
******THIS IS A NEW APPENDIX. – PLEASE READ CAREFULLY.******

**PRE-FABRICATION MEETING
TOWER LIGHTS – LIGHT POLES**

The intent of this appendix is to serve as a guide in conducting prefabrication meetings for tower lights and light poles.

INTRODUCTION OF PERSONNEL

DETAIL DESCRIPTION OF STRUCTURE TO BE FABRICATED

- A. Project Number
- B. Design Number
- C. Number of towers / light poles on the project

SPECIFICATIONS

- A. Bridge Welding Code (AASHTO/AWS D1.1 M/D1.1:2000 and D1.5M/D1.5:2002).
- B. Standard Specifications, Supplemental Specifications, Special Provisions, Instruction Memorandums (IMs) and any other special requirements specified in the contract documents.
- C. Standard specification requirements [Article 2522, 2408.03B](#)
- D. [IM 559](#)

PROJECT STATUS

- A. Designed by DOT / Consultant / Others
- B. Status and Distributions of Shop Drawings, approved shop drawings shall be required.
- C. Approved shop drawings shall be required prior to the start of any fabrication work.
- D. Weld procedures are in integral part of the shop drawings, and shall be submitted for approval by Central Materials.
- E. Tentative Starting Date
- F. Tentative Completion Date
- G. Plant Working Hours; Number of Shifts
- H. Work on Iowa's projects shall not be interrupted due to scheduling conflict or due to change of priorities by the fabrication shop.

- I. Iowa Department of Transportation Scheduled Holidays (Work or No Work).

QUALITY ASSURANCE & QUALITY CONTROL

- A. Certified NDT & CWI Inspector Required (Current Approved / Certified List)
- B. Copy of AWS Certification Required
1. Quality Control Specified Duties (AWS Chapter 6)
- D. Discuss Quality Control Record Keeping System (Description by Plant Personnel).
- E. Quality Control Manager is responsible to whom?
- F. How many CWI Inspectors does the plant have? Any assigned to 2nd and / or 3rd shifts?

Note: CWI shall be present at all times throughout the welding process.

NON-DESTRUCTIVE TESTING (NDT)

- A. UT 100% for male / female of the splice.
- B. Longitudinal seam welds 100% UT.
- C. Radiograph 100% of the full penetration sections of the longitudinal seam weld at the base plate connection location. Radiographs shall be performed by an independent certified agency.
Note: The NDT for the longitudinal seam weld at the base plate connection can be either at 100% radiograph or at 100% UT
- D. Magnetic particle testing – random at 10% of the partial penetration of the longitudinal seam welds.
- E. 100% UT of all transverse butt and fillet welds
- F. 100% visual inspection of all longitudinal butt and fillet welds and shall be acceptable by the criteria of Table 6.1 of the AWS code.
- G. Questionable visually inspected welds shall be supplemented with magnetic particle testing for verification purposes.
Note: if defects are found in the area tested, additional inspection for a minimum of 5 feet on each side of the defect.
- H. Longitudinal seam welds
1. minimum of 60% penetration, except for the following areas where complete penetration welds are required.
- a. Within 6 inches of circumferential welds which are complete penetration butt welds
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- b. For a distance of the nominal splice length, plus 6.0 inches on both sections of the slip type / telescopic support.

Note: All non-destructive testing (UT, MT) shall be performed by a certified NDT inspector. A copy of these tests certifications shall be submitted to central materials for acceptance and approval.

MATERIALS

- A. All steel products and coating (if applicable) shall be melted and manufactured in the USA. The fabricator shall certify to the State of Iowa that the materials used are of domestic origin.
 - B. A certified mill analysis for each heat of steel used in the towers or poles and assemblies shall be submitted to the DOT inspector.
 - C. A certified test report / test results for the support cables shall be submitted to the DOT inspector
 - D. Office of Materials shall be notified of the shop fabrication schedule 30 days in advance of the start of the fabrication and the pre-fabrication meetin.
 - E. Final approval of all materials and fabricated materials shall be based on the following:
 - 1. A certification that methods and materials used in fabrication comply with the contract documents.
 - 2. Satisfactory reports from random monitoring inspections performed during fabrication.
 - 3. Verification of satisfactory compliance at the time of final inspection at the construction or project site.
 - F. Materials supplied from stock shall be identified by heat number and identified by mill test reports and ASTM Grade.
 - G. Bolts and Bolting
 - 1. Source – Approved Sources
 - 2. Sampling for Approval (shop and field bolts, extra number are required)
 - 3. Rotational Capacity Testing
 - 4. Turn of the Nut Method of Installation
 - 5. Bolt Tension Testing Device - calibrated within the last six months
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6. Anchor bolts, Nuts, and Washers
 - a. Shall be from approved source
 - b. Shall be full length galvanized
 - c. Galvanizing shall meet the requirements of ASTM F 2329

Note: Dual certification for galvanizing shall not be acceptable (such as ASTM A153 / F2329)

H. Non-compliance materials of any type, shall require repair procedure submitted for approval prior to the repair; a detailed description of the corrective action taken to correct the problem.

STORAGE AND HEAT NUMBERS

1. Tower poles / light poles must be properly supported during storage and shipping.
2. Steel with charpy test requirements are to be identified separately (marked CVN)
3. The fabricator shall furnish an affidavit in the form of cutting list, listing heat numbers, grade of steel, and a statement certifying that throughout the fabrication operation the identification of steel has been maintained in accordance with the specification (Article 2408.04)

WELDING

- A. Weld and fabricate steel structures in accordance with Article 2408.03B, except that gas metal arc and flux core arc welding processes can be permitted.
- B. Filler metal shall comply with the requirements of the AWS code. A certificate of compliance from manufacturer for each consumable to be used shall be attached to weld procedures.
- C. Weld procedures shall shall be submitted for approval.
- D. A list of certified welders shall be submitted to Central Materials.
- E. All fillet welds accessible for inspection using magnetic particle inspection according to ASTM E 709. (at no additional cost to the state).