SEPARATION STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation

DT1694 6/2012

☐ Grade Separation ☐ Railroad ☐ Retaining Wall ☐ Noise Barrier

☐ Sign Structure ☐ High Mast Lighting ☐ Other: _____

For guidance see: http://dotnet/dtid_bos/extranet/structures/reports-checklists.htm

Design Project ID	Construction Project ID	Highway (Project Name)		
Final Plan Due Date	Preliminary Plan Due Date	☐ Town ☐ Village ☐ City		
PS&E Date	Letting Date	County		
New Structure Number	Existing Structure Number	Section	Town	Range
Station	Latitude: Longitude:	☐ YES ☐ NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: Vertical Datum:		**Traffic Forecast Data**		
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed	Functional Class
Feature On		Feature On			
Feature Under		Feature Under			
Region Contact: (Area Code) Telephone Number(s): Email:		Consultant Contact: (Area Code) Telephone Number(s): Email:			

Instructions for Structure Survey

*Report submitted with Preliminary Plan requires **no** CADD file submittal (see ESubmittal instructions).*
Report submitted for development of Preliminary Plan to structure design engineer requires CADD file(s) submittal and Report submittal to Soils Engineer.

- *Coordinate with design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.*

In addition to this report, the following information shall be submitted.

1. **Small County Map** on which the location of proposed structure is shown in red, any highway relocation in green, and **Location Map** of scale not less than 1" = 2000' showing the structure location and number.

2. **Plan and Profile Sheet** on proposed reference line of feature on and feature under showing the following:
(a) Ground line; (b) Finished grade line; (c) Profile grade line elevations at least every 100 feet for 1,000 feet each side of the structure; (d) Vertical curve control points; (e) Horizontal curve control points; (f) Curve data, including full SE and runoff distance; (g) For railroad project, survey top of each rail and provide proposed geometrics in conformance with railroad company standards.

3. **Layout Sketch** of the site drawn to a scale of not less than 1 inch = 100 feet showing the following:
(a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) Reference line intersection stationing and intersection angle; (e) North Arrow; (f) Buildings; (g) Above and below ground facilities; (h) Proposed structure when report submitted with Preliminary Plan; (I) Railroad company stationing; (j) Station at ends of existing structure; (k) Other features which influence the design.

4. **Typical Sections** of all roadways showing the following:
(a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Subgrade; (e) Sidewalk, curb and gutter; (f) Median treatment at underpass mounted or ditch section; (g) Clear zone width; (h) Horizontal clearances at underpass.

Labeled Photographs of: (a) Existing structure; (b) Site pictures in all controlling directions including, but not limited to North, East, South and West; (c) Buildings within 100 feet of proposed structure.

Summary of Comments on Microsoft Word - dt1694.doc

Page: 1

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:54:14 AM -06'00'
Select the type of structure work that is being submitted.

Number: 2 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:54:28 AM -06'00'
Example: Pedestrian tunnel under railroad.

Number: 3 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 1:35:11 PM -06'00'
Insert date 12 months prior to earliest PS&E date.

Number: 4 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 1:35:41 PM -06'00'
Insert date 3 months prior to earliest PS&E date.

Number: 5 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 1:41:36 PM -06'00'
Latitude and longitude of proposed structure can be found using internet mapping. Helps design engineer or reviewer to locate the structure.

Number: 6 Author: BOS Comment Subject: Sticky Note Date: 10/15/2015 12:12:37 PM
Station at estimated start of structure; helps designer to quickly locate structure in alignment file.

Number: 7 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:43:23 AM -06'00'
Traffic data is used in structure design, displayed on structure plans.

Number: 8 Author: BOS Comment Subject: Sticky Note Date: 11/25/2015 5:00:29 PM -06'00'
If Subsurface Information is not included in this submittal, provide a comment in *Additional Information* section detailing **who will be doing the geotechnical work/soil borings (In-house or Consultant)**. If known, what is the anticipated schedule for this work? For structures to be designed by BOS: CADD files should be submitted as DGNs. Use Civil 3D export workflow to produce MicroStation files (a copy can be found in Chapter 7 of the SSR Manual).

Number: 9 Author: BOS Comment Subject: Sticky Note Date: 11/30/2015 12:29:15 PM -06'00'
Submit .pdf full page photos. Label photos or provide a key describing what is shown in each photo. *(There's no such thing as too many pictures!)*

Proposed Structure

Preference for Structure Type at this Site: 1

☐ No Preference

Aesthetics Level – See Bridge Manual Chapter 4 2

☐ 1 ☐ 2 ☐ 3 ☐ 4 (For Levels 2, 3 & 4 Explain on Page 3)

Spans- Number 4	Approximate Centerline to Centerline Span Lengths Along Reference Line of Highway 3
Clear Roadway Width on Structure Ft.	Cross Slope on Deck or N.C. (Normal Crown) 5 Ft./Ft.

Skew 7 6 ☐ R.H.F. ☐ L.H.F.

Sidewalks/Multi-Use Path 9 ☐ Yes ☐ No	Left Clear Sidewalk/Path Width 8 Ft. ☐ Yes ☐ No	Separation Barrier	Right Clear Sidewalk/Path Width Ft.	Separation Barrier ☐ Yes ☐ No

Type of Slope Protection 10

Specify Wing Location(s) for Beam Guard Attachment 11	Specify Wing Location(s) for Surface Drain Anchors 12

Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach 13

YES	NO		
☐	☐	Structure Will be Constructed to Accommodate Traffic Staging 14	**Vertical Clearance Design**
☐	☐	Structural Approach Slab	☐ 14' 9" to 15' 3"
☐	☐	Lighting Required: Bolt Circle Diameter _____ inches	☐ 16' 3" to 16' 9"
☐	☐	Traffic/Lighting Staff been Notified for Review	☐ Other: _____
☐	☐	Conduit in Parapet: Diameter _____ Number _____	
☐	☐	Historical Properties (Archaeological, Historic) Present Near Structure	

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES	NO	
☐	☐	Utilities will be located on the structure? (if YES, provide the following information as well as the alignment and profile on Page 3)
☐	☐	Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures? (if NO, please explain on Page 3)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES	NO	
☐	☐	Structure will be Removed ☐ Bid Item ☐ Later Contract ☐ Other: _____
☐	☐	Structure will Remain in Service, Purpose: _____

For Structure Designers Use Only
Proposed Structure

Spans – Number: Span Lengths (C.L. to C.L. of Substructure): Skew: ☐ R.H.F. ☐ L.H.F.

Latitude: Longitude:

Page: 2

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 2:24:10 PM -06'00'

See *Bridge Manual Chapter 5* for guidance. Helps supervisors update estimated scoped hours for the structure design process to appropriately assign work.

Number: 2 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 10:52:57 AM -06'00'

See *Bridge Manual 4.6 Levels of Aesthetics* for a description of each. If level 2 or greater is indicated, you must suggest particular requirements such as railing type, pier shape, special form liners, color, etc. in the *Additional Information* section at the end of the form. Early notification regarding any aesthetic treatment to be applied to structure is required as it can significantly affect design.

Number: 3 Author: BOS Comment Subject: Sticky Note Date: 10/15/2015 2:21:40 PM

Span length is measured from centerline of bearing of substructure to centerline of bearing of substructure. Span lengths are typically rounded up to the nearest foot.

Number: 4 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 10:29:08 AM -06'00'

Gives supervisors an indication of bridge scale. Helps supervisors update estimated scoped hours for the structure design process to appropriately assign work. Also gives structure designer a starting point.

Number: 5 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 10:53:19 AM -06'00'

To ease design and construction super elevation transitions should not take place on the bridge or approach slabs (if applicable).

Number: 6 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 10:28:57 AM -06'00'

Direction of skew, can be left blank if no skew. Left hand forward (L.H.F.) skew indicates that looking up station, the left side of the structure is further up station than the right side. Right hand forward (R.H.F.) skew indicates that the right side of the structure is further up station than the left side.

Number: 7 Author: BOS Comment Subject: Sticky Note Date: 10/15/2015 11:39:53 AM

The acute angle formed by the intersection of a line normal to the centerline of the roadway with a line parallel to the face of the abutments or piers. Structure layout will be skewed when angle exceeds 2 degrees. Reminder to minimize skew as much as possible. Larger skews create larger bridge elements and complicate bridge design and construction. See Bridge Manual for more details.

Number: 8 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 10:06:02 AM -06'00'

Determination of need for separation barrier is responsibility of the roadway designer. Coordination for determining if they are warranted **should be completed before SSR is submitted**. Preliminary Structure Plans are difficult to start without confirmation of bridge cross section and total width.

Number: 9 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 11:41:06 AM -06'00'

Determination of need for sidewalks, and their widths, is responsibility of roadway designer. Coordination for determining if they are warranted **should be completed before SSR is submitted**. Total bridge width is a vital component of preliminary structure design and plans development.

Number: 10 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 2:30:02 PM -06'00'

Slope protection under bridge. See *Bridge Manual Chapter 15*. This will be incorporated into the structure plans.

Number: 11 Author: BOS Comment Subject: Sticky Note Date: 10/15/2015 11:40:28 AM

Location (i.e. NE, SE, etc.). Beam guard attachment affects design of the parapet. The front face of parapet requires a transition area if beam guard attachment is necessary.

Number: 12 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 8:27:34 AM -06'00'

Location (i.e. NE, SE, etc.). Modifications to structure plans are required when surface drains will be used adjacent to wings.

Number: 13 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 9:07:22 AM -06'00'

Location (i.e. NE, SE, etc.). Roadway parapet may determine parapet type used on bridge, if transitions are necessary, conduit placement, etc.

Number: 14 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 8:30:18 AM -06'00'

Does the structural designer need to design for temporary roadway conditions or design the structure so that it can be built in sections?

Comments from page 2 continued on next page

Proposed Structure

Preference for Structure Type at this Site: ☐ No Preference

Aesthetics Level – See Bridge Manual Chapter 4
☐ 1 ☐ 2 ☐ 3 ☐ 4 (For Levels 2, 3 & 4 Explain on Page 3)

Spans- Number	Approximate Centerline to Centerline Span Lengths Along Reference Line of Highway
Clear Roadway Width on Structure Ft.	Cross Slope on Deck or N.C. (Normal Crown) Ft./Ft.
Skew ☐ R.H.F. ☐ L.H.F.	

Sidewalks/Multi-Use Path	Left Clear Sidewalk/Path Width	Separation Barrier	Right Clear Sidewalk/Path Width	Separation Barrier
☐ Yes ☐ No	Ft.	☐ Yes ☐ No	Ft.	☐ Yes ☐ No

Type of Slope Protection

Specify Wing Location(s) for Beam Guard Attachment	Specify Wing Location(s) for Surface Drain Anchors

Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach

YES	NO		
☐	☐	Structure Will be Constructed to Accommodate Traffic Staging	
☐	☐	Structural Approach Slab	15
☐	☐	Lighting Required: Bolt Circle Diameter _____ inches	
☐	☐	Traffic/Lighting Staff been Notified for Review	
☐	☐	Conduit in Parapet: Diameter _____ Number _____	
☐	☐	Historical Properties (Archaeological, Historic) Present Near Structure	16

Vertical Clearance Design
☐ 14' 9" to 15' 3"
☐ 16' 3" to 16' 9"
☐ Other: _____

Utilities on Structure (WisDOT policy is to avoid placing utilities on the structure.)

YES	NO	
☐	☐	Utilities will be located on the structure? (if YES, provide the following information as well as the alignment and profile on Page 3)
☐	☐	Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures? (if NO, please explain on Page 3)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES	NO	
☐	☐	Structure will be Removed ☐ Bid Item ☐ Later Contract ☐ Other: _____ 17
☐	☐	Structure will Remain in Service, Purpose: _____

18 For Structure Designers Use Only
Proposed Structure

Spans – Number:	Span Lengths (C.L. to C.L. of Substructure):	Skew: ☐ R.H.F. ☐ L.H.F.
Latitude:	Longitude:	

If YES, please describe in detail under *Additional Information* on the last sheet and include staging sketch in submittal.

Number: 15 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 9:08:28 AM -06'00'

Structural approach slabs should be considered depending on design speeds, ADT, and settlement susceptibility. See *Bridge Manual Chapter 12* for more details. This affects bridge design and plans (i.e. abutment width, wing location and sizing, parapet length).

Number: 16 Author: BOS Comment Subject: Sticky Note Date: 11/18/2015 9:09:06 AM -06'00'

Foundation types or construction could be affected by sensitive nearby sites. Proper coordination needs to be made when archaeological sites are present.

Number: 17 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:12:19 PM -06'00'

If structure is to be removed in a different contract list the construction ID for the removal.

Number: 18 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:55:00 AM -06'00'

For consultant designs: fill out this portion based on the preliminary plans and submit with the plans.

Additional Information

Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.
Please be as detailed and specific as possible.

1

The more information that can be provided, the better. This will result in fewer questions from BOS during structure design or consultant review and a better end product.

The following is not all inclusive; please add/delete discussion items to fit site/project specific details that may influence structure design:

Geotechnical Coordination:
Detail who is completing geotechnical work/soil borings (in-house or consultant) and anticipated schedule of work.

Aesthetics:
If aesthetic level 2 or more is indicated, you must suggest particular requirements such as railing type, pier shape, aesthetic option (type I,II or III), special form liners, stain/paint, color (federal color number), etc. See Bridge Manual Chapter 4 for updated information. Also include coordination that is yet to be made. If applicable, provide B-##-### for example structures in the area that are similar to proposed or desired; attach an exhibit for reference. contact BOS with questions.

Structural Approach Slabs:
If requested, provide justification for their inclusion. See Bridge Manual Chapter 12.11.

Proposed Structure (& Future Expansion):
Discuss proposed size and type of structure and vertical/horizontal clearances (if special clearances are required for construction staging). Describe future expansion, if any is anticipated, which may include lower roadway lane expansion, upper roadway widening, etc. Anticipated future expansion of bridge may have impacts to profile grade, consider vertical clearance requirement.

Temporary Shoring:
Describe anticipated locations of temporary shoring needed for construction. Especially important for stage construction or current structure that remain in service during construction.

Construction Staging:
Discuss construction staging in detail and describe desired sequencing; provide sketches of staging.

Traffic Barrier:
Discuss barrier locations, type, and heights approaching the structure, if applicable.

Bike/Pedestrian/Other Structure Accommodations:
Discuss proposed sidewalks, multi-use paths, separation barriers, medians, wildlife passages, etc.

Utilities:
List utilities located under, near, or on the proposed structure. Include type of utility, action to be taken and who owns the utility. If conduit/utility will be on the proposed structure describe who will be servicing it, number and size of conduits needed and any other pertinent information. Justification for placing utilities on proposed structure and means of attaching.

Site Drainage:
Discuss potential drainage concerns involving the proposed structure. Possible concerns include proposed roadway drainage pipes under substructure units, anticipated need for deck drains and median drainage. Include locations of pipes and invert elevations as appropriate.

DNR:
Discuss the status of coordination between Region/Consultant and DNR. Include any agreements made, concerns with the site, or areas requiring special attention as expressed by DNR.