

# Quality Control Manual

ISO 9001 Compliant

Manual No. Uncontrolled Copy

Issued to: \_\_\_\_\_

## **0.00. Introduction**

Wildstone is a multi-disciplined group of companies that provides construction & engineering services throughout Western Canada.

The Wildstone Company was founded in 1991 and initially provided resource management and engineering services to industrial developments. Since this time, the company has evolved into a full service Prime Contracting firm providing a wide variety of construction services to industrial, commercial, institutional and multi-residential projects.

We possess the unique in-house ability to self-perform structural, concrete, civil, site service piping and engineering services. As well, we have the capability to approach projects either on a design-build, EPC, stand alone engineering, or stand alone construction / installation basis.

## 0.01. Quality Policy

Wildstone's principal objective is to provide our clients with quality, innovative and cost effective construction and engineering solutions for their projects.

Wildstone shall ensure that all items either constructed by Wildstone or that of its subcontractors and suppliers shall meet the project quality requirements.

Wildstone has established procedures based on ISO 9001. The Wildstone management team is responsible for the quality of the work performed by Wildstone's own forces, its subcontractors and suppliers. The successful implementation of the quality control policies and procedures lies in the capabilities and experience of the Management Team together with the supplies workforce working together with Team Members dedicated to achieving a common goal – To produce quality lasting products.

It is the policy of Wildstone that all components of construction shall be performed in accordance with the requirements of the Owner's Contract Specifications, the approved drawings and the implementation of the Quality Plan.

Wildstone; objectives can be summarized to the following:

- To complete the project right the first time, on schedule and ensure quality workmanship at all stages of the project through the utilization of a Quality Control Program.
- To provide our clients with quality products and services that conform to the applicable contract requirements, rules and regulations, whether supplied directly, through subcontractors or the Owner.

**0.02 Record of Distribution**

Copy No.	Issued To	Revisions No.				
		00	01	02	03	04
1	President	x	x	X		
2	Construction Manager	X	x	X		
3	Piping Manager	x	x	X		
4	Engineering Manager	X	x	X		
5	Quality Control Manager	x	x	X		
6	Project Managers	x	x	X		
7	Superintendents	x	x	X		
8						
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**0.03. Table of Revisions**

Section	Sub section	Page No.	Revision No./Revision Date				
			00	01	02	03	04
0.0			Aug 00		July 07		
1.0			Aug 00		July 07		
2.0			Aug 00		July 07		
3.0			Aug 00		July 07		
4.0			Aug 00		July 07		
5.0			Aug 00		July 07		
6.0			Aug 00		July 07		
7.0			Aug 00		July 07		
8.0	01 & 02	12	Aug 00		July 07		
9.0			Aug 00		July 07		
10.0			Aug 00		July 07		
11.0			Aug 00		July 07		
12.0			Aug 00		July 07		
13.0			Aug 00		July 07		
14.0			Aug 00		July 07		
15.0	01 & 02	23	Aug 00		July 07		
16.0			Aug 00		July 07		
17.0			Aug 00		July 07		
18.0			Aug 00		July 07		
19.0	00	28	Aug 00		July 07		
20.0	00	28	Aug 00		July 07		
21.0			Aug 00		July 07		
22.0			Aug 00		July 07		
Appendix A			Aug 00		July 07		
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## 1.00. General

### 1.01. Project Identifier

Project Description

Wildstone Construction & Engineering Ltd. Quality Personnel

President .....	Jim Morrison, P.Eng
General Manager.....	Scot Brydon
Engineering Manager .....	Chris Harp, P.Eng
Construction Manager .....	Brad Walter
Superintendents .....	(as assigned)
Safety/Quality Control Manager .....	Mark Melissen
Quality Coordinator/Inspectors .....	(as assigned)
Quality Control – Subcontractors.....	(as selected)
Quality Control – Inspection and Testing Agency.....	(as selected)

## 2.00. Definitions

- |      |                         |                                                                                                                                                                           |
|------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.01 | Quality:                | Conformance to requirements                                                                                                                                               |
| 2.02 | Quality Assurance:      | All planned and systematic actions necessary to Provide adequate confidence that a product or Service will satisfy given requirements for quality.                        |
| 2.03 | Quality Policy:         | The overall quality and direction of an organization in regards to quality as formally expressed by top Management.                                                       |
| 2.04 | Quality Management:     | The aspect of the overall management functions that determines and implements the quality policy.                                                                         |
| 2.05 | Quality Control:        | The measurement, documentation, and verification of the physical characteristics of a material component, system, product, or service to meet predetermined requirements. |
| 2.06 | Non-conformance Report: | A report issued by Owner's representative or Contractor that an identified portion of the Work does not comply with or meets the requirements of the Contract Documents   |

### **3.00. Copyright Note**

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## **4.00. Management Responsibility**

Wildstone Management shall provide administrative support and technical direction to the QC activities. The management performs audit and review to ensure that the Quality Manual is effectively implemented. For each project, depending upon the size and requirements, the Management shall designate personnel, which may comprise of the different positions listed in subsections of 4.02 of this manual.

### **4.01. Organization**

Typical Project organizational chart is in Appendix A, which shows the line of responsibility and authority. The personnel assigned for the project shall be on the Organization Chart.

### **4.02. Responsibility and Authority**

Wildstone goals can only be achieved if the client's requirements and expectations are continually met. Construction requires teamwork of many individuals both directly and indirectly on the project. Each individual is challenged to be alert to opportunities to improve the quality of products and services.

#### **4.02.1 President (Pres.)**

The president's responsibilities are:

- (project specifics)

#### **4.02.2 Vice President (V.P.)**

The Vice President's responsibilities are:

- (project specifics)

#### **4.02.3 Project Manager (P.M.)**

The Project Manager's responsibilities are:

- Preparation, review, revision and approval of the quality control policies and procedures.

- Providing administrative support and technical direction to the quality control activities.
- Implementation of Quality Control Manual
- Overall construction coordination of the project.
- Performing audits and management reviews to ensure that the Quality Manual is successfully implemented.
- Evaluating the effectiveness of the Quality Manual in controlling the quality of the product or service provided and periodic reporting on the Quality Manual performance to the Project Sponsor.
- Implement the Four-Point Inspection Plan: Submittals, Initial Inspections, Follow-up Inspections and Final Inspections.

#### 4.02.4 Project Engineer (P.E.)

The Project Engineer's responsibilities are:

- Reviewing construction drawings. Have available on site plans and specifications pertinent to the work.
- Assist in implementation and maintenance of the Quality Manual.
- Preparation and coordination of project schedule.
- Schedule inspections and testing services.
- Verification of design change requirements.
- Maintain copy of all quality documentation on site.
- Ensuring that the Owner shall have access to all works on site and off site related to the project for the purposes of quality control inspection and testing.
- Ensuring the Field Superintendent, Sub-trades and suppliers are aware of the quality control requirements.

#### 4.02.5 Project Superintendents

The Project Superintendents shall report directly to the Project Manager.

The Project Superintendent's responsibilities are:

- Reviewing construction drawings.
- Coordination of all labour, materials and equipment to be used in the project.
- Informing labour about quality control requirements of the activity.
- Verifying that all equipment is properly maintained and is in good working condition.
- Be familiar with project requirements prior to the start on any operation.

#### 4.02.6 Quality Control Manager (QCM)

The QCM shall report directly to the Project Manager.

The Quality Control Manager's responsibilities are:

- Assist in implementation of the Quality Manual
- Implement the Four-Point Inspection Plan: Submittals, Initial Inspections, Follow-up Inspections and Final Inspections.
- Review documentation from site inspection for project quality compliance.
- Conduct site visits to monitor conformance with the quality control system.
- Conduct random visits to the sub-contractor's facilities.
- Review quality documents provided by the sub-contractors.
- Prepare monthly summary reports on testing and inspection results.
- Initiate a non-conformance process when products do not meet the required specifications.
- Monitoring quality control testing and procedures for conformance to the appropriate specified Codes and Standards.
- Collecting relevant quality data.
- Consulting with field technicians regarding materials and testing issues.

#### 4.02.7 Quality Coordinator

The Quality Coordinator's responsibilities are:

- Submitting a Quality Control Checklist to the PE on as needed for any work activity that requires inspection.
- Ensuring that the items in the checklist are properly addressed prior to the start of the work activity.
- Reporting detailed quantities of material installed and location of the installation.
- Authorized to implement a "stop work" order when materials, products or processes are not within the project specifications.

#### 4.02.8 Quality Control Testing Agency – Subcontractors

The Gisborne Group shall appoint an independent testing agency for the project.

*Qualification*

The Gisborne Group shall appoint a Testing Agency that shall meet the requirements in the Contract document and is qualified for the type of testing required for the project.

*Personnel*

The Testing Agency shall submit proof of qualifications and relevant experience of the personnel directly assigned for the project.

The following may be required for the project and shall have respective responsibilities but not limited to the following:

##### 4.02.8a Project Engineer (QC Testing Agency)

The Project Engineer responsibilities are:

- Reporting to the Contractor's QCM when required.
- Consulting with the project QCM on suspected deviated products.
- Providing technical support to the Quality Control Testing Agency staff.
- Providing support regarding RAR's and NCR's

#### 4.02.8b QC Technicians (QC Testing Agency)

The QC Technician responsibilities are:

- Providing Quality Control testing services for the Contractor in accordance with Testing Standard specified in the Contract Document.
- Providing the Contractor with test results.
- Notifying the Contractor of any failures.
- Recommending work stoppage when materials do not meet specifications or project requirements.
- Issuing RAR to the Contractor, if required.
- Re-testing any failing areas and informing the Contractor of the test results.

#### 4.02.9 Quality Assurance Agency

The Owner or its representative shall be responsible for Quality Assurance (QA) testing.

Except for random quality assurance tests, sampling and testing shall be coordinated with the Quality Control Testing Agency to ensure tests were performed on the same materials taken at the same time and location.

### **4.04. Resources**

Wildstone is comprised of experienced management and field staff with equipment, manpower and facilities to perform the particular project. A qualified Project Manager, Project Engineer, Superintendent shall be assigned, if and when required, for the project duration. Their respective responsibilities are described in subsections 4.02 of this manual.

Attached in Appendix A is the project organizational chart showing typical key personnel for a project?

### **4.05. Management representative**

The Project Manager is designated as the Management Representative for Wildstone; the responsibilities are listed in subsections of 4.02.

**4.06. Management review**

Wildstone shall conduct a review of the Quality Manual at the end of project for suitability and effectiveness in regards to its quality policy and objectives. The results of the review shall be documented and maintained.

## **5.00. Quality System**

### **5.01. General**

The quality manual shall be implemented to produce a product that conforms to the project requirements and enables Wildstone to create and retain satisfied customers. With the effective implementation, the overall performance efficiency will be improved, thereby minimizing unproductive time.

### **5.02. Quality system procedures**

Each activity for the project shall be monitored and inspected for quality. A Checklist is prepared that addresses the various quality requirements for each material during the stages of production, delivery and installation. The documentation of work activity and product quality shall serve as a basis for evaluation and acceptance of the project.

### **5.03. Quality planning**

Wildstone shall do the following:

- Plan for pre work meetings to address quality procedures and other requirements pertaining to achieving quality products.
- Use of the prepared checklist shall serve as a tool to check items for quality requirements. The checklist shall serve as a quality document when “signed off” by the QC Manager or QC Inspector.
- Use only approved plan; quality procedures; equipment for quality testing.
- Ensure that the product quality shall be consistent with other quality requirements in the project during the stages of production, delivery, installation and testing.
- Review undertaken to ensure compatibility between contract documents, construction drawings and other project specifications.
- Assess and update as necessary the existing quality control procedures, inspection and testing techniques.
- Review the contract documents and identify items needing verification.
- Clarify with the Owner and its Sub-contractors items in which the acceptance requirements were not adequately specified in the Contract documents.
- Prepare quality records and keep on file for use. Any new records needed to satisfy the contract requirements should be identified and prepared.

## **6.0 Contract Review**

### **6.01. General**

Wildstone shall coordinate with the other team members in the project and shall address necessary quality requirements or concerns for the project prior to any activity.

### **6.02. Review**

Wildstone team members shall conduct review of contracts and tender. The member of the project team or its representative shall participate in discussions regarding the project and shall satisfy every condition affecting the project. This may include labour supply conditions site conditions, materials to be provided by the Owner, project requirements, design, materials, construction procedures, environmental issues, project costs, safety issues, start and completion dates and other related items that may affect the project.

### **6.03. Amendment to a contract**

Any revision must be in writing by letter and shall be properly executed and signed. After the review of the revision, all team members shall be able to assure compliance with the contract specifications.

### **6.04 Records**

- .1 The revision shall become a part of the quality records and the copy shall be maintained in the contractor's project office files for reference.
- .2 Distribution log shall be maintained current and shall have the information about the distribution location and the date of distribution.
- .3 the following shall receive copies of any revised documents: The Owner, Subcontractors as directed by the Project Manager.

## **7.00. Design Control**

### **7.01 General**

Wildstone shall coordinate with the other team members on the project in regards to temporary construction design requirements for falseworks, formwork and shoring. The following shall be coordinated:

- Temporary construction design documents meets the appropriate WCB requirements.
- Sign off of necessary documents by the P.E.
- Inspection and checking of falseworks, formwork and shoring as required.
- Prepare inspection and checklist forms.

## **8.00. Document and Control Data**

### **8.01. General**

The General Manager shall review the documents/products and shall approve them for submittal to the Owner for review and acceptance.

### **8.02. Document and data approval issue**

- .1 Wildstone shall ensure that approved revised documents or Drawings shall be distributed to all parties who have copies preceded by the new revised document or drawings.
- .2 Distribution log shall be maintained current and have the information about the distribution location and the revision date.
- .3 All shop drawings and temporary drawing documents shall have a revision date. Project drawings shall be identified "Issued for Construction."
- .4 All project drawings issued for construction shall be stamped "Received." All project drawings that are obsolete shall be retained and stamped "Obsolete" and held in the job file.

### **8.03. Document and data changes**

- .1 Wildstone shall ensure that changes to the original or the existing project documents and data shall be reviewed and approved preferably by the same personnel that conducted the original review or by other specified designated personnel qualified to conduct the review. The nature of the changes shall be described and recorded in the documents.
- .2 Changes in drawings, specifications or requirements shall be identified to alert the users for the changes and when applicable, the reasons for the changes.

## **9.00. Purchasing**

### **9.01. General**

- .1 Wildstone shall ensure products to be purchased and incorporated in the project shall conform to the requirements in the contract Documents.
- .2 Prior to purchasing, the supplier of products shall submit documents Containing necessary information and relevant technical data for review.
- .3 Product intended for purchase shall be verified that it conforms to the Specified requirements.
- .4 Only conforming products shall be incorporated in the project.

### **9.02. Evaluation of subcontractors**

- .1 The subcontractor involved in the project shall be selected on the basis of past performance, ability to conform to the specified requirements and results of competitive tender.
- .2 The QCM shall monitor the work of the subcontractors to verify their conformance to the quality document requirements.
- .3 Wildstone shall advise that subcontractors are included in the Quality Plan and shall comply with the Contract quality requirements.

### **9.03. Purchasing data**

- .1 Purchase order to be issued by Wildstone shall be in writing.
- .2 Purchase order shall include the details of the product and governing specifications and date of delivery.

### **9.04. Verification of purchased product**

#### **9.04.1 Contractor verification of product**

- .1 Materials purchased shall be compared to the procurement documents (purchase order, material purchase requisition, material contract, etc.) to verify conformance to purchase requirements. The supplier shall supply documentation with each material shipment. Any damage, deficiency or shortage must be recorded on the incoming materials checklist and reported to the supplier through written communication immediately.

- .2 Wildstone shall require the subcontractor to submit documents regarding the product to be supplied. The documents shall be reviewed and if possible a sample shall be produced to verify that it shall meet quality requirements.

#### 9.04.2 Supplier verification at subcontractor's premises

Wildstone shall verify that the subcontractor has the capacity, manpower, equipment, materials and quality control procedures to provide the services or produce the products that shall meet the quality requirements in the contract documents.

## 10.00. Control of Customer Supplied Product

- Wildstone and its subcontractors shall be responsible for
- Receiving materials that are to be incorporated into the work, as required to do so in compliance with the contract documents. This responsibility shall include physical handling, checking quantities, verifying correctness, storage and completion of the incoming materials inspection report.
- Wildstone and subcontractors shall protect materials or items supplied from damage, deterioration or loss; and they shall remain protected until the time of installation.
- Any such product that is damaged or found to be unsuitable for use shall be identified, recorded and reported as a non-conformance.
- Shop and temporary drawings to be included with the product as required.
- The review of owner supplied product does not include issued for construction drawings.

## 11.00. Product Identification and Traceability

For all structural elements, primary architectural elements and other products where traceability is a specified requirement, Wildstone shall perform the following:

- Products delivered to the project site shall be given an identity and recorded in the logbook. The logbook shall have information about the product name, date delivered, quantity, date inspected, date installed and other relevant information. Products that are installed shall be properly tagged with their identity for storage. The products shall retain its given identity until incorporated into the project. The logbook can be used for item traceability during and after each stage of construction.
- For each shipment of material received, a checklist shall be completed and the material shall be given an inspection status as ACCEPT, REJECT or HOLD.
- Accepted materials shall be clearly marked on the packaging slip and inspection checklist and signed off by Wildstone. A copy of this slip shall be kept in file and recorded in the quality checklist.
- Rejected materials shall be clearly marked or tagged on-site and removed from the site as soon as practical. It is important that the Owner be notified of all rejected materials so that a determination can be made regarding disposal of the rejected materials.
- Hold materials shall be clearly marked and held onsite. The material may be held due to lack of technical data. Once the required information is received, the materials shall be marked as accepted and is ready for use in the project.

## 12.0 Process Control

- Prior to any activity, Wildstone shall ensure that its key personnel and its subcontractor are familiar with pertinent procedures in carrying out certain work activity. Only qualified personnel shall perform installation of products requiring special skills.
- Wildstone shall ensure that suitable equipment be used in handling, storage and installation of the products. Procedures and quality requirements as outlined in the checklists shall be followed.
- QCM shall monitor the activities in handling, storage and installation to ensure that quality of the product is not affected during these stages and that specified quality requirements.

## **13.00 Inspection and Testing**

### **13.01 General**

Wildstone shall employ the following procedures for inspection and testing:

- .1 to ensure that the product meets the requirements specified in the contract.
- .2 shall prepare a checklist to cover the quality requirements during the stages of delivery, storage and installation. These checklists shall serve as guidelines to ensure that a quality product are produced and documented during the stages of production, delivery and installation.
- .3 shall ensure that the frequency of testing as outlined in this manual is followed. The acceptance criteria shall be based upon the Owner requirements or as specified in the drawings or project specifications.
- .4 shall adopt the CAN/CSA or ASTM test methods if there was no test method specified in the contract document.
- .5 shall adopt the CAN/CSA frequency specifications or as specified in this manual and shall recommend that test frequency shall be relaxed if consistent quality product is produced based on the obtained test results.
- .6 shall seek the written approval of the Owner if the frequency of testing is relaxed.
- .7 shall monitor that each activity; the checklist used is maintained on site for review by the QCM.

### **13.02. Inspection And Test Records**

- .1 the QCM shall ensure those checklists, documents and any other records arising from inspection and testing shall be kept throughout the stages of construction.
- .2 the checklist shall show whether the product has passed or failed the inspection and/ or tests.
- .3 the QC personnel who performed the inspection and/or test shall sign the checklist and reports.

### **13.03. Testing Frequency**

The suggested testing frequency are outlined in Appendix D of this manual or can be modified as specified in the Contract Documents.

### **13.04. Control of Inspection, Measurement and Test Equipment**

#### **13.04.1. General**

The QCM shall monitor that measuring devices and test equipment to be used in the project shall be calibrated and documented. Sub-contractors and other parties performing work activities for the project shall submit proof of equipment calibration. Copies of the calibration Certificates shall be kept and maintained on file.

#### **13.04.2 Control procedures**

Wildstone and Sub-contractors and other parties shall ensure:

- That measuring equipment is certified prior to first use, accuracy and precision is recorded on a calibration certificate. The measuring equipment shall be periodically calibrated to ensure that accuracy and precision is maintained.
- That measuring devices or testing equipment shall have a label showing the date of calibration and other relevant information needed in the operation of the testing equipment.
- That the calibration records be maintained at all times.
- That the specified facilities for storage of samples on site is provided.
- Survey equipment is certified for accuracy and precision is recorded on calibration certificate.

### **13.05. Inspection and Test Status**

- .1 the QCM or its staff shall ensure that products or constructed section in the project subjected to inspection shall be identified by marking or by other suitable means to clearly distinguish between the conforming and non-conforming products.
- .2 the identification of inspection and test status shall be maintained through submitted checklist and other documents that may be relevant to the status of the product.

## 14.0. Inspection Meetings

### 14.01 *Pre-Work coordination and submittals*

- .1 PM shall schedule meetings to address project quality requirements.
- .2 The QCM shall monitor that all materials to be used meet the contract requirements or shall monitor that the materials were tested for acceptance prior to delivery and placement.
- .3 The QCM and/or reporting staff shall monitor that products that were accepted at the source should be inspected prior to placement.
- .4 The PE and/or reporting staff shall ensure that for incoming products that are released for immediate use prior to verification shall be clearly identified and its location recorded in order to permit immediate recall and replacement should the need arise.
- .5 The Project Manager shall monitor that the Contractor, Subcontractors and Suppliers clearly understand the quality and the technical requirements for the work.

The following items shall be discussed:

- Contract requirements
- Construction drawings and revisions
- Quality Control Program requirements
- Adequacy of materials and equipment
- Familiarity and proficiency of workforce
- Safety and environmental precautions
- Acceptance criteria
- Other required preparatory steps

**14.02. Initial inspections**

- .1 The QCM shall monitor the initial installation or placement of product.
- .2 upon completion of a representative sample of work, an initial inspection shall be performed. No work shall continue until the test results show that the product conforms to the requirements.
- .3 the following shall also be reviewed:
  - Workmanship in following the quality guidelines.
  - All safe work compliance are met
  - Conformance to drawings, specifications and/or approved submittals.
  - Adequacy of records for inspection and testing performed.
- .4 The QCI shall monitor and inspect all work as required and coordinate with the QC testing agency to ensure that all required testing be accomplished as the work progresses.
- .5 The QCI shall submit the checklist for each work activity. Each Checklist contains the necessary information and comments observed during the product production, delivery and installation stage. The QCI shall submit these Checklists to the PE.
- .6 The frequency of testing shall be as outlined in the quality manual.
- .7 The QCI shall initiate a non-conformance report for any product that does not meet the project requirements.

**14.03. Follow-up inspections**

- .1 Quality problem items shall be addressed by either of the following:
  - An effective resolution
  - An RAR (Remedial Action Report) documenting the deficiency
  - A stop work order until a resolution is established
  - An NCR (Non-Conformance Report) documenting the deficiency
- .2 Follow-up inspection of the work will be conducted to confirm conformance.
- .3 Records shall be maintained detailing:
  - Instructions given to personnel regarding deficiency corrections
  - What action and work was performed

**14.04. Completion inspections**

- .1 Prior to requesting for final inspection, all work and systems shall be inspected by the PE. It shall be verified that all quality procedures have been satisfactorily completed and the associated data and documentation are available.
- .2 Any known deficiency shall be noted and corrected prior to submission to the Owner for acceptance.
- .3 The Owner may conduct final inspection before acceptance to determine that project requirements have been completed and that the product conforms to the contract documents and specifications.

## **15.00. Control of Non-conforming Product**

### **15.01. General**

The following steps shall be employed when dealing with product that fails to meet the quality requirements at the acceptance stage:

- Any non-conforming products that cannot be immediately rectified shall be used to accurately describe the location, level, product name, date installed, type of failure and other descriptions which could be associated for the purpose of clear identification and separation from the conforming product.
- The reporting staff shall issue a Non-conformance report and shall detail the cause of the non-conformance.
- The QCM shall be advised and shall evaluate the severity of the non-conforming product and determine whether its cause is common or special. If the cause was special, the QCM shall direct it to the GM for review.
- The QCM shall notify the source of the non-conforming product at the earliest time and shall request disposition action.

### **15.02. Review and disposition of non-conformance product**

.1 The Owner has the final authority for disposition of non-conforming product.

Wildstone shall perform the following:

- For products that fail to meet the project specifications, but which could be reworked to meet the requirements, the QCI/technician should issue and RAR. Work shall be carried out until the product is brought within the specified tolerance. Re-tests shall be performed to verify the status of the product.
- In the event the product cannot be brought within the acceptable tolerance or if the product fails after rework was done within the allowable time frame, the QCI shall initiate a Non-Conformance report for the failing product.
- In the situation where the product cannot be made to conform to the quality requirements but is considered fit for use by the PM, a request for concession may be made to the Owner for approval to supply the product in a nonconforming condition.

## **16.00. Corrective and Preventive Action**

### **16.01. General**

The supplier shall establish and maintain documented procedures for implementing corrective preventive action.

### **16.02. Corrective action**

Wildstone shall perform the following:

- The QCM shall review non-conforming data to determine if it is of common or uncommon cause. The QCM shall decide if correlation testing (QC/QA) is required.
- Initiate investigation to determine the cause of non-conformance.
- Non-conformance from uncommon cause shall be dealt with promptly to determine the cause and prevent reoccurrence.
- When applying corrective action, the date of application and completion shall be recorded on the corrective action report. The action taken shall be verified, monitored and evaluated.

### **16.03 Prevention action**

Wildstone procedures for preventive action shall include:

- The Management team shall implement a program for quality system improvement that shall identify any problems be recorded and shall carry out preventive action.
- Verify the effectiveness of the implemented preventive action.
- Continually monitoring and recording the status of all approved preventive action plans and submit for review.

## **17.00. Handling, Storage, Packaging, Preservation and Delivery**

### **17.01. General**

- .1 Materials delivered for incorporation into the project shall be identified and recorded. Product name, date of delivery, amount delivered, date installed, and the status of the product shall be recorded in a logbook and shall be maintained on file in the project office.
- .2 All materials delivered for incorporation into the project shall be inspected for conformance to applicable drawings, specifications, or to other documents to ensure that only correct and acceptable items are used or installed. Materials to be noted on the QC checklists.

### **17.02 Handling**

Wildstone shall ensure that products are handled properly. Suitable equipment and the prescribed handling provisions recommended by the supplier shall be observed.

### **17.03. Storage**

- .1 All materials delivered in packages or bundles should be kept in original packaging with manufacture's seal and labels intact, until required for the work.
- .2 Materials to be kept in storage shall be tagged and protected from damage, deterioration or loss and shall remain protected until installation and acceptance by the PE.
- .3 Products requiring special storage condition shall be identified. For this type of storage, a means for alerting the staff to any deterioration shall be provided and assessment of the condition shall be done.

### **17.04. Packaging**

Products requiring shipping from site shall be properly identified and put in packages necessary to preserve their quality during delivery and handling.

**17.05. Preservation**

- .1 Flammable, hazardous or items susceptible to deterioration or damage by whatever means shall bear positive identification in order to give necessary precautions to be observed. Where required, material safety data sheet (MSDS) shall be requested from supplier at time of order. MSDS shall be kept on site for review.
- .2 Items identified as having potential contamination from other items shall remain segregated until required for use.
- .3 Wildstone shall conduct periodic assessment of the product in stock to determine the present condition and quality.
- .4 Wildstone shall periodically inspect all stored materials to ensure that the manufacturer's storing procedure and applicable contractual requirements for storage are followed.

**17.06. Delivery**

When shipping or receiving products, proper procedures shall be taken to prevent damage or deterioration during the delivery and handling up to its final destination.

## 18.00. Control of Quality Records

Wildstone shall employ the following procedures for control of quality records:

- Each record shall be filed under each category name either by Division, Trade or under appropriate headings which shall include all stages (production, delivery, and installation). A reference number and other information necessary shall be used if it will enable the record to be traced to the product or service it describes.
- The quality records and checklist shall be collected for each activity and submitted for review.
- The quality record shall have a logical indexing system using the alphanumeric format so that any missing record can be easily detected. A filing format, which is considered convenient and appropriate for this project, may be used.
- During the project construction, all quality records shall be maintained current and be completed in accordance with the contract documents. All in-process records are immediately updated with the current data and placed in the assigned files when not in use.
- All records, including those of vendors or subcontractors shall be kept on file in a designated location and shall be available to the Owner, if required.
- After the construction and acceptance of the project, all quality documents both in hard copy or in electronic file format shall be stored and protected from damage, deterioration or loss for a minimum period of three (3) years.
- Shall make all Quality System records available to the owner at all times.
- Logs will kept of quality files.

## 19.00. Internal Quality Audits

- .1 Wildstone Management is responsible for a review audit for the project to determine whether the approved policies and practices are being followed.
- .2 The management personnel responsible for the area audited shall take immediate corrective action on deficiencies found by the audit.
- .3 The internal audit is planned by the QCM, who performs and appoints others to perform the audit. The QCM acts as or appoints the lead auditor. The auditor normally works in an area or function other than the subject of the audit. Personnel from that area or function may assist in the audit provided independent personnel control the audit.
- .4 Prior to the audit, the QCM or lead auditor develops an audit checklist, selected from existing published standards or developed in-house. See example following.
- .5 The QCM is responsible for auditing of subcontractors.

**TYPICAL INTERNAL AUDIT CHECKLIST – DOCUMENTATION**

AUDITORS \_\_\_\_\_

DATE \_\_\_\_\_

RECORD	FINDING	RESULT	ELEMENT
QS Manual (latest version)			
Inspection & Test Plan			
Codes & Standards (up-to-date)			
<b>Job File, including:</b>			
Client correspondence			
Purchase orders			
Design specifications			
Drawings (up-to-date)			
Material test reports			
NDE records			

## 20.00. Training

- .1 Wildstone shall conduct a review of the personnel qualifications on the basis of education, safety, training and experience.
- .2 Resumes and/or other certifications shall be submitted to the Owner, if required.
- .3 The department manager:
  - a) determines the necessary competence for personnel affecting service quality;
  - b) provides training to satisfy these needs;
  - c) ensures that all personnel are aware of the relevance and importance of their activities and how they contribute to achievement of quality;
  - d) maintains records of education, training, skills, experience;
- .4 The QCM shall monitor the performance of all Quality control staff to ensure that they are properly performing the required inspections and reporting procedures.

## 21.00. Servicing

Where Wildstone has agreed to service its product, the following shall be employed:

- .1 Servicing plan shall be prepared and shall define the type, level, servicing procedures, equipment and technical support to be provided.
- .2 Servicing operations shall be carried out as defined in the contract.
- .3 Wildstone shall not accept any liability for the product supplied if the product has not been serviced as specified in the user manual supplied to the customer.

Wildstone shall analyze the collected data from service reports to resolve the re-occurring of the problem.

## **22.00. Statistical Techniques**

### **22.01. *Identification of need***

Statistical analysis shall be performed on test data from quality control construction material tests and other products that may require analysis.

### **22.02. *Procedures***

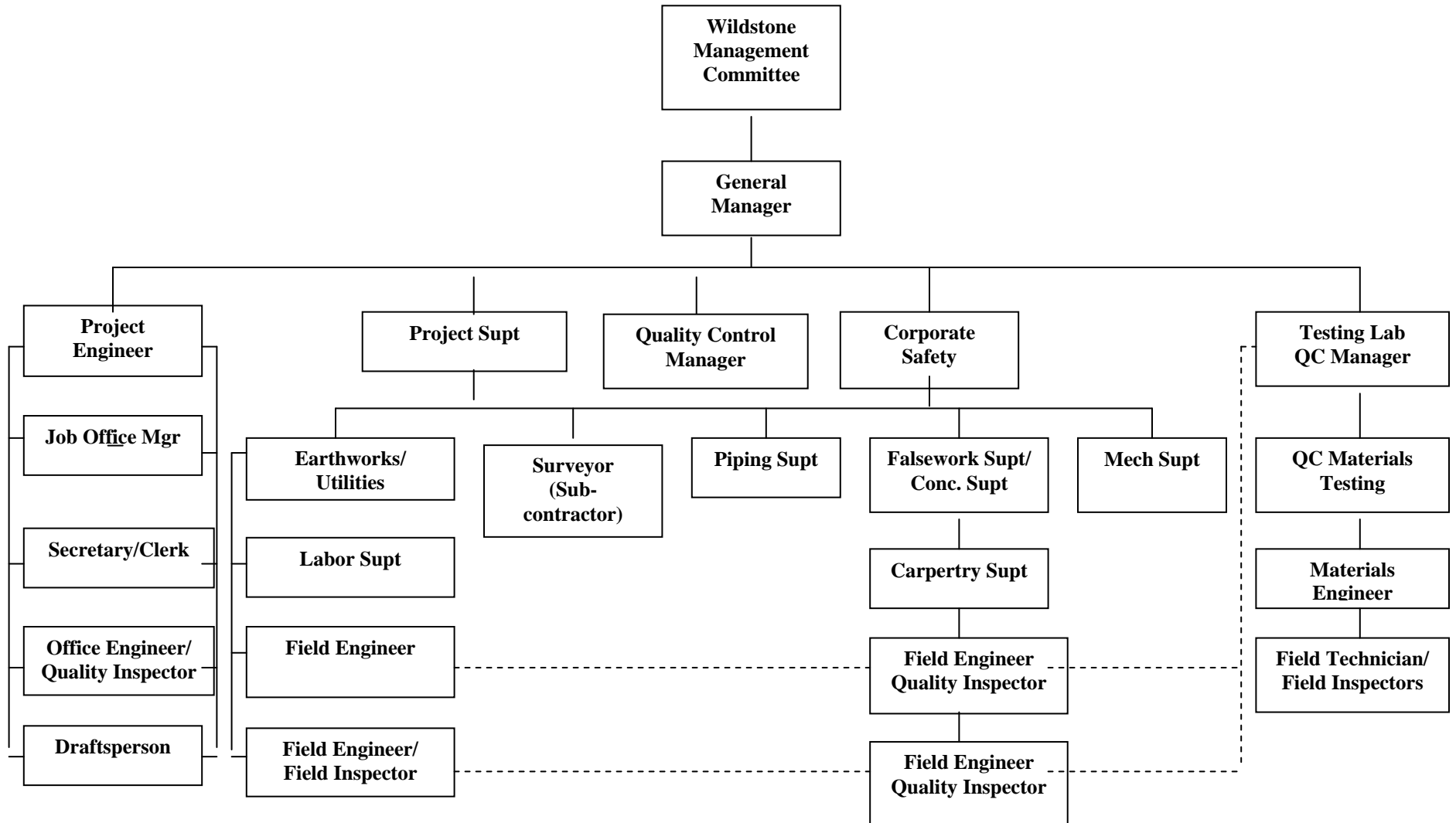
The QC Testing Agency shall use computer software programs that can generate Summary and Statistical Analysis. Statistical Analysis shall be generated from test results.

## **APPENDICES**

- A. Project Organizational Chart**
- B. Flowcharts**
- C. Quality Forms**
- D. Test Frequency Tables**
- E. Standard Inspection Checklists**

**Appendix A**  
**Project Organizational Chart**

Project Organizational Chart  
July, 2007

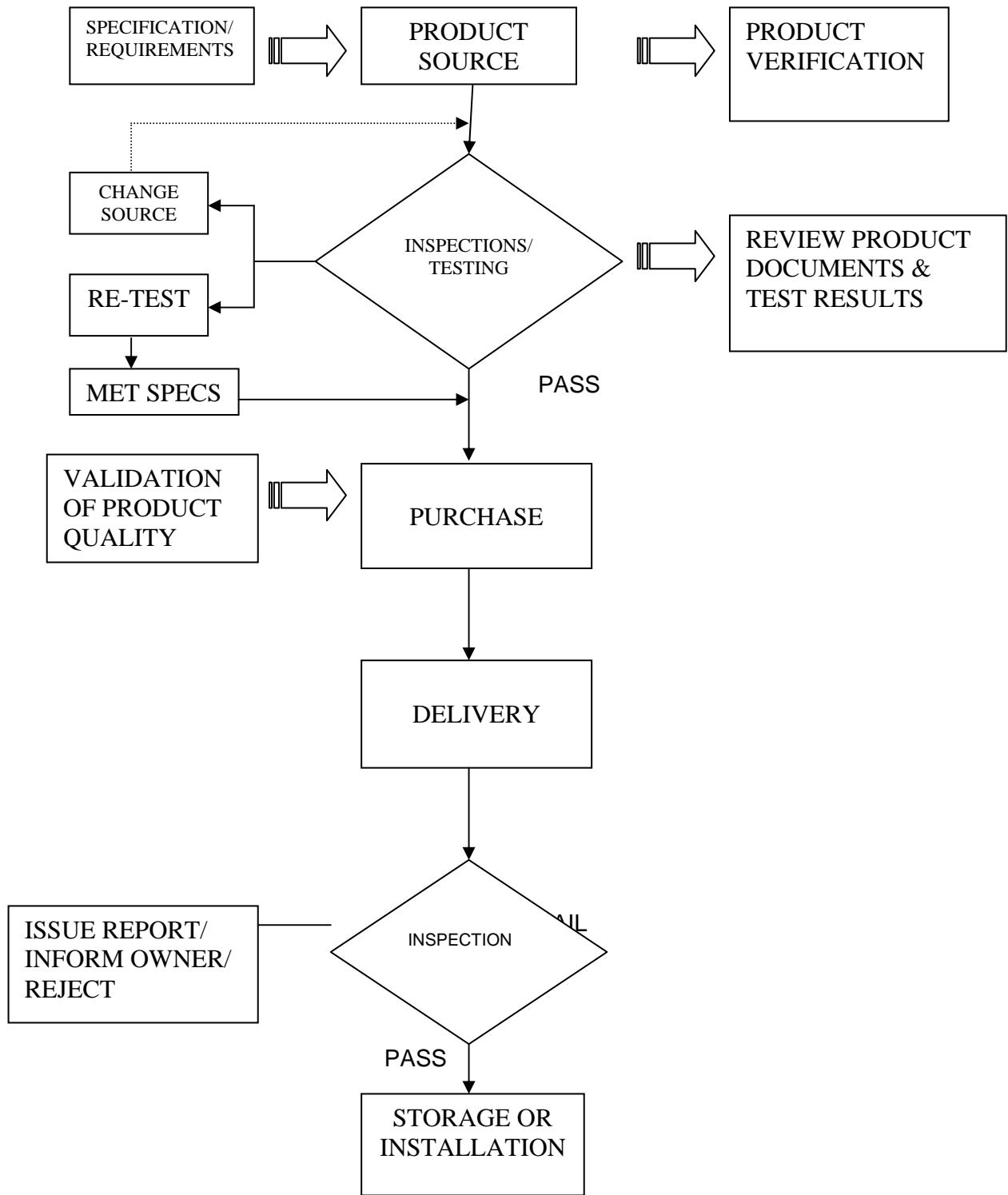


## **Appendix B.**

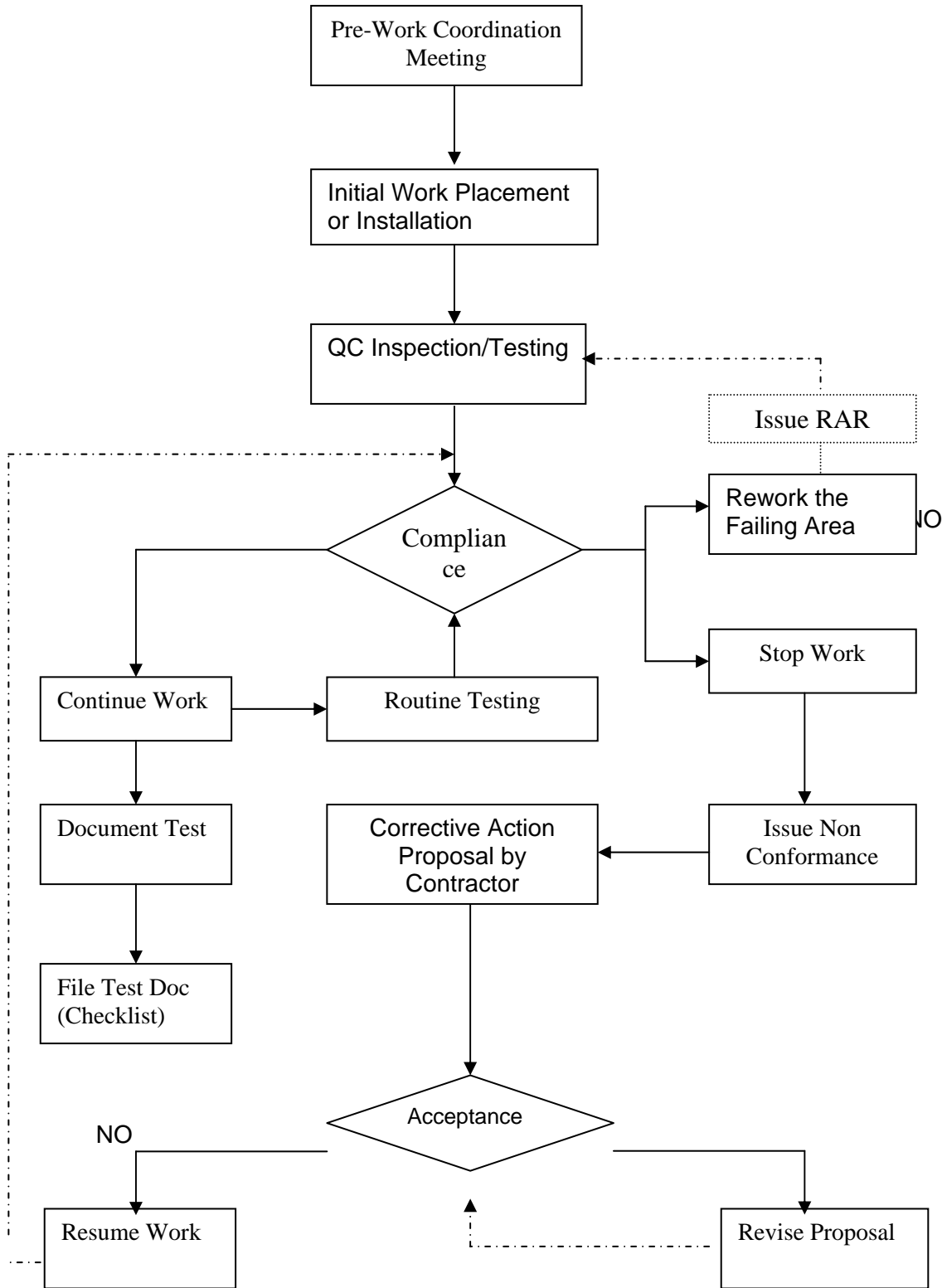
### **Flowcharts**

1. Product, Production, Delivery and Storage
2. Test plan

**B.1 Product, Production, Delivery and Storage**



**B.2. Test Plan**



## **Appendix C**


### **Quality Forms**

- 1 Remedial Action Report (RAR) Form**
- 2 Non-Conformance (NCR) Report Form**
- 3 Corrective Action Report (CAR) Form**

**Appendix C.1**

**Remedial Action Report (RAR) Form**


**Remedial Action Report (RAR)**

	Project:	RAR NO.:									
	Date:										
CONTRACT No.:	REPORTED BY:										
WORK AREA:	SIGNATURE:										
<p><b>DESCRIPTION OF NON-COMPLIANCE</b></p>          											
<p><b>REMEDIAL ACTION RESPONSE</b>  <i>(DESCRIPTION OF REMEDIAL ACTION INCLUDES DRAWING NO., AREA, ETC.)</i></p>          											
<p><b>REMEDIAL; ACTION APPROVAL AND ACCEPTANCE</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 45%;"><input type="checkbox"/> Contractor/Subcontractor</td> <td style="width: 30%;">Signature: .....</td> <td style="width: 25%;">Date: .....</td> </tr> <tr> <td><input type="checkbox"/> Quality Manager</td> <td>Signature: .....</td> <td>Date: .....</td> </tr> <tr> <td><input type="checkbox"/> Owner's Approval</td> <td>Signature: .....</td> <td>Date: .....</td> </tr> </table>			<input type="checkbox"/> Contractor/Subcontractor	Signature: .....	Date: .....	<input type="checkbox"/> Quality Manager	Signature: .....	Date: .....	<input type="checkbox"/> Owner's Approval	Signature: .....	Date: .....
<input type="checkbox"/> Contractor/Subcontractor	Signature: .....	Date: .....									
<input type="checkbox"/> Quality Manager	Signature: .....	Date: .....									
<input type="checkbox"/> Owner's Approval	Signature: .....	Date: .....									

## Appendix C.2

### Non-Conformance Report (NCR) Form


**Non- Conformance Report (NCR)**

	Project:	NCR NO.:
		Date:
CONTRACT No.:	REPORTED BY:	
WORK AREA:	SIGNATURE:	
NONCONFORMANCE REPORT (NCR) OR REMEDIAL ACTION REPORT(RAR) (DESCRIPTION OF NON-COMPLIANCE INCLUDES DRAWING NO., AREA, ETC.)		NCR Ref. No.
Confirmed and logged by Wildstone		
ACTION REQUIRED BY: <input type="checkbox"/> CONTRACTOR <span style="margin-left: 200px;"><input type="checkbox"/> SUBCONTRACTOR</span>  <input type="checkbox"/> RAR/ Construction Deficiency: Prepare Report and inform O.R. within 7 days  <input type="checkbox"/> NCR: Reply to O.R. with Proposed Disposition within 7 days (Use Attachments if necessary)		
<b>Contractor/Subcontractor's</b>  Signature: _____ APPROVED: _____ Date: _____ Date: _____		
<b>OWNER'S APPROVAL:</b>  SIGN: _____ DATE: _____ Owner's Representative (O.R.)		
<b>OWNER CONFIRMATION / VERIFICATION OF DISPOSITION</b>  VERIFIED BY: _____ DATE: _____  SIGNATURE: _____ Page 1 _____ of _____		

## Appendix C.3

### Corrective Action Report (CAR) Form

**Corrective Action Report (CAR) Form**

	<b>Project:</b>	<b>CAR NO.:</b>
		<b>Date:</b>
<b>CONTRACT No.:</b>  <b>WORK AREA:</b>	<b>REPORTED BY:</b>  <b>SIGNATURE:</b>	
<b>DESCRIPTION OF NON-COMPLIANCE</b>		<b>NCR No.</b>
<b>REMEDIAL ACTION RESPONSE</b> <i>(DESCRIPTION OF REMEDIAL ACTION INCLUDES DRAWING NO., AREA, ETC.)</i>		
<b>ACTION BY:</b> <input type="checkbox"/> <b>CONTRACTOR</b> <input type="checkbox"/> <b>SUBCONTRACTOR</b>		
<b>Reply to NCR issued by:</b>		
<input type="checkbox"/> <b>Owner's Representative (O.R.)</b>		
<input type="checkbox"/> <b>Wildstone</b>		
<b>Contractor/Subcontractor's</b>		
<b>Signature:</b> _____		
<b>Date:</b> _____		<b>Date:</b> _____

## **Appendix D**

### **Frequency of Testing**

## **Appendix D.**

### **Frequency of Testing**

- 1. Routine Construction Quality Control**
  - 1.1. Structural Concrete**
  - 1.2. Structural Backfill/Granular sub-base**
  - 1.3. Reinforcing Steel**
  - 1.4. Hot Mix Asphalt**
  
- 2. Source Acceptance Testing**

## D.1. Routine Construction Quality Control

### D.1.1 Structural Concrete

Test Frequency	Specification/Test Method	Test Description	Estimated Quantity
Per load tested 1 per set of cylinder cast 1 per set of cylinder cast	CAN/CSA A23.2(1C) A23.2(5C) A23.2(4C)	Sampling Slump Air Pressure Method	
One test for each 100m <sup>3</sup> placed but not less than one test per pour day	A23.2(12C) A23.2 (6C)	Casting of Cylinders Density and Yield	
Per load tested	A23.2(9C) ASTM C1064	Testing Cylinders Concrete Temp	
Concrete with exposure Class C1, F1 and C2, each load shall be monitored until consistency has been achieved.		Air Pressure Method Slump Concrete Temp	

### D.1.2 Structural Backfill/Granular Sub-base

Test Frequency	Specification/Test Method	Test Description	Estimated Quantity
Minimum of three tests per visit for each type of placed fill.	ASTM D2922 ASTM D3017  ASTM D2216	Field Density - Nuclear Moisture Content - Nuclear Lab Moisture - Microwave	
Three tests at start – up then, one test for each 1000m <sup>3</sup> of material type placed.	ASTM C136 ASTM D1557 ASTM D698	Gradation Moisture Density Relationship	

**D.1.3 Reinforcing Steel**

Test Frequency	Specification/Test Method	Test Description	Estimated Quantity
At the beginning of work, one test on each bar sizes. Then, one additional test on each bar size throughout the project duration.	ASTM E-8 ASTM E-370	Tensile Strength Bend Test	

**D.1.4 Hot Mix Asphalt**

Test Frequency	Specification/Test Method	Test Description	Estimated Quantity
One test for each 250m <sup>3</sup> tonnes or one half day production	ASTM D2172 AASHTO T30	Asphalt Content	
As required	ASTM D2726 ASTM D1559 ASTM D1041	Bulk Density Flow and Stability MTD	
One test per 1000m <sup>3</sup> but not less than five tests per one day production	ASTM D1075	Sampling	
As required	ASTM D3665	Sampling	
As required	ASTM D 5361	Coring	

**D.2. Source Acceptance Testing**

The materials supplier shall provide source acceptance testing for all construction materials. Copy of reports shall be obtained by the Quality Control Manager and submitted to Quality Assurance.

## Appendix E

Note: F = Forms, Forms are located at the back of each checklist section

### **Standard Inspection Checklists**

- A.2 *Division 2 - Site Work*
- A.2.1 Site Demolition
- A.2.2 Site Clearing
- A.2.3 Grading
- A.2.4 Excavation and Fill
- A.2.5 Gravity Sewerage System
- A.2.6 Underground Power and Communication Lines
- A.2.7 Foundation and Surface Drainage Systems
- A.2.8 Manholes, Catch Basins, Covers and Frames
- A.2.9 Chain Link Fences and Gates
- FA.2.1 Excavation Permit
  
- A.3 *Division 3 - Concrete*
- A.3.1 Concreting Procedures
- A.3.2 Structural Cast-In-Place Concrete Forms
- A.3.3 Reinforcing Steel
- A.3.4 Cast-In-Place Concrete
- A.3.5 Concrete Finishing
- A.3.6 Epoxy Grouting
- FA.3.1 Concrete Pour Sheet
- FA.3.2 Grout Placement Sheet
  
- A.4 *Division 4 - Masonry*
- A.4.1 Concrete Unit Masonry
  
- A.5 *Division 5 - Metals*
- A.5.1 Structural Steel
- A.5.2 Steel Deck
- A.5.3 Metal Fabrications
- A.5.4 Expanded Metal Systems
- A.5.5 Structural Steel Building
- A.5.6 Handrails and Railings
  
- A.6 *Division 6 - Wood and Plastic*
- A.6.1 Rough Carpentry
- A.6.2 Custom Cabinets
  
- A.7 *Division 7 - Thermal and Moisture Protection*
- A.7.1 Bituminous Damproofing
- A.7.2 Water Repellent Coatings
- A.7.3 Preformed Metal Cladding
- A.7.4 Applied Fireproofing

A.7.5	Firestopping
A.7.6	Preformed Joint Seals
A.7.7	Joint Sealant
A.8	<i>Division 8 - Doors and Windows</i>
A.8.1	Steel Doors and Frames
A.8.2	Overhead Doors and Shutters
A.8.3	Glass
A.8.4	Finish Hardware Installation
A.9	<i>Division 9 - Finishes</i>
A.9.1	Non-Load Bearing Wall Framing
A.9.2	Gypsum Board
A.9.3	Ceramic Tile
A.9.4	Resilient Flooring
A.9.5	Paints
A.9.6	Special Protective Coatings
A.10	<i>Division 10 - Specialties</i>
A.10.1	Toilet Accessories
A.11	<i>Division 11</i>
A.11.1	Elevating Lift Table
A.11.2	Overhead Chain Hoist
A.12	<i>Division 15 - Mechanical</i>
A.12.1	Pipe and Pipe fittings
A.12.2	Mechanical Identification
A.12.3	Duct Insulation
A.12.4	Piping Insulation
A.12.5	Supports, Anchors and Seals
A.12.6	Seismic Restraints
A.12.7	Valves and Strainers
A.12.8	Plumbing Systems
A.12.9	Reciprocating Air Compressor
A.12.10	Wet and Dry Automatic Sprinkler Fire Protection
A.12.11	Fire Extinguishers
A.12.12	Hot Water Pressure System
A.12.13	Terminal Heat Transfer Unit
A.12.14	Packaged Rooftop Heating Cooling Units
A.12.15	Ventilation System
A.12.16	Ductwork
A.12.17	Duct Accessories
A.12.18	Control General Provisions
FA.12.0	Buried Steel Piping Acceptance Sheet

FA.12.1	Buried PVC Piping Acceptance Sheet
FA.12.2	Polyethylene Pipe Fusion Weld Record
FA.12.3	Piping Testing Acceptance Sheet
FA.12.4	Flushing Acceptance Sheet
FA.12.5	Compressed Air Piping Acceptance Sheet
FA.12.6	PVC/CPVC Piping Acceptance Sheet
FA.12.7	Steam Piping Acceptance Sheet
FA.12.8	Condensate Piping Acceptance Sheet
FA.12.9	Rubber Lined Steel Piping Acceptance Sheet
FA.12.10	Chemical Piping Acceptance Sheet
FA.12.11	Oxygen Piping Acceptance Sheet
FA.12.12	Polyethylene Tailings Line Acceptance Sheet
FA.12.13	Pipe Inspection Test
FA.12.14	Field Piping and Equipment Pressure Test Report
FA.12.15	HVAC System Acceptance Sheet

**A.13**                    *Division 16 - Electrical*

A.13.1	General Electrical Provisions
A.13.2	Grounding
A.13.3	Electrical Identification
A.13.4	Testing Electrical
A.13.5	Wires and Cables
A.13.6	Panel Boards
A.13.7	Conduits
A.13.8	Cable Trays
A.13.9	Boxes
A.13.10	Wiring Devices
A.13.11	Motor Starters and Disconnects
A.13.12	Seismic Restraints
A.13.13	Motors
A.13.14	Transformers
A.13.15	Lighting
A.13.16	Fire Alarm and Detection System
A.13.17	Intercommunication Systems
A.13.18	Public Address System
A.13.19	Control Devices
A.13.20	Lighting Control Equipment

**A.14**                    **Others**


A.14.1	Underground Power and Communication Lines
A.14.2	Finished Door Hardware
A.14.3	Acoustic Ceiling Tiles
A.14.4	Chemical Resistant Coatings
A.14.5	Toilet Partitions
A.14.6	System Demonstration and Owner's Instructions
A.14.7	Commissioning
A.14.8	Testing
A.14.9	Equipment Testing and Start-Up
A.14.10	Coordination with Balancing Agency
A.14.11	Balancing

A.14.12	Vibration Isolation
A.14.13	Alignment Checklist for Couplings
A.14.14	Alignment Checklist for Belt Drives
A.14.15	Mechanical Pre-Operation Checklist
FA.14.1	Conveyor Acceptance Sheet
FA.14.2	Hydraulic Power Unit Acceptance Sheet
FA.14.3	Tank Acceptance Sheet
FA.14.4	Pump Acceptance Sheet
FA.14.5	Package Lube Unit Acceptance Sheet
FA.14.6	Belt Splicing Record
FA.14.7	Bolt Tightness Acceptance Sheet

<b>A.2</b>	<b><i>Division 2 - Site Work</i></b>
A.2.1	Site Demolition
A.2.2	Site Clearing
A.2.3	Grading
A.2.4	Excavation and Fill
A.2.5	Gravity Sewerage System
A.2.6	Underground Power and Communication Lines
A.2.7	Foundation and Surface Drainage Systems
A.2.8	Manholes, Catch Basins, Covers and Frames
A.2.9	Chain Link Fences and Gates
FA.2.1	Excavation Permit


**A.2.1 Site Demolition**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
Project No.: _____		Location: _____			
Contract No.: _____		Item No.: _____			
Project No.: _____					
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>		COMPLIANCE		N/A	DATE
		YES	NO		
Obtained applicable permits before demolition					
Verify structures to be demolished					
Verify items designated for preservation.					
Verify utility services that could be affected from demolition.					
Verify measures to ensure safety during demolition.					
Verify methods and sequence of demolition.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.2.2 Site Clearing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Obtained applicable permits before clearing.				
Verify limits for clearing				
Verify items designated for clearing.				
Verify measures to ensure safety during clearing.				
Verify areas for grubbing.				
Verify minimum depths required for stirrups and matted roots removal.				
Cleared materials were disposed offsite.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.2.3 Grading**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify quality of excavated material prior to use as fill for rough grading.				
Verify underground and surface utility lines and buried objects prior to start of work.				
Verify rough levels, profiles and contour requirements for specified areas.				
Disposed offsite materials identified as unsuitable for fill, grading or landscaping.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.2.4 Excavation and Fill**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Submitted to the Owner the permits for hauling and disposal of materials.				
Submitted to the Owner the Drawings for temporary excavation support systems.				
Verify locations of bench marks, monuments and survey references.				
Verify locations of underground utilities.				
Verify gradation requirements for backfill materials.				
Verify areas for excavation.				
Verify excavated materials if suitable as backfill or embankment material.				
Verify backfill provisions listed in Project Specifications.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.2.5 Gravity Sewerage System**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Materials for Gravity sewerage Systems meet product requirements described in Contract Documents.				
Confirmed locations and elevations for trenches.				
Pipes installed in accordance with the Project Specifications.				
Verify pipe alignment and elevation prior to backfilling.				
Backfill materials were compacted to as per contract requirements.				
Leakage Test – Air exfiltration tests conducted on sanitary sewers.				
Leakage test witnessed by Owner’s Representative.				
Sign – off:				Date:
Name:				
Comments:				


**A.2.6 Underground Power and Communication Lines**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify product requirements listed in Contract Documents.				
Verify locations for buried ducts and concrete-encased ductbanks.				
Verify clearance (spacers) between bottom of trench and concrete encased ducts.				
Inspect installed duct by Provincial Utility companies prior to backfilling or concrete placement.				
Sign – off:	Date:			
Name:				
Comments:				


**A.2.7 Foundation and Surface Drainage Systems**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.:				
Contract No.:				
Project No.:				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements listed in Project Specifications.				
Verify trench layout for pipes.				
Verify depth of trench.				
Place filter gravel in the bottom of the trench.				
Place pipes in accordance to Project requirements.				
Place select material as backfill above filter gravel.				
Sign – off:	Date:			
Name:				
Comments:	_____ _____ _____			


**A.2.8 Manholes, Catch Basins, covers and Frames**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements listed in Project Specifications.				
Verify condition of the bottom of trench.				
Verify alignment and grade of the installed concrete bases				
Verify bonding between bottom of precast and concrete bases.				
Verify locations for catch basin frames.				
Verify orientation of manhole steps.				
Verify elevation of manhole invert level.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.2.9 Chain Link Fences and Gates**

**CHECKLIST**

 <p><b>Project No.:</b>  <b>Contract No.:</b>  <b>Project No.:</b></p>	<b>QC Inspector:</b> _____ <b>Report Date:</b> _____ <b>Location:</b> _____ <b>Item No.:</b> _____				
	<b>QUALITY CONTROL PROCEDURES</b>		<b>COMPLIANCE</b>		
			<b>YES</b>	<b>NO</b>	<b>N/A</b>
	Fencing materials meet product requirements as described Project Specifications.				
Post was embedded into concrete at a depth shown in the Drawing.					
Fences erected at locations as shown in the Drawing					
Sign – off: _____ Date: _____ Name: _____					
Comments: _____ _____ _____					

**FA.2.1**

**EXCAVATION PERMIT**

CONTRACT NO. \_\_\_\_\_

DATE: \_\_\_\_\_

EXCAVATION AREA: \_\_\_\_\_

EXCAVATION DRAWING NO. \_\_\_\_\_

**EXCAVATION BOUNDARIES (4 POINT CO-ORD. & DEPTH)**

Or \_\_\_\_\_ N/S & \_\_\_\_\_ E/W

\_\_\_\_\_ N/S & \_\_\_\_\_ E/W

\_\_\_\_\_ DEPTH (METRES)


CHECKLIST	CONTRACTOR	OWNERS REP.	DATE	COMMENTS
AREA STAKED, CHECK FOR U/G SERVICES AS FOLLOWS:				
WATER/FIRE/SEWER PIPING				
GAS				
ELECTRICAL				
CABLE TV				
TELEPHONE				
OTHER				

**NOTE: WHERE THE EXCAVATION BOUNDARY IS WITHIN ONE (1) METRE HORIZONTAL DISTANCE OF UNDERGROUND (U/G) SERVICES, AREA SHALL BE HAND DUG TO LOCATE UNDERGROUND SERVICE PRIOR TO MACHINE DIGGING**

<b>A.3</b>	<b><i>Division 3 - Concrete</i></b>
A.3.1	Concreting Procedures
A.3.2	Structural Cast-In-Place Concrete Forms
A.3.3	Reinforcing Steel
A.3.4	Cast-in-Place Concrete
A.3.5	Concrete Finishing
A.3.6	Epoxy Grouting
FA.3.1	Concrete Pour Sheet
FA.3.2	Grout Placement Sheet


**A.3.1 Concreting Procedures**

**CHECKLIST**

 <p><b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b></p>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
<b>Cold Weather Concreting:</b>				
Submit procedures for performing cold weather concreting.				
Verify materials and equipment required.				
Verify CSA and ACI procedures for cold weather concreting.				
Verify heating requirements during curing period.				
<b>Hot Weather Concreting:</b>				
Submit procedures for performing hot weather concreting.				
Verify materials and equipment required.				
Verify CSA and ACI procedures for hot weather concreting.				
Verify admixtures used in concrete (No calcium chloride).				
Verify cooling and moisturizing requirements during curing period.				
Sign – off: Name:	Date:			
Comments:				
.....				
.....				


**A.3.2 Structural Cast-In-Place Concrete Forms**

**CHECKLIST**

	QC Inspector:			
	Report Date:			
	Location:			
	Item No.:			
Project No.:				
Contract No.:				
Project No.:				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
<b>Construction of Falsework:</b>				
Verify submittal requirement listed in Contract Documents.				
Verify product requirements listed in Project requirements.				
Verify shape and size of the formwork.				
Verify condition and formwork load requirements.				
Verify locations of items in the formwork that be embedded into the concrete.				
Verify tolerance for formed surfaces.				
Removal of Falsework.				
Verify compressive strength of field cure cylinders.				
Verify removal of Formwork and Falsework requirements procedures listed Project Specifications.				
Sign – off:	Date:			
Name:				
Comments:				


**A.3.3 Reinforcing Steel**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
Project No.: _____	Location: _____			
Contract No.: _____	Item No.: _____			
Project No.: _____				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify submittal requirement listed in Contract Documents.				
Verify product requirements listed in Project Specifications or applicable documents.				
Verify shape and size of the formwork.				
Verify condition and formwork load requirements.				
Verify locations of items in the formwork that be embedded into the concrete.				
Verify tolerance for formed surfaces.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.3.4 Cast-in-Place Concrete**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify submittal requirement listed in Contract Documents.				
Verify product requirements				
Verify concrete strength requirements.				
Verify locations of in placed inserts and embedded hardware prior to pour.				
Verify concreting procedures listed in Project Specifications.				
Notify testing agency for concrete testing.				
Verify concrete mix type delivered prior to unloading.				
Verify measures applied for curing.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.3.5 Concrete Finishing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify concrete surfaces after formwork removal.				
Verify surfaces for defects needing repair.				
Verify structural defects needing repair.				
Verify concrete surface tolerances.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.3.6 Epoxy Grouting**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements listed in Contract Documents.				
Verify surfaces to receive epoxy grout.				
Clean up grout spills at surrounding surfaces.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**FA.3.1**

**CONCRETE POUR SHEET**

DATE: \_\_\_\_\_ AREA NO.: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ CONTRACT NO: \_\_\_\_\_

LOCATION OF POUR: \_\_\_\_\_

DESCRIPTION OF POUR: \_\_\_\_\_

DRAWING NUMBER: \_\_\_\_\_

QUANTITYT OF CONCRETE ORDERED: \_\_\_\_\_

MIX DESIGN NUMBER: \_\_\_\_\_ RATE OF POUR: \_\_\_\_\_

TIME OF POUR: \_\_\_\_\_ SLUMP: \_\_\_\_\_ AIR: \_\_\_\_\_

ADDITIVES REQUESTED: \_\_\_\_\_ PLACING METHOD: \_\_\_\_\_

CHECK-OUT	CONTRACTOR	OWNER REP.	DATE	COMMENTS
Layout				
Formwork				
Reinforcing				
Anchor Bolts				
Embed Metal				
Pipe/Conduit				

ACTUAL QUANTITY PLACED: \_\_\_\_\_

QUANTITY OVER: \_\_\_\_\_ AREA MANAGER: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

QUALITY CONTROL	DATE:	INSPECTOR:
CYLINDERS		AIR%:
SLUMP AT JOB:		CONC. TEMP:
COMMENTS: _____		
_____		
_____		

**FA.3.2**

**GROUT PLACEMENT SHEET**

TO BE COMPLETED BY MECHANICAL/STRUCTURAL DEPARTMENT

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

EQUIPMENT NUMBER/LOCATION \_\_\_\_\_ GROUT STICKER YES \_\_\_\_\_ NO \_\_\_\_\_

EQUIPMENT OK TO GROUT: OKAYED BY: \_\_\_\_\_

TO BE COMPLETED BY CIVIL DEPARTMENT

DATE RECEIVED: \_\_\_\_\_ DATE GROUTED: \_\_\_\_\_

TYPE OF GROUT: \_\_\_\_\_ BATCH NUMBER: \_\_\_\_\_

DATE: \_\_\_\_\_

QUANTITY: \_\_\_\_\_

MIXING METHOD: \_\_\_\_\_

AIR TEMPERATURE: \_\_\_\_\_

WATER TEMPERATURE: \_\_\_\_\_

MIXED GROUT TEMPERATURE: \_\_\_\_\_

FLOW CONE RATE: \_\_\_\_\_ Seconds


NUMBER OF GROUT SAMPLES \_\_\_\_\_ TAKEN BY: \_\_\_\_\_

CHECKOUT	SURFACE PREPARATION (BUSHHAMMER)	CLEANOUT	24 HOUR WET SOAK	FORMS	PLACING METHOD	CURING METHOD
CONTRACTOR OKAYED BY						
OWNER OKAYED BY						
MANUFACTURERS TECHNICAL REPRESENTATIVE						

**A.4**            ***Division 4 - Masonry***  
A.4.1           **Concrete Unit Masonry**

**A.4.1 Concrete Unit Masonry**


**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify product requirements.				
Verify condition of the delivered concrete masonry.				
Verify condition of areas to receive concrete unit masonry.				
Verify construction procedures listed Project Specifications.				
Verify bond and reinforcing of masonry.				
Verify tolerances for the installed concrete masonry unit.				
Clean excess mortars and smears.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

<b>A.5</b>	<b><i>Division 5 - Metals</i></b>
A.5.1	Structural Steel
A.5.2	Steel Deck
A.5.3	Metal Fabrications
A.5.4	Expanded Metal Systems
A.5.5	Structural Steel Building
A.5.6	Handrails and Railings


**A.5.1 Structural Steel**

**CHECKLIST**

 <b>Wildstone</b> <small>CONSTRUCTION &amp; ENGINEERING</small> Project No.: Contract No.: Project No.:	QC Inspector:			
	Report Date:			
	Location:			
	Item No.:			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
Verify requirements for fabrication and erection of steel listed in Project Specifications.				
Verify design requirements listed in Contract Documents.				
Verify size and location of lifting points during handling and installation.				
Materials supplied meet project requirements.				
Welding and welding materials meet applicable.				
Verify requirement for connection bolts, anchor bolts, and nuts, washers and shims.				
Grouting material meets project requirements.				
Fabricated stairs as specified in Contract Documents.				
Verify temporary bracing requirements during erection.				
Verify elevations of column bases and base plates.				
Leveled and plumbed erected structures.				
Verify grouting procedures listed Project Specifications.				
Grout column base plates.				
Sign – off:	Date:			
Name:				
Comments:				


**A.5.2 Steel Deck**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify submittal requirements for metal deck drawings.				
Verify testing and inspection requirements.				
Verify product requirements.				
Verify alignment, elevations of the supporting structures for the steel deck.				
Verify deck surfaces after welding.				
Apply zinc coating to areas burned by welding.				
<b>Sign – off:</b>	<b>Date:</b>			
<b>Name:</b>				
<b>Comments:</b>				


**A.5.3 Metal Fabrications**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
Project No.: _____		Location: _____			
Contract No.: _____		Item No.: _____			
Project No.: _____					
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>			<b>DATE</b>	
	<b>YES</b>	<b>NO</b>	<b>N/A</b>		
Verify submittal requirements for shop and erection detail Drawings.					
Verify product requirements.					
Verify construction procedures.					
Verify vertical and horizontal alignments of the installed product.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.5.4 Expanded Metal Systems**

**CHECKLIST**

	QC Inspector: _____ Report Date: _____			
Project No.: _____ Contract No.: _____ Project No.: _____	Location: _____ Item No.: _____			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>DATE</b>
Verify submittal requirements for shop and erection detail Drawings.				
Verify product requirements.				
Verify construction procedures.				
Verify vertical alignments of the installed product.				
Remove debris, surplus materials.				
Sign – off:	Date:			
Name:				
Comments:				


**A.5.5 Structural Steel Building**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify design criteria.				
Verify documents and drawings for submittal.				
Verify product requirements.				
Verify construction procedures.				
Verify control and expansion joints.				
Sign – off:	Date:			
Name:				
Comments:	_____			
	_____			
	_____			

**A.5.6 Handrails and Railings**


**CHECKLIST**

	QC Inspector: .....			
	Report Date: .....			
	Location: .....			
	Item No.: .....			
Project No.: .....				
Contract No.: .....				
Project No.: .....				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify design criteria.				
Verify documents, product sample and drawings for submittals.				
Verify quality condition of the delivered products.				
Verify product requirements.				
Verify locations and dimension of inserts and sub-trades.				
Verify construction procedures.				
Verify vertical and horizontal alignments.				
Verify assemblies and proper operation of moving parts (i.e. gates).				
Remove debris, surplus materials.				
Sign – off: .....	Date: .....			
Name: .....				
Comments: .....				
.....				
.....				

- A.6**            ***Division 6 - Wood and Plastic***
- A.6.1          Rough Carpentry
- A.6.2          Custom Cabinets


**A.6.1 Rough Carpentry**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify elevation and locations for wood blockings.				
Verify installation locations for plywood.				
Broom clean areas upon completion.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.6.2 Custom Cabinets**


**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents, product sample and drawings for submittal.				
Verify product requirements.				
Owner's Rep inspected mechanical and plumbing fixtures prior to cabinetwork installation.				
Verify cut-outs locations.				
Verify fabrication and installation requirements.				
Remove debris, surplus materials.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

<b>A.7</b>	<b>Division 7 - Thermal and Moisture Protection</b>
A.7.1	Bituminous Damproofing
A.7.2	Water Repellent Coatings
A.7.3	Prefomed Metal Cladding
A.7.4	Applied Fireproffing
A.7.5	Firestopping
A.7.6	Prefomed Joint Seals
A.7.7	Joint Sealants


**A.7.1 Bituminous Damp proofing**

**CHECKLIST**

	<b>QC Inspector:</b> _____			
<b>Project No.:</b> _____	<b>Report Date:</b> _____			
<b>Contract No.:</b> _____	<b>Location:</b> _____			
<b>Project No.:</b> _____	<b>Item No.:</b> _____			
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product sample for submittal.				
Verify product requirements.				
Verify preparation, application and protection requirements.				
Remove debris, surplus materials.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.7.2 Water Repellent Coatings**

**CHECKLIST**

	<b>QC Inspector:</b> _____			
<b>Project No.:</b> _____	<b>Report Date:</b> _____			
<b>Contract No.:</b> _____	<b>Location:</b> _____			
<b>Project No.:</b> _____	<b>Item No.:</b> _____			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
Verify documents for submittal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verify product requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verify ambient condition and project site conditions requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verify preparation, application and protection requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove debris, surplus materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.7.3 Preformed Metal Cladding**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
Project No.: _____		Location: _____			
Contract No.: _____		Item No.: _____			
Project No.: _____					
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			<b>DATE</b>	
	<b>YES</b>	<b>NO</b>	<b>N/A</b>		
Verify product sample and drawings for submittal.					
Verify design criteria.					
Verify product requirements.					
Verify erection and sealant application requirements.					
Remove debris, surplus materials.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.7.4 Applied Fireproofing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents, product sample for submittal.				
Verify product requirements.				
Verify cleanness of surface to receive fireproofing.				
Verify thickness of fireproofing applied.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.7.5 Firestopping**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents, product sample and drawings for submittal.				
Verify documents, product sample for submittal.				
Verify product requirements.				
Verify application, inspection requirements.				
Remove debris, surplus materials.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.7.6 Preformed Joint Seals**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents, product sample for submittal.				
Verify product requirements.				
Verify preparation and installation requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.7.7 Joint Sealants**


**CHECKLIST**

 <b>Wildstone</b> <small>CONSTRUCTION &amp; ENGINEERING</small>	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>			<b>DATE</b>
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	
Verify documents, product sample for submittal.				
Verify product requirements.				
Verify inspection, preparation and installation requirements.				
Remove masking, excess sealant, droppings and misapplied sealant.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

- A.8**            ***Division - Doors and Windows***
- A.8.1          Steel Doors and Frames
- A.8.2          Overhead Doors and Shutters
- A.8.3          Glass
- A.8.4          Finish Hardware Installation


**A.8.1 Steel Doors and Frames**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify fabrication requirements.				
Verify locations for doorframe installation.				
Verify elevation, vertical and horizontal alignments.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.8.2 Overhead Doors and Shutters**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify documents for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify surfaces, dimension and connections prior to fabrication and installation.				
Verify installation requirements.				
Verify installed product for door systems smooth operation (opening and closing).				
Remove debris, surplus materials.				
Sign – off: Name:		Date:		
Comments: ..... ..... .....				


**A.8.3 Glass**

**CHECKLIST**

 <p><b>Project No.:</b>  <b>Contract No.:</b>  <b>Project No.:</b></p>	<b>QC Inspector:</b> ----- <b>Report Date:</b> ----- <b>Location:</b> ----- <b>Item No.:</b> -----				
	<b>QUALITY CONTROL PROCEDURES</b>		<b>COMPLIANCE</b>		<b>DATE</b>
			<b>YES</b>	<b>NO</b>	
	Verify documents for submittal.				
Verify product requirements.					
Verify compliance of the delivered products.					
Verify surfaces, dimension and connections prior to cutting of glass and installation.					
Verify installation requirements.					
Remove masking, excess sealant, droppings and misapplied sealant.					
Sign – off:	Date:				
Name:					
Comments:	-----				
	-----				
	-----				

**A.8.4 Finish Hardware Installation**


**CHECKLIST**

 <p><b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b></p>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify documents sample for submittal.				
Verify compliance of the delivered products.				
Verify compliance of the installed product prior to installation of the Finish-Hardwires.				
Verify smooth operation of door closers and holders.				
Verify “pull – push” door plate requirements.				
Verify electric and magnetic hardware connections.				
Verify gates, doors, access panels and cooling grilles for proper, easy and smooth operation.				
<b>Sign – off:</b>	<b>Date:</b>			
<b>Name:</b>				
<b>Comments:</b>				

- A.9**                    ***Division - Finishes***
- A.9.1                Non-Load Bearing Wall Framing
- A.9.2                Gypsum board
- A.9.3                Ceramic Tile
- A.9.4                Resilient Flooring
- A.9.5                Paints
- A.9.5                Special Protective Coatings


**A.9.1 Non-Load Bearing Wall Framing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify surfaces prior to installation.				
Verify Stud and Furring Installation requirements.				
Verify Ceiling System installation requirements.				
Clean rubbish, debris and surplus materials.				
Sign – off:	Date:			
Name:				
Comments:	_____			
	_____			
	_____			


**A.9.2 Gypsum board**

**CHECKLIST**

	QC Inspector: .....			
	Report Date: .....			
	Location: .....			
	Item No.: .....			
Project No.: .....				
Contract No.: .....				
Project No.: .....				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify compliance of the supporting members to receive gypsum board prior to installation.				
Verify compliance of installed bucks, anchors, blocking, electrical and mechanical work.				
Verify application requirements.				
Verify surfaces, horizontal and vertical alignments of the installed gypsum board.				
Remove debris, surplus material.				
Sign – off: .....	Date: .....			
Name: .....				
Comments: .....				
.....				
.....				


**A.9.3 Ceramic Tile**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify condition of surface to receive tiling prior to installation.				
Verify preparation and installation requirements.				
Verify proper bonding of tiles installed.				
Remove rubbish, debris and surplus material.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.9.4 Resilient Flooring**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify preparation and installation requirements.				
Remove excess adhesive, debris and surplus material.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.9.5      Paints**

**CHECKLIST**

	<b>QC Inspector:</b> _____			
<b>Project No.:</b> _____	<b>Report Date:</b> _____			
<b>Contract No.:</b> _____	<b>Location:</b> _____			
<b>Project No.:</b> _____	<b>Item No.:</b> _____			
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify type of Exterior Finishing/Interior Finishing System to use.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.9.6 Special Protective Coatings**


**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify Site Surface Preparation requirements.				
Verify coating schedule.				
Verify preparation and application requirements.				
Verify painted areas needing "touch up."				
Sign – off:	Date:			
Name:				
Comments:				

**A.10**            ***Division 10 - Specialties***  
A.10.1          Toilet Accessories

**A.10.1 Toilet Accessories**


**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify surface condition prior to installation.				
Verify location of grab bars.				
Verify proper operation of the installed accessories.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

<b>A.11</b>	<b>Division 11</b>
A.11.1	Elevating Lift Table
A.11.2	Overhead Chain Hoist


**A.11.1 Elevating Lift Table**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for Submittals.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify safety requirements.				
Verify requirements for "CONTROL"				
Verify installed elevating lift table for proper and smooth operation.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.11.2 Overhead Chain Hoist**


**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for Submittals.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify safety requirements.				
Verify requirements for "CONTROL"				
Verify installed elevating lift table for proper and smooth operation.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

<b>A.12</b>	<b><i>Division 15 - Mechanical</i></b>
A.12.1	Pipe and Pipe Fittings
A.12.2	Mechanical Identification
A.12.3	Duct Insulation
A.12.4	Piping Insulation
A.12.5	Supports, Anchors and Seals
A.12.6	Seismic Restraints
A.12.7	Valves and Strainers
A.12.8	Plumbing Systems
A.12.9	Reciprocating Air Compressor
A.12.10	Wet and Dry Automatic Sprinkler Fire Protection
A.12.11	Fire Extinguishers
A.12.12	Hot Water Pressure System
A.12.13	Terminal Heat Transfer Unit
A.12.14	Packaged Roomtop Heating Cooling Units
A.12.15	Ventilation System
A.12.16	Ductwork
A.12.17	Duct Accessories
A.12.18	Control General Provisions
FA.12.0	Buried Steel Piping Acceptance Sheet
FA.12.1	Buried PVC Piping Acceptance Sheet
FA.12.2	Polyethylene Pipe Fusion Weld Record
FA.12.3	Piping Testing Acceptance Sheet
FA.12.4	Flushing Acceptance Sheet
FA.12.5	Compressed Air Piping Acceptance Sheet
FA.12.6	PVC/CPVC Piping Acceptance Sheet
FA.12.7	Steam Piping Acceptance Sheet
FA.12.8	Condensate Piping Acceptance Sheet
FA.12.9	Rubber Lined Steel Piping Acceptance Sheet
FA.12.10	Chemical Piping Acceptance Sheet
FA.12.11	Oxygen Piping Acceptance Sheet
FA.12.12	Polyethylene Tailings Line Acceptance Sheet
FA.12.13	Pipe Inspection Test
FA.12.14	Field Piping and Equipment Pressure Test Report
FA.12.15	HVAC System Acceptance Sheet


**A.12.1 Pipe and Pipe Fittings**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify recommended product suppliers.				
Verify compliance of the delivered products.				
Verify layout and pipe elevation prior to installation.				
Verify preparation and connection requirements.				
Verify installation requirements.				
Verify welded pipe branch connections requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.2 Mechanical Identification**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify correct direction and location of installed identification.				
Sign – off:	Date:			
Name:				
Comments:	_____			
	_____			
	_____			


**A.12.3 Duct Insulation**

**CHECKLIST**

	QC Inspector: .....			
	Report Date: .....			
	Location: .....			
	Item No.: .....			
Project No.: .....				
Contract No.: .....				
Project No.: .....				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify compliance of the installed material to receive insulation.				
Verify thickness application requirements.				
Sign – off: .....	Date: .....			
Name: .....				
Comments: .....				
.....				
.....				


**A.12.4 Piping Insulation**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify requirements for preparation				
Verify installation requirements.				
Verify thickness application requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.5 Supports, Anchors and Seals**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify requirements for the use of inserts.				
Verify requirements for the use of Pipe Hangers and Supports.				
Verify requirements for the use of Low Velocity Duct Hangers and Supports.				
Verify requirements for Flashing and Sleeves installations.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.6 Seismic Restraints**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify items needing seismic restraints.				
Verify installation requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.7 Valves and Strainers**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements for Cold Water System .				
Verify product requirements for Hot Water System.				
Verify product requirements for Natural Gas System.				
Verify product requirements for Fire Protection System.				
Verify product requirements for Valve Operators and Strainers.				
Verify recommended suppliers.				
Verify compliance of the delivered products.				
Verify application requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.8 Plumbing Systems**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify recommended product suppliers.				
Verify compliance of the delivered products.				
Verify layout and elevation for the plumbing systems.				
Paint plumbing system.				
Flush, Clean, Test and Disinfect plumbing system.				
Sign – off: _____		Date: _____		
Name: _____				
Comments: _____				
_____				
_____				


**A.12.9 Reciprocating Air Compressor**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify product requirements for Compressor.				
Verify product requirements for Aftercooler.				
Verify product requirements for Air Dryer.				
Verify product requirements for Air Receiver.				
Verify product requirements for Valve and Controls.				
Verify recommended suppliers.				
Verify compliance of the delivered products.				
Verify installation requirements.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.10 Wet and Dry Automatic Sprinkler Fire Protection**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents and drawings for submittal.				
Verify product requirements.				
Verify product requirements for Sprinkler.				
Verify product requirements for Pipe Fittings.				
Verify product requirements for Valves listed in the Contract documents.				
Verify product requirements for Air Receiver.				
Verify product requirements for Air Compressor .				
Verify recommended suppliers.				
Verify compliance of the delivered products.				
Verify installation requirements.				
Conduct hydrant flow test.				
Clean and Flush the installed Sprinkler System.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.11 Fire Extinguishers**

**CHECKLIST**

 <p><b>Project No.:</b>  <b>Contract No.:</b>  <b>Project No.:</b></p>	<b>QC Inspector:</b> ----- <b>Report Date:</b> ----- <b>Location:</b> ----- <b>Item No.:</b> -----				
	<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<p align="center"><b>COMPLIANCE</b></p>		<p align="center"><b>N/A</b></p>	<p align="center"><b>DATE</b></p>
		<p align="center"><b>YES</b></p>	<p align="center"><b>NO</b></p>		
	Verify documents and drawing for submittal.				
Verify product requirements.					
Verify compliance of the delivered products.					
Verify location of installation for the Fire Extinguishers (F.E.).					
Verify height above the floor of the installed fire extinguishers (1200mm from floor to bottom of F.E.).					
Sign – off:	Date:				
Name:					
Comments:	-----				
	-----				
	-----				


**A.12.12 Hot Water Pressure System**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify location of installation and height of mounting pad.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.13 Terminal Heat Transfer Unit**

**CHECKLIST**

 <b>Wildstone</b> <small>CONSTRUCTION &amp; ENGINEERING</small>	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify install product for performance.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.14 Packaged Rooftop Heating Cooling Units**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify manufacturer's recommendation for installation.				
Verify rate of cooling as listed in ARI Standard 210.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.12.15 Ventilation System**

**CHECKLIST**

 <p><b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b></p>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify documents for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify the mounting surfaces and structures for capability to support the equipment to be installed.				
Verify environmental requirements.				
Verify product warranty provided by suppliers.				
Verify installation requirements.				
Perform field-testing for air balance distribution, airflow for fans and motorized dampers.				
Sign – off:	Date:			
Name:				
Comments:				


**A.12.16 Ductwork**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
		Location: _____			
		Item No.: _____			
Project No.: _____					
Contract No.: _____					
Project No.: _____					
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE	
	YES	NO			
Verify product requirements listed.					
Verify compliance of the delivered products.					
Verify field measurements for ductwork fabrication.					
Verify installation requirements.					
Verify sealed area for substantial air tightness before covering or concealing.					
Owner to inspect sealed section prior to applying insulation.					
Clean duct systems.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.12.17 Duct Accessories**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify location of fire dampers.				
Verify installation requirements.				
Demonstrate re-setting of fire dampers.				
Verify settings of fusible link for fire dampers.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.12.18 Control General Provisions**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE			DATE
	YES	NO	N/A	
Verify documents and drawings for submittal.				
Verify approved contractors and product requirements.				
Verify warranty and call backs requirements.				
Verify compliance of the delivered products.				
Verify location of thermostats and other exposed control sensors.				
Verify "As-Built" drawings submittal requirements.				
Submit control calibration check sheet prior to system activation.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**FA.12.0 BURIED STEEL PIPING ACCEPTANCE SHEET**

Equipment No. \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Specification 15050 "Basic Piping Methods & Materials"			
3. Pro-Installation visual inspection of pipes, fittings, valves, etc.			
4. Defects reported to Engineer			
5. Pipe material correct for service			
6. Pipe schedule correct			
7. Pipe size correct			
8. Confirm line number and route			
9. Report interferences to Engineer			
10. Level/slope checked			
11. All valves and specialty fitting over 2" independently supported			
12. Fixed pipe supports fully welded or bolted			
13. Anchor/thrust blocks installed			
14. Anchor/thrust blocks proper type			
15. Anchor/thrust blocks proper location			
16. Flanges installed			
17. Flange parallelity checked			
18. Flange bolts torqued properly			
19. Flange bolt holes straddle vertical or horizontal centerlines			
20. Gaskets installed			
21. Proper gasket material used			
22. All bolts coated with anti-seize compound on threads			
23. Proper solvent cement used			
24. Proper bedding and depth in trench to avoid abrasive contact with bedrock			
25. Snake pipe in trench if joints not fully dried			
26. All ports of line backfilled and braced to prevent movement			
27. Drain valves installed at all low points in piping system			
28. Vent valves installed at all high points in piping system			
29. All valves, gauges, accessories, etc. installed			
30. All valves operational			
31. Valve packing installed and adjusted			
32. All valves, gauges, accessories in proper orientation			
33. Parallel alignment within acceptable limits for fittings			
34. Angular alignment within acceptable limits for fittings			
35. Pipe grooves cut to proper specification			
36. Pipe connections stress free			
<b>NOTES:</b>			

**FA.12.0 BURIED STEEL PIPING ACCEPTANCE SHEET**

Equipment No. \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
37. Pipe connections stress free			
38. Cut Pipe ends reamed and filed			
39. Burrs, cuttings and chips removed			
40. Threaded joints with appropriate tape or jointing compound			
41. Excess jointing material removed			
42. Pipe grooves cut to proper specification			
43. Pipe insulation installed (complete pipe insulation acceptance sheet)			
44. Flushing required (complete flushing certificate)			
45. Disinfecting required (complete pipe disinfecting certificate)			
46. Testing complete (complete pipe testing acceptance sheet)			
Corrosion Resistant Protection:			
47. Protective jacket installed			
48. Integrity of protective jacket checked			
49. Heat shrink sleeves installed at all welded joints			
50. Integrity of heat shrink sleeves checked			
Cathodic Protection			
51. Proper anode installed			
52. Anode installation as per specification			
53. Reference electrode installed			
54. Test station installed			
55. Record of potential measurements after installation			
<b>NOTES:</b>			

**FA.12.1 BURIED PVC/CPVC/HDPE PIPING ACCEPTANCE SHEET**

Line Designation: \_\_\_\_\_ Date: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_ Engineer: \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Specification 15050 "Basic Piping Methods & Materials"			
3. Pro-Installation visual inspection of pipes, fittings, valves, etc.			
4. Defects reported to Engineer			
5. Pipe material correct for service			
6. Pipe schedule correct			
7. Pipe size correct			
8. Confirm line number and route			
9. Report interferences to Engineer			
10. Level/slope checked			
11. All valves and specialty fitting over 2" independently supported			
12. Fixed pipe supports fully welded or bolted			
13. Anchor/thrust blocks installed			
14. Anchor/thrust blocks proper type			
15. Anchor/thrust blocks proper location			
16. Flanges installed			
17. Flange parallelity checked			
18. Flange bolts torqued properly			
19. Flange bolt holes straddle vertical or horizontal centerlines			
20. Gaskets installed			
21. Proper gasket material used			
22. All bolts coated with anti-seize compound on threads			
23. Proper solvent cement used			
24. Proper bedding and depth in trench to avoid abrasive contact with bedrock			
25. Snake pipe in trench if joints not fully dried			
26. All ports of line backfilled and braced to prevent movement			
27. Drain valves installed at all low points in piping system			
28. Vent valves installed at all high points in piping system			
29. All valves, gauges, accessories, etc. installed			
30. All valves operational			
31. Valve packing installed and adjusted			
32. All valves, gauges, accessories in proper orientation			
33. Parallel alignment within acceptable limits for fittings			
34. Angular alignment within acceptable limits for fittings			
35. Pipe grooves cut to proper specification			
36. Pipe connections stress free			
<b>NOTES:</b>			



**FA.12.2 POLYETHYLENE PIPE FUSION WELD RECORD**

Line Designation: \_\_\_\_\_ Date: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_ Engineer: \_\_\_\_\_

Weld Number: \_\_\_\_\_

Size and series of pipe: \_\_\_\_\_

Time of day: \_\_\_\_\_

Weather conditions: \_\_\_\_\_

Ambient temperature: \_\_\_\_\_

Pipe ends squared: \_\_\_\_\_

O.D. of pipe ends matched: \_\_\_\_\_

Heating time: \_\_\_\_\_

Heating temperature: \_\_\_\_\_

Heat soak time: \_\_\_\_\_

Cooling time: \_\_\_\_\_

Cooling pressure: \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FA.12.3 PIPE TESTING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Visual inspection of pipe prior to test to identify problems			
2. All relief valves, pressure gauges, pumps, compressors, vessels, etc. isolated/removed from test			
3. List all items removed/isolated during test to confirm reinstallation after test			
4. Vent & drain valves, material and connection installed for test			
5. Ministry testing approval sheet signed and approved			
6. Do not test against closed valves			
7. Provide reasonable notice prior to testing			
8. Is continuous observation required during test			
9. Pipe size			
10. Footage			
11. List test specification followed			
12. List test fluid used			
13. List test fluid pressure			
14. List pressure duration			
15. List allowable leakage			
16. Observed leakage?			
17. List repairs on back of sheet			
18. Retesting			
19. Test successful			
<b>“After Completion of Test”</b>			
20. All lines drained			
21. All lines cleaned			
22. All lines dried (if required)			
23. Install relief valves, pressure gauges, pumps, compressors, vessels, etc. isolated/removed prior to test			
24. Remove any temporary items and connections installed for test			
<b>NOTES:</b>			

**FA.12.4 FLUSHING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Flush specification used			
2. Proper flush medium used			
3. Visual inspection of pipe prior to test			
4. All pumping units, motors, cylinders, equipment, etc. isolated/removed from test			
5. Prepare a checklist of items removed/isolated during test to confirm reconnection after test			
6. Vent & drain valves, material and connection installed for test			
7. 4 hour notice prior to flushing			
<b>“After Completion of Test”</b>			
8. All lines drained			
9. All lined dried (if required)			
10. Install relief valves, pressure gauges, pumps, compressors, vessels, etc. isolated/removed prior to test			
11. Remove any temporary items & connections installed for test			
<b>NOTES:</b>			

**FA.12.5 COMPRESSED AIR PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. ASME B31.1 Power Piping Code			
3. CSA B51 Boiler, Pressure Vessel and Pressure Piping Code			
4. Pre-installation visual inspection of pipes, fittings, valves, etc.			
5. Defects reported to Engineer			
6. Remove protection plugs prior to installation (pickled piping)			
7. Pipe material correct for service			
8. Pipe schedule correct			
9. Pipe size correct			
10. Confirm line number and route			
11. Report interferences to Engineer			
12. Pipe installed parallel to axis of building unless noted otherwise.			
13. Level/slope checked			
14. Plumbness checked			
15. No contact between dissimilar metals			
16. Suitable isolating shields between dissimilar metals			
17. Structures cut with Engineer's approval only			
18. Structures drilled with Engineer's approval only			
19. Welding to structures with Engineer's approval only			
20. Hangers installed and properly fastened			
21. Hanger spacing within acceptable spacing			
22. Pipe not supported from other piping			
23. All flanges and field welds clear pipe supports by 12 inches			
24. Expansion joints installed			
25. Expansion joints free movement			
26. Fixed pipe supports fully welded or bolted			
27. Sliding supports installed			
28. Sliding supports free movement			
29. Spring supports installed			
30. Spring supports preloaded			
31. Spring supports adjusted for travel			
32. Flanges installed			
33. Flange parallelity checked			
34. Flange bolts torqued properly			
35. Flange bolt holes straddle vertical or horizontal centerlines			
36. All bolts coated with anti-seize compound on threads			
37. Couplings installed			
38. Coupling bolts torqued properly			
39. Gasket material correct			
40. Gaskets installed			
<b>NOTES:</b>			

**FA.12.5 COMPRESSED AIR PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
41. Welders certified to Code			
42. Welding procedures submitted to Engineer			
43. Welders' ID stamp on welds			
44. NDE of welds complete: LPI MPI Radiography Visual			
45. Drain valves installed at all low points in piping system			
46. Vent valves installed at all high points in piping system			
47. All valves, gauges, accessories, etc. installed			
48. All valves operational			
49. Valve packing installed and adjusted			
50. All valves, gauges, accessories in proper orientation			
51. Parallel alignment within acceptable limits for fittings			
52. Angular alignment within acceptable limits for fittings			
53. Pipe connections stress free			
54. Cut pipe ends reamed and filed			
55. Burrs, cuttings and chips removed			
56. Threaded joints with appropriate tape or jointing compound			
57. Excess jointing material removed			
58. Pipe grooves cut to proper specification			
59. Sleeves installed in openings			
60. Sleeves flush to wall and roof surfaces			
61. Sleeves in floor extend 5 inches above floor surface			
62. Sleeves sealed at openings			
63. Pipe insulation installed (complete pipe insulation acceptance sheet)			
64. Flushing required (complete flushing certificate)			
65. Disinfecting required (complete pipe disinfecting certificate)			
66. Testing complete (complete pipe testing acceptance sheet)			
<b>NOTES:</b>			

**FA.12.6 PVC/CPVC PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Pre-installation visual inspection of pipes, fittings, valves, etc.			
3. Defects reported to Engineer			
4. Pipe material correct for service			
5. Pipe schedule correct			
6. Pipe size correct			
7. Confirm line number and route			
8. Report interferences to Engineer			
9. Pipe installed parallel to axis of building unless noted otherwise.			
10. Level/slope checked			
11. Plumbness checked			
12. Structures cut with Engineer's approval only			
13. Structures drilled with Engineer's approval only			
14. Welding to structures with Engineer's approval only			
15. Hangers installed and properly fastened			
16. Hanger spacing within acceptable spacing			
17. Hangers do not "squeeze" piping			
18. Hangers do not apply a point load on piping			
19. Protective sleeve between pipe and hanger installed			
20. All valves and specialty fitting over 2" independently supported			
21. Pipe not supported from other piping			
22. Expansion joints installed			
23. Expansion joints free movement			
24. Fixed pipe supports fully welded or bolted			
25. Fixed pipe supports as close to elbows as possible			
26. Sliding supports installed			
27. Sliding supports free movement			
28. Flanges installed			
29. Flange parallelity checked			
30. Flange bolts torqued properly			
31. Flange bolt holes straddle vertical or horizontal centerlines			
32. Gaskets installed			
33. Proper gasket material used			
34. All bolts coated with anti-seize compound on threads			
35. Proper solvent cement used			
<b>NOTES:</b>			

**FA.12.6 PVC/CPVC PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
36. Pipe grooves cut to proper specification			
37. Pipe connections stress free			
38. Drain valves installed at all low points in piping system			
39. Vent valves installed at all high points in piping system			
40. All valves, gauges, accessories, etc. installed			
41. All valves operational			
42. Valve packing installed and adjusted			
43. All valves, gauges, accessories in proper orientation			
44. Parallel alignment within acceptable limits for fittings			
45. Angular alignment within acceptable limits for fittings			
46. Avoid abrasive contact with walls, floors, other piping, etc.			
47. Sleeves installed in openings			
48. Sleeves flush to wall and roof surfaces			
49. Sleeves in floor extend 5 inches above floor surface			
50. Sleeves sealed at openings			
51. Pipe insulation installed (complete pipe insulation acceptance sheet)			
52. Flushing required (complete flushing certificate)			
53. Disinfecting required (complete pipe disinfecting certificate)			
54. Testing complete (complete pipe testing acceptance sheet)			
<b>NOTES:</b>			

**FA.12.7 STEAM PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. ASME B31.1 Power Piping Code			
3. CSA B51 Boiler, Pressure Vessel and Pressure Piping Code			
4. Pre-installation visual inspection of pipes, fittings, valves, etc.			
5. Defects reported to Engineer			
6. Remove protection plugs prior to installation (pickled piping)			
7. Pipe material correct for service			
8. Pipe schedule correct			
9. Pipe size correct			
10. Confirm line number and route			
11. Report interferences to Engineer			
12. Pipe installed parallel to axis of building unless noted otherwise.			
13. Level/slope checked			
14. Plumbness checked			
15. No contact between dissimilar metals			
16. Suitable isolating shields between dissimilar metals			
17. Structures cut with Engineer's approval only			
18. Structures drilled with Engineer's approval only			
19. Welding to structures with Engineer's approval only			
20. Hangers installed and properly fastened			
21. Hanger spacing within acceptable spacing			
22. Pipe not supported from other piping			
23. All flanges and field welds clear pipe supports by 12 inches			
24. Expansion joints installed			
25. Expansion joints free movement			
26. Fixed pipe supports fully welded or bolted			
27. Sliding supports installed			
28. Sliding supports free movement			
29. Spring supports installed			
30. Spring supports preloaded			
31. Spring supports adjusted for travel			
32. Flanges installed			
33. Flange parallelity checked			
34. Flange bolts torqued properly			
35. Flange bolt holes straddle vertical or horizontal centerlines			
36. All bolts coated with anti-seize compound on threads			
37. Couplings installed			
38. Coupling bolts torqued properly			
39. Gasket material correct			
40. Gaskets installed			
<b>NOTES:</b>			

**FA.12.7 STEAM PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
41. Welders certified to Code			
42. Welding procedures submitted to Engineer			
43. Welders' ID stamp on welds			
44. NDE of welds complete: LPI MPI Radiography Visual			
45. Drain valves installed at all low points in piping system			
46. Vent valves installed at all high points in piping system			
47. All valves, gauges, accessories, etc. installed			
48. All valves operational			
49. Valve packing installed and adjusted			
50. All valves, gauges, accessories in proper orientation			
51. Parallel alignment within acceptable limits for fittings			
52. Angular alignment within acceptable limits for fittings			
53. Pipe connections stress free			
54. Cut pipe ends reamed and filed			
55. Burrs, cuttings and chips removed			
56. Threaded joints with appropriate tape or jointing compound			
57. Excess jointing material removed			
58. Pipe grooves cut to proper specification			
59. Sleeves installed in openings			
60. Sleeves flush to wall and roof surfaces			
61. Sleeves in floor extend 5 inches above floor surface			
62. Sleeves sealed at openings			
63. Pipe insulation installed (complete pipe insulation acceptance sheet)			
64. Flushing required (complete flushing certificate)			
65. Disinfecting required (complete pipe disinfecting certificate)			
66. Testing complete (complete pipe testing acceptance sheet)			
<b>NOTES:</b>			

**FA.12.8 CONDENSATE PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. ASME B31.1 Power Piping Code			
3. CSA B51 Boiler, Pressure Vessel and Pressure Piping Code			
4. Pre-installation visual inspection of pipes, fittings, valves, etc.			
5. Defects reported to Engineer			
6. Remove protection plugs prior to installation (pickled piping)			
7. Pipe material correct for service			
8. Pipe schedule correct			
9. Pipe size correct			
10. Confirm line number and route			
11. Report interferences to Engineer			
12. Pipe installed parallel to axis of building unless noted otherwise.			
13. Level/slope checked			
14. Plumbness checked			
15. No contact between dissimilar metals			
16. Suitable isolating shields between dissimilar metals			
17. Structures cut with Engineer's approval only			
18. Structures drilled with Engineer's approval only			
19. Welding to structures with Engineer's approval only			
20. Hangers installed and properly fastened			
21. Hanger spacing within acceptable spacing			
22. Pipe not supported from other piping			
23. All flanges and field welds clear pipe supports by 12 inches			
24. Expansion joints installed			
25. Expansion joints free movement			
26. Fixed pipe supports fully welded or bolted			
27. Sliding supports installed			
28. Sliding supports free movement			
29. Spring supports installed			
30. Spring supports preloaded			
31. Spring supports adjusted for travel			
32. Flanges installed			
33. Flange parallelity checked			
34. Flange bolts torqued properly			
35. Flange bolt holes straddle vertical or horizontal centerlines			
36. All bolts coated with anti-seize compound on threads			
37. Couplings installed			
38. Coupling bolts torqued properly			
39. Gasket material correct			
40. Gaskets installed			
<b>NOTES:</b>			

**FA.12.9 RUBBER LINED STEEL PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Pre-installation visual inspection of pipes, fittings, valves, etc.			
3. Check integrity of rubber lining			
4. Ensure rubber covers pipe ends			
5. Defects reported to Engineer			
6. Remove protection plugs prior to installation (pickled piping)			
7. Do not put rubber lining in contact with oils or solvents			
8. Pipe material correct for service			
9. Pipe schedule correct			
10. Pipe size correct			
11. Confirm line number and route			
12. Report interferences to Engineer			
13. Pipe installed parallel to axis of building unless noted otherwise			
14. Level/slope checked			
15. Plumbness checked			
16. No contact between dissimilar metals			
17. Suitable isolating shields between dissimilar metals			
18. Structures cut with Engineer's approval only			
19. Structures drilled with Engineer's approval only			
20. Weld to structures with Engineer's approval only			
21. Welding not permitted on pipe			
22. Hangers installed and properly fastened			
23. Hanger spacing within acceptable spacing			
24. Pipe not supported from other piping			
25. All flanges and field welds clear pipe supports by 12 inches			
26. Expansion joints installed			
27. Expansion joints free movement			
28. Fixed pipe supports fully welded or bolted			
29. Sliding supports installed			
30. Sliding supports free movement			
31. Spring supports installed			
32. Spring supports preloaded			
31. Spring supports adjusted for travel			
34. Flanges installed			
35. Flange parallelity checked			
36. Flange bolts torqued properly			
37. Flange bolt holes straddle vertical or horizontal centerlines			
38. Couplings installed			
39. Coupling bolts torqued properly			
<b>NOTES:</b>			

**FA.12.10 CHEMICAL PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Pre-installation visual inspection of pipes, fittings, valves, etc.			
3. Defects reported to Engineer			
4. Remove protection plugs prior to installation (pickled piping)			
5. Pipe material correct for service			
6. Pipe schedule correct			
7. Pipe size correct			
8. Confirm line number and route			
9. Report interferences to Engineer			
10. Pipe installed parallel to axis of building unless noted otherwise.			
11. Level/slope checked			
12. Plumbness checked			
13. No contact between dissimilar metals			
14. Suitable isolating shields between dissimilar metals			
15. Structures cut with Engineer's approval only			
16. Structures drilled with Engineer's approval only			
17. Welding to structures with Engineer's approval only			
18. Hangers installed and properly fastened			
19. Hanger spacing within acceptable spacing			
20. Pipe not supported from other piping			
21. All flanges and field welds clear pipe supports by 12 inches			
22. Expansion joints installed			
23. Expansion joints free movement			
24. Fixed pipe supports fully welded or bolted			
25. Sliding supports installed			
26. Sliding supports free movement			
27. Spring supports installed			
28. Spring supports preloaded			
29. Spring supports adjusted for travel			
30. Flanges installed			
31. Flange parallelity checked			
32. Flange bolts torqued properly			
33. Flange bolt holes straddle vertical or horizontal centerlines			
34. All bolts coated with anti-seize compound on threads			
35. Couplings installed			
36. Coupling bolts torqued properly			
37. Proper gasket material used			
38. Gaskets installed			
<b>NOTES:</b>			

**FA.12.11 OXYGEN PIPING ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Pre-installation visual inspection of pipes, fittings, valves, etc.			
3. Defects reported to Engineer			
4. Remove protection plugs prior to installation (pickled piping)			
5. Pipe material correct for service			
6. Pipe schedule correct			
7. Pipe size correct			
8. Confirm line number and route			
9. Report interferences to Engineer			
10. Pipe installed parallel to axis of building unless noted otherwise.			
11. Level/slope checked			
12. Plumbness checked			
13. No contact between dissimilar metals			
14. Suitable isolating shields between dissimilar metals			
15. Structures cut with Engineer's approval only			
16. Structures drilled with Engineer's approval only			
17. Welding to structures with Engineer's approval only			
18. Hangers installed and properly fastened			
19. Hanger spacing within acceptable spacing			
20. Pipe not supported from other piping			
21. All flanges and field welds clear pipe supports by 12 inches			
22. Expansion joints installed			
23. Expansion joints free movement			
24. Fixed pipe supports fully welded or bolted			
25. Sliding supports installed			
26. Sliding supports free movement			
27. Spring supports installed			
28. Spring supports preloaded			
29. Spring supports adjusted for travel			
30. Flanges installed			
31. Flange parallelity checked			
32. Flange bolts torqued properly			
33. Flange bolt holes straddle vertical or horizontal centerlines			
34. All bolts coated with anti-seize compound on threads			
35. Couplings installed			
36. Coupling bolts torqued properly			
37. Proper gasket material used			
48. Gaskets installed			
<b>NOTES:</b>			

**FA.12.12 POLYETHYLENE TAILINGS LINE ACCEPTANCE SHEET**

Line Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop/spool drawings			
2. Pre-installation visual inspection of pipes, fittings, valves, etc.			
3. Defects reported to Engineer			
4. Pipe material correct for service			
5. Pipe schedule correct			
6. Pipe size correct			
7. Confirm line number and route			
8. Report interferences to Engineer			
9. All valves and specialty fitting over 2" independently supported			
10. Anchor/thrust blocks installed			
11. Anchor/thrust blocks proper type			
12. Anchor/thrust blocks proper location			
13. Flanges installed			
14. Flange parallelity checked			
15. Flange bolts torqued properly			
16. Flange bolt holes straddle vertical or horizontal centerlines			
17. Gaskets installed			
18. Proper gasket material used			
19. All bolts coated with anti-seize compound on threads			
20. Complete polyethylene fusion weld record			
21. Proper bedding to avoid abrasive contact with bedrock			
22. Posts installed to control snaking			
23. Drain valves installed at all low points in piping system			
24. Vent valves installed at all high points in piping system			
25. All valves, gauges, accessories, etc. installed			
26. All valves operational			
27. Valve packing installed and adjusted			
28. All valves, gauges, accessories in proper orientation			
29. Parallel alignment within acceptable limits for fittings			
30. Angular alignment within acceptable limits for fittings			
31. Pipe grooves cut to proper specification			
32. Pipe connections stress free			
33. Spigots installed			
34. Flushing required (complete flushing certificate)			
35. Testing complete (complete pipe testing acceptance sheet)			
<b>NOTES:</b>			





**FA.12.15 HVAC SYSTEM ACCEPTANCE SHEET**

Equipment Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_


Item Description	Date Completed	Contractor	Engineer
1. Equipment drawings and parts lists			
2. Assembly instructions			
3. Name plate data correct to specifications			
4. Alignment reading of HVAC unit			
5. Grouting			
6. Suspension hangers and brackets installed			
7. Isolator pads installed			
8. Alignment readings of base frame			
9. Alignment readings of motor			
10. Alignment readings of gear box			
11. Alignment reading of couplings (complete alignment checklist for couplings)			
12. Alignment readings for belt drive (complete alignment checklist for belt drives)			
13. Alignment reading for impeller			
14. Direction of fan rotation			
15. Intake ducting installed			
16. Bird screen installed			
17. Intake filters installed			
18. Distribution ducting installed			
19. Ducting supports proper			
20. Dampers, balancing valves, etc. installed			
21. Diffusers and return grills installed			
22. Ducting insulation installed			
23. Ducting stress free			
24. Gasketing installed			
25. Flexible connections and breeching installed			
26. Gas piping installed (complete gas piping acceptance sheet)			
27. Gas train installed			
28. Cooling water piping installed			
29. Drains, vents, valves, etc. installed			
30. Condensate piping installed			
31. Start-up checklist from manufacturer complete			
32. Duct balancing report			
33. Confirm flow rates, temperatures, etc.			
34. Instrumentation and controls installed and operational			
35. Guards installed			
<b>NOTES:</b>			

<b>A.13</b>	<b><i>Division 16 - Electrical</i></b>
A.13.1	General Electrical Provisions
A.13.2	Grounding
A.13.3	Electrical Identification
A.13.4	Testing Electrical
A.13.5	Wires and Cables
A.13.6	Panelboards
A.13.7	Conduits
A.13.8	Cabletrays
A.13.9	Boxes
A.13.10	Wiring Devices
A.13.11	Motor Starters and Disconnects
A.13.12	Seismic Restraints
A.13.13	Motors
A.13.14	Transformers
A.13.15	Lighting
A.13.16	Fire Alarm and Detection System
A.13.17	Intercommunication systems
A.13.18	Public Address System
A.13.19	Control Devices
A.13.20	Lighting Control Equipment

Note: It is recommended that qualified personnel with related experience shall review the items included in each of the checklists listed above.


**A.13.1 General Electrical Provisions**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Submitted Certificate of Compliance or technical information from manufacturers for electrical materials to be used.				
Equipment and material used are new and meet CSA requirements				
For concealed areas: all electrical fixtures, fittings and associated supports are as specified.				
The following are factory finished in an alkyd high gloss enamel applied over a corrosion resistant primer: <ul style="list-style-type: none"> <li>• Panel boards</li> <li>• Distribution centers</li> <li>• Motor control centers</li> <li>• Transformers</li> </ul> Note: Exterior color shall be grey (ASA #61). Interior color shall be white or manufacturers standard.				
All equipment are capable to operate under environmental conditions as listed in Project Specifications.				
<i>Note: any opening around the raceway or cable shall be properly closed or sealed with 3 hour fire rating insulation.</i>				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.2 Grounding**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
Project No.: _____	Location _____			
Contract No.: _____	Item No.: _____			
Project No. _____	_____			
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Equipment and material used are new and meet CSA or specified requirements				
Used materials as indicated on the Drawings				
Material used for exothermic welding connections was produced specifically for the application by one manufacturer				
All grounding and bonding components were installed in accordance Drawings and Specifications.				
Use approved compression fittings for all grounding system as indicated in the Drawing.				
Clearly marked and accurately located on the "As – Constructed Drawing" locations of all ground rods and buried ground conductors.				
Buried ground rods and interconnecting ground conductors at least 250 mm below permanent ground moisture level				
Installed separate ground conductor to all outdoors-light standards.				
Made all cable tray systems and metal walkways electrically continuous.				
Bonded all cable tray systems and metal walkways to the grounding system.				
Performed ground tests prior to energizing any electrical system.				
Checked for permanent attachment and electrical continuity each grounding path from all circuits, equipment and enclosure.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.3 Electrical Identification**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
The following electrical items were clearly identified as shown on the Drawing:  <b>Major electrical equipment:</b> <ul style="list-style-type: none"> <li>• Panels</li> <li>• Transformers</li> <li>• Main distribution centers</li> <li>• Branch circuits</li> <li>• Terminal cabinets</li> <li>• Special receptacles</li> </ul> <b>Conductor and Cable</b> <ul style="list-style-type: none"> <li>• equipment grounding conductor : green</li> <li>• neutral conductor</li> <li>• single phase ac (2 wire): black, white</li> <li>• Single phase ac (3 wire): black, red , white</li> <li>• three phase ac: (phase A:red); (phase B:black); (phase C:blue)</li> </ul> all voltage DC: (red:positive), (black:negative)				
System nameplates heights requirements: <ul style="list-style-type: none"> <li>• local control devices: 5.0mm</li> <li>• terminal strips: 5.0mm</li> <li>• HV switchgear : 25mm</li> <li>• all others : 10mm</li> </ul>				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.4 Testing Electrical**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Test instruments calibrated with proof recent calibration certificate.				
Visually inspected all equipment and materials				
Equipment Splice and System were tested for the ff.: Insulation resistance Grounding continuity 3. General operations 4. Proper and secure connections				
Performed megger test on all feeders and branch circuits before energizing any portion of the electrical system				
Performed voltage check				
Performed test in the presence of Designer				
Sign – off: Name:	Date:			
Comments:				


**A.13.5 Wires and Cables**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
Project No.: _____	Location: _____			
Contract No.: _____	Item No.: _____			
Project No.: _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
Materials used meet the Contract Documents requirements				
Laced or clipped groups of feeder conductors at all distribution centres, pull boxes and termination points.				
Installed power and motor feeder cables in one continuous length, free of joints, splices and taps.				
Terminated conductors in terminal blocks or with compression lugs insulated with heat shrinkable tubing or tape				
Used non-corrosive and non-conductive cleaning agents or lubricants when inserting conductors in raceways				
Service entrance cables were supplied, installed and connected by the Utility company or authority.				
Made no splice in instrumentation and communication cables. Note: the Designer should approve Any splice in instrumentation and communication cables.				
Tested wires and cables for shorts, open circuits and grounds.				
Sign – off: Name: _____	Date: _____			
Comments: _____ _____ _____				


**A.13.6 Panelboards**

**CHECKLIST**

	QC Inspector: _____ Report Date: _____			
	Project No.: _____ Contract No.: _____		Location: _____ Item No.: _____	
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
The following materials used meet the Contract Documents requirements.				
<ul style="list-style-type: none"> <li>• Panelboards:</li> <li>• 120/208 volt 3 phase</li> <li>• 120 volt single phase</li> <li>• 347/600 volt lightning panels</li> <li>• 347/600 volt power distributor</li> <li>• 347/600 volt main distributor</li> <li>• 125 volt DC panels</li> </ul>				
Connected all loads to the circuits as shown in the Drawing				
Grounded all panels				
Tested panelboards				
Checked circuit breaker for proper manual operation and tightness of electrical connections.				
Checked load balance on all feeders at all panelboards				
Load imbalance exceeding 15 % was corrected.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.7 Conduits**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
Project No.: _____	Location: _____			
Contract No.: _____	Item No.: _____			
Project No.: _____				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
Materials used meet the Contract Documents requirements.				
Rigid PVC conduit was used only for purpose as described in Project Specifications.				
All conduits were cleaned before use.				
Capped ends of conduits during construction				
Protected from damage conduits that stub out of concrete surfaces.				
Provided sleeves to conduits that pass through waterproof membranes. Note: Sleeves shall be provided before installation of membranes.				
Installed underground wiring in CSA approved rigid PVC				
Used conduits size as indicated in the Drawing.				
Installed expansion couplings in all conduit runs at 60m intervals.				
Coated with epoxy all buried rigid steel conduits in contact with soil.				
Sign – off: Name: _____	Date: _____			
Comments: _____ _____ _____				


**A.13.8 Cabletrays**

**CHECKLIST**

	<b>QC Inspector:</b> _____			
	<b>Report Date:</b> _____			
<b>Project No.:</b> _____	<b>Location:</b> _____			
<b>Contract No.:</b> _____	<b>Item No.:</b> _____			
<b>Project No.:</b> _____				
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Materials used for cabletrays and fittings as specified in the Contract Documents and Drawings.				
Installed cable tray system as indicated in the Drawing.				
Enclosed with covers all vertical cabletrays passing through a floor for a minimum of 2m above the floor				
Removed sharp metal rough edges or projection				
Painted field cut ends with two coats of zinc rich protective paint.				
Closed dead ends of cabletrays with proper end fittings.				
Grounded cabletrays.				
Sign – off: Name:	Date:			
Comments: _____ _____ _____				


**A.13.9 Boxes**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.:				
Contract No.:				
Project No.:				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
The following materials used meet the Contract Documents requirements.				
<ul style="list-style-type: none"> <li>• Embedded and concealed boxes</li> <li>• Exposed boxes</li> <li>• Gaskets</li> <li>• Cast metal cover plates</li> <li>• Steel cover plates</li> <li>• Surface box plates</li> <li>• Waterproof cover plates for receptacles</li> <li>• Fireproof cover plates</li> </ul>				
Installed pullboxes and junction boxes at locations shown on the Drawings.				
Installed junction boxes and pullboxes in damp and wet locations meet CSA Type 4 construction requirements or as specified in the Contract Documents.				
Sign – off: Name:	Date:			
Comments:				
_____				
_____				
_____				


**A.13.10 Wiring Devices**

**CHECKLIST**

	QC Inspector: _____ Report Date: _____						
Project No.: _____ Contract No.: _____ Project No.: _____	Location: _____ Item No.: _____						
<b>QUALITY CONTROL PROCEDURES</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">COMPLIANCE</th> <th rowspan="2">N/A</th> <th rowspan="2">DATE</th> </tr> <tr> <th>YES</th> <th>NO</th> </tr> </table>	COMPLIANCE		N/A	DATE	YES	NO
COMPLIANCE		N/A	DATE				
YES	NO						
The following materials used meet the Contract Documents requirements. <ul style="list-style-type: none"> <li>• Line voltage switches</li> <li>• Duplex receptacles</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>						
Installed switch mounting heights is 1250 mm or as indicated in the Drawing.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>						
Mounted receptacles at vertical distance of 300mm above the floor or as indicated in the Drawing.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>						
Tested wiring devices for correct function.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>						
_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> </table>						
Sign – off: Name: _____	Date: _____						
Comments: _____ _____ _____							


**A.13.11 Motor Starters and Disconnects**

**CHECKLIST**

 <p><b>Project No.:</b></p> <p><b>Contract No.:</b></p> <p><b>Project No.:</b></p>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify installation requirements.				
Perform test for operation and control.				
<b>Sign – off:</b>		<b>Date:</b>		
<b>Name:</b>				
<b>Comments:</b>				
-----				
-----				
-----				


**A.13.12 Seismic Restraints**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify Seismic Restraint design and inspection requirements.				
Verify electrical equipment needing Seismic Restraint.				
Verify installed seismic restraint of electrical equipment.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.13 Motors**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
Project No.: _____		Location: _____			
Contract No.: _____		Item No.: _____			
Project No.: _____					
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE	
	YES	NO			
Verify product requirements.					
Verify compliance of the delivered products.					
Verify and confirmed of motor final locations, loads, and connections prior to installation.					
Verify testing requirements.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.13.14 Transformers**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
Project No.: _____		Location: _____			
Contract No.: _____		Item No.: _____			
Project No.: _____					
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE	
	YES	NO			
Verify product requirements.					
Verify compliance of the delivered products.					
Verify installation requirements.					
Perform testing on the installed transformers.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.13.15 Lighting**

**CHECKLIST**

		QC Inspector: _____			
		Report Date: _____			
		Location: _____			
		Item No.: _____			
Project No.: _____					
Contract No.: _____					
Project No.: _____					
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>		<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
		<b>YES</b>	<b>NO</b>		
Installed light fixtures as indicated in the Drawings.					
Installed fixtures are CSA approved or as specified.					
Installed ballast for the HID light fixtures were type 120 volts or 347 volt design					
Installed lamps for all light fixtures as shown on the Drawings.					
Installed lights maintains 12mm clearance from combustible materials.					
Check and align all light fixtures					
Cleaned all diffusers					
Replaced all burnt-out lamps.					
All light fixtures tested in accordance with Project Specifications.					
Sign – off: _____		Date: _____			
Name: _____					
Comments: _____					
_____					
_____					


**A.13.16 Fire Alarm and Detection System**

**CHECKLIST**

	QC Inspector: _____ Report Date: _____						
Project No.: _____	Location: _____						
Contract No.: _____	Item No.: _____						
Project No.: _____							
<b>QUALITY CONTROL PROCEDURES</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="padding: 5px;">COMPLIANCE</th> <th rowspan="2" style="padding: 5px;">N/A</th> <th rowspan="2" style="padding: 5px;">DATE</th> </tr> <tr> <th style="padding: 5px;">YES</th> <th style="padding: 5px;">NO</th> </tr> </table>	COMPLIANCE		N/A	DATE	YES	NO
COMPLIANCE		N/A	DATE				
YES	NO						
Verify documents and drawings for submittal.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Verify product requirements.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Verify compliance of the delivered products.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Verify requirements for installation.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Manufacturer to perform initial verification on the installed Fire Alarm System.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Manufacturer to issue Inspection Certification.	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table>						
Sign – off:	Date:						
Name:							
Comments:							
_____							
_____							
_____							


**A.13.17 Intercommunication systems**

**CHECKLIST**

	QC Inspector: .....			
	Report Date: .....			
	Location: .....			
	Item No.: .....			
Project No.: .....				
Contract No.: .....				
Project No.: .....				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify installation requirements.				
Verify the installed intercommunication System.				
Sign – off: .....	Date: .....			
Name: .....				
Comments: .....				
.....				
.....				


**A.13.18 Public Address System**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents, shop drawings and product sample for submittal.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify locations for installation and verify Architectural and Mechanical Drawings for conflict in locations.				
Verify with Consultant prior to for any necessary cutting on structural members, coring, drilling and saw cutting.				
Install seismic restraint to the specified Public Address System components.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.13.19 Control Devices**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify product requirements.				
Verify compliance of the delivered products.				
Verify requirements for installation.				
Perform testing on installed control devices as required.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.13.20 Lighting Control Equipment**


**CHECKLIST**

 <p><b>Project No.:</b></p> <p><b>Contract No.:</b></p> <p><b>Project No.:</b></p>	<p><b>QC Inspector:</b></p> <p><b>Report Date:</b></p> <p><b>Location:</b></p> <p><b>Item No.:</b></p>				
	<b>QUALITY CONTROL PROCEDURES</b>		<b>COMPLIANCE</b>		
		<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>DATE</b>
	Verify product requirements listed.				
Verify compliance of the delivered products.					
Verify Site Surface Preparation requirements.					
Perform testing on installed lighting control equipment as required.					
<p>Sign – off: _____ Date: _____</p> <p>Name: _____</p>					
<p>Comments:</p> <p>.....</p> <p>.....</p> <p>.....</p>					

<b>A.14</b>	<b>Others</b>
A.14.1	Underground Power and Communication Lines
A.14.2	Finished Door Hardware
A.14.3	Acoustic Ceiling Tiles
A.14.4	Chemical Resistant Coatings
A.14.5	Toilet Partitions
A.14.6	System Demonstration and Owner's Instructions
A.14.7	Commissioning
A.14.8	Testing
A.14.9	Equipment Testing and Start-Up
A.14.10	Coordination with Balancing Agency
A.14.11	Balancing
A.14.12	Vibration Isolation
A.14.13	Alignment Checklist for Couplings
A.14.14	Alignment Checklist for Belt Drives
A.14.15	Mechanical Pre-Operation Checklist
FA.14.1	Conveyor Acceptance Sheet
FA.14.2	Hydraulic Power Unit Acceptance Sheet
FA.14.3	Tank Acceptance Sheet
FA.14.4	Pump Acceptance Sheet
FA.14.5	Package Lube Unit Acceptance Sheet
FA.14.6	Belt Splicing Record
FA.14.7	Bolt Tightness Acceptance Sheet


**A.14.1 Underground Power and Communication Lines**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify product requirements listed in Project Specifications.				
Verify compliance of the products.				
Verify locations and elevations for direct burial ducts and concrete-encased ductbanks.				
Verify installed plastic ducts spacers.				
Provincial Utilities company to inspect duct installation prior to backfilling or placement of concrete.				
Verify requirements for installation, backfilling.				
Sign – off: Name:	Date:			
Comments:				
-----				
-----				
-----				


**A.14.2 Finished Door Hardware**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify approved Manufacturers and product requirements.				
Verify compliance of the delivered products.				
Manufacturer's representative to inspect installed Finished Door Hardware.				
Manufacturer's representative to issue certification indicating compliance in product, installation and operation.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.14.3 Acoustic Ceiling Tiles**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify documents for submittal.				
Verify approved Manufacturer and product requirements.				
Verify compliance of the delivered products.				
Install acoustic ceiling assembly after overhead work (mechanical, electrical) were in compliance and the building is enclosed.				
Temperature is above 14 C before and after installation.				
Verify requirements for installation.				
Verify level of the installed ceiling system.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.14.4 Chemical Resistant Coatings**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify documents and product samples for submittal.				
Verify approved suppliers and product requirements.				
Verify requirements for installation.				
Verify compliance of the delivered products.				
To maintain minimum temperature of 10 C at the installation area 3 days prior and during and after installation.				
Remove excess adhesive, debris and surplus materials.				
Sign – off: Name:		Date:		
Comments:				
.....				
.....				
.....				


**A.14.5 Toilet Partitions**

**CHECKLIST**

 <p><b>Project No.:</b></p> <p><b>Contract No.:</b></p> <p><b>Project No.:</b></p>	<p><b>QC Inspector:</b></p> <p><b>Report Date:</b></p> <p><b>Location:</b></p> <p><b>Item No.:</b></p>				
	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>	
	<b>QUALITY CONTROL PROCEDURES</b>	<b>YES</b>	<b>NO</b>		
	Verify documents and shop drawings for submittal.				
Verify acceptable Manufacturers and product requirements.					
Verify compliance of the delivered products.					
<p>Sign – off:</p> <p>Name:</p>		<p>Date:</p>			
<p>Comments:</p> <p>.....</p> <p>.....</p> <p>.....</p>					


**A.14.6 System Demonstration and Owner’s Instructions**

**CHECKLIST**

 <p><b>Project No.:</b></p> <p><b>Contract No.:</b></p> <p><b>Project No.</b></p>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Prepare schedule identifying the proposed sequence of demonstration				
Arrange for presentation and demonstration of mechanical equipment and systems.				
Demonstrate the following system: <ul style="list-style-type: none"> <li>- Compressed air systems</li> <li>- Air Systems</li> <li>- Fire Protection Systems</li> <li>- Plumbing Systems</li> <li>- Control Systems</li> </ul>				
Demonstrate the following pieces of equipment: <ul style="list-style-type: none"> <li>- Hot Water Pressure Washer</li> <li>- Fans/Air Handling Units</li> <li>- Unitary Air Conditioners</li> <li>- Infrared Heaters</li> <li>- Domestic Water Heater</li> <li>- Pumps</li> <li>- Air Compressors and Dryer</li> </ul>				
Sign – off: Name:		Date:		
Comments:				


**A.14.7 Commissioning**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.:				
Contract No.:				
Project No.:				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify commissioning process for the mechanical system.				
Appoint Commissioning Coordinator.				
Verify systems for commissioning .				
Commissioning Coordinator to submit commissioning schedule 6 months prior to Substantial completion of project.				
Commissioning Coordinator to prepare commissioning statement for:  Phase 1 - System Readiness Phase 2 – System Start Up, Testing, Balancing, Ect. Phase 3 – Verification of System Commissioning. Phase 4 – Demonstration and Instruction.				
Sign – off:				Date:
Name:				
Comments:	_____			
	_____			
	_____			


**A.14.8 Testing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
<p align="center"><b>QUALITY CONTROL PROCEDURES</b></p>	<b>COMPLIANCE</b>		N/A	DATE
	YES	NO		
Verify documents, permits for submittals				
Verify compliance to pressure test for the following:				
Drainage System				
Water Piping				
Natural Gas				
Sprinkler System				
Underground Fire Mains				
Ducts				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.14.9 Equipment Testing and Start-Up**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify required tests to be witnessed				
Submit manufacturer's check sheets for the following: Hot water pressure washer Air handling units Pumps Compressors Control components Domestic water-heaters				
Conduct tests as required.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				


**A.14.10 Coordination with Balancing Agency**

**CHECKLIST**

 <b>Project No.:</b> <b>Contract No.:</b> <b>Project No.:</b>	<b>QC Inspector:</b>			
	<b>Report Date:</b>			
	<b>Location:</b>			
	<b>Item No.:</b>			
<b>QUALITY CONTROL PROCEDURES</b>	<b>COMPLIANCE</b>		<b>N/A</b>	<b>DATE</b>
	<b>YES</b>	<b>NO</b>		
Verify if work is in operating state and ready for balancing.				
Perform corrections as required by the Balancing Agency				
Install balancing valve, dampers.				
Install pulleys and sheaves for rotating equipment.				
Sign – off:	Date:			
Name:				
Comments:				


**A.14.11 Balancing**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.:				
Contract No.:				
Project No.:				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify if work for air and water distribution is completed.				
Coordinate time of visit with the Owner's Representative.				
Review reports of the Balancing Agency.				
Perform corrections as required by the Balancing Agency				
Submit balancing agenda to the Commissioning Contractor and to the Owner's Representative.				
Verify if systems been completed and in full working order prior to performing balancing.				
Submit reports to the Owner's Representative				
Sign – off: _____	Date: _____			
Name: _____				
Comments:	_____			
	_____			
	_____			

**A.14.12 Vibration Isolation**

**CHECKLIST**

	QC Inspector: _____			
	Report Date: _____			
	Location: _____			
	Item No.: _____			
Project No.: _____				
Contract No.: _____				
Project No.: _____				
QUALITY CONTROL PROCEDURES	COMPLIANCE		N/A	DATE
	YES	NO		
Verify installed equipment needing vibrator isolator.				
Verify product requirements.				
Verify compliance of the delivered products.				
Verify requirements for installation.				
Sign – off: _____	Date: _____			
Name: _____				
Comments: _____				
_____				
_____				

**A.14.13 Alignment Checklist for Couplings**

DATE: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

EQUIPMENT NO.: \_\_\_\_\_

ENGINEER: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_

COUPLING MAKE & SIZE: \_\_\_\_\_

FACE-TO-FACE DISTANCE: \_\_\_\_\_

COUPLING LOCATED BETWEEN: DriveR AND DriveN

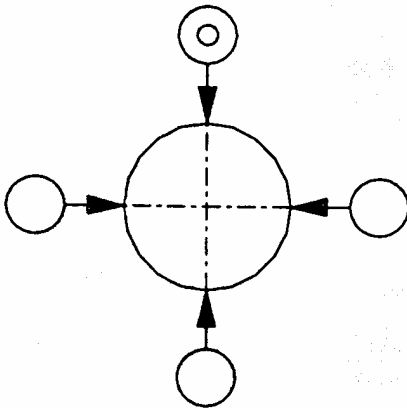
Motor  
Reducer  
Turbine


Reducer  
Other \_\_\_\_\_

Parallel Misalignment

Dialreading in thou's,  
probe on OD of:

DriveR half  
DriveN half

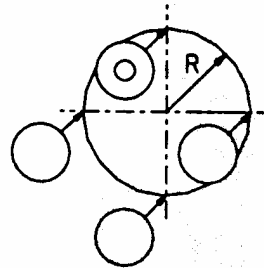
Remarks \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Angular Misalignment

Dialreading in thou's,  
probe on OD of:

DriveR half  
DriveN half

R =



Remarks \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SOFT FOOT CORRECTION:

**A.14.13 Alignment Checklist for Couplings**

**SUGGESTED TOLERANCES**

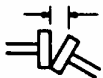
**Soft Foot (Flatness)**

**Short Coupling**

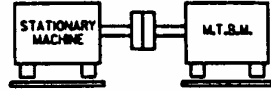
- Parallel Offset - (mils)



- Angularity



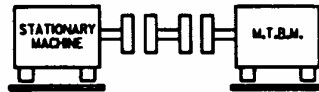
- (mils per Inch of coupling diameter)  
- or (mils per Inch of the path travelled by the axial dial indicator)



RPM	Excellent	Acceptable
all	.002	.003
600	.005	.009
900	.003	.006
1200	.0025	.004
1800	.002	.003
3600	.001	.0015
7200	.0005	.001
600	.001	.0015
900	.0007	.001
1200	.0005	.0008
1800	.0003	.0005
3600	.0002	.0003
7200	.0001	.0002

**Coupling with Spacers**

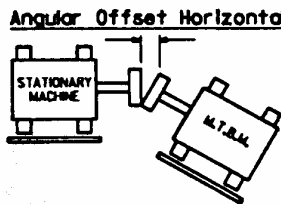
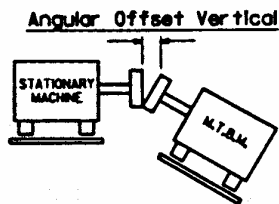
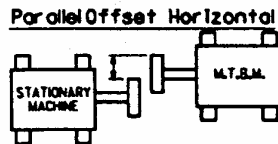
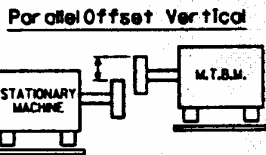
- Parallel Offset - (mils per Inch of spacer length) This tolerance must be met at both coupling faces.



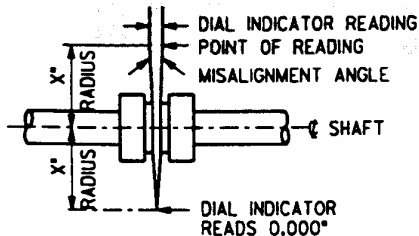
600	.0018	.003
900	.0012	.002
1200	.0009	.0015
1800	.0006	.001
3600	.0003	.0005
7200	.00015	.00025

**NOTES:**

1. Values are expressed in thousands of an Inch (mils).
2. These suggested tolerances are the maximum allowable from zero or a targeted offset in each of the four parameters of misalignment illustrated below.



**ANGULAR MISALIGNMENT**



1. Standard extension can be used for mounting dial indicators. Both shafts must turn in unison
2. Example:  
Coupling speed 3600 R.P.M.  
 $\theta = 10^\circ$   
Dial Ind. reading = 0.005 or tolerance of  $\frac{0.005}{20} = 0.00025$   
• (0.0002 = excellent ; 0.0003 = acceptable)

**A.14.14 Alignment Checklist for Belt Drives**

Equipment No.: \_\_\_\_\_ Date: \_\_\_\_\_

Description: \_\_\_\_\_

Contractor: \_\_\_\_\_ Engineer: \_\_\_\_\_

**SHEAVES**

Drive (R ): Make, size & no. of grooves: \_\_\_\_\_

Brushing make & size: \_\_\_\_\_

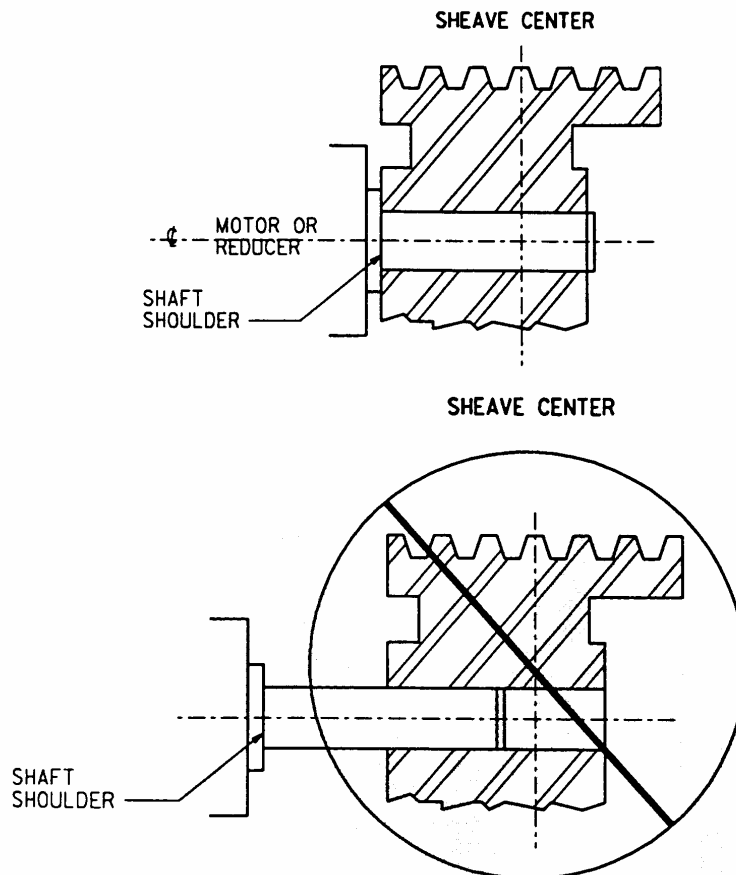
Drive (N): Make, size & no. of grooves: \_\_\_\_\_

Bushing make & size: \_\_\_\_\_

Centre distance: \_\_\_\_\_

Parallel alignment (offset): \_\_\_\_\_

Angular alignment (offset): \_\_\_\_\_



**A.14.14 Alignment Checklist for Belt Drives**

Equipment No.: \_\_\_\_\_ Date: \_\_\_\_\_

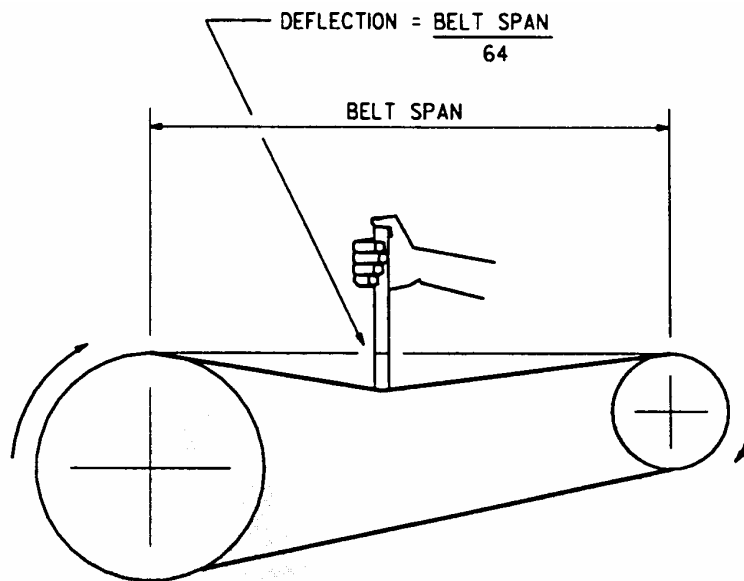
Description: \_\_\_\_\_

Contractor: \_\_\_\_\_ Engineer: \_\_\_\_\_

**BELT TENSIONING**

**Tension-Deflection Method**

Deflection force: \_\_\_\_\_



**TABLE NO. 1 FRACTIONAL HORSE POWER BELTS DEFLECTION FORCE**

CROSS SECTION	SMALLEST SHEAVE DIA. RANGE	Pounds	
		Min.	Max.
3L	1.25 - 1.75	1/2	5/8
	2.00 - 2.25	5/8	7/8
	2.50 - 3.00	3/4	1 1/8
4L	2.10 - 2.80	1 1/8	1 5/8
	3.00 - 3.50	1 1/2	2 1/8
	3.70 - 5.00	1 7/8	2 5/8
5L	3.00 - 4.20	2	2 7/8
	4.50 - 5.20	2 3/8	3 5/8

**A.14.15 MECHANICAL PRE-OPERATION CHECKLIST**

FILE \_\_\_\_\_

EQUIPMENT \_\_\_\_\_

EQUIP. NO. \_\_\_\_\_

PROJECT \_\_\_\_\_

MOTOR NO. \_\_\_\_\_

PROJECT NO. \_\_\_\_\_

ELECT. UNIT NO. \_\_\_\_\_

**DRIVE DETAILS**

TYPE	DRIVE			
	BELT	CHAIN	DIRECT	OTHER
SIZE				
NUMBER/PITCH				
TENSION				
ALIGNMENT				
OTHER				

**LUBRICATION DETAILS**

MECHANISM	TYPE	LEVEL

COOLING SYSTEM/GLAND WATER \_\_\_\_\_

PRESSURE GAUGE/READINGS \_\_\_\_\_

R.P.M. \_\_\_\_\_ FT./MIN. \_\_\_\_\_ GUARDS \_\_\_\_\_

REMARKS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

APPROVED BY: CONTRACTOR \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY: OTHER \_\_\_\_\_ DATE \_\_\_\_\_





**FA.14.3 TANK ACCPETANCE SHEET**

Equipment Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Item Description	Date Completed	Contractor	Engineer
1. Shop drawings complete with engineer stamp.			
2. Lifting study/lifting lugs - design complete with engineer stamp			
3. Welding design and procedures complete with engineer stamp			
4. Location/orientation of anchor bolts			
5. System axis and elevation marks			
6. Alignment of equipment, level, plumb, slope (shop fab. And field installed tanks)			
7. Grouting			
8. Orientation/dimensions of nozzles			
9. Internals, baffles, supports, accessories, etc.			
10. Ladders, stairways, structures, etc.			
11. Removal of lifting lugs			
12. Test procedures - Vacuum test			
- Radiographic test			
- Hydrostatic test			
- Visual inspection (100% of all welds)			
13. Inside cleanliness			
14. Painting			
15. Main shell dimensions (measured prior to hydrostatic test)			
- Diameter			
- Height			
- Roundness			
- Plumbness			
<b>NOTES:</b>			





**FA.14.6 BELT SPLICE RECORD**

Equipment Number: \_\_\_\_\_

Description \_\_\_\_\_

Contractor \_\_\_\_\_

Date \_\_\_\_\_

Make of Belt	No. of Piles	Weight	Covers	New	Used	No. of Splices	Vulcanizer No.
Length	Material Handled			Kind of Take-up			
Width	Splicing Done By			Assistant			
Curing Temperature	Splicing Procedure Recommended by Manufacturer						
Curing Time							
Pressure							
Type of Cement	Weather Conditions	Dry	Wet	Temperature			
Remarks							
Engineer's Approval: _____							

