

ACS100 General Specification

Contents

ACS100	General Specification.....	1
ACS100.1	Introduction	3
ACS100.2	Definitions	4
ACS100.3	General items.....	5
ACS100.3.1	Drawings.....	5
ACS100.3.2	Compliance with Legislation and Standards	5
ACS100.3.3	Hours of Work.....	6
ACS100.3.4	Public Relations, Customer and Stakeholder Management.....	6
ACS100.3.5	Temporary Works	6
ACS100.3.6	Performance Evaluation	7
ACS100.4	Site Establishment	7
ACS100.4.1	Site Limits	7
ACS100.4.2	Temporary Facilities & Signage	7
ACS100.4.3	Access to the Site.....	8
ACS100.4.4	Public and Private Roads and Accesses.....	9
ACS100.4.5	Survey and Setting Out	9
ACS100.4.6	Utility Services	9
ACS100.4.7	Preconstruction Condition Survey	10
ACS100.4.8	Groundwater control.....	11
ACS100.5	Safety Management.....	11
ACS100.5.1	Control of the Place of Work	11
ACS100.5.2	Contractor Incidents or Injuries	11
ACS100.5.3	First Aid Facilities	12
ACS100.5.4	After Hours	12
ACS100.5.5	Barricades and Plate Covers.....	12
ACS100.5.6	Hazardous Substances and Materials	13
ACS100.5.7	Safety in Design	13
ACS100.6	Environmental Management.....	13
ACS100.6.1	Resource Management Compliance Plan (RMCP).....	13
ACS100.6.2	Training and Induction.....	14

ACS100.6.3	Accidental Discovery Procedures.....	14
ACS100.6.4	Environmental Incidents and Reporting	15
ACS100.6.5	Dust Management	15
ACS100.6.6	Noise Management	15
ACS100.6.7	Vibration Management	16
ACS100.7	Quality Management.....	17
ACS100.7.1	Materials	17
ACS100.7.2	Inspection and Test Plan (ITP).....	18
ACS100.7.3	Hold Points	19
ACS100.8	Management Plans	19
ACS100.8.1	General	19
ACS100.8.2	Safety Plan	19
ACS100.8.3	Safe Work Method Statements (SWMS).....	20
ACS100.8.4	Quality Plan	21
ACS100.8.5	Traffic Management Plan	22
ACS100.8.6	Environmental Compliance Plan	23
ACS100.9	Programme	23
ACS100.9.1	Contract Programme.....	23
ACS100.9.2	Programming Constraints.....	24
ACS100.10	Reports, Meetings and Records	24
ACS100.10.1	Monthly Status Reports.....	24
ACS100.10.2	Meetings	25
ACS100.10.3	Records	25
ACS100.11	Completion Documentation	26
ACS100.11.1	Completion Documentation	26

ACS100.1 Introduction

This Specification describes the Principal’s general requirements for the construction, completion, and correction of defects of the Contract Works and forms part of the suite of Auckland Council Standard Specifications listed below. It is intended for use with the NZS 391X forms of contract.

The Auckland Council Standard Specifications should be read together with any Particular Specifications and the other documents comprising the Contract.

In the event of ambiguity or conflict between the Standard Specifications and any Particular Specification the Particular Specification will take precedence.

Number	Title
ACS100	General Specification
ACS210	Geotechnical investigations
ACS410	Site clearance and demolition
ACS510	Earthworks
ACS520	Reinstatement
ACS530	Planting
ACS610	Concrete construction
ACS710	Pipeline construction
ACS720	Manhole structures
ACS730	Box culverts and concrete channels
ACS740	Recycled aggregates
ACS1010	Site access roads and pathways
ACS1120	Pipe jacking and micro-tunnelling
ACS1130	Horizontal directional drilling
ACS1310	Fencing and barriers
ACS1320	Timber pole retaining walls
ACS1340	Gabions and reno mattresses
ACS1410	Pipe cleaning

Number	Title
ACS1420	Cured in place polyester liners
ACS1440	Spiral wound liners
ACS1450	Rehabilitation of pipelines and culverts with in-situ mortar application
ACS1460	Lining of pipelines and culverts with structural concrete linings
ACS1510	Internal inspection of pipelines
ACS1520	Utility investigation pits
ACS1530	Surveying

ACS100.2 Definitions

All the definitions in the Conditions of Contract for Building and Civil Engineering Construction - NZS 3910:2013 - shall apply, plus the following:

Term	Definition
Affected Party	A person or a group of people, who will experience an effect generated by the proposed Contract Works that will be significantly greater than or different from the effect on the general public.
Environmental Incident	<p>An unplanned event that could cause (potential) or has caused (actual) impact (change) on the environment resulting from activities or services undertaken as part of this Contract.</p> <p>For the purpose of these specifications, a subset of environmental incidents are those events which do not comply with statutory environmental requirements (i.e. Resource Management Act-related, permitted activity criteria, consent conditions, etc.).</p>
HSWA	Health and Safety at Work Act 2015
Hold Point	A defined position in the construction/manufacturing stages of the Contract beyond which work shall not proceed without mandatory verification and acceptance by the Engineer.
Independent Auditor	A person or persons nominated by the Principal to conduct independent quality, safety, and environmental audits.
Inspection and Test Plan	The document prepared by the Contractor as part of their Quality Plan which identifies the specific inspections and tests to be carried out by the Contractor for Works required by the Contract.

Term	Definition
Method Statement	A document that specifies the key steps and sequences in the manufacture/construction for an activity: what, how and by whom it shall be done and what materials and equipment shall be used to achieve the required quality standards.
Notice of Non-conformance	A notice from the Contractor advising the Engineer of a departure from the requirements of the Contract. This may automatically create a Hold Point.
Non-conformance Report	A report advising the corrective action to be taken following a Notice of Non-conformance.
Quality Assurance	The management actions covering planning, quality control, testing, inspection, and verification procedures integrated with production to provide a product fit for purpose.
Quality Manager	Is a person appointed by the Contractor for a specific contract with the authority and responsibility for the implementation and operation of the Quality Plan, to ensure that quality system requirements are not subordinated to design and productivity.
Regulator	Auckland Council Regulatory Services.
SWCoP	Auckland Code of Practice for Development and Subdivision. Chapter 4 – Stormwater.

ACS100.3 General items

ACS100.3.1 Drawings

Only Drawings clearly marked “ISSUED FOR CONSTRUCTION” (IFC) shall be used for ordering Materials, setting out or construction of the Contract Works.

The Contractor shall verify all dimensions shown on the Drawings by checking against actual Site measurements.

ACS100.3.2 Compliance with Legislation and Standards

In respect of the Contract Works, the Contractor shall comply with all relevant legislation, the provisions of all New Zealand Standards, National Environmental Standards and National Policy Statements that may be applicable to the Contract Works.

Reference to any standard in the Specifications relates to the latest edition and shall include any amendment to or substitution for the referenced standard, unless stated otherwise.

ACS100.3.3 Hours of Work

Subject to any licences (including any approved Traffic Management Plan/s) and unless otherwise approved in writing by the Engineer, working hours on Site shall be limited to 7:30 to 18:00 Monday to Saturday. No work (except for emergency work authorised in writing by the Engineer) shall be permitted on Sundays and New Zealand Public Holidays.

ACS100.3.4 Public Relations, Customer and Stakeholder Management

Any media enquiries shall be referred to the Engineer.

The Contractor shall prepare a letter to inform Affected Parties of the proposed Works and submit a draft to the Engineer for acceptance. The Contractor shall deliver the approved letter to all Affected Parties no fewer than **7 Working Days** (or as otherwise specified in any licences) prior to carrying out any such Works.

On completion, the Contractor shall prepare a letter notifying the Affected Parties that the Works are complete and thanking them for their co-operation and submit a draft to the Engineer for acceptance. The Contractor shall deliver the letter within **7 Working Days** of the Engineer's acceptance.

In addition to the notification described above, prior to any work taking place on private property, the Contractor shall make a courtesy visit to the owner or occupier to inform them of the proposed work. A minimum of **48 hours'** notice shall be given.

On completion of the Works, the Contractor shall obtain written confirmation from each property owner that all work has been completed to their satisfaction. The Engineer may, at their discretion, waive this requirement if the work has been completed in accordance with the Specifications and the property owner is acting unreasonably. Records of all written confirmations are to be forwarded to the Engineer prior to application for a Practical Completion Certificate.

ACS100.3.5 Temporary Works

The Contractor's Temporary Works shall be in accordance with the Temporary Works Procedural Control Good Practice Guideline TWfNZ GPG01:19 published by the Temporary Works Forum (NZ).

The complexity, risk and resultant level of checking required for each element of Temporary Works shall be determined by the Contractor and an appropriate Temporary Works Procedure submitted to the Engineer for acceptance at least **10 Working Days** prior to the Works commencing.

The procedure shall identify any inputs required from the Principal and Engineer regarding safety-in-design information or in their role as PCBUs under the HSWA.

The procedural control of the Temporary Works shall include the identification of suitably qualified and skilled resources, the nomination of competent people with the right combination of experience, qualifications, and training for the complexity of the task and a robust, documented procedure that clearly sets out roles and responsibilities.

All documentation developed that evidence good procedural control shall be kept in a centralised file in a location and format to be agreed with the Engineer. As a minimum, the Temporary Works file shall contain:

- a) Records of appointments of all key personnel
- b) The current Temporary Works Register
- c) Design Check Certificates
- d) “Issued for Construction” design documentation for each Design Check Certificate issued for each Temporary Works package
- e) Details of any standard solutions used on the project.

ACS100.3.6 Performance Evaluation

The Contractor shall participate in a monthly evaluation of the Contractor’s performance on the Contract, in accordance with the Principal’s performance evaluation process.

ACS100.4 Site Establishment

ACS100.4.1 Site Limits

The Site limits are shown on the Drawings and in the Particular Specifications. The land is either owned by the Principal or is land for which the Principal has gained the temporary use of for the Contract Works from the owner or occupier. Copies of any agreement(s) or licence(s) for the land use are included in the Contract.

ACS100.4.2 Temporary Facilities & Signage

The Contractor shall provide, and upon completion remove, all temporary facilities and services required for the Contract. All requirements of the relevant authority, or the conditions of any licences, shall be met in providing these facilities and services.

The Contractor shall erect and maintain signage provided by the Principal for the duration of the Contract Works, and upon completion, remove it. The location of signage shall be agreed on Site with the Engineer. No other signage is to be displayed at the Site, except for warning and directional signs.

The Contractor shall ensure that:

- a) The Site is always kept clean and tidy
- b) Materials are kept within the Site
- c) All redundant materials and waste are promptly removed from the Site
- d) No excess excavated material is stockpiled on the Site
- e) No offensive language is used in public
- f) Noise from equipment and staff is kept to a practical minimum
- g) Staff are courteous to members of the public, especially when working on private property
- h) Vehicles and machinery are kept in a clean and presentable condition
- i) All customer feedback, including concerns, queries, complaints, or compliments received from property owners, members of public and/or external stakeholders shall be recorded and forwarded to the Engineer as soon as it is received
- j) No water is used from privately owned water outlets without prior permission and appropriate payment
- k) All Subcontractors are aware of and comply with the above.

ACS100.4.3 Access to the Site

Access to the Site from public roads shall have appropriate controls in place to ensure that traffic safety is not compromised, and delays are reasonable.

Direct access to public roads from multiple locations along the site frontage will not be permitted.

The Contractor shall meet the requirements of the relevant Corridor Manager for the use of any public road access.

At the cessation of work on any day and before darkness, the Contractor shall barricade all entrances to the Site to prevent traffic access.

ACS100.4.4 Public and Private Roads and Accesses

The Contractor shall retain all public and private roads and accesses affected by the Contract Works in service until suitable alternative access is provided.

ACS100.4.5 Survey and Setting Out

In addition to the requirements of the General Conditions clause 5.8, setting out of the Contract Works shall be certified by a Licensed Cadastral Surveyor (or Surveyor accepted by the Engineer).

The Contractor shall, prior to commencement of the Contract Works and ordering of Materials, verify all existing dimensions shown on the Drawings by checking against actual Site measurements. Any discrepancy in the levels or dimensions from that specified in the Contract shall be brought to the attention of the Engineer.

Prior to commencement, the Contractor shall locate all existing survey marks within the Site and ensure that they remain undisturbed throughout the Works. The Contractor shall advise the Engineer of any marks not already relocated that will be affected by the Contract Works. Following the approval of the Engineer the Contractor shall contact Land Information New Zealand to obtain approval for relocation or replacement of those marks.

The survey projection and datum are:

- Coordinate Projection : NZTM2000
- Levels : New Zealand Vertical Datum 2016 (NZVD 2016)

ACS100.4.6 Utility Services

In addition to the requirements of clause 5.13 of the General Conditions, the Contractor shall carry out the following for purposes of design verification prior to commencing the Contract Works:

- a) For trenched excavations, expose all utilities shown to be within 1 m of the extent of any excavation at appropriate intervals and using an appropriate technique to confirm the location. Any utilities not found within the expected excavation range shall be referred to the Engineer.
- b) For trenchless installations, expose all utilities shown to be within a 3 m corridor along the pipe alignment and with a vertical clearance of less than 2 m between utility and proposed pipe at appropriate intervals to confirm the location. Any utilities not found within the expected excavation range shall be referred to the Engineer.

- c) The completed inspection log sheets, including photos and survey data, shall be submitted to the Engineer in sufficient time for any design changes to be made.
- d) Adhere to any specific requirements of the utility operator.

The Contractor shall liaise with utility operators to ensure:

- a) There is no interference with any existing utilities without express permission from the utility operator
- b) Complying with any conditions set by the utility providers/owners relating to the work.

Access to all hydrants, valves, sumps, manholes, inspection chambers, cabinets or other access points for services shall be kept free from obstruction to allow access by emergency services, utility operators and their contractors at all times.

ACS100.4.7 Preconstruction Condition Survey

A Preconstruction Condition Survey of all public and private assets within the Site and immediately beyond the perimeter of the Site shall be undertaken prior to commencing the Contract Works.

The Preconstruction Condition Survey and Report shall include, but not be limited to, structures, pavements and other surfaces, street furniture, services, paved areas, fences, gates, and farm paddocks.

The Survey shall include photographs and notes on any defects identified at the time of the inspection, together with the following:

- a) Full details and identification of all defects existing at the time of the inspection such as crack location and widths, spalling, exposed concrete, joint conditions, gaps, untrue walls, and sagging rooflines.
- b) Photographic evidence of all structural defects existing at the time of the inspection
- c) Causative interpretation of all structural defects existing at the time of the inspection. The report and interpretation shall include due consideration of the existing ground and the nature of adjacent construction.

Where appropriate, the Contractor shall install “tell-tale strips” across all significant cracks and defects during the initial inspection. All movement or breakage of the tell-tale strips shall be reported to the Engineer **within 24 hours** of the observation being made.

ACS100.4.8 Groundwater control

Unless it complies with the permitted activity standards under the Auckland Unitary Plan or is specifically authorised by a Resource Consent or otherwise approved by the Engineer, lowering of the natural groundwater table is not permitted.

The Contractor's methods of construction shall limit groundwater drawdown and any proposals to lower the groundwater table shall take account of the risks of settlement. Removal of groundwater shall not cause damage to the Contract Works, nor to third-party property and shall not cause nuisance either by the removal of ground or by settlement.

The Contractor shall prepare and submit to the Engineer, a Method Statement for controlling and monitoring any dewatering system, including monitoring settlement and changes in groundwater level/pressures, prior to commencing installation and operation of any dewatering system.

Within **5 Working Days** of receipt of the Contractor's Method Statement, the Engineer shall notify the Contractor in writing whether he or she accepts the Method Statement. Such acceptance shall not be unreasonably withheld. Where the Engineer does not accept the Method Statement, the notice shall include the Engineer's reasons, and the Contractor shall submit a revised Method Statement.

ACS100.5 Safety Management

ACS100.5.1 Control of the Place of Work

The Contractor shall have responsibility for control of the Site, as the place of work, as defined in the HSWA.

Where the Contract Works fall under the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations, the Contractor shall be the Mine Operator.

ACS100.5.2 Contractor Incidents or Injuries

Where an injury or incident occurs in relation to the Contract Works, including any 'notifiable event' under the HSWA, the Contractor shall:

- a) Notify the Engineer and Principal **as soon as possible**, but within **2 hours**
- b) Submit a written Incident Report to the Engineer and Principal within **2 Working Days**
- c) Submit a full incident investigation report with findings, recommendations and lessons learnt to the Engineer and Principal within **10 Working Days**.

ACS100.5.3 First Aid Facilities

The Contractor shall provide adequate first aid facilities and staff with first aid training, as required under legislation and based on a risk assessment of the Site hazards and potential emergencies.

ACS100.5.4 After Hours

In terms of Site safety after hours, the Contractor shall:

- a) Appropriately light the area affected by the Contract Works
- b) Provide a safe and segregated passage around the Site for pedestrians and vehicular traffic
- c) Barricade and fence off all obstructions and/or excavations
- d) Ensure the Site is in a safe and tidy state at the end of each working day
- e) Maintain traffic access as required.

ACS100.5.5 Barricades and Plate Covers

All Works, especially excavations, which pose a hazard to the public, must be adequately barricaded, fenced, or covered. Where these are in proximity to traffic lanes, additional temporary traffic management devices may be required in addition to barricades, fencing or plate covers.

Barricades or Site fencing must:

- a) Have a top and bottom rail
- b) Be ≥ 1200 mm high (1800 mm in high-risk areas), continuously connected around the hazard and able to withstand 40 kg horizontal and 70 kg vertical force
- c) Have suitable rigidity to prevent a person falling through
- d) Have a gap of less than 100 mm between the ground surface and the bottom rail
- e) Not be easily climbable
- f) Be highly visible.

Fence panels are to be secured and held together with the fence manufacturers locking mechanism

Plate covers shall be specifically designed for appropriate loadings and skid resistance. They shall be installed to ensure they will not move to expose the hazard, do not have edges which are hazardous or create other unacceptable effects such as noise.

Any temporary structures or surfaces in areas of pedestrian activity shall be installed in such a way to accommodate and provide for those with mobility or visual impairments.

ACS100.5.6 Hazardous Substances and Materials

If hazardous substances and materials are specified and used on the Site, the Contractor shall ensure that these are transported, used, stored, and disposed of in accordance with the requirements of the Hazardous Substances and New Organisms Act 1996, the Health and Safety at Work Act 2015 and the NZ Environmental Protection Authority.

ACS100.5.7 Safety in Design

The Contractor shall take account of the safety in design (SiD) information provided by the Principal in the planning and execution of the Contract Works and shall follow SiD protocols in the design of any Temporary Works.

Where there are any changes to the Contract Works or installation methods identified in the design stage SiD, the Contractor shall notify the Engineer who shall obtain agreement from the Designer and Principal that all implications for the future operation, maintenance and decommissioning of the Works have been considered. The Contractor shall update the SiD records accordingly.

On completion of the Works, the updated SiD records shall be submitted with the As-built Drawings and Operation and Maintenance Manuals, if required.

ACS100.6 Environmental Management

ACS100.6.1 Resource Management Compliance Plan (RMCP)

The Resource Management Compliance Plan (RMCP) is a document prepared by the Principal and forming part of the Contract which contains copies of all resource consents obtained by the Principal for the Contract Works, and a list of permitted activity standards under the Auckland Unitary Plan that are applicable to the Contract Works.

Importantly, the RMCP provides a summarised list of all resource consent conditions that must be adhered to for the Contract Works and allocates responsibility for compliance with each condition to either the Contractor or the Principal, as appropriate to the stage of the contract and the nature of each condition.

Where stipulated as being responsible for compliance with a particular condition, the Contractor shall comply with that condition and, where required, shall gather the prescribed evidence of compliance to be submitted to the Engineer and/or the Regulator within the prescribed timeframes.

All outstanding compliance documentation must be prepared and submitted in accordance with the Contract prior to issue of the Practical Completion Certificate.

ACS100.6.2 Training and Induction

All personnel working on the Site shall be inducted onto the Site with specific reference to the environmental hazards and emergency procedures. All Contractor staff responsible for the daily supervision of the Contract Works shall have the following environmental training (as a minimum):

- a) Erosion and sediment control
- b) Understanding of the RMCP
- c) If working under the Auckland Council Healthy Waters Regional Tree Consent (R/LUC/2013/2240), the Contractor must be trained by the Auckland Council Healthy Waters Resource Management Team. This includes project arborists.

A training register shall be kept on Site showing training, experience, and qualifications of staff on the Site, including training for specific environmental risks or tasks.

ACS100.6.3 Accidental Discovery Procedures

In accordance with rule E12.6.1 of the Auckland Unitary Plan, in the event of an accidental discovery of sensitive material on Site, the Contractor shall immediately suspend work and notify the Engineer. For the purposes of this clause 'sensitive material' means:

- a) Human remains and kōiwi
- b) An archaeological site
- c) A Māori cultural artefact/taonga tuturu
- d) A protected New Zealand object as defined in the Protected Objects Act 1975 (including any fossil or sub-fossil)
- e) Evidence of contaminated land (such as discolouration, vapours, asbestos, separate phase hydrocarbons, landfill material or significant odour); or
- f) A lava cave greater than 1 m in diameter on any axis.

Works shall only resume on instruction from the Engineer.

Nothing in this section limits the legal responsibilities of the Contractor or the requirement to notify Heritage New Zealand, the NZ Police, the Ministry of Health, or the Ministry for Culture and Heritage, as required.

The Contractor shall observe the tikanga and cultural protocols agreed with iwi/hapu in conjunction with the Principal.

ACS100.6.4 Environmental Incidents and Reporting

The Contractor shall notify the Engineer immediately of Environmental Incidents resulting in, but not limited to:

- a) Spills or discharges of sediment, hazardous and/or toxic substances
- b) Damage to trees
- c) Inappropriate disposal of contaminated materials/soils

For the purpose of these Specifications, a subset of environmental incidents are those events which do not comply with statutory environmental requirements (i.e. Resource Management Act-related, permitted activity criteria, consent conditions, etc.).

All incidents shall also be included on the Contractor's monthly Health, Safety and Environmental Report (HS206).

ACS100.6.5 Dust Management

The Contractor shall not allow the Works to result in any airborne and deposited dust beyond the boundary of the Site that is determined to be noxious, objectionable, or offensive.

Good practice measures, such as those described the Good Practice Guide for Assessing and Managing Dust, Ministry for the Environment (2016), shall be adopted at all times.

ACS100.6.6 Noise Management

The Contractor shall:

- a) Comply with the limits specified in New Zealand Standard NZS 6803: 1999, Acoustics – Construction Noise and Auckland Unitary Plan provisions relating to construction noise; and
- b) Resolve excessive noise conditions where they occur as a result of the Works.

The Contractor shall:

- a) Address noise management in its work planning
- b) Muffle all plant and equipment in accordance with good industry practice
- c) Avoid unreasonable nuisance and use methods that minimise noise levels, such as avoiding the use of breakers and other similar loud noise when required to work at night; and
- d) Where required by the conditions of any licences obtained by the Principal or the Contractor, the Contractor shall prepare, maintain, and implement a Noise Management Plan.

The Noise Management Plan shall aim to minimise any adverse effects from noise during construction, and shall include:

- a) Consideration of the permitted noise standards outlined in Tables E25.6.27.1, E25.6.27.2, E25.6.28.1, or E25.6.28.2 of the Auckland Unitary Plan as appropriate, (subject to a 5dBA decrease for Works longer than 20 weeks in accordance with rule E25.6.27.4 when measured 1 m from the most exposed façade of any building that is occupied during the Works).
- b) Means to ensure that any licence conditions are achieved.

The Engineer has the right to order the removal and replacement of Plant if the Contractor has not complied with this clause and more appropriate low-noise Plant is available.

ACS100.6.7 Vibration Management

Where required by the conditions of any licences obtained by the Principal or the Contractor, the Contractor shall prepare, maintain, and implement a Vibration Management Plan.

The Vibration Management Plan shall aim to minimise any adverse effects from vibration during construction and shall include consideration of the following:

- a) Vibration levels arising from construction activities on the Site must not exceed the limits set out in German Industrial Standard DIN 4150-3 (199) Structural variation - Part 3 Effects of Vibration on Structures criteria when measured in accordance with the Standard on any structure not on the same Site as specified in rule E25.6.30 (1)(a) of the Auckland Unitary Plan.
- b) Vibration levels arising from construction activities on the Site must not exceed the limit of 2 mm/s Peak Particle Velocity for more than 3 days in occupied buildings in any axis when measured in the corner of the floor of the story of interest for multi-story buildings, or within 500 mm of ground level at the foundation of a single-story building as specified in Table E25.6.30.1.

The Vibration Management Plan shall be prepared before the Contractor starts any of the activities authorised by any licences. The inputs shall as a minimum include the following:

- a) Maximum permitted ground vibration levels
- b) The times at which particular construction activities may take place
- c) Communication requirements with owners and occupiers of adjacent buildings
- d) Details of required baseline vibration monitoring
- e) Details and frequency of condition surveys
- f) Location, type, and monitoring frequency of vibration monitoring equipment
- g) Construction methodologies for minimising the impact of vibration
- h) Procedures for maximum permitted ground vibration levels being exceeded or justifiable complaints being received.

ACS100.7 Quality Management

ACS100.7.1 Materials

All Materials shall be new, unless otherwise specified, and in accordance with the requirements of the Drawings, Specifications and the Stormwater Code of Practice (SWCoP). Where a particular Standard is not called for in the SWCoP, Materials shall comply with the relevant New Zealand Standards (NZS) or (AS/NZS), Australian Standards (AS), or British Standards (BS) where appropriate NZS do not exist.

Where an item is mentioned by a trade name or other specific reference, it shall be deemed to mean the type of item so mentioned, or any other equivalent in quality, finish, durability, and serviceability for the purpose intended. The quoting of a trade name shall not be construed as a desire to restrict the use of competitors' products, and the Contractor is at liberty to offer for the Engineer's acceptance, any Materials considered by the Contractor to be of equivalent quality. Acceptance or otherwise of offered alternatives shall be at the Engineer's discretion. No warranty is expressed or implied that Materials specified are regularly stocked by merchants.

All Materials received on Site shall be inspected to ensure they are the correct Materials, comply with the Drawings and Specifications and are in good condition. Test data and certificates shall be supplied to the Engineer for all Materials to be incorporated in the Works.

Where sample acceptance is specified, samples of Materials shall be provided, and the Engineer's acceptance obtained prior to incorporating such Materials in the Contract Works.

Samples of accepted Materials shall be retained on Site for comparison with those built into in the Contract Works.

All imported materials, products, and systems, shall be tested, appraised, and certified in New Zealand or Australia by an IANZ/NATA accredited laboratory to the requirements of the Auckland Council Codes of Practice, appropriate AS/NZ Standard and NZ Building Code (as applicable).

In addition, the Contractor shall provide evidence of the material's / product's manufacturing process (e.g. mill certificates). Any alternative testing regime, of an equivalent standard, shall be agreed by the Engineer.

Where testing is done outside of New Zealand and Australia, the Contractor shall be required to prove the chain of custody of materials to ensure that there has been no substitution of untested materials.

ACS100.7.2 Inspection and Test Plan (ITP)

The Contractor shall establish and maintain an Inspection and Test Plan (ITP) as part of the Quality Plan to ensure and demonstrate that all products or parts of products requiring inspection and/or testing are so inspected and/or tested. The ITP shall include the type and number of tests to ensure compliance with all requirements of the Specifications and shall cover materials testing, workmanship, construction technique and finished quality.

The ITP shall be in general accordance with the approach set out in NZTA Z1:2021, Minimum Standard for Quality Management Plans.

All laboratory tests undertaken by the Contractor shall be carried out by an organisation acceptable to the Engineer. In-process and compliance inspections shall be completed by a responsible person nominated by the Contractor to demonstrate that the work has been completed in accordance with the Contract.

Details of all procedures and compliance certificates shall be submitted to the Engineer for information before each stage of the Contract Works is commenced. When any document is issued to the Engineer, it shall be accompanied by relevant signed quality statements.

The Engineer shall be entitled to audit any aspect of the system and require corrective action to be taken.

ACS100.7.3 Hold Points

To assure compliance with the specified standards and requirements, mandatory Hold Points may apply. Hold Points are those stages during the construction/manufacturing process where the ITP or Specifications require "acceptance by the Engineer" or where a Notice of Non-Conformance or Non-Conformance Report has been issued. The Contractor shall not proceed past the Hold Point until Notice to Proceed has been received from the Engineer.

ACS100.8 Management Plans

ACS100.8.1 General

The Contractor shall provide all management plans required by the Contract (including those required by any licences obtained by the Principal or the Contractor) to the Engineer for acceptance in accordance with the Contract.

The Contractor shall regularly review and update all management plans and retain an up-to-date copy on Site. Notification of all changes shall be continuously documented at the front of each management plan.

ACS100.8.2 Safety Plan

In accordance with clause 5.17 of the General Conditions, the Contractor shall prepare and submit to the Engineer, a Safety Plan for the execution of the Contracts Works.

The purpose of the Safety Plan is to provide an overarching approach to managing safety for the duration of the project, foster a culture of safety first, and to provide a method for complying with the provisions of the HSWA and its Regulations.

The Safety Plan must provide contract specific information including, but not limited to, the following:

- a) Contract specific roles and responsibilities
- b) Health and safety leadership structure
- c) Health and safety notifications and registrations
- d) Health and safety management procedures (hazard identification, risk assessment and proposed risk control measures relevant to the work being undertaken)
- e) Safety in design information (calculations, analyses, tests etc.)

- f) Safe Work Method Statements (SWMS) to demonstrate safe systems of work for high-risk tasks and activities
- g) Provisions for emergencies, planning and response
- h) Proposed training and competency requirements
- i) Induction procedures
- j) Drug and alcohol testing requirements
- k) Accident reporting, recording investigation, analysis and lessons learnt
- l) Schedule for safety audits, reviews, and inspections
- m) Health and wellness procedures
- n) Worker participation methods
- o) Sub-contractor management and collaboration procedures (coordination, cooperation, and consultation)
- p) Sub-contractor risk-based documents (SWMS, JSAs, Hazardous Substance Inventories, Plant and Competency Registers, etc.)
- q) Specific legal duties that must be followed under the HSWA and its Regulations.

ACS100.8.3 Safe Work Method Statements (SWMS)

Safe Work Method Statements (SWMS) form part of the Safety Plan and provide instructions on how to safely perform high risk tasks or activities related to the Contract Works.

A SWMS must be site and task specific and made available to workers, supervisors, and any other persons at the workplace, so they can understand the hazards, risks and safety controls that must be used to keep workers and others safe.

A SWMS is intended to be a simple safe system planning and implementation tool, used by supervisors and workers to stay safe on the Site when undertaking high risk work.

Where SWMS have not been provided with the Safety Plan or revised Safety Plan and accepted by the Engineer, they may be prepared as stand-alone documents and submitted to the Engineer for acceptance at least **5 Working Days** prior to the planned commencement of that part of the Contract Works.

The Contractor shall not commence that part of the Contract Works unless the Engineer has accepted the relevant SWMS.

High-risk work includes but is not limited to:

- a) Mining work
- b) Entry to confined spaces
- c) Use of hazardous substances which are assessed as high-risk in the Hazardous Substances and New Organisms Act 1996
- d) Any hazardous work notifiable to WorkSafe NZ
- e) Work near pressurised or energised systems including gas mains or electrical mains
- f) Work in areas that may have or develop a contaminated or explosive atmosphere and/or environment
- g) Work within a rail corridor
- h) Work on riverbanks
- i) Work in transport corridors
- j) Work involving aircraft
- k) Work on or near open or tidal water with a depth greater than 1.5 m
- l) Lone worker situations
- m) Night work
- n) Work in environments or situations where public emergency service response would be significantly delayed and or hindered
- o) Any other activity notified as such by the Engineer.

ACS100.8.4 Quality Plan

In accordance with clause 5.18 of the General Conditions, the Contractor shall prepare and submit to the Engineer, a Quality Plan for the execution of the Contracts Works.

The Quality Plan shall be in general accordance with the approach set out in NZTA Z1:2021, Minimum Standard for Quality Management Plans, the General Conditions clause 5.18.2, and shall include, but shall not be limited to, the following:

- a) Roles and responsibilities of key personnel including the Quality Manager (with qualifications or certifications where relevant)
- b) Method Statements - These are required in written form for all activities where their absence could create a risk to the quality or safety of the work being undertaken. They must describe how individual work activities are to be planned, controlled, and inspected for compliance with the Specifications
- c) Inspection and Test Plan

- d) Checklists
- e) Schedule of quality records to be kept and documentation control procedures
- f) Details of how test data will be checked by the Contractor for accuracy and completeness before being logged as complete
- g) Non-conformance and corrective action procedures
- h) Internal reviews and/or audits of compliance, including Sub-contractor compliance
- i) Pro-forma of a Quality Report to be submitted each month.

ACS100.8.5 Traffic Management Plan

In accordance with clause 5.19 of the General Conditions, the Contractor shall prepare and submit to the Engineer, a Traffic Management Plan for the execution of the Contracts Works.

For work in transport corridors, the Contractor shall comply with the National Code of Practice for Utility Operators' Access to Transport Corridors which will generally include, but not be restricted to, obtaining Works Access Permits (WAP) or Permits to Enter through the Corridor Access Request (CAR) process, which includes provision of a Traffic Management Plan.

The CAR must be submitted to the Corridor Manager, a minimum of 20 Working Days (30 Working Days for works in Motorway and Railway Corridors) before the Contractor intends to start work. A deficient or non-compliant CAR will result in the application being put on hold by the Corridor Manager until a compliant CAR is submitted.

The Contractor should allow in their programme for a reasonable period of additional time to respond to questions and requests for additional information. Larger and more complex projects on busy roads will likely require considerably more time than the minimums described above, and an experienced Contractor is expected to make appropriate provision in their programme for this.

The Contractor shall comply with any conditions set by the Corridor Manager in the WAP or Permit to Enter.

Compliance with the conditions of the WAP or Permit to Enter shall not relieve the Contractor from any of its duties, obligations, and liabilities under the Contract.

A copy of the relevant WAP or Permit to Enter shall be provided to the Engineer with submission of the Traffic Management Plan and a copy shall be held on Site.

The Engineer will not accept the Traffic Management Plan until a WAP has been issued by the Corridor Manager and a copy has been provided to the Engineer.

As soon as practicable, but within **10 Working Days** of completion of all work for which a WAP has been issued, the Contractor must lodge a Works Completion Notice with the Corridor Manager.

ACS100.8.6 Environmental Compliance Plan

In accordance with the Special Conditions of Contract, the Contractor shall prepare and submit to the Engineer an Environmental Compliance Plan for the execution of the Contracts Works.

The Contractor shall put in place induction, education, monitoring and reporting systems to ensure that site staff and Subcontractors understand and comply with all licences and the Environmental Compliance Plan. The Contractor shall regularly re-evaluate the plan and provide for regular re-training and re-education to meet differing site demands.

Before commencing Works on Site, the Contractor must ensure that the appropriate environmental protection measures are constructed and operational and that all contingency and emergency plans and procedures are in place.

The Contractor shall report immediately to the Engineer, all incidents with possible significant effects or outcomes.

The Contractor shall permit the Principal and Engineer access to the Site on a monthly basis, to conduct a site inspection and audit. During this time, the Contractor shall provide unrestricted access to any documentation or staff.

The Contractor shall establish and maintain a documented system of checks and audits to ensure that the work is being performed in accordance with the environmental requirements applicable to the work and shall provide the Engineer with access to the documentation upon reasonable request.

ACS100.9 Programme

ACS100.9.1 Contract Programme

The Contractor shall submit to the Engineer, a Comprehensive Programme in accordance with clause 5.10 of the General Conditions. The programme shall show how the Contract Works will be programmed, resourced, and coordinated to meet the Due Date for Completion.

The Comprehensive Programme shall be in logic linked Gantt Chart form showing all activities, and dependencies, milestones, programming constraints and shall clearly identify the critical path.

The Comprehensive Programme shall be updated at least monthly.

A digital copy of the current programme shall be maintained by the Contractor.

ACS100.9.2 Programming Constraints

Weather, seasonal, and environmental factors will be familiar constraints for an experienced Contractor when programming, planning, organising its resources and executing the Contract Works.

Earthworks activities are frequently restricted outside the “earthworks season” from 1 October to 30 April and the Contractor’s programme shall allow for all such earthworks activities to be completed within the earthworks season, unless otherwise approved by the Regulator.

The Contractor’s Programme shall provide for compliance with all licences and approvals granted to the Principal or Contractor or transferred to the Contractor via the Resource Management Compliance Plan for the Contract Works. The Contractor shall check all licence conditions and assess the implications of such conditions on its construction programme and methodology.

The Contractor’s Programme shall make adequate allowance for the anticipated timeframes to obtain Works Access Permits and approved Traffic Management Plans from the relevant Corridor Manager and approvals such as “Works Over” approvals from utility operators.

ACS100.10 Reports, Meetings and Records

ACS100.10.1 Monthly Status Reports

Brief Monthly Status Reports shall be prepared by the Contractor and an electronic copy submitted to the Engineer by the end of each month. Each report shall include:

- a) A summary of activities carried out during the preceding period and those planned for the next period
- b) Progress against key milestones
- c) Health, Safety, Environment and Quality – KPIs and any incidents, near misses, audits, and corrective actions
- d) Risks and opportunities
- e) Issues
- f) Photographs showing the status of construction and progress on Site.

ACS100.10.2 Meetings

The Contractor shall attend pre-commencement meetings with the Engineer and other stakeholders as required by the Engineer.

Regular progress meetings shall take place between the Contractor's Representative and the Engineer at the Contractor's Site office at a frequency to be decided by the Engineer but not less than Monthly. The Principal may attend and from time to time, the Engineer may ask subcontractors to attend.

The Monthly Progress Meeting shall have a formal agenda prepared by the Engineer to discuss contractual and other contract management issues. Exception reporting shall describe non-conformances, remedial actions, and/or exceptions to accepted practice, and clearly signal any action required by the Engineer and Principal.

ACS100.10.3 Records

The following records shall be submitted to the Engineer. The format of such records shall be submitted to the Engineer for acceptance before work commences on Site.

Monthly:

- a) Updated Comprehensive Programme showing actual progress against planned
- b) Cashflow forecast to completion based on the updated programme
- c) Health, Safety and Environmental Report (HS206)
- d) Quality Report including evidence of all quality testing and Quality Assurance for the period.

Weekly:

- a) Daily Site diary
- b) Records of daily Subcontractor, Plant, and labour resources on Site
- c) Daywork records in accordance with clause 9.4 of the General Conditions.

ACS100.11 Completion Documentation

ACS100.11.1 Completion Documentation

The following completion documentation shall be provided to the Engineer prior to issue of a Practical Completion Certificate as required:

- a) Building Consents and Code Compliance Certificates
- b) Design, design review, construction, and construction review producer statements / certificates
- c) Safety-in-design information including records of residual risks
- d) Operation and maintenance manuals
- e) Licence compliance documentation
- f) Property owner reinstatement approvals
- g) Quality Assurance records
- h) As-Built Drawings.

Upon completion of the Contract Works and prior to the issue of a Practical Completion Certificate, the Contractor shall engage a Licensed Cadastral Surveyor (or surveyor accepted by the Engineer) to carry out a survey of the Works and prepare and submit as-built drawings to the Engineer in the following formats:

- a) One complete set of AutoCAD (or equivalent vector drawing software as agreed by the Principal) files including all associated files. The as-built drawings shall be prepared in accordance with the Auckland Council “Development Engineering – As-built Requirements” and certified as being a correct record by the Contractor and the surveyor.
- b) One complete set of un-editable Adobe PDF files exported from the CAD As-built Drawings. This shall serve as a read-only set for viewing, downloading, and printing by users of the Auckland Council As-Built System.

The As-built Drawings shall cover all the Contract Works except the Temporary Works and shall include details of any unrecorded services that were discovered during the Works.