

Information Sheet for Bridge Railing Upgrades, Retrofits & Repairs

Thomas C. Stout, P.E.



Bridge Division Webinar
February 27, 2013



Overview

- The form
- Documents we'd like to see
- The end of the rail is where the action is
- Damage
- Undocumented modifications
- What you will get from us
- Summary

Ah, the new 2488. Why do we need it?

 **INFORMATION SHEET FOR BRIDGE RAILING UPGRADES, RETROFITS, & REPAIRS** Form 2488
(Only for work to be performed on existing structures.) (01/13)
Use a separate form for each structure. Page 1 of 2

Name of Submitter: _____ Position (Business Title): _____
Mailing Address: _____
Telephone # (____) _____-____ Date: _____

Due Dates and Charges:
Letting Date: _____ Target Date: _____ Ready-To-Let (RTL) Date: _____
Charge numbers for Time Sheet: _____ (Note that BRG cannot charge to District maintenance and local-
let jobs without special permission through District finance.)

NBI Structure #: _____ Structure Name: _____
County: _____ D/D/O/R: _____
CSJ: _____ Project: _____
Highway: _____ Change order? Yes No

- Type of retrofit/upgrade or guidance requested (if known) _____
- Roadway/structure design speed (if known): _____ (MPH) • Roadway/structure posted speed: _____ (MPH)
- Planned depth of finished overlay (finished riding surface?) _____"
- Planned transition type (MBGF? Crash cushion? Barrier?) _____
- Other special requirements (Drains? Conduit? Epoxy-coated reinforcing? Etc.) _____

Existing Structure Information Required:

- Structure Identification (Note that existing structure may have been widened or modified and detail sheets for such work should also be included)
 - District: _____ • County: _____ • Old CSJ: _____ • Highway: _____
- Inspection File
 - Data Sheet (w/ NBI number): Attached Not Available
 - Existing Photos: Attached Not Available
- Legible copies of existing plans or (if available) Plans Online CCSJ
 - Bridge Layout: Attached See Plans Online Not Available
 - Span Details: Attached See Plans Online Not Available
 - Abutment Details: Attached See Plans Online Not Available
 - Rail Details: Attached See Plans Online Not Available
 - Approach Details: Attached See Plans Online Not Available
 - Approach Slab: Yes No If yes, Attached See Plans Online Not Available

Field Verification Information required:

- Existing railing type: _____

Justification (the memo)



MEMORANDUM

TO: District Engineers

DATE: February 19, 2013

FROM: Gregg A. Freeby, P.E.

A handwritten signature in blue ink, appearing to read "Gregg A. Freeby".

SUBJECT: New Information Sheet for Bridge Railing Upgrades, Retrofits & Repairs

Form 2488 regarding bridge railing retrofits is now available on the TxDOT Enterprise Forms System (eForms) website. Please use this form when requesting the Bridge Division (BRG) to provide design details for bridge railing upgrades, retrofits or repairs to existing structures.

The purpose of this form is to ensure that all pertinent information required for this specialized and detailed work is provided when a request is first submitted to BRG. The use of this form will expedite the design work, prevent miscommunication about expectations, and assure a quality final product. The information sheet and associated data should be submitted to your district's Bridge Division Project Manager to initiate the design process. If you do not know who your Bridge Division Project Manager is, there is a map and contact information available on BRG's Crossroads website.

If you have questions or comments concerning this form, please contact your district's Bridge Division Project Manager.

cc: Directors of Transportation Planning and Development
District Maintenance Engineers
District Bridge Engineers
Area Engineers
Bridge Division

Notice any similarities?

 **INFORMATION SHEET FOR STRUCTURAL DESIGN** Form 2252
(Rev. 02/12)
Page 1 of 3

County: _____ Dist/Div: _____
CSJ: _____ Project: _____
Highway: _____ Project Limits: _____
NBI Structure #: _____ Structure: _____
Date: _____ Letting Date: _____ Target Date: _____ Ready-To-Let (RTL) Date: _____
Signature: _____

Details Prepared by: District Bridge Division

1. Was the preliminary layout approved? Yes No

2. Horizontal and verticle scales must be the same. Please indicate appropriate scale.
Half scale 1:20 1:40 (English) Full scale 1:10 1:20 (English)

Contact information for person transferring electronic files:
Name: _____ Telephone # (_____) _____

• Have electronic copies of the bridge layout(s) and plan & profile sheet(s) been included. Yes No

3. Overpass and underpass structures:

• Minimum vertical clearance (MVC) for each cross street: _____
• Minimum horizontal clearance (MHC) if close to clear zone: _____

4. Is design speed, ADT, terrain, and functional classification shown on layout? Yes No

5. Stream Crossings:

• Hydraulic data shown?

Drainage area size Yes No
Discharge design Yes No
High water design Yes No
Through-bridge velocity design Yes No

• Basic (100 year) flood data shown?

High water elevation calculation Yes No
Discharge Yes No
Velocity Yes No

• Hydraulics approved by Design Division? Yes No

If "No", submit a copy of the hydraulic report and scour analysis with layout.

 **INFORMATION SHEET FOR BRIDGE RAILING UPGRADES, RETROFITS, & REPAIRS** Form 2488
(01/13)
Page 1 of 2
(Only for work to be performed on existing structures.)
Use a separate form for each structure.

Name of Submitter: _____ Position (Business Title): _____
Mailing Address: _____
Telephone # (_____) _____ Date: _____

Due Dates and Charges:

Letting Date: _____ Target Date: _____ Ready-To-Let (RTL) Date: _____
Charge numbers for Time Sheet: _____ (Note that BRG cannot charge to District maintenance and local-
let jobs without special permission through District finance.)

NBI Structure #: _____ Structure Name: _____
County: _____ DID/O/R: _____
CSJ: _____ Project: _____
Highway: _____ Change order? Yes No

• Type of retrofit/upgrade or guidance requested (if known) _____

• Roadway/structure design speed (if known): _____ (MPH) • Roadway/structure posted speed: _____ (MPH)
• Planned depth of finished overlay (finished riding surface?) _____"
• Planned transition type (MBGF? Crash cushion? Barrier?) _____

• Other special requirements (Drains? Conduit? Epoxy-coated reinforcing? Etc.) _____

Existing Structure Information Required:

• Structure Identification (Note that existing structure may have been widened or modified and detail sheets for such work should also be included)
• District: _____ • County: _____ • Old CSJ: _____ • Highway: _____
• Inspection File
• Data Sheet (w/ NBI number): Attached Not Available
• Existing Photos: Attached Not Available
• Legible copies of existing plans or (if available) Plans Online CCSJ
• Bridge Layout: Attached See Plans Online Not Available
• Span Details: Attached See Plans Online Not Available
• Abutment Details: Attached See Plans Online Not Available
• Rail Details: Attached See Plans Online Not Available
• Approach Details: Attached See Plans Online Not Available
• Approach Slab: Yes No If yes, Attached See Plans Online Not Available

Field Verification Information required:

• Existing railing type: _____

Who are you and where do you live?



INFORMATION SHEET FOR BRIDGE RAILING UPGRADES, RETROFITS, & REPAIRS

(Only for work to be performed on existing structures.)

Use a separate form for each structure.

Form 2488
(01/13)
Page 1 of 2

Name of Submitter: _____ Position (Business Title): _____

Mailing Address: _____

Telephone # (_____) _____ - _____ Date: _____

Where is it, what is it, and what do I charge my time to?

Due Dates and Charges:

Letting Date: _____ Target Date: _____ Ready-To-Let (RTL) Date: _____

Charge numbers for Time Sheet: _____ (Note that BRG cannot charge to District maintenance and local-let jobs without special permission through District finance.)

NBI Structure #: _____ Structure Name: _____

County: _____ D/D/O/R: _____

CSJ: _____ Project: _____

Highway: _____ Change order? Yes No

• Type of retrofit/upgrade or guidance requested (if known)

• Roadway/structure design speed (if known): _____ (MPH) • Roadway/structure posted speed: _____ (MPH)

• Planned depth of finished overlay (finished riding surface?) _____ "

• Planned transition type (MBGF? Crash cushion? Barrier?)

• Other special requirements (Drains? Conduit? Epoxy-coated reinforcing? Etc.)

May we please have all this stuff? (really, we need it)

Existing Structure Information Required:

- Structure Identification (Note that existing structure may have been widened or modified and detail sheets for such work should also be included)
 - District: _____ • County: _____ • Old CSJ: _____ • Highway: _____
- Inspection File
 - Data Sheet (w/ NBI number): Attached Not Available
 - Existing Photos: Attached Not Available
- Legible copies of existing plans or (if available) Plans Online CCSJ
 - Bridge Layout: Attached See Plans Online Not Available
 - Span Details: Attached See Plans Online Not Available
 - Abutment Details: Attached See Plans Online Not Available
 - Rail Details: Attached See Plans Online Not Available
 - Approach Details: Attached See Plans Online Not Available
 - Approach Slab: Yes No If yes, Attached See Plans Online Not Available

We're working on the rail so we must know **everything** about it

Field Verification Information required:

- Existing railing type: _____

Form 2488 (01/13)
Page 2 of 2

- Height of existing railing (Measure railing according to the BRIDGE RAILING MANUAL directions. See PLAN VIEW OF STRUCTURE detail herein for additional information. Note that if height varies more than 1" along the railing, more complete information will be required.)
 - Average rail height
 - Left Side (looking upStation): _____
 - Right Side (looking upStation): _____
 - Rail terminal block heights (end of railing generally on a wing wall)
 - NW Corner: _____
 - NE Corner: _____
 - SW Corner: _____
 - SE Corner: _____

Yes, we need this too

- Slab information (Depth? Overhang? Curb?)
-

- Abutment information (wingwalls, etc.)
-

- Joint information
-

- Existing overlay depth at face of rail (Will it remain? Will removal notes be required?)
-

- Location of nearby road crossing (including driveways and rail roads)
-

- Non-recorded changes to structure? (often to rail transitions, to adjacent ditches, and to riprap drainage swales)
-

- Photographs, using a flash to clarify details in shadows, of existing rail conditions (see PLAN VIEW OF STRUCTURE detail herein)

- Photos and descriptive listing attached Yes No

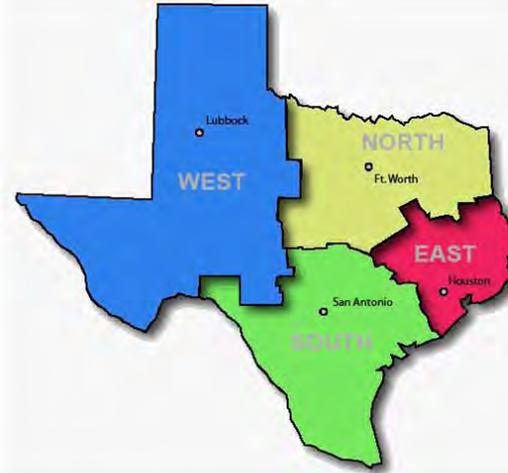
- Existing approach slab (and curb, drainage swales, etc.) conditions:
-

- Items crossed by structure (RR? Roadway? Stream?)
-

Who do you send it to?

Project Development

Bridge Project Management Areas



North Region

Project Manager
Michelle Veale, P.E.
(512) 416-2848

19 - Atlanta
2 - Forth Worth
10 - Tyler
3 - Wichita Falls
1 - Paris
18 - Dallas
9 - Waco
23 - Brownwood

South Region

Project Manager
Jeff Tomkins, P.E.
(512) 416-2225

13 - Yoakum
14 - Austin
16 - Corpus Christi
15 - San Antonio
21 - Pharr
22 - Laredo

East Region

Project Manager
Mahendra Patel, P.E.
(512) 416-2434

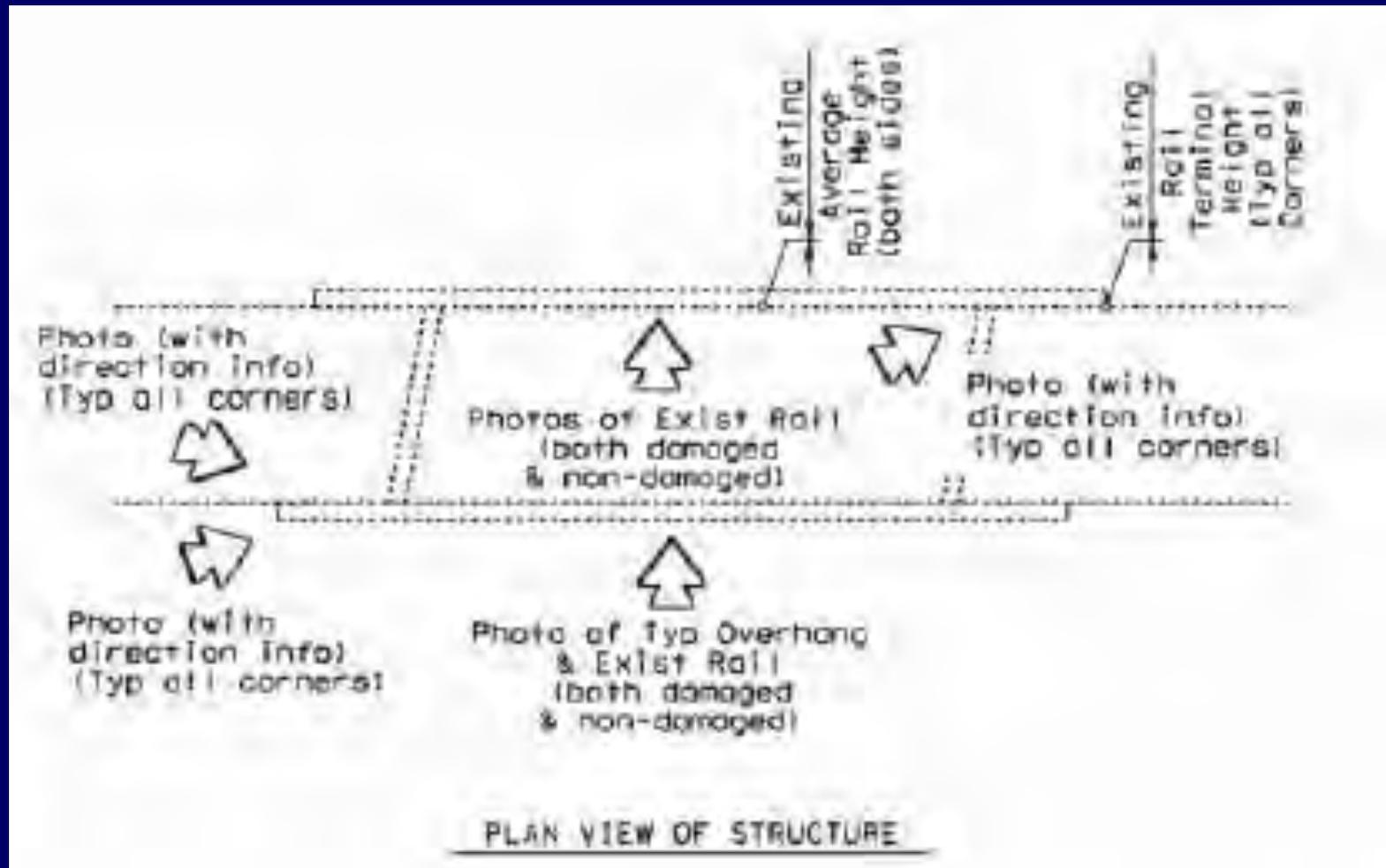
20 - Beaumont
17 - Bryan
11 - Lufkin
12 - Houston

West Region

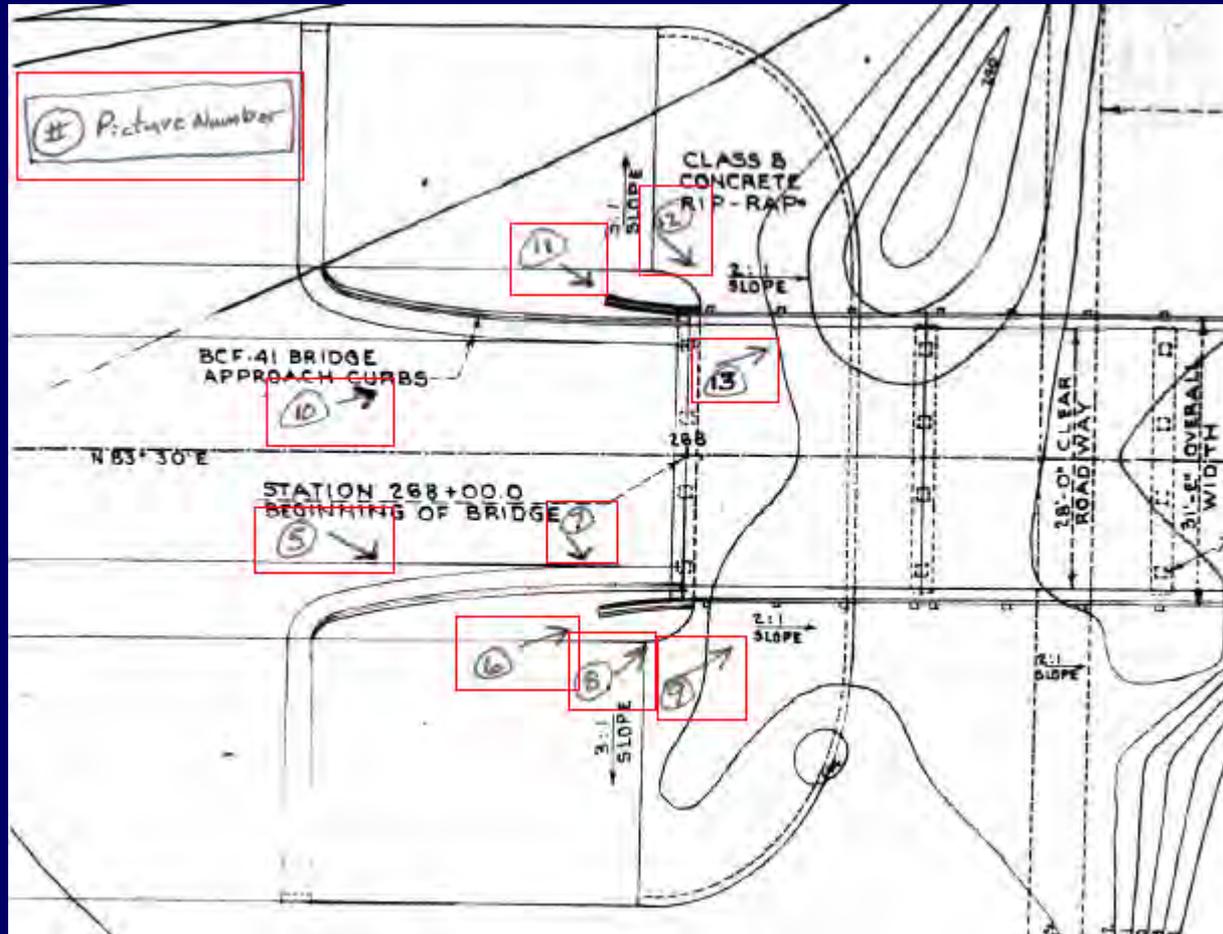
Project Manager
Sam Brooks, P.E.
(512) 416-2358

4 - Amarillo
24 - El Paso
7 - San Angelo
6 - Odessa
5 - Lubbock
8 - Abilene
25 - Childress

Photos, please



Perspective is everything



Yes, the end of the rail...



...is where...



...the action is,



and all four corners...



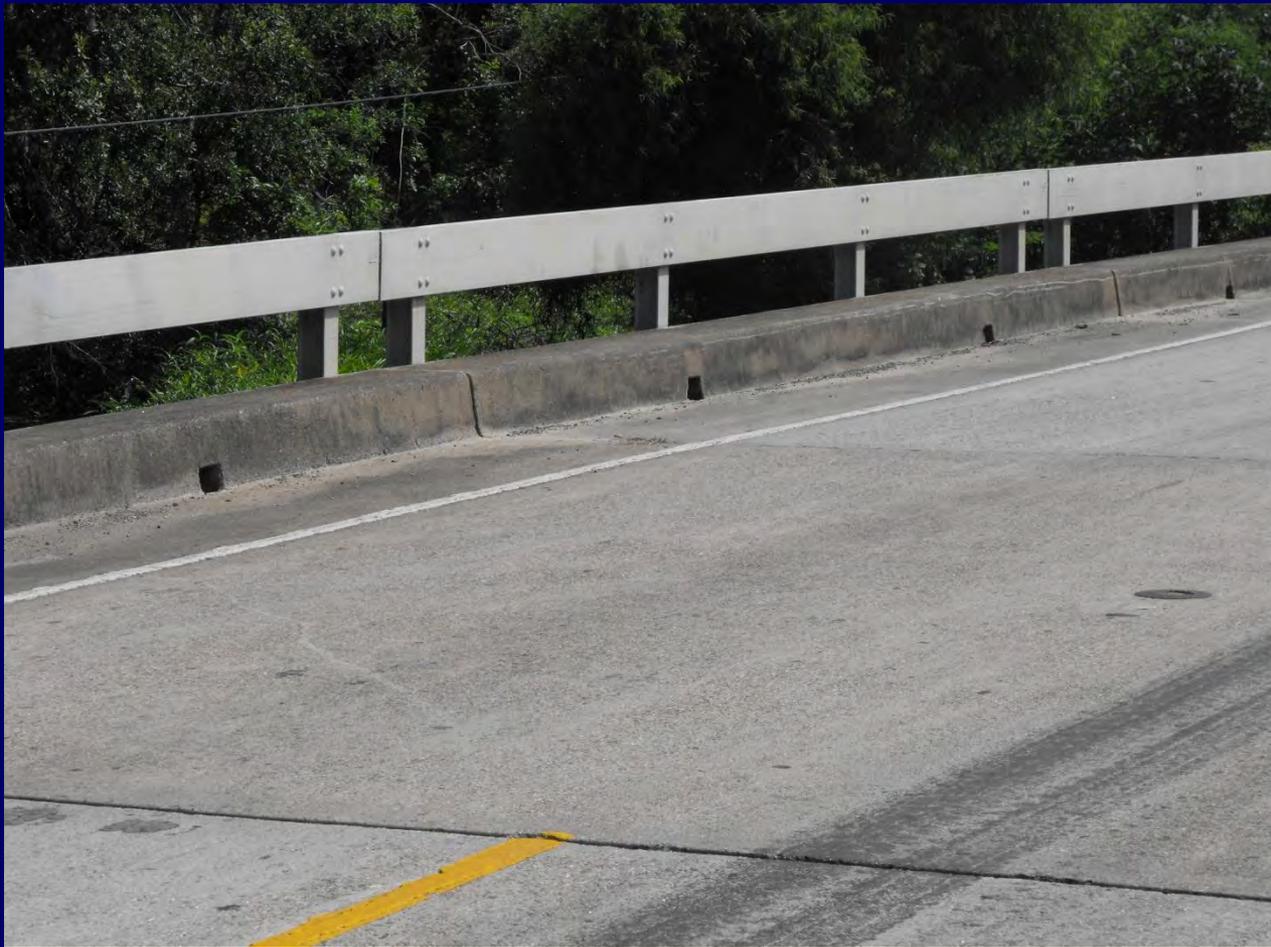
...may be...



...different



We need to know about drains



We need to know how much
ACP you plan to use



MBGF and side slopes do matter



Much of the work...



2007/04/10 15:40:40

...done on existing rails...



2007/04/10 15:40:46

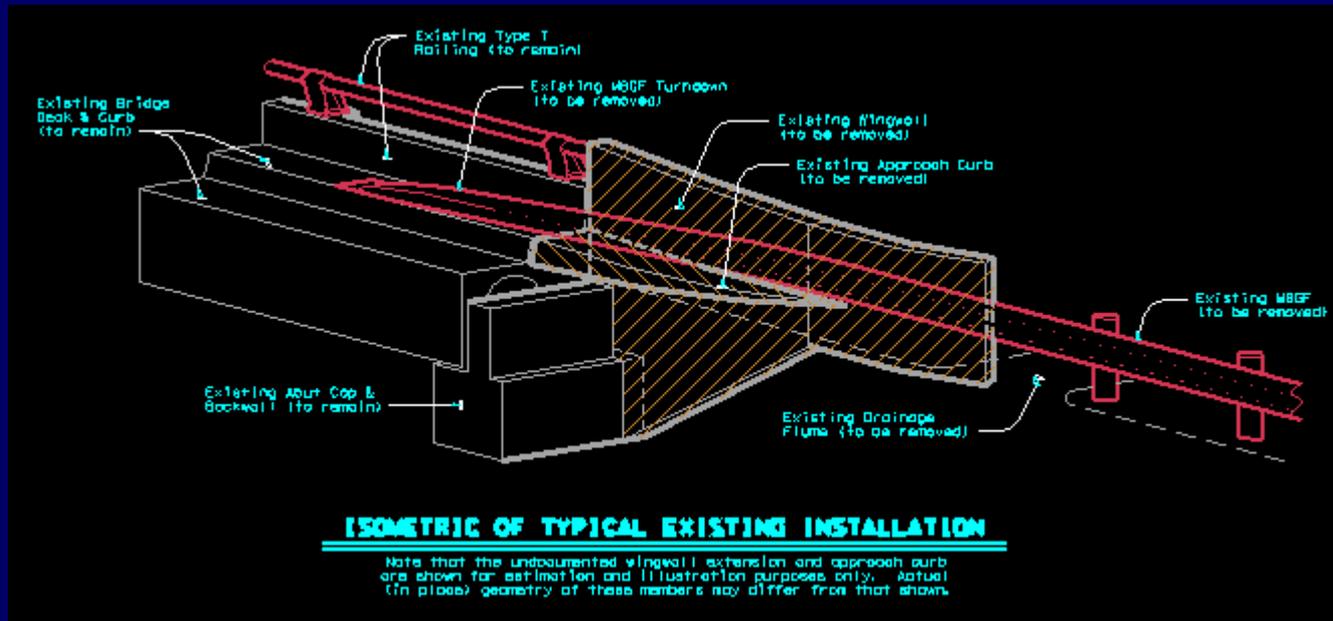
...is undocumented



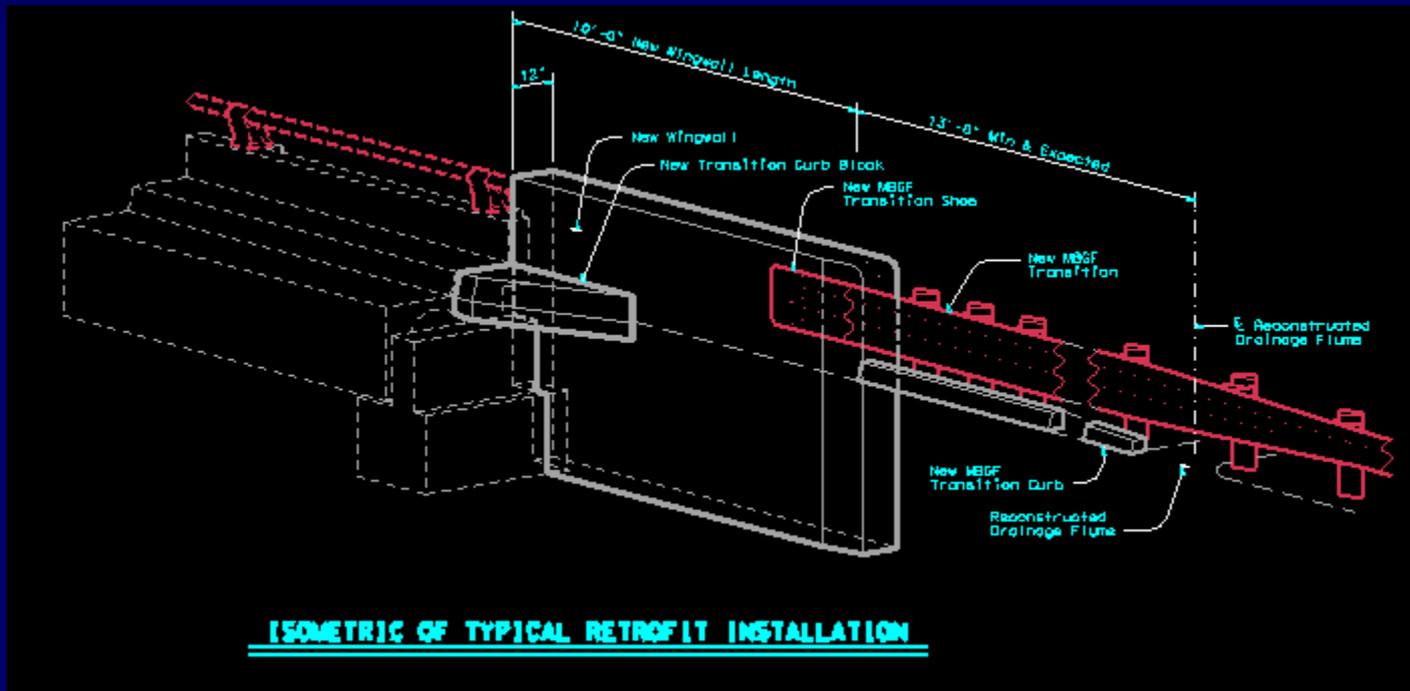
What we do depends
on what is out there



We have to go from there...



...to here to make sure
everything works together



Stuff gets broke (and burned)...



...and not just in the rail



The damaged concrete has got to go and finding it is high-tech



Even though the rail damage...



...often occurs at mid-span...



...we still need to see
the end of the rail



Sometimes,
something in a photo...



...will **POP** out at us



Summary

- Fill in the 2488 form as completely as possible and send it to your BRG PM
- Attach the existing plans for the whole bridge, not just the rail
- Take lots of photos, label them, and convey their orientation

Summary

- Understand that much of the information we need is at the end of the rail
- Realize that old rail probably has undocumented work on it
- Even though rail damage is at mid-span, we still need information on the rail ends

Questions?

- TxDOT Bridge Division
 - Thomas Stout, Design Branch Leader (512-416-2228)
 - Jim Pitzer, Transportation Specialist (and rail wizard) (512-416-2244)