SPRINGS FABRICATION

QT-3
ASME Quality Program Manual

850 Aeroplaza Drive
Colorado Springs, Colorado 80916
United States

For the fabrication of
pressure retaining items
ASME Code, Section VIII, Division 1
(U Designator)
Shop/Field Fabrication

and

Repair and Alteration of
metallic pressure retaining items
National Board Inspection Code
Code Symbol Stamp "R"
Shop and Field

☐ **CONTROLLED COPY (DO NOT COPY)** Manual No.: _____

Manual Date: 12/27/2023 10th Edition - Revision 2

Approved By: _____ Date: 12/27/2023
Quality Manager

Accepted By: _____ Date: 12/27/2023
Authorized Inspector

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Section II
STATEMENT OF AUTHORITY AND RESPONSIBILITY
Colorado Springs

It is the intent of the ASME Quality Program to establish the controls necessary for the performance and documentation of inspections and examinations, which shall ensure compliance to the applicable sections of the ASME Code, the National Board Inspection Code (NBIC), applicable jurisdictional requirements, and the applicable customer-imposed specifications. This Quality Program and Manual shall apply to the Colorado Springs facility.

The Quality Manager shall have full support of the management and complete responsibility for the ASME Quality Program. The Quality Manager shall have authority to stop work on any and all operations that deviate from the requirements of the ASME Quality Program delineated in this Manual and the ASME Code, NBIC, jurisdictional requirements and imposed customer specifications. The Quality Manager shall have complete freedom to identify quality problems, initiate corrective actions, and provide solutions to those problems should they occur.

It shall be the responsibility of the Quality Manager, all other managers, supervisors, and company personnel to work with quality to ensure compliance to the requirements of the ASME Quality Program and to maintain the highest possible quality standards. The Quality Manager reports directly to the President.

In the unlikely event that the Quality Manager encounters a situation which cannot be resolved, the President of the company shall assume the responsibility for their resolution. Such resolutions shall assure that the requirements of the ASME Quality Program Manual, ASME Code, NBIC and the applicable jurisdictional requirements and customer specifications are not compromised.

Operational control of Procedure Qualification Records (PQR), Welding Procedure Specifications (WPS) as well as Welder Performance Qualifications (WPQ) is maintained by Springs Fabrication, LLC.

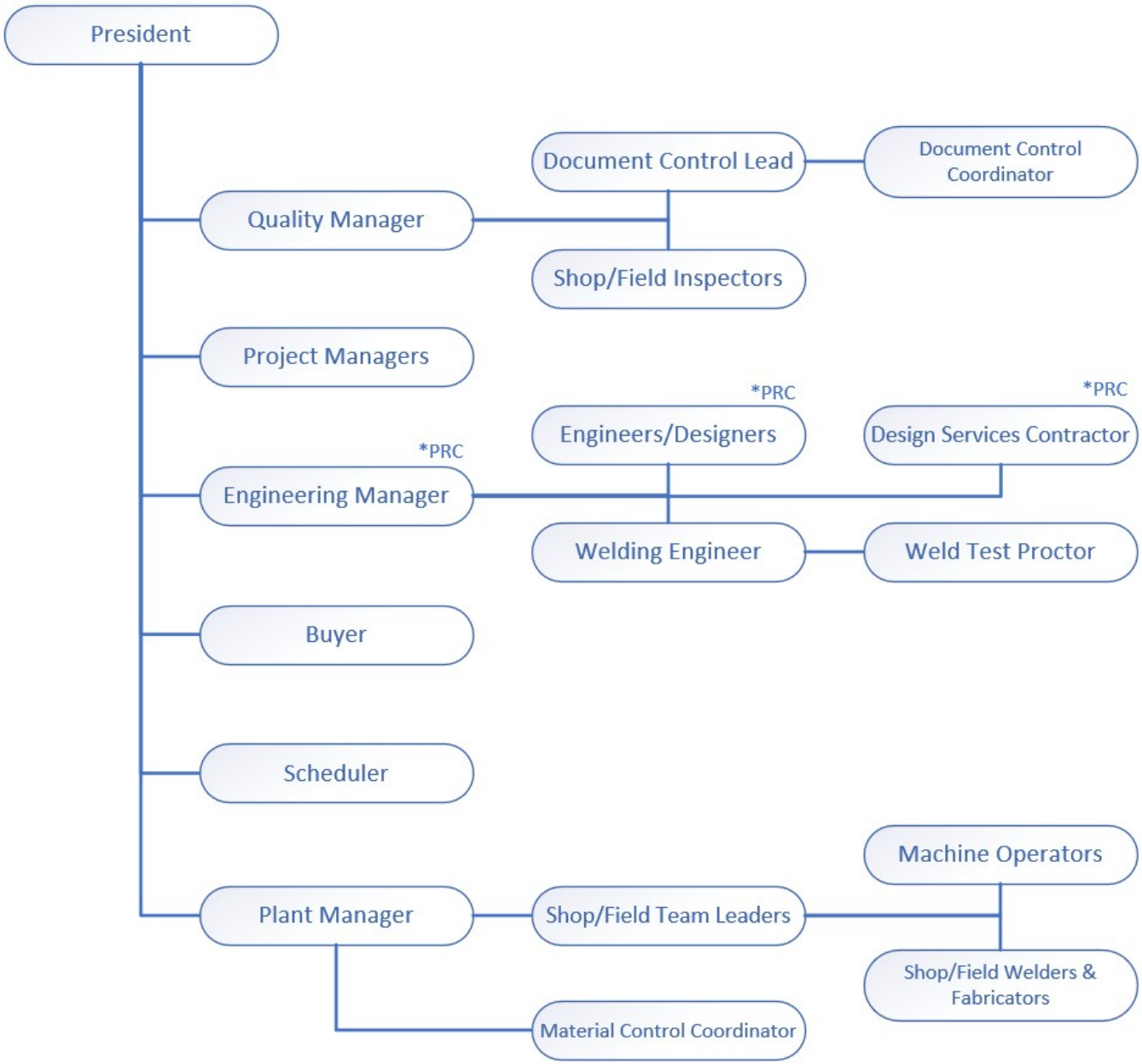
Per Section IX paragraph QG-107, Springs Fabrication, LLC, hereinafter referred to as Springs Fabrication, will maintain the aforementioned records including those from Springs Fabrication, Inc., IP Systems and/or Machine Build Technologies. Springs Fabrication accepts the responsibility of the PQR, WPS & WPQ records and the WPS & WPQ documents have been changed to reflect the name of the current company.

A controlled copy of the ASME Quality Program Manual shall be made available to the Authorized Inspector.

Tom Nepp
President
Springs Fabrication, LLC

12/27/2023
Date

Section III
ORGANIZATIONAL CHART



Within the Springs Fabrication Corporate Organization, activities described in this manual may be performed by the stated individual or their designee. Responsibilities shall stay with the assigned individual.

Section IV
GLOSSARY OF TERMS AND ACRONYMS

1.0 Scope:

1.1 This section provides a list of terms and acronyms used in this Manual. Whenever they are referred to they shall have the meaning as stated below.

1.2 When masculine pronouns are used in this Manual, they are intended to include the corresponding feminine equivalent without discrimination.

2.0 Terms and Acronyms:

2.1 AI - Authorized Inspector - An inspector who holds a valid National Board "AI" commission who is regularly employed by an ASME\National Board Accredited Inspection Agency with which Springs Fabrication, LLC has a contract.

2.2 ASME - American Society of Mechanical Engineers

2.3 ASME Quality Program - Documented and established controls necessary for the performance, documentation, and review of inspections necessary to ensure compliance to the applicable sections of the ASME Code, NBIC, Jurisdictional Requirements and the imposed customer specifications.

2.4 ASNT - American Society for Nondestructive Testing

2.5 Authorized Inspection Agency - An ASME Accredited Inspection Agency.

2.6 AWS - American Welding Society

2.7 Buyer - An individual authorized to purchase materials, parts, and/or services for use on ASME Code items or parts.

2.8 Certifications – When approvals are electronic, they are only initiated from a clean drawing format. Format duplication is not permitted. All access to an electronic signature is password protected. All other approvals are written with initial/signature & date.

2.9 Code - ASME Boiler and Pressure Vessel Code, National Board Inspection Code (NBIC) and Jurisdictional requirements, as appropriate.

2.10 Design Activity – Design work, calculation and/or analysis, performed in accordance with the Code.

2.11 Design Package – consists of approved calculations, approved drawings, data reports, inspection reports, customer specifications, and other relevant documents pertaining to the design.

2.12 DSC – Design Services Contractor

2.13 ECN/MCN - Engineering Change Notice and Manufacturing Change Notice, process used to authorize and document changes to drawings and documents.

2.14 Examination - The review of materials, parts, services, etc., which are performed by Springs Fabrication, LLC's Quality Assurance personnel.

2.15 Fabrication Package –consists of copies of the design drawings, customer specifications, Review and Verification Record, Weld and Inspection Record, and test reports.

2.16 FCAW - Flux Core Arc Welding

2.17 GMAW - Gas Metal Arc Welding

2.18 GTAW - Gas Tungsten Arc Welding

2.19 Hold Point - A specific point in the fabrication process beyond which production may not proceed until a review has been performed or an operation has been witnessed by the designating party. The hold point designator may waive Hold Points at his discretion except for mandatory Code Hold Points. Waivers must be obtained prior to proceeding with fabrication.

2.20 Inspection - The review of materials, parts, services, etc. which are performed by the AI in all ASME Code work for compliance to the applicable Code requirements.

2.21 Jurisdiction - A jurisdiction of a state of the United States of America or a province of Canada, which has adopted and does administer one or more sections of the ASME Boiler and Pressure Vessel Code as a legal requirement.

2.22 Jurisdictional Requirements - The lawful requirements of a jurisdiction regarding boilers or pressure vessels.

2.23 MCC – Material Control Coordinator

2.24 MRR - Material Receiving Report

2.25 MTR – Material Test Report. Maintained in a dedicated filing system.

2.26 M&TE - Measurement and Test Equipment

2.27 NBIC - National Board Inspection Code

2.28 NCR Report (NCR) - A document used to identify and document conditions adverse to quality. The NCR shall identify the discrepant condition, determine the cause of the discrepancy, and

prescribe immediate corrective actions to correct the deficiency and provide actions to prevent recurrence.

2.29 NDE - Nondestructive Examination

2.30 Nonconformity - Any condition that is not in compliance with the requirements of the applicable section of the Code, the customer specifications, or the Quality Program Manual.

2.31 PRC - Person in Responsible Charge

2.32 Quality Assurance (QA) - Comprises all of the planned and systematic actions necessary to provide adequate confidence that all items are designed, constructed and installed in accordance with the appropriate codes, standards, specifications and contract requirements.

2.33 Quality Control (QC) - The examination of the physical characteristics of materials or items to establish conformance with acceptance standards associated with those examinations.

2.34 Responsible Charge – The degree of control a Designer, Engineer, or Certifying Engineer is required to maintain over engineering decisions made personally or by others over which the Person in Responsible Charge (PRC) exercises supervisory direction and control authority.

2.35 ERP System – Enterprise Requirements Planning software.

2.36 SAW - Submerged Arc Welding

2.37 SCO – Specification Change Order

2.38 SFMC - Springs Fabrication, LLC Material Code

2.39 SMAW – Shielded Metal Arc Welding

2.40 Weld Test Proctor - Designated individuals who have demonstrated competence in the process for administering performance qualification testing of welders or welding operators, as required by Section IX QG-106 of the Code.

2.41 WIR - Weld Inspection Record

Section V
ASME QUALITY PROGRAM

1.0 Scope:

1.0 This section assigns responsibility for the ASME Quality Program as implemented at Springs Fabrication. It further establishes the process by which revisions to the program are approved and implemented.

1.1 The ASME Quality Program at Springs Fabrication is inclusive of both ASME quality control and ASME quality assurance activities and requirements.

2.0 Responsibilities:

2.1 Quality Manager

2.1.1 Reviews new editions of the ASME Code and revises this manual as applicable.

2.1.2 Prepares procedures and instructions for the implementation of the ASME Quality Program.

2.1.3 Provides oversight, direction, verification and approval for the programs and procedures of the ASME Quality Program.

2.1.4 Ensures tests are performed and documented.

2.1.5 Approve in-house calibration procedures and approve sub-contractors to perform outside calibration services as required.

2.1.6 Ensure that all repairs and alterations to pressure-retaining items are made in accordance with the current NBIC and/or jurisdictional requirements.

2.1.7 Maintains custody and control of the ASME Certification Mark and “NB” Symbol Stamp and its usage.

2.1.8 Reviews purchase requisitions, quality system deviations, and product nonconformance documentation for compliance.

2.1.9 Prepares ASME Manufacturer’s Data Reports.

2.1.10 Prepares and issues the Review and Verification Record (Exhibit #8), Weld and Inspection Record (Exhibit #7) Manufacturer’s Data Reports, and test reports.

2.1.11 Prepares the Design Package for new orders.

2.1.12 Generates the Fabrication Package for new orders.

2.1.13 Qualifies and approves personnel regarding:

2.1.13.1 Authorization to perform design activities.

2.1.13.2 Designation of Person in Responsible Charge of design activities

2.1.14 Certifies ASME Manufacturer's Data Reports.

2.1.15 Acts as liaison with the AI to include notification of work progress and approaching inspection or Hold Points.

2.2 Shop/Field Inspector

2.2.1 Prepares, stamps, and attaches ASME Code nameplates.

2.2.2 Provides the required oversight, direction, and verification of the performance and documentation of required inspections, examinations, and tests as required by the ASME Code.

2.3 Quality Manager and/or Document Control Lead, or a designee appointed by the Quality Manager

2.3.1 Maintains control of measuring and test equipment.

2.4 Engineering Manager

2.4.1 Generate design documents as a designated person in responsible charge and/or exercise control of design work performed by others to ensure compliance with the ASME Code.

2.4.2 Determine and submit qualification data for personnel regarding:

2.4.2.1 Authorization to perform design activities.

2.4.2.2 Designation of Person(s) in Responsible Charge of design activities.

2.4.3 Verify that software used to generate the ASME design calculations complies with the specified Code any time the software is updated.

2.4.4 Review changes to design documents and generate revised documents.

2.4.5 Review all Quality System Deviations for ASME Code compliance.

2.4.6 Issue the National Board and Serial Numbers and record them in the National Board Numbers Control Log (Exhibit #20).

2.5 Engineers / Designers

2.5.1 Generate design documents in compliance with the ASME Code under the control of a designated person in responsible charge.

2.5.2 When qualified and designated, generate design documents as a designated person in responsible charge or exercise control of design work performed by others.

2.6 Welding Engineer

2.6.1 Develop, qualify, and maintain the Procedure Qualification Records and Welding Procedure Specification records used in the construction of ASME Code items and parts as well as maintain the Continuity Report (Exhibit #17).

2.6.2 Generate the Weld Inspection Record with NDE requirements specific to each Code item.

2.6.3 Reviews and approves in-house and sub-contractor NDE qualifications and procedures.

2.6.4 Review all Radiographic Examination results of Code items.

2.6.5 Review and approve requisitions for weld filler material to be used on ASME Code jobs.

2.7 Project Manager

2.7.1 Define the scope of work and initiate new jobs and provide design scope to the Engineering Manager.

2.7.2 Review and approve all design drawings for manufacture.

2.7.3 Provide material requisitions to the Quality Manager for Quality review on all pressure boundary materials.

2.7.4 Generate a Quality System Deviation (Exhibit #15) when a material substitution or conditional release is necessary.

2.7.5 Provide notification to the customer representative when specified Hold/Witness Points have been reached.

2.8 Shop/Field Team Leaders

2.8.1 Provide direction and verification of the performance of assigned production personnel and production activities.

3 ASME Quality Program Manual:

3.1 Issuance

3.1.1 A controlled copy of the ASME Quality Program Manual shall be issued to key personnel at Springs Fabrication and its Authorized Inspection Agency upon request. The distribution is recorded in the Revision History Log (Exhibit #1). The Manual Number is the assigned control number and shall be designated on the cover page of this Manual.

3.1.2 A controlled copy of this Manual shall be made available to the AI, for shop or field.

3.1.3 Should a copy of this ASME Quality Program Manual be requested for off-site use, an uncontrolled copy of this Manual shall be issued. This Manual shall be identified as "UNCONTROLLED COPY" on the cover sheet.

3.2 Revision:

3.2.1 The Quality Manager, Welding Engineer, and Engineering Manager shall perform a review of any new edition of the Code. Any applicable changes mandated by the new edition of the Code shall be made to this manual and made effective prior to the mandatory effective date and shall be documented on the SCO Form (Exhibit #6). Documentation of the Code review shall be by the Quality Manager's memo to file, available upon audits.

3.2.2 This Manual shall be revised in its entirety when changes are required. A consecutive number and date of revision shall identify the revisions. The revisions shall be documented on the SCO Form (Exhibit #6). Typographical/clerical changes do not constitute a revision change.

3.2.3 The Quality Manager shall retrieve and re-issue this manual based on the distribution list from Revision History Log (Exhibit #1).

3.2.4 When there is a proposed change to any process or procedure governed by the ASME Quality Program Manual, the proposed change shall be reviewed by the Quality Manager.

3.2.5 Revision changes to this Quality Program Manual will be documented in Chapter XIX, Revision History.

3.2.6 At the discretion of the Quality Manager at the time of the Tri-annual Review the Quality Program Manual may be issued as a new edition with a revision level reset to zero.

3.3 Approval:

3.3.1 The departments indicated on the SCO form shall review the proposed changes and indicate their approval by signature (or initials) and date.

3.3.2 Before a proposed revision can be included or implemented, AI acceptance shall be obtained.

3.3.3 This revised Manual shall be signed and dated on the Cover Page of this Manual by the Quality Manager and the AI.

Section VI
DESIGN DOCUMENTS AND SPECIFICATION CONTROL

1.0 Scope:

1.1 This section defines Springs Fabrication's system for the control of the ASME Code design process, by prescribing specific controls for the preparation, review, approval, and revision of design documents including design calculations, design drawings, and specifications.

2.0 Receipt of Order:

2.1 When an order is received, the Project Manager shall assign a unique job number.

2.2 The Design Package will be assembled by the Quality Manager.

2.3 The Project Manager shall arrange for design documents to be generated or reviewed as applicable.

3.0 Design Calculations:

3.1 Generation of design calculations, in compliance with the ASME Code and customer specifications shall be performed by, or personnel qualified to perform design work under the supervision and control of, personnel designated with responsible charge for design activities.

3.2 Personnel designated with responsible charge shall review the design calculations for compliance with the ASME Code. This review shall be indicated by initialing/signing and dating the cover page of the design calculations.

3.3 Customer supplied design calculations will be reviewed and accepted by signature and date of personnel designated with responsible charge.

3.4 The software used to generate the ASME design calculations shall be manually verified against the specified Code any time the software is updated. This verification shall be documented and retained by the Engineering Manager.

4.0 Design Drawings:

4.1 Generation of design drawings, in compliance with this manual and customer specifications shall be performed by, or personnel qualified to perform design work under the supervision and control of, personnel designated with responsible charge for design activities.

4.2 Personnel designated with responsible charge shall review and approve the design drawings by initiating and signing an ECN.

4.3 A Project Manager shall review and authorize the design drawings for manufacture by signing the ECN initiated by Engineering.

4.4 The "Approved for Manufacture" stamp (Exhibit #5) shall be used on printed drawings to indicate that the drawing can be used for fabrication.

4.5 Springs Fabrication Generated Drawings-

4.5.1 Design drawings shall contain, but not be limited to, the following information as applicable:

4.5.1.1 Code Edition

4.5.1.2 Maximum Allowable Working Pressure (MAWP) and Temperature

4.5.1.3 Minimum Design Metal Temperature (MDMT) and Pressure

4.5.1.4 Required Nondestructive Examination (NDE) and Heat Treatment

4.5.1.5 Weld details such as weld symbols, Weld Procedure Specifications and/or weld map numbers. When weld map numbers are used, they refer to weld details on a separate Weld and Inspection Record (Exhibit #7).

4.5.1.6 Bill of Materials (Exhibit #4) indicating material dimensions and specifications. The Bill of Materials may be a separate document as applicable.

4.5.1.7 Hydrostatic / pneumatic test pressure and requirements.

4.5.1.8 Corrosion allowance

4.5.1.9 Nameplate facsimile

4.6 Customer Supplied Drawings-

4.6.1 The drawings shall contain as applicable the information listed in 4.1.1.1 through 4.1.1.9 above. If not included in the drawing, these shall be added to the drawing or generated separately.

4.6.2 A Drawing Cover Sheet (Exhibit #24) shall be generated and included in the Design Package.

5.0 Design Package

5.1 The Quality Manager shall develop and retain the Design Package after Designers provide the calculations and drawings.

5.2 The Design Package shall contain, but not be limited to the following documents and records:

5.2.1 Approved design calculations

5.2.2 Approved design drawings

5.2.3 Customer specifications, when applicable

5.3 The Quality Manager shall file completed Manufacturer's Data Reports and test reports specific to the job in the Design Package when received.

5.4 The Material Receiving Reports (MRR's – Exhibit #13) and Material Test Reports (MTR's) will be filed separately from the Design Package. Traceability to these documents is accomplished through the Material Traceability Record (Exhibit #9) which is filed with the Fabrication Package.

6.0 Fabrication Package

6.1 The Fabrication Package shall be assembled by the Quality Manager. It shall contain, but not be limited to the following documents and records:

6.1.1 Review and Verification Record (Exhibit #8) generated by the Quality Manager.

6.1.2 Material Traceability Record (Exhibit #9) generated by the Quality Manager, or a designee assigned by the Quality manager, is completed by the Shop/Field Team Leader, and verified by the Quality Manager, or a designee assigned by the Quality manager.

6.1.3 Weld and Inspection Record (Exhibit #7) generated by the Welding Engineer, populated by Shop/Field Welders & Fabricators and inspections verified by Shop/Field Inspectors.

6.1.4 Hydrostatic / Pneumatic Test Reports (Exhibit #10) shall be approved by the Shop/Field Inspector and verified by the Quality Manager, or a designee assigned by the Quality manager.

6.1.5 Copies of the approved design drawings and copies of customer specifications, when applicable.

6.1.6 Welding Procedure Specification Submittal generated by the Welding Engineer.

6.2 All work and processes shall follow the requirements specified in the Fabrication Package and this Manual.

7.0 Pre-Production Package Review

7.1 The Quality Manager shall review the Design Package and Fabrication Package and shall record this activity by signing the Review and Verification Record.

7.2 The AI reviews the Design Package and the Fabrication Package and records this activity by signing the Review and Verification Record.

7.3 When both reviews are complete, the packages shall be returned to the Quality Manager. The Quality Manager shall file the Design Package and forward the Fabrication Package to the appropriate shop Team Leaders for review and manufacture.

8.0 Revision Control:

8.1 When a change is identified which affects approved design documents, the change shall be reviewed for the impact on work in process and Code compliance. Based on this review, an ECN/MCN (Exhibit #2) shall be initiated by the person receiving the change or his designee, the job shall be placed on hold, if necessary, and the ECN/MCN shall be forwarded to the Engineering Manager for further review and generation of revised documents.

8.2 Revisions to design documents shall be processed in the same manner as the originals and shall receive the same review and approval process.

8.3 One set of Obsolete drawings for each revision shall be stamped as “OBSOLETE” or “VOID” and maintained in the design package. All remaining sets shall be destroyed.

8.4 Obsolete design drawings shall be removed from the Fabrication Package by Quality Manager or designee.

9.0 Pressure Vessel Design Work Requirements

9.1 Design activities associated with the manufacture of pressure vessels and components certified by Springs Fabrication shall be prepared by, or under the supervision and control of, personnel designated as a “Person in Responsible Charge” (PRC)

9.2 All personnel engaged in design activities as a PRC or while under the responsible charge of a PRC shall have:

9.2.1 Knowledge of the design requirements of ASME BPVC Section VIII, Division 1 for applying the Certification Mark and designator listed in the scope of the Certificate of Authorization,

9.2.2 Knowledge of this QT-3, ASME Quality Program Manual.

9.2.3 Training commensurate with the scope, complexity, criticality, or special nature of the design activities performed.

9.2.4 Their design activity qualifications determined and documented on the "Qualification for Design Activities / Person in Responsible Charge Designation" form (Exhibit #18) and certified by the Quality Manager.

9.2.5 Their design activities documented on the design calculation cover sheet (Exhibit #25).

9.3 Certified Engineers meeting the qualification requirements detailed herein may perform design activities for which they are qualified under the supervision of the PRC or be designated as a PRC without limitation of design activities.

9.4 Engineers and Designers meeting the qualification requirements detailed herein may perform design activities for which they are qualified under the supervision of the PRC or be designated as a PRC for a limited scope of design activities.

9.5 Design Assistants are permitted to perform design activities for which they are qualified only under the supervision of a PRC.

9.6 Design activity qualifications shall be determined per the following requirements:

9.6.1 <u>Certifying Engineer</u>: The Certifying Engineer shall,

9.6.1.1 Be Chartered, Registered, or Licensed in accordance with one or more of the following:

9.6.1.1.1 As a Registered Professional Engineer in at least one state of the United States or at least one province of Canada.

9.6.1.1.2 With the International Register of Professional Engineers by an authorized member of the International Professional Engineers Agreement (IPEA).

9.6.1.1.3 With an authorized member of the Asia Pacific Economic Cooperation (APEC).

9.6.1.1.4 With an authorized member of the European Federation of National Engineering Associations (FEANI).

9.6.1.2 Have 4 years or more of experience in the design of pressure vessels.

9.6.2 <u>Engineer</u>: The Engineer shall have,

9.6.2.1 A degree from a university or college having an accredited program in engineering, science, or technology requiring an equivalent of 4 years of full-time study of higher education.

9.6.2.2 One (1) year or more of experience in the design of pressure vessels.

9.6.3 Designer: The Designer shall meet either of the following:

9.6.3.1 Completed an accredited engineering technician or associate degree requiring the equivalent of at least 2 years of study, plus have a minimum of three (3) years of experience in the design of pressure vessels; or

9.6.3.2 A minimum of five (5) years of experience in the design of pressure vessels.

9.6.4 Design Assistant: The Design Assistant shall meet the requirements of paragraph 9.2.

9.7 When any of the design activities listed in ASME BPVC Section VIII, Division 1, Mandatory Appendix 47, Table 47-5-1 are required to be performed, the following additional qualifications shall apply for the individual(s) engaged in those activities.

9.7.1 A Certifying Engineer may engage in or be in responsible charge of any of the design activities listed in Table 47-5-1.

9.7.2 Engineers and Designers who engage in or are in responsible charge of any of the design activities listed in Table 47-5-1 shall have evidence of additional qualifications as follows:

9.7.2.1 Numerical Analysis (such as Finite Element Analysis)

9.7.2.1.1 Two (2) years or more of experience performing design analysis.

9.7.2.1.2 Have received instruction in the use and understanding of any numerical analysis computer programs from one of the following:

9.7.2.1.2.1 The developer of the computer program (e.g., the software vendor).

9.7.2.1.2.2 A training course acceptable to or licensed by the developer.

9.7.2.1.2.3 A Certifying Engineer with requisite knowledge of the computer program and qualifications to train others in its use.

9.7.2.2 Fatigue Assessments

9.7.2.2.1 Two (2) years or more of experience performing fatigue assessments.

9.7.2.2.2 The individual is working under the responsible charge of a Certifying Engineer.

9.7.2.3 Other Design Activities

9.7.2.3.1 Two (2) years or more of experience performing seismic reactions, designing quick-actuating closures, or being engaged in U-2(g) design activities.

9.8 When additional design capabilities are required which exceed the qualifications of the design staff, a Design Services Contractor (DCS) may be engaged to perform the required design activities. The DSC shall meet all the qualification and documentation requirements of this QC Manual without exception for the appropriate level of qualification required to perform the necessary design activities. These requirements always apply regardless of the extent or duration of the contracted design activities. If it becomes necessary to designate the DSC as a PRC, a letter appointing the DSC shall be issued. The DSC shall countersign the letter accepting their appointment and acknowledging their assigned responsibilities.

9.9 Qualified design staff shall have their design activities as PRC documented on the design calculation cover sheet (Exhibit #25).

9.10 If a qualified individual does not engage in design activities for more than twelve months, their competency to perform those activities shall be reevaluated by the individual certifying their design activity qualifications. The competency reevaluation shall be documented on the "Qualification for Design Activities / Person in Responsible Charge Designation" form (Exhibit #18) prior to assigning the individual to any design activities whose continuity is exceeded.

10.0 Person in Responsible Charge (PRC)

10.1 Personnel qualified as a Certifying Engineer, Engineer, or Designer, selected to be a "Person in Responsible Charge" (PRC) shall be designated as such using the controlled document "Qualification for Design Activities / Person in Responsible Charge Designation" (Exhibit #18). Each person's authority for being in responsible charge shall be assigned a scope of design activities commensurate with their level of qualification.

10.2 Personnel designated as a PRC shall be actively engaged in the design process from conception to completion. Engineering decisions must be personally made by a PRC, or by individuals over which the PRC provides supervisory direction and control. Reviewing and accepting design calculations or analysis reports after their preparation without direct involvement in their development does not constitute the proper execution of "responsible charge" as intended by these requirements.

10.3 Personnel designated as a PRC should demonstrate sufficient competency in the following body of knowledge elements:

10.3.1 Basic Capability

- Mathematics

10.3.2 Technical Capability

- Manufacturing processes to be applied
- Design requirements for the code of construction
- Engineering science
- Engineering tools (i.e., design software)
- Quality control and quality assurance
- Technical breadth and depth

10.3.3 Professional Practice

- Communication
- Legal aspects of engineering
- Continuing education

Section VII
MATERIAL CONTROL

1.0 Scope:

1.1 This section defines Springs Fabrication's system for controlling material and items used for ASME Code projects. It includes requirements for material and item requisition, purchasing, receiving, identification, substitutions, conditional releases, and traceability.

2.0 Requisition:

2.1 The Project Manager shall review the design drawings to determine which materials or parts need to be requisitioned. Based on this review, the Project Manager shall initiate a material requisition, which specifies the Code requirements that apply to the items being purchased. In addition, the material or item description, specification, and purchasing notes shall be specified on the requisition.

2.2 All requisitions for materials that form the pressure boundary or that will be welded directly to the pressure boundary shall be routed to the Quality Manager for review.

2.3 The Quality Manager shall review and indicate compliance for purchase by date stamping (initials and date) in the requisition notes, then route to purchasing for processing.

2.4 A Buyer shall process the Material Requisition for materials and parts and generate a Purchase Order (Exhibit #12) through the ERP System.

2.5 Where items are ordered for a specific job, the job number shall be indicated on the Purchase Order. Electronic signature/initials and date of the Purchase Order is recognized as an acceptable approval signature method.

3.0 Purchasing:

3.1 Materials and/or parts shall be purchased in compliance with the requirements of the current edition of the ASME Code. Material specifications shall be designated SA, SB, SFA, or Code-acceptable ASTM designations. The requirements of UG-79 shall be applied when required.

3.2 The supplier is responsible for fulfilling the order in accordance with all specifications and instructions provided in the Purchase Order.

4.0 Receiving:

4.1 Using a receiving copy of the Purchase Order, or accessing the Purchase Order through the ERP System, the Material Control Coordinator shall receive and process the purchased item(s) and applicable documentation, and as a minimum, shall perform the following duties, or ensure that they are performed:

4.1.1 Verify the nominal sizes of the items being received.

4.1.2 Visually inspect for damage or condition of the surface of the material.

4.1.3 Verify and record all markings (i.e. heat/lot numbers, heat codes, and material specifications).

4.1.4 Verify that the items received satisfy the requirements of the Purchase Order.

4.1.5 Initiate a Material Receiving Report (MRR/Exhibit # 13).

4.1.6 Verify that standard pressure parts have Certificate of Compliance when a Material Test Report is not available and that other (non-standard) Code parts fabricated by welding have Manufacturer's Partial Data Reports.

4.1.7 Notify the Shop/Field Inspector of the receipt of ASME heads and material that require thickness verification and forward the MRR.

4.1.8 Verify that received Material Test Reports are in compliance with Section II of the ASME Code as applicable and, when acceptable, initial and stamp the MTR with the date and inspection stamp, and sign and date the MRR.

4.2 A Shop/ Field Inspector shall ensure that actual thickness measurements for ASME heads and items that require thickness verification are performed by signing and dating the MRR. If further material testing is required to be performed at receiving inspection or during manufacturing operations, the Quality Manager is responsible for seeing that these tests are performed and documented.

4.3 The Shop/Field Inspector shall verify that the Manufacturer's Partial Data Report is attached to the Material Receiving Report prior to completing incoming inspection.

4.4 The Document Control Coordinator shall ensure that the MRR's are reviewed for completeness and indicate the final review is complete by signature and date on the MRR.

4.5 The Material Control Coordinator shall ensure that acceptable received items are identified by one of the methods below.

4.5.1 Items (i.e. raw material, fittings, flanges, etc.) shall be assigned a Springs Fabrication Material Code Number (SFMC). This SFMC is a coded marking system acceptable to the AI for tracking heat numbers and material test reports.

4.5.1.1 The SFMC shall consist of an 8-digit number (SF XX XXXX). The first two characters (SF) reflect Springs Fabrication. The third and fourth digits designate

the year in which the materials are received. The remaining 4 digits are a sequential number beginning with 0001 and ending with 9999.

4.5.1.2 The SFMC details shall be recorded in the SF Number Database (Exhibit #14).

4.5.2 Standard pressure parts that have Certificates of Compliance and other (non-standard) Code parts fabricated by welding that have Manufacturer's Partial Data Reports shall be identified by the supplier's part number.

4.5.3 Items that have been requisitioned specifically for a job and shall be used entirely for that job shall be marked with that job number.

4.6 Items that have the same heat number, material specification and coded markings may be grouped together, and their location identified as stated above.

4.7 Customer-supplied items shall be processed in the same manner as purchased items, except that a SFMC may or may not be assigned as appropriate. The customer shall be responsible for ensuring that the items are properly marked and identified in accordance with the requirements of the ASME Code. Items not identified correctly will be handled in accordance with 4.10 below.

4.8 The Material Control Coordinator shall forward the completed MRR, Material Test Reports, Manufacturer's Partial Data Reports, etc. to Document Control Coordinator for review and retention.

4.9 The accepted materials shall be moved to the appropriate storage or staging area.

4.10 When items received do not meet the requirements of the purchase order or the ASME Code, the item(s) shall be identified with a Hold Tag (Exhibit #23). The item(s) shall not be released until the purchase order requirements or ASME Code requirements are met, or a Quality System Deviation (Exhibit #15) is generated and approved. When the item(s) cannot meet the above requirements, an NCR (Exhibit #16) shall be initiated, and disposition determined in accordance with Section X of this Manual.

5.0 Substitutions:

5.1 When a required item is not available, a substitute item may be used when the following processes are followed:

5.1.1 The Project Manager shall generate a Quality System Deviation (QSD) (Exhibit #15).

5.1.2 The Engineering Manager shall review the QSD for ASME Code compliance.

5.1.2.1 If the QSD is approved, the Engineering Manager shall sign it.

5.1.2.2 If the QSD cannot be approved due to the inability to meet ASME Code compliance, that aspect of the job shall be placed on hold until the required item can be obtained.

5.1.3 The Quality Manager shall review the QSD for ASME Quality Program compliance.

5.1.3.1 The Quality Manager shall indicate approval of the QSD by signing it.

5.1.3.2 Any conflicts or issues detected in the QSD with the ASME Quality Program shall be resolved before the QSD is approved.

5.1.4 All QSD's generated for material substitution shall be submitted to the AI for his review and signed concurrence.

5.1.5 When a material substitution QSD is authorized, a copy of the QSD shall be placed in the Fabrication Package. The Quality Manager shall retain the original in the Design Package.

6.0 Conditional Release:

6.1 When a required item is on hold at receiving, a conditional release can authorize the release of the item when the following steps are followed:

6.1.1 The Project Manager shall generate a Quality System Deviation (Exhibit #15).

6.1.2 The Quality Manager shall review the Quality System Deviation and indicate approval with a signature on the Quality System Deviation.

6.1.3 When a conditional release is authorized, a copy of the Quality System Deviation shall be placed in the Fabrication Package. The Quality Manager shall retain the original in the Design Package.

6.1.4 Prior to signing the Manufacturers Data Report, all conditional releases must be closed, and the Quality Manager shall initial the Review and Verification Record.

Section VIII
AUTHORIZED INSPECTOR

1.0 Scope:

1.1 This section describes the working relationship of Springs Fabrication with the Authorized Inspection Agency and the AI.

2.0 General:

2.1 The AI and/or Supervisor shall have free access to the premises of Springs Fabrication and/or field sites where Code work is being performed and to all documentation related to Code work being performed. Access shall be granted for the performance of scheduled and unscheduled inspections, QC monitoring, annual and periodic audits of Springs Fabrication's manufacturing systems and audits of the AI as required by the National Board Rules and Regulations.

2.2 The AI also has the privilege of visiting any vendor or supplier of materials, parts and/or services to Springs Fabrication that he deems necessary to satisfy any and all inspection requirements of such material, parts and/or services.

2.3 The Quality Manager shall be the liaison between Springs Fabrication and the Authorized Inspection Agency and the AI. Inspections shall be scheduled with sufficient notification to allow the AI to make the necessary arrangements for performing the requested inspections.

2.3.1 Currently, Springs Fabrication maintains an inspection agreement with only the Agency of Record. If Springs Fabrication changes or cancels the inspection agreement, the ASME/ National Board will be notified immediately by the Quality Manager.

2.4 The Design and Fabrication Packages shall be made available to the AI for review and the establishment of AI Hold Points on the RVR (Exhibit #8), prior to fabrication.

2.5 A current controlled copy of the ASME Quality Program Manual shall be available to the AI at Springs Fabrication. A controlled copy of the ASME Quality Program Manual shall also be available at any field site for the AI's use.

2.6 Nonconforming conditions involving repairs to pressure-retaining surfaces shall be provided to the AI for his review and concurrence. Welding repairs to pressure-retaining materials shall be presented to the AI for his review and concurrence prior to repairs being performed.

Section IX
EXAMINATION AND INSPECTION PROGRAM

1.0 Scope:

1.1 This section establishes the requirements for the issuance of material, material processing, fabrication, final inspection and testing, application of the ASME Code Certification Mark, and preparation and submittal of the Manufacturer's Data Report.

2.0 Issuance:

2.1 Production personnel shall verify that items released for manufacture are as specified in the Fabrication Package and are identified as required.

2.2 Shop/ Field Team Leaders shall review the Fabrication Package and WPSs as well as assign qualified Welders.

3.0 Processing:

3.1 Shop/Field Fabricators and Machine Operators shall transfer the SFMC from the parent material to the cut piece. The SFMC on the parent material must remain legible after all cutting operations are completed. If the cut interferes with the SFMC it shall be copied to another location on the parent material prior to cutting.

3.2 If the SFMC is removed by any machining operation, the Machine Operator shall maintain material traceability and the item's SFMC shall be reapplied after each machine process is completed.

4.0 Fabrication:

4.1 Shop/Field Fabricators shall follow all manufacturing plans, weld maps, WPSs, and other job documentation as provided.

4.2 Shop/Field Fabricators shall maintain item traceability throughout the fabrication process by recording the SFMC of each item on the Material Traceability Record (Exhibit # 9) and shall maintain the traceability of the SFMC on the items that have been received for fabrication.

4.3 The AI and Customer Hold/Witness points shall be annotated on the Review and Verification Record as applicable.

4.4 The Shop/Field Inspector shall be notified when inspection points have been reached or when a quality issue needs to be addressed.

4.5 All Code items and/or parts shall have their National Board number or Springs Fabrication serial number stamped on the nameplate bracket, prior to attachment of the nameplate, and on any removable pressure boundary items.

4.6 The Shop/Field Team Leaders shall ensure that items are prepared for inspection, testing, and examination.

5.0 Inspection and Testing:

5.1 In-process fabrication and welding shall be monitored and inspected by the Shop/Field Inspector, or his designated inspector, throughout the fabrication process and the results shall be documented on the Weld and Inspection Record.

5.1.1 Weld joints shall be inspected for correct joint preparations, proper fit-up and alignment, in-process and final weld integrity, and visual acceptability.

5.1.2 Spin hole welds shall be examined in accordance with ASME Section VIII, Div. 1 UW-34.

5.1.3 The design drawings identify the individual weld joints by use of an identification number. The fabricators shall enter their Welder stamp number and date on the corresponding number on the Weld and Inspection Record for each weld they perform.

5.1.4 The Weld and Inspection Record shall list any Nondestructive Examinations (NDE) required. The Shop/Field Inspector and the AI shall review the results of all Code-mandated NDE examinations for compliance to the Code except volumetric examination which shall be reviewed by the Welding Engineer and the AI.

5.2 The Quality Manager shall notify the AI when approaching specified inspection Hold/Witness Points.

5.3 The Project Manager shall notify the customer representative when approaching specified Hold/Witness Points.

5.4 The Shop/Field Inspector shall ensure items that shall be stamped with the ASME Certification Mark with the “U” designator shall be pressure tested as specified by the Code and are verified by the Shop/Field Inspector and the AI.

5.4.1 The Shop/Field Inspector shall ensure that test gages of the proper range shall be used. Dial indicating pressure gages used in testing shall be graduated over a range of about double the intended maximum test pressure, but in no case shall the range be neither less than 1-½ nor more than 4 times test pressure.

5.4.2 The results of the pressure test shall be documented on the Hydrostatic/Pneumatic Test Report (Exhibit #10) and signed by the Shop/Field Inspector.

5.4.3 When a pneumatic test is required, the requirements of ASME Section VIII, Division 1, paragraph UG-100 and UW-50, shall apply.

6.0 ASME Certification Mark & NB Symbol:

6.1 The Quality Manager shall ensure the ASME Certification Mark, its usage, and the nameplates that they are applied to, are controlled.

6.2 The ASME Certification Mark shall only be applied with the AI's concurrence.

6.3 The abbreviation "Springs Fabrication" may be used on the nameplate in lieu of "Springs Fabrication, LLC".

7.0 Manufacturer's Data Report:

7.1 Quality Manager shall initiate a Manufacturer's Data Report for "U" designated items.

7.2 The Manufacturer's Data Report shall be reviewed for correctness and completeness and signed by the Quality Manager prior to being submitted to the AI.

7.3 The AI shall review the Manufacturer's Data Report and stamped Code nameplate. When satisfied that Code requirements have been met the AI may sign the Manufacturer's Data Report.

7.4 Quality Manager shall initiate a Manufacturer's Partial Data Report (MPDR) for "U" designated parts.

7.5 The MPDR shall be reviewed for correctness and completeness and signed by the Quality Manager prior to being submitted to the AI.

7.6 The AI shall review the MPDR, the stamped Code nameplate or the directly stamped part. When satisfied that Code requirements have been met the AI may sign the MPDR.

7.7 The Shop/Field Inspector shall ensure that the Code nameplate with the ASME Certification Mark with the appropriate Code designator is attached securely to the item after each item has been assembled and prepared for shipment.

7.7.1 When the nameplate is required to be welded directly to the Code item, the nameplate may be attached prior to final inspection, subject to AI concurrence.

Section X
CORRECTION OF NONCONFORMITIES

1.0 Scope:

1.1 This section establishes the guidelines necessary for the identification, resolution, disposition, and documentation of nonconformities in items and/or parts manufactured under the requirements of the ASME Quality Program.

1.2 Nonconformity is defined as any condition that renders an item or activity unacceptable or indeterminate and as specified in the Glossary.

2.0 Identification:

2.1 When a nonconforming condition is identified with materials, parts, welds, or documentation during the receiving, fabrication, or testing processes, the individual who identified the issue shall verify the nonconformance with the Shop/Field Inspector and document the condition on a Nonconformance Report (Exhibit #16).

2.2 The nonconforming material, part or item shall be identified with a Hold Tag (Exhibit #23), and moved, when reasonable, to the hold area until disposition is determined and released by the Quality Manager.

2.3 When an NCR is initiated, it shall be identified on the Review and Verification Record.

2.4 Nonconforming conditions involving repairs and rework to pressure-retaining items shall be provided to the AI for his review and concurrence prior to repairs being performed.

3.0 Resolution and Disposition:

3.1 The Quality Manager, Engineering Manager, and Welding Engineer as required shall review the nonconformance and determine a disposition. All dispositions related to Code compliance shall be brought to the attention of the AI for acceptance. Documented objective evidence of the AI's acceptance of disposition shall be attached to the NCR.

3.2 Nonconforming conditions shall have their dispositions determined using one of the following options.

3.2.1 "Rework" – the nonconforming item is made to conform to the specified requirements by re-machining, re-welding, re-assembling, or other corrective means during fabrication. AI concurrence is required.

3.2.2 "Repair" – the nonconforming item is brought to a condition such that the capability of an item to perform its design function is unimpaired, even though that item still may not conform to the original requirement. AI concurrence is required.

3.2.3 "Supplier Rework" - the nonconforming item is returned to the supplier to be reworked.

3.2.4 "Scrap" – the nonconforming item is scrapped.

3.2.5 "Engineering Use-As-Is" – This disposition is only applicable when Springs Fabrication has design authority. It may be imposed for a nonconformance when it can be established that the discrepancy shall result in no adverse impact on the design specifications and the deviation shall still meet the requirements of the ASME Code. The item shall continue to meet all engineering functional requirements.

3.2.6 "Customer Use-As-Is" – A disposition that satisfies the criteria of an "Engineering Use as is" except that Springs Fabrication does not have design authority and acceptance of the deviation must have prior customer approval.

4.0 Documentation:

4.1 If the corrective action requires welding, the Quality Manager shall coordinate with the Welding Engineer to initiate the appropriate weld and inspection documentation and assign the appropriate Welding Procedure Specification to complete the specified corrective actions.

4.2 The Quality Manager and AI shall review the completed NCR's that require AI concurrence to verify that the specified corrective actions have been completed. When satisfied that all corrective actions have been adequately completed and documented, they shall sign and date the NCR, and the Quality Manager shall remove the Hold Tag.

4.3 When completed, the closure of the NCR shall be recorded in the NCR Database and the NCR shall be filed in the Design Package.

Section XI
WELDING CONTROL

1.0 Scope:

1.1 This section establishes the requirements necessary to ensure that all welding performed on ASME Code Materials, Items and/or Parts conforms to the requirements of the ASME Code Section IX and other Code sections, as applicable.

2.0 General:

2.1 All welding of ASME Code materials, items and/or parts shall be performed by Welders who have been qualified in accordance with the requirements of ASME Section IX and this Quality Program Manual.

2.2 All Springs Fabrication ASME qualified welding procedures are acceptable for use at shop/field locations controlled by Springs Fabrication.

2.3 Procedure Qualification Records, Welding Procedure Specifications, and Welder Performance Qualification records shall be on file and available to the AI upon request.

2.4 The AI has the right at any time to require re-qualification of any welding procedure, or Welder, or Welding Operator.

2.5 Welding processes acceptable for use are maintained by the Welding Engineer.

3.0 Weld Test Proctor Qualifications

3.1 Individuals designated as Weld Test Proctors shall meet one of the following criteria:

3.1.1 Employees familiar with ASME Section IX requirements and actively certified by the AWS as a CWI,

3.1.2 Employees other than CWI's may be considered qualified Weld Test Proctors by the following:

3.1.2.1 A minimum of two years of welding, welding inspection, or welding engineering experience.

3.1.2.2 Have received training on ASME Section IX requirements, this training may be from an external training course, or from internal training.

3.1.2.3 Have demonstrated their understanding of ASME Section IX requirements by having passed an open book examination with a score of no less than 75%.

3.2 Individuals designated as Weld Test Proctors shall have knowledge of Springs Fabrication's Quality Control Program.

3.3 Individuals designated as Weld Test Proctors shall understand the scope, complexity, or special nature of the activities to which oversight is to be provided.

3.3.1 The Welding Engineer shall communicate any and all special requirements.

3.4 Individuals designated as Weld Test Proctors shall have a record, maintained by the organization, containing objective evidence of the qualifications, training, or experience.

4.0 Weld Procedure Specifications:

4.1 The Welding Engineer shall develop and maintain the Procedure Qualification Record and Welding Procedure Specification records used in the construction of ASME Code items and parts. They shall be developed and qualified in accordance with the requirements of ASME Section IX, as supplemented by the Code of Construction.

4.1.1 The Welding Engineer shall determine the appropriate size, material type, and number of test coupons required for the qualification of the Welding Procedure Specification.

4.1.2 The Welding Engineer shall prepare a draft Welding Procedure Specification or Welder Performance Qualification and Procedure Qualification Record.

4.1.3 The Weld Test Proctor shall supervise, control, and evaluate the acceptance of the procedure qualification process. They shall record the actual value of each essential variable of the process and shall verify that the values used in the qualification process are within the ranges specified on the draft Welding Procedure Specification / Test Information Form.

4.1.4 The test coupons, marked with the coupon number, base material, and filler material, shall be sent to an outside testing laboratory for testing in accordance with ASME Section IX.

4.1.5 When acceptable results are received from the test lab, a formal Welding Procedure Specification (WPS) shall be prepared and issued which references the Procedure Qualification Record (PQR) documenting the procedure test results. A Welder Performance Qualification (WPQ)/ Welding Operator Performance Qualification (WOPQ) shall also be prepared and issued to document the Welder's qualification resulting from the test. The Welding Engineer shall certify the PQR, WPQ, or WOPQ.

4.2 The Welding Engineer shall specify the Welding Procedure Specifications to be used for all Code welding on the WPS Submittal.

4.3 The Welding Engineer shall generate the Weld and Inspection Record for weld traceability.

4.4 The Welding Engineer shall provide controlled copies of a Welding Procedure Manual that contain the valid Welding Procedure Specifications to the Shop/Field Inspector and the Shop / Field Leaders for use. The Welding Procedure Manual shall be readily available to the Welders.

5.0 Welder Qualifications:

5.1 The Welding Engineer shall develop, qualify, certify, and maintain the Welding Performance Qualification records used in the construction of ASME Code items and parts. They shall be developed and qualified in accordance with the requirements of ASME Section IX, as supplemented by the Code of Construction.

5.2 The Welder qualification process shall be conducted using the data supplied on the Welding Procedure Specification. The Weld Test Proctor shall supervise, control, and evaluate the Welder qualification process. The Weld Test Proctor shall record the actual value of each essential variable of the process and shall verify that the values used in the qualification process are within the ranges specified on the Welding Procedure Specification.

5.3 When the qualification test has been completed the Weld Test Proctor shall perform a visual inspection of the completed test coupon to ensure that the weld meets the acceptance criteria of the Code.

5.4 Acceptable test coupons shall be tested in accordance with the requirements of ASME Section IX. When the coupon passes the required test, acceptance of the Welder Performance Qualification shall be by the Welding Engineer who will prepare, certify, and issue the Welder Performance Qualification (WPQ) or Welding Operator Performance Qualification (WOPR) as applicable.

5.5 The Welding Engineer shall assign and log each Welder with a Welder ID number and stamp upon successful qualification testing. A log shall be kept controlling the issuance of the stamps.

5.6 A Continuity Report (Exhibit #17) shall be maintained by the Welding Engineer and updated at least monthly to monitor each qualified Welder's history.

5.7 A Welder's performance qualifications shall expire if he has not welded with a process during a period of six (6) months or when there is a specific reason to question his ability to make sound welds. If a Welder is to continue Code welding, a renewal qualification shall be performed. If performance-essential variables change, the Welder shall be re-qualified.

5.8 The Shop Team Leaders shall be responsible for the assignment and instruction of the Welders based on the requirements of the Weld Map and WPS.

5.8.1 The Welding Engineer shall provide welder qualification information to Shop Team Leaders.

6.0 Welding Filler Material Control:

6.1 The Material Control Coordinator (MCC) shall monitor the welding filler material stock levels on a regular basis to ensure that stock levels are maintained at sufficient levels and reordered as necessary. The MCC shall initiate a material requisition in the ERP System which specifies Code requirements for the material. A Purchase Order shall be generated and reviewed per Section VII of this Manual.

6.1.1 The purchase order shall specify the SFA- Specification (ASME's Specifications for Welding Rod, Electrodes, and Filler Metals, Section II, Part C), the AWS Classification, or the brand name and the quantity of weld filler material to be ordered.

6.1.2 The material requisition shall be initiated or reviewed by the Welding Engineer when ordering non-stock or newly added stock materials. These reviews shall be performed as outlined in Section VII of this Manual.

6.2 When welding filler materials are received, they shall be stored in a controlled location until issued to production.

6.3 Once issued by the MCC, welding filler materials shall be controlled in such a way as to prevent contamination or loss of identification.

6.4 The Welders shall ensure that filler materials being used on each job is as specified by the Welding Procedure Specification.

6.5 The Shop/ Field Team Leader shall verify that the welding filler material being used on each job is as specified by the Welding Procedure Specification.

6.6 Low hydrogen electrodes shall be maintained in the original sealed containers until they are placed in the rod oven.

6.6.1 No more than a four-hour supply of low hydrogen electrodes shall be issued to a Welder at any one time.

6.6.2 Low hydrogen electrodes returned after being exposed for more than 4 hours will be discarded or used for non-code work.

6.6.3 The rod oven temperature shall be in accordance with ASME Section II Part C or the rod manufacturer specifications.

7.0 Weld Stamping:

7.1 Recording the Welder ID on the Weld and Inspection Record (Exhibit #7) is completed by the Welder when each stage of welding is complete and is used in lieu of the Code-mandated weld stamping.

8.0 Tack Welds:

8.1 Tack welds shall be made by qualified Welders and procedures, and visually inspected for defects by the Shop/Field Inspector or his designated inspector. Tack welds that are defective shall be removed.

8.2 Tack welds that are left in place shall be properly prepared for inclusion into the final weld.

8.3 Tack welds used by subcontractors shall be controlled by using the WPS approved by the Welding Engineer. Subcontractor tacks shall be removed.

Section XII
NONDESTRUCTIVE EXAMINATION

1.0 Scope:

1.1 This section of this Manual establishes the controls for the performance of Nondestructive Examinations (NDE) to ASME Code items, parts and components as required by ASME Section VIII, Division 1.

2.0 General Requirements:

2.1 The Welding Engineer shall specify on the Weld and Inspection Record the NDE examinations mandated by the Code.

2.2 NDE methods acceptable for use shall include Radiographic Testing, Ultrasonic Testing, Liquid Dye Penetrant Testing, and Magnetic Particle Testing.

2.3 The Quality Manager shall establish and maintain NDE qualification requirements for in-house inspectors as applicable as described in paragraph 3.0.

2.4 The Welding Engineer shall review and approve in-house and sub-contractor NDE qualifications and procedures.

2.5 NDE examinations performed by or on behalf of Springs Fabrication shall be performed in accordance with qualified and approved procedures. Springs Fabrication Shop Inspectors or qualified subcontractors can perform NDE examinations as described in paragraphs 3.1 or 3.2, as appropriate.

2.6 Magnetic Particle Testing and Liquid Dye Penetrant Testing may be performed in-house or by a subcontractor.

2.7 Where needed, for Radiographic Testing, Ultrasonic Testing, Liquid Dye Penetrant Testing, and Magnetic Particle Testing, a subcontractor can be used. The Quality Manager shall appoint the subcontractor's level III by letter, and the subcontractor shall accept this appointment in writing.

2.8 The Welding Engineer shall act as the liaison with the NDE subcontractors.

2.9 The Welding Engineer, Shop/Field Inspector shall review NDE results for compliance with the applicable Code acceptance criteria. This includes reviewing all radiographic films.

2.10 NDE procedures shall be demonstrated to the satisfaction of the AI per T-150 of ASME Section V prior to acceptance of production examinations.

2.11 The AI has the prerogative of requiring re-qualification of any NDE procedures and/or examiners if he has reason to doubt the effectiveness of results.

3.0 Personnel Qualifications / Certifications

3.1 Sub-contract and in-house personnel performing NDE examinations must be qualified to a Written Practice which meets the requirements of ASNT SNT-TC-1A, current Code-mandated edition and certified by the sub-contracted Level III.

3.2 Copies of sub-contract personnel certification records shall be reviewed by the Quality Manager and the AI and maintained on file.

3.3 Springs Fabrication personnel who perform Liquid Dye Penetrant Testing and Magnetic Particle Testing shall be required to demonstrate to the Quality Manager and AI their knowledge and proficiency in the specific NDE method they shall be required to use in production.

3.4 Springs Fabrication personnel who interpret NDE examinations shall have an annual visual examination to Jaeger J-1 at 12 inches.

4.0 Procedure:

4.1 Specified NDE examinations shall be performed by either qualified in-house personnel or qualified sub-contracted personnel and the results documented.

4.2 The results of all NDE examinations, including film and interpretation sheets for Radiographic Testing, shall be made available to the AI for review and acceptance.

4.3 Radiographic film viewing equipment and calibrated density strips shall be provided by the vendor and available for use by the AI.

4.4 Quality Manager shall file the NDE results in the Design Package after the examination. The Liquid Penetrant Examination Report (Exhibit #11) provides a sample type of documentation that would be provided to Quality Manager.

Section XIII
HEAT TREATMENT

1.0 Scope:

1.1 This section establishes the way heat treat operations are performed including procedural requirements necessary to assure that Code requirements and customer specifications are met.

2.0 General Requirements:

2.1 The Quality Manager shall specify on the Review and Verification Record the requirement for heat treatment if applicable.

2.2 For subcontracted heat treatment, the Engineering Manager or Welding Engineer shall provide Code requirements and review and approve the subcontractor's procedure. The procedure shall specify, as a minimum, proper thermocouple placement, attachment and removal method, heating and cooling gradients, holding time and temperature, and calibration requirements. Heat treatment reports and charts shall be signed and dated by the subcontractor.

2.3 For in-house localized heat treatment, the Engineering Manager or Welding Engineer shall provide Code requirements and develop a Code-compliant procedure. The procedure shall specify, as a minimum, proper thermocouple placement and attachment method, heating and cooling gradients, holding time and temperature, and calibration requirements.

2.4 The Welding Engineer shall review time and temperature charts and sub-contractor's documentation for compliance with the ASME Code and written procedures.

2.5 Heat treatment procedures and records shall be made available to the AI for review.

3.0 Procedure:

3.1 Items and/or parts identified for heat treatment shall be marked with the Job Number and National Board Number or Serial Number to ensure traceability. Identification markings shall be recorded on the time and temperature chart. Items returning from sub-contracted heat treatment shall be received as described in Section VII of this Manual.

3.2 Documentation shall also include calibration records for the equipment used in the process.

Section XIV
CALIBRATION OF MEASUREMENT AND TEST EQUIPMENT

1.0 Scope:

1.1 This section describes Springs Fabrication's system for calibration of Measurement and Test Equipment (M&TE) used for the purpose of performing tests and inspections as specified by ASME Section VIII, Division 1.

2.0 General Requirements:

2.1 The Document Control Lead is responsible for the calibration and control of tools, gages, instruments, and other M&TE used in activities affecting product quality. Only equipment with current calibration status shall be used for final acceptance for Code examinations and tests.

2.2 M&TE shall have a unique identification number. This number shall be marked on the equipment and shall be recorded in the Springs Fabrication Tools Calibration List (Exhibit #3). The identification number can be the equipment serial number, or a unique Springs Fabrication assigned identifier.

2.3 M&TE shall have a current calibration sticker. If a calibration sticker cannot be placed directly on the equipment the sticker shall be affixed to the case or a tracking number on the equipment shall be traceable to the Springs Fabrication Tools Calibration List.

2.4 The calibration history for each piece of test equipment shall be documented on a Calibration Record (Exhibit #19) which is retained by the Document Control Lead.

2.5 The Document Control Lead shall monitor the Springs Fabrication Tools Calibration List, to assure that M&TE calibration status remains current. Before the calibration due date is reached, the equipment shall be removed from service and be sent for calibration.

2.6 When reason exists to believe that equipment is not performing correctly it shall be verified prior to use. If it cannot be readily verified it shall be re-calibrated before use or replaced.

2.7 Either Springs Fabrication or a sub-contracted agency shall perform calibration activities at pre-determined intervals. Calibrations shall be traceable to national standards.

2.8 Pressure test gages shall be calibrated on an annual basis or any time an error is suspected using a standard deadweight tester or calibrated master gage.

2.9 In-house calibrations shall be performed in accordance with procedures approved by the Quality Manager. Sub-contractors who have been approved by the Quality Manager shall perform outside calibration services as required.

2.10 Out-of-calibration equipment shall be handled per Section X of this Manual.

Section XV
RECORDS RETENTION

1.0 Scope:

1.1 This section outlines the system for the retention of quality records which are generated to document the fabrication, inspection, and testing of ASME Code items and parts at Springs Fabrication.

2.0 General Requirements:

2.1 The Document Control Lead is responsible for the accumulation and retention of quality records.

2.2 Quality records shall be retained at Springs Fabrication. Manufacturer's Data Reports shall be distributed as required by Section VIII, Division 1 of the ASME Code and the National Board requirements.

2.3 The Design Package, the Fabrication Package, and records generated during fabrication and inspections shall be retained for a minimum of 5 years. After the job is complete, the Fabrication Package(s) shall be merged into the Design Package for final filing.

2.4 Manufacturer's Data Reports and National Board R-Forms (which are not registered with the National Board) shall be retained for a minimum of five (5) years.

2.5 A copy of the Manufacturer's Data Report shall be furnished to the user or his designated agent and, upon request, to the Inspector.

2.6 All Quality Records shall be available to the AI for review.

2.7 For ASME Section VIII Div 1 items, records retention to include:

1. Manufacturers Partial Data Reports.
2. Manufacturing Drawings.
3. Design Calculations and Proof Test Reports.
4. Material Test Reports and / or Material Certifications.
5. Pressure Parts Documentation and Certifications.
6. Welding Procedure Specifications and Procedure Qualification Record's (retained electronically by Welding Engineer).
7. Welder Performance Qualification Records, including Welder Continuity Logs, for only those welders/welding operators who welded on the vessel or part (retained electronically by Welding Engineer), shall be maintained for at least the minimum time frame as set forth in Mandatory Appendix 10.
8. NDE Interpretation Reports.
9. Repair Procedure and Records.
10. Process Control Sheets (RVRs and WIRs).

11. Heat Treat Records and Test Results.
12. Post Weld Heat Treatment Records.
13. Nonconformances and Dispositions.
14. Hydrostatic / Pneumatic Test Records.

Section XVI
REGISTRATION WITH THE NATIONAL BOARD

1.0 Scope:

1.1 This section establishes the controls necessary for the control and application of the NB stamp and for proper registration with the National Board (when required).

2.0 General Requirements:

2.1 The Engineering Manager or Designer shall issue the National Board and Serial Numbers and record them in the National Board Numbers Control Log (Exhibit #20).

2.1.1 Serial Numbers for Code items shall consist of the last two digits of the year design began, the job number and National Board Number. For example, an item designed in 2001 on job number J4347 with a National Board Number of 567 would be assigned a serial number of 01-4347-567.

2.1.2 National Board Numbers shall be assigned starting with number 1 and running consecutively without skips, gaps, or duplications.

2.2 The Quality Manager shall ensure that Manufacturer's Data Reports for ASME Code items are registered with the National Board per the customers' or jurisdictional requirements.

2.3 The original Manufacturer's Data Report shall be submitted to the National Board within 30 days of certification.

2.4 The Quality Manager shall ensure the NB stamp and ASME Certification Mark, its usage, and the nameplates that they are applied to, are controlled.

2.5 The NB stamp shall be applied to the nameplate when the item requires registration with the National Board.

Section XVII
FIELD SITE OPERATIONS

1.0 Scope:

1.1 This section establishes additional controls necessary to control operations at field sites. This ASME Quality Program Manual shall control all remote activities. The requirements of the Quality Program as described previously shall be adhered to except as amended in this section.

2.0 Requirements:

2.1 A controlled copy of this Manual, as well as a controlled copy of the ASME Weld Procedures Manual, including Welder's qualifications and Continuity Log, shall be available at the field site.

2.2 The Quality Manager shall facilitate the hand-off of the Fabrication Package to the field site.

2.3 Welding consumables, which conform to the requirements of Section XI of this Manual, may be obtained locally by the Shop/Field Team Leader.

2.4 The Shop/Field Inspector or Shop/Field Team Leader may receive materials that conform to the requirements of Section VII of this Manual at the field site. Receipt of material shall be in accordance with the requirements of Section VII of this manual.

2.5 Pressure gages used for pressure testing shall be calibrated and available at the field site. Gages shall be issued to the Shop/Field Inspector for use in field site pressure testing.

2.6 Code nameplates shall be pre-stamped and shall have been verified by the Quality Manager prior to being transmitted to the field site to be attached. The Shop/Field Inspector shall attach the applicable nameplate in the field site with the concurrence of the AI.

2.7 All documentation shall be made available to the AI at the field site.

2.8 Completed documentation shall be returned to the Quality Manager for review and approval. Completed documentation packages shall be made available to the AI for review.

Section XVIII
REPAIRS AND ALTERATIONS

1.0 Scope:

1.1 This section establishes the guidelines to assure that all repairs and alterations to pressure-retaining items are made in accordance with the requirements of the NBIC and/or Jurisdictional requirements and this Manual.

2.0 Policy:

2.1 It shall be the policy of Springs Fabrication to make repairs and alterations to pressure-retaining items in accordance with the rules and regulations of the NBIC and/or Jurisdictional Authority located in the area in which the item shall operate.

2.2 Where any provision in the NBIC presents a direct or implied conflict with any lawful regulation of the Jurisdictional Authority, the lawful regulation shall govern.

2.3 When the standard governing the original construction is the ASME Code, repairs and alterations shall conform, insofar as possible, to the section and edition of the ASME Code most applicable to the work planned.

2.4 When the standard governing the original construction is not the ASME Code, repairs and alterations shall conform, insofar as possible, to the edition of the construction standard or specification most applicable to the work. Where this is not possible or practicable, it is permissible to use other codes, standards, or specifications including the ASME Code provided Springs Fabrication has the concurrence of the Inspector and the Jurisdictional Authority where the pressure-retaining item is installed.

2.5 Functional and administrative procedures and controls for shop activities described in this section are also extended to field sites.

3.0 Definitions:

3.1 Pressure-retaining Items – Those items specified by the ASME Code Section VIII, Div. 1 and to the items so designated by standards other than the ASME Code as pressure-retaining.

3.2 Repair – Any work necessary to restore pressure-retaining items to a safe and satisfactory operating condition.

3.3 Alteration – Any change in the item described on the original Manufacturer's Data Report that affects the pressure containing capability of the pressure-retaining item.

3.3.1 Nonphysical changes such as an increase in the maximum allowable working pressure (internal or external) or design temperature of the pressure-retaining item shall be considered an alteration.

3.3.2 A reduction in minimum temperature shall also be considered an alteration.

3.4 Routine Repairs – Repairs that are acceptable as routine repairs are listed in the NBIC (Part 3-3.3.2). Routine repairs shall be documented in the Remarks section of Form R-1.

3.5 Report Form – The appropriate National Board Report Form(s)

3.5.1 Form R-1 – Report of Repair,

3.5.2 Form R-2 – Report of Alteration,

3.5.3 Form R-4 – Report Supplementary Sheet.

3.6 Inspector:

3.6.1 Inspector holds an "AI" or "IS" commission with an "R" endorsement issued by the National Board and employed by an Authorized Inspection Agency.

4.0 Procedure:

4.1 The Project Manager shall define the scope of work.

4.2 The Project Manager shall obtain a copy of the original Manufacturer's Data Report when possible. He shall review the Data Report and/or the scope of the work to be performed to ascertain if it should be classified as a repair or alteration, and to which construction code or standard the work shall be performed. When a copy of the original Manufacturer's Data Report can not be obtained the repair/alteration procedure shall address any additional requirements deemed necessary, subject to the Inspector's approval and to ensure compliance with the NBIC and the Jurisdictional requirements.

4.2.1 If the existing material cannot be verified (unknown), a chemical analysis and hardness testing, as a minimum, shall be performed of the unknown material to verify its weldability and strength or a welding procedure may be qualified for the unknown material. If there is a question with regard to the weldability characteristics of the material, then competent technical advice should be obtained.

4.2.2 If replacement parts are required, they shall be handled in accordance with NBIC Part 3 section 3.2.2.

4.3 The Quality Manager shall ensure that all repairs and alterations are made in accordance with the current NBIC and/or jurisdictional requirements.

4.4 The Quality Manager shall review local jurisdictional requirements to determine if any additional requirements, not included in this Manual, must be addressed.

4.4.1 If deemed necessary, additional jurisdictional requirements shall be addressed in the repair procedure, alteration procedure or job specifications, as appropriate.

4.4.2 Additional quality requirements shall be addressed in the repair procedure, alteration procedure or inspection documentation, as appropriate.

4.4.3 The Quality Manager shall be responsible for reviewing any pertinent jurisdictional addendum prior to the start of any repair or alteration to assure work compliance.

4.4.3.1 Where such requirements require additional controls in the quality system, an addendum addressing the additional requirements shall be added as a separate section of this Manual with review and acceptance of the Inspector.

4.4.3.2 When additional jurisdictional requirements have been identified which impose additional quality requirements, the Quality Manager shall ensure that they have been addressed in the repair procedure, alteration procedure, or inspection documentation.

4.4.4 When the Quality Program Manual is revised the Quality Manager shall review any jurisdictional addendum for inclusion in this section of the Manual as deemed necessary.

4.5 The Quality Manager or Welding Engineer shall prepare any repair procedures or alteration procedures necessary for the specified repair and/or alterations required.

4.6 The Engineering Manager or Designer shall prepare design documents as necessary.

4.7 The Project Manager shall prepare purchase requisition(s) as determined from the design documents.

4.7.1 The Quality Manager shall review purchase requisitions for compliance.

4.8 The Project Manager shall review and approve the design drawings prior to release to fabrication.

4.9 The Quality Manager shall prepare the Fabrication Package for review and release.

4.10 The Quality Manager shall review the Design and Fabrication Packages.

4.11 When repairs or alterations are to be performed at a field site, design drawings and specifications shall be delivered to the appropriate persons at the field site, which requires acknowledgement from the recipient.

4.12 All welding shall be performed in accordance with Section XI of this Manual.

4.13 Under certain conditions Post Weld Heat Treatment, in accordance with the original code of construction, may be unadvisable or impractical. Alternative methods, as allowed by Part 3 of the NBIC, may be used using a procedure approved by the Quality Manager and accepted by the Inspector and jurisdiction, if required.

4.14 The Nondestructive Examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria shall be in accordance with the original code of construction used for construction of the pressure-retaining item. Weld repairs and alterations shall be subjected to the same Nondestructive Examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdictional Authority may be used where the pressure-retaining item is installed, where required.

4.15 The Shop/Field Inspector or his designee, along with the Inspector, shall witness any required pressure test upon completion of the work. He shall ensure that only calibrated pressure gages of the proper range are used and that the test temperature is appropriate for the item being tested.

4.16 Pressure testing for repairs shall be the minimum required verifying leak tightness integrity of the repair and shall not exceed the test pressure established by the original code of constructions. Metal temperature shall not be less than 60° F for ASME Section VIII Div. 1 and no more than 120° F. Pressure test hold times shall not be less than 10 minutes prior to examination by the Inspector. As an alternative to the pressure test, NDE methods that verify the integrity of the repair may be used, subject to the concurrence of the Inspector and Jurisdictional Authority, where required.

4.17 Pressure testing of alterations shall not exceed 1.5 times the MAWP adjusted for temperature and may be further adjusted based on remaining corrosion allowance. The metal temperature shall not be less than 60° F for ASME Section VIII Div. 1 and no more than 120° F. The test pressure shall be held for a minimum of 10 minutes prior to the Inspector's examination. During a pressure test, where the test pressure shall exceed 90% of the set pressure of a pressure relief device, the device shall be removed or prepared as recommended by the device manufacturer.

4.18 The Quality Manager is responsible for the preparation and distribution of the required report forms. The Quality Manager shall review, certify, and present them to the Inspector for acceptance and signature.

4.19 Legible copies of the completed "R" Form, together with attachments, shall be distributed as follows: The Quality Manager shall distribute the NBIC "R" Form with attachments as follows:

4.19.1 Forms R-1 and R-2 to the Inspector (when requested), Inservice AIA, Owner/User, and if required, the Jurisdiction.

4.19.2 Form R-1 may be registered with the National Board when required by the Owner, Jurisdictional Authority or Company. The sequential numbers shall be assigned and recorded in the National Board R-Numbers Control Log (Exhibit #21).

4.19.3 Form R-2 shall be registered with the National Board when the original item was registered with the National Board. The sequential numbers shall be assigned and recorded in the National Board R-Numbers Control Log (Exhibit #21).

4.20 The Quality Manager shall retain custody and control of the National Board "R" Symbol Stamp. The Quality Manager is responsible for the proper stamping of the repairs and alterations.

4.21 When the National Board "R" Symbol Stamp is to be applied, an "R" nameplate (Exhibit #22) may be used, or where permitted, the Symbol may be stamped directly adjacent to the original stamping on the item. If the nameplate is used, it shall be welded or permanently attached adjacent to the original.

4.21.1 The National Board "R" Symbol Stamp shall be applied with the concurrence of the Inspector.

4.21.2 The abbreviation "Springs Fabrication" may be used on the nameplate in lieu of "Springs Fabrication, LLC".

4.21.3 Repaired or Altered ASME Boilers or Pressure Items shall not be re-stamped with the ASME Certification Mark; unless specifically authorized by ASME.

4.22 If it becomes necessary to remove the original stamping, the Inspector shall, subject to the approval of the Jurisdictional Authority, witness the making of a facsimile of the stamping, and the transfer of the stamping to a new item. When the stamping is on a nameplate, the Inspector shall witness the transfer of the nameplate to a new location. Any relocation shall be described on the applicable NBIC "R" Form. The re-stamping or replacement of an ASME Certification Mark shall be performed only as permitted by the governing code of construction.

4.23 All records substantiating a repair or alteration shall be retained for a minimum of 5 years.

Section XIX
REVISION HISTORY

Revision	Date	SCO#	Description of Change
0	10/13/2021	1611	New 10th Edition
1	05-05-2023	1654	Change Quality Manager Name on cover page from Elisa to Jason. Replace word "SYSPRO" with "ERP System" in 6 locations. Section IV, GLOSSARY OF TERMS AND ACRONYMS Insert 2.10 Design Activity – Design work, calculation and/or analysis, performed in accordance with the Code. Insert 2.12 DSC – Design Services Contractor. Insert 2.31 PRC - Person in Responsible Charge. Insert 2.34 Responsible Charge – The degree of control a designer, engineer, or Certifying Engineer is required to maintain over engineering decisions made personally or by others over which the person in responsible charge (PRC) exercises supervisory direction and control authority. Section V. ASME QUALITY PROGRAM. Insert 2.1.13 Qualifies and approves personnel regarding: Insert 2.1.13.1 and 2.1.13.2. Clause 2.3 change from DC Lead to Quality Manager and/or DC Lead or a designee assigned by the QM. Change 2.4.1 to Generate design drawings and calculations documents as a designated person in responsible charge and/or exercise control of design work performed by others to ensure compliance with the current ASME Code. Insert 2.4.2 and 2.4.2.1 & 2.4.2.2. Change 2.4.3 to Verify that software used to generate the ASME design calculations complies with the specified Code any time the software is updated. Insert 2.5, 2.5.1 & 2.5.2. Section VI Design Documents and Specification Control. Clause 3.0 change from Design “Documents” to Design “Calculations”. Add 3.1 to cover that word change. 3.2 & 3.3 change "Engineering Manager" to "Personnel designated with responsible charge". Move 3.5 & 3.6 to 4.3 & 4.4. Remove the following: The Project Manager shall review and approve customer supplied drawings by attaching the drawing in SYSPRO. The “Approved for Manufacture” stamp (Exhibit #5) shall be used on printed drawings to indicate that the drawing can be used for fabrication. Insert 4.1 & 4.2. Re-number remaining clauses. Add Section 9.0. & 10.0. In Section XI Welding Control. Clause 3.1 remove words “By the General Manager”. Section XX List of Exhibits. Add Exhibit 18 - Qualification and Designation of Designers and Personnel in Responsible Charge. Add Exhibit #25 - Design Calculation Cover Sheet
2	12/27/2023	1668	Update the verbiage in Section XV, 2.7, item 7 to meet the new verbiage of the 2023 ASME code, Mandatory Appendix 10, and include the added requirement for how long these records shall be maintained. Update Table of Contents.

Section XX
LIST OF EXHIBITS

1.0 List of Exhibits

1.1 Exhibit #1 – Revision History Log (sample from log)
1.2 Exhibit #2 – Engineering Change Notice/Manufacturing Change Notice (ECN/MCN)
1.3 Exhibit #3 – Springs Fabrication Tools Calibration List (sample from log)
1.4 Exhibit #4 – Bill of Materials (sample)
1.5 Exhibit #5 – Approved for Manufacture Stamp
1.6 Exhibit #6 – Specification Change Order (SCO)
1.7 Exhibit #7 – Weld and Inspection Record (WIR)
1.8 Exhibit #8 – Review and Verification Record
1.9 Exhibit #9 – Material Traceability Record
1.10 Exhibit #10 – Hydrostatic/Pneumatic Test Report
1.11 Exhibit #11 – Liquid Penetrant Examination Report
1.12 Exhibit #12 – Purchase Order – (sample through ERP System)
1.13 Exhibit #13 – Material Receiving Report (MRR)
1.14 Exhibit #14 – SF Number Database (sample record of SFMC)
1.15 Exhibit #15 – Quality System Deviation (pages 1 and 2)
1.16 Exhibit #16 – Nonconformance Report (NCR)
1.17 Exhibit #17 – Continuity Report (sample from log)
1.18 Exhibit #18 – Qualification and Designation of Designers and Personnel in Responsible Charge
1.19 Exhibit #19 – Calibration Record
1.20 Exhibit #20 – National Board Numbers Control Log
1.21 Exhibit #21 – National Board R-Numbers Control Log
1.22 Exhibit #22 – “R” Nameplates
1.23 Exhibit #23 – Hold Tag
1.24 Exhibit #24 – Drawing Cover Sheet
1.25 Exhibit #25 – Design Calculation Cover Sheet

2.0 The exhibits and sample forms contained in this Manual shall be reviewed for currency at least one time per year. Outdated exhibits and sample forms shall be updated, and the Manual shall be revised at that time.

Exhibit #1 – Revision History Log (Sample from Log)

Log, Revision History : Table

Doc #	TYPE	SCO	Rev	Date	Document Title	Dept	Location	Cntrld Copies
QP-015	Procedure	596	1	7/15/2004	Customer Satisfaction (previously	QA	Sfi server Q:Procedures	
QP-015	Procedure	596	Obs	7/15/2004	Personnel Cert for Visual Examina	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QP-015	Procedure	656	1	7/9/2004	Customer Satisfaction Procedure	QA	Sfi server Q:Procedures	
QP-016	Procedure	662	0	8/24/2004	Purchasing Procedure	Mfg	Sfi server Q:Procedures	
QP-016	Procedure	710	1	6/10/2005	add use of SQR, changed referenc	QC	Sfi server Q:Procedures	
QP-018	Procedure	646	0	6/29/2004	Origination & Control of QMS Docu	QA	Sfi server Q:Procedures	
QP-018	Procedure	621	Obs	12/16/2003	Quality Objectives	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QP-019	Procedure	663	0	8/25/2004	Product Planning and Scheduling I	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QP-019	Procedure	715	1	6/30/2005	Product Planning and Scheduling I	Mfg	Sfi server Q:Procedures	
QP-020	Procedure	704	0	6/1/2005	Initial Release	QA	Sfi server Q:Procedures	
QP-021	Procedure	708	Obs	6/2/2005	Initial Release	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QP-022	Procedure	706	0	6/2/2005	Handling, Storage, Packing, Prese	QA	Sfi server Q:Procedures	
QP-022	Procedure	722	1	2/6/2006	Handling, Storage, Packaging, Pre	QA	Sfi server Q:Procedures / qms	
QPI-001	Work Instructior	611	0	11/14/2003	Corrective Action Request Work In	QA	Sfi server Q:Work Instructions	
QPI-002	Work Instructior	619	1	12/9/2003	Audit Documentation Work Instruc	QA	Sfi server Q:Work Instructions	
QPI-002	Work Instructior	611	0	11/13/2003	Audit Documentation Work Instruc	N/A	Sfi server W:Doc Cntrl/Archives/Work Instruct	
QPI-003	Work Instructior	611	0	11/14/2003	Internal Auditor Qualification and T	QA	Sfi server Q:Work Instructions	
QT-1	Manual	599	D	10/30/2003	QT-1 ISO QPM	QA	Sfi server Q:	CC1 Doc Cntrl CC2 MEP CC3 CE (T. Ray)
QT-2	Manual	665	7	9/15/2004	QT-2 Advanced Technology QPM	QA	Sfi server Q:	CC1 Eng Mngr CC2 Doc Cntrl CC3 CE (T. Ray)
QT-2	Manual	651	6	7/2/2004	Advanced Technology Quality Prog	N/A	Sfi server W:Doc Cntrl/Archives/Manuals	
QT-2	Manual	578	5	8/27/2003	Advanced Technology Quality Prog	N/A	Sfi server W:Doc Cntrl/Archives/Manuals	
QT-3	Manual	667	1	10/7/2004	QT-3 ASME QPM 4th Edition	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QT-3	Manual	585	3	9/23/2003	QT-3 ASME QPM 4th Edition	N/A	Sfi server W:Doc Cntrl/Archives/Procedures	
QT-3	Manual	677	2	1/4/2005	QT-3 ASME QPM 4th Edition	QA	Sfi server Q:	CC1 Qlty Mngr CC2 CE CC3 One Beacon Rep. CC4 Eng Mngr
SF-A-05-2	Form	481	E	11/27/2002	Springs Fabrication, Inc. QT-1 and	PM	Pre-printed forms.	CC1 Qlty Mngr CC2 CE CC3 One Beacon Rep. CC4 Eng Mngr
SF-A-05-2	Form	724	F	3/16/2006	SFI Shop Traveler	PM	Sfi server Q:Forms	
SF-B-05-2	Form	489	F	11/21/2002	QT-1 and QT-3 Process Traveler	PM	Pre-printed forms.	
SF-D-05-2	Form	412	2	9/4/2002	Shop Traveler MTR List Continued	PM	Pre-printed forms.	
SF-E-05-2	Form	485	3	11/22/2002	Springs Fabrication, Inc. QT-2 Shc	PM	Pre-printed forms.	
SF-F-05-2	Form	469	0	11/21/2002	Springs Fabrication, Inc. QT-2 Pro	PM	Pre-printed forms.	
Shop Prac	Manual		N/A	5/9/2005	Shop Practices Manual-this is a c	Mfg	N/A	CC #1 QC, CC#2 Comm Fab, CC#3 Eng Fab
SP-001	Procedure	703	0	5/9/2005	Initial Release	QA	Sfi server W:Safety/Respirator Program	
TF-01	Form	400	4	8/8/2002	Hydrostatic / Pneumatic Test Rep	QA	Sfi server Q:Forms	Shop Practices Manual
TF-02	Form	721	7	1/10/2006	Liquid Penetrant Examination Rep	QA	Sfi server Q:Forms / QA	
TF-02	Form	684	6	1/5/2005	How to Fill Out Liquid Penetrant F	QA	Sfi server Q:Work Instructions	
TF-02	Form	5	6	1/5/2005	Liquid Penetrant Form	QA	Sfi server Q: Forms	
TF-02	Form	505	5	12/13/2002	Liquid Penetrant Examination shee	QA	Sfi server Q:Forms	Shop Practices Manual
TF-03	Form	691	0	2/17/2005	Magnetic Particle Examination Re	QA	Sfi server Q:Forms	
TF-04	Form	N/A	0		Magnetic Particle Examination Re	QA	Sfi server Q:Forms	Shop Practices Manual
TF-04	Form	680	Obs	1/5/2005	Magnetic Particle Examination Re	N/A	Sfi server W:Doc Cntrl/Archives/Forms	

Record: 1 of 402

Datasheet View NUM

Exhibit #2 –Engineering Change Notice/Manufacturing Change Notice (ECN/MCN)

SPRINGS FABRICATION

Manufacturing Change Notice (MCN) / Engineering Change Notice (ECN)

Section 1

Date:	**Initiated By:**	**Customer:**	**Governing Code:** ☐ QT-1 ☐ QT-2 ☐ QT-3	ECN #: *(DC)*

Document (Ex: Work Order, Dwg #, etc.)	**Revision** Current	**Revision** New	**Redlines Captured** (Req'd if NEW revision)	**New Redline Date**	**Description of Change** (Specify affected sheet numbers if applicable)
			☐ Yes ☐ N/A		**Job #(s):** **Description of Change:**
			☐ Yes ☐ N/A		**Job #(s):** **Description of Change:**
			☐ Yes ☐ N/A		**Job #(s):** **Description of Change:**
			☐ Yes ☐ N/A		**Job #(s):** **Description of Change:**

Review & Approvals (Initial & Date)	☐ Designer:	☐ Eng. Mgr:	☒ Project Mgr:

Section 2

Job Released to Manufacturing? ☐ **No** ☐ **Yes** (If **yes**, route MCN/ECN to Mfg Eng. for completion. If **no**, route MCN/ECN to Quality Mgr.)

Section 3

☐ **Change does not affect materials or Select Change Disposition:**
☐ **Scrap:** ☐ **Rework** ☐ **Repair** ☐ **UAI** ☐ **Other:**

Comments:

Documentation to be replaced or added to the floor (☐ None **or** check all that apply)**:**

	PROC	MS	1WELD1	1WELD2	1WELD3	F/HYD	QA	ASSY	SHIP	As-Built	Via Email
Work Order	☐	☐	☐	☐	☐	☐	☐	☐	☐		**Notify ATG** ☐
Part Router (shall be included with all work order changes)	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Dwg#: Rev change – all depts. w/ open ops	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	
Dwg#: Rev change – all depts. w/ open ops	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	☐ Sht:	**Notify SubCon** ☐
Other:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Section 4

Review & Approvals (Initial & Date)	☐ Mfg Engineer:	☐ Welding Eng.:	☐ Programmer:
☐ Buyer (Mat'l Review):	☐ Other:	☒ Quality Mgr:	☒ Doc Control:

Exhibit #3 – Springs Fabrication Tools Calibration List (Sample from Log)

SFI Tools : Table

Description	S/N	Model	Cal Date	Due Date	Cal By	Results	Cal Freq	Comments
Coating Thicking Instrument	102535	6000 FNS Probe	5/25/2006	11/25/2006	J.Eubanks	acc	semi-annual	
Coating Thickness Gage	36880	6000 FRS Probe	5/11/2006	11/23/2006	PPTL	acc	semi-annual	
Depth Micrometer	PDM-01	0-6"	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Dial Indicator .500	IND-1	25-141-S	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Dial Indicator, 1"	15999	0"-1"	8/16/2005	8/16/2006	Eubanks, J.	acc	semi-annual	
Digital Psychrometer	9229804	SAM990DW	1/19/2006	1/19/2007	PPTL	acc	annual	
Ellwood Radius Check Fixtu	EFN-302	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSR/C
Ellwood Radius Check Fixtu	EFN-310	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSR/C
Ellwood Radius Check Fixtu	EFN-311	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSR/C
Ellwood Radius Check Fixtu	EFN-319	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSR/C
Feeler Gage Set	SF-FG1	.0015-.035	4/3/2006	10/3/2006	Eubanks, J.	acc	semi-annual	
Foot Candle/Lux Meter	Q103545	407026	10/10/2005	10/10/2006	QTS	acc	annual	
Height Gage	1269	24"	6/8/2006	12/8/2006	PPTL	acc	semi-annual	
Height Gage	SF-02	18"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Height Gage	74093	12"	6/8/2006	12/8/2006	Eubanks, J.	acc	semi-annual	
Height Gage	645205	0" to 6"	6/8/2006	12/8/2006	Eubanks, J.	acc	semi-annual	
Holiday Detector	W-13724	APW	10/17/2005	10/17/2006	PPTL	acc	annual	
Inside Micrometer	823	4" - 24" Mic	6/8/2006	12/8/2006	Powell, J	acc	semi-annual	
Inside Micrometer	Mic-20	4"-24" Mic	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Inside Micrometer	000001	2"-12" Inside	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Length Standard	000005	1-5" 5 parts	2/17/2006	8/17/2006	PPTL	acc	semi-annual	
Length Standard	LS-12-01	12" Long	2/17/2006	8/17/2006	PPTL	acc	semi-annual	
Length Standard	LS-24-01	24" Long	2/17/2006	8/17/2006	PPTL	acc	semi-annual	
Machinist Square	BA001826	916-406	2/14/2006	8/14/2006	PPTL	acc	semi-annual	
Micrometer	103-179	2" - 3"	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Micrometer	83404	0" -1"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	JACK-JDP	0-1"	10/8/2005		Eubanks, J.	acc	semi-annual	OOSR/C (taken home)
Micrometer	SF-01	6" - 7"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	215	0" -1"	10/22/2005	10/22/2006	Eubanks, J.	acc	annual	
Micrometer	103-262	1"-2"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	JLE-01	0" - 1" Mic.	8/16/2005	8/16/2006	Eubanks, J.	acc	semi-annual	
Multimeter, 3.5 Digit	80520327	87 Series III	7/6/2004		MM&R	X	semi-annual	calibrate when needed
Paint Thickness Gage	013894	Automatic	8/24/2005	8/24/2006	PPTL	acc	semi-annual	
Pin Gage	000029	.7495	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Pin Gage	000028	.7506	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Pin Gage Set	SPPGS-M-2	M-2 Minus 250 p	9/8/2005	9/8/2006	MM&R	acc	annual	
Pin Gage Set	SPPGS-M-1	M-1Minus 190 pc	9/8/2005	9/8/2006	MM&R	acc	annual	
Pin Gage Set	000009	MO Minus 50 pc	8/24/2005	8/24/2006	PPTL	acc	annual	
Pressure Gage	HTG-14	0-2000 psi	5/16/2006	5/17/2007	MM&R	acc	annual	
Pressure Gage	HTG-5	0-10000 psi	3/24/2004		MM&R	x	annual	OOSR/C

Record: 1 of 143

Datasheet View

Exhibit #4 – Bill of Materials (sample)

INDEX	QTY	TYPE	PART NO.	DESCRIPTION	LENGTH	PLATE WIDTH	SPECS	PURCH
1	1	ASSEMBLY	3294-001	WELDMENT, VESSEL (SEE SHEET 3)				
2	1	ASSEMBLY	3294-002	ASSEMBLY, MANWAY DAVIT AND COVER (SEE SHEET 8)				
3	1	ASSEMBLY	3294-003	WELDMENT, BOOT -01 (SEE SHEET 9)				
4	1	ASSEMBLY	3294-004	WELDMENT, BOOT -02 (SEE SHEET 10)				
5	5	PART	3294-005	GASKET, 24 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
6	4	PART	3294-006	GASKET, 20 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
7	1	PART	3294-007	GASKET, 6 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
8	3	PART	3294-008	GASKET, 4 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
9	4	PART	3294-009	GASKET, 3 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
10	4	PART	3294-010	GASKET, 2 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
11	2	PART	3294-011	GASKET, 1 300#, FLEX. STYLE "CGI" SPIRAL WOUND 304 SS W/ GRAPHITE FILLER			SEE DESC.	1
12	53	PART	3294-012	STUD, 1 1/2-8UNC w/ (2) NUTS	9.500		STUD: SA193 B8M NUT: SA194 8M	1
13	27	PART	3294-013	STUD, 1 1/4-8UNC w/ (2) NUTS	8.500		STUD: SA193 B8M NUT: SA194 8M	1
								APPROX. TOTAL WT.

Exhibit #5 – Approved for Manufacture Stamp

Not actual size
Actual stamp prints in red ink

Exhibit #6 – Specification Change Order (SCO)

SPRINGS FABRICATION

Specification Change Order (SCO)

SCO No.:		Date of Request:		Effective Date:		Requested by:		Customer:	☐ ☒ N/A
								Job #:	☐ ☒ N/A

☐ New Work Instruction	☐ New Procedure	☐ New Manual	☐ New Form	☐ Other:
☐ Work Instruction Change	☐ Procedure Change	☐ Manual Change	☐ Form Change	☐ Other:

Document No.	Revision		Springs Fabrication Document Title(s):	Description of Change *(If more than one document, ID all documents with change detail)*	Reason for Change
	Old	New			

Actions were taken to identify, and if required, revise all documents affected by this change?	Yes ☐	Add Document to Shop Floor Control Book:	☐

Notifications** (Individuals involved in Approvals will automatically be notified)									
President/ VP	☐	Human Resources	☐	Facilities	☐	Quality	☐	Team Lead(s):	☐
CFO/ COO	☐	Product Development	☐	Safety	☐	Manufacturing	☐	Project Mgr(s):	☐
Accounting	☐	Design Engineering	☐	Materials	☐	Planning	☐	Other:	☐

***Managers shall be notified of the changes listed in this SCO and are required to communicate the information to their affected groups / personnel.*

ECN / SCO Approvals *(Initial and Date by your name or title)*					
☐ President		☐ Product Development		☐ Project Manager	
☐ CFO		☐ Purchasing Manager		☒ Quality Manager	
☐ Human Resources		☐ Manufacturing Manager		☒ Doc Control	
☐ Design Supervisor		☐ Safety Coordinator/Mgr.		☐	
☐ Engineering Manager		☐ Master Scheduler		☐	

Exhibit #7 – Weld and Inspection Record (WIR)

SPRINGS FAB

Weld & Inspection Record (WIR)

Job #: _____ Desc.: _____ Customer _____ Governing Code _____ NB #: _____

Dwg(s): _____ Rev.: _____ Part #: _____ Acceptance Criteria _____ Serial #: _____

Weld #	Weld Point Description	Joint Type	Size	Sched.	WPS	Fit Up (Stamp #)	Fit Check (Initial & Date)	Root Pass (Stamp #)	QA Root Face (Initial & Date)	QA Root Surface (Initial & Date)	Final Weld (Stamp #)	VT QA (Initial & Date)	Required NDE (Non-VT)	Acc / Rej	Inspection By (Initial & Date)	Required NDE (Non-VT)	Acc / Rej	Inspection By (Initial & Date)	Filler Metal (SF #)

Exhibit #8 – Review and Verification Record

SPRINGS FABRICATION

Review and Verification Record (RVR)

ASME CODE CLASSIFICATION: U

Job #:	**Serial #:**	**National Board #:**	**Customer:**
Dwg #:	**Rev.:**	**Description:**	

Design Package Review

Quality Review: **Date:**

Authorized Inspector Review: **Date:**

Drawing Revision Review:

Rev.	QA initials	AI initials	Rev.	QA initials	AI initials

Calculation Revision Review:

Rev. Date	QA initials	AI initials	Rev. Date	QA initials	AI initials

Fabrication Package Review

Quality Review: **Date:**

Authorized Inspector Review: **Date:**

Process Review

Description	Supervisor	Date	Quality	Date	AI	Date	Customer	Date
WPS Review								
Welder Qualification Review								
NCR Review - #'s _____, _____, _____, _____								
Non-conformance Report(s) resolved								
Conditional Release review - #'s _____, _____, _____								
Conditional Release(s) resolved								
Weld and Inspection Report (WIR) completed								
Internal Visual Inspection performed					H			
External Visual Inspection performed					H			
NDE Results Review (Review and acceptance of RT, UT, MT and PT and results)								
Pressure Testing performed					H			
PWHT / Stress Relief review								
Nameplate stamping review					H			
Manufacturer's Data Report review and signature					H			
Dataplate attached								
Assembly complete								

Exhibit #9 – Material Traceability Record

SPRINGS FABRICATION

Material Traceability Record

Job #:		Dwg #:		Serial #:		NB #:	

SFMC / Heat Number	Verification (Production)	Description	Specification	Part #	Verification (QA)

Exhibit #10 – Hydrostatic/Pneumatic Test Report

SPRINGS FABRICATION

Hydrostatic / Pneumatic Test Report

Job #: _____ **Serial #:** _____ **NB #:** N/A **Customer:** _____

Drawing # & Rev: _____ **Item Description:** _____

Code Requirement: **Code Year**

ASME Section VIII Div. 1 (UG-99, HYDRO) ☐ _____

ASME Section VIII Div. 1 (UG-100, PNEU.) ☐ _____

ASME B31.1 ☐ _____

ASME B31.3 ☐ _____

Customer Requirement ☐ _____

Other _____ ☐ _____

Procedure: QC-011

Acceptance Criteria: QC-011

AI Witness Required: ☐

Design Requirements:

Vessel Requirements: MAWP: N/A PSI @ N/A °F MDMT: N/A °F @ N/A PSI

Jacket Requirements: MAWP: N/A PSI @ N/A °F MDMT: N/A °F @ N/A PSI

Manifold / Spool Requirements: MAWP: N/A PSI @ N/A °F MDMT: N/A °F @ N/A PSI

Item Description	Gage No.	Calibration Due Date	Test Pressure	Hold Time	Test Start Time	Test End Time	Test Performed By (Initial & Date)	QA Verification (Initial & Date)

Comments: _____

QA Verification (as noted above): The test was performed to the procedures, characteristics and methods detailed within this report.

Quality Review: Conformance to test requirements and acceptance criteria has been evaluated.

Printed Name: _____ **Signature:** _____ **Date:** _____

Exhibit #11 – Liquid Penetrant Examination Report

SPRINGS FABRICATION

Liquid Penetrant Examination Report

Springs Fabrication LLC 850 Aeroplaza Drive, Colorado Springs, CO 80916

Job #:		**Drawing #/ Part #:**		**Serial #:**	
Procedure: (No. & Rev)	QC-015	**Governing Code:** (inc. Year & Addenda)		**Acceptance Criteria:**	
PT Type:	☒ Visible ☐ Other	**Lighting Source:**	Flash Light or Equivalent		
Light Intensity Checked Weekly: (100 FC Minimum)	**Initial & Date:**	**Light Meter S/N:**		**Light Meter Cal Due Date:**	

Material	Brand Name	Product Number	Batch Number
Penetrant			
Cleaner			
Developer			

Description of Part (Size, material spec, thickness, etc.)	Weld No. / Area Examined	Interpretation: Accept	Interpretation: Reject	Remarks Description of Indications (i.e., Linear or Rounded, etc.)
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

Comments:

Examiner: The examination was performed to the procedures, characteristics and methods detailed within this report.

Printed Name: _____ Signature: _____ NDE Level: II Date: _____

Quality Review: Conformance to test requirements and acceptance criteria has been evaluated.

Printed Name: _____ Signature: _____ Date: _____

Exhibit #12 – Purchase Order (Sample through ERP System)

SPRINGS FABRICATION INCORPORATED
ENGINEERED METAL PRODUCTS

850 Aeroplaza Drive
Colorado Springs, CO 80916
Phone: 719.596.8830 Fax: 719.596.1836

Purchase Order

Number	Date	Page
4443	06/10/09	1

Supplier:		Deliver To:	
	Fort Worth FED Head Company		Springs Fabrication, Inc.
	3040 Peden Rd.		Springs Fabrication, Inc.
	Ft. Worth, TX		850 Aeroplaza Drive
			Colorado Springs, CO 80916
	76179-9244		

Buyer	Buyer Email	Due Date	Supplier Contact/Phone
Jim Inglis	jim_i@springsfab.com	06/26/09	Ron Lively/800.451.2684

Payment Terms	Ship Via	FOB
1% 10, Net 30	Fort Worth F & D to arrange	Springs Fabrication

Line	Job	Stock Code	Description	Qty	UOM	Unit Price	Gross Amount
			Mill / Manufacturer certification is				
			required				
			UCS-79(d) or UHA-44, ASME Sec. VIII, Div. 1				
			Must conform to UG-81, ASME Sec. VIII, Div.				
			1				
			ASME partial data report (U-2) required				
			Freight charges $140 Total includes in Unit				
			Price($70 each)				
			6/11/09 Internal Note:				
			Darrell Tygart approved bevel at 37.5°deg				
			with minimal land. These are stock heads				
			from FT Worth FED.06/11/09 Jim_i				

Please fax or email order confirmation. Thank you.	Total	0.00
	Purchasing Approval	Date
Receiving Hours From 7:00 A.M. To 1:30 P.M.		

You may be a Federal Government sub-contractor required to comply with all provisions of Executive Order 11246 of September 24th 1965 and of the rules, regulations and relevant orders of the Secretary of Labor.

Exhibit #13 – Material Receiving Report (MRR)

SPRINGS FABRICATION

Material Receiving Report

SF #

Section I

Vendor / Supplier:		**P.O. No.:**	
Customer:		**Job No.:**	

Heat No. / Lot No.	Qty.	Material Specification	Description

Receiving Assessment

The above recorded material(s) have been received and verified to meet the requirements of the purchase order. Nominal sizes and product markings have been verified, visually checked for obvious damage and all applicable documentation received.

Received & Assessed by: _____ Date: _____

Signature or Initials — Select Name from Drop-down List

Section II

ASME Heads

Record actual measured minimum thickness: _____

Spin Form Holes in Head? ☐ Yes ☐ No — If **Yes**, add Weld requirements and Liquid Penetrant (PT) testing requirements to the Weld Inspection Report (WIR)

M&TE used: **Ultrasonic Thickness Gage** Serial #: _____

Performed by: _____ Date: _____

Signature or Initials — Select Name from Drop-down List

Section III

Documentation

☐ Certified Material Test Report (CMTR) received and attached

CMTR has been reviewed and complies with ASME Section II and/or ASTM requirements? ☐ Yes ☐ No

CMTR has been reviewed and complies with P. O. requirements? ☐ Yes ☐ No

Verified by: _____ Date: _____

Signature or Initials — Select Name from Drop-down List

☐ Certificate of Conformance (C of C) received and attached

☐ Partial Data Report (U-2) received and attached (i.e. Two (2) piece heads, Misc. pressure parts)

Section IV

Remarks:

Section V

Final QA Review by: _____ **Date:** _____

Signature or Initials

Exhibit #14 – SF Number Database (Sample Record of SFMC)

SF Number Log

View SF15-

View All

SF #	Received? MTR	ASME	COC	Material Spec.	Description	Heat No.	PO No.	Supplier	Date Rcvd.
SF15-0001	Yes	Yes	No	A/SA240 316/L	Sheet 10Ga 48x120	504417 USA	31285	Samuel&Son	1/2/2015
SF15-0002	Yes	Yes	No	A992	Beam S4x9.5# 20'	2215475 USA	31385	R&S Steel	1/2/2015
SF15-0003	Yes	Yes	No	A/SA105	Flange RFWN 2 150# XH	^553 USA Self-Certified	CUSTOMER S	MCJUNKIN REDMAN	1/2/2015
SF15-0004	Yes	Yes	No	A/SFA5.9 ER316Si/ER316 LSi	Weld Wire LINCOLN .035X25#	14082149 USA	31392	GENERAL AIR	1/2/2015

View Jobs | Print Label (north) | Print MMR | Print Label (south)

Add new | Exit

Exhibit #15 – Quality System Deviation (page 1 of 2)

SPRINGS FABRICATION

Quality System Deviation

Please check the appropriate box

☐ **Deviation** ☐ **Substitution** ☐ **Conditional Release**

Section I General Information

Date:	**Control No.:** (Obtain Control # from Document Control)	**Job No.:**	**Serial #:** (If applicable)
Initiators name:	**Customer:**	**QT-1** ☐ **QT-2** ☐ **QT-3** ☐	**NB #:** (If applicable)
NCR No.: (If applicable)	**Qty. on hold:** (For conditional release)	**Qty. to Release:** (For conditional release)	

Section II

Description or Scope:

Section III

Affected Process or Document:

Process or Document ID	Description or Title	Rev	Paragraph	Section

Section IV

Affected Item:

Item ID	Qty.	Description	Specification
1.			
2.			
3.			
4.			
5.			

"Affected Item" continued *(match line (from above) 1 to 1, 2 to 2, etc.)*

SF #	Heat #	Where Used
1.		
2.		
3.		
4.		
5.		

Section V

Technical Justification:

Over to page 2

Exhibit #15 – Quality System Deviation (page 2 of 2)

SPRINGS FABRICATION

Quality System Deviation

Section VI

Restrictions / Remarks:

Section VII

Approval or Disapproval:

☐ Approved	☐ Disapproved	Engineering:		Date:
☐ Approved	☐ Disapproved	Project Manager:		Date:
☐ Approved	☐ Disapproved	Quality Manager:		Date:
☐ Approved	☐ Disapproved	A. I. (if applicable):		Date:
☐ Approved	☐ Disapproved	Customer (if applicable):		Date:

Reason for Disapproval:

Section VIII

Conditional Release Closure:

☐ CR Closed Closed by: _____ Date: _____

DISTRIBUTION: Original – Document Control Copy – Shop Traveler Package and Quality Assurance File Package (QAFP), if applicable

Exhibit #16 – Nonconformance Report (NCR)

SPRINGS FABRICATION

Nonconformance Report NCR #

SECTION 1: PRODUCT/JOB INFORMATION

Initiated By:		Customer:	
Date Initiated:		Job #:	
Quality Program:		Dwg/Part#/ Rev:	
Owner:		Part Description:	
Resp. Dept.:		Build Qty:	
NCR Code		Qty Affected:	

SECTION 2: DESCRIPTION OF NONCONFORMANCE

Requirement:

As Found:

SECTION 3: PRODUCT DISPOSITION AND APPROVALS

Disposition **Estimated Cost** **AI Review Req'd?** ☐

	Req'd	Approvals:	Date:		Req'd	Approvals:	Date:
Owner:	☐			Mfg Mgr:	☐		
Proj. Mgr:	☐			Engineering:	☐		
QA:	☐			Weld Eng:	☐		
AI:	☐			Purchasing:	☐		

SECTION 4: PRODUCT DISPOSITION INSTRUCTIONS

Instructions:

Step #	Dept:	Instruction	Comp. By	Comp. Date	Time to Comp (Hrs)

SECTION 5: DISPOSITION REVIEW COMPLETE

The signatures below indicate that the disposition and applicable instructions have been completed

Owner: _____ Date: _____ QA: _____ Date: _____

The When required, the Authorized Inspector signature below indicates that this report has been reviewed and accepted.

AI: _____ Date: _____

Exhibit #17 – Continuity Report (Sample from Log)

SPRINGS FABRICATION
ENGINEERED METAL PRODUCTS

Springs Fabrication, Inc.
850 Aeroplaza Drive
Colorado Springs, CO 80916

CONTINUITY REPORT
per ASME Section IX

Generated: 10/1/2014

Page 1 of 7

- Indicates an expired process.

Name / Process / Method	Original Date	Stamp / Weld Date	Welder ID / Expiration	Job Number	Status / Witnessed by	Inspection type
Adams, Larry W.		**52**	**793**		**Active**	
FCAW / Semiautomatic	7/27/2009	7/25/2014	1/25/2015		James Vela	
GMAW / Semiautomatic	8/19/2008	7/25/2014	1/25/2015		James Vela	
SAW / Machine	6/22/2011	4/30/2014	10/30/2014		James Vela	
Alderson, Nathan		**2**	**931**		**Active**	
FCAW / Semiautomatic	6/13/2013	6/12/2014	12/12/2014		James Vela	
GMAW / Semiautomatic	6/13/2013	6/12/2014	12/12/2014		James Vela	
GTAW / Manual	6/13/2013	6/12/2014	12/12/2014		James Vela	
Allen, Jeremy		**19**	**705**		**Active**	
FCAW / Semiautomatic	6/13/2008	7/25/2014	1/25/2015		James Vela	
GMAW / Semiautomatic	9/14/2006	7/25/2014	1/25/2015		James Vela	
GTAW / Manual	10/17/2012	7/25/2014	1/25/2015		James Vela	
Allison, Lynn		**59**	**770**		**Active**	
FCAW / Machine	3/1/2010	7/1/2014	1/1/2015		James Vela	
FCAW / Semiautomatic	7/2/2008	7/25/2014	1/25/2015		James Vela	
GMAW / Semiautomatic	9/21/2007	7/25/2014	1/25/2015		James Vela	
GTAW / Manual	12/9/2007	7/1/2014	1/1/2015		James Vela	
SMAW / Manual	6/18/2010	7/1/2014	1/1/2015		James Vela	
Amanda, Nelson		**80**	**958**		**Active**	
FCAW / Semiautomatic	9/5/2014	9/5/2014	3/5/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
GMAW / Semiautomatic	9/5/2014	9/5/2014	3/5/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
Anagnostou, George		**4**	**486**		**Active**	
FCAW / Semiautomatic	9/16/2003	4/30/2014	10/30/2014		James Vela	
GMAW / Semiautomatic	9/16/2003	4/30/2014	10/30/2014		James Vela	
GTAW / Manual	8/14/2003	7/25/2014	1/25/2015		James Vela	
Barfield, Jonathon		**77**	**972**		**Active**	
FCAW / Semiautomatic	8/11/2014	8/11/2014	2/11/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
GMAW / Semiautomatic	8/11/2014	8/11/2014	2/11/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
Bernard, Michael		**49**	**79**		**Active**	
FCAW / Semiautomatic	7/5/2012	9/4/2014	3/4/2015		James Vela	
Berry, Michael		**20**	**977**		**Active**	
FCAW / Semiautomatic	9/17/2014	9/17/2014	3/17/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
GMAW / Semiautomatic	9/17/2014	9/17/2014	3/17/2015	WPS: Gs1sa-b, Fs1-b	James Vela	
Beukema, Zebulon		**70**	**800**		**Active**	
FCAW / Machine	3/1/2010	4/30/2014	10/30/2014		James Vela	
FCAW / Semiautomatic	7/23/2009	6/3/2014	12/3/2014		James Vela	
GMAW / Semiautomatic	5/5/2009	6/3/2014	12/3/2014		James Vela	
GTAW / Machine	12/3/2013	6/3/2014	12/3/2014		James Vela	
GTAW / Manual	1/21/2010	6/3/2014	12/3/2014		James Vela	
SAW / Machine	2/22/2010	4/30/2014	10/30/2014		James Vela	
SMAW / Manual	12/12/2011	4/30/2014	10/30/2014		James Vela	

Exhibit #18 – Qualification and Designation of Designers and Personnel in Responsible Charge

SPRINGS FABRICATION

Qualification for Design Activities / Person in Responsible Charge Designation (Exhibit #18)

Name: **Title:** **Company:** **Design Services Contractor:** ☐

Design Activity Qualification			
Level of Qualification (choose one)		**Date**	**Remarks: (Initial Qualification, Re-Qualification, etc.)**
☐	Certifying Engineer		
☐	Appendix 47, Table 47-5-1		(All or which; Numerical Analysis, Fatigue Assessments, Other Design activities)
☒	Engineer	12/1/2015	Initial Qualification
☐	Designer		
☐	Design Assistant		

Education / Degree Type	Date	School	Remarks: (*Documents saved in file)
AS, Design		Technical Trades Institute	See Diploma*
BS, Mechanical Engineering		Utah State	See Diploma*

Experience / Registrations / Training	Date(s)	Company / State	Remarks: (*Documents saved in file)
P.E. Registration	2/21/2019	Colorado	See Certificate*
SF QT-3 QPM Orientation Training	11/25/2015	Springs Fabrication, CO	See Training Record*
Design Engineer	11/25/2015 To Present	Springs Fabrication, CO	See Job Description*
Designer	3/25/2011 10/31/2015	Vessels Are US, UT	See Resume*

The above-named employee certifies the provided documented evidence establishing these qualifications are true and accurate

Signature: _____ Date: _____

The provided documented evidence, which after review, has established the required qualifications for the level of qualification selected above and is therefore authorized to perform design activities commensurate with the highest level of their qualifications as described in QT-3, ASME Quality Manual and Mandatory Appendix 47 of ASME Section VIII, Division 1.

Name / Signature: _____ Date: _____
Quality Manager

The qualifications of this individual shall remain valid indefinitely, provided that no lapse, expiration, or removal of a Registration or License affects their qualification as listed above and/or no more than twelve (12) months has passed since their last design activity. If this time interval is exceeded their competency shall be reevaluated prior to assignment of further design activities. ☐ REEVALUATION Date: _____

Person in Responsible Charge (PRC) Designation N/A: ☐

After a review of the experience and education for the employee listed above, it has been determined that this person has demonstrated the competency and meets the qualification requirements set forth in Springs Fabrication QT-3 ASME Quality Manual and Appendix 47 of ASME Section VIII, Division 1 for designation as a Person in Responsible Charge (PRC) of design activities for this facility.

We therefore designate the above-named individual to act as a PRC for the scope of design activities as described in QT-3, ASME Quality Manual, effective upon acknowledgement of this designation and acceptance of these responsibilities as indicated by their signature and date below. This designation shall remain valid indefinitely, provided that no lapse, expiration, or removal of a Registration or License affects their qualification as listed above.

Name / Signature _____ Date: _____
Designee

Name / Signature: _____ Date: _____
Quality Manager

Exhibit #19 – Calibration Record

SFI Tools : Table

Description	S/N	Model	Cal Date	Due Date	Cal By	Results	Cal Freq	Comments
Calipers, Fowler 24"	4-32,8149	24"	11/14/2005		J.Eubanks	acc	semi-annual	OOSRVC
Calipersy	P-1419	6"	4/8/2006	10/8/2006	Eubanks, J.	acc	semi-annual	
Chart Recorder	265-14829	0-150 Deg F.	5/18/2006	5/18/2009	MM&R	acc	tri-annual	
Coating Thicking Instrument	102535	6000 FNS Probe	5/25/2006	11/25/2006	J.Eubanks	acc	semi-annual	
Coating Thickness Gage	36880	6000 FRS Probe	5/11/2006	11/23/2006	PPTL	acc	semi-annual	
Depth Micrometer	PDM-01	0-6"	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Dial Indicator .500	IND-1	25-141-S	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Dial Indicator, 1"	15999	0"-1"	8/16/2005	8/16/2006	Eubanks, J.	acc	semi-annual	
Digital Psychrometer	9229804	SAM990DW	1/19/2006	1/19/2007	PPTL	acc	annual	
Ellwood Radius Check Fixtu	EFN-302	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSRVC
Ellwood Radius Check Fixtu	EFN-310	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSRVC
Ellwood Radius Check Fixtu	EFN-311	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSRVC
Ellwood Radius Check Fixtu	EFN-319	Aluminum	12/2/2005		Eubanks, J.	x	semi-annual	OOSRVC
Feeler Gage Set	SF-FG1	.0015-.035	4/3/2006	10/3/2006	Eubanks, J.	acc	semi-annual	
Foot Candle/Lux Meter	Q103545	407026	10/10/2005	10/10/2006	QTS	acc	annual	
Height Gage	1269	24"	6/8/2006	12/8/2006	PPTL	acc	semi-annual	
Height Gage	SF-02	18"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Height Gage	74093	12"	6/8/2006	12/8/2006	Eubanks, J.	acc	semi-annual	
Height Gage	645205	0" to 6"	6/8/2006	12/8/2006	Eubanks, J.	acc	semi-annual	
Holiday Detector	W-13724	APAW	10/17/2005	10/17/2006	PPTL	acc	annual	
Inside Micrometer	823	4" - 24" Mic	6/8/2006	12/8/2006	Powell, J	acc	semi-annual	
Inside Micrometer	Mic-20	4"-24" Mic	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Inside Micrometer	000001	2"-12" Inside	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Length Standard	000005	1-5" 5 parts	8/22/2006	2/22/2007	PPTL	acc	semi-annual	
Length Standard	LS-12-01	12" Long	8/22/2006	2/22/2007	PPTL	acc	semi-annual	
Length Standard	LS-24-01	24" Long	8/22/2006	2/22/2007	PPTL	acc	semi-annual	
Machinist Square	BA001826	916-406	2/14/2006	8/14/2006	PPTL	acc	semi-annual	
Micrometer	103-179	2" - 3"	4/22/2006	10/22/2006	Eubanks, J.	acc	semi-annual	
Micrometer	83404	0" -1"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	JACK-JDP	0-1"	10/8/2005		Eubanks, J.	acc	semi-annual	OOSRVC (taken hom
Micrometer	SF-01	6" - 7"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	215	0" -1"	10/22/2005	10/22/2006	Eubanks, J.	acc	annual	
Micrometer	103-262	1"-2"	3/21/2006	9/21/2006	Eubanks, J.	acc	semi-annual	
Micrometer	JLE-01	0" - 1" Mic.	8/16/2005	8/16/2006	Eubanks, J.	acc	semi-annual	
Multimeter, 3.5 Digit	80520327	87 Series III	7/6/2004		MM&R	X	semi-annual	calibrate when needed
Paint Thickness Gage	013894	Automatic	8/22/2006	8/22/2007	PPTL	acc	annual	
Pin Gage	000029	.7495	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Pin Gage	000028	.7506	7/24/2006	7/24/2007	Eubanks, J.	acc	annual	
Pin Gage Set	SPPGS-M-2	M-2 Minus 250 p	9/8/2005	9/8/2006	MM&R	acc	annual	
Pin Gage Set	SPPGS-M-1	M-1Minus 190 pc	9/8/2005	9/8/2006	MM&R	acc	annual	

Record: 1 of 152

Datasheet View

Exhibit #20 – National Board Numbers Control Log

SPRINGS FABRICATION, INC.
NATIONAL BOARD NUMBERS CONTROL LOG

Exhibit #20

NATIONAL BOARD NO.	ISSUE DATE	SPRINGS FABRICATION SERIAL NUMBER	TYPE OF VESSEL	CUSTOMER	Q.C. INT.	DATE SUBMITTED TO N.B.	DP Complete
2613	8/31/2022	22-25821-2613	Vessel	Separator tank			
2614	9/30/2022	22-25838-2614	Vessel	250 GAL Vessel			
2615	9/30/2022	22-25838-2615	Vessel	250 GAL Vessel			
2616	9/30/2022	22-25838-2616	Vessel	250 GAL Vessel			
2617	9/30/2022	22-25838-2617	Vessel	250 GAL Vessel			
2618	9/30/2022	22-25840-2618	Vessel	100 GAL Vessel			
2619	9/30/2022	22-25840-2619	Vessel	100 GAL Vessel			
2620	10/27/2022	20-24439-2620	Vessel	STEAM GENERATOR			
2621	11/7/2022	22-25917-2621	Vessel	HP PURIFIER			
2622	11/7/2022	22-25917-2622	Vessel	HP PURIFIER			
2623	11/7/2022	22-25917-2623	Vessel	HP PURIFIER			
2624	12/12/2022	22-25964-2624	Vessel	Pressure tanks			
2625	12/12/2022	22-25964-2625	Vessel	Pressure tanks			
2626	12/12/2022	22-25964-2626	Vessel	Pressure tanks			
2627	12/12/2022	22-25964-2627	Vessel	Pressure tanks			
2628	2/20/2023	23-26058-2628	Vessel	HP PURIFIER			
2629	2/24/2023	23-26067-2629	Vessel	30 Gallon Vessel			
2630	2/24/2023	23-26068-2630	Vessel	60 Gallon Vessel			
2631	4/7/2023	23-26135-2631	Vessel	Corden Pharma			

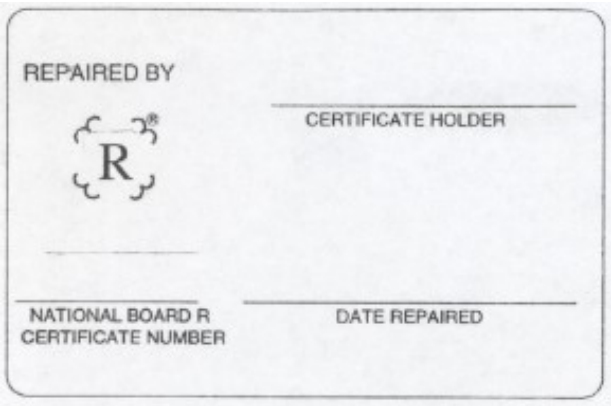
Exhibit #21 – National Board R-Numbers Control Log

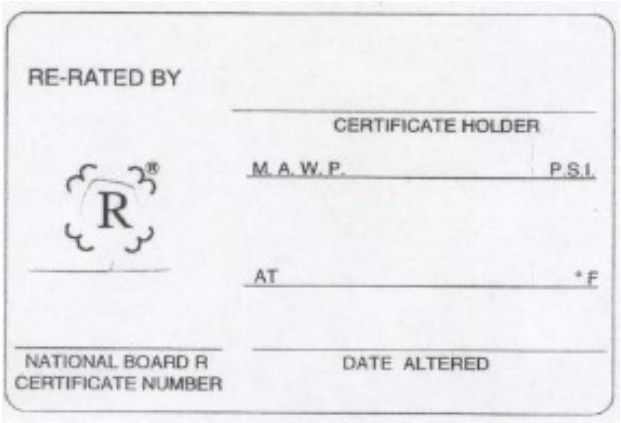
SPRINGS FABRICATION, LLC

FORM "R" (R-4182) NUMBERS CONTROL LOG

Repair No	Type (R-1/R-2)	SERIAL NO.	ISSUE DATE	CUSTOMER	DESCRIPTION OF PART	DESCRIPTION OF WORK PERFORMED	DATE STAMPED	DATE OF ACCEPTANCE BY AIA	DATE SUBMITTED	Q.C. INITIAL	PRC for repair design

Exhibit #22 – “R” Nameplates





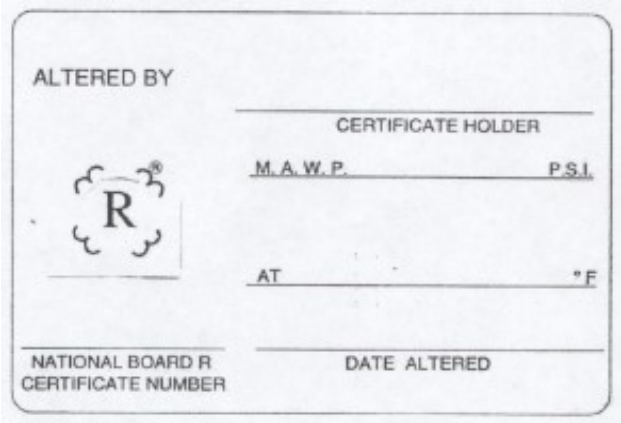
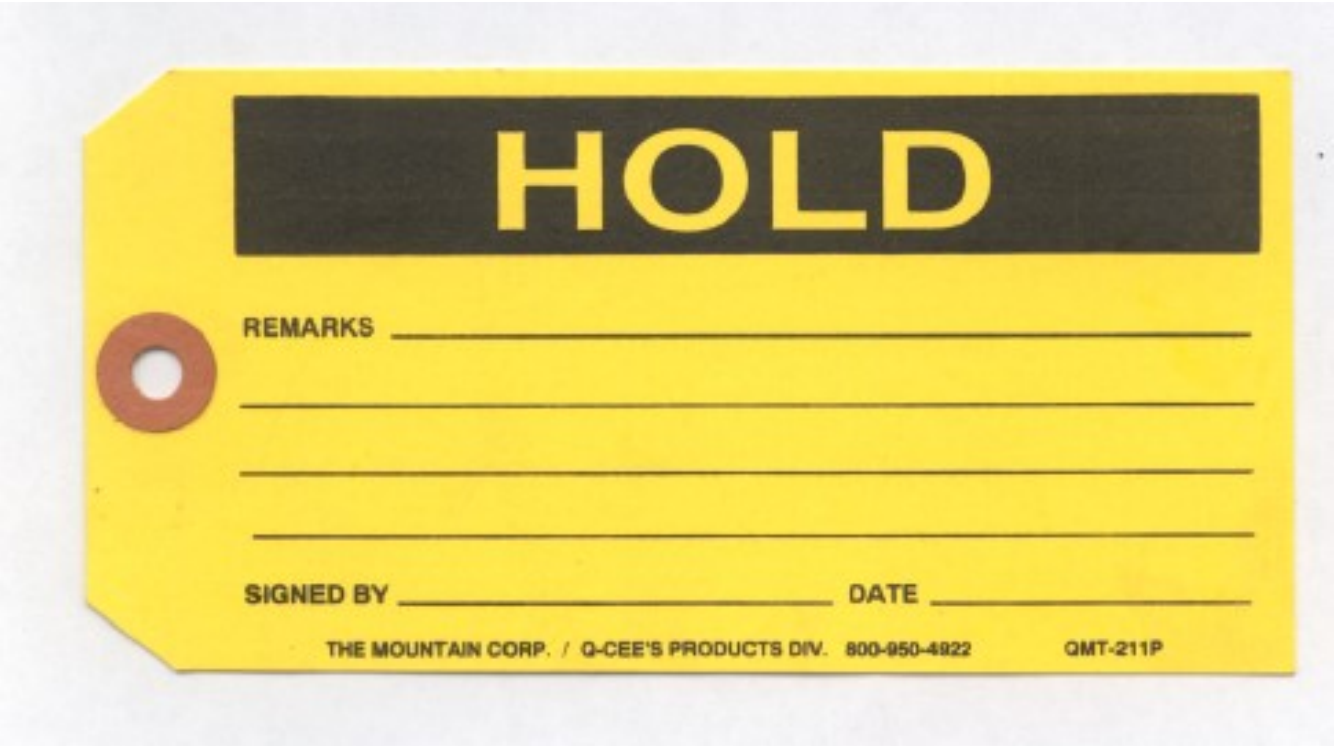


Exhibit #23 – Hold Tag



Hold Tags may not necessarily appear this way –
it depends on what is commercially available at the time they are purchased.

Exhibit #24 – Drawing Cover Sheet

Springs Fabrication LLC

Drawing Cover Sheet

Job Number: _____ **Customer Drawing No:** _____ **Rev.:** _____

Customer: _____ **Description:** _____

ASME Code Edition: _____ **Addenda:** _____

Max. Allowable Working Pressure: _____ **PSIG.** **at** _____ **Deg. F**

Minimum Design Metal Temp: _____ **Deg. F** **at** _____ **PSI**

Hydrostatic Test Pressure: _____ **PSIG**

NDE Examination: _____ **Post Weld Heat Treat:** _____

Corrosion Allowance: _____

See weld map for WPS numbers and weld points.

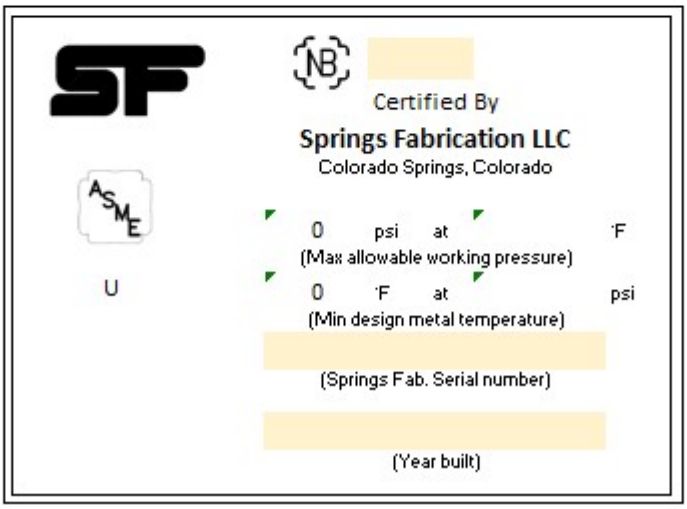


Exhibit #25 – Design Calculation Cover Sheet

Springs Fabrication, LLC

850 Aeroplaza Drive

Colorado Springs, 80916

COMPRESS Pressure Vessel Design Calculations

Date:	Friday, April 14, 2023
Customer:	JB Henderson
Vessel Description:	Effluent Sampling Tank
Job No.:	25689
Name:	TK-2601 Rev A
P.O. Number:	22047-002
Drawing Number:	200-5714 Rev A
Serial Number:	22-25689-2610
National Board Number:	2610
Year Built:	2023
Postweld Heat Treated:	None
Estimator:	J.Smith
Estimator Signature/Date:	4/14/2023
Designer:	
Designer Signature/Date:	
Engineer:	J.Swan
Engineer Signature/Date:	Josh Swan 4/14/2023
Certifying Engineer:	
Certifying Engineer Signature/Date:	
Person in Responsible Charge (PRC):	J.Swan
PRC Signature/Date:	Josh Swan 4/14/2023