Nonconformance Report (NCR) Guidelines

JULY 2025

Texas Department of Transportation

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Section 1 - Overview

This guide outlines the procedure for submitting a Nonconformance Report (NCR) for Structural Materials constructed for TxDOT projects. Nonconformances are defined as any deviation from TxDOT Specifications, not only damage to product. While it is the Fabricators' responsibility to recognize deficiencies and submit an NCR, TxDOT may also request an NCR through verbal conversations, email, or issuance of an Inspector Fabricator Memorandum (IFM).

To facilitate the NCR process and allow for a quicker response time to deficiencies, this document provides guidance regarding when to submit an NCR and what supplemental documentation is necessary.

This guide includes a list of nonconformances that commonly occur, from the time a member is fabricated until installation is complete; however, it is possible for unusual damage to occur. It is meant to be used in conjunction with repair guidance such as the TxDOT Concrete Repair Manual, AASHTO/NSBA Steel Bridge Collaboration G2.2 Guidelines for Resolution of Steel Bridge Fabrication Errors, AWS D1.1 Section 7.25 and other published repair documents and acceptable standard industry practices. The Fabricator may submit repair procedures that differ from the referenced documents; in such cases, they are responsible for developing and submitting the procedures to TxDOT for review and concurrence prior to implementation. *TxDOT reserves the right to require that any submittal be reviewed and sealed by a licensed professional engineer*.

Fabricators accomplish repair work using materials meeting TxDOT specifications such as Buy America compliant welding consumables or repair materials appearing on TxDOT Material Producer Lists (MPL); however, Fabricators may propose using an alternate material if they feel it will provide for the best repair in a specific application. The Engineer will review such requests on a case-by-case basis.

In case of discrepancies between TxDOT's requirements and manufacturers' instructions, notify TxDOT before proceeding with the repairs. Maintain current copies of the manufacturers' technical literature to ensure repair crews follow the proper procedures.

QC personnel must be present to observe repair implementation if the deficiency is significant enough that it warrants preparation of an NCR. They should also monitor repairs that do not require NCR submission often enough to be comfortable that repair crews are adhering to repair requirements.

When discrepancies become repetitive, prepare an NCR specifically addressing corrective actions. Repetitive discrepancies may include minor items not normally requiring an NCR.

It is critical that repair crews use appropriate repair materials and installation methods to ensure the long-term success of a repair. Even the best materials will not perform effectively unless each aspect of the repair is executed properly.

The Materials and Tests Division Structural Materials Section (MTD – STR) will update this guide when appropriate and is available for questions or additional information regarding a specific material or procedure proposed for addition.

Section 2 – Nonconformance Report (NCR)

The Fabricator is responsible for identifying and reporting deficient members fabricated for TxDOT or under TxDOT's Quality Assurance review. Submit an NCR to TxDOT personnel no more than 14 days after the deficiency occurs, to ensure that there is sufficient time for TxDOT to review the NCR or for the Fabricator to repair or refabricate the member. In addition to the specific deficiency necessitating the NCR, the submittal must include any other observable conditions present on the member, such as irregularities, thermal cracking, or minor spalls, even if those conditions are not believed to be related or do not independently warrant an NCR. This ensures a complete assessment of the member's overall condition can be performed. If the delivery date for a member is imminent, include information on Contractor-verified delivery dates if there could potentially be an impact to the schedule. It is the Fabricator's responsibility to notify TxDOT if a quick response is needed due to shipping constraints. The Fabricator is responsible for any impacts incurred due to the nonconformance or the submittal process.

Preparation:

Include the following information in each NCR:

- Fabricator's name, address, and contact information,
- Submittal date,
- NCR number (See Section 3 for NCR naming convention.),
- IFM number, if applicable,
- Project information: project name, county, CSJ (control, section, and job numbers), project number, and project developer (if applicable),
- Name of structure and location within structure,
- Member identification: member type, fabrication date, product/piece ID, erection mark, and design length or area,
- Description of the deficiency and where the member is in the fabrication process,
- Explanation of why the deficiency occurred,
- Proposed corrective action,
- Anticipated delivery date of the subject member(s) if there could be impacts caused by the time it takes to review, repair, or refabricate the deficient product,
- Corrective action implemented to prevent future occurrences of the same deficiency,
- Signature from Fabricator's representative.

An example NCR is included later in this section for each respective DMS (7300, 7370, 7380, and 7395) to give a clear understanding of what is expected to be documented. A fillable template for each DMS is available upon request.

Refer to Tables 1-3 for attachments that should be included with the NCR to address the typical deficiencies that occur during fabrication or while the member is in storage. In general, include the following attachments:

- Clear, color photographs of the deficiencies or damage. Include images from far enough away that the Engineer can determine the location and extent of deficiencies or damages, and close-ups to show the severity;

- Diagrams detailing pertinent dimensions and locations of the deficiencies. In many cases it is more convenient for the Fabricator, and preferable to the Engineer, to have information and dimensions shown on photographs;
- Relevant sections of the contract plans, shop drawings, and erection sheets;
- Information detailing deficiencies or damages located over pedestrian or vehicular traffic (for concrete members);
- Technical data sheets on the proposed repair materials (if applicable);
- Sign-in sheet for any training that occurred due to the deficiency (See Appendix A for example "Training Sign-In Sheet"); and
- Any other documents needed to support the NCR.

Unassigned Stock NCR — For Concrete Members

When a major concrete member is unacceptable for use in the current project or location but could be modified for use in another project or location, an NCR should be submitted to place the member into unassigned stock. NCRs for unassigned stock should include all the information detailed above (except no repair material information is needed) and the following:

- A statement that the member will be put into unassigned stock,
- corrected PC2 sheet,
- mix design,
- beam details,
- pictures, and
- E-Sheets.

If this member was part of an original request for repair, the NCR number should be the same as its parent NCR, with the inclusion of a revision number. Otherwise, use a new NCR number.

When a product in unassigned stock is to be transferred to another project, contact MTD – STR for guidance.

Rejected Member NCR — For Concrete Members

When a major concrete member is being rejected, submit an NCR as detailed above for unassigned stock, except include a statement of rejection in the body of the NCR, and only attach pictures and an updated PC2 stating the beam has been rejected on NCR "X."

NCR Review

When the Fabricator has compiled all the required information for an NCR, submit the NCR and all attachments to the local TxDOT personnel for review. After TxDOT reviews the NCR for accuracy and thoroughness, one of the following will occur:

- If the information presented is agreeable and all required attachments are present, local TxDOT personnel will stamp the NCR.
- If there are minor discrepancies or differences in opinion, TxDOT personnel will provide electronic redlines before stamping.
- If there are significant errors or discrepancies, TxDOT personnel will send the NCR back to the Fabricator to revise and resubmit.

Once agreed upon, TxDOT personnel will return the stamped NCR to the Fabricator for submittal to MTD – STR Headquarters.

If the Fabricator and TxDOT personnel disagree on the circumstances outlined in an NCR and the differences in opinion cannot be resolved in a manner satisfactory to both sides, the Fabricator should submit the unstamped NCR to MTD – STR's Engineer with TxDOT personnel's notations explaining the points of contention. The Engineer will follow up with the local TxDOT personnel while reviewing the NCR.

The following pages have examples of NCRs and tables of required attachments for each DMS program to assist with the creation of NCRs.

DMS-7300 – Precast Concrete Structures

FABRICATION INCORPORATED
123 Fabrication Road
Fabville, TX 12345
Phone: 123-456-7890

October 29, 2024

Texas Department of Transportation
Materials and Tests Division
Laboratory Building
Structural Section
6230 E. Stassney Lane
Austin, Texas 78744

Re: County: Bexar
CSJ: 123-45-6789
Project #: NH 2007(123)
Job #: 108-032
Highway: IH 35

Non-Conformance Report
NCR #: FAB 12345.01-24
IFM #: [INCLUDE IF APPLICABLE]

We have prepared this report to address defects in the following member(s):

Casting Date	Casting ID	Erection Mark	Design Length
11/11/2024	A-1, A-2, A-3	CW-1 through CW-3	80 ft.

Description of Deficiency:
TX Girders sustained vertical cracks near midspan because of improper detensioning techniques. The vertical cracks web out near the top surface on members CW-1 and CW-2, which caused the concrete to delaminate and spall in the top flanges. The location and widths of the cracks are shown on the attached diagrams.

Why Deficiency Occurred:
The cracks appeared to have been caused because saddles were not used on the members prior to detensioning the strands even though calculations showed that the uplift exceeded half of the member's dead weight. The damage was worsened because too much heat was used to cut the hold-down strands, resulting in very quick releases.

Proposed Solution/Repair:
Due to the extent of the damage, we have rejected member CW-1. We will recast that beam soon. We request that TxDOT accept member CW-3 as cast because the vertical cracks should close upon application of the dead loads after erection. If the cracks do not close sufficiently our repair crew will visit the jobsite and inject them with epoxy. We propose to repair member CW-2 as outlined in Sections 2.3 (Major Spall) and Section 3.2 (Batched Concrete) of the *TxDOT Concrete Repair Manual.*

How to Prevent Future Occurrence:
To prevent similar damage in the future, we will require that our Production Superintendent check with QC personnel to ensure that strand uplift calculations have been run. When necessary, we will place saddles on the beams prior to releasing the strands and hold down points. Additionally, our Production Superintendent has already worked with each crewmember to make sure they know how to properly release hold downs using a slow burn (See attached training sheet).

Please do not hesitate to call if you need any additional information or have questions.

Sincerely,

John Q Inspector
Quality Manager

Attachment: PC-2, photographs, Fabrication Sheets, Erection Sheets, Bridge Layout, Training Sheet
Cc: John Q Public, Local Field Area Manager, TxDOT

Table 1: DMS-7300 Attachments

	Fabricator-Generated Documents													Shop Drawings			Contract Drawings			
	PC-2/PC-7	Photographs (Far and Near)	Sketches	Concrete Mix Design (D9-PC-342R)	Concrete Operations Records	Batch Tickets	Temperature Charts	Prime Contractor Letter or Email	Area Office Letter or Email	Repair Material Technical Product Data	Bearing Area Loss Spreadsheet/Sketch	Depth of Damage Measurements	Stressing Sheets	Fabrication Sheet(s)	Erection Sheet(s)	Bearing Pad Details	Bridge Layout	Abutment/Bent Details	Bearing Detail	Span Details
Spall, Honeycomb, Cracks	X	X	X	X	TBD	X	X	TBD		X		X	TBD	X	X		X			TBD
Bearing Area Damage	X	X	X	X	TBD	X	X	TBD		X	X			X	X	X	X	X	X	X
Trimming/Cutting Beam Ends	X		TBD					TBD	TBD	X				X	X		X	X	X	
Concrete Material Issues	X	TBD		TBD	TBD	TBD	TBD							X	X		X			
Slump/Flow issues	X			X	X	X	X							X	X		X			
Rain in Concrete	X	X		X	X	X								X	X		X			
Concrete Temperature Issues	X			X	TBD	X	X							X	X		X			
Dimensional Issues (Length, Skew, Batter, etc.)	X	TBD	X					TBD	TBD	TBD				X	X	TBD	X	TBD	TBD	TBD
Sweep, Dogleg, or Misalignment	X	TBD	X					TBD	TBD					X	X	TBD	X	TBD	TBD	TBD
Inserts or Embedment	X	TBD	X							TBD				X	X		X			
Strand or Reinforcement Placement	X	TBD	X											X	X		X			
Prestressing Issues	X												X	X	X		X			
Transferring a Product	Contact MTD-STR for guidance.																			
Strand Debonding Failure	X	X	X							TBD		X		X	X		X			
Concrete Lack of Workability	X	X	X	X	X	X				TBD		X		X	X		X			
Rejected Members	X	TBD																		
Unassigned Stock	X	TBD		X										X	X					

Sections marked TBD may be requested by TXDOT if not provided. Additional documentation may be requested if determined to be needed by TxDOT personnel.

DMS-7370 – Bridge Steel

FABRICATION INCORPORATED
123 Fabrication Road
Fabville, TX 12345
Phone: 123-456-7890

October 29, 2024

Texas Department of Transportation
Materials and Tests Division
Laboratory Building
Structural Section
6230 E. Stassney Lane
Austin, Texas 78744

Re: County: Bexar
CSJ: 123-45-6789
Project #: NH 2007(123)
Job #: 108-032
Highway: IH 10

Non-Conformance Report
NCR #: FAB 12345.01-24

We have prepared this report to address defects in the following member(s):

Fabrication Date	Girder	Description	QTY
10/20/2024	01234A5-2	Bottom Flange	1

Description of Deficiency:
A 5" long weld was deposited on the flange of Girder 01234A5-2 outside of the weld zone 20 ft from the flange splice.

Why Deficiency Occurred:
Employee lost focus and attention leading to a misplaced weld.

Proposed Solution/Repair:
Grind area flush with base metal, MT the affected area for defects.

How to Prevent Future Occurrence:
Provide training to employee on the importance of being alert and attentive during welding.

Please do not hesitate to call if you need any additional information or have questions.

Sincerely,

John Inspector
Quality Manager

Attachment: Shop drawing, repair area photograph, employee training record
Cc: John Q Public, Local Field Area Manager, TxDOT

Table 2: DMS-7370 Attachments

	Fabricator-Generated Documents								Shop Drawings	Contract Drawings
	Photographs (far and near)	Sketches	Measurements	Repair WPSs	Approved Repair Procedure	Signed/Sealed Engineering Calculations/Drawings	Hardness Testing	NDT (RT,UT,MT)	Fabrication Sheet(s)	Bearing Details
Notches/Gouges*	X	X	X	If welded repair	X			X	X	
Incorrect Stud Placement	X	X	X						X	
Bearing Stiffener End Seating	X	X	X						X	X
Repair of Base Metal	X		X	If welded repair	X			X	X	
Overheated Steel			X				X	X	X	
Improperly Fit/Welded	X	X	X	If welded repair	X			X	X	
Mislocated Holes	X	X	X	If welded repair	X	TBD		TBD	X	
Incorrect Dimensions			X			TBD			X	
Kinks	X	X	X		X					
Short Bends	X		X						X	X
Excessive Web Buckle	X				X					
Incorrect Splice Location		X	X			X			X	

Sections marked TBD may be requested by TXDOT if not provided. Additional documentation may be requested if determined to be needed by TxDOT staff.

* For notch/gouge repair by welding, contact the local TxDOT personnel for review of the notch/gouges prior to submitting the NCR.

DMS-7380/7395 – Non-Bridge Steel

FABRICATION INCORPORATED
123 Fabrication Road
Fabville, TX 12345
Phone: 123-456-7890

October 29, 2024

Texas Department of Transportation
Materials and Tests Division
Laboratory Building
Structural Section
6230 E. Stassney Lane
Austin, Texas 78744

Re: County: Bexar
CSJ: 123-45-6789
Project #: NH 2007(123)
Job #: 108-032
Highway: IH 35

Non-Conformance Report
NCR #: FAB 12345.01-24
IFM #: Click here to enter IFM#.

We have prepared this report to address defects in the following member(s):

Fabrication Date	Type of Product	Description	QTY
10/20/2024	Overhead Sign Structure	100’ Overhead Sign bridge Sta. 2487+00	1

Description of Deficiency:
One 13/16” diameter hole was located off by 1” on a bottom chord angle.

Why Deficiency Occurred:
The Programming personnel entered the wrong location for the hole and the deficiency was not caught before the hole was made.

Proposed Solution/Repair:
We are proposing to plug the hole using the attached hole repair procedure then redrill the hole in the correct location.

How to Prevent Future Occurrence:
Shop programming personal and checkers will be trained to ensure proper dimensioning is performed.

Please do not hesitate to call if you need any additional information or have questions.

Sincerely,

John Inspector
Quality Manager

Attachment: Shop drawing, repair area photograph
Cc: John Q Public, Local Field Area Manager, TxDOT

Table 3: DMS-7380/7395 Attachments

	Fabricator-Generated Documents						Shop Drawings
	Photographs (far and near)	Sketches	Extent of Damage/Measurements	Repair WPSs	Approved Repair Procedure	NDT (RT,UT,MT)**	Fabrication Sheet(s)
Notches/Gouges*	X	X	X	If welded repair	X		
Repair of Base Metal	X		X	If welded repair		X	
Improperly Fit & Welded	X	X		X	X		X
Mislocated Holes		X		If welded repair	X	X	X
Post-galvanization Base/Weld Material Repair	X	X	X	X		X	
Incorrect Dimensions			X			X	X
Incorrect Splice Location	X		X				X
Repetitive Seam Weld Repair (more than two times)		X	X	X	X	X	

Minor discrepancies that don't constitute an NCR unless repetitive occurrence include: excessive tack welding/grinding, galvanization problems, etc.
* Fabricators who have an approved procedure for repair of notches and gouges do not need to submit an NCR.
** NDT required if repair is required to fix deficiency

Section 3 – Nonconformance Report Submission

Nonconformance Reports (NCRs) must be submitted by either the QC Supervisor or the Fabricator's engineer. Production staff are not permitted to prepare or submit these reports. Each NCR PDF document must be named to include the Fabricator's name, producer code, NCR number, and year (e.g., XYZ 999.01-25 for NCR Number one in 2025 from Fabricator XYZ with producer code 999). Other information can also be included on a specific member type or deficiency. Email subject lines must contain the Fabricator name and NCR number.

The Fabricator's engineer [not the Engineer of Record (EOR)] is responsible for reviewing NCRs that include fabrication errors or changes to ensure structural adequacy. The Fabricator's engineer is also responsible for evaluating potentially structurally deficient members. If the deficiency significantly alters the original design, the EOR must review and approve the NCR at the Fabricator's expense. TxDOT will conduct the final review and issue the final determination on all NCRs submitted, regardless of the Fabricator's engineering evaluation. *TxDOT reserves the right to require that any submittal be reviewed and sealed by a licensed professional engineer*.

Submit the NCR to the designated proxy email account for the applicable TxDOT Field Area and include the Field Area Manager (FAM) on the email. Once an NCR has been reviewed and is ready for submission, email the stamped copy to MTD – STR Engineering for review. *For NCRs related to DMS-7380 and DMS-7395, submit the NCR directly to the FAM instead. If necessary, the FAM will forward the NCR to MTD – STR Engineering for review.*

If directed to forward an NCR or related information regarding a deficient member to a TxDOT District Office, the Bridge Division, or any other party, the Fabricator must copy MTD – STR Engineers on the email. MTD – STR Engineers must also be notified if any information is sent to a structural engineering consultant or testing laboratory concerning a member fabricated for TxDOT.

Occasionally, NCRs are not transmitted successfully to MTD – STR Headquarters due to excessive file size. Some external email systems do not automatically generate a failure notification when a message is not delivered. To ensure successful submission, the Fabricator must verify that all PDFs are appropriately compressed and transmitted without error. If there is any uncertainty regarding successful delivery, the Fabricator should follow up with TxDOT to confirm receipt.

Section 4 - Preapproved Repair Procedures

Fabricators may submit standard repairs for approval. Most of these repairs include engineered procedures that require an engineering seal from the manufacturer. For concrete members, this may include remedial installation of form hangers, weld clips, and lifting/handling devices. For structural steel, standard repairs might include correction of flange tilt, camber correction by heat, or notch and gouge repair. For non-bridge steel, standard repairs may include notch and gouge repair, heat straightening of shafts, seam weld repairs (other than incomplete joint penetration), and galvanized coating damage.

Submit proposed procedures to MTD – STR Headquarters. It may be necessary to prepare an NCR in order to implement a preapproved procedure. If the deficiency is considered reoccurring, the local TxDOT personnel can request an NCR be submitted to address the issue even though preapproval for the repair has been given.

Keep up-to-date copies of the manufacturers' technical material, including engineering seals, to ensure that repairs are being performed as required.

Appendix A

Training Sign-In Sheet

Training Subject/Description:

_____
_____
_____
_____

Date of Training:

_____

Trainer:

_____

Printed Name & Title	Signature