

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
QUALITY CONTROL PLAN FOR WELDING PILE SPLICES

STR:MJF

1 of 2

APPR:POJ:JAB:04-28-20
FHWA:APPR:05-05-20

a. Description. This work consists of providing and maintaining a quality control plan (QCP) for welding non-main member pile splices to produce welds that meet *American Welding Society (AWS) D1.1, Structural Welding Code - Steel* (as modified by the current FUSP 20SP-707A - Structural Steel and Aluminum Construction), hereafter called *AWS D1.1*. Perform quality control (QC) inspection in accordance with the QCP during all phases of the welding. Ensure the QCP is in accordance with the contract and specifications herein.

Main member piles do not require a QCP, but do require an [AASHTO/AWS D1.5 Field Welding Plan \(form 0395\)](#) to be submitted to the Engineer for review and approval.

b. Quality Control Plan. Provide a [Pile Welding Quality Control Plan \(form 5627\)](#) to the Engineer for review and approval a minimum of 10 working days before the start of pile driving. The Engineer will provide approval, objections, or revisions to the proposed QCP within 5 working days of receipt of the QCP. Do not hold a pre-welding meeting or begin welding of pile splices before approval of the QCP by the Engineer.

The QCP must state the scope of work and list all methods, procedures, personnel, equipment, supplies, and facilities necessary to ensure the welded pile splices meet the contract requirements. Ensure the QCP is administered by a QC Manager that is a full-time employee or a contracted consultant. See QC Manager requirements in subsection c. of this special provision.

All QC test reports and splicing records must include the pile location (substructure unit) and pile number (based off the plans). Failure to provide proper documents for QC will be justification for withholding acceptance for the welded pile splices, or as a basis for non-payment.

c. QC Manager and Pile Welder Requirements. The QC Manager is defined as the individual administering the QCP. Ensure the QC Manager is an AWS Certified Weld Inspector (CWI) or a welder endorsed through MDOT's Welder Certification Program or MDOT's Welder Qualification Program. Ensure the QC Manager has clearly defined authority and responsibility to take all actions necessary for the successful implementation of the QCP, including but not limited to the QC acceptance and rejection of welds, and prescription of corrective measures to ensure welds meet the contract requirements.

Submit the welder's qualification records that show they meet AWS qualification requirements and are endorsed by MDOT with the QCP. Please see the [MDOT Welder Certification Program](#) and the [MDOT Welder Qualification Program](#) for more information.

d. Pre-Welding Meeting. Hold a pre-welding meeting to discuss the QCP in detail including roles and responsibilities of all QC staff. All staff (QC and production) listed on the QCP must attend the meeting and record their name in a sign in sheet. Notify the Engineer of the meeting

date, time, location, and provide a call-in number for Department personnel not able to attend the meeting.

e. Non-Destructive Testing (NDT) Inspection. Ensure all welds are visual test (VT) inspected and accepted by the QC Manager. Penetrant testing (PT) inspection is required for complete joint penetration welds with cope holes. The welder is permitted to perform the QC inspection after each weld pass (during welding inspection as defined in form 5627). If corrective action is required, the QC Manager must inspect and accept the repaired weld.

f. Quality Assurance Testing. The Engineer will periodically inspect welded splices and may perform NDT or require the Contractor to perform other NDT on welds not inspected in accordance with the approved QCP. If the additional NDT identifies rejectable defects then all costs associated with repairing the weld, retesting the weld using the same NDT that found the defect, and the cost associated with the initial test that found the defect will be at no cost to the Department. If the QCP is not followed or welds with defects are accepted by the QC inspection, then an AWS CWI must inspect and accept all welded pile splices for the remainder of the project at no cost to the Department.

g. Pile Welding QCP Template and Records. Maintain complete QC records documenting the required acceptance criteria have been met including pre-welding, during welding, post-welding, corrective repairs, and final acceptance. These records must indicate what action was taken to correct deficient welds when inspection indicates defective welds. Ensure the QC records are furnished to the Engineer within 24 hours after the date covered by the record in a portable document format (PDF) file.

Submit QCP's and pile welding records using the following MDOT Forms:

1. [Pile Welding Quality Control Plan \(Form 5627\)](#);
2. [Pile Welding Splice Record \(Form 5628\)](#); and
3. [Pile Welding Corrective Action Record \(Form 5629\)](#).

h. Measurement and Payment. All costs associated with providing and maintaining an effective QCP will be included in the piling pay items in the contract.