

STANDARD QUALITY ASSURANCE PLAN

I. PURPOSE

The Standard Quality Assurance Plan (hereinafter referred to as "Standard QA Plan") for steel moment frames provides specifications, procedures, and illustrative details to comply with the requirements of the 2017 Los Angeles Building Code. The quality assurance requirements described in this Standard QA Plan are intended to promote public safety and welfare by standardizing inspections, tests, and all other applicable measures that ensure substantial compliance with the code performance objectives of steel moment frame connections.

II. HOW TO USE THIS STANDARD QA PLAN

Use the Standard QA Plan, follow the steps outlined below:

- 1. Standard QA Plan shall be attached to or incorporated in the structural plan.
2. Where the Standard QA Plan is attached to the structural plan, the Engineer of Record shall:
a. Identify the type of steel moment frame to be used in the building or structure by placing an "X" mark in the box below:

SPECIAL MOMENT FRAME (SMF)
INTERMEDIATE MOMENT FRAME (IMF)
ORDINARY MOMENT FRAME (OMF)

- b. Place a NOTE on the structural plan stating "All specifications, tables, and notes in the City of Los Angeles Standard Quality Assurance Plan for Steel Moment Frames shall be part of this approved structural plan."
c. Provide a stamp on the Standard QA Plan in the box provided at the lower right corner of each sheet.
3. Where the Standard QA Plan is incorporated directly in the structural plan, the Engineer of Record shall place a NOTE on the structural plan to clearly identify the type of steel moment frame to be used in the building or structure.
4. All of the quality assurance requirements listed in the Standard QA Plan shall be applied to special moment frames, intermediate moment frames, and ordinary moment frames, unless noted otherwise herein.
5. Organize and submit all reports required in Table 1 on Sheet 2 to the City Building Inspector in a timely manner for review and approval.
6. The procedures, specifications and illustrative details as described in the Standard QA Plan shall not exempt the Engineer of Record from using engineering judgment in determining the suitability of applying the Standard QA Plan to any welded connections. Any deviations in the quality assurance requirements as specified in the Standard QA Plan shall comply with Part III Item 5 of the Standard QA Plan.

III. GENERAL REQUIREMENTS

1. Referenced Documents

- The design and construction of steel moment frames shall be in compliance with the following:
a. City of Los Angeles Building Code, 2017 Edition (hereinafter referred to as "LABC").
b. AISC Seismic Provisions for Structural Steel Buildings, Part I dated June 22, 2010 (hereinafter referred to as "AISC Seismic").
c. AWS D1.101, 1M:2010 and AWS D1.8/D1.8M:2009 Structural Welding Code - Steel (hereinafter referred to as "AWS").

2. Material Specifications

- Steel shall comply with the following ASTM standard specifications:
i. Wide flange shapes.....ASTM A36, A529(S0), A572(42)(50), A588, A913(S0), A992 (S0)
note: minimum yield stress shall not exceed 50 ksi, except column per AISC 341 sec.6.1
ii. Continuity, doubler and column base plates, shear tabs.....I above or ASTM A283/A283M Grade D
iii. Anchor rods at column base plates.....ASTM F1554 or per AISC360-10 A4
iv. Fabricate and erect structural steel in compliance with the AISC 360-10 "Specification for Structural Steel Buildings" (hereinafter referred to as "AISC Specification").
v. Steel having dual ASTM designation shall be clearly identified on each specific plan detail.

3. High strength bolts shall comply with the following requirements and ASTM standard specifications:

- i. High strength bolts, nuts, and washers.....ASTM A325, A490
ii. Installed bolts in accordance with the "Specifications for Structural Joints using ASTM A325 or A490 Bolts."
iii. Tighten bolts to a snug-tight condition, then further tighten to the minimum specified tension and verifying using a calibrated tension measuring device, Twist-Off and Direct-Tension Indicator methods shall also be permitted
iv. Slip critical high strength bolts are required.
v. Welding surfaces and connections with high strength fasteners shall be prepared as required for Class A per the AISC Seismic Section 7.2.2.
c. Filler metal properties and specifications shall be as follows:
i. Electrodes shall be of a low-hydrogen type meeting requirement of H416 as tested in accordance with AWS A4.3 and conforming to AWS Specifications as referenced in Table 7 on Sheet 2.
ii. Filler metals shall be classified for nominal 70 ksi tensile strength. The maximum permitted electrode diameter shall be in accordance with Table 5 on Sheet 2.
iii. Filler metals shall have a minimum Charpy V-Notch (CVN) toughness of 20 ft-lb-ft at 70°F using AWS A5 classification test methods.
v. The use of intermetallic welds shall not occur unless it can be demonstrated by testing in accordance with AWS Section 4.
vi. The parameters established by the electrode manufacturer shall be reflected in the approved WPS.
d. Other materials not listed in LABC Chapter 35 are not permitted without specific approval from the Department.

3. Welding Processes

Structural welding shall be limited to the Shielded Metal Arc Welding or Flux Cored Arc Welding processes.

4. Base Metal Repairs or Restorations

Any repair or restoration of base metal shall comply with all of the following:

- a. Engineer of Record shall review and approve the WPS for repair procedures prior to welding.
b. Ensure that repair procedures meet the requirements outlined in AWS Section 5.26 and ASTM A618/A642 Section 9.2, 9.3, 9.4 and 9.5.
c. All welding shall be performed using low-hydrogen electrodes or with SMAW using low-hydrogen electrodes.
d. Provide continuous visual inspection by the Deputy Inspector, or
e. Provide non-destructive testing upon completion of the repair work.

5. Deviations From the Standard Quality Assurance Plan

Deviations from any part of the Standard QA Plan may be made provided the procedures outlined below are followed:

- a. Deviations from the Standard QA Plan must be reviewed and approved by the Engineer of Record.
b. Engineer of Record shall provide alternate procedures, specifications, and/or details to justify the deviations.
c. Submit the proposed deviations from the Standard QA Plan to the Department for review and approval prior to commencement of work.
d. Supplemental testing and additional specifications may be required to justify the deviation.
e. Conformance with all applicable provisions of the LABC, AISC, and AWS is required.

IV. QUALITY ASSURANCE

1. Certification

- a. Inspectors shall be LADBS Certified Deputy Inspectors per LABC Section 1704.2 and Information Bulletin P/B/C 2011-035 "Regulations Regarding Registration for Deputy and Controlled Activities Inspection." Employment shall be in accordance with Information Bulletin P/B/C 2011-041 "Employment of Deputy Inspectors of a Registered Deputy Inspector."
b. Welders shall be LADBS Certified Welders for the Structural Steel classification per LABC Section 2204.1, and Information Bulletin P/B/C 2014-045 "Welder Certification Rules and Regulations."
c. Shop welds shall be performed in an LADBS Certified Fabricator's Shop per LABC Section 96-204(g) and Information Bulletin P/B/C 2011-042 "Application for Approval as Fabricator."
d. Technicians performing Non Destructive Testing (NDT) shall be certified for Level II in accordance with ASNT SNT-TC-1A (current edition) by a Testing Agency approved per LAMC Section 98,0503 and Information Bulletin P/G 2017-028 "Rules and regulations for Recognition of Testing Agencies."

2. Pre-Construction Meeting

- a. The Owner (or owner's representative) shall arrange a pre-construction meeting(s) with the Engineer of Record (or Structural Observer) designated by the Engineer of Record, the Contractor (or affected Sub-Contractor), and the Deputy Inspector to discuss and review welding procedures, bolting procedures, and inspection requirements for all welding and bolting operations with consideration to minimize welding shrinkage effects including number of welders per deputy inspector
b. The City Building Inspector shall be notified of such meeting(s) and may participate at his/her discretion.
c. Meeting record(s) shall be included in the first report submitted to the City Building Inspector.

3. Structural Observation

- Structural observation shall be performed in accordance with Information Bulletin P/B/C 2017-024. The Structural Observer shall:
a. Perform structural observation listed in Table 5 on Sheet 2.
b. Perform structural observation prior to placement of decking, covering by prepropping, encasement in concrete or placement of other finishes.
c. Submit observation report(s) to the City Building Inspector at each stage observed and upon completion of the structural system,
d. State in the report that the steel moment frame system substantially conforms with the approved structural plans and specifications.
e. Use the Department's Structural Observation Report Form to report all observations. Structural Observation Report Form can be obtained at www.ladbs.org, keyword "Information Bulletin P/B/C 2017-024".

4. Deputy Inspection

- The following are the basic Quality Assurance responsibilities of the Deputy Inspectors:
a. Arrive on the job in sufficient time to verify the permit information, check for prior inspections and/or approvals by the City Building Inspector or previous Deputy Inspectors, check the quality of all materials and become familiar with the approved structural plans and specifications.
b. Verify that structural steel delivered is from a fabricator currently licensed by the Department.
c. Identify material from an offsite fabricator in accordance with LABC Section 2203 and compare to the approved plans and specifications.
d. Verify that each steel piece is labeled with the approved fabricator's shop name and license number.
e. Visual check shop welds and/or non-destructive test, as required, joint preparation, facing surfaces, indentation stamping and color codes of high strength steel, excessive mill scale or lamination, and dimensional conformity with the approved plans which are part of the lateral resisting system.
f. Before any welding begins, inspect joint preparation, fit-up, condition of surfaces to be welded, storage and use of electrodes, current location of all welders, and voltage/amperage of welding machines.
g. Ensure that all welding and inspection activities complies with AWS.
h. Measure voltage/amperages near the arc with a hand held calibrated averaging type meter. The meter shall be calibrated not less than once a year. This equipment shall be used by the Fabricator, Erector, and Deputy Inspector.
i. During welding operation, provide continuous inspection particularly on multiple pass welds to assure that each pass has been prepared correctly, preheat and interpass temperatures are maintained and that the root opening weld shall be the correct size and without rejectable discontinuities.
j. Mark steel near the weldment to indicate that inspection was made.

k. Verify type and size of bolts and washers, check mill certificates, and verify facing surfaces are free of burrs, scale, rust, grease or anything that may inhibit full contact.

l. Verify connections involving high strength bolts and welds are fabricated per Part III Item 2(b) and 2(c) and erected in a sequence per Part II Item 2, unless specified otherwise by the Engineer of Record.

m. Verify high strength bolts are not welded or damaged by preheating.
n. Verify washers are always installed with all bolts, except A-490 bolts which require washers under both elements.
o. Verify that any deficiency noted in the Structural Observation Report Form has been corrected.

p. Verify that the Engineer of Record has approved the written Welding Procedure Specification (WPS) prepared by the Fabricator or Erector. The WPS shall include the following:
i. All applicable requirements from the codes, the Standard QA Plan, and any other information necessary to produce the welds.
ii. List the applicable base metal types and thicknesses.
iii. List the welding joint detail, including joint type, weld type, joint geometry, and applicable dimensions. Individual weld passes shall be identified in sketches and numbered to identify the sequence of their deposition (see Detail 13 on Sheet 3 for example). The sketches shall identify the maximum layer thicknesses and bead widths. In no case shall layer thicknesses exceed 1/4 inch nor shall the maximum bead widths exceed 5/8 inch.
iv. List the welding processes.
v. Specify the required welding positions.
vi. List the filler metal per AWS for electrode specification and classification (see Table 7 on Sheet 2), as well as information regarding shielding material to be used.
vii. Indicate the minimum preheat and interpass temperatures (see Table 4 on Sheet 2) and post-weld heat treatment per Part V Item 5.

viii. List all applicable electrical characteristics for the welding process employed. WPS shall clearly indicate the specific values required for each welding pass. These electrical characteristics shall include at minimum the following:
(1) Electrode diameter (see Table 5 on Sheet 2).
(2) Type of current, and acceptable ranges of current measured in amperage.
(3) Voltage.
(4) Travel speed (range), and
(5) Amperage, voltage and electrode extension (as applicable) shall be within the filler metal manufacturer's recommendations.
ix. A copy of the electrode manufacturer's technical information with ID # listed shall be attached to the WPS.

q. Weld joints not conforming to AWS Chapter 3 must be tested by an approved testing agency, accepted by the Engineer of Record, and approved by the Department's Material Control Section before the weld is performed. Material Control Section can be contacted at:
LADBS Material Control Section
221 N. Figueroa St., Suite 400
Los Angeles, CA 90012
(213) 482-0385 or 1-888-LA-BUILD

r. Notify the Contractor, Engineer of Record, and City Building Inspector of any deviations or non-compliance with the approved WPS, plans or specifications.

s. "Deputy Inspection Report Form INFORM07" shall be submitted on a weekly basis to the City Building Inspector and Engineer of Record, unless determined otherwise by the City Building Inspector.

t. During the execution of the work, the Deputy Inspector shall not undertake or engage in any other task or occupation which will interfere with the proper performance of the duties of such inspection.

w. Visual welding inspections, bolting inspections and other inspections shall be conducted at locations and frequencies as specified in Table 8 on sheet 2 of 3.

5. Electrode Storage and Atmospheric Exposure

- a. Electrodes are considered to be exposed to the atmosphere if:
i. the manufacturer's sealed electrode containers or packagings are opened or damaged, or
ii. outside of baking or storage ovens.
b. Modification or lubrication of electrodes are not permitted.
c. Drying of electrodes in baking or storage ovens are permitted as recommended by the manufacturer.
d. Electrodes shall be identified to facilitate monitoring of total atmospheric exposure time.
e. Storage and atmospheric exposure of AWS A5.1-A1 and A5.5-56 low-hydrogen SMAW electrodes shall be in accordance with AWS Section 5.3.2.
f. FCAW electrodes not consumed within 24 hrs of accumulated atmospheric exposure time shall be used. Manufacturer's recommendations that show that drying effectively reduces moisture and restores electrodes to their designated diffusible hydrogen levels are permitted.
g. FCAW electrode welding suspended more than 8 hrs shall be removed from the machines and stored in an electrode wire baking or storage oven maintained at a temperature between 250° and 550°F, or as recommended by the electrode manufacturer.

6. Plastic Hinging Zone Protection

a. The plastic hinging zone shall be identified diagrammatically, as illustrated in Detail 15 on Sheet 3, on the structural plans by the Engineer of Record.
b. The Engineer of Record and Contractor shall be responsible for reviewing shop drawings of ALL relevant trades to ensure compliance. This shall be discussed and documented in pre-construction meetings.
c. The Contractor shall be responsible for developing a program to ensure that all workers on the project, including their subcontractors, are aware of and understand this requirement. Failure to comply with these requirements may cause the replacement of steel.
d. Plastic hinging zones shall be defined by permanent markings such as paint or ink.
e. A note, as illustrated in Detail 15 on Sheet 3, shall be prominently placed on the structural plans (general note sheet and adjacent to moment frame detail) and the construction documents of ALL trades.
f. Welded, bolted, screwed, or shot-in (powder driven) attachments for perimeter edge angles, shear studs, exterior facades, partitions, duct work, piping, or other connections shall not be permitted within the plastic hinging zones.

g. Any penetrations or damage from temporary welded attachments within the plastic hinging zones shall be repaired as required by the Engineer of Record and comply with Part III Item 4.

h. Initially, the plastic hinging zone "Warning Sign" as illustrated in Detail 15 on Sheet 3, may be temporary. However, the temporary "Warning Sign" shall be replaced by a permanent "Warning Sign" before project completion. This sign and identification of the plastic hinging zone shall be maintained during construction; and may require repair after operations such as fireproofing.

i. Signs shall be affixed to the beam and located within the plastic hinging zone. The City Building Inspector may accept alternate methods of attaching the "Warning Sign" to the plastic hinging zones.

7. Additional Charpy V-Notch Toughness

a. Demand Critical Welds

For steel frame with service temperature at 50°F or higher welds at the locations indicated below shall be made with filler metal having a CVN toughness of 20 ft-lb-ft at -20°F AND 40 ft-lb-ft at 70°F as determined by test procedure prescribed in the AISC Seismic Sec.9.1-5 "Weld Metal / Welding Procedure Specification Toughness Verification Test."

For steel with service temperature below 50°F, the qualification temperature for AISC Seismic Provision Appendix X shall be 20°F above the lowest anticipated service temperature or at a lower temperature.

- i. Beam flanges to columns.
ii. Single plate shear connections to columns.
iii. Beam webs to columns, and
iv. Column splices.
v. Column bases.
b. Heavy Section CVN Requirements

For structural steel in the SLRS, in addition to the requirements of AISC Specification Section A.3.1c, thick shaps with flanges 1 1/2 in. thick and thicker shall have a min. CVN toughness of 20 ft-lb at 70°F. tested in the alternate core location as described in ASTM A5 Supplemental Requirement S30, Plates 2 in. thick and thicker shall have min. CVN toughness of 20 ft-lb at 70°F, measured at any location permitted by ASTM A673, where the plate is used in the following:

- i. Member built-up from plate
ii. Connection plates where inelastic strain under seismic loading is expected.

8. Non-Destructive Testing (NDT) Requirements

The following NDT requirements, which shall be considered as a minimum, are to be included in the Quality Assurance Agency Document(s)(see part 1, IV 9 below)

a. The minimum non-destructive testing at each weld joint or parts shall be conducted at the locations and frequencies as specified in Table 2 and Table 3 on Sheet 2 respectively.

b. A copy of each NDT report shall be provided to the Contractor, Engineer of Record, Deputy Inspector, and City Building Inspector with the following information:
i. Document the accepted and rejected welds, parts, or joints.
ii. Identify the tested weld by piece mark and location in the piece.
iii. Identify the tested weld location in the structure.

c. NDT Technician shall perform the following tasks:
i. Coordinate the NDT scope and schedule with the Deputy Inspector.
ii. Perform NDT in a timely manner (so as not to hinder construction work) and to detect welding problems sooner after occurrence so that corrective measures can be taken by the Contractor.

iii. Mark the inspected and accepted welds, parts, and joints with a distinguishing mark or die stamp.
d. Rejection Rate for NDT
i. The rate of UT testing on CJP groove welds may be reduced if approved by the Engineer of Record and the Department, except no reduction is permitted for demand critical welds. Where the initial rate for UT is 100%, the NDT rate for an individual welder or welding operator is permitted to be reduced to 25%, provided the reject rate, the number of welds containing unacceptable defects divided by the number of welds completed, is demonstrated to be 5% or less of the welds tested for the welder or welding operator. A sampling of at least 40 completed welds for a job shall be made for such reduction evaluation. For evaluating the reject rate of continuous welds over 3 ft in length where the effective throat is 1 in. or less, each 12 in. increment or fraction thereof shall be considered as one weld. For evaluating the reject rate on continuous welds over 3 ft in length where the effective throat is greater than 1 in., each 6 ft. in. length or fraction thereof shall be considered one weld.

ii. The rate of MT testing on CJP groove welds may be reduced if approved by the Engineer of Record and the Department. The MT rate for an individual welder or welding operator may be reduced to 10%, provided the reject rate is demonstrated to be 5% or less of the welds tested for the welder or welding operator. A sampling of at least 20 completed welds for a job shall be made for such a reduction evaluation. This reduction is not permitted on welds in the k-area, at repair sites, weld tab and backing removal sites and access holes.

iii. Reject rate shall mean the number of welds containing rejectable defects divided by the number of welds completed.

9. Quality Assurance Agency Documentations

- i. Submit Fabricator and Erector Document for review by EOR prior to fabrication erection per AISC 341-10 Sec. J2.
ii. Submit Quality Assurance Agency Document to EOR, owner, and City Building Inspector per AISC 341-10 Sec. J3.
iii. The reports listed in Table 1 on Sheet 2 shall be submitted to the City Building Inspector in a timely manner.
iv. The requirements stated in Section 8 are to be included in the Quality Assurance Agency Document(s)

V. WELDING PROCEDURES

1. Bottom Beam Flange Moment Connection Welding
Where welding of the bottom beam flange to the column flange is in the flat welding position, welding shall be completed with the following sequence:
a. Start welding from Side A (onk side of the beam) with a maximum 1/4 inch thick root pass beyond the center of the joint on Side B (other side of the beam), reaching past the beam web through the weld access hole.
b. After the arc is initiated, electrode travel shall progress toward the edge of the Side A beam flange, terminating on the Side A web tab.
c. The Side A root pass, and root pass deposit on SideB, shall be thoroughly cleaned to allow Deputy Inspector to verify the resulting bead profile is suitable for obtaining good fusion by the subsequent root pass to be initiated from SideB. If the profile is not conducive to good fusion, the start of the first root pass shall be ground/gouged/chipped/otherwise prepared to ensure adequate profile to achieve fusion.
d. Complete the root pass on Side B before any other weld passes are performed.
e. The arc shall be initiated at the start of the first Side A root pass, and electrode travel shall progress toward the edge of the Side B beam flange, terminating on the Side B web tab.

f. The above sequence shall be repeated for subsequent weld layers, and each weld layer shall be completed on both sides of the joint before a new layer is deposited. For each layer, the weld starts and stops shall be on opposite side of beam web as compare to previous layer. The order of operations (Side A, then Side B, or vice versa) is not restricted and may vary for each weld layer. Weld passes shall be placed in horizontal layers. Each pass shall be thoroughly cleaned of slag and wire brushed. Each pass shall be visually inspected by the Deputy Inspector, as described above in Step (c). An alternate welding sequence may be made provided the Contractor submits in writing an alternate sequence that is approved by the Engineer of Record and complies with the requirements of Part III Item 5 of the Standard QA Plan.

2. Sequence for Welding at Multiple Locations

When welding occurs at multiple locations of welded steel moment frame connections, the following sequence shall be followed:

- a. Weld both top and bottom beam flanges prior to any supplemental welding to the beam web or shear tab.
b. Engineer of Record shall review and approve all field welding sequences prior to the start of work.
c. Field welding of web shear plates with bolts shall occur after field welding of beam flanges to column flange.
d. High strength bolts shall be in the snug tight condition prior to welding.
e. Notwithstanding AISC Steel Construction Manual Specification Section J1.10 to the contrary, high strength bolts shall be fully tensioned upon completion of all welding activities.

An alternate sequence of welding may be made provided the Contractor submits in writing, the alternate sequence minimizes residual stresses and is approved by the Engineer of Record.

3. Welding Technique

a. Stringer beads shall be used during all welding operations. Maximum bead width, bead thickness, and layer thickness shall be considered. Weaving is not permitted, except when the WPS approved by the Engineer of Record limits electrode oscillation transverse to the weld at connection plates where inelastic strain under seismic loading is expected.

- i. 3d for 1G1F, 2G/2F, and 4G/4F weld positions, or
ii. 5d for the 3G/3F position, where d = electrode diameter.
b. Weld layers shall progress from the face of the column flange outward toward the groove face of the beam flange as illustrated in Detail 13 on Sheet 3.

4. Preheat and Interpass Temperature

a. The minimum preheat and interpass temperature requirements in Table 4 of Sheet 2 shall be observed. Special attention shall be given to AWS Section 5.5.1 and Section 5.6 for the thickness of the base metal to be welded.

b. Preheat and all subsequent interpass temperatures shall be maintained during the welding operation for a distance at least equal to the thickness of the thicker welded part, but not less than 3', in all directions from the point of welding.

c. Where base metals are of different thickness, the higher minimum preheat and interpass temperature requirements of the thicker plate shall govern.
d. Maximum preheat and interpass temperature shall not exceed the lesser of:
i. 550°F, or
ii. The maximum temperature recommended by the manufacturer.

5. Post Weld Heat Treatment

Unless specified otherwise in an approved WPS, the minimum post weld heat treatment shall be provided as follows:
a. Apply temperature in the 400°F to 600°F range immediately after completion of welding to prevent the weld metal from cooling below the minimum preheat and interpass temperature.
b. Maintain temperature for approximately 1 hour per inch of thickness of weld metal or joint, whichever is less.
c. Conditions specified in AWS Section 3.1.4 and Section 5.8 should carefully be considered when applying post weld heat treatment. Alternatively, the use of insulating blankets after the completion of welding in lieu of post weld heat treatment may be permitted to control the cooling of the welded connection to ambient temperature if recommended by the Engineer of Record and approved by the City Building Inspector, unless required otherwise by approved WPS.

VI. WELDING AND FABRICATION DETAILS

1. Base Metal Joint Preparation

a. Base metal preparation shall be in compliance with AWS Section 5.15.
b. All beam flange to column flange welds are to be made with an AWS prequalified CJP groove welded joint detail.
c. Bevel, fit-up and detail tolerances shall be as required by the selected prequalified welds joint detail.
d. Whenever possible, use the AWS prequalified CJP groove welded joint detail as illustrated in Detail 14 on Sheet 3 and the following:
i. Use single bevel CJP groove welds made with a 30° groove angle or double bevel CJP groove welds when flange thickness exceed 1-1/2 inches.
ii. "As Fit-Up" and "As Detailed" shall be the maximum tolerances.
iii. Meet all prequalified WPS variables in Table 5 on Sheet 2.

2. Weld Access Hole

a. Where access holes are provided, they shall be detailed as illustrated in Detail 12 on Sheet 3.
b. Notches and gouges shall be repaired following a WPS approved by the Engineer of Record.
c. Weld access holes shall be prepared by grinding to a suitable finish in accordance with AISC Specification Section J1.6 and provided with a minimum radius of 3/8 inch as illustrated in Detail 12 on Sheet 3.

3. Backing Bar

a. Backing bar used in connections with a CJP groove weld of beam flange to column flange shall be removed except the top flange backing bar attached to the column by a continuous fillet weld on the edge below the CJP groove weld need not be removed.
b. Following removal of backing bar, the root pass shall be background to sound weld metal, and back welded. A reinforcing fillet weld with a minimum leg size of 5/16 inch on the root opening plus 1/16 inch, whichever is larger, shall be provided. The reinforcing fillet weld need not be ground.

SEE ADDRESS: OWNER:

STANDARD QUALITY ASSURANCE PLAN For Steel Moment Frames

The specifications and illustrative details contained in this Standard Quality Assurance Plan have been prepared in accordance with the referenced governing codes and standards. It is the responsibility of the user to verify the applicability of the provisions of this Standard Quality Assurance Plan to the project and to the materials and methods used. The user shall be responsible for the application of the provisions and standards to the project. The Engineer of Record and the City Building Inspector are not responsible for the user's interpretation of the provisions and standards. The user shall be responsible for the user's compliance with the provisions and standards. The user shall be responsible for the user's compliance with the provisions and standards. The user shall be responsible for the user's compliance with the provisions and standards.

Engineer of Record

LADBS Logo.lmp

Date: 12/30/2017

Scale: Not to Scale

Sheet: 1 of 3