

CIRCULAR LETTER

SECTION: 602.42 ERECTION OF STEEL STRUCTURES
NUMBER: 602.42-01
SUBJECT: PRE-ERECTION CONFERENCE
DATE: MARCH 15, 2024

A pre-erection conference on the project site should be held prior to erecting steel members for bridge construction. The conference should include discussion on methods of erection; equipment utilized; traffic control; safety precautions; and any questions or concerns of those persons involved in the erection.

In addition to the Team Lead, the conference should include representation from the following:

1. The Contractor
2. The Erector
3. The Structures Division
4. The Project Field Personnel

CIRCULAR LETTER

SECTION: 603.13 REPAINTING OF EXISTING STEEL STRUCTURES

NUMBER: 603.13-01 PRE-ERECTION CONFERENCE

SUBJECT: ABRASIVE BLASTING/WATER WASHING ACTIVITIES GUIDANCE

DATE: OCTOBER 2, 2015

Requirements outlined in this guidance apply to all abrasive blasting/water washing activities that are organized or coordinated by TDOT District Operations Engineer, including: painting; blasting with sand, slag, steel shot or grit; and water washing of bridges. For each abrasive blasting/water washing project, the onsite TDOT District Operations Engineer shall ensure completion of the following:

- (1) A minimum of two weeks prior to commencement of any project involving blasting/water washing of bridges or steel structures, the TDOT Environmental Facilities Compliance Office is notified of the project and schedule. The Division address and contacts are:

TDOT Environmental Facilities Compliance Office
Mr. Barry Brown, Manager
Suite 900 James K. Polk Bldg.
505 Deaderick Street
Nashville, TN 37243

Regional Environmental Coordinator

- (2) On the first day that abrasive blasting/water washing begins, a “split” sample is collected and submitted for TCLP metals analysis (a “split” sample is defined as a sample that is collected directly from the sample that the contractor collects for testing). The TDOT Environmental Facilities Compliance Office shall arrange for the split sample to be collected/analyzed, and the onsite TDOT District Operations Engineer shall ensure collection of the sample.
- (3) The TDOT Environmental Facilities Compliance Office receives a copy of the contractor’s test results to compare with the results of Toxicity Characteristic Leaching Procedure (TCLP) metals analysis of the “split” sample. A copy of the test results from the contractor’s sample shall be submitted to the TDOT Environmental Facilities Compliance Division within two weeks of receipt from the testing laboratory.
- (4) Abrasive blasting/water washing wastes are not disposed onsite. These wastes are disposed as hazardous wastes per TN Rule 1200-1-11 or as special wastes per TN Rule 1200-1-7.
- (5) The TDOT Environmental Facilities Compliance Office receives a copy of any Hazardous Waste Notification Form (“HN Form”) submitted by the contractor to TDEC, if applicable. A copy of the HN Form shall be submitted to the TDOT Environmental Facilities Compliance Division at the same time the form is submitted to TDEC.

- (6) The TDOT Environmental Facilities Compliance Office receives a copy of any Hazardous Waste Stream Report (“Attachment WS”) that is submitted to TDEC by the TDOT contractor/subcontractor (typically submitted in conjunction with the HN Form). A copy of Attachment WS shall be submitted to the TDOT Environmental Facilities Compliance Office at the same time the form is submitted to TDEC.
- (7) The TDOT Environmental Facilities Compliance Office is listed as the responsible facility on all waste manifests, using the address and contact information listed in item # 1, above.
- (8) The TDOT Environmental Facilities Compliance Office receives copies of all hazardous waste manifests, non-hazardous waste manifests, or other shipping papers as appropriate. For hazardous waste manifests, the generator copy shall be submitted to the TDOT Environmental Facilities Compliance Office within two weeks of the date of waste shipment. The returned copy of the manifest from the treatment, storage, disposal facility (TSDF) shall be submitted to the TDOT Environmental Facilities Compliance Office within two weeks of receipt from the TSDF.
- (9) The contractor/subcontractor provides disposal facility contact information (including facility name, installation ID number, location, mailing address, contact person and phone number) to the TDOT District Operations Engineer, or their designee, in a timely manner. Within two weeks of receipt of this information from the contractor/subcontractor, disposal facility contact information shall be sent to the TDOT Environmental Facilities Compliance Office for proper record keeping.

CIRCULAR LETTER

SECTION: 604.01 CONCRETE STRUCTURES - DESCRIPTION (GENERAL)
NUMBER: 604.01-01
SUBJECT: REQUEST FOR MARKING REPAIR AREAS BY BRIDGE REPAIR DIVISION
DATE: MAY 1, 2024

When requesting inspection by the Structures Division for the purpose of locating and marking repair areas, the following procedures should be followed:

1. Notify the Region & Repair office a minimum of three (3) days in advance of the scheduled work.
2. The deck to be marked should be scarified (if required), cleaned and traffic control set up before the marking team arrives.
3. The Team Lead is to furnish one person to assist in marking the decks.

CIRCULAR LETTER

SECTION: 604.01 DEFINITIONS AND TERMS
NUMBER: 604.01-03
SUBJECT: AMERICAN WELDING SOCIETY (AWS) – CERTIFICATION

All field welding must be in conformance with the American Welding Society (AWS) D1.5 Bridge Welding Code and accomplished by an AWS Certified Welder. Said certification must have been administered by a Certified Welding Inspector (CWI).

The following is a partial listing of companies currently staffed to administer AWS Certification Tests:

PSI (Pittsburgh Testing Laboratory), Nashville, TN
World Testing, Mt. Juliet, TN
American Industrial Testing & Analytical Laboratories, Memphis, TN
Quality Control & Inspections, Knoxville & Memphis, TN

For reference, a sample qualification record from the AWS D1.5 Bridge Welding Code is attached detailing the pertinent information needed on all certifications. The contractor/welder may have a different form than the one attached, however the information detailed on the form must include the information shown on the reference document. In addition, the Team Lead may be able to verify the Welder's Certification by entering the Certification Number on the AWS website (www.aws.org).

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or welding operator's name _____ Identification no. _____
 Welding process _____ Manual _____ Semiautomatic _____ Machine _____
 Position _____
 (Flat, horizontal, overhead or vertical — if vertical, state whether upward or downward)
 In accordance with procedure specification no. _____
 Material specification _____
 Diameter and wall thickness (if pipe) — otherwise, joint thickness _____
 Thickness range this qualifies _____

FILLER METAL

Specification no. _____ Classification _____ F no. _____
 Describe filler metal (if not covered by AWS specification) _____
 Is backing strip used? _____
 Filler metal diameter and trade name _____ Flux for submerged arc or gas for gas metal arc or flux
 cored arc welding _____

VISUAL INSPECTION (9.25.1)

Appearance _____ Undercut _____ Piping porosity _____

Guided Bend Test Results

Type	Result	Type	Result

Test conducted by _____ Laboratory test no. _____
 per _____ Test date _____

Fillet Test Results

Appearance _____ Fillet size _____
 Fracture test root penetration _____ Marcoetch _____
 (Describe the location, nature, and size of any crack or tearing of the specimen.)
 Test conducted by _____ Laboratory test no. _____
 per _____ Test date _____

RADIOGRAPHIC TEST RESULTS

Film identi- fication	Results	Remarks	Film identi- fication	Results	Remarks

Test witnessed by _____ Test no. _____
 per _____

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of AASHTO/AWS D1.5, (_____) Bridge Welding Code.
 (year)

Manufacturer or contractor _____
 Authorized by _____
 Date _____

CIRCULAR LETTER

SECTION: 601.01 DESCRIPTION (GENERAL)
NUMBER: 604.01-04
SUBJECT: STAKE OUT OF STRUCTURES
DATE: JULY 1, 1992

Prior to commencing construction on a bridge, project personnel shall check the stake out of the structure by using either an alternate method or checked by an independent party. All stake out data shall be made a part of the project records.

CIRCULAR LETTER

SECTION: 604.03 CLASSIFICATION, PROPORTIONING AND QUALITY ASSURANCE OF
CONCRETE
NUMBER: 604.03-01
SUBJECT: CONCRETE DELIVERY TICKETS
DATE: MARCH 15, 2024

When concrete is delivered to a project, it is the TDOT Inspector's responsibility to verify that the concrete delivery ticket includes the information specified in Section 604 of the Standard Specifications and/or part 600 of the Supplemental Specifications.

The inspector should also verify the Batch Time and note the Discharge Time on the ticket. The inspector should sign the ticket and keep a copy for the project records.

The following is a suggested method for arriving at water calculations and proper recording of mixing revolutions:

Maximum Water (per approved design) – This quantity represents the total amount of water that may be added at any time to the mix and still not exceed the water-cementitious material ratio. For instance, if your concrete design indicates a mix based on 33 gallons per C.Y. with an additional 2.5 gallons per C.Y. noted under remarks, the Maximum Water (Design) would be $(33+2.5) \times 35.5$ gallons per C.Y. times the number of C.Y. batched.

Batched Water (at the plant) – This quantity represents the amount of water metered into the mix plus the quantity that was present in the aggregates indicated by your moisture tests. For instance, if the free moisture in the fine and coarse aggregate is 16 gallons and the amount of water metered is 246 gallons, the Batched Water would equal 262 gallons.

Project Water – The difference the Maximum Water and the Batched Water indicates to the roadway inspector the amount of water that may be added at the job site.

$$\text{Project Water} = \text{Maximum Water} - \text{Batch Water}$$

Mixing revolutions at the plant and job site are to be recorded. The mixing revolutions are to be witnessed by the inspector and noted on the tickets for all concrete. The inspector will document any alterations to the mixture (e.g., water, air entrainer, chemical admixture) and ensure that a minimum additional 30 revolutions are completed per **604.13**.

Trucks with revolution inoperable counters are not to be used.

CIRCULAR LETTER

SECTION: 604.05 PRECAST PRESTRESSED BRIDGE DECK PANELS
NUMBER: 604.05-01
SUBJECT: POST ERECTION BRIDGE DECK PANEL DEFICIENCY CHECK
DATE: MARCH 15, 2024

After pouring a bridge deck which has precast deck panels, the Team Lead should request the Structures Division to review and report any deficiencies found in the deck panels prior to final acceptance.

When a report indicates deficiencies, the Team Lead should notify the District Manager and the Contractor, in writing, of the type of deficiencies. A decision will be made advising of necessary corrective action to take. The project will not be accepted as complete until all necessary repair work has been completed.

CIRCULAR LETTER

SECTION: 604.16 CONCRETE STRUCTURES
NUMBER: 604.16-01
SUBJECT: BRIDGE DECK CONSTRUCTION CHECKLIST
DATE: FEBRUARY 5, 2021

The link contains a bridge deck construction checklist procedure to be followed for prepour during and post pour for bridge deck pours and a list of factors that adversely affect deck construction.

LINK TO FORM:

[Bridge Deck Construction Checklist](#)

CIRCULAR LETTER

SECTION: 604.21 DEFECTIVE CONCRETE
NUMBER: 604.21-01
SUBJECT: EVALUATION OF LOW STRENGTH CONCRETE
DATE: MAY 21, 2024

Subsection 604.20 of the Standard Specifications grants the Engineer the discretionary authority of allow concrete which fails to meet the design strength to remain in place, subject to the price adjustment set out in Subsection 604.31 and provided its durability is good and it is considered structurally adequate. To aid in administering this provision, the Structures Division has prepared the Low Cylinder Evaluation Guide (LCEG) shown on page two of this circular letter.

In concordance with the LCEG, test results for low strength concrete are to be processed as follows:

1. Cast in place concrete within the tolerances permitted by the LCEG may be accepted by the District Office provided the concrete is considered durable and structurally sound.

A completed Concrete Cylinder Strength Evaluation Form is to be sent for information to the local Materials and Tests Field Services Team Lead, and to the FHWA on non-exempt Federal-aid projects. The Contractor is to be advised in writing of the action taken.

On the Concrete Cylinder Strength Evaluation Form under “REGION” it should be noted that the concrete represented by the low cylinders is considered structurally adequate and may remain in place subject to the adjustment in contract price provided in Subsections 604.20 and 604.31. The statement “As noted above”, or similar wording, should be written under “Proposed Disposition”; and “Not Applicable (N/A)” should be written on the approval lines at the bottom of the form.

2. Test results for cast-in-place concrete with strength less than permitted by the tolerances in the LCEG are to be submitted for approval to the Headquarters Construction Division in accordance with our past practices.
3. Test results for precast or prestressed products below the specified design values shown on the Approved Shop Drawings are to be submitted to the Materials and Tests Division for evaluation and coordination with the Structures Division, and with the FHWA on non-exempt Federal-aid projects.

The Concrete Cylinder Strength Evaluation Form, modified as applicable, may be used to process low test results for precast or prestressed concrete products.

LOW CYLINDER EVALUATION GUIDE

BRIDGE/STRUCTURE MEMBER	STRUCTURAL REVIEW REQUIRED
CIP Concrete Except as Noted	Notes 1 and 2 (CIP)
	Notes 2 and 3 (PC), (PS)
Bridge Railing & Median Barriers	200 psi
Bridge Deck & Diaphragms	500 psi
Concrete Girders	100 psi
Concrete Girders, Panels & Piles (PC or PS)	Note 3
Bent Caps, Columns, & <u>Drilled Shafts</u>	200 psi
Bent Footings	500 psi
Abutment Walls & Wings	200 psi
Retaining Walls & Footings	200 psi
Box Bridge Slabs & Walls	200 psi
Box Bridge Slabs & Walls (PC)	Note 3
Expansion Joint Concrete Repair	500 psi
Culvert Headwalls (Precast) & other Miscellaneous Precast Items	Note 3

NOTES

1. If concrete test cylinder breaks for cast-in-place (CIP) members fall below the specified values shown in the plans by more than these values, an evaluation will be required in the Structures Division.
2. Design values are based on 3,000 psi concrete, except bridge decks are 4,000 psi. See shop drawings for precast (PC) and prestressed (PS) members.
3. Any test cylinder breaks below the values shown on approved shop drawings for precast (PC) or prestressed (PS) members will be evaluated by the Materials and Tests Division.

[Concrete Cylinder Strength Evaluation Form](#)