

SCHEDULE D1. – MANAGEMENT REQUIREMENTS

(Clauses 1.1 and 8.2)



Transport
for NSW

Management Requirements – Project Administration – Central Station Main Works (MR-PA)

DOCUMENT NUMBER: SM-17-00000462

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Sydney Metro Requirement – Project Administration – Central Station, Main Works (MR-PA) describes requirements and processes for the management and administration of the CSM Project.
- (b) This MR-PA must be read in conjunction with other parts of the Contract.
- (c) The Contractor must comply with the requirements of this MR-PA, including the Reference Documents in Annexure A.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-PA.

1.3. General Requirements

- (a) Where noted in Annexure D – Project Specific Requirements, the Contractor must comply with the requirements of this MR-PA, as amended by Annexure D.
- (b) The Reference Documents listed in this MR-PA are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.

2. Management Plans

2.1. General Requirements

The Contractor must have in place, maintain and consistently apply until Final Completion, the Management Plans and associated Sub Plans nominated in the Contract and as referenced in Table 1 Annexure D. The Contract Management Plan (CMP) will act as a single framework document for the Management Plans such that it contains within it a series of Sub Plans. The Contractor’s Activities must be in accordance with the CMP and its associated Management Plans. Each Management Plan must address the items below as well as any specific requirements described in the Contract, including the Reference Documents and MRs.

- (a) **Objectives:** The objectives that the Management Plan seeks to address and the processes that will be used by the Contractor to verify whether the Contractor’s Activities and the Works are achieving those objectives. The nominated objectives must be based on the objectives listed in the Contract including the SWTC and its Appendices.
- (b) **Requirements:** The requirements, procedures and processes for the management and implementation of the relevant Management Plan and how those will be delivered, including addressing the requirements of the Contract, Authority Approvals, Laws, Codes and Standards, programs, agreements and proposed agreements, drawings and reports.
- (c) **Policies, procedures and processes:** Policies, procedures and processes for the management and implementation of the relevant Management Plan.
- (d) **Roles and responsibilities:** The allocation of personnel roles, responsibilities and delegation of authority, including the division within and between the Contractor and Subcontractors.

- (e) **Deliverables:** The various relevant Contract deliverables, including all Documents, reports and certificates and the outputs of the management process and procedures are to be detailed. The Management Plan must demonstrate how the requirements will be achieved.
- (f) **Documents/references:** Selected documents that are of ongoing importance for reference or monitoring, such as the development consent conditions. Where such documents are to be updated or are not immediately available, this should be noted in the Management Plan.
- (g) **Records:** A description of how the records of compliance, decisions and assumptions will be maintained.
- (h) **Timing:** An identification and integration of the timing for key milestones and targets.
- (i) **Assurance auditing:** Procedures for surveillance, self-checking and audit by the Contractor to confirm compliance of the Contractor's Activities with the requirements of the Management Plan and the Contract, and the effectiveness of the Contractor's management systems.

2.2. Relationship with Planning Approvals

To the extent that a Management Plan must be produced by the Contractor, under a Planning Approval, that Management Plan must be submitted in accordance with that Planning Approval. Where this MR-PA (or one of the Reference Documents) requires the same Management Plan to be produced, the Principal's Representative may, where requested by the Contractor, agree that a single, combined Management Plan be provided by the Contractor which is compliant with all of the relevant Contract requirements.

2.3. Submission

The timing for the submission of the Management Plans to the Principal's Representative for review in accordance with the requirements of the Contract is nominated in Annexure D of this MR-PA. All Management Plans must be submitted by the date nominated in Annexure D.

2.4. Updating Management Plans

The Management Plans must be progressively reviewed, monitored, amended and updated. The Contractor's reviews of the Management Plans must regularly reassess their applicability, suitability and effectiveness for managing the Contractor's Activities. As a minimum, the Management Plans must be updated every 6 months. Each update of the Management Plans must be submitted to the Principal's Representative for review, in accordance with the Contract.

3. Management Plan Content

3.1. Contract Management Plan

- (a) The CMP is the Contractor's overarching project Management Plan that describes all other Management Plans including any Sub Plans and management systems that the Contractor is required to develop under the Contract. The CMP must provide a framework to bring together all the management requirements for the Contractor's Activities into one coordinated and integrated management system.
- (b) The CMP must inform and direct personnel and others engaged by the Contractor about the specific work practices, resources, sequence of activities, controls and

checks that are to be implemented during the performance of the Contractor's Activities.

- (c) The CMP must:
- (i) explain in a systematic, coordinated and integrated structure the management method for performing the Contractor's Activities;
 - (ii) define responsibilities, resources and processes for planning and performing the Contractor's Activities;
 - (iii) define responsibilities, resources and processes for verifying that the Contractor's Activities meet the requirements of the Contract;
 - (iv) cover all the specific management systems, Management Plans and Documents required for the performance of the Contractor's Activities and to meet the requirements of the Contract;
 - (v) cross reference each Management Plan required to be developed by the Contractor, through the use of a matrix or equivalent, listing its compliance with the relevant Contract requirements;
 - (vi) identify the responsible person for developing and updating the CMP and any other Management Plan;
 - (vii) describe how the Contractor will interface with the Principal's Representative to enable specific knowledge and experience of the Principal to be utilised in the development of the Management Plans;
 - (viii) describe how the Contractor will comply with all Laws, Codes and Standards and requirements, applicable to the Contractor's Activities;
 - (ix) document the interface between the Management Plans and the Contractor's corporate systems as applicable under the Contract; and
 - (x) explain the alignment of the operating processes of the Contractor, Subcontractors and the Principal's Representative; and
 - (xi) incorporate a surveillance schedule in accordance with clause 9.1 of this MR-PA as well as an audit schedule and procedures for proactively managing auditing requirements consistent with the TfNSW Audit and Compliance Standard SM QM-ST-202 and clause 9 of this MR-PA.

3.2. Construction and Site Management Plan

The Construction and Site Management Plan must describe the procedures and processes that the Contractor will undertake to plan and execute the Works, and must:

- (a) detail how the Contractor will comply with its obligations under the Contract in relation to the control, establishment, security, use and rehabilitation of the Site including the arrangements to provide access to, within and through the Site for the Principal, Interface Contractors, Other Contractors, Operator, Existing Operators and any other person nominated by the Principal's Representative;
- (b) determine effective construction staging that will ensure that Station and rail operations and the associated transport facilities' operational requirements are maintained and impact to these operations is minimised and managed accordingly during construction of the Works and Temporary Works;
- (c) describe the processes to ensure the compatibility of any necessary Temporary Works with each other and with the Works;

- (d) where the Works includes tunnelling, detail specific measures in relation to construction practices to maintain safety during tunnelling works in accordance with requirements of WHS Legislation, Codes of Practice and Australian Standards and the tunnelling section of the Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221;
- (e) describe procedures to ensure the prompt identification and recording of Defects, and for the rectification of those Defects and the verification of the results;
- (f) describe procedures for the Contractor's mobilisation and demobilisation to carry out the Contractor's Activities, including mobilisation and demobilisation of personnel, Construction Plant and equipment;
- (g) address the Contractor's processes and procedures for the management of quality in accordance with the requirements of clause 8 of this MR-PA;
- (h) address the Contractor's management of time-related facets of the Contractor's Activities, including the production and update of the Contractor's Program;
- (i) refer to any associated Management Plans and Sub Plans required under the Contract;
- (j) address the management of interfaces with all Authorities, Interface Contractors, Other Contractors, Operator, Existing Operators, and other Stakeholders including:
 - (i) communication channels, processes for ensuring efficient information flow, communication protocols and meeting schedules;
 - (ii) sequencing and timing of activities with the interfaces, including special programs;
 - (iii) programming of works and communications to be conducted in conjunction with operations by others such as, for example, Track Possessions, Non Track Possessions, shutdowns or Milestones;
 - (iv) roles and responsibilities of personnel and organisations for key aspects of the interface;
 - (v) technical and program requirements;
 - (vi) work implications and applicable construction methodologies;
 - (vii) review of work methods, processes and impacts on operations and services (for example timetables, etc.);
 - (viii) outline an incident reporting procedure and crisis management procedures with reference to the Contract, including MR-S, MR-E and MR-C unless otherwise contained within another separate Sub Plan; and
- (k) described the interface with other relevant Management Plans.

3.3. Demolition Management Plan

Where the Works involve Demolition, the Contractor must have a Demolition Management Plan, which must:

- (a) describe the procedures and processes that the Contractor will undertake to plan and execute the Contractor's Activities;
- (b) reflect the requirements of the SWTC;

- (c) detail what monitoring requirements are to be implemented, if any, prior to the demolition works commencing;
- (d) detail, if required, what engineering analysis will be implemented to predict the effects of the proposed demolition works;
- (e) detail how the Contractor will comply with its obligations under the Contract in relation to the control, establishment, security, use and rehabilitation of the Site including the arrangements to provide access to, within and through the Site for the Principal, Other Contractors and any other person nominated by the Principal;
- (f) describe procedures for the preparation and implementation of plans and Safe Work Method Statements before the start of related demolition work;
- (g) describe procedures for the management of Subcontractors and their plans and Safe Work Method Statements;
- (h) describe the processes for the preparation and certification of designs for Temporary Works and demolition methodology;
- (i) describe the processes during the demolition process to ensure the Temporary Works are constructed according to their design;
- (j) describe procedures to ensure the prompt identification and recording of Defects, including process for the rectification of those Defects;
- (k) include structured and verifiable processes for monitoring and ensuring compliance of the Contractor's Activities with the requirements of the Contract, as well as include structured and verifiable processes for the rectification of any non-conformances;
- (l) describe procedures for the Contractor's mobilisation and demobilisation to carry out the Contractor's Activities, including mobilisation and demobilisation of personnel, Construction Plant and equipment and closeout of Stakeholder communications;
- (m) address the Contractor's management of time related facets of the Contractor's Activities, including the production, subsequent and monthly updates of the Contractor's Program;
- (n) address the Contractor's processes and procedures for the management of Stakeholder and community liaison requirements in accordance with MR-C;
- (o) address the requirements of AS 2601 Demolition of Structures and the Demolition Code of Practice;
- (p) describe the Contractor's Quality Management System including the preparation of inspection and test plans (ITPs) and the method for the release of Hold Points;
- (q) address the management of interfaces with all Authorities and Other Contractors including:
 - (i) communication channels, processes for ensuring efficient information flow, communication protocols and meeting schedules;
 - (ii) sequencing and timing of activities with the interfaces, including special programs;
 - (iii) roles and responsibilities of personnel and organisations for key aspects of the interface;
- (r) outline incident reporting and crisis management procedures with reference to the Contract, including the MRs;

- (s) include in its appendices, each demolition methodology and the requirement to submit each demolition methodology to the Principal's Representative for review in accordance with the Contract. In addition, each demolition methodology must include the following:
- (i) drawings showing the site establishment including the location of hoardings, scaffolding, entry to and egress from the Site, traffic controls, vehicle movements and major equipment;
 - (ii) drawings showing the staging of the demolition from site establishment through to Completion, including works adjacent to adjoining properties;
 - (iii) each demolition methodology to be deployed including equipment to be deployed and sequence of removal of demolished materials;
 - (iv) scope and methodology for the removal and/or diversion of utilities;
 - (v) methodology for treatment of contamination;
 - (vi) proposed hours of work;
 - (vii) local barriers to shield high noise impacts;
 - (viii) all monitoring as required by the Contract;
 - (ix) details of unrestricted demolition licence and SafeWork NSW approved unrestricted demolition supervisors for each Site;
 - (x) practices to maintain safety during demolition in accordance with requirements of WHS Legislation;
 - (xi) measures to mitigate noise and vibration impacts to adjacent and surrounding properties in compliance with the Contract;
 - (xii) measures to mitigate dust and other environmental impacts in accordance with the Contract;
 - (xiii) input from and certification by a Structural Engineer or other such persons appointed in a similar certification or independent role; and

3.4. describe the interface with other relevant Management Plans. Interface Management Plan

The Contractor must have an Interface Management Plan (IMP) to describe its responsibility in undertaking co-ordination with Other Contractors, Interface Contractors and all interfacing parties to ensure the design construction, testing and Commissioning of the Works are fully integrated. The IMP must:

- (a) nominate an interface representative to provide a single point of contact for all interfaces and interface management issues relating to design development;
- (b) describe the procedures in place to effectively manage the interfaces during delivery of the Works;
- (c) describe the processes to be implemented to permit access by Interface Contractors to work sites;
- (d) outline what temporary measures will be introduced to minimise damage to completed works;
- (e) describe the arrangements for interface management meetings and recording of the meeting minutes;

- (f) demonstrate compliance with the development of the design in accordance with MR-T;
- (g) reflect the requirements and processes to be implemented in relation to the management of the design interface as contemplated by MR-T;
- (h) demonstrate compliance with Rail Safety National Law, MR-S and the Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221 in relation to safety interface management;
- (i) list the interface parties the Contractor will consult with;
- (j) provide a schedule which defines the various interfaces, demarcation, the scope of the Works relevant to that interface, the parties and their roles and key milestones;
- (k) describe the processes to be used to consult with the various Stakeholders at each interface during the Design Stages, construction, testing and Commissioning, Operational Readiness and Asset Handover for both Milestones and Portions;
- (l) include a schedule describing the information, and its required date from Other Contractors, Interface Contractors, Existing Operators, the Operator and all other interfacing parties nominated by the Principal's Representative;
- (m) include the requirements of clause 12.2 of the table in Annexure B, MR-S;
- (n) describe the interface with other Management Plans;
- (o) include as a Sub Plan, an Interface Testing and Commissioning Management Plan which describes the management of activities during the construction and proving phase of delivery to ensure that the Works will correctly interface with the Interface Works. The Sub Plan must include the following:
 - (i) the strategy for testing and Commissioning interfaces, with tests between two interfacing parts of the Works and Interface Works being carried out to validate the functionality of the functions between the two interfacing systems. These will cover all interface functions specified in the IRS;
 - (ii) the roles and responsibilities of the Contractor and other Stakeholders involved in the testing and Commissioning process;
 - (iii) a schedule, to be updated as required to ensure it is current, which describes the responsibility of the Contractor and Others as either "leading", or "supporting" in relation to testing and Commissioning for each of the separate systems to be tested;
 - (iv) details of the individual interface tests specified in the ITS and DITP (referenced in MR-T) that will be carried out prior to the systems integration tests, including off-site, factory tests between two interfacing systems at system protocol and communication level before the respective system design is finalised and developed;
 - (v) details of the interface functions involving software development that will be verified with an Off-site Software Proving Platform (SPP), detailing the acceptance criteria of the functional and performance tests which must be agreed with the interfacing parties, prior to the testing;
 - (vi) details of any interface testing meetings that the Contractor has been requested to attend. The Contractor must attend all meetings whenever requested by the Principal's Representative;

- (vii) contain a section relating only to the testing and Commissioning of the Metro Station Works, reflecting clause 12 and Annexure C of this MR-PA which includes the following subsections and content:
- A. a schedule of tests of each system and individual component;
 - B. a schedule of Commissioning activities of each piece of equipment and system in that component of the Works, reflecting the relevant stages outlined in Annexure C;
 - C. a detailed program which includes information of testing and Commissioning activities, their sequence, start and completion dates, testing and Commissioning duration and float time;
 - D. testing and Commissioning procedures;
 - E. step-by-step testing details;
 - F. check list, test forms, method statements, set up details, test equipment and instruments with calibration certificates and details;
 - G. step-by-step Commissioning procedures and the system parameters, settings, time delays to be set for normal operation;
 - H. the scope, objectives, methodology, pre-requisites, strategy, sequencing and acceptance criteria of all testing and Commissioning works;
 - I. design data and acceptance criteria;
 - J. Codes and Standards to be followed;
 - K. details of the certification and approvals to be provided; and
 - L. details of the inclusion of data sheets which must be provided for all test equipment to be used indicating the manufacturers' name, model number and serial number, the last date of calibration, the date of next calibration, correction factors and the base standards to which it is manufactured.
- (p) A section relating only to the testing and Commissioning of the Central Station Works and Central Walk Works, reflecting clause 12 and Annexure C of this MR-PA which includes the subsections and content detailed in clause 3.4 (o) (vii) A to L. above.

3.5. Workplace Relations Management Plan

A Workplace Relations Management Plan is required to be provided and implemented by the Contractor pursuant to the NSW Implementation Guidelines to the New South Wales Code of Practice for Procurement: Building and Construction

http://www.industrialrelations.nsw.gov.au/biz_res/oirwww/pdfs/WRMP.pdf

3.6. Risk Management Plan

A Risk Management Plan is required to detail the Contractor's approach and management of risk. The Risk Management Plan must include:

- (a) an outline of the framework and approach for developing, utilising, and maintaining a risk register capable of supporting effective risk management and reporting risk information;

- (b) the management of risks applicable to the undertaking all of the Contractor's Activities;
- (c) details of the Contractor's approach to risk management, its risk framework, processes and internal controls to manage risks in accordance with ISO 31000 - Risk Management Guidelines and Principles and the Sydney Metro Risk Management Standard SM RM-ST-201;
- (d) processes and procedures for the systematic identification, assessment, treatment and management of hazards and risks;
- (e) details on how the Contractor will embed risk management through the Supply Chain and into the various functions, procedures and activities necessary to achieve optimal risk management outcomes;
- (f) details on how the Contractor's decision making processes and risk management systems are aligned;
- (g) details of the Contractor's organisational structure that identifies risk management roles, responsibilities, and accountabilities, and the expertise and training required to perform such roles;
- (h) the consultation processes employed by the Contractor in relation to identified risks and the personnel involved in the consultation process;
- (i) the means to identify and quantify risk situations as they emerge and to initiate corrective action immediately, regardless of the timing relative to planned risk management process reviews;
- (j) details of key CSM Project timeframes and milestones where the Contractor will undertake risk workshops and meetings, including joint risk workshops with the Principal, to identify and, or review risks that update the Contractor's risk register;
- (k) the process that assigns, to an individual in the Contractor's management team, ownership of:
 - (i) each risk (including threat and opportunity events);
 - (ii) each control measure to manage threats and opportunities; and
 - (iii) each task (being a planned action and associated milestone to improve or enable effective controls).
- (l) details on the timing and scope of the Contractor's internal and external risk review processes, compliance, and audit related activities, including methods used to ensure that risk control measures and tasks are on schedule and effective;
- (m) risk criteria and a risk matrix that are appropriate for the Contractor's Activities;
- (n) details of how a risk register will be used as a tool to manage risks related to the delivery of the Contractor's Activities, and a template of the Contractor's proposed risk register;
- (o) details of internal and external reporting of risks and risk management;
- (p) a process and methodology for the management of any risks that are identified by the Principal, and for the inclusion of any such risks in the Contractor's risk register, as well as details of any specific measures the Contractor will adopt to minimise risks to the Stakeholders;
- (q) details on how the Risk Management Plan will be implemented;
- (r) details how the risks identified under the Risk Management Plan and its processes are integrated and managed with the other Management Plans;

- (s) performance criteria for the Risk Management Plan and processes to report on their results in the Contractor's Monthly Report, described in clause 7 of this MR-PA;
- (t) processes and procedures to show how the requirements of clause 4 of this MR-PA will be implemented; and
- (u) a description of the interfaces with other Management Plans.

3.7. Quality Plan

- (a) A Quality Plan is required to detail the Contractor's approach and management quality assurance and control.
- (b) The Quality Plan must be a Contract-specific Management Plan which defines the procedures and other management controls which will be utilised to ensure compliance with the Contract.
- (c) The Contract must reflect the Contractors "AS/NZS ISO 9001" certified quality management system.

3.8. Operations Configuration Change Management Plan

- (a) During the Works, the operation of the Station will be impacted by the Contractor's Activities, which must be managed to ensure that any Operational Change does not interfere or negatively impact the continuous, uninterrupted station operations.
- (b) The Contractor must establish and lead an Operations Change Management Working Group (OCMWG) consisting of the Contractor, Principal, Existing Operators, Other Contractors and other Stakeholders, including local business owners, council and property owners, as agreed with the Principal's Representative. The OCMWG will be the forum for the Contractor to coordinate activities with Stakeholders across multiple interfaces in regards to Operational Changes.
- (c) The Contractor must coordinate the activities of the OCMWG, to ensure the continuous, uninterrupted operation of the Station and related rail network facilities, during each Operational Change whilst the Works and Contractors Activities proceed.
- (d) The Contractor must attend and interface with the Sydney Trains SPOIAG meetings as further defined in the SWTC.
- (e) The Contractor must develop and implement an Operations Configuration Change Management Plan (OCCMP) that includes the processes to ensure that adequate planning occurs prior to any Operational Change and that sufficient consultation, coordination, and resources are available for the required implementation of the OCCMP.
- (f) The OCCMP must include:
 - (i) a schedule (which must be updated as required) which shows occasions when it is anticipated that Operational Changes will occur, including details of the scope and key dates;
 - (ii) the processes and documents to be developed to plan and consult with necessary parties on the Operational Changes, including:
 - A. Sydney Trains;
 - B. NSW Trains;
 - C. NSW Police;
 - D. Federal Police;

- E. NSW Fire Brigade; and
 - F. Business owners.
- (iii) Reference to SWTC's requirements for "Pedestrian management during construction";
 - (iv) the steps, and timescales involved to manage Operational Changes, from the trigger point, through planning and consultation to implementation;
 - (v) a clear description of the trigger points in the Contractor's Activities, which will be used as the commencement of the planning and implementation processes;
 - (vi) the process for documenting, review and approval of both the OCCMP as well as the Documents required to be produced for each Operational Change;
 - (vii) the communications requirements, referencing the Community Communications Strategy in clause 3.9;
 - (viii) the requirements for operational staff training;
 - (ix) continued compliance with the requirements of the Environmental Documents, and all other approvals required under Law and the Contract;
 - (x) a pre-operational checklist, listing the activities and responsible party within the OCMWG which must occur prior to implementing any Operational Changes;
 - (xi) emergency response procedures and evacuation plans;
 - (xii) a Customer Management Sub Plan which describes the management of public movements and how they will be accommodated during the various stages of the Contractor's Activities. The Customer Management Sub Plan must include the following items or process and procedures detailing how and when these items will be addressed in the delivery of the Works:
 - A. procedures and processes detailing how the uninterrupted continuous operation of the Station, including transport services and the movement of customers, through the Station and its environs will be effectively managed throughout the duration of the Contract;
 - B. staging drawings showing, as a minimum, the layout of public areas, including facilities provided for operational staff and patrons and systems drawings at each stage of the Contractor's Activities;
 - C. drawings showing the proposed arrangement of the customer facilities clearly showing the position of hoardings, safe access and provisions for interchange. Clearances and free area of platforms and the like must be clearly documented. Fruin Level of Service diagrams must accompany the drawings and must indicate the level of service for the proposed arrangement;
 - D. drawings showing proposed arrangement of signage covering existing signage and new temporary signage. Details must include location, size and wording of temporary and permanent way finding signage and proposed modification to any existing signage;
 - E. drawings showing proposed arrangement of customer information panels including temporary relocations and modifications;
 - F. a program clearly indicating when existing configurations will be changed and proposed period of change;

- G. controlled Site access points;
 - H. details of emergency egress arrangements;
 - I. delineation lines and material to be used for delineation;
 - J. access point(s) from public modes of transport and general ingress and egress points;
 - K. identification of accommodation of level changes via ramps, stairs, and other means;
 - L. details of how the Contractor will comply with the requirements to install signage and delineation to clearly communicate to the public and others routes to safely and easily navigate around or through the Site; details of arrangements for the accommodation of public during the Principal Arranged Events, and Public Events described in MR-C;
- (xiii) details of the consultation that has been carried out with Sydney Trains and other Stakeholders nominated by the Principal's Representative during the development of this Management Plan, including the requirement to demonstrate that all Stakeholders comments have been addressed;
 - (xiv) references to, and be consistent with the Principal Contractor's Handover Process SMPS-PW-318 document; and
- (g) describe the interface with other Management Plans.

3.9. Community Communications Strategy

The Contractor must have Community Communications Strategy (CCS), which must reflect the requirements of MR-C and:

- (a) include policies, processes and procedures for Stakeholder and community relations and proactive communications management;
- (b) fulfil the requirements of any conditions of the Environmental Documents;
- (c) be reviewed every six months and undertake the ongoing development, amendment and updating of the CCS throughout the duration of the Contractor's Activities including to take into account:
 - (i) changes in the design and construction program;
 - (ii) changes in Stakeholder and community needs; and
 - (iii) changes in the Contractor's Activities and Stakeholder and community information requirements.
- (d) include the following:
 - (i) include a Business Management Sub Plan to ensure the impacts on businesses affected by the Contractor's Activities are minimised;
 - (ii) a Customer Disruption Sub Plan to outline major customer impacts and the communications response to be delivered in collaboration with Sydney Trains and the Sydney Coordination Office, to ensure the impacts on customers affected by the Contractor's Activities are minimised;
- (e) identify how the Contractor will comply with the Stakeholder and community relation requirements of the Contract;

- (f) address and detail the Stakeholder and community liaison management team structure, including key personnel, authority and roles of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the Contractor's overall CSM Project organisation structure;
- (g) detail strategies for the management of community liaison issues, dealing with all Stakeholders and mitigating impacts;
- (h) include specific key messages that will be used in Public Communications Materials and when responding to enquiries and complaints;
- (i) provide details of the development and implementation of communication and consultation tools, including community-based forums;
- (j) detail processes and procedures, for:
 - (i) the management of the interface between the Contractor and the Principal's Representative;
 - (ii) reporting;
 - (iii) developing Public Communication Materials;
 - (iv) community and Stakeholder consultation and timeframes for undertaking this consultation;
 - (v) handling complaints and enquiries;
 - (vi) handling of media and government enquiries;
 - (vii) incident and crisis communication management and reporting;
 - (viii) monitoring and evaluation; and
 - (ix) ensuring Subcontractors comply with the communications requirements of the Contract.
- (k) include Stakeholder and community liaison site induction information to be provided to Staff and Subcontractors;
- (l) include analysis of other major projects and influences around the Site with the potential to result in cumulative impacts to the community and strategies for managing these combined impacts;
- (m) include a comprehensive list of community liaison issues relating to the Works, the Temporary Works and the Contractor's Activities and a comprehensive list of Stakeholders and Stakeholder issues and interests;
- (n) include a detailed Project Milestone and Events Plan, as a Sub Plan including details on how the Principal's requirements for Events and Principal Events will be accommodated including, but not limited to those various events outlined in MR-C. This Sub Plan must provide details of how VIP's, media, photographers, and other Stakeholders and the public will be accommodated to ensure their safety, whilst providing the required access to view the Works and Contractor's Activities. The Sub Plan must comply with the minimum requirements of MR-C or outline alternative approaches to achieving the specified outcomes which must be approved by the Principal's Representative prior to any such events taking place;
- (o) include a program for the implementation of community liaison activities, including a framework for the development of milestone implementation plans. This program must include key dates for the commencement and conclusion of construction

- activities, associated impacts to the community and the Contractor's proposed strategy for minimising impacts and informing the community;
- (p) identify innovative programs, processes and methodologies for the Contractor to support the Principal's engagement with and support to local communities, including engagement with schools, seniors, environmental groups, sporting groups, young people, businesses and other community groups; and
 - (q) describe the interface with other Management Plans.

3.10. Procurement Plan

The Contractor must have a Procurement Plan that describes how the Contractor will manage the procurement and tendering for the engagement of Subcontractors and an assessment for self-performance to deliver the Works. The Procurement Plan must:

- (a) set the Contractor's procurement objectives and targets, addressing:
 - (i) value for money, considering the benefits achieved compared to whole-of-life costs;
 - (ii) efficiency and effectiveness;
 - (iii) probity and equity; and
 - (iv) effective competition.
- (b) document the Contractor's procurement strategy, including procedures and processes that address:
 - (i) related parties;
 - (ii) packaging of works elements;
 - (iii) applicable contracting and commercial strategies (e.g. construct only, design and construct, lump sum, schedule of rates);
 - (iv) select tender lists, single action tenders and direct negotiations;
 - (v) buy or lease decision making based on business case benefit cost analysis;
 - (vi) use of contractor performance reviews and other performance information;
 - (vii) transparency;
 - (viii) how the Contractor will ensure that Subcontracts entered into are accurately reported and monitored and do not incur expenditure above the authorised limits;
 - (ix) re-testing the market where variations submitted are substantial increases to the original budget;
 - (x) not contracting with a Prohibited Subcontractor; and
 - (xi) the practicality of forming panel(s) of pre-qualified service providers for specialised or critical activities.
- (c) include delegations for procurement strategy, release of tender invitation documentation and award of contracts;
- (d) include an asset policy detailing how the Contractor intends to manage purchases and leases, track and dispose of assets;

- (e) detail the procurement and tendering procedures, processes, constraints and tools including those regarding:
- (i) identification of procurement packages;
 - (ii) establishment and approval of Subcontracts;
 - (iii) selection of suitable tender methods and processes that suit the procurement and its level of risk, in particular ensuring sufficient tender assessment review of high value and/or high risk tenders by a tender review panel arrangement or similar;
 - (iv) selection of a suitable tender methods and processes that suit timing and avoids unnecessary costs for tenderers; and safeguards the security and confidentiality of all tenders;
 - (v) compliance with the NSW Government Code of Practice for Procurement;
 - (vi) a requirement that any proposed transaction with a related body corporate will be on market tested and on commercially reasonable arm's length terms and only negotiated and entered into with the prior agreement with the Principal's Representative;
 - (vii) preparation of Subcontractor tender documents, including:
 - A. conditions of tendering, ensuring that:
 - standard conditions in relation to NSW Government Code of Practice for Procurement are included in all tender documents;
 - same tender conditions are used for each tenderer on any particular tender process;
 - all requirements, including the criteria for tender evaluation are clearly stated; and
 - where tenderers are encouraged to submit alternative tenders which do not fully meet the prescriptive conditions of tendering, the conditions under which these alternative tenders will be considered are specified.
 - B. for construction packages:
 - technical specification and other non-price acceptance criteria;
 - package management requirements, including requirements for inspection and test plans and method statements; and
 - provisions for the operating status of the railway system.
 - (viii) pre-determining the criteria for the handling of tender submissions which do not meet conditions of tendering (including late submissions), to ensure that the integrity and competitiveness of the tendering process is not compromised;
 - (ix) confidentiality, to ensure the Contractor does not disclose tenderer information that is intellectual property, commercial-in-confidence or otherwise confidential;

- (x) the evaluation criteria that is consistent with the proposed Subcontract requirements and aims to identify the tenderer offering the best value for money with due consideration of price and non-price criteria;
- (xi) the pre-determination of evaluation criteria, weightings, and scoring systems for non-price selection criteria which is ideally set prior to request for tenders, but no later than the close of tenders;
- (xii) the evaluation of tenders which is based on conditions of tendering and evaluation criteria therein and ensures:
 - A. any tender which does not adequately comply with conditions of tender may be passed over;
 - B. tenders are evaluated by people with necessary skills and knowledge and free from any conflict of interest which may undermine the fairness process;
 - C. tenders are evaluated for non-price criteria prior to price assessment; and
 - D. where a tenderer offers an alternative tender, a tender for that alternative is not sought from other tenderers and the Contractor does not breach confidentiality by using information contained in alternative tenders as the basis for calling subsequent tenders.
- (xiii) clarification of tenders when information in a tender is open to interpretation or not clear and is material to identifying the successful tender, ensuring the clarification process does not allow a tenderer to gain unfair advantage over other tenderers or allow the tenderer to revise or enhance its original tender;
- (xiv) where none of the tenders are acceptable at the end of a competitive tendering process, conducting exhaustive tender negotiations with the most acceptable tender (based on the evaluation criteria) with the aim to achieve a tender that is mutually acceptable;
- (xv) prohibition of "bid shopping";
- (xvi) debriefing of tenderers, on request whose tenders were not accepted, on request, explaining how their tender performed against the evaluation criteria (rather than against the successful tender), with the objective of assisting them to improve future tenders; and
- (xvii) complete contractor and supplier performance reviews which assesses their performance in a transparent manner to inform future tender assessments.
- (f) describe the standard forms of contract to be used for subcontracting engagements, supply agreements, minor, medium and major Subcontract works, which need to be clearly communicated, well understood and approved by the Principal's Representative;
- (g) provide details of how the Contractor will submit these forms of contract to the Principal's Representative for approval in accordance with the Contract, during the early phase of the Contract to enable timely review and approval of these forms of contract;
- (h) provide details of how the Contractor will highlight those items of particular interest to the Principal when seeking approvals, such as:

- (i) limitations to liability;
- (ii) insurance arrangements;
- (iii) performance obligations;
- (iv) liquidated damages;
- (v) dispute resolution;
- (vi) any proposed incentives in any of those contracting arrangements;
- (vii) other subcontracting requirements as set out in the Contract; and

- (i) describe the interface with other Management Plans.

3.11. Cost Management Plan

The Contractor must have a Cost Management Plan (separate to any other Cost Plan required in the General Conditions) describing the Contractor's approach, processes, governance and procedures to develop and establish transparent and robust cost management. The Cost Management Plan must include:

- (a) an overview of the cost management system;
- (b) how the contractor will manage costs following approval of the Target Cost including details of the:
 - (i) cost breakdown structure;
 - (ii) cost control structure;
 - (iii) accountabilities for cost control;
 - (iv) delegations for cost commitments, payments and contingency drawdown;
 - (v) processes for certification of hours worked and goods and materials received;
 - (vi) management of budget, budget establishment, budget allocation and budget reallocation;
 - (vii) management and reporting of rates based budgets for materials and plant hire;
 - (viii) management and reporting of budget variations;
 - (ix) management and reporting of Subcontractor and supplier variations, claims and disputes;
 - (x) management of contingency; and
 - (xi) linking budget line items into schedule activities for accurate cash flow projections.
- (c) variance monthly reporting, outlining the method for determining actual cost to date, accruals, Earned Value to date, budget to date, forecast cost at completion, and forecast budget at completion;
- (d) details on the proposed packaging of Subcontracts including;

- (i) a cost analysis of each part of the Reimbursable Work, including a detailed breakup by reference to each separate Subcontract package of costs for construction and Commissioning which must set a budget (including a contingency) for each Subcontract package;
- (ii) cashflow requirements of the Contract; and
- (iii) a reconciliation of each of the elements of the budget against the Target Cost.
- (e) any other cost related detail nominated by the Principal's Representative; and
- (f) a description of the interfaces with other Management Plans.

3.12. Workforce Development & Industry Participation Plan

The Contractor must develop, implement and maintain a Workforce Development & Industry Participation Plan that includes:

- (a) details of how the Contractor will comply with the requirements of the MR-W;
- (b) the Workforce Development and Industry Participation team structure, including roles and responsibilities of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the Contractor's overall organisation structure;
- (c) as an annexure to the plan, an initial baseline forecast of Workforce Development & Industry Participation needs using the following Reference Documents:
 - (i) Workforce Profile and Gap Plan Template SM ES-FT-435;
 - (ii) Workforce Development Output Delivery Profile Template SM ES-FT-435;
 - (iii) Training Needs Analysis SM ES-FT-432; and
 - (iv) the Sydney Metro Industry Curriculum Guide SM ES-FT-433.
- (d) an outline of the systems and processes that will be used to support the management of Workforce Development and Industry Participation;
- (e) a list of education and training providers, employer services providers or other organisations involved in the delivery of the workforce development and industry participation activities;
- (f) types of nationally recognised and accredited training offered and the main beneficiaries of the training;
- (g) a description of the strategies to be undertaken to obtain funding, subsidies and grants in regards workforce development and programs;
- (h) a description of the main occupational areas offering potential Apprentice and Trainee opportunities;
- (i) details of the employment status of Apprentices and Trainees stating whether they are either directly employed, sourced via a Group Training Organisation or similar body;
- (j) strategies to support the employment of diversity and inclusion groups including those specified in MR-W;
- (k) strategies for engagement with local community groups, diversity and inclusion representatives and other organisations to maximise employment opportunities;
- (l) strategies to support an increase in the number of Women in senior leadership and management roles;

- (m) strategies to assess Local sourcing options to support Local and ANZ SME diversity;
- (n) the approach to sustainable procurement including:
 - (i) the approach for support of ANZ SMEs;
 - (ii) the approach for support of Recognised Aboriginal Businesses;
 - (iii) actions to be taken to ensure the support of Subcontractors;
 - (iv) how Subcontractors' performance and compliance will be managed; and
- (o) the interfaces with other Management Plans.

3.13. Aboriginal Participation Plan

The Contractor must develop, maintain and implement an Aboriginal Participation Plan, which identifies:

- (a) roles and responsibility for key personnel, lines of communication and minimum skill levels for each role in relation to the management of Aboriginal participation;
- (b) an outline of the systems that will be used to support the management of Aboriginal participation;
- (c) strategies for ongoing engagement with Local Aboriginal community groups, employment & training providers or other organisations to maximise education, training, employment or other related opportunities;
- (d) plans for participation in Aboriginal cultural celebration activities i.e. NAIDOC, Reconciliation week;
- (e) details of how the requirements of MR-W will be applied to Subcontractors and other suppliers;
- (f) methodologies and details of programs to increase the participation of Aboriginal People including:
 - (i) mentoring programs that contribute to the engagement and retention of Aboriginal People in the workforce;
 - (ii) work experience placements for Aboriginal People who are students or jobseekers;
 - (iii) Aboriginal Apprentice & Trainee opportunities;
 - (iv) education & training to provide opportunities for Upskilling of Aboriginal People in the Workforce;
 - (v) Cultural Awareness Training;
 - (vi) engagement & capacity building of Recognised Aboriginal Businesses; and
 - (vii) as an annexure to the plan, a baseline forecast of the Aboriginal People in the Workforce and business engagement using the Workforce Development Output Delivery Profile Template SM ES-FT-435.
- (g) the interfaces with other Management Plans.

3.14. Training Management Plan

The Training Management Plan must describe the Contractor's training policy and the training management guidelines. Where agreed by the Principal's Representative, the TMP may be combined with, or form a Sub Plan of the Project Training Plan required in the General Conditions, and must;

- (a) describe arrangements for managing the competence of staff, including the plans, processes, tools and methods for:
 - (i) identifying professional development and training needs, considering:
 - A. prior learning and experience as a valid basis for competence development.
 - B. training requirements and procedures with law enforcement agencies, other emergency service providers and with other relevant transport providers.
 - (ii) identifying potential skill shortages and gaps and how they might be addressed;
 - (iii) planning, implementation and recording of relevant professional development and training activities to enhance the knowledge and skills of staff, and the organisation as a whole;
 - (iv) periodic assessments of staff competence;
 - (v) certification processes, including those required for staff undertaking systems assurance activities, testing and Verification activities, and rail safety work as defined in the Rail Safety National Law; and
 - (vi) establishing and maintaining competence records and a register of staff, containing appropriate and timely information about all competence aspects of staff, including certification.
- (b) include a schedule of training;
- (c) provide a detailed description of the training facilities;
- (d) include competence assessment programs and periodic proficiency testing by job function;
- (e) include details on safety training and the competency requirements defined in MR-S and the Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221;
- (f) include a description of course content and training materials, a list of training syllabi, presentations and special tools or equipment;
- (g) provide a description of how quality of teaching, training and assessment will be evaluated, including training program development and delivery, trainer and assessor competence, resourcing and measurements of learner outcomes;
- (h) outline the arrangements to maintain competence management records that contain appropriate and timely information about all competence aspects of a candidate; and
- (i) describe the interfaces with other Management Plans.

3.15. Defects Management Plan

The Contractor must have a Defects Management Plan which describes the process of identification and rectification of Defects, addressing the Contractor's obligations and responsibilities relating to the management of Defects and must:

- (a) clearly specify the strategy for managing the rectification of any Defects raised;
- (b) articulate the role of the Principal's Representative and Independent Certifier in relation to Defects;
- (c) reflect the obligations of the Contract in relation to all kinds of Defects;
- (d) describe the software application used to record and track the status of Defects;
- (e) identify, wherever a non-conformance is proposed in relation to the rectification of a Defect, how the Contractor will submit a "Defect rectification methodology" including analysis to support the proposal in relation to the durability, whole of life performance, environment and sustainability performance, functional performance and safety to both the Principal's Representative and the Independent Certifier for review in accordance with the Contract;
- (f) include a procedure for pre Asset Handover inspections and recording of Defects and clearing required Defects ahead of Asset Handovers in relation to the Construction Completion and Completion of Portions as well as Milestones;
- (g) include a procedure for rectification of remaining Defects where Construction Completion or completion of a Milestone has occurred; and
- (h) describe the interfaces with other Management Plans.

3.16. Property Management Plan

The Contractor must have a Property Management Plan (PMP) describing the procedures and processes the Contractor will implement to manage property issues and to minimise, detect, assess, mitigate and rectify damage to property caused by or as a result of the Contractor's Activities. The PMP must:

- (a) describe the management of risk and its mitigation;
- (b) describe the processes for carrying out and managing all condition surveys;
- (c) describe the processes for monitoring and managing property damage;
- (d) describe processes for managing Stakeholders, impacted adjoining land and assets;
- (e) describe the damage mechanisms, including trials of construction procedures and methods to help assess the risk of property damage;
- (f) include noise, vibration and settlement limits that will prevent the damage of existing property and items by the Contractor's Activities and the need to transfer these criteria into method statements and inspection and test plans to ensure that any Contractor's Activities are within the above limits and minimise damage risks. The plan must include procedures for the review of, and change to, construction methodologies to minimise or prevent damage;
- (g) contain a list of properties with the potential to be detrimentally or negatively affected by the Contractor's Activities;
- (h) contain a list of the properties and assets which will be subject to a condition survey by the Contractor;

- (i) include a clear statement that all Contractors' Activities causing any damage will cease until the construction methodology is reviewed and damage rectification agreed with the property owner and the Principal's Representative;
- (j) set out the Contractor's procedures for communicating with property owners and for managing property damage claims including the means of providing routine and regular advice to property owners and occupiers about the Contractor's Activities in close proximity to and with the potential to detrimentally or negatively affect their property;
- (k) describe processes for receipt and recording of reports of and claims relating to damage thought to be associated with the Contractor's Activities, the Temporary Works and the Works;
- (l) include in the property condition survey section of the PMP, descriptions of the Contractor's proposed approach to performing condition surveys. The PMP must as a minimum:
 - (i) set out the minimum standards of pre-construction and post-construction condition surveys;
 - (ii) include a procedure for the use of an independent third party to ensure compliance against the minimum standard of condition surveys; and
 - (iii) describe how the Contractor will minimise disruption to property owners and occupiers by completing single condition surveys in agreement with Other Contractors and Subcontractors; and
- (m) describe the interfaces with other Management Plans.

3.17. Engineering Management Plan

The Contractor must have an Engineering Management Plan (EMP) which must describe the approved AEO engineering management processes and controls which will be applied to the specific requirements of this Contract in order to develop a compliant design. The EMP must address the Works and Temporary Works, reflect the requirements included in MR-T and must:

- (a) describe the Contractors design team organisation diagram naming all personnel and their parent companies;
- (b) describe the design personnel roles and responsibilities, and lines of reporting;
- (c) include a staff competence assessment register;
- (d) describe how staff competence will be managed over the life of the Contract;
- (e) include a matrix demonstrating how the AEO structure covers the full scope of the Works and Temporary Works;
- (f) include details of how the ASA Requirements and other relevant Codes and Standards will be met;
- (g) describe how the Interface Coordination Team, described in MR-T will manage the coordination of the design development;
- (h) include the proposed design package structure, including number of packages and associated description/naming and a milestone program for staged submission;
- (i) include a list of the Customer Facing Design Packages, which has been agreed with the Principal's Representative;

- (j) include procedures relating to the management of staged design development and submission internal Validation and Verification prior to submission as well as external design reviews;
- (k) identify and quantify specialist reports required to meet the requirements of the design, key Stakeholders and authorities;
- (l) provide details of the management of the design development to accommodate the interface requirements described in MR-T;
- (m) provide details of the design control procedures to be implemented to ensure compliance with the requirements of the SWTC , MR-T, MR-S and WHS Guidelines are achieved during delivery of the design;
- (n) provide details on how the Contractor will ensure that the engineering, architectural and rail systems designs are integrated and work together and that potential clashes with new and existing infrastructure are identified and resolved during the design;
- (o) provide details on how the Contractor will ensure that any updates of the Codes and Standards will be addressed during the design development;
- (p) provide details of how the Contractor will coordinate and accommodate design reviews and acceptance requirements, as outlined in MR-T. Include adequately addressing and closing Stakeholders comments prior to the submission of design packages;
- (q) provide details of how the Contractor will manage complex Temporary Works design and staging with the Principal and key Stakeholders;
- (r) include procedures regarding interaction with the Independent Certifier;
- (s) include details of the proposed configuration management;
- (t) provide details of the approved design control procedures to effectively manage and system and safety assurance;
- (u) include details of systems and process for requirements management;
- (v) include procedures for RAM management arrangements;
- (w) include details of the testing philosophy, the provision of access as well as test procedures in a section on testing, which reflects the requirements of MR-T;
- (x) include processes, methodologies and the software that will be used for the creation, management and production of digital engineering;
- (y) provide details of how the Contractor will manage the competency assessments for a large team over an extended period of time for the CSM Project;
- (z) include, as Sub Plan, a Digital Engineering Execution Plan (DEXP) and a supporting Master Information Delivery Plan (MIDP), both in accordance the Employers Information Requirements SM ES-ST-203;
- (aa) include an Asset Management Information Plan which:
 - (i) describes the processes of creation, Validation and approval of the AMI at the various stages of delivery described in MR-T and SWTC;
 - (ii) identifies the key roles and responsibilities within the Contractor's team in relation to the production of AMI, as well as the interface with the broader Stakeholder group;
 - (iii) describes how the AMI packages for each key element of the Works will be identified and packaged;

- (iv) describes how the Principal's different AMI specifications will be applied to suit the particular type of assets to which they relate, differentiating between those to be operated and maintained by Sydney Trains and those to be operated and maintained by an operator other than Sydney Trains;
 - (v) provides a standard list of content for each type of AMI package which describes how the AMI information will be collated to enable and assist ease of use to the Asset Owners and Operator/Maintainers; and
 - (vi) includes a schedule, to be agreed by the Principal's Representative, which defines the frequency and timing of the "data drops" contemplated in section 4.3 of the Employer's Information Requirements SM EM-ST-203. The data drops must reflect the nature of delivery of certain assets to their Operator/Maintainers and Asset Owners in accordance with the requirements of the Contract for Asset Handovers.
- (bb) include an Security Execution Plan Sub Plan which defines the process for embedding security into the design process and testing its outcomes;
- (cc) include a Detailed Site Survey Management Plan in accordance with Sydney Train's "Detailed Site Survey Management Plan";
- (dd) include a Customer Centred Design (CCD) Sub Plan, to define the process for embedding customer engagement through the CCD process in the overall design process, which must meet the requirements specified in the SWTC and must also include:
- (i) the proposed customer centred design methodology, for each Design Stage 1, Design Stage 2 and Design Stage 3;
 - (ii) how the application of the methodology will assure the delivery of customer outcomes;
 - (iii) a description of how customer input, feedback and Validation will be incorporated at, and between, each Design Stage;
 - (iv) how the lead team member responsible for CCD will work collaboratively with other design managers across the design process;
 - (v) how the interrelationship between product, services, systems and spaces are being addressed;
 - (vi) any change in methodology and iterations versus previous Design Stages and supporting rationale; and
 - (vii) the governance structure and decision rights to ensure CCD is embedded within the organisation and the design decision making process.
- (ee) include a Public Art Management Plan, which details how the Contractor will manage the relevant parts of the Public Art Master Plan, as defined in the SWTC;
- (ff) include an Acoustic Design Integration Plan (ADIP) as a Sub Plan that will:
- (i) encompass all aspects of design relating to the operational acoustics, noise and vibration performance of the Worksite (hereafter referred to as the "Acoustic Performance");
 - (ii) incorporate a land use report to identify the land use category and the associated construction and operational noise and vibration criteria at all existing and proposed (identified at the time of the relevant Planning Approval) sensitive receivers potentially impacted by the Works;
 - (iii) address the operating lifespan of the Works;

- (iv) identify all design packages, components and interfaces that affect the acoustic performance of the Works;
 - (v) determine how the acoustic design interfaces will be managed and coordinated; and
 - (vi) implement a risk-based approach to managing acoustic design risks.
 - (vii) ensure all relevant components of the ADIP are referred to and addressed in each design submission that relates to “Acoustic Performance”.
- (gg) include all other plans, required under the SWTC and MR-T as Sub Plans to this Engineering Management Plan, unless otherwise agreed by the Principal’s Representative; and
- (hh) describe the interfaces with other Management Plans.

3.18. Commissioning and Operational Readiness Management Plan

The Contractor must develop a Commissioning and Operational Readiness Management Plan (CORMP) which documents the procedures and management controls to be used to ensure the Commissioning, Operational Readiness and Asset Handover activities comply with the requirements of the Contract, and must contain separate sections for (i) the Metro Station Works and (ii) the Central Station Works and Central Walk Works which reflect the requirements of Annexure C and in each case:

- (a) describe the clear division of responsibility in regards the management of the processes of Commissioning, Operational Readiness and Asset Handover as described in MR-T, this MR-PA and the Contract;
- (b) detail of the Contractor’s personnel in key positions relating to the Commissioning and Operational Readiness aspects of the Works;
- (c) define the interfaces with key Stakeholders and describes their roles and responsibilities in relation to Operational Readiness and Asset Handover;
- (d) include a staging plan which provides details of the staged Commissioning Events and program of Asset Handovers;
- (e) describe the operation and maintenance changes in relation to the constructed assets as a result of the Asset Handover;
- (f) include procedures for completion and Asset Handover of the Works at Construction Completion and Completion of Portions, Milestones and other relevant occasions;
- (g) contain the process for the progressive submission of records and documentation required for Completion and Construction Completion Portions and Milestones;
- (h) contain procedures to monitor the status of activities and tasks that must be completed in order to achieve Completion and Construction Completion of Portions and for Milestones;
- (i) contain procedures for the identification, monitoring and close out and identification of responsibility for issues which may adversely impact upon the achievement of Construction Completion and Completion of Portions and Milestones;
- (j) describe the methodology to identify, track progress, obtain and submit all forms of certification, other approvals, documents (Including AMI) and sign-offs associated

prior to all forms of Asset Handover including Milestones, Portion Construction Completion and Portion Completion;

- (k) include as a Sub Plan, an Interchange Operation and Maintenance Plan in accordance with ASA T MU MD 00015 ST; and
- (l) describe the interfaces with other Management Plans.

4. Risk Management

- (a) The Contractor must undertake risk management as an integrated part of the Contractor's Activities, including:
 - (i) implementation of risk management techniques to identify and assess risks which are applicable to the undertaking of the Contractor's Activities and develop and implement strategies to treat and manage these risks to an acceptable level;
 - (ii) undertaking risk management in accordance with the requirements of AS/NZS/ISO31000, ISO/IEC31010, and consistent with the requirements of Sydney Metro Risk Management Standard SM RM-ST-201;
 - (iii) undertaking safety risk management in accordance with the requirements of MR-S and the Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221;
 - (iv) consideration of risk in order to identify potential property that could be affected or damaged by the Contractor's Activities;
 - (v) management of adverse impacts and realise potential opportunities relating to the performance of the Contractor's Activities;
 - (vi) holding joint risk workshops with the Principal at key CSM Project phases and milestones to identify and assess key risks associated with the Contractor's Activities and development of mitigation strategies;
 - (vii) production of a consolidated risk register that includes all reasonably foreseeable risks associated with the Contractor's Activities;
 - (viii) reporting on risks and risk management in accordance with the reporting requirements in the Risk Management Plan; and
 - (ix) ensure that the individuals and resources allocated to risk management activities are suitably trained and made available to effectively implement the Risk Management Plan.
- (b) The Contractor must maintain an up-to-date risk register, consistent with the requirements of the Risk Management Plan, which is inclusive of the following:
 - (i) a description of all risks applicable to all stages and phases including transition between phases and their likely impact;
 - (ii) analysis, assessment and evaluation of all risks;
 - (iii) details of specific risk control measures and proposed treatments for identified risks to eliminate or reduce risks;
 - (iv) the current and residual risk level assessed for each risk in terms of consequence and likelihood in a manner compatible with the Principal's risk management system defined in the TfNSW Sydney Metro Risk Management Standard SM RM-ST-201;

- (v) the personnel responsible for managing the risk and monitoring implementation of treatment measures; and
 - (vi) demonstration that risks have been eliminated, or have been minimised and managed so far as is reasonably practicable.
- (c) Upon request by the Principal's Representative, the Contractor must provide access to the Contractor's risk register. Where the Contractor's risk register is accessible electronically, and the Principal's Representative agrees, the Contractor may provide the Principal with access to relevant parts of its electronic system in lieu of paper copies.
- (d) Prior to Construction Completion the Contractor must provide a list of the residual risks which will be in existence beyond the Date of Construction Completion in relation to each Portion.

5. Contractor's Program

- (a) The Contractor's Program and its updates must be in accordance with the Sydney Metro Programming Protocol SM PC-ST-211.
- (b) The Contractor's Program and its updates must be submitted to the Principals Representative for review in accordance with the Contract.
- (c) The initial and all subsequent versions of the Contractor's Program must meet the following general requirements:
 - (i) identify the Dates for Completion and Dates for Construction Completion of each Portion and demonstrate how the Contractor will achieve those relevant dates;
 - (ii) identify the required start date and completion date of all activities required to be undertaken by Interface Contractors and clearly identify the dependant follow on works using the activity code in the programme;
 - (iii) identify the dates of all Milestones and demonstrate how the Contractor will achieve those dates;
 - (iv) Identify the key dates of CCB and CMAAC control gates including all Contractor's Activities relating to the requirements of MR-T in regard to the CCB and CMAAC;
 - (v) identify the full scope of the Contractor's Activities, including staged works and any Temporary Works including items such as traffic management, mobilisation, site establishment, interface management, review periods etc.;
 - (vi) identify all possessions required for activities and provide detailed schedules for possession works, details of possession planning and booking of possession with Sydney Trains within the timeframes required by Sydney Trains, in accordance with clause 11;
 - (vii) minimise the use of positive or negative lags between activities by replacing lags with activities;
 - (viii) not constrain the networks so as to prevent the program from reacting dynamically to changes;
 - (ix) include details on programming contingencies, providing rationale for the applied program contingency amount;
 - (x) show the dates when the Contractor will require information, documents, materials or instructions from the Principal under the Contract and the dates

when the Contractor will provide information or Documents to the Principal's Representative, taking account of the review or approvals processes and timeframes contemplated by the Contract;

- (xi) show all activities relating to the coordination of the Interface Work, including coordination meetings, development of Design Documentation, the key activities of Interface Contractors and the Interface Work and other Contractor's Activities relating to the management of interfaces per the requirements of MR-T;
- (xii) show the dates relating to the provision of information to and from all parties involved in relation to the Interface Works;
- (xiii) be based on a time-scaled calendar in units of one week and identify working days, non-working days, shifts, statutory holidays, rostered days off, Christmas shutdown and any other shutdowns;
- (xiv) break down all activities into periods of no greater than four weeks with sufficient details to allow accurate monitoring of the progress of the Contractor's Activities;
- (xv) contain activities, each having an activity ID, activity description, original duration, start date, finish date and dependencies;
- (xvi) identify access and Asset Handover dates, staging and sequences of design and construction activities, other significant events, the critical path and the float relating to activities not on the critical path;
- (xvii) clearly identify access requirements and activities, including site access, Track Possessions, service outages, public domain access requirements;
- (xviii) differentiate between the Works to be undertaken by the Contractor and the Works to be undertaken by Subcontractors;
- (xix) identify the award of all significant contracts and Subcontracts related to the Contractor's Activities;
- (xx) identify all pre-construction activities and all reviews and approvals required to be obtained from Authorities, the Principal or Principal's Representative including preparation, consultation, submissions and reviews of Authority Approvals;
- (xxi) identify all certification and licenses required to be obtained by the Contractor to comply with its obligations under the Contract;
- (xxii) identify all significant external events activities that have a bearing on time required to complete the Contractor's Activities;
- (xxiii) meet the requirements of section 4.4 of Sydney Metro Programming Protocol SM PC-ST-211 to provide resources dictionary and subsequent updates during delivery phase;
- (xxiv) identify all staging of the Contractor's Activities and all external interfaces that:
 - A. impact on the Contractor's Activities;
 - B. impact on the activities of the Interface Contractors; and
 - C. provide opportunities for the Interface Contractors to commence work earlier.
- (xxv) be submitted in electronic format which must include:

- A. electronic format for publishing in Adobe Acrobat .pdf files;
 - B. native format (.xer) files that permits 100% data and format transfer with Oracle Primavera P6 Release 8.1 or later release;
 - C. layout and filter files (.plf) together with the native format (.xer) files; and
 - D. allow interrogation by the Principal's Representative.
- (xxvi) be prepared using Oracle Primavera P6 Professional Release 8.1 or later releases;
- (xxvii) comply with the Schedule Meta-Data Requirements; and
- (xxviii) the status report must include an Earned Value analysis by the data date according to Australian Standard requirements AS 4817-2006 Project Performance Measurement.
- (d) Monthly updates of the Contractor's Program must be submitted to the Principal's Representative on the first Business Day of each calendar month, which include progress information to the end of the preceding calendar month.
- (e) In addition to the general requirements of clause 5 (c) above, monthly updates of the Contractor's Program must also include the following:
- (i) status the actual progress of activities based on the physical work completed;
 - (ii) remaining duration, actual start and actual finish for progressed and completed activities;
 - (iii) show program changes as described in the General Conditions as separate activities, so that time can be clearly distinguished from the original Contract scope;
 - (iv) clearly identify activities supporting progress payments, key milestones, and Portions;
 - (v) clearly identify the amount of program contingency available for each Portion;
 - (vi) a written narrative which clearly describes how the program has been developed. The program narrative must be in sufficient detail to enable the durations, leads and lags in the logic diagram to be assessed and to explain any constraints that may exist within the program network logic, and must include the following:
 - A. an overview of the delivery strategy as reflected in the Contractor's Program;
 - B. executive summary program that is a maximum of two pages;
 - C. staging diagrams for the Works;
 - D. fundamental assumptions;
 - E. key indicators of program progress, performance, and trends;
 - F. long lead items, approvals and permits;
 - G. critical path;
 - H. calendars, working hours and work shifts;
 - I. production rates and cycle times;

- J. construction staging and major work front configuration;
- K. resource allocation and profile;
- L. internal and external constraints;
- M. program risks and contingencies;
- N. program opportunities; and
- O. mitigation measures that could be implemented in the case of delay.

6. Document Management

6.1. General

- (a) The Contractor must control all copies of Documents in accordance with the Contract.
- (b) The Contractor must promptly advise the Principal's Representative of any changes made to the submitted Documents and submit the amended Documents for review in accordance with the Contract, within 5 Business Days of the amendment, with the amendments clearly marked on the Document.

6.2. Principal's Data and Collaboration System (PDCS)

- (a) Without limiting any specific requirements of the Contract, the Contractor must use the Principal's prescribed PDCS, as notified by the Principal's Representative for the duration of the Contractor's Activities.
- (b) The Contractor must carry out all liaison activities within the PDCS, including but not limited to uploading the following:
 - (i) all correspondence;
 - (ii) Requests for information (RFI);
 - (iii) Non-conformance reports (NCR's);
 - (iv) upload of all controlled Documents and Design Documentation including but not limited to, drawings, specifications, procedures, checklists, Management Plans, test plans, inspections, Safe Work Method Statements, certificates and schedules;
 - (v) Lot management;
 - (vi) all Documents for review by the Principal's Representative in accordance with the Contract; and
 - (vii) transmittal of documentation to other CSM Project participants.
- (c) The Contractor must use the prescribed metadata, title information and document numbering formats provided by the Principal's Representative when uploading documents to the PDCS.
- (d) Access to the electronic portal will be granted to the Contractor's staff, only upon completion of general user training.
- (e) The Principal will not accept hard copy records in lieu of electronic versions.

6.3. Document Formatting

Where electronic copies are submitted to the PDCS they must be submitted in their native file formats as well as in pdf version. File formats used for archiving or compression will not be otherwise accepted.

7. Monthly Reporting

Without limiting any other reports that may be required under the Contract, the Contractor must prepare and submit to the Principal's Representative for review in accordance with the Contract, a Monthly Report which meets the requirements of the Contract, including the following items:

- (a) a summary of the planned Contractor's Activities over the forthcoming month and quarter;
- (b) a list and timing of Hold Points and Witness Points planned for the forthcoming two months;
- (c) a description, including photographs, of the progress made on all current Contractor's Activities;
- (d) a summary of the financial status of the Contract, including detailed final cost forecasts, and separate lists for the cost of approved Changes, Claims and outstanding Claims for Changes;
- (e) a cost report which allocates all budget and actual cost items against separate funding sources, under a set of cost headings and codes. The format and content of the cost report must be submitted to the Principal's Representative in accordance with the Contract ahead of the submission of the first Monthly Report;
- (f) a cashflow forecast for the remainder of the Contractor's Activities on a month by month basis;
- (g) the number and categories of personnel and equipment currently engaged by the Contractor to carry out the Contractor's Activities (including those engaged in off-site functions), compared with the planned resources for the Contractor's Activities;
- (h) an updated Contractor's Program in accordance with clause 5, above;
- (i) the status of Design Documentation, major procurement orders, Subcontracts, and general construction;
- (j) a Temporary Works list as described in MR-T;
- (k) a matrix showing the status of each design package against each of the Design Stages;
- (l) the status of planning activities including Authority Approvals;
- (m) where Contractor's Activities involve any related Track Possession, Non Track Possessions, shutdown or outage activity, the Monthly Report must also include monthly reliability statistics listing the following:
 - (i) Incidents in Track Possession/shutdown/outage;
 - (ii) Incidents in Non-Track Possession/shutdown/outage;
 - (iii) potential Incidents in Track Possession/shutdown/outage; and

- (iv) potential Incidents in Non-Track Possession/shutdown/outage.
- (n) safety information and statistics, as required by MR-S;
- (o) sustainability reporting as required by MR-Sy;
- (p) Non conformances in any Authority Approvals, Contractor's Activities, Works and Temporary Works and the steps taken by the Contractor to address those Defects;
- (q) any issues arising from or affecting the CMP and its related Management Plans;
- (r) records of all corrective and preventative actions taken by the Contractor under the Contract and audits of such actions;
- (s) cooperation, coordination, industrial relations and interface issues with Other Contractors;
- (t) the status of interface management with Other Contractors highlighting the status of room handovers and any integration issues;
- (u) summary updates relating to community issues and potential community issues;
- (v) complaints received by the Contractor in relation to the Contractor's Activities;
- (w) other key issues that have the potential to affect the Contractor's Activities;
- (x) the status of audit activities during the reporting period. As a minimum, the Contractor must provide the following information:
 - (i) details of audits performed (planned vs completed);
 - (ii) audit findings (with rating / priority) and corrective actions;
 - (iii) implementation status of corrective actions (open and overdue); and
 - (iv) explanation for audits not completed as planned and for overdue corrective actions.
- (y) the status of any property damage claims;
- (z) a summary of key risks and opportunities, as defined in agreement with the Principal and corresponding risk treatments or opportunity implementations, either underway or planned;
- (aa) details of key risks likely to affect the Contractor's Program or the achievement of CSM Project objectives including those associated with key Stakeholders including the community, key interfaces, health and safety, environment and cultural heritage;
- (bb) key changes in the Contractor's risk profile and risk register since the previous Monthly Report and trend reporting, including:
 - (i) new or emerging risks that have been identified;
 - (ii) risks that have increased or decreased in risk exposure rating;
 - (iii) risks that have occurred and how the impact is being managed; and
 - (iv) risks that have been closed or eliminated.
- (cc) the current version of Contractor's risk register;
- (dd) other reporting requirements detailed in the Contract, including MRs, Environmental Documents and SWTC; and

- (ee) any other information the Principal's Representative reasonably requires.

8. Quality

8.1. Quality Management System

- (a) The Contractor must have in place, maintain and consistently apply an "AS/NZS ISO 9001" certified quality management system.
- (b) The Contractor must prepare a schedule of ITPs and ITP forms that the Contractor must use to verify that the Contractors Activities comply with the Contract.
- (c) The Contractor must submit a schedule showing the status of all ITPs, including any which are planned but not yet prepared, to the Principal's Representative on a monthly basis, for review in accordance with the Contract.
- (d) Where requested, the Contractor must submit any ITP to the Principal's Representative and Independent Certifier for review in accordance with the Contract.
- (e) The Contractor must prepare a schedule of Witness Points and Hold Points. This schedule must list all proposed Witness Points and Hold Points and must be kept up to date.
- (f) The Principal Representative or Independent Certifier may at any stage during the performance of the Contractors Activities nominate Hold Points and Witness Points for inclusion in the ITPs.
- (g) The Principal's Representative, Independent Certifier and the Environmental Representative may nominate persons to attend or witness the release of any Hold Point or to attend any Witness Point.
- (h) The Principal's Representative and the Independent Certifier must be given a minimum of 3 Business Days' notice of all forthcoming Hold Points and Witness Points.
- (i) The Contractor must assign a nominee for each Hold Point that is acceptable to the Principal's Representative.
- (j) The Contractor must develop a Project Records Index (PRI) to capture all the Contract requirements for records and documentation required for Construction Completion and Completion. The PRI must include:
- (i) The Contract requirements including:
 - A. submissions, information, data and records relating to the Contractor's Activities;
 - B. identified records relating to The Contractor's Activities ;
 - C. identified records relating to surveying activities;
 - D. "work as executed" Design Documentation; and
 - E. the Contractor's Programs;
 - (ii) details of the party controlling the document,
 - (iii) details of the document format; and
 - (iv) the document reference number.

9. Audits and Surveillance

9.1. Principal's Audit and Surveillance

- (a) The Contractor's Management Plans, systems and processes will be subject to audit and surveillance by the Principal to gain assurance that the Contractor has established effective management systems and processes to meet the requirements of the Contract. The Principal may utilise its own auditor(s) and surveillance officer(s) to perform these activities, supported by subject matter experts where relevant.
- (b) The nature of audit and surveillance activities may include risk-based compliance testing; desktop review of documentation; inquiry and observation of activities; and review of developing processes or activities in the form of a review to test readiness to implement.
- (c) Where elements of the delivery program are sub-contracted, the Contractor must pass its audit and surveillance requirements to its Subcontractor and be able to provide evidence that these Contractor's Activities are being effectively overseen by the Contractor. If requested by the Principal, the Contractor will provide evidence of the effective implementation of management systems and procedures by its Subcontractors.
- (d) The Contractor must be cooperative in assisting the auditors and surveillance officers in undertaking their duties. This includes providing access to Sites; systems and documentation; facilities to perform audits and surveillance; and participation of representatives from the Contractor and Subcontractors if the scope of the audit warrants.

9.2. Collaborative Audit Program

- (a) Besides the Principal, a number of other parties (such as Regulators, an Authority etc.) are required to, or may have an interest in auditing systems and processes established by the Contractor. A collaborative audit program will be established by the Principal to coordinate audit activities across the CSM Project.
- (b) It is an objective of the Principal that these audit activities are coordinated in order to provide timely and cost effective assurance that aligns and standardises the planning, conduct and reporting of audits. The Principal will conduct audits on the Contractor's compliance with the requirements of the Contractor and the Contractor's quality management system.
- (c) The Principal may conduct audits on the Contractor's compliance with the Contract and Management Plans.
- (d) The Principal will establish an Audit Working Group, with representatives from the Principal; Contractor; and other parties that may have an interest in the CSM Project, to manage the collaborative audit program. The Audit Working Group will, on a collaborative basis, develop, agree and implement a risk based audit program covering all aspects of the Contractor's Activities.
- (e) The Contractor must attend the Audit Working Group meetings. The meetings will be held whenever requested by the Principal's Representative, but will typically be held on a monthly basis.
- (f) Where the Contractor performs compliance audits of its systems and procedures, the Principal's Representative must be invited to participate in the audit planning and oversee conduct of the audit. The Contractor must provide a copy of the audit report to the Principal's Representative.

- (g) The Contractor must implement systems and procedures to ensure audit recommendations and corrective actions are actioned in a timely and agreed manner.
- (h) Periodically, the Contractor must allow the Principal to verify the effectiveness of the audit action implementation and reporting process by providing evidence that audit actions have been implemented.

10. Property Management

10.1. General Property Obligations

- (a) The Contractor is responsible for managing the Site and minimising the impact of the Contractor's Activities on adjoining owners during any investigations, early/enabling works, construction and Defects rectification activities. The Contractor must ensure it has the necessary legal rights to access the appropriate property prior to commencing the Contractor's Activities.
- (b) The Contractor must appoint a site-based person to be the Contractor's property representative. This representative must be present during all inspections undertaken by the Principal.

10.2. Condition Surveys

The following requirements in this clause 10.2 apply in addition to those set out in the Environmental Documents and the SWTC.

10.2.1. Pre-Construction Condition Surveys

- (a) The Contractor must carry out pre-construction ground and infrastructure condition surveys to record the existing condition of ground and infrastructure which could be affected by the Contractor's Activities (including rail infrastructure, roads, access driveways, bus stops and associated bus service infrastructure, parks and other publicly accessible areas, footpaths and cycleways, Utility Services, buildings and other structures) prior to commencing construction and to assess the susceptibility of critical structures or buildings or Utility Services to damage or unacceptable changes or alterations as a result of the Contractor's Activities.
- (b) The pre-construction ground and infrastructure condition surveys must, where relevant be conducted with the agreement of the Utility Service owner, property owner and any occupier and be completed in accordance with the Contract requirements. The Contractor must provide relevant Utility Service owners, property owners or occupiers with a notice proposing at least two alternative dates for the completion of pre-construction ground and infrastructure surveys. If a Utility Service owner, property owner or occupier does not provide the Contractor with sufficient access to carry out a pre-construction ground and infrastructure survey within 21 days of the latest date which the Contractor included in the notice, the Contractor must give the Principal's Representative and the Independent Certifier a copy of the notice and a signed statement by the Contractor to the effect that the Utility Service owner, property owner or occupier has not provided sufficient access to carry out the pre-construction ground and infrastructure survey.
- (c) The Contractor must prepare a detailed record that, as a minimum, includes dated photographs of the pre-construction conditions of all ground and infrastructure which may be affected and a summary description of the pre-construction conditions for each item.

- (d) The Contractor must provide the Principal's Representative, the Independent Certifier and, where relevant, the owner and/or occupier with a hard copy and an electronic copy in .pdf format of the survey report promptly, and in any event within 5 Business Days of the Contractor receiving such a report.
- (e) In addition to the requirements set out in the Contract and the MRs, the Contractor must comply with all requirements allocated to the Contractor for condition surveys and ongoing monitoring set out in Third Party Agreements and Environmental Documents.
- (f) The Principal's Representative may direct the Contractor to include additional properties and assets if it considers they have the potential to be damaged as part of the Contractor's Activities and the Principal's nominated person and the Independent Certifier may attend the undertaking of condition surveys.
- (g) The pre-construction ground and infrastructure condition surveys must be carried out by an independent and appropriately qualified and experienced assessor for the specific element of ground or infrastructure being surveyed.

10.2.2. Post-Construction Condition Surveys

- (a) Prior to Construction Completion of the last Portion, the Contractor must perform a post-construction condition survey on each item previously subject to a pre-construction ground and infrastructure condition survey.
- (b) The Contractor must ensure that post-construction ground and infrastructure condition surveys are performed to the same standards as the pre-construction ground and infrastructure condition surveys. The Contractor must ensure that the same surveyor performs both the pre-construction and post construction condition surveys on a particular item.
- (c) The Contractor must submit all post-construction ground and infrastructure condition survey reports to the Principal's Representative and the Independent Certifier for review in accordance with the Contract and then to any relevant owner and/or occupier. Each report must contain a certificate from the surveyor who performed the survey, certifying that the survey has been completed and is an accurate assessment of the ground and infrastructure's condition.
- (d) The post-construction ground and infrastructure condition survey reports must include a determination of the cause of any monitored change or damage identified (if any) since the pre-construction or previous construction survey and the Contractor's proposed remedial works or activities. If any damage is found to have been caused by the Contractor's Activities, the Contractor must:
 - (i) provide the Principal's Representative and the Independent Certifier with a proposal setting-out the remedial action required; and
 - (ii) obtain the relevant owner's acceptance, in a form agreed to by the Principal, of the compensation, repair or reinstatement work, and release from future claims and actions.
- (e) If no damage is found to have been caused by the Contractor's Activities, the Contractor must:
 - (i) write to the owner and provide a copy of both reports for the property owner's records; and

- (ii) provide the Principal's Representative with a copy of all records for its future reference.

10.2.3. Property Condition Surveys of Buildings

- (a) The Contractor must ensure that the processes and procedures for performing all condition surveys are based on industry best practices. Examples of acceptable standards for condition surveys of buildings include:
 - (i) sections 4 and 5 of the "Royal Institute of Chartered Surveyors (RICS) Guidance Note 63/2010 Building surveys and technical due diligence"; and
 - (ii) "AS 4349 Inspection of Buildings – General Requirements", and with specific regard to the heritage elements.
- (b) The Contractor's reports on condition surveys of buildings must as a minimum record the following features and include dated photographs:
 - (i) major features of the buildings and developments including location, type, construction, age and present condition, including any defects or damage;
 - (ii) type of foundations including columns, walls and retaining structures;
 - (iii) an assessment of the susceptibility of the building to further movement or stress;
 - (iv) an assessment of the effectiveness of water-proofing systems in basements to the anticipated movements caused by the Contractor's Activities; and
 - (v) an assessment of the susceptibility of the building to changes in water levels resulting from the Contractor's Activities.
- (c) Existing levels of aesthetic damage are to be recorded in accordance with the assessment requirements of "Building Damage Classification", by Burland et al, 1977 and Boscardin and Cording, 1989 or another similar or equivalent assessment method to the satisfaction of the Principal's Representative.
- (d) The condition surveys must be carried out by an independent and appropriately qualified and experienced assessor for the specific property being assessed.

10.3. Design and Construction

10.3.1. Pre-Construction Land Surveys

The Contractor must verify survey control for the Contractor's Activities and must:

- (a) avoid, where reasonably possible, disturbance of existing survey marks and must re-establish any such marks disturbed or affected by the Contractor's Activities;
- (b) carry out boundary and engineering surveys in accordance with the Surveying and Spatial Information Act 2002 (NSW) and the Surveying and Spatial Information Regulation 2012 (NSW);
- (c) prior to commencing any activity which could affect existing infrastructure (including roads, railways, utility services and buildings), undertake a survey to identify and record the location of the construction site boundary in relation to existing infrastructure; and
- (d) provide the Principal's Representative and the Independent Certifier with reports on the location of the Site boundary in relation to existing infrastructure prior to commencing the relevant Contractor's Activities.

10.3.2. Design Documents

The Contractor must clearly identify property boundaries on drawings it produces in respect of the design of the Works and Temporary Works.

10.3.3. Property Requirements as Part of Site Inductions

- (a) The Contractor must ensure its employees and the employees of Subcontractors engaged in carrying out the Contractor's Activities on the Site are inducted and trained in any property requirements of the Contract to achieve a level of awareness and competence appropriate to their assigned activities.
- (b) The property requirements of the induction must include informing the relevant persons of Site boundaries, parking and vehicle delivery restrictions, Third Party Agreements, limitation of access rights and access procedures to minimise all potential property impacts including property damage, disturbance and any other property matters.

10.3.4. Property Records

The Contractor must provide the following records:

- (a) a list of who holds issued documents on a register of current document issue, including revisions;
- (b) an index of all property records;
- (c) personnel and provider qualifications and skills and competency records;
- (d) induction and training records;
- (e) property control and constraints maps (worksite maps);
- (f) identified property Stakeholders within the complaints list as identified by the Principal;
- (g) a list of all adjoining property owners and details of all interaction and communications;
- (h) evidence of property inputs and outputs within the design development process including any sustainability initiatives;
- (i) surveillance, audit of Subcontractors property performance and controls;
- (j) Contractor's non-conformance reports and register; and
- (k) property non-compliance reports.

10.3.5. Construction Phase Monitoring

- (a) The Contractor must implement a monitoring and inspection regime for properties with the potential to be detrimentally or negatively affected by the Contractor's Activities. The monitoring and inspection regime must address the requirements of the Contract, the Contractor's obligations relating to Environmental Documents and Third Party Agreements and agreements made with any Authority.
- (b) For activities in or adjacent to the Rail Corridor, the Contractor must implement specific monitoring regimes and emergency and response procedures for all Contractor's Activities close to or under, and likely to affect, live Rail Track in accordance with relevant monitoring Codes and Standards.

10.3.6. Planning Consistency Checks

- (a) Consistency checklists, in the format provided by the Principal unless otherwise agreed, are to be completed by the Contractor and provided to the Principal's Representative for review in accordance with the requirements of the Contract in circumstances where the work is likely to deviate from the approved CSM Project.
- (b) Should the Works be found not to be consistent with the approved CSM Project, the Contractor may request the Principal seek a modification. Under such circumstances, it is the Contractor's responsibility to provide the necessary reports, studies and final submission to the Principal to justify the modification. Any modification must detail property impacts.

10.4. Property Risk Assessment

- (a) The Contractor must undertake a comprehensive and site-specific property risk assessment in conjunction with the Contractor's construction personnel and in consultation with the Principal's Representative, prior to the commencement of early works (including pre-construction works).
- (b) A staged risk assessment may be utilised, upon agreement with the Principal. This risk assessment must identify the property aspects and actual and potential property impacts of the Contractor's Activities and the control measures that are required to be implemented in order to provide property protection in accordance with the requirements of the Contract. With respect to the Site (and where the Site is at more than one location, for each part of the Site).
- (c) This risk assessment is to include:
 - (i) potential damage to property and related infrastructure such as roads and footpaths etc. Factors to consider when determining an asset's susceptibility to damage must include maximum levels of movement or angular distortion, or strain, or settlement or deflection or groundwater draw down;
 - (ii) permanent and temporary worksite access requirements and timing;
 - (iii) access to or across adjoining properties and timing;
 - (iv) crane swings, air rights and impacts on neighbouring properties or the Rail Corridor;
 - (v) access to Utility Services;
 - (vi) any future subdivision, easements, other title interests or divestment requirements;
 - (vii) any future commercial impacts of resultant work; and
 - (viii) site investigation and contamination.

10.5. Property Compliance Checklist

The Contractor must prepare and submit to the Principal's Representative, the property compliance checklist plus supporting documents contained in Annexure B: Property Compliance Checklist, to demonstrate that all legal and contractual property related obligations have been met. The checklist must be submitted:

- (a) 10 Business Days prior to site access; and
- (b) 10 Business Days prior to construction commencement.

11. Working In and Adjacent to the Rail Corridor and Rail Environment

11.1. Operating Railway System

The Contractor acknowledges and agrees that:

- (a) it is aware that Sydney Trains or another Operator/Maintainers may continue to use areas adjacent to the Site as part of normal operations of the railway system on a commercial basis during the undertaking of the Contractor's Activities;
- (b) the Contractor must not do anything to prevent the continuance of normal operations of the railway system, including within the Rail Corridor, the Site, adjoining areas and railway stations, to the satisfaction of the Operator/Maintainer;
- (c) it must ensure that the railway system operations and infrastructure are not impeded or interfered with by reason of the performance of the Contractor's Activities, except where this is approved in writing beforehand by the Principal's Representative;
- (d) it must maintain and coordinate sufficient access to the railway system, for users and Operator/Maintainers, so as not to hinder main traffic routes, including access to and from operating railway station platforms, ticketing areas and the Rail Corridor, and the flow of traffic, including on or accessing the Site and the adjoining areas, except where this is approved in writing beforehand by the Principal's Representative;
- (e) it must, in performing the Contractor's Activities, do everything that could be reasonably expected of the Contractor to avoid Sydney Trains or another Operator/Maintainer breaching any obligation it may have arising out of or in connection with the continuing operation of the railway system on a commercial basis;
- (f) it must ensure:
 - (i) access and egress for Sydney Trains or other Operator/Maintainers and its contractors to the Site to undertake regular inspections and to complete maintenance and repairs of their infrastructure where required;
 - (i) access and egress to those parts of the Site required by Other Contractors are made available and coordinated so as to minimise any interference with or disruption to the Contractor's Activities; and
 - (ii) emergency egress routes (including routes to the Rail Corridor and its support system) are maintained at all times and that emergency systems (including the Sydney Trains emergency warning intercommunication system and fire alarm panels) remain operational throughout the duration of the Contract.
- (g) it must provide a safe place for persons carrying out Rail Track inspections and/or maintenance work, for example, refuges in any hoarding/fencing constructed adjacent to the Rail Track;
- (h) it must comply with any Sydney Trains or other Operator/Maintainer's standards applicable to the Works including for work that is adjacent to an operating rail line and to live overhead wires;
- (i) it must ensure that whilst undertaking the Contractor's Activities, no employees or Construction Plant (including, for example, by the slewing of cranes) of the Contractor, Subcontractors or consultants enter an operating Rail Corridor, except as permitted by Sydney Trains "RailSafe Network Rules"; and

- (j) it must at all times, and to the satisfaction of the Principal's Representative, carry out the Contractor's Activities in a manner that will ensure the safety of all property and persons, including the general public, travelling public, station lessees, railway traffic, railway system personnel, road traffic and any person associated or engaged in connection with the Contractor's Activities.

11.2. Track Possessions

- (a) The Track Possessions available to the Contractor are set out in the Contract.
- (b) The Contractor must follow the applicable planning process, including notification lead times when requesting new or altering existing Track Possessions (including dates, configurations and start/finish times) as defined in the Sydney Trains Network Access Manual Volume 1 and Volume 2. All such requests from the Contractor must be made to the Principal's Representative who will then submit the information to Sydney Trains (which is the determining Authority).
- (c) For existing approved possessions, a description of the scope of Works and Temporary Works to be carried out in each Track Possession must be submitted to the Principal's Representative for review in accordance with the Contract, at least 16 weeks prior to the commencement of the Track Possession. The scope description must reference the possession number/sequence and include the following information:
 - (i) work description;
 - (ii) location of work including track and kilometrage/structure/signal numbers;
 - (iii) any tracks which are blocked due to the work;
 - (iv) any exclusion zones; and
 - (v) work train &/or track machine requirements associated with the work including times required at the worksite.
- (d) Where power isolation is required, the Contractor must specify what power is required to be isolated and its location, as well as the time and duration required for the power isolation. This information must be submitted to the Principal's Representative for review in accordance with the Contract at least 16 weeks prior to each Track Possession.
- (e) For each Track Possession to be utilised by the Contractor, the Contractor must attend and incorporate the requirements from:
 - (i) the "Works Coordination Meeting" with Sydney Trains held approximately 12 weeks prior to the Track Possession. This meeting will decide the coordination of all activities in the Track Possession, working hours, movements of equipment and work trains in the Track Possession area;
 - (ii) the "Possession Finalisation Meeting" with Sydney Trains held approximately 4 weeks prior to the Track Possession to identify and resolve any clashes or interface issues; and
 - (iii) the "Pre-Possession Meeting" with Sydney Trains, held approximately 3-5 Business Days prior to the Track Possession to confirm the detailed arrangements for the Track Possession and coordinate the activities of each party working in the Track Possession.
- (f) Prior to the pre-possession meeting the Contractor must arrange and confirm names, contact details and shift times of the worksite supervisor and safeworking personnel associated with the Works. The Contractor is to procure all safeworking

personnel including the Possession Protection Officer (PPO), PPO Assist and Protection Officers (minimum PO2 accredited for Track Possessions) required for each possession. The level of safeworking competency of safeworking personnel must be in accordance with the Network Rules and Procedures. Safeworking personnel must only be sourced from approved providers on the TfNSW Safeworking Panel.

- (g) The Contractor must provide safe working personnel (in accordance Sydney Trains Network Rules) including, but not limited to Protection Officers, Pilots, and a Worksite Coordinator for each work location.
- (h) The Worksite Coordinators must hold Protection Officer level PO4 competency, and be able to work as PPO assist as required.
- (i) The Worksite Coordinator may be required to work on Site or in the Sydney Trains PPO Office.
- (j) The Contractor must provide personnel to place and remove possession protection in accordance with Sydney Trains Network Rules for all Track Possessions
- (k) The Contractor's Protection Officer must perform the role of PPO assist or PPO in accordance with the Sydney Trains Network Rules, when required.
- (l) If a Track Possession involves an asset or partial asset being handed over to the Asset Owner or Operator/Maintainer (even if only for maintenance prior to it being commissioned), a formal Asset Handover will be required. In these circumstances, the following documents appertaining to the assets being handed over are required to be submitted to the Principal's Representative for review in accordance with the Contract at least six weeks prior to the Track Possession:
 - (i) Safe Work Method Statements;
 - (ii) residual risk assessments;
 - (iii) any asset management and operational documentation described in MR-T and the SWTC;
 - (iv) Design Documentation; and
 - (v) any other documents required as directed by the Principal's Representative.
- (m) The Contractor may not have exclusive access to any Rail Tracks or areas within the vicinity of Rail Tracks during a Track Possession, and must coordinate the Contractor's Activities with those sharing the Track Possession, including parties involved in the operation or maintenance of the rail system and Other Contractors. This includes, where required, the Contractor allowing for Operator/Maintainers' contractors and Other Contractors to pass through the worksite(s) during the Track Possessions.
- (n) The extent of Operator/Maintainers' contractors' and Other Contractors' activities on or within the vicinity of the Rail Track during Track Possessions will be determined at the "Works Coordination Meeting" referred to in clause 11.2 (e) of this MR-PA.
- (o) The Contractor must ensure that all persons invited or brought onto the Site by the Contractor or Other Contractors, and those who enter an area within the Rail Corridor undertake all necessary Site inductions and obey all directions given by the Worksite Protection Personnel.
- (p) The Contractor must comply with the requirements of Sydney Trains Possession Notice 10, in relation to the certification and handover of any part of the Works.

- (q) The Contractor must immediately comply with any instructions by the Principal's Representative to alter or curtail the Contractor's Activities if the Principal's Representative considers that continuing with intended Contractor's Activities will result in a delay to returning the Track Possession and/or delay to train operations.
- (r) The Principal may alter, cancel or curtail any Track Possession at any time.
- (s) If assets are being handed over to the Operator/Maintainer then the Contractor must assist the Principal in the process of formal Asset Handover.
- (t) The Contractor must prepare, maintain and update policies and procedures for planning and managing Track Possession work in accordance with the Sydney Trains Network Access Manual Volume 1 and Volume 2.
- (u) The Contractor must submit to the Principal's Representative for review in accordance with the Contract, a Project Criticality Analysis not less than 12 weeks prior to the Track Possession.
- (v) to further define the Contractor's responsibilities for safeworking included in items (f), (g), (j) and (k) above, refer to the Reference Document "Possession Safeworking Responsibilities Matrix" in Contract Schedule E2, Table 8.

11.2.1. Track Possession Plan

- (a) The Contractor must prepare and submit to the Principal's Representative for review in accordance with the Contract, 12 weeks prior to each Track Possession a consolidated Track Possession Plan comprising all information required in advance of the Track Possession. Updates must be provided at 6, 4 and 2 weeks prior to the Track Possession, with a final plan submitted 1 week prior to the Track Possession.
- (b) The Track Possession Plan must include the following minimum documents and information:
 - (i) a possession scope of works and Work Method Statement;
 - (ii) a possession layout plan, detailing worksite location, tracks affected, access locations;
 - (iii) an Oracle Primavera P6 subprogram;
 - (iv) a possession staging plans;
 - (v) Safe Work Method Statements and a Construction Environmental Management Plan;
 - (vi) a plant list;
 - (vii) a hi-rail plant movements schedule;
 - (viii) a possession request and notification documentation – including but not limited to; power isolation request, construction resource request, project works notification, Project Criticality Assessment, work activity advice and any disruption notices etc.;
 - (ix) a worksite protection plan;
 - (x) a resource register of work personnel proposed to work on the possession with contact details and evidence of Rail Industry Safety Induction (RISI) certification or other safe working qualification (for each shift);
 - (xi) contact details for site based management including; Subcontractor management and protection officers;
 - (xii) detailed Site survey - for construction issue;

- (xiii) out of hours work permit & community notifications;
- (xiv) alternative accommodation letters (if applicable);
- (xv) Authority Approvals – including but not limited to; road opening permit, road occupancy license, footpath opening permit;
- (xvi) Traffic Management Plans / Traffic Control Plans;
- (xvii) pedestrian management plans including within station and interchanges;
- (xviii) approved for construction design including Temporary Works certification;
- (xix) train-stop suppressions requirements;
- (xx) possession train movements;
- (xxi) ITPs, including a list of Hold Points and Witness Points;
- (xxii) structural/civil/electrical/mechanical (plus all other disciplines) engineer advice (if applicable); and
- (xxiii) workgroup interface meetings and notes.

11.2.2. Possession Program

- (a) The Contractor must prepare and submit to the Principal's Representative, for review, a detailed possession program identifying the following minimum information:
 - (i) the elements of the Contractor's Activities to be completed prior to the Track Possession;
 - (ii) an hour by hour breakdown of the elements of the Contractor's Activities to be carried out during the Track Possession;
 - (iii) milestones and the time and date by which they must be achieved so as to ensure that the rail infrastructure can be reinstated within the allocated time and which, if not achieved by the nominated time, would result in the Contractor bringing work to an end and commencing reinstatement of the rail infrastructure and other works to avoid a delay in returning the Track Possession and/or delays to trains;
 - (iv) adequate allowance of time at the beginning and end of the Track Possession to safely remove and reinstate the affected rail infrastructure to operational condition and for providing and removing safeworking protection and for the Operator/Maintainer inspections and certifications;
 - (v) the specific risks to be managed during the Track Possession and the procedures to be followed in managing these risks;
 - (vi) any potential interface issue in any way connected with work carried out by an Other Contractor or involving the Operator/Maintainer's operational and maintenance activities; and
 - (vii) progress/program review meetings scheduled during the Track Possession as requested by the Principal's Representative and/or the Operator/Maintainer.

11.2.3. Possession Staging Plans

- (a) The Contractor must provide coloured staging plans for all work activities proposed to be completed during each Track Possession.
- (b) The Possession Staging Plans must include the following minimum documents and information:

- (i) identifying various stage / work zones (colour coded);
- (ii) all access paths, paths of travel for all equipment, lay down areas;
- (iii) location of all plant and equipment (i.e. cranes, day makers, concrete pump / trucks etc.);
- (iv) the swing and reach distances for each item of plant and equipment showing critical distances from rail infrastructure such as Track, platform edge / coping, signals, OHW and OHW structures etc. ; and
- (v) position of spotters, Protection Officers etc.

11.2.4. Track and Infrastructure Certification

- (a) The Contractor must arrange a qualified track inspector to inspect and certify that the track infrastructure is suitable for train running after each Track Possession if the existing Tracks have been disturbed in any way e.g. excavation within the vicinity of the Track, or when the Track may have been used as an access for construction purposes during a Track Possession.
- (b) All remedial works required by the qualified track inspector must be undertaken and completed before the end of the Track Possession.
- (c) Any electrical or signal infrastructure disturbed or damaged as a result of the Contractor's Activities must be reported immediately to the Principal. The Contractor will be liable for the cost of rectification. The Contractor must take all necessary precautions and protect existing signal/electrical infrastructure when work is undertaken in the vicinity of such equipment.

11.2.5. Possession Progress reporting

- (a) The Contractor will submit a status report, every six hours from commencement of works, to the Principal Representative. The final status report will be issued once all worksites have been cleared and applicable permits returned.
- (b) The status report will be developed in consultation with the Principal's Representative. The status report will provide a summary narrative including progress, issues and mitigation measure related to the following; safety, environment, community, possession access and isolations, site interface, plant and resources, programme progress accompany by a statused hour by hour program.
- (c) The Contractor will convene progress review meetings/conference calls during the Track Possession from site with the Principal Representative.

11.3. Non Track Possessions (including system isolations)

Where directed by the Principle's Representative, the Contractor must comply with the following requirements:

- (a) the Contractor must make the necessary arrangements with the Principal's Representative, Asset Owner or Operator/Maintainers prior to the Contractor's Activities taking place on assets or systems during Non Track Possessions;
- (b) the Contractor must comply with any permit requirements, rules and regulations or other requirements of the Asset Owner or Operator/Maintainer in regards the Contractor's Activities during Non Track Possessions;
- (c) whilst the Principal will assist the Contractor in discussions with the relevant Asset Owners and Operator/Maintainers, the Principal cannot guarantee that all requests

- to take possession of assets or systems, for a Non Track Possession will be granted;
- (d) the scope of Works and Temporary Works to be carried out in each Non Track Possession must be submitted to the Principal's Representative for review in accordance with the Contract, at least 8 weeks prior to the commencement of the Non Track Possession;
 - (e) the Contractor must comply with the requirements of the Principal's Representative, in relation to the certification and handover at the end of a Non Track Possession;
 - (f) the Contractor must immediately comply with any instructions by the Principal's Representative to alter or curtail the Contractor's Activities if the Principal's Representative considers that continuing with intended Contractor's Activities will result in a delay to returning the Non Track Possession and/or delay to operational activities;
 - (g) the Principal may alter, cancel or curtail any Non Track Possession at any time;
 - (h) the Contractor must prepare and submit to the Principal's Representative for review in accordance with the Contract, prior to each Non Track Possession:
 - (i) a consolidated plan comprising all information required in advance of the Non Track Possession;
 - (ii) an Oracle Primavera P6 subprogram; and
 - (iii) any other information required by the Principal's Representative.

11.4. Certification of the Works and Temporary Works

Before handing back an area at the end of any Track Possession or Non Track Possession, or before any Asset Handover; the Contractor must provide to the Principal's Representative and, if required by the Principal's Representative, to the Operator/Maintainer; the following:

- (a) written certification by the Contractor's designers (including design Subcontractors) that the relevant works are safely able to support the operating infrastructure;
- (b) for any adjustments to or interruptions of service to signalling, Track, overhead wiring (OHW) or high voltage infrastructure, written certification from the Contractor's designers (including design Subcontractors) that such infrastructure is suitable for operations and complies with the approved design;
- (c) for any adjustments to or interruptions of service to signalling, overhead wiring or high voltage infrastructure, written certification from a Sydney Trains' (or other relevant Operator/Maintainer's) representative that such infrastructure is suitable for operations; and
- (d) all other infrastructure certification required by Sydney Trains or the relevant Operator/Maintainer and/or Asset Owner.

12. Commissioning and Operational Readiness

- (a) The Contractor must perform Commissioning and Operational Readiness activities on the Works and Temporary Works, prior to an Asset Handover.
- (b) The Contractor must participate and lead Commissioning and Operational Readiness activities for the Metro Station Works as well as the Central Station Works and Central Walk Works, in accordance with the stages, as further defined in Annexure C, and this MR-PA.

12.1. Commissioning

- (a) The Contractor must establish and chair a Commissioning Management Team whose membership may include representatives from the Principal, Asset Owners, Operator/Maintainer, TfNSW's technical advisors, Interface Contractors, Other Contractors, Follow on Contractors, Existing Operators and other Stakeholders, all as nominated by the Principal's Representative.
- (b) The role of the Commissioning Management Team is to ensure that the required activities are undertaken to enable all Works and Temporary Works to be commissioned and handed over in a controlled manner and in accordance with the Contract. This may apply to a permanent fulltime or temporary Asset Handover, where control of the assets return to the Contractor.
- (c) The Contractor's Commissioning activities must be carried out, in such a way as to compliment and support the Operational Readiness activities described in clause 12.2 below, and in accordance with the Contractor's Commissioning and Operational Readiness Management Plan described in this MR-PA.

12.2. Operational Readiness

- (a) The Contractor must work collaboratively with the Principal, Other Contractors, Interface Contractors, the Operator and Existing Operators to ensure that the programming, coordinating and execution of all Operational Readiness activities, including activities carried out by third parties to enable efficient Asset Handovers.
- (b) The Contractor must appoint a member from its organisation as the Contractor's Operational Readiness representative. The Contractor's Operational Readiness representative must be continuously available to participate in Operational Readiness Team (ORT) meetings organised by the Principal, and as otherwise required by the Principal.
- (c) The Contractor must:
 - (i) attend all ORT meetings and Stakeholder's operation readiness meetings for the duration of the Contract;
 - (ii) provide information and report progress on the testing and Commissioning of the Works and Contractor's Activities, in order to facilitate Operational Readiness;
 - (iii) work collaboratively with the Principal and the ORT members;
 - (iv) develop and provide a training program or conducting familiarisation where required for the Operator/Maintainer's personnel;
 - (v) participate in an Operational Readiness risk workshops, if requested by the Principal;
 - (vi) supply spares and any special tools, facilities and equipment required for Operational Readiness activities; and
 - (vii) prepare and maintain a register detailing all the certification and approvals required in relation to each type of Asset Handover (Milestone, Portion Completion or Construction Completion).
- (d) The Contractor must develop and implement training for the Operator/Maintainer and Asset Owner personnel as nominated by the Principal's Representative. The Contractor must:
 - (i) provide training which covers the operation and maintenance of the Works;

- (ii) provide to the Principal's Representative three full sets of training aids and material for the Principal's use in future training. All training aids and material must be of a good commercial standard and appropriate for the training to be conducted;
- (iii) provide training that is based upon the Asset Management Information documentation developed in accordance with the Contract;
- (iv) provide qualified people to conduct all training who are appropriately skilled, qualified, experienced and competent in the field involved, and who have completed formal training in instruction techniques;
- (v) schedule training courses, taking into account the possibility that some trainees will be required to attend more than one course;
- (vi) conduct training on site wherever possible. When training is provided off-site, it must be provided in the Sydney metropolitan region;
- (vii) Where access to particular equipment is required, training must be undertaken on equivalent duplicate equipment to that in the Works. Off-site training must be supplemented with visits to the applicable installed system on site; and
- (viii) keep a register of attendance at training. These records must be submitted to the Principal's Representative at completion of the training.

13. Asset Handover

- (a) The Contractor must work with the Principal's Representative prior to each Asset Handover and provide the required AMI, Design Documentation, certification, Authority Approvals, Documents and other information to achieve successful Asset Handover.
- (b) Certification of the Works and Temporary Works, by the Contractor must be carried out progressively and as required by the Principal's Representative.
- (c) Where assets are handed over on a staged basis for Portion Completion, Construction Completion or Milestones or other situations, the Contractor's Program must reflect the relevant activities, including testing, commission, Operational Readiness and the provision of AMI prior to, and including Asset Handover.
- (d) Where relevant, the Contractor must comply with the requirements of the Principal Contractor's Handover Process SMPS-PW-318 document.

Annexure A: List of Reference Documents

- Sydney Metro Industry Curriculum Guide SM ES-FT-433, 21 June 2017
- Sydney Metro Program Protocol SM PC-ST-211.
- TfNSW Audit and Compliance Standard SM QM-ST-202, 11 April 2014
- Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221 29 May 2017
- Sydney Train's Detailed Site Survey Management Plan.
- TfNSW Sydney Metro Risk Management Standard SM RM-ST-201, 11 August 2016
- Workforce Profile and Gap Plan Template SM ES-FT-435, 22 February 2018.
- Workforce Development Output Delivery Profile Template SM ES-FT-435, 22 February 2018.
- Training Needs Analysis SM ES-FT-432, 22 February 2018.
- Employers Information Requirements SM ES-ST-203, 7 January 2017
- TfNSW's Coordinating and Reporting of AEOC Critical Resources through P6 4TP-PR-172 27 February 2015.
- Chain of Responsibility Standard SM PS-ST 222 3 May 2016
- Principal Contractor's Handover Process SM PS-PW-318 17 May 2017
- ASA T MU MD 00015 ST (available on internet) 9 February 2017
- Sydney Trains Network Access Manual Volume 1, December 2014
- Sydney Trains Network Access Manual Volume 2 (available on internet), May 2016
- Sydney Trains Possession Notice 10 (available on internet), July 2015

Annexure B: Property Compliance Checklist

Property Compliance Checklist Pre-Site Occupation/Pre-Construction Commencement:

Compiled by:	
On behalf of:	
Contract #:	
Date:	

#	Issue	Circle relevant answer and add comment	Attachment
1	Has the Contractor been liaising with the Principal's Property Manager?	Y N n/a Comment: [insert text here]	
2	Have all properties affected by the CSM Project been identified?	Y N n/a Comment: [insert text here]	
3	Has a list of all affected properties been issued to the Principal?	Y N n/a Comment: [insert text here]	
4	Are all properties owned by the Principal?	Y N n/a Comment: [insert text here]	
5	Is access required to properties owned by other parties?	Y N n/a Comment: [insert text here]	
6	Are all agreements in place with other landowners to permit the contractor to undertake the works?	Y N n/a Comment: [insert text here]	
7	Have all surveys been conducted?	Y N n/a Comment: [insert text here]	
8	Have all surveys been cross-checked with the designs?	Y N n/a Comment: [insert text here]	
9	Do any of the proposed works fall outside the property/site boundaries?	Y N n/a Comment: [insert text here]	
10	If so, has the Contractor got agreements to build on the adjoining land?	Y N n/a Comment: [insert text here]	
11	Are new easements, stratum, MOUs or WADs with Stakeholders required for the CSM Project?	Y N n/a Comment: [insert text here]	
12	Have any new easement, stratum, MOUs or WADs been drafted and issued to the Principal?	Y N n/a Comment: [insert text here]	

#	Issue	Circle relevant answer and add comment	Attachment
	for review?		
13	Have all property Pre-Condition Surveys been conducted and submitted?	Y N n/a Comment: [insert text here]	
14	Has the Asset Management Plan been considered in design?	Y N n/a Comment: [insert text here]	
15	Are there any other property risks?	Y N n/a Comment: [insert text here]	

RECEIVED by TfNSW	
Signed:	
Received by:	
Date:	
REVIEWED by Principal's Representative	
Signed:	
Name:	
Date:	
Acceptable? (Conforms to contract requirements): Y/N provide reasons:	
Comments provided: Y/N (attach comments)	
No Comments or no further Comments: Y/N	

Annexure C: Stages of Commissioning & Operational Readiness

C1: Non Metro Station Works

The following requirements apply to the Central Station Works and Central Walk Works.

ID	Stage	Description	Lead By	Requirement
1	Factory acceptance tests	Element and system testing prior to delivery to Site	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
2	Installation / operational checks	Covers all tests and checks with installation of elements of the Works.	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
3	Site acceptance tests	Covers a final inspection, testing, Commissioning and Validation of individual systems.	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
4	System integration tests and Commissioning	Covers testing, Commissioning and Validation of interdependent systems and related systems including across interfaces with work of Other Contractors.	Contractor and Other Contractors	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
5	Integration with Network	Covers integration of systems into the existing network.	Contractor, Other Contractors and Operator/Maintainer or Owner	Certification by Contractor with an opportunity for the Principal's Representative and Independent

ID	Stage	Description	Lead By	Requirement
				Certifier to witness.
6	Acceptance tests	Covers acceptance tests to validate systems.	Contractor, Other Contractors and Operator/Maintainer or Owner	Certification by Contractor with an opportunity for the Principal's Representative and Independent Certifier to witness. All records and documentation provided and certified.
7	Accreditation of new infrastructure	Involves provision by Contractor of comprehensive documentation to enable Operator/Maintainer or Owner to seek and obtain amendment to its existing accreditation to allow for the incorporation of the new infrastructure provided under this Contract.	Contractor, Other Contractors and Operator/Maintainer or Owner	All records and documentation provided and certified.
8	Pre-commercial operations and operational staff training	Involves the Works operating on the network to enable owner / operator staff training to be completed and systems to be stabilised.	Operator/Maintainer or Owner and Contractor	Contractor to provide attendance and maintenance accompanied by Operator/Maintainer and Owner staff as part of the requirements for training and Asset Handover to Principal and operation.
9	Completion and Asset	Contractor's Certificate of Completion for the	Contractor and Operator/Maintainer	Certification by the

ID	Stage	Description	Lead By	Requirement
	Handover of Works	Works confirming the Works has been completed with no outstanding Works, Contractor's Activities or Defects that prevent the fully functional operation of the Works.	or Owner	Contractor
10	Setting to Works for commercial operation	Pre-commercial operation of the new parts of the network	Operator/Maintainer or Owner	Attendance by Contractor and completion of Defect rectification

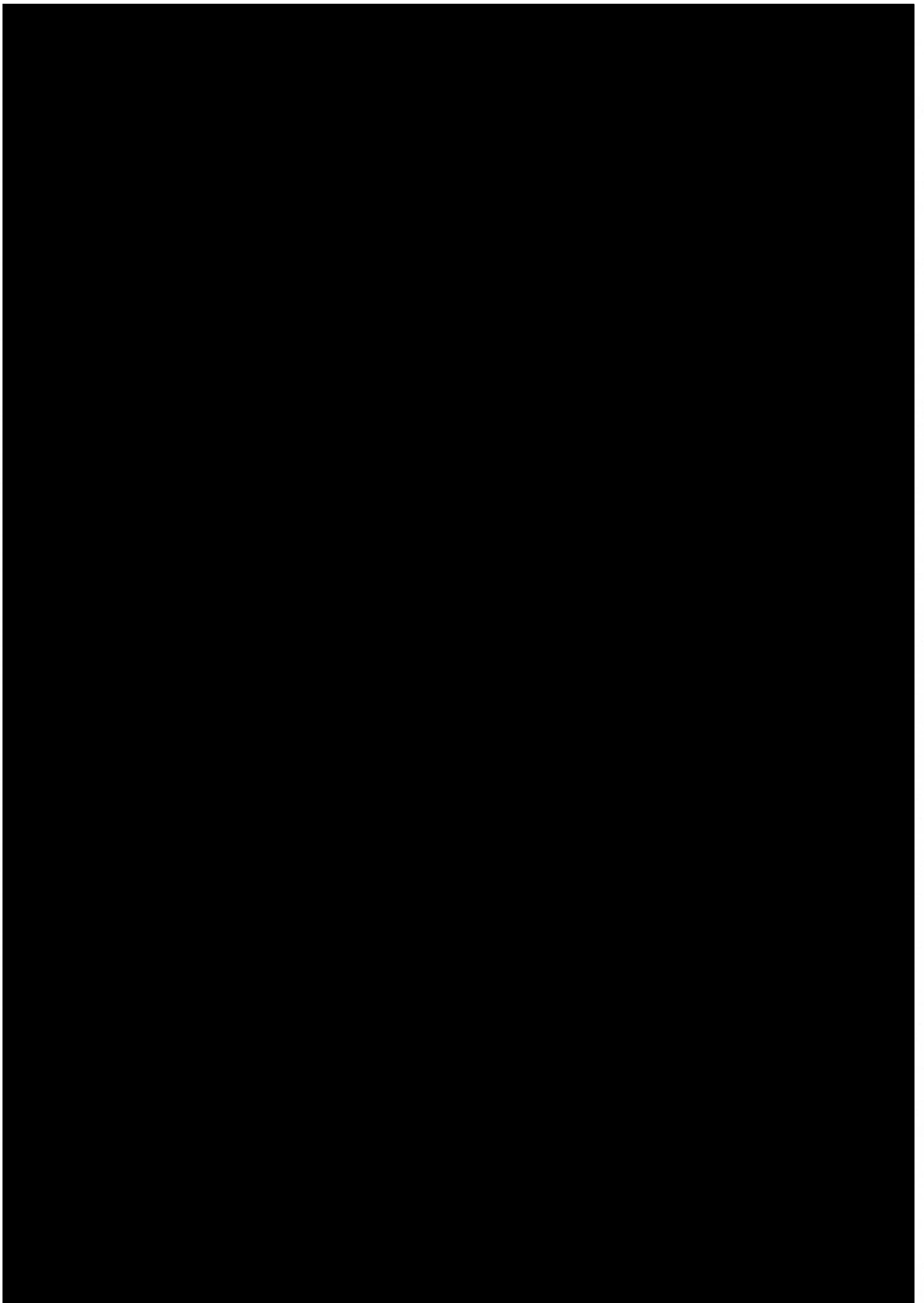
C2: Metro Station Works

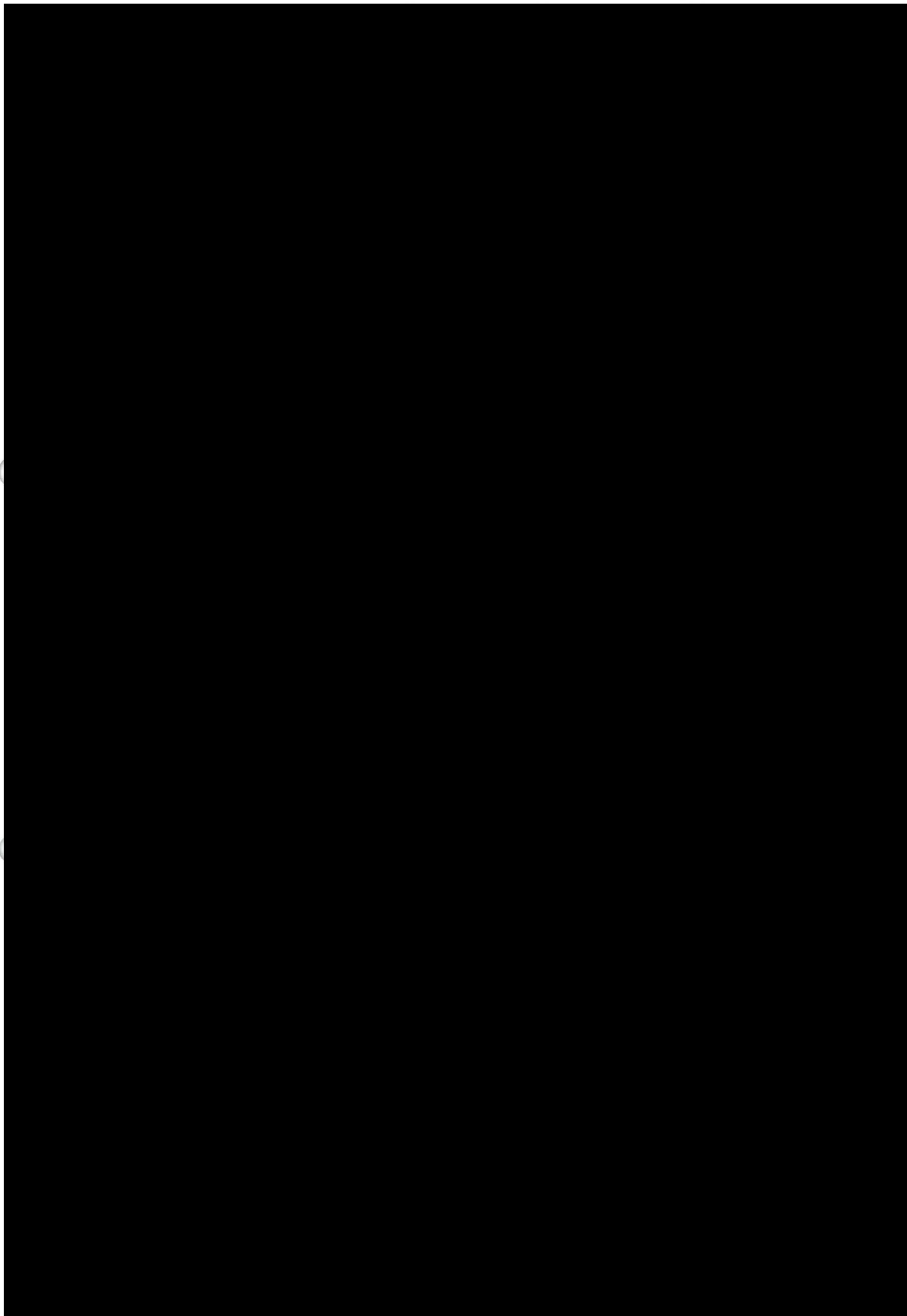
The following requirements apply to the Metro Station Works.

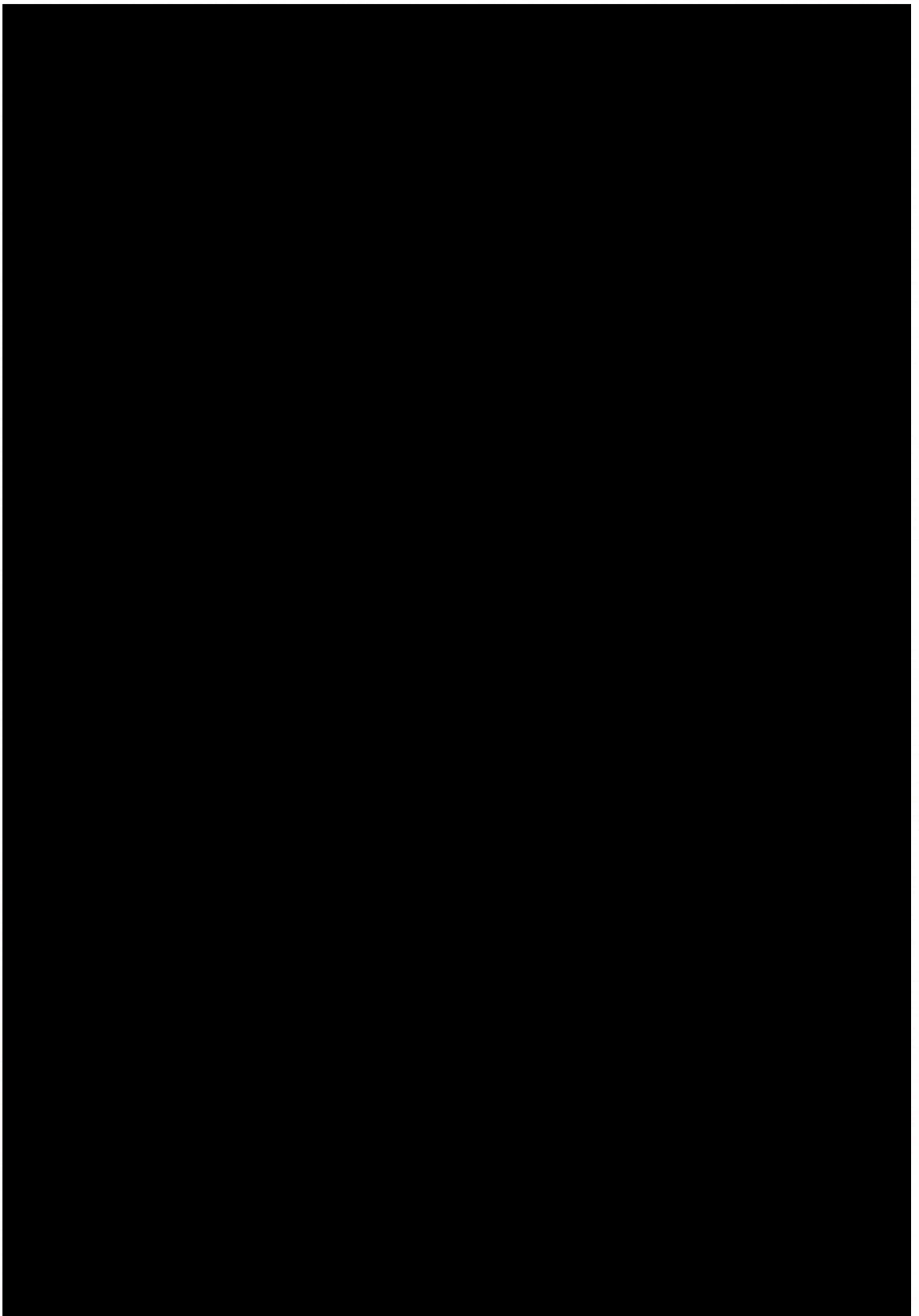
ID	Stage	Description	By	Requirement
Stage 1: Off-Site Tests				
1	First Article Inspection Tests	Design of equipment being manufactured in factory is subject to quality, finish, dimensions and function checks	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
2	Type Tests	Material or equipment which has not been used in similar railway application and has not been subject to type test before.	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
3	Factory Acceptance Tests	Element and system testing in factory prior to delivery to Site demonstrating compliance with requirements of the Contract.	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.
4	Integrated Factory Acceptance Tests	The following interfaced systems must be verified for correct communication and information exchange using simulated testing setup. <ul style="list-style-type: none"> • Building Management System and Central Control System • Station fire indicator panel and Central Control 	Contractor	Certification by Contractor, with an opportunity for the Principal's Representative and Independent Certifier to witness.

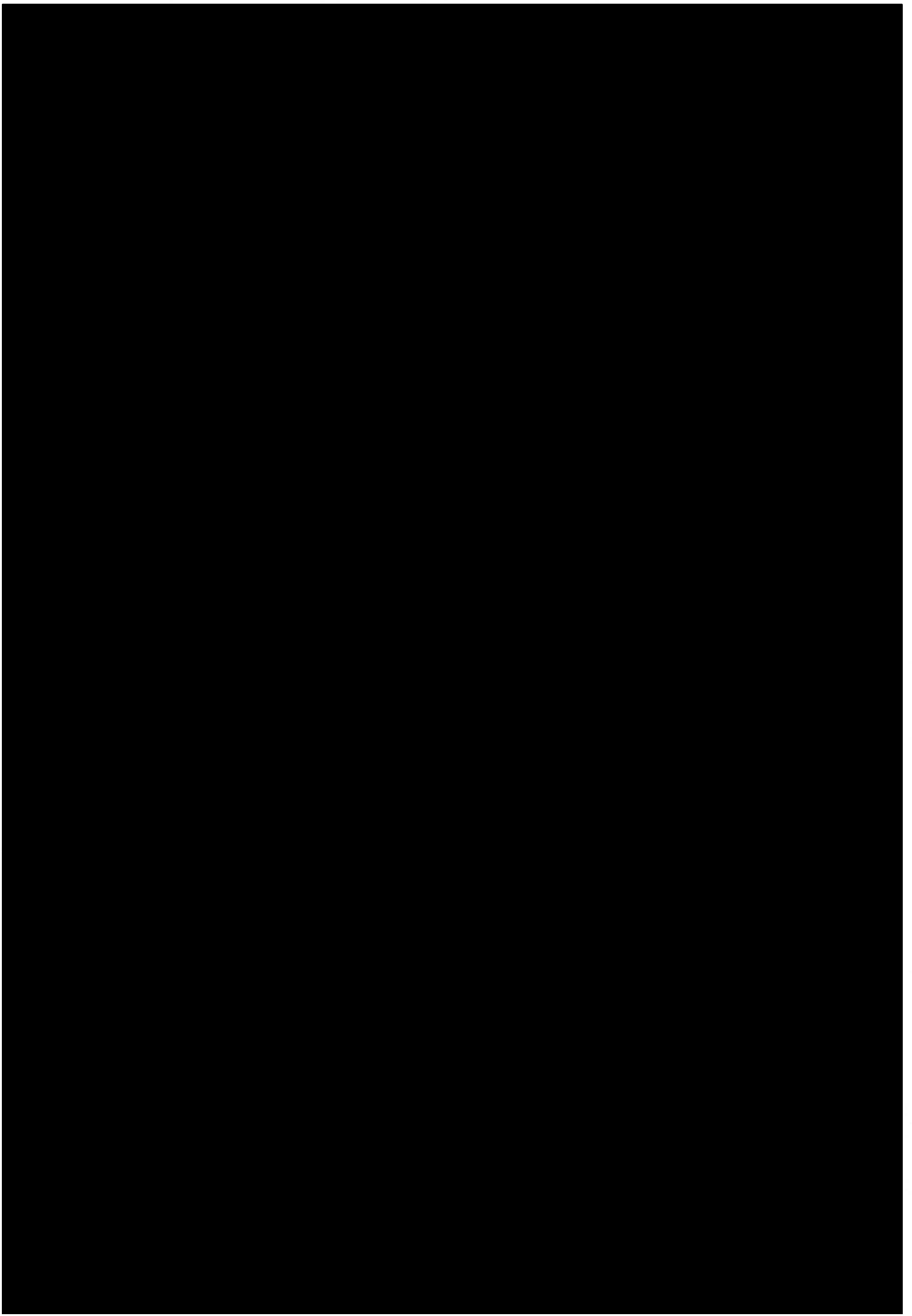
ID	Stage	Description	By	Requirement
		System		
Stage 2: Site Tests				
5	Site installation and operations checks	Tests on a part or the whole of the installation, which are required to verify correct installation of the works, before they are covered or connected up. Example : "Megger" test, leakage test, pressure test	Contractor	To be agreed with the Principal's Representative and described in the relevant Management Plans
6	Site acceptance tests	Tests on a complete system or equipment verifying the full range of performance functions, as specified in the deed.	Contractor	To be agreed with the Principal's Representative and described in the relevant Management Plans
7	System integration tests	Tests which demonstrate the correct functioning and operation of interfacing systems, which form parts of the railway, in a systematic and controlled manner.	Contractor and Other Contractors	Scope of tests must be agreed prior to the tests with the expected outcome included in the draft procedures.
8	System acceptance tests (SAT)	The tests undertaken to demonstrate that the system as a whole is capable of functioning in accordance with the specified requirements of the Contract SAT on individual systems must be satisfactorily completed prior to commencement of Test Running and Trial Running.	Contractor and Other Contractors	To be agreed with the Principal's Representative and described in the relevant Management Plans
Stage 3: Performance Tests				
9	Initial Performance Test (Test Running)	These are system-wide tests to demonstrate the correct and safe operation of the entire railway. The railway as a whole is validated for meeting the system performance requirements (SPR). Tests	Other Contractors	All contractors involved must provide support services to the Test Running. Operator personnel will attend and witness the

ID	Stage	Description	By	Requirement
		are also performed to confirm achievement of the reliability and availability targets. Test Running must be satisfactorily completed before Trial Running commences.		Test Running.
10	Trial Running	The railway will be operated according to a pre-planned train schedule, initially for a short duration which is progressively extended.	The Operator	The Operator will lead Trial Running supported by all other contractors.
11	System Performance Test	Operation of the integrated railway of SMNW (with passengers) and SMCSW (without passengers) continuously for a pre-agreed duration of time each day in accordance with Service and System Performance Requirements, achieving the target performance for 7 consecutive days.	The Operator	Supported by all contractors.
12	Capacity Performance Test	Operation of the integrated railway of SMNW and SMCSW continuously as in Revenue Service (without passenger) for a pre-agreed duration of time each day in accordance with the Capacity Performance Time-table, achieving the target performance for 2 hours in each of the 4 consecutive no service periods.	The Operator	Supported by all contractors.
13	Final Performance Test	Operate the integrated railway with the Indicative Final Performance time table for the City Section Final Performance Test to the Public and the integrated railway will be run in accordance with the Final Performance Test time table	To be agreed with the Principal's Representative and described in the relevant Management Plans	To be agreed with the Principal's Representative and described in the relevant Management Plans











Transport
for NSW

Management Requirements – Safety Management – Central Station Main Works (MR-S)

DOCUMENT NUMBER: SM-17-00000464

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Sydney Metro Requirement – Safety Management – Central Station Main Works (MR-S) describes requirements and processes in relation to safety management. This MR-S must be read in conjunction with other parts of the Contract.
- (b) The Contractor must comply with the requirements of this MR-S, including the Reference Documents in Annexure A.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-S.

1.3. General Requirements

- (a) Where noted in Annexure C – Project Specific Requirements, the Contractor must comply with the requirements of this MR-S, as amended by Annexure C.
- (b) The Reference Documents listed in this MR-S are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.
- (c) The Contractor must provide copies of all the Documents required in this MR-S in “.pdf” format that comply with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0).

2. Compliance with the Sydney Metro Principal Contractor Health & Safety Standard

The Contractor must comply with the requirements of the Sydney Metro Principal Contractor Health & Safety Standard SM PS ST-221 (SMPCH&SS), as detailed in Annexure B.

3. Local Possession Authority (LPA)

- (a) To that extent that Contractor’s Activities may be undertaken outside a Track Possession, the Contractor may carry out certain Works under a lower level of protection than LPA, as prescribed in the Sydney Trains RailSafe Network Rules.
- (b) In the circumstances described in clause 3 (a) above, the Contractor must provide to the Principal’s Representative for review in accordance with the Contract, a written approval from the Contractor’s Representative detailing the specific Works to be undertaken, as well as written justification including a risk assessment confirming its acceptability.

Annexure A: Reference Documents

- SM PS ST-221 Sydney Metro Principal Contractor Health & Safety Standard. 29 May 2015.
- Sydney Trains RailSafe Network Rules (available on internet).
- Web Content Accessibility Guidelines WCAG 2.0 (available on internet).
- Sydney Metro Employers Information Requirements SM EM-ST-203. 7 January 2017
- Sydney Metro CAD/GIS/BIM Manual SM EM-PW-304. 7 January 2017

Annexure B: SMPCH&SS Requirements included in the Contractor's Activities

Clause	Heading	Contractor's Responsibility
4.1	Project Health & Safety Management Plan (PHSMP)	The Contractor must comply with these requirements, and, within its PHSMP Management Plan, must: <ul style="list-style-type: none"> (a) describe procedures for the preparation and implementation of plans and Safe Work Method Statements before the start of related construction work; and (b) describe procedures for the management of Subcontractors and their plans and Safe Work Method Statements.
4.1.1	PHSMP Operational Readiness Review	The Contractor must comply with these requirements.
4.1.2	PHSMP Annual Review	The Contractor must comply with these requirements.
5.1	Company Officers	The Contractor must comply with these requirements.
5.2	Leadership and Culture	The Contractor must comply with these requirements.
5.2.1	Safety Leadership Meeting	The Contractor must comply with these requirements.
5.3	Resources	The Contractor must comply with these requirements.
5.3.1	Health & Safety Resources	The Contractor must comply with these requirements.
5.3.2	Supervisory Levels and Competency	The Contractor must comply with these requirements.
6.1	Health & Safety Planning	The Contractor must comply with these requirements.
6.1.1	Health & Safety Performance Index	The Contractor must comply with these requirements.
7.1	General Health & Safety Risk Management Requirements	The Contractor must comply with these requirements.
7.2	Risk Assessment and Control	The Contractor must comply with these requirements.
7.2.1	Project Level Risk Assessment	The Contractor must comply with these requirements.
7.2.2	Task/Work Method Level Risk Assessments	The Contractor must comply with these requirements.
7.3	Safety in Design	The Contractor must comply with these requirements, and in addition must utilise digital engineering in accordance with the standards listed in Annexure A or as otherwise agreed with the Principal's Representative, to assist in facilitating Safety in Design workshops.
8	Training & Competence	The Contractor must comply with these

		requirements.
8.1	Rail Safety Worker Competence	The Contractor must comply with these requirements.
9	Communication and Consultation	The Contractor must comply with these requirements.
9.1	Pre-Work Briefings	The Contractor must comply with these requirements.
9.2	Toolbox Talks	The Contractor must comply with these requirements.
9.3	Safety Alerts, Lessons Learnt and Bulletins	The Contractor must comply with these requirements.
9.4	Health and Safety Committee Meetings	The Contractor must comply with these requirements.
9.5	Communication and Consultation on H&S across languages	The Contractor must comply with these requirements.
10.1	H&S Reporting to Sydney Metro	The Contractor must comply with these requirements.
10.2	Reporting to External Parties	The Contractor must comply with these requirements.
11.1	Work at Height	The Contractor must comply with these requirements.
11.1.1	Use of Ladders for Access/Egress	The Contractor must comply with these requirements.
11.1.2	Falling objects	The Contractor must comply with these requirements.
11.2.1	Temporary Works (General Requirements)	The Contractor must comply with these requirements.
11.3	Scaffolding	The Contractor must comply with these requirements.
11.4	Formwork and Falsework	The Contractor must comply with these requirements.
11.5	Cranes and Load Shifting	The Contractor must comply with these requirements.
11.5.1	Tower Cranes	The Contractor must comply with these requirements.
11.6	Piling	The Contractor must comply with these requirements.
11.7	Demolition	The Contractor must comply with these requirements.
11.8	Explosives	The Contractor must comply with these requirements should the use of explosives be permitted
11.9.1	Excavation Work	The Contractor must comply with these requirements.
11.9.2	Tunnelling	The Contractor must comply with these requirements.
11.10	Electrical Safety	The Contractor must comply with these requirements.
11.10.1	Electrical Work	The Contractor must comply with these requirements.
11.10.2	Overhead Services	The Contractor must comply with these

		requirements.
11.10.3	Underground/Buried Services	The Contractor must comply with these requirements.
11.11	Confined Spaces	The Contractor must comply with these requirements.
11.12	Hot Work	The Contractor must comply with these requirements.
11.13	Chemical Management	The Contractor must comply with these requirements.
11.14	Occupational Health Hygiene and Well being	The Contractor must comply with these requirements.
11.14.1	Occupational Health & Hygiene Program	The Contractor must comply with these requirements.
11.14.2	Health Risk Assessment	The Contractor must comply with these requirements.
11.14.3	Asbestos Control	The Contractor must comply with these requirements.
11.14.4	Risk of Importation of Asbestos Containing Materials	The Contractor must comply with these requirements.
11.14.5	Ventilations in Tunnels and Enclosed Areas	The Contractor must comply with these requirements, however a separate Ventilation Management Plan is not required if the content of this clause 11.14.5 is included in another Management Plan.
11.14.6	Respirable Crystalline Silica Control	The Contractor must comply with these requirements.
11.14.7	Diesel Exhaust Emissions Control	The Contractor must comply with these requirements.
11.14.8	Thermal Heat Stress Risk Control	The Contractor must comply with these requirements.
11.14.9	Contaminated Ground	The Contractor must comply with these requirements.
11.14.10	Noise	The Contractor must comply with these requirements.
11.14.11	Psychosocial Hazards	The Contractor must comply with these requirements.
11.14.12	PPE Programs	The Contractor must comply with these requirements.
11.14.13	OHHW Training Program	The Contractor must comply with these requirements.
11.14.14	Medical Examination and Health Monitoring Program	The Contractor must comply with these requirements.
11.14.15	OHHW Key Performance Indicators	The Contractor must comply with these requirements.
11.14.16	OHHW Performance Reporting	The Contractor must comply with these requirements.
11.14.17	OHHW Performance Review	The Contractor must comply with these requirements.
11.15	Hazardous Manual Tasks	The Contractor must comply with these requirements.
11.16	Driving and Vehicle Safety	The Contractor must comply with these

		requirements.
11.16.1	Vehicle Drivers	The Contractor must comply with these requirements.
11.16.2	Minimum Vehicle Safety Equipment	The Contractor must comply with these requirements.
11.16.3	Vehicle Registration, Maintenance and Inspection	The Contractor must comply with these requirements.
11.17	Heavy Vehicles	<p>The Contractor must comply with these requirements and the following:</p> <ul style="list-style-type: none"> a) provide a dedicated logistics team to manage heavy vehicle requirements including Chain of Responsibility (CoR) and compliance with the heavy vehicle equipment requirements, specified in the Contract, including the Reference Documents, Codes and Standards; b) provide a means of identifying Site approved heavy vehicles; c) in order to allow for monitoring of vehicles working on the CSM Project, a dedicated delivery management system (Software System) must be deployed on the project which must allow vehicles to be monitored in real time. The Software System must allow for geo-fencing of localities ensuring compliance to dedicated access/egress routes and advice if these are deviated from (e.g. due to an accident or similar). Furthermore, the Software System must allow for delivery management through centralised vehicle traffic scheduling and traffic flow management in real time. Once vehicles are connected to the system, it must also allow for real time logistics management and monitoring and recording of materials delivery/disposal to a nominated location providing 100% traceability for disposal of all materials. The Software System will also be used to monitor and control over-size over-mass vehicles and the associated permits; and d) install a weighbridge to manage compliance with CoR.
11.18	Construction Traffic and	The Contractor must comply with these

	Vulnerable Road Users	requirements.
11.18.1	Heavy Vehicle Operators	The Contractor must comply with these requirements and develop and implement a program for random drug and alcohol testing for heavy vehicle operators.
11.18.2	Haulage Route Compliance	The Contractor must comply with these requirements.
11.18.3	Heavy Vehicle Safety Equipment	The Contractor must comply with these requirements.
11.18.4	Heavy Vehicle Driver Training	The Contractor must comply with these requirements.
11.19	Working In and Around Live Traffic	The Contractor must comply with these requirements.
11.19.1	Work around Construction Traffic / Mobile Plant	The Contractor must comply with these requirements.
11.20	Plant and Equipment	The Contractor must comply with these requirements.
11.20.1	Plant Specific Requirements	The Contractor must comply with these requirements.
11.20.2	Hand Tools	The Contractor must comply with these requirements.
11.20.3	Power Tools	The Contractor must comply with these requirements.
11.21	Work In and Around Water	Does not apply to this contract.
11.22	Work Conducted in the Vicinity of Aerodromes	The Contractor must comply with these requirements.
11.23	Remote or Isolated Work	The Contractor must comply with these requirements.
11.24	Night Work	The Contractor must comply with these requirements.
11.25	Welfare Facilities	The Contractor must comply with these requirements.
11.26	Lock-out/Tag-Out	The Contractor must comply with these requirements.
11.27	Permits to Work	The Contractor must comply with these requirements
11.28	Permit to Work – Tunnelling	The Contractor must comply with these requirements.
11.29	Safety Signage	The Contractor must comply with these requirements.
12	Rail Safety	The Contractor must comply with these requirements.
12.1	Rail Safety Risks	The Contractor must comply with these requirements.
12.2	Rail Safety Worker Requirements	The Contractor must comply with these requirements.
12.2.1	Competence and Induction	The Contractor must comply with these requirements.
12.3	Project Work Notification	The Contractor must comply with these requirements.
12.4	Arrangements for Track Possessions	The Contractor must comply with these requirements.

12.5	Track Worker Protection	The Contractor must comply with these requirements.
12.6	Worksite Protection	The Contractor must comply with these requirements.
12.6.1	Construction Fencing in the Rail Corridor	The Contractor must comply with these requirements.
12.6.2	Demarcation Fencing	The Contractor must comply with these requirements.
12.7	Mobile Plant in the Rail Corridor	The Contractor must comply with these requirements.
12.7.1	Road Rail Plant and Track Machines	<p>The Contractor must comply with these requirements, and in addition all road rail plant must comply with the requirements of AS7502:2016 Australian Standard for Road-Rail Vehicles.</p> <p>In the case where a Road-Rail Vehicle meets the stated requirements with the exception of compliance with AS7502: 2016, and is authorised via a TfNSW approved registration, the Contractor is to ensure work is conducted without any additional risks by completing a risk assessment and implementing additional controls where identified</p>
12.8	Working Around Electrical Infrastructure	The Contractor must comply with these requirements.
12.8.1	Planning Work Around Electrical Infrastructure	The Contractor must comply with these requirements.
12.8.2	Work Conducted around Underground Electrical Assets	The Contractor must comply with these requirements.
12.8.3	Safe Use of Mobile Plant in the Rail Corridor around Electrical Infrastructure	The Contractor must comply with these requirements.
12.9	Underground Services	The Contractor must comply with these requirements.
12.9.1	Detailed Site Survey	The Contractor must comply with these requirements.
12.10	Protection of Infrastructure from Damage	The Contractor must comply with these requirements.
12.11	Emergency/Incident Planning Response & Reporting	The Contractor must comply with these requirements.
13.1	Alcohol and Other Drugs	The Contractor must comply with these requirements.
13.1.1	Definitions	The Contractor must comply with these requirements.
13.1.2	Testing	The Contractor must comply with these requirements.
13.1.3	Employee Assistance	The Contractor must comply with these requirements.
13.1.4	Notification	The Contractor must comply with these requirements.
13.2	Fatigue Management	The Contractor must comply with these

		requirements.
13.2.1	Fatigue Minimisation Controls for Rail Safety Workers	The Contractor must comply with these requirements.
13.2.2	Fatigue Minimisation for Other Safety Critical Roles	The Contractor must comply with these requirements.
13.3	Health Assessment	The Contractor must comply with these requirements.
13.3.1	Health Assessment for Rail Safety Workers	The Contractor must comply with these requirements.
14	PPE	The Contractor must comply with these requirements.
14.1	Respiratory PPE	The Contractor must comply with these requirements.
15	Site Security & Access Control	<p>The Contractor must comply with these requirements and the following:</p> <ul style="list-style-type: none"> a) engage a specialist security lead (NSW Security Licence Class 2A) to provide advice and direction; and b) as a minimum, the following trained and authorised security patrollers must be employed for security patrol tasks. The Contractor's performance will be reviewed periodically (as indicated below), with the Principal to review the effectiveness of security levels provided: <ul style="list-style-type: none"> A. Security Guard (days) - Platform 12 - 8 months; B. Security Guard (days) - Entire Site (roaming) - Entire project duration; C. Security Guard (days) - Platform 12 - Entire project duration; D. Security Guard (nights) - Platform 12 - Entire project duration; E. Security Guard (nights) - Bounce Hotel - Entire project duration; and F. Security Guard (nights) at Entire Site (roaming) - Entire project duration.
16	Interface Management	The Contractor must comply with these requirements.
17	Management of Change	The Contractor must comply with these requirements.
18	Configuration Control Board	The Contractor must comply with these requirements.
19	Asset Management	The Contractor must comply with these

		requirements.
20	Safety in Procurement	The Contractor must comply with these requirements.
20.1	Subcontractor Safety Management Plan	The Contractor must comply with these requirements.
20.2	Control of Subcontractors	The Contractor must comply with these requirements.
21.1	Systems Engineering	The Contractor must comply with these requirements.
21.2	Reliability Availability and Maintainability	The Contractor must comply with these requirements.
22	Safety Assurance	The Contractor must comply with these requirements.
22.1	Independent Safety Assessment	The Contractor must comply with these requirements.
23	Human Factors	The Contractor must comply with these requirements.
24	Incident, Emergency and Crisis Management	The Contractor must comply with these requirements.
24.1	Minimum Requirements for Management Plans	The Contractor must comply with these requirements.
24.2	First Aid Requirements	The Contractor must comply with these requirements.
24.3	Site Emergency Co-ordinators	The Contractor must comply with these requirements.
24.4	Simulated Emergency Exercises	The Contractor must comply with these requirements.
25	Incident Reporting & Investigation	The Contractor must comply with these requirements.
25.1	Incident Notification & Reporting	The Contractor must comply with these requirements.
25.1.1	Notification to Regulators	The Contractor must comply with these requirements.
25.2	Incident Investigation	The Contractor must comply with these requirements.
25.2.1	Submitting Investigation Reports	The Contractor must comply with these requirements.
25.2.2	Corrective & Preventative Action	The Contractor must comply with these requirements.
26	Corrective Action Management	The Contractor must comply with these requirements.
27	Injury Management & Return to Work	The Contractor must comply with these requirements.
28.1	Inspections	The Contractor must comply with these requirements.
28.2	Audits	The Contractor must comply with these requirements.
28.3	Compliance Working Group	The Contractor must comply with these requirements.

Note: Wherever course titles vary between the SMPCH&SS and the SMIC, the SMIC will take precedence over the SMPCH&SS

Annexure C: Project Specific Requirements

The following amendments apply to the clauses listed in the main body of this MR-S.

Section Number	(A) Clause No. to be deleted in full	(B) Clause No. to be amended / replaced	(C) New Clause No. to be added	(D) Clause wording to be deleted and/or replaced
N/A	N/A	N/A	N/A	N/A



Transport
for NSW

Management Requirements – Workforce Development & Industry Participation – Central Station Main Works Contract (MR-W)

DOCUMENT NUMBER: SM-17-00000466

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Management Requirements – Workforce Development and Industry Participation – Central Station Main Works (MR-W) describes specific requirements and processes in relation to workforce development and industry participation.
- (b) This MR-W must be read in conjunction with other parts of the Contract.
- (c) The Contractor must comply with the requirements of this MR-W, including the Reference Documents in Annexure A.
- (d) All the requirements defined in this MR-W apply across the Supply Chain.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-W.

1.3. General Requirements

- (a) Where noted in Annexure B – Project Specific Requirements, the Contractor must comply with the requirements of this MR-W, as amended by Annexure B.
- (b) The Reference Documents listed in this MR-W are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.
- (c) The Contractor must provide copies of all Documents required under this MR-W in “.pdf” format that comply with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0).

2. Workforce Development & Industry Participation Requirements

2.1. General Requirements

- (a) The Contractor must develop, implement and maintain governance structures, processes and systems that ensure integration of the workforce development and industry participation requirements during the Contractor’s Activities as they apply across the Supply Chain and document them in the specific related Management Plans detailed in MR-PA.
- (b) The Contractor must engage and deploy suitable resources to manage, coordinate and deliver the requirements of this MR-W.
- (c) The Contractor must meet with the Principal’s Representative on a monthly basis to discuss progress and compliance with the requirements of this MR-W, and upcoming Contractor’s Activities in relation to the requirements of this MR-W.
- (d) The Contractor must advise the Principal’s Representative about its strategies to obtain workforce development funding, subsidies and grants and report on any funding, subsidies and grants it receives in relation to the CSM Project.

- (e) The Contractor must assess current and future workforce development and industry participation needs and must submit to the Principal's Representative 30 Business Days after the Contract date, the following completed templates and information for review in accordance with the Contract:
 - (i) a completed Workforce Profile and Gap Plan Template SM ES-FT-435;
 - (ii) a completed Workforce Development Output Delivery Profile Template SM ES-FT-435;
 - (iii) a completed Training Needs Analysis SM ES-FT-432 which will provide for the outcomes specified in this MR-W and in particular the requirements of 2.3.4; and
 - (iv) estimated Workforce numbers that will participate in the Sydney Metro Industry Curriculum Program (SMIC).
- (f) The reporting in clause 2.1 (e) (i) to (iv) must also be updated and submitted to the Principal's Representative every 12 months on the anniversary of the date of the Contract until the Date of Construction Completion of the last Portion to reach Construction Completion.
- (g) The Contractor must provide the following completed documents to the Principal's Representative for review in accordance with the Contract, prior to submission to the NSW Procurement Board:
 - (i) a NSW APiC Aboriginal Participation Plan Template SM ES-FT 426, 60 Business Days after the Contract Date; and
 - (ii) a NSW APiC Aboriginal Participation Report Template SM ES-FT 427, prior to the Date of Construction Completion of the last Portion to reach Construction Completion.
- (h) The Contractor must ensure that employment conditions for all Trainees and Apprentices meet or exceed the obligations and expectations of the National Code of Good Practice for Australian Apprenticeships, including pay rates reflecting individual awards or the national minimum wage for Trainees where no award or agreement exists.
- (i) The Contractor must participate in all meetings, working groups and sub groups relating to the Sydney Metro City & Southwest SEAG providing timely information to these groups, and as required by the Principal's Representative.
- (j) The Contractor is encouraged to support an increase in the number of women in senior leadership and management roles, and appropriate strategies must be developed and included in the Workforce Development & Industry Participation Plan required in MR-PA.

2.2. Key Personnel

- (a) The Contractor must engage a Workforce Development and Industry Participation Manager and an Aboriginal Participation Manager to establish, monitor and implement strategies relating to workforce development and industry participation. These personnel must establish, monitor and implement strategies relating to workforce development and industry participation.

- (b) The minimum qualifications, skills, competencies and experience for these personnel are:
- (i) Workforce Development & Industry Participation Manager qualifications:
 - A. Degree, Diploma or Advanced Diploma in Adult Education, Vocational Education, Organisational Development, Education or Human Resources; and
 - B. Cert IV or equivalent in Training & Assessment.
 - (ii) Workforce Development & Industry Participation Manager experience:
 - A. minimum of 5 years' training or learning and development work experience in a similar role within the rail, mining, civil construction industry or on major infrastructure projects;
 - B. demonstrable and significant experience dealing at a strategic level with education providers, registered training organisations, skill services organisations, etc;
 - C. excellent communication and leadership skills;
 - D. experience in managing or delivering nationally accredited programs within recognised industry Training Packages;
 - E. experience in delivering workforce development requirements within infrastructure projects;
 - F. experience working with the implementation and delivery of diversity and inclusion programs;
 - G. experience in liaising with state and federal agencies in relation to accessing funding opportunities related to training; and
 - H. demonstrated ability to work within a team and engage with Stakeholders.
 - (iii) Aboriginal Participation Manager qualifications:
 - A. Desirable requirements: Degree, Diploma or Advanced Diploma in Adult Education, Commerce, Education, Human Resources, Community Engagement or Social Policy; and
 - B. Essential requirements: Cert IV or equivalent in Training & Assessment or other relevant discipline.
 - (iv) Aboriginal Participation Manager Experience:
 - A. demonstrable knowledge and understanding of Aboriginal communities and their cultures and an understanding of the issues affecting Aboriginal People;
 - B. demonstrated ability in management, leadership and capacity to mentor;
 - C. demonstrated high level communication skills, including the ability to effectively liaise with community; and

- D. demonstrated ability to work within a team and engage with Stakeholders.
- (c) In addition to the mandatory requirements of clause 2.2 (b) it would be preferable for the Workforce Development & Industry Participation Manager to:
 - (i) hold tertiary qualifications in relevant discipline and equivalent experience in training, employment, social policy or corporate social responsibility fields in the infrastructure delivery sector; and
 - (ii) have experience in improving participation amongst under-represented groups in the Workforce.

2.3. Workforce Development & Industry Participation Outputs

2.3.1. Industry Participation

By the Date of Construction Completion of the last Portion to reach Construction Completion, the Contractor must:

- (a) have engaged as a minimum, the number of Australian and New Zealand Small and Medium Enterprises (ANZ SME) nominated in Annexure B, in the Supply Chain;
- (b) ensure that at least the minimum number of ANZ SMEs in the Supply Chain nominated in Annexure B, were Local ANZ SMEs; and
- (c) ensure that as a minimum, the number of ANZ SMEs in the Supply Chain nominated in Annexure B, were Recognised Aboriginal Businesses.

2.3.2. Local Sustainable Jobs

The Contractor must ensure that by the Date of Construction Completion of the last Portion to reach Construction Completion:

- (a) at least 20% of the Workforce were employed in Local Sustainable Jobs; and
- (b) of the 20% described in clause 2.3.2 (a), at least 2.5% of that number of the Workforce employed in Local Sustainable Jobs, were Aboriginal People..

2.3.3. Apprentices & Trainees

The Contractor must ensure that by the Date of Construction Completion of the last Portion to reach Construction Completion:

- (a) it has employed as a minimum, the number of Apprentices or Trainees (equivalent full time employees) nominated in Annexure B, across the Supply Chain;
- (b) some of the Apprentices in clause 2.3.3 (a) have commenced or completed (during the term of this Contract) study in the R1130915 Certificate III in Civil Construction as defined by the NSW Government Department of Education & Training;
- (c) as a minimum, the number nominated in Annexure B, of those people in clause 2.3.3 (a), were Aboriginal People.

2.3.4. Workforce Skills Development

- (a) In addition to the SMIC requirements, 20% of the Workforce (measured at the Date of Construction Completion of the last Portion to reach Construction Completion) must have participated in relevant Workforce Skills Development Training.

- (b) The 20% measure of the Workforce in clause 2.3.4 (a) above does not include training otherwise required by legislation, associated regulations, standards and accreditations or in the various approvals, licenses, and permits that may be necessary for the commencement, implementation and control of the Works, Temporary Works and Contractors Activities, (as it is not considered to be Workforce Skills Development Training).
- (c) The Contractor must ensure by the Date of Construction Completion of the last Portion to reach Construction Completion, at least the minimum number of Aboriginal People within the Workforce nominated in Annexure B, have undertaken Upskilling at AQF Certificate IV equivalent and above.

2.3.5. Diversity & Inclusion

The Contractor must ensure that by the Date of Construction Completion of the last Portion to reach Construction Completion, the targets listed in clause 2.3.5 (a) to (d) have been met, and the Contractor must demonstrate how this is being progressively achieved throughout the period of the Contract by their inclusion in the monthly reports referred to in clause 5 of this MR-W:

- (a) a minimum of 15% of the Workforce were female;
- (b) 2.5% of the Workforce were Aboriginal People;
- (c) 5% of the Workforce were females in Non-Traditional Trades; and
- (d) 8% of the Workforce were under the age of 25 years whilst working on the CSM Project.

2.3.6. Inspiring Future Talent

- (a) The Contractor must develop and implement programs for engagement with NSW tertiary education establishments including Work Experience Placements and Graduate Placements.
- (b) The Contractor must ensure that by the Date of Construction Completion of the last Portion to reach Construction Completion, as a minimum, the number of the Workforce nominated in Annexure B were employed through Work Experience Placements; and the number of the Workforce nominated in Annexure B, were employed through Graduate Placements.

3. Workforce Development and Industry Participation Programs

- (a) The Contractor must participate in the SMIC provided by the Principal, through Industry Curriculum Training Providers in accordance with the Sydney Metro City & Southwest Industry Curriculum Guide - SM ES-FT-433.
- (b) All training in the programs referred to in this MR-W must be completed, to the extent they apply, prior to the individuals commencing on the Site, unless otherwise stated in the Sydney Metro City & Southwest Industry Curriculum Guide - SM ES-FT-433.
- (c) All of the Workforce must complete Sydney Metro Orientation Training prior to commencement on Site.

- (d) All workers in the role of Supervisor must attend the Cultural Awareness Training.
- (e) The Contractor must also participate in the following Sydney Metro Workforce Development and Industry Participation Programs in accordance with the SM ES-FT-444 Sydney Metro Workforce Development Program Guide:
 - (i) Sydney Metro Apprentice and Trainee Scheme;
 - (ii) Sydney Metro Careers Program;
 - (iii) Sydney Metro Diversity and Inclusion Programs:
 - A. Sydney Metro Pre-Employment Programs;
 - B. Aboriginal Participation Programs; and
 - C. Women In Non-Traditional Trades Program.
 - (iv) Sydney Metro Workforce Skills Development Programs;
 - (v) Sydney Metro Job Brokerage; and
 - (vi) Sydney Metro Industry Participation Program.
- (f) In regards the Sydney Metro Pre-Employment Programs in clause 3 (e) (iii) A. the Contractor must:
 - (i) attend all Sydney Metro Pre-Employment Program graduations; and
 - (ii) interview all participants, graduating from the Sydney Metro Pre-Employment Program who subsequently apply for a position with the Contactor
- (g) All Vacancies in the Workforce must be posted on the Principal's website (job portal pages).
- (h) In addition the Contractor must:
 - (i) identify Australian Qualifications Framework recognised accredited programs and other arrangements for education and training that provide Relevant Qualifications for the Workforce;
 - (ii) identify Australian Skills Quality Authority recognised educational and training facilities that can provide the accredited training and nationally recognised qualifications required for workforce participation;
 - (iii) provide relevant Workforce Skills Development Training to assist in re-skilling and Upskilling the Workforce;
 - (iv) provide Apprentice and Trainee programs;
 - (v) provide access to the Site and all locations where the Works and Temporary Works are being carried out as requested by the Principal's Representative to enable the Principal's Accredited Assessors to carry out competency assessment as part of mandatory SMIC requirements;
 - (vi) use the Principal's nominated electronic access control software application (Pegasus) to track and report total Workforce numbers and workforce development and industry participation outputs; and

- (vii) use the Principal's nominated electronic access control software application to ensure that access to the Site is only granted to the required people having completed the SMIC.

4. Procurement Principles

The Contractor must:

- (a) include all workforce development and industry participation requirements in the selection process for its Subcontractors and in the Subcontracts;
- (b) maximise opportunities for Australian and New Zealand (ANZ) small and medium enterprises (SME) participation to supply goods or services where practicable;
- (c) identify ANZ SMEs for potential participation in the Supply Chain for the Works, and alert these ANZ SMEs of potential tenders and supply opportunities;
- (d) identify and implement sustainable procurement initiatives that provide environmental and social improvement and maximise opportunities for ANZ SMEs;
- (e) advertise all procurement opportunities through the Industry Capability Network Gateway <http://www.icn.org.au>;
- (f) provide the Principal all relevant information in order for the Principal to be able to comply with the *Australian Jobs Act 2013*, Sydney Metro Australian Industry Participation Plan and other relevant Government requirements;
- (g) comply with the NSW Aboriginal Participation in Construction Policy; and
- (h) comply with the NSW Procurement Directive PBD-2017-05 – Construction training and skills development

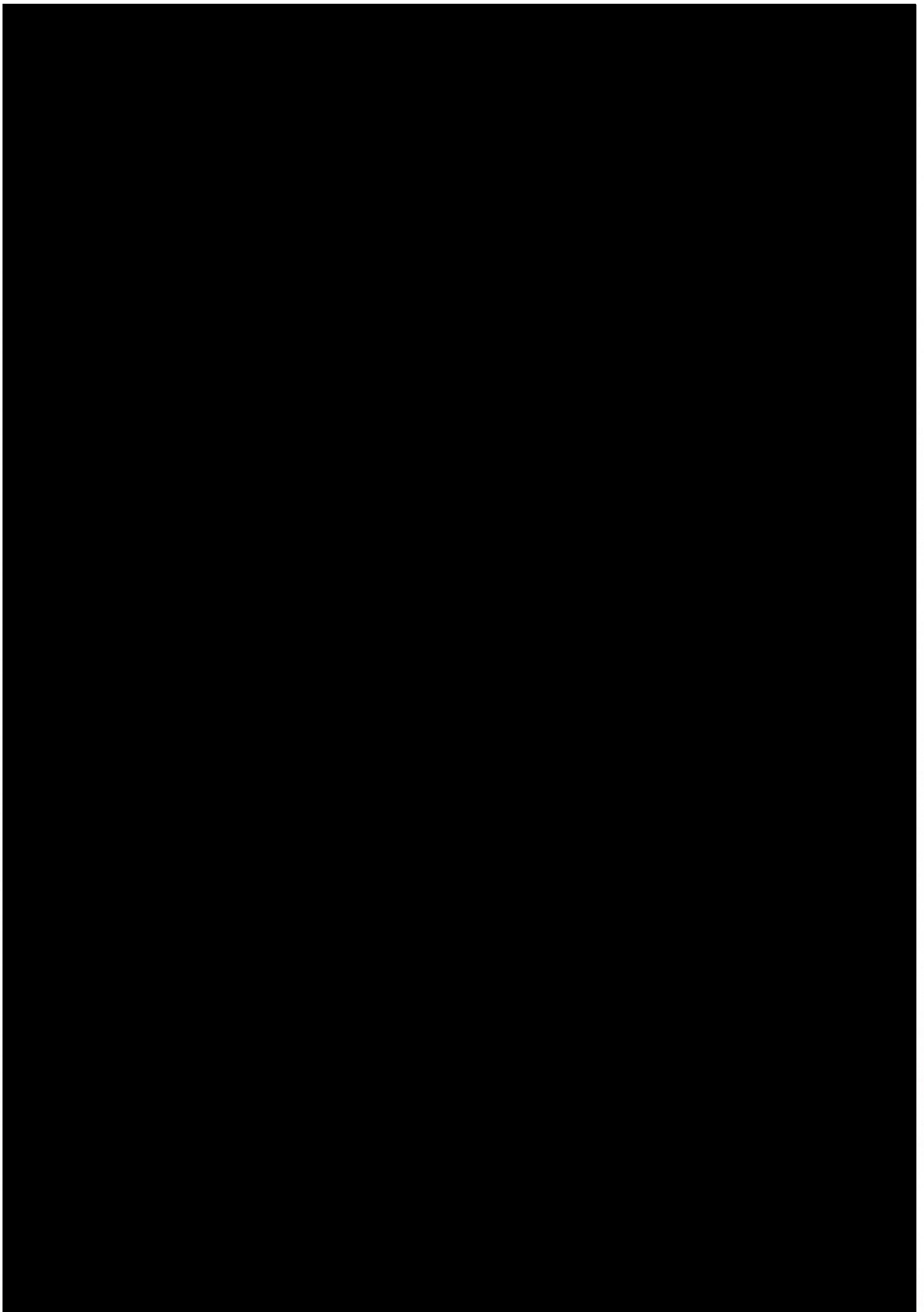
5. Reporting Requirements

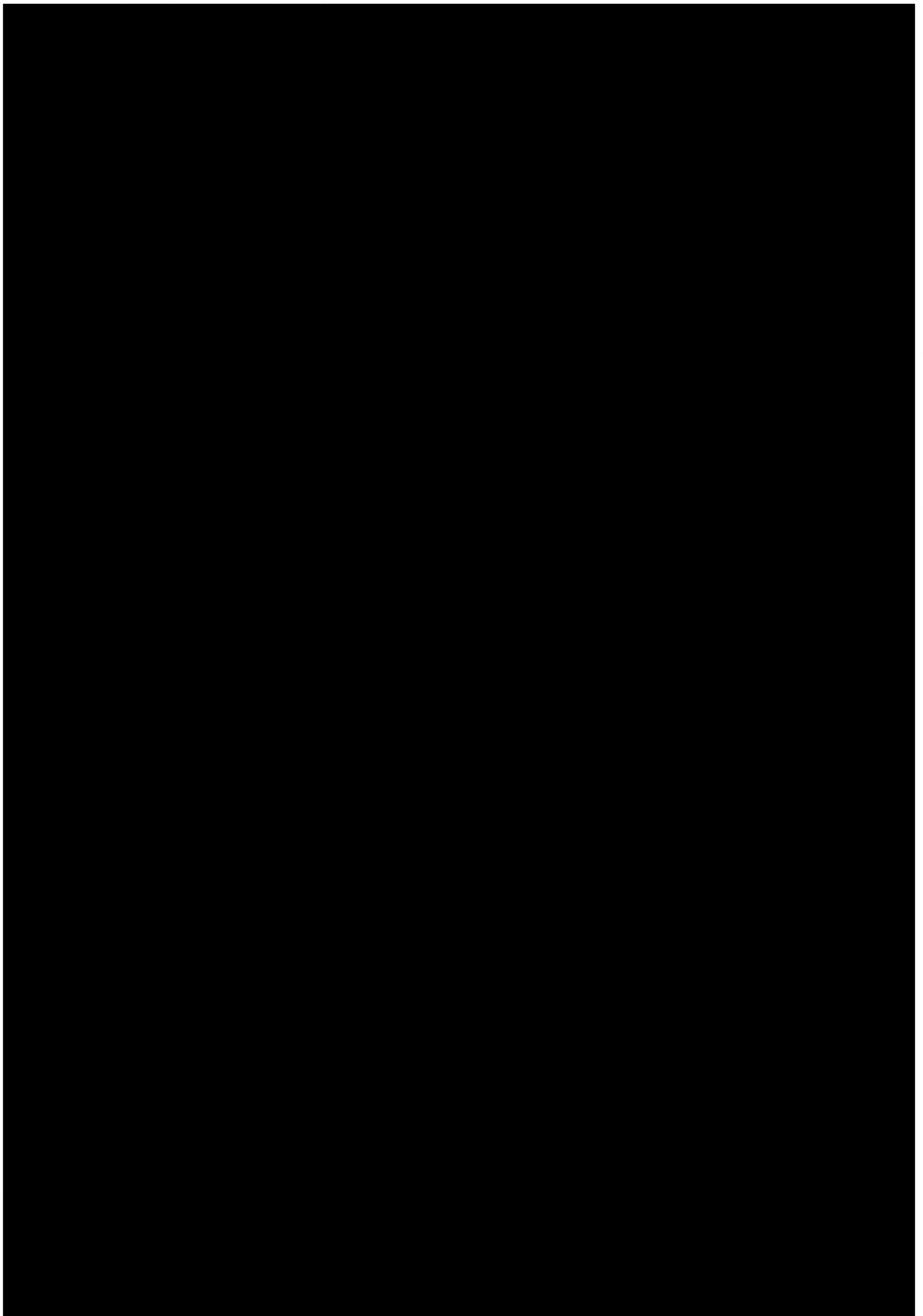
- (a) The Contractor must submit a monthly progress report to the Principal's Representative for review in accordance with the Contract. The monthly progress report must be in accordance with the Sydney Metro City and Southwest Workforce Reporting Template SM ES-FT- 423.
- (b) The Contractor's monthly progress report must contain the following information, in each case showing the number in the current month, cumulative total and the predicted total number (by the Date of Construction Completion of the last Portion to reach Construction Completion):
 - (i) progress against the requirements of clause 2.3 of this MR-W;
 - (ii) Workforce numbers under the headings listed in A to G, below:
 - A. total number of people engaged in the Workforce;
 - B. Local Sustainable jobs;
 - C. Aboriginal Peoples in the Workforce;
 - D. gender ratio and numbers in the Workforce;
 - E. Apprentices;
 - F. Trainees; and
 - G. Apprentices and Trainees who are Aboriginal People.

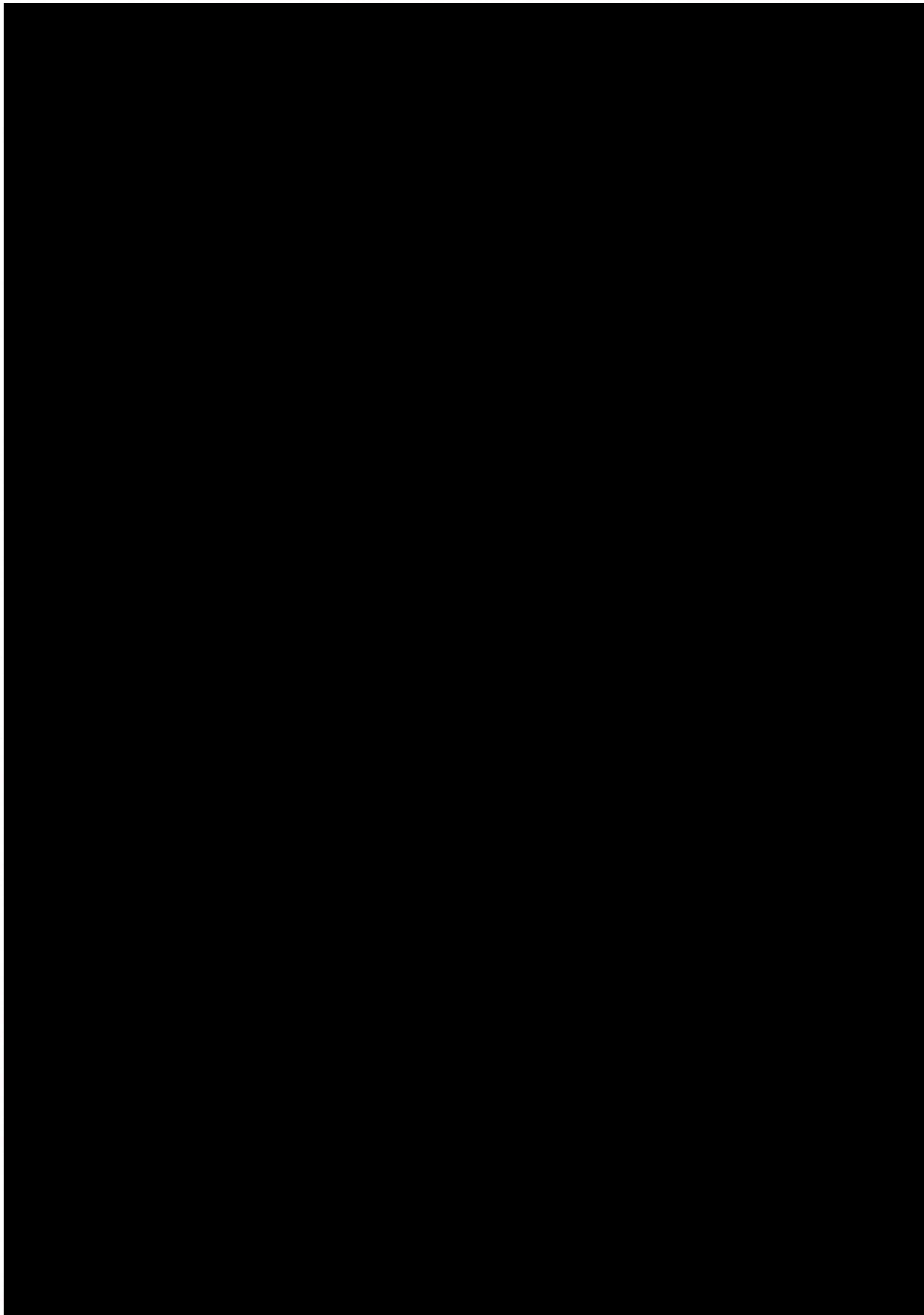
- (iii) numbers of all Apprentices and Trainees employed in the Workforce, regardless of duration of employment i.e. also including those with less than 26 weeks continuous employment;
 - (iv) the proportion of the Workforce participating in Nationally Recognised Accredited Training;
 - (v) the proportion of the Workforce represented in the following groups:
 - A. women in Non-Traditional Trades;
 - B. women in senior leadership and management roles;
 - C. people under the age of 25 years;
 - D. Long Term Unemployed;
 - E. Mature Aged Workers;
 - F. people with a registered Disability; and
 - G. people under the age of 25 years, who have been out of education or training for six months or more.
 - (vi) the number of ANZ SMEs participating in the Supply Chain;
 - (vii) the number of Local ANZ SMEs participating in the Supply Chain;
 - (viii) the number of Recognised Aboriginal Businesses participating in the Supply Chain;
 - (ix) details of the Workforce participating in all Cultural Awareness Training;
 - (x) details of the Workforce participating in the Sydney Metro Workforce Development and Industry Participation Programs, showing the results per individual program; and
 - (xi) details of any additional Nationally Recognised Accredited Training undertaken by the Workforce.
- (c) Randomly selected data, records and other information may be requested to support audits carried out by the Principal on a quarterly basis. The Contractor must provide the Principal's Representative with this documentary evidence associated with the data when requested by the Principal's Representative.

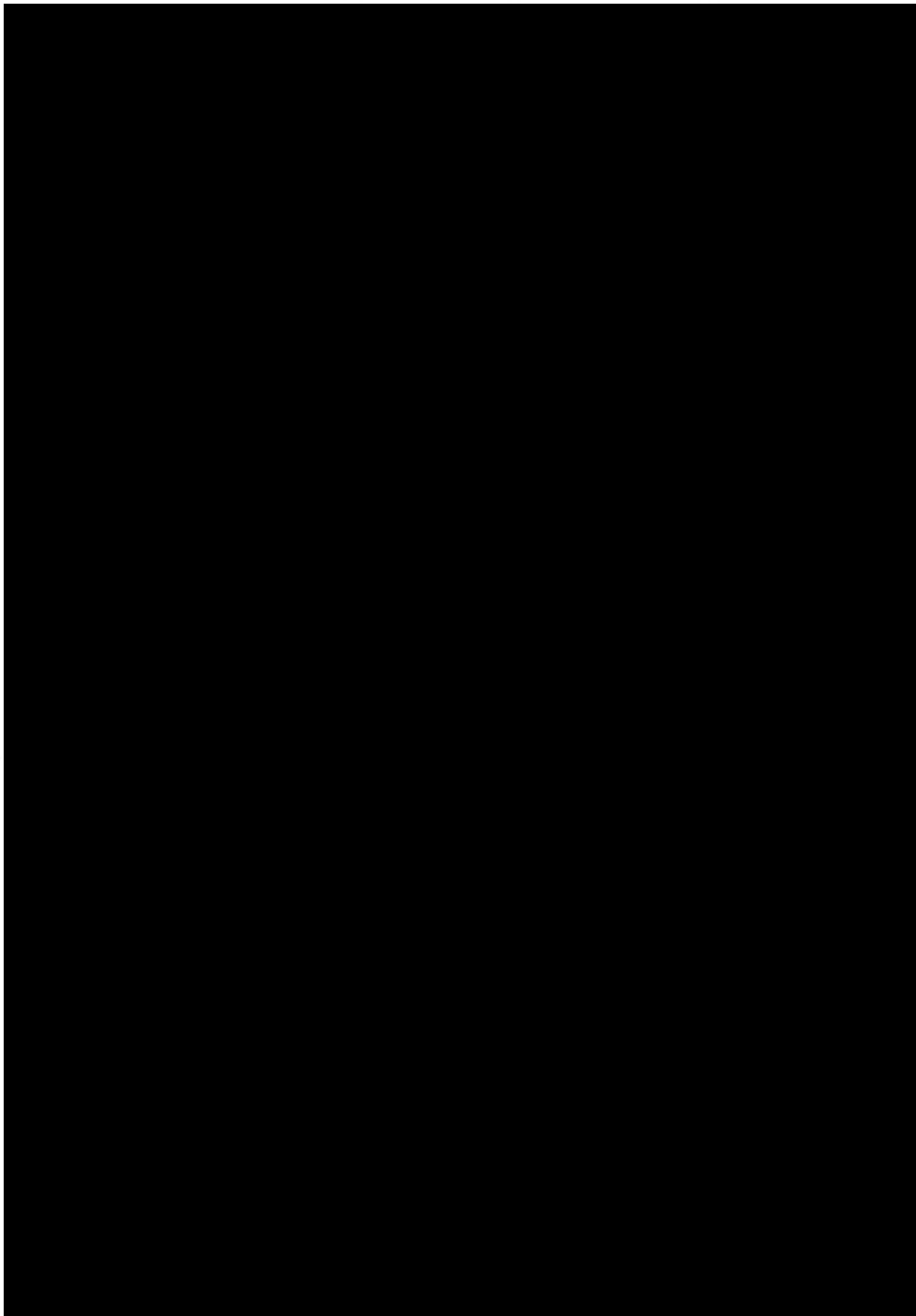
Annexure A: Reference Documents

- Workforce Profile and Gap Plan Template SM ES-FT-435, 22 February 2018.
- Workforce Development Output Delivery Profile Template SM ES-FT-435, 22 February 2018.
- Training Needs Analysis SM ES-FT-432, 22 February 2018.
- NSW APiC Aboriginal Participation Report Template SM ES-FT-427, 22 February 2018.
- NSW APiC Aboriginal Participation Plan Template SM ES-FT-426, 22 February 2018.
- Sydney Metro City & Southwest Industry Curriculum Guide SM ES-FT-433, December 2017
- Sydney Metro Australian Industry Participation Plan, April 2014
- Sydney Metro City and Southwest Workforce Reporting Template SM ES FT-423, 22 February 2018.
- NSW Aboriginal Participation in Construction Policy "APIC", 1 August 2016 (available on internet).
- NSW Procurement Directive PBD-2017-05 Construction training and skills development (available on internet).
- National Code of Good Practice for Australian Apprenticeships, July 2017 (available on internet).
- Sydney Trains PR D 78701 Personnel Certifications – Electrical, 6 October 2017 (available on internet).
- Web Content Accessibility Guidelines WCAG 2.0 (available on internet).
- SM ES-FT-444 Sydney Metro Workforce Development Program Guide 18 December 2017













Transport
for NSW

Management Requirements – Technical Management – Central Station Main Works (MR-T)

Document Number: SM-17-00000465

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Management Requirements - Technical Management (MR-T) describes technical engineering management requirements and processes.
- (b) This MR-T must be read in conjunction with other parts of the Contract.
- (c) The Contractor must comply with the requirements of this MR-T including the Reference Documents in Annexure A.

1.2. Definitions

Refer to MR-Prelude, SWTC Appendix A01 and the General Conditions for a definition of terms used in this MR-T.

1.3. General Requirements

- (a) Where noted in Annexure B – Project Specific Requirements, the Contractor must comply with the requirements of this MR-T, as amended by Annexure B.
- (b) The Reference Documents listed in this MR-T are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.

2. General

- (a) The Contractor must manage the design process in accordance with the details and information provided in its Engineering Management Plan as described in MR-PA, and develop Design Documentation in accordance with this MR-T and the Contract.
- (b) The Contractor must engage with and coordinate input from various Stakeholders, Interface Contractors, Other Contractors, Operators and Existing Operators in the development of the design to ensure that the system requirements, interfaces and associated specifications are accommodated (through regular working groups and design management meetings) within the design of the Works.
- (c) The Contractor must provide a high performance and highly skilled team for the duration of the CSM Project, working in a collaborative manner with the Principal and other service providers and Stakeholders to deliver the Works.
- (d) The Contractor must regularly attend meetings with the Principal and other Stakeholders and present design development and progress information, at the Principal’s request.
- (e) The Contractor must test and Commission the Works and Temporary Works and must coordinate Asset Handovers with Interface Contractors, Other Contractors, Operators, Existing Operators and other entity or person nominated by the Principal’s Representative.
- (f) Asset Management Information must be prepared for the Works in accordance with the SWTC.
- (g) Samples and Prototypes must be provided by the Contractor in accordance with Annexure E.

3. Design Development and Review

3.1. General

- (a) Unless otherwise agreed by the Principal's Representative, the Contractor must prepare design packages containing relevant Design Documentation in accordance with this MR-T and the Reference Documents at each of Design Stage 1, Design Stage 2, and Design Stage 3.
- (b) The Contractor may, at its choosing; prepare and submit enabling works, piling and plunge columns design packages (containing Design Documentation in accordance with this MR-T and the Reference Documents) at Design Stage 1 and Design Stage 3 only.

3.2. Design Stages

- (a) All Design Documentation must comply with the requirements of the Contract and must be submitted to the Principal's Representative and Independent Certifier and others for review in accordance with the Contract at the following times:
 - (i) at the completion of the Design Stage 1 "System Design Stage" for each design package;
 - (ii) at the completion of the Design Stage 2 "Preliminary Design Stage" for each design package; and
 - (iii) at the completion of the Design Stage 3 "Critical Design Stage" for each design package, and must include all Design Documentation required to allow complete construction of the designed elements.
- (b) The Contractor may request permission from the Principal's Representative to remove either a Design Stage 1 or a Design Stage 2 submission from its schedule for a specific design package. Only when the Principal's Representative has provided a written approval to grant such a request may the Contractor delete that submission, and must then include all the content and Design Documentation of that deleted Design Stage in the subsequent Design Stage submission.
- (c) The submission of design packages must be as carried out in accordance with that detailed in the Contractor's Engineering Management Plan unless otherwise approved in writing by the Principal's Representative. In circumstances where such an approval has been provided, the Contractor must include in any new combined or split design package, all relevant requirements, information, descriptions including a traceability matrix to the previous design packages to ensure that the Principal and Independent Certifier can adequately review the new design package.

3.3. Design Stage 1 Review (30%)

- (a) The Design Stage 1 Design Documentation, submitted to the Principal's Representative for review in accordance with the Contract for each design package must:
 - (i) include a Design Report as described in clause 3.8.1;
 - (ii) include a full set of preliminary general arrangement drawings, sections, elevations, room data sheets, finishes and material schedules and system schematics;

- (iii) if requested, include preliminary calculations including assumptions;
 - (iv) include a system concept review to ensure that the system requirements are technically feasible and achievable;
 - (v) include detailed pedestrian modelling and analysis that supports all key design decisions;
 - (vi) include an interface schedule highlighting interfaces with existing systems to ensure that the system interfaces are technically feasible and achievable;
 - (vii) include preliminary details of all equipment, plant, materials and finishes including Prototypes and Samples;
 - (viii) include any other details, calculations, models, drawings, reports or other information as requested by the Principal's Representative or the Independent Certifier;
 - (ix) be consistent with, and coordinated and fully integrated with all other design packages that have already been submitted for review;
 - (x) include 3D digital models;
 - (xi) be of a quality and detail to demonstrate that the Contractor's proposed design approach complies with and satisfies the functional and performance requirements of the Contract;
 - (xii) demonstrate that the Contractor has identified, considered and resolved all of the relevant design requirements of the Contract;
 - (xiii) include the endorsement of the Design Review Panel (DRP) as described in clause 5;
 - (xiv) include all concession applications to the ASA requirements; and
 - (xv) include any other Design Documentation described elsewhere in the Contract as being required in the Design Stage 1 submission.
- (b) In addition to the Design Documentation listed in clause 3.3 (a), the Contractor must also produce and submit to the Principal's Representative for review in accordance with the Contract, the Design Documentation listed in Annexure C, Annexure D and Annexure E for Design Stage 1.

3.4. Design Stage 2 Review (70%)

- (a) The submission of the Design Stage 2 Design Documentation must represent the completion of the design development for each design package. Further development of the design package in Design Stage 3 must be limited to design detailing and preparation of drawings suitable for construction.
- (b) The Design Stage 2 Design Documentation, submitted to the Principal's Representative for review in accordance with the Contract for each design package must:
 - (i) be consistent with, and incorporate the development of design packages submitted in the Stage 1 Design submissions;
 - (ii) demonstrate that comments made by the Independent Certifier on the Design Stage 1 Design Documentation have been addressed;
 - (iii) include an updated Design Report;

- (iv) include a full set of general arrangement drawings, sections, elevations, complex details, room schedules and finishes and material schedules, room data sheets and room layouts and system schematics;
 - (v) include summary final calculations including assumptions (full calculation details must be provided at the request of the Principal's Representative);
 - (vi) include complete details and selections of all plant and equipment;
 - (vii) include complete details and selections of all materials and finishes;
 - (viii) include updated Prototypes and Samples including all testing and analysis carried out;
 - (ix) include updated detailed pedestrian modelling and analysis that supports all key design decisions;
 - (x) include details of all approved concession or waivers to the ASA Requirements, noting that all concession or waivers to the ASA Requirements must be submitted and approved by the ASA prior to the Design Stage 2 submission;
 - (xi) demonstrate to the Principal that the Contractor has identified, considered, completely thought through, resolved and drawn to scale on the design package drawings, all of the relevant design requirements of the Contract;
 - (xii) be coordinated with any Interface Work, and include any detailed interface requirement specifications developed with the Interface Contractors;
 - (xiii) need only the addition of detailing and specifications to the Design Documentation to permit the construction of the design with minimal risk of any abortive construction;
 - (xiv) include the endorsement of the DRP as described in clause 5;
 - (xv) be consistent with, and coordinated and fully integrated with all other design packages that have already been submitted for review; and
 - (xvi) include any other Design Documentation described elsewhere in the Contract as being required in the Design Stage 2 submission.
- (c) The following Design Documentation must also be produced and submitted to the Principal's Representative during Design Stage 2 for review in accordance with the Contract:
- (i) updated versions of all Documents required under clause 3.3 (a) above; and
 - (ii) all Design Documents listed in Annexure C, Annexure D and Annexure E for Design Stage 2.

3.5. Design Stage 3 Review (100%)

- (a) The Design Stage 3 Design Documentation, submitted to the Principal's Representative for review in accordance with the Contract for each design package must:
- (i) confirm comments made by the Independent Certifier and other Stakeholders, including the DRP on the Design Stage 2 Design Documentation have been addressed and must be ready for their Design Stage 3 status to be changed

- to AFC status without further amendment if no further comments are received from Stakeholders;
- (ii) be of a quality and content to permit the Design Stage 3 design package Design Documentation to support application to the CCB Control Gate 3 for approval of the proposed configuration change;
 - (iii) be fully complete, correct, detailed, and co-ordinated;
 - (iv) be fully co-ordinated with the Interface Work;
 - (v) have any residual risks arising out of the design, operation and ongoing maintenance of the asset agreed with the Operator, Existing Operators, Independent Certifier and Principal's Representative;
 - (vi) include the Initial Draft version of the Asset Management Information;
 - (vii) include a full set of complete drawings technical specifications and acceptance criteria for construction suitable for construction of the Works and the Temporary Works;
 - (viii) include Verification of the Design Documentation against the design inputs, including achievement of acceptance criteria, safety, environmental and other management requirements for the Design Documentation;
 - (ix) include updated Prototypes and Samples;
 - (x) include an updated and final Design Report; and
 - (xi) include the endorsement of the DRP as described in clause 5.
- (b) The following Design Documentation must also be produced and submitted to the Principal's Representative during Design Stage 3 for review in accordance with the Contract:
- (i) updated versions of all Documents required under clause 3.4 (a) above; and
 - (ii) all Design Documents listed in Annexure C, Annexure D and Annexure E for Design Stage 2.

3.6. Additional Requirements for Customer Centred Design

In addition to the requirements of clauses 3.3, 3.4 and 3.5 the Contractor must also submit the Customer Centred Design Report (required under Annexure C) and the Design Documentation created for the Customer Facing Design Packages to the Independent Certifier and Principal's Representative for review in accordance with the Contract, at the following times. A Customer Centred Design Report is not required for enabling works and piling works design packages, where it can be demonstrated that they do not affect the customer experience.

- (a) 6 weeks prior to the Design Stage 1 submission;
- (b) 6 weeks prior to the Design Stage 2 submission; and
- (c) 6 weeks prior to the Design Stage 3 submission.

3.7. Approved For Construction Design Documentation

The Contractor must produce AFC drawings which accurately replicate the certified Design Stage 3 Design Documentation and must ensure at least two bound copies are kept on Site

and made available for inspection by the Principal's Representative and the Independent Certifier during construction of the Works.

3.8. Design Documentation

3.8.1. Design Reports

- (a) The Design Documentation prepared for each design package must include a comprehensive Design Report which describes the basis for the development of the design for each particular design package in which it appears.
- (b) All Design Reports must be of consistent format, layout and content. All changes to the design from the previous version of the Design Report must be summarised in the subsequent Design Report for each design package.
- (c) Design Reports must identify, address and include:
 - (i) the scope of the design package to which it applies;
 - (ii) a description of the overall asset, system and its sub assets and systems;
 - (iii) how the design objectives outlined in the SWTC have been met;
 - (iv) a list and description of all interfaces with Interface Work;
 - (v) a list of all the Documents that make up the design package;
 - (vi) a list of all design changes compared to the previous Design Stage submission;
 - (vii) a list of all the Codes and Standards, design guidelines and other design reference documents applicable to the design package;
 - (viii) details of how all review comments made against the previous Design Stage submission have been addressed;
 - (ix) details of the consultation held and process adopted to manage the Interface Work in accordance with clause 4 of this MR-T;
 - (x) all assumptions, dependencies and constraints;
 - (xi) other Design Documentation required to be produced by the Contractor, described in the SWTC;
 - (xii) references to and photographs of any quality benchmarks, Samples, scale models and Prototypes to be submitted as part of that design package; and
 - (xiii) a section on maintainability to demonstrate how the Contractor has addressed the following:
 - A. whole of life costs for asset operations, maintenance, replacement and refurbishment demonstrating how costs have been minimised;
 - B. enabling maintenance to be carried out with minimum disruption to passengers and normal operations;
 - C. RAMS demonstration as required by EN 50126 to support RAM targets;
 - D. tabulation of condition monitoring systems, parameters and interfaces required to the Operator/Maintainer's asset information system;
 - E. access points and methodology, and access time;

- F. maintenance activities including replacement and refurbishment, including detailed steps, any special tools and equipment required, duration of activities with and without access time;
 - G. the appropriate application of whole of life considerations in the design and construction of the Works including application of AS4536 for quantitative whole life cycle cost analysis; and
 - H. standards and acceptance criteria applicable for maintenance activities.
- (d) Design Reports must identify and address all design inputs relevant to the design package including:
- (i) the requirements of the SWTC;
 - (ii) any changes compared with the CSM Contractor's Tender Design as well as any departures from the previous Design Stage, stating the reasons for the changes;
 - (iii) a list of all computer software used for analysis of the design or in preparation of the design package;
 - (iv) performance criteria and measures to comply with the performance requirements of discrete design components, parts or elements;
 - (v) environmental and sustainability design requirements;
 - (vi) the sustainability initiatives incorporated as part of the design package;
 - (vii) the findings of any assessments or review conducted with Stakeholders;
 - (viii) interim design reviews in summary form;
 - (ix) inputs from Stakeholders and the community involvement process;
 - (x) inputs from the Design Review Panel;
 - (xi) inputs from the Heritage Working Group;
 - (xii) inputs from the Sydney Trains Working Group and Operator;
 - (xiii) inputs from the Customer Centred Design (CCD) process;
 - (xiv) inputs from security assessments;
 - (xv) details of integration and multi-disciplinary design interface issues and risks associated with other discrete design elements and associated mitigation strategies;
 - (xvi) details of durability issues and risks, and measures to comply with the durability requirements for the discrete design components, parts or elements;
 - (xvii) the design loadings, load combinations, exposure conditions and design standards that will be adopted for the detailed design of the discrete design elements or components;
 - (xviii) details of constructability issues; and
 - (xix) any specialist engineering input and reports including geotechnical, groundwater, hydrology, flooding, noise and vibrations, materials testing, settlement and movement assessment, monitoring and infrastructure protection.
- (e) The Design Reports must identify and reference all design outputs relevant to the design package including:

- (i) design drawings, calculations and schedules;
 - (ii) details of any computer software;
 - (iii) details of functional analysis and requirements allocation, including functional flow block diagrams;
 - (iv) RAMS (reliability availability and maintainability) assessments;
 - (v) details of any alternative designs considered and the process used to determine the recommended option;
 - (vi) consideration of requirements for future safeguarding;
 - (vii) detailed specifications for materials, finishes, equipment and systems; and
 - (viii) design model Verification.
- (f) The Design Reports must also identify and provide details of compliance and potential inconsistency with:
- (i) the Environmental Documents;
 - (ii) any Authority Approval; and
 - (iii) any other Approval that Contractor is required to obtain for the design and construction of the Works and the Temporary Works.
- (g) The Design Reports must identify safety issues and other risks relevant to the design package, and describe measures to comply with the criteria specified for the discrete design elements and components, including:
- (i) details to address the requirements of security, fire and life safety, accessibility, passenger and staff safety and amenity including wayfinding and signage;
 - (ii) details to address the requirements for accreditations or certification; and
 - (iii) details to address the safe construction of the Works through safety in design.
- (h) The Design Reports must identify all tests relevant to the design package, including the testing and commissioning requirements to be addressed in the relevant inspection and test plans (ITPs) and Management Plans, and contain any test results applicable to the Design Stage.

3.9. Design Changes and Non-Conformances During Construction

- (a) The Contractor must submit details of any proposed changes to the approved Design Stage 3 design to the Principal's Representative and the Independent Certifier for review in accordance with the Contract prior to their inclusion within the Works.
- (b) The Contractor must not propose any change to the approved Design Stage 3 design or action to address non-conformances and Defects that would result in a lower standard or service level than that specified in the Contract.

4. Interface Management

4.1. General

- (a) The Contractor is responsible for the design of the Works. The Interface Contractors are responsible for the design of the Interface Work. The Contractor

- must cooperate, coordinate and interface with a number of Stakeholders including Interface Contractors, Other Contractors, Operators and Existing Operators in the development of the design of the Works to ensure that the interfaces and their associated specifications are accommodated within their design.
- (b) The Contractor must coordinate the development of the design to ensure that the required interfaces are accommodated within the design of the Works, so that the Works properly interface and integrate with the Interface Work as necessary.
 - (c) The Contractor must submit to the Principal's Representative, for review in accordance with the Contract, a detailed Construction Interface Specification (CIS) for all construction interfaces. The Contractor must identify contract boundaries for each of the interfaces, list relevant specifications and propose the demarcation of the responsibilities for each construction package. The CIS must also detail and describe any critical sequencing of the construction activity.
 - (d) The Contractor must arrange and conduct regular technical working groups (TWG) reviews on key areas of the design with Stakeholders and Operator/Maintainers to ensure they are able to inform and contribute towards the design development. The TWG reviews must include the following elements as a minimum:
 - (i) rail and rail systems;
 - (ii) stations and Station Precincts including heritage;
 - (iii) Interface Contractors;
 - (iv) Planning Approvals, Authority Approvals and all other required approvals;
 - (v) customer and transport integration;
 - (vi) signage and wayfinding, retail and advertising; and
 - (vii) Others as required by the Principal's Representative.
 - (e) The Contractor must continuously manage the coordination process and provide input, feedback and the required Design Documentation until Construction Completion of all Portions involving the Metro Station Works.
 - (f) Without limiting the requirements of the General Conditions, as part of the coordination process and activities with the Interface Contractors, the Contractor must:
 - (i) ensure timely and effective coordination for the interface documentation;
 - (ii) resolve all conflicts and discrepancies between any element of the Works and the Interface Work which may impact on access, headroom and clearance, equipment interference, delivery routing, maintenance provisions or general engineering practice;
 - (iii) ensure that loadings, supports, internal clear sizes, setting out dimensions, and layout of all the equipment rooms or areas (including cable ducts, pipe ducts, trench, underfloor void, ceiling void, and all the recessed details for electrical and mechanical equipment) shown on architectural drawings, structural and civil layout drawings, are sufficient and suitable for the Interface Contractor's equipment and installation;
 - (iv) ensure that the access requirements for maintenance and installation shown on all delivery route drawings, architectural drawings and/or civil layout and structural drawings are sufficient and suitable for the Interface Contractor's equipment and installation;

- (v) attend site inspections to confirm with Interface Contractors the positions and setting out of cast-in items prior to concreting;
 - (vi) coordinate with the Interface Contractors, the attendance of Authorities at inspections of the Works and the Interface Work prior to Construction Completion of each Portion;
 - (vii) comply with all requirements of the delivery route drawings in determining the Contractor's method and sequence of construction; and
 - (viii) comply with the layout of major services routes and items of electrical and mechanical equipment shown on the combined services drawings and the room layout and major structures and penetrations shown on the structural electrical and mechanical drawings.
- (g) Where an Interface Contractor is appointed later than commencement of design coordination activities, the Principal will provide the inputs required by the Contractor in order to undertake its design obligations.
- (h) The Contractor must undertake all modifications to the Works, Temporary Works and Contractor's Activities, which may be necessary to achieve complete compatibility of the Works with the Interface Work.
- (i) All information and data exchanged between the Contractor and the Interface Contractors must also be copied to the Principal's Representative for information.

4.2. Interface Coordination Team

- (a) The Contractor must have an Interface Coordination Team (ICT) to coordinate the interface management activity within the development of the design and construction testing and commissioning of the Works and Temporary Works.
- (b) The ICT must establish and lead fortnightly Interface Design Coordination Meetings (IDCM) with the Interface Contractors, Other Contractors, Operator and Existing Operators and other Stakeholders, as agreed with the Principal's Representative.
- (c) The ICT meetings must also provide design and technical support (inclusive of the use of aspects such as 3D visualisations, virtual reality, presentations, models and other interactive materials) to help communicate the design to the Stakeholders through the CSM Project's delivery.
- (d) All relevant Design Documentation must be submitted to the members of the IDCM for regular review and comment as part of the Stakeholder consultation requirements of the Contract. The Contractor must address all comments raised the members of the IDCM. Requests for information (RFI) are to be managed by the Contractor under its RFI process directly with the Interface Contractors, Other Contractors, Operators, Existing Operators and other Stakeholders.
- (e) The Contractor must mark-up drawings to identify the agreed requirements and obtain signatures from the attendees on the marked up drawings or draft drawings signifying the agreement of the requirements.

4.3. Interface Design and Coordination

- (a) The Contractor must design, develop, and submit to the Principal's Representative for review in accordance with the Contract the following drawings for coordination of the design and construction activities with the Interface Contractors as further detailed in Annexure D:

- (i) structural electrical and mechanical drawings (SEM);
 - (ii) combined services drawings (CSD);
 - (iii) wall elevation drawings (WEDs);
 - (iv) cable containment drawings;
 - (v) cast-in conduit drawings;
 - (vi) architectural builders works and finishes (ABWF) drawings; and
 - (vii) delivery route drawings (DRDs,
- (b) As a part of each submission, the Contractor must also issue the coordination drawings listed in clause 4.3 (a) above, to the relevant Interface Contractors in .pdf and native CAD format, as well as providing hard copies for marking up comments in coordination meetings with other Stakeholders.
- (c) The Contractor must, as part of each submission for each Design Stage, ensure that the Design Work complies with interface requirements of the SWTC, including the Interface Schedules as well as the physical constraints imposed by the Works and Interface Work
- (d) The Contractor must resolve any conflicts between the Works and the Interface Work, including spatial coordination and system integration.
- (e) The Contractor must coordinate, prepare or provide input into the development of, and agree with the relevant Interface Contractors, detailed interface specifications (DIS) which cover all interfaces including design, manufacture and installation of structural, electrical, mechanical, functional, protocol, software and all other interfaces.
- (f) The Contractor must coordinate, prepare or provide input into the development of, and agree with the relevant Interface Contractors, interface test specifications (ITS) and detailed interface test plans (DITP) which must be used to identify the testing activities and thereby verify that the DIS requirements have been satisfied.
- (g) The content for the ITS, DIS and DITP must be in accordance with Annexure D.
- (h) All documents required to be prepared by the Contractor in this clause 4.3, are Design Documentation, and must be submitted to the Principal's Representative for review in accordance with the Contract.

5. Design Review Panel

- (a) The Principal will establish a Design Review Panel including various Stakeholders to review and provide comment on certain aspects of the design including architectural, heritage, CCD, wayfinding and signage, public art urban design and landscaping.
- (b) The Contractor must submit Presentation Materials and present to the DRP at the following times:
- (i) as soon as practicable after the date of the Contract, to allow the DRP to provide feedback and comments on the proposed approach and guiding design principals;

- (ii) monthly through each Design Stage 1, Design Stage 2 and Design Stage 3 of the design process to:
 - A. allow the DRP to provide design comments;
 - B. report on the progress of the listed elements in clause 5 (a);
 - C. demonstrate how the DRP comments from the previous month have been either incorporated into the design or otherwise addressed; and
 - D. demonstrate how specific planning conditions in the Environmental Documents have been addressed.
- (iii) after consultation with all Stakeholders including the Sydney Trains Working Group, the Operator and Sydney Trains CCBs during each of Design Stage 1, Design Stage 2 and Design Stage 3;
- (c) Prior to any presentation, the Contractor must allow 3 Business Days for the Principal's Representative to review the Presentation Material and associated Design Documentation and provide an approval to present.
- (d) If the Principal's Representative does not provide such an approval the Presentation Material and Design Documentation must be resubmitted and a further 3 Business Days will apply for the Principal's Representative to consider its approval.
- (e) Once approved under clause 5 (c), the Contractor must allow at least 5 Business Days prior to presenting the Presentation Material to the DRP.
- (f) Presentations must include appropriate drawings, models, images, renders and other media to adequately express the design outcomes to the audience.
- (g) Presentations must be accompanied by appropriate Design Documentation including samples, materials and finishes boards. Additional materials must be made available for review as per the presentations prior to the DRP.
- (h) If Prototypes are required, then a DRP presentation must be organised to view the Prototypes prior to the Design Stage 1 and Design Stage 2 submissions.
- (i) All comments provided by the DRP must be tabulated and appropriate responses provided to close the comments out. The Contractor must provide this table to the DRP to facilitate the DRP's endorsement.
- (j) The Contractor must obtain the DRP's written endorsement of the Design Documentation at each of the following stages, Design Stage 1, Design Stage 2, Design Stage 3, which must be submitted to the Principal's Representative in accordance with clause 3 above. Such endorsement must be provided prior to proceeding to a subsequent Design Stage.
- (k) The Contractor must also comply with any requirements of the Planning Approvals in relation to the DRP and its membership.

6. Heritage Working Group (HWG)

- (a) The Principal will establish a Heritage Working Group including various Stakeholders to review and provide comment on the heritage components of the design.

- (b) The Contractor must present the heritage elements of any designs to the Heritage Working Group:
 - (i) as soon as practicable after the date of the Contract to provide comments and feedback on the proposed designs that have an interface with any Heritage fabric;
 - (ii) monthly, through each of Design Stage 1, Design Stage 2 and Design Stage 3 to:
 - A. allow the HWG to provide comments on the design;
 - B. demonstrate how the heritage planning conditions in the Environmental Documents have been addressed;
 - C. report on design progress; and
 - D. demonstrate how the HWG comments, and other feedback from the previous month have been either incorporated into the design or otherwise addressed.
- (c) Prior to any presentation, the Contractor must allow 3 Business Days for the Principal's Representative to review the Presentation Material and provide an approval.
- (d) If the Principal's Representative does not approve the Presentation Material, it must be resubmitted in accordance with clause 6 (c) above and a further 3 Business Days will apply.
- (e) Once approved under clause 6 (c), the Contractor must allow at least 5 Business Days prior to presenting the Presentation Material to the HWG.
- (f) Presentation Materials must include appropriate drawings models, images, renders and other media to adequately express the design outcomes to the audience.
- (g) Appropriate Samples and Prototypes including materials and finishes boards must be made available for review as per the presentations prior to the HWG.

7. Presentation of the Design to Sydney Trains and the Operator

- (a) The Contractor must present the design of those part of the Works nominated in Annexure B to the Sydney Trains Working Groups (STWG), and others as nominated by the Principal's Representative for review prior to the Design Stage 1, Design Stage 2 and Design Stage 3 submissions and at all other times requested by the Principal's Representative.
- (b) The Contractor must present the design of that part of the Works nominated in Annexure B to the Operator, and others as nominated by the Principal's Representative for review prior to the Design Stage 1, Design Stage 2 and Design Stage 3 submissions and at all other times requested by the Principal's Representative.
- (c) Prior to any presentation, the Contractor must allow 3 Business Days for the Principal's Representative to review the Presentation Material and provide an approval.
- (d) If the Principal's Representative does not approve the Presentation Material, it must be resubmitted in accordance with clause 7 (c) above and a further 3 Business Days will apply.

- (e) Once approved under clause 7 (c) the Contractor must allow at least 6 Business Days prior to presenting the Presentation Material to the STWG.
- (f) All comments from the STWG, Operator and others must be adequately addressed in the view of the Principal's Representative and Independent Certifier in accordance with the Contract prior to submission of each of the Design Stage 1, 2 and 3 submissions to the Principal's Representative for review in accordance with the Contract.

8. Configuration

8.1. Configuration Management

The Contractor must ensure that its configuration management activities include a change management process aligned with AS ISO 10007 Quality management systems - Guidelines for configuration management.

8.2. Configuration Control

- (a) The Contractor must have in place, maintain and consistently apply until Final Completion configuration control measures to ensure that TfNSW is supported to meet the requirements of Sydney Metro Sub-CCB and CMAAC Control Gates.
- (b) The Contractor must prepare and submit to the Principal all Design Documentation, including Asset Management Information required to support the following applications by the Principal to the Sydney Metro Sub-CCB and Configuration Management and Asset Assurance Committee (CMAAC):
 - (i) Sub-CCB Control Gate 2 "initial design complete";
 - (ii) Sub-CCB Control Gate 3 "for construction" submission, which applies before finalisation of AFC Design Documentation;
 - (iii) Sub-CCB Control Gate 4 "ready for testing" submission, which applies on completion of construction and is required as a condition precedent to testing the Works; and
 - (iv) CMAAC/Sub-CCB Control Gate 5 "asset acceptance" submission, which applies prior to commissioning of the Works and placing into operational service.
- (c) The Contractor must not commence any new Project Phase until the relevant configuration control board (in clause 8.2 (b) above), has issued an approved Configuration Change Request (CCR) and after any conditions imposed by the Sub-CCB or CMAAC have been satisfactorily addressed.
- (d) The Contractor must review and adequately adhere to any residual conditions imposed by the Sub-CCB during Control Gates prior to the Control Gates noted in clause 8.2 (b) above.
- (e) The Contractor must adequately address any residual open assurance and stakeholder comments prior to the next Control Gate.

8.3. Configuration Change Request Submissions to Control Gates

- (a) The Contractor must provide all necessary Design Documentation including Asset Management Information required to support all CCR applications and submissions by the Principal in support of the Sub-CCB and CMAAC Control Gates.

- (b) The Contractor's proposed Design Documentation to support each CCR submission must be sufficient for and, of a quality that permits the Principal to gain Sub-CCB or CMAAC acceptance. The Principal may request additional Documents prior to the submission of each CCR.
- (c) The Contractor must provide a list of all Design Documentation including revision numbers and must complete and comply with Configuration Change Request Form (Sydney Metro Sub-CCB) SM EM-FT-413 for each CCR submission.
- (d) All CCR submissions will be submitted to the Sub-CCB or CMAAC by the Principal.
- (e) Submissions to the CMAAC must be completed in accordance with the latest requirements published by CMAAC.
- (f) The Contractor may be requested to support all submissions by making available subject matter experts to present to the Sub-CCB or CMAAC.
- (g) The Contractor must keep itself informed of the Sub-CCB and CMAAC timetable at all times during the course of the Contractor's Activities. The Contractor must include due allowance in the Contractor's Program for the preparation of the required CCR Design Documentation and to ensure that:
 - (i) a minimum of 3 Business Days is allowed for the Principal to review and approve the proposed CCR submission;
 - (ii) there is a minimum period of 6 Business Days after an approval has been provided under clause 8.3 (g) (i) before the day of the Principal's presentation of the CCR submission to the Sub-CCB; and
 - (iii) there is a minimum period of 20 Business Days after an approval has been provided under clause 8.3 (g) (i) before the day of the Principal's presentation of the CCR submission to the CMAAC.
- (h) Applications of separate design packages for Sub-CCB and CMAAC review are permitted with prior agreement of the Principal. The Contractor shall give due consideration in determining a strategy for submission of design packages so that each part of the Contractor's Activities may proceed logically and ahead of the completion of the design for later stages.

8.4. Sydney Trains Regional CCB and Facilities CCB

- (a) The Contractor must present the relevant parts of the design as determined by the Principal's Representative to both the Sydney Trains Regional CCB and Sydney Trains Facilities CCB for review when requested by the Principal's Representative. Presentations may include discipline specific elements including track, overhead wiring, signalling, civil, drainage, electrical, earthing and bonding, and communications.
- (b) Prior to any presentation, the Contractor must allow 3 Business Days for the Principal's Representative to review the Presentation Material and provide an approval.
- (c) If the Principal's Representative does not approve the Presentation Material, it must be resubmitted in accordance with clause 8.4 (b) above and a further 3 Business Days will apply.
- (d) Once approved under clause 8.4 (b), the Contractor must allow at least 6 Business Days prior to presenting the Presentation Material to a CCB.

- (e) All comments from the CCB's must be adequately addressed to the satisfaction of the Principal's Representative, prior to submission of each of the Design Stage 1, the Design Stage 2 and the Design Stage 3 submissions to the Principal's Representative.
- (f) By agreement of the Principal only, presentations to the Sydney Trains Regional CCB and Sydney Trains Facilities CCB may be omitted at Design Stage 1 and Design Stage 2.

9. Requirements Management

The Contractor must adopt a formalised requirements management process to manage the requirements for the Contractor's Activities and as a means of Verification and Validation compliant with EN50126/IEC 62278, and must:

- (a) use the IBM Rational DOORS database for system requirements traceability and requirements Verification of the Works;
- (b) provide a RVTM which complies with T MU AM 06007 GU – ASA Guide to Requirements Definition and Analysis, IEE1220, ANSI/EIA632 or a similar standard) containing as a minimum, the attributes in clause 9 (d);
- (c) submit an up-to-date RVTM with each design submission that demonstrates compliance with the requirements of the Contract at each Design Stage 1, Design Stage 2 and Design Stage 3 of the design as well as the Sub-CCB and CMAAC Control Gate as identified in clause 8;
- (d) the RVTM as a minimum must include:
 - (i) unique identifiers for each system and interface requirement;
 - (ii) SWTC requirements including those requirements originating from safety controls identified in the Contractor's safety hazard log;
 - (iii) a reference to the source of all requirements including clause reference;
 - (iv) other references as appropriate including safety hazard log references;
 - (v) SFAIRP references to the justification of safety requirements, where these have been allocated;
 - (vi) an attribute identifying the RAM target and/or SIL associated with the requirement, where these have been allocated;
 - (vii) subsystem elements that satisfy a particular system requirement, with a link to subsystem requirements or specification document reference, as appropriate;
 - (viii) details of how the design or construction elements that satisfy the requirements will be verified and validated;
 - (ix) a work package reference;
 - (x) a Design Documentation reference;
 - (xi) a list of the Principal's Representative and Independent Certifier's comments on each element of the Design Documentation;
 - (xii) a list of the Contractor's response to Principal's Representative's and Independent Certifier's comments;
 - (xiii) ITP references including ITPs, and test procedures as relevant;
 - (xiv) reference to Verification and Validation status and records; and

- (e) provide to the Principals Representative and the Independent Certifier for review in accordance with the Contract, at each Design Stage 1, Design Stage 2 and Design Stage 3 of the design as well as the Sub-CCB and CMAAC Control Gate as identified in clause 8, an electronic copy of all the Contractor's IBM Rational DOORS data in archive (.dpa) format on an electronic storage media device.

10. Digital Engineering

- (a) The Contractor must implement and comply with the Principal's requirements for digital engineering in accordance with the Sydney Metro Employers Information Requirements SM EM-ST-203 and Sydney Metro CAD/GIS/BIM Manual SM EM-PW-304 in relation to the entire Works, including developing federated digital models and submitting the required Design Documentation to the Principal's Representative and Independent Certifier for review and certification in accordance with the Contract.
- (b) In addition, the Contractor must develop and upload AFC Design Documentation, work-as-executed drawings AMI, and other Contract Documentation and Materials as requested by the Principal's Representative, to the Principal's Virtual Planroom database for those parts of the Works nominated in Annexure B, and any other parts of the Works as determined by the Principal's Representative.

11. Value Engineering

- (a) The Contractor must implement a process of value engineering in order to drive value enhancements in the Design Work.
- (b) Within twenty five Business Days of the date of the Contract, the Contractor must submit and obtain agreement from the Principal's Representative, a matrix listing those design packages it proposes to perform value engineering analysis on, as well as the basis for its decision.
- (c) The Contractor must plan, organise and facilitate value engineering workshops on the agreed list of design packages with the Principal and other key Stakeholders at times suitable to allow for full integration of the value engineering outcomes into the following Design Stages:
 - (i) prior to completion of Design Stage 1;
 - (ii) prior to the completion of Design Stage 2;
 - (iii) prior to the completion of Design Stage 3; and
 - (iv) any other requirements of the General Conditions.
- (d) The value engineering workshops must be documented in separate value engineering reports, documenting the process followed, Stakeholder involvement, agreed outcomes, impact on program and cost (including capital and whole of life costs), compliance (and potential non-compliance) with the requirements of the Contract, and maintenance impact and must be submitted to the Principal's Representative within 7 days of the workshops for review in accordance with the Contract.
- (e) The Contractor must adopt only the agreed outcomes in its Design Work, as documented in the finalised value engineering reports, following the Principal Representative's review.

12. Temporary Works Design Management and Review

- (a) The Contractor must develop and maintain a Temporary Works List. This must be kept up-to-date and contain a description of the status of the work, and be included in each Monthly Report, and at other times required by the Principal's Representative.
- (b) The Contractor must include the Temporary Works List, the design of Temporary Works and the review of Temporary Works designs in the Engineering Management Plan processes and as activities in the Contractor's Program.
- (c) Following any Principal's Representative review of the Temporary Works List, the Principal's Representative will advise the Contractor which of the Temporary Works designs (if any) are to be reviewed by the Principal as part of the design review process and which of the Temporary Works designs will require submission through the relevant CCB.
- (d) All designs to be submitted to the Principal's Representative in clause 11 (c) must be issued under the authority of an AEO. Temporary Works designers must work under the appropriate design consultant's AEO and design management processes.
- (e) For those Temporary Works designs that the Principal's Representative determines are to be reviewed by the Principal in clause 11 (c), the design submissions for the Temporary Works designs must include:
 - (i) A list of the Temporary Works assumptions that the designer has made in the construction, including any assumptions or calculated assessments relating to the load capacity of any existing infrastructure that is required to support the Temporary Works;
 - (ii) identification of potential effects on adjacent Works;
 - (iii) a description of mitigation measures to ensure that the design is adequate in both the short and long term;
 - (iv) any key site data that must be confirmed prior to construction of the Temporary Works;
 - (v) methods for reinstatement of any permanent infrastructure affected by the Temporary Works;
 - (vi) details of the staging and sequencing of the Works and Temporary Works;
 - (vii) inspection and test requirements; and
 - (viii) settlement monitoring criteria (if settlement of either the Temporary Works or existing infrastructure is a possibility).
- (f) The Contractor must address Temporary Works in a Safety Assurance Statement and Safety Assurance Report(s). The Contractor's Safety Assurance Report(s) must present the safety assurance demonstration for the design, construction, maintenance and dismantling of the Temporary Works. The safety assurance demonstration for the Temporary Works must be to a standard comparable to the safety assurance demonstration for the Works.

13. System Verification Reviews

- (a) The Contractor must complete System Verification Reviews (SVR's) progressively.
- (b) The Contractors SVRs must be carried out on each system in the Works as well as any interfaces with other systems and the Interface Work.
- (c) The Contractor must ensure that the Documents for each SVR are of a consistent format and are progressively submitted to the Principal's Representative for review in accordance with the Contract as work proceeds.
- (d) Prior to the commencement of integration testing, the Contractor must demonstrate that all SVR actions are complete and that the system is ready for integration testing with the existing network, prior to final acceptance testing and Asset Handover.
- (e) The Contractor must ensure that final SVR documentation is submitted to the Principal's Representative for review in accordance with the Contract following system integration of the relevant system or subsystem and prior to Construction Completion of each Portion.

14. Testing

- (a) The Contractor must undertake comprehensive testing of the Works and the Temporary Works to ensure compliance with the Contract.
- (b) The Contractor's Engineering Management Plan described in MR-PA must articulate the management systems, processes and procedures to be planned and implemented in order to successfully test the Works, taking into account the need to coordinate the Contractor's Activities in relation to testing prior to each Asset Handover.
- (c) The Contractor must plan and implement an inspection and testing regime to verify that the Works have been delivered in accordance with the requirements of the Contract and the Design Documentation.
- (d) The Contractor must identify all Hold Points and Witness Points necessary to ensure that the Works will comply with the certified design and that all Hold Points and Witness Points are accurately incorporated into the Contractor's ITPs.
- (e) A representative from the Contractor's design team must endorse each ITP prior to submission to the Principal's Representative and Independent Certifier for review in accordance with the Contract.
- (f) The Contractor must provide test results and certification to verify the compliance of materials, products and assemblies with the performance and technical requirements, stated in the Design Documentation and the requirements of the Contract.

15. Construction Compliance with Design

- (a) The inspection and testing performed by the Contractor must include certification that the Construction of the Works is compliant with the AFC Design Documentation. Such certification must be provided by the Contractor and must include certification from Subcontractors who developed or assisted in the

development of that Design Documentation. Certification documentation must be submitted to the Principal's Representative prior to obtaining Construction Completion for each Portion. Certification is required for the following design elements:

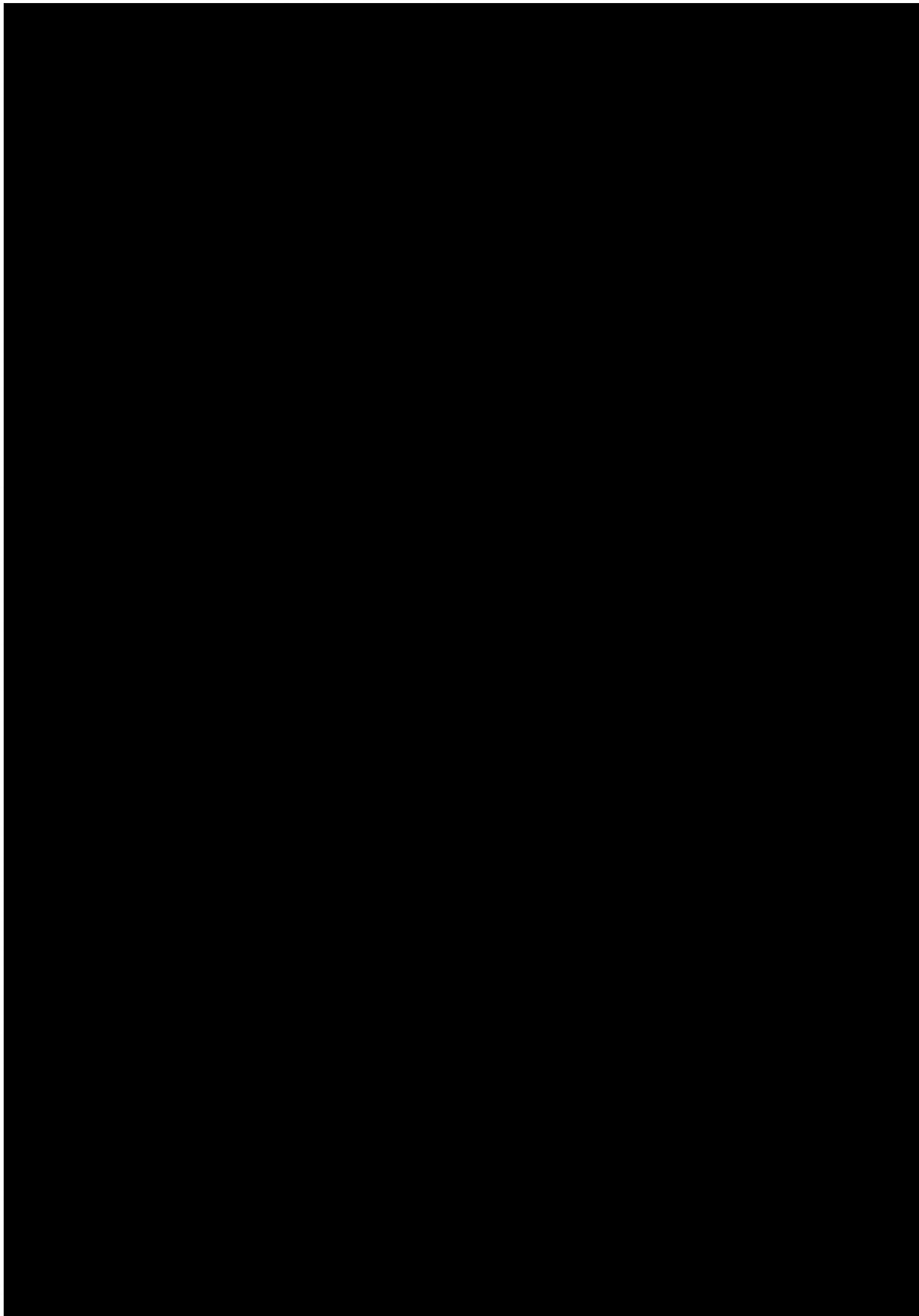
- (i) All structural works, including foundations, superstructure, retaining walls, noise walls and the like;
- (ii) all mechanical ventilation and air conditioning services;
- (iii) all electrical services including lighting;
- (iv) all communications services, including cabling;
- (v) mechanical transportation systems, including lifts and escalators;
- (vi) all fire and life safety services;
- (vii) all glazing, including glazing support structures;
- (viii) all transport network infrastructure works, including train rails, traction power works, earthing and bonding, high voltage electrical works, transformers, cabling and signalling works; and
- (ix) any other component of the Works that the Principal's Representative requests.

16. Physical Configuration Audit

- (a) Prior to Completion of each Portion, the Contractor must conduct a Physical Configuration Audit (PCA) in conjunction with the Principal's Representative and the Independent Certifier, which demonstrates that the as-built configuration of the Works conforms to the AFC Design Documentation and that the work – as – executed Design Documentation and AMI represents an accurate record of the constructed Works.
- (b) The Contractor must issue a formal notification to the Principal's Representative at least 2 weeks prior to commencing a PCA. The Principal's Representative will advise the Contractor if the Principal's representative(s) intend to attend.

Annexure A: List of Reference Documents

- Sydney Metro Employers Information Requirements SM EM-ST-203, 7 January 2017
- Sydney Metro CAD/GIS/BIM Manual SM EM-PW-304, 7 January 2017
- Configuration Change Request Form (Sydney Metro Sub-CCB) SM EM-FT-413, Version 5.0 2017
- Wayfinding Planning Guide – Introduction, 17 May 2017



Annexure C: Specific Design Documentation

C1 Civil and Structural Works

Design Stage 1

The Design Documentation must include as a minimum a civil and structural report and drawings including:

- (a) structural and civil general arrangement drawings including plans, elevations and sections;
- (b) stormwater and drainage networks and catchment drawings;
- (c) proposed construction staging methodology;
- (d) a risk and mitigation review for all structural support elements that could be impacted by train or vehicle collision, noting that the Contractor must have obtained the prior agreement of the Principal's Representative for all proposed physical mitigation works for barriers, collision walls and all other mitigation measures proposed;
- (e) all design studies and options analysis used in the design development;
- (f) load rating and analysis for affected structures, including specifying strengthening works required;
- (g) a durability assessment of existing asset affected by the Works;
- (h) a flood modelling report;
- (i) details of safeguarding provisions; and
- (j) a blast mitigation threat and mitigation analysis.

Design Stage 2

The Design Documentation must include as a minimum, a civil and structural report and drawings including:

- (a) general arrangement drawings showing finished surface levels, earthworks and retaining structural, stormwater drainage typical details, retaining structures, access routes and proposed utility corridors;
- (b) a description of the proposed construction staging methodology;
- (c) set of computations and all supporting studies, reports or analysis;
- (d) an updated durability assessment of existing assets affected by the Works.
- (e) an updated flood modelling report; and
- (f) detailed general arrangement plans.

Design Stage 3

The Design Documentation must include as a minimum a Civil and Structural report and drawings including:

- (a) an updated version of each of the Documents requested in Design Stage 1 and 2;
- (b) material and equipment specifications;
- (c) detailed reinforcement or construction drawings; and
- (d) testing and commissioning requirements, including Hold Points and Witness Points.

C2 Rail, Rail Systems and Communications Works

C2.1 Signalling Works

Design Stage 1

The Design Documentation for signalling works at Design Stage 1 must include as a minimum, an updated Signalling Functional Specification (SFS), including construction staging and drivers diagram.

Design Stage 2

The Design Documentation for signalling works at Design Stage 2 must include as a minimum an updated SFS

Design Stage 3

The Design Documentation for signalling works at Design Stage 3 must include, as a minimum:

- (a) a signalling plan;
- (b) a circuit design (blue);
- (c) control tables;
- (d) details of the track insulation;
- (e) a mechanical design; and
- (f) an air systems design.

C2.2 Track Works

Design Stage 1

The Design Documentation for track works at Design Stage 1 must include as a minimum:

- (a) track alignment design details showing:
 - (i) identification and naming of individual tracks;
 - (ii) horizontal setting out geometry details including horizontal curve parameters;

- (iii) vertical setting out geometry details including cross sections;
 - (iv) “cant deficiency” design in conjunction with the normal and maximum rolling stock speed profiles with due consideration of providing a smooth, comfortable ride and future maintenance requirements;
 - (v) clearances between the swept path of rolling stock and structure gauge and infringements into the structure gauge (such as Platform edges);
 - (vi) turnout and catchpoint type and layout; and
 - (vii) point machine configuration.
- (b) demonstration that the following interfaces have been addressed in the alignment design, including:
- (i) survey control; and
 - (ii) clearance between the swept path of the rolling stock and all infrastructure.

Design Stage 2

The Design Documentation for track works at Design Stage 2 must include as a minimum:

- (a) 3-dimensional electronic CAD files of the alignment design;
- (b) location of insulated joints in and around turnouts;
- (c) updated alignments;
- (d) staging plans;
- (e) speedboard configuration details; and
- (f) friction modification and flange lubrication design.

Design Stage 3

The Design Documentation for track at stage 3 must include as a minimum:

- (a) method statements for the following construction and maintenance activities:
 - (i) rail welding including inspection, testing and replacement welds;
 - (ii) rail bending;
 - (iii) rail stressing and maintenance of the stress free temperature;
 - (iv) rail profiling and grinding;
 - (v) trackform construction;
 - (vi) maintenance welding to crossing noses;
 - (vii) turnout installation to include as a minimum a record of nominal masses of turnout components to be transported on site and in safe procedures for handling them;
 - (viii) alignment monitoring, testing and evaluation; and

- (ix) track geometry measurement and recording.
- (b) 3-dimensional electronic CAD files of the alignment design; and
- (c) an updated version of each of the Documents requested in Design Stage 1 and 2.

C2.3 Communications Systems Works

Design Stage 1

The Design Documentation for communication systems works at Design Stage 1 must include as a minimum:

- (a) an overall system description covering the principles of operation, overall functionality and individual element functionality during normal and degraded conditions including levels of redundancy;
- (b) systems level schematics;
- (c) network level schematics;
- (d) preliminary loss budgets;
- (e) spare port and cable allocation checks;
- (f) material and equipment availability;
- (g) software identification;
- (h) typical environmental limits;
- (i) typical floor plan;
- (j) changes to power and air-conditioning loads;
- (k) concept timing diagrams;
- (l) typical radio coverage;
- (m) concept design; and
- (n) hazard analysis and design which includes:
 - (i) communications hardware and software;
 - (ii) emergency voice communications;
 - (iii) emergency recorded communications;
 - (iv) transmission of train control data; and
 - (v) transmission of 'signalling' data.

Design Stage 2

The Design Documentation for communication systems at Design Stage 2 must include as a minimum:

- (a) a finalised system description and specification covering the communications operational philosophy, including interfaces with existing systems;
- (b) finalised single line and system block schematics for each individual communications systems, showing design intent, connectivity and interfaces;
- (c) finalised design specifications for each communications systems including comprehensive performance details, functionality details, equipment specifications and datasheets;
- (d) approved room and rack layout drawings for all communications equipment showing equipment dimensions, maintenance access, cable routes;
- (e) coverage diagrams and calculations for radio systems, CCTV, PA and other systems;
- (f) an updated reliability, availability and maintainability and safety analysis for each of the communications systems; and
- (g) lists of plant and equipment to be de-commissioned;

Design Stage 3

The Design Documentation for communication systems at Design Stage 3 must include as a minimum, an updated version of each of the Documents requested in Design Stage 1 and 2.

- (a) schedules of cabling and equipment for each of the communications systems;
- (b) detailed equipment lists;
- (c) documentation showing final port and cable allocations;
- (d) documentation showing final loss budgets;
- (e) availability calculations;
- (f) a list of IP addresses;
- (g) documentation showing message formats;
- (h) documentation showing environmental limits;
- (i) documentation showing floor loads;
- (j) documentation showing heat dissipation and air-conditioning loads;
- (k) timing diagrams;
- (l) documentation showing failure modes, effects and critical analysis;
- (m) verified detailed design documentation;

- (n) documentation showing installation standards; and
- (o) testing and commissioning plans.

C3 Architectural, Spatial, Functional and Finishes Works

Design Stage 1

The Design Documentation for architectural, spatial, functional and finishes works at Design Stage 1 must include as a minimum:

- (a) drawings (which must show key dimension, primary service routes, relationship of public spaces, service facilities and future surrounding developments) and specifications which include:
 - (i) a Station precinct master plan at an appropriate scale that shows all project interfaces and interchanges;
 - (ii) for all architectural and Public Domain elements 1:500 site plans and site sections;
 - (iii) 1:250 (A1) plans, sections, and elevations defining the materials;
 - (iv) future links to other properties;
 - (v) typical sketch details and wall sections of major architectural elements including walls, cladding, glazing, ceilings, floors, vertical transport elements, signage, lighting, heritage items;
 - (vi) typical sketch details of key Public Domain elements including: pavements, kerbs, stairs, ramps, walls, furniture, shelters, fences and gates, planting beds, tree pits, and lighting;
 - (vii) preliminary technical specifications; and
 - (viii) material and finishes schedule.
- (b) a Design Report, which in addition to the requirements of clause 3 of this MR-T includes the following specific deliverables:
 - (i) a description and illustration of look, feel and function of the Station;
 - (ii) a description and illustration of the Station designs and Station Precinct surrounding the Station;
 - (iii) a description of impacts of the Station entries and egress/exhaust structures on the Public Domain including height, massing, scale, address and entry, heritage, view corridors, solar access, wind, access, traffic and transport circulation networks;

- (iv) a description of how the recommendations of the Contractor's heritage consultant, heritage engineer, Building Code of Australia (BCA) and Disability Discrimination Act (DDA) consultants have been incorporated.
- (v) access plans identifying current and future pedestrian desire lines and key movement corridors;
- (vi) a description of the relationship between Station entries and Station buildings with related development adjacent to the Central Station Precinct;
- (vii) pedestrian modelling report describing the demand analysis assumptions and pedestrian modelling to verify the design achieves the levels of service requirements;
- (viii) a preliminary accessibility plan and report to demonstrate compliance with the Disability and Discrimination Act 1992, BCA and Australian Standards and the Disability Standards for Accessible Public Transport;
- (ix) a preliminary crime prevention through environmental design review and report;
- (x) an acoustic design strategy;
- (xi) a BCA Brief demonstrating compliance of the design with the BCA and the fire engineering strategy;
- (xii) a DDA Brief;
- (xiii) a furniture fittings and fitments section;
- (xiv) a wind study demonstrating that the design of Station entrance buildings and platforms enable comfortable and safe conditions;
- (xv) a soil analysis from a soil scientist;
- (xvi) a landscape design section;
- (xvii) a fencing design section describing the fencing design approach and typologies.
- (xviii) a paving design section describing the pavement design approach for the Central Station Precinct, Metro Concourse, platform, and Public Domain areas;
- (xix) a bird, bat and vermin management strategy describing approach for mitigation of the negative impacts of the presence of populations on the Station, Central Station Precinct and Public Domain; and
- (xx) a Glass Cleaning Assessment.

- (c) the following Still 3D stereo panoramic renders, capable of being viewed on a Virtual Reality (VR) headset, fully coordinated with the drawings and design report, as a minimum:
- (i) the Metro Station and Central Station Precinct illustrating the context, external architectural and Public Domain design;
 - (ii) the internal and external Station spaces including primary plaza, Station entry, paid concourse, circulation, and platform areas;
 - (iii) the external service/egress buildings; and
 - (iv) the external perspectives of the related Public Domain, and external landscape.

3D stereo panoramic renders must be stored on a secure server, and all VR headsets must be able to access the server to view all renders. The Contractor must provide 2 x VR headsets for use by the Principal at all times.

- (d) documentation describing the sustainable design features and initiatives of the architectural and Public Domain design;
- (e) integration of the architectural design with related developments at Central Station by others, and with future links to adjacent properties, interchanges;
- (f) descriptions and illustrations of the lift car interiors and all visible surfaces within the lift shaft;
- (g) a preliminary external and internal materials, finishes and fixtures digital sample boards and a schedule, describing:
 - (i) product type, finish, colour, size, thickness
 - (ii) cross reference location of all materials and finishes on architectural drawings and schedules; and
 - (iii) quality benchmarks, in existing buildings where the proposed fitting and fixture has been used and demonstrating its suitability.

Design Stage 2

The Design Documentation for architectural, spatial, functional and finishes works at Design Stage 2 must include as a minimum:

- (a) 1:100 (A1) plans, sections and elevations fully defining the layout, preliminary construction method, materials, finishes of the architectural and Public Domain works;
- (b) typical details of key architectural elements including walls, cladding, glazing, ceilings, floors, vertical transportation elements, signage, lighting, heritage items;

- (c) typical details of all Public Domain elements including: pavements, kerbs, stairs, ramps, walls, furniture, shelters, fences and gates, planting beds, tree pits, and lighting;
- (d) 1:50 room layouts and room data schedules;
- (e) technical specifications;
- (f) a topsoil stripping management plan;
- (g) samples of all materials, finishes, fixtures and fittings visible within public areas (internal and external) with specifications, and details of the manufacturer(s);
- (h) a Glass Cleaning Assessment, which has been reviewed by the Operators and Existing Operators, addressing all associated comments;
- (i) updated external and internal materials and fixtures including:
 - (i) method of fixing;
 - (ii) design life to replacement or refurbishment;
 - (iii) maximum replacement times from the time of damage;
 - (iv) manufacturer code number; and
- (j) recommended cleaning methodology, maintenance and frequency, repair and replacement methodology; and the design life to refurbishment and/or replacement.

Design Stage 3

The Design Documentation for architectural, spatial, functional and finishes works at Design Stage 3 must include as a minimum:

- (a) 1:100, 1:50, 1:20 (A1) plans, sections, elevations fully documenting the layout, final construction method, materials, finishes of the architectural and Public Domain works;
- (b) full construction detailing; and
- (c) coordinated services drawings for all public areas of the Station.

C4 Electrical Systems Works

C4.1 Low Voltage System Works

Design Stage 1

The Design Documentation for the low voltage systems works at Design Stage 1 must include as a minimum:

- (a) low voltage distribution system modelling for all operations activities in all operational modes;

- (b) a power supply design study;
- (c) a power quality report;
- (d) single line diagrams;
- (e) maximum demand calculations for each load;
- (f) cable route diagrams;
- (g) low voltage distribution equipment sizes;
- (h) other discipline interfaces;
- (i) a cost benefit analysis of options and final selection;
- (j) lighting level calculations;
- (k) a PV feasibility report to be completed as soon as it practical after contract award factors relating to the interaction of the new technology, including cost, implications of new technology for Sydney Metro and non-financial benefits;
- (i) configuration options and preferred arrangement;
 - (ii) cost-benefit analysis;
 - (iii) for building integrated canopy structure systems, a study of the implication of installation into structures that are also used to support the 1500V overhead wire system; and
 - (iv) an installation risk assessment and mechanisms to mitigate risks.
- (l) the earthing arrangement of the PV system, confirming that it is consistent with the overall earthing, bonding and electrolysis strategy of the Works.

Design Stage 2

The Design Documentation for the low voltage systems works at Design Stage 2 must include as a minimum:

- (a) low voltage electrical protection schemes, including discrimination studies;
- (b) design studies, including: fault level, voltage drop and cable sizing calculation;
- (c) designer's risk assessment and traceability;
- (d) cable selection, cable schedule and cable routing arrangements;
- (e) a fully dimensioned and confirmed site plan;
- (f) protection setting calculations;
- (g) specifications or datasheets for low voltage distribution items;

- (h) switchboard equipment general arrangement drawings;
- (i) an updated power quality report; and
- (j) An updated PV design report.

Design Stage 3

The Design Documentation for the low voltage systems works at Design Stage 3 must include as a minimum, an updated version of each of the documents requested in Design Stage 1 and 2.

- (a) An updated PV report including:
 - (i) equipment specifications and type approval plan;
 - (ii) technical drawings for all the equipment to be used;
 - (iii) a verification and validation process, including detailed inspection and test tasks;
 - (iv) operational instruction for the PV system; and
 - (v) asset management strategy, including detailed maintenance instructions.

C4.2 Earthing and Bonding System Works

Design Stage 1

The Design Documentation for earthing and bonding systems works at Design Stage 1 must include as a minimum:

- (a) an Electromagnetic Compatibility (EMC) Management Plan that:
 - (i) identifies a EMC/Electromagnetic Interference (EMI) “baseline” for the precinct;
 - (ii) defines the “boundary” of the precinct and the mechanisms to ensure this boundary is not breached;
 - (iii) recommends methods and mechanisms to mitigate EMI sources and ensures all items of equipment, systems and integrated systems forming part of the Works are electromagnetically compatible with each other and third party systems external to the Works; and
 - (iv) includes testing to be undertaken following installation to determine the performance of the EMC/EMI mitigation measures.
- (b) an Electrolytic Corrosion Risk Mitigation plan that:
 - (i) determines the earthing, bonding and electrolysis mitigation system configuration to be used;

- (ii) identifies a stray current “baseline” for the precinct;
 - (iii) recommends methods and mechanisms to provide bonding of 1500V structures that is monitored in enough detail to allow maintenance to identify the source of Stray Currents within 48 hours;
 - (iv) assesses the impact of the PV system on the proposed earthing and bonding arrangements;
 - (v) defines the “earthing boundary” of the precinct and the mechanisms to ensure this boundary is not breached by earthed metallic devices; and
 - (vi) includes testing to be undertaken following installation to determine the performance of the electrolysis mitigation measures.
- (c) an earthing and bonding report that:
- (i) studies the proposed installation of PV cells on the canopy structure that is used to support the 1500V OHW system considering implication of earthing, bonding and stray current risks;
 - (ii) studies risks associated with the multiuse metallic components that support lifts, escalators, canopies and 1500V OHW and identify mechanisms to provide best overall earthing/bonding/electrolysis mitigation outcomes;
 - (iii) identifies the configuration of bonding that provides condition monitoring and an alarm function to alert the electrical system operator to the flow of stray current;
 - (iv) identifies the configuration, technology and operational function of a system to manage PSD to ‘rail to earth’ touch voltages, including the interface with other rail systems required to enact this functionality;
 - (v) identifies the configuration, technology and operational function of a system to manage Sydney Metro City and Southwest rail to earth voltages, that provides condition monitoring, alarms and remote control functions to the electrical system operator;
 - (vi) includes a study of neutral-earth resistors in Central Station on the 11kV system that is connected to equipment inside Central Station. This study does not need to consider the 33kV network that passes through Central Station;
 - (vii) includes a study of a stray current collection system that could be applied to the infrastructure elements of the Project Works;
 - (viii) studies methods of applying cathodic protection against electrolytic corrosion due to stray DC traction currents that are compliant with the requirements in the Electricity Supply Corrosion Protection) Regulation 2008 (NSW) and are consistent with the technology and application used by the NSW Electrolysis Committee; and

- (ix) identifies anticipated fault levels and protection clearing times.
- (d) an electromagnetic compatibility report that covers:
 - (i) Sydney Metro City & Southwest infrastructure;
 - (ii) Sydney Trains infrastructure;
 - (iii) Third Party infrastructure; and
- (e) a soil resistivity report.

Design Stage 2

The Design Documentation for earthing and bonding systems works at Design Stage 2 must include as a minimum:

- (a) approvals from Utility Service owners, evidence of submissions to Authorities and other relevant stakeholders for relevant Contractors Activities;
- (b) evidence of submissions leading to Third Party technical and operational agreements;
- (c) system modelling, including earth potential rise, step and touch potentials, rail to earth potentials, Stray Currents and EMC for all operational modes (i.e. Normal Operations, Abnormal Operations, Degraded Operations and Emergency Operations);
- (d) compliance with transfer, step and touch potential design criteria;
- (e) compliance with Stray Current management criteria;
- (f) Traction Return schematics;
- (g) Traction Return arrangements, layouts and details, including rail isolation, and rail to earth voltage monitoring. Leakage current monitoring must be measured by portable devices and may not be shown on arrangements;
- (h) earthing, bonding and isolation schematics;
- (i) earthing, bonding and isolation arrangements, layouts and details, including earthing grids, earth bars, miscellaneous steel requirements, PSDs, Third Party infrastructure and isolated supplies;
- (j) equipment and plant room arrangements and layouts, including plans, elevations and cross sections;
- (k) cable infrastructure layouts, cross sections and details;
- (l) equipment operations and maintenance strategy and planning;
- (m) equipment replacement methodology; and

- (n) installation and workmanship details.

C4.3 Lighting Works

Design Stage 1

The Design Documentation for lighting works at Design Stage 1 must include as a minimum:

- (a) visualisations of overall intent, to cover each area and zone;
- (b) architectural integration details;
- (c) indicative luminaire types; and
- (d) a control strategy.

Design Stage 2

The Design Documentation for lighting works at Design Stage 2 must include as a minimum:

- (a) low level lighting plans showing luminaire types, mounting locations of luminaires on floor and walls and indicative set out dimensions;
- (b) reflected ceiling plans showing locations and types of luminaires and indicative set out dimensions;
- (c) luminaire specifications;
- (d) luminaire electrical loading details; and
- (e) preliminary light level calculations illustrating compliance with key design principles and requirements.

Design Stage 3

The Design Documentation for lighting works at Design Stage 3 must include as a minimum:

- (a) low level lighting plans showing luminaire types, mounting locations of luminaires on floor / walls, indicative set out dimensions and control groupings;
- (b) reflected ceiling plan showing locations and types of luminaires, indicative set out dimensions and control groupings;
- (c) sections and elevations illustrating mounting locations, critical dimensions and positions of integration details;
- (d) integration details within architectural details, with critical dimensions and surface finishes;
- (e) a control strategy, including specification of control system, sensors, time clocks etc. control groups and operation of those groups during various times of day;
- (f) a luminaire specification;

- (g) a control schedule outlining, per channel:
 - (i) luminaire type;
 - (ii) luminaire quantity;
 - (iii) unit load;
 - (iv) control type; and
 - (v) total load;
- (h) final illuminance and (where appropriate) luminance calculations, which illustrate horizontal, work surface and vertical illuminance where required;
- (i) BCA compliance statement, outlining allocation of W/m² per space, area and room index of each space, any adjustment factors that have been used and any elements that have been, justifiably excluded from the calculation results; and
- (j) green star and National Australian Built Environment Rating System (NABERS) energy rating compliance statement outlining targeted points and achievements.

C5 Mechanical Systems Works

C5.1 Environmental Control Systems (ECS) Works

Design Stage 1

The Design Documentation for environmental control systems works at Design Stage 1 must include as a minimum:

- (a) a design report detailing:
 - (i) ECS system level description, including Stations, and service facilities;
 - (ii) primary system ventilation, cooling and heating methods;
 - (iii) system capacities for each location to +/-25% confidence;
 - (iv) ECS provisions for each room and area type, providing outline of services and sub-systems and heating, cooling and ventilation methods;
 - (v) a system description of cooling for both new and existing Station buildings (if impacted by the Contractors activities), including cooling system capacities to a +/-25% confidence level;
 - (vi) a description of cooling and ventilation methods;
 - (vii) a description of air distribution arrangement, and identification of any unique requirements or characteristics of any particular location;
 - (viii) a description of the normal and emergency operating modes;

- (ix) preliminary equipment schedules for major equipment; and
 - (x) preliminary plant room schedules for major plant rooms at each geographic location.
- (b) a system schematic for each air, water, and refrigerant system;
- (c) typical plant room layouts, including:
- (i) cooling tower plant room (if applicable);
 - (ii) chiller plant room (if applicable);
 - (iii) condenser plant room;
 - (iv) air-handling unit plant room(if applicable); and
 - (v) major fan rooms.
- (d) site plans identifying, major heat rejection, intake and discharge locations, orientation, and aspect; and
- (e) preliminary system interface block diagrams.

Design Stage 2

The Design Documentation for environmental control systems works at Design Stage 2 must include as a minimum:

- (a) an updated design report provided in Design Stage 1 with +/- 10% confidence on system capacities and equipment sizing;
- (b) final output from the cooling thermal model to confirm the cooling provision;
- (c) detailed equipment schedules, indicative of final equipment selections with details of the main system components including:
 - (i) their operation, function, and performance requirements;
 - (ii) performance curves;
 - (iii) noise data and treatments; and
 - (iv) weight, dimensions and power requirements;
- (d) an updated plant room schedule detailing the dimensions of each plant room, location and special requirements including specific service requirements;
- (e) updated system schematics for each system showing equipment sizing, cooling and heating capacities, air and water flow rates to discrete equipment and room level detail;

- (f) specific plant room layout drawings detailing equipment, services connections, maintenance access and plant replacement routes;
- (g) a list of fire rated equipment or specific plant room fire rating or detection and protection requirements;
- (h) a description of control architecture and strategy for all ECS systems;
- (i) a draft monitoring and control point schedule detailing the type of points proposed and the function of the point;
- (j) single line air and water distribution drawings for geographic location with identified cross section sizing;
- (k) drawings detailing main services penetrations, risers, and main distribution corridor cross-sections;
- (l) updated site plans identifying, all heat rejection, intake and discharge locations, orientation, and aspects;
- (m) updated system interface block diagrams;
- (n) a detailed design deliverables list and designers initial ITP list;
- (o) materials and workmanship specification for the ECS; and
- (p) calculations for all systems, including:
 - (i) heating and cooling load calculations;
 - (ii) fan sizing calculations;
 - (iii) electrical loading calculations;
 - (iv) detailed hydraulic calculations;
 - (v) noise and vibration calculations; and
 - (vi) indicative energy and water usage for each major system.

Design Stage 3

The Design Documentation for environmental control systems works at Design Stage 3 must include as a minimum, an updated version of each of the Documents requested in Design Stage 1 and 2.

C5.2 Hydraulics Services Works

Design Stage 1

The Design Documentation for hydraulic services works at Design Stage 1 must include as a minimum:

- (a) schematic layout drawings for each system, including:
 - (i) indicative main services reticulation routes;
 - (ii) indicative main equipment location and layouts; and
 - (iii) details of connection to Authorities' services.
- (b) preliminary risk analysis for the rainwater harvesting system, pump duties, sump volumes and rising main sizes;
- (c) a plant room schedule (including spatial provisions) and building showing all plant rooms and proposed servicing;
- (d) preliminary builder's work requirement schedules; and
- (e) preliminary control system point schedules.

Design Stage 2

The Design Documentation for hydraulic services works at Design Stage 2 must include as a minimum:

- (a) detailed risk analysis report for the rainwater harvesting system, pump duties, sump volumes rising main sizes and biocide dosing rates;
- (b) preliminary material and workmanship specifications;
- (c) detailed builder's work requirement schedules; and
- (d) detailed control system point schedules.

Design Stage 3

The Design Documentation for hydraulic services works at Design Stage 3 must include as a minimum:

- (a) detailed material and workmanship specifications, including manufacturer's technical catalogues;
- (b) finalised builder's work requirement schedules;
- (c) finalised control system point schedules;
- (d) plant and equipment installation and replacement strategy proposals;
- (e) noise and vibration control measures;
- (f) pump motor/starter and control panel schedules and drawings;
- (g) technical schedules detailing the equipment performance data;

- (i) drawings and documentations prepared by the Water Servicing Coordinator for the town mains/sewer mains/stormwater connections;
- (ii) system interface block diagrams indicating the locations and details of the interface with Sydney Trains, Authorities and Other Contractors; and
- (iii) equipment and material data sheets with details of the main system components, including materials and workmanship specifications for each hydraulic services system.

C5.3 Fire Services Systems Works

Design Stage 1

The Design Documentation for fire services systems works at Design Stage 1 must include as a minimum:

- (a) a system overview;
- (b) a description for each fire services system;
- (c) schematic diagrams for each fire services system;
- (d) system interface block diagrams indicating the locations and details of the interface between different trades;
- (e) fire services provision schedules;
- (f) plant room schedules; and
- (g) room data sheets.

Design Stage 2

The Design Documentation for fire services systems works at Design Stage 2 must include as a minimum:

- (a) fire services calculations including:
 - (i) system design calculations – sizing, quantity & capacity;
 - (ii) electrical loading calculations;
 - (iii) detailed hydraulic calculations; and
 - (iv) noise and vibration calculations.
- (b) equipment technical details including:
 - (i) equipment data sheets detailing the main system components including their operation function, performance requirements and power requirements;

- (ii) technical data for fire services equipment including pump curves and performance details;
 - (iii) pump motor/starter and control panel schedules and drawings; and
 - (iv) noise and vibration control measures.
- (c) fire services drawings including:
- (i) plant room equipment layout drawings for each fire services system;
 - (ii) service layout drawings showing the main routing for each fire services system;
 - (iii) services penetration drawings; and
 - (iv) builder's work drawings.
- (d) fire services schedules including:
- (i) fire services provision schedules;
 - (ii) plant room schedules;
 - (iii) drawing list and submission schedule;
 - (iv) Sydney Metro central control system and Sydney Metro City & Southwest building management system point schedules;
 - (v) painting schedules; and
 - (vi) lifting facilities schedules.
- (e) plant replacement and access strategy;
- (f) material and workmanship specifications; and
- (g) system interface data and specification.

Design Stage 3

The Design Documentation for fire services systems works at Design Stage 3 must include as a minimum, an updated version of each of the Documents requested in Design Stage 1 and 2.

C5.4 Vertical Transport

Design Stage 1

The Design Documentation for vertical transport works at Design Stage 1 must include as a minimum:

- (a) equipment specifications;

- (b) interface details with architecture, structure and rail systems;
- (c) risk analysis report; and
- (d) preliminary finishes details.

Design Stage 2

The Design Documentation for vertical transport works at Design Stage 2 must include as a minimum:

- (a) materials and finishes details including:
 - (i) lift car interior;
 - (ii) flooring;
 - (iii) hand rails;
 - (iv) lighting;
 - (v) emergency lighting;
 - (vi) operating panels;
 - (vii) indication panels;
 - (viii) non slip treatment escalator steps;
 - (ix) comb plates;
 - (x) escalator hand rails;
 - (xi) escalator stainless steel; and
 - (xii) escalator fall protection.
- (b) technical specifications;
- (c) equipment data sheets;
- (d) risk analysis report; and
- (e) a comprehensive plant and equipment access, maintenance and replacement strategy.

C6 Fire and Life Safety (FLS) Works

Design Stage 1

The Design Documentation for fire and life safety works at Design Stage 1 must include as a minimum:

- (a) A preliminary Fire Engineering Brief (FEB). The FEB must be consistent with the guidance described in AS4825 Tunnel Fire Safety, and must as a minimum contain the following:
- (i) a project scope;
 - (ii) a fire engineering design scope;
 - (iii) fire engineering design objectives;
 - (iv) a regulatory framework;
 - (v) details of relevant stakeholders including a summary of consultation undertaken (minutes to be attached) and all agreements achieved;
 - (vi) an elemental review and description of the Works infrastructure, systems and operations, as it relates to the FLS strategy, including interfaces to other rail facilities, adjoining properties and other rail operators;
 - (vii) Occupant characteristics, which must include:
 - A. population numbers to be used for egress assessment during AM peak, PM peak and off-peak;
 - B. the proportion of Occupants who are mobility impaired;
 - C. the likely location of Occupants within the Station;
 - D. whether occupants are static (e.g. staff) or transient (e.g. commuters) and general flow patterns;
 - E. presence of homeless people sleeping rough;
 - F. presence of those involved in anti-social behaviour (e.g. graffiti vandals);
 - G. seasonal changes and school holidays; and
 - H. potential special events (e.g. New Year's Eve).
 - (viii) hazards identified and preventative and protective measures;
 - (ix) a fire and life safety strategy;
 - (x) a methodology of assessment including:
 - A. identification and likelihood based categorisation of all credible fire and egress scenarios;
 - B. acceptance criteria including tenability criteria and safety factors;
 - C. proposed method for assessing risk to operational impact;

- D. identification and justification of all key input parameters for quantitative assessment including smoke modelling, egress assessment, structural assessment, quantitative risk assessment, radiation modelling and fire brigade response;
 - E. description of software modelling and commentary provided as to its level of validation; and
 - F. a list of all assumptions, including assumed values as inputs to any quantitative likelihood assessment or risk assessment.
- (xi) preliminary analysis and modelling results;
 - (xii) a trial design, including:
 - A. proposed fire safety systems;
 - B. required redundancies;
 - C. preliminary “cause and effect matrix” of required responses for all credible scenarios; and
 - D. proposed management of interfaces.
 - (xiii) a proposed methodology for justification of non-compliances with the Codes and Standards, including:
 - A. deemed to satisfy provisions of the BCA;
 - B. ASA standards; and
 - C. Metro standards.

Design Stage 2

The Design Documentation for fire and life safety works at Design Stage 2 must include as a minimum:

- (a) a final FEB that, in addition to the requirements of design stage 1, contains:
 - (i) updates in response to stakeholder review comments on the preliminary FEB;
 - (ii) Document Review Registers (DRR's) applicable to the preliminary FEB, including responses and response acceptances to all review comments raised; and
 - (iii) a copy of all approvals.
- (b) a written report from the Proof Engineer (fire life safety) containing detailed results of their review of the final FEB including an assessment of:
 - (i) appropriateness of the trial design;

- (ii) compliance with relevant legislation, codes and standards; and
 - (iii) appropriateness of assumptions, engineering methods, analysis and calculations.
- (c) a preliminary Fire Engineering Report (FER). The FER must be consistent with the guidance described in AS4825 Tunnel Fire Safety, and must as a minimum contain the following:
- (i) a project scope;
 - (ii) a fire engineering design scope;
 - (iii) a fire engineering design objectives;
 - (iv) a regulatory framework;
 - (v) details of relevant stakeholders including a summary of consultation undertaken (minutes to be attached) and all agreements obtained;
 - (vi) a description of the Works infrastructure, systems and operations, as it relates to the FLS strategy, which must specifically address interfaces to other rail facilities, adjoining properties and other Operators including the Operator and Existing Operator;
 - (vii) Occupant characteristics, which must include:
 - A. population numbers to be used for egress assessment during AM peak, PM peak and off-peak;
 - B. proportion of occupants who are mobility impaired;
 - C. the likely location of Occupants within the Station;
 - D. whether Occupants are static (e.g. staff) or transient (e.g. commuters) and general flow patterns;
 - E. presence of homeless people sleeping rough;
 - F. presence of those involved in anti-social behaviour (e.g. graffiti vandals);
 - G. seasonal changes and school holidays; and
 - H. potential special events (e.g. New Year's Eve),
 - (viii) identified hazards and preventative and protective measures;
 - (ix) an assessment of all credible scenarios identified in the FEB, and in accordance with the methodology in the agreed FEB, including:
 - A. results of all Quantitative Assessment and Qualitative Assessment;

- B. all design inputs and assumptions; and
 - C. all inputs to risk assessments are to be agreed during stakeholder workshops.
- (d) a detailed description of the FLS strategy covering:
- (i) integration with fire safety elements of rail systems, rolling stock and operations;
 - (ii) means of escape for all occupants including the mobility impaired, including exit routes, travel distances, occupant numbers, exit widths, and fire protection of exit routes;
 - (iii) fire and fire resistance, and Fire Hazard Properties of materials;
 - (iv) smoke control;
 - (v) fire suppression systems, including sprinklers and gaseous suppression;
 - (vi) automatic fire detection;
 - (vii) Occupant warning systems;
 - (viii) emergency lighting and signage;
 - (ix) fire fighting access, facilities and equipment;
 - (x) manual fire fighting equipment;
 - (xi) emergency and other power requirements;
 - (xii) fire incident management; and
 - (xiii) fire related operational requirements, maintenance and housekeeping.
- (e) a comprehensive list of required fire safety systems including:
- (i) a “cause and effect matrix” of required responses for all credible scenarios;
 - (ii) detail not prescribed in design standards; and
 - (iii) relevant inputs and assumptions that have formed the basis of the assessment.
- (f) detailed justification for non-compliances with Codes and Standards, including:
- (i) DTS provisions of the BCA;
 - (ii) ASA standards; and
 - (iii) Metro standards.
- (g) a detailed description of FLS interfaces with other systems and project elements;

- (h) a document map is to be provided identifying the linkages if the FER is dependent on other reports; and
- (i) the SFAIRP assessment demonstrating compliance with the Rail Safety (Adoption of National Law) Act 2012.

Design Stage 3

The Design Documentation for fire and life safety works at Design Stage 3 must include as a minimum:

- (a) a final FER that, in addition to the requirements of design stage 2, contains:
 - (i) updates in response to stakeholder review comments on the preliminary FER;
 - (ii) DRR's applicable to the preliminary FER, including responses and response acceptances to all review comments raised; and
 - (iii) copy of all approvals .
- (b) a written report from the Proof Engineer (fire life safety) containing detailed results of their review of the final FER including an assessment of:
 - (i) any changes to design objectives or design input parameters from the FEB;
 - (ii) appropriateness of the FLS strategy;
 - (iii) compliance with relevant legislation, codes and standards; and
 - (iv) appropriateness of assumptions, engineering methods, analysis and calculations.
- (c) the following certificates (and any supporting documentation as required) to the Principal and the Independent Certifier:
 - (i) Certification by the Qualified Fire Engineer of the fire engineering design as documented in the Approved FER; and
 - (ii) Certification by the Proof Engineer (fire life safety) of the fire engineering design as documented in the Approved FER; and
- (d) an electronic copy of all input and output files generated for the purposes of smoke modelling, egress modelling, structural fire modelling, radiation modelling, fire brigade response modelling, quantified Risk assessment(s) and supporting analysis that form part of the final FER;
- (e) testing methodologies and specifications for any fire testing programs necessary to demonstrate the Fire Resistance Levels and / or Fire Hazard Properties of any required Fire Safety Systems defined in the final FER; and

- (f) All documents referenced within the final FER must be issued to the Principal and the Independent Certifier with the final FER before the FER can be approved by the Principal.

C7 Heritage Works

Design Stage 1

The Design Documentation for heritage works at Design Stage 1 must include as a minimum, a Heritage Impact Assessment (HIA) report for specific elements within the heritage curtilage.

- (a) As a minimum the HIA report must include the following sections:
- (i) Executive summary;
 - (ii) Introduction;
 - (iii) Description of the Place;
 - (iv) Summary of Proposed Design (description of the impacts of the new station elements on the existing heritage building);
 - (v) Assessment Methodology;
 - (vi) Understanding of Heritage Values at Central Station;
 - (vii) Assessment of Impact;
 - (viii) Summary statement of Impact;
 - (ix) Heritage Design consideration;
 - (x) Heritage recommendations and conclusion; and
 - (xi) Appendices as required (including typical sketch details and wall sections of major architectural elements).
- (b) The HIA report must incorporate images, photographs, and drawings.

Design Stage 2

The Design Documentation for heritage works at Design Stage 2 must include as a minimum, an updated HIA report for specific elements within the heritage curtilage.

Design Stage 3

The Design Documentation for heritage works at Design Stage 3 must include as a minimum, an updated final version of the HIA report for specific elements within the heritage curtilage.

C8 Sustainability Works

Design Stage 1

The Design Documentation for sustainability works at Design Stage 1 must include as a minimum:

- (a) a sustainability assessment report;
- (b) estimates of operational electricity consumption which include a breakdown of electricity consumption, by system, and document the assumptions which have been used in the development of the estimates;
- (c) climate change impact assessment reports which demonstrate how climate change risks have been mitigated in design;
- (d) life-cycle assessment reports which describe how life-cycle assessment has been used as a decision making tool for material selection and sourcing and project design to minimise life cycle environmental impacts; and
- (e) a salvage assessment report.

Design Stage 2

- (a) The Design Documentation for sustainability works at Design Stage 2 must include as a minimum:
 - (i) an updated sustainability assessment report;
 - (ii) an updated salvage assessment report;
 - (iii) estimates of operational electricity consumption which include a breakdown of electricity consumption, by system, and document the assumptions which have been used in the development of the estimates;
 - (iv) Climate Change Impact Assessment Reports which demonstrate how climate change risks have been mitigated in design;
 - (v) life-cycle assessment reports which describe how life-cycle assessment has been used as a decision making tool for material selection and sourcing and project design to minimise life cycle environmental impacts;
 - (vi) completed Green Star Design and As Built Refrigerants Impacts Calculator for all Station heating, ventilation, air conditioning and refrigerant (HVAC&R) systems;
 - (vii) documentation demonstrating that the Metro Station has been designed to achieve a minimum 15% improvement over a reference Station based on the section J minimum performance requirements, defined by the National Construction Code (NCC), BCA. The 15% design improvement and reference

Station must include all building related energy end uses (excluding process, communications and specialist equipment energy loads); and

- (viii) energy calculations (which have been tested for appropriateness) where the hourly use profiles and the relative levels for occupancy, energy consuming systems and equipment such as artificial lighting, air-conditioning, ventilation, lifts and internal transport devices, domestic hot water and variable energy using systems and equipment such as computers, datacom equipment and machinery.
- (b) Where Works are classified under a particular NCC BCA, Design Documentation must include energy simulation modelling and associated reporting against minimum performance requirements. Design Documentation must be provided initially during Design Stage 2 and updated at Design Stage 3 to reflect changes.
- (c) Where Works are not classified under a particular NCC BCA building classification, appropriate NCC BCA Section J benchmarks must be used to determine the minimum performance benchmark and improvements must be demonstrated by energy simulation modelling or detailed calculations and included in a report.

Design Stage 3

The Design Documentation for sustainability works at Design Stage 3 must include as a minimum, an update of all Design Documentation to be provided in Design Stage 2.

C9 Customer Centred Design (CCD)

Design Stage 1

Design Documentation to be submitted in relation to CCD at Design Stage 1, as a minimum, must include:

- (a) a Design Package CCD Report, which must address and include:
 - (i) a description of the findings from the application of steps, as specified in SWTC Appendix B09 ,including, but not limited to:
 - A. population numbers to be used for egress assessment during AM peak, PM peak and off-peak;
 - B. identification and analysis of potential issues that impact other design packages; and
 - C. an overview of outstanding customer design issues to be resolved through product, systems and spatial solutions in subsequent Design Stages.
 - (ii) A description of how the Customer Reference Panel has been engaged during the Design Stage 1, including activities that have taken place, participant demographic/customer segment representation, feedback received, where and how this influenced the design solution, including;

- A. details of level of prototyping applied, including;
 - 1. the tests completed using prototypes;
 - 2. the aim of the tests;
 - 3. the type of prototypes used;
 - 4. the outcome of the tests;
 - 5. photo / videographic images of the tests being completed with customers; and
 - 6. how this tests informed the design at Design Stage 1.
 - B. customer journey maps that address the relevant stages of the Sydney Metro Easy Door-to-door-to-door Journey Experience, described in the EIS;
 - C. lessons learned for application in subsequent customer engagement activity;
- (iii) analysis and commentary, supported by direct customer feedback, in relation to how the design performs against:
- A. SWTC Appendix B09 clause 3.1(g);
 - B. SWTC Appendix B09 clause 2.2(a);
 - C. SWTC Appendix B09 clauses 2.3(b) to (k);
- (iv) reporting against the findings of SWTC Appendix B09 clause 3.1(i), including analysis and supporting commentary in relation to:
- A. average score by demographic;
 - B. average score by customer segment; and
 - C. “net promoter score,” defined as the number of responses that responded either 9 or 10 divided by the total number of respondents, less the sum of the number of responses scored between 0 and 6 divided by the total number of respondents.

Design Stage 2

In addition to the requirements set out in MR-PA, Design Documentation to be submitted in relation to CCD at Design Stage 2, as a minimum, must include:

- (a) A Design Package CCD Report, which must address and include:
 - (i) a description of the findings from the application of steps as specified in SWTC Appendix B09 clause 3.1(c)(iii) to (viii), including, but not limited to:

- A. an overview of engagement activities and agreed actions that have taken place to address issues identified in Design Stage 1, Annexure C, C9 Design Stage 1 clause (a), (i), B above;
 - B. identification and analysis of potential issues that impact other design packages; and
 - C. an overview of outstanding customer design issues to be resolved through product, systems and spatial solutions in the subsequent Design Stage.
- (ii) how the Customer Reference Panel has been engaged during the Design Stage, including activities that have taken place, participant demographic/customer segment representation, feedback received, where and how this influenced the design solution, including;
- A. details of level of prototyping applied, including;
 - 1. the tests completed using prototypes;
 - 2. the aim of the tests;
 - 3. the type of prototypes used;
 - 4. the outcome of the tests
 - 5. photo / videographic images of the tests being completed with customers; and
 - 6. how this tests informed the design during Design Stage 2.
 - B. customer journey maps that address the relevant stages of the Sydney Metro Easy Door-to-door-to-door Journey Experience; and
 - C. lessons learned for application in subsequent customer engagement activity.
- (iii) analysis and commentary, supported by direct customer feedback, in relation to how the design performs against:
- A. SWTC Appendix B09 clause 3.1(g);
 - B. SWTC Appendix B09 clause 2.2(a);
 - C. SWTC Appendix B09 clauses 2.3(b) to (k);
- (iv) reporting against the findings of SWTC Appendix B09 clause 3.1(i), including analysis and supporting commentary in relation to:
- A. average score by demographic
 - B. average score by customer segment

- C. “net promoter score”
- D. trend analysis relative to Design Stage 1.

Design Stage 3

In addition to the requirements set out in MR-PA, Design Documentation to be submitted in relation to CCD at Design Stage 3 must include as a minimum:

- (a) a Design Package CCD Report at the conclusion of Design Stage 3. This report must include:
 - (i) a description of the findings from the application of steps as specified in SWTC Appendix B09 clause 3.1(c)(iii) to (viii), including, but not limited to:
 - A. An overview of engagement activities and agreed actions that have taken place to address issues identified in Design Stage 2, Annexure C C9 Design Stage 2 clause (a), (i), B above
 - B. identification and analysis of potential issues that impact other design packages.
 - (ii) how the Customer Reference Panel has been engaged during the Design Stage, including activities have taken place, participant demographic/customer segment representation, feedback received, where and how this influenced the design solution, including;
 - A. details of level of prototyping applied, including;
 - 1. the tests completed using prototypes;
 - 2. the aim of the tests;
 - 3. the type of prototypes used;
 - 4. the outcome of the tests;
 - 5. photo / videographic images of the tests being completed with customers; and
 - 6. how this tests informed the design during Design Stage 3.
 - B. customer journey maps that address the relevant stages of the Sydney Metro Journey Map and Customer Principles; and
 - C. lessons learned for application in subsequent customer engagement activity.
 - (iii) analysis and commentary, supported by direct customer feedback, in relation to how the design performs against:
 - A. SWTC Appendix B09 clause 3.1(g);

- B. SWTC Appendix B09 clause 2.2(a);
- C. SWTC Appendix B09 clauses 2.3(b) to (k);
- (iv) reporting against the findings of SWTC Appendix B09 clause 3.1(i), including analysis and supporting commentary in relation to:
 - A. average score by demographic;
 - B. average score by customer segment;
 - C. “net promoter score”;
 - D. trend analysis relative to Design Stage 1 and Design Stage 2.

C10 Wayfinding (Building, Station Precinct and Public Domain Works)

At all Design Stages, the Contractor must follow the design processes described in the TfNSW “Wayfinding Planning Guide – Introduction” and must use any documentation templates provided by the Principal.

Design Stage 1

- (a) The Contractor must provide the following Design Documentation in relation to all customer-facing areas of the design solution submitted in Design Stage 1 Building, Precinct and Public Domain works, and in accordance with the TfNSW Wayfinding Planning Guide – Introduction:
 - (i) a signage and wayfinding report which must identify, address and include:
 - A. the requirements of the Contract;
 - B. any departures from the Tender Design and any departures from the previous Design Stage if appropriate, and the reasons for the changes;
 - C. assumptions, dependencies and constraints;
 - D. interim design reviews in summary form;
 - E. inputs from Stakeholders and the CCD process;
 - F. inputs from the Design Review Panel and Station Working Groups;
 - G. accompanied by relevant product data sheets and test certificates;
 - H. details of any alternative designs considered and the process used to determine the recommended option;
 - I. consideration of requirements for future safeguarding;
 - J. detailed specifications for materials, finishes, equipment and systems;
and
 - K. design verification.

- (ii) a wayfinding provisioning report, including control drawings and other specifications, demonstrating how provisions have been made to allow signs to be:
 - A. flexibly located and installed, based on customer requirements and decision points;
 - B. connected to data and power sources;
 - C. planned in relation to lighting, furniture, advertising, retail signage and any other relevant elements of the Station environment; and
 - D. any other provisioning or allowances made.
- (iii) wayfinding requirements analysis, including but not limited to:
 - A. issues analysis;
 - B. benchmarks and exemplars; and
 - C. solution constraints.
- (iv) wayfinding strategic analysis report, including but not limited to:
 - A. Site/interchange boundaries;
 - B. zone and flow plans; and
 - C. services summary.
- (v) a non-customer-facing wayfinding plan that:
 - A. demonstrates compliance with building codes and statutory regulations;
 - B. identifies requirements and constraints identified through consultation with operator(s); and
 - C. demonstrates compliance with the design requirements in SWTC Appendix B3.

Design Stage 2

The Contractor must provide the following Design Documentation in relation to all customer-facing areas of the design solution submitted in Design Stage 2 Building, Station Precinct and Public Domain works, and in accordance with TfNSW's Wayfinding Planning Guide – Introduction, which must include as a minimum:

- (a) An updated Signage and wayfinding report;
- (b) A wayfinding concept design package, including but not limited to:
 - (i) new sign schedules and location plans;

- (ii) new sign set outs;
 - (iii) sign removal schedules and location plans;
 - (iv) interface schedules and location plans; and
 - (v) Stakeholder consultation notes.
- (c) an updated non-customer-facing wayfinding plan.

Design Stage 3

The Contractor must provide the following Design Documentation in relation to all customer-facing areas of the design solution submitted in Design Stage 3 Building, Station Precinct and Public Domain works, and in accordance with the TfNSW Wayfinding Planning Guide – Introduction, which must include as a minimum:

- (a) An updated signage and wayfinding report;
- (b) A wayfinding assurance report, including but not limited to:
 - (i) sign verification schedules
 - (ii) RFIs and summary of changes for production order
 - (iii) production order request
 - (iv) bracket and fixing designs
 - (v) shop drawings
 - (vi) engineering certifications and assurances
- (c) A wayfinding production order package, including but not limited to:
 - (i) production order from the TfNSW Wayfinding Program, the form of which will be supplied by the Principal's Representative;
 - (ii) new sign schedules and location plans;
 - (iii) new sign set outs;
 - (iv) sign removals schedules and location plans; and
 - (v) interface schedules and location plans;
- (d) an updated non-customer-facing wayfinding plan.

C11 Public Art (Building, Station Precinct and Public Domain Works)

Design Stage 1

The Contractor must provide the following Design Documentation in relation to the design solution submitted in Design Stage 1 building, precinct and public domain works:

- (a) a Public Art Management Report, including:
 - (i) concept development drawings and mock-ups from the artist(s);
 - (ii) a written progress report in point form on concept development including comment on any issues that have arisen, from the artist(s);
 - (iii) confirmation of the timeline for delivery of the artwork(s);
 - (iv) a description of art costs, and confirmation of provisional sum being allocated and expended to the artworks;
 - (v) opportunities for, and costs of any potential additional artwork(s), and identification of funding source;
 - (vi) control drawings and other specifications, demonstrating how the various provisions specified in SWTC Appendix B11 section 2.1(b)(i) have been addressed;
 - (vii) design drawings and renders which identify how the public artwork(s) will be incorporated into the Works as per SWTC Appendix B11 section 2.1(b)(ii);
 - (viii) an options analysis of all public art opportunities and locations explored through the design development process; and
 - (ix) results of the CCD process as defined by SWTC Appendix B09.

Design Stage 2

The Contractor must provide the following Design Documentation in relation to the design solution submitted in Design Stage 2 building, precinct and public domain works:

- (a) a Public Art Management Report, that:
 - (i) provides detailed fabrication drawings from the artist and, if appropriate, a maquette of the proposed artwork(s);
 - (ii) provides a written progress report in point form on design development, including comment on any issues that have arisen, from the artist(s);
 - (iii) provides a description of art costs, and confirmation of provisional sum being allocated and expended to the artworks;
 - (iv) identifies opportunities for, and costs of any potential additional artwork(s), and identification of funding source;
 - (v) demonstrates compliance with any specified requirements in relation to permanent artwork(s) as per SWTC Appendix B11 section 2.1(b);
 - (vi) demonstrates compliance with provisioning requirements in relation to temporary artwork(s) as per SWTC Appendix B11 section 2.1(b); and

- (vii) includes the results of the CCD process (as defined by SWTC Appendix B09).

Design Stage 3

The Contractor must provide the following Design Documentation in relation to the design solution submitted in Design Stage 3 Building, precinct and public domain works:

- (a) a revised Public Art Management Report, that:
- (i) provides images of the fabrication process;
 - (ii) includes a written progress report in point form, including comment on any issues that have arisen, from the artist(s);
 - (iii) includes an operations and maintenance manual as a part of the AMI;
 - (iv) demonstrates compliance with any specified requirements in relation to permanent public art as per SWTC Appendix B11 section 2.1(b);
 - (v) demonstrates compliance with provisioning requirements in relation to temporary public art as per SWTC Appendix B11 section 2.1(b);
 - (vi) addresses how any issues identified at Stage 2 have been resolved; and
 - (vii) includes the results of the CCD process (as defined by SWTC Appendix B09).

C12 Advertising (Building, Station Precinct and Public Domain Works)

Design Stage 1

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 1 Building, Station Precinct and Public Domain works:

- (a) an advertising provisioning report, including:
- (i) control drawings and other specifications, demonstrating how the various provisions specified in SWTC Appendix B13 clause 2.1(a)(i) have been addressed;
 - (ii) identification, through design drawings and renders (as appropriate), opportunities for the incorporation of the different types of advertising into the Works as per SWTC Appendix B13 clause 2.1(a)(ii); and
 - (iii) an initial analysis of customer traffic patterns proximate to identified advertising locations, supported by Station pedestrian modelling, as appropriate;

Design Stage 2

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 2 Building, Station Precinct and Public Domain works:

- (a) An advertising integration report, that:
 - (i) demonstrates compliance with any specified requirements as per SWTC Appendix B13 clause 2.1(a);
 - (ii) updated analysis of customer traffic patterns proximate to identified advertising locations, supported by Station pedestrian modelling, as appropriate; and
 - (iii) identifies issues in relation to the realisation of the Advertising Strategy that need to be resolved through Stage 3 Design.

Design Stage 3

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 3 Building, Station Precinct and Public Domain works:

- (a) an updated advertising integration report that:
 - (i) demonstrates compliance with any specified requirements as per SWTC Appendix B13 clause 2.1(a);
 - (ii) updated analysis of customer traffic patterns proximate to identified advertising locations, supported by Station pedestrian modelling, as appropriate; and
 - (iii) addresses how any issues identified at Stage 2 have been resolved.

C13 Retail (Building, Station Precinct and Public Domain Works)

Design Stage 1

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 1 Building, Station Precinct and Public Domain works:

- (a) A retail provisioning report, including:
 - (i) control drawings and other specifications, demonstrating how the various provisions specified in SWTC Appendix B14 clause 2.1(a)(i) have been addressed;
 - (ii) identify through design drawings and renders (as appropriate) opportunities for the incorporation of the different types of retail into the Works as per SWTC Appendix B14 clause 2.1(a)(ii);
 - (iii) options analysis of all retail opportunities and locations explored through the design process as per SWTC Appendix B14 clause 2.1(a);
 - (iv) Initial analysis of customer traffic patterns proximate to identified retail locations, supported by Station pedestrian modelling, as appropriate; and
 - (v) results of the CCD process (as defined in SWTC Appendix B09).

- (b) A Retail Provisioning Plan as specified in SWTC Appendix B14, clause 3.1.

Design Stage 2

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 2 Building, Station Precinct and Public Domain works:

- (a) a retail integration report that:
- (i) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.1(a);
 - (ii) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.2;
 - (iii) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.3;
 - (iv) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.4;
 - (v) provides an updated analysis of Customer traffic patterns proximate to identified retail locations, supported by Station pedestrian modelling, as appropriate;
 - (vi) identifies issues in relation to the realisation of the Retail Strategy that need to be resolved through Stage 3 Design; and
 - (vii) results of the CCD process (as defined in SWTC Appendix B09).
- (b) an updated Retail Provisioning Plan as specified in SWTC Appendix B14, clause 3.1.

Design Stage 3

The Contractor must provide the following artefacts in relation to the design solution submitted in Design Stage 3 Building, Station Precinct and Public Domain works:

- (a) an updated retail integration report that:
- (i) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.1(a);
 - (ii) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.2;
 - (iii) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.3;
 - (iv) demonstrates compliance with any specified requirements as per SWTC Appendix B14 clause 2.4;

- (v) provides an updated analysis of Customer traffic patterns proximate to identified retail locations, supported by Station pedestrian modelling, as appropriate;
 - (vi) addresses how any issues identified at Stage 2 have been resolved; and
 - (vii) results of the CCD process (as defined in SWTC Appendix B09).
- (b) an updated retail provisioning plan as specified in SWTC Appendix B14, clause 3.1, including a detailed set of tenancy plans for each retail unit. Tenancy plans should detail proposed lease lines, services locations, reflected ceiling plans, sections and elevations.

Annexure D: Interface Documentation and Coordination

The following requirements apply to the design of the Metro Station Works only.

D1 Structural Electrical and Mechanical Drawings

- (a) The Contractor must develop initial SEMs (Phase 1 SEMs) as part of Design Stage 1.
- (b) SEM drawings must coordinate the civil works of the Contractor and the civil requirements of the Interface Work for electrical and mechanical installation.
- (c) SEM drawings must comprise layout and sectional drawings that use the architectural layouts as a background with the structural framing superimposed to show (at a 1:100 / 1:50 scale) all the required:
 - (i) openings in slabs, sleeves, plinths, reinforced concrete walls, beams and blockwork walls;
 - (ii) openings required for access panels / doors in walls, slabs or beams for the delivery and maintenance of the electrical and mechanical equipment;
 - (iii) cast-in items including pipework, cable sleeves, lifting hooks, brackets, sockets, anchors, lifting beams, floor drains, equipment plinths, and electrical conduits; and
 - (iv) all rebates in concrete surfaces and chases in blockwork that are required for concealed conduits, cables and pipes.
- (d) For all openings, the SEM drawings must include the following installation details:
 - (i) entity responsible for providing the sleeves or steel enclosure;
 - (ii) entity responsible for sealing the opening within the sleeve; and
 - (iii) the Contractor to seal the remaining opening and outside the sleeve with fire resistant material, compatible with the fire rating of the wall.
- (e) The Phase 1 SEM must show the preliminary and approximate structural and architectural openings, penetrations, cast in items and builder's works provisions for plant and materials and Interface Contractors' installations. The provisions on the Phase 1 SEM are based on the intended locations and arrangements of the major services and the preliminary layout of Interface Contractors' equipment layout. The Contractor must not rely on the information provided in the provisions and must check all information prior to its use.
- (f) The Contractor must issue the Phase 1 SEMs to the Principal's Representative and relevant Interface Contractors. The Interface Contractors and Principals' Representative will review the Phase 1 SEMs and mark up amendments on the drawings to suit the Interface Work, as necessary, within 4 weeks of the issue of the drawings by the Contractor.
- (g) The Contractor must arrange coordination working sessions to be attended by the Principal's Representative and relevant Interface Contractors to review and reach agreement on the marked-up Phase 1 SEMs.

- (h) The Contractor must develop the detailed SEMs as part of Design 2 and be based on the agreed marked-up Phase 1 SEMs.
- (i) Updated versions of all Documents listed in clauses (a) to (h) above must be submitted as a part of the Design Stage 3 submissions.

D2 Combined Serviced Drawings

- (a) CSDs are layout and sectional drawings which must show (generally at scales of 1:100, 1:50 or 1:25) combined and coordinated arrangements of all the major electrical and mechanical works on architectural layout backgrounds. The services routing and equipment layout must be coordinated with due regard to the design intent, construction sequence, operational safety, maintainability, constructability and aesthetic appearance.
- (b) The CSDs must include setting out dimensions and levels of the following items, unless their inclusion will reduce the clarity of the drawings (in which case these must be shown on separate drawings):
 - (i) ductwork routes;
 - (ii) cable trays and trunking routes;
 - (iii) pipework routes and valve locations;
 - (iv) louvres and grille locations;
 - (v) major equipment, including fans, chillers, switchboards, lighting fittings, pumps, air handling units, battery racks, UPS, control panels, compressors and vessels, generators and tanks; and
 - (vi) locations of earthing terminals, emergency push buttons, power isolators and switches, and water and drainage points.
- (c) The Contractor must coordinate with all relevant Interface Contractors to review, their mark-up amendments and reach agreement on the CSDs. This includes coordination with any CSDs developed by Interface Contractors.
- (d) The Contractor must develop initial CSDs ("Phase 1 CSDs") as part of Design Stage 1 design for the Metro Station Works.
- (e) The Phase 1 CSD must show the preliminary and approximate spatial arrangements of the building services installations. The arrangements on the Phase 1 CSD will be based on the assumed sizes of the equipment, the intended locations and arrangements of the major services and the preliminary layout of Interface Contractors' equipment. The Phase 1 CSDs may not be entirely suitable for the Contractor's sequence of Works and size of actual equipment to be used.
- (f) The Contractor must issue the Phase 1 CSDs to the Principal's Representative and relevant Interface Contractors. The Principal's Representative and relevant Interface Contractors will review and mark-up any proposed amendments to account for the Interface Work, as necessary, within 4 weeks of the issue of the drawings by the Contractor.

- (g) The Contractor must arrange a coordination working session to be attended by the Principal's Representative and relevant Interface Contractors to review and reach agreement on the marked-up Phase 1 CSDs.
- (h) The Contractor must develop the detailed CSDs ("Phase 2 CSDs") as part of Design Stage 2 design for the Metro Station Works and be based on the agreed marked-up Phase 1 CSDs.
- (i) The Interface Contractors will provide equipment layout and other necessary information for the equipment rooms. The Contractor must incorporate these details in the Phase 2 CSD for these equipment rooms.
- (j) Updated versions of all Documents listed in clauses (a) to (i) above must be submitted as a part of the Design Stage 3 submissions.

D3 Wall Elevation Drawings

- (a) WEDs are required to facilitate the coordination of wall openings, wall mounted equipment, structural reinforcement zones, and lintels, to avoid clashes and ensure constructability.
- (b) The WEDs must show all the openings for electrical, mechanical and systems Works based on the SEM drawings as well as all cast-in items, doors, access panels, blockwork reinforcement zones and the like, to illustrate the coordination arrangement amongst all these items. For any areas with false ceiling, the ceiling line must be shown on the WEDs.
- (c) The Contractor must develop initial WEDs ("Phase 1 WEDs") as part of the Design Stage 1 design for the Metro Station Works.
- (d) The Contractor must issue the Phase 1 WEDs to the Principal's Representative and relevant Interface Contractors. The Principal's Representative and relevant Interface Contractors will review and mark-up any proposed amendments to account for the Interface Work, as necessary, within 4 weeks of the issue of the drawings by the Contractor.
- (e) The Contractor must arrange a workshop to be attended by the Principal's Representative and relevant Interface Contractors to review and reach agreement on the marked-up Phase 1 WEDs.
- (f) The Contractor must develop the detailed WEDs ("Phase 2 WEDs") as part of Design Stage 2 design for the Metro Station Works.
- (g) The Interface Contractors will provide information on any large items which will be fixed to blockwork walls, and the imposed loads on the walls, including of runs of pipes, ducts, cable trays, and dampers. The Contractor must incorporate these details in the Phase 2 WEDs.
- (h) Updated versions of all Documents listed in clauses (a) to (g) above must be submitted as a part of the Design Stage 3 submissions.
- (i) The final WEDs must be used for construction of the civil works, with an AFC version being released in accordance with this MR-T clause 3.7.

D4 Cable Containment Drawings

- (a) The cable containments drawings are layout plans and installation details showing the arrangement of cable containment system with details of sizes, fixings, cables, terminations and hangers.
- (b) In accordance with the requirements of the agreed Phase 2 CSDs, the Contractor must review the cable containment requirements of the Interface Contractors for compatibility with the design of the Works and prepare the cable containment drawings.
- (c) Versions of all Documents listed in clauses (a) to (b) above must be submitted as a part of the Design Stage 1, Design Stage 2 and Design Stage 3 submissions.

D5 Cast-in Conduit Drawings

- (a) The cast-in-conduit drawings are layout plans and installation details, which must show the arrangement of cast in conduit, with conduit sizes and details of cables, loads and terminations (to a minimum of 1:100 scale).
- (b) The Interface Contractors will mark the general layout drawings to show the cast in conduit requirements to the Contractor, including mark-up on the general layout drawings.
- (c) The Contractor must review the cast in conduit requirements of Interface Contractors for compatibility with the design of the Works and must prepare the cast in conduit drawings.
- (d) The Contractor must arrange a workshop to be attended by the Principal's Contractor and all relevant Interface Contractors to review and reach agreement of the cast in conduit drawings.
- (e) Versions of all Documents listed in clauses (a) to (d) above must be submitted as a part of the Design Stage 1, Design Stage 2 and Design Stage 3 submissions.

D6 Architectural Builders Works and Finishes Drawings

- (a) ABWF drawings must show the various architectural and builder work finishes to be done in the civil structure or partitions and identify interfaces with all electrical and mechanical equipment.
- (b) ABWF drawings must include:
 - (i) reflected ceiling plans, which show the intended layout of ceiling fittings and fixtures with all ceiling or soffit mounted equipment, and where necessary, sectional drawings are produced to identify any visual obstructions;
 - (ii) wall cladding drawings;
 - (iii) floor tiling drawings;
 - (iv) internal glazing drawings;
 - (v) balustrades and gates drawings;

- (vi) lift shaft and lift machine room drawings;
 - (vii) door schedules;
 - (viii) external work drawings (including louvre, glazed wall, special roof drawings);
 - (ix) roller shutter schedules;
 - (x) raised floor drawings;
 - (xi) toilets, sanitary ware schedule etc.;
 - (xii) signage and advertising panels drawings; and
 - (xiii) head wall units, and tail wall units (for signalling, communications and passenger screen door equipment) and hose reel cabinet drawings.
- (c) The Contractor must issue (at same time as issuing the Phase 1 CSD and Phase 1 SEM) the ABWF drawings to the Principal's Representative and relevant Interface Contractors for review and to mark-up any proposed amendments to account for the Interface Work.
- (d) The Contractor must arrange a coordination working session to be attended by the Principal's Representative and relevant Interface Contractors to review and reach agreement on the marked-up ABWFs.
- (e) The Interface Contractors will review and mark-up the ABWF drawings to account for the Interface Work. The Contractor must revise the ABWF drawings with agreed changes and reissue to the Interface Contractors.
- (f) Updated versions of all Documents listed in clauses (a) to (e) above must be submitted as a part of the Design Stage 2 and Design Stage 3 submissions.

D7 Delivery Route Drawings

- (a) DRDs must show the intended routes within the Site along which any large or heavy equipment which will be transported to their final installation positions and all permanent delivery routes required for future maintenance or equipment replacement. The DRDs will consist of plans, sections and elevations drawings as necessary.
- (b) DRDs must include:
- (i) temporary delivery routes required during construction;
 - (ii) permanent delivery routes for maintenance or equipment replacement;
 - (iii) dimensions of the largest piece of equipment expected to be delivered along each identified route;
 - (iv) maximum weight of equipment to be delivered along each route;
 - (v) temporary floor and wall openings;
 - (vi) sections of walls and plantroom doors that will be temporarily omitted until after equipment delivery;

- (vii) demountable louvers and wall panels that will be sealed off, but need to remain accessible for maintenance or equipment replacement in the future; and
- (viii) hoisting provisions and structural beams.
- (c) The Contractor must issue (at same time as issuing the Phase 1 CSD and Phase 1 SEM) the DRDs to the Principal's Representative and relevant Interface Contractors for review and to mark-up any proposed amendments to account for the Interface Work.
- (d) The Contractor must arrange a coordination working session to be attended by the Principal's Representative and relevant Interface Contractors to review and reach agreement on the marked-up DRDs.
- (e) The Interface Contractors will review the DRDs to confirm if all large or heavy equipment and materials can be delivered along the routes indicated.
- (f) Versions of all Documents listed in clauses (a) to (e) above must be submitted as a part of the Design Stage 1, Design Stage 2 and Design Stage 3 submissions.

D8 DIS, ITS and DITP requirements

The Design Documentation for the DIS, ITS and DITP must include the following:

D8.1 Detailed Interface Specification

- (a) The detailed interface specification must include the design of the physical, electrical, mechanical, functional, protocol, software and all other interfaces between the Contractor and the Interface Contractors.
- (b) The DIS must show clearly the demarcation of responsibilities between the Contractor and the Interface Contractors.
- (c) The DIS must include and cover the items in the following table of contents:
 - (i) Section 1. Purpose;
 - (ii) Section 2. Reference Documents;
 - (iii) Section 3. Glossary;
 - (iv) Section 4. Interface Specifications;
 - (v) Section 4.1 Interface Diagrams;
 - (vi) Section 4.2 Physical Interface;
 - (vii) Section 4.2.1 Nature, Location and Quantity;
 - (viii) Section 4.2.2 Electrical Description;
 - (ix) Section 4.2.3 Mechanical Description;
 - (x) Section 4.3 Functional Interface;
 - (xi) Section 4.4 Protocols;
 - (xii) Section 4.5 Software and Data Interface;

- (xiii) Section 4.6 Naming Convention;
- (xiv) Section 4.7 Design Constraints;
- (xv) Section 4.8 Electromagnetic Compatibility;
- (xvi) Section 5. Implementation and Installation;
- (xvii) Section 6. Quality Assurance;
- (xviii) Section 6.1 Interface Requirements References;
- (xix) Section 6.2 Verification and Validation;
- (xx) Appendices and Drawings;
- (xxi) Appendix. 1 Detailed Data Interface Schedules;
- (xxii) Appendix. 2 Cables Termination Schedules / Drawings; and
- (xxiii) Appendix. 3 System Start-up parameters.

D8.2 Detailed Interface Test Plan

- (a) The DITP must identify various tests required to ascertain the proper interfacing and interaction as required and must cover the purpose, methodology, sequence, testing instrument, inputs and expected outputs, responsibility of the Contractor and the Interface Contractors in each test.
- (b) The DITP must show clearly the demarcation of responsibilities between the Contractor and the Interface Contractors.
- (c) The detailed interface test plan must include and cover the items in the following table of contents:
 - (i) Section 1. Purpose;
 - (ii) Section 2. Reference Documents;
 - (iii) Section 3. Glossary;
 - (iv) Section 4. Test methodology;
 - (v) Section 5. Interface Test Specifications;
 - (vi) Section 5.1 Test XXX-YYY-IT-01;
 - (vii) Section 5.1.1 Purpose of this test;
 - (viii) Section 5.1.2 Reference to PS and other functionality requirements;
 - (ix) Section 5.1.3 Test Configuration;
 - (x) Section 5.1.4 Testing Equipment;
 - (xi) Section 5.1.5 Test procedures with inputs and expected output (format only);
 - (xii) Section 5.2 Test XXX-YYY-IT-02;
 - (xiii) Section 5.2.1 Purpose of this test;

- (xiv) Section 5.2.2 Reference to PS and other functionality requirements;
- (xv) Section 5.2.3 Test Configuration;
- (xvi) Section 5.2.4 Testing Equipment;
- (xvii) Section 5.2.5 Test procedures with inputs and expected output (format only)(repeat for all tests);
- (xviii) Section 6. Logical sequence and dependence of the tests (can be illustrated using a fish-bone chart);
- (xix) Section 7. Quality Assurance;
- (xx) Section 7.1 Interface Requirements References;
- (xxi) Appendices and Drawings.

D8.3 Interface Test Specification

- (a) For each of the interface tests identified in the DITP, a detailed ITS must be jointly developed between the Contractor and the relevant Interface Contractor, to verify that the detailed interface specification requirements have been satisfied.
- (b) The interface test specification of each interface test must cover the following items:
 - (i) purpose of the test;
 - (ii) reference to the SWTC and other functionality requirements;
 - (iii) pre-requisites for the test;
 - (iv) test configuration;
 - (v) testing equipment and resources;
 - (vi) expected duration of the test;
 - (vii) safety precautions; and
 - (viii) step by step test procedures with inputs and expected outputs and acceptance criteria.
- (c) The division of responsibilities between the Contractor and the Interface Contractors must be clearly specified in each interface test specification.
- (d) The step-by-step test procedures must demonstrate that all the required functionalities of the interface are fulfilled. Each test must be repeatable, and the same test results must be achieved under the same testing conditions.

Annexure E Prototypes and Samples

- (a) The Contractor must undertake prototyping at all Design Stages in accordance with the Overarching CCD Management Plan and Design Package CCD Implementation Plan as specified in SWTC Appendix B09.
- (b) The Contractor must, where practicable, utilise the method of prototyping from the available options that best achieves a natural human interaction to support customer validation through testing.

- (c) An acceptable prototyping approach to be adopted by the Contractor at Design Stage 1 may include, but is not limited to items (i) to (vii) below. Where an alternative prototyping approach is sought, the Contractor must obtain agreement from the Principal's Representative in writing prior to undertaking customer testing:
- (i) paper-based imagery and renders;
 - (ii) models;
 - (iii) interaction-based tools such as building blocks and craft based materials;
 - (iv) low-fidelity user interface examples;
 - (v) site visits using analogous locations;
 - (vi) analogous off-the-shelf products; and
 - (vii) indicative sample materials.
- (d) An acceptable prototyping approach to be adopted by the Contractor at Design Stage 2 may include, but is not limited to items (i) to (vii) below. Where an alternative prototyping approach is sought, the Contractor must obtain agreement from the Principal's Representative in writing prior to undertaking customer testing.
- (i) 3-dimensional computer based Station imagery and renders;
 - (ii) 3-dimensional physical mock-ups;
 - (iii) high fidelity user interface examples;
 - (iv) virtual reality simulations;
 - (v) product and material samples as proposed;
 - (vi) activity-based interactions to complete a task with a mock up; and
 - (vii) site visits using analogous or actual locations (may be at a testing centre).
- (e) An acceptable prototyping approach to be adopted by the Contractor at Design Stage 3 may include, but is not limited to items (i) to (vii) below. Where an alternative prototyping approach is sought, the Contractor must obtain agreement from the Principal's Representative in writing prior to undertaking customer testing.
- (i) 3-dimensional computer based Station imagery and renders;
 - (ii) 3-dimensional physical mock-ups;
 - (iii) high fidelity user interface examples;
 - (iv) virtual reality simulations;
 - (v) actual pre-production (beta version) user interface examples;
 - (vi) activity based interactions to complete a task with the manufacturer's product; and
 - (vii) site visits using actual locations (may be at a testing centre).





Transport
for NSW

Management Requirements – Sustainability – Central Station Main Works (MR-Sy)

DOCUMENT NUMBER: SM-17-00000467

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Management Requirements – Sustainability – Central Station Main Works (MR-Sy) describes requirements and processes in relation to management, reporting and sustainability related aspects of the Works, Temporary Works and the Contractor's Activities.
- (b) This MR-Sy must be read in conjunction with other parts of the Contract.
- (c) The Contractor must comply with the requirements of this MR-Sy and any Reference Documents listed in Annexure A to this MR-Sy.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-Sy.

2. General

- (a) Where noted in Annexure C – Project Specific Requirements, the Contractor must comply with the requirements of this MR-Sy, as amended by Annexure C.
- (b) The Reference Documents listed in this MR-Sy are included in electronic format on the DVD entitled "Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.
- (c) The Contractor must provide copies of all the Documents required in this MR-Sy in ".pdf" format that comply with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0).
- (d) The Contractor must ensure that sustainability is addressed throughout the performance of the Contractor's Activities and that sustainability is embedded into the design and construction of the Works and the Temporary Works.

3. Governance

- (a) The Contractor must develop, implement and maintain governance structures, processes and systems that ensure integration and implementation of all sustainability considerations, initiatives and reporting.
 - (b) For the Contractor's Activities related to the Works, the Contractor must:
 - (i) enter into a Ratings Agreement to obtain an Infrastructure Sustainability Rating for the Contractor's Activities, and provide a copy to the Principal's Representative;
 - (ii) use the IS Rating Scheme to achieve the following, in this clause 3 (b) (ii) A. and B, below. Should either of the following occur:
 - A. ISCA not accept the business as usual base case assumption that approximately 30% of the power demand be provided from generators in addition to mains power supply; or
 - B. an ISCA Credit Wat-2, Level 1 is not achieved;
- the Contractor must:

- C. demonstrate the associated impact to IS Ratings; and
 - D. achieve an adjusted minimum ISCA rating of 73, which is 75 minus 1 point for each of the above assumptions if rejected;
- further, the Contractor must:
- E. achieve a “Design” rating score of at least 75, with a target of 79, for the design of the Works; and
 - F. achieve an “As Built” rating score of at least 75, with a target of 79, for the constructed Works; and
- (iii) use the IS Rating Scheme credit weightings in accordance with ‘Draft ISCA Weightings Assessment – Central Station’ ; and
 - (iv) use the ‘Draft ISCA Base Case Assumptions – Central Station’ provided by the Principal’s Representative to develop Base Case Footprints for relevant IS Rating Scheme credits.
- (c) The rating scores under the IS Rating Scheme must be verified by Infrastructure Sustainability Council of Australia verifiers in accordance with the IS Rating Scheme process using the IS Rating Scheme tool version 1.2.
- (d) For the Contractor’s Activities related to the Works, the Contractor must:
- (i) register the project with the Green Building Council of Australia (GBCA);
 - (ii) use the Green Star Design & As Built Rating Tool (GSDABRT) to calculate the ‘Design’ and ‘As Built’ rating scores;
 - (iii) achieve a GSDABRT ‘Design Review’ rating of at least 5 stars for the design of the Works; and
 - (iv) achieve a GSDABRT ‘As Built’ rating of at least 5 stars for the delivery of the Works.
- (e) The GSDABRT rating scores must be verified by the GBCA in accordance with the Green Star Rating System.
- (f) The sustainability objectives and requirements described in the Contract must be allowed for and addressed in:
- (i) design briefings for all personnel involved in the preparation of Design Documentation;
 - (ii) the Design Documentation;
 - (iii) site inductions for all of the Contractor’s personnel and Subcontractor’s personnel engaged in the Contractor’s Activities; and
 - (iv) Management Plans for the management, coordination and delivery of the Contractor’s Activities.
- (g) The Contractor must also:
- (i) participate in Sustainability Forums, hosted by the Principal’s Representative on a regular (at least monthly) basis and present progress updates, sustainability performance information and sustainability lessons learned and provide other information as requested;

- (ii) develop, implement, maintain and submit to the Principal's Representative for review in accordance with the Contract, a Sustainability Assurance Framework to identify and track compliance with the sustainability requirements defined in the Contract; and
- (iii) prepare and submit each year, by 31 August to the Principal's Representative for review in accordance with the Contract, an annual sustainability report which demonstrates the Contractor's performance in economic, social, environmental and governance areas over the last Financial Year.

4. Climate Change

The Contractor must:

- (a) identify and describe in the Design Documentation, and implement climate change initiatives which demonstrate that the Works have been designed to combat and be resilient to the effects of climate change during each Design Stage referred to in MR-T;
- (b) undertake climate change risk assessments in respect of the Works in accordance with the guidance and requirements included in the TfNSW Climate Risk Assessment Guidelines and the Infrastructure Sustainability Council of Australia's IS Rating Tool Technical Manual V1.2 – Climate Change Adaptation chapter. The risk assessments must be used as an input to inform the Design Work and be documented in the Design Documentation submitted to the Principal's Representative at Design Stage 1;
- (c) identify all necessary adaptation measures that comprehensively address risks classified as "extreme" and "high" during the design life of the Works using AS/NZS ISO 31000:2009 Risk management – Principles and guidelines;
- (d) implement measures to mitigate:
 - (i) all climate change risks classified as "extreme" and "high" in clause 4 (b) above; and
 - (ii) implement measures to mitigate at least 25% of all climate change risks classified as "medium" in clause 4 (b) above.
- (e) ensure that the climate change projections and guidance which the Contractor uses to underpin the climate change risk assessment in clause 4 (b) above are the most recent available and are consistent with industry best practice, including NWRLSRT-PBA-SRT-SU-REP-000022 Climate Resilience Report.

5. Carbon and Energy Management

The Contractor must:

- (a) undertake greenhouse gas assessment and reporting which covers the Works, Temporary Works and Contractors Activities, in accordance with the requirements of TfNSW's Carbon Estimate and Reporting Tool (CERT). All reports required to be produced under the CERT must be provided to the Principal's Representative for review by the Principal's Representative in accordance with the Contract;
- (b) demonstrate, using the CERT, that the Contractor has achieved at least a 20 % reduction in greenhouse gas emissions associated with the Contractors Activities,

measured against the CERT Base Case generated using the CERT, during Design Stage 3 and again prior to the Date of Construction Completion of the final Portion to reach Construction Completion;

- (c) ensure, and provide evidence to the Principal's Representative that, as a minimum, 25% of the total electricity being used in carrying out the Contractor's Activities is being offset through either one or a combination of the following:
 - (i) purchase of Australian Carbon Offset Credits; and
 - (ii) purchase of renewable energy from an Accredited Renewable Energy Supplier.
- (d) develop and implement Green Travel Plans for the personnel engaged in delivery of the Contractor's Activities.

6. Resources

6.1. Water Efficiency

The Contractor must:

- (a) undertake a water balance study and submit it to the Principal's Representative (prior to the commencement of construction work) that identifies the sources, uses and estimated quantities of potable and non-potable water which will be either created or used in the performance of the Contractor's Activities;
- (b) ensure that the water balance study in clause 6.1 (a) above identifies initiatives to reduce water demand and use non-potable water, which must be adopted in order to achieve the targets set out in clause 9; and
- (c) meter the water supplied for the Contractor's Activities from both recycled water networks and potable sources in order to report against the targets set out in clause 9 below.

6.2. Materials

The Contractor must:

- (a) include evidence in its Design Stage 1, Design Documentation of how materials use has been minimised through materials avoidance, reduction and innovative design;
- (b) undertake life-cycle assessments in accordance with ISO 14044:2006 to assist in selection of the most appropriate low-impact materials for the Contractor's Activities, Works and Temporary Works including (as a minimum):
 - (i) concrete;
 - (ii) steel;
 - (iii) architectural tunnel lining;
 - (iv) flooring;
 - (v) wall lining; and
 - (vi) glazing.

- (c) ensure that the life-cycle assessments in clause 6.2 (b) are undertaken before the completion of Design Stage 1, and the results of the life cycle assessments are included in its Design Documentation for Design Stage 1;
- (d) maximise the use of recycled steel, in the Works and Temporary Works;
- (e) use low volatile organic compounds (VOC) paints, finishes, sealants and adhesives and low emission formaldehyde composite wood products in the Works and the Temporary Works;
- (f) ensure that all surface coatings used in the Works comply with the VOC Limits defined in the Australian Paint Approval Scheme;
- (g) source the following materials for the Works and Temporary Works in accordance with the following requirements:
 - (i) concrete must be sourced from members of the Cement Concrete and Aggregate Australia; or a “similar” international association or organisation by agreement with the Principal’s Representative;
 - (ii) steel must be sourced from suppliers that are certified under the Australian Certification Authority for Reinforcing and Structural Steels or a “demonstrated equivalent” approved association or organisation, where agreed by the Principal’s Representative;
 - (iii) steel must be sourced from steelmakers with an ISO 14001:2015 Environmental management certified Environmental Management System;
 - (iv) fabricated steel products must be in accordance with AS 5131:2016 Structural steelwork – Fabrication and erection and certified through the National Structural Steelwork Compliance Scheme;
 - (v) at least 60% by mass of all reinforcing steel has been produced using energy-reducing processes, which include Polymer Injection Technology or its equivalent, in its manufacture;
 - (vi) Polyvinyl chloride must be compliant with the Green Building Council of Australia Best Practice Guidelines for PVC in the Built Environment; and
 - (vii) timber products must be sourced from one or more of the following:
 - G. re-used timber;
 - H. post-consumer recycled timber;
 - I. timber suppliers in Australia certified by the Forest Stewardship Council, Australia; or
 - J. timber suppliers in Australia, certified under the Program for the Endorsement of Forest Certification.
- (h) record the percentage of steel sourced from Australian manufacturers and make this information available to the Principal’s Representative upon request;
- (i) identify and implement initiatives to both reduce spoil quantities which will be generated during the performance of the Contractor’s Activities and maximise the beneficial reuse of spoil; and

- (j) ensure that 100% of spoil which can be re-used, is beneficially reused in accordance with the spoil reuse hierarchy identified in the Environmental Documents and is not disposed to landfill.

7. Supply Chain

The Contractor must:

- (a) develop, implement and maintain a sustainable procurement policy and processes that comply with the requirements of BS 8903:2010 “Principles and framework for procuring sustainably – Guide”, and include them in the Construction Sustainability Management Plan required in Annexure B clause 3.2;
- (b) achieve, as a minimum, the following for its procurement activities using the IS Rating Scheme version 1.2 tool:
 - (i) Level 2 for Pro-1 “Commitment to sustainable procurement”;
 - (ii) Level 3 for Pro-2 “Identification of suppliers”;
 - (iii) Level 3 for Pro-3 “Supplier evaluation and contract award”; and
 - (iv) Level 2 for Pro-4 “Managing supplier performance”.
- (d) demonstrate that sustainability training is being provided to High Impact Suppliers; and
- (e) use a risk based approach to ensure that where High Impact Materials are sourced from a Developing Country the supplier's operations are in compliance with:
 - (i) all relevant laws and regulations local to that country;
 - (ii) the International Labour Organization's Fundamental Conventions; and
 - (iii) the “Ten Principles” of the UN Global Compact.

8. Community Benefit

- (a) The Contractor must identify and implement at least eighteen (18) community benefit initiatives which provide demonstrable and tangible benefits to local community groups, during the construction period.
- (b) The Contractor must identify and implement at least ten (10) community benefit initiatives which provide demonstrable and tangible benefits to the broader local community beyond the construction period.

9. Sustainability Reporting

- (a) The Contractor must prepare and submit a report named the “Climate Change Impact Assessment Report” to the Principal's Representative for review in accordance with the Contract, at Design Stage 1, Design Stage 2, Design Stage 3 Design and again prior to the Date of Construction Completion of the last Portion to reach Construction Completion.
- (b) The Climate Change Impact Assessment Report must:
 - (i) be prepared in accordance with the guidance and requirements included in the TfNSW Climate Risk Assessment Guidelines;

- (ii) identify any project-specific climate change risks (utilising climate modelling data); and
 - (iii) identify risk mitigation measures which have been and will be implemented to reduce risk levels.
- (c) The Contractor must prepare and submit to the Principal's Representative for review in accordance with the Contract, a report titled the "Greenhouse Gas Inventory Report", to be prepared using the CERT at Design Stage 1, Design Stage 3, annually thereafter and again prior to the Date of Construction Completion of the last Portion to reach Construction Completion.
- (d) The Greenhouse Gas Inventory Report must include data relating to emissions associated with electricity and fuel consumption, on-site process emissions and embodied emissions for all materials used in the Contractor's Activities, Works and Temporary Works.
- (e) The Contractor must provide an inventory of non-road diesel powered vehicles to be used for the Contractor's Activities within 1 month of the date of the Contract and subsequently, annually using TfNSW's Air Emission Data Collection Workbook 9TP-FT-439.
- (f) Until the Date of Construction Completion of the last Portion to reach Construction Completion, the Contractor must electronically submit a report titled the "Quarterly Sustainability Report" (QSR) to the Principal's Representative in accordance with the Contract and submit one hard copy of the QSR to the Independent Certifier by the seventh day of the month following the end of that quarterly period.
- (g) The QSR must be easy to understand and the Contractor must provide a copy in a.pdf format that complies with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0) for uploading to the Principal's Sydney Metro website.
- (h) The QSR must, as a minimum, include, address and detail:
 - (i) an executive summary;
 - (ii) the status of the implementation of the sustainability strategies and initiatives identified in the Sustainability Management Plan, required under MR-PA;
 - (iii) an update on "Design" and "As Built" performance against the Infrastructure Sustainability Council of Australia IS Rating tool version 1.2 required in clause 3 above;
 - (iv) an update on "Design" and "As Built" performance using the GSDABRT, as required in clause 3 above;
 - (v) climate change risk assessments undertaken and details of where the climate change risk assessment have influenced the design and construction for the Works and Temporary Works;
 - (vi) details of greenhouse gas reduction initiatives which have been implemented in the design and construction Works and Temporary Works;

- (vii) life cycle assessments undertaken, and details of environmental impact reduction initiatives which have been implemented in the design and construction Works and Temporary Works;
 - (viii) compliance with sustainable procurement requirements described in clause 7 above;
 - (ix) the sustainability performance of the Contractor against all other requirements contained in this MR-Sy; and
 - (x) corrective actions taken where Defects in the Works, Temporary Works or Contractor's Activities relating to sustainability were identified.
- (i) In addition and until the Date of Construction Completion of the last Portion to reach Construction Completion, the Contractor must submit to the Principal's Representative for review in accordance with the Contract, a report titled the "Monthly Sustainability Data Report" (MSDR) by the seventh day of the month (containing reporting data for the month; 2 months prior. For example the January data would be submitted by the seventh day of March).
- (j) The Contractor's MSDR must as a minimum, detail the Contractor's performance against the targets identified in the Sustainability Management Plan, Spoil Management Plan, Carbon and Energy Management Plan, and Materials Management Plan (all required under MR-PA), using the Sydney Metro City & Southwest Sustainability Reporting Template SME ES-FT- 439 including reporting on:
- (i) Scope 1 Carbon Emissions, Scope 2 Carbon Emissions, Scope 3 Carbon Emissions and Total Carbon Emissions;
 - (ii) performance against the Carbon Emission Target identified in the Carbon and Energy Management Plan;
 - (iii) electricity consumption and generation, including any on-site renewable energy generation and any renewable energy sourced for the construction of the Works and Temporary Works and performance against Electricity Consumption Targets included in the Sustainability Management Plan;
 - (iv) quantity of greenhouse gas emissions associated with electricity consumption which have been offset, and method of offset;
 - (v) fuel consumption and performance against Fuel Consumption Targets;
 - (vi) volume of potable mains water consumed for the Contractor's Activities, and performance against the Mains Water Consumption Target;
 - (vii) volume of non-potable water consumed for the Contractor's Activities, including details of the sources of non-potable water, and performance against the Non-Potable Water Consumption Target;
 - (viii) percentage of water consumed for the Contractor's Activities which has been sourced from non-potable sources;
 - (ix) waste generation, recycling and disposal; total quantity of waste generated; quantity of non-putrescible general solid waste generated and percentage which has been recycled or reused; quantity of construction and demolition

- waste generated and percentage which has been recycled or reused; quantity of office waste generated and percentage which has been recycled or reused;
- (x) the volume of spoil reused within the Site, beneficially reused off-site or disposed of off-site against the Spoil Targets identified in the Spoil Management Plan;
 - (xi) destinations for spoil which has been beneficially reused off-site or disposed of off-site;
 - (xii) quantities of steel and concrete which have been used for the Contractor's Activities;
 - (xiii) volume weighted average percentage cementitious content in concrete used for the Contractor's Activities which has comprised fly ash or slag; and
 - (xiv) such other information that the Principal's Representative may request.

10. Construction Environmental Management Framework (CEMF)

The Contractor must comply with the relevant clauses of the CEMF SM ES-ST-204 as listed in Annexure B of this MR-Sy.

Annexure A: Reference Documents

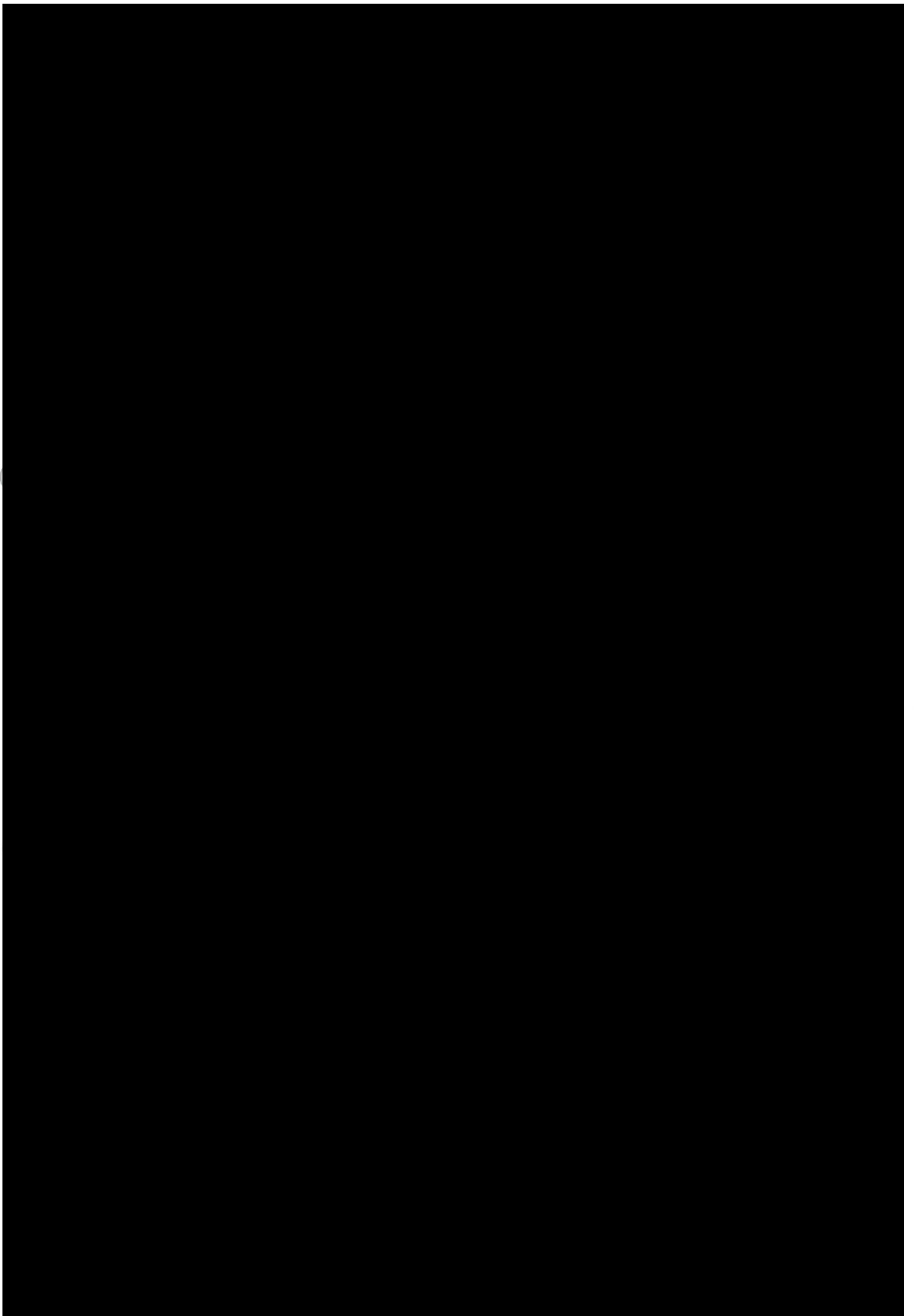
The following are Reference Documents:

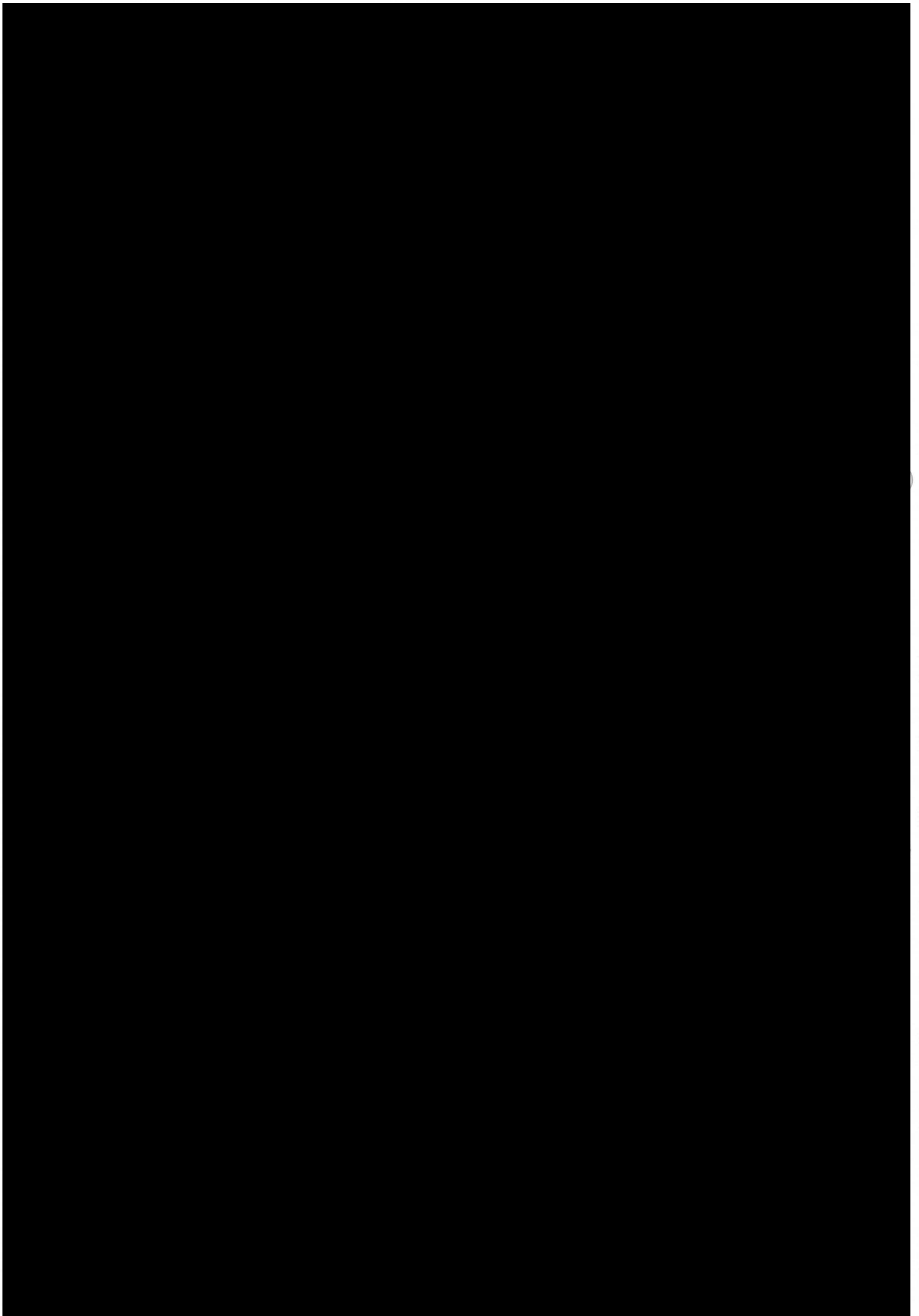
- NWRLSRT-PBA-SRT-SU-REP-000022 Climate Change Resilience Report, 25 November 2015.
- Air Emission Data Collection Workbook 9TP-FT-439, 22 February 2018.
- Sydney Metro City & Southwest Sustainability Reporting Template SME ES-FT-439, 22 February 2018.
- Sydney Metro Construction Environmental Management Framework CEMF SM ES-ST-204, 15 August 2016
- TfNSW Climate Risk Assessment Guidelines 9TP-SD-081 (available on internet), 1 March 2016;
- TfNSW Carbon Estimation and Reporting Tool “CERT” (available on internet), 30 June 2017;
- Draft ISCA Weightings Assessment – Central Station, August 2017.
- Draft ISCA Base Case Assumptions – Central Station, August 2017.

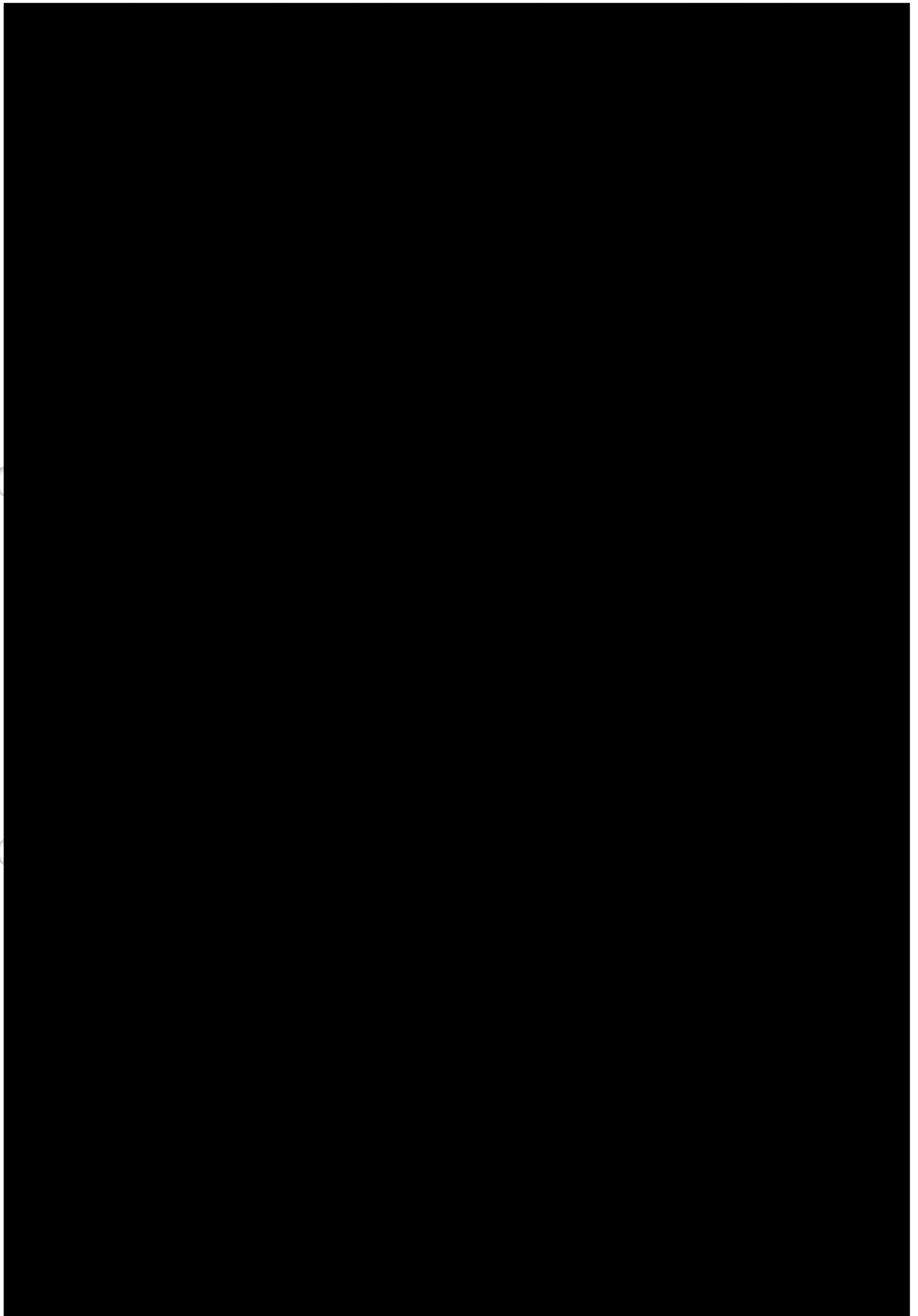
Annexure B: CEMF Requirements included in the Contractor's Activities

CEMF Clause	Heading	Contractor's Responsibility
1.3	Environment and Sustainability Policy	The Contractor must comply with these requirements.
2.1	Legislation	The Contractor must comply with these requirements except the Principal retains the obligation to address any legislation which is not relevant to the Contractor's Activities.
3.1	Environmental and Sustainability Management System	The Contractor must comply with these requirements.
3.2	Construction Sustainability Management Plan (referred to as the SMP)	<p>The Contractor must comply with these requirements. The SMP must also include a matrix of all the Contract requirements (including those in the SWTC and MR-Sy) relating to sustainability, referencing the relevant document clause.</p> <p>The Contractor must provide an SMP with the following sub-plans:</p> <ul style="list-style-type: none"> a) Construction Carbon and Energy Management Plan; b) Waste Management and Recycling Plan; and c) A Materials Management Plan <p>In relation to the Workforce Development Plan the Contractor must comply with the requirements of MR-PA and not clause 3.2 (d) of the CEMF.</p>
13.1	Carbon and Energy Management Objectives	The Contractor must comply with these requirements.
13.2	Carbon and Energy Management Implementation	The Contractor must comply with these requirements. The Carbon and Energy Management Plan must include estimates of Scope 1, Scope 2 and Scope 3 emissions and the Carbon Emission Target.
13.3	Carbon and Energy Mitigation	The Contractor must comply with these requirements.
14.1	Materials Management Objectives	The Contractor must comply with these requirements.
14.2	Materials Management Implementation	The Contractor must comply with these requirements.

CEMF Clause	Heading	Contractor's Responsibility
		requirements.
14.3	Materials Mitigation	The Contractor must comply with these requirements.
17.1	Waste Objectives	The Contractor must comply with these requirements.
17.2	Waste Implementation	The Contractor must comply with these requirements.
17.3	Waste Mitigation	The Contractor must comply with these requirements.









Transport
for NSW

Management Requirements - Prelude – Central Station Main Works (MR-Prelude)

DOCUMENT NUMBER SM-17-00000463

Date of issue:

22 February 2018

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1. General

1.1. Scope

The suite of Management Requirements (MR) documents describe requirements that the Contractor must comply with. The suite of MRs must be read in conjunction with other parts of the Contract.

The Principal's suite of MRs consists of the following documents:

- (a) MR-Prelude (*this document*);
- (b) MR-C, Stakeholder and Community Liaison;
- (c) MR-E, Environment;
- (d) MR-PA, Project Administration;
- (e) MR-S, Safety Management;
- (f) MR-Sy, Sustainability;
- (g) MR-T, Technical Management; and
- (h) MR-W, Workplace Development and Industry Participation.

1.2. Definitions

Unless noted otherwise, wherever used in the MRs, words and phrases have the meaning given to them in the table 1.2 below.

Table 1.2 Definitions

Aboriginal Person (or Aboriginal People)	A person or people (as defined by the Aboriginal Land Rights Act, 1983 (NSW)), who is/are of Aboriginal descent, identifies as an Aboriginal person/people, and is/are accepted by the Aboriginal community in which he/she/they lives.
Accredited Assessors	Assessors holding a Certificate IV in Training and Assessment, able to demonstrate the performance evidence, and knowledge evidence as outlined in the Unit of Competency being assessed, and meeting the minimum years of current* work experience specified by the assessment requirements for the Industry sector relevant to the outcomes of the unit. *Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.
Accredited Renewable Energy Supplier	A supplier or provider of renewable energy, accredited under the Australian Government's National Green Power Accreditation Program.
Apprentice	An employee of an Apprentice Employer undertaking a recognised Australian Apprenticeship program and related qualification and holding a formal training contract who has been employed by that employer for a minimum continuous period of 26 weeks on the CSM Project.

Apprentice Employer	The Contractor, its Subcontractors in the Supply Chain who employ Apprentices, any Group Training Organisation engaged to provide Apprentices to those organisations.
Approved for Construction (AFC)	Design Documentation, that has been developed and is in accordance with the certified design which is then to be used for construction purposes without further amendment or development.
Asset Handover	A term for the point in time when the partial, complete, temporary or full time responsibility for control, access, operation or maintenance of any part of the Works including assets, systems or locations is transferred to a party other than the Contractor. This may include handover to an Existing Operator, Operator, Operator/Maintainer, Asset Owner or other party nominated by the Principal's Representative. Asset Handover can apply in relation to Completion of a Portion or Construction Completion of a Portion, where the complete Works relating to a Portion are completed and handed over, or in relation to a Milestone or other occasion where part of the Works may be handed over for a period of time.
Asset Management Information (AMI)	Documents and digital engineering models which must be provided by the Contractor, describing the function, operation and maintenance requirements of the Works, prior to an Asset Handover, which meet the requirements of the SWTC and its Annexures.
Asset Owner	An organisation who will ultimately own the assets being delivered under this Contract. In some cases the Asset Owner may also be the Operator/Maintainer.
Audit Working Group	A working group established by the Principal with representatives from the Contractor, and other parties to manage the collaborative audit program.
Australian and New Zealand Small and Medium Enterprises (ANZ SME)	Micro, small and medium size enterprises with fewer than 200 employees, in Australian and New Zealand.
Australian Carbon Offset Credits	Credits comprising Australian carbon credit units issued by the Clean Energy Regulator in accordance with the framework established by the Carbon Credits (Carbon Farming Initiative) Act 2011.
Australian Certification Authority for Reinforcing and Structural Steels (ACRS)	An administrative body for an independent third party accreditation certification scheme for manufacturers and suppliers to Australia and New Zealand.
Australian Paint Approval Scheme (APAS)	A scheme administered by CSIRO to register paint and surface covering manufacturers.
Australian Qualifications Framework (AQF)	Australian Qualifications Framework, which is the national policy for regulated Qualifications in Australian education and training. AQF Qualifications ensure national recognition and consistency, as well as common understanding across Australia of what defines each qualification.

Australian Skills Quality Authority (ASQA)	Australian Skills Quality Authority (ASQA) is the national regulator for Australia's vocational education and training sector. ASQA regulates courses and training providers to ensure nationally approved quality standards are met.
Base Case Footprints	As defined in the Infrastructure Sustainability Council of Australia IS Technical Manual.
Business Hours	Between 09:00 and 17:00 on Monday to Friday or as otherwise defined in the Environmental Documents.
Calendar Quarter Date	The following dates are Calendar Quarter Dates: <ul style="list-style-type: none"> • 31 March; • 30 June; • 30 September; and • 31 December
Carbon Emission Target	The carbon emission target, documented in the Carbon and Energy Management Plan.
CCB	Refer to "Sydney Metro Sub CCB (the "CCB")" below.
CCD	Customer Centred Design.
Central Station Works	That part of the Works described in the SWTC, as the "Central Station Works".
Central Walk Works	That part of the Works described in the SWTC, as the "Central Walk Works".
CERT Base Case	The Base Case which is automatically generated by the TfNSW Carbon Estimating and Reporting Tool (CERT), as defined in Appendix A of the TfNSW Carbon Estimate and Reporting Guide.
Civil Construction	As defined by the Construction Work – Code of Practice by Safe Work Australia.
Combined Service Drawings (CSD)	Drawings showing all services, supports, penetrations etc. in both the Works and Interface Work, produced by the Contractor.
Commissioning	The systematic process of ensuring that all infrastructure, equipment and systems installed as a part of the Works perform interactively in accordance with the design intent and the Operator/Maintainer's functional and operational needs.
Commissioning Management Team	The team appointed by the Contractor to organise and coordinate the Commissioning of the Works and Temporary Works.
Communications Management Control Group (CMCG)	A management group providing a forum to exchange information and coordinate communication and consultation activities to deliver a consistent approach to the community and other Stakeholders.
Community Communications Strategy	The strategy document to be provided by the Contractor in accordance with MR-PA.
Community Complaints Commissioner	As defined in the Environmental Documents.

Community Information Centre	An information centre or office established and operated to provide information about the Project to the community.
Complete	Where a Condition of Approval applies to a particular works package and no further evidence is required to demonstrate compliance.
Compliant	A temporary status assigned to a Condition of Approval which indicates a check of evidence has occurred and confirmed it is adequate to demonstrate the requirements of a condition is being met on the day it was checked.
Condition of Approval (CoA)	A condition of a Planning Approval within the Environmental Documents.
Configuration Change Request (CCR)	A formal request to a CCB or CMAAC to make a configuration change, raised by the principal with the support of the Contractor.
Configuration Management & Asset Assurance Committee (CMAAC)	The committee established by TfNSW that is responsible for making decisions about the configuration of TfNSW transport assets.
Construction Environmental Management Plan (CEMP)	A Management Plan to be developed by the Contractor in accordance with the requirements of MR-E and MR-PA which describes how the Contractor will manage the environmental related matters and issues that arise during the CSM Project.
Construction Hours	As defined in the Environmental Documents as “Standard Construction Hours”.
Construction Interface Specification	A Design Document to be provided by the Contractor listing all interfaces with works provided by others, listing significant information such as boundaries, responsibilities, critical timing etc.
Construction Traffic Management Plan	A Management Plan to be developed by the Contractor in accordance with the requirements of MR-PA. Where a similar document is required by the Planning Approval, the Principal’s Representative may approve a combined submission.
Consultation Manager Database	A database maintained by the Contractor containing the details of all community contact related to the CSM Project.
Contract Management Plan (CMP)	Unless otherwise defined in the Contract means the highest level Management Plan to be developed by the Contractor in accordance with the requirements of MR-PA which acts as a framework for bringing together all the various other Sub plans for the Contractor’s Activities.
Contractor	The “CSM Contractor” as defined in the General Conditions.
Contractor’s Activities	The “CSM Contractor’s Activities” as defined in the General Conditions.
Contractor’s Program	The “CSM Contractor’s Program” as defined in the General Conditions.
Control Gate	A stage or phase of the CCB and CMAAC configuration change management process representing a Hold Point in regards the approval of the CSM Project’s delivery.

Copy	Any information and content in written, photographic and diagrammatical forms or electronic form, which is to be provided in support of the CSM Project, to inform Stakeholders and the community.
CSM Project	The Central Station Main Works project.
CSM Works Specific Accredited Cultural Awareness Programme (the Programme)	A structured training program that brings employees together for cultural awareness, created, documented and delivered by the Contractor.
Cultural Awareness Training	A structured program that brings employees together for cultural awareness, adding to their cultural knowledge and providing opportunities for staff to develop and apply their cultural and cross-cultural skills, and delivered by a Recognised Aboriginal Business. This training is integrated within the Sydney Metro Industry Curriculum Program.
Customer Facing Design Packages	Those design packages which include architectural, wayfinding and structural elements of the design which will be visible to the customers of Central Station, as listed in the Engineering Management Plan required in MR-PA and agreed with the Principal's Representative.
Design Report	A Document, which meets the specific Design Report requirements listed in MR-T.
Design Review Panel (DRP)	A panel organised by the Principal to review elements of the design, further described in MR-T.
Design Stage 1	Design Stage 1 means the development of the system design for each design package, representing 30% completion of the design.
Design Stage 2	Design Stage 2 means the development of the preliminary design for each design package, representing 70% completion of the design.
Design Stage 3	Design Stage 3 means the development of the critical design for each design package, including finalisation of all Design Documentation required for construction and signifying 100% completion of the design.
Developing Country	A country declared as such by the Australian Government Minister for Foreign Affairs.
Disability	Disability is broadly defined in anti-discrimination/EEO laws and includes: <ul style="list-style-type: none"> • Physical disability • Physical illness or disease that makes, or has made, any part of the body or brain work differently • Mental or psychiatric disability, including any part of the body or brain work differently • Intellectual disability • Disfigurement or different formation of any part of the body • Any organism in the body that could cause disease or illness e.g. hepatitis or HIV with no symptoms.
Draft ISCA Base Case Assumptions	Assumptions which will be used by the Contractor to develop the Base Case Footprints.
Earned Value	A method of measuring and reporting cost performance based on integrated time, cost and scope elements.

Electricity Consumption Target	The target which represents the estimated electricity consumption as a result of the Contractor's Activities, to be included in the Sustainability Management Plan.
Emergency Works	Unplanned Works, Temporary Works or Contractor's Activities which must be undertaken immediately in order to avoid damage to property or injury to people.
Engineering Management Plan	A Management Plan in accordance with the requirements of MR-PA, and is otherwise referred to as the "Design Management Plan" in the General Conditions and SWTC
Environmental Compliance Requirements (ECRs)	All the requirements arising out of the Environmental Documents, related Conditions of Approval and REMMS, for which the Contractor must comply in accordance with the Contract.
Event	A media event or similar, where media or other invited guests view the Works, Temporary Works or Contractors Activities or parts of the Site.
Final Completion	The point in time occurring at the expiry of the last "Defects Correction Period", which is defined in the General Conditions.
Financial Year	The 12 month period from 1 July to 30 June inclusive.
Forrest Stewardship Council	A non profit membership based body operating to protect the management of forests in Australia.
Fruin Level of Service	A level of service standard for pedestrian access created by John J Fruin PhD.
Fuel Consumption Targets	The target which represents the estimated fuel consumption as a result of the Contractor's Activities, as included in the Sustainability Management Plan.
General Conditions	Of the Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract.
Glass Cleaning Assessment	An engineering report which describes how the design has been developed to minimise safety risk and effort involved in operation and maintenance (including cleaning) of horizontal and vertical glass elements. This report must also describe the methodology for cleaning specific elements of glass including all lifts (internal and out), canopies, windows, balustrades etc.
Graduate Placements	A structured, paid program with training and mentoring for university graduates holding recognised higher education qualifications often leading to professional qualifications.
Green Star Design & As Built Rating Tool	The Green Building Council of Australia rating tool to be used to calculate a Green Star Rating.
Green Star Rating System	The Green Star rating system operated by the Green Building Council of Australia
Green Travel Plans	A travel plan which details how the Contractor will promote, encourage and incentivise the use of public transport, shared and active transport such as cycling and walking.

Group Training Group Organisation (GTO)	A Group Training Organisation is an organisation which employs apprentices and trainees and places them with host employers. The host employers provide the on-the-job training and experience, while the GTO organises off-the-job training, handles recruitment, job rotation and pay. GTOs are registered in NSW under the Apprenticeship and Traineeship Act 2001. .
Others	Persons or organisations other than the Contractor and any people or organisations engaged directly by the Contractor in relation to the Contractor's Activities
High Impact Materials	Construction materials and consumables sourced from High Impact Suppliers.
High Impact Suppliers	Suppliers of materials, equipment or services which have potentially significant environmental, social or socio-economic impacts.
Hold Point	A verification point beyond which the relevant part of the Contractor's Activities may not proceed without the verification and subsequent written authorisation of the Principal's Representative or the relevant nominated person.
IBM® Rational® DOORS®	A proprietary Requirements Management application for optimising requirements communication, collaboration and verification.
Industry Curriculum Training Provider	Registered training organisation approved by Sydney Metro to deliver the Sydney Metro Industry Curriculum Program.
Infrastructure Sustainability Rating	A rating obtained under the IS Rating Scheme.
Interface Coordination Team (ICT)	A team led by the Contractor to coordinate the management of interfaces with other work being carried out on the CSM Project, and includes chairing and organising the IDCM.
Interface Design Coordination Meetings (IDCM)	Design meetings led by the Contractor to coordinate interfaces with work being constructed by various Stakeholders including contractors, as well as operators.
Interface Schedules	As defined in the SWTC.
IS Rating Scheme	The Infrastructure Sustainability Rating Scheme operated by the Infrastructure Sustainability Council of Australia.
IS Rating	A rating determined under the IS Rating Scheme
Initial Draft	The first submitted version of a Document.
Local	The 38 Local Government Areas (LGA) within the Sydney region and five LGAs in the Sydney Surrounds (Wyang, Gosford, Blue Mountains, Wollondilly and Hawkesbury).
Local Sustainable Jobs	New employees who have resided within the Local area for a minimum of 6 months and have not worked for the employer during the six months prior to their start date. Direct employment for a minimum of 26 weeks and 15 hours per week. All employment subject to the conditions of the National Employment Standards.
Long Term Unemployed	People with a period of unemployment of 26 weeks or more.

Look Ahead Program	Either a 2 week or 4 week program, showing the forthcoming Contractor's Activities over the specified period.
Lot	Refers to the management of documentation, meaning a group or batch of documents of similar nature.
LPA	Local Possession Authority as described in the Sydney Trains Network Procedures.
Mains Water Consumption Target	The target representing the estimated quantity of water from mains supply which will be consumed a result of the Contractor's Activities, and which must be included in the Sustainability Management Plan.
Management Plan	Any of the plans including Sub plans and the CMP framework to be developed by the Contractor in accordance with the Contract which describe how the Contractor will manage related matters and issues that arise during the term of the CSM Project.
Marketing and Promotional Materials	Those documents described in MR-C, clause 11.
Mature Aged Workers	A member of the Workforce who is of 50 years of age or older.
Maximum Number of Visitors on Site	The peak number of people which can safely be on Site at any one time.
Media Viewing Area	Located within the Viewing Area, provides a safe, segregated place for the media to view the Works and Contractor's Activities.
Metro Station Works	That part of the Works described in the SWTC, as the "Metro Station Works"
Monthly Report	A progress report developed by the Contractor and submitted on a monthly basis per the requirements of the MRs.
Monthly Sustainability Data Report (MSDR)	A report which is in the format described in MR-Sy.
MR	Management Requirements.
MR-C	Management Requirements – Stakeholder and Community Liaison- Central Station Main Works.
MR-E	Management Requirements – Environmental - Central Station Main Works.
MR-PA	Management Requirements – Project Administration - Central Station Main Works.
MR-Prelude	Management Requirements – Prelude - Central Station Main Works.
MR-S	Management Requirements – Safety Management - Central Station Main Works.
MR-Sy	Management Requirements –Sustainability - Central Station Main Works.
MR-T	Management Requirements – Technical Management - Central Station Main Works.
MR-W	Management Requirements – Workplace Development and Industry Participation - Central Station Main Works.

National Structural Steelwork Compliance Scheme	An independent third party quality and compliance and certification system for supply, fabrication and erection of structural steelwork in Australia.
Nationally Recognised Accredited Training	An AQF recognized qualification or part qualification, leading to formal certification or statement of attainment that a graduate has achieved learning outcomes as described in the AQF.
Non Compliant	A temporary status assigned to a Condition of Approval, indicating that a check has occurred confirming inadequate evidence to demonstrate that the requirements of a condition have been met, at the time it was checked.
Non Track Possessions	Temporary handover of existing assets or systems or a specific area, under the control of an external party to the Contractor, to allow the Contractor to carry out part of the Works or Temporary Works. Non Track Possessions occur outside the Rail Corridor (where Track Possessions occur) and require the Contractor to hand back control by an agreed time/date, in accordance with the requirements set out in MR-PA.
Non-Potable Water Consumption Target	The target representing the estimated quantity of non-potable water from sources other than mains supply which will be consumed a result of the Contractor's Activities as included in the Sustainability Management Plan.
Non-Traditional Trade	A non-traditional occupation for women is one in which women comprise 25 per cent or less of total employment.
Notification	Notice of forthcoming activity in relation to the CSM Project.
Off-site Software Proving Platform (SPP)	Software used offsite to test interfaces. SPP includes software to simulate a system in its final installed state, to allow offsite pre-testing of the interface.
Ongoing	Where a Condition of Approval applies to a particular works package which has commenced construction or non-construction activities, and the demonstration of compliance with the requirement is not yet complete.
Operational Change	Any impact initiated by the Contractor's Activities on the operations and maintenance of Central Station which necessitates a change or amendment to the existing operations. This may include impacts on customers, business owners, Existing Operators, emergency services, etc.
Operational Readiness	The process which ensures that the primary functional or operational output of the Works or part of the Works are ready to operate, with all necessary operational plans and approvals in place, fully trained operating staff, all related Works completed and with the Operator/Maintainer ready to accept the responsibility for ongoing operation and maintenance of the facility or assets.
Operator/Maintainer	Any organisation that will operate or maintain assets delivered as part of the Project. In some cases, the Operator/Maintainer may also be an Asset Owner.
Pilot	As defined in the Sydney Trains Network Rules.
Photography Specification	A written specification produced by the Contractor in order to engage photographers, video and filmmakers and other similar providers.
Possession Protection Officer	As defined in the Sydney Trains Network Rules.

PO (Protection Officer)	See Protection Officer
PO Assist	As defined in the Sydney Trains Network Rules.
Polymer Injection Technology	<p>A process used in steel manufacture which involves the use of polymers (e.g. rubber from used car tyres) as a partial substitute for coke and as an alternate carbon injectant to produce foaming slag in Electric Arc Furnace (EAF) steel making. This technology holds environmental benefits in the form of:</p> <ul style="list-style-type: none"> · Reduced energy consumption; <input type="checkbox"/> Lower greenhouse gas emissions; <input type="checkbox"/> Reduced quantities of injectants; and <input type="checkbox"/> Reduced emission levels for NO_x, CO and SO₂.
PPE	Personnel Protective Equipment and clothing.
Presentation Materials	Design Documentation, Documents and other materials to be used to present the design of the Works (or part of the Works) to the Principal and Stakeholders.
Principal's Education Program (PEP)	Principal's Education Program – A school education program delivered by the Principal either inside or outside of a formal school setting that involved students and/or teachers. It includes but is not limited to the School Holiday Program, School Construction Sites Visits, School Presentations or Incursion, School Excursions, at locations along the Project alignment or for major events, outside the alignment for example the Royal Easter Show at Sydney Olympic Park.
Program for the Endorsement of Forest Certification	An international not for profit organisation dedicated to promoting sustainable forest management.
Project Criticality Analysis	A document prepared in advance of a Track Possession which makes an assessment of the operational and safety risk in the event of a delayed handback, and the course of action to be taken to mitigate any impact on the rail network.
Project Health and Safety Management Plan	Means the Management Plan required in MR-PA and General Conditions.
Project Phase	Each discrete element of the CSM Project's delivery including but not limited to design, construction, testing, Commissioning, Asset Handover, Defects correction and operation.
Property Management Plan (PMP)	A Management Plan to be developed by the Contractor in accordance with the requirements of MR-PA which describes the procedures and processes the Contractor will implement to manage property issues.
Protection Officer	As defined in the Sydney Trains Network Rules.
Prototype	A prototype, which forms part of the Design Documentation and is to be provided by the Contractor as described in the SWTC and MR-T.
Public Communications Material (PCM)	The communications materials produced by the Contractor, listed in clause 10.2 of MR-C.

Public Event	An event or similar led by the Principal with the support of the Contractor, where the public or other invited guests view the Works or Site.
Rail Industry Safety Induction (RISI)	A nationally recognised competency for accessing the Rail Corridor.
RAM	Reliability, Availability, Maintainability.
RAMS	Reliability, Availability, Maintainability, Safety.
Ratings Agreement	A written agreement between the Contractor and Infrastructure Sustainability Council of Australia (ISCA) which commits the Contractor to obtaining a rating from ISCA under their Ratings Scheme in relation to the Contractors Activities.
Recognised Aboriginal Business	A business: <ul style="list-style-type: none"> certified as an Indigenous business by Supply Nation (formerly the Australian Indigenous Minority Supplier Council); which is certified as an Indigenous business by the NSW Indigenous Chamber of Commerce; or that meets the definition of an Indigenous enterprise under the definition used in the Australian Government's Indigenous Procurement Policy
Reference Documents	Those documents listed in the annexures of the MR documents, and included as Schedule G1 of the Contract, with which the Contractor must comply.
Registered Training Organisation	Those training providers registered by ASQA
Relevant Qualifications	Qualifications that support the employee to meet or exceed construction and operational requirements relevant to the Project and identified longer term career progression.
Requirement Verification & Traceability Matrix (RVTM)	A list of requirements, their verification attributes, and their traces. Sometimes also referred to as a RAATM Requirements Analysis Allocation and Traceability Matrix.
RFI	A "Request for Information" or technical query, seeking clarification on a technical matter.
Risk Management Plan	A Management Plan to be developed by the Contractor in accordance with the requirements of MR-PA which describes the management of risks applicable to the undertaking of the Contractor's Activities.
Safe Work Method Statements (SWMS)	The documents so titled prepared in accordance with MR-S and that give specific instructions on how to safely perform a work related task, or operate a piece of plant or equipment etc.
Safety Assurance Statement (SAS)	A document supplying the arguments that the proposed specific contract designs are safe (to be constructed, maintained, operated and decommissioned) and providing a formal demonstration through objective evidence that risks have been adequately assessed and minimised through a comprehensive safety risk management process. The SAS also demonstrates that the safety requirements have been identified, understood and achieved through the proposed design, construction, Commissioning and operations and that all Works have been carried out in accordance with the design and undertaken by competent people.

Sample	A sample, which forms part of the Design Documentation and is to be provided by the Contractor as described in the SWTC and MR-T.
Schedule Meta-Data Requirements	The data requirement specified in the Sydney Metro Programming Protocol.
Scope 1 Carbon Emissions, Scope 2 Carbon Emissions, Scope 3 Carbon Emissions	As defined in the CERT Tool.
SEM	Structural, electrical and mechanical drawings
SFAIRP	So Far As Is Reasonably Practicable, as defined in the SWTC
SIL	Safety Integrity Level.
Skills Set	Groupings of Units of Competency from a Training Package, which are combined to provide a clearly defined statement of skills and knowledge required by the individual to meet industry need, or a licensing or regulatory requirement.
SMPCH&SS	Sydney Metro Principal Contractor Health & Safety Standard SM PS-ST-221.
Spoil Targets	The target which represents the estimated quantities of spoil which will be generated as a result of the Contractor's Activities that will be reused onsite; beneficially reused offsite; and disposed offsite, as documented in the Spoil Management Plan.
Stakeholder	Any body or group with a tangible interest in the CSM Project or Project and includes groups such as the local community, customers, business owners, Operators, Existing Operators, Interface Contractors, Other Contractors, the DRB, Sydney Trains, emergency services etc.
Stakeholder and Community Liaison Program (CLP)	A program developed by the Contractor, describing those activities that the Contractor will carry out to manage stakeholder and community liaison in accordance with MR-C.
Station	Central Station and its contextual surrounds, Sydney.
STEM+	Science Technology, Engineering and Maths
Sub Plan	A Management Plan which forms a sub-plan to another Management Plan. e.g. the Spoil Management Plan is one of a number of Sub Plans to the CEMP.
Supervisor	All workers who act in a supervisory capacity on Site.
Supply Chain	The network of suppliers, engaged by the Contractor, participating in the delivery and operation of Sydney Metro City & Southwest, and includes but is not limited to the Contractor, its Subcontractors, suppliers, consultants and other entities engaged by them to deliver the CSM Project.
Sustainability Forums	Regular meetings between sustainability representatives of all Sydney Metro City & South West contract packages. The purpose of the forums is to share knowledge and lessons learnt on approaches to implementing sustainability requirements.

Sustainability Assurance Framework	A governance process to assure that sustainability requirements are being met.
Sydney Metro City and Southwest Skills and Employment Advisory Group (SEAG)	An advisory group with an objective to inform, advise and support the delivery of the Sydney Metro Workforce Development & Industry Participation Strategy. Members of SEAG are pre-approved by Sydney Metro.
Sydney Metro Industry Curriculum Program (SMIC)	A range of mandatory pre-commencement training programs that will deliver defined minimum levels of competency within identified critical skills areas for Sydney Metro City & Southwest Project with the objective of establishing new industry benchmarks, improve work health and safety, and increase quality and productivity outcomes. The SMIC identifies critical skills as: <ul style="list-style-type: none"> • Demolition • Tunnelling • Civil Construction • General Construction • Rail • Heavy Haulage • Supervisory skills across all industry disciplines. Training providers delivering these courses will be pre-approved Sydney Metro Industry Curriculum Program providers.
Sydney Metro Orientation Training	Sydney Metro mandatory pre commencement training for all workers. This is integrated within the SMIC. It will be provided as standalone training for individuals that hold required Units of Competency within SMIC, or whose occupations do not fall in the scope of the SMIC .
Sydney Metro Pre-Employment Program	One of the Sydney Metro Workforce Development & Industry Participation Programs, providing accredited new entrant level technical skills and employability training for the Long Term Unemployed and other under-represented groups in the workforce.
Sydney Metro Project 24-hour Telephone Contact Number	A 24-hour contact line, to enable the public to contact, and obtain information about the Project.
Sydney Metro Sub CCB (the "CCB")	TfNSW's delegated Configuration Control Board (CCB) responsible for the CSM Project.
Sydney Metro Workforce Development & Industry Participation Programs	The Workforce Development Programs delivered by TfNSW and it's Nominated Providers to support the delivery of the Sydney Metro City & Southwest Workforce Development & Industry Participation Strategy. They include – <ul style="list-style-type: none"> • Sydney Metro Apprenticeship & Trainee Scheme • Sydney Metro Careers Program • Sydney Metro Diversity & Inclusion Programs: <ul style="list-style-type: none"> ○ Sydney Metro Pre-Employment Programs ○ Aboriginal Participation Programs

	<ul style="list-style-type: none"> ○ Women in Non-Traditional Trades Program ● Sydney Metro Workforce Skills Development Programs: <ul style="list-style-type: none"> ○ Sydney Metro Workforce Upskilling Programs ○ Sydney Metro Industry Curriculum Program ○ Sydney Metro Orientation Training ● Sydney Metro Job Brokerage ● Sydney Metro Industry Participation Program
Sydney Metro Workforce Upskilling Program	Part of the Sydney Metro Workforce Skills Development Program.
Sydney Trains RailSafe Network Rules	The Network Rules and Procedures, Network Local Appendices, as well as contractor information, Safeworking policies, Safe Tracks flyers, Weekly Notices and SAFE Notices contained on the railsafe.org.au website.
Sydney Trains SPOIAG	The Sydney Trains' Station Precinct Operation Impact Assessment Group.
System Verification Reviews (SVR)	A form of testing to ensure acceptability and compliance at a system level prior to integration testing.
Temporary Works List	Part of the Monthly Report, which defines, describes and provide status information on the Temporary Works.
Ten Principles	The Ten Principles of the UN Global Compact. https://www.unglobalcompact.org/what-is-gc/mission/principles -
TfNSW Safeworking Panel.	A procurement panel operated by TfNSW.
Total Carbon Emissions	The summation of the Scope 1 Carbon Emissions, Scope 2 Carbon Emissions and Scope 3 Carbon Emissions.
Trainee	An employee registered as a trainee, holding a formal training contract with their employer, who is directly employed by the Contractor or its Subcontractors in the Supply Chain or hosted via a Group Training Organisation and who has been employed by that employer for a minimum continuous period of 26 weeks on the CSM Project.
Training Package	A set of nationally endorsed standards, qualifications and guidelines used to assess the skills and knowledge people need to perform effectively in the workplace.
T-VET	Tertiary Vocational Education Training
Units of Competency	An AQF recognised specification of knowledge and skill, and the application of that knowledge and skill, to the standard of performance expected in the workplace.
Upskilling	Workforce training or development activity for employed individuals, undertaking one or more accredited courses of learning and development leading to a nationally recognised qualification, Skills Set or Units of Competency. Does not include training undertaken to meet compliance requirements detailed in applicable pieces of legislation and associated regulations, standards and accreditations or in the various approvals, licenses, and permits that may be necessary for the commencement and control of the Works and Contractor's Activities.

Vacancies	Specific positions offered for paid, ongoing workers, for work of 15 hours or more per week and at least three months duration.
Validation	The assurance that a product, service or system meets the needs of the customer or other identified stakeholders.
Verification	The evaluation of whether or not a product, service or system complies with a regulation, requirement, specification or imposed condition.
Viewing Area	A safe viewing area or platform created by the Contractor to accommodate visitors to Site to view the Works, Temporary Works, Contractors Activities and parts of the Site as further described in MR-C.
VIP Viewing Area	Located within the Viewing Area, provides a safe, segregated place for VIP's and guests to view the Works and Contractor's Activities.
Virtual Planroom	An engineering document repository managed by TfNSW that is used for submission of as built and AMI information to Sydney Trains.
VOC Limits	The APAS volatile organic compounds limits which will apply for a range of APAS paint specifications.
Witness Point	A point during a process where the Principal's Representative, or the relevant person nominated, may review, witness, inspect, or undertake tests on any component, method, or process of the Contractor's Activities.
Work Experience Placement	A structured placement developed in partnership with education providers, offering young people in statutory, tertiary, vocational or higher education an opportunity for work experience, where each placement is a minimum of 1 week.
Workforce	All workers employed directly or contracted by the Contractor, Subcontractors and the broader Supply Chain inclusive of management and professional, technical and trade.
Workforce Skills Development Training	Workforce training or development activity through undertaking Nationally Recognised Accredited Training and development that leads to qualifications, Skills Sets or Units of Competency at Certificate II and above that supports the employee to meet or exceed Sydney Metro delivery requirements and identified longer term career progression. This does not include 'training' undertaken to meet compliance requirements detailed in applicable legislation and associated regulations, standards and accreditations or in the various approvals, licenses, and permits that may be necessary for the commencement and control of work on the CSM Project.
Workplace Relations Management Plan	A Management Plan to be developed by the Contractor in accordance with the requirements of MR-PA and the "NSW Code of Practice for Procurement: Building and Construction" and its Guidelines.
Works	In the MRs only, means the "Project Works" as defined in the General Conditions, and includes the "Works" and the "Sydney Trains Works" as defined in the General Conditions
Worksite Coordinator	As defined in the Sydney Trains Network Rules.
Worksite Protection	Any form of protection under the New South Wales Network Rules (as described in NWT300 Planning Work In The Rail Corridor).

Worksite Protection Personnel	The personnel assigned to implement the required Worksite Protection for work within the Rail Corridor.
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**Transport
for NSW**

Management Requirements – Environment – Central Station Main Works (MR-E)

DOCUMENT NUMBER: SM-17-00000461

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Management Requirements – Environment – Central Station Main Works (MR-E) describes requirements and processes in relation to environmental management.
- (b) This MR-E must be read in conjunction with other parts of the Contract.
- (c) The Contractor must comply with the requirements of this MR-E, including the Reference Documents in Annexure B.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-E.

1.3. General Requirements

- (a) Where noted in Annexure C – Project Specific Requirements, the Contractor must comply with the requirements of this MR-E, as amended by Annexure C.
- (b) The Reference Documents listed in this MR-E are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.
- (c) The Contractor must provide copies of all the Documents required in this MR-E in “pdf” format that comply with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0).

2. Environmental Requirements

2.1. The Construction Environmental Management Framework

- (a) The Contractor must comply with the relevant requirements of the Sydney Metro Construction Environmental Management Framework (CEMF) SM ES-ST-204, as indicated in Table 1.1 of Annexure A.
- (b) Where the CEMF requires the Contractor to submit a document for review, the Contractor must submit those Documents to the Principal’s Representative for review in accordance with the Contract.

2.2. Environmental Reporting

- (a) The Contractor must provide a monthly report, using the Sydney Metro City & Southwest Environmental Reporting Template SM ES-FT-421.
- (b) Within 5 Business Days of each Calendar Quarter Date, a register of Environmental Compliance Requirements (ECRs), which identifies progress, and evidence of compliance against each ECR, must be submitted to the Principal’s Representative for review in accordance with the Contract.
- (c) The register of ECRs must classify each ECR as:
 - (i) Ongoing or Complete, to indicate their progress; and
 - (ii) Compliant or Non Complaint, to indicate compliance.

2.3. Additional Environmental Requirements

The Contractor must comply with the requirements listed in Annexure C “Project Specific Requirements”.

Annexure A: CEMF Requirements included in the Contractor's Activities

Table 1.1

CEMF Clause	Heading	Contractor's Responsibility
1.3	Environment & Sustainability Policy	The Contractor must comply with this policy.
2.1	Legislation	The Contractor must comply with these requirements where applicable to the Contractor's Activities.
2.2	Environmental Approvals	The Contractor must comply with these requirements where applicable to the Contractor's Activities.
2.3	EPL	The Contractor must comply with these requirements.
2.4	Standards & Guidelines	The Contractor must comply with these requirements.
3.1	Environmental and Sustainability Management System	The Contractor must comply with these requirements.
3.2	Sustainability Management Plan	Refer to MR-Sy in relation to this clause for the Principal's requirements.
3.3	Construction Environmental Management Plans	<p>The Contractor must comply with these requirements and in addition to the requirements of Section 3.3 g. the Contractor's procedures included in the CEMP must be consistent with the following Reference Documents:</p> <ul style="list-style-type: none"> (a) City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210); (b) Environmental Incident Classification and Reporting Procedure (SM ES-PW-303); (c) Water Discharge and Reuse Procedure (SM ES-PW-309); (d) Planning Approval Consistency Procedure (SM ES-PW-314); and (e) Environment & Sustainability Policy (SM SE MM 102).
3.4	Construction Environmental Management Sub-Plans	The Contractor must comply with these requirements.
3.5	Environmental Procedures and Control Maps	The Contractor must comply with these requirements.
3.6	Additional Environmental	The Contractor must comply with these

CEMF Clause	Heading	Contractor's Responsibility
	Assessments	requirements.
3.7	Condition Surveys	3.7 (a) The Contractor must comply with the requirements of MR-PA in relation to pre construction building condition surveys and not this clause 3.7 (a). 3.7 (b) The Contractor must comply with these requirements.
3.8	Register of Hold Points	The Contractor must comply with these requirements.
3.9	Training, awareness and Competence	The Contractor must comply with these requirements.
3.10	Emergency and Incident Response	The Contractor must comply with these requirements.
3.11	Independent Environmental Representatives	The Contractor must comply with these requirements.
3.12	Roles and Responsibilities	The Contractor must comply with these requirements.
3.13	Environmental Monitoring, Inspections and Auditing	The Contractor must comply with these requirements.
3.14	Environmental Non-compliances	The Contractor must comply with these requirements.
3.15	Environmental Records and Compliance Reporting	The Contractor must comply with these requirements.
3.16	Review and Improvement of the E&SMS	The Contractor must comply with these requirements.
4.1	Overview	The Contractor must comply with these requirements.
4.2	Communication and Consultation Strategy	The Contractor must comply with these requirements.
4.3	Complaint Handling	The Contractor must comply with these requirements.
4.4	Urban Design of Temporary Works	The Contractor must comply with these requirements.
4.5	Business and Property Impacts	The Contractor must comply with these requirements.
5.1	Working Hours	The Contractor must comply with these requirements.
5.2	Site Layout	The Contractor must comply with these

CEMF Clause	Heading	Contractor's Responsibility
		requirements.
5.3	Reinstatement	The Contractor must comply with these requirements.
6.1	Spoil Management Objectives	The Contractor must comply with these requirements.
6.2	Spoil Management Implementation	The Contractor must comply with these requirements.
6.3	Spoil Mitigation	The Contractor must comply with these requirements.
7.1	Groundwater Management Objectives	The Contractor must comply with these requirements.
7.2	Groundwater Management Implementation	The Contractor must comply with these requirements.
7.3	Groundwater Mitigation	The Contractor must comply with these requirements.
8.1	Construction Traffic Management Objectives	The Contractor must comply with these requirements as well as the Reference Documents in Annexure B.
8.2	Construction Traffic Management Implementation	The Contractor must comply with these requirements as well as the Reference Documents in Annexure B.
8.3	Construction Traffic Mitigation	The Contractor must comply with these requirements as well as the Reference Documents in Annexure B.
9.1	Construction Noise and Vibration Management Objectives	The Contractor must comply with these requirements.
9.2	Construction Noise and Vibration Management Implementation	The Contractor must comply with these requirements.
9.3	Construction Noise and Vibration Mitigation	The Contractor must comply with these requirements.
10.1	Heritage Management Objectives	The Contractor must comply with these requirements.
10.2	Heritage Management Implementation	The Contractor must comply with these requirements.
10.3	Heritage Mitigation	The Contractor must comply with these requirements.
11.1	Flora and Fauna Management Objectives	The Contractor must comply with these requirements.

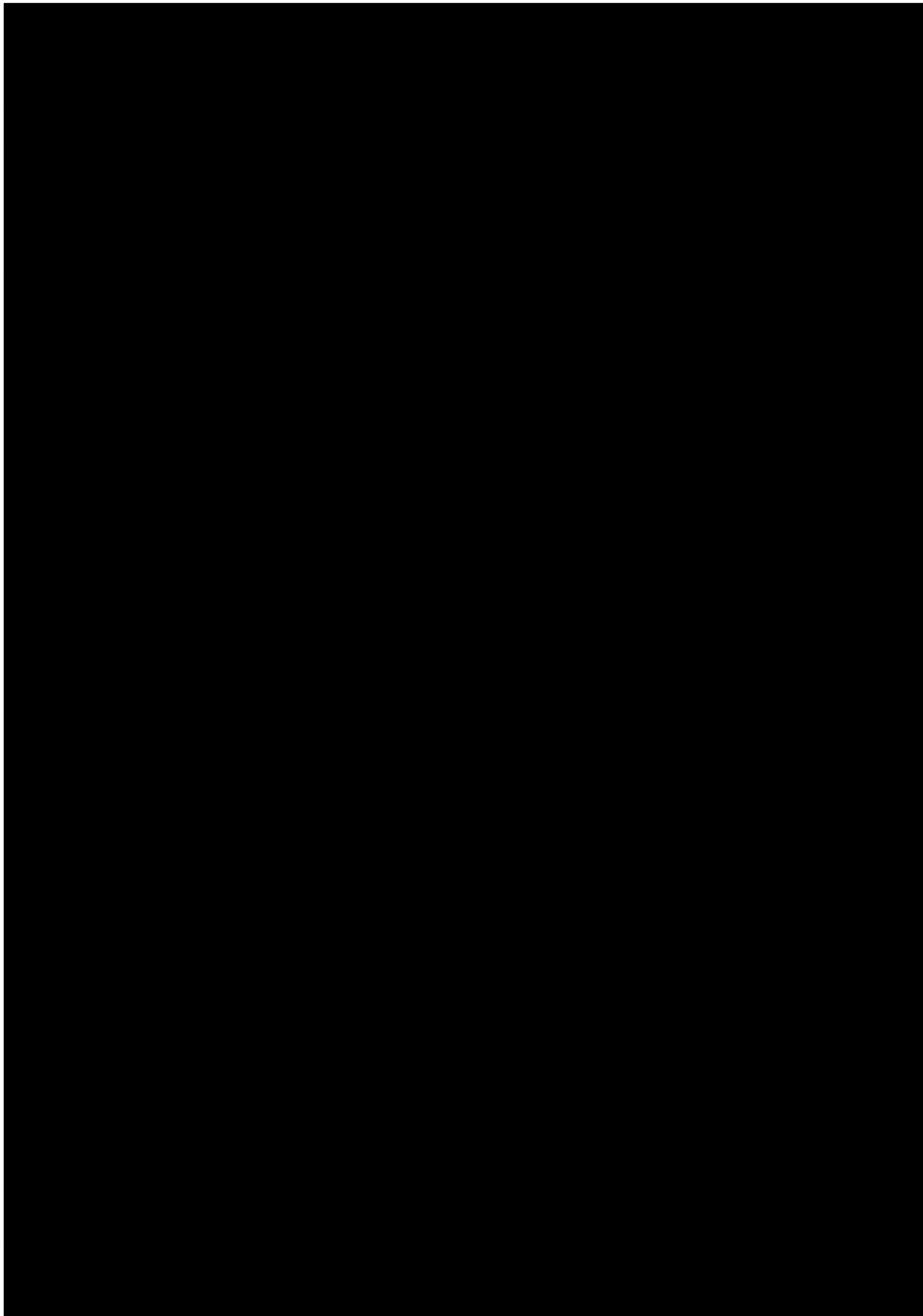
CEMF Clause	Heading	Contractor's Responsibility
11.2	Flora and Fauna Management Implementation	The Contractor must comply with these requirements.
11.3	Flora and Fauna Mitigation	The Contractor must comply with these requirements.
12.1	Visual Amenity Management Objectives	The Contractor must comply with these requirements.
12.2	Visual Amenity Management Implementation	The Contractor must comply with these requirements.
12.3	Visual Amenity Mitigation	The Contractor must comply with these requirements.
13.1	Carbon and Energy Management Objectives	Refer to MR-Sy for the Principal's requirements in relation to this clause.
13.2	Carbon and Energy Management Implementation	Refer to MR-Sy for the Principal's requirements in relation to this clause.
13.3	Carbon and Energy Mitigation	Refer to MR-Sy for the Principal's requirements in relation to this clause.
14.1	Materials Management Objectives	Refer to MR-Sy for the Principal's requirements in relation to this clause.
14.2	Materials Management Implementation	Refer to MR-Sy for the Principal's requirements in relation to this clause.
14.3	Materials Mitigation	Refer to MR-Sy for the Principal's requirements in relation to this clause.
15.1	Soil and Water Management Objectives	The Contractor must comply with these requirements.
15.2	Soil and Water Implementation	The Contractor must comply with these requirements.
15.3	Soil and Water Mitigation	The Contractor must comply with these requirements.
15.4	Water Resource Management	The Contractor must comply with these requirements.
16.1	Air Quality Management Objectives	The Contractor must comply with these requirements.
16.2	Air Quality Management Objectives	The Contractor must comply with these requirements.
16.3	Air Quality Mitigation	The Contractor must comply with these requirements.
17.1	Waste Objectives	Refer to MR-Sy for the Principal's requirements in relation to this clause.

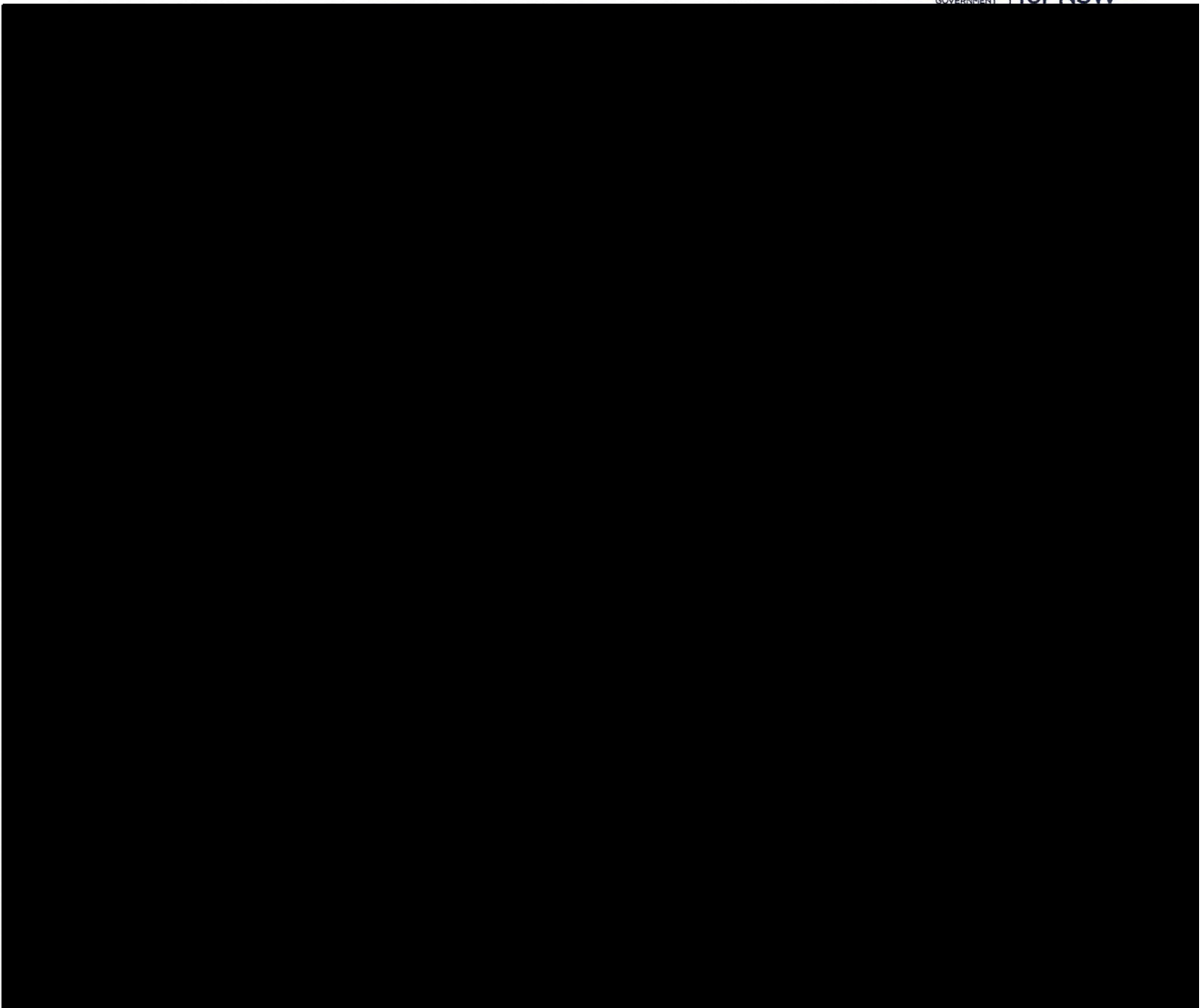
CEMF Clause	Heading	Contractor's Responsibility
17.2	Waste Implementation	Refer to MR-Sy for the Principal's requirements in relation to this clause.
17.3	Waste Mitigation	Refer to MR-Sy for the Principal's requirements in relation to this clause.

Annexure B: Reference Documents

The following are Reference Documents:

- Sydney Metro Construction Environmental Management Framework (CEMF) SM ES-ST-204, 25 May 2017.
- Sydney Metro City & Southwest Environmental Reporting Template SM ES-FT-421, 22 February 2018.
- City and Southwest Construction Noise and Vibration Strategy SM ES-ST-210, 29 April 2016.
- Environmental Incident Classification and Reporting Procedure SM ES-PW-303, 7 July 2016.
- Water Discharge and Reuse Procedure SM ES-PW-309, 7 July 2016.
- Environment & Sustainability Policy SM SE-MM-102, 2016.
- Planning Approval Consistency Procedure SM ES-PW-314, 7 July 2016.
- Principal's General Specifications G10 - Traffic and Transport Management SM ES-ST-214, 30 November 2016.
- Sydney Metro's Construction Traffic Management Framework II, 25 May 2017.
- Web Content Accessibility Guidelines WCAG 2.0 (available on internet).







Transport
for NSW

Management Requirements – Stakeholder and Community Liaison – Central Station Main Works (MR-C)

DOCUMENT NUMBER: SM-17-00000460

Date of issue:

22 February 2018

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1. Introduction

1.1. Purpose

- (a) This Management Requirement – Stakeholder and Community Liaison (MR-C) describes requirements and processes for Stakeholder and community liaison. This MR-C must be read in conjunction with the Contract.
- (b) The Contractor must comply with the requirements of this MR-C, including the Reference Documents in Annexure A.

1.2. Definitions

Refer to MR-Prelude and the General Conditions for a definition of terms used in this MR-C.

1.3. General Requirements

- (a) Where noted in Annexure B – Project Specific Requirements, the Contractor must comply with the requirements of this MR-C, as amended by Annexure B.
- (b) The Reference Documents listed in this MR-C are included in electronic format on the DVD entitled “Sydney Metro City & Southwest Central Station Main Works Incentivised Target Cost Contract – Schedule G1.

1.4. Context

The Contractor must take the lead on Stakeholder and community liaison and provide appropriate resources to liaise with the Principal’s Representative, undertake Stakeholder and community liaison management and consultation. This will involve providing the required information about the Works, the Temporary Works and the Contractor’s Activities.

2. General Obligations

The Contractor is required to:

- (a) manage and coordinate Stakeholder and community liaison, consultation and Notification in relation to the Works, the Temporary Works and the Contractor’s Activities;
- (b) work cooperatively with the Principal to provide a coordinated approach to Stakeholder and community liaison management, that is consistent across the Stakeholders and communities affected by the Works, Temporary Works and Contractor’s Activities as well as any activities being carried out by any Interface Contractor, Other Contractor, Operator, and Existing Operator in so far as it relates to the Works;
- (c) enhance and protect the reputation of the NSW Government and the Principal in delivery of the Contractor’s obligations under the Contract;
- (d) ensure that the Principal’s Representative, Stakeholders and the community are provided with adequate Notification of planned construction activities and the CSM Project’s key milestones;

- (e) ensure that the Stakeholders and the community fully understand the impact of the Works, Temporary Works and Contractor's activities, and their objectives, benefits, potential impacts and expected outcomes;
- (f) ensure that the Principal's Representative is informed of all issues raised by an Authority in relation to the Contractor's Activities, Works and Temporary Works and is invited whenever the Contractor meets directly with an Authority;
- (g) ensure that the Principal's Representative is continuously informed of all issues raised directly with the Contractor by Stakeholders and the community and is given the opportunity to be involved in the planning and coordination of all meetings, presentations and site visits attended by Stakeholders and members of the community;
- (h) ensure that the Principal's Representative is contacted immediately in relation to planned or unplanned community protests that do or may arise during the performance of the Contractor's Activities;
- (i) ensure the timeframes for review and approval defined in this MR-C and resources for Document development, consultation, approval and Notification are incorporated into the Contractor's Program;
- (j) comply with the current version of the Community Communications Strategy;
- (k) be proactive in providing the Principal's Representative with accurate and adequate information on the status of the Works, Temporary Works, Contractor's Activities and any associated impacts;
- (l) consult the Principal's Representative prior to taking any unilateral action that may impact on the Stakeholders or the community;
- (m) make appropriate senior personnel and subject matter experts available to attend meetings with the community or other Stakeholders, as required or requested by the Principal's Representative;
- (n) ensure that personnel and Subcontractor's personnel comply with the requirements of the Sydney Metro Overarching Community Communications Strategy SM SC-PW-303, and Transport for NSW Use of Social Media Policy CP13003; and
- (o) provide all Documents in .pdf format that comply with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0).

3. Stakeholder and Community Liaison Personnel

3.1. Personnel

The Contractor's team must consist of the people nominated in Annexure B of this MR-C.

3.2. General

The Contractor must ensure that its team:

- (a) does not contain vacant positions for more than four weeks;
- (b) members described in Annexure B clause 3.1 (a) and (b) commence within 14 Business Days of the date of the Contract and remain until the Date of

Construction Completion of the final Portion to reach Construction Completion;
and

- (c) members providing capability other than that described in clause 3.2 (b) above, commence within eight weeks after the date of the Contract and remain until the Date of Construction Completion of the final Portion to reach Construction Completion.

4. Planning and Progress

- (a) The Contractor must provide accurate information to the Principal's Representative regarding current and upcoming Contractor's Activities and all associated community impacts by developing, implementing and maintaining a Stakeholder and Community Liaison Program (CLP) that includes the following:
 - (i) the key dates for the commencement and conclusion of construction activities;
 - (ii) associated impacts on Stakeholders and the community;
 - (iii) the Contractor's strategy for minimising those impacts;
 - (iv) Notifications and release of other information;
 - (v) production and distribution of all other Public Communication Material; and
 - (vi) media milestones.
- (b) The Contractor must submit an updated CLP to the Principal's Representative for review in accordance with the Contract, each fortnight including a two week and four week Look Ahead Program.
- (c) The Contractor's representative described in section 3.1(a) must meet with the Principal's Representative as required and requested to discuss the Contractor's Stakeholder and community liaison activities including progress against the Look Ahead Programs.
- (d) The Contractor's representative described in section 3.1(b) must meet with the Principal's Representative as required and requested to provide details of the Contractor's Activities and will be required to generate and maintain a program of media milestones and other opportunities.

5. Meetings with Stakeholders and the Community

- (a) The Contractor must work collaboratively with the Principal's Representative to coordinate consultation activities with Stakeholders and the community.
- (b) The Contractor must organise meetings with Stakeholders and the community and also attend meetings along with the Principal's Representative to discuss the Contractor's Activities, work in progress, upcoming work or any issues in connection with the Contractor's Activities.
- (c) The Contractor must advise the Principal's Representative of the purpose for any consultation activities prior to organising them. The Principal's Representative will decide the Principal's level of involvement.

- (d) The Contractor must advise the Principal's Representative of the timing, purpose and attendees for all meetings with stakeholders and the community organised by the Contractor, seven days prior to the meetings taking place and invite the Principal's Representative to attend.
- (e) The Contractor must provide relevant materials for presentation and distribution at Stakeholder and community meetings in accordance with clause 10.2.
- (f) The Contractor must provide appropriate Contractor's personnel to attend and participate in Stakeholder and community meetings (including after-hours) and any meetings of working groups established by the Principal or as otherwise required by the Principal's Representative.
- (g) The Contractor's personnel must be adequately informed and suitably qualified to participate in and chair meetings to update Stakeholders and the community on the progress of the Works, the Temporary Works and the Contractor's Activities and resolve Stakeholder and community issues.
- (h) The Contractor must comply with all practicable suggestions and requests of Stakeholders and the community, where agreed by the Principal's Representative.

6. Communications Management Control Group

- (a) The Principal will establish a Communications Management Control Group (CMCG) prior to the start of the Contractor's Activities to provide a forum to exchange information and coordinate communication and consultation activities with the community and Stakeholders and to deliver a consistent approach.
- (b) The CMCG will generally meet fortnightly throughout the duration of the Contractor's Activities or as otherwise required by the Principal Representative.
- (c) The Contractor's lead representative described in section 3.1(a), and additional Contractor's personnel requested by the Principal's Representative, must attend all CMCG meetings.
- (d) The Contractor must provide all relevant information regarding any potential impact that its activities may have on the community (including but not limited to local residents, property and business owners, transport users) in accordance with clause 10.2 below for inclusion in the CMCG meetings. Such information includes:
 - (i) a summary of current and upcoming work from the two week and four week Look Ahead Programs, their likely impacts, and proposed mitigation strategies to address those impacts;
 - (ii) an update on any current or emerging issues and/or any promotional opportunities;
 - (iii) an update on complaints received and action taken to resolve them; and
 - (iv) other information as requested by the Principal's Representative.

7. Community Information Sessions

- (a) The Contractor must provide appropriate personnel, including technical experts, to attend community information sessions as required and requested by the Principal's Representative.
- (b) The Contractor must provide materials or information in accordance with clause 10 below, to support the community information sessions, and as requested by the Principal's Representative.

8. Community Information Centre

- (a) The Contractor must provide suitably qualified and experienced team members to attend the Principal's Community Information Centre or mobile Community Information Centre at least twice per week (including weekends and out of office hours) to take part in education or group presentations, or community engagement events.
- (b) The Contractor must hold weekly briefings for personnel nominated by the Principal's Representative on the progress of the Contractor's Activities and current or emerging issues.
- (c) The Contractor must develop and install interactive displays, relating to the Contractor's Activities, for use by Community Information Centre visitors.
- (d) The Contractor must prepare a specification for the development and production of the interactive displays and submit it to the Principal's Representative for review. The Principal's Representative must be given a minimum of 20 Business Days to review and make comment upon the specification and the Contractor must address all the Principal's comments to the satisfaction of the Principal's Representative, prior to being approved.
- (e) The Principal's Representative's approval of the specification is a Hold Point.
- (f) The interactive displays must include 3D visualisation of the construction process, graphical information, simulations of excavation activities, photographs and videos, details of the Contractor's equipment, details of environmental protection work and sustainability initiatives.
- (g) The design of the interactive displays produced by the Contractor must comply with the approved specification described in clause 8 (d), above and must be submitted to the Principal's Representative for review. The Principal's Representative must be given a minimum of 20 Business Days to review and make comment upon the Documents and the Contractor must address all the Principal's comments on the Documents to the satisfaction of the Principal's Representative.
- (h) The Principal's Representative's approval of the Documents for the design of the interactive displays is a Hold Point.
- (i) The interactive displays must be initially developed, produced and installed within six months after the date of the Contract, and then be updated, as a minimum, on a six monthly basis until the Date of Construction Completion of the final Portion to reach Construction Completion.

9. Principal's Education Programs

- (a) The Contactor must provide information and photographs for inclusion in the Principal's Education Programs (PEP) as directed by the Principal's Representative.
- (b) The Contractor must also provide 2 attendant personnel with contracting and construction knowledge to support the Principal at a minimum of 15 PEPs (for their full duration) per annum.
- (c) The Contractor must ensure that all personnel that interact with children during the PEPs undergo the NSW Office of the Children's Guardian's "Working With Children Check" prior to attending any PEPs.

10. Communication Material for the Public

10.1. Principal's Material

The Principal may produce and distribute its own communication material and the Contractor must provide Copy contributing to the production of that communication material when requested by the Principal's Representative. This communication material may include information such as construction status and updates and information on the status of current and upcoming Contractor Activities.

10.2. Contractor's Public Communication Material

- (a) The Contractor must produce its own Public Communication Material (PCM). The Principal's Representative's approval of the Contractor's proposed PCM is a Hold Point.
- (b) Public Communication Material includes but is not limited to:
 - (i) information for the CMCG;
 - (ii) information for community and Stakeholder meetings;
 - (iii) information for the Principal's Education Programs;
 - (iv) materials for community information sessions, including photographs, items of interest including machinery, plant and equipment and other items as requested;
 - (v) community and Stakeholder Notifications;
 - (vi) advertisements concerning the Contractor's Activities;
 - (vii) quarterly construction update newsletters;
 - (viii) community emails;
 - (ix) information to comply with the Contractor's obligations relating to the Environmental Documents;
 - (x) all website content to be used on the Principal's or Contractor's websites as a means of communicating information for the benefit of the Principal, rather than the Contractor; and

- (xi) all information released on social media platforms.
- (c) All Public Communication Material, Copy and other publicly available information provided by the Contractor must comply with Transport for NSW Editorial Style Guide and Sydney Metro Brand Style Guidelines, and be written in plain English.
- (d) The Contractor must provide a copy of all final PCM, Copy and other information requested by the Principal's Representative in a.pdf format that complies with the Level AA accessibility requirements in the Web Content Accessibility Guidelines (WCAG 2.0) for uploading to the Principal's website and any other websites, on the day they are delivered or released to the public.
- (e) All PCM produced by the Contractor must be approved by the Principal's Representative. The Contractor must address any comments made by the Principal, to the satisfaction of the Principal's Representative prior to its approval in accordance with (i) below. The Contractor must allow for and comply with the following timeframes and requirements when scheduling and carrying out the Contractor's Activities:
 - (i) a period of at least five Business Days from acceptable submission for the Principal's Representative to approve any PCM;
 - (ii) an additional 30 Business Days from acceptable submission for Sydney Trains to approve any PCM regarding Track Possessions and Non Track Possessions;
 - (iii) a period of seven days after the PCM has been issued to the community or Stakeholders, before it commences any of the related Contractor's Activities; and
 - (iv) ensure that all personnel engaged in undertaking the Contractors' Activities are aware of, and abide by these requirements in this clause 10.2 and MR-C.
- (f) Where the Contractor's Activities are adjacent to other construction activities, being carried out by external parties public communication activities must be coordinated (via the CMCG) and shared as required before distribution to the public.

10.3. Community and Stakeholder Notifications

- (a) The community and Stakeholders must be notified of any current and upcoming Works or Temporary Works or Contractor's Activities with the potential to impact them, prior to their occurrence, and with the exception of Emergency Works, in accordance with this clause 10.3 (c) to (i).
- (b) In the event of Emergency Works, the Contractor must provide written and verbal Notification to occupiers of properties immediately adjacent to or impacted by any Emergency Works within two hours, after commencing any Emergency Works.
- (c) The Contractor must produce and distribute all community and Stakeholder Notifications.
- (d) Written Notifications must be distributed to all properties within 500 metres of the Contractor's Activities.

- (e) The Contractor must issue the Notifications for the following:
- (i) construction commencement;
 - (ii) significant milestones;
 - (iii) changes to the scope of work;
 - (iv) night works;
 - (v) changes to traffic conditions requiring traffic alerts;
 - (vi) modifications to pedestrian routes, cycle ways and bus stops;
 - (vii) out of hours work;
 - (viii) disruption of residential or business access;
 - (ix) changing or disrupting of Utility Services; and
 - (x) investigation activities.
- (f) The Contractor must ensure that all Notifications include all required details, including the following:
- (i) the scope of work;
 - (ii) the location of work;
 - (iii) the hours of work;
 - (iv) the duration of activity;
 - (v) the type of equipment used and likely impacts of the work including noise, vibration, traffic, access and dust;
 - (vi) the applicable mitigation measures; and
 - (vii) the Sydney Metro Project 24-hour Telephone Contact Number, postal address and email address.
- (g) The Contractor must issue traffic alerts by email, seven days before changes to traffic and access arrangements are made, to all key traffic and transport Stakeholders including:
- (i) relevant Authorities; and
 - (ii) transport operators, including bus, coach and taxi operators.
- (h) The Contractor must provide and erect signage that identifies changes to traffic and access arrangements, seven days before the changes take place, for the following events:
- (i) making changes to pedestrian routes;
 - (ii) making changes to platforms or concourses;
 - (iii) impacting on cycle ways;
 - (iv) changing traffic conditions; and

- (v) disrupting access to bus stops.
- (i) The Contractor must provide Notification to relevant Authorities at least seven days before commencing work on any Utility Services of any kind including Unknown Specified Utility Services Work, work on Specified Utility Services and Non-Contestable Unknown Specified Utility Services Work

10.4. Project Advertisements

- (a) The Contractor must prepare and publish advertisements relating to the performance of the Contractor's Activities in accordance with clause 10.2, Law and relevant Authority approvals.
- (b) The Contractor must advertise all significant traffic management changes, detours, traffic disruptions and work outside any working hours contained in the Environmental Documents at least seven days before any detour, disruption, work or change occurs. These adverts must be placed in local newspapers that cover the geographical areas of the Contractor's Activities.

10.5. Quarterly Construction Update Newsletters

- (a) The Contractor must develop, produce and distribute a quarterly construction update newsletter providing updates on the Works, Temporary Works and Contractor's Activities to the local community and Stakeholders in accordance with clause 10.2.
- (b) The newsletters must:
 - (i) Inform the community and Stakeholders of the progress of the CSM Project and key milestones or activities taking place during the following three months;
 - (ii) be of a high quality, and include relevant photos, maps and illustrations;
 - (iii) be at least a single A4 double sided sheet in full colour;
 - (iv) be distributed to commercial and residential properties within a 500m radius of the Site; and
 - (v) be available at the community information centre for three months from the time of issue for distribution to commercial and residential properties.

10.6. Community emails

- (a) The Contractor must develop and distribute a monthly community update email, in accordance with clause 10.2.
- (b) The update email must:
 - (i) inform the community and Stakeholders of the progress of the Works, Temporary Works and Contractor's Activities and key milestones or activities taking place during the following month; and
 - (ii) be distributed to all Stakeholders registered in the Consultation Manager Database to receive community update emails.

10.7. Environmental Documents

Notwithstanding the requirements of the Contract, when requested by the Principal's Representative, the Contractor must provide information or input into addressing any communication requirements outlined in the Environmental Documents.

10.8. Project Websites

10.8.1. Contractor's Project Website

- (a) The Contractor must establish and maintain a new website or maintain a page on an existing web site to publish details on the status of the Works, Temporary Works and Contractor's Activities.
- (b) The Contractor must only publish on the website:
 - (i) employment or supplier opportunities;
 - (ii) information required to be published to comply with the Environmental Documents;
 - (iii) executive summaries of publicly available reports relating to the Works, Temporary Works and Contractor's Activities;
 - (iv) environmental, sustainability, transport, traffic and noise and vibration reports (and the executive summaries of these reports) that are publicly available; and
 - (v) web content and documents must comply with the Level AA accessibility requirements as outlined in Web Content Accessibility Guidelines (WCAG 2.0).
- (c) The Contractor must not include any other information, graphics or photographs on the website.

10.8.2. Principal's Project Website

- (a) The Contractor must provide the following information in electronic format which complies with the Level AA accessibility requirements of the Web Content Accessibility Guidelines (WCAG 2.0) to be uploaded onto the Principal's CSM Project website:
 - (i) Public Communication Materials;
 - (ii) Marketing and Promotional Materials;
 - (iii) photography in accordance with clause 20;
 - (iv) each version of the Community Communications Strategy; and
 - (v) any other Copy or information, requested by the Principal's Representative.

10.9. Social Media

- (a) The Contractor must comply with [Transport for NSW Use of Social Media Policy CP13003](#).

- (b) The Contractor must, as a minimum, provide three, 180 character, social media updates each week with accompanying images or video, relating to the Contractor's Activities during the construction of the Works and Temporary Works.
- (c) The social media updates must include, but not be limited to, updates about the Contractor's Activities scheduled for the forthcoming week, construction progress and changes to the Contractor's Program.
- (d) During Business Hours, the Contractor must provide responses to any social media platform enquiries forwarded by the Principal within two hours of receiving the enquiry. Outside of Business Hours, the Contractor must provide a written response within two hours of the start of next Business Day.

11. Contractor's Marketing and Promotional Material

11.1. General Requirements

- (a) Marketing and Promotional Materials (MPM) include, but are not limited to:
 - (i) promotional or information related signage;
 - (ii) displays;
 - (iii) award submissions;
 - (iv) media articles;
 - (v) other forms of advertisements not otherwise included in the PCM;
 - (vi) internal newsletters and publications;
 - (vii) presentations at conferences;
 - (viii) presentations at internal events;
 - (ix) technical papers and reports;
 - (x) photographs;
 - (xi) sponsorships;
 - (xii) Contractor's website content promoting their involvement in the CSM Project, not otherwise included in the PCM;
 - (xiii) case studies; and
 - (xiv) other corporate materials.
- (b) The Contractor must recognise and identify the Principal's role in any Marketing and Promotional Material that the Contractor develops.
- (c) The Contractor must not participate in any public local events or open days without prior approval from Principal's Representative.
- (d) The Contractor must identify innovative programs, processes and methodologies to support the Principal's engagement with, and support of; local communities, including engagement with local:

- (i) schools;
 - (ii) seniors;
 - (iii) environmental groups;
 - (iv) sporting groups;
 - (v) young people;
 - (vi) businesses; and
 - (vii) other community groups.
- (e) All drafts of Marketing and Promotional Materials must be submitted to the Principal's Representative prior to being publicly released by the Contractor. The Principal's Representative must be given a minimum of 10 Business Days to review and make comment upon the submitted Documents. The Contractor must address all the Principal's comments on the submitted Documents to the satisfaction of the Principal's Representative, prior to being approved. The Principal's Representative's approval of Marketing and Promotional Material is a Hold Point.

11.2. Community Signage

- (a) The Contractor must prepare and install any way-finding signage to direct pedestrians, customers and vehicles around the Site as appropriate.
- (b) When requested, the Contractor must provide the required resources to assist the Principal with the provision and/or installation of any other signage or graphics required by the Principal, to be placed on or over the hoardings or fencing.
- (c) The Contractor must submit plans and details of all signage (other than signage containing safety advice or instruction only), advertising or branding on the external face of any hoarding, fence or structure to the Principal for review. The plans must be approved by the Principal's Representative prior to being used for their intended purpose. The Principal's Representative must be given a minimum of 10 Business Days to review and make comment upon the submitted Documents. The Contractor must address all the Principal's comments on the submitted Documents to the satisfaction of the Principal's Representative, prior to being approved.

12. Contractor's Site Structures and Equipment

12.1. Contractor's Hoardings and Fences

- (a) The Contractor must arrange for the production and installation of any site hoarding and fencing banners including vinyl (on solid hoarding), shade cloth or other material on the external face of any hoarding or fence within 30 days of Site establishment where access has been granted to that part of the Site.
- (b) Site hoarding and fencing banners must be replaced every 12 months to ensure they remain clean and appropriate for their intended use.

- (c) All banner artwork print proofs must be submitted to and approved by the Principal's Representative prior to being used by the Contractor in the production of banner artwork. The Principal's Representative must be given a minimum of five Business Days to review the banner artwork print proofs. The Contractor must address all the Principal's comments on the print proofs to the satisfaction of the Principal's Representative, prior to being approved.
- (d) The Principal's Representative's approval of banner artwork print proofs is a Hold Point.
- (e) Installation plans for all hoardings or fencing banners, including shade cloth or other material on the external face of any hoarding or fence, must be submitted to and approved by the Principal's Representative prior to being erected by the Contractor. The Principal's Representative must be given a minimum of 10 Business Days to review and comment on banner installation plans. The Contractor must address the Principal's comments on the submitted Documents to the satisfaction of the Principal's Representative, prior to them being approved.
- (f) The Principal's Representative's approval of banner installation plans is a Hold Point.
- (g) Viewing holes and transparent panels must be provided in the hoardings at various locations, to be determined by the Principal's Representative in consultation with the Contractor.

12.2. Graffiti and Bill Posters

- (a) Hoardings, site sheds, fencing, acoustic walls around the perimeter of the Site and any other structures built as part of the Works and Temporary Works must be maintained free of graffiti and any advertising not authorised by the Principal.
- (b) The Contractor must carry out daily inspections for graffiti and unauthorised advertising and must remove or cover any such graffiti or unauthorised advertising identified within the following timeframes:
 - (i) offensive graffiti must be cleaned or covered within 24 hours;
 - (ii) highly visible yet non-offensive graffiti must be cleaned or covered within one week;
 - (iii) graffiti that is neither offensive nor highly visible must be cleaned or covered during normal operations within one month; and
 - (iv) any advertising material including bill posters must be removed or covered within 24 hours.

13. Branding and Logos

- (a) The Contractor must follow the Sydney Metro Brand Style Guidelines and Transport for NSW Editorial Style Guide for all branding and logos used on any items, including:
 - (i) Marketing and Promotional Material;
 - (ii) site safety signage;

- (iii) hoarding and site fencing;
 - (iv) cranes and their flags;
 - (v) other structures;
 - (vi) vehicles;
 - (vii) plant and equipment; and
 - (viii) clothing, including personal protection equipment.
- (b) All items carrying Sydney Metro branding and logos must be updated each year, unless otherwise agreed by the Principal's Representative.

14. Animations

- (a) The Contractor must supply high quality, high definition animations for public use of key sections of the Works, Temporary Works and Contractor's Activities, including those nominated in Annexure B.
- (b) The Contractor must engage an animation provider from the Principal's panel of nominated Subcontractors to create the animations contemplated in clause 14 (a).

15. Consultation Manager Database

- (a) The Contractor must use the Consultation Manager Database for the collection and recording of details of all contact and correspondence with Stakeholders and the community.
- (b) The Contractor must ensure that all relevant personnel complete formal training and become familiar with the Consultation Manager Database.
- (c) The Contractor must update and maintain the Consultation Manager Database with accurate contact details to ensure easy identification and rapid distribution of information.
- (d) The Contractor must record all details, including publication and distribution details relating to Public Communication Materials in the Consultation Manager Database.
- (e) The Contractor must ensure that the details of all interactions with Stakeholders and the community are recorded in the Consultation Manager Database within 48 hours of the interaction taking place.
- (f) The Contractor must record all contact with the media and elected government representatives, CSM Project related articles (paper and web based) and online discussions including blogging into the Consultation Manager Database and send copies of articles or web links to the Principal's Representative.
- (g) All entries made in the Consultation Manager Database must be in accordance with the requirements in the Sydney Metro Overarching Community Communications Strategy SM SC-ST-202.

16. Enquires and Complaints Management

16.1. General

- (a) The Contractor must ensure suitably qualified and experienced personnel are available to answer any questions, concerns, complaints or enquires in relation to the Contractor's Activities on a 24 hour a day seven day a week basis.
- (b) The Principal has established a Sydney Metro Project 24-hour Telephone Contact Number, postal address and email address to which enquires and complaints will be received. The Contractor must respond to enquiries and manage complaints directed to the Contractor, by the Principal or received directly.

16.2. Enquiries

- (a) In responding to all enquiries the Contractor must:
 - (i) provide at least a verbal response to telephone enquiries within two hours from the time of the enquiry being received, unless the enquirer agrees otherwise;
 - (ii) provide a written response to, emails and online comments within 24 hours of their receipt;
 - (iii) provide a written response to letters within five Business Days of their receipt;
 - (iv) record details of enquiries received in the Consultation Manager Database within 48 hours of being received;
 - (v) report monthly to the Principal's Representative on any enquiries received, and responses given; and
 - (vi) provide responses to any social media platform enquiries forwarded by the Principal during in accordance with clause 10.9 (d).
- (b) In addition, in responding to media or government enquiries the Contractor must also comply with clause 17.

16.3. Complaints

- (a) In responding to Complaints the Contractor must meet the following timeframes:
 - (i) within 24 hours of the complaint being received record details of every complaint received and how it was managed and closed out in the Consultation Manager Database in accordance with Sydney Metro Construction Complaints Management System SM SC-PW-303;
 - (ii) for complaints received by phone: immediately investigate and determine the source of the complaint and within two hours make an initial call to the complainant where a phone number was provided or is available in the Consultation Manager Database, unless the complainant agrees otherwise;

- (iii) for complaints received by email during Construction Hours: within four hours from receipt, provide a written response or provide a verbal response within two hours if a contact number is available;
 - (iv) for complaints received by email outside Construction Hours provide an immediate automated email response confirming receipt and explaining that a full response will follow, and then within the first four hours of the next Business Day from receipt, provide a written response
 - (v) for complaints received by letters/faxes received within Construction Hours: within 24 hours of receipt provide a written response (or a verbal response within two hours if a contact number is available);
 - (vi) for complaints received by letters/faxes outside of Construction Hours: within 24 hours of the start of next Business Day from receipt, provide a written response (or a verbal response within two hours if a contact number is available);
 - (vii) immediately notify the Principal's Representative if it is considered that the complaint does not relate to the Works, the Temporary Works or the Contractor's Activities;
 - (viii) forward information on any complaints received, including response times and details of any actions undertaken or proposed or investigations occurring, to the Principal's Representative in writing within one Business Day after receipt of the complaint; and
 - (ix) provide feedback to requests for information from the Principal's Representative or the Community Complaints Commissioner in relation to responses to complaints within two hours of the request.
- (b) The Contractor must:
- (i) appropriately escalate complaints in accordance with the Sydney Metro Overarching Community Communications Strategy SM SC-PW-303;
 - (ii) take all actions and implement all practicable measures to prevent the reoccurrence of Stakeholder and community complaints;
 - (iii) develop and implement procedures for managing and resolving all Stakeholder and community complaints that comply with the requirements in AS 4269: 1995 Complaints handling, the Sydney Metro Overarching Community Communications Strategy SM SC-PW-303, and the Sydney Metro Construction Complaints Management System SM SC-PW-303; and
 - (iv) comply with all directions from the Principal's Representative, which may incorporate recommendations from the Community Complaints Commissioner in relation to the resolution of any escalated complaints.

17. Media and Government Relations

- (a) The Contractor must advise the Principal's Representative of any contact by the media or government representative within two hours of the contact.
- (b) The Contractor must not provide any statement (verbal or written) or any photographs or illustrations to the media or elected government representatives

regarding the Works, Temporary Works, Contractor's Activities or the Project without the prior written approval of Principal's Representative.

- (c) The Contractor must not permit any media or elected government representative on any part of the Site without the prior written approval of Principal's Representative.
- (d) The Contractors Public Affairs Management team member must assist the Principal in the management of media and government relations 24 hours a day, seven days a week, as required and requested by the Principal's Representative.
- (e) The Contractor must provide the Principal's Representative with relevant information required to respond to media and government enquiries, including providing a holding statement within 30 minutes and full responses within two hours of the enquiry or contact being made. During an ongoing event, including during an emergency, Incident or crisis or as required and requested by the Principal's Representative, updates must be provided every hour.
- (f) Notwithstanding other requirements of the Contract, the Contractor must provide the Principal's Representative with at least eight weeks notice prior to the commencement of the Works and Temporary Works or other Site related activity and eight weeks notice prior to the anticipated Date of Construction Completion of any Portion. Update notification must be provided at 10 Business Days, and again at five Business Days prior to the anticipated Date of Construction Completion of any Portions.
- (g) The Contractor must provide at least 20 Business Days notice to the Principal Representative of any significant milestones, to be agreed with the Principal's Representative, to enable the Principal to organise official media events.
- (h) The Contractor must ensure that all of its personnel and all of the Subcontractors' personnel engaged in the Contractor's Activities are aware of and abide by the requirements of this clause 17.

18. Crisis Communication Procedures

- (a) The Contractor must develop incident and crisis communications procedures.
- (b) The Contractor must immediately notify the Principal's Representative of any incident that may have an impact on the community, environment, personnel or subcontractors, which may attract the attention of the media, the Minister for Transport, a local Member of Parliament, local council or the broader community.
- (c) The Contractor must not contact or provide information to any person, other than that which is required to directly manage the Incident or to comply with law, without obtaining the prior approval of the Principal's Representative.
- (d) the Contractor must provide suitably qualified and experienced personnel, including the Contractor's Public Affairs Management team member, to support the Principal in responding to Stakeholders, the media or the public as required and requested by the Principal. The Contractor must also provide senior and experienced personnel to attend meetings with Stakeholders, the media or the public as requested by the Principal's Representative.

- (e) The Contractor must provide the Principal's Representative with all necessary communications materials or information that may need to be disseminated as a result of an incident.
- (f) The Contractor must, in the case of an incident that has attracted or can reasonably be expected to attract the attention of the media, the Minister for Transport, a local Member of Parliament, or the broader community, notify the Principal's Representative within 10 minutes of the incident occurring and for any other incidents notify the Principal's Principal Manager Project Communications within one hour of the incident occurring.
- (g) The Contractor must conduct and document formal incident and crisis communications exercises and invite the Principal's Representative to observe and participate.

19. Organised Events

19.1. General

- (a) The Project is expected to attract considerable interest from Stakeholders, the community, educational institutions and the engineering profession which may result in numerous requests to visit the Site. In the event the Principal is required to arrange for visitors to attend the Site, the Contractor must provide the required access with a minimum of two hours' notice of a request from the Principal's Representative.
- (b) The Contractor must accommodate weekly visits to the Site for the Principal's personnel including access for the purpose of photography or videography for promotional and documentary purposes. The Contractor must provide a dedicated safety escort around the Site.
- (c) The Contractor must incorporate into the Temporary Works, access stairs and walkways, which as well as providing access for the Contractor's Activities can also be used by visitors and the public for accessing the Site at the times set out under the Contract.
- (d) Safe public Site access routes must be agreed with the Principal's Representative and must be BCA compliant for temporary access. Where these routes require vertical transportation these elements must provide for the minimum dimensions in accordance with the *Discrimination Disability Act 1992*.

19.2. Principal Arranged Events

- (a) The Contractor must accommodate Principal arranged Events for Media, VIPs and other guests.
- (b) For each Event, the Contractor must provide Site access, site escorts, safety equipment including PPE, site inductions, site transport and Viewing Areas to accommodate all Event participants.
- (c) An Event will be held prior to the Construction Completion of each Portion, when the construction of the Works associated with that Portion has been largely completed with the exception of minor Defects. Providing the support outlined in

this MR-C for each Event must be accomplished by the Contractor prior to Construction Completion of each Portion.

- (d) The location of the Viewing Areas associated with each Portion must provide access to the Works relating to the individual Portions, and in any event must be agreed with the Principal's Representative prior to Event taking place.
- (e) For each Event, the Contractor must provide support as required by the Principal's Representative to facilitate Principal arranged Events, including:
 - (i) accommodating a Site inspection at least one week prior to the Event;
 - (ii) confirming the PPE requirements which will be provided for Event participants by the Contractor, on Site at least two weeks prior to an Event;
 - (iii) providing Viewing Areas incorporating exclusion zones demarcated by crowd control barriers, for Event participants to view the Works and Temporary Works;
 - (iv) identifying and providing safe access including a pedestrian route to the Viewing Areas;
 - (v) providing a VIP Viewing Area for VIPs and guests able to accommodate at least 30 people, within the Viewing Area;
 - (vi) providing a Media Viewing Area above to accommodate at least 30 people within the Viewing Area; where the VIP Viewing Area and Media Viewing Area are separated so as to avoid interaction between the two groups of Event participants;
 - (vii) providing power outlets as required by the Principal's Representative;
 - (viii) providing access to and supervision of, third party suppliers arranged by the Principal to deliver or install, and remove equipment required for the Events;
 - (ix) supplying and set up of marquees close to the Viewing Areas to provide shade to Event participants;
 - (x) providing lighting as required;
 - (xi) providing on site security to manage the entry and exit of Event participants;
 - (xii) providing a room for VIPs and guests, accommodating at least 30 people for them to change into PPE;
 - (xiii) providing a room or covered area with flooring to accommodate at least 30 people, separate to that in clause 19.2 (e)(xii) above for media personnel to change into PPE;
 - (xiv) providing trestle tables and chairs in the rooms to be provided in clauses 19.2 (e) (xii) and (xiii), to be used to assist people with changing into PPE;
 - (xv) providing space and access to power outlets to set up TV and story boards either outside or inside the media PPE room described in 19.2 (e) (xiii);

- (xvi) providing reserved parking to accommodate at least 30 vehicles for VIPs and guests, media and TfNSW staff;
 - (xvii) providing access to separate male and female toilet facilities for Event participants; and
 - (xviii) ensuring that new or existing Event and promotional site signage (provided by the Principal) is installed, clean, visible and in good condition. Any other banners on Site that are not pre-approved by the Principal must be removed at least a day prior to the Event or promotional opportunity.
- (f) In regards to the requirements for rooms and parking in clauses 19.2 (e) (xii), (xiii) and (xvi), off Site locations in close proximity to Site where the Contractor transfers visitors to Site may be utilised where prior approval by the Principal's Representative has been provided.

19.3. Principal Arranged Public Events

- (a) The Contractor must accommodate a minimum of five Public Events per year, arranged by the Principal on the Site, for open day weekends, community and Principal's Education Program tours, each time catering for up to the Maximum Number of Visitors on Site;
- (b) The Contractor must provide access to Site as required by the Principal's Representative to facilitate Public Events including the provision of access for visitors including prams, wheelchairs or people with limited mobility;
- (c) The Contractor must provide Site escorts, safety equipment and viewing areas to accommodate all Public Event participants.
- (d) The Contractor must provide support as required to facilitate Public Events including:
 - (i) accommodating a Site inspection at least one week prior to the Public Event;
 - (ii) providing three separate, safe Viewing Areas for visitors to view the Works, Temporary Works and Contractor's Activities in locations nominated in Annexure B and as agreed with Principal's Representative;
 - (iii) accommodating up to 30 visitors including visitors with prams and wheelchairs, at each Viewing Area. Viewing Areas must be able to be used simultaneously and provide shelter for wet weather and be in locations that do not require Site inductions or use of PPE;
 - (iv) installing a TV, storyboards, chairs and models in one of the Site Viewing Areas;
 - (v) providing power;
 - (vi) providing access to, and supervising third party suppliers to deliver or install equipment required for the Public Event;
 - (vii) providing access to separate male and female and wheelchair accessible toilet facilities for visitors;

- (viii) providing on-Site security to manage the entry and exit of visitors;
 - (ix) providing materials to support the Public Event including photographs, machinery, technical experts, guides and other items required and requested by the Principal's Representative;
 - (x) ensuring new or existing Public Event and promotional site signage provided by the Principal is installed, clean, visible and in good condition. Any other banners on site that are not pre-approved by the Principal must be removed at least a day prior to the Public Event;
 - (xi) providing dedicated first aid officers and room or tent in which to administer first aid to visitors; and
 - (xii) if required by the Principal's Representative, providing access to a lunch room with refrigerator and tables and chairs for staff breaks.
- (e) The Contractor must not organise any Site visits by Stakeholders or community members without approval from the Principal's Representative. The Contractor must provide the Principal's Representative with at least 48 hours prior written notice of all proposed visits.

20. Site Photography

20.1. Site Photography by the Principal

The Contractor must provide the following content and personnel for the production of a documentary, to be made by the Principal about the Project. The Contractor must:

- (a) provide interview subjects from its Workforce. All interview subjects, must be pre-approved by the Principal's Representative;
- (b) allow all approved interview subjects to take part in filming and interview activities in the course of their duties, including on equipment; and
- (c) co-ordinate Site activities with the Principal and its documentary producers, including pre-interviews and interviews with approved interviewees.

20.2. Site Photography by the Contractor

The Contractor must supply on demand, captured photographs and recorded footage as requested by the Principal's Representative.

20.2.1. General

- (a) The Contractor must prepare a Photography Specification which must reflect the requirements of this MR-C. The Principal's Representative's approval of the Photography Specification is a Hold Point.
- (b) The Contractor's Photography Specification must include the need for professional photography and filming every month at the Site. The photography and filming must capture construction progress and human interest images.
- (c) The Photography Specification must be used by the Contractor to engage video, photography and time lapse providers from the Principal's panel of nominated Subcontractors.

- (d) All photographs must be of a professional quality (minimum 300 dpi) suitable for use by the Principal in publications, Project communications and promotions of a broader nature and for enlargement to use in display materials.
- (e) The Contractor must provide the Principal's Representative with photography and video of the Site that is suitable for uploading to the Principal's Project website to show the status of the Works, the Temporary Works and the Contractor's Activities.
- (f) Photographs and images must be provided, as a minimum, on a monthly basis, uploaded to a shared server or as otherwise requested by the Principal's Representative.
- (g) All photographs, images, film and videos taken by the Contractor are the property of the Principal and must be provided when requested. The Principal may, without the Contractor's approval, use the photographs and film footage for whatever purpose the Principal deems necessary or appropriate.
- (h) The Contractor must obtain signed release forms from all employees and contractors who will feature in any form of photography, filming and video. Employees or contractors who do not provide signed release forms cannot be recorded in any photographs, filming or videos which would prevent the Principal from using the material.

20.2.2. Monthly Footage Package

- (a) The Contractor must supply 30 minutes of professionally filmed and edited footage every month, to the Principal's Representative.
- (b) The proposed content of the monthly footage package must be approved by the Principal's Representative, prior to that footage being recorded. The Principal's Representative's approval of the monthly footage package is a Hold Point.
- (c) Each monthly footage package must capture construction progress and human interest images and must include professional photography and filming, at locations specified in Annexure B.

20.2.3. Time Lapse Cameras

- (a) In addition to the professionally recorded and edited monthly footage package, the Contractor must install and produce edited time lapse photography.
- (b) The Contractor must install at least three fixed high definition time lapse cameras to monitor the Site and capture major activity at the locations specified in Annexure B.
- (c) Should the view from any of the fixed high definition time lapse cameras in clause 20.2.3 (b) become obscured, the Contractor must relocate the camera to a position agreed by the Principal's Representative to continue capturing major activity.
- (d) The Contractor must also provide two portable time lapse cameras to be set up and operated by the Contractor in locations around the Site agreed with the Principal's Representative on a monthly basis. The fixed locations of these portable cameras will not exceed more than two different locations per month.

- (e) The Contractor must consult with the Principal's Representative on the installation and placement of all time lapse cameras. The Principal's Representative will provide final approval on placement.
- (f) The Contractor must:
 - (i) provide an online viewing portal for each time lapse camera;
 - (ii) deliver electronically, every month an edited compilation of footage from each camera;
 - (iii) provide on request, edited time lapse footage within 48 hours; and
 - (iv) Prior to the final Portion to reach Construction Completion, all time lapse footage in a single edited high definition file for each camera.

21. Site Inductions and Training

- (a) The Contractor must ensure its personnel and Subcontractors' personnel are adequately inducted and trained in all of the Stakeholder and community liaison requirements detailed in this MR-C, Sydney Metro Principal Contractor Health & Safety Standard SM PS ST- 221 and the Sydney Metro Construction Environmental Management Framework SM ES-ST-204, with a particular focus on incident management, incident reporting procedures, community enquiries or complaints, and media and government enquiries prior to commencing any Contractor's Activities.
- (b) Site inductions and training material must be regularly updated to address any actions taken in response to Stakeholder and community complaints and any changes to the Community Communication Strategy.
- (c) The Contractor must carry out further inductions and training of any personnel previously inducted and trained to ensure the Stakeholder and community liaison requirements procedures and protocols remain understood and current.
- (d) All material produced for the purpose of Site inductions by the Contractor must be submitted to and approved by the Principal's Representative prior to it being released for its intended purpose. The Principal's Representative must be given a minimum of 10 Business Days to review and make comment upon the Site induction submitted Documents. The Contractor must address all the Principal's comments on the Site induction Documents to the satisfaction of the Principal's Representative. The approval by the Principal's Representative of Site induction Documents is a Hold Point.

Annexure A: Reference Documents

- Sydney Metro Overarching Community Communications Strategy SM SC-ST-202 dated 15 March 2017
- Transport for NSW Editorial Style Guide, dated April 2016
- Sydney Metro Brand Style Guidelines, dated October 2016
- Sydney Metro Construction Complaints Management System SM SC-PW-303, dated 15 March 2017
- Sydney Metro Principal Contractor Health & Safety Standard SM PS ST- 221, 29 May 2017
- Sydney Metro Construction Environmental Management Framework SM ES-ST-204, 15 August 2016
- Transport for NSW Use of Social Media Policy CP13003 (available on internet), 18 November 2013
- Web Content Accessibility Guidelines (WCAG 2.0) V2.0 (available on internet),

