



CLARK COUNTY DEPARTMENT OF BUILDING & FIRE PREVENTION

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SUBJECT: TG-1-06a - PREPARATION OF A QUALITY SYSTEMS MANUAL FOR STRUCTURAL STEEL FABRICATORS

1.0 PURPOSE: This technical guideline outlines the minimum requirements for a Quality Systems Manual to meet the requirements of approved construction documents and ordinances as adopted by the Clark County Department of Building (CCBD)

2.0 SCOPE: Manuals shall detail, as a minimum, procedures used to control the fabrication process of structural steel in the fabrication facility. The manual shall identify the level of education and experience of key personnel to ascertain the production of a quality product. Manuals are required to be approved by CCBD for listing as an approved fabricator.

3.0 ABBREVIATIONS & ACRONYMS:

- AISC:** American Institute of Steel Construction
- ASNT:** American Society for Nondestructive Testing
- ASTM:** American Society for Testing and Materials
- AWS:** American Welding Society
- CCBD:** Clark County Department of Building
- HSB:** High Strength Bolts
- IAS:** International Accreditation Services
- IBC:** International Building Code
- MTR:** Material Test Report
- NCR:** Non-Compliance Report
- NDT:** Nondestructive Testing
- PQR:** Procedure Qualification Record
- QAA:** Quality Assurance Agency
- QC:** Quality Control
- QSM:** Quality Systems Manual
- TG:** Technical Guideline
- WPS:** Welding Procedure Specification
- WQR:** Welder Qualification Record

4.0 DEFINITIONS: For the purposes of this technical guideline certain terms, phrases, words and their derivatives shall be construed as specified in this section, the International Building Code and the Building Administrative Code of Clark County.

REVISION DATE: 1/1/2006
EFFECTIVE DATE: 5/10/2006

Revised By:	Concurred By:	Approved By:
/s/	/s/	/s/
Mark J. Hayes Building Inspection Specialist	Scott Telford, P.E. Principal Engineer	Theodore L. Droessler, P.E. Manager of Engineering

Approved: Acceptable to the building official

Approved Shop Drawings: Pictorial documents to show the assembly of the component materials and approved by the Registered Design Professional.

Construction Documents: Plans, specifications, supporting calculations and other data prepared to describe the design, materials, physical characteristics, location, orientation, and scope of a proposed project necessary to obtain a permit.

Controlled Document: Any document for which distribution and status are to be kept current by the issuer.

Non-Compliance Report (NCR) is a notification to the Building Official, and to the contractor, that an item was found that is not conforming to the approved construction documents. This report shall contain a descriptive of the deficiency with references to the use of unapproved documents, if applicable. This report is to be written immediately upon finding such deficiency.

Nondestructive Testing (NDT): The application of physical testing processes used for detecting discontinuities in materials without impairing the usefulness or longevity of the material.

Quality Control (QC): A managerial process which consists of the following steps: (1) Evaluate actual quality performance. (2) Compare actual performance to quality requirements. (3) Take action on the difference.

Quality Assurance (QA): An independent evaluation of quality-related performance conducted primarily for the information of those not directly involved in conduct of operations, but who have a need to know.

Registered Design Professional: An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

- 5.0 REFERENCES:** The edition of the International Building Code (IBC) that is currently adopted by Clark County is listed on the county website. Chapter 35 of the IBC lists the referenced standards adopted by the building code. The application of the referenced standards shall be as specified in Section 102.4 of the IBC. Copies of the Southern Nevada Amendments to the IBC and the Clark County Building Administrative Code are available on the county website. The Clark County website address is: www.ClarkCountyNV.com

Southern Nevada International Building Code Amendments

Clark County Building Administrative Code

International Building Code

American Welding Society (AWS), D1.1, D1.3, D1.4

American Society for Testing and Materials (ASTM)

American Institute of Steel Construction (AISC), Manual of Steel Construction LRFD and ASD

American Institute of Steel Construction (AISC) main member traceability standard

RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts

6.0 RESPONSIBILITIES

- 6.1** It is the responsibility of the CCBD Engineering Group to perform the following functions:
- 6.1.1** Review submitted QSM's for conformance to current TG's and the Clark County Administrative Code.
 - 6.1.2** Review QSM revisions and correspond with applicant to resolve non-compliances.
 - 6.1.3** Review completed third party audit reports.
 - 6.1.3.1** Coordinate and/or correspond with applicant to resolve audit findings.
 - 6.1.4** Issue approval documentation.

- 6.2** It is the responsibility of the Fabricator to perform the following functions:
- 6.2.1** Provide QSM's conforming to TG's.
 - 6.2.2** Provide QSM revisions within 30 days of a material change to the QC program.
 - 6.2.3** Provide QSM revisions as required by CCBD.
 - 6.2.4** Operate in accordance with their QSM.

7.0 PROCEDURE

It is important that the fabricator understand that all fabrication is required to comply with the fabricator's written procedures, regardless of fabrication project jurisdiction, when the governing jurisdiction approves the fabricator based on the fabricator's current CCBD approved fabricator status. The fabricator is responsible for assuring that all fabrication meets Clark County approved fabricator requirements and applicable Clark County Codes.

Fabricators shall submit a detailed and properly formatted Quality Systems Manual to the CCBD for review and approval. This manual, as a minimum, shall be formatted with page numbers and section numbers and shall identify the company policy regarding fabrication, operations, and control of materials and quality in the following areas:

7.1 General Management

- 7.1.1** The QSM shall have a written procedure that addresses how "Controlled" and "Un-Controlled" copies of the QSM are maintained and distributed. The QSM shall be considered to be a lifetime record and shall be a controlled document. The company President and the Quality Control Manager shall indicate their approval of the QSM by signing and dating the QSM cover page. The procedure shall identify the following:
 - 7.1.1.1** Who is responsible for maintenance of the QSM?
 - 7.1.1.2** How revisions are reviewed, approved and included in the QSM.
 - 7.1.1.3** How revisions are reviewed and subsequently recorded in the QSM.
 - 7.1.1.4** How controlled copyholders receive revisions.
 - 7.1.1.5** How controlled and uncontrolled copies are distributed.
 - 7.1.1.6** The QSM shall have a controlled copy distribution page that identifies the copyholder, QSM copy number, issue date and current revision.
- 7.1.2** The QSM shall have a table of contents page. The table of contents page shall identify each section and shall identify exhibits/attachments that are contained in the QSM.
- 7.1.3** The QSM shall have a revision history page that lists all of the revisions with the approval dates, section number and page number in the QSM. The fabricator shall have a method of identifying new QSM revisions from the previous revisions.
- 7.1.4** The QSM shall have a Quality Policy statement that states the final fabricated product shall comply with the Approved Construction Documents, applicable building codes and standards and the fabricator's QSM. The Company Policy statement shall include the organization of all fabrication activities to ensure that a quality product will be produced.

- 7.1.5** The QSM shall have an organizational chart that depicts job titles of key personnel with lines of responsibility indicating separation of production from quality control.
- 7.1.5.1** Job descriptions and qualifications of Quality Control inspectors and key personnel, shall be included in a resumé to show that experienced personnel exists within the company to produce a quality product. (See Section 7.6.11).
- 7.1.6** The QSM shall have a fabrication facility plot plan that identifies material storage, welding, fabrication, coating and office areas.
- 7.1.7** The QSM shall have a current fabrication equipment list.
- 7.1.8** The QSM shall be readily accessible and available to all personnel responsible for performing fabrication operations that affect the quality of the fabricated item.
- 7.1.9** The QSM shall have an Exhibits section that contains completed sample Quality System Records used by the fabricator. This section shall also contain completed sample copies of WPS's (and PQR's when required), WQR's and any other records or documents that effect fabrication quality.
- 7.1.10** A description of the general sequence of operations of manufactured products from receiving to layout to fabrication to coating and to shipping shall be included.
- 7.1.11** When company key personnel, plant location, procedures or policies change, revisions to the QSM shall be submitted within 30 days of the changes becoming effective.

7.2 Engineering and Drafting

- 7.2.1** The QSM shall have a written procedure that addresses the review, revision, approval, control and issuance of customer information including but not limited to, Change Orders, Transmittals and Requests for Information (RFI) Etc... The procedure shall identify the following:
- 7.2.1.1** Who is responsible for reviewing customer information?
- 7.2.1.2** How customer information is reviewed and incorporated into project requirements.
- 7.2.1.3** How the fabricator tracks customer information.
- 7.2.2** The QSM shall have a written procedure that addresses the review, revision, approval, control and issuance of shop drawings and the review and control of Design Drawings. The procedure shall identify the following:
- 7.2.2.1** Who is responsible for ensuring engineering and drafting procedures are followed?
- 7.2.2.2** How revisions are made to the shop drawings.
- 7.2.2.3** Who is responsible for reviewing shop drawings and revisions made to shop drawings?
- 7.2.2.4** How obsolete shop and design drawings are removed from the fabrication process.
- 7.2.2.5** How revised shop and design drawings are identified.
- 7.2.2.6** How shop drawings are identified as released for fabrication.

7.2.2.7 Who reviews Design drawings?

7.2.2.8 How design drawings are controlled.

7.2.3 The shop drawings shall reference the approval date of the Registered Design Professional's structural drawings. The Registered Design Professional of Record is required to apply a review stamp to the shop drawings.

7.2.4 The QSM shall have a written procedure addressing detailing operations. The procedure shall identify the following:

7.2.4.1 Is detailing provided in-house or subcontracted?

7.2.4.1.1 If detailing is subcontracted, the written procedure shall identify the required detailer experience, qualifications and the selection process. The fabricator retains responsibility for ensuring compliance to project requirements.

7.2.4.2 What are the detailer's responsibilities? As a minimum the detailer's responsibilities shall include the review of the structural drawings to ensure production of the shop drawings complies with the applicable codes, contract documents and quality requirements.

7.2.4.3 Who, in the fabricator's staff, reviews the work of the detailer, checking all shop drawings prior to project engineer approval? As a minimum the fabricators personnel, who performs this review, shall have documented training and experience in steel connection selection.

7.2.4.4 Who, in the fabricator's staff, directs detailing operations. As a minimum this person shall be qualified by one or more of the following;

- Have documented experience in sizing, detailing and reviewing steel connection details.
- Graduate Engineer with steel fabrication experience.
- Licensed P.E. or S.E. with steel fabrication experience.

7.2.5 A copy of the current Approved Construction Documents and the approved shop drawings shall be maintained at the fabrication facility.

7.3 Procurement

7.3.1 The fabricator shall have a procurement policy which states that all materials and services purchased meet the Approved Construction Documents, applicable building codes and standards and the fabricator's QSM.

7.3.2 The QSM shall have a written procedure that addresses procurement of materials and/or services. The procedure shall identify the following:

7.3.2.1 All purchases of material and services shall be in writing, using the appropriate Purchase Order (P.O.) form.

7.3.2.2 What information is provided on the P.O.? As a minimum the following shall be identified:

- ASTM material specification and grade
- Material description
- Quantity of material
- Type of services requested, including any special instructions, applicable codes and standards.

7.3.2.3 Who reviews the P.O.?

- 7.3.2.4 Who is responsible for ensuring the P.O. is maintained on file?
- 7.3.2.5 CCBD requires that the following statement is included on the P.O. “Material Test Reports (MTR)’s required with the shipment”.

7.3.3 The QSM shall have a written procedure that addresses control and issuance of customer supplied materials. The procedure shall identify the following:

- 7.3.3.1 Who is responsible for verifying receipt of customer supplied materials?
- 7.3.3.2 Who reviews customer supplied materials to verify conformance to project quality requirements?
 - 7.3.3.2.1 If customer supplied materials do not comply with project quality requirements what actions are taken?
- 7.3.3.3 How is conformance to project quality requirements documented?
- 7.3.3.4 Is customer supplied material documentation maintained on file?

7.3.4 All purchased materials shall be inspected for conformance to ASTM A6, upon receipt.

7.3.5 The QSM shall identify if any portion of fabrication, inspection and/or testing is subcontracted.

- 7.3.5.1 If portions of the fabrication are subcontracted, the subcontracted fabricator shall be a CCBD approved fabricator. The subcontractor shall be held to the same quality requirements as the primary fabricator.
- 7.3.5.2 The written procedure shall identify the required fabrication experience, qualifications and the selection process. The fabricator retains responsibility for ensuring compliance to project requirements.
 - 7.3.5.2.1 If the subcontractor is a non-approved CCBD fabricator, the subcontractor shall have a CCBD approved testing/inspection agency perform shop inspections of the subcontracted fabrication items.
- 7.3.5.3 If inspection/testing operations are subcontracted, a CCBD approved testing/inspection agency shall be used. The CCBD approved testing/inspection agency, hired by the fabricator, shall contact CCBD to request a Shop Testing/Inspection approval letter, authorizing the agency to perform the shop testing/inspection operations.
- 7.3.5.4 The written procedure shall identify the required inspection/testing experience, qualifications and the selection process. The fabricator retains responsibility for ensuring compliance to project requirements.

7.4 Operations

7.4.1 The QSM shall have a written procedure that addresses HSB storage, control and tensioning operations. CCBD requires HSB storage, tensioning and inspection operations to be performed in accordance with AISC specifications. The procedure shall identify the following:

- 7.4.1.1 How are HSB stored and identifiable by HSB production lot?
- 7.4.1.2 What actions are taken if HSB are rusted, dirty or contaminated?
- 7.4.1.3 If no HSB tensioning is performed in the fabrication facility, the procedure shall clearly state that “No HSB tensioning is performed”.
- 7.4.1.4 If tensioning is performed in the fabrication facility, the written procedure shall describe the tensioning inspection and testing operations.
- 7.4.1.5 How tensioning inspection and testing results are documented.

7.4.1.6 How Certificate of Conformance documents are maintained and kept current.

7.4.2 The QSM shall have a written procedure that addresses at what stages of fabrication QC inspections and/or NDT operations are performed. The procedure shall identify the following:

7.4.2.1 Hold points for inspections and/or nondestructive testing.

7.4.2.2 Who is responsible for notifying QC/NDT personnel?

7.4.2.3 How notification is made.

7.4.3 The QSM shall have a written procedure that addresses structural steel coatings. Types of coating shall include but not limited to Paint (Primer/Finish), Galvanizing and Fire Protective materials. The procedure shall identify the following:

7.4.3.1 Are coating operations performed in-house or subcontracted.

7.4.3.1.1 If coating application is subcontracted, the fabricator shall review the subcontractors' procedures to ensure conformance to project quality requirements.

7.4.3.2 How fabricated item surfaces are prepared for coating application.

7.4.3.3 How coating inspection and testing results are documented.

7.4.3.4 How coating materials are to be stored.

7.4.3.5 How Certificate of Conformance documents are maintained and kept current.

7.4.4 The QSM shall have a written procedure that addresses material storage. A suitable materials storage area shall be established to properly segregate, store, and control material prior to the release of materials to production. The procedure shall identify the following:

7.4.4.1 Who is responsible for material storage?

7.4.4.2 How materials are stored to prevent damage.

7.4.4.3 How traceable material is segregated from non-traceable material.

7.4.4.4 How materials are released to production.

7.5 Quality Control

7.5.1 The QSM shall have a written procedure that addresses the Receiving Inspection operation. The written procedure shall identify the following:

7.5.1.1 Who performs receiving inspection?

7.5.1.2 The inspector's review of the P.O. to the received order.

7.5.1.3 What is reviewed during this inspection?

7.5.1.4 The acceptance criteria used for receiving inspection.

7.5.1.5 How received items are identified as complying or non-complying.

7.5.1.6 How shorted quantities are identified.

7.5.1.7 The inspector's review of the MTR's.

7.5.1.8 How receiving inspection results are documented.

7.5.1.9 What actions are taken if a received item is found to be non-complying?

7.5.2 The QSM shall have a written procedure that addresses in-process, final, and where applicable, coating inspections. 100% of all fabricated items shall have a final inspection performed. The quality control inspection personnel shall be aware of their responsibilities and be allowed the time necessary to perform their inspection duties. They shall not be allowed to inspect their own work. The fabricators

customer or customer's representative shall have the right to verify product conformance to project requirements, at the fabricators facility. The procedure shall identify the following:

- 7.5.2.1 How each welder identifies their completed welds?
- 7.5.2.2 Who performs each of these inspections?
- 7.5.2.3 For each of these inspections, what is reviewed?
- 7.5.2.4 How results for each inspection are documented.
- 7.5.2.5 What actions are taken if an item is found to be non-complying?

7.5.3 The QSM shall have a written procedure addressing welding electrodes and Submerged Arc Welding (SAW) flux storage and issuance. Welding electrode storage shall be in accordance with AWS requirements. The procedure shall identify the following:

- 7.5.3.1 What welding processes are used in fabrication?
- 7.5.3.2 How welding electrodes are stored.
- 7.5.3.3 How SAW flux is stored.
- 7.5.3.4 Low Hydrogen re-baking procedures shall identify the following:
 - Re-baking time periods for low hydrogen coverings conforming to AWS A5.1 and/or A5.5.
 - Re-baking oven temperatures for low hydrogen coverings conforming to AWS A5.1 and/or A5.5.
- 7.5.3.5 How is re-baking controlled to ensure electrodes are only re-baked one time for low-hydrogen electrodes that have exceeded the allowable atmospheric time period?
- 7.5.3.6 Welding electrode restrictions for ASTM A 514 and/or A 517 steel.
- 7.5.3.7 How welding electrodes are issued to fabrication personnel.
- 7.5.3.8 How welding electrode Certificate of Conformance documents are maintained and kept current.

7.5.4 The QSM shall have a written procedure that addresses the system used to maintain main member material traceability to the MTR's. The fabricator shall always maintain main member traceability regardless of project specifications and/or project jurisdiction. The procedure shall identify the following:

- 7.5.4.1 What identification markings are placed on the fabricated items? Each main member shall have an identification marking that is unique to that fabricated main member. (Example: 3 identical columns C-1-1, C-1-2, C-1-3)
- 7.5.4.2 How identification markings refer back to the MTR.
- 7.5.4.3 Who verifies materials are properly marked?
- 7.5.4.4 Who is responsible for transferring these markings, when materials are cut?
- 7.5.4.5 Who is responsible for ensuring markings are protected during coating operations?
- 7.5.4.6 How these markings are protected during coating operations.
- 7.5.4.7 Who is responsible for ensuring MTR are kept on file?

7.6 Quality Assurance

- 7.6.1** The QSM shall identify that current editions of the following codes are available to shop personnel: AISC, AWS (Applicable Standards), ASTM (Minimum A 6, A 36, A 53, A 108, A 325, A 490, A 500, A 514, A517, A 572, A 992), IBC, Clark County Administrative Code, Southern Nevada IBC Code Amendments.
- 7.6.2** The QSM shall have a written procedure that addresses an internal audit of the fabricator's quality program that shall be performed at a minimum of once a year. The procedure shall identify the following.
- 7.6.2.1** Who is responsible for performing the audit?
- 7.6.2.2** How often the audit will be performed.
- 7.6.2.3** How the audit results are to be documented.
- 7.6.2.4** What areas of the quality program are to be audited? As a minimum, the following subject areas are required to be audited:
- Non-compliance reporting
 - Inspection records
 - Welder qualification period of effectiveness
 - Quality system documents
 - Calibration records
 - Training records
 - Purchase order requirements
- 7.6.2.5** How corrective actions to deficiencies, noted during the internal audit, are documented and implemented.
- 7.6.3** The QSM shall have a written procedure that addresses third party audits of the fabricator's quality program that shall be performed at a minimum of once a year. Annual third party audits are required to be performed to maintain approval of the fabrication facility. Fabricators who hold fabrication approvals and have had an audit performed within the last year by one or more of the approved entities listed below shall not be required to have a CCBD annual audit performed.
- American Institute of Steel Construction (AISC)
 - Internal Accreditation Services (IAS)
 - Steel Joist Institute (SJI)
 - Rack Manufactures Institute (RMI)
- 7.6.4** Fabricators that have had an annual audit performed within the last year by one or more of these entities shall provide CCBD a copy of the entities annual audit at time of CCBD fabricator renewal. Fabricators who do not hold a fabrication approval by one or more of these entities shall have a CCBD annual third party audit performed by a CCBD approved auditor. The procedure shall identify the following:
- 7.6.4.1** Who is responsible for ensuring the third party audit is completed?
- 7.6.4.2** How often this audit will be performed.
- 7.6.4.3** How the audit results are to be documented and maintained.
- 7.6.4.4** How corrective actions to deficiencies, noted during the third party audit, are documented and implemented.
- 7.6.5** The QSM shall have a written procedure that addresses each employee's review of the fabricator's QSM. This procedure shall identify the following:

- 7.6.5.1 Who is responsible for ensuring this review is performed?
- 7.6.5.2 When this review is to be performed.
- 7.6.5.3 How this review is to be documented.

7.6.6 The QSM shall have a written procedure that addresses training of Quality Control personnel that shall be performed at a minimum of once a year. Quality Control inspection personnel shall be trained in knowledge and practice in proper inspection methods and evaluating inspection results to acceptance criteria. The procedure shall identify the following:

- 7.6.6.1 Who is responsible for performing the training?
- 7.6.6.2 How often this training will be performed.
- 7.6.6.3 Who is required to attend this training?
- 7.6.6.4 What will be covered in this training?
- 7.6.6.5 How this training is to be documented.

7.6.7 The QSM shall have a written procedure that addresses reporting of non-compliance items noted during fabrication. The procedure shall identify the following:

- 7.6.7.1 Who is responsible for reporting and documenting non-compliance items?
- 7.6.7.2 How non-compliance items are documented.
- 7.6.7.3 How a non-compliance item is identified on the fabricated item.
- 7.6.7.4 Who reviews the non-compliance documentation?
- 7.6.7.5 Who decides what corrective actions are to be taken?
- 7.6.7.6 What actions are taken if the non-compliance item cannot be corrected?
- 7.6.7.7 The re-inspection of the non-compliance item.
- 7.6.7.8 Documentation of re-inspection results.
- 7.6.7.9 What actions are taken if the fabricated item fails re-inspection?
- 7.6.7.10 How non-compliance documentation is identified as completed and cleared.
- 7.6.7.11 How the fabricated item is identified as completed and acceptable.

7.6.8 The QSM shall have a written procedure that addresses maintenance of fabrication, inspection and testing equipment and calibration to the manufacturer's recommendations or to a national standard. The procedure shall identify the following:

- 7.6.8.1 Who is responsible for equipment maintenance and calibration?
- 7.6.8.2 How often equipment is calibrated.
- 7.6.8.3 What equipment is to be calibrated?
- 7.6.8.4 How calibration results are documented.
- 7.6.8.5 What actions are taken if equipment fails calibration?

7.6.9 The QSM shall have a written procedure that addresses how welder qualification documents are reviewed, updated and issued. The procedure shall also state that all new hire welders will be qualified to the applicable AWS standard and that no previous qualifications will be accepted. The procedure shall also address the system used to track Welder Qualification Record (WQR) period of effectiveness. The AWS welding code (Section 4.0 Paragraph 4.1.3) states that a WQR remains effective so long as there is no reason to question the welder's ability and the

welder has not had a lapse in welding, for each process qualified, greater than six months. The procedure shall identify the following:

7.6.9.1 Who is responsible for tracking WQR period of effectiveness?

7.6.9.2 How this tracking information is documented.

7.6.9.3 What actions are taken if a welder's ability is questioned?

7.6.9.4 What actions are taken if a welder has a lapse in welding greater than six months?

7.6.10 The QSM shall have a written procedure that addresses the review, revision, approval, control and issuance of Welding Procedure Specifications (WPS). The development and preparation of WPS documents shall be in accordance with the applicable AWS standard. All WPS documents shall be reviewed and stamped by an AWS Certified Welding Inspector (CWI). The procedure shall identify the following:

7.6.10.1 Who is responsible for the development, review, approval and issuance of WPS documents?

7.6.10.2 Who has access to WPS documents?

7.6.10.3 Where are WPS documents located?

7.6.11 The QSM shall have a section that includes copies of any certifications, training documents and/or degrees held and resumes for all key personnel, to include:

7.6.11.1 QC Manager (Shall have minimum 5 years fabrication experience and visual weld inspection training)

7.6.11.2 QC Inspector(s) (Shall have minimum 2 years QC inspection experience and visual weld inspection training)

7.6.11.3 Project Manager(s)

7.6.11.4 Procurement Manager

7.6.11.5 Production Manager

7.6.11.6 Detailer(s)

7.6.11.7 Company President.

7.6.12 The QSM shall have a written procedure addressing material certificate of conformance documents for HSB, welded headed or threaded studs and welding electrodes. The procedure shall identify the following:

7.6.12.1 Who is responsible for ensuring current editions of these documents are maintained?

7.6.12.2 Where these documents are kept.

7.6.12.3 What happens to expired documents?

7.6.13 The QSM shall have a written procedure that addresses the fabricator's Certificate of Compliance document. The fabricator shall provide a certificate of compliance (Reference IBC Section 1704.2.5.2); upon completion of fabrication, to the project owner and contractor which states that the completed product meets the requirements of the Approved Construction Documents and the Building Administrative Code of Clark County. See sample copy in Appendix A. The procedure shall identify the following:

7.6.13.1 Who is responsible for issuing this document?

7.6.13.2 Who shall receive copies of this document?

7.6.13.3 Where completed copies of this document are kept.

7.7 Nondestructive Testing (NDT)

- 7.7.1 The QSM shall have a written procedure that addresses NDT, other than visual inspection that is performed on fabricated members. The procedure shall identify the following:
- 7.7.1.1 Whether NDT operations are performed by the fabrication company personnel, or subcontracted.
 - 7.7.1.2 When NDT operations are performed by the fabrication company personnel, the QSM shall contain the following:
 - 7.7.1.2.1 NDT documentation forms used to record NDT results.
 - 7.7.1.2.2 Written NDT procedures approved by an ASNT Level III, for each NDT process to be used.
 - 7.7.1.2.3 Resumes and certifications for NDT personnel and the ASNT Level III.
 - 7.7.1.2.4 Fabrication company personnel NDT certification and recertification procedures.
 - 7.7.1.3 If NDT services are subcontracted, the procedure shall state that the subcontracted NDT agency shall be a CCBD approved NDT agency and that only ASNT Level III NDT procedures shall be used.
- 7.7.2 The QSM shall have a written procedure that addresses the CCBD NDT requirement for full penetration welds on primary structural members. All full penetration welds on primary structural members with a material thickness of 5/16" and greater shall have a volumetric (Ultrasonic or Radiograph) NDT inspection performed to ensure weld soundness. The procedure shall identify the following:
- 7.7.2.1 Who is responsible for ensuring this NDT requirement is performed?
 - 7.7.2.2 How the NDT results are to be documented.
 - 7.7.2.3 What actions are taken if a fabricated member fails an NDT operation?
 - 7.7.2.4 How re-inspection of the fabricated member, rejected during the NDT operation, is performed and documented.

8.0 RECORDS

- 8.1 The QSM shall have a written procedure that addresses Quality System Records. The procedure shall identify the following:
- 8.1.1 Who is responsible for Quality System Records?
 - 8.1.2 Where Quality System Records are kept.
 - 8.1.3 How obsolete documents are segregated, marked or destroyed to prevent usage.
 - 8.1.4 Identify the Quality System Records that are kept. As a minimum the following records shall be archived:

Job Specific Documents	Company Specific Documents
Purchase Orders	WQR Period of Effectiveness Records
Structural and Shop Drawings Material Test Reports (MTR)	WQR's
All Inspection Reports	WPS's
All Testing Reports	PQR's
All Noncompliance Reports	All Audits (Internal and 3 rd Party)
Certificate of Compliance (Fabricated Items)	Certificate of Conformance (Materials)
	Training Records
	Welder identification list
	Equipment Calibration Records
	Employees' Review of QSM Records

8.1.5 All Quality System Records shall be archived for a minimum of two years, after the fabricator's certificate of compliance has been issued.

9.0 ATTACHMENTS

- Sample copy of a Certificate of Compliance document
- QSM-TG-1-06 Matrix sheet

10.0 REVISION HISTORY:

Title	Revision/Approved Date	Effective Date
TG-1-06a	December 11, 2006	December 11, 2006
TG-1-06	January 1, 2006	May 10, 2006
TG-1-96	October 21, 1996	October 21, 1996



Clark County Department of Building & Fire Prevention

4701 W. Russell Rd • Las Vegas NV 89118
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Ronald L. Lynn, Director/Building Fire Official
Samuel D. Palmer, Assistant Director * Girard Page, Fire Marshal

Note: Remove below verbiage and place company letterhead in this area.

Approved Fabricators are required to submit a **CERTIFICATE OF COMPLIANCE** for their shop-welded construction (Reference International Building Code Section 1704.2.5.2). Certification is to cover all materials and workmanship supplied by the fabricator/manufacturer, including all products fabricated by others that become part of the total product furnished to the project.

An example of an acceptable product certification is as follows:

**FABRICATOR/MANUFACTURER
CERTIFICATION OF COMPLIANCE**

Welded Structural Steel Fabrication

Fabricator: _____ Facility _____

Fabricator Certification(s): Clark County _____ IAS _____ AISC _____ SJI _____ RMI _____

Project: _____ Location: _____

To: Building Official, (*Applicable Project Jurisdiction*)

All materials, workmanship and services supplied for use on the project noted above were purchased, fabricated, manufactured, shipped and/or installed in strict accordance with the requirements of the approved construction documents, International Building Code, applicable _____ (*Jurisdictional*) _____ building codes and the _____ (*Fabricator*) _____ Quality Systems Manual.

I certify that the above is true and all records pertaining to the above are on file in my office.

(*Responsible Party*) _____ Date _____

cc: Project Owner
Project Contractor
Project Architect/Engineer

Note: Only approved fabricators may submit product certifications for work performed in their shop.



Clark County Department of Building & Fire Prevention
 Fabricator QSM Matrix to Technical Guideline (TG)-1-06

The fabricator shall review Clark County Department of Building (CCBD) TG-1-06 and shall identify areas of the fabricators Quality System Manual (QSM) that address TG-1 Section/Paragraph/Sub-Paragraph requirements. The comments section is for identifying additional areas of the QSM that pertain to TG-1 requirements.

TG-1 Section	Fabricators QSM Corresponding Section	Additional Information or Comments
7.1	General Management	
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7.1.10		
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7.2	Engineering and Drafting	
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7.3	Procurement	
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7.4	Operations	
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7.5	Quality Control	
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7.6	Quality Assurance	
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7.7	Nondestructive Testing	
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8.0	Records	
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8.1.5		

The fabricator shall submit this form along with a “Controlled” copy of your QSM to CCDB when completed. The fabricator shall also maintain a copy of this form in the fabricators QSM for reference.