APPENDIX 3-C

INITIAL QUALITY MANAGEMENT PLAN

(See attached.)

Design and Construction Quality Management Plan

June 2017

Great Hall Project LLC

ferrovial

SAUNDERS
Building Confidence®

JLC | MJE-Loop Capital Partners LLC

Revision History

Revision	Effective Date	Prepared by:	Reviewed by:	Approved by:
V0	06/26/2017			

Table of Contents

1 Introduction

1.1 Organization

DBJV is a Limited Liability Company formed by Ferrovial Agroman U.S. Corp. and Saunders Construction, Inc. as its members, with overall responsibility for the design and construction of the Great Hall Project. DBJV has entered into a contract with the Developer to carry out the design and construction of the Great Hall Project and will perform its obligations according to the D&B Contract and Development Agreement.

DBJV will either self-perform or contract/subcontract the design and construction services to qualified Design Consultants and Contractors. DBJV's contractors or subcontractors will be contractually required to comply with the Development Agreement, for the portions that are applicable, and the Technical Provisions, as part of the provision for their services. Consultants may subcontract to sub-consultants (previously approved by DBJV) and they will also be required to comply to the same contractual requirements that apply with their contract with DBJV.

The developer will provide oversight of the DBJV and any of their consultants/contractors and will perform audits and impose corrective action to ensure that all phases of the Great Hall Project adhere to the required QMS, D&B Contract, legal standards, and the Development Agreement.

1.2 Purpose

The purpose of this plan is to set out how quality will be assured and controlled by the DBJV on the Design and Construction (D&C) phase of the project. This plan will:

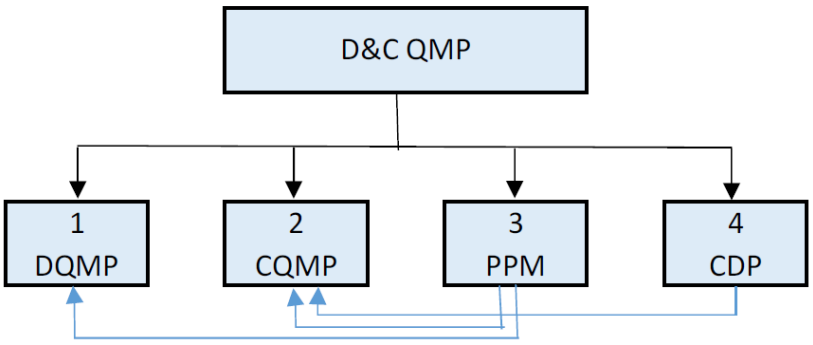
- describe the roles, duties, and activities that define the D&C team for the Great Hall Project;
- outline how the D&C phase is to be checked, monitored, reviewed, managed, controlled, audited, and documented;
- outline the lines of communication between the Owner [DEN], the Great Hall Partners [Developer] and the Design and Build Joint Venture [DBJV]; and
- include a management structure for DBJV's personnel and its inter-relationship with its subcontractors and suppliers.

This Design and Construction Quality Management Plan (**D&C QMP)** is structured as follows:

1. Design and Construction Quality Management Plan Introduction
2. Design Quality Management Plan (**DQMP**);
3. Construction Quality Management Plan (**CQMP**);
4. Process Procedures Manual (**PPM**); and
5. Construction Detail Procedures **(CDP**).

Figure 1 below shows the structure of the D&C QMP and the links between the documents.

Figure 1 Structure of Design and Construction Quality Management Plan (D&C QMP)



Design Quality Management Plan (DQMP)

This section describes how quality will be managed during the design phase of the project.

Construction Quality Management Plan (CQMP)

This section describes how quality will be managed during the construction phase of the project.

Process Procedures Manual (PPM)

DBJV's PPM defines the proposed method/procedure of managing the quality system of the D&C project (i.e. procurement, audits, training etc.). It defines responsibilities and the required documentation of the results of these processes. DBJV Process Procedures Manual (PPM) ensures that quality is managed consistently. The PPM will be updated or expanded during the course of the design and construction phases.

Construction Detail Procedures (CDPs)

DBJV's Construction Detail Procedures (CDP) define the proposed method of performing specific work activities during construction (i.e. structures, plumbing, etc.). It defines responsibilities i.e. production, QC and QA activities, and the required documentation of the results of the work performed.

The specific CDP's will be detailed and developed prior to the start of a major construction activity. Details of these CDP's will be used in safety awareness talks prior to the work commencing. Environmental and security issues will also be considered where appropriate. Every CDP will contain the corresponding Hold Point(s) for the control of each activity, as required. The CDPs will be updated or expanded during the course of the design and construction phases.

1.3 Quality Objective

A general objective for this project is that it will be executed with a partnering ethos. As such, parties associated with the work shall adopt a collaborative manner and shall contribute to realizing the best aspirations of all the parties involved.

The quality objective is to establish a document which will provide overall critical direction and support for the implementation and maintenance of all Design and Construction Quality Assurance and Quality Control activities to be performed on this Project. The quality management plans will define specific quality control and quality assurance activities applicable to the design and the construction. DBJV's approach to quality will foster a systematic, consistent, and authoritative construction quality management program that will result in a completed project in accordance with the Contract specifications, on schedule, within budget, and in alignment with the Project Management Plan (PMP).

1.4 Quality Policy

DBJV is responsible for providing quality and reliability for the design and construction work that will provide both service and safety to the Developer and DEN. It will be the policy of DBJV to abide by the requirements of this document as well as the requirements of the Development Agreement.

All design, procurement packages, and construction/construction management during the Design and Construction phase will achieve the highest regards for quality and will comply with the contract requirements, good industry practices, applicable codes, schedule requirements, and all legal requirements.

1.5 Management Process

DBJV is committed to the process of continual improvement of the project design, construction, and product quality. To ensure this commitment, DBJV and any of its consultants, designers, subcontractors and suppliers will be collectively responsible for the delivery of and adherence to the D&C QMP

This responsibility includes monitoring the quality of their individual work adhering to the completeness of the work, complying with Developer and DBJV's D&C QMS requirements, the Development Agreement, delivering a quality design and final constructed product, and providing documented proof that this has been achieved.

DBJV's philosophy related to developing its Management and Organizational Structure is based on the following primary principals:

- Quality Assurance: This process is to ensure that planned and systematic management actions are performed to provide adequate confidence that facilities, structures, systems, and components will perform satisfactorily in service. This activity will provide documented proof that the overall requirement for each portion of the QMS has been met; and
- Quality Control: This process is to verify and document that work is in compliance with drawings, specifications, procedures, and contract requirements by means of examination, inspection, observation and testing.

1.6 Project Review

The D&C Project Director (D&C PD) and his delegated staff will meet biweekly or as required with Developer to assess project progress. Issues identified in the meeting will be addressed and included in DBJV internal meetings. Meeting minutes and actions due are noted by DBJV and circulated to the appropriate individuals. The contents of these meetings and recorded documents are deemed to be commercially sensitive and thereby maintained in the DBJV's EDMS system and will be sent to Developer.

This D&CQMP is a working document and is subject to annual revision during the course of the contract. A revision history table is included at the beginning of the document. The D&C Quality Manager (D&C QM) is responsible for ensuring the document is properly maintained, revised, approved, and distributed. In addition, the current plan will always be accessible from document control EDMS in Portable Document Format (PDF/.pdf) to all DBJV members. Obsolete versions will be identified by "Superseded" or destroyed. Each time a revision is made it will be submitted to the Developer.

2 Interfaces

2.1 Interface between DBJV, the Developer and DEN

The success of this project will ultimately depend on DBJV's and Developer ability to work in conjunction with DEN. DBJV's relationship with Developer and DEN will work due to an open, proactive and clear communication on project issues and solutions to these issues. DEN's involvement in these issues will be facilitated through project meetings, monthly reports, written updates, and immediate notification on high-priority issues. DEN will be involved in a review process and their participation will be appreciated as a guidance for the members of the complaint resolution team.

The liaison strategy for DBJV with Developer and DEN is based on the following concepts:

- DEN will issue a Request for Information, (RFI), – DEN may issue a Request for Information (RFI) to the Developer which it will then pass on to DBJV to obtain requested information on an issue –DBJV will respond promptly to these requests.
- DBJV, with the coordination of Developer, will conduct design / construction meetings with DEN. These meetings are to discuss the construction work in progress, schedule, design issues/conflicts and to coordinate audits of the construction/inspection/testing process. The CM will notify in advance of a meeting the day and time via email to the appropriate individuals and will provide a meeting agenda with the meeting notice. The meeting will be attended by the CM or his designee, the CT members necessary to attend, consultants/subcontractors, (if required), D&C QM and/or his designee, Developer and DEN.
- The chain of communication/coordination will be DEN with Developer, then with DBJV, and DBJV with its consultants/subcontractors.
- To facilitate the progress of the construction work, DBJV will communicate in the designated manner with any subcontractors/consultants or its self-performing crews with DEN through Developer. All formal interaction and communication between DBJV, Developer and DEN will be through the CM or his designee. Informal communications will occur. Project Managers shall use their best judgment to determine when work will progress most efficiently through informal communications, and when formal communication is required. On very rare, but important circumstances, there will be direct communication between DBJV and DEN with Developer being apprised about the communication and results of the direct contact.
- Developer and DBJV will arrange other meetings as necessary, on topics such airlines, baggage systems, TSA, and public relations matters. Attendees at these ad hoc meetings may include DEN personnel, relevant governmental entities, airline representatives, TSA representatives, public representatives, Sub consultants, Subcontractors, Design Consultants and other interested parties.
- Coordinate quality related activities, (field monitoring inspections, and the testing on an audit basis as indicated in the Development Agreement), with the D&C QM, Developer's QEM and DEN.

2.2 Interface between DBJV and Subcontractors/Consultants

DBJV will be responsible to coordinate and channel all requests and issues between their Subcontractors/Consultants and DEN through Developer.

DBJV will require all Subcontractors/Consultants to develop production schedules that will comply with DBJV's approved schedule. These schedules will be reviewed and approved by DBJV.

DBJV will delegate responsibility for design and design quality to the Design Consultants, via a Subcontract, with DBJV performing oversight of the process (PPM 1.1, 1.21, and 1.34). These Subcontracts will incorporate, as a reference, a redacted version of the Design and Build Contract, Development Agreement, Technical Provisions, and other relevant contract documents to be complied with. The Design Manager (DM), with the Design Team, will manage the performance of the Design Consultants in achieving these requirements (PPM 1.1, 1.21, and 1.34).

The Construction Design Manager (CDM) with the Construction Design Team will perform design work during the construction process or manage the performance of any Design Consultants in achieving these requirements (PPM 1.1, 1.21, and 1.34). The Developer may audit the effectiveness of the DM and/or the CDM. The D&C QM will audit the records of the DM, the Design Consultants, and the CDM along with their Design Consultants to assure that they are following their respective quality plans (PPM 1.11); the Developer may audit the D&C QM to ensure that these activities are being performed.

The Construction Design Manager (CDM) along with the CDT and the CT will coordinate with the DM and CDM and his DT and CDT on any queries or design issue from the Subcontractors/Consultants.

During construction all the work from different consultants and subcontractors will be coordinated through the Construction Manager. The chain of communication/coordination will be the following: DEN with Developer, Developer with DBJV, and DBJV with its consultants/subcontractors. On very rare, but important circumstances, there will be direct communications between DBJV and DEN with Developer being appraised about the communications and the results of the direct contact.

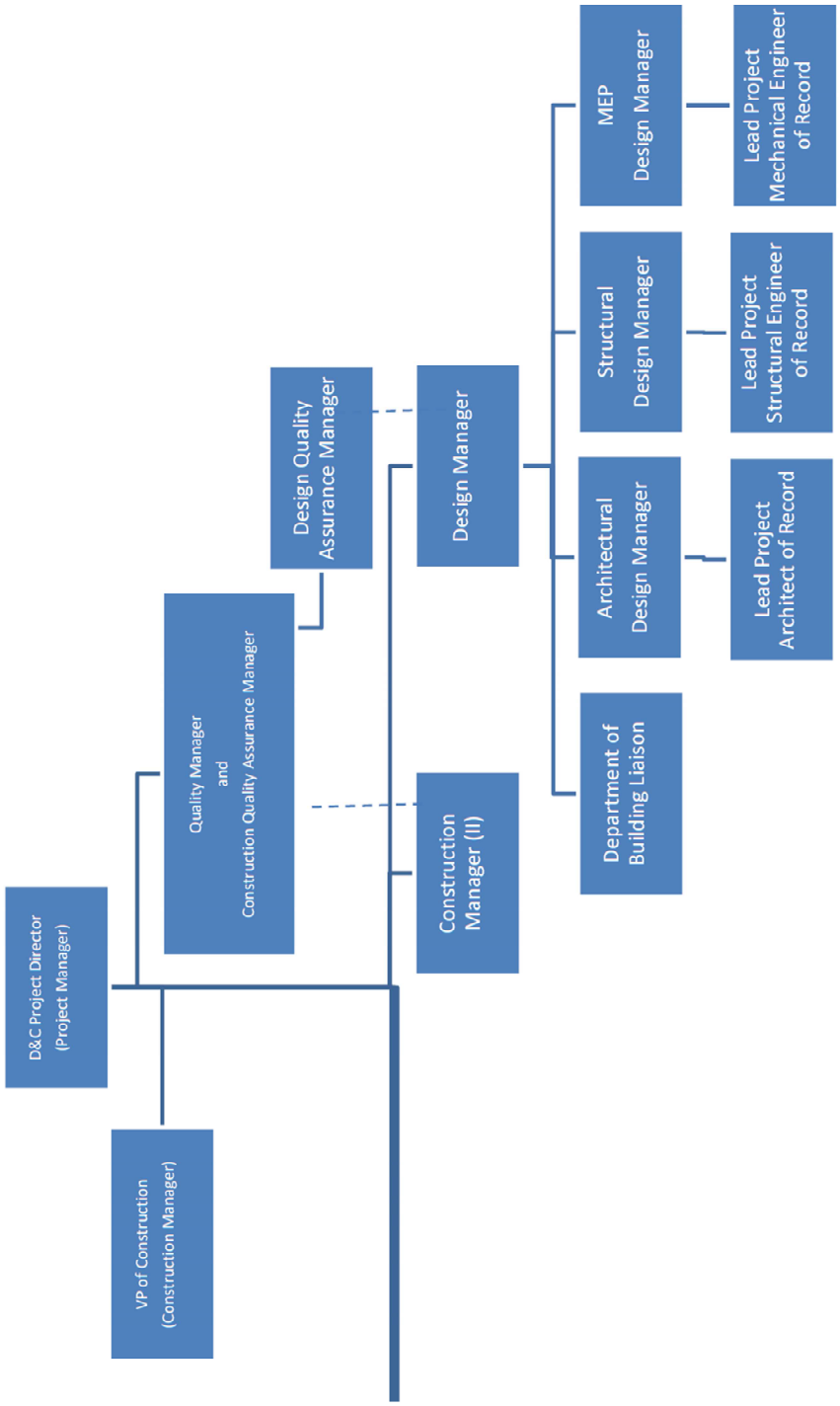
The quality management is organized in a way that there is a clear distinction between the Quality Control and the Quality Assurance activities. The QC and QA will be performed by two different groups (DBJV's Construction Management Team and DBJV's QA Team) working in parallel and being intimately related. However, the QA Team will always be the contact point for any quality-related issues.

In the DBJV organization the QC/QA will work in the following way: all the QC will be performed by the Construction Management Team (CMT) who are the individuals responsible for the production / construction management of the work, such as Superintendents, Project Engineers, Project Managers and the Construction Manager (CM), or QC of the contractors with an approved quality plan; the QA activities will be performed by the QA Team, under the direction of the D&C QM. All members of the QA Team, including the D&C QM, will have no responsibilities in the production of the work and therefore will be totally independent from the QC activities (see next section "Organization Charts").

In general, all of DBJV management staff will take part in maintaining, auditing and reporting on the effectiveness of the QMS. With this concept, the D&C QM will collaborate with other managers in their assigned areas (i.e. the DM for design, the CM for construction, the HSEM for safety, etc.) in implementing the QMS. The QA Team will also assist the D&C QM in the implementation of the DBJV QMS when needed. Any QMS issues or concerns identified by other members of DBJV's organization will be reported to the D&C QM.

2.3 Organization Chart

Figure 2 DBJV'S Project Organization Chart for Quality



DENVER INTERNATIONAL AIRPORT

DEN

GREAT HALL PROJECT

A PROJECT THAT WILL INSPIRE THE AIRPORT INDUSTRY

Design Quality Management Plan

June 2017

Great Hall Project LLC

ferrovial

SAUNDERS Building Confidence®

JLC | MJE-Loop Capital Partners LLC

Revision History

Revision	Effective Date	Prepared by:	Reviewed by:	Approved by:
V0	06/26/2017			

Table of Contents

1 Organization and Personnel

1.1 Organizational Structure

The organizational structure for DBJV is included in Appendix 01, and within DBJV's organization the Design Team organizational structure is included in Appendix 02. In summary:

- DBJV's General Design Team (DT), is led by the Design Manager (DM)
- DBJV's Construction Design Team (CDT), is led by the Construction Design Manager (CDM)
- DBJV's Environmental Team (ET), is led by the D&C Safety and Environmental Manager (D&C SEM)
- DBJV's Quality Assurance Team, (QA Team), is led by the Quality Manager (QM)
- Design Consultants have been contracted to perform the Design Work. These sub-consultants will report to the DM/CDM. They will implement their own quality program adapted to comply with DBJV's Design Quality Management Plan and to the requirements of the Development Agreement.

An overall design flow process chart can be located in Appendix 4.

DBJV has the overall responsibility to ensure that all design work is progressing efficiently and in a timely manner and that it complies with the D&C QMP requirements.

1.2 Resource Plan and Design Coordination

DBJV will allocate the resources to ensure the timely completion of the activities delineated in the design schedule.

DBJV's resources assigned to perform the design will be comprised of three groups:

- DBJV's Design Team has the responsibility for managing the design and is directed by the DM during the design of the Project.
- DBJV's Construction Design Team has the responsibility for managing any new design or re-designs during the construction process and is directed by the CDM.
- The Design Consultant's Organization will report to either DBJV's DM or CDM (or their designees).

DBJV's Design Team is comprised of the main discipline managers as shown in Appendix 2.

Both DBJV's Design Team (DT) and Construction Design Team (CDT) will be located at the D&B Contractor's project office.

The Design Consultant's Organization will be directed by the Design Consultant's Manager (Lead Project Architect of Record or Engineer of Record) and will integrate the different discipline team leaders and design task leaders responsible for their assigned work activities. Adequate resources will be allocated to ensure the timely completion of the design activities. The Design Consultant's Manager (Lead Project Architect of Record or Engineer of Record) and the Design Consultant's main discipline team leaders will be located in an off-site design office.

To facilitate progress of the work, DBJV and the Design Consultants will communicate in a designated manner, following the chain of command illustrated in the DBJV Interrelationship Chart (Appendix 2).

All formal interaction and communication between the DBJV's DT or CDT and DEN will occur through the Developer. Informal communication will occur. Managers and design task leaders shall use their best judgment to determine when work will progress most efficiently through informal communication, and when formal communication is required.

DBJV, with the coordination of Developer, will conduct design management meetings with DEN. These meetings are to discuss the design work in progress and to coordinate auditing of the design products or processes. The DM or CDM will notify in advance of a meeting the day and time via email to the appropriate individuals and will provide a meeting agenda with the meeting notice. The meeting will be attended by the DM or designee, the Design Team members necessary to attend, the Consultants (if required), CDM or designee, the Construction Design Team, the Developer and DEN.

Design work products and deliverables will be submitted to the Developer who, in turn and concurrently, will deliver them to DEN as required in the Development Agreement. Documents will stored in DBJV'S EDMS.

In general, all DBJV management staff will participate in maintaining this process and reporting on the quality, health and safety and environmental management of the Design and Construction phase. With this concept, the D&C QM will be responsible for the overall process; the D&C SEM in the areas related to the health and safety and environment; the DM and CDM in the areas related to design; the CM in the construction phase. They will report on the above to the Developer's Quality and Environmental Manager and the Asset Delivery Director.

1.3 Project Main Personnel

The following table shows Main Personnel in DBJV's organization describing the positions.

Titles	Project Main Personnel Positions
Project Manager / D&C Project Director (D&C PD)	Oversees design, construction, subcontractors, project controls, scheduling and quality for DBJV
Construction Manager / Vicepresident of Construction (VPC)	Oversees construction, quality, health and safety and environmental and is responsible for the phasing and scheduling of the project
Construction Manager (II) (CM)	Oversees all construction activities
Design Manager (DM)	Oversees design process for the project during the initial design phase
Construction Design Manager (CDM)	Coordinates with the design team and with construction on all surveying and design issues or versees design process for the project during during construction
Procurement/Project Controls Manager (PPCM)	Oversees subcontracting process, procurement of materials for construction, document control, and project controls

Titles	Project Main Personnel Positions
D&C Safety and Environmental Manager (D&C SEM)	Oversees monitoring and controling the safety program during design and construction Oversees environmental compliance overseen the Environmental Team during design and construction
Quality Manager / Construction Quality Assurance Manager (QM/CQAM)	Oversees development, implementation, maintenance, and evaluation of the QMS for DBJV
Design Quality Assurance Manager (DQAM)	Oversees development, implementation, maintenance, and evaluation of the QMS for Design for DBJV

The responsibilities of the Design Main Personnel are as follows:

Project Manager / D&C Project Director (D&CPD)

The Project Manager, D&C Project Director (D&C PD) is responsible for managing all design and construction related aspects of this Project. They will:

- Take overall responsibility for site administration and coordination of site operations, design, site surveying and control; and coordinate the development and implementation of the QMS with the Quality Manager / Construction Quality Assurance Manager (QM/CQAM).
- Perform progress monitoring and verification of quality and quantity of work completed by subcontractors/sub consultants with the QM/CQAM.
- Coordinate with the D&C Safety /Environmental Manager for the health and safety for field operations and Environmental Compliance.
- Manage both design and construction budgets and cost control measures with the Design Manager (DM), Construction Design Manager (CDM), Construction Manager / Vice-president of Construction (CM-VPC) and the Construction Manager II(CM).
- Affirm that work has been completed in compliance with the specified requirements upon completion of each design and construction phase with the DM, CDM, CM, and QM/CQAM.
- Ensure that all pertinent design and construction records are collected and prepared for archiving by coordinating with the Procurement/Project Control Manager (PPCM) and the QM/CQAM.
- Assess bidders' competency to perform the work prior to the award of any procurement package related to construction/design/installation with the QM/CQAM, DM, CDM, VPC, CM, and the PPCM.
- Report to the Asset Delivery Director of the Developer in all matters related to design and construction.

Construction Manager / Vice-president of Construction (VPC)

The Construction Manager / Vice-president of Construction (VPC) is responsible for overseeing all aspects related to construction. The VPC shall have the overall responsibility for site administration and coordination of site operations, site surveying and quality control (QC); progress monitoring and verification of quality and quantity of work completed by Sub-contractors, environmental and health and safety for field operations, and scheduling.

Prior to award of any procurement package related to construction/installation, the VPC will assess the bidder's competency to perform the Work. The actual supervision of construction activities on site shall be managed by different Construction Project Managers (PM) who shall report to the CM and the VPC.

The VPC and the CM, with the assistance of the Construction Project Managers (PM) and the PPCM, will have the responsibility of overall planning and scheduling of the project. The CM is responsible for the coordination of subcontractors and all construction activities for this project. They will:

- Report to the D&C PD.
- Supervise the performance of the site administration and coordination of site operations (**PPM** 1.1 and 1.2).
- Schedule the project in logical steps and ensure that there is budgeted time required to meet designated deadlines.
- Confer with supervisory personnel, owners, contractors, design professionals, and the QA Team to discuss and resolve matters such as work procedures, complaints, construction problems and quality related issues (**PPM** 1.9 and 1.10).
- Take action to deal with the results of delays, bad weather, or emergencies at the construction site.
- Interpret and explain plans and contract terms to the clients, representing the Owner or Developer in conjunction with the CM and the DM and CDM (**PPM** 1.2, 1.4, 1.5, 1.12, and 1.15).
- Study job specifications to determine appropriate construction methods.
- Plan, organize, and direct activities concerned with the construction and maintenance of structures, facilities, and systems (**PPM** 1.23 and **CDP**s).

Construction Manager II (CM)

The Construction Manager (CM) is responsible for managing all aspects related to construction. The CM shall have the overall responsibility for site administration and coordination of site operations, site surveying and quality control (QC); progress monitoring and verification of quality and quantity of work completed by Sub-contractors, health and safety for field operations, scheduling, and cost control.

Prior to award of any procurement package related to construction/installation, the CM will assess the bidder's competency to perform the Work. The actual supervision of construction activities on site shall be managed by different Construction Project Managers (PM) who shall report to the CM.

The CM, with the assistance of the Construction Project Managers (PM) and the PPCM, will have the responsibility of overall planning and scheduling of the project. The CM is responsible for the coordination of subcontractors and all construction activities for this project. They will:

- Report to the VPC and the D&C PD.

- Perform site administration and coordination of site operations (**PPM** 1.1 and 1.2).
- Oversee site surveying and quality control (QC), evaluate the progress and verify the quality and quantity of work completed by Sub-contractors (**PPM** 1.22).
- Assist the D&C SEM on issues with all health and safety for field operations.
- Control cost for the construction process.
- Schedule the project in logical steps and ensure that there is budgeted time required to meet designated deadlines.
- Confer with supervisory personnel, owners, contractors, design professionals, and the QA Team to discuss and resolve matters such as work procedures, complaints, construction problems and quality related issues (**PPM** 1.9 and 1.10).
- Take action to deal with the results of delays, bad weather, or emergencies at the construction site.
- Interpret and explain plans and contract terms to administrative staff, workers, and clients, representing the owner or Developer in conjunction with the DM and the CDM (**PPM** 1.2, 1.4, 1.5, 1.12, and 1.15).
- Study job specifications to determine appropriate construction methods.
- Plan, organize, and direct activities concerned with the construction and maintenance of structures, facilities, and systems (**PPM** 1.6, 1.23 and **CDP**s).
- Report the work progress to the Works Supervisors appointed by the Developer.

Design Manager (DM)

The Design Manager is responsible for managing the Design Team and the Design Consultants (Lead Project Architect and Engineer of Record).

They will:

- Report to the D&C PD.
- Direct the work of the Design Team.
- Ensure that specific packages for design and related specifications meet the requirements of the Development Agreement and D&B Contract (**PPM** 1.2 and 1.22).
- Ensure that the design is functional and fulfils the specified criteria for safety, life expectancy, constructability, quality, cost-effectiveness and complies with required environmental guidelines within the project schedule (**PPM** 1.23).
- Coordinate design activities with the D&C SEM.
- Coordinate interdisciplinary requirements within the Design Consultants and will require the Design Consultants to certify that their design products have been completed in accordance with specified requirements.
- Manage the technical performance of the Design and the financial costs for these services.

- Provide engineering support to the project team for technical input during the procurement process and for reviewing change proposals and coordinate with the Procurement/Project Controls Manager (**PPM** 1.4 and 1.5).
- Review design packages developed by the Design Consultants prior to their being issued for construction (IFC).
- Establish an effective design review process to ensure that interdisciplinary requirements have been completed prior to being issued for procurement and, subsequently, for construction (**PPM** 1.21).
- Coordinate with the D&C QM that consultants have approved quality programs that comply with DBJV (when applicable) (**PPM** 1.3, 1.10 and 1.11).
- Report the progress of the design to the Design Engineers appointed by the Developer

Construction Design Manager (CDM)

The Construction Design Manager is responsible for coordination of all design related issues that occur during the construction process due to surveying or project engineering with the DM. Coordinate with the Construction Manager (CM) on all construction related issues. They will:

- Report to the D&C PD.
- Direct the work of the Construction Design Team (CDT).
- Oversee that the design is construct able during the construction phase.
- Provide engineering support to the project team (**PPM** 1.22).
- Provide technical input/support during the procurement process and cooperates with the PPCM in this area (**PPM** 1.4, 1.5, and 1.7).
- Provide technical review of change proposals prior to their issuance.
- Provide the final “as-built” drawings for this project (**PPM** 1.3 and 1.31).
- Assist in procuring and managing the Design consultants and surveying companies through the PPCM.
- Coordinate the design adjustments efforts with the DM, Developer, DEN, Owners and third parties.
- Ensure that the design complies with the Development Agreement requirements and Design and Build Contract. Provide technical assessment for the RFQ’s prior to the award of any procurement package related to design or professional services (**PPM** 1.2 and 1.7).
- Review design packages developed by the Design Consultants prior to their being issued for construction (IFC).
- Establish an effective design review process to ensure that interdisciplinary requirements have been completed prior to being issued for procurement and, subsequently, for construction (**PPM** 1.21 and 1.34).
- Respond to RFI’s.
- Evaluate and approve RFA’s in coordination with the D&C QM.

- Coordinate with the D&C QM that consultants have approved quality programs that comply with DBJV (when applicable) (**PPM** 1.3, 1.10 and 1.11).
- Report the progress of the design to the Design Engineers appointed by the Developer

Procurement/Project Controls Manager (PPCM)

The Procurement/Project Controls Manager is responsible for the development, implementation of purchasing programs and procedures; budget development; management of overall procurement for this project; and retention and management of project documents. They will:

- Report to the D&C PD.
- Plan, organize, and direct the work of the purchasing of supplies, materials, equipment, and services (**PPM** 1.2, 1.4, 1.5, and 1.7).
- Establish goals, objectives, and performance standards for purchasing.
- Evaluate and modify purchasing policies and procedures when necessary.
- Interpret and apply policies, laws, and regulations pertaining to procurement.
- Analyse performance and workload data and develops and implements procedural changes, new methods, or automated systems as appropriate, in order to increase efficiency and cost-effectiveness of the purchasing process.
- Determine purchasing needs, legal requirements, and product specifications, and to share information about cost and availability, vendor qualifications, and current technology along with the DM, CDM and CM.
- Develop standardized specifications for the purchasing of commodities used by several departments.
- Review bids with the DM, DCM, CM and D&C QM, contracts, and purchase orders to ensure clarity and compliance with the QMS and the Development Agreement.
- Ensure maintenance of appropriate documentation and records (**PPM** 1.3, 1.9, 1.24, and 1.31).
- Research market conditions and new products.
- Negotiate with vendors regarding purchase requirements, prices, trade and cash discounts, deliveries, current product development, and submission of bids.
- Direct the work of the Procurement and Document Control departments.

D&C Safety and Environmental Manager (D&C SEM)

The Safety and Environmental Manager is responsible for monitoring and controlling all the safety issues for this project for DBJVI and coordinating with Developer during the design and build phase. He is also responsible They will for ensuring this Project is in compliance with all applicable environmental Laws and Regulations as well as any requirements of the contract documents.

During the design and construction phase, the SEM will report to the D&C PD. They will:

- Report to the D&C PD.

- Provide program direction to ensure that a safe, healthy, and secure work environment exists for employees and the public, including persons with disabilities, and that the public is protected from harm in connection with operation of the Great Hall Project.
- Develop the Safety Plan for Construction, emergency procedures, and all required updates to comply with the contract and applicable Laws.
- Assess safety and health program policy issues, reviewing and analysing the effectiveness of the safety and health program to the contract requirements and applicable Laws.
- Ensure that safety and health issues are routinely discussed by all levels of management at staff meetings, or other appropriate meetings.
- Ensure that the staff has received all required health and safety training and any updates to the program (**PPM** 1.15).
- Prepare all reports required by the contract, the company, or by Law (**PPM** 1.3).
- Conduct assessments to ensure compliance with the health and safety plan.
- Conduct safety meetings with employees to discuss safety and health matters, including provisions for persons with disabilities, workplace violence and security, specific workplace hazards, updates or changes to the program, and employee concerns.
- Provide a safe and secure work environment that has zero tolerance for violence, threats, harassment, and intimidation in the workplace.
- Conduct periodic safety inspections of all worksites to identify and correct unsafe conditions and unsafe acts, and document the results.
- Investigate and document all occupational injuries, illnesses, or acts of workplace violence, and identify corrective action(s) that will prevent further occurrences (**PPM** 1.10).
- Ensure that each employee has received the required training to perform their assigned task, provided with the necessary equipment, and follows all safety and health policies, procedures, and work practices.
- Direct the work of the Safety Team (ST) and the Environmental Team.
- Direct the work of the Environmental Team (ET).
- Ensure that the permits for this Project are current and all permits have been obtained.
- Review required submittals for quality and accuracy (**PPM** 1.23).
- Ensure that the documentation and reporting of the environmental compliance of the work is correct (**PPM** 1.3).
- Report any violations or non-conformances that might represent an imminent danger to human health or the environment to the Developer and subsequently to DEN as soon as the problem has been identified (**PPM** 1.9).
- Advise the D&C PD, CM, and relevant Design and Construction personnel on environmental issues (PPM 1.15 and 1.23).
- Inform the D&CPD on any appropriate recommendations for corrective action, including stoppage of work (PPM 1.25).

- Report Health and Safety and Environmental Status to the Health and Safety and Environmental Supervisor appointed by the Developer

Quality Manager / Construction Quality Assurance Manager (QM/CQAM)

Active during the design and construction phases, the QM/CQAM is responsible for the Project, ensuring that the QMS has been developed, established, maintained, and evaluates the QMS for DBJV's scope of services. They will:

- Report to the D&C PD.
- Direct the work of the QA construction Team and Design Quality Assurance Manager (DQAM)
- Provide independent quality evaluations of construction work (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).
- Supervise quality evaluations of design deliverables (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).
- Ensure that Sub-consultant/Subcontractor work adheres to the QMS, contract, and the completed design products requirements (**PPM** 1.5 and 1.11).
- Perform and/or direct independent quality audits during all phases of the Project (**PPM** 1.11).
- Participate in Management Reviews assessing the effectiveness of the Quality Management System (**PPM** 1.1 and 1.19).
- Be responsible for field QA activities, documenting the QA activities, and providing records to document control (**PPM** 1.3).
- Determine the final disposition of all nonconformities and implementation of corrective and preventive actions (**PPM** 1.9 and 1.10).
- Be responsible for training, planning and performing internal quality audits (**PPM** 1.15).
- Prior to award of any procurement package, the D&C QM will assess the quality program of a bidder (**PPM** 1.2 and 1.7).
- Responsible for ensuring all testing is performed, reviewed, and submitted to document control (**PPM** 1.8).
- Responsible for issuing Stop Work for quality related issues (PPM 1.25).
- Report Construction Quality status to the Quality Supervisor appointed by the Developer

Design Quality Assurance Manager (DQAM)

Active during the design and construction phases, the DQAM is responsible for the Assurance of the Quality of the Design documents of the Project, ensuring that the QMS has been developed, established, maintained, and evaluates the QMS for DBJV's design scope of services. They will:

- Report to the QM/CQAM.
- Provide independent quality evaluations of design deliverables (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).

- Ensure that Sub-consultant/Subcontractor work adheres to the QMS, contract, and the completed design products requirements (**PPM** 1.5 and 1.11).
- Be responsible for design QA activities, documenting and providing records to document control (**PPM** 1.3).

1.4 Other DBJV Design Personnel

Architectural Design Manager (ADM)

- Report to the DM.
- ADM will ensure that Document Control has the current revisions of the Drawings and Specifications (PPM 1.3).
- The ADM is responsible for the coordination of the Architectural design (PPM 1.6).
- The ADM will be responsible for managing the control, inspections, checking and revision of the architectural and technical performance of the design details (PPM 1.21).
- The ADM will review and oversee the design prepared by the Design Consultants. He will control the Design Consultant's Architectural Designer, for compliance with the CDA and technical Standards. He will coordinate with the different Discipline Managers and the different Design Consultant's Discipline Leaders which are involved in the scope of the work being developed under the direction of the DM (PPM 1.6, 1.7, 1.22, and 1.23).
- The ADM will verify the progress of the design to meet the design and the design schedule. He will be responsible for identifying and proposing to the DM any necessary actions to be taken in the event of a potential delay that may be identified. He will ensure, with the approval of the DM, that the requirements of the designs schedule. He will document the actual progress.
- The ADM will monitor the Architectural Design performance for the project; ensure procedures have been established and adhered to; and that all necessary documentation for verification is present in document control. The ADM will investigate and recommend actions to the DM on all items identified as requiring further development during the design phase which will optimize the project effectiveness (PPM 1.3).
- The ADM shall attend the design meetings arranged by the DM to coordinate with the different Design Discipline Managers and agree on a schedule of deliverables.
- He is responsible for ensuring the design schedule is being met in his area of responsibility.

Structural Design Manager (SDM)

- Reports to the DM.
- The SDM will review all structural design related issues to ensure they comply with contractual requirements and specifications.
- The SDM will review the Design Consultants' work to ensure that it complies with the design intent and that there is clarity in their drawings and related documents (PPM 1.7 and 1.21).
- The SDM will ensure that Document Control has the current revisions of the Drawings and Specifications (PPM 1.3).

- The SDM will respond to any issues raised by the DM, and shall provide him with the information and documents he may require.
- The SDM will attend the design meetings arranged by the DM to coordinate with the different Design Discipline Manager, and agree on a schedule of deliverables.
- The SDM will coordinate with other Disciplines Managers and the different Design Consultant's Discipline Leaders which are involved in the scope of the work being developed.
- He is responsible for ensuring the design schedule is being met in his area of responsibility.

Mechanical Electrical and Plumbing Design Manager (MEPDM)

- Reports to the DM.
- The MEPDM will review all mechanical, electrical and plumbing design related issues to ensure they comply with contractual requirements and specifications.
- The MEPDM will review the Design Consultants' work to ensure that it complies with the design intent and that there is clarity in their drawings and related documents (PPM 1.7 and 1.21).
- The MEPDM will ensure that Document Control has the current revisions of the Drawings and Specifications (PPM 1.3).
- The MEPDM will respond to any issues raised by the DM, and shall provide him with the information and documents he may require.
- The MEPDM will attend the design meetings arranged by the DM to coordinate with the different Design Discipline Manager, and agree on a schedule of deliverables.
- The MEPDM will coordinate with other Disciplines Managers and the different Design Consultant's Discipline Leaders which are involved in the scope of the work being developed.
- He is responsible for ensuring the design schedule is being met in his area of responsibility.

DBJV Design Consultant's Manager(s) (DCM) [Lead Project AOR and EOR]

The Design Consultant's Manager(s) responsibilities will include:

- The DCM reports to the DM.
- The overall design management and quality for their organization and any sub-consultants on their team.
- The point of contact for DBJV liaison.
- Solicit DBJV involvement and comments on design issues (e.g. constructability issues).
- Respond to DEN trough Developer as directed by the DM.
- Attend meetings with DBJV as required.
- Conduct weekly progress meetings with their Design Consultant's Discipline Leaders and any sub-consultants on their team.
- Chair milestone review meetings.

- Provide internal direction to their Design Consultant's Discipline Teams and any sub-consultants, and will provide a final resolution to the design issue.
- Provide monthly progress reports and invoicing to .DBJV
- Manage interaction between all Design Consultant's Design Disciplines and sub-consultants for their project limits.

DBJV's Design Consultant's Discipline Leaders

The Design Consultant Discipline Leaders will be appointed for major Design Disciplines (Structures, Electrical, Mechanical, etc). Their responsibilities will include:

- Reporting and communicating with the DCM.
- Assuring that their approved quality programs are being implemented.
- Keeping track of inputs and outputs, issues, and design changes.
- The timely distribution of new information to/from the DCM, other Design Consultant's Discipline Leaders and other Design Consultant Task Leaders.
- Communicating and meetings with the DBJV's Design Team.
- Perform spot check verification with written documentation for the acceptance of the milestone submittals.
- Assisting the DCM in communicating with the DM.
- Review data collection needs with Design Consultants Task Leaders and provide a list of required information to other Design Consultant Discipline Leaders under the supervision of the CDM.
- Prepare technical letters/responses to DBJV and/or DEN trough Developer. Attend and prepare regular weekly progress meetings/conference calls.
- Provide direction and advice to Design Consultant Task Leaders.
- Review deliverables for completeness and that required quality checks have been performed prior to the Internal Review Meeting(s).
- Follow up on the schedule for their respective disciplines.

DBJV's Design Consultant Task Leader(s)

The Design Consultant Task Leader(s) will be responsible for ensuring the task staff produces their required deliverables. Their responsibilities will include:

- Reporting to and communicating with their respective Design Consultant Discipline Leader(s).
- Assuring that their approved quality program is being implemented.
- Meeting schedule for deliverables.
- Implementing and monitoring compliance to the Contract, Technical Provisions, Technical Documents, and relevant Good Industry Practice.
- Assist Design Consultants Discipline Leaders with responses to DBJV and/or Developer or DEN comments.

- Provide technical leadership during the design, which will provide technical background/analysis/recommendations for issue resolutions.
- Ensure that all the required quality checks have been performed prior to the submission of deliverables to Consultant's Internal Review Meeting and to DBJV.
- Review, approve, sign and seal the Design task deliverables including construction drawings, specifications and reports.

DBJV's Design Consultant's Task Team

These teams will usually consist of designers led by the Design Consultant's Task Leader to produce design/reports, details, analysis, calculations, etc. within the discipline and/or portion thereof. The Design Consultant's team members will conduct their own internal quality checks to their approved company's quality program.

DBJV's Design Consultant Quality Manager (DCQM)

The DCQM will ensure the development, implementation, maintenance, and evaluation of the quality program for their firm and their sub-consultants. The DCQM's responsibility will include:

- The DCQM reports to the DCM.
- The DCQM will audit the implementation of the quality program and will provide guidance when its application is questioned.
- The DCQM will have no responsibilities in the design of the work and will therefore be totally independent to perform his duties in performing the quality assurance for the work being performed.
- The DCQM will adapt their quality program to fulfil DBJV's QMS requirements.
- The DCQM is responsible, in coordination with the DCM, in identifying those Project activities that will require a Design Process Procedure (DPP), and defining the scope and content, along with the preparation and distribution of each procedure, as applicable.
- The DCQM has the authority and responsibilities for reviewing and approving the disposition of non-conforming design.
- The DCQM is responsible for providing procedural direction and ensuring that compliance audits have been performed on the quality of the products/services and that it complies with their approved quality program.
- The DCQM is responsible for assessing any sub-consultant work for compliance to their company's quality program, and their understanding of the program requirements through formal QA audits of their quality program.
- The DCQM or the DCQM designee is responsible for planning, scheduling and performing Quality Audits to ascertain that their quality program is adequate, objective, and is being implemented correctly.

1.5 Design Contact Information

To prevent potential continuing revising of this document, *only* titles, positions and a brief description of their responsibilities has been previously described. A copy of the resumes for all quality management personnel and key personnel from DBJV will be kept as accessible quality record. The positions and job descriptions will be updated once the team has been totally defined. A separate document will be provided to Developer with the DBJV Personnel contact information (including the Design Personnel) so that these personnel can be contacted. This list will be updated in a regular basis when changes occur. This document can be found in Appendix 6 as DBJV Contact Information.

2 Design Consultants

2.1 Contractor Control Procedures

DBJV will ensure that the overall design work is progressing efficiently and in a timely manner as described in:

- Design and Construction Quality Management Plan (D&CQMP)
- Process Procedures Manual (**PPM**)
- Request for Proposal (RFP);
- Request for Information (RFI);
- The design schedule.

DBJV is constantly seeking out best practices that will lead to superior performance in satisfying Developer needs and DBJV's internal cost effectiveness. Towards this goal, DBJV is establishing a relationship with its Subcontractors, Consultants and Sub-consultants to create a list of preferred Subcontractors. Subcontractor performance is therefore monitored on various items, e.g. experience, schedules, and non-conformances to the contract. This data will be analysed and used for establishing reliable relationships.

The control of DBJV´s contractors will start in the procurement period. Here, the Procurement/Project Control Manager (PPCM) and his Procurement Team (PT) will go through a process of asking for Request for Proposal (RFPs) to different subcontractors and then analyse each bid, in terms of cost and experience, skills and background projects of each company. During this process, different staff from DBJV, such as DM, CM, CDM, SEM, MWBE Coordinator, and the D&C QM, will provide their input to the PPCM. The contractor will be selected taking into account all this information and the D&C PD will collaborate in the final decision.

The Design Manager (DM) will monitor the Design Consultant's performance on a regular basis while their work is being carried out for this project. Any problems, difficulties, failures, or queries, which bring into question matters within the scope of this procurement procedure will be identified and resolved jointly with the Procurement/Project Control Manager (PPCM) in conjunction with any other relevant personnel. The DT will also check that the Design Consultant is complying with the approved design scheduled.

During the execution of the work, the Design Consultant will be monitored by different departments of DBJV's organization. The DT and CDT for the work being developed to achieve the goals and directions of the DM and CDM, the SEM, and Environmental Team (ET) to assure that the contractor incorporates the Environmental requirements into the design requirements; the D&C Quality Manager and his Quality Assurance Team (QA Team) to assure that the quality of the work is being performed to and complies with their approved quality program. Audits will be performed to determine their individual quality programs effectiveness (PPM 1.11) and reported to the Developer.

The DM or CDM and/or their designees will perform formal design reviews of the Design Consultant's work and DBJV's internal quality checking process of this activity is being followed on an interdisciplinary review (see PPM 1.21). The Design Consultants Quality Management Systems' contain attributes to ensure that performance metrics are achieved for each organization (i.e. Design Input/Output). The D&C QM will perform audits of the Design Consultant' to ensure that their approved quality program is functioning properly. All audits will (PPM 1.11) be kept as a quality record and will be included in the corresponding monthly report as a summary of activities performed.

To control the performance of the Design Consultant, the relevant DM or a Design Team member and the CDM or a CDT member will review the Design Consultant's progress payment request and the D&C PD will authorize their payment.

An overall DBJV Design Flow Process diagram can be located in Appendix 4.

2.2 Responsibility of Contractors and Affiliates

DBJV is responsible to Developer for the Design and Construction Work for this Project. DBJV will subject the applicable requirements of the Development Agreement and the D&B Contract to their Contractors or Affiliates. The Design Consultants will be contractually subject to the same requirements that apply to DBJV.

The Design Consultant's organization is illustrated in Appendix 4. This organization will be led by the Design Consultants DCM and will integrate with the different Design Consultant's Discipline Leader(s) and Design Consultants Task Leader(s) responsible for the teams of engineers.

The scope of services of the Design Consultant(s) will involve the design Products so that the Construction for this Project will be defined and will comply with the Development Agreement and the Technical Provisions. To achieve this, DBJV will establish an overall schedule for the Project and require each Design Consultant to develop an individual schedule showing how they will achieve these goals. The individual schedules will be reviewed and approved by DBJV.

Table 2 – Design Consultants Reporting and Communication Relationships

Role	Reporting to	Communications with
Design Consultant Manager (DCM) [Lead Project AOR and EOR]	Design Manager (DM)	Design Consultant Discipline Leader(s), DBJV's Discipline Design Managers, DM and CDM (when applicable)
Design Consultant Discipline Leaders (Structures, Electrical, Mechanical, …)	Design Consultant Manager (DCM)	Other Design Consultant Discipline Leaders and Consultant Task Leaders, and DBJV (discipline) Design Managers
Design Consultant Task Leaders	Design Consultant Discipline Leader	Design Consultant Task Members.
Design Consultant Task Members (e.g., Structural teams, Electrical teams, etc.)	Design Consultant Task Leader	Other Design Consultant Task Members.

2.3 Satisfaction of Contract Obligations

DBJV through the DM and/or the CDM, in collaboration with the PPCM, the D&C SEM, and with their respective teams, will ensure that every Subcontractor, Consultant, or Sub-consultant meets the requirements imposed by their respective Contracts (PPM 1.1, 1.2, 1.4, 1.5, 1.7, 1.11, 1.21, and 1.34).

The DM, DT, CDM and CDT will receive input from the different department managers (CFO, D&C QM, SEM, and PPCM) and based upon the feedback, they will be able to evaluate each Design Consultant in order to determine their performance on this Project. Periodic meetings between the DT and/or the CDT and each Design Consultant and/or there sub-consultants will be required to analyse and correct any deviation from the Contract Agreements (PPM 1.9, 1.10, and 1.11).

DBJV will implement a QMS to ensure that the Design Consultants and their sub-consultants meet the requirements imposed by their respective contracts. DBJV has appointed a D&C Quality Manager (D&C QM) to oversee all design quality management activities and perform audits on these activities.

The Design Consultant Quality Manager (DCQM) will be responsible for the development, implementing, managing, maintaining, and documenting the Consultant quality program and to adapt it to comply with DBJV's Design Quality Management Plan. The Design Consultant Quality Manager (DCQM) role and responsibilities are detailed in previous sections of this document.

3 Coordination and Interface

3.1 Interface between DBJV, Design Consultants, Developer and DEN

All formal interaction and communication between the DBJV Design Team and the Design Consultants with DEN will be through DBJV's Design Manager (DM) or the Construction Design Manager (CDM) under the coordination of the Developer through their Asset Delivery team led by the Asset Delivery Director.

DBJV, under the coordination of the Asset Delivery Team of the Developer, will conduct design management meetings with DEN and its consultants, as needed, to discuss design work in progress and coordinate auditing of the design products. The DM or the CDM will notify in advance the day and time via email to the appropriate individuals for pending meetings. The meeting will be attended by the DM or CDM and or their designees, the design Consultants (if required), Developer's Asset Delivery Director, other Asset Delivery team members (if required) and DEN.

The DM and/or CDM will schedule design meetings with the Asset Delivery Manager to describe the progress of the design work and to discuss design issues that have been identified. A meeting agenda will be submitted with the meeting notification.

Design products and other deliverables will be submitted to the Developer's Asset Delivery team who, in turn and concurrently, will deliver them to DEN. Documents will be transmitted via Document Control and will be stored in DBJV's EDMS.

The Asset Delivery team of the Developer will monitor and control DBJV's progress at the different levels:

- Overall control and coordination: Asset Delivery Director
- Design coordination: Developer's Design Engineers and Retailer Technical links (for interfaces with commercial units build-outs)
- Construction coordination: Works Supervisors and TSA, airlines and Retailers Technical links
- Schedule coordination: Planner
- Health and Safety coordination: Developer's Health and Safety Manager
- Environmental and Quality coordination: Developer's Environmental and Quality Manager

3.2 Developer Representative

The Developer's Quality/Environmental Manager is responsible for auditing and ensuring that the DBJV are meeting the requirements of the DQMP.

.

4 Procedures

4.1 Introduction

The Great Hall Project is a Public Private Partnership (PPP) project that will require significant design effort. The proper planning, coordination, and execution of design activities will be critical to ensure that the overall design will meet the desired quality requirements and will be completed to the required schedule. At the same time, a high degree of flexibility will be necessary to accommodate the changes that inevitably occur in a project of this type with such a tight schedule to be accomplished.

The procedures and design principals associated with this project will generally follow the work tasks approach, as outlined in various manuals and publications, and will follow Good Industry Practice. These procedures will be augmented with specific requirements from the Development Agreement, Technical Provisions, and other contract documents that apply solely for this project.

4.2 General Design Activities

The following are general design activities by disciplines that will be performed as required by the schedule:

Structural:

Expand conceptual design solutions, prepare drawings or other documents to describe and fix the size and character of the project, the relationship of components, and space requirements. Establish Primary Structural Systems and any appropriate dimensions. Size and/or describe major structural components. Consult on critical space allowances and clearances. Provide structural engineering calculations and design drawings.

Architectural:

Architectural design, shell and core, interior (fit-out) design and general signage and way-finding design. The Design shall consider terminal planning principles, tenant needs, concession tenant design guidelines, projected impacts, architectural, passenger circulation concepts, baggage handling system requirements, and LEED requirements.

The design work the overall aesthetics will be performed to comply with the Development Agreement requirements. The Design Consultants will work to achieve this goal with coordination with DBJV, the Developer , DEN and other interested groups.

MEP (HVAC, Electrical, plumbing, fire protection, IT and communications):

Develop the systems philosophy and determination of the applied systems, Schematic diagrams, selection of main equipment, MEP vertical shafts and technical room spaces ,main runs distributions, holes and necessary main spaces for the installations in vertical risers, false ceilings, raised floors, etc., material lists,…Identify, define, and quantify the long-lead MEP equipment that would require early identification and definition in order to deliver the Project in accordance with the Schedule.

4.3 Surveys and Mapping

All surveying shall conform to all applicable surveying laws, the Professional Land Surveying Practices Act, the General Rules of Procedures and Practices of the Colorado Board of Professional Land Surveying and the Technical Provisions.

Survey checks will be carried out on certain critical elements of the works as the work proceeds to verify that the elements have been constructed to the design and contract requirements. Results of these checks are to be recorded and stored in document control (PPM 1.22).

4.4 Environmental Management

The integration of the environmental requirements into the design of the Project will be done through a regular basis interaction between the DM, the CDM, the D&C SEM, the Developer's Quality and Environmental Manager and the Design Consultants to ensure that all the requirements are covered and included into the final design for the Project. The D&C SEM will assist in the review of the Design in order to check that all the requirements of the environmental documents are fulfilled and inform the DM and/or CDM of their findings.

The designs that will be developed will be reviewed by the D&C SEM or members of the Environmental Team (ET) to help identify any potential opportunities in avoiding or minimizing proposed environmental impact issues. The D&C SEM will conduct ongoing coordination meetings with the DT or CDT in order to ensure environmental compliance has been achieved in the design product.

The D&C SEM will coordinate with the DT or CDT potential revisions needed to the design product and document their implementation into the appropriate documents.

The status of the Environmental compliance and integration of requirements on the design will be reported to the Developer's Environmental and Quality Manager

DBJV will implement the proposed Project design and environmental mitigation requirements in accordance with the Environmental procedures described in the D&CEMP and PPM 1.23.

4.5 Structural Assessments (Audits)

DBJV will review the boundaries (beginning and ending) of all structures and check the boundaries of all permanent and temporary construction (PPM. 1.32). The location of foundations and other structure elements will be assessed in the attempt in avoiding conflicts with the new design. DBJV will identify conflicts with existing structures and installations and include them in an initial conflict issues for resolution.

5 Quality Assurance and Control

5.1 Quality Management Plan

DBJV will assure that it controls the design process and that it will satisfy the D&C Contract requirements as well as being technically valid and accurate and in compliance with ISO 9001; 2015 edition. This will be accomplished by defining, controlling, and verifying the design, systems, and supplied equipment/material being provided to Developer. DBJV will require all designers to develop a plan for controlling their design activities for their scope of work and that it is in compliance to DBJV's QMS. This process will address both drawings and/or specifications, changes/revisions, and any waivers granted where applicable. Subconsultant's quality program will be approved by DBJV.

DBJV is committed to providing quality in the application of responsible and professional work for all project deliverables. These will include the consultant's deliverables to ensure accuracy, completeness, and adequacy for their intended purpose. The Design Consultant Manager (DCM) will be fully responsible for all aspects of their design quality, including the work of their sub–consultants and will ensure, if appropriate, their quality will comply with this document.

The design activities will be assigned to professionally qualified individuals who will be required to comply with this document. Design information will be communicated and controlled by minutes of meetings, engineering drawings, and comments generated on the work performed.

An overall Design Flow Process chart can be found in Appendix 4. This Design Flow Process will be applicable for all original design performed by DBJV's Design and Construction Design Departments and its sub-consultants. The requirements for changes to original design by the Construction Design Team will be detailed in PPM 1.34.

The following are general design activities that will be controlled by quality and reported to the Developer's Quality and Environmental Manager:

Design Inputs – Design Document Control will maintain a list of design inputs that require control (such as survey, geotechnical data, as-built drawings, various reports, technical standards, specifications, codes etc.). The Design Consultant Quality Manager (DCQM), along with the DCM, will verify that the inputs are addressed and that quality procedures to address their adequacy and accuracy have been developed, when required. Independent reviews and verification procedures; utilizing the expertise of different Consultant's Design Task Leaders; and utilizing other design supervisors will be used to achieve this goal.

Design Outputs – the Design Consultants are responsible for ensuring that the design outputs can be verified and validated against design input requirements. Specifically, engineering drawings and other design outputs (e.g. plans, specifications, calculations, reports, etc.) must contain or make reference to acceptance criteria and must identify those characteristics of the design that are crucial to the safe and proper execution of the project, and to the safe and proper operation of the project, and its compliance with environmental requirements.

The Design Consultant Manager (DCM) will ensure that design engineers adopt a consistent format and content in order to ensure consistency of the information delivered to the follow-on designers and contractors. The work will be documented that it was checked by others than those that developed the original design. There will be documented proof that this was achieved.

Control Procedures:

Design Review and Certification

The Design Consultant's quality program will address as a minimum the following requirements:

- There are provisions to assure that appropriate quality standards are specified and included in design documents.
- The provisions shall also be used for the selection and review for suitability of application of materials, parts, equipment, and process.
- Measures shall be established for the identification and control of design interfaces and coordination among participating design organizations.
- There will be means to identify and track all items significant to the structures safety and quality requirements by parts numbers, drawing numbers, serial numbers, or other items when deemed necessary.
- Design control measures will be implemented to provide for the verification or checking the adequacy of the design by use of alternate or simplified calculation methods, or by the performance of a suitable testing program.
- Verify or checking process shall be performed by individuals or groups other than those who performed the original design, but may be from the same organization.
- Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall have a proven acceptance based upon previous work in this area.
- Logs will be developed and will be used to track design review comments and/or other items deemed necessary. This will be a tool to determine the status of the work in progress as well as control the status of the work.

Changes or revisions to the design shall be subject to the same design control standards that were applied to the original design. If changes or revisions are made, the requirements of the Colorado State Board of Registration for Professional Engineers and Architects shall be adhered to, and will follow the procedures PPM 1.21 and PPM 1.34.

Design drawings, plans, models and specifications will comply with all applicable Development Agreement requirements for design and drafting.

Each submittal will be accompanied by a letter of transmittal outlining any features which are not complete to its specified level (when the document version is not still Issued For Construction (IFC), and detail what issues remain to be resolved before the work can be completed. This will minimize comments of incomplete work so that the focus can be directed to the work that is sufficiently complete for the review.

If any part or portion of the work is sub-contracted, the sub-contractor must meet the same requirements as DBJV or its Design Consultants where this is applicable.

Quality Records – Quality Records are objective evidence that specified quality control procedures and quality assurance processes have been performed. These records are to be maintained in accordance with Project requirements and reported to the Developer's Quality and Environmental Manager.

To ensure the accuracy of the design, completion of the work, and the quality of the design is present in submittals, all project drawings/reports during development of the design/report, including formal reviews, will serve as evidence that design control has been performed and must be handled as follows:

- All review drawings/plans/reports (formal or informal) will be marked up following the Consultant's quality program requirements.
- All design check sets will be named (i.e. "Check Set rev#1", rev#2 …) and stored by the DCM to create a design development trail. Each check set will be automatically "Superseded" with the once a new check set revision is created. Elements revised will be included in "bubbles" marked with a number, and a legend with a description of the revision implemented will be noted.
- All internal milestone review check sets will be labelled as appropriate (e.g. "60% Design Review").
- Roll plans for milestone internal/independent reviews will be handled as needed.
- The DCM and the Design Consultants Task Leader(s) will be responsible for enforcing the above outlined procedures.
- All review reports and/or minutes of design meetings will be filed by the DCM in the appropriate quality file.

Sub-consultant Work – All work performed by sub-consultants will be reviewed by the Design Consultant Discipline Leaders or Task Leaders to ensure that their work conforms to the Design Consultant's quality program. Sub-consultants will be required to review and professionally seal all work that they produce in accordance with all applicable laws and the Development Agreement requirements. All design sub-consultant submittals will be reviewed and certified by the sub-consultant as meeting the requirements of the Design Consultant's quality program and project specifications.

The procedures mainly relevant to this section of the plan are PPM 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.9, 1.10, 1.11, 1.22, 1.34.

5.2 Design Review

Regularly scheduled design task force meetings and installations coordination meetings will be held as directed by the Design Manager. Action Item Logs will be updated and design directives will be issued to document any significant design actions, as necessary.

Topics of the meetings will include:

- Tracking and resolution of design issues
- Discussion/agreement on project requirements related to design objectives
- Performance of ongoing constructability reviews
- Communication of construction priorities and schedules
- Tracking progress of design development
- installation issues

These meeting will be held when needed. The meeting minutes will include action items to update the design schedule as a consequence of the topics referred above.

Designated representatives from the Developer or DEN may be asked to be involved in informal reviews at any time during the life of the project. These reviews will not restrict the progress of design, but will give the Developer and DEN the opportunity to provide comments and feedback or simply to examine

the progression of the design work. The DBJV will provide unrestricted access to the Developer to all activities of the design element to be reviewed.

Developer and DEN formal design reviews will be as agreed and described in the Development Agreement.

The procedures mainly relevant to this section of the plan are: PPM 1.1, 1.3, 1.7, 1.11, 1.14, 1.21, 1.22, 1.23, 1.34.

5.3 Ensuring Accuracy, Completeness and Quality in Submittals

DBJV's Design Consultant's quality program will enforce procedures to ensure that the design work conforms to Development Agreement requirements, DBJV's QMS and will integrate appropriately with other design elements. Sub-consultants will be required to review and professionally seal all work that they produce in accordance with applicable laws and regulations. Sub-consultants shall perform internal quality control reviews on their products and certify them as meeting the requirements of this document (PPM 1.3, 1.7, 1.11, 1.14 and 1.23).

5.4 Continual Improvement Procedures

The Design Consultant Quality Manager (DCQM) will establish and perform internal audits and will train and supervise any internal auditors that may be utilized on this Project (PPM 1.3, 1.7 and 1.11).

Qualified personnel, independent of those having direct responsibility for the activity being audited, will perform internal quality audits. Internal audits will take place after completion of internal checking and Independent Technical Reviews, but prior to Internal Design Reviews have been performed. Quality audits will also occur prior to submittals of "Issued for Construction" documents. The auditor will review relevant documents and interviews personnel using an audit checklist developed for this type of audit.

The DCQM will ensure that audit results are recorded and brought to the attention of appropriate personnel such as the DCM, Design Consultant Task Leaders, Construction Manager, the DM, CDM, and the D&C QM. Managers responsible for the activity being audited will ensure that prudent and timely corrective action is taken to resolve all identified deficiencies. Follow-up audits will serve to verify that corrective actions have been taken and to evaluate the effectiveness of the response to address the audit finding(s).

If any recurring problems exist, the DCQM will bring them to the attention of the DCM, the DM, the CDM, and the D&C QM. Quality audit results will also serve as a tool to review and implement continual improvement to the QMS and design activities.

5.5 Continual Improvement of the Organization

DBJV personnel is encouraged to seek out improvements for existing practices. Management personnel will review recommendations for improvement and implement, monitor and control them as appropriate. They will have the necessary authority, technical support, training and resources for implementing the changes associated with the improvements.

The procedures mainly relevant to this section of the plan are: PPM 1.1, 1.2, 1.3, 1.7, 1.9, 1.10, 1.11, 1.19, 1.28, 1.34.

5.6 Audit

DBJV will evaluate the effectiveness of its QMS by conducting formal internal audits. The audits will enable DBJV to verify that the QMS is functioning to specified requirements, and to confirm its continued suitability. These audits will provide confidence within DBJV and its subcontractors, and act as an assurance to external organizations that DBJV is using an effective Quality Management System. The D&C QM along with the D&C PD will analyse the audit findings to analyse and use the data for the continual improvement of the QMS.

The object of auditing is to assess whether, the system is being implemented as planned and whether it continues to be effective. DBJV's procedure for quality audits will be followed. Developer will be notified of audits and given the opportunity to participate/observe. Audits will be performed to the requirements of PPM 1.11.

Developer or other permissible third parties may with or without prior notice, perform external audits on DBJV. DBJV will fully cooperate with all organizations involved with an external audit of DBJV.

The D&C PD will determine the frequency of the audits jointly with the D&C Quality Manager (D&C QM).

An audit report will be completed for each audit, with a copy being forwarded to the D&C PD and other to the Developer, who will consolidate them and report to DEN as required. Persons independent of the activity being audited may perform internal audits with proper training and approval of the D&C QM.

Audits performed by the Developer to DBJV will be consolidated by the Developer and submitted to the D&C PD and DEN as required.

The findings of all audits will be considered at the annual DBJV Management review and other meetings held by DBJV's Supervisory Board, for verification of compliance to DBJV's QMS and to identify opportunities for improvement, if any.

5.7 Non-Conformances/ Corrective and Preventative Action

DBJV has established and maintains a procedure used for identifying any non-conformance (i.e. an occurrence not in conformance with procedure or product requirements) it is addressed in **PPM** 1.9 Control of Non-Conforming Products. Such occurrences require the documentation and addressing of these issues.

DBJV has established and maintains a procedure used for identifying any repeated defects identified by NCR's or audit findings. This is addressed in detail in **PPM** 1.10.

5.8 Document Management

5.8.1 Maintenance of Records

DBJV has established, and maintains, a procedure to comply with the Quality Management and Contract requirements. Many documents qualify as Quality Records, including Minutes of Contract Review Meetings, Inspection and Test Results, Product Conformity Certificates, Request for Information, Resolved Non-Conformance Reports; Data on Computer Disks etc. DBJV will demonstrate compliance as described below:

- DBJV will prepare and maintain Quality Records to verify that the Work meets Specification and that the DBJV Construction QMS is operating effectively.
- Pertinent Supplier and Subcontractor Quality Records will also form part of this database.

- DBJV will agree upon the scope and retention of Quality Records with Developer. Quality Records will be available to Developer or its representative as specified in the Contract.
- DBJV will apply a systematic approach to the storage, protection and retrieval of Quality Records. DBJV will retain records for a minimum period determined by Development Agreement, D&B Contract and legal requirements.

The DBJV's EDMS will be used to store correspondence, meeting minutes, presentations from workshops, links to other related materials and the results of commissioned reports and surveys. This will be the main source where staff will be able to find current information about processes and procedures relating to their areas of work.

DBJV Document Control personnel will control the issuance of Construction drawings and their revisions. Drawings (and other similar construction documents) will be marked "Issued for Construction" (IFC) to denote that they are suitable for issuance to construction personnel.

DBJV will send the information to the Developer who will employ an Electronic Document Management System (EDMS) that is agreeable with DEN.

5.8.2 Environmental Documentation and Reporting Requirements

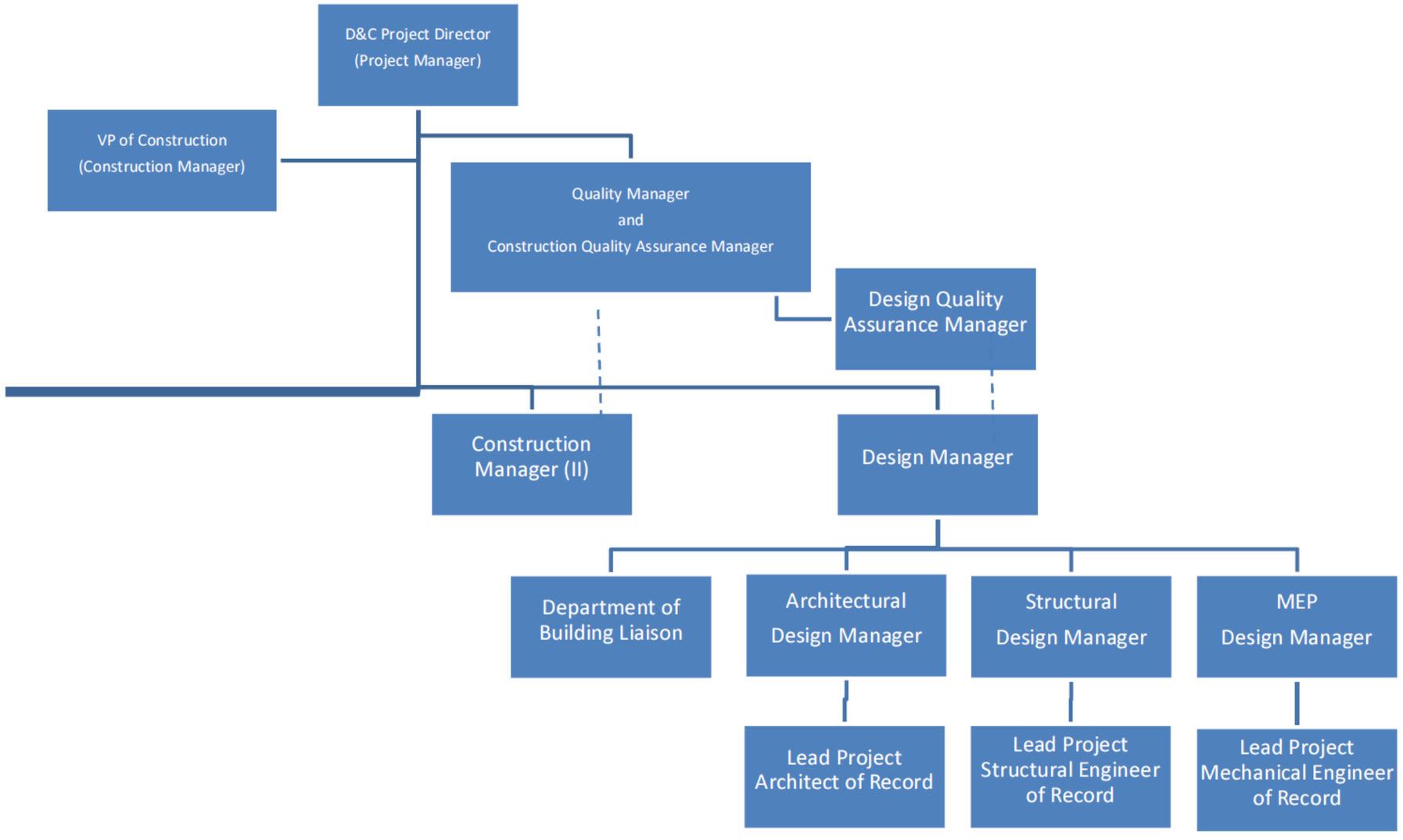
As required by the Contract, DBJV will create a Design and Construction Environmental Management Plan (D&C EMP) which will be applicable throughout the Term of the Agreement. This document will establish the approach, requirements and processes for protecting the environment during the performance of the work to minimize impacts on the environment.

This plan will satisfy DEN and other resource agency requirements. Procedures and processes for environmental compliance will be set forth in the in the D&C EMP.

The D&C SEM will monitor and coordinate all the requirements that are contained in the environmental documents and will be reported to the Developer's Quality and Environmental Manager. Copies of these documents will be maintained by Document Control in DBJV'S EDMS and forwarded to the Developer.

6 Appendixes

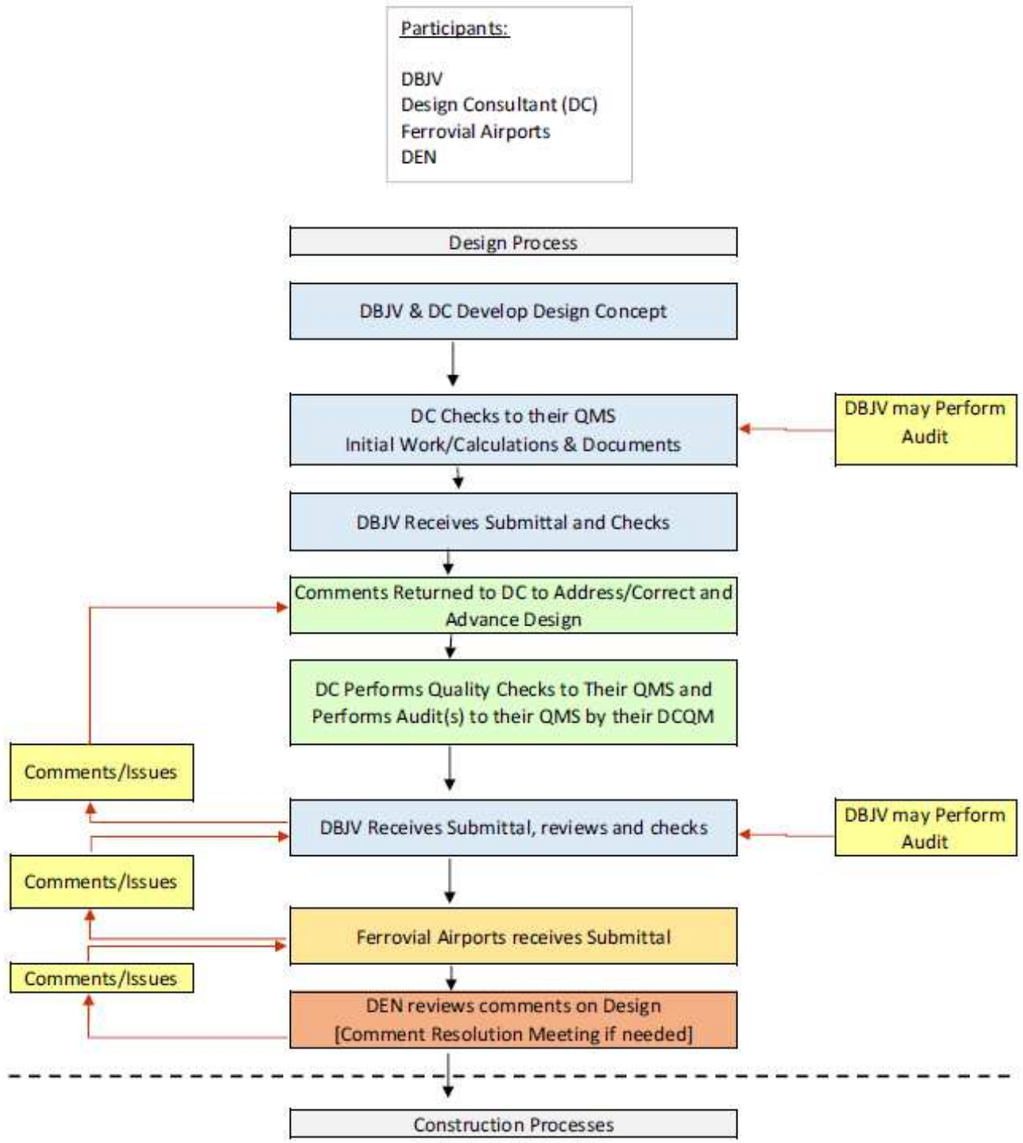
Appendix 1 DBJV Design/Construction Organization Chart



Appendix 2 Process Procedures Manual (PPM) Table of Contents

PPM 1.1. Management review
PPM 1.2. D&C Contract review
PPM 1.3. Documents and data control (Including Quality and Environmental Records)
PPM 1.4. Procurement (Materials and Supplies)
PPM 1.5. Procurement (Subcontractors)
PPM 1.7. Procurement for design services
PPM 1.8. Random sampling
PPM 1.9. Control of non-conforming products / work
PPM 1.10. Corrective Action Report
PPM 1.11. Internal Audits
PPM 1.12. Developer complaints and compliments
PPM 1.14. Submittals (RFA)
PPM 1.15. Training
PPM 1.19. Monthly Quality Reports
PPM 1.21. Design Review Procedures
PPM 1.22. Survey and mapping
PPM 1.23. Environmental Management for LEED
PPM 1.24 Area Systems Walk Down and Turnover Punch List
PPM 1.25. Stop work order
PPM 1.26. Request for Information (RFI)
PPM 1.27. Daily Inspection Report (DIR)
PPM 1.28. Continual Improvement.
PPM 1.29. Control of Instruments Measuring and Test Equipment (M&TE)
PPM 1.30 Preparation and Control of Field Changes
PPM 1.31 Preparation of On-Going As-Builts and Final As-Builts
PPM 1.32. Structural Assessments (Audits)
PPM 1.33. Noncompliance points from parties
PPM 1.34. Field design or design drawing revision by the Construction Design Team
PPM 1.35. 4 Phase Inspection Control Procedures

Appendix 3 DBJV Design Flow Process



Appendix 4 List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos Containing Materials
CAR	Corrective Action Report
CDM	Construction Design Manager
CDP	Construction Detail Procedures
CDT	Construction Design Team
CFO	Chief Financial Officer
CM	Construction Manager
CMT	Construction Management Team
CQMP	Construction Quality Management Plan
CRM	Comment Resolution Meeting
D&C	Design and Construction
D&C HSMP	Design and Construction Health and Safety Management Plan
D&C EMP	Design and Construction Environmental Management Plan
D&C PD	Design and Construction Project Director
D&C PD	D&C Project Director
D&C QM	Design and Construction Quality Manager
D&C SEM	Design and Construction Safety and Environmental Manager
DB	Design and Build
DC	Document Control
DCM	Design Consultant Manager
DCQM	Design Consultant Quality Manager
DIR	Daily Inspection Report
DM	Design Manager
DQMP	Design Quality Management Plan
DT	Design Team
EDMS	Electronic Document Management System
EI	Environmental Inspector
ET	Environmental Team
FCR	Field Change Request
FD	Financial Department
FHWA	Federal Highway Administration
IFC	Issued for Construction
IRSP	Internal Review Signature Page
ISO	International Standards Organization
LBP	Lead Based Paint
MSDS	Material Safety Data Sheet
MWBE	Minority and Women Business Enterprises
NCR	Non-Conformance Report

O & M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
OVT	Owner Verification Tests
PE	Professional Engineer
PMP	Project Management Plan
PPCM	Procurement/Project Control Manager
PPCT	Procurement /Project Control Team
PPE	Personal Protective Equipment
PPM	Process Procedures Manual
PPP	Public Private Partnership
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QMS	Quality Management System
RFA	Request for Approval
RFI	Request for Information
RFP	Request for Proposal
ST	Safety Team
USACE	United States Army Corps of Engineers
WI	Work Instructions
WP	Work Plan

Appendix 5 DBJV Contact Information

TITLE		NAME	INITIALS	COMPANY	MOBILE NUMBER	EMAIL ADDRESS
D&C PD	D&C Project Director	Ignacio Perez Jainaga	IPJ	DBJV		
CM	Construction Manager	Steve Culvertson	SC	DBJV		
PPCM	Procurement/Project Controls Manager			DBJV		
DM	Design Manager			DBJV		
CDM	Construction Design Manager			DBJV		
D&C QM	D&C Quality Manager			DBJV		
D&C SEM	D&C Safety /Environmental Manager			DBJV		
MWBEM	MWBE Manager			DBJV		
CFO	Chief Financial Officer			DBJV		

DENVER INTERNATIONAL AIRPORT

DEN

GREAT HALL PROJECT

A PROJECT THAT WILL INSPIRE THE AIRPORT INDUSTRY

Construction Quality Management Plan

June 2017

Great Hall Project LLC

ferrovial

SAUNDERS Building Confidence®

JLC | MJE-Loop Capital Partners LLC

Revision History

Revision	Effective Date	Prepared by:	Reviewed by:	Approved by:
0	06/26/2017			

Table of Contents

1 Organization and Personnel

1.1 Introduction

DBJV has the overall responsibility to ensure that all the construction work is progressing efficiently and in a timely manner and that it complies with the Construction Quality Management Plan (CQMP) requirements.

It sets out the processes for ensuring that the work will be in compliance with the "Issue For Construction" (IFC) drawings, plans, specifications, to help prevent the occurrence of deficiencies and non-conforming construction work, and to help resolve deficiencies if and when they occur during the life of the Project.

1.2 Organization Chart

The DBJV organization chart for the Design & Construction Phase is shown in Appendix 5.

In general, all of DBJV management staff will take part in maintaining, auditing and reporting on the effectiveness of the QMS. With this concept, the D&C QM will collaborate with other managers in their assigned areas (i.e. the DM for design, the CM for construction, the SEM for safety, etc.) in implementing the QMS. The QA Team will also assist the D&C QM in the implementation of the DBJV QMS when needed. Any QMS issues or concerns identified by other members of DBJV's organization will be reported to the D&C QM.

Below is a list of the major disciplines/functional areas within the DBJV organization.

- Design Department
- Financial Department
- Procurement/Project Control Department
- Quality Assurance Department
- Safety Department and Environmental Department
- Construction Department
- Construction Design Department

1.2.1 Interrelation between Disciplines/Functional Areas

Meetings between the department managers are the primary means to disseminate information and control their efforts. At these meetings, managers will provide progress updates and highlight issues arising during execution of the construction work. The relationship between all departments within DBJV is set out in the organization chart located in Appendix 5. Action items may be assigned from the results of the disseminated information.

The procedures mainly relevant to this section of the plan are: PPM 1.1, 1.12, 1.15, 1.21, 1.22, 1.24, 1.25, and 1.34.

1.3 Resource Plan and Construction Coordination

DBJV will allocate the resources to ensure the timely completion of the activities delineated in the construction schedule.

The resources assigned to perform the construction/construction management will be comprised of the three following groups:

- DBJV's Construction Team (CT) for managing the construction /Construction Management and Quality Control (QC) as directed by the CM.
- The Construction Design Team (CDT) for managing the design issues/conflicts and as directed by the CDM.
- The QA Team for performing final review and acceptance of the work as directed by the D&C QM.

DBJV's Construction Team is comprised of the different Project Managers as shown in Appendix 5.

1.4 Project Main Personnel

The following table shows Main Personnel in DBJV's organization describing the positions.

Titles	Project Main Personnel Positions
Project Manager / D&C Project Director (D&C PD)	Oversees design, construction, subcontractors, project controls, scheduling and quality for DBJV
Construction Manager / Vicepresident of Construction (VPC)	Oversees construction, quality, health and safety and environmental and is responsible for the phasing and scheduling of the project
Construction Manager (II) (CM)	Oversees all construction activities
Design Manager (DM)	Oversees design process for the project during the initial design phase
Construction Design Manager (CDM)	Coordinates with the design team and with construction on all surveying and design issues or versees design process for the project during during construction
Procurement/Project Controls Manager (PPCM)	Oversees subcontracting process, procurement of materials for construction, document control, and project controls
D&C Safety and Environmental Manager (D&C SEM)	Oversees monitoring and controling the safety program during design and construction Oversees environmental compliance overseen the Environmental Team during design and construction
Quality Manager / Construction Quality Assurance Manager (QM/CQAM)	Oversees development, implementation, maintenance, and evaluation of the QMS for DBJV

Titles	Project Main Personnel Positions
Design Quality Assurance Manager (DQAM)	Oversees development, implementation, maintenance, and evaluation of the QMS for Design for DBJV

The responsibilities of the Design Main Personnel are as follows:

Project Manager / D&C Project Director (D&CPD)

The Project Manager, D&C Project Director (D&C PD) is responsible for managing all design and construction related aspects of this Project. They will:

- Take overall responsibility for site administration and coordination of site operations, design, site surveying and control; and coordinate the development and implementation of the QMS with the Quality Manager / Construction Quality Assurance Manager (QM/CQAM).
- Perform progress monitoring and verification of quality and quantity of work completed by subcontractors/sub consultants with the QM/CQAM.
- Coordinate with the D&C Safety /Environmental Manager for the health and safety for field operations and Environmental Compliance.
- Manage both design and construction budgets and cost control measures with the Design Manager (DM), Construction Design Manager (CDM), Construction Manager / Vice-president of Construction (CM-VPC) and the Construction Manager II(CM).
- Affirm that work has been completed in compliance with the specified requirements upon completion of each design and construction phase with the DM, CDM, CM, and QM/CQAM.
- Ensure that all pertinent design and construction records are collected and prepared for archiving by coordinating with the Procurement/Project Control Manager (PPCM) and the QM/CQAM.
- Assess bidders' competency to perform the work prior to the award of any procurement package related to construction/design/installation with the QM/CQAM, DM, CDM, VPC, CM, and the PPCM.
- Report to the Asset Delivery Director of the Developer in all matters related to design and construction.

Construction Manager / Vice-president of Construction (VPC)

The Construction Manager / Vice-president of Construction (VPC) is responsible for overseeing all aspects related to construction. The VPC shall have the overall responsibility for site administration and coordination of site operations, site surveying and quality control (QC); progress monitoring and verification of quality and quantity of work completed by Sub-contractors, environmental and health and safety for field operations, and scheduling.

Prior to award of any procurement package related to construction/installation, the VPC will assess the bidder's competency to perform the Work. The actual supervision of construction activities on site shall be managed by different Construction Project Managers (PM) who shall report to the CM and the VPC.

The VPC and the CM, with the assistance of the Construction Project Managers (PM) and the PPCM, will have the responsibility of overall planning and scheduling of the project. The CM is responsible for the coordination of subcontractors and all construction activities for this project. They will:

- Report to the D&C PD.
- Supervise the performance of the site administration and coordination of site operations (**PPM** 1.1 and 1.2).
- Schedule the project in logical steps and ensure that there is budgeted time required to meet designated deadlines.
- Confer with supervisory personnel, owners, contractors, design professionals, and the QA Team to discuss and resolve matters such as work procedures, complaints, construction problems and quality related issues (**PPM** 1.9 and 1.10).
- Take action to deal with the results of delays, bad weather, or emergencies at the construction site.
- Interpret and explain plans and contract terms to the clients, representing the Owner or Developer in conjunction with the CM and the DM and CDM (**PPM** 1.2, 1.4, 1.5, 1.12, and 1.15).
- Study job specifications to determine appropriate construction methods.
- Plan, organize, and direct activities concerned with the construction and maintenance of structures, facilities, and systems (**PPM** 1.23 and **CDP**s).

Construction Manager II (CM)

The Construction Manager (CM) is responsible for managing all aspects related to construction. The CM shall have the overall responsibility for site administration and coordination of site operations, site surveying and quality control (QC); progress monitoring and verification of quality and quantity of work completed by Sub-contractors, health and safety for field operations, scheduling, and cost control.

Prior to award of any procurement package related to construction/installation, the CM will assess the bidder's competency to perform the Work. The actual supervision of construction activities on site shall be managed by different Construction Project Managers (PM) who shall report to the CM.

The CM, with the assistance of the Construction Project Managers (PM) and the PPCM, will have the responsibility of overall planning and scheduling of the project. The CM is responsible for the coordination of subcontractors and all construction activities for this project. They will:

- Report to the VPC and the D&C PD.
- Perform site administration and coordination of site operations (**PPM** 1.1 and 1.2).
- Oversee site surveying and quality control (QC), evaluate the progress and verify the quality and quantity of work completed by Sub-contractors (**PPM** 1.22).
- Assist the D&C SEM on issues with all health and safety for field operations.
- Control cost for the construction process.

- Schedule the project in logical steps and ensure that there is budgeted time required to meet designated deadlines.
- Confer with supervisory personnel, owners, contractors, design professionals, and the QA Team to discuss and resolve matters such as work procedures, complaints, construction problems and quality related issues (**PPM** 1.9 and 1.10).
- Take action to deal with the results of delays, bad weather, or emergencies at the construction site.
- Interpret and explain plans and contract terms to administrative staff, workers, and clients, representing the owner or Developer in conjunction with the DM and the CDM (**PPM** 1.2, 1.4, 1.5, 1.12, and 1.15).
- Study job specifications to determine appropriate construction methods.
- Plan, organize, and direct activities concerned with the construction and maintenance of structures, facilities, and systems (**PPM** 1.6, 1.23 and **CDP**s).
- Report the work progress to the Works Supervisors appointed by the Developer.

Design Manager (DM)

The Design Manager is responsible for managing the Design Team and the Design Consultants (Lead Project Architect and Engineer of Record).

They will:

- Report to the D&C PD.
- Direct the work of the Design Team.
- Ensure that specific packages for design and related specifications meet the requirements of the Development Agreement and D&B Contract (**PPM** 1.2 and 1.22).
- Ensure that the design is functional and fulfils the specified criteria for safety, life expectancy, constructability, quality, cost-effectiveness and complies with required environmental guidelines within the project schedule (**PPM** 1.23).
- Coordinate design activities with the D&C SEM.
- Coordinate interdisciplinary requirements within the Design Consultants and will require the Design Consultants to certify that their design products have been completed in accordance with specified requirements.
- Manage the technical performance of the Design and the financial costs for these services.
- Provide engineering support to the project team for technical input during the procurement process and for reviewing change proposals and coordinate with the Procurement/Project Controls Manager (**PPM** 1.4 and 1.5).
- Review design packages developed by the Design Consultants prior to their being issued for construction (IFC).

- Establish an effective design review process to ensure that interdisciplinary requirements have been completed prior to being issued for procurement and, subsequently, for construction (**PPM** 1.21).
- Coordinate with the D&C QM that consultants have approved quality programs that comply with DBJV (when applicable) (**PPM** 1.3, 1.10 and 1.11).
- Report the progress of the design to the Design Engineers appointed by the Developer

Construction Design Manager (CDM)

The Construction Design Manager is responsible for coordination of all design related issues that occur during the construction process due to surveying or project engineering with the DM. Coordinate with the Construction Manager (CM) on all construction related issues. They will:

- Report to the D&C PD.
- Direct the work of the Construction Design Team (CDT).
- Oversee that the design is construct able during the construction phase.
- Provide engineering support to the project team (**PPM** 1.22).
- Provide technical input/support during the procurement process and cooperates with the PPCM in this area (**PPM** 1.4, 1.5, and 1.7).
- Provide technical review of change proposals prior to their issuance.
- Provide the final "as-built" drawings for this project (**PPM** 1.3 and 1.31).
- Assist in procuring and managing the Design consultants and surveying companies through the PPCM.
- Coordinate the design adjustments efforts with the DM, Developer, DEN, Owners and third parties.
- Ensure that the design complies with the Development Agreement requirements and Design and Build Contract. Provide technical assessment for the RFQ's prior to the award of any procurement package related to design or professional services (**PPM** 1.2 and 1.7).
- Review design packages developed by the Design Consultants prior to their being issued for construction (IFC).
- Establish an effective design review process to ensure that interdisciplinary requirements have been completed prior to being issued for procurement and, subsequently, for construction (**PPM** 1.21 and 1.34).
- Respond to RFI's.
- Evaluate and approve RFA's in coordination with the D&C QM.
- Coordinate with the D&C QM that consultants have approved quality programs that comply with DBJV (when applicable) (**PPM** 1.3, 1.10 and 1.11).
- Report the progress of the design to the Design Engineers appointed by the Developer

Procurement/Project Controls Manager (PPCM)

The Procurement/Project Controls Manager is responsible for the development, implementation of purchasing programs and procedures; budget development; management of overall procurement for this project; and retention and management of project documents. They will:

- Report to the D&C PD.
- Plan, organize, and direct the work of the purchasing of supplies, materials, equipment, and services (**PPM** 1.2, 1.4, 1.5, and 1.7).
- Establish goals, objectives, and performance standards for purchasing.
- Evaluate and modify purchasing policies and procedures when necessary.
- Interpret and apply policies, laws, and regulations pertaining to procurement.
- Analyse performance and workload data and develops and implements procedural changes, new methods, or automated systems as appropriate, in order to increase efficiency and cost-effectiveness of the purchasing process.
- Determine purchasing needs, legal requirements, and product specifications, and to share information about cost and availability, vendor qualifications, and current technology along with the DM, CDM and CM.
- Develop standardized specifications for the purchasing of commodities used by several departments.
- Review bids with the DM, DCM, CM and D&C QM, contracts, and purchase orders to ensure clarity and compliance with the QMS and the Development Agreement.
- Ensure maintenance of appropriate documentation and records (**PPM** 1.3, 1.9, 1.24, and 1.31).
- Research market conditions and new products.
- Negotiate with vendors regarding purchase requirements, prices, trade and cash discounts, deliveries, current product development, and submission of bids.
- Direct the work of the Procurement and Document Control departments.

D&C Safety and Environmental Manager (D&C SEM)

The Safety and Environmental Manager is responsible for monitoring and controlling all the safety issues for this project for DBJVI and coordinating with Developer during the design and build phase. He is also responsible They will for ensuring this Project is in compliance with all applicable environmental Laws and Regulations as well as any requirements of the contract documents.

During the design and construction phase, the SEM will report to the D&C PD. They will:

- Report to the D&C PD.
- Provide program direction to ensure that a safe, healthy, and secure work environment exists for employees and the public, including persons with disabilities, and that the public is protected from harm in connection with operation of the Great Hall Project.

- Develop the Safety Plan for Construction, emergency procedures, and all required updates to comply with the contract and applicable Laws.
- Assess safety and health program policy issues, reviewing and analysing the effectiveness of the safety and health program to the contract requirements and applicable Laws.
- Ensure that safety and health issues are routinely discussed by all levels of management at staff meetings, or other appropriate meetings.
- Ensure that the staff has received all required health and safety training and any updates to the program (**PPM** 1.15).
- Prepare all reports required by the contract, the company, or by Law (**PPM** 1.3).
- Conduct assessments to ensure compliance with the health and safety plan.
- Conduct safety meetings with employees to discuss safety and health matters, including provisions for persons with disabilities, workplace violence and security, specific workplace hazards, updates or changes to the program, and employee concerns.
- Provide a safe and secure work environment that has zero tolerance for violence, threats, harassment, and intimidation in the workplace.
- Conduct periodic safety inspections of all worksites to identify and correct unsafe conditions and unsafe acts, and document the results.
- Investigate and document all occupational injuries, illnesses, or acts of workplace violence, and identify corrective action(s) that will prevent further occurrences (**PPM** 1.10).
- Ensure that each employee has received the required training to perform their assigned task, provided with the necessary equipment, and follows all safety and health policies, procedures, and work practices.
- Direct the work of the Safety Team (ST) and the Environmental Team.
- Direct the work of the Environmental Team (ET).
- Ensure that the permits for this Project are current and all permits have been obtained.
- Review required submittals for quality and accuracy (**PPM** 1.23).
- Ensure that the documentation and reporting of the environmental compliance of the work is correct (**PPM** 1.3).
- Report any violations or non-conformances that might represent an imminent danger to human health or the environment to the Developer and subsequently to DEN as soon as the problem has been identified (**PPM** 1.9).
- Advise the D&C PD, CM, and relevant Design and Construction personnel on environmental issues (PPM 1.15 and 1.23).
- Inform the D&CPD on any appropriate recommendations for corrective action, including stoppage of work (PPM 1.25).
- Report Health and Safety and Environmental Status to the Health and Safety and Environmental Supervisor appointed by the Developer

Quality Manager / Construction Quality Assurance Manager (QM/CQAM)

Active during the design and construction phases, the QM/CQAM is responsible for the Project, ensuring that the QMS has been developed, established, maintained, and evaluates the QMS for DBJV's scope of services. They will:

- Report to the D&C PD.
- Direct the work of the QA construction Team and Design Quality Assurance Manager (DQAM)
- Provide independent quality evaluations of construction work (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).
- Supervise quality evaluations of design deliverables (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).
- Ensure that Sub-consultant/Subcontractor work adheres to the QMS, contract, and the completed design products requirements (**PPM** 1.5 and 1.11).
- Perform and/or direct independent quality audits during all phases of the Project (**PPM** 1.11).
- Participate in Management Reviews assessing the effectiveness of the Quality Management System (**PPM** 1.1 and 1.19).
- Be responsible for field QA activities, documenting the QA activities, and providing records to document control (**PPM** 1.3).
- Determine the final disposition of all nonconformities and implementation of corrective and preventive actions (**PPM** 1.9 and 1.10).
- Be responsible for training, planning and performing internal quality audits (**PPM** 1.15).
- Prior to award of any procurement package, the D&C QM will assess the quality program of a bidder (**PPM** 1.2 and 1.7).
- Responsible for ensuring all testing is performed, reviewed, and submitted to document control (**PPM** 1.8).
- Responsible for issuing Stop Work for quality related issues (PPM 1.25).
- Report Construction Quality status to the Quality Supervisor appointed by the Developer

Design Quality Assurance Manager (DQAM)

Active during the design and construction phases, the DQAM is responsible for the Assurance of the Quality of the Design documents of the Project, ensuring that the QMS has been developed, established, maintained, and evaluates the QMS for DBJV's design scope of services. They will:

- Report to the QM/CQAM.
- Provide independent quality evaluations of design deliverables (**PPM** 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.23, 1.24, 1.31, and 1.34).
- Ensure that Sub-consultant/Subcontractor work adheres to the QMS, contract, and the completed design products requirements (**PPM** 1.5 and 1.11).

- Be responsible for design QA activities, documenting and providing records to document control (**PPM** 1.3).

1.5 Contractor Personnel and Third-Party Personnel

DBJV will require, by contract, any consultants or Subcontractors to comply with the Development Agreement, for the portions that are applicable, and especially the Technical Provisions, as part of the stipulation for their services. If the consultants or Subcontractors, with DBJV's approval, decide to subcontract to others, they will also be required to comply to the same contractual requirements that apply to their contract with DBJV.

DBJV strategy for M/WBE participation includes several approaches for inclusion such as focused Subcontractor-designated work for qualified MWBE firms (including small, disadvantaged, and women-owned business concerns), where feasible, especially in scopes of work where there are a large concentrations of qualified MWBE firms . Project management personnel will identify and evaluate the work activities that DBJV's own workforce will perform based on best value assessments of each work activity and labor resource and may determine an possible opportunity for a small or MWBE firm could perform if possible.

DBJV is familiar with MWBE requirements from its work in Colorado and similar requirements in other areas nationwide. Colorado-based Saunders Construction, Inc. has completed numerous projects in compliance with DEN and City and County of Denver MWBE requirements. DBJV is committed to achieving the MWBE participation on this project.

Below is a list of the principal departments for DBJV and their responsibilities. It is understood and will be adhered to that all key personnel for DBJV will be submitted to Developer for approval. To prevent potential continual revision of this document, ***only*** titles, positions and a brief description of their responsibilities will be described here. A copy of the resumes for all quality management personnel from DBJV will be kept as accessible quality record.

1.5.1 PROCUREMENT/PROJECT CONTROLS TEAM (PPCT)

The DBJV PPCT will be responsible for optimizing the purchasing and procurement during the project by establishing rules that guarantee the products and services purchased meet the contract requirements with Developer. They will take into account the price, schedule, quality, and overall best value. They will report to the PPCM.

The PPCT will also be in charge of DBJV's Document Control. This department will receive all the documentation from Developer, DEN, etc., and will file it and distribute it internally within the DBJV organization. They will also submit all the information to Developer, such as drawings, letters, requests, etc. The PPCT will maintain all the data base of the all the documentation produced by DBJV, including quality documents, Design Documents, environmental documents, etc.

The Procurement/Project Control Department will be responsible for producing, maintaining and enforcing the procurement policy defined by DBJV and in accordance with the D&C Contract and the Development Agreement. They will also prepare all contracts with suppliers, Subcontractors and sub-consultants.

The procedures mainly relevant to this section of the plan are PPM 1.2, 1.3, 1.4, 1.5, 1.7, 1.9, 1.10, 1.11, and 1.26.

1.5.2 CONSTRUCTION DESIGN TEAM (CDT)

The CDT is responsible for managing the overall design adjustments during the construction phase. The CDT will be responsible for the overall constructability of the Design during the construction phase and will report to the CDM.

During the duration of the construction phase, the CDT shall be responsible for providing engineering support to the project team to provide technical input during the procurement process and for reviewing change proposals prior to being issued for implementation. The CDT will also oversee and manage any new design outside the original design team members. The CDT will be responsible of preparing the final as-built drawings.

The Survey Team will also be under the direction and supervision of the CDT. They will be in charge of the survey of the construction work and the as-built of the construction work performed.

1.5.3 FINANCIAL DEPARTMENT (FD)

The Financial Department (FD) shall be responsible for the proper administration of accounts relating to the business performance of the D&B Contract and with DBJV's corporate policies and applicable laws and regulations. The FD reports to the Chief Financial Officer (CFO).

This department shall execute the business administration for DBJV and have care and custody of its funds, securities, evidences of indebtedness and all personal property and deposit in accordance with the instructions received from the D&C PD.

The FD is responsible for accounts payable, accounts receivable, maintaining payrolls and all other financial matters pertaining to the Project.

1.5.4 SURVEY TEAM

The Survey Team will be responsible for providing supervision of the survey work for construction layout and performing as-built of the work constructed. The Survey Team will be under the supervision of the CDT.

1.5.5 CONSTRUCTION TEAM (CT)

The CT is responsible for managing the overall construction/construction management, schedule and internal analysis of construction cost for this Project.

This team along with the CT will assist with the Project Baseline Schedule and will also assist in the monthly updates to the schedule, helping to determine monthly progress, requesting field changes, etc. For this purpose, the CT team will receive input for all the other departments, and they will specially work very close with the rest of the Construction Team.

The CT will report to the CM.

The CT will work with the CDT, and the QA Team. The implementation of the Quality Control activities at the site will be the responsibility of all the DBJV Construction Management Team, or designees, starting with the CM, and going through all levels of the team (i.e. Project managers, superintendents, project engineers) down to the workers. The QC activities will also include all DBJV subcontractors work.

The CT will be responsible for all Hold Points and all non-conformances that are identified and will not be covered up until all issues are resolved.

1.5.6 QUALITY ASSURANCE TEAM (QA Team)

The D&C Quality Manager (D&C QM) will be primarily responsible for developing, establishing, implementing, maintaining and evaluating the QMS including the CQMP. The D&C QM will not be involved with scheduling or production activities, and will report to the D&C PD. The functions and responsibilities of the D&C QM have been already described in this document.

The D&C QM will implement the CQMP with the collaboration of the QA Team, which will consist mainly of Quality Assurance Field Inspectors and Quality Laboratory Technicians. The QA Team is responsible for ensuring the overall quality for the Project. They will report to the D&C QM.

The QA Team will work closely with the CT and the CDT. They will be responsible for coordinating the quality testing laboratory activities with the CT. They will:

- Carry out Quality Control and Assurance activities identified in the CQMP, PPM's, and CDP's.
- Oversee, evaluate, and document the quality of construction work performed by DBJV, suppliers and/or subcontractors including conformance to D&C Contract requirements, IFC drawings, specifications and the Development Agreement requirements.
- Verify that test equipment is properly calibrated and maintained on at least a yearly basis or as required by the manufacture or industry requirements.
- Field and Lab technicians will be assigned to inspect and test the construction activities in accordance with the Construction Detail Procedures (CDP), Hold Points, applicable Standards and Specifications, or the Process Procedure Manual (PPM).
- Through daily field inspection, they will work to prevent the occurrence of non-conforming construction work or deficiencies and, when this happens, identify the deficient or non-conforming construction work as detailed in PPM 1.9.
- Assist with determining the final disposition of all nonconformities and implementation of corrective and preventive actions (PPM 1.9 and 1.10).
- Control further processing, delivery, installation or use of non-conforming construction work or supplied products until the deficiency or unsatisfactory conditions have been corrected, controlled, or removed as detailed in PPM 1.9.
- Coordinate quality assurance activities with the D&C QM.
- Assist in providing independent quality evaluations of design deliverables and construction work (PPM 1.1, 1.2, 1.3, 1.4, 1.5, 1.22, 1.24, and 1.31).
- Assist and/or participate in independent quality audits during all of the construction phases of the Project (PPM 1.11).
- Provide feedback for Management Reviews assessing the effectiveness of the Quality Management System (PPM 1.1 and 1.19).
- Be responsible for conducting field QA activities, documenting the QA activities, and providing QA records to document control (PPM 1.3).
- Assist in training for quality, planning, and performing internal quality audits (PPM 1.15).

- Responsible for overseeing that all testing is performed, reviewed, and submitted to document control (PPM 1.3).

1.5.7 Document Control

The D&C QM or his representative will be the person within the DBJV's organization that will be in charge of monitoring and ensuring all the quality records are produced by this Plan.

The Procurement/Project Control Manager (PPCM) will be responsible for Document Control and that the requirements of PPM 1.3 are implemented.

Document Control (DC) at a minimum will:

- Maintain field and Laboratory test data and submit to the Developer.
- Maintain the database with the inspection reports, test results, material sample reports and other documents deemed necessary and submit to the Developer.
- Will prepare, file, and transmit quality communications to the Developer.

1.5.8 Communication of Quality Data

The secure DBJV's EDMS utilized by the Project will enable authorized team members to access and store project data, progress meeting minutes, draft text and drawings. It will contain an e-mail list server to notify Project personnel of significant upcoming events and emergencies. The EDMS will also serve as a clearinghouse to request information from other team members. DBJV will regularly submit project-related documents to Developer who will forward to DEN and other stakeholders.

All the work from different consultants and subcontractors will be coordinated through the Construction Manager. The chain of communication/coordination will be the same as referenced above, in summary, DEN with Developer, Developer with DBJV, and DBJV with its consultants/subcontractors. On very rare, but important circumstances, there will be direct communications between DBJV and DEN with Developer being appraised about the communications and the results of the direct contact.

The contact information for DBJV is located in Appendix 6.

2 Subcontractors

2.1 Subcontractor Control Procedures

DBJV will ensure that the construction work is progressing efficiently and is meeting the approved schedule requirements, PPM 1.2, 1.3, 1.4, 1.5, 1.7, 1.9, 1.10, 1.11, 1.12, 1.15, 1.22, 1.23, 1.24 1.26, 1.27, 1.29, 1.30, 1.31 and the CDP's.

DBJV is constantly seeking out best practices that will lead to superior performance in satisfying Developer's needs and DBJV's internal cost effectiveness. Towards this goal, DBJV is establishing a relationship with its Subcontractors, Consultants and Sub-consultants to create a list of preferred Subcontractors. Subcontractor performance is therefore monitored on various items, (e.g. safety, non-conformances to the contract, etc.). This data will be analysed and used for establishing reliable relationships.

The control of DBJV´s contractors will start in the procurement period. Here, the Procurement/Project Control Manager (PPCM) and his/her team will go through a process of asking for quotes (RFPs) from different Subcontractors and then analyse each bid, in terms of cost and experience, skills and background projects of each company. During this process, different staff from DBJV, such as CM, D&C SEM, MWBE Coordinator, and the D&C QM, will provide their input to the PPCM. The contractor will be selected taking into account all this information and the D&C PD will collaborate in the final decision.

The Construction Team (CT) will monitor the Subcontractor's performance on a regular basis while their work is being carried out on site. Any problems, difficulties, failures, or queries, which bring into question matters within the scope of this procurement procedure will be identified and resolved jointly with the Procurement/Project Control Manager in conjunction with other relevant personnel. The CT will also check that the subcontractor is complying with the approved schedule. The CT will be responsible for the QC activities that will be required to be performed, along with the QC of the subcontractors with approved quality plans.

During the execution of the work, the Subcontractor will be monitored by different departments of DBJV's organization. The D&C SEM and the Safety Team (ST) will assure that the contractor is complying with the D&C Health and Safety Management Plan and the D&C Environmental Management Plan. The D&C Quality Manager and his Quality Assurance Team (QA Team) will ensure the quality of the work being properly executed based on the different Construction Detail Procedures (CDP's) that DBJV has in place. Hold Point(s) (HP) in the CDP's will be used to document this task.

Hold Point(s) (HP) is identified on different forms that document that the execution of the different construction activities is acceptable before the work proceeds. They will contain the different points where the activity has to be controlled and will contain places to be signed by both the QC personnel and the QA Team. All documented HP(s) will be kept as a quality record and will be included in the completed quality records for the documentation for this Project. The HP(s) are part of the Construction Detail Procedures (CDP) that DBJV has prepared and will be further expanded during the life of the project, as needed. Every CDP will have its own HP(s), as needed.

To control the performance of Subcontractors, the relevant Construction Team representative will review and approve Subcontractor progress payments with the D&C PD authorizing payment.

2.2 Responsibility of Contractors and Affiliates

DBJV is responsible to Developer for the Design and Construction Work for this Project. DBJV will be subject to the applicable requirements of the Development Agreement and the D&B Contract. The Subcontractors will be contractually subject to the same requirements that apply to DBJV for what is applicable to their scope of services.

The Subcontractor or any self-performed work will be controlled by the CM and by the CT. The Subcontractors will report to a designated Project Manager or Superintendent on all issues for construction, schedule, and quality.

2.3 Satisfaction of Contract Obligations

All responsible personnel will ensure that every Subcontractor or Supplier meets the obligation imposed by their respective Contracts.

The CT will receive input from the different department managers (D&C PD, D&C QM, SEM, PPCM, DM and the CDM). Based upon the feedback received, they will be able to evaluate the performance of Subcontractors, suppliers, or consultants on the Project. Periodic meetings between the CT and each Subcontractor will be held to analyse and correct any deviation from the Subcontractor's contract.

DBJV will implement a QMS to ensure that either the self-performed work or the Subcontractor meet the requirements imposed by the Development Agreement and the D&B Contract. The CM will be responsible for the QC on the work performed on this Project. DBJV has appointed a D&C Quality Manager (D&C QM), to oversee all of the quality-related issues for the design and construction/construction management activities and perform audits on these activities.

3 Procedures (Process Control)

DBJV will define the requirements for the construction process, construction-related activities or special processes that directly affect the quality of the Project. This will assure that these processes will be performed under controlled conditions and in compliance to DBJV's QMS, the D&B Contract and the Development Agreement requirements.

DBJV has developed the Process Procedures Manual, (PPM) to address management and construction-related activities. The Construction Detail Procedures (CDP) was developed for major construction activities for this Project. Activities or construction-related activities that affect quality will be performed in accordance with the PPM's and CDP's. Within some of these documents, "Hold Points" have been designated. This will ensure that the construction, assembly or installation process, which require specific inspection or testing has been performed, is acceptable, and the work will not proceed until this has been accomplished. This will ensure that construction activities where the results cannot be verified by subsequent inspection and testing, or where work is required to be performed in a specified sequence, or when an activity requires a special process or for complex, multi-disciplined activities has been performed correctly.

DBJV will develop additional specific CDP's for other major or special construction activities prior to their commencement. These new CDP's may also have required "Hold Points" (HP) as they are identified for the procedure.

These procedures will apply to all subcontractors/sub consultants performing work, including special processes for this Project.

4 Quality Assurance and Control

In the DBJV organization the QC/QA will work in the following way: all of the QC activities will be performed by the Construction Management Team (or designee) and all of the QA activities will be performed by the QA Team. The QA Team will always be the contact point for any quality-related issues.

The implementation of the Quality Control activities at the site will be the responsibility of all the Construction Management Team starting with the Construction Manager CM, and going through all levels of the team down to the workers. The QC activities will also include all TI subcontractors work.

The QA Team will perform the QA activities under the direction of the D&C QM. All members of the QA Team, including the D&C QM, will have no responsibilities in the production of the work and therefore will be totally independent from the QC (see Appendix 5)..

Developer will provide oversight of DBJV and any of their consultants/contractors and will perform audits and impose corrective action to ensure that all phases of the Great Hall Project adhere to the required QMS, D&B Contract, legal standards, and the Development Agreement.

When adverse quality related issues are identified by the QC or the QA Team, both Developer and DEN will be informed as soon as possible to ensure an open climate of collaboration is maintained.

DBJV will assure that it controls the construction process and that it will satisfy the requirements of the Design Drawings/Specifications, the Development Agreement, the D&B Contract requirements, its QMS and being technically valid and accurate and in compliance with ISO9001:2015 edition. This will be accomplished by defining the procedures, the controls, inspections, testing, and verification that the work and equipment/material is in compliance to the above requirements. DBJV will require that all Subcontractors/Consultants comply with this document: the Design and Construction Quality Management Plan (D&C CQMP), the applicable PPM's and the CDP's.

DBJV is committed to providing quality during the procurement of equipment/material and the construction work so that it meets the approved schedule and the completed work is acceptable. DBJV has established a QMS that ensures both quality control and quality assurance activities will be accomplished.

DBJV will assure both Quality Control and Quality Assurance of the vendors for this project, by performing QC inspection/testing by the vendor and DBJV's Independent Testing Laboratory will provide QA on the vendor.

A required Monthly Report will be submitted starting the first full month after the Project beginning. A part of this report will be a summary of all QA/QC activities/findings. Other Documents will be present in this document as well, (i.e. Change Orders, Schedule, etc.).

5 Construction Quality Management

5.1 Document and Data Control

The purpose of this section is to ensure that project documents and data is received, reviewed, approved, issued and any changes made to documents are done in a controlled manner and that obsolete documents and data are identified and removed for issuance or continued usage.

Records will be maintained them in DBJV's EDMS and will be sent to Developer and DEN (trough Developer).

When revisions to documents/drawings are received, Document Control (DC) will ensure that the revised documents are distributed to the original recipients using a log of who received the original document. The original document recipients will be responsible for ensuring that superseded documents are identified, removed, and disposed of to prevent inadvertent usage of the document. All of the process will be electronically controlled and traceable. Distribution lists will be frequently updated to ensure all recipients are included as the organization changes.

5.1.1 Design Changes

Design changes may be required for Issued for Construction (IFC) documents. If the change does not require a P.E. approval, then the change will be documented by the Construction Design Manager (CDM) to the requirements of PPM 1.31 and PPM 1.34. Otherwise, changes that do require P.E. approval will be processed and documented as a revision to the IFC documents. The DM during D&C phase and the CDM during construction will decide which design changes will require a P.E. approval. The P.E. may be within the DBJV's organization or the Design Consultants organization. Revisions will be controlled and issued through the chain-of-command to ensure rapid and accurate distribution. As previously noted, Document Control will distribute the drawings to ensure that the revised IFC documents have been disseminated to field personnel or other organizations. This will be audited (PPM 1.11) by the QA Team to show compliance to this requirement.

DC will maintain a log of the IFC drawings or documents and their revision status to keep track of the originally approved design documents. In the event that a design change is made during construction, DC will ensure distribution of such document to all pertinent parties.

5.1.2 Changes to the CQMP

The CQMP may require revision during the contract period. For example, changes to the CQMP may be required if the existing system no longer represents the current and/or appropriate practice.

Changes to the CQMP sections, procedures or forms will all be addressed in the same manner. Changes will be initiated by the D&C QM who, in turn, will request input from the other DBJV Team members. The revision number of the CQMP will be entered in the revision history table. An electronic copy of the revised document will be transmitted to the Developer and, through Developer to DEN.

The procedures/documents mainly relevant to this section of the plan are PPM 1.1, 1.3, 1.11, 1.14, 1.31, and 1.34.

5.2 Purchasing

The purpose of this section is to ensure that purchased supplies, materials, and services conform to project contractual requirements.

The Procurement/Project Control Manager (PPCM) shall develop the purchasing process for the project to ensure that the products and services purchased meet the contract requirements taking into account, quality, price, schedule and overall best value. (PPM 1.2, 1.4, 1.5 & 1.7)

5.2.1 Evaluation and Selection of Subcontractors and Suppliers

The evaluation and selection of subcontractors and suppliers will be based on their ability to meet the contract requirements. The CM in collaboration from all the Construction Management Team (QC), D&C QM, and the PPCT will make the evaluations and selections. or this selection all aspects of their capability will be evaluated such as safety, quality, schedule, price, environmental, etc., so that input from all the DBJV staff will be used. The D&C PD will be involved, when necessary, in the selection and in accordance with the internal procurement policy (PPM 1.2). All consultants, sub-contractors and suppliers will be contractually subject to the same requirements that apply to DBJV.

The extent and type of controls imposed on subcontractors and suppliers will depend upon the type of product, the impact of subcontracted/supplied product on the quality of the final product, and, where applicable, the quality evaluations and records of previously demonstrated capability and performance of this organization.

When deemed necessary the D&C QM may perform a site evaluation to assist in the evaluation process prior to a final decision being made.

5.2.2 Purchasing Process

When a supplier is selected, a purchase order or subcontract containing product descriptions, technical requirements, commercial conditions, quality specifications, safety requirements, and environmental requirements will be prepared. The D&C QM will review the procurement documents to ensure that the quality requirements are included, when required. The purchase order will be reviewed and authorized by the PPCM prior to being issued and will be approved by the CM and/or the D&C PD.

Changes to procurement documents will be subject to the same requirements, reviews and authorizations as the original documents. Copies of the procurement documents related to quality of the product or construction work will be retained in Document Control.

5.2.3 Verification of Purchased Product

The Construction Team (as Quality Control) will request certificate of compliance and test results in applicable cases and conduct inspection and testing or verification inspection at the jobsite or at the subcontractor's/suppliers premises, if necessary, to determine that the product meets the applicable standards, design specifications and the Development Agreement-Technical Provisions. The QA Team will verify that the products furnished comply with the quality and technical requirements of the Contract Documents.

The D&C QM will verify that required inspections and tests of all construction work and purchased products (including subcontracts) to be performed by the CMT (QC) conform to contractual requirements with this being performed with the assistance of the QA Team.

Non-conforming subcontractor construction work or supplier product will be handled in accordance to the procedures for Control of Non-conforming Product and PPM 1.9.

5.3 Product Identification and Traceability

The purpose of this section is to ensure that items furnished by DBJV, subcontractors and suppliers for incorporation into the project are identifiable and traceable through source, delivery, and installation, where required. This process ensures that DBJV can effectively identify Materials, Suppliers/Producers, and installation locations where required.

5.3.1 Material /Product Identification and Traceability

Purchased Product

All items furnished for this project for incorporation into the construction work will conform to contract requirements. Documentation of materials, such as test reports and certificates of compliance, will be obtained by the CT (QC) and verified by the QA Team. These documents will be transmitted to DC for filing and storage. A summary of this information will be included in the monthly report to Developer.

Materials such as concrete will be traced from the manufacturer's plant to the point of placement. Structural steel will be traced from the point of manufacture to the location that it is placed in the structural element, where required. Tracked Assets will be traced from the manufacturer's plant to the point of placement and appropriately tagged and recorded in accordance with DEN Standards.

Site work and Inspection/Testing location Identification

DBJV will effectively identify the exact location of the elements of the construction work. This system will include the following:

- Material/Product information.
- Project location.
- Sample/test identification details for test reports.

Location descriptions will be used to identify locations of construction work and inspection and testing activities. Additional test and Laboratory assigned numbers will be used to identify individual tests.

The procedures mainly relevant to this Section of the plan are PPM 1.2, 1.4, 1.5, 1.8, 1.9, 1.11and 1.29.

5.4 Inspection and Testing

The Developer Quality/Environmental Manager (QEM) will oversee, as an independent observer, the testing and inspection activities and will report the results to the Developer's Asset Delivery Director, O&M Manager, DEN ,D&C PD, and the D&C QM.

The D&C Quality Manager, with the help of the Quality Assurance Team (QA Team), will be responsible for performing a review and acceptance of all the tests performed by its organization or Subcontractors. The D&C QM with the help of the QA Team will prepare the quality reports that will gather the different tests results. This report will be available (submitted), through DBJV's Document Control, to Developer who will inform DEN. If external laboratories or agencies are used, a list of the organizations and their certification, equipment, calibration of equipment and location of the lab, and information on each agency's capability to provide the specific services required for the work will be kept as an accessible quality record.

DBJV's testing of Materials and Workmanship will be performed in accordance with the D&B Contract, the Development Agreement, and the Project Design Documents. The test frequencies will be performed in accordance with the applicable building permits, Design Documents and Specifications or as designated or in the Development Agreement.

Product conformity certificates of compliance and external test results are acceptable for showing the acceptability of the product material. All product certificates of compliance and external test results will be kept as a quality record for proof that the material is acceptable.

Inspections and test results will be documented and retained for proof of the results of the inspections and tests performed.

The CT (QC), including designated members (Superintendents, Project Engineers, etc…) from DBJV, subcontractor and supplier staff will perform daily inspections of the construction work items to verify the construction work conforms to IFC Design documents and the requirements of the Development Agreement-Technical Provisions. The QA staff will coordinate acceptance inspections and tests by internal/external Laboratories and with Developer oversight. Inspection procedures will generally follow the DEN Standard Specifications or as modified by DBJV's design requirements, and the responsibilities for this control will be established as a Hold Point (HP). Test methods and frequencies will be in accordance with applicable standards or DBJV's design requirements. The QA Team will perform the final acceptance inspections and tests releasing the HP. The D&C QM has the authority to stop the work for any Quality related issue.

In general, but not all inclusive, the procedures and forms will be tailored to confirm compliance with:

- IFC Plans and Specifications.
- Development Agreement, Technical Provisions.
- DEN Standard Specifications
- Building Permit Requirements

5.4.1 Inspection and Test Plan

A detailed description of the Inspection and Test Plan (I&TP) will be developed and maintained by DBJV. This document will contain the inspections, tests, frequency and will be updated, as needed throughout the life of the Project and will be found on the EDMS system and is located in Appendix 7 of this document.

Both the Process Procedures Manual (PPM) and the Construction Detail Procedures (CDP) have been developed to ensure that the work is performed on this Project is to established requirements.

5.4.2 Establishing Construction Hold Points

Specific "Hold Point" for the activity verification or the acceptability of the work will be identified in the CDP's for each construction activity. Additional Hold Points will be identified once the design has been developed and further requirements have been specified. All Hold Points will be identified and specified prior to the starting of a work activity. The D&C QM and the CT (QC) will jointly develop a list of all significant construction work items. The D&C QM and the CT will develop Hold Point (HP) criteria. The HP will identify inspections, tests, and inspection/hold points for each construction work item prior to the beginning of construction activity, (where applicable).

The HP will include the following (located in individual CDP's):

- Items to be inspected.
- Where HPs are specified in the process or procedure.
- Location and frequency of the inspection and test (on/off site).
- Relevant procedures, drawings, and specifications.
- Identification of designated quality control and quality assurance representative involved with the HP.

These requirements will also apply to any Subcontractors or Suppliers involved on this Project. All tests will be documented and will be filed by Document Control in DBJV's EDMS to show proof that the inspection and/or tests have met the requirements of the Design Documents.

To ensure that Developer is notified of pending Hold Points, DBJV will submit a two week look-ahead schedule in a weekly manner and a Next Day Look Ahead for scheduled work. This procedure will be reinforced by a continuous face to face contact or by phone communications between DBJV and the Developer. Any modification to the look-ahead schedule activities will be communicated to Developer by either face to face contact, by telephone communication or via email. Developer will communicate to DEN along all this process.

The procedures mainly relevant to this section of the plan are PPM 1.3, 1.4, 1.5, 1.9, 1.10, 1.11, 1.15, 1.24, 1.27, 1.30 and 1.31.

5.4.3 Four-Phase Inspection Control Procedures

A Four-Phase control system consisting of a Pre-Mobilization phase, Pre-Construction phase, Initial Inspection phase and Follow-up Inspection phase shall be implemented by the Quality Control Staff to ensure that construction, including that of subcontractors, fabricators and suppliers, complies with the requirements of the contract documents.

- Phase I: Pre-Mobilization Phase
- Phase II: Pre-Construction Phase
- Phase III: Initial Inspection
- Phase IV: Follow-Up

The procedure is explained in PPM 1.35.

5.4.4 Follow-up Inspections/Testing

Follow up inspections/testing will be performed daily or as the frequency requires. This will ensure that the work is in continuing compliance to the IFC documents and contract requirements. This will be performed by the CT (QC) and the QA Team. This will be performed until the completion of the particular work activity or a work segment is completed. Follow up will be performed on the particular work activity or work segment until completion is achieved. This activity will be documented as specified in the CDPs and Daily Inspection Reports (PPM 1.27). Deficient or non-conforming construction work or material will not be built on or used and will be identified, documented, and corrected/approved to the requirements of PPM 1.9 (Control of Non-Conforming Products/Work).

5.4.5 Quality Activities

Personnel under the direction of the CM (CT (QC)) will provide in-process inspection, sampling and testing of the construction work. Results of this work will be reviewed or verified by the QA Team for conformance to the IFC documents, codes, and the Development Agreement Requirements. All reports, inspection results or test reports generated from these activities will be retained in DC as part of the quality records.

The inspection and monitoring of construction/installation activities will include observation of the construction work, review of procedures or instructions; evaluation of workmanship; evaluation of effectiveness of controls (HP); and discussions with the testing lab personnel, workers, superintendents and Project Managers. This work will be performed by the CT (QC) with the work being documented to the requirements of the PPM's and the CDP's, as applicable. All HPs identified in the CDPs will be documented on the appropriate forms. Information gleamed from this process will also be used in continual improvement process (PPM 1.28).

After completion and acceptance of the work activity/process by QC, a member of the QA Team will verify the acceptance by releasing the HP for either final acceptance or further work progression. Any deficient or non-conforming construction work will be identified, documented, and all problems/issues corrected before the HP is released.

5.4.6 Quality Testing Laboratory Acceptance Inspections and Tests

The approved testing laboratory will inspect, sample and test each portion of the construction work items where testing is required, (i.e. concrete, field welds, etc.). This is to ensure that the work material is in compliance to the IFC documents, codes, and Development Agreement requirements.

The timing and frequency of inspections, sampling, and tests will be determined in part by HPs and/or the Inspection and Test Plan (I&TP) developed for this Project. The sampling and testing will meet the minimum frequency established in Design Documents. Additional samples and acceptance testing may be performed, if deemed necessary, to further show proof of the acceptance of the work activity. All inspections, sampling and testing, (on or off site), will be controlled and performed by qualified personnel. The work will be performed to the IFC documents, codes, and the Development Agreement requirements. Any re-incorporation of material temporarily removed or placed on hold will indicate their traceability and their acceptance to be used, if required. All test results (passing or failing) will be documented on appropriate forms and these forms will be stored in DC as a quality record after they have been reviewed for completeness.

All inspections, sampling and tests will be coordinated between the CT (QC), the QA Team, and/or the Testing Material Manager.

Material inspection and testing supplied by the manufacturers or producers will include a manufacturer's certificate and test report that their material/product is in compliance to the IFC documents, codes, and Development Agreement requirements.

All test equipment will be maintained and calibrated to the frequency required by DEN, the manufacturer, code requirements, or the Development Agreement requirements.

5.4.7 Inspection and Test Status

The status of all inspections and test results will be monitored for all ongoing construction work. The status of the inspections and test results will be discussed in the weekly construction meeting(s). A current assessment of the status of the work or material is whether the Hold Point(s), (when applicable) have been released for further processing. Any deficiencies will be identified to the Project Manager, Superintendent, Subcontractor, and/or supplier. When necessary, the deficiency will be further documented by the issuance of an NCR to the requirements of PPM 1.9. Information gleamed from this process will also be used in continual improvement process (PPM 1.28).

5.4.8 Records

A copy of all Quality reports will be maintained in DBJV's EDMS. A summary of quality inspections and test reports will be transmitted to Developer and through Developer to DEN in an electronic format acceptable to all parties. However, DBJV will submit/upload these reports to Developer as soon as they have been internally reviewed and are correct. Developer will keep all the quality reports in Developer's Document Control System and will inform DEN. A list of the quality records that DBJV will maintain is located in Appendix 1 of this document. This list contains the minimum quality records to be kept and will be updated during the design and construction progress. This list will be updated as needed to address any additional documents that need to be added.

The procedures mainly relevant to this Section of the plan are PPM 1.2, 1.3, 1.4, 1.5, 1.8, 1.9, 1.10, 1.11, 1.14, 1.19, 1.28 and 1.29.

5.5 Inspection, Measuring and Test Equipment (IM&TE)

This section describes the processes to be followed to ensure effective control, calibration, and maintenance of Inspection, Measuring, and Testing Equipment (IM&TE) used by DBJV or its subcontractors to demonstrate conformance of the construction work to contract requirements, or industry standards.

IM&TE is classified into two categories.

- The first category is non-precision field tools and instruments such as measuring tapes, rulers, weld radius gauges, and hand levels whose accuracy of measurement is considered adequate without calibration or controls. DBJV's CT (QC) and QA Team will monitor the condition of this equipment and the equipment will be replaced when the accuracy or function is affected by wear and tear or the results appear questionable.
- The second category of IM&TE is the precision equipment that is used to determine the acceptability of the characteristics of the construction work or the installation of material. This will include most items of test equipment and survey equipment and may also be applied to non-precision items that are used in Quality Test Laboratory test methods. This equipment will be identified and controlled to ensure proper selection and use based on criteria such as type, range, accuracy and tolerances. The remainder of this section will deal with this second category. This second category of IM&TE normally requires calibrations at intervals specified by the user or a certified external agency. Calibration frequencies are established by the manufacturer, program requirements, code, or industry standards.

To establish and maintain an effective IM&TE calibration program, devices will be identified and clearly marked. Calibrated IM&TE will be stored and maintained in the recommended environments.

IM&TE is normally supplied with the manufacturer's verification of initial calibration. Devices such as compression testing machines, which require calibration prior to operation at a new location, will be calibrated prior to use.

Calibration procedures will comply with appropriate standards and DEN as well as the manufacturer's requirements.

External calibrations will be performed as required by the fabricator/supplier or to the Development Agreement requirements. However, only qualified organization staff members may perform in-house calibrations; these internal calibrations will be performed as acceptable by the fabricator/supplier. The staff member performing the calibration will ensure the calibration is performed in accordance with the relevant procedure and to the environmental conditions that are as specified by the manufacturer or calibration procedure. At the completion of the calibration, the staff member will update the IM&TE calibration log and attach a calibration label or sticker to the equipment that indicates the date calibrated and the next calibration due date.

All externally performed calibrations will be traceable. External calibration may be performed at the project site or at a remote facility. Records of both internally performed and external calibration will be documented by the individual, the calibration date, and a reference to the applicable calibration requirements. These records will be maintained as a quality record.

The following procedures and forms are relevant to this section of the plan PPM 1.9 and 1.29.

5.5.1 IM&TE Calibration Log

The D&C QM or his designee will maintain an IM&TE calibration log or equipment checklist with the following information:

- Equipment make, model, and serial number,
- Verification/Calibration frequency
- Date calibrated

This information will be part of the quality records filed in DBJV's EDMS.

5.5.2 Use of Inspection, Measuring and Test Equipment

Before IM&TE is used, the calibration status and the current condition of the IM&TE will be verified. Equipment that is damaged or out of calibration will not be used. The individual conducting the inspection, measurement or test will ensure that the environmental conditions are in accordance with the manufacturer's recommendations or other relevant requirements. The equipment will also be stored in accordance with the manufacturer's recommendations.

IM&TE that shows evidence of damage or does not function properly will be identified, isolated, and recalibrated or replaced prior to being placed back in service.

5.5.3 Quality Testing Laboratory Calibration Records

The IM&TE calibration log for the quality testing laboratory will be reviewed on a regular basis by the D&C QM or his designee to ensure that it is current. This record will be a part of the project quality records and will be available for review by DBJV personnel and Developer. A copy of the quality testing laboratory calibration log will be supplied to DBJV as it is updated.

The procedures mainly relevant to this section of the plan are PPM 1.29.

5.6 Control of Non-Conforming Products/Work

This section describes the procedures to be followed to identify, document, segregate, resolve, re-inspect, and retest Non-conforming construction work or products.

Non-conformances shall be processed in accordance with procedures detailed in PPM 1.9, which applies to all non-conformances such as defects, damage, errors or omissions in material or work that cannot be easily remedied at the time of discovery. DBJV will report as non-conforming, these circumstances or situations defined above. Minor non-conformances that can be readily remedied at the time or material rejected at the time of delivery shall not be recorded on a Non-Conformance Report (NCR) (these minor nonconformities will be internally documented by DBJV and tracked by DBJV and is available as a record on the Open Items Log [PPM 1.9/3]). The D&C QM, using "reasonable" experience and judgment, will be responsible for deciding if a NCR is needed to be initiated depending on the importance of the issue. Other parties, Developer or DEN may request the initiation of a NCR.

5.6.1 Non-Conformance Reports (NCR)

Non-conformances (PPM 1.9) shall be recorded on a Non-Conformance Report form (PPM 1.09-1). A proposed solution to the NCR will be required from the responsible party that the NCR was addressed to.

The D&C QM will review the proposed corrective action with a view of assessing both the immediate and future consequences for the total Project.

DBJV will document significant project deficiencies as an NCR, such as defects, damage, errors or omissions in material or work that cannot be easily remedied at the time of discovery. This information will be accessible to Developer and DEN (trough Developer). An NCR Log (PPM 1.09-2) will be kept and maintained to track the status of all NCRs.

5.6.2 NCR Close Out

The D&C QM has the authority to proceed with the administrative close-out of NCRs. A required design solution, for example, will be processed ahead of the NCR close out. NCRs may be generated by Developer or DEN representatives. NCR reports, from either party, and their approved solutions, will be provided to Developer and DEN (trough Developer).

The process for closing a DBJV NCR will be the following: the responsible party will submit a proposed solution to the problem; an appropriate Construction Design Team member(s) will review, discuss, adjust and will agree with the final solution for closure. DBJV, the supplier, or subcontractor will implement the solution and the NCR will become closed. The executed work or material will be on hold until the solution is implemented. DBJV could, at its own risk, continue with the progress of the work, being responsible to provide proof of the acceptability of the works.

5.6.3 Additional Testing

In the case of NCRs, the need for additional testing may be required. If so, the D&C QM or the Engineer of Record will identify the tests to be performed. Additional testing and re-sampling will be carried out by the QA Team or testing agency performing the work.

The procedures mainly relevant to this Section of the plan are PPM 1.3, 1.9, 1.10, 1.11 and 1.14.

5.7 Corrective and Preventive Actions

This section describes procedures for carrying out corrective and preventative action when recurring non-conformances, deficiencies, or audit findings are detected.

5.7.1 Corrective Action

The D&C QM will monitor all non-conformances including inspection findings, test results and audit to identify adverse trends or recurring problems. The D&C QM will investigate the root cause with the DBJV staff, subcontractors or suppliers who are involved where this has occurred and any others that may help address required improvements to prevent the continuing reoccurrence of the problem. The D&C PD, Developer QEM, and DEN (trough Developer) will be informed of this process. A corrective action will be issued to the group where this problem has been occurring. The group will address how they will prevent the continuing problem.

5.7.2 Preventive Action

While the QMS exists to rectify non-conforming materials and workmanship, proactive steps will be taken to reduce or eliminate the occurrence of non-conformances or deficiencies. Suggested future preventative action may be included as part of a response to a non-conformance investigation.

Preventative action, such as competency requirements, identification of training needs, and scheduling of audits may all contribute to the reduction in errors and omissions which may lead to a reduction or elimination of non-conformances.

The procedures mainly relevant to this section of the plan is PPM 1.3, 1.10, 1.11, 1.14, 1.28 and 1.33.

5.8 Control of Quality Records

Quality Records are objective evidence that the work was performed to specified quality control procedures and quality assurance processes were performed properly. These records will be prepared and submitted in accordance with contract requirements. A list of the quality records that TI will keep can be found in Appendix 1 of this document. This list contains the minimum quality records to be kept and will be updated during the design and construction progress as needed.

To ensure accuracy, completeness, and quality in required submittals, all project deliverables, including sub-contractor deliverables, serves as evidence (together with all applicable checklists) that construction quality control and quality assurance was performed properly. The construction activities will be performed by qualified individuals who will comply with the requirements of the CQMP, PPMs, and the CDPs. Quality Control will include the management and monitoring of construction inputs and outputs. Quality Assurance will include monitoring of quality inputs and outputs and will be performed by the QA Team. Document Control, with oversight from the D&C Quality Manager (D&C QM), will store and maintain the records for this Project in DBJV's EDMS (PPM 1.3).

The D&C QM is responsible for assuring that the following has been performed:

- That quality documents placed in DBJV's EDMS have been reviewed and checked by the appropriate personnel.
- That all required information present on the quality documents is accurate, complete, and that the required quality information is present, (submittals, test reports, inspection reports, etc.).

The D&C QM will ensure that the records are being filed, stored and maintained and will be readily retrievable and protected from damage, deterioration or loss by the PPCM. Quality records will be submitted to Developer and through Developer to DEN in accordance with contract requirements.

The D&C QM or his designee will prepare a monthly report on the quality inspections and tests performed with the results noted. Also any Non-conformances identified and their resolution status among other Project activities.

The procedures mainly relevant to this section of the plan PPM 1.3, 1.11, 1.14 and 1.19.

5.8.1 As-Built Drawings

The Construction Design Team (CDT) will maintain a set of as-built drawings. The CDM will review the As-Built drawings for completeness prior to transmission to Developer an DEN (trough Developer) following completion of the project.

The as-built drawings will have incorporated all the design changes from the last revisions of the IFC drawings and any noted changes that have occurred. The DM during the design phase and the CDM during the construction phase are responsible for checking that the revisions of the IFC drawings reflect the major changes produced during construction. If a change is minor, the change will be incorporated into the as-built by the CDM (PPM 1.31).

5.8.2 Certificates of Compliance

The PPCM, in coordination with the CM and the D&C QM, will be responsible to check that all the materials to be purchased meet the Design Documents and CDA requirements prior to purchasing them. A file with the documentation of the different materials providing proof of their compliance with the Design Documents and Development Agreement requirements will be kept as a quality record. Certificates of Compliance (C of C) or test reports for items tested by manufacturers will be reviewed by

the QC and QA Teams to confirm that the certificates are current and will verify compliance to the Design Documents. The QC or QA Team will file the C of C in the project quality records, and provide a copy to Developer, and through Developer to DEN.

C of C or test reports for materials inspected by DEN, as part of their quality program, shall be transmitted by DEN to the Developer, and to DBJV's trough Developer, to document that the items comply with DEN requirements. Copies of these documents will be placed in the project quality records in DBJV's EDMS.

The procedures mainly relevant to this section of the plan PPM 1.3, 1.4, 1.11 and 1.14.

5.9 Audit

DBJV will evaluate the effectiveness of its Quality Management System (QMS) by conducting internal audits. The audits will enable DBJV to verify that the QMS is functioning to specified requirements, and to confirm its continued suitability. These audits will provide confidence that DBJV and its subcontractors' work is acceptable, and acts as an assurance to external organizations that DBJV is using an effective QMS. The D&C QM along with the D&C PD will analyse the audit findings to examine and use the data as part of the continuous improvements of the QMS.

The object of auditing is to assess whether, the system is being implemented as planned and whether it continues to be effective. DBJV's procedure for quality audits will be followed (per PPM 1.11). Developer will be notified of audits and given the opportunity to participate/observe.

Staff independent of the activity to be audited will carry out internal audits as directed by the D&C QM. Audits of suppliers will be assigned by the D&C QM. Audits will be scheduled based on the status and importance of the activity. The D&C Quality Manager with concurrence with the D&C PD will prepare an audit schedule on a predetermined basis.

The process of auditing and conducting follow-up actions will be performed in accordance with Process Procedures Manual PPM 1.11, Internal Audits. The results of the audits will be documented and brought to the attention of management representative of the section audited or Subcontractors for a timely corrective action to any identified deficiencies. Copies are also distributed to the D&C PD and Developer.

The D&C Quality Manager may perform an unscheduled audit under special circumstances. Developer R or other permissible third parties may perform external audits on DBJV. DBJV will fully cooperate with all organizations involved with an external audit of DBJV.

A report for the external audits performed by Developer or DEN will be submitted to the D&C PD and the D&C Quality Manager.

The D&C PD and the managers involved in the Management Review will consider the findings of all audits, verify compliance to the DBJV QMS and identify/discuss opportunities for improvement in a timely manner during the review meetings.

5.10 Training

5.10.1 Health & Safety and Environmental Training

Personnel who will engage in field activities will receive training by designated members of the Safety /Environmental Team (e.g., D&C Safety & Environmental Manager) on environmental and safety issues and precautions to take in the field. Personnel who have participated in the training will receive a

Certificate of Completion and a means to readily identify their participation in the training program (e.g., a sticker to be displayed on their hard hats).

Attendance will be taken at all training sessions in the form of a sign-in sheet. An electronic database will be maintained by a designated D&C Safety and Environmental Team member to record training that has been received by each employee. The database used to document the training will be updated monthly or as training is provided (PPM 1.15). These documents will be readily accessible for review by DBJV's Management Team, CT, D&C SET members, Developer and DEN (trough Developer).

5.10.2 Quality Training

Personnel performing construction quality activities will be indoctrinated to the requirements of the Development Agreement-Technical Provisions, IFC documents, the CQMP, **PPMs** and **CDPs**. Training will be provided to those personnel, as required (PPM 1.15). The D&C QM and the QA Team or their designees will conduct the quality training. The training will cover the following topics:

- Quality requirements for the project.
- Basic quality principles.
- Project Construction Quality Organization.
- Quality Management System elements and documentation for compliance.
- Construction Quality Management Plan.
- Hold Point criteria.

5.11 Continual Improvement

DBJV will pursue a policy of continuous improvement of their QMS via Internal Audits and review of NCR's, and CAR's, among other methods. DBJV personnel are encouraged to seek out improvements for existing practices. Management personnel will review recommendations for improvement and implement, monitor and control them as appropriate. They will have the necessary authority, technical support, training and resources for implementing the changes associated with the improvements.

The procedures mainly relevant to this section of the plan are PPM 1.1, 1.9, 1.10, 1.11, 1.12, 1.14, 1.15, 1.19, 1.21, 1.23, 1.24, 1.25, 1.28, 1.30, 1.33 and 1.34.

6 Appendices

Appendix 1 List of Quality Records

A list of all the quality records that DBJV will keep for the duration the project is shown below. The record will be retained as required in the Development Agreement. This list contains the minimum documents to be kept and the list will be updated during the design and construction progresses. The first list will be a summary of the results compiled from the list and will be part of the monthly report document. The other list will be internal for TI and will be submitted upon request or when required at the completion of the Project.

To be included in the monthly quality report as a summary:

- Material Certificates of Compliance (COC).
- Internal Inspection Results.
- External Inspection Results.
- Quality Testing Laboratory Results.
- Hold Points Review.
- Non-Conformance Log.
- DBJV Subcontractor List.
- Audit Schedule.
- Open Items Log.
- Index of IFC Drawings.

To be submitted upon request, when required or at the completion of construction:

- IFC Specifications and Drawings.
- As-built Drawings.
- Calibration Certificates of testing and laboratory equipment.
- Calibration on Required Measurement Equipment (i.e. calipers, etc.).
- IM&TE Calibration Log.
- DBJV and Subcontractor Safety Tool Box (sign-in sheet, content and instructor).
- DBJV Environmental and Construction Safety Training Sessions (sign-in sheet, content and instructor).
- Quality Testing Laboratory Information (name, location, certificates, capabilities).
- Resumes of all DBJV quality management personnel.
- Testing Laboratory Field Tests.
- Audit Schedule.
- DBJV Internal Documentation of Minor Non-Conformities (Open Items Log).
- Environmental Records and Permits.
- Minutes of Monthly Meetings.
- Project Presentations.
- Old versions of quality documents (which track changes from one revision to another and their Revision History).
- DEVELOPER complaints and compliments.
- Annual Quality Management System Review.
- RFI's.
- RFA's.

Appendix 2. Process Procedures Manual (PPM) Table of Contents

PPM 1.1. Management review
PPM 1.2. D&C Contract review
PPM 1.3. Documents and data control (Including Quality and Environmental Records)
PPM 1.4. Procurement (Materials and Supplies)
PPM 1.5. Procurement (Subcontractors)
PPM 1.7. Procurement for design services
PPM 1.8. Random sampling
PPM 1.9. Control of non-conforming products / work
PPM 1.10. Corrective Action Report
PPM 1.11. Internal Audits
PPM 1.12. Developer complaints and compliments
PPM 1.14. Submittals (RFA)
PPM 1.15. Training
PPM 1.19. Monthly Quality Reports
PPM 1.21. Design Review Procedures
PPM 1.22. Survey and mapping
PPM 1.23. Environmental Management for LEED
PPM 1.24 Area Systems Walk Down and Turnover Punch List
PPM 1.25. Stop work order
PPM 1.26. Request for Information (RFI)
PPM 1.27. Daily Inspection Report (DIR)
PPM 1.28. Continual Improvement.
PPM 1.29. Control of Instruments Measuring and Test Equipment (M&TE)
PPM 1.30 Preparation and Control of Field Changes
PPM 1.31 Preparation of On-Going As-Builts and Final As-Builts
PPM 1.32. Structural Assessments (Audits)
PPM 1.33. Noncompliance points from parties
PPM 1.34. Field design or design drawing revision by the Construction Design Team
PPM 1.35. 4 Phase Inspection Control Procedures

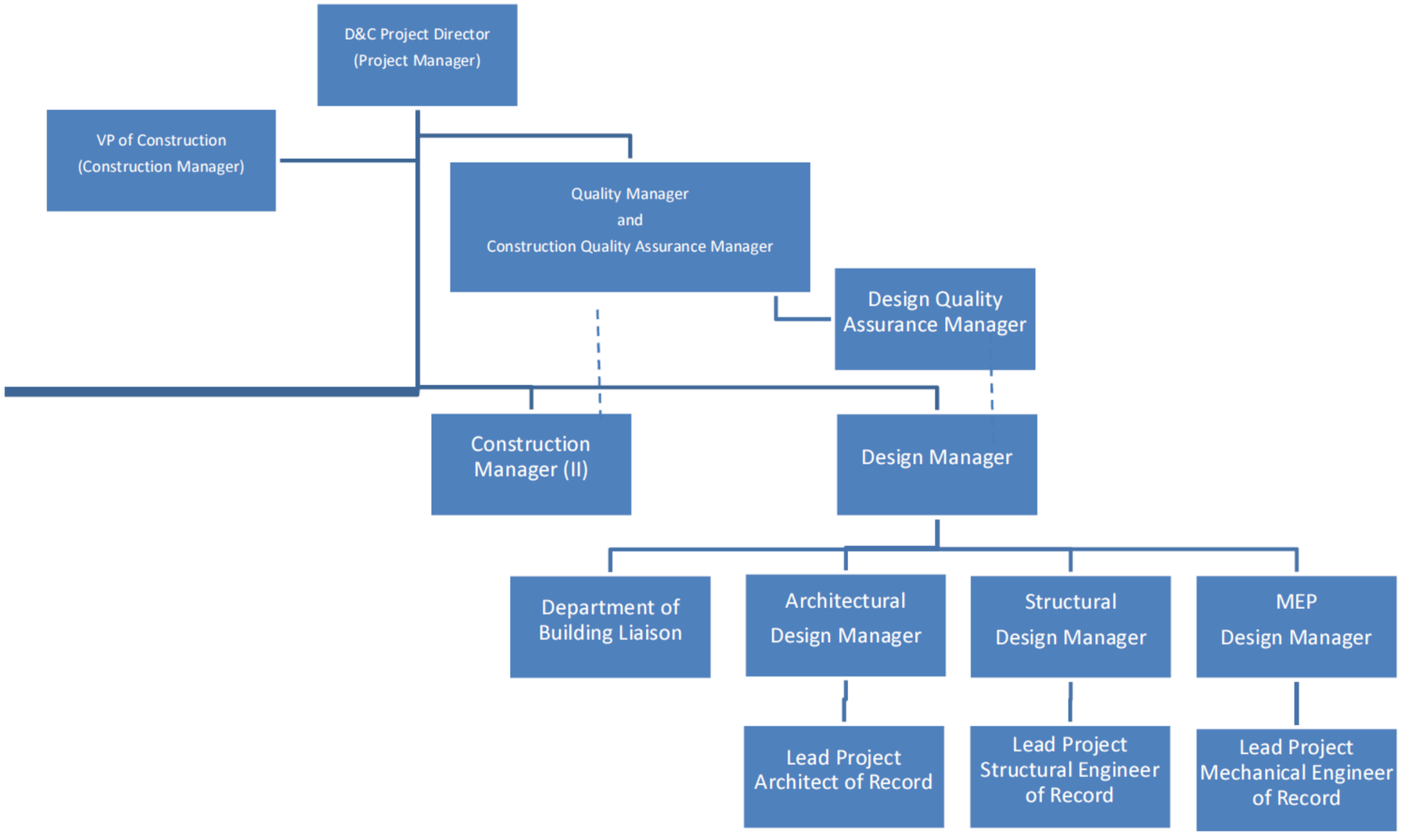
Appendix 3. Construction Detail Procedures (CDP) Table of Contents [TO BE DEVELOPED POST PRE DEVELOPMENT STAGE]

Appendix 4. List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos Containing Materials
CAR	Corrective Action Report
CDM	Construction Design Manager
CDP	Construction Detail Procedures
CDT	Construction Design Team
CFO	Chief Financial Officer
CM	Construction Manager
CMT	Construction Management Team
CQMP	Construction Quality Management Plan
CRM	Comment Resolution Meeting
D&C	Design and Construction
D&C HSMP	Design and Construction Health and Safety Management Plan
D&C EMP	Design and Construction Environmental Management Plan
D&C PD	Design and Construction Project Director
D&C PD	D&C Project Director
D&C QM	Design and Construction Quality Manager
D&C SEM	Design and Construction Safety and Environmental Manager
DB	Design and Build
DC	Document Control
DCM	Design Consultant Manager
DCQM	Design Consultant Quality Manager
DIR	Daily Inspection Report
DM	Design Manager
DQMP	Design Quality Management Plan
DT	Design Team
EDMS	Electronic Document Management System
EI	Environmental Inspector
ET	Environmental Team
FCR	Field Change Request
FD	Financial Department
FHWA	Federal Highway Administration
IFC	Issued for Construction
IRSP	Internal Review Signature Page
ISO	International Standards Organization
LBP	Lead Based Paint
MSDS	Material Safety Data Sheet
MWBE	Minority and Women Business Enterprises
NCR	Non-Conformance Report
O & M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
OVT	Owner Verification Tests
PE	Professional Engineer

PMP	Project Management Plan
PPCM	Procurement/Project Control Manager
PPCT	Procurement /Project Control Team
PPE	Personal Protective Equipment
PPM	Process Procedures Manual
PPP	Public Private Partnership
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QMS	Quality Management System
RFA	Request for Approval
RFI	Request for Information
RFP	Request for Proposal
ST	Safety Team
USACE	United States Army Corps of Engineers
WI	Work Instructions
WP	Work Plan

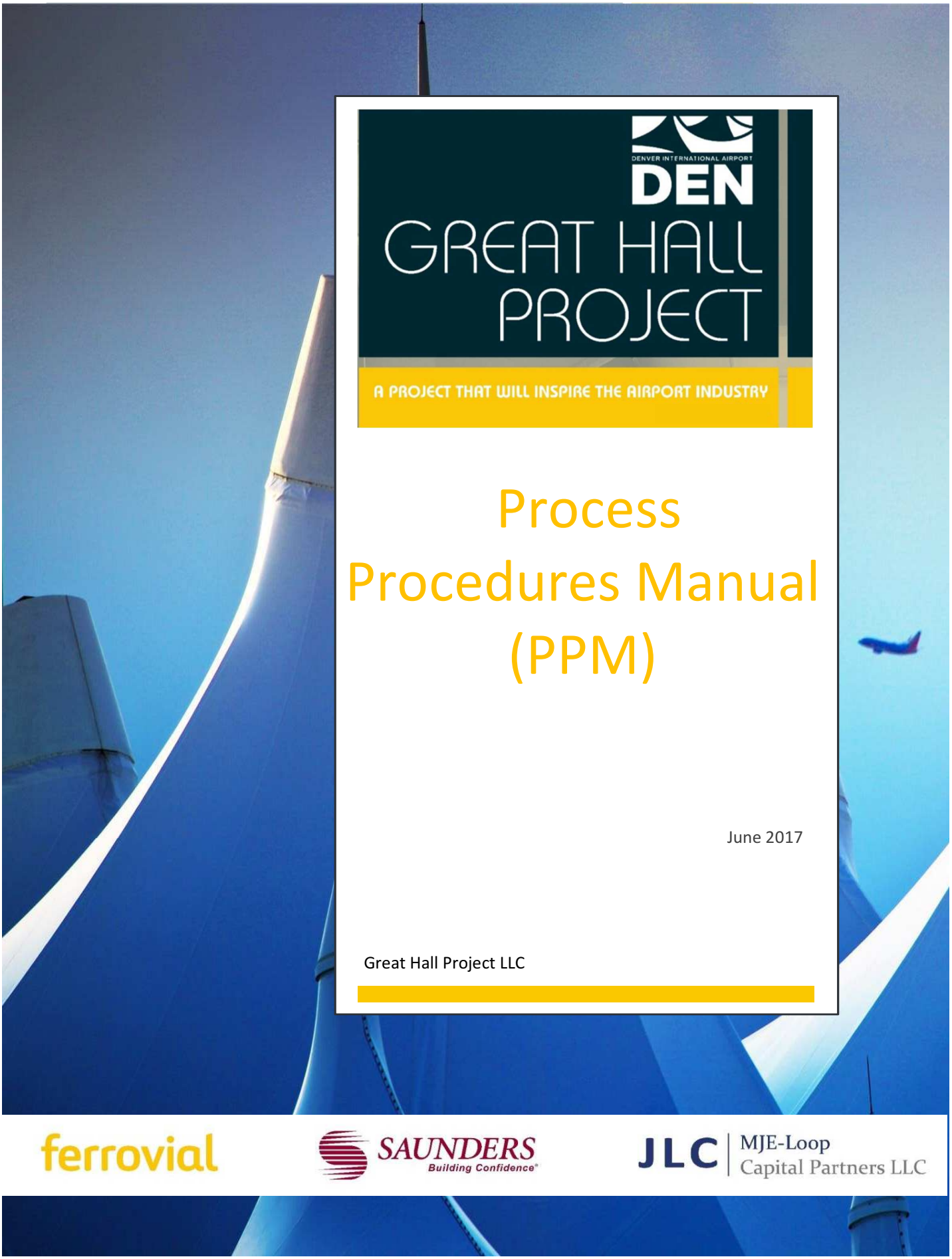
Appendix 5. Organization Chart



Appendix 6. DBJV Contact List

TITLE		NAME	INITIALS	COMPANY	MOBILE NUMBER	EMAIL ADDRESS
D&C PD	D&C Project Director	Ignacio Perez Jainaga	IPJ	DBJV		
CM	Construction Manager	Steve Culvertson	SC	DBJV		
PPCM	Procurement/Project Controls Manager			DBJV		
DM	Design Manager			DBJV		
CDM	Construction Design Manager			DBJV		
D&C QM	D&C Quality Manager			DBJV		
D&C SEM	D&C Safety /Environmental Manager			DBJV		
MWBEM	MWBE Manager			DBJV		
CFO	Chief Financial Officer			DBJV		

Appendix 7. Inspection and Test Plan (I&TP). [TO BE DEVELOPED POST PRE DEVELOPMENT STAGE]



DENVER INTERNATIONAL AIRPORT

DEN

GREAT HALL PROJECT

A PROJECT THAT WILL INSPIRE THE AIRPORT INDUSTRY

Process Procedures Manual (PPM)

June 2017

Great Hall Project LLC

ferrovial

SAUNDERS Building Confidence®

JLC | MJE-Loop Capital Partners LLC

Revision History

Revision	Effective Date	Prepared by:	Reviewed by:	Approved by:
0	06/26/2017			

Table of Contents

Overview

The project procedures outlined in this document describe the DBJV's internal processes for managing the quality system of the D&C project. The PPMs will be updated or expanded during the course of the design and construction phases. These procedures will be agreed between the DBJV and Great Hall Partners (GHP) in advance of construction commencing or if a change to procedure that affects GHP is required for any reason. All procedures will be audited for compliance by the Great Hall Partner's Quality Manager.

1 PPM 1.1. Management review

1.1 Purpose and Scope

- Establish a Quality Management System that meets the project needs and is functional.
- Ensure that changes to the Quality Management System, if any, are evaluated and documented.
- The scope encompasses all aspects of DBJV's activities which document the review and evaluation of the quality of DBJV´s design, products, and services, to the agreed requirements of the D&C Contract, Development Agreement, and other relevant contract documents.
- A formal regular evaluation by the D&C PD, D&C QM and other DBJV team members will be performed on the status and operational effectiveness of the Quality Management System (QMS) in relation to the Quality Policy and Quality Objectives found in the DBJV Design and Construction Quality Management Plan.

1.2 Definitions

- Review: A formal regular evaluation by the D&C PD, D&C QM and other DBJV team members of the status and adequacy of the QMS (procedures, stated business objectives, working methods) in relation to Quality Policy and Quality Objectives.

The evaluation will take into account any changes that may have been created by new:

- Technologies
- Quality concepts
- Market strategies
- Social or environmental conditions
- Law
- Safety

1.3 References

- Design and Construction Quality Management Plan.
- Development Agreement.
- D&C Contract

1.4 Responsibilities

- Preparation by D&C Quality Manager (D&C QM).
- Review by Construction Manager (CM).
- Approval by the D&C Project Director(D&C PD).

1.5 Procedure

- Frequency. A Management Review Meeting will be held at least annually to discuss the status of the Quality Management System. An agenda will be prepared by the D&C QM and circulated, indicating topics for discussion at the meeting.
- Attendance. The meeting will be coordinated by the D&C QM, who will record the minutes of the meeting indicating actions to be completed.
  The attendees will include the D&CPD, the Construction Management Team (CMT), the DM, and other requested Managers. Managers unable to attend may forward points they wish to be discussed at this meeting via a memo to the D&C QM.
- Agenda/Meeting. The meeting will be chaired by the D&CPD and the agenda will cover compliance to the QMS, results of internal and/or external audits, any departures from procedures indicating

possible improvements, Developer Complaints/Compliments, status and analysis of Non-conformances to indicate any quality trends and any corrective/preventative actions. Any new policies and objectives for inclusion in the QMS will be presented for discussion and the required documentation amended accordingly through the required revision process.

- The review will also take into account any observations made by the operating staff, Suppliers, Subcontractors, Designers, Quality Assurance staff, Developer, and agencies/organizations affecting quality. Such recommendations, observations and any conclusions reached will be considered for improving the QMS.
- The agenda will also include a review of the adequacy of the resources to meet the quality requirements, and the need for staff training.
    - Suggested items include (but not all inclusive):Non-conforming items occurring during the period (including the results of Quality Audits)
    - Corrective/Preventive Action recommended and responsibility (including Quality Audits)
    - Effectiveness of previous corrective/preventive actions, if any
    - Supplier, Subcontractor, Designers
    - Supplier visits/audits to assess Quality Assurance and Control processes
    - Documentation Changes (including procedures)
    - Contract Review (general)
    - Developer Complaints / Compliments
    - New Products / Services for consideration; New Suppliers/Subcontractors, Designers
    - Any other Business
    - Date of Next Meeting
    - Schedule changes that may affect work and/or quality
- Follow-Up

The D&C QM will take and circulate the meeting minutes. Each participant shall review the meeting minutes and acknowledge acceptance or disagreement of the minutes within five (5) business days after receipt of the meeting minutes. The D&C QM and follow-up on actions agreed to at the meeting

1.6 Records

The meeting minutes are the only formal documentation generated by this procedure and shall be kept on file in the DBJV Document Control EDMS.

1.7 Revision History

Revision	Effective Date	Page	Description of Change

2 PPM 1.2. D&C Contract review

2.1 Purpose and Scope

- To ensure that the Developer's requirements are adequately defined, specified and documented in all contracts issued by DBJV.
- To ensure that any requirements differing from those in the proposal and in the D&C Contract are resolved, and that any further amendments to the D&C Contract are controlled and documented.
- To ensure that adequate resources are available to meet both the D&C Contract requirements and the Development Agreement requirements.
- The Scope covers any Changes/Variations/Instructions issued during the execution of the D&C Contract and their required documented changes.

2.2 Definitions

- D&C Contract: A turnkey agreement under which DBJV will perform the design and construction work for the project, under the supervision of Developer.
- Development Agreement (DA): Contract between DEN and Developer for the design, construction, operation and maintenance of the Project.
- Contract Review: An evaluation by DBJV's management of the Contract documents to assess that all of the requirements are present and that their subcontractors and suppliers can meet these requirements.
- The DBJV Management Team: The D&C Project Director (D&C PD), the Construction Manager (CM), D&C Quality Manager (D&C QM) and the other relevant Managers.

2.3 References

- The DBJV D&C Quality Management Plan.
- The D&C Contract.
- The Development Agreement, Technical Requirements, Technical Documents.

2.4 Responsibilities

- Preparation by the Procurement/Project Controls Manager (PPCM).
- Review by the Construction Manager (CM).
- Approval by D&C Project Director (D&C PD).

2.5 Procedure

- The D&C PD may convene a contract meeting when any changes to the contract requirements are needed, (i.e. scope of services).
- Contract Reviews may be conducted in separate meetings.

The D&C PD will then assume responsibility for the Project.

The DBJV Contract Management Review Meeting will take place after the DBJV Management Team has had time to become familiar with any Contract revision and have formed initial views/concerns. The Meeting will be chaired by the D&C PD.

The meeting between the DBJV Management Team will be conducted for the purpose of understanding the changes in requirements set forth in the D&C Contract, Development Agreement, and other relevant contract documents.

The D&C PD will appoint a responsible person to record the meeting minutes.

- The Management Review is aimed to affirm the following points:
  - Work scope and assessments of any changes in the requirements with Developer;
  - Developer Specifications, or contractual requirements;
  - Regulatory requirements, e.g. OSHA, environmental requirements;
  - Any restrictions imposed on working methods/plant etc.;
  - Change in Management Staff (if different from the D&C Contractor's proposal);
  - Revisions to the QMS staff, when required;
  - Assessing compliance to the Development Agreement for the MWBE participation requirements.
  - Assessing purchasing from local suppliers to comply with the Development Agreement requirements.
- If any issues arise as a result of the review, the D&C PD will contact Developer for clarification. All correspondence will be transmitted through and will be filed in DBJV Document Control EDMS. If such a query affects the Quality Assurance or Quality Control requirements of the D&C Contract, a copy will be forwarded to the D&C QM for appropriate review/action.
- To ensure that communications with DBJV's representative are controlled, the D&C Contract Review process shall endeavour to establish primary levels of communication (verbal and written, contacts) with the appropriate responsible personnel. This may be further developed to suit the site specific requirements at different levels of Design and Construction.
- Review of Supplier/Subcontractor/Design/Consultant queries because of changes to their contracts.

Suppliers/Subcontractors/Design/Consultants may need to obtain clarification on queries to contract revisions sufficiently in advance to avoid delays. Queries will normally be processed through the Procurement/Project Control Manager (PPCM) who will comment on the nature and intent of the query. Records of Supplier/Subcontractor queries will be filed in Document Control.

- Further D&C Contract Reviews

After the initial D&C Contract Management Review Meeting, further reviews will be carried out at project level by periodic meetings, if necessary. Actions noted at such meetings will be circulated to those concerned.

The D&C PD will decide the frequency of such meetings.

- End of Contract Report

A final report shall be produced by the D&C PD, at the end of the D&C Contract review as an historical report, highlighting the significant areas of problems and successes, (Lessons Learned). As a guide for contents, the following is suggested:

  - Brief description of the Work;
  - Construction Methods (i.e. methods actually used to construct the Work, noting the differences from the proposal assumptions and the actual);
  - Site Organization (e.g. organization chart, responsibilities);
  - Program: How the Contract was actually implemented relative to the planned process. Where delays were identified and what actions were taken to address these delays;
  - Labour: Difficulties, shortages, recruitment;
  - Plant: Availability, reliability, specific costs to run major items, transport, servicing, (internal and external) site purchase, special items designed and/or fabricated, transport difficulties;
  - Materials: Shortages, surpluses, long deliveries, price level and availability, new and/or problem suppliers;
  - Design Consultants (their performance), design issues, quality of work.
  - Subcontractors (their performance), difficulties, safety. New Subcontractors.

- Safety: Performance, difficulties, accidents, incidents, Subcontractors' performance;
- Staff: Performance, attitudes, failings, communications;
- Claims, Changes, Contractual claims (and counter-claims) and Insurance claim evaluations. Change orders (how and why these occurred);
- Quality Issues

2.6 Appendices

None

2.7 Revision History

Revision	Effective Date	Page	Description of Change

3 PPM 1.3. Documents and data control (Including Quality and Environmental Records)

3.1 Purpose and Scope

- Legal Purpose

A QMS will generate documentary records. The records will provide documented proof that the work has been accomplished as required by the drawings, specifications, code requirements, and contractual requirements. Such records may be used as evidence in legal proceedings. Therefore, specific records will be maintained for the period detailed in the contract documents (depending on the type of records) but to be decided by the D&C Project Director with due regard to statutory requirements.

- Purpose
  - This procedure describes the primary responsibilities and principles used by DBJV for indexing, filing and retrieving relevant documents including Quality and Environmental Records generated during design, procurement, and construction phases of the D&C Contract.
  - To ensure that relevant documents including Quality and Environmental Records are identified, generated, distributed and stored for their specified retention time. These records will help to safeguard DBJV's interests for future reference.
  - That obsolete documents are removed from the system and replaced with new versions to avoid inadvertent use. These may be kept for reference but must be suitably marked as "SUPERSEDED" or "VOID".
- Scope
  - All documents, some of which include the DBJV's D&C QMP, D&C Environmental Plans, PPM, design drawings, CDP, specifications, operational procedures, federal standards, and so forth, which support the QMS for the execution of the Work are within the scope of this procedure. Documents from Subcontractors/ Consultants/ reviewers and inspectors involved in the D&C Contract, will be included.
  - The D&C QM will maintain a list of all Quality Records. The list of all the quality records that DBJV will keep during the project can be found in Appendix 1 of the CQMP. This list contains the minimum documents identified to be kept and it will be updated during the design and construction progress as additional documents are added to the list. The list of environmental documents will be maintained in DBJV's Document Control EDMS. DBJV will upload the required documentation into the Developer EDMS.

3.2 Definitions

- D&C Contract: A turnkey agreement under which DBJV will perform the design and construction work for the project, under the supervision of Developer.
- Quality and Environmental Documentation: A list of all the quality records that DBJV will keep during the project which contains the minimum documents to be kept and it will be updated during the design and construction progress.
- Records: A document which furnishes evidence that the requirements and obtained contractual requirements of items or activities affecting quality, environment, etc. have been achieved.
- EDMS: Electronic Document Management System to store and record the main documents generated in accordance with the D&C Contract.

3.3 References

- D&C Construction Quality Management Plan (D&C CQMP).
- Project Management Plan (PMP).
- Development Agreement.

3.4 Responsibilities

- Prepared by the D&C Quality Manager (D&C QM).
- Review by the Procurement/Project Controls Manager (PPCM).
- Approval by the D&C Project Director (D&C PD).

3.5 Procedure

- The PPCM is responsible for filing and maintaining records during the execution of the D&C Contract with the Document Control Manager overseeing this work. These records are generally defined in applicable procedures and must include records supplied by Consultants, Subcontractors and Suppliers.
- All records shall be uniquely identified and only the current revision of any document is permitted for use.
- Records shall be maintained by establishing a Document Control System and Correspondence Register, detailing which records are being held in each specific file. All files shall be kept in a secure place and in an environment which will minimize deterioration and unauthorized access.
- Records must not be removed from the Document Control by any unauthorized personnel. Responsibility for the copying and distribution of documents shall be delegated to suitable members of the administrative staff by the PPCM or Document Control Manager. Any document(s) which are temporarily removed (permitted for short periods only) shall be noted on a sign-out sheet by the relevant member of the administrative staff, who will be responsible for ensuring the return and proper re-filing of the document(s).
- Records shall be filed and maintained as required by the D&C Contract. At the completion of the Contract, records will be classified and separated according to the storage period requirement.
- Packaging (collating and filing) of Records.
    - The records shall be separated in accordance with paragraph above. Each file shall be labelled to show file index number, section of the Work, structure number (if any), and D&C Contract Title and Number.
    - Each file shall be checked by the PPCM or Document Control Manager (or his/her delegate) for completeness, legibility and retrieval. The action of uploading the document into the Document Control Software implies the aforementioned has been checked.
    - Subcontractors and Suppliers records shall be packaged similarly (where applicable).
- Compliance with this procedure shall be verified by the D&C QM (or delegated persons) through surveillances, reviews and audits.
    - Records generated by Subcontractor and Supplier interaction with DBJV are also subject to the above controls.
- Records which are to be stored by DBJV will be sent to a suitable storage facility. The documents will be marked with the unique D&C Contract Title and Number for easy retrieval. The storage period for the records is dependent on D&C Contract requirements.
- Where the D&C Contract includes a design element, the Design Consultant's will maintain documents which will form part of the overall D&C Contract project record (inclusive of sub-consultants and Subcontractors). The Design Consultants will submit these documents to DBJV in order to keep them as a project record.

- One master set of design records, (which has been approved for construction) shall be maintained on the site where the work is being stored by Document Control in DBJV's EDMS. The Design Manager or his designee is responsible for the transmittal of revisions to DC for distribution to all affected members having these documents.
  - Submissions
    - Pre-final drawings will be sent to the Developer who will forward to DEN for comment, once they send back comments the consultant will amend the drawings and will issue the IFC drawings signed and sealed.
    - A separate document with the consultant's responses to the comments will also be sent, if needed.
    - The Design Manager (DM) or his designee will update the IFC drawings index.
    - All the above files (IFC drawings, comment responses and IFC drawings index) will be filed in the appropriate folder in the Document Control system in the DBJV's EDMS becoming that set of drawings the original and current IFC. All the updated IFCs will always be in the EDMS; these are the original and current documents.
    - These files will be sent to the Developer who will forward to DE.
    - A notification by email will be sent to the appropriate recipients informing of the uploads made. (DBJV and Developer).
    - The DBJV's Subcontractors will have access to most current version of the documents through DBJV'S EDMS and will also receive a notification of the uploads made.
  - Submissions Revision of the drawings

    When drawings have to be reviewed, the submittal will be done as follows:

    - The consultant will send the new revision of the drawing or the drawings with the seal and the signature to the DM/CDM, in pdf and electronic format. The revised drawings will show a cloud highlighting the changes made with a number of the revision where it was made. The name-number of the drawing will include the revision number. A brief description of the change will also be included in the index file.
    - The DM/CDM or his designee will update the IFC drawings index.
    - When changes to a drawing or a package of drawings are made, a revised package will be submitted, despite there being no changes to other drawing within the package. The index sheet of the package will be revised, with the above description and its revision number (always different in each resubmission) plus the drawings will follow the process of "Submissions".
    - The latest issued revision of a drawing will void the current version up to date so when uploading the new document the previous version will be "moved" to the "VOID" folder.

      *Note: the history of the changes for the packages will be noted on the index sheet. The drawings(s) will have a cloud of changes and the revision number.
- A register will be kept of all Quality and Environmental Documents generated and stored in the DBJV's EDMS. The names of persons in receipt of controlled documents, and their latest revision number will be maintained by DC. DBJV personnel with approved access will be able to download drawings and other controlled documents through the DBJV's EDMS system.
- Uncontrolled copies (i.e. copies issued for information purposes only) are not the responsibility of the originator, and therefore the user of an uncontrolled document must ensure that the document is current by checking the latest version status in the EDMS.
- The recipient will ensure:

- Documents are checked against the transmittal note for content, issue status revision number, and so forth;
- Any documents which have been superseded as a result of the issuance of a new document will either be destroyed or kept in a manner such that these will not be accidentally used;
- Drawings, Specifications, Site Instructions, Standards, Contracts, Quality and Environmental Documents, and so forth, shall show date of receipt and indicate their status. Superseded material shall be removed/destroyed as stated above;
- The storage period of documents (if any) after the completion of the Contract is either as specified in the Development Agreement, required by law, or as specified by the D&C Project Director .

Project data will be stored in DBJV's EDMS and will be sent to Developer. The EDMS stores and records all documents in accordance with the Development Agreement. Access is controlled in such a way that access is only possible to authorized persons. It may be necessary to restrict access to certain levels of information. Management will establish these levels. All work will be routinely backed up at the end of every working day.

The EDMS shall:

- Provide a secure location that it is protected from theft, damage, unauthorized or malicious use.
- Provide a mechanism for the electronic transfer of metadata along with the associated documents in PDF file format images for uploading into an Electronic Document Management System (EDMS).
- All electronic information shall be searchable and legible.

All documents containing information on Quality or Environmental Documentation will be copied electronically and stored off-site.

3.6 Appendices

PPM 3-1. Documents List in Use form

3.7 Revision History

Revision	Effective Date	Page	Description of Change

PPM 3/1 Document List in use Form

DBJV	DOCUMENTS LIST IN USE		QUALITY SYSTEM FORM: PPM 3-1	
PROJECT: Great Hall Project			DATE:	PAGE:
Completed By:		Reviewed By:		
No.	Title	Type of Document	Revision No.	Date of Receipt	Status

4 PPM 1.4. Procurement (Materials and Supplies)

4.1 Purpose and Scope

- To ensure that all materials, goods, and products purchased by DBJV meet the Project requirements at the most economical price to achieve the best value and comply with the Development Agreement and D&C Contract requirements.
- The scope will cover all materials, goods, and products ordered by DBJV for use on the Project. Sub-contract services are not within the scope of this procedure.

4.2 Definitions

- P.R.: Purchase Request.
- P.O.: Purchase Order.
- R.F.Q.: Request For Qualifications.

4.3 References

- The DBJV D&C QMP and PPM.
- Project Management Plan (PMP) and associated documents.
- ASTM, Codes, Material Safety Data Sheets (MSDS), MWBE, and Development Agreement requirements.
- PPM 1.2 D&C Contract Review.

4.4 Responsibilities

- Preparation by the Procurement/Project Control Manager (PPCM).
- Review by the Construction Management Team (CMT).
- Approval by the D&C Project Director (D&C PD).

4.5 Procedure

- The process of procurement of materials starts during the Proposal stage.
- The PPCM will generate a database source list of materials and approved vendors. This will be based on historical data and new approved vendors.
- Contract Stage

All materials to be procured will be identified on a Purchase Request.

The appropriate manager and his staff are responsible for ensuring that the Purchase Request is complete and includes the correct resource allocation codes. The PPCM will advise on the adequacy of the suppliers and/or vendors available to provide the required materials needed. The appropriate manager or his staff will make the ultimate decision regarding the selection of the supplier or vendor.

The requestor of a product may suggest a possible supplier if known, or if requested/as required in the contract. In addition, the requestor must state all unique characteristics required for this product (material/product specifications).

Upon receipt of the Purchase Request (P.R.), the PPCM may seek additional quotes from suppliers not on the approved suppliers list. The PPCM will also forward to the appropriate supplier, necessary data such as Specifications, Bill of Quantities, Contract Specific Clauses, Drawings, and so forth, to ensure accurate pricing and the purchased product will comply with its intended use.

The PPCM shall send a Quality, Safety, and Environmental Evaluation Questionnaire, (located in PPM 1.5) to the main Supplier to determine what quality system the Supplier has in place.

- The approved suppliers list will be established and maintained on the basis of the suppliers' ability to show consistent reliability for:
  - Product compliance to specification;
  - Price;
  - Compliance with agreed delivery schedules;
  - Quality Assurance compliance;
  - MWBE participating requirements,
  - Local suppliers (when possible)
- The PPCM or his designee will review the quotes from the individual requesting a proposal and transmit any additional inquiries to the supplier. If necessary, meetings will be held with the relevant suppliers to clarify any queries and confirm ability to meet the contract requirements.
- The PPCM or designee will complete a Comparative Form for all materials within the parameters set out in purchasing policy. A review by the appropriate DBJV members will then be undertaken and a Supplier will be chosen.
- A Purchase Order or a Contract will be sent to the selected Supplier. Terms and Conditions will be as described in the Purchase Order, but, as a minimum, each Supplier shall provide:
  - Certificates of conformity (including tests performed) for the products supplied to meet the specifications at the time of the delivery, unless previously provided;
  - Material Safety Data Sheets;

Each Purchase Order or Contract should contain information pertaining to special terms and conditions, max limitation quantities and any other project specific requirements.

- The PPCM or designee will maintain a Purchase Request summary list during the Project life.
- The PPCM will correspond with Suppliers during the Project's life cycle, as necessary, to address contract-related issues that arise, e.g. non-conforming materials, audit findings.

4.6 Records

The PPCM will maintain records of Quotes, Comparative Forms, RFQ's, Purchase Requisitions, and Contractor Directory (on Database) by suitable categories. Specification, Drawings, Bill of Quantities, and so forth, used in the quotes will be filed in the applicable Contract file(s) and stored by Document Control in DBJV's EDMS.

4.7 Appendices

PPM 4-1. Purchase Order form

PPM 4-2. Comparative form

PPM 4-3. Contractor Directory form

4.8 Revision History

Revision	Effective Date	Page	Description of Change

PPM 4-1. Purchase Order form

DBJV

24735 E 75th Ave #100,
Denver, CO 80249,
Phone:
Fax:

PURCHASE ORDER

The following number must appear on all related correspondence, shipping papers, and invoices:

P.O. NUMBER: 0000

TO:	**SHIP TO:** DBJV Ferrovial Agroman & Saunders 24735 E 75th Ave #100, Denver, CO 80249, Phone:

P.O. DATE	REQUISITIONER	SEGMENT	ORDER NUMBER	TERMS

QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL

Prepared By:	Accountant:	Procurement:	SUBTOTAL	
			SALES TAX	
			SHIPPING & HANDLING	
			OTHER	
			TOTAL	

1. Please send two copies of your invoice.
2. Enter this order in accordance with the prices, terms, delivery method, and specifications listed above.
3. Please notify us immediately if you are unable to ship as specified.
4. All invoices should include a corresponding **PO Number** in order to be processed for payment.
5. **Send all correspondence to:**
6. **Accounting Department**
   DBJV Ferrovial Agroman & Saunders
   24735 E 75th Ave #100,
   Denver, CO 80249,
   Phone
   Fax

Authorized by **, CFO** Date

Purchase Order Form PPM 4-1

PPM 4-2. Comparative form

DBJV — COMPARATIVE FORM

PPM 4-2

P.O./AGREEMENT Nº. ____

(TO FILLED IN BY ACCOUNTING DEPT.)

PROJECT: Great Hall Project CODE: ---
ADDRESS: 24735 E 75th Ave #100, Denver, CO 80249, Phone: Fax:
PROJECT DIRECTOR Ignacio Perez Jainaga
Prod./Activity:

CODE	DESCRIPTION	QTY.	UN	BUDGET UNIT PRICE	BUDGET TOTAL	QUOTE DATE: PHONE: CONTACT: UNIT PRICE	TOTAL	QUOTE DATE: PHONE: CONTACT: UNIT PRICE	TOTAL	QUOTE DATE: PHONE: CONTACT: UNIT PRICE	TOTAL	QUOTE DATE: PHONE: CONTACT: UNIT PRICE	TOTAL	QUOTE DATE: PHONE: CONTACT: UNIT PRICE	TOTAL	IDEAL QUOTE (Minimum) UNIT PRICE	TOTAL
							$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
							$0.00		$0.00						$0.00	$0.00	$0.00
					$0.00												$0.00
					$0.00												$0.00
					$0.00												$0.00
					$0.00												$0.00
					$0.00												$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00				$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00			$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00
					$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	$0.00	$0.00

	BUDGET	QUOTE 1	QUOTE 2	QUOTE 3	QUOTE 4	QUOTE 5	IDEAL QUOTE
TOTAL	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DISCOUNTS (%)				0.00%			
FINANCE COST (%)				0.00%			
TOTAL VALUE		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
PAYMENTS TERMS							
DELIVERY TERMS							
COMMENTS							

VERY IMPORTANT

It is obligatory to fill in the following:

a-) Complete description of items to compare, and expected quantity for the contract
b-) Contacted vendor's contact person and phone number (even if they don't quote)
c-) Budget units/prices (if applicable)
d-) Payment Terms and discounts
e-) Signatures and dates

Prepared By: Name: Manny Diaz

Date:

APPROVALS

Procurement Manager	Project Manager(s)	Construction Manager	Project Director	CHOSEN VENDOR	COMMENTS
Name:	Name:	Name:	Name:	Vendor(s):	
				Phone:	
				Contact:	
Date:	Date:	Date	Date Date:		

PPM 4-3. Contractor Directory form

DBJV		CONTRACTOR DIRECTORY				QMS	
						FORM NO.: PPM 4-3	
	Project:	Great Hall Project				Date:	
Reference	Discipline/Trade	Subcontractor Name	Contact	Postal Address	Email Address	PHONE/FAX/CELL	Minorities

5 PPM 1.5. Procurement (Subcontractors)

5.1 Purpose and Scope

- Enables the selection of Subcontractors on the basis of scope of work, competency to perform the work, health and safety record, quality control and assurance ability, and overall best value for the Project and compliance with Development Agreement and D&C Contract requirements.
- This procedure covers all Construction Sub-contracts.

5.2 Definitions

- Subcontractor: A company, organization or individual providing a service or product, which may include, labor, plant, materials or other facilities or resources to DBJV.

5.3 References

- The D&C QMP as part of the PMP.
- The D&C Health and Safety Management Plan (D&C HSMP) and the D&C Environmental Management Plan (D&C EMP) (especially noting the training programs for all Subcontractor employees who will be on site).
- The DBJV approved Subcontractors list.
- Appropriate Sub-contract Form.
- Minority and Women Business Enterprise (MWBE) Plan, Small Business Mentor Protégé Program.
- PPM 1.2 D&C Contract Review.
- The Development Agreement.

5.4 Responsibilities

- Preparation by the Procurement/Project Controls Manager (PPCM).
- Review by the Construction Management Team (CMT).
- Approval by the D&C Project Director (D&C PD).
- The responsibility for the approval of a Subcontractor rests with the D&C PD (or a delegated authority). The PPCM shall provide the CMT and the D&C PD with all the necessary assessment details of the Subcontractor for his review and approval.

5.5 Sub-contract Procedure

- Pre-Contract and Contract Procedure

Procurement of sub-contract services starts during the Proposal stage. The PPCM will provide a list of Subcontractors who were involved during the Proposal phase and determine their level of interest in participating in the Project. The PPCM may seek additional quotes from Subcontractors not involved during the proposal stage.

- Inquiries, Quotations and Comparisons

Following Notice to Proceed, a meeting will be held which will include the PPCM, CMT, and the D&C PD, plus any other managers or parties as deemed necessary to discuss specific Sub-contract packages. The information on the subcontractor will be presented by the PPCM at the meeting.

  - Subsequently, the PPCM shall extract and copy the relevant information from the contract documents which shall include:

- Health and Safety, Quality and Environmental documentation;
- Drawings;
- Specifications;
- Unit priced Bill of Quantities;
- Specific conditions of Sub-contract;
- Contract Details, Instructions to Proposers, and other sections, as required.
- Subcontractor Quotes and Quality Assurance documentation and any other information required;
- Letter of Award. This will be a guarantee that the requirements of the Development Agreement and the D&C Contract will be fulfilled when selecting the Subcontractor.

- The PPCM will create a Contractor Directory File, (PPM 1.4/3).
- The PPCM will notify qualified Subcontractors of their Award of Contract and will provide a scope of work with a contract for review and comment.
- All Requests for Proposal (RFP) to Subcontractors will be forwarded under a DBJV Standard Cover Letter.
- All RFPs sent out and received will be recorded in a Comparative Form (PPM 1.4/2) for cost comparison.
- A copy of the completed Quality, Safety, and Environmental Evaluation Questionnaire (PPM 1.5/2) received from the Subcontractors shall be forwarded to the D&C QM for review.
- Following an initial comparisons between Subcontractors, the CMT shall convene a Pre-Let meeting with the preferred Subcontractors and the PPCM.
- Responsive Subcontractor proposals will be evaluated based on type of work, quality of work, perceived needs, price, qualifications, schedule, inclusions/exclusions to determine fit and best-value for the project.

- Sub-contract Documentation
  - Following the selection of a Subcontractor, the PPCM will draft the contract.
  - All contracts will have reference to and contain a contract Bill of Quantities, Lump Sum Price, or Schedule of Rates.
  - Prior to issuance of the contract, the D&C PD and the legal department shall review the proposed contract document.
  - Two (2) sets of completed Contract Documents will be sent to the Subcontractor for signature under a DBJV Standard Cover Letter. A record contract shall be retained by the PPCM in DC.
  - Copies of Subcontractor's document details will be filed in the Subcontractor Procurement File in DC and in relevant extracts will be provided to the CMT.
  - Revised contracts with questions will be checked by the PPCM for amendments made by the Subcontractor. Any disagreement with these amendments, actual or proposed, must be resolved with the Subcontractor immediately. The D&C PD and the legal department must also be immediately informed of any matter which may affect or vary the final Sub-contract terms and conditions and/or execution of the work. If these amendments are acceptable and are properly initiated by the Subcontractor, the contract is then signed by the authorized DBJV person, one original is retained and filed in Document Control (Subcontractor Procurement File and the second original is returned to the Subcontractor under a DBJV Standard Cover Letter.
  - Other returned information such as construction detail procedures, safety plan, hazardous materials data sheets, waste disposal, materials sources, contact numbers, and so forth, will be provided to the site and relevant personnel with the original details retained along with the original signed contract in the Subcontractor Procurement File.
  - The PPCM will notify the Chief Financial Officer (CFO) of the new Subcontractor.
  - The Contractor Directory will be updated.

- Supply Chain Management / Subcontractor Performance Review
  - DBJV is constantly seeking out best practices that will lead to superior performance in satisfying DEVELOPER needs and DBJV internal cost effectiveness. Toward this goal DBJV is establishing a relationship with its Subcontractors to create a list of preferred Subcontractors. Subcontractor performance is therefore monitored on various items, e.g. quality, safety, ability to meet schedule, etc. This data will be analysed and used for establishing reliable relationships.
  - The CMT and QA Teams will monitor the Subcontractor performance on a regular basis while the work is being carried out on site. Any problems, difficulties, failures, or queries, which bring into question matters within the scope of this procurement procedure shall be identified and resolved jointly with the PPCM in conjunction with other relevant personnel or managers.
  - In order to control the performance of Subcontractors, their progress payments will be reviewed by the respective person in charge and authorized by the D&C PD.
  - Upon completion of the Subcontractor's work, the CMT and QA Teams with input from the PPCM will complete a Subcontractor's Evaluation Report (form PPM 1.05/1). Copies of this document will be distributed to the Document Control, and recorded in the Subcontractor database for future reference.

5.6 Records

The PPCM will maintain records of Quotes, Comparative Pricing, Purchase Requisitions, contracts, support documentation, amendments to the contract, RFP evolution with relevant documents, copies of Quality, Safety, and Environmental Evaluation Questionnaire received, pre-let meeting agenda and minutes, and Contractor Directory (on Database) by suitable categorizations. Specification, Drawings, Bill of Quantities, and so forth, used in the quotes will be filed in the applicable Contract file(s) and stored in DC. A copy of the executed Sub-contract will be maintained in DBJV´s Document Control.

5.7 Appendices

PPM 5-1. Subcontractor Evaluation Report

PPM 5-2. Quality, Safety, and Environmental Evaluation Questionnaire

5.8 Revision History

Revision	Effective Date	Page	Description of Change

PPM 5-1. Subcontractor Evaluation Report

DBJV	SUBCONTRACTOR EVALUATION REPORT	QUALITY SYSTEM FORM NUMBER: PPM 5-1
Center Code: --	Project: Great Hall Project	Date:
Subcontractor Name:		

FACTOR TO EVALUATE
GENERAL OBSERVATIONS

1. Generally failed in the due date with serious project consequences
2. Sometimes missed due dates
3. Generally met due dates
4. Always met the due dates
5. Collaborated to improve performance and the beat the due dates

QUALITY PRODUCE/QUALITY SERVICE (QE)

1. Bad quality in products or services provided
2. Some quality deficiencies without seriously impacting final quality
3. Products or services provided generally met the specifications
4. Products or services provided always met specifications and are documented
5. Products or services surpassed quality specifications

PERSONNEL QUALIFICATIONS (CT)

1. Personnel without training and technical knowledge
2. Personnel with insufficient training and technical knowledge
3. Personnel with sufficient training and technical knowledge
4. Personnel with good training and technical knowledge
5. Personnel with knowledge to resolve any technical requirement

PRICING (PR)

1. Frequently changed pricing and caused work stoppage
2. Tried to introduce changes with negative impact on the work
3. Generally kept the same price
4. Always kept to contract pricing and tried to improve pricing
5. Always tried to reduce cost and pricing

HEALTH AND SAFETY (ONLY FOR SUBCONTRATORS) (SS)

1. Consistently out of compliance with the health and safety policies
2. Some health and safety failures
3. Met the requirements
4. Proactive health and safety program and good compliance overall
5. Took all means necessary to maintain a healthy and safe work environment

ENVIRONMENTAL ISSUES (CM)

1. Failed to follow the environmental plans
2. Some environmental issues, but without serious impact to the project
3. Met the requirements of the Environmental Plans
4. Follow all requirements included in the environmental plans
5. Follow all requirements and try to make improvements

Average (with a decimal):

MANUFACTURER/SUPPLIER	(CPx0.9+CEx1.2+CTx0.9+PRx1)/4	
DESIGNER/CONSULTING	(CPx0.9+CEx1.2+CTx1.1+PRx0.8)/4	
SUBCONTRACTOR (Except Designers)	(CPx0.9+CEx1.2+CTx0.9+PRx1+SSx1+CMx1)/6	

NON CONFORMANCE	PRODUCTS/SERVICES PROVIDED
Non Conformance? (number of these) Cost With subcontractor/supplier change? ("yes" or "no")	

REMARKS ON IMPORTANT INCIDENCES AND AMENDMENTS

Would you use this subcontractor again?

Signature General Manager, Service or Unit Resp.		
V°B°		
Prepared by	CM	PG
Signature	Signature	Signature
Date	Date	Date

PPM 5-2. Quality, Safety, and Environmental Evaluation Questionnaire

DBJV	QUALITY, SAFETY & ENVIRONMENTAL EVALUATION QUESTIONNAIRE	QUALITY SYSTEM FORM No.: PPM 5-2
Center Code: ---	Project: Great Hall Project	Date: Revision No: 0

SUBCONTRACTOR NAME:

Quality

1. Do you have a QA/QC Manual? Yes ___ No ___
2. Do you have procedures for calibration/verification of equipment? Yes ___ No ___
3. Do you have records on calibration/verification for equipment? Yes ___ No ___
4. Do you have document control procedures? Yes ___ No ___
5. Do you have procedures for controlling Non-conforming products/work? Yes ___ No ___

Note: Required procedures will be submitted when requested by TI

Health and Safety

Do you have the following that will comply with TI, TxDOT and OSHA requirements?

1. Health and Safety Plan Yes ___ No ___
2. Health and Safety Procedures Yes ___ No ___
3. Health and Safety Training Yes ___ No ___

Note: Required procedures will be submitted when requested by TI

Environmental

Do you have the following that will comply with TI and TxDOT Environmental requirements?

1. Environmental training Yes ___ No ___
2. Environmental plan (if applicable) _____

Note: Required procedures will be submitted when requested by TI

For internal use only

Evaluation:

Comments: _____

DATE: _____ SIGNATURE: _____

6 Blank

7 PPM 1.7. Procurement for design services

7.1 Purpose and Scope

- Enables the selection and procurement of Design Consultant Services (and other professional consultants) on the basis of capabilities, quality assurance, technical experience, past performance, safety and health, price, and overall best value and compliance with the Development Agreement and D&C Contract requirements.
- This procedure covers all Design Services sub-contracts enter into with DBJV.

7.2 Definitions

- Design Consultant: A company, organization or individual providing technical services, e.g. design, calculations, checking of other work or other similar facilities or resources, to DBJV.

7.3 References

- The D&C QMP in the Project Management Plan (PMP).
- D&C Health and Safety Management Plan
- D&C Environmental Management Plan
- Appropriate subcontract forms.
- Minority/Woman-Owned Business Enterprise (MWBE) program

7.4 Responsibilities (for this procedure)

- Preparation by the D&C Procurement/Project Controls Manager (D&C PPCM)
- Review by the Design Manager (DM).
- Approval by D&C Project Director (D&C PD).

The responsibility for the selection of a Design Consultant rests with the D&C PD in conjunction with the DM (or a delegated authority –designee-). The D&C PPCM and the DM shall provide the D&C PD with all the necessary assessment details of the Design Consultant's for his review and approval.

7.5 Procedure

- Inquiries, Quotations and Comparisons
  - A meeting will be held that will include the D&C PPCM, D&C PD, DM, plus any other managers or individuals as deemed necessary to define the procurement strategy for design at the start of the project.
  - As part of this meeting, the main Design packages will be outlined by the DM.
  - Subsequently, the PPCM shall extract and copy the relevant information for the procurement documents, which should include:
    - Safety, Health and Environmental documentation;
    - Specification details;
    - Specific conditions of Sub-contract;
    - Extracts from the Proposal documents including Contract Details, Instructions to Proposers; Extracts from the Development Agreement, Instructions to proposers;
    - Design and Construction schedule;
    - Drawings;
    - QMS when required.

- The D&C PPCM will create a Request for Proposal (RFP), according to DBJV's criteria.
- The D&C PPCM will notify the Design Consultants of the pending RFP and invite selected Design Consultants to participate in the RFP.
- All Requests for Proposal (RFPs) to Subcontractors will be transmitted under a DBJV Standard Cover Letter. A Quality, Safety, and Environmental Evaluation Questionnaire may accompany the RFP at the discretion of the DM and D&C QM.
- A comparison of the Proposals received will be based on the conditions defined in the RFP.
- If applicable, a copy of the completed Quality, Safety, and Environmental Evaluation Questionnaire received from the preferred Bidders shall be forwarded to the D&C QM for evaluation.
- Following the initial comparison of the proposals, the D&C PD shall convene a Pre-award meeting with the preferred bidders, the DM, the D&C PPCM and the D&C QM.

- Design Consultant's Documentation
  - Following the selection of a Design Consultant, the D&C PPCM will draft the contract agreement.
  - The Contract will have reference to and contain (1) terms and conditions, (2) scope of work, (3) price w/a schedule of values for payment, (4) schedule of design deliverables, (5) insurance requirements, and (6) any other documents that are relevant to the Subcontractor's scope of services (i.e. a QMS Plan).
  - Prior to its issuance, the DM and the D&C PD shall review the proposed Contract.
  - Two (2) sets of contract documents will be transmitted to the Design Consultant(s) for their initial signature under a DBJV Standard Cover Letter. A record of the contract document will be retained by the D&C PPCM in all cases.
  - A returned contract will be reviewed by the D&C PPCM for amendments inserted by the Design Consultant. Any disagreement with these amendments, actual or proposed, must be addressed and resolved with the Design Consultant(s) immediately. This will include, where necessary, other parties involved in a meeting and discussion on the amendment. The D&C PD and the DM must also be immediately informed of any amendments which may affect or vary the final Contract terms and conditions and/or execution of the work. If these amendments are acceptable and are properly initialled by the Design Consultant(s), the Contract is then signed by the authorized DBJV representative. One original is retained and filed in DBJV's Document Control EDMS and the second original is returned to the Design Consultant(s) under a TI Standard Cover Letter.
  - Other returned documents, (e.g. construction detail procedures, safety plans, contact numbers), will be filed with the original details retained along with the original signed contract in DBJV's Document Control EDMS.
  - The D&C PPCM will provide the Chief Financial Officer (CFO) with the Subcontractors Approval/Notification Form.
- Design Consultant's Performance Review:
  - DBJV is constantly seeking out best practices that will lead to superior performance in satisfying client's needs and DBJV's internal cost effectiveness. Towards this goal, DBJV is establishing a Design Consultant's Evaluation Report in order to create a list of preferred Design Consultant's. The report shall evaluate the Design Consultant performance for future work opportunities. This report will be filed in DBJV's Document Control EDMS.
  - While the work is being performed, the D&C QM will monitor the Design Consultant(s) performance on a regular basis through the means established in the Design Quality Management Plan, (in the PMP). Any problems, difficulties, failures, or queries, which bring into

question matters within the scope of this procurement procedure shall be identified and resolved jointly with the D&C PD, the DM the D&C PPCM and the D&C QM.

- The progress payments to the Design Consultants will be reviewed by the D&C PD, the DM and the D&C PPCM on a monthly basis.
- Upon completion of the Design Consultant's work, the D&C PD with input from the DM will complete a Design Consultant Evaluation Report for internal use by DBJV.

7.6 Records

The D&C PPCM will maintain records of Quotes, Comparisons, Sub-contracts, support documentation, amendments to the sub-contract, RFP evolution with relevant documents, copies of Quality, Safety, and Environmental Evaluation Questionnaire received (if applicable), Subcontractor compliance matrix and Design Consultant Directory, any specifications, Drawings, Bill of Quantities, and so forth, used in the quotes will be filed in the applicable Contract file(s) stored in DBJV's Document Control EDMS.

A copy of the executed Contract will also be maintained in DBJV's Document Control EDMS.

7.7 Revision History

Revision	Effective Date	Page	Description of Change

8 PPM 1.8. Random sampling

8.1 Purpose and Scope

This procedure establishes the method of determining the random unit, random quantity or random location for sampling or testing of construction materials. This is intended to minimize any bias on the selection of the sample/test locating by the person selecting the sample/test location.

The scope includes all samples and test locations for this project.

8.2 Definitions

- Sample: A representative part or quantity of workmanship or material to be examined or tested for compliance to required standards.
- Random Sampling: Selection made without obvious method or conscious choice of the item being chosen.

8.3 References

- D&C Quality Management Plan (D&CQMP).
- Development Agreement.
- Project Management Plan (PMP).
- Construction Detail Procedures (CDP).

8.4 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Reviewed by the Construction Manager (CM).
- Approval by the General Manager (GM).

8.5 Procedure

8.5.1 General

Sample selection or test locations will be selected by applying random numbers to the unit, quantity, distance or area designated for material or test location acceptance testing. ASTM D 3665 will be utilized for determining the random sampling or test location. Each lot of production to be tested for acceptance will not exceed the frequency specified in the CDP. The inspection and testing laboratory may divide each lot into smaller sublots to increase the random sampling and testing frequency and necessary confidence in material/testing location quality. The maximum lot size shall not exceed the daily production quantity/test required for each material type, mix design, or placement.

8.5.2 Process

The inspectors and testing laboratory personnel are responsible for obtaining random samples and test locations for the unit, quantity, distance or area designated for material acceptance testing. Samples and tests obtained from fixed locations (non random) through independent observation and judgment of the inspection/testing personnel may be performed at any time to increase the confidence in material or work quality. When the result(s) of either a random or fixed test fails to comply with the Design Documents requirements, DBJV and or the testing laboratory will document the corrective actions such as reworking, additional processing, or plant adjustment(s). After adjustments of operational techniques or material properties, re-testing will be conducted in the same general location to confirm the effectiveness of work adjustment. A Fixed Independent re-test will be performed until a passing test results is obtained from the reworked item of work. After a Fixed Independent re-test is performed, a

new random sample process will be performed to validate this lift. This will constitute the acceptance of the reworked item. The following test types are defined as follows:

- Random Independent- for random sampling and test performed for acceptance decision and independent of OVT sample and test.
- Random Split- for random sampling and test performed for acceptance decision and in conjunction with OVT split sample and test.
- Fixed Independent- for acceptance sampling and test performed at locations selected by DBJV through visual observation and independent of the OVT sample and test; this includes retesting of a previous Random Independent sample or test to correct construction deficiencies.
- Fixed Split- for acceptance sampling and test performed at locations selected by DBJV's inspector through visual observation and in conjunction with OVT sample and test; this includes retesting of a previous Random Split sample or test to correct construction deficiencies.

Selection of Random Numbers

- Random numbers will be selected from the random number tables in ASTM D 3665. The random number tables consist of a list of numbers in blocks which are to be used in the random selection process. Only the tables located in ASTM D3665 will be used.
- Without looking at the table, select a block on the table.
- After selecting a block, the top left number in the block is the first random number used. If a pair of random numbers is needed, the adjacent number within the block is used.
- Continue down the vertical column in the block for additional numbers and proceed to the top of the adjacent column to the right, if available, when the bottom of the column is reached. When the bottom of the last column on the right is reached, proceed to the block above. If a pair of numbers on the right is reached, proceed to the block above on the left in the table.
- If each number or pair of numbers in the table is used for random selection process, select a new starting block and repeat the procedure.
- If the random location results in a location that a sample is not allowed, then the random number shall be discarded and the next random number in sequence will be used, unless otherwise indicated. Note on the field test report and the DIR (Daily Inspection Report) the reason for discarding the initial random number(s)- such as joints, obstructions, edge of elements , etc.

Random Location Per Length

- Identify the length from which random location is required.
- Select a random number in accordance with the process above (selection of random numbers).
- Multiply the length by the random number.
- The resulting number is the random distance.
- Add the random distance to the beginning of the length to determine the random location.

Random Location Per Area

- Identify the area from which a random location is required.
- Select a pair of random numbers in accordance with the process above (selection of random numbers). Use the first number for the longitudinal location and the second number for the transverse direction.
- Determine the longitudinal length in accordance with the process above (random location per length).
- Multiply the transverse width by the random number.

- The resulting numbers represent the random location.

Random Unit

- Identify the number of units for which a random unit is required and label these units numerically beginning with 1 and increasing until all units have a different number.
- Select a random number in accordance with the process above (selection of random numbers).
- Multiply the number of units by the random number.
- Round up the resulting number to the next whole number to determine the random unit.

Random Quantity

- Identify the quantity from which a random quantity is required.
- Select a random number in accordance with the process above (selection of random numbers).
- Multiply the quantity by the random number.
- The resulting number is the random quantity to be sampled.
- The sample is obtained from the truck containing the random quantity.

8.6 Appendices

None

8.7 Revision History

Revision	Effective Date	Page	Description of Change

9 PPM 1.9. Control of non-conforming products / work

9.1 Purpose and Scope

- This document defines the requirements for the identification, documentation and resolution (elimination) of non-conforming products and/or work, including any environmental or safety non-compliance, which may occur during the Design and Construction stages of the Project. This process will ensure that non-conforming products or work are controlled by taking actions to preclude their use or application in the Work or process.
- At times it may be possible for a non-conforming product or work to be accepted by requesting concession or minor alteration of a specification or requirement. The purpose of this procedure is to control such changes and provide verification of acceptance of the product or work.
- The scope includes all materials, products and work provided or used during the Design and Construction phases of the Project. Also, any section of completed or partially completed work which is within the scope of this procedure.

9.2 Definitions

- Open Items Log: A log of minor deficiencies that documents their existence, status (open/closed), and what solution was implemented to close these items (upgrading to an NCR).
- Non-Conformance: A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate.
- Modify: The action of performing additional work to a planned change in design or operation and accomplished in accordance with the requirements and limitations of applicable codes, standards, specifications, and predetermined safety restrictions.
- Repair: The action of working on an item which will result in making an item acceptable for its intended use even though it may not be restored to a condition which meets its original specification requirements.
- 'Use-As-Is': No additional work will be performed.
- Re-Test: In some cases there is a doubt of incorrect inspection and testing results, further testing can be done by specifying the test, location, method, environment, etc. The quantity of the re-tests shall be sufficiently representative of the area to validate the re-test results and evaluate a possible error in the performance of the first test.
- Reject/Scrap/Replace: A disposition which indicates that the item is unsuitable for its intended purpose and economically or physically incapable of being reworked or repaired.
- Rework: The activity of correcting the non-conforming item to be brought back into conformance with the original requirements through re-machining, reassembling, reprocessing, reinstallation, or completion of the required operation. This may require an additional procedure to be written to address the re-work process.

9.3 References

- The Design and Construction Quality Management Plan (D&C QMP).
- Project's specific Drawings and Specifications.
- Development Agreement (DA).
- Construction Detail Procedures (CDP).

9.4 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Construction Manager (CM).
- Approval by the D&C Project Director (D&C PD).

9.5 Procedure

- Identification of Non-Conformance(s)

Identification of Non-Conformances may be performed by:

- Non-conformances occurring on site can be identified by any DBJV employee, the Quality Team, Environmental Team, Safety Team, Construction Management Team, subcontractor or approved inspection authority.
- The Developer and DEN will also have the authority to issue Non-Conformance reports in DBJV's system which will be processed like a DBJV generated NCR and these NCRs will be addressed by the D&C QM

The person responsible for initiating the NCR will be identified in the '"Issued by" section of the NCR form.

- Process
  - To start the process, the individual that identifies the Non-Conformance should communicate to the relevant CMT (QC Team) and/or the QA Team, of the work or material in question so that the DBJV staff is aware of the situation. Initial notification to the CMT (QC) can be done verbally. The NCR will be documented by using the standard Non-Conformance Report form (PPM 1.09-1) by the individual that is reporting the problem.
  - When non-conforming work or material occurs, an NCR form will be filled out and the original NCR will be provided to the D&C QM. The NCR will be assigned a unique number from the NCR Log (PPM 1.09/2) so that it can be monitored. Only one record NCR Log will be maintained by the D&C QM.
  - All NCRs that are identified shall be specific and indicate the exact nature of the non-conformance. Contractual reference (specification, drawings, contract clause, works element, etc.) should also be as detailed as possible. When traceability is a required parameter of the Contract, items will be uniquely identified and their location where used in the works will be recorded.
  - The Originator of an NCR may elaborate on the details and circumstances of the non-conformance on additional sheets and/or photographs which may be attached to the NCR.
  - A copy of each NCR must be sent to the D&C QM who will review the NCR to ensure that the information has been entered correctly, and will be used for internal reporting and tracking after a unique number has been issued for the NCR.
  - The Non-Conformance Reports shall be transmitted to the CM for review and further assignment to the Project Manager for a disposition. Each NCR will be reviewed on a case-by-case basis by each Project Manager.
  - NCRs will be distributed to the following personnel:
    - Construction Manager.
    - Construction Management Team.
    - Project Managers.
    - QA Team/Environmental Team/Safety Team (as appropriate).
    - Other relevant personnel, e.g. PPCM when a Supplier is having problems.
    - The Developer who will distribute to DEN.

- The D&C QM (or designee) will conduct at least a monthly meeting with DBJV's Construction Management Team to review all open NCRs. Each open NCR will be examined to determine if the required action has been taken and that the relevant information required to close out the NCR has been attached to it. If the latter has taken place, then the NCR may be closed out by the D&C QM (or by a person appointed by him) examining the attached information to ensure that the NCR is correctly closed out. The NCR is closed by signing the NCR form. All sections of the NCR form are to be completed for the NCR to be satisfactorily closed out. In some instances, however, sections of the form may not be applicable to the NCR in question and, in these situations, the non-relevant sections of the form should be marked N/A (not applicable). If the information attached to the form or the action taken to close out the NCR is insufficient in the opinion of the D&C QM, then additional information and/or further action will be taken to close out the NCR. Details of the additional information and/or action taken are to be detailed on the NCR form. The NCR Log will be made available to all DBJV staff and the Developer who will report to DEN.
- minor deficiencies (minor non-conformances) which occur during construction may be corrected with rework through standard working practices without any change to the permanent work. These minor deficiencies will be tracked on the Open Items Log (PPM 1.09/3). DBJV Design Manager or Construction Design Manager and D&C Quality Manager, using expertise and judgment, may determine whether these minor deficiencies need to be advanced to NCR status or upon review of the issues can and will close out these minor deficiencies with a defined acceptance reason.
- Completed work which is not in accordance with the Drawings and Specifications, for which an alteration would be necessary for its acceptance, or where repairs are required to make the work comply with the Drawings and Specifications, will be recorded as a Non-Conformance.
- DBJV will allocate a suitable area for controlling and storing of Non-Conforming items (if applicable). This will help in segregation and avoiding inadvertent use of the item(s).

- Recording and Resolution of Non-Conformance Reports
  - Any non-conforming product delivered to the site by a Supplier and incorporated into the work will be identified and recorded as an NCR. The product (if identified before use), will be segregated and identified in whatever practical manner to prevent inadvertent use or mixing with conforming products. Subcontractors, Consultants and Suppliers will receive a copy of the NCR when a product/service that they provided does not conform to project design requirements. Unused, non-conforming products not needed on the Project will not be recorded as an NCR. These items will be sent back to the Subcontractors, Consultants or Supplier for replacement with an acceptable product. The resolution action of a NCR that involves Subcontractors, Consultants or Suppliers shall be provided by them. Those actions shall have to be approved by the D&C QM and the standard procedure for a NCR will be followed.
  - Decisions on the resolution of Suppliers non-conforming products shall be subject to the approval of the CMT in consultation with the Engineer of Record, D&C QM, and the PPCM.
  - The person responsible for responding to the NCR will complete the "Cause", "Corrective Action", and the "Disposition Status" portions of the NCR. They will complete the "Prepared by" portion of the form. In case the NCR is a subcontractor or consultant, a signature is required. If the action requires a modification of a design element, this action shall be previously approved by the DM and/or the CDM with the engineer of record's approval. The D&C QM will evaluate the suggested action and his final acceptance is required. The date of acknowledgement of the response will also be tracked (PPM 1.09/2).

- Objective evidence shall be retained to substantiate that repaired and/or reworked items have been re-inspected or re-tested according to the applicable procedures and that the item is now acceptable.
- Approval by the D&C QM is required to close out all NCRs. A list of personnel approved to sign off on NCRs will be communicated to the Developer who will communicate to DEN.
- The process for closing a NCR will be the following:
  - the NCR recipient will submit a proposed solution to the D&C QM within ten (10) working days of receiving the NCR.
  - The D&C QM will review, discuss, and adjust the response until there is an agreed upon final solution.
  - The NCR recipient and/or the CMT will implement the solution and
  - the NCR will be closed after the work is verified as acceptable. The executed activity will be on hold until the solution is implemented and is acceptable.

  Same considerations are applicable and will be performed for the Open Items closures.

  For sub-contracted work, NCRs shall also be controlled by this procedure unless agreed otherwise.

- Change Control

The Construction Manager and the Project Managers are responsible to ensure that all activities are performed in accordance with the approved repair procedures and, applicable Drawings and Specifications. When deficiencies occur, this procedure will ensure that a controlled approach is taken to resolve these non-conformances.

- NCR Data Analysis & Improvement

The D&C QM will review and carry out analysis to identify any adverse trends and will report them to the D&C Project Director and the CM with recommendations for improvement (e.g. additional training). If a trend is identified, a CAR will be issued to address this continuing problem (see PPM 1.10).

9.6 Records

The D&C QM will maintain a record of all documents associated with this procedure. A copy of these records will be maintained in Document Control and in the EDMS System.

9.7 Appendices

PPM 9-1. Non-Conformance Report form

PPM 9-2. Non-Conformance Log form

PPM 9-3. Open Items Log form

9.8 Revision History

Revision	Effective Date	Page	Description of Change

PPM 9-1. Non-Conformance Report form

PPM 9-1. Non-Conformance Report form

DBJV Great Hall Project	**Affected Segment, Item or System:**	**NCR No:**
	Issued By:	**Issue Date:**
To (Responsible Organization / Subcontractor):		
Requirements Not Met:		
Non-Conformance Description:		

Cause of Non-Conformance:		
Corrective Action:		
Disposition Status:		
1. Reject/Scrap/Replace ☐	2. Rework ☐	3. Repair ☐
4. Re Test (Specify) ☐	5. Accept 'As Is' ☐	6. Other ☐
Prepared by:		Date:
Reviewed by:		Date:
Approved by:		Date:

Verification Corrective Action is completed:	Yes ☐	No ☐
Signed (QA Team Member):		Date:

NCR Closed:	Yes ☐	No ☐
Signed (D&C QM):		Date:

PPM 9-2. Non-Conformance Log form

DBJV		NON-CONFORMANCE LOG	QUALITY SYSTEM FORM: PPM 9-2	
PROJECT: Great Hall Project				
NCR No.	Date Issued	Brief Description of NCR	Status O/C	Date Closed

PPM 9-3. Open Items Log form

OPEN ITEMS LOG

QUALITY SYSTEM
FORM: PPM 9-3

PROJECT:
Great Hall Project

Open Item No.	Date Identified	Segment	Brief Description of Open Item	Solution	Status O/C	Date Closed

10 PPM 1.10. Corrective Action Report

10.1 Purpose and Scope

- To ensure that repeated defects, wherever located in DBJV's activities are identified by Non-Conformance Reports (NCR's) or audit findings are evaluated for noted trends. In addition, the root cause shall be identified so that changes can be made to the D&C QMP, if necessary, to prevent recurrence of the problem.
- These actions will be recorded and used in the continual improvement of the D&C Quality Management System.
- Scope - This procedure encompasses all activities affecting the quality of products/services that DBJV will provide to Developer. It will include Developer complaints to be addressed by DBJV.

10.2 Definitions

- Corrective Action Report (C.A.R.): These reports may be generated as a result of an Audit finding, Developer or DEN complaint or by some other means such as repeated NCR's with the same cause. The Corrective Action Report is the document initiated by the D&C QM for addressing and resolving a non-conformance to the QMS.
- Non-Conformance Reports: Are the documents initiated to identify, record, and resolve items (material, equipment or portion of completed works) where the quality characteristic is indeterminate or non-conforming to applicable specifications or drawings. Recurring NCR's associated at the same cause will require a CAR (PPM 1.9).
- Preventative Action (P.A.): An action to prevent a non-conformance.
- Deficiency: A minor non-compliance, which is a minor deficiency, that may be corrected immediately, (if possible) and does not affect the permanent works. They will be tracked on an Open Items Log (PPM 1.9).

10.3 References

- The Development Agreement.
- The DBJV Design and Construction Quality Management Plans (DQMP and CQMP).
- The DBJV Health, Safety and Environmental Management Plan (D&C HSEMP).
- Construction Detail Procedures (CDP).

10.4 Responsibilities (for this procedure)

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Construction Manager (CM).
- Approval by the D&C Project Director (D&C PD).

10.5 Procedure

- Investigations will be performed by the D&C QM or his designee to determine the cause of quality problems and to identify possible D&C QMS defects especially when:
  - Analysis of all NCRs or Audit Findings indicates significant, recurring defects in materials, equipment, or portions of completed work, recurring disregard for safety, environmental, or quality controls.
  - Developer finds continuing issues with the same problem.

- A Corrective Action Report (C.A.R) (PPM 1.10/1) will be prepared for all such investigations containing the following information:
  - The C.A.R. number assigned from the C.A.R. Log (PPM 1.10/2) by the D&C QM.
  - The date issued.
  - The department / section / organization / person being assigned the C.A.R.
  - A description of the "cause" (Item / Activity, Description, Location) with a detailed reference to the specifications, drawings, codes or requirements that continue to be identified as being non-conforming or as audit findings.
  - The name of the initiator and the date.
  - The department / section / organization / person that the C.A.R. has been issued to will complete the "Analysis" and "Description of the Corrective/Preventative Action Adopted" portion of the document and sign and date the form under the "Prepared By".
  - A review of the responses will be performed by another competent individual and this will be documented by their signing and dating under "Reviewed By".
  - After all issues/concerns have been addressed (if applicable) the completed response with an Implementation date has been established with a responsible person identified, it will be issued/transmitted back to the D&C QM after the "Approved By" is signed and dated. This process is to be completed with ten (10) working days from the time the department / section / organization / person receives the C.A.R.
  - After the response has been received and reviewed, it will be Approved by the by the appropriate individual (D&C PD, CM, DM,CDM, Project Manager) and dated.
  - The document will be forwarded to the D&C QM for the completion of the form after verification that the approved modifications have been implemented.
  - Once the CAR is closed it will be stored in the appropriate folder in DBJV's EDMS (PPM 1.3).

10.6 Appendices

PPM 1.10-1. Corrective Action Report form

PPM 1.10-2. Corrective Action Report Log form

10.7 Revision History

Revision	Effective Date	Page	Description of Change

PPM 10-1. Corrective Action Report form

PPM 10-1. Corrective Action Report form

DBJV Great Hall Project	Affected Segment, Item or System:	CAR No:
	Issued By:	Issue Date:
To (Responsible Organization / Subcontractor):		
Location:		
Description of the cause:		

Description of the Corrective/Preventive Action adopted::
Prepared by: _____ Date: _____
Approved by: Date:

Implementation Corrective/Preventive Action is completed:	Yes ☐	No ☐
Signed (Responsible):	Date:	

Verification Corrective/Preventive Action is completed:	Yes ☐	No ☐
Signed (D&C QM):	Date:	

PPM 10-2. Corrective Action Report Log form

PPM 10-2 Corrective Action Report Log form

SPV		Corrective Action Report Log	QUALITY SYSTEM FORM: PPM 10-2	
PROJECT: Great Hall Project				
CAR No.	Date Issued	Brief Description of CAR	Status O/C	Date Closed

11 PPM 1.11. Internal Audits

11.1 Purpose and Scope

- To establish measures for planning, performing, recording and reporting of Internal Audits.
- To determine that a quality assurance program has been developed; is documented; is effective; and the product or services achieve their required objectives.
- Provides DBJV, Subcontractors, and/or Suppliers/Vendors opportunity for improvement.
- Meets regulatory requirements, if any.
- The scope will encompass all documentation of Work performed by DBJV and its Subcontractors.

11.2 Definitions

- Audits: A documented activity performed in accordance with written procedures or check lists to verify by examination and evaluation of objective evidence, that applicable elements of the quality assurance program have been developed, documented, and its effectively is in accordance with specified requirements.
- Internal Audits: Audits performed by the D&C QM (or suitably qualified delegated personnel) on specific sites or departments within DBJV, Subcontractors, Consultants and/or Suppliers.
- External Audits: Audits performed by Developer or DEN on the DBJV's D&C Quality Management System.
- System Review: A general examination of the D&C QMS using documentary information available to determine whether the Quality requirements are being met or can be achieved. A report will be produced providing these conclusions. Recommendations or corrective actions may be in the report, as appropriate to address any issues.
- Surveillance: The physical presence for the purpose of monitoring and verification of the effectiveness and validity of procedures, methods, conditions, processes, products and services. It also includes analysis of records in relation to stated references to ensure that specified requirements are being complied with.

11.3 References

- DBJV's Design and Construction Quality Management Plan (D&C QMP).
- Development Agreement (DA).
- The Project Management Plan (PMP).

11.4 Responsibilities (for this procedure)

- Preparation by the D&C Quality Manager (D&C QM).
- Review by Construction Manager (CM).
- Approval by the D&C Project Director (D&C PD)

11.5 Procedure

- General
  - Auditors and Lead Auditors must be suitably qualified. The D&C QM will select the auditors. If no suitably qualified persons are available, then the D&C QM will help prepare a checklist against which the audit will be performed by delegated personnel.
  - The persons carrying out the audit will have no functional responsibility for the performance of the activity being audited.

- Audits will be performed in accordance with the audit schedule to be prepared by the D&C QM and approved by the D&C PD. Unscheduled audits may be necessary under certain circumstances and will be performed by the D&C QM (or designee) with the prior approval of the D&C PD. Developer's QEM will be notified of any pending audits.
- A Surveillance is a very narrow form of an audit (mini-audit). It has a very narrow scope of what will be reviewed/evaluated and is less formal in nature. There are no pre-notifications for surveillances as is required for an audit. The forms will be utilized for a surveillance as for an audit. The numbering will denote either an "A" for "Audits" or "S" for "Surveillance" (i.e. A-1, S-1).
- Unscheduled audits will be performed when it is suspected that quality is being jeopardized or when significant changes have been made to the functional areas of the Quality Management System.

- Audit Schedule
  - Audits will be planned in advance and a schedule prepared subject to the approval of the D&C PD. These audits will be used to verify the implementation of all quality-related activities carried out both by DBJV and its Suppliers/Subcontractors. Audits will be carried out at least annually. A copy of the audit schedule will be provided to the Developer's QEM.

- Selection of the Audit Team
  - The D&C QM may carry out the audits alone, or may select a suitably qualified deputy to act on his/her behalf. The D&C QM may designate a Lead Auditor and assist in the selection of the other members of the audit team. The auditors will be briefed by the D&C QM on the performance of the audit.
  - The Lead Auditor is responsible for developing/coordinating the audit plan, date(s) and time of the audit, conducting the audit, summarizing the audit findings at the exit interview, preparing an audit report, evaluating the audit response (if any) from the audited organization, circulating the audit report and its close-out when completed and is acceptable. A Non Conformance Report (NCR) or Corrective Action Reports (CAR) may be issued when the circumstance described in their appropriate sections have met their requirements for issuance. The D&C QM will assist him in this task.
  - The use of external auditors may be decided by the D&C QM with the consent of the D&C PD.

- Audit Plan and Notification
  - The audit plan identifies the purpose of the audit, the specific requirements to be audited (including reference to specific documents), and an audit checklist will be developed for use during the audit. The audit plan and checklist will be reviewed and approved by the D&C QM.
  - The D&C QM will issue a unique audit/surveillance number to each audit/surveillance from the Audit Log.
  - The D&C QM will issue an audit notification to consultants, subcontractors and/or Suppliers to be audited. The D&C QM will then consult with the Lead Auditor detailing the scope of the audit, the name(s) of the auditor(s), reference documents, the timing of the audit, the date(s) and any works visits necessary. Site visits will be made jointly with DBJV staff. Notes will be made of any relevant points where verification is sought in identifying compliance to procedures, codes, or standards. In any case a minimum of ten (10) working days will be provided to the audited organization to prepare for the audit after receipt of the audit checklist has been supplied.
  - DBJV can and will be audited by Developer and DEN. DBJV will cooperate and respond to any concerns or findings.

- Audit Performance
  - A pre-audit meeting shall be conducted by the Lead Auditor in order to introduce the audit team, establish a general overview of the areas to be audited, establish escorts for site visits, anticipated time for closing meeting and venue, etc. The names of those present shall be recorded.
  - An audit checklist will be used to assist the audit team stay focused on the scope and purpose of the audit.
  - All deficiencies/discrepancies will be immediately brought to the attention of the Department or Segment Manager of the audited Department/Segment or Subcontractor, discussed and corrected wherever possible at the time that it was identified. When deficiencies show a non-conformance in relation to the Quality Management System it will be subject to the issuance of a NCR and or a C.A.R. depending on the circumstances.

Non-conformances of a less serious nature will be noted and reported as an "Observation". As a guide, observations are those types of deviations where they are:

- an event not affecting any permanent works;
- an event that is corrected immediately.

  - Key documents or records which are reviewed shall be identified on the check list. Where possible, copies shall be obtained as documentary evidence and attached to the audit. The names of persons consulted during the audit shall be recorded.
  - A closing meeting shall be conducted by the Lead Auditor who will outline a summary of findings identified during the audit for correction by DBJV, suppliers or Subcontractor. Any Non-conformances (or Corrective Action Reports if any) shall be identified and, in principle, acknowledged by the audited organization. Recommendations and possible solutions shall be discussed in an attempt to reach a mutual agreement prior to the conclusion of the audit. DBJV may take this opportunity to amend the audit findings based upon the audited organizations ability to provide additional documentation or proof that the audit finding was not applicable to its Department/Section, supplier, or Subcontractor. The names of the attendees at the closing meeting shall be recorded.

- Audit Reports
  - The audit report shall contain as a minimum:
    - audit number and date(s) of audit;
    - title, address, location of the audit;
    - audit scope;
    - audit checklist;
    - names of persons consulted during the audit;
    - the audit team;
    - list of criteria audited and the result;
    - any copies of documentation obtained during the audit;
    - audit conclusion or summary;
    - Non-conformance Reports and/or Corrective Action Reports with unique numbers and response due dates, other observations requiring attention if applicable.
  - The report will be signed by the Lead Auditor and reviewed by the D&C QM who will transmit the Audit Report to the audited Segment/Department Manager, Supplier, or Subcontractor, and the D&C PD. This shall be done within five (5) business days of the audit. A copy of the DBJV Internal Audit will be provided to the Developer and DEN at the completion of the audit.

- Follow-Up Activities
  - The audited organization will respond to the findings no later than a month (1) from the receipt of the report.
  - The Lead Auditor or D&C QM shall follow-up on any Audit Finding Responses to ensure that all appropriate issues have been addressed and all commitments have been accomplished. Any NCRs or C.A.R.s issued due to the audit will be reviewed for completion. When all issues have been successfully addressed for the Audit, the Audit will be closed and so noted on the Audit Log. The D&C QM will monitor the whole process for compliance and report the results to the D&C PD and applicable Subcontractor, suppliers and/or DBJV Department Managers.

11.6 Appendices

PPM 11-1. Audit/Surveillance Plan form

PPM 11-2. Audit/Surveillance Finding Report form

PPM 11-3. Audit/Surveillance Log form

11.7 Revision History

Revision	Effective Date	Page	Description of Change

PPM 11-1. Audit/Surveillance Plan form

PPM 11-1. Audit -Surveillance Plan form

DBJV Great Hall Project	AUDIT/SURVEILLANCE PLAN	QUALITY SYSTEM Form: PPM 1.11/1
Organization Name and Address:		
Organization Representative Contacted:		
Organization Services (Scope):		
Audit Location (if different from above):		
Audit Date and Time:		
Organization QA Documents to be Audited:		
Audit Personnel:		
Audit Checklist:		
Requirements/Activities to be Audited:		

_____

D&C QM or Designee

_____

DATE

PPM 11-2. Audit/Surveillance Finding Report form

DBJV Great Hall Project	Audit/Surveillance Finding Report form	QUALITY SYSTEM FORM: PPM 11-2	
Audited/Surveyed Organization:	Audit/Surveillance No.:	Contract No.:	
Persons Contacted:	Reported By:	Date:	
DEFICIENCY	Document Violated: Paragraph (List and Cite)		
Observations:			
Recommended Corrective Action:			
Corrective Action Assigned To:	Response Due Date:	Approved by:	Date:
TO BE COMPLETED BY AN AUDITED ORGANIZATION			
Corrective Action Response: Preventative Action:	Submitted By:	Date:	
TO BE COMPLETED BY D&C QM			
Review of Corrective Action Response: ( ) Satisfactory ( ) Unsatisfactory			
Remarks:	Reviewed By: ( ) Deficiency Closed: Approved by:	Date: Date:	

PPM 11-3. Audit/Surveillance Log form

DBJV Great Hall Project		AUDIT/SURVEILLANCE LOG		QUALITY SYSTEM FORM: PPM 11-3	
PROJECT:		IH 635 Managed Lanes Project			
Audit No.	Audit Date	Audit Organization	Date Issued	Date Due	Date Closed

12 PPM 1.12. Developer complaints and compliments

12.1 Purpose and Scope

- To ensures that complaints received from Developer on aspects other than quality will be investigated appropriately.
- The scope covers complaints received from Developer on completed work (which does not form part of the final "punch" list), and from members of the public related to DBJV's activities (e.g. noise, dust or other hazards).
- Developer would channel complains received from DEN through this process.

12.2 Definitions

- Complaint: An expression of dissatisfaction (either verbally or in writing), with respect to any aspect of the D&C Contract, including scope, execution or status which has an overall effect on the quality of the end product, and which is not covered by a Non-conformance Report.
  Note: A low Complaint rate is not proof of Developer's satisfaction; however a high Complaint rate is proof of dissatisfaction.
- Compliment: An expression of satisfaction beyond the normal compliance to the D&C Contract requirements. This type of expression will usually be received by letter.
- References
- DBJV's Design and Construction Quality Management Plans (DQMP and CQMP).
- The Project Management Plan (PMP).
- Construction Detail Procedures (CDP).
- Process Procedures Manual (PPM).
- D&C Health, Safety and Environmental Management Plan (D&C HSEMP).

12.3 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Review by Construction Manager (CM).
- Approval by the D&C Project Director (D&C PD).

12.4 Procedure

- The Non-Conformance system (PPM 1.9), the Corrective Action Reporting (PPM 1.10), or Noncompliance Points from Parties (PPM 1.33) system will generally be sufficient to control any non-conformances in relation to the Contract Requirements. The PMP documents the communication between DBJV staff and the Developer (and related third parties) to ensure compliance with Developer's, statutory, and regulatory requirements.
- When a complaint is raised by the Developer to any member of DBJV staff, then a Developer Complaint Form (PPM 1.12/1) shall be completed by the D&C QM. The form will document all relevant information pertaining to the complaint.
- The complaint will be kept in DBJV's EDMS system. The D&C QM will pass this information to the relevant Department Managers and/or the D&C PD for use in preparing a response to the issue. The D&C QM will be copied on all the complaints being tracked and addressed.
- Once a complaint has been received, the D&C QM may provide assistance (if required) to the relevant Department Managers or D&C PD in investigating the cause of the complaint, determining whether

a Non-conformance Report already exists, or whether one should be issued at that time. Such details will be noted by the D&C QM in the "comments" section of the Complaint Form.

- The D&C QM may also assist the Department Manager and/or D&C PD on the possible reply to the Complaint. The D&C PD will review the response before it is dispatched. In certain circumstances, corrective actions might have been already agreed upon by the Department Manager to site-related complaints. These actions or agreements will be noted on the Complaint.
- If the Complaint is in connection with work performed by a Supplier or Subcontractor employed by DBJV, then the D&C QM will investigate the matter in consultation with the persons responsible for the procurement of the particular Supplier or Subcontractor. The results will be noted by the PPCM, and the Approved Suppliers/Subcontractors list will be updated accordingly to reflect this situation.
- Any Developer complaints are an important document in the 'quality loop' as it provides feedback for the continuous improvement and 'fine tuning' of the Quality Management System. The D&C QM will monitor the file of complaints.
- After a response has been transmitted to Developer addressing the complaint, the complaint will be closed and so noted on the Complaint Log (PPM 1.12/2).
- Occasionally, DBJV may receive a compliment from Developer or other bodies regarding its performance. Copies of these documents shall be forwarded to the D&C QM for his information. The D&C QM will maintain a file of such compliments.

12.5 Appendices

PPM 12-1. Developer Complaints Report form

PPM 12-2. Complaint Log form

12.6 Revision History

Revision	Effective Date	Page	Description of Change

PPM 12-1. Developer Complaints Report form

DBJV	Developer Complaints Report Form	QUALITY SYSTEM FORM: PPM 12-1 Complaint No.:
Area:	Project: Great Hall Project	Issue Date: Page: Date:

COMPLAINT EXTRACT:			
		Date Received:	
Topic Code:		Address	
Complainant Name:		Phone	
Received By:		Email	
Method of Contact from Complainant:			

Complaint Tracking:	
Date	Observations (taken action, communications, etc.)

COMPLAINT CLOSURE:	Date:
Solution (Short Description):	Complaint Addressed by:

PPM 12-2. Complaint Log form

DBJV	COMPLAINT LOG		QUALITY SYSTEM FORM: PPM 12-2
PROJECT: Great Hall Project			
COMPLAINT No.	RECEIVED DATE	ORGANIZATION ISSUING COMPLAINT	DATE CLOSED

13 Blank

14 PPM 1.14. Submittals (RFA)

14.1 Purpose and Scope

- This procedure establishes the QA/QC criterion that defines the method of record keeping, lines of communications and responsibilities of the Construction Management Team (Quality Control) and Subcontractors for submitting Shop Drawings, Material Specifications and all other information for approval.
- The Scope includes the following operations: submitting Shop Drawings, Material Specifications and all other information for approval by both DBJV's D&C QM and Design Manager or Construction Design Manager or designees.

14.2 Definitions

- Submittals: Shop drawings, material data, and samples. Product data submittals, samples, and shop drawings are required primarily for the Design Team/Construction Design Team and Design Consultant to verify that the correct products will be installed on the project.

14.3 References

- D&C Quality Management Plan (D&C CQMP).
- Development Agreement
- Project Management Plan (PMP).

14.4 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Reviewed by the Design Manager (DM) or Construction Design Manager (CDM).
- Approval by the D&C Project Director.

14.5 Procedure

- Implementation
  - The organization (DBJV/Subcontractor/Supplier) making the submittal will review the Design Documents to ensure that all required information associated with the submittal is present and acceptable. The Construction Team will review the package before submitting it to the Design Team or Construction Design Team and the D&C Quality Manager. The submittal process will give all the parties the opportunity to review the items being submitted for approval. This could include shop drawings, test reports on material, mix designs, colours, patterns, mark ups and types of material. This will not be an opportunity to select different materials than what was designated in the Design Documents.
    If a variation from the originally specified material is submitted it will be duly noted as to what is different and the reason change or variation from the Design Documents. Only after a revision of the IFC drawings or a Field Change is issued can the proposed material be used.
  - Each submittal will contain the name of the organization, the originator, the reference to Design Documents requirements, and all attachments to be reviewed (i.e. shop drawings, mix design, material certifications, etc.). The Construction Team will request a RFA number from the Construction Design Team who will update the log accordingly assigning a unique number to the submittal
  - The submittal will be transmitted to the Design Manager or Construction Design Manager or designee who will determine if the submittal will be reviewed and approved by the DBJV or if it will be transmitted to the Design Consultant for their review and approval.

- If the submittal will be reviewed by DBJV, both the Design Manager or Construction Design Manager and the D&C QM or designees will review the submittal. After determining a status of the submittal the Design Manager or Construction Design Manager, D&C QM or designees and Design Consultant will note the submittal with one of the following statuses.
    - Approved
    - Approved As Noted
    - Approved As Noted Resubmit
    - Rejected
- After a status of the submittal has been established the submittal will be transmitted back to the Design Team or the Construction Design Team for updating the log. Regardless of the status, a copy of the status will be transmitted back to the originator who initiated the submittal. CDT will submit the closed submittal to Document Control who will file it in the DBJV's EDMS and will submit to the Developer.

14.6 Records

- PPM 14-1. RFA form
- PPM 14-2. RFA Log form

14.7 Revision History

Revision	Effective Date	Page	Description of Change
00			

DBJV

Request for Approval form, PPM 1.14-01

REQUEST:

Contract: Great Hall Project		**RFA No:**
Raised By:	**Project Area:**	**Date response required:**
We hereby seek approval for the following: ☐ SHOP DRAWINGS , ☐ MATERIALS		
Description:		
Discipline (Check one)	☐ ARCHITECTURE, ☐ STRUCTURES, ☐ MEP, ☐ OTHER:_____	
Manufactured/ Supplied By:		
Specification Reference:		
Drawing Reference:		
Number of Additional Sheets (attached):	**Signed:** _____ **Date:**	

RESPONSE:

Comments (To Be Completed By Construction Design Manager or designee):			
We hereby: approved ☐ approved as noted ☐ rejected ☐ (Reason if not approved)			
Name:	Position:	Signature:	Date:

DBJV	**RFA log**				**QUALITY SYSTEM** **FORM: PPM 14-2**	
PROJECT: Great Hall Project						
RFA No.	**Date Identified**	**materials or shop drawings**	**RFA Details (Summary)**	**RFA response**	**Status O/C**	**Date Closed**

15 PPM 1.15. Training

15.1 Purpose and Scope

- Ensure that DBJV personnel are adequately trained to carry out their duties.
- Ensures that DBJV personnel skills are developed sufficiently to enable them to progress within the Company and undertake increased roles of responsibility.
- Scope: The procedure is applicable to all DBJV personnel. Job Descriptions of key personnel who have a direct impact on quality matters are detailed in the D&C QM and PMP.

15.2 Definitions

- None.

15.3 References

- Design and Construction Quality Management Plan (D&CCQMP) and Process Procedures Manual (PPM).
- Development Agreement and Project Management Plan (PMP).
- Environmental and safety training specified in the D&C Health and Safety Management Plan (D&C HSMP) and in the D&C Environmental Management Plan (D&C EMP).

15.4 Responsibilities (for this procedure)

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Construction Management Team (CMT).
- Approval by the D&C Project Director (D&C PD).

15.5 Procedure

- The D&C PD, CM and Project Managers will review the records of personnel under their supervision to assess training needs.
- The records will be kept up-to-date and noted on a training log. All training undertaken will be documented. Any person responsible for arranging a training course shall inform the participants of the course date, and shall provide the course administrator with a list of names of the participants and other relevant details.
- Training may be undertaken as an in-house activity or by an approved third party organization.
- DBJV Managers will be responsible for reviewing and identifying training needs. Such reviews will be made at least annually. Training recommendations will be communicated to the appropriate manager(s) for review and approval.
- The D&C PD (or other delegated person), will review any training recommendations made and approve the training program.
- Copies of certificates and training records of DBJV members will be maintained in the DBJV's EDMS. Access to personnel information is restricted due to confidentiality requirements (not including training records).

15.6 Appendices

PPM 15-1. Training Log form

15.7 Revision History

Revision	Effective Date	Page	Description of Change

PPM 15-1. Training Log form

DBJV	PROJECT TRAINING LOG		FORM No: PPM 15-1
Center Code:	-------	Project: Great Hall Project	
TYPE OF TRAINING			
ISSUES			
GUIDED TO			
INSTRUCTOR (S)			
DOCUMENTS PROV			

NO.	FIRST AND LAST NAME	TITLE/POSITION	COMPANY	SIGNATURE	DATE

16 Blank.

17 Blank

18 Blank.

19 PPM 1.19. Monthly Quality Reports

19.1 Purpose and Scope

- Describes the primary responsibilities and processes used by DBJV for creating, executing, and documenting the Monthly Quality Reports.
- This Quality Report will be done on a monthly basis, with it starting aligned with the monthly reporting that Developer agrees with DEN.
- A copy of the report, once completed, will be submitted to the Developer.

19.2 References

- The Project Management Plan (PMP)
- Design and Construction Quality Management Plan (D&C QMP).
- D&C Health and Safety Management Plan (D&C HSMP)
- D&C Environmental Management Plan (D&C EMP)
- Development Agreement (DA).

19.3 Responsibilities (for this procedure)

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Construction Manager (CM).
- Approved by the D&C Project Director (D&C Project Director).

19.4 Procedure

- The Monthly Quality Reports will contain at least the following chapters:
  - Introduction
  - Purpose of the Report
  - Jobsite Information
  - Monthly Works Description. A summary of the monthly work performed will be presented in this section.
- Monitoring of the D&C QMP
  - Technical specifications and quality certificates. A brief summary of the documentation requirements that come with the receipt of new materials, checking their suitability under the Development Agreement, Technical Provisions, codes and current standards will be included.
  - Technical specifications, quality certificates, material mixes, etc will be included in Appendices to the Monthly Quality Report.
  - Monthly calibrations and verifications. Calibrations and verifications of survey or laboratory equipment performed in that period will be included .
  - Updated list of drawings. The current list of drawings will be attached as an Appendix to the Monthly Quality Report.
  - Other procedures. This section will discuss the internal or external audits performed during this period, as well as other quality procedures related with the D&C QMP that took place in the period of the report preparation.

Quality Control

- A Summary of the laboratory tests and results analysis. A brief description and analysis of all laboratory tests performed during the month. The summary of monthly tests will be grouped by type, and they will be included in Appendices to the Monthly Quality Report.
  - Concrete Tests

- Steel Tests
- Etc.

- Inspection and Surveillance

This section will include a brief description and analysis of the monthly Hold Points performed at the different jobsites, checking the suitability of either the working methods or the materials used, and the compliance with the Development Agreement or the Technical Specifications. A summary of the Hold Points will be included in the Appendices to the Monthly Quality Report.

- Non-Conformances and Incident Reports

During the routine inspections carried out by DBJV, the Developer or DEN, the report will identify the number of Non-conformances or open items reports (PPM 1.9) as a result of the following actions:

- Survey Issues
- Material/Products
- Test Results
- Construction Work

A brief description of non-conformances and open items reports open or closed, and proposed corrective actions in that monthly report period, will be included in this monthly report section.

A list of all non-conformances and incident reports from the starting of the works will be compiled in the Appendices to the Monthly Quality Report, and also those non-conformance or incident reports open in this period.

- Picture Report

Required pictures will be provided in this section.

- Appendices to the Monthly Quality Report
  - Appendix 1: List of calibrations and verifications of survey or laboratory equipment.
  - Appendix 2: Updated list of drawings.
  - Appendix 3: Summary of laboratory tests.
  - Appendix 4: Summary of Non-Conformance, Incident Reports and Audits.

19.5 Records

A copy of this report will be stored by Document Control and the DBJV's EDMS and submitted to the Developer.

19.6 Revision History

Revision	Effective Date	Page	Description of Change

20 Blank.

21 PPM 1.21. Design Review Procedures

21.1 Purpose and Scope

- To describe the process for reviewing design drawings, specifications, and other pertinent design documents for this Project developed by the Design Team (DT) or Construction Design Team (CDT).
- This will ensure that the design process will satisfy contract requirements, that the design is constructible and is technically valid and accurate. There will be coordination between the different design disciplines during this process to ensure that due diligence of the quality assurance review process will be achieved.

21.2 Definitions

- D&C Contract: A turnkey agreement under which DBJV will perform the design and construction work for the Project.
- Development Agreement: A contract between DEN and the Developer for the design, construction, operation and maintenance of the Project.
- Design Review: An evaluation by DBJV's Design Team (DT) or Construction Design Team (CDT) of the design documents to assess that all of the requirements are present and that the design consultants have met the requirements that have been established in the Technical Documents.
- DBJV Management Team: The D&CPD, the DM, the CDM, the CM, D&C QM, and other relevant Managers.

21.3 References

- The Design and Construction Quality Management Plan (D&CQMP) that can be found in the PMP.
- The D&C Contract.
- The Development Agreement, Technical Requirements and Technical Documents.

21.4 Responsibilities

- Preparation by the Design Manager (DM) or Construction Design Manger (CDM).
- Reviewed by the D&C Quality Manager (D&C QM).
- Approval by the D&C Project Director (D&C PD).

21.5 Procedures

- Design documents received from the Design Consultants will be stored in DBJV's EDMS and logged as per the Document Control Receipt Log (PPM 1.21-1).
- After receipt, the Design Manager (DM) or Construction Design Manager (CDM) and the Design Discipline Managers will be notified of the receipt of the design documents submitted for review and comment. In some areas, personnel from other departments (Utilities, Construction, Procurement…) will be notified as well.
- Each Design Discipline Manager or his designee will review and make comments on the documents and complete a Review Comment Summary and Resolution Form (see form PPM 1.21-2).
- Each Design Discipline Manager after revision of the document will sign the "QC" - Internal Review Signature Page (IRSP) (see form PPM 1.21-3) and send to DC with his comments. Document Control who will retain both until the review is completed by all the reviewers.
- The DM will receive the Review Comment Summary and Resolution Form and the "QC" - IRSP from DC. After his review and concurrence, it will be transmitted to DC for further processing. The completed Review Comment Summary and Resolution Form and "QC" - IRSP will be saved in DBJV's

EDMS. A copy of the comments will be transmitted back to the Design Consultant that transmitted the package for review.
Note: Not all the Design Documents will need a comment log to be completed.

- After the comments have been addressed by the Design Consultant, they will transmit their comment response with the document appropriately corrected (response) back to DC.
- After receipt of the response from the Design Consultant, DC will store the document response into DBJV's EDMS and a copy will be sent to the Design Discipline Managers or their designee. In some cases, personnel from other departments (Utilities, Construction, Procurement…) will be notified as well of the response.
- The response will be reviewed to ensure that the response addresses the original review comment that was generated.
- If the response is not satisfactory, the Design Discipline Leaders will follow up with these issues through emails and/or meetings.
- This process will continue until all issues have been satisfactorily addressed.
- All design changes shall be subject to the same design control standards that were applied to the original design. These changes shall be reviewed and approved by the original Design Consultant unless another responsible organization is utilized for these services. If changes are made by other than the original designer, the requirements of the State Board of Registration or the pertinent organization shall be adhered to.

21.6 Records

Copies of all documents generated will be stored by Document Control in DBJV's EDMS.

21.7 Appendices

PPM 21-1. Document Control Receipt Log

PPM 21-2. Review Comment Summary and Resolution Form

PPM 21-3. "QC" - Internal Review Signature Page

21.8 Revision History

Revision	Effective Date	Page	Description of Change

PPM 21-1. Document Control Receipt Log

DBJV				Great Hall Project	
Form Title **DOCUMENT CONTROL RECEIPT LOG**				Revision No. / Status 0 Form Revision Date: 10/20/2010	Form No. 1.21/1 Page No. ____ of ____
Ref. No.	Date	From	To	Title	Notes

PPM 21-2. Review Comment and Summary Resolution Form

Great Hall Project

FORM: PPM 21-2

REVIEW COMMENT SUMMARY AND RESOLUTION FORM

Submittal:	DBJV Review	Designer:	Date:
Package/Document:		Reviewer:	

CODE :
A. Accept Comment (Modify or Add)
B. No Action Required
C. Clarify – need to discuss
D. Reject Comment – No action
E. Resolution of comment in next phase of design

CATEGORY (Cat) :
1. Required
2. Preferential/Advisory

Item No.	* Dwg. No. Page. No.	Comments (If no comments, write "NO COMMENT" and return form.)	Cat	# Code	# Response	## Final Disposition Code	## Final Disposition Date

* Indicate Drawing No. or Page No. or use "G" for General Comment
# To be filled out by Discipline Lead or Task Lead
To be determined at Review Meeting or in subsequent meeting/discussion

Page 1 of 1
date, Rev

PPM 21-3. "QC" - Internal Review Signature Page

FORM: PPM 1.21/3

DBJV	Great Hall Project

"QC" - Internal Review Signature Page

Type of Submittal: _____

Design Manager: _____ **Quality Manager:** _____

Date Submitted for QC Review: _____

Scheduled Completion Date for QC Review: _____

Date Completed for QC Review: _____/_____/_____

(Shaded area is to be completed by Personnel in Responsible Charge.)

QC Reviewers, please review for the following:

1.) Make comments in the form of redlines directly on the document.

2.) Compatibility of the Plans, Report, and/or Document with respect to your own discipline.

3.) Review if your own discipline is proposing something that could adversely impact any of the material that you are reviewing.

4.) Sign this form acknowledging you are finished with your QC - Internal Review.

I understand that by signing this form, I am acknowledging that the above referenced document, plans, and/or report in as far as the particular discipline that I represent has been reviewed and any conflicts or impacts my discipline would have has been so noted.

NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	
NAME:	Date	NAME:	Date
POSITION:		POSITION:	

Note: Please affix this Signature Page directly onto the cover of the document being reviewed.

22 PPM 1.22. Survey and mapping

22.1 Purpose and Scope

- To ensure that DBJV has developed procedures to incorporate all the required provisions to comply with the D&C Contract and the Development Agreement, applicable requirements of the Professional Land Surveying Practices Act; and the applicable requirements of the General Rules of Procedures and Practices of the Colorado Board of Professional Land Surveying.
- This procedure covers all the field surveying performed by DBJV needed to develop the additional data taken from the LIDAR surveying made previous to the Project commencement.

22.2 Definitions

- D&C Contract : A turnkey agreement under which DBJV will perform the design and construction work for the Project, under the supervision of the Developer.
- Development Agreement: Contract between DEN and the Developer for the design, construction, operation, and maintenance of the Project.
- Contract Review: An evaluation by DBJV's management of the Contract documents to assess that all of the requirements are present and that their sub-contractors and suppliers can meet these requirements.
- The DBJV Management Team: The D&C PD, the CM, the DM, the CDM, CM, D&C QM, and other relevant Managers.
- Sub-contractor: A company, organization or individual providing a service or product, which may include, labor, materials or other facilities or resources to DBJV.
- Inspection, Measuring, and Test Equipment (IMTE): Devices or systems used to calibrate measure, gauge, test, or inspect in order to control or acquire data to verify conformance to specified requirements.
- Precision: The degree of resolution or accuracy of measurement, for example, readability.
- Calibration: Comparison of a measurement standard or item of measuring and test equipment to a standard of higher accuracy or item of measuring and test equipment of closer tolerance to detect and quantify inaccuracies by adjustment.

22.3 References

- The Design and Construction Quality Management Plan (D&CQMP)
- The Development Agreement
- The DBJV approved Sub-contractors list.
- Appropriate forms of Sub-contract.
- Minority and Women Business Enterprise (MWBE) Plan, Small Business Mentor Protégé Program.

22.4 Responsibilities

- Preparation by Design Manager/D&C Quality Manager (DM/D&C QM).
- Reviewed by Construction Design Manager (CDM).
- Approved by D&C Project Director (D&C PD).

22.5 Procedure

- Survey companies will be employed utilizing PPM 1.5 Procurement (Sub-contractors) in alignment with the Development Agreement.
- The firms will be independent of the Design Consultants developing the overall design for this Project.

- The firms will utilize only calibrated equipment that is calibrated to the manufactures requirements or as minimum on a yearly basis. There will be documented proof of the acceptability of the equipment with required logs being maintained.
- Either the Design Manager or the Construction Design Manager, will determine the needs of survey data needed. A request and direction will be given to the Survey Manager to obtain the requested data who will request survey tasks by either the independent survey company or DBJV's survey team.
- These surveys will be to help complete or further compliment the LIDAR surveys that have been performed on this Project.
- The survey data obtained from the survey company/or DBJV's survey team will be reviewed and appropriately sealed to industry requirements and to the State of Colorado required standards (when applicable).
- The LIDAR survey will be verified on a randomly selected basis being the selected points determined by DM, CDM, and/or Survey Manager.
- Additionally, the Primary Control Points that have been established for this project will be verified by the independent survey company or by DBJV's surveyors.
- As needed or requested, additional independent surveying or DBJV survey team will be utilized to verify or determine field survey data (e.g. columns, slab openings, elevations, etc.).
- When the independent survey is completed it will be reviewed by the appropriate qualified personnel.
- Once any or all issues have been resolved with the survey data, it will be transmitted to DC.
- DC will log and file a copy of the survey data to the requirements of PPM 1.3 Documents and Data Control.
- The survey data will be transmitted to the appropriate Design Consultant or others that need this information for their use on this Project.
- Any comments or additional survey data requested by the Design Consultant will be analyzed and evaluated by DBJV. When this request is deemed necessary, a request for additional survey will be directed to the independent survey company or DBJV survey team.
- The surveying process will be audited to assure that correct checks are performed on the work and that the equipment is properly calibrated.

22.6 Records and Documentation

All appropriate/required surveys will be stored in DC.

22.7 Appendices

PPM 1.22-1 List of Equipment for Calibration / Verification form

PPM 1.22-2 Optical and Digital Level Calibration / Verification form

PPM 1.22-3 Theodolites and Total Station Calibration / Verification form

22.8 Revision History

Revision	Effective Date	Page	Description of Change

DBJV	LIST OF EQUIPMENT FOR CALIBRATION/VERFICATION	Quality System
		Form: PPM 1.22-1
	Great Hall Project	Page:

Performed by: Revised by:

#	Equipment	Serial Number	Assigned To:	Inspection program		Procedure or Instructions
				Current Calibration Date:	Next Calibration Date:	

DBJV

OPTICAL AND DIGITAL LEVEL CALIBRATION / VERIFICATION

Quality System

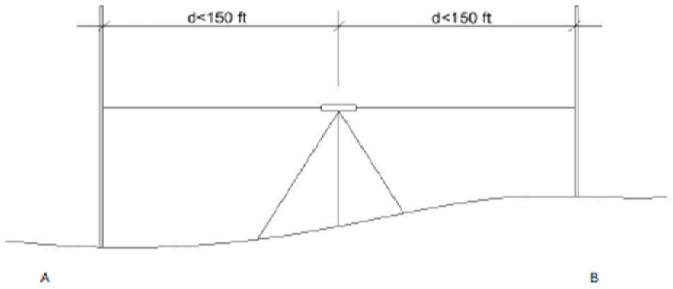
Form: PPM 1.22-2

Great Hall Project

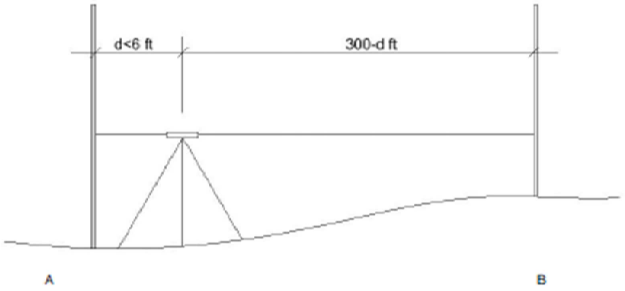
Date: Page:

Performed by:	Reviewed by:		Assigned To:
Equipment:	Start date:	Verification Instructions:	Calibration Date:
Brand:		Manufacturer's Manual	
Model:	Retired date:	Verification Period:	Calibration Period:
Serial Number:		1 Month	1 Year

1



2



#	Date	Calibration Verification	Manufacturer's Manual	Spherical Level	Collimation Line (dms)	Tripod Accessories	Elevation error (ft) Z1A	Z1B	Z1A-Z1B	Z2A	Z2B	Z2A-Z2B	E=Z1-Z2	Observations

PPM 1.22-3 Theodolites and Total Station Calibration / Verification form

DBJV

THEODOLITES AND TOTAL STATION CALIBRATION/VERIFICATION

Quality System

Form: PPM 1.22-3 Page: 1

Performed by:
Equipment:
Brand:
Model:
Serial Number:

Great Hall Project

Reviewed by:
Start date:
Retired date:

Verification Instructions: Manufacturer's Manual
Verification Period: 1 Month

Date:
Assigned To:
Calibration Date:
Calibration Period: 1 Year

#	Calibration Verification	Date	Manufacturer's Manual	Levels Spherical	Levels Tubular	Plummet	Tripod accessories	Compensator L	Compensator T	Index Error	Collimat. Error	Perpendic. Error	ATR Hz	ATR V	Distance Measured	Standard	Notes

23 PPM 1.23. Environmental Management for LEED

23.1 Purpose and Scope

- Ensures that Environmental issues are identified, discussed, and that efforts are taken to avoid, minimize, and compensate for environmental impacts throughout the Design and Construction phase of the D&C Contract.
- This procedure describes the primary environmental management responsibilities and principles used by DBJV for interaction between Design and Construction and Environmental Personnel during the Design and Construction phase of the D&C Contract for achieving at minimum a Gold level LEED certification from USGBC.
- This procedure covers environmental management associated with the Design/Environmental interface only; it does not cover all environmental records such as training or monitoring, such records will be maintained by the relevant departments and in the DBJV's EDMS and submitted to the Developer.
- Developer shall be responsible for achieving at minimum a Gold level LEED certification from USGBC with respect to the Terminal Improvements.

23.2 Definitions

- D&C Contract: A turnkey agreement under which DBJV will perform the design and construction work for the project, under the supervision of Developer.
- Records: Design and Construction Environmental Records (such as meeting minutes, final Plans, etc) which provide documentary evidence of the specification of individual items, standards of work, and compliance with the Owners Project Requirements (OPR). A document is considered an Environmental Record when it has been fully completed, verified (when applicable) and signed by the relevant personnel.

23.3 References

- DBJV's Design and Construction Quality Management Plan (D&C QMP)
- D&C Environmental Management Plan (D&C EMP)
- Development Agreement.

23.4 Responsibilities (for this procedure)

- Preparation by the D&C Safety and Environmental Manager (D&C SEM)
- Review by the Design Manager (DM)
- Approval by the D&C Project Director (D&C PD)

23.5 Procedure

In order to reach the Project goal of achieving at minimum a Gold level LEED certification from USGBC the following steps must be followed during the Design stage:

- Begin with an initial research and analysis. Study the OPR which contains owner's requirements related to mechanical, electrical, and plumbing (MEP) and building enclosure systems that must be included in the project, along with additional items that the owner may request that the design team consider.

- When sufficient information has been gathered, hold a goal-setting workshop to discuss findings. To capture the most opportunities, the workshop should occur before any design work and include wide representation from the design and construction disciplines.
- Map the LEED project boundary along property lines. Share the final project boundary decision with the entire team, since this site definition affects numerous prerequisites and credits.
- Use the project goals to identify the credits and options that should be attempted by the team. Understand what each credit is intended to achieve and may help teams align goals with credits that bring value to the owner, environment, and community of the project.
- Establish the target LEED certification Gold level and identify additional credits needed to achieve it. Make sure that all prerequisites can be met and include a buffer of several points above the minimum in case of changes during design and construction.
- Project team members should perform additional research and analysis as the project progresses, refining the analysis, testing alternatives, comparing notes, generating ideas in small meetings, and evaluating costs.
- The project team should reassemble occasionally to discuss overlapping benefits and opportunities. This approach encourages the discovery of new opportunities, raises new questions, and facilitates testing across disciplines.
- The above pattern of research and analysis followed by team workshops should continue until the solutions satisfy the project team and owner.
- DBJV will have a LEED consultant to lead the group through the LEED application and documentation process. During the construction phase a team member will be designated to lead the construction documentation process (ensure that everyone is documenting the construction points correctly, such as our recycling process and waste management). Both the design and the construction leaders should be involved throughout the process to ensure consistency, clarity, and an integrative approach.
- Cross-disciplinary team ownership of LEED credit compliance can help foster integrative design while ensuring consistent documentation across credits. On a credit-by-credit basis, assign primary and supporting roles to appropriate team members for credit achievement and documentation. Clarify responsibilities for ensuring that design decisions are accurately represented in drawings and specifications and that construction details match design documentation.
- Establish regular meeting dates and develop clear communication channels to streamline the process and resolve issues quickly.
- During Construction verify that product data, LEED submittal, shop drawings and samples have been submitted and approved prior to proceeding with the work under specification section that corresponds.
- Develop consistent documentation is critical to achieving LEED certification. Data accumulated throughout the construction process, such as construction materials quantities, should be gathered and assessed at regular intervals to allow the team to track ongoing progress toward credit achievement and ensure that information is not misplaced or omitted.
- Maintaining Consistency in the Application and the credit category overviews discuss the numeric values and meaning of terms that affect achievement of multiple credits within a credit category.
- Perform quality assurance review and submit for certification as an essential part of the work program. A thorough quality control check can improve clarity and consistency of the project's LEED documentation.

23.6 Records

All records will be stored in Document Control in DBJV'S EDMS and submitted to the Developer (PPM 1.3)

23.7 Revision History

Revision	Effective Date	Page	Description of Change

24 PPM 1.24 Area Systems Walk Down and Turnover Punch List

24.1 Purpose and scope

- This PPM describes the walk down process performed by DBJV to verify that a unit of work, work area or system, is complete and acceptable (installed per the applicable drawings, specifications and approved field changes) and that all non-conformance reports and open items have been satisfactorily corrected, accepted, and closed out prior to turnover to the Developer. A walk down verifies the completeness of both the physical work and the supporting documentation. DBJV will also submit an installation safety certificate (ISC) for the area or systems being turned over to the Developer.
- This PPM establishes the system for the planning and conducting of area/systems walk downs and turnovers conducted jointly by DBJV project personnel, the Developer, and DEN authorized representatives.

24.2 Definitions

- Open Items Log: A log of non-conformances (minor deficiencies) that documents their existence, status (open/closed), and what solution was implemented to close these items (upgrading to an NCR).
- Non-conformance: A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate.

24.3 Responsibilities

- Preparation by the Design Manager (DM) and the D&C Quality Manager (D&C QM).
- Reviewed by the Construction Design Manager (CDM).
- Approval by the Design & Construction Project Director (D&C PD).

24.4 Procedure

- The D&C Quality Manager (D&C QM) or designee is responsible for ensuring that proper coordination is achieved among authorized representatives for DBJV, the Developer, and other stakeholders such as state, county or city authorities as necessary, during the walk down and turnover process. Proper coordination includes advance notifications, scheduling, documentation, closing out punch list items and securing signatures for obtaining the certificate of beneficial occupancy (where applicable).
- The D&C QM or designee is responsible for the management of the walk down process. This includes identification of walk down scope, determination as to when a given area/system is ready to be walked down, assembly of the walk down team and generation of a punch list, if necessary. The D&C QM or designee will also ensure that punch list items are closed out in a timely manner.
- Construction Manager (CM) and Project Manager are responsible for ensuring that work is performed in accordance with the approved Design Documents.
- Sub-contractor Representative (SR) is the representative of the sub-contractor who performed the work. The SR has the authority to commit the sub-contractor to accepting that an identified condition is a “punch list” item that must be corrected by the sub-contractor in a timely manner that supports the turnover and start-up schedule.
- The Developer / DBJV is to describe the individual who has been identified as the DEN “point of contact” (POC) when a walk down is scheduled. The POC participates in walk downs and is empowered to accept or reject an area or system being walked down or turned over.

- Quality Administrator reports to the D&C QM and is responsible for assisting the D&C QM or designee in maintaining and periodically updating all walk downs and turnover activities, including status of corrective actions to punch lists and deficiencies.

24.5 Requirements

24.5.1 Walk downs

- Walk downs are conducted by DBJV to evaluate if a defined area of work that a specific sub-contractor has identified as being complete is, in the opinion of DBJV, complete and acceptable as defined by the applicable drawings and specifications.
- There are two major types of walk downs:
  - Preliminary Walk Down:
    A preliminary walk down is conducted when the work is approximately 70% complete, or whenever a part of a system or structure is to be enclosed or buried. The objective of this walk down is to evaluate the quality of the work performed to that point. The walk down will document in a preliminary punch list the required repair or rework for identified non-conforming conditions and ensure that the corrections are done prior to the final joint walk down with the Developer and/or other stake holders.
  - Final Walk Down.
    A joint "Final Walk Down" is conducted when a work element is complete. The purpose of this walk down is to verify that the system has been finalized in accordance with the approved design. This walk down includes verification that the supporting inspection and test documentation has been compiled and provides evidence that the system is acceptable.
- Walk downs are conducted using approved drawings, specifications, design changes, and field changes. During walk downs, drawings are checked to identify if any conditions do not conform to the approved drawings and specifications and to make sure that no changes to the as-installed condition will be made.
- To the extent possible, photos should be taken as a part of a walk down. This is especially needed for areas where work will be buried or enclosed. When photos are taken, they are to be numbered using an approved process and recorded on a log to identify location and the punch list item number. If more than one photo is taken, an additional sequential number should be appended to the log. For a given item number a description of what is shown by each photo taken is entered in the punch list under the "Punch List Description" heading.
- The walk down process includes verification that required testing has been performed and is acceptable. This verification is performed by the D&C QM or designee.

24.5.2 Walk Down Planning

- The D&C QM or designee plans for a walk down by generating a Walk Down Record (PPM 1.24-1A and PPM 1.24-1B respectively). These forms describe the scope of the inspection, the names of the walk down participants, the applicable drawings, specifications, design changes, and other related documents and punch lists identified. The D&C QM or designee obtains inputs from the CM or designee and Engineer-of-Record (EOR) when developing the Walk Down Record.
- The D&C QM or designee also coordinates with the CM or designee to identify members of the walk down team. Members shall include, as a minimum, the D&C QM or designee, the CM or designee, Developer's authorized representative(s) and the authorized manager or supervisor from those responsible for doing the work.
- Walk down records will be organized by the work area numbers. Given the scope of most work areas, it is expected that there will be multiple walk down records for any given work area.

- Walk down records will be numbered. The number is formed using the applicable work area number followed by the date the walk down is performed and sequence number. Example: WA1-171201-01 (WA1 indicates the walk down is being done for Work Area # 1, 03115 is YYMMDD indicating the date the walk down is planning for, and 01 indicates that this was the first walk down done for that work area).
- The walk down shall require a review of the list of outstanding items, such as non-conformance report (NCR) (PPM 1.9), tracking log to identify whether or not there are any open NCRs affecting the area covered by the walk down. Any open NCR or Open Items Log affecting the scope of the walk down shall be listed under one line item and the line item is recorded as a "Reject".
- The D&C QM or designee notifies by e-mail of the time and place of a planned walk down to concerned representatives from DBJV and the Developer who notifies the DEN POC.

24.5.3 Walk Down Performance

- The Walk Down Records are filled out by the D&C QM or designee with input from the other members of the walk down team.
- Each drawing shall be listed as a separate "Item No." (Item No. format is 01,02, etc) so that the status of the work covered by the drawing can be clearly defined.
  Notes:
  - a) There may be multiple checkpoints for a given Item No. In such cases, list the item number followed by a letter for each of the checks to be made (Example: 02.a, 02.b, etc.).
  - b) Checkpoint shall be established to require verification of required documentation such as material certifications and test reports.
- Walk down team members are required to initial next to their names on the walk down record attendance to indicate they are participating in the walk down. Using the Walk down Record, applicable drawings and specifications, the walk down team will inspect the work area. The purpose of this inspection is to evaluate the status (completeness or incompleteness) and quality (acceptability or unacceptability) of the work.
- The walk down team goes through the area covered by the walk down record. A line item evaluated as being "Acceptable" by the walk down team is classified as "A". A line item having incomplete or unacceptable work is to be classified as "R" and the work remaining to be done shall be summarized in the Inspection Summary section.
- After a walk down is completed the D&C QM or designee reviews the results with the walk down team members. The D&C QM or designee determines what, if any, corrections needs to be made to the walk down records and promptly makes them. If a member of the walk down team has any objections, the member may document their objections on a separate piece of paper that list then attached to the walk down record.

24.5.4 Walk Down Follow-Up and Close Out

- Unacceptable walk down results are documented on a "Punch List", Form PPM 1.24-2. The Punch list is generated and filled out by the D&C QM or designee. The PL number is the same as the walk down record number.
- A copy of the punch list is delivered to the organization that did the work so that it can be used to track the necessary corrective actions are taken to close the deficient items. Copies of the punch list are also provided to the members of the walk down team and DBJV's management (D&C PD, CM and D&C QM). The original punch list is maintained by the D&C QM or designee until all items are closed.
- The D&C QM or designee and the CM or designee maintain their copies of the punch list to track status of corrective actions performed by either DBJV's direct-hired personnel or sub-contractor. A

deficiency may be categorized as a punch list, requiring a corrective action report (CAR) or a non-conformance (NCR).

- The organization that did the work may request D&C QM or designee verification and acceptance of corrective actions on a "deficiency item by deficiency item basis," or the sub-contractor may elect to correct all the items listed and then request verification that the corrective action is acceptable.
- If a deficiency item concerns the supply of missing documentation (test reports, etc.), or the correction of existing documentation, then the item is closed when the documentation is delivered and accepted by the D&C QM or designee, the Developer and the DEN's POC. The corrected documentation is filed in accordance with the established procedure for Documents and data control.
- When requested by the organization that did the work, the D&C QM or designee will verify that deficient items identified as being corrected by the organization that did the work, does in fact conform to the applicable approved drawings and specifications, as supplemented by approved field changes. If acceptable the D&C QM or designee and the Developer and the DEN's POC shall initial and date the "D&C QM or designee Closure" box of the deficiency list. If unacceptable, the D&C QM or designee reviews what still needs to be done with the organization that performed the work.
- Unresolved deficiencies are brought to the attention of the CM or designee in order to ensure that corrective action will be taken in a timeframe that supports the project schedule.

24.5.5 Walk Down Closeout

- The D&C QM or designee combines the Walk Down Record cover sheet with the Punch list(s).
- When all items listed on the punch list are closed the punch list is turned over to the Developer in accordance with the Development Agreement and trough the EDMS.

24.6 Records

All records generated will be stored in DBJV's Document Control and in the EDMS System.

24.7 Appendices

PPM 1.24-1A Walk Down Record Cover Sheet

PPM 1.24-1B Walk Down Record Continuation Sheet

PPM 1.24-2 Punch List

24.8 Revision History

Revision	Effective Date	Page	Description of Change

PPM 1.24-1A Walk Down Record Cover Sheet

DBJV	Form Source: PROJECT PROCEDURE MANUAL FORM	
Form Title: WALK DOWN RECORD COVER SHEET Walk Down #_____	Revision No. /Status Form Revision Date: ___/___/____	Form No.: PPM 1.24-1A Form Page: 1 of 1

Walk Down Scope Description: ☐ **Preliminary** ☐ **Final**

Date Generated: ___/___/___

Sheet____ Of___

Walk Down Team Members: (Print Name/Company Represented, then Initial/date entry)

_____/_____ _____/_____

_____/_____ _____/_____

_____/_____ _____/_____

_____/_____ _____/_____

_____/_____ _____/_____

LIST OF APPLICABLE DRAWINGS AND SPECIFICATIONS
(Number, Title, Rev.)

Number	Title	Rev.

PPM 1.24-1B Walk Down Record Continuation Sheet

DBJV	Form Source PROJECT PROCEDURE MANUAL	
Form Title **WALK DOWN RECORD CONTINUATION SHEET** **Walk Down No._____**	Form No. /Status Form Revision Date __/__/____	Form No. PPM 1.24-1B Form Page 1 of 1
Walk Down Scope Description:		**Date Generated:** ___/___/___ **Sheet____ of___**

Item No.	Drwg/Spec No.	Walk Down Item Description	A/R	Explain Rejects (Inspection Summary)

PPM 1.24-2 Punch List

DBJV	Form Source: PROJECT PROCEDURE MANUAL		
Form Title: **PUNCH LIST** ☐ Preliminary ☐ Final		Revision No.	Form No. PPM 1.24-2
		Form Revision Date __/__/____	Form Page 1 of ___

Punch List Scope Description: Walk Down #_____ ***Date:*** _____

WD Item No.	Punch List Description	Date Completed	Closure Signatures		
			DBJV	Developer	DEN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

25 PPM 1.25. Stop work order

25.1 Purpose and Scope

- The purpose of this procedure is to assign responsibilities and establish controls for reporting, resolving, tracking and closing out of a Stop Work Order (SWO) in accordance with the requirements of DBJV's Design and Construction Quality Management Plan (D&C CQMP).
- This procedure describes the process for initialling, review, approval and tracking of a SWO.

25.2 Definitions

- Non-conformance: A condition that, for any reason, will not be brought into compliance with the established design requirements.
- Corrective Action: Measure taken to rectify conditions adverse to quality and, when necessary, to preclude repetition.

25.3 Responsibilities

- Preparation by the Design & Construction Quality Manager (D&C QM).
- Review by the Construction Manager (CM).
- Approval by the Design & Construction Project Director (D&C PD).

25.4 Procedure

- Identification of Conditions Necessitating Stop Work Order
  - A non-conformance (PPM 1.9), is initially identified and work is still proceeding that will result in more damage to an item or pose a safety risk; or
  - A Corrective Action Report (CAR) , (PPM 1.10) or an audit finding, (PPM 1.11) has been issued to an organization and deficient work processes and non-conforming conditions remain uncorrected resulting in continuing damage to items, unsafe conditions and unacceptable quality of the work.
- Processing of Stop Work Orders (SWO)
  - Uncontrolled work process(es) that may cause damage to items may be identified either by email, letter, on a daily inspection report (DIR) (PPM 1.27), NCR or audit finding.
  - The particular uncontrolled work activity (ies) shall be promptly reported to the D&C QM who will initially evaluate the situation and determine if it warrants the issuance of an SWO.
  - If so, the D&C QM will complete and sign a SWO form (PPM 1.25-1) and transit it to Document Control (DC)
  - Upon receipt of the SWO in DC, the document is immediately forwarded to the responsible organization for implementation with copies distributed to both the D&C PD and the Developer QEM.
  - The responsible person / organization addresses corrective action and will inform the D&C QM prior to implementing the corrective action for verification. He will send the document to DC whom upon receipt will log it into the system and forward the original to the D&C QM.
  - The D&C QM or his designee will review the proposed response/corrective action. The D&C QM will either accept the response/corrective action or return it to the responsible person/organization to further address the SWO issues.
  - The responsible person/organization will ensure that the work activity in question will not be allowed to resume until appropriate action to control the non-conforming condition has been corrected.

- Once the SWO is acceptable and the SWO issue has been corrected, the D&C QM or his designee will sign and close the SWO.
- The original SWO form will be forwarded by the D&C QM to DC for filing into DBJV's EDMS. Copies of the closed SWO will be forwarded to both the D&C PD and the Developer's QEM.
- Work activity that was affected by the SWO will start again.

25.5 Appendices

PPM 1.25-1 Stop Work Order (SWO) Form

PPM 1.25-2 Stop Work Order log form

25.6 Revision History

Revision	Effective Date	Page	Description of Change

DBJV

GREAT HALL PROJECT

Form Title	Revision No. / Status	Form No.
Stop Work Order	0	PPM 1.25-1
	Form Revision Date:	Page No. ____ of ____

Stop Work Order No.	Responsible Organization Subcontractor	Issue Date

Affected Work Area, Item or System:	Requirement(s) Not Met:

Description of Work Activity/ies Impacting Quality (ref. NCRs, CAR, Audit Reports, etc.):

Prepared By: _____ D&C QM ___ Title Date:

APPROVALS

Name & Signature (of person reviewing recommendation)	Title/Company:	Date:
_____ Name and signature	D&C Quality Manager / DBJV	

SWO RESPONSE

Prepared By: _____ Date: _____

COMPLETION OF CORRECTIVE ACTION

Name & Signature (of person responsible for corrective action)

Verification that Corrective Action is Complete:

Signature/Title:

D&C QM

PPM 1.25-2 Stop Work Order Flowchart

Stop Work Order Log form, PPM 1.25-2

SPV		**Stop Work Order Log**	**QUALITY SYSTEM** **FORM: PPM 1.25-2**	
PROJECT: Great Hall Project				
SWO No.	**Date Issued**	**Brief Description of SWO**	**Status O/C**	**Date Closed**

26 PPM 1.26. Request for Information (RFI)

26.1 Purpose

- The procedure defines the methods, record keeping, lines of communications, and responsibilities of the Construction Management Team (CMT), the Construction Design Team, the Design Team, and the Design Consultant involved with requests for information (RFI).
- This procedure covers inquiries (contractual, administrative, etc.) and clarification of technical matters (except request for design changes covered by procedure PPM 1.30, Preparation and Control of Field Changes) originated by DBJV for formal response by the Design Consultant or its authorized representatives.

26.2 Definitions

- Request for Information (RFI): is intended to document a request for design clarification, design intent, supplemental instructions or clarifications to issued Design Documents. An RFI may be initiated by either DBJV or its subcontractors (with DBJV's approval).

26.3 References

- DBJV Design and Construction Quality Management Plan (D&CQMP)
- Development Agreement (DA)
- The Project Management Plan (PMP)

26.4 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Design Manager (DM) or the Construction design Manager (CDM).
- Approval by the General Manager (GM).

26.5 Procedure

- The RFI (form PPM 1.26-1) shall be used to secure clarifications from the Design Consultant or its authorized representative for the following types of questions, as a minimum:
  - Clarifications to design intent of issued specifications;
  - Clarifications that affect the operation and/or safety of equipment controls or components;
  - Dimensional interference clarifications;
  - Clarification of temporary facilities not clearly shown on Design Documents;
- Each RFI shall identify the name of the originator who may be contacted for more information. To ensure appropriate prioritization, all RFI's shall specify a response due date.
  All RFI's shall state the problem or the existing condition, list the affected design documents, and be accompanied by the appropriate sketch(es), as necessary. Each RFI shall address/contain only one subject for simplicity of tracking.
- The Construction Team will request a RFI number from the Construction Design Team who will update the log accordingly assigning a unique number to the submittal
- The submittal will be transmitted to the Construction Design Manager or designee who will determine if the submittal will be reviewed and approved by the DBJV or if it will be transmitted to the Design Consultant for their review and response.
- If the submittal will be reviewed by DBJV, the Construction Design Manager or his designees will review the submittal.

- Once a response of the submittal has been established the submittal will be transmitted back to the Construction Design Team for updating the log (PPM 1.26-2). A copy of the response will be transmitted back to the originator who initiated the submittal.
- DC will log (PPM 1.26-2) and file in DBJV's EDMS all completed RFI's, together with attachments, such as drawings, sketches, etc. and their response with any attachments (PPM 1.3, Documents and Data Control). The documents will be sent to Developer.

26.6 Appendices

PPM 1.26-1 Request for Information form

PPM 1.26-2 Request for Information log form

26.7 Revision History

Revision	Effective Date	Page	Description of Change

DBJV

Request for Information (RFI) form. PPM 1.26-1

Contract: Great Hall Project		RFI No:
Raised By:	Area:	Date response required:
For the Attention of the Construction Design Manager: We hereby seek additional information for the following: Please, include drawing's name, revision and date		
Number of Additional Sheets (attached): Please,attach drawings/markups	Signed: Date:	

To Be Completed By Design Team/ Construction Design Team/Design Consultant:

Response: *(When you complete this section return RFI to Construction Design Team)*	
Number of Additional Sheets on the response (attached):	Signed: Date:

To Be Completed By Construction Design Manager:

☐ Closed ☐ Additional Information required
See RFI No:

Name:	Position: CDM	Signature:	Date:

DBJV	RFI log	QUALITY SYSTEM FORM: PPM 26-2

PROJECT:
Great Hall Project

RR No.	Date Identified	RFI Details (Summary)	RR response	Status O/C	Date Closed

27 PPM 1.27. Daily Inspection Report (DIR)

27.1 Purpose

- The purpose of this procedure is to assign responsibilities for documenting oversight inspections and tests, including documentation and reporting on this Project for construction-related work activities in accordance with the requirements of the Construction Quality Management Plan (CQMP).
- This procedure will describe the oversight inspection process performed by both the Construction Management Team (as QC) and the QA Team personnel to verify the quality of the work being performed by the DBJV Construction workforce and/or subcontractors. Oversight inspection is done to ensure that the work complies with established design requirements. This procedure will also include the establishment of the appropriate inspection and test checklists as a reference and will record the results during the oversight inspections and tests verifications process.

27.2 Definitions

- Non-conformance: A log of non-conformances (minor deficiencies - Open Items Log) that documents their existence, status (open/closed), and what solution was implemented to close these items (upgrading of an NCR).
- Inspection: The process of measuring, examining, testing, gauging, observing, or comparing an item to applicable requirements.

27.3 References

- Design and Construction Quality Management Plan (D&C QMP).
- Construction Detail Procedures (CDP).
- Process Procedures Manual (PPM).

27.4 Responsibilities

- Preparation by the D&C Quality Manager (D&C QM).
- Review by the Construction Manager (CM).
- Approval by the D&C Project Director (D&C PD).

27.5 Procedure

- General
  - Documenting the inspection and testing process will be performed by both the Construction Management Team (as QC) and the QA Team using currently approved Design Documents, and/or inspection checklists. Inspection checklists should be completed and attached to the Daily Inspection Report (PPM 1.27-1 or PPM 1.27-2).
  - Daily inspections performed during a work shift shall be recorded using a DIR. Inspections shall be recorded in the field the day they are performed, and, preferably, as they are performed.
  - The key parts of a DIR are:
    - Date, Inspector Name, and Inspector's Signature;
    - Work Area Number;
    - Type of Work – structure, architecture, MEP, etc.;
    - Location of work area (unique identifier);
    - Organization performing work – could be DBJV, subcontractor or independent testing laboratory

- Applicable drawing description and revision number;
- Applicable specification and revision number;
- Unresolved issues, if any
- Visitors
- Safety Issues
- Meetings
- Verbal Instructions

- DIR forms are assigned separately for each QC (PPM 1.27-1) and QA (PPM 1.27-2) individual writing a report.
- When checklists are utilized, they should be developed using applicable codes, standards and specifications and performed to the other appropriate PPM's or CDP's. Checklists should also include accept/reject criteria contained in applicable drawings and specifications. In such instances, the drawing and/or specification number and revision shall be listed. They will be referenced on the DIR.

  Note: Checklists are an aid to be used by those performing inspections to ensure all relevant characteristics are checked. Applicable requirements are contained in approval drawings, specifications and referenced codes and standards. QC/QA inspectors are expected to perform any additional checks they deem appropriate based on existing conditions.
- A photo may be taken during the course of an inspection. In such cases, the photo is dated and a description of the photo is provided. A description of what is shown by each photo taken is entered in the DIR "Other Notes".

- Identification of Open Items and Non-conforming Conditions
  - Non-conformances (NCRs), or Open Items, are first identified on a DIR normally. The non-conforming condition is described in the "Unresolved Issues/Factors contributing to Delay" section on the DIR form. The generation and processing of Open Items or a Non-conformance Report is described in PPM 1.9.
  - When closing an NCR, a new DIR entry is made and the DIR date and Item number is noted on the Non-conformance Report block "verification that Corrective Action is Complete" by the D&C QM, when applicable.

27.6 Appendices

PPM 1.27-1 QC Daily Inspection Report (DIR)

PPM 1.27-2 QA Daily Inspection Report (DIR)

27.7 Revision History

Revision	Effective Date	Page	Description of Change

FORM No.: PPM 1.27-1

DBJV Great Hall Project

DAILY QC INSPECTION REPORT

NUMBER OF DOCKETS ATTACHED: _____ DATE: _____

TIME OF DAY (Circle): AM / PM LOCATION: _____

WEATHER CONDITION: TEMPERATURE:

GENERAL DESCRIPTION / PROGRESS OF THE WORKS:

VISITORS TO THE SITE:

TESTS/INSPECTIONS:

SAFETY - ACCIDENTS, INJURIES, OR UNUSUAL EVENTS:

GENERAL INFORMATION:

COST CODE	SUBCONTRACTOR	NUM. OF WORKERS	LIST OF MACHINERY	AREA OF ACTIVITY	ACTIVITY	WORK DESCRIPTION	HOURS

OBSERVATIONS:

SIGNATURES:

FILLED IN BY: _____ SUPERVISED BY: _____

SIGNATURE: _____ DATE: _____ SIGNATURE: _____ DATE: _____

QC / QA DATE:

FORM No.: PPM 1.27-1

DBJV Great Hall Project

(CONTINUED) DAILY QC INSPECTION REPORT

MEETINGS AND SIGNIFICANT DECISIONS:

UNRESOLVED ISSUES / FACTORS CONTRIBUTING TO DELAY:

VERBAL INSTRUCTIONS GIVEN TO SUBCONTRACTOR PERSONNEL:

CONCRETE:

COST CODE	PLANT	AREA OF ACTIVITY	ELEMENT	CONCRETE CLASS	VOLUME

MATERIAL DELIVERIES:

SUPPLIER	MATERIAL	AREA

other:

COST CODE	WORK	SUPPLIER	AREA OF ACTIVITY	LOCATION	QUANTITY

ADDITIONAL INFORMATION

OBSERVATIONS:

DBJV Great Hall project

QA Daily Inspection Report (QA DIR), form PPM 1.27-2

Subcontractors:_____ Report By:_____

Date: _____ Area: _____

WEATHER

TEMPERATURE:	CONDITIONS :	AM		PM
Low Temperature		☐	Partly Cloudy	☐
High Temperature		☐	Cloudy	☐
		☐	Windy	☐
NOTES:		☐	Rain	☐
		☐	Snow	☐
		☐	Other _____	

☐

VISITORS TO THE SITE:

TESTS/INSPECTIONS:

SAFETY

ACCIDENTS, INJURIES, OR UNUSUAL EVENTS:

PROGRESS OF WORK

WORK AREA:_____

Description:

WORK AREA:
Description:

WORK AREA:
Description:

KEY ACTIVITIES AND MATERIAL DELIVERIES:

MEETINGS AND SIGNIFICANT DECISIONS:

UNRESOLVED ISSUES/FACTORS CONTRIBUTING TO DELAY:

VERBAL INSTRUCTIONS GIVEN TO SUBCONTRACTOR PERSONNEL:

OTHER NOTES:

28 PPM 1.28. Continual Improvement.

28.1 Purpose and Scope

- To ensure that DBJV has developed a procedure to address the requirements of the Development Agreement and ISO 9001.
- This procedure will cover the processes to be implemented for the continual improvement of DBJV's Quality Management Plans.

28.2 Definitions

- Audits: A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of the quality management system has been developed, documented and effectively implemented in accordance with specified requirements.
- Continual Improvement: An activity(ies) in which an organization carries out tasks to make incremental improvements, day after day.
- Kaizen: A Japanese term of Kai "change" and zen "good" and understood to connote "gradual unending improvement" of all areas of a company and not just quality.
- Quality Policy: The overall intentions and directions of an organization related to quality as formally expressed by top management.
- Quality Objective: The goals a company is seeking to achieve as related to quality.

28.3 References

- The Design and Construction Quality Management Plan (D&C QMP).
- The D&C Health, Safety and Environmental Management Plan (D&C HSEMP)
- The Development Agreement.
- ISO 9001

28.4 Responsibilities

- Preparation by the Design and Construction Quality Manager (D&C QM)
- Reviewed by the Construction Manager (CM)
- Approval by the D&C Project Director (D&C PD)

28.5 Procedure

- DBJV will utilize the Kaizen approach to improve itself both in company management and in quality for this project.
- DBJV's approach of self-improving in all areas will help to increase the probability of enhancing customer satisfaction (both internal and external) by meeting or exceeding the quality requirements for this project.
- To achieve the above, it will take the participation and commitment of both management and all participants on this project to make this succeed.
- To achieve the objective of this procedure, the following processes will be utilized:
  - Management Review (PPM 1.1)
  - Customer Feedback (PPM 1.12)
  - NCR's (PPM 1.9)
  - Audits (PPM 1.11)
  - C.A.R.s (PPM 1.10)
  - Output from meetings (both internal and external)

- Recommendations/suggestions from DBJV members or team members

- From the results gleamed from the above, the following will be developed:
  - Trend analysis (analysing and evaluating the current circumstances and identify areas for improvement)
  - Set objectives for improvement
  - Meet with Key Personnel to attempt to find solutions for problems
  - Determine what resources are needed to implement the solution for improvement
  - Implement corrections to the program
  - Measure, verify and review the results of modifications or changed implemented

The basic principles of the above are widely recognized as the PDCA cycle.

- The results from the above can and will be measured by the following:
  - Reduced NCR's for the same problems
  - Reduced or eliminated Audit Findings for the same problems
  - Revised procedures (PPMs and CDPs) that streamline and reflect a progressive improvement to the different processes
  - Better customer satisfaction (both internally and externally) on the work being performed
- The results of the above will be reviewed and evaluated by DBJV's management (PPM 1.1).

28.6 Appendices

None

28.7 Revision History

Revision	Effective Date	Page	Description of Change

29 PPM 1.29. Control of Instruments Measuring and Test Equipment (IM&TE)

29.1 Purpose and Scope

This procedure establishes requirements for Instruments Measuring and Testing Equipment (IMTE) used by DBJV personnel, subcontractors and independent testing laboratory personnel utilized to accept work. DBJV personnel may utilize supplier or subcontractor (IMTE) provided that the supplier's or subcontractor's QA/QC Plan and procedures describe their calibration control process, the plan and procedures have been approved by DBJV and stickers/documentation shows that the calibrations are current.

This PPM covers industry-recognized tools, equipment, instrument, gauges and similar devices where calibration requirements are normally applied. These requirements of this procedure are not applicable to those everyday fabrication or (IMTE) where calibrated precision is not a requirement (i.e. rulers, measuring tapes, etc.).

29.2 Definitions

- Instruments Measuring and Testing Equipment (IMTE): devices or systems used to calibrate, measure, gage, test, or inspect in order to control or acquire data to verify conformance to specified requirements.
- Precision: the degree of resolution of measurement, for example, readability.
- Testing: an element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operation conditions.

29.3 References

- Development Agreement.
- PPM 1.9 Control of Non-Conforming Products.
- American Society for Testing and Materials Standards (ASTM).

29.4 Responsibilities

- Preparation by the Construction Manager (CM).
- Reviewed by the Design and Construction Quality Manager (D&C QM).
- Approval by the Design and Construction Project Manager (D&C PM).

29.5 Requirements

29.5.1 Calibration and Control

Calibration

IMTE shall be calibrated at prescribed time periods or usage and whenever the accuracy of the equipment is suspect. A log of calibrated instruments and equipment used shall be maintained by the organization, subcontractor or DBJV individual who are responsible for the use of the instruments and/or equipment (unless the organization or subcontractor has a pre-approved procedure).

Calibration shall be checked against certified instrument or equipment having known valid relationships to and traceable to the National Institute of Standards and Technology NIST. Where duplication of requirements exists, the manufacturer's recommended procedures will form the basis for the calibration and shall be documented in a calibration procedure.

Controls

IMTE controls are based on the established reference standards such as ISO 10012-1, Metrological Confirmation System for measuring equipment (non-mandatory reference).

If the IMTE is calibrated in the field, that calibration shall be done only by the qualified personnel.

Calibration services provided by an outside supplier shall be subject to audits by DBJV and will comply with ISO 17025 requirements.

Procedures for performing or specifying calibration of IMTE require that calibration standards have an equal or greater accuracy that the equipment being calibrated, unless limited by the state of the art.

Out-of-calibration devices shall be tagged and segregated, or both, and not used until they have been re-calibrated. Measuring or test equipment consistently found to be out of calibration shall be repaired or replaced.

IMTE shall be properly handled and stored to maintain accuracy.

29.5.2 Calibration Records

Records shall be established and maintained to indicate calibration status and the capability of measuring and test equipment to satisfactorily perform their intended function. A calibration history sheet, shall be maintained as a project record by the organization, subcontractor or individual responsible for using the instrument and/or equipment. Other records include work orders, service tickets and any documents associated with the task of calibration. Subcontractors will submit calibration logs monthly.

29.5.3 Lab Equipment

The devices to be used in the testing and inspection on the project will be calibrated by the labs, using their own calibration procedures and logs.

29.6 Appendices

None

29.7 Revision History

Revision	Effective Date	Page	Description of Change

30 PPM 1.30 Preparation and Control of Field Changes

30.1 Purpose and Scope

- The purpose of this procedure is to define the standard work process for the development, implementation and processing of field changes.
- This procedure is applicable to all changes to permanent Project Design Work/Processes during the construction process that are initiated by DBJV and/or DBJV's authorized representative that will require minor changes, modifications and/or re-design by DBJV and/or the Design Consultant or its authorized representative.

30.2 Definitions

- Field Change Request (FCR): a document used to make a change to the design documents already issued for construction (IFC).
- FC will affect the original design and requires revision, amendment and/or re-design by DBJV and/or the Design Consultant or its authorized representative.
- Field Changes will be made by the Construction Design Manager (CDM) and will be initiated by the Construction Design Team (CDT) and/or Construction Management Team (CMT) through a Request For Information (RFI) (PPM 1.26 Request For Information) or a Field Change Request PPM 1.30-2.

30.3 References

None

30.4 Responsibilities

- Preparation by the Construction Design Manager.
- Review by the D&C Quality Manager (D&C QM).
- Approval by the General Manager (GM).

30.5 Procedures

- A Field Change (FC) (Form PPM 1.30-2) shall be initiated by the Construction Team (CT) through a Request for Information (RFI) and/or by the Construction Design Team (CDT) upon identification of an omission, mistake and/or change needed to be made to the Issued For Construction (IFC) drawings. Also, FC Requests, mark-ups will be handed in.
- Changes on the Design Documents shall be evaluated and analysed by the Construction Design Manager (CDM) or his designee. The CDM or his designee shall ensure the need and adequacy of the change is in compliance with project technical requirements and that the implementation of the field change to the Design Documents does not conflict with other Design Documents.
- A Field Change log (Form PPM 1.30-1) will be kept updated by the Construction Design Team (CDT).
- A Request For Information (RFI) will include a sketch /mark-up when Field Change is initiated by the Construction Team (CT).
- Once the drawings are revised and the document is approved by the CDM, Document Control will upload the new document in DBJV'S EDMS (PPM 1.3 Document and Data Control) which will be also sent to the Developer.
- The Construction Design Team (CDT) or delegated organization will re-design, revise or amend the IFC drawing(s) and will note on the drawings a reference to a 'FC' (Field Change). The 'FC' drawings shall supersede the latest IFC drawings and shall become the IFC drawings. Further Field Changes

required on the 'FC' drawings shall become the new IFC drawings. Further Field Changes required on the 'FC' drawings shall be noted as 'FC X' with 'X' being the number of the revision to the 'FC' drawings.

- The review process will be based on a signature acceptance of the changes in both the handed in mark-up and the pre-final FC.
- Upon receipt of the revised IFC drawing, Document Control shall ensure distribution to all relevant parties (Quality, Construction, subcontractors, etc.) by uploading the drawing to DBJV's EDMS and will submit the document to the Developer
- Document Control shall maintain all FC's and related documents in the DBJV's EDMS.
- All field changes shall be subject to the same design control standards that were applied to the original design. These changes shall be performed by a Professional Engineer (PE) or Architect from DBJV or Design consultant.
- The relationship between RFI, FC, and its revisions is further defined in PPM 1.34 in addition to the review process.

30.6 Appendices

PPM 1.30-1 Field Change log form

PPM 1.30-2 Field Change Request form

30.7 Revision History

Revision	Effective Date	Page	Description of Change

PPM 1.30-1 Field Change log form

DBJV

Field Change log form

FORM No.:
PPM 1.30-1

FIELD CHANGE No.	REQUEST DATE	GENERATOR	REASON OF CHANGE	AFFECTED DOCUMENTS (WHICH ARE SUPPLEMENTED BY THE GENERATED ONES)	FIELD CHANGE GENERATED (WHICH SUPPLEMENTS THE AFFECTED ONES)	ISSUED DATE

Field Change Request form, PPM 1.30-2

DBJV	Great Hall Project	
Form Title FIELD CHANGE REQUEST (FCR)	Revision No. / Status Form Revision Date:	Form No. Page No. 1 of 1

F.C.R. No.:	F.C. DRAWING SHEET NAME:	Sheet
		1 of 2 (sheet 2 is the drawing)

Affected Design Documents:

AFFECTED PACKAGE:		AFFECTED SHEET:	
Set Revision	Date of Set Rev		Date of Sheet rev
			7/9/14

F.C.R. Reason / Description:

(Sketches Attached - Sheets ____ thru ____)

F.C.R. generated by:

Name:	Position:	Signature:	Date:

F.C. approved by:

EOR:

Name:	Position:	Signature:	Date:

CDT:

Name:	Position:	Signature:	Date:
	C.D.M.		

31 PPM 1.31 Preparation of On-Going As-Builts and Final As-Builts

31.1 Purpose and Scope

The procedure defines the method for DBJV's preparation, control and documentation of field-directed redline changes to Project Design Drawings and Specifications on this Project.

This procedure applies to all Design Drawings and Technical Specifications identified by contract or issued by DBJV from the Design Consultants that are used for the construction of this Project. Variations, changes, or additions to the design drawings or specifications that reflect as-built conditions will be documented by DBJV using redlines.

31.2 Definitions

- Redline Changes: A document depicting, pictorially or in text, a variation, change, or addition to a project design document. No additional IFC drawings signed by a PE are needed.
- Field Directed Changes: Changes and as-built conditions that do not require Design Consultants approval prior to performing the work. Examples of field directed changes include:
  - As-built location of designed commodities (material or products) installed within prescribed design tolerances;
  - As-built location of field-routed commodities;
  - Field selection of alternatives permitted by the Design Documents; and
  - Installation of temporary construction facilities, infrastructure, and utilities required for the construction of the Project, which will remain as permanent.
- Document Control will use a log of field documents to track current design document revisions and distributions.

31.3 References

- Design and Construction Quality Management Plan (D&CQMP)
- PPM 1.30 Preparation and Control of Field Changes

31.4 Responsibilities

- Preparation by the Construction Design Manager (CDM).
- Review by the D&C Quality Manager (D&C QM).
- Approval by the D&C Project Director (D&C PD).

31.5 Procedures

31.5.1 Standard Work Process

- The Construction Design Team (CDT) and/or the Construction Management Team (QC) will prepare a field directed change redline to document the variation from the Project Design Drawings and Specifications. This could be done before or after the construction.
- The CDM and/or the DC shall determine whether the variation can documented by a field directed change.
- The CDM will follow the criteria below to make this determination:
  - The variation is within design drawing, contract, and technical specification requirements;
  - The variation involves an editorial error or discrepancy in the documents and does not affect the intent of the drawing or text in question;

- The variation provides additional assembly information for the crafts to perform their work such as field weld numbering, material stock codes, or directions.

- If the variation does not satisfy the criteria for a field directed change redline, the CDM shall prepare the appropriate documentation (e.g. field change request or assist with the non-conformance report) to document the variation. In such cases, a copy of the redline will be used as an attachment to the applicable change document.
- The CDM shall determine when the field directed change redlines are required and shall ensure that all field supervisors and subcontract administrators are cognizant of the criteria outlined in this procedure.

31.5.2 Preparation and Use of Redlines

- Redlines shall be prepared using the 8½" x 11" RDF shown in Appendix 1.31/1 with a mark-up of an engineering drawing attached (if required). Each RDF shall include the following as a minimum:
  - If larger drawings are being used to document the as-built information, the RDF shall be used as a cover sheet to provide the information;
  - Redlines require a written report, brief explanation of the field conditions and the explanation of the change or clarification. They shall include some annotation denoting no additional changes to the drawing and no additional changes to the specifications;
  - In case a clarification drawing is needed (no PE signature required) will be logged as a construction drawing sketch CDS;
  - In case a clarification to the specifications is needed it will be included in the report; and
  - Once the report is finished Document Control, Construction and all the parties that have been involved will get a copy.
  - If the variation does not satisfy the criteria for a field directed change redline, the CDM shall prepare the appropriate documentation (e.g. field change request or assist with the non-conformance report) to document the variation. In such cases, a copy of the redline will be used as an attachment to the applicable change document.
  - The CDM shall determine when the field directed change redlines are required and shall ensure that all field supervisors and subcontract administrators are cognizant of the criteria outlined in this procedure.

31.5.3 As-built drawings

- When the construction has been done meeting the design criteria and tolerances, as buit drawings will be issued the same way as on the design phase.
- When the construction has been done and a redline is required the Construction Design Team will provide as built drawings attached to the redline report.

31.5.4 Redline Revisions

- Minor revisions, clarifications, or corrections to a redline may be made via notation in the lower block indicated on the RDF. The number of the revision enclosed by a triangle should accompany any supplemental comments or attachments and the source of the comments should be clearly identified.

31.6 Appendix

PPM 1.31/1 Redline Document form

31.7 Revision History

Revision	Effective Date	Page	Description of Change

32 PPM 1.32. Structural Assessments (Audits)

32.1 Purpose and Scope

- This procedure will primarily describe the process for evaluating the structural condition of the existing structures through the combination of several non-destructive evaluation (NDE) methods with coring, laboratory testing, and visual survey inspections. The structural capacity of an existing structure will be verified to comply with a Load Rating to ensure the requirements established in the D&C Contract and the Development Agreement.
- This will ensure whether the existing structure will be acceptable to form part of the final works satisfying contract requirements and current specifications. There will be coordination between the different design disciplines during this process to ensure that due diligence of the quality assurance review process will be achieved.

32.2 Definitions

- Development Agreement: A turnkey agreement under which DBJV will perform the design and construction work for the Project.
- Design Review: An evaluation by DBJV's Design Team (DT) of the design documents to assess that all of the requirements are present and that the design consultants have met the requirements that have been established in the Technical Documents.
- Sub-contractor: A company, organization or individual providing a service or product, which may include, labor, materials or other facilities or resources to DBJV.
- Inspection, Measuring, and Test Equipment (IM&TE): Devices or systems used to calibrate measure, gauge, test, or inspect in order to control or acquire data to verify conformance to specified requirements.
- Precision: The degree of resolution or accuracy of measurement, for example, readability.
- Calibration: Comparison of a measurement standard or item of measuring and test equipment to a standard of higher accuracy or item of measuring and test equipment of closer tolerance to detect and quantify inaccuracies by adjustment.

32.3 References

- The Design and Construction Quality Management Plan (D&C QMP) in the PMP.
- Development Agreement, Technical Requirements, Technical Documents.

32.4 Responsibilities

- Preparation by the Design Manager (DM).
- Review by the D&C Quality Manager (D&C QM).
- Approval by the D&C Project Director (D&C PD).

32.5 Procedure

- Structural conditions surveying/monitoring investigation companies will be employed utilizing PPM 1.5 or PPM 1.7 and the Development Agreement.
- The firms will be managed by the DBJV's Design Team and will develop a particular survey/monitoring plan for each individual existing structure requiring to be assessed.
- The firms will utilize only calibrated equipment for the structural monitoring that is calibrated to the manufactures requirements or as minimum on a yearly basis.

- The DBJV Design Team will assess the viability of including existing structures into the final works. Once a structure has been identified as potentially reusable, an external structural investigation company will be appointed to carry out a full investigation of the structure(s).
- Structural assessment will be described as follows:
  - Load rating: verify existing structural capacity to determine compliance with parameter required under the Development Agreement. Available as-built drawings will be released to the external appointed company for their assessment. Evaluation work will include checks and measurements on site. Modeling of the structure and calculations will be performed compiling available information included from measurements taken on site.
  - Ground inspections: An inspection will be performed by experienced inspectors including but not limited to the following:
    - Visual inspections
    - Fatigue assessments
    - Deterioration degree
    - Impact of chemical agents such as sulfate, chlorine and others
    - Cracks
  - Condition Report: Findings and conclusions will be summarized in a report made by the firms performing the work activities. The report will determine one of the three following possibilities:
    - Use–as-is: Relevant information and the as-built reports will form part of the final design of the structure.
    - Structural reinforcement improvement: When the report concludes that structure may be brought into compliance with contract parameters and current specifications a detailed structural reinforcement design will be required and reviewed as per PPM 1.21.
    - Unacceptable: When the report concludes that the existing structure(s) may not be brought into contract parameters and current specification a different alternative must be sought as demolition and new structural design.

32.6 Appendices

None

32.7 Revision History

Revision	Effective Date	Page	Description of Change

33 PPM 1.33. Noncompliance points from parties

33.1 Purpose and Scope

The purpose of this procedure is to define the standard work process for those cases when Noncompliance Points are issued by DEN.

This procedure is applicable to all Noncompliance Points received formally through the channels and procedures defined in the PMP and per the Development Agreement.

33.2 Definitions

- Noncompliance Point: A document which reflects any breach or failure in performance of obligation under the Development Agreement documents.
- CAR: Reports that may be generated as a result of an Audit Finding, Developer Complaint, or by some other means such as repeated NCR's with the same cause. The Corrective Action Report is the document initiated by the D&C QM for addressing and resolving a non-conformance to the QMS.
- Preventative Action (PA): An action to prevent a non-conformance.

33.3 References

- Development Agreement.
- PPM 1.10 Corrective Action Report.
- PPM 1.11 Internal Audits.

33.4 Responsibilities

- Preparation by the Construction Design Manager (CDM).
- Review by the D&C Quality Manager (D&C QM).
- Approval by the D&C Project Director (D&C PD).

33.5 Procedure

- Noncompliance Points, being formal notifications that are received by DBJV, will be documented proof of a potential issue that has been observed on different Project processes/procedures.
- DBJV, upon receipt of the Noncompliance Points notification, will update the Noncompliance Points Log (PPM 1.33-1). The log will be periodically reviewed to identify potential trends which need to be remediated through a Corrective Action Report (CAR, PPM 1.10).
- Additionally, the log will reflect the status of each Noncompliance Point Issue. DBJV may issue a Non-Conformance Report (NCR, PPM 1.9), if it is deemed appropriate based upon what was identified with the Noncompliance Point issue.
- The Noncompliance Point will be addressed to comply with the Development Agreement requirements.

33.6 Appendices

PPM 1.33-1 Noncompliance Points Log

33.7 Revision History

Revision	Effective Date	Page	Description of Change

DBJV		NONCOMPLIANCE POINTS LOG				QUALITY SYSTEM
						FORM: PPM 1.33-1
PROJECT:	Great Hall Project					
NCP No.	NCP DATE	ISSUING ORGANIZATION	DESCRIPTION	NCP ISSUED BY DEN (YES/NO)	DATE OF RESPONSE	STATUS OF NCP

34 PPM 1.34. Field design or design drawing revision by the Construction Design Team

34.1 Purpose and Scope

- The purpose of this procedure is to define the standard work process for the development, implementation and processing of field changes or design performed by the Construction Design Team or their representatives.
- This procedure is applicable for all field changes or design to permanent Project Design Work/Processes during the construction process. This work will be initiated by DBJV's Construction Design Team and/or DBJV's authorized representative. This work will be for minor changes, clarifications, further details, modifications and/or re-design by DBJV and/or the Design Consultant or their authorized representative.

34.2 Definitions

- Field Change (FC): A document used to make a change to the design documents that are already Issued For Construction (IFC). The FC will affect the original design and requires revision, amendment and/or re-design by DBJV and/or the Design Consultant or its authorized representative.
- Request for Information (RFI): is intended to document a request for design clarification, design intent, supplemental instructions or clarifications to issued Design Documents. An RFI may be initiated by either DBJV or its subcontractors, (with DBJV's approval).
- Design Documents: Drawings or specifications.

34.3 References

- Development Agreement, Technical Requirements, Technical Documents
- Project Management Plan (PMP),
- The D&C Quality management Plan (D&C QMP)

34.4 Responsibilities

- Preparation by the Construction Design Manager
- Review by the D&C Quality Manager (D&C QM)
- Approval by the D&C Project Director (D&C PD)

34.5 Procedures

This procedure will become applicable when a response to a RFI either requires the generation of a field design document or a modification to an original design document occurs. This Field Change will reflect both the response to the RFI (if applicable) and to the original design document. The FC will highlight those aspects that have been modified or the newly addressed issues. These Field Changes will be incorporated into the appropriate IFC folders in DBJV's EDMS and also submitted to the Developer. Also, when a change is needed on a current IFC drawing a Field Change might be issued.

Field Change form PPM 1.30-1 shall be initiated by either the Construction Team (CT) through a Request for Information (RFI) and/or mark-up drawings generated by the Construction Design Team (CDT). Also, a Field Change might be initiated by the Construction Design Team (CDT) if deemed necessary. This will

be done upon identification of omissions, mistakes and/or changes needed to the Issue for Construction (IFC) drawings or specifications.

A Field Change (FC) log will be kept updated by the Construction Design Team (CDT).

A RFI shall include a reference of the current document in question (desirable if include updated IFC drawings).

A Request for Information (RFI) response will reference the Field Change (FC) generated (if the FC is generated due to the RFI response).

Changes to the design Documents shall be evaluated and analysed by the Construction Design Manager (CDM) or his designee. The CDM or his designee shall ensure the need and adequacy for the change, compliance with project technical requirements, and that the implementation of the field change is documented on the design drawings and will be in accordance with the design plans. The CDM or designee upon approval of the need for the change to the drawings will update the "IFC" drawings log in Document Control (PPM 1.3).

The Construction Design Team (CDT) or their designee will design, re-design, revise or amend the IFC drawings and will note the changes as a reference to a "FC" (Field Change). The "FC" drawings or specifications shall supersede the latest IFC drawings and shall amend the IFC drawings or specifications. Further Field Changes required on a "FC" drawing or specification shall be noted as 'FC X'. The 'X' number will represent the revision of the "FC" drawing(s).

Upon receipt of the revised (now IFC document) Document Control will ensure distribution to all relevant parties (Quality, Construction, subcontractors, the Developer, etc.) to the requirement of PPM 1.3.

Document Control shall maintain all FC's and related documents in the DBJV's EDMS.

All Field Changes shall be subject to the same design control standards that were applied to the original design or new design. These changes will be performed by a Professional Engineer (PE) or Architect from either DBJV, an external engineer, or the original engineer complying to the requirements of the Colorado State Board of Registration for Architects and Professional Engineers.

- New Design Packages developed by the CDT or its Consultants

The development of any new Design Packages by DBJV or any of its Consultants will be performed to the requirements described in the PMP, D&C DQMP, DQMP and PPM 1.21 Design Review Procedures.

- Design Revisions or Design Drawings Adjustments

The following will be performed for:

- revisions of IFC documents,
- new drawings or documents that complement, clarify, or modify existing packages. This may be done by either DBJV or by a DBJV Construction Design Team Consultant.
  - The process may be initiated by either a RFI, a mark-up drawing or as directed by the CDT
  - The CDT or their designee will develop the drawings as directed by the CDM or designee.
  - The Review boxes will be completed during the review process (Design, Check & Reviewed) by either DBJV or its designee.
  - The drawing will include the name of the original designer that was on the original drawing.
  - Either the TOM or CDM will review the drawing and will forward the drawing to the appropriate Project Manager if it is considered appropriate for their review.

- The internal review will be performed by the designer, CDM or designee, and the Project Manager if considered needed; no comment log will be utilized.
- After review and approval by DBJV, the documents will be transmitted to the Developer who will forward to DEN to ensure that both are aware of any changes being made.

34.6 Appendices

None

34.7 Revision History

Revision	Effective Date	Page	Description of Change

35 PPM 1.35. 4 Phase Inspection Control Procedures

35.1 Purpose and Scope

A Four-Phase control system consisting of a Pre-Mobilization phase, Pre-Construction phase, Initial Inspection phase and Follow-up Inspection phase shall be implemented by the Quality Control Staff to ensure that construction, including that of subcontractors, fabricators and suppliers, complies with the requirements of the contract documents.

This system of management will address each definable feature of work beginning with early planning stage requirements and ending with the finished work activities. Each phase will allow the opportunity to prevent problems and deficiencies. The Four-Phase inspection process is conducted for each definable feature of work.

35.2 Definitions

None

35.3 References

- Development Agreement, Technical Requirements, Technical Documents
- Project Management Plan (PMP),
- The D&C Quality management Plan (D&C QMP)

35.4 Responsibilities

- Preparation by the Construction Design Manager
- Review by the D&C Quality Manager (D&C QM)
- Approval by the D&C Project Director (D&C PD)

35.5 Procedures

- Phase I: Pre-Mobilization Phase. This meeting will facilitate the submission of early and complete submittals. Establish Phase II approximate dates. Set up meeting approximately 2 weeks prior to insure that all the requirements have been met. PRE-WORK meeting.
- Phase II: Pre-Construction Phase. The intent of this meeting is to ensure all personnel directly responsible for the installation of the work are fully aware of all requirements. Safety, Specification's, Plans as well as any site specific requirements not covered in Phase 1. Review the list of Trade Specific Preconstruction Meeting Agenda’s.
- Phase III: Initial Inspection / 1st Work Phase. This phase is performed once a representative portion of work has been installed for each definable feature of work.
- Phase IV: Follow-Up / Final Inspection Phase. this will ensure a continuation of quality until the completion of the work feature. Trade specific checklists will need to be created for the Project.

35.6 Appendices

PPM 1.35-1 Phase I Pre-Mobilization Phase Checklist Form

PPM 1.35-2 Phase II Pre-Construction Phase Checklist Form

PPM 1.35-3 Phase III Initial Inspection Phase Checklist Form

PPM 1.35-4 Phase IV Follow up / Final Inspection Phase Checklist Form

35.7 Revision History

Revision	Effective Date	Page	Description of Change

PHASE I: PRE-MOBILIZATION PHASE CHECKLIST FORM. PPM1.35-1

Date:
Project Name:
Subcontractor Name:
Definable Feature of Work:

I. Personnel Present:

Name	Position	Company

II. Submittal Review:

1. Review Submittal Log- a review of the applicable section(s) of the specifications and contract drawings to determine submittal, shop drawing, sample, and mock-up requirements.
2. Get a commitment from the Subcontractor on the timing and date for when the required paperwork/submittals and samples will be submitted to DBJV.
3. This meeting will facilitate the submission of early and complete submittals.
4. Get name and the telephone # for the Submittal POC. Talk in detail of how you want them to come to DBJV/ Project. Highlighted, Underlined, ect.

III. Industry Standards:
Compare to industry standards.

IV. Mock-up Requirements:

1. Mock-ups will begin immediately so approval can be completed prior to Phase II: Pre-Construction Phase.
2. An agreement will be reached on planned construction procedures, tolerances, and the required level of quality expected.

V. Committed Delivery Dates:
Review the requirement to provide committed material delivery dates from the manufacturer (in writing) that is consistent with the master schedule.

VI. Testing Requirements:

1. Off-site Inspections- QC Team will inspect manufacturing facilities and material sources as specifically directed by the specifications. Additional inspections will be conducted as necessary to ensure compliance with the contract specifications. The QC Team will record off-site surveillance activities in the Project Daily Report. Where instances of noncompliance are observed, corrective action will be initiated.
2. Special Inspection Requirements: review any special inspection requirements.
3. Identify any additional Project requirements. 3rd Party requirements or Manufacture's Rep.

VII. Safety:
Review DBJV specific safety requirements for the project (code of conduct rules, project specific rules, background checks, etc.)

VIII. Review Quality Control Plan:
Review with the Subcontractor the QC Plan expectations and requirements.

IX. Comments during meeting:
Problems and deficiencies apparent during this phase and corrective action initiated. Set date for a Pre-Work Meeting. Foreman/ Lead Man from Sub-Contractor are required to attend.

X. Document Control
All QC meetings, inspections, testing, etc. should be filled and stored in the DBJV Document Control System

PHASE II: PRE-CONSTRUCTION PHASE CHECKLIST FORM (1 of 2) PPM1.35-2

Date:
Project Name:
Subcontractor Name:
Definable Feature of Work:
Owner/Architect Notified (if applicable): Yes _ No _

I. Personnel Present:

Name	Position	Company

II. Review Pre-Mobilization Phase Checklist Meeting Minutes:
Review any problems, deficiencies and corrective action items from Pre-Mobilization Phase.

III. Submittals and Material Delivery / Storage:

1. Review Submittal Log. Have all submittals required to start work been approved? Yes _ No _. If No, what items have not been submitted and/or approved?
   Discuss any close-out submittals, Warranty/O&M's
2. Are all materials on hand? Yes _ No _. If No, what items are missing?
3. Material Check- inspect all materials/equipment deliveries for: (This should be done as material arrives.)
   a. Compliance with approved submittals and specifications
   b. Damage
   c. Correct dimensions and quantities
   d. Required labeling and documentation
4. Are materials properly stored? Yes _ No _
   a. Superintendent to direct lay-down area for material.
   b. Discuss Specification/Manufacture's recommendation for storage of material as it relates to Temperature, Dunnage, ect.
   c. If No, what action will be taken?

IV. Mock-up Review:

1. Review the approved mock-up to discuss quality expectations. Can the mock-up be incorporated into the work?
2. An agreement will be reached on planned construction procedures, tolerances, and the required level of quality expected.

V. Specifications:

1. Review each paragraph of specifications. Execution portion of the specifications will be the top priority.
2. Discuss procedure for accomplishing the work. (Include labor and equipment.)
3. Clarify any differences from specifications.

VI. Preliminary Work
Ensure "Work by Others" is correct and acceptable. If not, what action will need to be taken to correct?

VII. Testing Requirements:

1. Identify test to be performed and by whom.
2. Frequency?
3. Location required?
4. Review Testing Plan.

VIII. Safety:

1. Review DBJV Safety requirements.
2. Analyze potential hazards to assure safety requirements are met.
3. All equipment checked and checklists recorded? Yes _ No _. If not, what action will be taken?

PHASE II: PRE-CONSTRUCTION PHASE CHECKLIST FORM (2 of 2) PPM1.35-2

IX. Review list of Trade Specific Preconstruction Meeting Agenda's:

1. Review for trade specific agenda items to be discussed at this Preconstruction meeting.
2. Reference the "Four-Phase Inspection Control Procedures" for a listing of these trade specific preconstruction agenda's.
3. Set a date and a time for Initial/1st Work Inspection and invite any 3rd Party, Owner QA, and Architect, if applicable.

X. Comments during meeting:

Problems and deficiencies apparent during this phase and corrective action initiated.

XI. Document Control

All QC meetings, inspections, testing, etc. should be filled and stored in the DBJV Document Control System

PHASE III: INITIAL INSPECTION/FIRST WORK PHASE CHECKLIST FORM. PPM 1.35-3

Date:
Project Name:
Subcontractor Name:
Definable Feature of Work:
Owner/Architect Notified (if applicable): Yes _ No _

I. Personnel Present:

Name	Position	Company

II. Review Pre-Construction Phase Checklist Meeting Minutes:

1. Review any problems, deficiencies and corrective action items from Pre-Construction Phase.

III. Check First Installed:

1. Is work in full compliance with plans, specifications and submittals? Yes _ No _
2. Are procedures and quality control measures being used acceptable? Yes _ No _
3. Is the preliminary work satisfactorily complete? Yes _ No _
   If not, what action needs to be taken to correct?
4. Are testing requirements being completed? Yes _ No _

Photo documentation of the Initial Phase Area

5. Safety Review: are requirements to ensure safety being met? Yes _ No _
6. Set date for Follow-up inspection

IV. Comments during meeting:
Problems and deficiencies apparent during this phase and corrective action initiated.

V. Document Control
All QC meetings, inspections, testing, etc. should be filled and stored in the DBJV Document Control System

PHASE IV: Follow up/Final Inspection Phase Checklist form PPM 1.35-4

Date:
Project Name:
Subcontractor Name:
Definable Feature of Work:
Owner/Architect Notified (if applicable): Yes _ No _

I. Personnel Present:

Name	Position	Company

II. Review Pre-Construction Phase and Initial/1st Work Checklist Meeting Minutes:
1. This phase will be conducted with scope specific BIM-360- Checklist.

III. Check any trends from Initial/1st work Inspections or any previous Follow up Inspections:

1. Add these minimum requirements to the BIM-360 checklist.
2. Are procedures and quality control measures being used acceptable? Yes _ No _
3. Has the Sub-Contractor Foreman Punched his own work, Made corrections and notified they are prepared for a final Inspection.
4. Has the client or Owners Rep been invited to Close-out/Final Inspection.
5. Is the final product- work satisfactory to the DBJV Team/ Quality Staff and the client? Yes_ No_
   If not, what action needs to be taken to correct?
6. Are testing requirements complete? Yes _ No _
7. Photo documentation of the Completed work.
8. Completion date for any deficiencies found.
9. Date for re-inspection of those deficiencies.
10. Do we have all warranties required by the Contract and specifications, O&M's in and approved.

IV. Comments during meeting:
Problems and deficiencies apparent during this phase and corrective action initiated.

V. Document Control
All QC meetings, inspections, testing, etc. should be filled and stored in the DBJV Document Control System