STREAM CROSSING STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation

DT1698 6/2012

1 ☐ **Stream Crossing** ☐ **Box Culvert** ☐ **Box Culvert Extension:** ☐ Right

☐ **Other:** _____ ☐ Left

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 2	Preliminary Plan Due Date 3	☐ Town ☐ Village ☐ City		
PS&E Date	Letting Date	County		
New Structure Number	Existing Structure Number	Section	Town	Range
Station 5	Latitude: 4 Longitude:	☐ YES ☐ NO Structure Located on National Highway System		
For Survey and CADD Files Horizontal Coordinate System: Vertical Datum:		6 **Traffic Forecast Data**		
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed / Functional Class
Feature On				mph
Feature Under ☐ Waterway:		☐ Other:		
Region Contact: (Area Code) Telephone Number(s): Email:		Consultant Contact: (Area Code) Telephone Number(s): Email:		

Instructions for Structure Survey

7
- *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 hydraulic 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 highway showing: (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.
3. 8 **Contour Map** of the site drawn to a scale of not less than 1" = 20' with one-foot contours and showing: (a) Existing highway and structure; (b) Proposed highway alignment and R/W; (c) Station numbers; (d) North arrow; (e) Buildings; (f) Above and below ground facilities; (g) Recommended channel change; (h) Direction of stream flow; (i) Station at ends of existing structure; (j) Location of river cross sections or individual survey shots; (k) Proposed structure and extent of riprap for report submitted with preliminary plans; (l) Other features that influence design.
4. **Typical Roadway Cross Section** of proposed approaches showing: (a) Dimensions; (b) Slopes; (c) Type and width of surfacing or pavement; (d) Sidewalk, curb & gutter; (e) Subgrade and pavement thickness; (f) Clear zone width.
5. 9 **Stream Cross Sections** at upstream and downstream face of existing bridge and at one structure length upstream and downstream. Water and streambed elevations to be taken at structure and water surface elevations 1500 feet upstream and downstream of existing bridge.
6. 10 **Labeled Photographs** of: (a) Existing structure; (b) Upstream and downstream structures; (c) Buildings within 100 feet of the proposed structure; (d) Unobstructed panoramic view looking upstream and downstream from location of proposed structure, showing stream and floodplains; (e) Any noteworthy details on existing structure or surrounding site (i.e. downstream obstructions); (f) Air photo mosaics referenced to contour map DGN if available.
7. 11 Attach a copy of the regulatory floodplain map (FEMA map) depicting the site.
8. 12 Report submitted with preliminary plans – **Hydraulic Report** (See Bridge Manual Chapter 8) which may contain: (a) USGS quadrangle sheet showing proposed location, highway alignment and reach of river; (b) All available flood history, high water marks with date of occurrence, nature of flooding, damages, scour information, and factors affecting water stages; (c) Navigation clearance; (d) Discussion of alternatives considered, factors influencing selection.
9. 13 Attach a copy of DNR initial concurrence letter.

Summary of Comments on DT1698 Stream Crossing Structure Survey Report

Page: 1

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 12/11/2015 4:19:14 PM -06'00'
Select the type of structure work that is being submitted. If a bridge is the anticipated structure type, "Stream Crossing" should be checked. If a culvert is the anticipated structure type, "Box Culvert" should be checked.

Number: 2 Author: BOS Comment Subject: Sticky Note Date: 2/2/2016 12:22:21 PM -06'00'
Insert date 3 months prior to earliest PS&E date.

Number: 3 Author: BOS Comment Subject: Sticky Note Date: 2/2/2016 12:22:14 PM -06'00'
Insert date 12 months prior to earliest PS&E date.

Number: 4 Author: BOS Comment Subject: Sticky Note Date: 11/20/2015 9:10:28 AM -06'00'
Latitude and longitude of proposed structure can be found using Internet mapping. Helps design engineer or reviewer to locate the structure.

Number: 5 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 7:54:27 AM -06'00'
Station at estimated start of structure; helps designer to quickly locate structure in alignment file.

Number: 6 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 4:18:42 PM -06'00'
Traffic data is used in structure design and displayed on structure plans.

Number: 7 Author: BOS Comment Subject: Sticky Note Date: 11/25/2015 5:00:28 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 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: 8 Author: BOS Comment Subject: Sticky Note Date: 12/11/2015 4:22:31 PM -06'00'
1' contours in a DGN file are required for all In-house designed stream crossings; contours should be continuous line strings and have elevation labels or elevations defined in the line properties. Ideally, contours will extend several hundred feet out from the roadway alignment. Items a-l should be included in the alignment, topo/base mapping and field survey ground shots DGN files. Be sure to include proposed right-of-way or provide existing if no changes are expected; contact BOS regarding any updates. A PDF copy of the contour map is required with submittal of Consultant designed preliminary structure plan submittals.

Number: 9 Author: BOS Comment Subject: Sticky Note Date: 12/11/2015 4:40:14 PM -06'00'
DGN and DWG files containing surveyed stream shots are requested. It is most important to survey several points in the channel and on the stream banks. Fewer points are needed outside the banks where the surface is flatter. Include CSV file that contains point coordinates, ID and elevation labels for each shot. Cross sections should be taken at both faces of the existing structure and approximately 1 bridge length upstream and downstream. Cross sections should extend to the edges of the floodplain if 1' contours don't cover the desired extents.

Number: 10 Author: BOS Comment Subject: Sticky Note Date: 12/11/2015 4:26:16 PM -06'00'
Submit a .zip file or PDF of full page photos. Label photos or provide a key describing what is shown in each photo. See Chapter 7 of SSR Manual for examples and label/description list. *(There's no such thing as too many pictures!)*

Number: 11 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:17:09 AM -06'00'
A FEMA floodplain map should be included for all stream crossings that are located in a mapped floodplain and can be printed from FEMA's online Flood Map Service Center (https://msc.fema.gov/portal).

Number: 12 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:58:14 AM -06'00'
Only required when submitting Consultant designed preliminary structure plans.

Number: 13 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:58:18 AM -06'00'
E-Submit with SSR or provide to structural or hydraulic designer via email if letter is received from DNR after SSR submittal.

Proposed Structure

Preference for Structure Type at this Site: 1

☐ No Preference

2 Aesthetics Level – See Bridge Manual Chapter 4

☐ 1 ☐ 2 ☐ 3 ☐ 4 (For Levels 2, 3 & 4 Explain on Page 5)

Clear Roadway Width on Structure	Cross Slope on Deck or N.C. (Normal Crown) 3
Ft.	Ft./Ft.

5 Sidewalks/Multi-Use Path	Left Clear Sidewalk/Path Width 4	Separation Barrier	Right Clear Sidewalk/Path Width	Separation Barrier
☐ Yes ☐ No	Ft.	☐ Yes ☐ No	Ft.	☐ Yes ☐ No

Specify Wing Location(s) for Beam Guard Attachment 6	Specify Clear Zone Width When Beam Guard Not Used on Culvert
Specify Wing Location(s) for Surface Drain Anchors 7	Specify Wing Location(s) where Bridge Barrier/Rail Continues on Roadway Approach 8

YES	NO	
☐	☐	Project Is in Flood Hazard Area (FIS Mapped Floodplain)
☐	☐	Structure Will be Constructed to Accommodate Traffic Staging 9
☐	☐	Temporary Structure Required
☐	☐	Riprap Required 10
☐	☐	Structural Approach Slab 11
☐	☐	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 12

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 4)
☐	☐	Utilities have been approved by Region Utility Coordinator or previously approved by the Bureau of Structures? (if NO, please explain on Page 4)

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

Proposed Disposition of Existing Structure

YES	NO	
☐	☐	Structure will be Removed ☐ Bid Item 14 ☐ Other Contract ☐ Other: _____
☐	☐	Structure will Remain in Service, Purpose: _____

Removal 13

- ☐ Normal Removal
- ☐ Removal With Minimal Debris
- ☐ Removal With Capture System

Page: 2

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 2/2/2016 12:23:28 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: 2/2/2016 12:23:47 PM -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: 2/2/2016 12:26:10 PM -06'00'

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

Number: 4 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:20:19 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: 5 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:13:01 PM -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: 6 Author: BOS Comment Subject: Sticky Note Date: 9/21/2015 11:55:22 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: 7 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 8:29:35 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: 8 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:16:46 PM -06'00'

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

Number: 9 Author: BOS Comment Subject: Sticky Note Date: 2/2/2016 12:25:40 PM -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? If YES, please describe in detail under *Additional Information* on the last sheet and include staging sketch in submittal.

Number: 10 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:17:19 PM -06'00'

Slope protection under the bridge. See *Bridge Manual Chapter 15*. This will be incorporated into the structure plans. Riprap slopes are commonly placed in front of stream crossing abutments. Other protection may be considered if a path is present under the bridge.

Number: 11 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:17:36 PM -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: 12 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:17:54 PM -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: 13 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:18:24 PM -06'00'

See comments in DNR Initial Review letter regarding preferred removal method. Level of removal should correspond with quality of waterway being spanned. See Standardized Special Provisions (STSP) Articles 39, 40 and 41.

Number: 14 Author: BOS Comment Subject: Sticky Note Date: 11/20/2015 9:11:38 AM -06'00'

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

Existing Structures

STRUCTURE DATA		UPSTREAM	AT SITE	DOWNSTREAM
Structure Number (B/P/C)				
Highway, Railroad, Path, or Structure Name				
Year Built				
◊ Latitude				
◊ Longitude				
‡ Distance from Proposed Site in Miles				
Number of Spans				
Clear Span *(Between Inside Faces of Substructure Units)* Lengths Along C.L. Rdwy/Track				
Sidewalk:	Right Side Clear Width			
	Left Side Clear Width			
Roadway Width on Structure Between Curbs				
Superstructure Type				
Abutment Type(s)				
Pier Type(s) and Width(s)				
Is Structure Supported on Piles?				
Condition:	Superstructure Rating (NBI)			
	Substructure Rating (NBI)			
	Sufficiency Rating (NBI)			
Skew:	Stream			
	Structure			
* Elevation + +	Finished Grade			
	Low Chord			
† Character of Material in Stream Bed				
Does Drift Pass Satisfactorily (Y/N/no record)				
Does Ice Pass Satisfactorily (Y/N/no record)				
Evidence of Damage From Floating Debris				
Streambed Scour Visible (Y/N) Ⓟ	Provide Additional Details on Page 5			
Streambank Scour Visible (Y/N) Ⓟ				
† Recorded High Water Elevation - Date				
** Observed High Water Mark Elevation Ⓟ				
History of Flooding over Roadway (Date or Frequency)				
Abutment Slope Washout From:	Stream Flow Ⓟ			
	Roadway Drainage Ⓟ			
Low Water Elevation				
º Ordinary High Water Mark				
Observed Water Elevation				
Streambed Elevation				
Water Surface Elevation	Date	1500' Upstream ‡	At Site	1500' Downstream ‡

Ⓟ Provide labeled photograph.

* Use same vertical datum for all structures within 1500' of existing structure.

** High water marks may include, but are not limited to, debris, leaves, or dirt on structure that appear to have been left by recent flooding.

+ + Take these elevations at the same location.

† Information on high water can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, FIS, local officials, bridge inspector, or WisDOT bridge maintenance engineer.

º If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."

‡ Measured along thread of channel. If there is an abrupt river profile change within 1500' contact hydraulic engineer for revised location.

◊ Lat./Long. taken at name plate location (with photograph or sketch of location).

Page: 3

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 12:50:47 PM -06'00'
If there are two or more stream branches upstream of subject structure, survey bridge on branch with larger drainage area.

Number: 2 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:27:28 PM -06'00'
Do not survey structures located downstream of mouth of the subject stream.

Number: 3 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:27:11 PM -06'00'
B, C, or P-xx-xxx

Number: 4 Author: BOS Comment Subject: Sticky Note Date: 11/17/2015 4:25:27 PM -06'00'
Highway number, railroad name, path name (e.g. Hank Aaron State Trail), or structure name (e.g. Hoan Bridge).

Number: 5 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:27:15 PM -06'00'
Can be provided on one line (e.g. "43.0732, -89.4596" copied from internet mapping, decimal degrees preferred)

Number: 6 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:30:27 AM -06'00'
If structure is 1500' or further from the subject structure this distance can be measured as the crow flies, rather than along the stream thread.

Number: 7 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:00:45 AM -06'00'
Between beam guard or parapets if curbs are not present. Between edges of pavement if barriers are not present.

Number: 8 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:00:49 AM -06'00'
e.g. prestressed concrete girders, concrete slab, cast-in-place deck girders, steel girders/beams, truss, three-sided structure (buried).

Number: 9 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:01 AM -06'00'
e.g. timber backed, concrete, masonry.

Number: 10 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:00:58 AM -06'00'
e.g. solid shaft, multi-column, pile bents (photos are helpful).

Number: 11 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:04 AM -06'00'
If yes, include type: timber, H-pile, cast in place, etc.

Number: 12 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 4:57:45 PM -06'00'
Obtain values from HSI Bridge Inventory System.

Number: 13 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:37:43 PM -06'00'
Stream skew is the angle formed by the intersection of a line normal to the centerline of the roadway and a line parallel to the direction of flow (i.e. flow normal to the structure is 0 degrees).

Number: 14 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:36:35 PM -06'00'
Structure skew is 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.

Number: 15 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:34:15 AM -06'00'
Provide at lowest corner of the bridge, top of deck at face of parapet or rail; elevations should be taken at each corner of the bridge and be included in the survey DGN file.

Number: 16 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:34:08 AM -06'00'
Provide bottom of girder/slab elevation at lowest corner of the bridge. Elevations should be taken at each corner of the bridge and be included in the survey DGN file.

Number: 17 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:34:20 PM -06'00'
Provide a picture looking into the water at the stream bed material, if visible. Examples of bed material character include, but are not limited to, silt, sand, gravel, or cobbles.

Number: 18 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 1:39:36 PM -06'00'
Damage or marks on the superstructure may indicate contact between the structure and ice or debris carried by high water. This will be taken into consideration when determining superstructure type and elevation; 2' of freeboard above high water is required when girders are used.

Number: 19 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:32 AM -06'00'
Consideration will be given to substructure unit location and placement of additional riprap based on current scour conditions.

Comments from page 3 continued on next page

Existing Structures

STRUCTURE DATA		UPSTREAM	AT SITE	DOWNSTREAM
Structure Number (B/P/C)				
Highway, Railroad, Path, or Structure Name				
Year Built				
◊ Latitude				
◊ Longitude				
‡ Distance from Proposed Site in Miles				
Number of Spans				
Clear Span *(Between Inside Faces of Substructure Units)* Lengths Along C.L. Rdwy/Track				
Sidewalk:	Right Side Clear Width			
	Left Side Clear Width			
Roadway Width on Structure Between Curbs				
Superstructure Type				
Abutment Type(s)				
Pier Type(s) and Width(s)				
Is Structure Supported on Piles?				
Condition:	Superstructure Rating (NBI)			
	Substructure Rating (NBI)			
	Sufficiency Rating (NBI)			
Skew:	Stream			
	Structure			
* Elevation + +	Finished Grade			
	Low Chord			
Character of Material in Stream Bed				
Does Drift Pass Satisfactorily (Y/N/no record)				
Does Ice Pass Satisfactorily (Y/N/no record)				
Evidence of Damage From Floating Debris				
Streambed Scour Visible (Y/N) Ⓟ	Provide Additional Details on Page 5			
Streambank Scour Visible (Y/N) Ⓟ				
† Recorded High Water Elevation - Date				
** Observed High Water Mark Elevation Ⓟ				
History of Flooding over Roadway (Date or Frequency)				
Abutment Slope Washout From:	Stream Flow Ⓟ			
	Roadway Drainage Ⓟ			
Low Water Elevation				
º Ordinary High Water Mark				
Observed Water Elevation				
Streambed Elevation				
Water Surface Elevation	Date	1500' Upstream ‡	At Site	1500' Downstream ‡

Ⓟ Provide labeled photograph.

* Use same vertical datum for all structures within 1500' of existing structure.

** High water marks may include, but are not limited to, debris, leaves, or dirt on structure that appear to have been left by recent flooding.

+ + Take these elevations at the same location.

† Information on high water can be obtained from observation, owner, adjacent property owner, County Road Commission, Regional Planning Commission, DNR, FIS, local officials, bridge inspector, or WisDOT bridge maintenance engineer.

º If marked by DNR, "The point on the bank or shore up to which the presence and action of water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic."

‡ Measured along thread of channel. If there is an abrupt river profile change within 1500' contact hydraulic engineer for revised location.

◊ Lat./Long. taken at name plate location (with photograph or sketch of location).

Number: 20 Author: BOS Comment Subject: Sticky Note Date: 12/9/2015 10:17:50 AM -06'00'

Can be obtained from observation, by owner, adjacent property owner, County personnel, DNR, local officials, bridge maintenance/inspection personnel, or other sources. Approximate elevation from one of the above sources is better than no elevation. Provides valuable information for evaluating potential vulnerabilities of the proposed structure. May also be used to help validate bridge hydraulic model.

Number: 21 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:36 AM -06'00'

Only required if there are signs of recent flood or high water. May include any water mark, sediment, or debris on the bridge or abutments; record elevation at the top of such a mark. Indicates level to which flood waters rose.

Number: 22 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:38 AM -06'00'

It is important to account for roadway overtopping in design if it is known to occur; in some cases it may be possible and appropriate to alleviate roadway overtopping when sizing structure. May be acquired from local sources listed for Recorded High Water Elevation.

Number: 23 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 9:01:40 AM -06'00'

Refers to lowest known flow in a year, approximate elevation is sufficient (e.g. water is 1' deep, dry, etc.). May be acquired from local sources listed for Recorded High Water Elevation.

Number: 24 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 12:53:30 PM -06'00'

This elevation is not required for all structures, but generally will be if recreational navigation clearance is a consideration for the proposed structure. Early coordination with the DNR should be made to determine if this elevation needs to be collected near the structure being replaced. If required, the DNR will mark the elevation at the site so that it can be surveyed.

Number: 25 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 12:55:08 PM -06'00'

Elevation of the water surface in the channel near the bridge.

Number: 26 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 12:53:43 PM -06'00'

Take stream bed elevation at same location as observed water elevation.

Number: 27 Author: BOS Comment Subject: Sticky Note Date: 12/9/2015 10:23:12 AM -06'00'

Should be taken about 1500' upstream, location can be adjusted if an abrupt change in stream profile is present. Only use elevation at upstream structure if it is about 1500' away or further. Used in hydraulic model input. Record streambed elevation if dry. If water surface elevation is taken at an alternate location, provide the distance to this point along the channel thread.

Number: 28 Author: BOS Comment Subject: Sticky Note Date: 12/9/2015 10:23:27 AM -06'00'

Should be taken about 1500' downstream, location can be adjusted if subject stream joins a larger stream/river (confluence). Take elevation at mouth of subject stream if confluence exists. Only use elevation at downstream structure if it is about 1500' away or further. Used in hydraulic model input. Record streambed elevation if dry. If water surface elevation is taken at an alternate location, provide the distance to this point along the channel thread.

Number: 29 Author: BOS Comment Subject: Sticky Note Date: 11/19/2015 12:51:54 PM -06'00'

Same as observed above.

Existing Culvert Information

Number of Barrels			
Barrel Width Perpendicular to Walls			
Allowable High Water			
Floor: Concrete, Earth, Silted			
If Silted Indicate Depth of Silt in Barrel			
Elevation:	Inlet	Invert	
		Finished Grade	
		Top of Opening	
		Top of Water	
	Discharge	Invert	
		Finished Grade	
		Top of Opening	
		Top of Water	
	For Structures with Concrete Aprons:		
	At Beginning of Upstream Apron		
		Apron Elevation	
		Streambed	
		Top of Water	
	At End of Downstream Apron		
		Apron Elevation	
		Streambed	
		Top of Water	
Condition Ⓟ:	Wingwalls		
	Barrel		

Attach Sketch
Ⓟ Provide labeled photograph.

Page: 4

Number: 1 Author: BOS Comment Subject: Sticky Note Date: 10/14/2015 10:27:29 AM
See additional information for Existing Culvert section in Chapter 9 of the SSR Manual.

Number: 2 Author: BOS Comment Subject: Sticky Note Date: 11/20/2015 9:01:50 AM -06'00'
Provide culvert length in addition to span of box culvert cell(s) or pipe(s).

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 higher is indicated, you must suggest particular requirements such as railing type, pier shape, new 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 staged construction or current structure that remains 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 (e.g. AOP, etc.).

For Structure Designers Use Only
Proposed Box Culvert

Aprons	Type	Elevations
Inlet		
Outlet		
Openings - Number	Clear Span at Right Angles to Axis of Box	Inside Height of Box
Slope of Channel at Culvert		

All Proposed Structures

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

Drainage Area _____ Sq. Mi.
High Water (100) _____ Ft.
Velocity _____ Ft/Sec.
Waterway Area _____ Sq. Ft.
Scour Code _____

Q (100) _____ cfs
Q (Struct.) _____ cfs
Q (Rdwy.) _____ cfs
Q (Suple. Struct.) _____ cfs

Existing Bridge
High Water (100) _____ Ft.

Regulatory High Water
_____ Ft.
Source FIS _____

Erosion Control
Q_2 = _____ cfs.
HW_2 = _____ Ft.

Temporary Structure
Q _____ Yr. _____ cfs.
High Water _____ Ft.
Min. A (BR) _____ Sq. Ft.

Overtopping Frequency (If>100Yrs.-NA)
Q _____ Yr. _____ cfs.
High Water _____ Ft.