

## Schedule 18

### Appendix 18N – Design Submittal Requirements

## **SECTION A. DEFINITIONS**

### **A.1 General**

- A.1.1 Capitalized terms used in this Appendix 18N have the meanings given in Schedule 18 – Technical Requirements or the Design Build Agreement.

## **SECTION B. GENERAL**

### **B.1 Design Submittals**

- B.1.1 The 30% Design Submittal shall be submitted as a complete single submission. If Design Builder submits only a portion of the 30% Design Submittal, the City will not commence the review procedure as set out in Schedule 5 – Review Procedure until the entire 30% Design Submittal has been received.
- B.1.2 The 60% Design Submittal may be submitted in separate design packages for review under Schedule 5 – Review Procedure. The design packages must be divided in a logical manner (e.g. by discipline and/or process area) and be broad enough to allow the City to review a complete design concept.
- B.1.3 The 90% Design Submittal and IFC Submittal must be submitted in the same design packages as the 60% Design Submittal.

### **B.2 As-Built Submittal**

- B.2.1 A preliminary version of the As-built Submittal is a condition to achieve Substantial Completion.
- B.2.2 The complete As-Built Submittal is a condition to achieve Final Completion.

## **SECTION C. 30% DESIGN SUBMITTAL**

### **C.1 Design Report**

- C.1.1 The design report for the 30% Design Submittal shall include the following:
- (a) a general section, which shall include:
    - (i) project background, description and objectives;
    - (ii) summary of anticipated Permits, Licenses and Approvals;
    - (iii) summary of wastewater flows; and
    - (iv) preliminary description of hazardous locations;
  - (b) an architectural section, which shall include:
    - (i) preliminary space requirements for buildings and rooms;

- (ii) preliminary overview of building design including overall look and aesthetics;
  - (iii) preliminary list of proposed building materials; and
  - (iv) preliminary building envelope analysis;
- (c) a geotechnical and hydrogeological section, which shall include:
  - (i) scope of any additional site investigations that were conducted (if required);
  - (ii) preliminary design for pile foundations and raft foundations; and
  - (iii) preliminary design for excavation, shoring and dewatering;
- (d) a civil section, which shall include:
  - (i) preliminary site layout description;
  - (ii) preliminary design for roads and parking area;
  - (iii) preliminary land drainage design;
  - (iv) preliminary underground utility design (water, wastewater and natural gas);
  - (v) preliminary yard piping design including pipelines proposed to be installed by trenchless techniques;
  - (vi) preliminary landscaping design; and
  - (vii) description of the temporary works including temporary utilities and site offices;
- (e) a structural section, which shall include:
  - (i) preliminary design load analysis;
  - (ii) preliminary design for substructures;
  - (iii) preliminary design for superstructures; and
  - (iv) preliminary design for water-retaining structures;
- (f) a process mechanical section, which shall include:
  - (i) overview of process design concept;
  - (ii) preliminary design for all major processes including equipment sizing;
  - (iii) preliminary hydraulic analysis for the Infrastructure; and
  - (iv) listing of any long-lead equipment;

- (g) a building mechanical section, which shall include:
  - (i) preliminary sizing for major equipment;
  - (ii) preliminary design for HVAC control;
  - (iii) preliminary design for building fire protection; and
  - (iv) preliminary design for domestic plumbing;
- (h) an electrical section, which shall include:
  - (i) preliminary equipment sizing;
  - (ii) preliminary electrical room sizing;
  - (iii) preliminary design for standby power generation facility;
  - (iv) preliminary design for site lighting; and
  - (v) preliminary design for grounding and lightning protection system;
- (i) an automation section, which shall include:
  - (i) preliminary automation requirements for major equipment including datasheet with level of automation and mode of control;
  - (ii) preliminary design for ancillary systems; and
  - (iii) preliminary design for Main Control Suite; and
- (j) a section for other topics, which shall include:
  - (i) preliminary design for safety requirements;
  - (ii) preliminary design for operations and maintenance requirements;
  - (iii) preliminary design for reuse of existing infrastructure and decommissioning; and
  - (iv) any other introductory and explanatory text to provide context and clarity to the document (e.g. brief explanation for approach to design and design criteria for each discipline).

## **C.2 Drawings**

C.2.1 The engineering design drawings for the 30% Design Submittal shall include the following:

- (a) a general section, which shall include:
  - (i) a cover sheet;

- (ii) drawing index in both a drawing layout format and a sortable and searchable spreadsheet file, in accordance with Schedule 18 – Technical Requirements – Appendix 18C – Drafting Requirements; and
  - (iii) legends, abbreviations, general notes for each discipline;
- (b) an architectural section, which shall include:
  - (i) preliminary 3D renderings of building exteriors;
  - (ii) preliminary floor plans; and
  - (iii) preliminary building elevations;
- (c) a geotechnical and hydrogeological section, which shall include:
  - (i) preliminary piling plans c/w pile schedules;
  - (ii) preliminary excavation and shoring plans;
- (d) a civil section, which shall include:
  - (i) preliminary site layout plan including areas for future expansion and decommissioning areas;
  - (ii) preliminary site grading plans;
  - (iii) preliminary roadway and parking lot plans;
  - (iv) preliminary utility piping plans;
  - (v) preliminary overall yard piping plan (major pipes);
  - (vi) preliminary landscaping plans; and
  - (vii) preliminary temporary works plans (staging areas, site offices and temporary utilities);
- (e) a structural section, which shall include:
  - (i) preliminary foundation plans;
  - (ii) preliminary floor plans; and
  - (iii) preliminary roof plans;
- (f) a process mechanical section, which shall include:
  - (i) preliminary process flow diagram (PFD);
  - (ii) preliminary hydraulic profile;
  - (iii) preliminary piping and instrumentation diagrams (P&IDs);

- (iv) preliminary equipment and piping plans;
- (v) preliminary equipment and piping sections; and
- (vi) preliminary equipment and piping details;
- (g) a building mechanical section, which shall include:
  - (i) preliminary heating flow diagram;
  - (ii) preliminary ventilation flow diagram;
  - (iii) preliminary plumbing flow diagram;
  - (iv) preliminary P&IDs;
  - (v) preliminary equipment and piping plans;
  - (vi) preliminary equipment and piping sections; and
  - (vii) preliminary equipment and piping details;

C.2.1.2 an electrical section, which shall include:

- (a) preliminary area classification drawings;
- (b) preliminary electrical distribution plan;
- (c) preliminary grounding and lightning protection system layout;
- (d) preliminary overall single line diagram; and
- (e) preliminary site lighting plan; and

C.2.1.3 an automation section, which shall include:

- (a) preliminary network architecture, including fieldbus network; and
- (b) preliminary automation floor plans.

### **C.3 Supporting Technical Submissions**

C.3.1 Design Builder shall provide the following supporting technical submissions for the 30% Design Submittal:

- (a) technical reports, which shall include:
  - (i) HIRA Report; and
  - (ii) HAZOP methodology report;
- (b) technical management plans, which shall include:

- (i) Excavation, Shoring and Dewatering Plan;
- (ii) Land Drainage Management Plan; and
- (iii) Subsurface Investigation Plan;
- (c) special studies and models, which shall include:
  - (i) draft corrosion study report;
  - (ii) draft CFD model and report; and
  - (iii) draft power study model and report; and
- (d) other submissions, which shall include:
  - (i) Asset Criticality Team; and
  - (ii) preliminary master equipment schedule for process mechanical, building mechanical, electrical and automation.

## **SECTION D. 60% DESIGN SUBMITTAL**

### **D.1 Design Report**

D.1.1 The design report for the 60% Design Submittal shall include the following:

- (a) a general section, which shall include:
  - (i) project background and description;
  - (ii) updated list Permits, Licenses and Approvals;
  - (iii) updated summary of wastewater flows and other design criteria; and
  - (iv) updated description of hazardous locations;
- (b) an architectural section, which shall include:
  - (i) schedule of space requirements for buildings and rooms;
  - (ii) updated overview of building design including overall look and aesthetics;
  - (iii) updated list of proposed building materials;
  - (iv) updated building envelope analysis;
  - (v) access/egress design;
  - (vi) transparency and fenestration design;
  - (vii) interior and exterior lighting design;
  - (viii) acoustics and noise control design; and

- (ix) vibration control design;
- (c) a geotechnical and hydrogeological section, which shall include:
  - (i) updated design for pile foundations and raft foundations;
  - (ii) pile installation methodology including wave equation analysis;
  - (iii) vibration controls to protect nearby structures; and
  - (iv) updated design for excavation, shoring and dewatering;
- (d) a civil section, which shall include:
  - (i) final site layout description including site security (fencing);
  - (ii) final design for roads and parking area;
  - (iii) final land drainage design;
  - (iv) updated underground utility design;
  - (v) updated yard piping design;
  - (vi) trenchless pipeline installation methodology;
  - (vii) updated landscaping design; and
  - (viii) final description of the temporary works including temporary utilities and site offices;
- (e) a structural section, which shall include:
  - (i) updated design load analysis;
  - (ii) updated design for substructures;
  - (iii) updated design for superstructures;
  - (iv) updated design for water-retaining structures;
  - (v) schedule of materials for construction; and
  - (vi) design for lifting devices;
- (f) a process mechanical section, which shall include:
  - (i) detailed description of process design concept for each major unit process;
  - (ii) updated summary of process design calculations;
  - (iii) updated design for all major processes including equipment sizing; and



- (iv) updated hydraulic analysis for the infrastructure;
- (g) a building mechanical section, which shall include:
  - (i) updated sizing for major equipment;
  - (ii) updated design for HVAC control;
  - (iii) updated design for building fire protection;
  - (iv) updated design for domestic plumbing;
  - (v) natural gas system; and
  - (vi) HVAC automation requirements;
- (h) an electrical section, which shall include:
  - (i) updated equipment sizing;
  - (ii) updated electrical room sizing;
  - (iii) updated design for standby power generation facility;
  - (iv) updated design for site lighting;
  - (v) updated design for grounding and lightning protection system; and
  - (vi) standby systems including UPS sizing;
- (i) an automation section, which shall include:
  - (i) updated automation requirements for major equipment including datasheet with level of automation and mode of control;
  - (ii) updated design for ancillary systems;
  - (iii) updated design for Main Control Suite;
  - (iv) alarm management;
  - (v) networking design;
  - (vi) building security design;
  - (vii) description of HMI system including pictorial representation; and
  - (viii) control requirements for HVAC; and
- (j) a section for other requirements, which shall include:
  - (i) updated design for safety requirements;
  - (ii) updated design for operations and maintenance requirements;

- (iii) updated design for reuse of existing infrastructure and decommissioning; and
- (iv) any other introductory and explanatory text to provide context and clarity to the document.

## **D.2 Drawings**

D.2.1 The engineering design drawings for the 60% Design Submittal shall include the following:

- (a) a general section, which shall include:
  - (i) a cover sheet;
  - (ii) drawing index in both a drawing layout format and a sortable and searchable spreadsheet file, in accordance with Schedule 18 – Technical Requirements – Appendix 18C – Drafting Requirements; and
  - (iii) legends, abbreviations, general notes for each discipline;
- (b) an architectural section, which shall include:
  - (i) updated 3D renderings of building exteriors;
  - (ii) updated floor plans;
  - (iii) ceiling plans;
  - (iv) building sections;
  - (v) updated building elevations;
  - (vi) room finish schedule;
  - (vii) door and window schedules;
  - (viii) stair and guardrail plans; and
  - (ix) architectural details;
- (c) a geotechnical and hydrogeological section, which shall include:
  - (i) updated piling plans c/w pile schedules;
  - (ii) updated excavation and shoring plans;
- (d) a civil section, which shall include:
  - (i) updated site layout plan including areas for future expansion and decommissioning areas;
  - (ii) updated site grading plans;

- (iii) updated roadway and parking lot plans;
  - (iv) updated utility piping plans;
  - (v) updated overall yard piping plan;
  - (vi) detailed yard piping plans c/w pipe schedules;
  - (vii) updated landscaping plans;
  - (viii) decommissioning plans; and
  - (ix) final temporary works plans (staging areas, site offices and temporary utilities);
- (e) a structural section, which shall include:
- (i) updated foundation plans c/w details and schedules;
  - (ii) updated floor plans c/w details and schedules;
  - (iii) updated roof plans c/w details and schedules;
  - (iv) updated structural section c/w details; and
  - (v) structural details;
- (f) a process mechanical section, which shall include:
- (i) updated PFD;
  - (ii) updated hydraulic profile;
  - (iii) updated P&IDs;
  - (iv) updated equipment and piping plans;
  - (v) updated equipment and piping sections; and
  - (vi) updated equipment and piping details;
- (g) a building mechanical section, which shall include:
- (i) updated heating flow diagram;
  - (ii) updated ventilation flow diagram;
  - (iii) updated plumbing flow diagram;
  - (iv) updated P&IDs;
  - (v) updated equipment and piping plans;
  - (vi) updated equipment and piping sections; and

- (vii) updated equipment and piping details;
- (h) an electrical section, which shall include:
  - (i) updated area classification drawings;
  - (ii) updated electrical distribution plan;
  - (iii) updated grounding and lightning protection system layout;
  - (iv) updated overall single line diagram;
  - (v) updated site lighting plan;
  - (vi) duct bank routing site plan and details;
  - (vii) MCC single line diagrams;
  - (viii) MCC elevation and panel schedules;
  - (ix) electrical room layouts;
  - (x) power and lighting plans c/w luminaire schedules; and
  - (xi) cable tray plans and sections; and
- (i) an automation section, which shall include:
  - (i) updated network architecture, including fieldbus network;
  - (ii) site plan;
  - (iii) updated automation floor plans; and
  - (iv) 3D layout of Main Control Room.

### **D.3 Supporting Technical Submissions**

D.3.1 Design Builder shall provide the following supporting technical submissions for the 60% Design Submittal:

- (a) technical reports, which shall include:
  - (i) Geotechnical and Hydrogeological Design Report;
  - (ii) HIRA Report; and
  - (iii) HAZOP workshop #1 report;
- (b) technical management plans, which shall include:
  - (i) Equipment Lifting and Replacement Plan;
  - (ii) Noise Control Plan; and

- (iii) Tie-Ins Plan;
- (c) special studies and models, which shall include:
  - (i) draft hydraulic model and report for fire protection study;
  - (ii) final corrosion study report;
  - (iii) final CFD model and report;
  - (iv) draft physical model report;
  - (v) qualifications of independent firm performing odour sampling for air dispersion model;
  - (vi) qualifications of independent firm performing odour panel testing for air dispersion model;
  - (vii) final power study model and report;
  - (viii) draft ground model and report; and
  - (ix) draft lighting model and report; and
- (d) other submissions, which shall include:
  - (i) updated Technical Specifications (blacklined), which must include:
    - (A) detailed process mechanical valve schedule;
    - (B) detailed process mechanical pipe schedule; and
    - (C) detailed building mechanical valve schedule;
  - (ii) updated master equipment schedule;
  - (iii) preliminary process control narratives;
  - (iv) preliminary PLC I/O lists; and
  - (v) preliminary functional requirements specifications.

## **SECTION E. 90% DESIGN SUBMITTAL**

### **E.1 Design Report**

E.1.1 The design report for the 90% Design Submittal shall include the following:

- (a) a general section, which shall include:
  - (i) project background and description;
  - (ii) final list of Permits, Licenses and Approvals;
  - (iii) final summary of wastewater flows and other design criteria; and

- (iv) final description of hazardous locations;
- (b) an architectural section, which shall include:
  - (i) final schedule of space requirements for buildings and rooms;
  - (ii) final overview of building design including overall look and aesthetics;
  - (iii) final list of proposed building materials;
  - (iv) final building envelope analysis;
  - (v) final access/egress design;
  - (vi) final transparency and fenestration design;
  - (vii) final interior and exterior lighting design;
  - (viii) final acoustics and noise control design; and
  - (ix) final vibration control design;
- (c) a geotechnical and hydrogeological section, which shall include:
  - (i) final design for pile foundations and raft foundations;
  - (ii) final pile installation methodology including wave equation analysis;
  - (iii) final vibration controls to protect nearby structures; and
  - (iv) final design for excavation, shoring and dewatering;
- (d) a civil section, which shall include:
  - (i) final site layout description including site security (fencing);
  - (ii) final design for roads and parking area;
  - (iii) final land drainage design;
  - (iv) final underground utility design;
  - (v) final yard piping design;
  - (vi) final trenchless pipeline installation methodology;
  - (vii) final landscaping design; and
  - (viii) final description of the temporary works including temporary utilities and site offices;
- (e) a structural section, which shall include:
  - (i) final design load analysis;

- (ii) final design for substructures;
  - (iii) final design for superstructures;
  - (iv) final design for water-retaining structures;
  - (v) final schedule of materials for construction; and
  - (vi) final design for lifting devices;
- (f) a process mechanical section, which shall include:
- (i) detailed description of process design concept for each major unit process;
  - (ii) final process design calculations;
  - (iii) final design for all major processes including equipment sizing; and
  - (iv) final hydraulic analysis for the infrastructure;
- (g) a building mechanical section, which shall include:
- (i) final sizing for major equipment;
  - (ii) final design for HVAC control;
  - (iii) final design for building fire protection;
  - (iv) final design for domestic plumbing;
  - (v) final natural gas system; and
  - (vi) final HVAC automation requirements;
- (h) an electrical section, which shall include:
- (i) final equipment sizing;
  - (ii) final electrical room sizing;
  - (iii) final design for standby power generation facility;
  - (iv) final design for site lighting;
  - (v) final design for grounding and lightning protection system; and
  - (vi) final standby systems including UPS sizing;
- (i) an automation section, which shall include:
- (i) final automation requirements for major equipment including datasheet with level of automation and mode of control;
  - (ii) final design for ancillary systems;

- (iii) final design for Main Control Suite;
- (iv) final alarm management;
- (v) final networking design;
- (vi) final building security design;
- (vii) description of HMI system including pictorial representation; and
- (viii) final control requirements for HVAC; and
- (j) a section for other requirements, which shall include:
  - (i) final design for safety requirements;
  - (ii) final design for operations and maintenance requirements;
  - (iii) final design for reuse of existing infrastructure and decommissioning; and
  - (iv) any other introductory and explanatory text to provide context and clarity to the document.

## **E.2 Drawings**

E.2.1 The engineering design drawings for the 90% Design Submittal shall include the following:

- (a) a general section, which shall include:
  - (i) a cover sheet;
  - (ii) drawing index in both a drawing layout format and a sortable and searchable spreadsheet file, in accordance with Schedule 18 – Technical Requirements – Appendix 18C – Drafting Requirements; and
  - (iii) legends, abbreviations, general notes for each discipline;
- (b) an architectural section, which shall include:
  - (i) final 3D renderings of building exteriors;
  - (ii) final floor plans;
  - (iii) final ceiling plans;
  - (iv) final building sections;
  - (v) final building elevations;
  - (vi) final room finish schedule;



- (vii) final door and window schedules;
  - (viii) final stair and guardrail plans; and
  - (ix) final architectural details;
- (c) a geotechnical and hydrogeological section, which shall include:
- (i) final piling plans c/w pile schedules;
  - (ii) final excavation and shoring plans;
- (d) a civil section, which shall include:
- (i) final site layout plan including areas for future expansion and decommissioning areas;
  - (ii) final site grading plans;
  - (iii) final roadway and parking lot plans;
  - (iv) final utility piping plans;
  - (v) final overall yard piping plan;
  - (vi) final detailed yard piping plans with pipe schedules;
  - (vii) final landscaping plans;
  - (viii) final decommissioning plans; and
  - (ix) final temporary works plans (staging areas, site offices and temporary utilities);
- (e) a structural section, which shall include:
- (i) final foundation plans c/w details and schedules;
  - (ii) final floor plans c/w details and schedules;
  - (iii) final roof plans c/w details and schedules;
  - (iv) final structural section c/w details; and
  - (v) final structural details;
- (f) a process mechanical section, which shall include:
- (i) final PFD;
  - (ii) final hydraulic profile;
  - (iii) final P&IDs;
  - (iv) final equipment and piping plans;

- (v) final equipment and piping sections; and
- (vi) final equipment and piping details;
- (g) a building mechanical section, which shall include:
  - (i) final heating flow diagram;
  - (ii) final ventilation flow diagram;
  - (iii) final plumbing flow diagram;
  - (iv) final P&IDs;
  - (v) final equipment and piping plans;
  - (vi) final equipment and piping sections; and
  - (vii) final equipment and piping details;
- (h) an electrical section, which shall include:
  - (i) final area classification drawings;
  - (ii) final electrical distribution plan;
  - (iii) updated grounding and lightning protection system layout;
  - (iv) final overall single line diagram;
  - (v) final site lighting plan;
  - (vi) final duct bank routing site plan and details;
  - (vii) final MCC single line diagrams;
  - (viii) final MCC elevation and panel schedules;
  - (ix) final electrical room layouts;
  - (x) final power and lighting plans c/w luminaire schedules; and
  - (xi) final cable tray plans and sections; and
- (i) an automation section, which shall include:
  - (i) final network architecture, including fieldbus network;
  - (ii) final site plan;
  - (iii) final automation floor plans;
  - (iv) final 3D layout of Main Control Room; and
  - (v) final instrument loop diagrams.

### **E.3 Supporting Technical Submissions**

E.3.1 Design Builder shall provide the following supporting technical submissions for the 90% Design Submittal:

- (a) technical reports, which shall include:
  - (i) HIRA Report;
- (b) technical management plans, which shall include:
  - (i) Alarm Management Plan;
- (c) special studies and models, which shall include:
  - (i) final hydraulic model and report for fire protection study;
  - (ii) final physical model report and video;
  - (iii) air dispersion model and dispersion modeling results;
  - (iv) final ground model and report; and
  - (v) final lighting model and report; and
- (d) other submissions, which shall include:
  - (i) final Technical Specifications (blacklined);
  - (ii) final master equipment schedule;
  - (iii) final process control narratives;
  - (iv) final PLC I/O lists; and
  - (v) final functional requirements specifications.

## **SECTION F. IFC SUBMITTAL**

### **F.1 Design Report**

F.1.1 The design report for the IFC Design Submittal shall include the following:

- (a) all disciplines, which shall include:
  - (i) all information from the 90% Design Submittal; and
  - (ii) revisions from the 90% Design Submittal.

### **F.2 Drawings**

F.2.1 The engineering design drawings for the IFC Design Submittal shall include the following:

- (a) all disciplines, which shall include:
  - (i) all drawings from the 90% Design Submittal;
  - (ii) revisions from the 90% Design Submittal.

### **F.3 Supporting Technical Submissions**

F.3.1 Design Builder shall provide the following supporting technical submissions for the IFC Design Submittal:

- (a) all supporting technical submissions, which shall include:
  - (i) all information from the 90% Design Submittal;
  - (ii) revisions from the 90% Design Submittal; and
  - (iii) HAZOP workshop #2 report.

## **SECTION G. AS-BUILT SUBMITTAL**

### **G.1 As-Built Construction Report**

G.1.1 A written report and appendices containing all ancillary information related to the construction of the Infrastructure, having sufficient detail to highlight how construction was undertaken and shall generally include the following:

- (a) all disciplines, which shall include:
  - (i) general overview of the Infrastructure;
  - (ii) decommissioning;
  - (iii) temporary works;
  - (iv) environmental considerations;
  - (v) underground work including utilities;
  - (vi) each asset component, providing a description, method of work, inspection and major challenges;
  - (vii) the appendices shall include:
    - (A) design reports from the Design Submittals;
    - (B) field documents (originals); and
    - (C) commissioning records including all certificates;
  - (viii) any other items as reasonably requested by the City; and
  - (ix) submit 3 hard copies and in electronic format unless stated otherwise.

## **G.2 As-Built Construction Drawings and Record Drawings**

G.2.1 The drawings for the As-Built Submittal shall include the following:

- (a) all disciplines, which shall include:
  - (i) a drawing index in both a drawing layout format and a sortable and searchable spreadsheet file, in accordance with Schedule 18 – Technical Requirements – Appendix 18C – Drafting Requirements;
  - (ii) a native digital copy of all three-dimensional models developed for the design and construction;
  - (iii) 3 sets of A1 size drawings;
  - (iv) 2 sets of 11” x 17” drawings;
  - (v) all sets of drawings, required by any Governmental Authority, but not less than 2 sets of 11” x 17” drawings;
  - (vi) electronic AutoCAD and text searchable PDF design drawings files organized by area and then by discipline; and
  - (vii) any other submittals to produce accurate records of the actual construction.

G.2.2 Design Builder shall adhere to the following hardcopy organization requirements:

- (a) provide a separate binder for each Area Code;
- (b) within each binder, provide two levels of dividers between drawings as follows:
  - (i) the first level of dividers shall divide the drawings by discipline. Label binder dividers for each discipline in the format “D – DD” where D is the discipline code and DD is the discipline name; and
  - (ii) the second level of dividers shall divide the drawings by document type. Label binder dividers for each document type in the format “TTT”, where TTT is the document type code in accordance with the Document Numbering Standard found in Schedule 18 – Technical Requirements – Appendix 18D – City Standards;
- (c) organize drawings within each divider by drawing number; and
- (d) for 11” x 17” drawings, provide drawings in a 11” x 17” binder.

G.2.3 Design Builder shall adhere to the following electronic copy organization requirements:

- (a) provide drawings on a USB flash drive, organized according to the following requirements:

- (i) provide folders for each area and subfolders for each discipline;
- (ii) provide text-searchable PDF format drawings organized in the corresponding folder, with each drawing as a separate file; and
- (iii) for each subfolder, provide a PDF file that contains all drawings in that subfolder.

### **G.3 As-Built Construction Specifications**

G.3.1 The As-Built Construction Specifications for the As-Built Submittal in both native and PDF format and shall include the following:

- (a) manufacturer trade name and catalogue number of each product installed, particularly optional items with reference to the shop drawing allowing such items;
- (b) substitutions made with reference to reference to the RFS allowing the substitution; and
- (c) changes made by Change Orders with explicit reference to the applicable Change Order.

### **G.4 As-Built Project Schedule**

G.4.1 The As-Built Project Schedule for the As-Built Submittal shall include the following:

- (a) all activities identified in the Project Schedule, including all added activities and Change Orders up to and including the Final Completion Date;
- (b) the actual dates for all Milestones;
- (c) actual activity start dates, end dates, duration and man-hours;
- (d) the actual critical path up to Substantial Completion Date; and
- (e) submitted in native format.

### **G.5 Supporting Technical Submissions**

G.5.1 Design Builder shall provide the following supporting technical submissions for the Final As-Built Submittal:

- (a) all supporting technical submissions, which shall include:
  - (i) updated Geotechnical and Hydrogeological Design Report;
  - (ii) Phase 2 O&M Information;
  - (iii) Phase 2 Asset Registry; and
  - (iv) all design calculations and supporting documentation prepared during design of the Infrastructure, sorted and organized in a logical manner.