

**STATE OF NEW HAMPSHIRE**  
**BRIDGE DESIGN MEMORANDUM**

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**FROM:** Mark W. Richardson, PE  
Administrator

**DATE:** January 21, 2014  
**AT (Office):** Bureau of Bridge Design

**SUBJECT:** Design Memorandum 2014-01  
NHDOT- Bridge Design Website Changes

**TO:** Bureau of Bridge Design staff, Bridge Design Consultants, FHWA, NHDOT Bureaus

The Bureau of Bridge Design is updating the Bridge Design Manual and web site. During this process, certain completed sections are being issued for immediate implementation. Consequently, the Bridge Design Website has been modified as follows:

**A. Document Library: Bridge Drawings**

- New Bridge Details Sheets
- New Bridge Details
- New Sample Plans

**B. Summary:** The above noted revisions are being implemented to provide:

- Bridge Design drawings on NHDOT Bridge Design Website have been separated into three categories: (1) Bridge Detail Sheets, (2) Bridge Details, and (3) Sample Plans.
- **Bridge Detail Sheets:** Bridge Detail Sheets are plan sheets prepared by the New Hampshire DOT for use on NHDOT projects. Other users who use the Bridge Detail Sheets do so at their own risk. The Detail Sheets are backed by engineering analysis, calculations, crash testing, and are approved by NHDOT Administrators and the Federal Highway Administration (FHWA). Only certain details can be modified by designers. As noted on each Detail Sheet, if any modifications are made to details other than those noted, the engineer responsible for the modification becomes the Engineer of Record (EOR) for those details and for all effects the modifications may have on other components within the sheet.

The Bridge Detail Sheets are located at

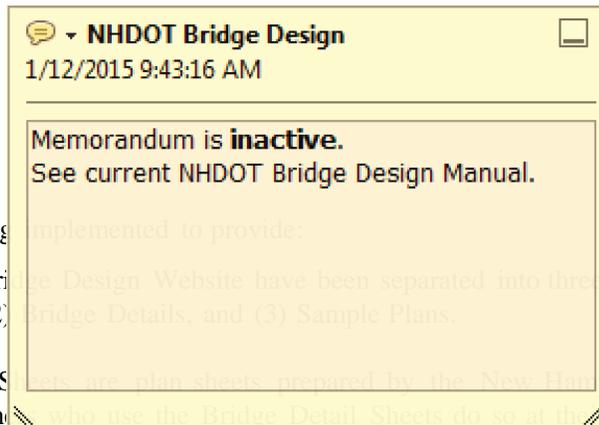
<http://www.nh.gov/dot/org/projectdevelopment/bridgedesign/detailsheets/index.htm>

- **Bridge Details:** The New Hampshire Department of Transportation (NHDOT) makes these documents available on an "as-is" basis. Bridge Details are considered nothing more than *examples* of items that are often used with very similar application from job to job. The details are intended to be copied to a project and *modified to fit* the particular aspects of the project. They are not intended to be included in a contract plan set without close scrutiny for correct application to the specific bridge or project..

The Bridge Details are located at

<http://www.nh.gov/dot/org/projectdevelopment/bridgedesign/bridgedetails/index.htm>

- **Sample Plans:** The Bureau of Bridge Design has assembled sample bridge plans and bridge plan checklists that can be used as an aide in the preparation of construction plans for bridges. The sample bridge plans and checklists are intended to be used only as a *general guide*, or reminder, to the designer, checker, and reviewer, and are not intended to be a replacement for the user's own professional judgment based on sound engineering principles. It is the responsibility of the designer to provide the details that allow the Contractor to construct the project as intended. The Bureau of Bridge Design makes these documents available on an "as



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is" basis. Details and items on the sample plans may be revised/updated overtime, and therefore, should be reviewed frequently. It is the responsibility of the designer to provide the most current details and items on the contract plans.

The Sample Bridge Plans are located at

<http://www.nh.gov/dot/org/projectdevelopment/bridgedesign/sampleplans/index.htm>

- The Bridge Design drawings will be updated as needed and the latest updated version will be placed on the website with the revision date noted.

**C. Background:**

This memorandum incorporates the changes to information available at the NHDOT Bridge Design Website in accordance with the changes being made to the Bridge Design Manual.

The efforts of the Department are judged to a great extent by the clarity, neatness, and accuracy of its Contract Plans. It is the intent of the Department to require that all drawings meet the NHDOT standards to produce clear, consistent, and effective plan sheets that have uniform appearance and accurate information.

**D. Implementation:**

The update to the NHDOT Bridge Design Website Drawings shall be implemented as of the date of this memo and shall be used on all applicable projects.



Mark W. Richardson, PE  
Administrator, Bureau of Bridge Design

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## [Project Development](#) > [Bridge Design](#) > [Document Library](#)

This is the document library for the Bureau of Bridge Design. All plans, reports and files originating from this bureau are listed below. Looking for information relating to bridge design that isn't listed here? Contact [lpayette@dot.state.nh.us](mailto:lpayette@dot.state.nh.us)

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### Engineering/Technical Information

#### Bridge Data

- [Bridge Summary](#)  
(revised April 2013)
- [Bridge Summary Key](#)  
(revised April 2008)
- [State Redlist Status](#)  
(revised April 2013)
- [State Redlist Summary](#)  
(revised April 2013)
- [State Redlist Index](#)  
(revised April 2013)
- [Municipal Redlist](#)  
(revised April 2013)
- [E-2 Bridge Restrictions](#)
- [Definitions](#)
- [State Jurisdiction Restricted Bridges - E-2 or Load Posted \(Sorted by Municipality\)](#)  
(revised daily)
- [State Jurisdiction Restricted Bridges - E-2 or Load Posted \(Sorted by Route\)](#)  
(revised daily)

#### Oversize/Overweight

- [Weight Limitations Information](#)
- [OW Permit Self Bridge Review \(BOPR\)](#)

#### Bridge Rating

- [Bridge Capacity Form \(Form 4\)](#)
- [NH Legal Load Equivalent](#)
- [Bridge Capacity Form Instructions](#)

#### Manuals

- [Bridge Design Manual](#) (Oct. 2000)

#### Notices/Memorandums

- [Deflection Notice](#)
- [Design Memorandum 2011-01](#)  
(Deck and Box Beams)
- [Design Memorandum 2012-01](#)  
(Sign Structures)
- [Design Memorandum 2013-01](#)  
(Vehicular Collision Pier Protection)
- [Design Memorandum 2014-01](#)  
(Bridge Design Website Changes)

#### Bridge Drawings

- [Bridge Detail Sheets](#)
- [Bridge Details](#)
- [Sample Plans](#)

#### Maps

- [Town Bridge Maps](#)  
(created 7/2007, no revision since 2007)
- [NH Bridges \\*](#) (revised daily)  
\*This is a Google Earth kmz file. Kmz files are zipped kml (Keyhole Markup Language) files, which will start Google Earth. To view KMZ files, you will need to have [Google Earth](#) installed on your pc.

#### Qualified Products List

- [NEPCOAT Qualified Products List A B & C](#)  
(revised 11/15/13)
- [NEPOVERCOAT Qualified Products List M - Bridge Paint](#)

**Project Development > Bridge Design > Bridge Detail Sheets**

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Please note that some of the files listed below are large and may take several minutes to download depending on your Internet connection.

Steel Bridge Rail

DGN Locator	Description	Format	Date Revised
T2_BR-RAIL	T2 Bridge Rail	pdf dgn	12/2013
T3_BR-RAIL	T3 Bridge Rail	pdf dgn	12/2013
T4_BR-RAIL	T4 Steel Bridge Rail	pdf dgn	12/2013
T2SP-APPRAIL	T2 Steel Bridge Approach Rail (Steel Posts)	pdf dgn	12/2013
T3SP_APPRAIL	T3 Steel Bridge Rail (Steel Posts)	pdf dgn	12/2013
T4SP-APPRAIL	T4 Steel Bridge Approach Rail (Steel Posts)	pdf dgn	12/2013
BR-SNOWSCRN	Snow Screen with Steel Bridge Rail	pdf dgn	12/2013
BR-PROSCREEN	Protective Screen with Steel Bridge Rail	pdf dgn	12/2013

Aluminum Bridge Rail

DGN Locator	Description	Format	Date Revised
2BAR	Bridge Rail Details (2-Bar Aluminum)	pdf dgn	12/2013
3BAR	Bridge Rail Details (3-Bar Aluminum)	pdf dgn	12/2013
4BAR	Bridge Rail Details (4-Bar Aluminum)	pdf dgn	12/2013
APP-2BAR_SP	Approach Rail Detail (2-Bar Aluminum, Steel Posts)	pdf dgn	12/2013
APP-3BAR_BC_SP	Approach Rail Detail (3-Bar Aluminum, Steel Posts) Use with brush curb	pdf dgn	12/2013

APP-3BAR_SW_SP	Approach Rail Detail (3-Bar Aluminum, Steel Posts) Use with sidewalk	pdf dgn	12/2013
APP-4BAR_SP	Approach Rail Detail (4-Bar Aluminum, Steel Posts)	pdf dgn	12/2013
AL-SPLICERBAR	Bridge Rail Splice Bar Detail - Aluminum	pdf dgn	12/2013
BALUSTERS	Aluminum Baluster Details	pdf dgn	12/2013
AL-PROSCREEN	Protective Screen with Aluminum Rail	pdf dgn	12/2013
AL-SNOWSCRN	Snow Screen with Aluminum Bridge Rail	pdf dgn	12/2013

T101 Bridge Rail

DGN Locator	Description	Format	Date Revised
T101-3BROWN_SP	T101 Bridge & Approach Rail (Steel Posts, Brown) 3" curb reveal	pdf dgn	1/20/2014
T101-3GALV_SP	T101 Bridge & Approach Rail (Steel Posts, Galvanized) 3" curb reveal	pdf dgn	1/20/2014
T101-7BROWN_SP	T101 Bridge & Approach Rail (Steel Posts, Brown) 7" curb reveal	pdf dgn	1/20/2014
T101-7GALV_SP	T101 Bridge & Approach Rail (Steel Posts, Galvanized) 7" curb reveal	pdf dgn	1/20/2014

Bridge Mounted Sign Supports

DGN Locator	Description	Format	Date Revised
SIGN-BRACKETS	Bridge Mounted Sign Supports	pdf dgn	12/2006

Deck Panels

DGN Locator	Description	Format	Date Revised
DECKPANELS_HL93	Precast Concrete Deck Panel Details	pdf dgn	12/2010

Soundwalls

DGN Locator	Description	Format	Date Revised
SOUNDWALL1	Wood Panel Soundwall 1 of 3	pdf dgn	9/2005
SOUNDWALL2	Wood Panel Soundwall 2 of 3	pdf dgn	9/2005
SOUNDWALL3	Wood Panel Soundwall 3 of 3	pdf dgn	9/2005
SOUNDWALL4	Soundwall Location Chart	pdf dgn	9/2005

Lane Closure

DGN Locator	Description	Format	Date Revised
PCB4-3LP10	Portable Concrete Barrier (10 ft. long)	pdf dgn	7/2004
PCB4-3LP20	Portable Concrete Barrier (20 ft. long)	pdf dgn	7/2004

Vehicular Collision Pier Protection

DGN Locator	Description	Format	Date Revised
54SS-MED BARRIER	54" Single Slope Concrete Barrier, Precast	pdf dgn	9/2013
54SF-MED BARRIER	54" Single Slope Concrete Barrier Single-Faced, Precast	pdf dgn	9/2013
54SS-TAPERED UNIT	54" to 45" Transition Single Slope Concrete Barrier, Precast	pdf dgn	9/2013
54SS-TYPE I_PIER	Pier Protection Type I (54" Single Slope Concrete Barrier)	pdf dgn	9/2013
54SS-TYPE II_PIER	Pier Protection Type II (54" Single Slope Concrete Barrier)	pdf dgn	9/2013
54SF-TYPE II_PIER	Pier Protection Type II (54" Single Slope Concrete Barrier, Single-Faced)	pdf dgn	9/2013

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## [Project Development](#) > [Bridge Design](#) > [Bridge Details](#)

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### Expansion Joints

DGN Locator	Description	Format	Date Revised
COMP_SEAL-BKWLL	Compression Seal Expansion Joint (behind backwall, brush curb)	pdf dgn	12/30/2013
COMP_SEAL-BC	Compression Seal Expansion Joint (in front of backwall, brush curb)	pdf dgn	12/30/2013
COMP_SEAL-BCSW	Compression Seal Expansion Joint (in front of backwall, brush curb, sidewalk)	pdf dgn	12/30/2013
COMP_SEAL-SW	Compression Seal Expansion Joint (in front of backwall, sidewalk)	pdf dgn	12/30/2013
STRIP_SEAL-BKWLL	Strip Seal Expansion Joint (behind backwall, brush curb)	pdf dgn	12/30/2013
STRIP_SEAL-BC	Strip Seal Expansion Joint (in front of backwall, brush curb)	pdf dgn	12/30/2013
CRACK_CONTROL	Asphaltic Plug for Crack Control	pdf dgn	1/14/2014
PLUG_JOINT	Asphaltic Plug Expansion Joint	pdf dgn	1/14/2014
ANCHOR_DETAIL	Anchor Details	pdf dgn	1/14/2014
BACK_PLATE	Backing Plate Detail	pdf dgn	1/14/2014
FIELD_WELD	Field Splice Weld Details	pdf dgn	1/14/2014

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## [Project Development](#) > [Bridge Design](#) > [Sample Plans](#)

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The New Hampshire Department of Transportation (NHDOT) makes these documents available on an "as-is" basis. Details and items of the sample plans may have changed. It is the responsibility of the designer to provide the most current details and items on the contract plans.

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### Bridge Plan Checklists

Description	Format	Date Revised
TS&L Plan Checklist	xls	5/2012
Preliminary Plan Checklist List	xls	5/2012
Final Plan Checklist List	xls	5/2012
Constructability Plan Checklist List	xls	5/2012

### Expansion Joints 5/2012

Description	Format	Date Created
Finger Joint	pdf	11/2004
Finger Joint Phase Construction	pdf	1/2011
Modular Joint	pdf	4/2010
Plow Plate	pdf	7/2013

### Sign Structure

DGN Locator	Description	Format	Date Created
615.1000x	Bridge Sign Structure Footing Plan	pdf dgn	12/2012
615.2000x	Cantilever Sign Structure Footing Plan	pdf dgn	12/2012
Stick Figure	Sign Structure Stick Figure	pdf dgn	7/2004

### Steel Girder Bridge Plans

Description	Format	Date Created
Bartlett 13043	pdf	8/2006

### Steel Bridge Reahbilitation Plans

Description	Format	Date Created
Lincoln 15755	pdf	9/2013
Hopkinton-New London	pdf	12/2007

Haverhill, N.H. - Newbury, VT 14335	pdf	9/2007
Soundwall Sample Plans		
Description/Format	Format	Date Created
Bridge Mounted	pdf	9/2010
Concrete Barrier Mounted	pdf	8/2004
MSE Wall Mounted	pdf	2/2010
13933D MSE Wall Mounted	pdf	5/2010

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