct launching and receiving pits, with all trench shoring designed and certified by a RPEQ.
- Weld and install the cream stripe OD710 PE100 PN20 SDR9 sewer rising main including pipes, bends and all other fittings using HDD.
- Treat excavation ground water and excess construction spoil as required prior to disposal in accordance with the approved ASCMP.
- Clean launching and receiving pits of all drilling and recycled mud, and cuttings. These materials are to be removed from the Site.
- Supply all necessary plant, equipment and labour required for the construction as detailed in Attachment 2 – Sewer Rising Main Drawings. This activity is deemed to include all demolition and alteration Works required to accommodate the Works.
- Undertake quality assurance testing on installed pipework and ancillary components and verify conformance in accordance with the Standards in Section 11.2, including pressure testing before and after installation.

Work Milestone Three - Construction of OD710 PE100 PN20 SDR9 Sewer Rising Main under the Nerang River by HDD

This Milestone includes:

- Implement and maintain environmental controls, ITP, Safety Management Plan (SMP).
- Provide Safe Work Method Statements (SWMS) for all activities not less than seven days before the commencement of each respective activity to the Superintendent and gain approval of the same.
- Set out alignment for the proposed Work.
- Construct launching and receiving pits, with all trench shoring designed and certified by an RPEQ.
- Weld and install the cream stripe OD710 PE100 PN20 SDR9 sewer rising main including pipes, bends and all other fittings using HDD.
- Treat excavation ground water and excess construction spoil as required prior to disposal in accordance with the approved ASCMP.
- Clean launching and receiving pits of all drilling and recycled mud, and cuttings. These materials are to be removed from the Site.
- Supply all necessary plant, equipment and labour required for the construction as detailed in Attachment 2 – Sewer Rising Main Drawings. This activity is deemed to include all demolition and alteration required to accommodate the Works.
- Undertake quality assurance testing on installed pipework and ancillary components and verify conformance in accordance with the Standards in Section 11.2, including pressure testing before and after installation.
2.2 **Specific/ancillary Work**

Subject to the requirements of the Contract, the Works must also include the following items:

- positive location of all services in the Works area prior to commencement of Work
- all thrust blocks required for the Works
- testing and commissioning of proposed pressure mains (in accordance with Clause 36.5 of the latest edition of WSA 04, Sewage Pumping Station Code of Australia).

**Design deliverable**

The following points are to be considered as part of the design deliverables:

- Be responsible for the design and construction of temporary aspects of the HDD. Ensure no obstruction of public roadways by the Works (vehicles, plant, equipment, materials and exclusion zones).
- Works are to include any temporary Works and temporary supporting structures.
- All design assumptions are to be provided.
- Subsurface conditions, equipment requirements, groundwater and other factors are the responsibility of the Contractor and must be fully documented.

2.4 **Project deliverables**

The following Works are to be inspected by the Superintendent and included in the construction program. The Superintendent cannot approve payment of more than 80% of a Work Milestone unless all items for that Work Milestone are completed.

**Pre-Construction Stage Work Milestone One**

<table>
<thead>
<tr>
<th>TASK</th>
<th>UNIT</th>
<th>ALLOWANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Investigate and collate all relevant information and visit the Sites. Meet and liaise with the Superintendent. Prepare the following documents to 100% completion:&lt;br&gt;• CEMP&lt;br&gt;• SWMS&lt;br&gt;• Program of Work including the planned route&lt;br&gt;• Quality Management Plan&lt;br&gt;• Safety/Risk Management Plan&lt;br&gt;• Contingency Plans&lt;br&gt;• Bore drilling, reaming and pullback plan&lt;br&gt;• Spoil Management and ASCMP Plans&lt;br&gt;• Additional geotechnical investigations (if required)&lt;br&gt;• Construction Methodology Report</td>
<td>days</td>
</tr>
<tr>
<td>1.2</td>
<td>Submit 100% documentation to Superintendent for review.</td>
<td>days</td>
</tr>
<tr>
<td>1.3</td>
<td>Meet with the Superintendent to discuss 100% documentation.</td>
<td>days</td>
</tr>
<tr>
<td>1.4</td>
<td>Assessment of 100% documentation by the Principal and Superintendent</td>
<td>days</td>
</tr>
<tr>
<td>1.5</td>
<td>Acceptance by Superintendent of 100% documentation with comments. <strong>Hold Point</strong>&lt;br&gt;</td>
<td>days</td>
</tr>
<tr>
<td>1.6</td>
<td>Site establishment</td>
<td>days</td>
</tr>
</tbody>
</table>
* Contractor must indicate time period in the above program of Work.

**Construction Stage – Work Milestones Two and Three**

<table>
<thead>
<tr>
<th>TASK</th>
<th>UNIT</th>
<th>ALLOWANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Services diversions, set out</td>
<td>days</td>
</tr>
<tr>
<td>2.2</td>
<td>Construct pits</td>
<td>days</td>
</tr>
<tr>
<td>2.3</td>
<td>HDD activities</td>
<td>days</td>
</tr>
<tr>
<td>2.4</td>
<td>Pipe welding and installation</td>
<td>days</td>
</tr>
<tr>
<td>2.5</td>
<td>Endcap for pressure testing purposes. Contractor needs to perform pressure testing of the pipe before and after installation.</td>
<td>days</td>
</tr>
<tr>
<td>2.6</td>
<td>As-Built Documentation and survey</td>
<td>days</td>
</tr>
</tbody>
</table>

**Post-Construction Stage - Work Milestones Two and Three**

<table>
<thead>
<tr>
<th>TASK</th>
<th>UNIT</th>
<th>ALLOWANCE</th>
</tr>
</thead>
</table>
| 3.1  | Prepare and submit the following documents:  
- All As-Built Documentation and quality assurance records  
- Consulting Engineer’s Certificate and As-Built Documentation certification  
- Operations and maintenance manual | days | * |
| 3.2  | Assessment of documentation by Superintendent. | days | Allow 10 Business Days |
| 3.3  | Submit revised final documentation | days | * |

* Contractor must indicate time period in the above program of Work.
3. **Site location and limits**

The Site is located on Via Roma Surfers Paradise between Remembrance Drive (Gold Coast Highway) and Amalfi Drive.

There are limits to where equipment may be operated. No equipment may be operated while it and its safe clearance zone are within the vehicle travel lanes on Remembrance Drive.

4. **Order of Work**

The asphalt in the SPS is within the limits of the Site and plant may be operated on it as long as the underlying PUPs are not damaged.

5. **Coordination with other Works**

5.1 **Work to be undertaken prior to the Works**

The Principal will undertake the following Works prior to HDD construction:

- removal of trees
- vehicle and pedestrian traffic control in accordance with Contractor’s construction management plan
- dilapidation survey
- grubbing to 600mm.

5.2 **Work to be undertaken during the Works**

During the Works, the following activities will be progressed by the Principal. Allow for and coordinate activities through the Superintendent to minimise conflict.

- traffic control
- re-configuration of site compound near the receiving pit in John Fraser Memorial Park
- installation of SRM in Via Roma.
5.3 Work to be undertaken after Practical Completion of the Works

After the Works are complete the following activities will be undertaken by the Principal:

- backfill the launching and receiving pits
- make good any surface treatments.

6. Contract specific requirements/constraints

The Site Works impact A5 SPS and the Works are to be performed in a manner such as to minimise any disruption or hindrance to current operational or maintenance activities.

Access to the SPS will be permitted by arrangement with the Superintendent. Protocol for access to the site will be determined and approved by the Superintendent prior to commencement of the Works.

All roadways and access points to the SPS are to be kept clear and accessible. Parking of vehicles or equipment within existing roadways will only be permitted for short-term loading or unloading of equipment or facilities, and only with the prior approval of the Superintendent.

All other vehicles, plant, equipment, materials and exclusion zones must not obstruct public roadways, subject to the written agreement of the Superintendent.

Prepare and implement an approved contingency plan dealing with the key HDD risks identified in the safety / risk management plan. Prior to commencing Work onsite provide plans containing equipment and materials on standby to mitigate against the following HDD risks:

- fluid management
- fluid loss
- a hydrofracture event
- hydro-lock (loss of fluid circulation)
- hole collapse
- fluid pit overflow
- hydrocarbon spill
- drill pipe or bottom hole assembly failure.

Set the drill entry and exit sites up in accordance with Attachment 2 – Sewer Rising Main Drawings which as a minimum must cover the following key aspects:

- temporary access for plant
- entry and exit points (driving and receiving pit)
- pedestrian walkways and appropriate exclusion zones around cranes or moving plant
- equipment and material locations and movement zones;
- underground or overhead power lines and the appropriate exclusion zone and other PUPs
- shaft / pit locations.

Follow the site layout submitted to the Principal. Any changes to site layout are to be documented and approved by the Superintendent.

7. Salvaged items - Not Applicable

Not applicable.
8. Statutory requirements/approvals

Further to Clause 14 of the General Conditions of Contract, ensure all appropriate statutory approvals are obtained.

The Principal will obtain the following approvals and provide to the Contractor:
   - tidal works permit
   - letter of No Objection from City of Gold Coast as asset owners

The following third parties have to be consulted by the Principal in light of the Contractor’s plans:
   - local businesses and residents to minimise disruption to access and inconvenience from construction activities.
   - local services – including Telstra, Uecomm and Energex.

9. General requirements

9.1 Specification precedence

Further to Clause 8 of the General Conditions of Contract, the following order of precedence applies:
   a) The Contract drawings
   b) The Technical Specifications
   c) The referenced standards.

Comply with the highest quality or standard where there is an inconsistency or discrepancy between the required qualities or standards in different parts of the Contract.

9.2 Cadastral information

Subject to Clause 8.3A of the General Conditions of Contract where cadastral information is supplied in digital form, the following is applicable:
   - Execute a ‘Standard Licence Deed for Consultants Use of Licensed Data Products’ - Schedule E of the Digital Cadastral Data Standard Licence Agreement for Distribution / Value Adding between The State of Queensland and the Principal; and
   - Negotiate direct with relevant authority to facilitate the execution of the licence.

9.3 Proprietary items

A proprietary item is any item identified by graphic representation on any drawings, or by naming one or more of the following: manufacturer, supplier, installer, trade name, brand name, catalogue or reference number and the like.

The identification of a proprietary item must not necessarily imply exclusive preference for the item so identified, but must be deemed to indicate the required properties of the item. An alternative item with the required properties may be considered for acceptance at the Superintendent's discretion.

When submitting an alternative item for approval, submit sufficient information to permit evaluation of the proposed alternatives, including evidence that the performance is equal to or greater than that specified. If requested, obtain and submit reports on relevant tests by an independent testing authority. State whether the use of the alternative will require alteration to any other part of the Works.

9.4 Access to private property

Where access to private property is required do not enter the private property unless:
   - the Superintendent has been given notice of the requirement to access the private property;
• the person proposing to enter onto private property has been appointed by the Principal as an authorised person (Local Government Worker) in accordance with the Local Government Act 2009 (Qld); and

• entry is necessary in order to undertake work on that property.

Make every effort to minimise obstruction to private property. Vehicular access may only be denied for a maximum of 12 hours. Provide temporary vehicular and pedestrian access if permanent access cannot be provided within this time.

Maintain safe and reasonable personal access to properties at all times.

Further to Clause 29.3A of the General Conditions of Contract, the following information must be recorded on the site personnel register:

• the Act applying to the instrument of appointment
• the commencement date of the appointment
• the expiry date of the appointment
• the date the training was completed
• reference number for issued documents
• the issue date of the Identification card
• the expiry date of the Identification card
• the date all documents and Identification cards returned to the Principal.

9.5 Work within easements - Not Applicable

Not applicable

9.6 Impact on properties from Works

Further to Clause 15 of the General Conditions of Contract, ensure minimal disruption and protect private or public property from potential damage during the Works.

Arrange an inspection with the Superintendent of the adjoining / potentially affected properties prior to commencement of the Works.

Keep detailed records of existing conditions, especially of structural defects and other damage or defacement. Have two copies of each record (including drawings, written descriptions and photographs) to be endorsed by the resident or their representative as evidence of the conditions. Provide one endorsed copy of each record to the Superintendent. Keep the other endorsed copy on Site.

9.7 Dilapidation survey

The Principal will provide dilapidation survey reports to the Contractor for houses within 50 metres of the driving and receiving pits. Reports will provide a general overview with concentrated focus on actual defects, potential defects, or areas of poor condition which may lead to potential claims. A record of all observed movements, deformations, cracks and damage will be provided in addition to detailed records of conditions existing within and on the exterior of the properties, especially structural defects and other damage or defacement.

The details will include actual measurement of crack widths and lengths, wall straight-edge deflection (vertical and horizontal), angular deflection, paint problems such as flaking, quantification of separated materials including a statement as to existing condition, residual bonding capacity etc.

Quantification will be sound, scientific and measurable such that a future analysis could be extrapolated from the report. Reports must comply with AS 4349.1 ‘Inspection of Buildings-Property Inspections-Residential Buildings’. Surveys will include, but not limited to the following:

• Walls, fences and driveways
- Window and door glazing
- Brickwork and plaster cracking
- Ceiling and cornices
- Tiles and lamination
- Hogging and sagging of any structure
- Garden/vegetation
- Swimming pools/outdoor structures
- Boundary fences
- Existing water damage
- Common (Body Corporate) areas

Photographs in the report will be indexed with explanatory text describing the location and pertinent details of all photographs. Close-up photographs will document to a necessary level of detail to fully define the magnitude and extent of defects.

If the Principal’s survey is deemed by the Contractor to be insufficient then the Contractor is to complete their own.

9.8 Encroachments

Further to Clause 15 of the General Conditions of Contract, do not demolish or damage adjoining property. Should the Works reveal encroachments of adjoining property on to the site or encroachments of existing site structures on to adjoining property, and should such encroachments not be referred to in the Contract, obtain instructions from the Superintendent immediately.

9.9 Notification of proposed Works or disruption to service - Not Applicable

Not applicable

9.10 Continued operation of existing facilities

Ensure that minimal disruption to existing services and to the operation of the Site occurs. Liaise with the Superintendent to be proactive in avoiding disruption, and reactive in attending to conflict situations.

9.11 Examination and testing

Further to Clause 31 of the General Conditions of Contract, no claim for delay will arise from the giving of insufficient or unreasonably short notice in respect of inspections, examinations and testing. The minimum notice considered to be reasonable by the Superintendent to undertake an inspection is two Business days.

10. Contract administration

10.1 Status Program, Report and Contract status meeting

Further to Clause 33.2 of the General Conditions of Contract, a Status Program and Status Report must be submitted each fortnight to the Superintendent and contain as a minimum the following:

- reporting period
- major activities achieved during the report period
- actual progress versus scheduled progress
- health, safety and environmental issues/incidents
- non-conformances addressed
- complaints
• arising issues and/or outstanding actions, including requests for information from the Contractor, the Principal, authorities; or others.
• progressive As-Built Documentation
• the Site Personnel Register
• a copy of all records & reports related to trackable waste.

Attend a Contract status meeting at least monthly, or as requested by the Superintendent, following delivery of the Status Program and prior to submission of Payment Claim.

10.2 Construction Methodology Report

Provide a detailed construction methodology report to the Superintendent prior to the commencement of the Works. As a minimum, the report must include the following:

• mobilisation
• access to utility services and fresh water
• construction site area
• construction access arrangement
• provision of traffic control, to be undertaken by the Principal
• site establishment
• implementation of all necessary management plans (environmental, erosion and sediment control, traffic, safety etc.), systems and controls
• demolition Works
• construction of the Works including a sequence for the reaming stages, ream sizing and bottom hole assembly (BHA)
• site demobilisation.

Provide an updated construction methodology report with the Status Program if any changes to methodology have occurred.

10.3 Supervision

Further to Clause 25 of the General Conditions of Contract provide a full time competent and experienced technical site representative and a project manager for the duration of the Contract.

Notify the Superintendent of proposed changes, the Principal will assess the suitability for the purpose of the Contract. New Personnel must have the same or greater qualifications and experience to those they are replacing.

10.4 Working hours

Further to Clause 32 of the General Conditions of Contract the standard working hours are defined in Annexure Part A of the Contract Header. Night Works will only be permitted where specified and/or with the prior approval of the Superintendent.

11. Materials and Work

11.1 Quality Assurance

Further Clause 14H of the General Conditions of Contract, maintain a documented Quality Assurance System (QAS) for the duration of the Contract to ensure that prescribed quality outcomes are achieved.

The QAS must include an ITP and procedures and identify Hold Points to meet the minimum requirements of the deliverables specified in Clause 2. Modify the QAS to meet any changes to the Works.
11.2 Testing

Any sampling and testing required to be by an independent testing authority must be carried out by an authority registered with the National Association of Testing Authorities to perform the specified sampling and testing.

Ensure pressure testing of installed PE pipes is completed in accordance with the relevant Australian standard.

12. Certification of the Design

Where the Contract requires design to be carried out the following is applicable:

- ensure that the design of the Works is certified by a designer who is a RPEQ registered under the provisions of the Professional Engineers Act 2002 (Qld);
- provide RPEQ certification in a form acceptable to the Principal in respect of the adequacy and suitability of the design of the specified parts of the Works

13. Construction requirements

13.1 Existing services and public utilities

Further Clause 15 and 16 of the General Conditions of Contract, where facilities (services, utilities or other Principal facilities, whether overhead, at the surface, underground or in conduits) exist at or in the vicinity of the Site, take all care necessary to protect such facilities from damage.

Consult with and manage all interfaces with service authorities controlling facilities in the vicinity of the Works. These authorities include but are not limited to communications, gas and power.

Prepare a service plan prior to commencing the Works. The plan must include measures to ensure the integrity of all facilities throughout the duration of the Works. Confirm level and location of all services prior to construction commencing within the Site and protect such.

In the case of any damage occurring to such utilities, the matter must be immediately reported to the department, public authority or company concerned and to the Superintendent. The cost of any necessary repairs and/or renewals will be borne entirely by the Contractor. Any Public Utility Plant damaged or interfered with during the Works must be restored to its previous condition at the earliest possible opportunity, in accordance with the requirements of the respective asset owner. If the Contractor fails to arrange/undertake such repairs as required by the asset owner, then the Superintendent may arrange for the repairs and the Superintendent has the right to deduct the costs incurred from monies or securities otherwise owing or held by the Principal.

Unless instructed otherwise, deal with existing services (such as drains, watercourses, public utility and other services) encountered or obstructed in the course of performing the Works, as follows:

- if the service is to be continued, repair, divert, and relocate as required
- if the service is to be abandoned, cut and seal, or disconnect and make safe.

In the event of any discrepancy between location drawing information and physical location of the existing underground services, the service provider must be asked to attend the Site to confirm the accuracy of the location drawing information. Work with the service provider to locate/confirm the existing underground services. Under boring or excavation must not commence until approval documents and sign off is received from the service provider that Work can continue.

13.2 Contractor’s site area

Further to Clause 27 of the General Conditions of Contract, access onto and around the Site, and the use of the Site, for Temporary Works and Construction Plant, including working and storage areas, locations of offices,
workshops, sheds, roads access routes, parking and the like, must be restricted to those areas shown on any drawings or approved by the Superintendent and subject to such conditions as are stated in the Contract or imposed by the Superintendent.

13.3 **Superintendent site office - Not Applicable**

Not applicable

13.4 **Temporary services**

Provide all temporary services required to undertake the Works.

If available, water for construction purposes may be drawn from the existing metered supply. If there is a water reticulation system, but no existing metered connection, arrange for a metered standpipe from the Principal. Contact the Customer Service Centre on 1300 000 928 for information on security deposits, hire charges, cost of water, payment arrangements, and to arrange for standpipe(s) as required.

Pay for installation and use of water used from the Principal’s supply reticulation system for the Works at the current rate stipulated in the register of general charges. Be responsible for the adequacy of quality and flow quantities for the intended use.

Supply may be drawn from the existing supply at locations as / if indicated on any drawings. Otherwise determine the location and delivery method for water required for the Works direct from the Principal.

Comply with requirements of the Principal for taking of water from fire hydrants.

13.4.1 **Temporary power supply**

Do not use power supply from the Principal’s facilities. Use portable power generation devices fitted with emission control devices to comply with local and/or statutory regulations. The permitted times of use of such equipment may also be restricted by local and/or statutory regulations, comply with all such regulations and Legislative Requirements.

Do not use private services, irrespective of whether approval to the use of such services.

Upon request to the Superintendent and where available, the Principal may provide a limited power supply from existing facilities. The cost of providing this power will be to the account of the Contractor. Provide fused and earth leakage protected distribution board as the interface to the Principal’s power supply and the board will be installed by the Principal’s electricians who will establish the current load. Any costs associated with the installation and later disconnection of the board by the Principal’s electricians will be to the Contractor's account.

13.4.2 **Temporary water supply**

Recycled water is available within nominated treatment plant sites for all uses, except for potable or ancillary applications. Use of recycled water is therefore the preferred source of water for pressure testing of mains, provided the Contractor has assessed and considered that the quality of the recycled water is acceptable and suitable for its proposed use and application. Use of recycled water must comply in all regards with statutory requirements and in accordance with policies and procedures of the Principal.

Disposal of waste recycled water used for pressure testing must be in accordance with the Environment Management Plan.

Where water is required from the Principal's existing reticulation water supply system, obtain such water only at locations agreed by the Superintendent and only via a metered standpipe. Properly manage the use of such water to avoid unnecessary wastage.

A metered standpipe will be made available upon receipt of an application to the Principal. All fees, which the Principal may impose for the use of the standpipe must be paid by the Contractor.
Any security deposits, rental/fees or water usage charges will be to the account of the Contractor and payable at the rate applicable at the time.

Should the water available from the Principal’s existing reticulation supply system not be at a suitable pressure and/or flow as required, any additional Works to boost the pressure and/or flow will be at the Contractor’s expense.

If through drought, fire or any cause whatever, a delay occurs, due to cessation or temporary failure of the water supply, the Principal will not be held responsible in any way and the Contractor will have no right to compensation or to claim for damages on account of any loss which they may deem to be occasioned thereby.

Use of water from private residential water services is not permitted, irrespective of whether approval is obtained for the use of such services.

13.5 **Temporary fences and hoardings**

Provide appropriate hoardings and/or temporary fencing with lockable gates, to secure the Site parameters from unlawful entry. This is to occur north of Markwell Avenue. Confirm the location with the Superintendent prior to installation.

13.6 **Interruption and/or diversion of services - Not Applicable**

Not applicable

13.7 **Work with the Principal - Not Applicable**

Not applicable

13.8 **Vehicle detection units - Not Applicable**

Not applicable

13.9 **Signage**

**General**

Do not erect or display any signs or advertising. Project promotional signs will remain the property of the Principal.

Do not issue any information, publication document or article for publication concerning the project in any media without prior approval of the Principal. Refer any media queries concerning the project to the Superintendent.

13.10 **Pedestrian and traffic management**

The CEMP is to include consideration of pedestrian and vehicle traffic. The Principal will develop the Traffic Guidance Schemes (TGS). After the Contractor has agreed to the TGS the Principal will process a Temporary Road Closure Approval and then implement the TGS.

13.10.1 **Interfaces with City of Gold Coast (City) controlled roads and footpaths**

Closure of a City controlled road and/or footpath, either in total or any part thereof, is subject to approval following lodgement of all appropriate road closure application forms, and arranging the preparation and lodgement of any supplementary information requested by the City to support the proposed footpath or road closure. The application must be supported by a Site specific TMP and TGS.

Do not commence the Works which may impact pedestrian and traffic flow until the approval to proceed has been issued. A copy of the approvals and applicable TGS and the Police Service Permit (if applicable) must be kept on Site.
A Temporary Road Closure Approval is required for any partial or full road closure including footpaths, City car parks or City contract Works that will impact on pedestrians or traffic as listed below.

<table>
<thead>
<tr>
<th>Type of closure</th>
<th>Description of closure type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane</td>
<td>Closure of a single traffic lane on a multi-lane road</td>
</tr>
<tr>
<td>Half road/hold and release</td>
<td>Closure of one direction of traffic flow on a two-way road</td>
</tr>
<tr>
<td>Full road</td>
<td>Closure of a road to all vehicular traffic (detour required)</td>
</tr>
<tr>
<td>Footpath</td>
<td>Closure of a footpath to pedestrian/cyclists</td>
</tr>
<tr>
<td>Parking</td>
<td>Closure of off street car park/on street marked parking bay or parking lane</td>
</tr>
</tbody>
</table>

Allow a minimum seven Business Days for approval following a fully complied submission or allow a minimum 14 Business Days for approval following a fully complied submission for a full road closure.

13.10.2 Interfaces with City of Gold Coast controlled parks and reserves

A copy of the Permit for Placement of Infrastructure within a City Controlled Park / Reserve and Conditions of Approval must be kept on Site.

14. Work Health and Safety

14.1 Safe Work

Ensure that all Work Health and Safety Requirements are met and all workers and subcontractors are supervised at all times while performing the Works. Ensure systems for monitoring of documented Work practices (including subcontractor's documented Work practices) are implemented and maintained throughout the course of the Work. Prior to commencement of Works, ensure all workers (including workers employed by Subcontractors) receive training in Work Health and Safety (WHS) and risk management specific to the Site and Work activities.

Provide the below documents to the Superintendent, in accordance with Clause 14H and 27.1(d) of the General Conditions of Contract, and at any time during the course of the Works:

- Safe Work Method Statement (SWMS) and/or safe systems of Work incorporating site specific workplace hazards risks and controls.
- designers safety report identifying hazards incorporated in any aspect of any design, including temporary Works.
- the Contractor's WHS Management Plan relative to Site construction activities being undertaken, addressing at least the following aspects of the Works;
  - the names, positions and health and safety responsibilities of all persons whose positions or roles involve specific health and safety responsibilities
  - arrangements in place for managing any Work health and safety incidents that occur at the Site
  - the arrangements for ensuring that all persons at the Site are informed of the Site rules
  - arrangements for consultation, cooperation and coordination
  - process for management of subcontractors
  - workers have appropriate licences and training
  - the safe use and storage of plant
  - obtaining and providing essential services information
  - compliance with this Clause.

14.2 Communication, consultation and coordination

Before commencing Works and then on an ongoing basis, consult, cooperate and coordinate with:

- the Superintendent;
- workers (including workers employed by Subcontractors) who are or are likely to be directly affected;
- relevant suppliers, contractors and other third parties;
- all other duty holders as defined within Work Health and Safety Law in relation to any WHS matters arising out of or in connection with Works under the Contract.

14.3 **Principal inductions**

Undertake the identified online induction within Clause 14.3.1 and 14.3.2 and a site specific inductions at commencement of the Works and/or prior to being granted access to the Site by the Principal Contractor who is the City of Gold Coast. The inductions inform of potential hazards that may be encountered when undertaking the Works and outline specific safety requirements when on the Site.

14.3.1 **Water and Waste facilities**

To perform Work within a Water and Waste facility, mandatory completion of the online safety induction and possession of a current induction card is required before presenting to the facility. To complete the online induction access the following - [https://www.onlineinduction.com/goldcoast/](https://www.onlineinduction.com/goldcoast/)

The Contractor and any subcontractors must self-register and create their own passwords to complete the required inductions.

Prior to attending site, all Contractors’ personnel including subcontractors must complete the relevant induction/s as appropriate for the specific work site:

- General Induction to Water and Waste (Compulsory for all of the Principal’s operational sites).
- Induction to reservoirs, pump stations and other sites.

Failure to produce a current induction card will result in removal from and/or loss of access to a Water and Waste facility.

14.3.2 **Transport and Infrastructure**

To perform work within a Transport and Infrastructure controlled construction site, mandatory completion of the online safety induction and possession of a current induction card is required before presenting to the site. To complete the online induction access the following - [https://www.onlineinduction.com/goldcoast/](https://www.onlineinduction.com/goldcoast/)

The Contractor and any subcontractors must self-register and create their own passwords to complete the required inductions. Failure to produce a current induction card will result in removal from and/or loss of access to the site.

14.4 **High Risk Construction Work**

The high risk construction activities identified by the Principal are listed below. This assessment is not exhaustive and excludes activities generated by individual work process. Prepare SWMS for all high risk construction activities incorporating Site specific workplace hazards risks and controls prior to the commencement of the Works. Ensure SWMS address all relevant aspects of the activities and all high risk construction Work is carried out in accordance with the SWMS.

- involves a risk of a person falling more than 2m
- involves, or is likely to involve, the disturbance of asbestos
- is carried out in or near a confined space
- is carried out in or near a shaft or trench with an excavated depth greater than 1.5m; or a tunnel
- is carried out on or near energised electrical installations or services
- is carried out in an area that may have a contaminated or flammable atmosphere
is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor that is in use by traffic other than pedestrians
is carried out in an area at a workplace in which there is any movement of powered mobile plant
is carried out in or near water or other liquid that involves a risk of drowning.

14.5 Known Hazards
The known hazards and risks at/or in the vicinity of the Site identified by the Principal are listed below. Prior to the commencement of the Works identify all hazards and risks that are present.

- The physical Working environment, for example the potential for electric shock, immersion or engulfment, fire or explosion, slips, trips and falls, people being struck by moving plant, exposure to noise, heat, cold, vibration, radiation, static electricity or a contaminated atmosphere.
- Physical injury and microbiological contamination of persons coming into contact with wastewater if the Works are not properly managed or controlled, or if personal hygiene procedures are not followed.
- Biological hazards may exist i.e. substances which consist of, or which may contain microorganisms or non-viable products of living matter, which can create a risk to health e.g. virus, bacteria. Examples – HIV, Hepatitis (A, B and C), Avian Influenza (Bird Flu), tetanus, typhoid fever, Q fever, Hendra Virus, dermatitis etc.).
- High voltage underground services are present within Remembrance Drive. 110kV power is nominated as located in the centre of Remembrance Drive and 11kV is nominated as crossing Remembrance Drive adjacent Enderley Avenue, refer drawing 1110 and Clause 2.1, Milestone Two.
- PUP and other services exist within or adjacent to each Works site and in close proximity to the launching and retrieval pits. Refer to Part B; Technical Specifications and Part C; Principal Supplied Information.
- Overhead services are present at the retrieval pit location at and adjacent to chainage 314.53m.
- Working adjacent to a traffic corridor on the eastern side of Nerang River during PE pipe welding adjacent to Remembrance Drive.
- Working within a traffic corridor on the western side of Nerang River during PE pipe welding adjacent to Via Roma.
- Presence of hazardous airborne contaminants (e.g. gases and vapours or dusts like lead, silica or pesticides).
- Animals including insects, snakes and spiders that bite or sting. Snake kits must be available on site. Large snakes have been regularly sighted.
- Risk of falls due to deep excavation at each launching and retrieval pit.
- Construction access constraints exist across multiple properties along the construction corridor.
- Violence and aggression (verbal/physical abuse from members of the general public).
- Working near water or liquid that poses a risk of drowning.

14.6 Personal Protective Equipment (PPE)
Ensure the following minimum PPE is provided and worn at all times:

- long sleeved high visibility shirt, or a long sleeved shirt with a high visibility vest
- full length trousers
- broad brimmed, bucket or legionaries style hat and/or safety helmet with broad brim
- safety glasses
- gloves when conducting manual tasks.
Inclusive of the above, during low light and night time Works, fluorescent and/or reflective PPE must also be worn. All PPE must meet minimum standards nominated within applicable Legislative Requirements.

Ensure controls are implemented utilising a risk based approach for all Work activities and where identified, additional/alternate PPE is provided and worn as required.

14.7 **Asbestos and other hazardous material**

Notwithstanding any other provisions of this document regarding asbestos and other hazardous material, if material that might contain asbestos or other hazardous substances is discovered, the Contractor must:

- Immediately notify the Superintendent; and
- Comply with all applicable obligations and restrictions imposed by any applicable Legislative Requirements.

14.8 **Alcohol and Other Drugs**

The Contractor’s workers (including workers employed by subcontractors), whilst engaged in the Works, must not be under the influence of any alcohol and/or other drugs (AOD).

All workers must maintain a Breath Alcohol Concentration (BrAC) reading of 0.000% and in respect of drugs including but not limited to opiates, THC, cocaine, amphetamine and benzodiazepines, maintain levels not in excess of those prescribed by AS 4760.

The Principal may arrange for random AOD testing at any time. The Contractors workers must participate in testing through a random selection process.

The Contractor must ensure:

- all workers are aware that they must participate in a random AOD test when requested
- all workers comply and participate in the random AOD test
- all workers cease Work and leave the site if:
  - they refuse to submit a sample for testing purposes;
  - a non-negative drug test result is returned; or
  - a positive alcohol test is returned.

A worker may only return to the Site subject to the Contractor providing evidence of a confirmed negative test result.

14.9 **Reporting and Incident Investigation**

Provide WHS performance reports specific to the Site and Works in accordance with Clause 10.1 of this document or as otherwise directed.

Notify the Superintendent immediately after becoming aware of any of the following:

- a failure to comply with any requirement of this Clause
- any accident, incident or near-miss incident;

The initial notification may be verbal or in writing, it must contain the full details of:

- the location and nature of the event;
- the nature and extent of any harm and any other impacts that have occurred or may occur;
- how the Contractor is managing the event; and
- any other information required by any Regulatory Authority.

If the initial notification is verbal, it must be followed by written notification as soon as practicable.

Further to the requirement of the WHS Management plan, investigate the root cause any accident, incident or near-hit incident as soon as practical and provide the results, any learning or recommendations and any progress reports on corrective actions taken to the Superintendent.
The Principal may by notice in writing to the Contractor, participate in any investigation or review the Contractor undertakes.

Failure to comply with this Clause, the Principal may by notice in writing to the Contractor conduct its own investigation in to any accident or incident in relation to the Works.

15. Environmental Management

15.1 Environmental Management Plan

Prepare an ASCMP to handle, stockpile, carryout necessary tests, treat, dispose all construction spoils both solid and liquid, seek approval of the Superintendent and implement throughout the entire Contract. Records of all tests carried out, carting information and details of dump/tip must be maintained and copies supplied to the Superintendent.

The Contractor will be considered independent, and not a servant or agent of the Principal, for the purposes of complying with the Environmental Protection Act 1994 (Qld).

Engage a suitably qualified environmental consultant to prepare an EMP aligned with Site conditions, Works and work methodologies, and submit in accordance with Clause 14H and 27.1(d) of the General Conditions of Contract and when any amendments are made and at any time during the course of the Works.

The EMP must demonstrate that all reasonable and practicable measures have been taken to prevent or minimise environmental harm during the course of the Contract in compliance with the Environmental Protection Act 1994 and other applicable environmental matters.

Ensure all Work complies with the EMP. The EMP must include as a minimum the following:

- Company structure and responsibility for specific actions
- Assignment of responsibility for environmental controls
- Communication and reporting
- Arrangements for consultation, cooperation and coordination
- Compliance with the requirements of all environmental laws
- Environmental commitments
- Environmental training plan
- Appropriate licences and training including site induction training for environmental aspects of the Works
- Incorporate the Principal's conditions of all approvals, licences and permits
- Process for management of subcontractors
- Site-specific environmental requirements
- Identification of environmental issues and potential impacts
- Locations of environmental controls and environmentally sensitive areas
- Control measures to minimise likelihood of environmental harm
- Contingency plans and emergency procedures including response time
- Managing the risks posed by fire ants
- Manage Acid Sulphate Soil
- Treatment of Acid Sulphate Soil (if found)
- Monitoring containment releases
- Arrangements for managing incidents
- Corrective actions
- Periodic review of environmental performance
- Record keeping and environmental auditing for continual improvement
- Maintain an incident register for non-compliance reporting and provide a copy to the Superintendent following any significant incidents during the Works.

The CEMP is to provide the following minimum requirements:

- In addition to the above, provide details of potential environmental issues, impacts and associated control measures for implementation for issues including but not limited to:
  - Noise control and monitoring
  - Minimise disruption to flora and avoid spread of any noxious weeds and disruption to fauna habitat
  - Conservation of protected species
  - Identify fauna species and arrange relocation
  - Prepare and implement a species management plan as required
  - Engage a suitably qualified fauna spotter during clearing
  - Relocate fauna during clearing of vegetation
  - Engage an ecological consultant to undertake appropriate assessment.
  - Restore habitat following Works
  - Manage collect and dispose all waste from the Works including regulated waste
  - Controlled activities and waste management
  - Manage air quality emissions from all equipment within legal limits
  - Manage materials handling and store dangerous goods off Site and handle safely on site
  - Manage erosion and sediment control in accordance with the International Erosion Control Association best practice guidelines
  - Prevent erosion by using appropriate erosion and sediment control devices
  - Undertake Works in such a way to prevent unreasonable amounts of dust and other airborne matter impacting on adjacent properties
  - Control soil erosion and prevent sediment in run off
  - Contain and treat any contamination of run off
  - Assessment of Acid Sulphate Soil
  - Disposal of Acid Sulphate Soil
  - Preservation of trees and other habitats
  - Impacts to plant communities
  - Impacts to individual native plants
  - Gold Coast City vegetation assets
  - Disturbance to stream bank and bed as a result of rock installation (and reclamation) for access/working platforms
  - Disturbance to the stream bank and bed resulting in disturbance to aquatic fauna through short term changes to hydrology (e.g. turbidity of water)
  - Conservation of heritage values
  - Preservation of visual amenity
  - Manage record and report the prescribed information about the trackable waste in accordance with the requirements of the Environmental Protection (Waste Management) Regulation 2000
  - Building waterway barriers
  - Riverine Protection
- Catchment Management
- National Environmental Significant Sites

15.2 **Environmental Management - water based impacts**

15.2.1 **Working in Tidal Areas**

- Provide details of any bunding proposed to allow Works within the tidal range, including material types. Bunding Works must comply with all Legislative Requirements.
- Ensure full consideration has been given to the impact of wave actions from vessels passing the Site.
- Ensure full consideration has been given to the behaviour of foundation materials in excavations within such zones.
- Ensure any floating equipment may operate adequately and legally within the confines of the adjacent harbour.
- Coordinate and program the Works making allowance for the actions of the tides.
- Make allowance for removal of all materials from the Site not incorporated in the Works or shown on the drawings.
- Ensure consideration has been given to the diversion or treatment of stormwater runoff which may enter the Site from the existing stormwater flow paths.
- Ensure consideration has been given to prevention of failure or critical loading situations to bunds and / or retained works from all tide levels within the Contract which may be determined from tide charts. The Contractor is not required to consider storm surge actions above the absolute charted tide levels.

**Reference Charts**

Determine all tide levels from the most recent publication of 'The Official Tide Tables and Boating Safety Guide' by TMR (Maritime Safety Queensland). All heights and levels in discussion and correspondence are to be referred to Australian Height Datum.

15.3 **Seek approval on behalf of the Principal from the Department of Agriculture, Fisheries and Forestry prior to disturbing any marine plants in accordance with the Fisheries Act 1994 (Qld). Environmentally Relevant Activity - Not Applicable**

Not applicable

15.4 **Red Fire Ants**

Moving restricted items from or within fire ant restricted areas must be in accordance with all legislative requirements. This includes managing the risks of spreading fire ants. Refer to the Department of Agriculture and Fisheries for more information. [https://www.daf.qld.gov.au/business-priorities/plants/weeds-pest-animals-ants/invasive-ants/fire-ants](https://www.daf.qld.gov.au/business-priorities/plants/weeds-pest-animals-ants/invasive-ants/fire-ants)

15.5 **Acid Sulphate Soils (ASS) and Potential Acid Sulphate Soils (PASS)**

Assessment of the potential for presence of ASS has been undertaken by the Principal. Any strata which may contain ASS was found to be more than 3 metres below the surface. If there is PASS excavated during the Works then it is possible it may be so well mixed with other material that it will be difficult to confirm by testing.

Assessment of ASS is to be undertaken and included in the EMP.

Manage ASS and PASS, including disposal at appropriate facilities (if applicable) or alternatively treat on Site.
Specifications - AS2124

15.6 Transport of materials
Convey soils, earth, sand, loose debris and similar loose materials to or from the Site in a manner that will prevent dropping of materials. Cover all loads to ensure no loss of load or dust. Ensure that the wheels, tracks and body surfaces of all vehicles and plant leaving the Site are free of mud, and that mud is not carried on to adjacent paved streets or other areas. Spoiled material will be disposed at the licenced facilities.

15.7 Disposal of spoil
Remove all spoil (inclusive of ASS that cannot be treated on Site) not required as part of the Works from the Site. Pay all tipping fees at the waste disposal facility.

15.8 Noise
In addition to statutory requirements, adopt noise reduction measures as per following:
- Use plant and equipment with silences
- Use acoustic enclosures
- Use alternative power suppliers.

15.9 Vibration controls
Provide survey services throughout the Contract to establish, continuously monitor and maintain vibration monitoring equipment for the life of the Contract or as otherwise advised by the Superintendent. Maintain daily reports and when requested by the Superintendent provide within 48 hours’ notice.

Ensure vibration complies with AS2670.1 and AS 2670.2 and that levels do not exceed levels that are close to the lower level of human perception or may cause structural damage.

Install monitoring equipment to measure vibration levels of the peak particle velocity to AS 2187.2.

15.9.1 Ground movement
Provide monitoring points for use in determining the extent of ground movement occurring in the vicinity of the Works. The base information for this will be a control grid established and surveyed by the Principal.

15.10 Incident reporting and investigation
Notify the relevant administering agency and the Superintendent immediately of
- any non-compliance with any environmental authority or other permit, licence or approval applying to the Works or any environmental Legislative Requirements relating to the Works or the Site
- any incident involving actual or potential serious or material environmental harm or environmental nuisance associated with the conduct of the Works. In this Clause ‘serious or material environmental harm’ and ‘environmental nuisance’ have the same meanings they have in the Environmental Protection Act 1994 (Qld).

Notify the Superintendent immediately of any direction order or requirement being imposed on it by any agency responsible for administering environmental Legislative Requirements in respect of the Works.

15.11 Environmental harm
The Principal may inquire about compliance. The Contractor must:
- answer any reasonable request by the Superintendent where applicable concerning compliance with any environmental authority, or other approval, or any environmental Legislative Requirements concerning the Works; and
- respond to any reasonable direction of the Superintendent where applicable concerning compliance with any environmental authority or other approval concerning the Works, in the case
of you being an independent contractor working under the Principal’s environmental authority, or in the case of you being a dependent contractor.

The Contractor is aware of approvals obtained by Principal.

The Principal will provide copies of the Tidal works approvals relating to the Works to the Contractor.

16. Cultural Heritage

16.1 Indigenous cultural heritage

The Principal discloses the cultural heritage aspects of the Works Sites have been reviewed in line with the Duty of Care guidelines gazetted with the Aboriginal Cultural Heritage Act 2003 and the Principal’s Indigenous Cultural Heritage Officer advises that the Works sites are ‘Category 4 under the ‘Duty of Care Guidelines’ as it has been previously disturbed, no further assessment required’.

16.2 European cultural heritage

There are no places in the proposed Work area entered in the Queensland Heritage Register or Gold Coast Local Heritage Register.

17. Completion

17.1 Commissioning equipment

Provide High Definition CCTV footage (360 degrees) of installed pipeline conforming to the relevant Australian Standard.

17.2 Progressive recording of As-Built Documentation

Further to Clauses 8.8 and 37.2 of the General Conditions of Contract regarding timeframes and acceptance of As-Built Documentation, undertake progressive recording of As-Built Documentation as follows:

Retain a single set of approved For Construction drawings as control drawings onto which As-Built Documentation will be progressively recorded.

These control drawings must be clearly stamped ‘As-Built drawings – record’ in red colour. Keep accurate and reliable records of As-Built Documentation throughout the term of the Contract and regularly enter the As-Built drawings using red colour pens.

The control drawings are to be available for review by the Superintendent at any time.

17.3 Format and content of As-Built Documentation

The Principal's requirement for the type of file format to be provided for As-Built drawings is outlined in the City of Gold Coast As-Constructed Data Capture Guidelines. Departure from these Guidelines is subject to approval of the Superintendent.

As-Built Documentation must meet the following minimum criteria:

- Show approved street names and correct lot numbers (current at the time of the Works).
- Must be north facing.
- Show all significant variations from the contract drawings, including tolerances outside those specified.
• Where the Contract contains the decommissioning of any of the Principal's assets, these assets must be clearly marked on the As-Built drawing by labelling the asset ‘Decommissioned’ and displaying a ‘strike out’ with cross(es) on the drawing.

• All drawings prepared in addition to the Principal's supplied drawings, including but not limited to As-Built Documentation associated with or arising from changes in the Contract scope of Works, must be prepared using the same layout and format (i.e. titles, logos, drawing numbers, etc.) as that provided in the Principal's supplied drawings and standard template drawings. In the event that the format of the standard template drawings and Principal's supplied drawings differ, all drawings must be prepared using the standard template drawings, unless otherwise approved by the Superintendent.

• Incorporating password lock or equivalent security measures preventing opening of the drawing file or files will not be accepted.

• The Superintendent will notify the Contractor of the non-compliance and the Contractor must immediately correct the affected drawing files and within five Business days of the initial notification by the Superintendent will resubmit a complete set of the revised electronic drawing files.

• As-Built drawings incorporating As-Built survey details must be certified by a Registered Surveyor under the provisions of the Surveyors Act 2003 (Qld) (as amended).

• All drawings, including those with As-Built survey data endorsed by a Registered Surveyor, are to be certified by a RPEQ registered under the provision of the Professional Engineers Act 2002 (Qld) if specified in the documentation.

17.4 As-Built survey information and certification

As-Built Documentation incorporating the As-Built survey details must, unless otherwise advised in writing, be prepared based on:

• Australian Height Datum unless otherwise advised in writing;

• Survey coordinate system converted to Mapping Grid of Australia 1994 Zone 56 (MGA 94).

The origin of all levels and details of all survey control points or survey coordination details or notes utilised in compiling the As-Built survey drawings are to be noted on the As-Built drawings.

All Permanent Survey Marks (PSM) must be submitted with MGA94 horizontal coordinates, of at least 4th order, Class D accuracy (as defined by the Intergovernmental Committee on Surveying and Mapping and Practices for Control Surveys) and 4th Order, Class D heights on Australian Height Datum.

For all Works, excluding those where the Works are located entirely within the boundaries of existing water and/or sewage treatment plants, As-Built Documentation must include details of survey control comprising as a minimum:

• For Works comprising the construction of new or replacement pipelines (e.g. water mains, reclaimed water pipelines, pressure or gravity sewer mains and access chambers) totalling more than 400 metres in total length:
  ▪ Three or more registered PSM’s; and
  ▪ Connection to the defined points of cadastre adjacent to the Site of the new infrastructure.

• For Works comprising the construction of new reservoirs, pumping stations and ancillary facilities (water, wastewater or reclaimed water):
  ▪ A minimum of two registered PSM’s; and
  ▪ Connection to the defined points of cadastre for the Site, or adjacent to the Site, of the new infrastructure.

• For all other Works located within or adjacent to road reserves or public areas:
  ▪ A minimum of two (three preferred) registered PSM’s; and
  ▪ Connection to the defined points of cadastre adjacent to the Site of the new infrastructure.
For all Works located entirely within existing sewage or water treatment property and/or sites, As-Built drawings for any new facilities, structures or infrastructure constructed as part of the Works must include details of survey control comprising as a minimum:

- Details of existing or newly constructed permanent reference marks from which the new infrastructure has been, and can be, referenced.
- Connection to the defined points of cadastre for the boundary of the treatment plant site.

Where agreed by the Superintendent and at the request of the Contractor, the Principal’s survey officers, through the Superintendent, may be available to discuss As-Built survey data requirements. This may include, but not be limited to, clarification of survey conversion or adjustment factors applicable to the Gold Coast region and to ensure consistency of survey coordination with the Principal’s base data requirements.

17.5 Operations and maintenance manuals

Further to Clause 8.8 of the General Conditions of Contract, provide instructions and a recommended maintenance schedule for all items supplied and installed, along with details of model (reference numbers or similar), manufacturer and / or supplier.

Draft operations and maintenance manuals must be submitted to the Superintendent prior to the commissioning of each infrastructure facility and/or item of installed equipment (e.g. switchboard, pumping equipment, or valves/pipework) associated with each Milestone Separable Portion, or the Works, or prior to applying for a Certificate of Practical Completion as applicable.

Include within the operations and maintenance manuals the following:

- provide instructions and a detailed manufacturers recommended maintenance schedule for all items supplied and installed, along with details of model (reference numbers or similar), manufacturer and / or supplier. This would include but not be limited to:
  - Maintenance tasks to be performed
  - Detailed Work instructions
  - Frequency of each maintenance task (daily, weekly, monthly etc.)
  - Special skills or experience needed to perform each maintenance task
  - Any specialist tools required to carry out the maintenance task
  - Provide a full list of required spare parts and contact details of local resellers of those parts
  - Test results from factory acceptance testing (FAT), Site acceptance testing (SAT) and commissioning, including all other test results associated with the Works,
  - Where the nature of the Works required are upgrade of sewerage pump stations, air valves and odour control units etc., provide relevant operational and maintenance information of the new Works that has been undertaken and/or provided.
  - If any new Work has effected, altered, or changed any function or operational procedure of pre-existing equipment (i.e. pump station) or components from its existing presence, provide the entire operational procedure that includes those changes.
Part B

1. Technical Specification

Attachment 1 - Technical Specification

Attachment 2 - Sewer Rising Main Drawings
Part C – Attachments

Attachment 3 - Geotechnical Interpretive Report

Attachment 4 - Geotechnical Factual Report

Attachment 5 - Potholing Report

Attachment 6 – Pavement Investigations

Attachment 7 - Soil Profile

Attachment 8 - Pavement Investigation and Rehabilitation Report