Sewalls Falls Bridge
2012 In-Depth Inspection

Prepared for the

CITY of CONCORD, NEW HAMPSHIRE
ENGINEERING SERVICES DIVISION

March 2012

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SEWALLS FALLS BRIDGE
2012 IN-DEPTH INSPECTION

INTRODUCTION:

CHA conducted an in-depth structural inspection, truss spans only, of the Sewalls Falls Bridge, which carries Sewalls Falls Road over the Merrimack River in the City of Concord, NH. Performed in conjunction with a load rating analysis of the structure, the purpose of this evaluation is to establish a baseline for the City to judge the feasibility of repair, re-use, modification or replacement options for the bridge. The inspection was performed during the week of March 5th through 9th of 2012, by the CHA Bridge Inspection Team of Carl Snyder and Joe Albert, with traffic control assistance provided by Greg Meagher, Construction Inspector with the City of Concord's Engineering Services Division.

Figure 1: Bridge from north shore, left (upstream) side

The inspection was limited to the two truss spans, superstructure elements only. Numerous existing bridge components are already contemplated for complete removal, abandonment, or replacement under the various bridge rehab/replacement schemes presently under consideration. The existing multi-girder approach spans forming the elevated southern approach to the two main truss spans are expected to be replaced by a filled-earth causeway; the existing concrete and masonry pier and abutments are expected to be replaced with new substructures to accommodate the rehabilitated existing structure and a new, parallel bridge constructed immediately upstream; the existing floor system and bearings are known to be in generally poor condition, and are expected to need replacement even if the existing trusses

remain in service; the existing bridge railing system exhibits serious impact damage and corrosion, and has many generations of patchwork and welding repairs. Therefore, the following elements were NOT given a detailed, in-depth inspection: the multi-girder approach spans; existing substructures; existing truss and stringer bearings; existing steel open-grating deck; existing steel floor system framing (stringers and floorbeams); existing lower (under-deck) horizontal lateral bracing; and the existing bridge railing system.

Pursuant to the agreed scope of services, the existing truss-span floor system (stringers and floorbeams) was given a casual inspection, using visual assessment and physical probing (with metal bar) to the extent possible through the open-grating deck.

By pre-arrangement with the City and Concord, the bridge was closed from 7 a.m. to 5 p.m. daily, to all but emergency use during the inspection. Access to the upper trusses and bracing was made by various ladders. Access to the truss lower chords was made by climbing over or through the bridge railing system. All work was performed in compliance with OSHA requirements for worker safety and fall protection.

INSPECTION CONVENTIONS:

For identification and location purposes, the bridge is considered to be oriented from the south-southwest to the north-northeast, or nominally south to north. Ignoring the approach spans, the southern truss span is considered Span 1 and the northern one is Span 2. Bridge elements (e.g., truss panel points) are numbered in this order longitudinally. "Left" and "Right" designations are based on the observer looking north from the south end of the bridge. Thus the Merrimack River flows left to right with respect to the bridge.

Unless otherwise specified, elevation views are shown looking westward, or from the right side, and plan views are shown with west up. Truss panel points are numbered from 0 (zero) at the south end of each span, and 9 (nine) at the north. Note to site visitors: there are field markings on various bridge components which are both consistent AND inconsistent with this convention.

DESCRIPTION OF TRUSS SPANS:

The truss-span portion of Sewalls Falls Bridge is a 338-foot-long, 2-span steel structure built circa 1915 on pre-existing stone-masonry substructures. Design plans dated 1936 show the addition of an elevated structure at the south approach, comprised of 10 steel multi-girder spans (not inspected), which replaced an earth-filled causeway. The two truss spans have nine panels in a parallel-chord, Pratt-truss configuration,

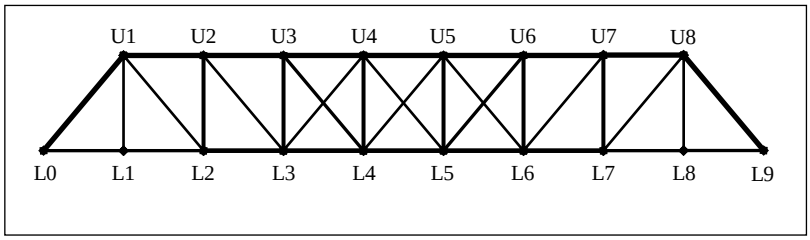

Figure 2: Sewalls Falls Bridge truss schematic

with diagonal counters forming an "X" in the 3 center panels (Fig. 2). As is common in the Pratt design, the first and last interior panel points (U1LI & U8L8) have a vertical member serving primarily as a floorbeam hanger. Trusses are comprised of riveted, built-up members connected by riveted gusset plates at all panel points. Top chords are channel-box sections comprised of 2 rolled channel sections with outward-facing flanges with a single top plate; these sections are open on the bottom to receive the panel-point gusset plates. Truss verticals and diagonals are single-angle pairs or double-angle pairs. Truss bottom chords are double-angle pairs, supplemented with a single pair of outer side plates in the central 5 panels of the truss.

The two circa-1915 truss spans differ in length by 2 feet, presumably to fit the pre-existing pier and abutment layout. This difference is made up solely in the lengths of the first and last panels of the spans, which results in different slopes in the truss end-posts. Intermediate panel lengths and *all* corresponding member cross-sections (including those in the differing end panels) are the same in both spans. The standard intermediate panel length is 18'-6½". Record drawings indicate center-to-center bearing dimensions of 166'-10½" for Span 1 (south span); and 164'-10½" for Span 2 (north span). Field measurements are consistent with these dimensions. All truss members and floorbeams are of built-up riveted fabrication of the original 1915 construction. With regard to rolling tolerances, we frequently encountered thickness measurements 5 to 10 percent in excess of the nominal thickness in angle legs.

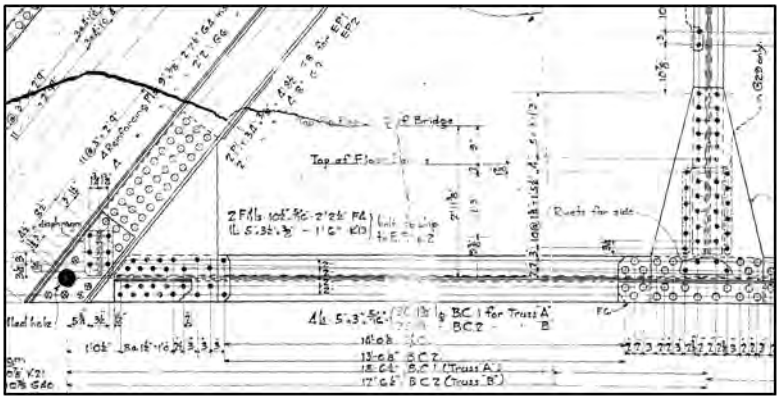

Figure 3: Excerpt from 1915 shop drawings

Figure 4: Typical floor framing - Span 2 Panel 9

The Stringers are rolled beams; their date of origin was not determined, but they have the same staggered holes in the top flanges (for fastening timber nailers), as shown in the 1915 shop drawings. Floorbeams are built-up riveted sections with separate web plates and flange angles. Both the stringers and the floorbeams have been extensively modified; they have welded flange cover plates and web repair plates, possibly from multiple generations of rehabs and retrofit construction. Truss members are all original sections, with a very few localized welded and bolted repairs.

Without exception, truss dimensions and member sizes appear to be consistent with the 1915 record drawings.

INSPECTION & MEASUREMENT METHODS:

All primary truss members received a hands-on, close-up inspection for alignment, straightness, localized impact damage, corrosion, and potential cracking (no cracks were observed). Plan verification measurements were typically made with bow calipers and a stick rule.

Impact damage resulting in the misalignment of a member as a whole was measured off a tensioned string line. The string line was positioned as close to as practicable to the member's original alignment at the panel points at each end of the member. A stick rule was then used to measure the maximum displacement perpendicular to the axis of the member, in both longitudinal and transverse planes. Axial twist was documented with and measured off digital imagery. Photos were sighted down the length of the member, and composed with an original reference plane in view. Zoom settings were maximized to mitigate perspective and lens effects. Localized impact damage, such as bent or dented angle legs or channel flanges, was documented with a straightedge and stick rule.

Figure 5: Documentation of impact damage

Each truss member was visually assessed to identify the location for the worst overall (gross) section loss for the member, based primarily on build-up of crevice corrosion or "pack rust". Many bottom chord members exhibit similar-looking deterioration intermittently throughout their length. This occasionally required taking measurements at additional locations per member to ascertain the worst instance.

Figure 6: Measuring section loss on a truss vertical

Truss member section losses were almost exclusively measured by ultrasonic ("d-meter") means, because the worst corrosion is typically between closely spaced or mated surfaces. In most cases, the accessible sides of the components were free of pitting or corrosion, requiring minimal surface preparation for testing. Truss gusset plates, which are typically too large to permit

mechanical measurement, were similarly measured by d-meter (very few plates have significant section losses). Over 900 d-meter readings were recorded.

Floorbeams and stringers were evaluated visually and by probing with a piece of rebar through the open grating steel deck, as prescribed in the project scope. The primary focus was on beam flanges near their mid-length, and beam webs near their supports. Efforts were concentrated at areas with already-visible holes, material loss, or very heavy rust scale. These locations were forcibly pounded to remove additional rust and determine if there was obvious additional loss or hole-enlargement. A rough estimate was then made of the apparent magnitude of section loss.

* * *

SUMMARY OF FINDINGS:

Upper Trusses & Bracing:

Above the travelway, no deficiencies were observed in any upper truss panel point gusset plates or member connections; however, the top chords of the truss exhibit minor deterioration in their top plates due to crevice corrosion ("pack rust"). This corrosion is typically present between the horizontal bracing gusset plates and the top plates of the upper chords at each panel point (see Fig. 7). These were not accessible for direct measurement, but pitting is typically visible along and just under the edges of the horizontal gusset plates. Based on what is visible, a conservative estimate of 33% section loss in the top plates of the upper chords is recommended for load rating purposes. Because this loss typically occurs over very short lengths along the member (<1"), it applies only to local bearing/compression stress, and not to slenderness or buckling modes of analysis. No losses were evident in the channel components of the chords, so the resulting weighted maximum effect of the top plate losses on the gross section is 12% for the section with the lightest channels (chord members U1U2 and U7U8). See Photos 1 through 4.

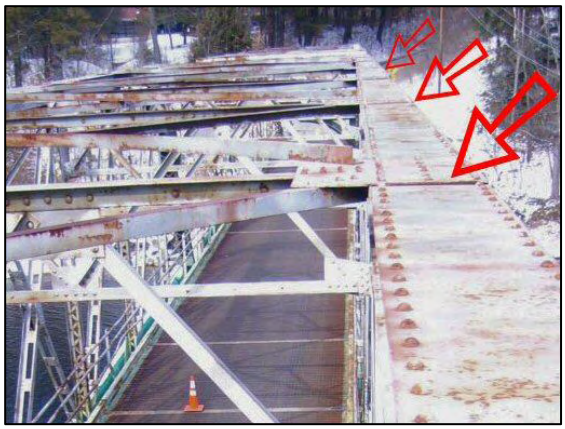

Figure 7: Typical horizontal gusset plates along upper chord (Span 1 Right Truss shown)

Also above the travelway, the upper lateral (horizontal-plane) and sway (vertical-plane) bracing exhibit only minor pack rust and no significant distortions. No rivet failures were observed on the bridge, including those near to and clearly stressed by pack rust prying forces.

Vehicular Impact Damage:

Along the travelway envelope, numerous truss members exhibit impact damage in the form of large-scale twisting and out-of-plane deformations in numerous truss diagonals (Fig. 8). Much of the worst structural damage coincides with bridge railing damage, and appears consistent with typical impact damage from a snowplow blade. Also, there are numerous small dents and localized bends in various projecting member legs and flanges. No cracks or tears were observed in any truss component. See Table 1 for a detailed summary of observed impact damage to truss members, with photo references.

Figure 8: Truss member impact damage

Along the bridge centerline there is evidence of impact damage resulting from an over-height vehicle or load hitting the lower chord of the transverse sway bracing (Fig. 9). No impact damage was observed at the "portal" bracing at each end of each of the truss spans. At the intermediate

sway bracing, several low chords exhibit minor to moderate bends, with little effect on other components, including connections to the corresponding truss verticals. No cracks or tears were observed in any of these components. See Table 2 for a summary of maximum longitudinal displacements of these chords, with photo references.

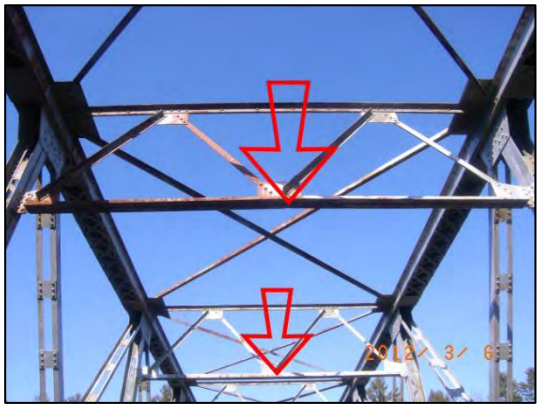

Figure 9: Damaged sway-bracing chords

Lower Trusses – Truss Members:

Where vertical and diagonal truss members intersect gusset plates at the lower-chord panel points, there is minor to moderate crevice corrosion and localized loss of cross-sectional area ("section loss") in most truss members. Section losses are typically greater at the inboard sides of the connections, i.e., at the gusset plates closest to the travelway. The greatest section losses found among all truss verticals was 15% on Span 1 Right Truss member U3L3. The greatest section losses found among all truss diagonals was 9% on Span 2 Left Truss member U1L2. See Table 2.

Figure 10: Typical truss bottom chord

Along the truss bottom chords, there is intermittent crevice corrosion and section loss in each truss panel (Fig. 10). Some panels have their worst losses at the panel point gusset plates, others occur between panel points. The greatest section losses found among all truss bottom chords was 27% on Span 1 Right Truss member L0L1. Similar losses were encountered at Span 1 Left Truss member L6L7 (26% SL); and Span 2 Left Truss member L2L3 (26% SL). See Table 2.

Lower Trusses – Truss Gusset Plates:

Truss gusset plates are typically in good condition throughout, with generally minor and/or localized non-critical corrosion and section loss. Most have minor distortions along the upper edges due to pack rust at the truss verticals and diagonals, and in some cases due to distortions carried into the plates from the most severely impact-damaged diagonals. If the trusses are to remain in service, removal of selected distortions should be considered. Most of these locations are where the degree of pack rust and/or impact damage would already warrant disassembly and cleaning of the connection.

Figure 9: Typical lower chord gusset plate conditions (Span 2 Left Truss at L3).

In a few locations, gusset plates have light pitting along horizontal lines just above the upper angles of the bottom chords – most of this is minor and predates the current paint system. Since the lower

panel point gusset plates are attached on the outsides of the members, this pitting is typically on the interior surfaces of the gusset plates. Ultrasonic thickness measurements were taken at a few plates appearing to have the most pronounced and continuous lines of pitting anywhere on the bridge. Locations and section loss (SL) were as follows:

1. Span 2 Left Truss at Panel Point L3:
    a. Left (outboard) plate: Begin and End halves: 0% SL (despite pitting).
    b. Right (inboard) plate: Begin half: 0% SL; End half: 12% SL.
2. Span 2 Right Truss at Panel Point L6:
    a. Left (inboard) plate: Begin half: 3% SL; End half: 2% SL.
    b. Right (outboard) plate: Begin half: 3% SL; End half: 10% SL.

Also along the bottom chord, most inboard truss gusset plates have a line of deep pitting and active corrosion just above the intersection with the horizontal gusset plates for the lower lateral (under-deck) bracing. This is located in a horizontal plane corresponding to the centerline of the intersecting bottom chord members, with connecting rivets above and below the pitting - so that the chord member itself effectively knits the gusset plate across the pitted zone. This condition is considered as not seriously compromising the truss. Similar localized pitting occurs where the tops of the floorbeams intersects the inboard plates. In these locations, the truss verticals similarly knit the gusset plate across the pitted regions. See Figure 12.

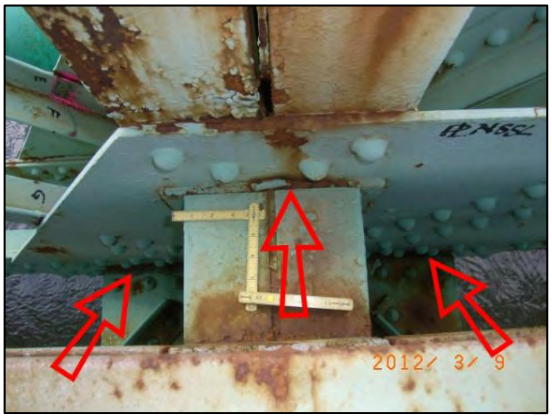

Figure 10: Typical pitting lines, from top


Figure 11: Utility brackets welded to gusset plates (Left side shown, Right side similar)

Finally, almost all bottom chord gusset plates have utility support brackets welded to the outboard plate, along both sides of the bridge. These brackets support a municipal sewer line along the left (upstream) side of the bridge, and a natural gas main on the other. Each bracket has a vertical leg welded directly to the outboard truss gusset plate with intermittent field-made fillet welds. No cracked or broken welds were observed in these connections; however, these welds compromise the gusset plates, the truss, and thus each entire span by creating points of stress concentration, introducing potential point sources for propagation of fatigue cracks, and altering the old gusset plates metallurgically due to the heat of welding. If the existing trusses are to remain in service, removal and post-removal testing of these welds should be considered as part of any superstructure repair scheme. *(The exception is at Span 1 panel point L0 in the left and right trusses).

Stringers:

Stringer beams typically exhibit moderate to serious deterioration throughout the bridge, with few instances of severe deterioration (Fig 14). All 144 stringers were assessed on a binary basis to distinguish between members with or without relatively obvious severe deterioration. As these members were inspected through the open grating deck rather than hands-on, our assessment is mostly qualitative, with only a rough and not necessarily complete estimation of the magnitude of deterioration. See Table 3 for a summary of findings.

Figure 12: Stringer deterioration (from 2011 NHDOT (Draft) Inspection Report, Image No, D077-28)

Floorbeams:

Floorbeams typically exhibit moderate to serious deterioration throughout the bridge, with few instances of severe deterioration (Fig 15). All 16 floorbeams were assessed on a binary basis to distinguish between members with or without relatively obvious severe deterioration. As these members were inspected through the open grating deck rather than hands-on, our assessment is mostly qualitative, with only a rough and not necessarily complete estimation of the magnitude of deterioration. See Table 4 for a summary of findings.

Figure 13: Floorbeam deterioration (from 2011 NHDOT (Draft) Inspection Report, Image No, D077-62)

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Sewalls Falls Bridge
2012 In-Depth Inspection
DATA TABLES

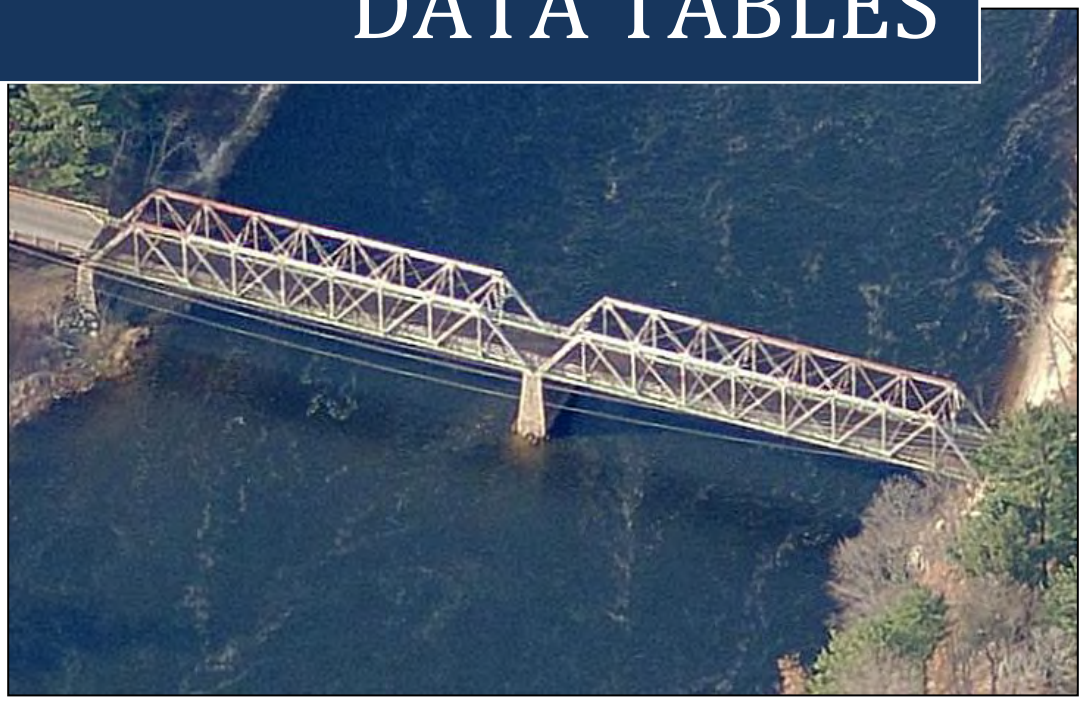
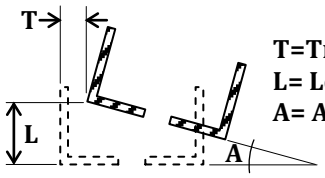


Table 1:

OBSERVED IMPACT DAMAGE LOCATIONS & MEASUREMENTS

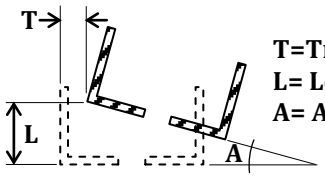


T=Transverse offset
L= Longitudinal offset
A= Angle of axial rotation

Span	Truss	Member	Deformations at Apparent Point of Impact (APOI)			Distance from APOI to Nearest Panel Point	Photo No. <*filenames*>
			Longitudinal Offset	Transverse Offset	Approximate Axial Rotation[1,2]		
1	Left	L0U1	Local damage only: Bottom flange of inboard channel bent up 1¾" over 15" length, and adjoining web slightly distorted; Top plate edge bent up ½" over 9" length.			13.4' to L0	Photos 5, 6 <12-0003, 04>
1	Left	U2L2	None	None	3° CCW	Forces from lower sway bracing	Photos 7, 8 <12-0008, 09>
1	Left	L4U5	2¼"	¾"	8° CW	5.3' to L4	Photos 9, 10 <12-0016, 19>
1	Left	U4L5	¼"	¼"	None noted	6.5' to L5	(None) <12-0020, 29>
1	Left	U5L6 Inboard Member	2¼"	1"	1° CCW	5.5' to L6	Photo 11 <12-0024a>
1	Left	U5L6 Outboard Member	¼"	¼"			
1	Left	L5U6 Inboard Member	4⅛"	1⅛"	15° CCW	5.5' to L5	Photos 12-14 <12-0030-32>
1	Left	L5U6 Outboard Member	¼"	1⅝"			
1	Left	L6U7	Localized damage only: Bottom inboard angle leg is bent 1" over a 5" length.			5.5' to L6	(None)
1	Right	L1U1	Local damage only: Inboard railing bracket is detached and the angle leg is bent ½" over 6" length.			At rail post connections.	(None)
1	Right	L3U4 Inboard Member	5¼"	2¼"	21° CCW	4.5' to L3	Photos 15, 16 <12-0047a, 48>
1	Right	L3U4 Outboard Member	⅜"	1⅜"			

Table 1:

OBSERVED IMPACT DAMAGE LOCATIONS & MEASUREMENTS



T=Transverse offset
L= Longitudinal offset
A= Angle of axial rotation

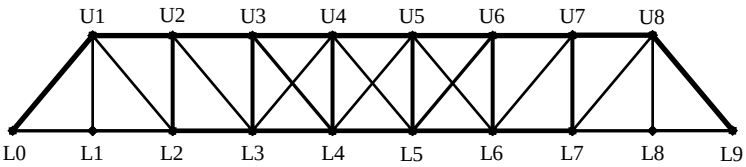
Span	Truss	Member	Deformations at Apparent Point of Impact (APOI)			Distance from APOI to Nearest Panel Point	Photo No. *<filenames>*
			Longitudinal Offset	Transverse Offset	Approximate Axial Rotation[1,2]		
1	Right	U4L5 Inboard Member	6"	2¾"	18° CCW	6.8' to L5	Photos 17, 18 <12-0053a, 55>
1	Right	U4L5 Outboard Member	⅝"	1½"			
1	Right	U5L6 Inboard Member	⅝"	0"	None	8.7' to L6	(None) <12-0060>
2	Left	U5L6 Inboard Member	3¾"	1¾"	2° CCW	5' to L6	Photos 19, 20 <12-0071a, 72>
2	Left	U5L6 Outboard Member	¾"	1½"			
2	Right	U5L6	½"	¼"	None	10.8' to L6	(None) <12-0102, 103>

Table 1 Notes:

1. This is an estimation of the maximum amount of axial twist of the whole member section at the apparent point of impact (APOI).
2. CW & CCW indicate clockwise and counter-clockwise, respectively, in plan view (looking from upper end to lower end of member).

Table 2:

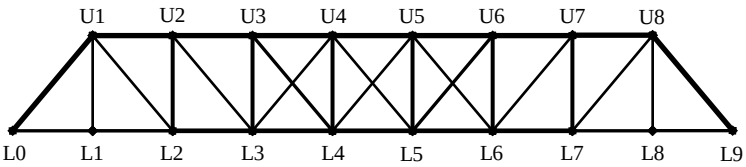
TRUSS MEMBER SECTION LOSSES[1]



Member	Type	Size[2]	Span 1 Left Truss	Span 1 Right Truss	Span 2 Left Truss	Span 2 Right Truss
L0U1 & U8L9	End Posts	2-C12 x 25 plus plate 18 x 3/8"	No significant section loss (NSSL), or impact damage			
U1 through U8	Top Chords	2-C12 x 20.5 or 35 plus plate 18 x 3/8"				
L0L1 & L1L2	Bottom Chord	4-L5 x 3 x 5/16"	4%	**27% Photo 21, 22**	3%	3%
L2L3	Bottom Chord	4-L5 x 3½ x 5/16" plus 2-Pl. 11 x 5/16"	17%	15%	**26% Photo 23, 24**	16%
L3L4	Bottom Chord	4-L5 x 3½ x 7/16" plus 2-Pl. 11 x 3/8"	5%	10%	10%	**11% Photo 25, 26**
L4L5	Bottom Chord	4-L5 x 3½ x ½" plus 2-Pl. 11 x 3/8"	NSSL	NSSL	≤5%	**5% Photo 27, 28**
L5L6	Bottom Chord	4-L5 x 3½ x 7/16" plus 2-Pl. 11 x 3/8"	**18% Photo 29, 30**	9%	8%	10%
L6L7	Bottom Chord	4-L5 x 3½ x 5/16" plus 2-Pl. 11 x 5/16"	**26% Photo 31, 32**	24%	10%	18%
L7L8 & L8L9	Bottom Chord	4-L5 x 3 x 5/16"	NSSL	1%	**13%**	9%
U1L1	FB Hanger	4-L3 x 3 x 5/16"	NSSL			
U2L2	Vertical	4-L5 x 3½ x 3/8"	NSSL	NSSL	NSSL	NSSL
U3L3	Vertical	4-L5 x 3 x 5/16"	7%	**15% Photo 33, 34**	10%	6%
U4L4	Vertical		NSSL	9%	**13% Photo 35, 36**	9%
U5L5	Vertical		**9%**	7%	*≤5%	*≤5%
U6L6	Vertical		NSSL	**10% Photo 37, 38**	*≤6%	9%
U7L7	Vertical	4-L5 x 3½ x 3/8"	NSSL	*≤4%	*≤2%	***≤5%**
U8L8	FB Hanger	4-L3 x 3 x 5/16"	NSSL			
U1L2	Diagonal	4-L4 x 3 x 7/16"	NSSL	NSSL	≤1%	**5% Photo 39, 40**

Table 2:

TRUSS MEMBER SECTION LOSSES[1]



Member	Type	Size[2]	Span 1 Left Truss	Span 1 Right Truss	Span 2 Left Truss	Span 2 Right Truss
U2L3	Diagonal	4-L4 x 3 x 5/16"	NSSL	3%	3%	**5% Photo 41, 42**
U3L4	Diagonal	2-L5 x 3 x 5/16"	NSSL	**7%**	4%	4%
L3U4	Counter	2-L3 x 3 x 5/16"	NSSL	**6% Photo 43, 44**	3%	4%
U4L5	Counter		NSSL			
L4U5	Counter		NSSL			
U5L6	Counter		1%	2%	*≤4%	**6%**
L5U6	Diagonal	2-L5 x 3 x 5/16"	**9% Photo 45, 46**	5%	3%	**12% Photo 47, 48**
L6U7	Diagonal	4-L4 x 3 x 5/16"	1%	*≤5%	4%	**8% Photo 49, 50**
L7U8	Diagonal	4-L4 x 3 x 7/16"	NSSL	***≤5%**	*1%	NSSL

Table 2 Notes:

1. Section Loss = percentage of material lost through corrosion compared to the original cross sectional area. Numbers presented as "≤" are calculated from visually-estimated losses. Numbers in **bold text** indicate losses which control among all symmetrically equivalent members.
2. Member Size is that shown on the 1915 shop drawings. Field checks indicate the 1915 shop drawings are accurate.
3. * indicates member also has significant impact damage.

Table 3:

STRINGER CONDITIONS[1]

Span	Floor Panel	Stringer #	Description of Losses[2]
1	1	4	9.5' from the Begin approach, Top Flange Cover Plate :30% SL, Web 50% SL
		5 & 6	8.0' from the Begin approach, Top Flange Cover Plate 100% SL 7.5' from the Begin approach, Bottom Flange: 30% SL
	2	5	9.0' from Floorbeam 1, Web: 50% loss, Top Flange: 20% SL
	3	3	5' from Floorbeam 2, Web: 30% SL
		6	2' from Floorbeam 3: Web: 80% SL over a 2' length
		7	2' from Floorbeam 3: Web: 20% SL
	4	4	2’ from Floorbeam 3, Web: 45% SL
		5	2’ from Floorbeam 4, Web: 30% SL
		6	2’ from Floorbeam 4, Web: 60% SL
		7	2’ from Floorbeam 4, Web: 90% SL, approximately 8”x4” hole in the web.
	5	3	2’ from Floorbeam 4, Web: 40% SL
		5	2’ from Floorbeam 5, Web: 20% SL
	8	6	2’ from Floorbeam 7, Web:60% SL, approximately 4”x4” hole in web
	9	4	3’ from Floorbeam 8, Web: 30% SL
		5	2’ from Floorbeam 8, Web: 30% SL
		6	2.5’ from Floorbeam 8, Web: 25% SL, Top Flange Cover Plate: 20% SL 10.8’ from Floorbeam 8, Web 45% SL over a 1’ length, Top Flange Cover Plate 35% SL, Top Flange 10% SL
		7	0.5’ from Floorbeam 8, Web: 40% SL, 2.5’ from Floorbeam 8, Web: 30% SL
2	1	2	0.5’ From Floorbeam 0, Web: 35%SL
		3	1.0’ from Floorbeam 0, Top Flange: 30% SL
		5	0.5’ from Floorbeam 1, Web: 25% SL
		7	1.0’ from Floorbeam 1, Web: 30% SL
	2	4	2.0’ from Floorbeam 2, Web: 20% SL
		5	1.0’ from Floorbeam 2, Web: 30% SL
		6	1.0’ from Floorbeam 2, Web: 40% SL
	3	3	2.0’ from Floorbeam 2, Web: 50% SL
		5	2.0’ from Floorbeam 2, Web: 25% SL
	7	5	9.3’ from Floorbeam 6, Top Flange: 15% SL over 8” length
	8	5	5.0’ from Floorbeam 7, Top Flange: 30% SL over 8” length 1.0’ from Floorbeam 8, Top Flange: 35% SL over 3” length
	9	3	10.0’ from Floorbeam 8, Bottom Flange: 40% SL
		5	An average of 40% SL along entire Top Flange, with a maximum of 70% SL at two locations; 1.0’ from Floorbeam 8 and 11.1’ from Floorbeam 8

1.) Stringers are numbered from left to right looking NNE
2.) SL= Section Loss

Table 4:

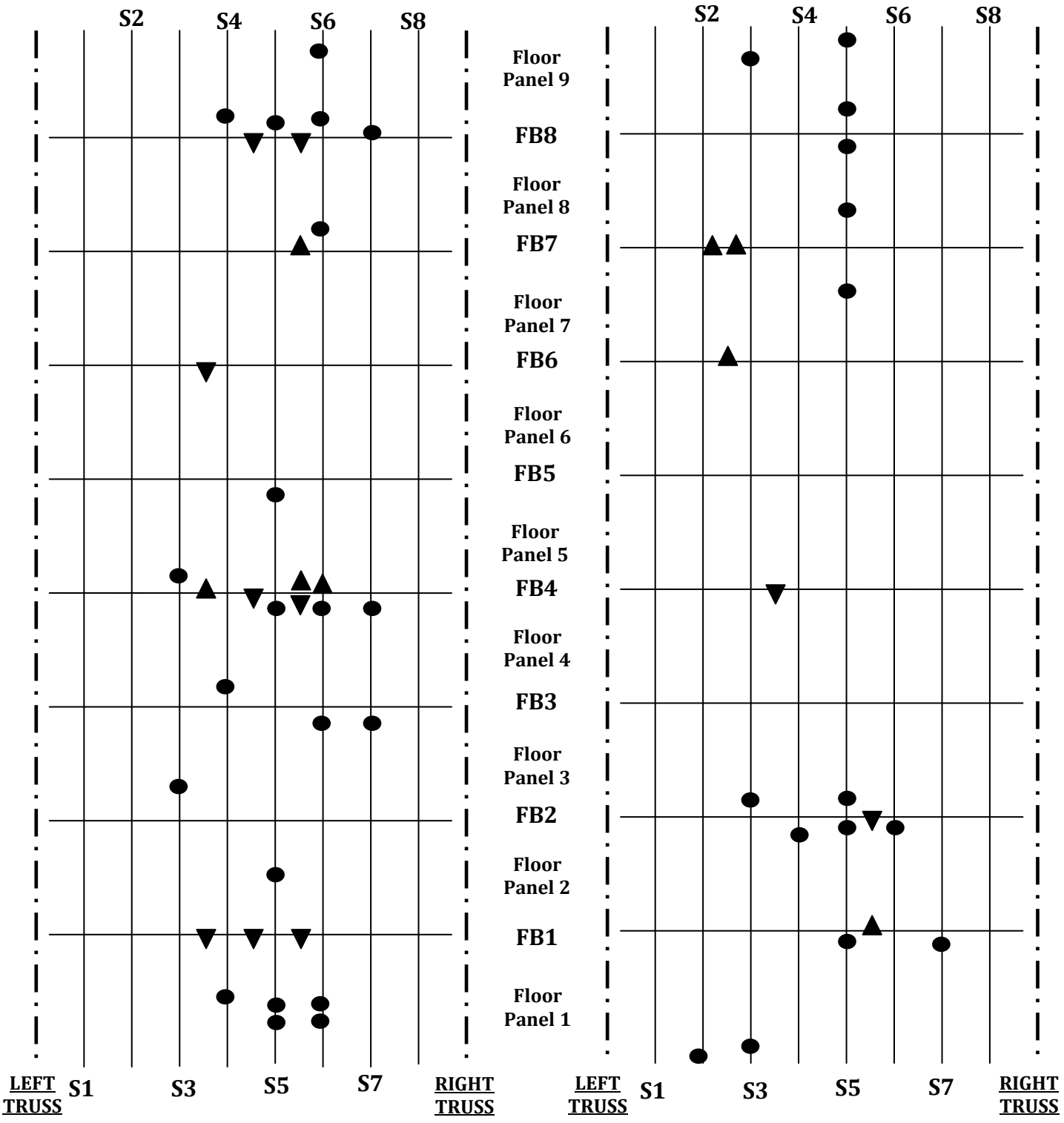
FLOORBEAM CONDITIONS[1]

Span	Floorbeam #	Description of Losses[2]
1	1	Begin side bottom flange, holes between Stringers 3-6. 80% SL between Stringers 3 and 4, 30% SL between Stringers 4 and 5, and 50 % SL between Stringers 5 and 6
	4	Begin side bottom flange, multiple holes in between stringers 4 and 6, maximum SL of 50%. End side bottom flange, holes between Stringers 3 and 4 (60% SL) and Stringers 5 and 6 (35% SL) End side bottom flange, holes 6"-8" in length under stringer 6, maximum SL of 70%.
	6	Begin side bottom flange, holes between Stringers 3 and 4, 90% SL
	7	End side bottom flange, gauges between Stringers 5 and 6, 25% SL
	8	Begin side bottom flange, between Stringers 4 and 6, maximum SL of 60%
2	1	End side bottom flange, holes between Stringers 5 and 6, maximum SL of 70%
	2	Begin side bottom flange, holes between Stringers 5 and 6, 70% SL
	4	Begin side bottom flange, holes between Stringers 3 and 4, 30% SL
	6	End side bottom flange, holes between Stringers 2 and 3, 80% SL
	7	End side bottom flange, holes over a length of 18” between Stringers 2 and 3, 50% SL

1.) Floorbeam 0 is the southernmost Floorbeam
2.) SL= Section Loss; Stringers are numbered from left to right looking NNE.

FLOOR SYSTEM FRAMING
(Locations of Observed Serious Section Losses in Tables 3 & 4)

●STRINGER LOSS ▼FLOORBEAM LOSS



Sewalls Falls Bridge
2012 In-Depth Inspection
CONDITION PHOTOS

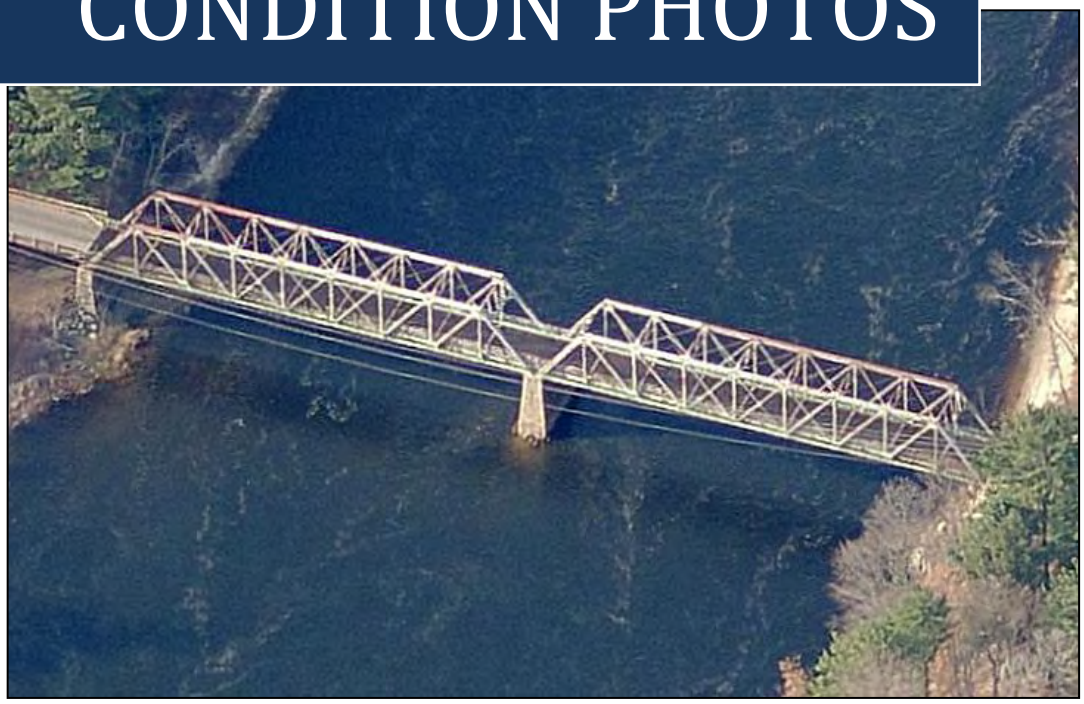


Photo 1: Span 1 Right Truss at U1: Pack rust at top chord and bracing gusset plate <12-0042>

Photo 2: Span 1 Left Truss at U6: Pack rust at top chord and bracing gusset plate <12-0033>

Photo 3: Span 2 Left Truss at U1: Pack rust at top chord and bracing gusset plate. <12-0066a>

Photo 4: Span 2 Right Truss at U7: Pack rust at top chord and bracing gusset plate. <12-0105>

Photo 5: Span 1 Left Truss at L0U1: Localized impact damage <12-0003>

Photo 6: Span 1 Left Truss at L0U1: Localized impact damage <12-0004>

Photo 7: Span 1 Left Truss at U2L2 (Begin side looking up): Impact damage: axial rotation <12-0008>

Photo 8: Span 1 Left Truss at U2L2 (Right side looking up): Impact damage: axial rotation <12-0009>

Photo 9: Span 1 Left Truss - L1U2: Impact damage. <12-0016a>

Photo 10: Span 1 Left Truss - L1U2: Impact damage. <12-0019>

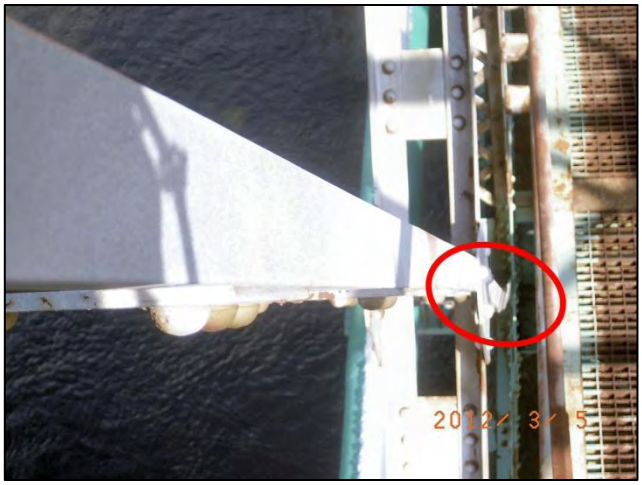


Photo 11: Span 1 Left Truss at U5L6: Impact damage in lower half, looking from U5 <12-0024a>

Photo 12: Span 1 Left Truss – L5U6: Impact damage <12-0030>

Photo 13: Span 1 Left Truss – L5U6: Impact damage in lower half of member <12-0031>

Photo 14: Span 1 Left Truss – L5U6: Impact damage looking back from U6 <12-0032a>

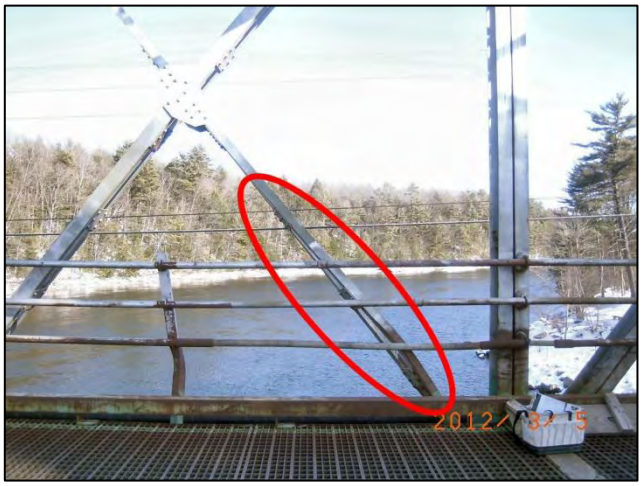


Photo 15: Span 1 Right Truss - L3U4: Impact damage <12-0047a>

Photo 16: Span 1 Right Truss – L3U4: Impact damage in lower half, looking toward L3 <12-0048>

Photo 17: Span 1 Right Truss – U4L5: Impact damage <12-0053a>

Photo 18: Span 1 Right Truss – U4L5: Impact damage, looking toward L5 <12-0055>

Photo 19: Span 2 Left Truss - U5L6: Impact damage. <12-0071a>

Photo 20: Span 2 Left Truss - U5L6: Impact damage, looking toward L6. <12-0072>

Photo 21: Span 1 Right Truss - L0L1 at L0, from Right: Section loss <12-0202a>

Photo 22: Span 1 Right Truss - L0L1 at L0, looking into L0: Section loss <12-0203>

Photo 23: Span 2 Left Truss - L2L3 looking from L2: Section loss <12-0314>

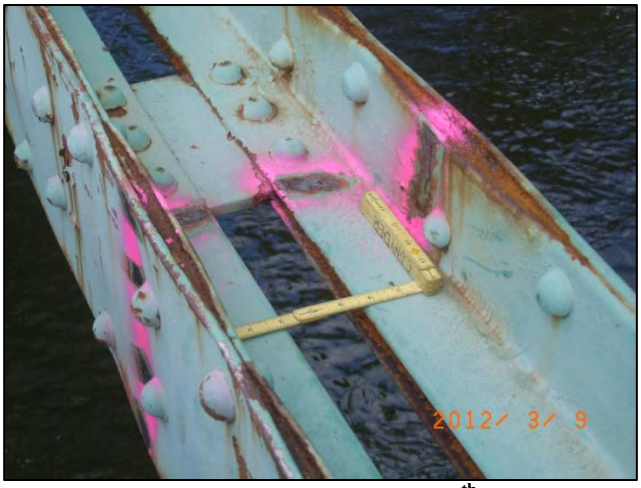


Photo 24: Span 2 Left Truss - L2L3 at 5th tie plate: Section loss <12-0315>

Photo 25: Span 2 Right Truss - L3L4 looking toward panel point L4: Section loss <12-0413>

Photo 26: Span 2 Right Truss - L3L4 between tie plates #2 & #3: Section loss <12-0413>

Photo 27: Span 2 Right Truss - L4L5 looking toward panel point L5: Section loss <12-0423>

Photo 28: Span 2 Right Truss - L4L5 looking back at panel point L4: Section loss <12-0424>

Photo 29: Span 1 Left Truss - L5L6 at tie plate #5 (near L6): Section loss <12-0169>

Photo 30: Span 1 Left Truss - L5L6 at tie plate #5, underside: Section loss <12-0172a>

Photo 31: Span 1 Left Truss - L6L7 at tie plate #3 (mid-panel): Section loss <12-0182>

Photo 32: Span 1 Left Truss - L6L7 at tie plate #3, underside: Section loss <12-0184>

Photo 33: Span 1 Right Truss - U3L3 at L3: Section loss <12-0227>

Photo 34: Span 1 Right Truss - U3L3 at L3: Section loss <12-0229>

Photo 35: Span 2 Left Truss - U4L4 at L4: Section loss <12-0333>

Photo 36: Span 2 Left Truss - U4L4 at L4: Section loss <12-0334>

Photo 37: Span 1 Right Truss – U6L6 at L6: Section loss <12-0264>

Photo 38: Span 1 Right Truss – U6L6 at L6: Section loss <12-0267>

Photo 39: Span 2 Right Truss - U1L2 at L2: Section loss <12-0396>

Photo 40: Span 2 Right Truss - U1L2 at L2: Section loss <12-0397>

Photo 41: Span 2 Right Truss - U2L3 at L3: Section loss <12-0406>

Photo 42: Span 2 Right Truss - U2L3 at L3: Section loss <12-0407>

Photo 43: Span 1 Right Truss - L3U4 at L3: Section loss <12-0230>

Photo 44: Span 1 Right Truss - L3U4 at L3: Section loss <12-0232>

Photo 45: Span 1 Left Truss - L5U6 at L5: Section loss <12-0166>

Photo 46: Span 1 Left Truss - L5U6 at L5: Section loss <12-0167>

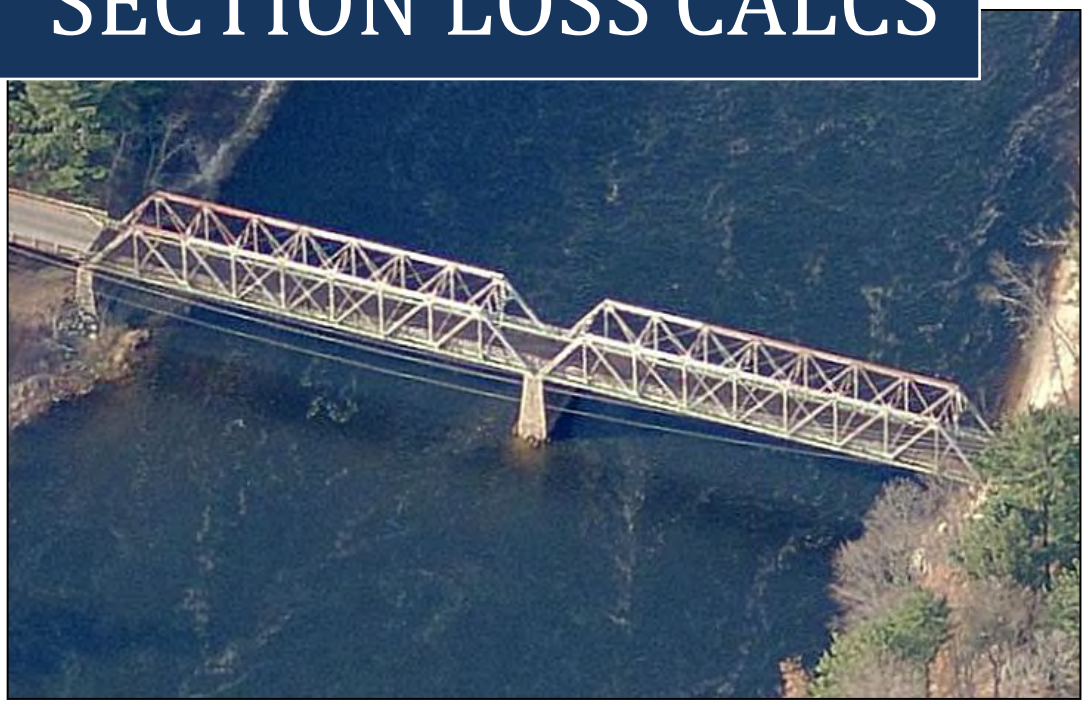
Photo 47: Span 2 Right Truss - L5U6 at L5: Section loss. <12-0431>

Photo 48: Span 2 Right Truss - L5U6 at L5: Section loss. <12-0432>

Photo 49: Span 2 Right Truss – L6U7 at L6: Section loss. <12-0443>

Photo 50: Span 2 Right Truss - L6U7 at L6: Section loss. <12-0445>

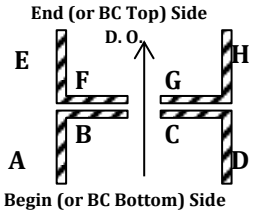
Sewalls Falls Bridge
2012 In-Depth Inspection
SECTION LOSS CALCS



CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____

*****Book dimensions were used when d-meter readings exceed the nominal thickness of the member.**



Section Loss Summary- Span 1 Truss 1

L1L2 @ L1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.306			0.313	0.317	0.297	0.313	0.286		
	0.310			0.313	0.278	0.312	0.250	0.266		
	0.313			0.313	0.261			0.313		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.310	0.313	0.313	0.313	0.285	0.305	0.281	0.288		
Section Loss (%)	1%	0%	0%	0%	9%	3%	10%	8%	-	-
Gross Loss	4%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
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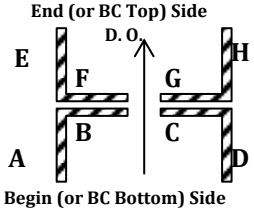
Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

L2L3 @ Tie Plate 1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.264	0.241	0.139	0.274	0.167	0.157
					0.271	0.291	0.224	0.284	0.281	0.280
					0.279			0.279	0.280	0.293
									0.224	0.299
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.313	0.313	0.313	0.313	0.271	0.266	0.182	0.279	0.238	0.257
Section Loss (%)	0%	0%	0%	0%	13%	15%	42%	11%	24%	18%
Gross Loss	14%									

Member	L5x3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
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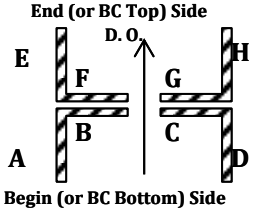
Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

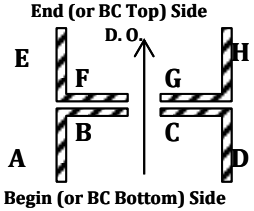
L2L3 @ Tie Plate 3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.304			0.285	0.245	0.193	0.201	0.275	0.132	0.181
	0.293			0.278	0.258	0.225	0.226	0.277	0.231	0.283
	0.291			0.287	0.268			0.266	0.281	0.299
									0.274	0.241
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.296	0.313	0.313	0.283	0.257	0.209	0.214	0.273	0.230	0.251
Section Loss (%)	5%	0%	0%	9%	18%	33%	32%	13%	27%	20%
Gross Loss	17%									

Member	L5x3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

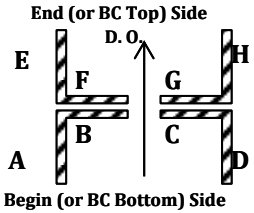
U3L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.318		0.226	0.297	0.305		0.234	0.292		
	0.311		0.219	0.298	0.300		0.209	0.294		
	0.312			0.302	0.312			0.304		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.314	0.313	0.223	0.299	0.306	0.313	0.222	0.297		
Section Loss (%)	0%	0%	29%	4%	2%	0%	29%	5%	-	-
Gross Loss	7%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

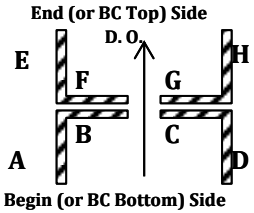
L3L4 @ L4

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)						0.279	0.271			
						0.333	0.246			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.438	0.438	0.438	0.438	0.438	0.306	0.259	0.438	0.375	0.375
Section Loss (%)	0%	0%	0%	0%	0%	30%	41%	0%	0%	0%
Gross Loss	5%									

Member	L5x3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

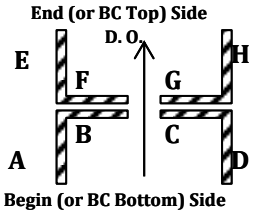
U5L5 @ L5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)		0.310	0.212			0.253	0.230	0.285		
		0.246	0.233			0.311	0.242	0.266		
								0.295		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.313	0.278	0.223	0.313	0.313	0.282	0.236	0.282		
Section Loss (%)	0%	11%	29%	0%	0%	10%	24%	10%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

L5U6 @ L5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.291			0.233						
	0.293			0.228						
	0.297			0.246						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.294	0.313	0.313	0.236	0.000	0.000	0.000	0.000		
Section Loss (%)	6%	0%	0%	25%	0%	0%	0%	0%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
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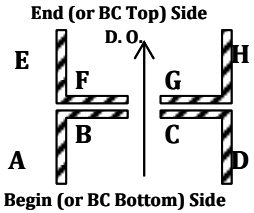
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

L5L6 @ Tie Plate 5

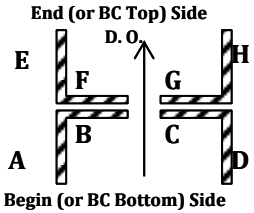
Leg	A	*B	* C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.428	0.361	0.291	0.424	0.367	0.362	0.274	0.395	0.320	0.331
	0.417			0.415	0.370	0.360	0.307	0.390	0.325	0.324
					0.376			0.227	0.320	0.319
									0.190	0.312
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.423	0.361	0.291	0.420	0.371	0.361	0.291	0.337	0.289	0.322
Section Loss (%)	3%	17%	33%	4%	15%	17%	34%	23%	23%	14%
Gross Loss	18%									

Member	L5x3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

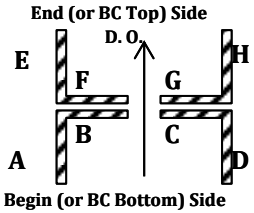
U5L6 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.313			0.285		
					0.313			0.302		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.313	0.313	0.313	0.294		
Section Loss (%)	0%	0%	0%	0%	0%	0%	0%	6%	-	-
Gross Loss	1%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

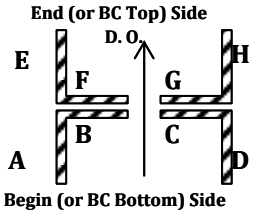
L6U7 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313			0.306	0.313			0.310		
	0.313			0.288	0.313			0.313		
	0.313			0.289						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.313	0.313	0.313	0.294	0.313	0.313	0.313	0.311		
Section Loss (%)	0%	0%	0%	6%	0%	0%	0%	0%	-	-
Gross Loss	1%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 1

L6L7 @ Tie Plate 3

Leg	A	* B	* C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.272	0.203	0.173	0.257	0.259	0.181	0.180	0.288	0.162	0.192
	0.275			0.256	0.288	0.224	0.162	0.257	0.295	0.295
					0.295		0.177	0.246	0.280	0.271
									0.185	0.141
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.274	0.203	0.173	0.257	0.281	0.203	0.173	0.264	0.231	0.225
Section Loss (%)	12%	35%	45%	18%	10%	35%	45%	16%	26%	28%
Gross Loss	26%									

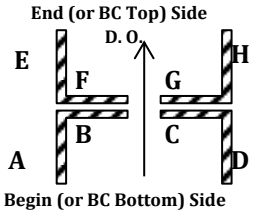
Member	L5x3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____

*****Book dimensions were used when d-meter readings exceed the nominal thickness of the member.**



Section Loss Summary- Span 1 Truss 2

L0L1 @ L0

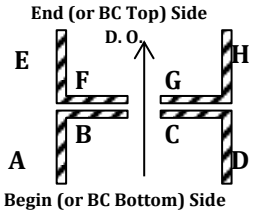
Leg	*A	* B	*C	*D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.296	0.185	0.214	0.210	0.310	0.134	0.220	0.202		
					0.303	0.203	0.207	0.200		
					0.276	0.217		0.227		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.296	0.185	0.214	0.210	0.296	0.185	0.214	0.210		
Section Loss (%)	5%	41%	32%	33%	5%	41%	32%	33%	-	-
Gross Loss	26%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

L0L1 @ L1

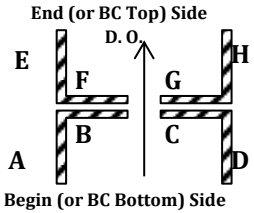
Leg	A	* B	* C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.240	0.163	0.179	0.313	0.275	0.151	0.125	0.323		
	0.312			0.226	0.284	0.139	0.171	0.212		
	0.313			0.207	0.204	0.198	0.242	0.279		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.288	0.163	0.179	0.249	0.254	0.163	0.179	0.271		
Section Loss (%)	8%	48%	43%	20%	19%	48%	43%	13%	-	-
Gross Loss	27%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

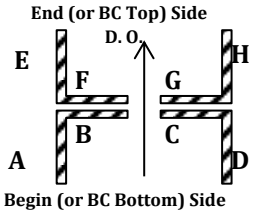
L2L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.289			0.253	0.284	0.206	0.141	0.313	0.264	0.263
	0.292			0.264	0.279	0.193	0.202	0.293	0.298	0.304
				0.286	0.285	0.160	0.209	0.302	0.293	0.290
									0.275	0.111
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.291	0.313	0.313	0.268	0.283	0.186	0.184	0.303	0.283	0.242
Section Loss (%)	7%	0%	0%	14%	10%	40%	41%	3%	10%	23%
Gross Loss	15%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

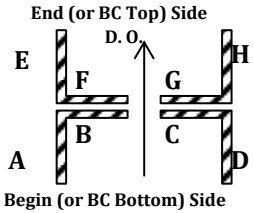
U2L3 @L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313			0.312	0.252			0.293		
	0.309			0.313	0.277			0.298		
	0.277			0.313	0.297			0.301		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.300	0.313	0.313	0.312	0.275	0.313	0.313	0.297		
Section Loss (%)	4%	0%	0%	0%	12%	0%	0%	5%	-	-
Gross Loss	3%									

Member	L4x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.09
Original Area of Steel (in^2)	8.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

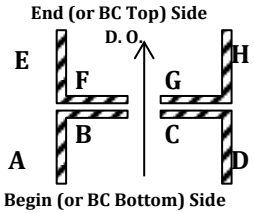
U3L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.291	0.203	0.313	0.311	0.304	0.292	0.313	0.271		
	0.279	0.218	0.293	0.261	0.278	0.212	0.299	0.272		
	0.266			0.260	0.274	0.000		0.291		
Wane						0.313				
In Plane Rivet Hole										
Average Section Remaining	0.279	0.211	0.303	0.277	0.285	0.168	0.306	0.278		
Section Loss (%)	11%	33%	3%	11%	9%	46%	2%	11%	-	-
Gross Loss	15%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

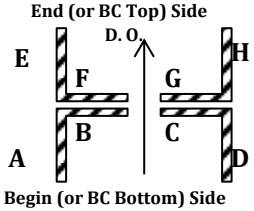
L3U4 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.271			0.272						
	0.266			0.269						
	0.261			0.288						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.266	0.313	0.313	0.276	0.000	0.000	0.000	0.000		
Section Loss (%)	15%	0%	0%	12%	0%	0%	0%	0%	-	-
Gross Loss	6%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

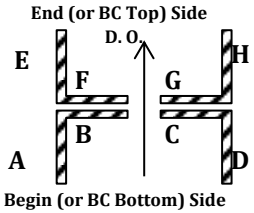
L3L4 @ 8.2' From L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.393			0.406	0.419	0.330	0.309	0.420	0.295	0.338
	0.381			0.396	0.402	0.422	0.346	0.402	0.367	0.364
					0.411			0.415	0.258	0.353
									0.335	0.319
Wane									0.125	
In Plane Rivet Hole										
Average Section Remaining	0.387	0.438	0.438	0.401	0.411	0.376	0.328	0.412	0.314	0.344
Section Loss (%)	12%	0%	0%	8%	6%	14%	25%	6%	16%	8%
Gross Loss	10%									

Member	L5x3-1/2x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

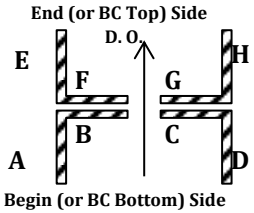
U3L4 @ L4

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.271			0.313		
					0.255			0.298		
					0.244			0.289		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.257	0.313	0.313	0.300		
Section Loss (%)	0%	0%	0%	0%	18%	0%	0%	4%	-	-
Gross Loss	7%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

U4L4 @ L4

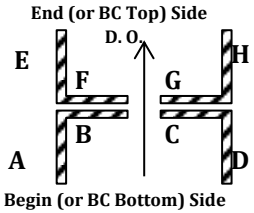
Leg	A	B	C	D	E	*F	*G	H	Left Plate	Right Plate
Measured Thickness (in)	0.271	0.230	0.304	0.299	0.303	0.236	0.298			
	0.259	0.242	0.292	0.297						
	0.269			0.313						
Wane		0.188								
In Plane Rivet Hole										
Average Section Remaining	0.266	0.236	0.298	0.303	0.303	0.236	0.298	0.313		
Section Loss (%)	15%	24%	5%	3%	3%	24%	5%	0%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

U5L5 @ L5

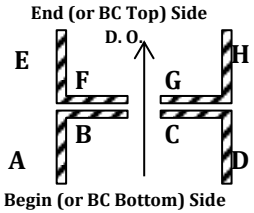
Leg	A	B	C	D	E	*F	*G	*H	Left Plate	Right Plate
Measured Thickness (in)	0.297	0.232	0.297	0.301		0.229	0.307	0.307		
	0.288	0.225	0.313	0.306						
	0.294			0.313						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.293	0.229	0.305	0.307	0.313	0.229	0.307	0.307		
Section Loss (%)	6%	27%	2%	2%	0%	27%	2%	2%	-	-
Gross Loss	7%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

*Values not taken at these legs, visually similar section losses to opposite member.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

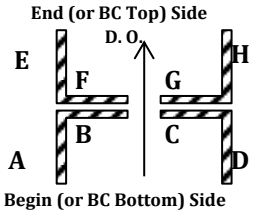
L5U6 @ L5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.302			0.274						
	0.313			0.272						
	0.308			0.248						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.308	0.313	0.313	0.265	0.000	0.000	0.000	0.000		
Section Loss (%)	2%	0%	0%	15%	0%	0%	0%	0%	-	-
Gross Loss	5%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

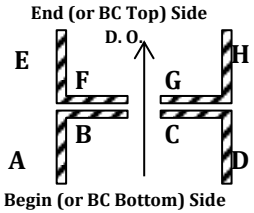
L5L6 @ Tie Plate 2

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.430	0.352	0.357	0.429	0.436	0.351	0.312	0.427	0.373	0.344
	0.422	0.342	0.332	0.419	0.420	0.338	0.308	0.418	0.365	0.366
					0.418			0.428	0.364	0.362
									0.359	0.297
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.426	0.347	0.345	0.424	0.425	0.345	0.310	0.424	0.365	0.342
Section Loss (%)	3%	21%	21%	3%	3%	21%	29%	3%	3%	9%
Gross Loss	9%									

Member	L5x 3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

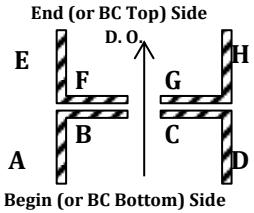
U5L6 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.313			0.293		
					0.284			0.310		
					0.291			0.313		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.296	0.313	0.313	0.305		
Section Loss (%)	0%	0%	0%	0%	5%	0%	0%	2%	-	-
Gross Loss	2%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

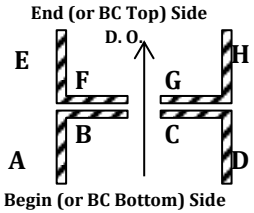
U6L6 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.296	0.272		0.292	0.307	0.191	0.305	0.287		
	0.281	0.246		0.279	0.265	0.235	0.313	0.285		
	0.277			0.313	0.253	0.201		0.311		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.285	0.259	0.313	0.295	0.275	0.209	0.309	0.294		
Section Loss (%)	9%	17%	0%	6%	12%	33%	1%	6%	-	-
Gross Loss	10%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

L6U7 @ L6

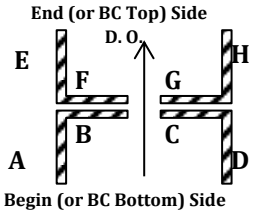
Leg	**A	B	C	** D	** E	F	G	**H	Left Plate	Right Plate
Measured Thickness (in)	0.297			0.281	0.297			0.281		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.297	0.313	0.313	0.281	0.297	0.313	0.313	0.281		
Section Loss (%)	5%	0%	0%	10%	5%	0%	0%	10%	-	-
Gross Loss	5%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

**Values visually estimated.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

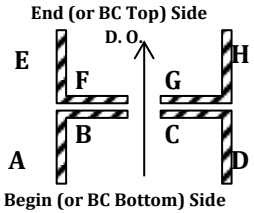
L6L7 @ Tie Plate 1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.266	0.254	0.216	0.268	0.275	0.289	0.211	0.294	0.247	0.235
	0.281	0.304	0.152	0.265	0.284	0.308	0.229	0.277	0.300	0.305
	0.271			0.293	0.282		0.281	0.271	0.307	0.275
									0.147	0.195
Wane		0.188							0.250	
In Plane Rivet Hole										
Average Section Remaining	0.273	0.279	0.184	0.275	0.280	0.299	0.240	0.281	0.250	0.253
Section Loss (%)	13%	11%	41%	12%	10%	4%	23%	10%	33%	33%
Gross Loss	24%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	18.48
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

U7L7 @ L7

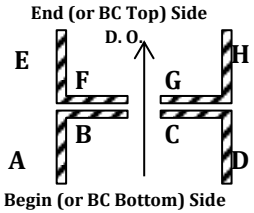
Leg	**A	** B	** C	D	** E	**F	**G	H	Left Plate	Right Plate
Measured Thickness (in)	0.297	0.281	0.297		0.297	0.281	0.297			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.297	0.281	0.297	0.313	0.297	0.281	0.297	0.313		
Section Loss (%)	5%	10%	5%	0%	5%	10%	5%	0%	-	-
Gross Loss	4%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

**Values visually estimated.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

L7U8 @ L7

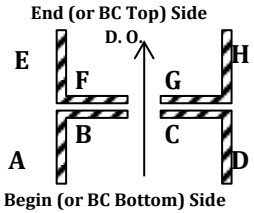
Leg	**A	B	C	** D	** E	F	G	**H	Left Plate	Right Plate
Measured Thickness (in)	0.394			0.416	0.394			0.394		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.394	0.438	0.438	0.416	0.394	0.438	0.438	0.394		
Section Loss (%)	10%	0%	0%	5%	10%	0%	0%	10%	-	-
Gross Loss	5%									

Member	L4x3x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.87
Original Area of Steel (in^2)	11.48
Rivet Hole (in)	0.81
# of Angles	4

**Values visually estimated.

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 1 Truss 2

L7L8 @ L8

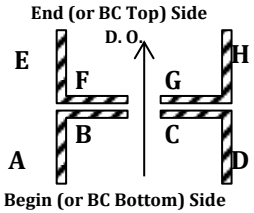
Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.293			0.313	0.304			0.313		
	0.310			0.309	0.308			0.297		
				0.313	0.313			0.293		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.302	0.313	0.313	0.311	0.308	0.313	0.313	0.301		
Section Loss (%)	4%	0%	0%	0%	1%	0%	0%	4%	-	-
Gross Loss	1%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____

*****Book dimensions were used when d-meter readings exceed the nominal thickness of the member.**



Section Loss Summary- Span 2 Truss 1

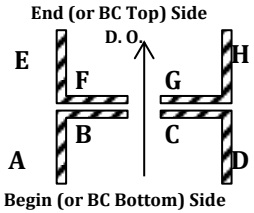
L1L2 @ L1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.312			0.310	0.282			0.301		
	0.303			0.312	0.287			0.288		
					0.283			0.297		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.308	0.313	0.313	0.311	0.284	0.313	0.313	0.295		
Section Loss (%)	2%	0%	0%	0%	9%	0%	0%	5%	-	-
Gross Loss	3%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

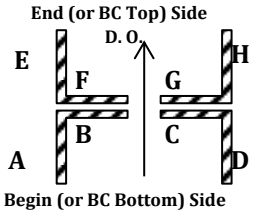
U2L2 @ L2

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)		0.352	0.274			0.350	0.293			
		0.353	0.236			0.364	0.319			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.375	0.353	0.255	0.375	0.375	0.357	0.306	0.375		
Section Loss (%)	0%	6%	32%	0%	0%	5%	18%	0%	-	-
Gross Loss	6%									

Member	L5x3x3/8
Nominal Member Thickness (in)	0.3750
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.86
Original Area of Steel (in^2)	11.44
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U1L2 @ L2

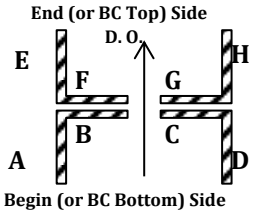
Leg	**A	B	C	**D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.416			0.416						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.416	0.438	0.438	0.416	0.438	0.438	0.438	0.438		
Section Loss (%)	5%	0%	0%	5%	0%	0%	0%	0%	-	-
Gross Loss	1%									

Member	L4x3x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.87
Original Area of Steel (in^2)	11.48
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

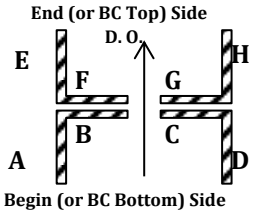
L2L3 @ Tie Plate 5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.285	0.312	0.278	0.272	0.174	0.224	0.292	0.293	0.081	0.195
	0.276		0.287	0.283	0.178	0.276	0.225	0.276	0.234	0.301
	0.290			0.291	0.205	0.312	0.173	0.267	0.187	0.290
									0.066	0.086
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.284	0.312	0.283	0.282	0.186	0.271	0.230	0.279	0.142	0.218
Section Loss (%)	9%	0%	10%	10%	41%	13%	26%	11%	55%	30%
Gross Loss	26%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U2L3 @ L3

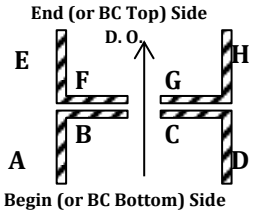
Leg	**A	B	C	**D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.297			0.297	0.313			0.280		
					0.303			0.287		
								0.299		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.297	0.313	0.313	0.297	0.308	0.313	0.313	0.289		
Section Loss (%)	5%	0%	0%	5%	2%	0%	0%	8%	-	-
Gross Loss	3%									

Member	L4x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.09
Original Area of Steel (in^2)	8.36
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

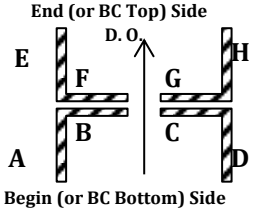
U3L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.303		0.231	0.299	0.266	0.310	0.221	0.292		
	0.296		0.246	0.264	0.297	0.313	0.236	0.280		
	0.292		0.265	0.285	0.305	0.313	0.209	0.287		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.297	0.313	0.247	0.283	0.289	0.312	0.222	0.286		
Section Loss (%)	5%	0%	21%	10%	7%	0%	29%	8%	-	-
Gross Loss	10%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

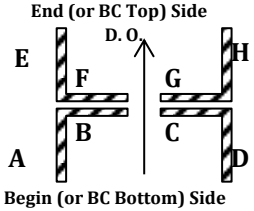
L3U4 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.303			0.305						
	0.284			0.266						
	0.292			0.298						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.293	0.313	0.313	0.290	0.000	0.000	0.000	0.000		
Section Loss (%)	6%	0%	0%	7%	0%	0%	0%	0%	-	-
Gross Loss	3%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

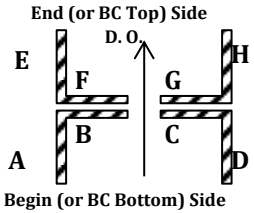
L3L4 @ Mid of Tie Plates 1 and 2

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.428	0.406	0.409	0.422	0.394	0.390	0.386	0.383	0.278	0.302
	0.424	0.422	0.403	0.408	0.390		0.372	0.395	0.327	0.342
					0.395			0.387	0.326	0.353
									0.338	0.318
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.426	0.414	0.406	0.415	0.393	0.390	0.379	0.388	0.317	0.329
Section Loss (%)	3%	5%	7%	5%	10%	11%	13%	11%	15%	12%
Gross Loss	10%									

Member	L5x 3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U3L4 @ L4

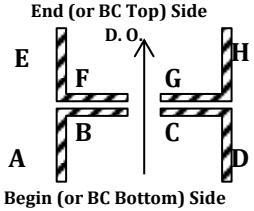
Leg	A	B	C	D	**E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.297			0.265		
								0.273		
								0.311		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.297	0.313	0.313	0.283		
Section Loss (%)	0%	0%	0%	0%	5%	0%	0%	9%	-	-
Gross Loss	4%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

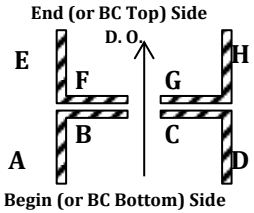
U4L4 @ L4

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.310	0.306	0.179	0.281	0.297	0.295	0.186	0.283		
	0.292	0.292	0.201	0.258	0.287		0.182	0.286		
	0.286		0.255	0.273	0.292		0.225			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.296	0.299	0.212	0.271	0.292	0.295	0.198	0.285		
Section Loss (%)	5%	4%	32%	13%	7%	6%	37%	9%	-	-
Gross Loss	13%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U5L5 @ L5

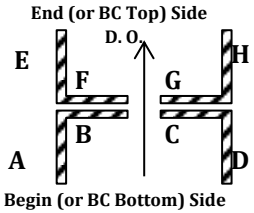
Leg	**A	** B	**C	**D	** E	**F	**G	**H	Left Plate	Right Plate
Measured Thickness (in)	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.297	0.297	0.297	0.297	0.297	0.297	0.297	0.297		
Section Loss (%)	5%	5%	5%	5%	5%	5%	5%	5%	-	-
Gross Loss	5%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

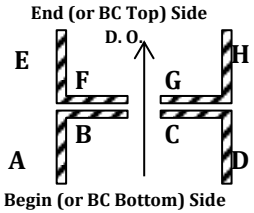
L5U6 @ L5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)				0.313						
				0.275						
				0.272						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.313	0.313	0.313	0.287	0.000	0.000	0.000	0.000		
Section Loss (%)	0%	0%	0%	8%	0%	0%	0%	0%	-	-
Gross Loss	3%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

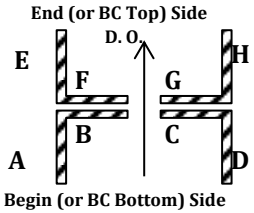
L5L6 Between Tie Plates 2 and 3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.427	0.413	0.323	0.423	0.412	0.342	0.415	0.419	0.303	0.337
	0.412	0.410	0.318	0.417	0.402	0.422	0.333	0.406	0.361	0.372
					0.416			0.412	0.352	0.359
									0.352	0.367
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.420	0.412	0.321	0.420	0.410	0.382	0.374	0.412	0.342	0.359
Section Loss (%)	4%	6%	27%	4%	6%	13%	15%	6%	9%	4%
Gross Loss	8%									

Member	L5x 3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U5L6 @ L6

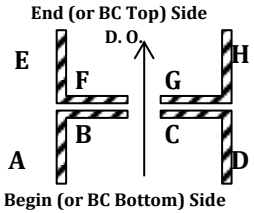
Leg	A	B	C	D	**E	F	G	**H	Left Plate	Right Plate
Measured Thickness (in)					0.281			0.297		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.281	0.313	0.313	0.297		
Section Loss (%)	0%	0%	0%	0%	10%	0%	0%	5%	-	-
Gross Loss	4%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U6L6 @ L6

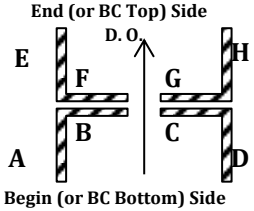
Leg	**A	** B	** C	D	** E	**F	**G	H	Left Plate	Right Plate
Measured Thickness (in)	0.281	0.297	0.281		0.281	0.297	0.281			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.281	0.297	0.281	0.313	0.281	0.297	0.281	0.313		
Section Loss (%)	10%	5%	10%	0%	10%	5%	10%	0%	-	-
Gross Loss	6%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

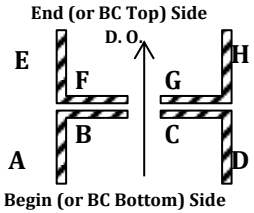
L6U7 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313	0.310	0.307	0.284	0.313	0.305	0.301	0.272		
	0.313	0.302	0.293	0.282	0.313			0.276		
	0.288			0.313	0.313					
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.304	0.306	0.300	0.293	0.313	0.305	0.301	0.274		
Section Loss (%)	3%	2%	4%	6%	0%	2%	4%	12%	-	-
Gross Loss	4%									

Member	L4x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	
Area of Angle (in^2)	2.09
Original Area of Steel (in^2)	8.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

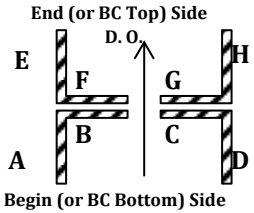
L6L7 Between Tie Plates 2 and 3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.305	0.286	0.303	0.293	0.275	0.223	0.275	0.286	0.243	0.281
	0.310	0.305	0.271	0.288	0.295	0.261	0.295	0.293	0.293	0.290
				0.290	0.310	0.311	0.313	0.305	0.287	0.288
									0.230	0.191
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.308	0.296	0.287	0.290	0.293	0.265	0.294	0.295	0.263	0.263
Section Loss (%)	2%	5%	8%	7%	6%	15%	6%	6%	16%	16%
Gross Loss	10%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

U7L7 @ L7

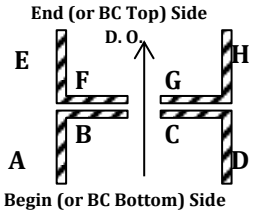
Leg	**A	B	C	**D	**E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.356			0.356	0.356					
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.356	0.375	0.375	0.356	0.356	0.375	0.375	0.375		
Section Loss (%)	5%	0%	0%	5%	5%	0%	0%	0%	-	-
Gross Loss	2%									

Member	L5x3x3/8
Nominal Member Thickness (in)	0.3750
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.86
Original Area of Steel (in^2)	11.44
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

L7U8 @ L7

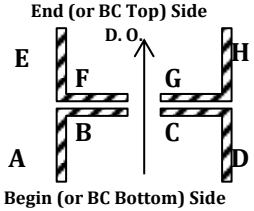
Leg	A	B	C	**D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)				0.356	0.375			0.375		
					0.375			0.375		
					0.375					
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.375	0.375	0.375	0.356	0.375	0.375	0.375	0.375		
Section Loss (%)	0%	0%	0%	5%	0%	0%	0%	0%	-	-
Gross Loss	1%									

Member	L4x3x3/8
Nominal Member Thickness (in)	0.3750
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.48
Original Area of Steel (in^2)	9.94
Rivet Hole (in)	0.81
# of Angles	4

**Values were estimated visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 1

L8L9 @L8

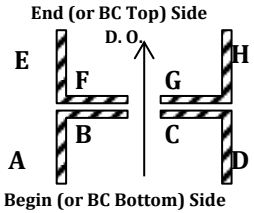
Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313	0.308	0.159	0.328	0.313	0.154	0.199	0.304		
	0.312	0.304	0.205	0.273	0.313	0.265	0.158	0.300		
	0.313			0.313	0.310		0.140	0.313		
Wane			0.250							
In Plane Rivet Hole										
Average Section Remaining	0.312	0.306	0.182	0.305	0.312	0.210	0.166	0.306		
Section Loss (%)	0%	2%	42%	3%	0%	33%	47%	2%	-	-
Gross Loss	13%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____

*****Book dimensions were used when d-meter readings exceed the nominal thickness of the member.**



Section Loss Summary- Span 2 Truss 2

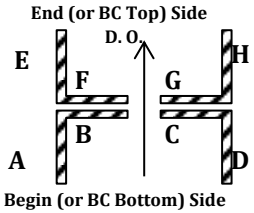
L0L1 @ L0

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.296	0.303	0.313	0.313	0.308	0.299	0.311	0.302		
	0.292	0.299	0.294	0.312	0.306	0.312	0.291	0.309		
	0.293			0.312	0.282			0.313		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.294	0.301	0.304	0.312	0.299	0.306	0.301	0.308		
Section Loss (%)	6%	4%	3%	0%	4%	2%	4%	1%	-	-
Gross Loss	3%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

U1L2 @ L2

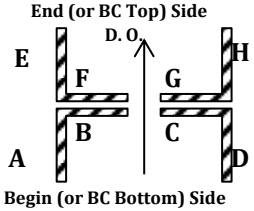
Leg	A	B	C	D	** E	F	G	**H	Left Plate	Right Plate
Measured Thickness (in)	0.289			0.437	0.416			0.416		
	0.192			0.438						
	0.432									
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.304	0.438	0.438	0.437	0.416	0.438	0.438	0.416		
Section Loss (%)	30%	0%	0%	0%	5%	0%	0%	5%	-	-
Gross Loss	5%									

Member	L4x3x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.87
Original Area of Steel (in^2)	11.48
Rivet Hole (in)	0.81
# of Angles	4

**Values were estiamted visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

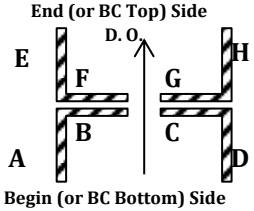
L2L3 @ Tie Plate 3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.284	0.260	0.310	0.283	0.269	0.208	0.313	0.297	0.237	0.132
	0.288	0.234	0.304	0.298	0.295	0.198	0.207	0.289	0.313	0.301
	0.302			0.308	0.295		0.204	0.277	0.282	0.277
									0.247	0.208
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.291	0.247	0.307	0.296	0.286	0.203	0.241	0.288	0.270	0.230
Section Loss (%)	7%	21%	2%	5%	8%	35%	23%	8%	14%	27%
Gross Loss	16%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

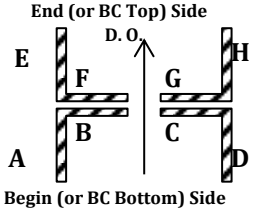
U2L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313			0.282	0.278			0.247		
	0.308			0.313	0.281			0.313		
					0.307			0.190		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.310	0.313	0.313	0.297	0.289	0.313	0.313	0.250		
Section Loss (%)	1%	0%	0%	5%	8%	0%	0%	20%	-	-
Gross Loss	5%									

Member	L4x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.09
Original Area of Steel (in^2)	8.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

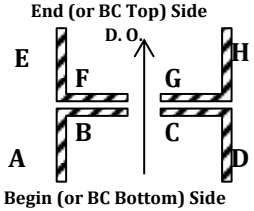
U3L3 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.311	0.293	0.313	0.283	0.294	0.294	0.295	0.290		
	0.287	0.305	0.292	0.307	0.300	0.313	0.295	0.258		
	0.291			0.297	0.312			0.269		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.296	0.299	0.303	0.296	0.302	0.304	0.295	0.272		
Section Loss (%)	5%	4%	3%	5%	3%	3%	6%	13%	-	-
Gross Loss	6%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

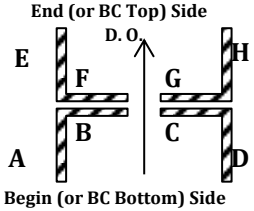
L3U4 @ L3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.299			0.269						
	0.274			0.283						
	0.275			0.307						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.283	0.313	0.313	0.286	0.000	0.000	0.000	0.000		
Section Loss (%)	10%	0%	0%	8%	0%	0%	0%	0%	-	-
Gross Loss	4%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

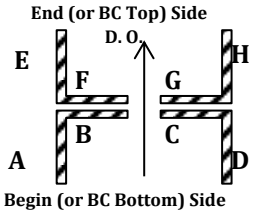
L3L4 Between Tie Plates 2 and 3

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.413	0.400	0.266	0.420	0.397	0.322	0.402	0.418	0.297	0.327
	0.399	0.397	0.401	0.410	0.390	0.331	0.334	0.382	0.355	0.353
	0.436		0.409	0.415	0.413	0.438	0.312	0.397	0.353	0.348
									0.307	0.334
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.416	0.399	0.359	0.415	0.400	0.364	0.349	0.399	0.328	0.341
Section Loss (%)	5%	9%	18%	5%	9%	17%	20%	9%	13%	9%
Gross Loss	11%									

Member	L5x 3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

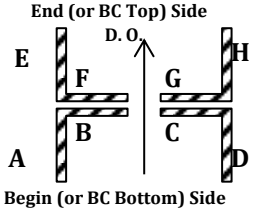
U3L4 @ L4

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.283			0.292		
					0.281			0.304		
					0.308					
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.291	0.313	0.313	0.298		
Section Loss (%)	0%	0%	0%	0%	7%	0%	0%	5%	-	-
Gross Loss	4%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

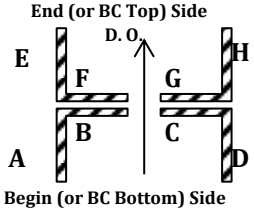
U4L4 @L4

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)		0.262	0.313	0.278	0.299	0.258	0.313	0.270		
		0.252	0.304	0.294	0.297	0.221	0.295	0.273		
		0.188		0.303				0.304		
Wane		0.188				0.188				
In Plane Rivet Hole										
Average Section Remaining	0.313	0.234	0.308	0.292	0.298	0.240	0.304	0.282		
Section Loss (%)	0%	25%	1%	7%	5%	23%	3%	10%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

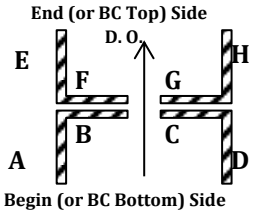
L4L5 @ Tie Plate 1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)		0.335	0.301			0.404	0.282			
		0.284	0.361			0.355	0.385			
						0.293	0.438			
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.438	0.310	0.331	0.438	0.438	0.351	0.368	0.438	0.375	0.375
Section Loss (%)	0%	29%	24%	0%	0%	20%	16%	0%	0%	0%
Gross Loss	5%									

Member	L5x3x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	11
Area of Angle (in^2)	3.31
Original Area of Steel (in^2)	21.48
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

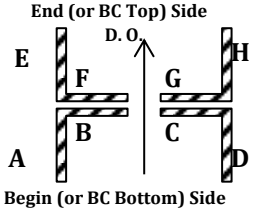
L5U6 @ L5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.222			0.262						
	0.210			0.280						
	0.207			0.320						
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.213	0.313	0.313	0.287	0.000	0.000	0.000	0.000		
Section Loss (%)	32%	0%	0%	8%	0%	0%	0%	0%	-	-
Gross Loss	12%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	4.80
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

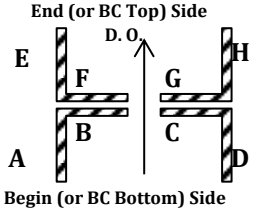
L5L6 Between Tie Plates 4 and 5

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.436	0.371	0.367	0.410	0.424	0.309	0.425	0.433	0.356	0.333
	0.404	0.348	0.356	0.415	0.421	0.326	0.314	0.404	0.359	0.372
					0.413	0.406	0.297	0.393	0.354	0.359
									0.312	0.335
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.420	0.360	0.362	0.413	0.419	0.347	0.345	0.410	0.345	0.350
Section Loss (%)	4%	18%	17%	6%	4%	21%	21%	6%	8%	7%
Gross Loss	10%									

Member	L5x 3-1/2 x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0.375
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	3.53
Original Area of Steel (in^2)	22.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

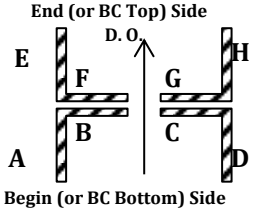
U5L6 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.295			0.252		
					0.284			0.260		
					0.274			0.279		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.000	0.000	0.000	0.000	0.284	0.313	0.313	0.264		
Section Loss (%)	0%	0%	0%	0%	9%	0%	0%	16%	-	-
Gross Loss	6%									

Member	L3x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	3.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	1.78
Original Area of Steel (in^2)	3.55
Rivet Hole (in)	0.81
# of Angles	2

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

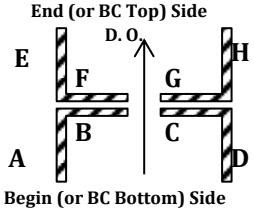
U6L6 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.310	0.199	0.313	0.306	0.313	0.261	0.313	0.298		
	0.288	0.187	0.307	0.288	0.291	0.233	0.307	0.301		
	0.270		0.298	0.330	0.287			0.310		
Wane		0.188				0.125				
In Plane Rivet Hole										
Average Section Remaining	0.289	0.193	0.306	0.308	0.297	0.247	0.310	0.303		
Section Loss (%)	7%	38%	2%	1%	5%	21%	1%	3%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

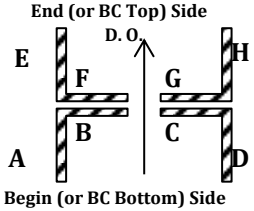
L6U7 @ L6

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313			0.297	0.304			0.295		
	0.310			0.293	0.313			0.313		
	0.302			0.271						
Wane										
In Plane Rivet Hole				0.813				0.8125		
Average Section Remaining	0.308	0.313	0.313	0.287	0.308	0.313	0.313	0.304		
Section Loss (%)	1%	0%	0%	8%	1%	0%	0%	3%	-	-
Gross Loss	8%									

Member	L4x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.09
Original Area of Steel (in^2)	8.36
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

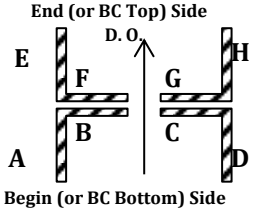
L6L7 @ Tie Plate 1

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.267	0.221	0.210	0.274	0.305	0.179	0.185	0.293	0.288	0.264
	0.270	0.230	0.205	0.277	0.295	0.158	0.197	0.299	0.291	0.304
	0.287			0.295	0.303			0.301	0.296	0.288
									0.208	0.223
Wane						0.125	0.250			
In Plane Rivet Hole										
Average Section Remaining	0.275	0.226	0.208	0.282	0.301	0.169	0.191	0.298	0.271	0.270
Section Loss (%)	12%	28%	34%	10%	4%	46%	39%	5%	13%	14%
Gross Loss	18%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

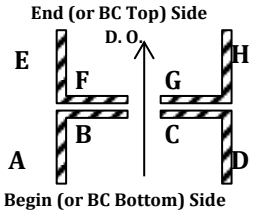
L6L7 @ Tie Plate 2

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)					0.313	0.222	0.309	0.340	0.249	0.207
					0.313	0.286	0.224	0.327	0.309	0.307
					0.313			0.254	0.301	0.305
									0.247	0.237
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.313	0.313	0.313	0.313	0.313	0.254	0.267	0.307	0.277	0.264
Section Loss (%)	0%	0%	0%	0%	0%	19%	15%	2%	12%	16%
Gross Loss	8%									

Member	L5x 3-1/2 x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0.3125
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.50
Length of Plate (in)	11
Area of Angle (in^2)	2.56
Original Area of Steel (in^2)	17.11
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

U7L7 @ L7

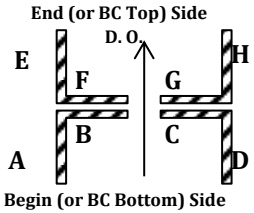
Leg	**A	B	C	**D	** E	F	G	**H	Left Plate	Right Plate
Measured Thickness (in)	0.338			0.356	0.338			0.356		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.338	0.375	0.375	0.356	0.338	0.375	0.375	0.356		
Section Loss (%)	10%	0%	0%	5%	10%	0%	0%	5%	-	-
Gross Loss	5%									

Member	L5x3x3/8
Nominal Member Thickness (in)	0.3750
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.86
Original Area of Steel (in^2)	11.44
Rivet Hole (in)	0.81
# of Angles	4

**Values were estiamted visually

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

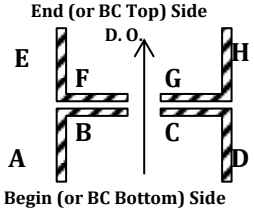
L7U8 @ L7

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.438			0.438	0.438			0.438		
					0.421			0.438		
					0.435			0.438		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.438	0.438	0.438	0.438	0.431	0.438	0.438	0.438		
Section Loss (%)	0%	0%	0%	0%	1%	0%	0%	0%	-	-
Gross Loss	0%									

Member	L4x3x7/16
Nominal Member Thickness (in)	0.4375
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	4.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.87
Original Area of Steel (in^2)	11.48
Rivet Hole (in)	0.81
# of Angles	4

CHA Project # 23968
Location: Concord, New Hampshire
Bridge: Sewalls Falls Road over the Merrimack River

Input By: _____JPA_____
Checked By:_____JMF_____



Section Loss Summary- Span 2 Truss 2

L8L9 @ L9

Leg	A	B	C	D	E	F	G	H	Left Plate	Right Plate
Measured Thickness (in)	0.313	0.301	0.302	0.313	0.313	0.14	0.213	0.310		
	0.297	0.233	0.313	0.306	0.308	0.181	0.304	0.294		
	0.313			0.277	0.279	0.264	0.320	0.276		
Wane										
In Plane Rivet Hole										
Average Section Remaining	0.307	0.267	0.307	0.299	0.300	0.195	0.279	0.293		
Section Loss (%)	2%	15%	2%	4%	4%	38%	11%	6%	-	-
Gross Loss	9%									

Member	L5x3x5/16
Nominal Member Thickness (in)	0.3125
Nominal Plate Thickness (in)	0
Nominal Long Leg Length (in)	5.00
Nominal Short Leg Length (in)	3.00
Length of Plate (in)	0
Area of Angle (in^2)	2.40
Original Area of Steel (in^2)	9.61
Rivet Hole (in)	0.81
# of Angles	4

Sewalls Falls Bridge
2012 In-Depth Inspection
FIELD NOTES

Also @ 2' A/D Bott chan flg bent to Begin 1" over 15" <(14,15)>

ABUTMENTS		WINGWALLS	STREAM CHANNEL	APPROACHES	Field Note Sheet	STANDARD PHOTOS	
22 23 Joint with Deck	30 31 Stem	40 41 Walls	48 Alignment	53 Drainage	A/D = above deck	LoadPosting	BIN NH 070/117
24 25 Brgs, AB's, & Pads	32 33 Erosion / Scour	42 43 Footings	49 Erosion / Scour	54 Embankment	(1)	ApproachBegin	Carry Sewells Falls
26 27 Br Seat & Pedestals	34 35 Footings	44 45 Erosion / Scour	50 Waterway Opening	55 Settlement		ApproachEnd	Cross Merrimack R
28 29 Backwall	36 37 Piles	46 47 Piles	51 Bank Protection	56 Erosion		FeatureCrossedLeft	D.O. NE
Span "A"	Span "A"	Span "A"	Span "A"	57 Pavement		FeatureCrossedRight	
				58 Guiderailing Span "A"		AbutmentBegin	Dates 3/5/2012
DECK ELEMENTS		SUPERSTRUCTURE	PIER		UTILITIES	AbutmentEnd	
19 Wearing Surface	23 Scuppers	27 Deck	33 Brgs, AB's, & Pads	38 Pier Columns	43 Light Stds & Fixtures	ElevationLeft/Right Span1	
20 Curbs	24 Gratings	28 Primary	34 Pedestals	39 Footings	44 Sign Stucture	Framing/FrmingSpan1/etc	
21 Sidewalks & Fascias	25 Median	29 Secondary	35 Top of Cap or Beam	40 Erosion / Scour	45 Utilities & Supports	FramingFloor/Truss	
22 Railings & Parapets	26 Mono Deck Surface	30 Paint	36 Stem Solid Pier	41 Piles		Pier1/etc	
		31 Joints	37 Cap Beam			Utility-1/-2/etc	
						SpecialEmphasis/-1/-2/etc.	

✓	Span	Item	Photo Location / Description / ◯Rating / (Overall Summary, or Other Elements Summary)	Photo	✓
→	1	28	1T1-LOU1 End post imp damage @ 7'-10" A/D:	002	
			Bott channel flange bent up 1¾" over 15 (Bracing panel)	3	
			[web also slightly distorted over bottom 1/2. Else OK	4	
			Top PL (only, not channel flg) bent up 1/2" over 9"	5	
	1	28	1T1-U1L1 no I.D.		
	1	28	1T1-U1L2 " "		
	1	28	1T1 @ U1 Gen Config.	006	
	1	28	1T1-U2L2 appears twisted CCW 3° ± axially and outlegs flared on Begin, pinched on End side. (prob due ID to sway BC)	007,8, 9,10,11, 13,14,15	
			↖ 11" b to b ↗ ↖ 9" b to b		
			Overall member not o.o.p. noticeably. No I.D.		
	1	28/29	1T1 @ U2: Top HGPL for bracing: 1/8" p.r. @ edges	0012	
	1	28	1T1-L4(M)U5 Bent to Begin @ 5.3' from PPL4. 2¼" to End and ¾" Left	0016,17, 18,19, 21#,22	
	1	28	1T1-U4(M)L5 Sight down; Elev:	20# 29	
	1	28	1T1-U5(M)L6 Sight down	23,24,25	
	1	28/29	1T1 @ U5 – Top HGPL for bracing: 1/16-3/32" p.r. @ Begin edge	26,27,28	
	1	28	1T1-L5(M)U6 Elev; Sight downs from (M)	30; 31,32,34	
	1	28/29	1T1 @ U6 - Top HGPL for bracing up to 3/8" p.r. @ Beg edge	33	
	1	28	1T1-U5L6 - Elev; Sight downs from (M)	35; 36,37	
	1	28/29	1T1 @ U7 – Top HGPL for bracing up to 1/2" p.r. Beg & End edges	38	
	1	28	1T1-U8L8 from U8: slight bow to End ¼" ± @ mid-height.	40	
1T1	1	28	1T1 Top Chord from U8	39	
1T2	1	28	1T2 @ U1 - gen config.; p.r. @ cap PL	41,42	
	1	28	1T2-U2U1 from U2 gen config; also U3+ from U2	43; 44,45	
	1	28/29	1T2 @ U3: p.r. @ top HGPL, Beg PL cor.	46	
	1	28	1T2-L3U4 Elev; Sight downs	47; 48,49,50	
	1	28/29	1T2 @ U4: p.r @ top HGPL	51	

ABUTMENTS				WINGWALLS	STREAM CHANNEL	APPROACHES		Field Note Sheet	STANDARD PHOTOS	BIN NH 070/117
22 23 Joint with Deck		30 31 Stem		40 41 Walls	48 Alignment	53 Drainage			LoadPosting	
24 25 Brgs, AB's, & Pads		32 33 Erosion / Scour		42 43 Footings	49 Erosion / Scour	54 Embankment			ApproachBegin	Carry Sewells Falls Rd
26 27 Br Seat & Pedestals		34 35 Footings		44 45 Erosion / Scour	50 Waterway Opening	55 Settlement			ApproachEnd	
28 29 Backwall		36 37 Piles		46 47 Piles	51 Bank Protection	56 Erosion			FeatureCrossedLeft	Cross Merrimack R
Span "A"		Span "A"		Span "A"	Span "A"	57 Pavement			FeatureCrossedRight	
						58 Guiderailing	Span "A"		AbutmentBegin	D.O. NE
DECK ELEMENTS				SUPERSTRUCTURE	PIER			UTILITIES	AbutmentEnd	
19 Wearing Surface		23 Scuppers		27 Deck	33 Brgs, AB's, & Pads		38 Pier Columns	43 Light Stds & Fixtures	ElevationLeft/Right Span1	Dates 3/5/2012
20 Curbs		24 Gratings		28 Primary	34 Pedestals		39 Footings	44 Sign Stucture	FramingFramingSpan1 etc	3/6/2012
21 Sidewalks & Fascias		25 Median		29 Secondary	35 Top of Cap or Beam		40 Erosion / Scour	45 Utilities & Supports	FramingFloor Truss	
22 Railings & Parapets		26 Mono Deck Surface		30 Paint	36 Stem Solid Pier		41 Piles		Pier1 etc	
				31 Joints	37 Cap Beam				Utility -1 -2 etc	
									SpecialEmphasis -1 -2 etc.	

✔	Span	Item	Photo Location / Description / ○Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔
	1	28	1T2-U4L5 Elevs ⟨52,53⟩; Sight-downs	0052,53; 54,55,56,57	
	1	28	1T2@U5: gen config typ condition (good)	58, 59	
	1	28	1T2-U5L6 look down from U5	60	
	1	28	1T2@U7: p.r. @ top HGTL = U6U7 top Pl pitting up to 1/8" deep, max		
			SO 33% SL for 3/8 Pl (conservative	61	
3/5					
3/6	2	28/29	2T1@U1: up to 3/8" p.r. @ cap Pl. Trough of SL to 1/8" max.	65,66	
	2	28	2T1-LØU1@ 7.7' above deck: I.D. to lower chan flg 4" long x 1/4", flg only	67,68	
	2	28	2T1-U5(M)L6 from U5: I.D. sight down	69,70	
			elev & sight-down from M:	71,72,73	
	2	28/29	2T1@U6: p.r. @ top HGTL (typ.)	74	
			plan view	75,76	
	2	28	2T1-U8L8: slight I.D. @ bottom rail bracket: End Rt L longit leg bent out 5/16" over 5" length @ 4.8' from L8	77,78	
1&2	2	28	Top chord panel point photo survey - gen config Span 1 ⟨79⟩⟨80-87⟩ Span 2 ⟨88-95⟩		
	2	28	2T2-LØU1@ 8.0' AD: dent in edge top Pl 3" long x 3/16".	96,97	
	2	28	2T2-U2U3 p.r. scallops ≤ 1/8", intermittent, infreq, from U2 (typ.)	98	
	2	28	2T2-U5(M)L6 lower half bowed inbd (Left): Elev; lookdowns from M	101; 102, 103	
	2	28	2T2@U5 - typ condition inside PP (upper)	99, 100	
	2	28	2T2-U8L9@ AD: ID to chan BF 7/8 x 15", Top Pl 5/8 x 8"	106, 107	
	2	28	2T2@U7: p.r. @ HGTL	104, 105 #	
	1	29	Portal BC's @ U1 & U8 - No I.D. evid.		
	1	29	Sway brace BC@pp2: 1/2" to Begin	110, 108, 109	
	1	29	" " " @pp3: 2" to Begin	111, 112	
	1	29	" " " pp4: 1/4" ± " " (est.)	No Photo	
	1	29	" " " pp5: NS Def.; pp6: 1/2" ± to Begin; pp7: 3/8" to Begin	" "	
	2	29	Portal BC @ U1 & U8 No I.D. evid		
	2	29	Sway brace BC@ pp2: 1/4" ± to Begin		
			pp3: NS Def.; pp4: 1/8 ± to Beg.; pp5: 3/4" to Beg.		
			pp6: 1/2" to Beg. pp7 NS Def.		

CHA

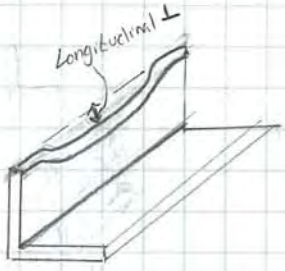
CHA COMPUTATION PAD

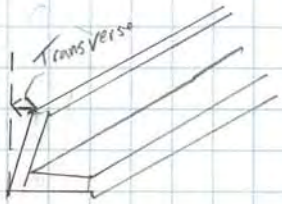
COMPLETED BY:	Joe Albert / C. Snyder	PROJECT / PHASE / ORG	23968 1000
CHECKED BY:		SHEET #:	1 OF 2
PROJECT NAME:	Sewalls Falls Bl	DATE:	3/5/2012
PROJECT LOCATION:	Concord, NH	SUBJECT:	Truss impact damages SP 1

(3)

Impact damages - Primary Members

- (inboard) SP1 T1 L4(M)U5 @ 5.3' From PP4 measured along member, bent 2¼" OOP Long. 5/8" Transverse
  Outboard ⊥ Leg bent ≈ ½" Longitudinally ⊥, minimal transverse bending if any.
- (inboard) SP1 T1 L5(M)U6 @5.5' from PP5 measured along member, bent 4⅛" Longitudinally ⊥
  inboard ⊥ Leg ↪ 1⅛" Transversely
  outboard ⊥ leg ¼" x 1⅝" L⊥xT
  - SP1 T1 L5(M)U4 @6.5' From PP5 measured along member, bent ≈ ¼" x ¼" L⊥xT
  - SP1 T1 U5(M)L6 @5.5' From PP6 M.A.M bent 2¼" x 1" L⊥xT (inboard) Max ¼" x ¼" L⊥xT (outboard)
  - SP1T1 L6U7 localized impact of inboard bottom ⊥ leg 5.5' from PP6 5" long x 1" in
  - SP1T2 L1U1 Begin S/le inboard ⊥ leg @ rail supports ⊥ leg bent downstream max of ½" at bottom two rail supports.
  - SP1T2 L3(M)U4 inboard @4.5' from PP3 5¼" x 2¼" L⊥xT twisted downstream
    outboard @4.5' " " 3/8" x 1⅜" L⊥xT bent toward d/s.
  - SP1T2 L5(M)U4 inboard @6.8' from PP5 6" x 2¾" L⊥xT twisted upstream
    outboard @6.8' from PP5 5/8" x 1½" L⊥xT twisted upstream
  - SP1T2 L6(M)U5 inboard @8.7' From PP6 5/8" x 0" L⊥xT bowed toward begin





→ See back for detailed sketch

CHA

CHA COMPUTATION PAD

COMPLETED BY:	Joe Albert / C. Snyder	PROJECT	PHASE	ORG
CHECKED BY:		23968	1000	
PROJECT NAME:	Sewalls Falls Bridge Inspection	SHEET #:	2 OF 2	
PROJECT LOCATION:	Concord, New Hampshire	DATE:	3/6/2012	
		SUBJECT:	Impact damages Span 2	

(4)

Impact damage

Span 2

T1 L6(M) U5 inboard @5.0 from PP6 3 3/4" x 1 3/4" L⊥xT twisted upstream
outboard @5.0' from PP6 3/4" x 1 1/2" L⊥xT twisted upstream

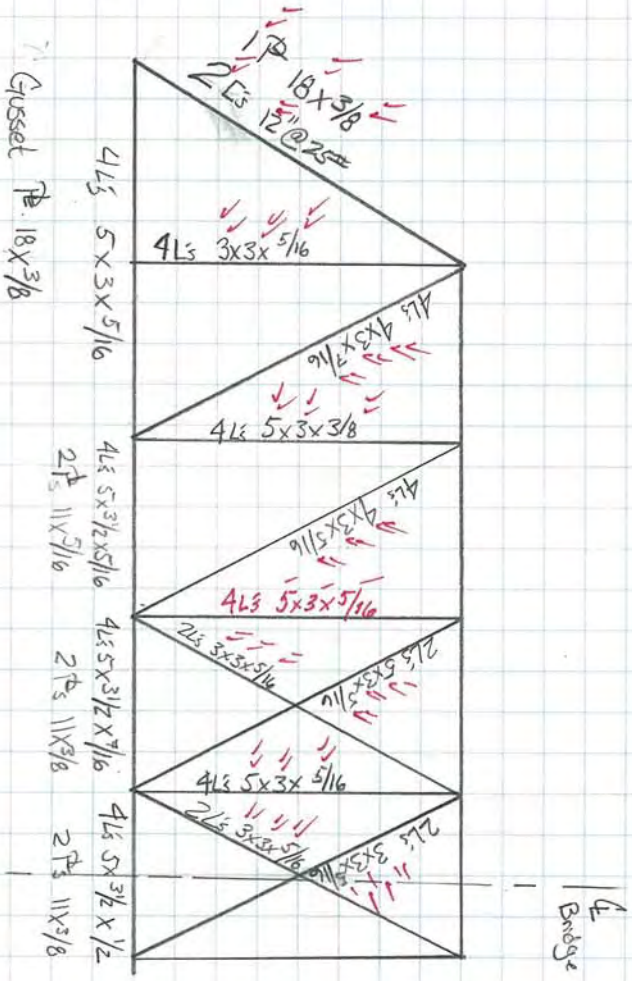
T2 L6(M) U5 inboard @10.8' from PP6 1/2" x 1/4" L⊥xT bent upstream

CHA COMPUTATION PAD

COMPLETED BY:	JPA	PROJECT / PHASE / ORG	23968 1000
CHECKED BY:	CDS	SHEET #: 1 OF 1	(5)
PROJECT NAME:	Sewalls Falls bridge inspection	DATE:	3/6/2012
PROJECT LOCATION:	Concord, New Hampshire	SUBJECT:	Field Verification of Dimensions

File 3998-05.TIF

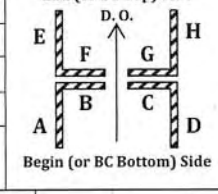
Gusset Pl. 18X3/8



Field Measurements

Span 1 161'-2" edge ℄ to edge ℄ 129'-10"
Span 2 159'-2" " 129'-9¼"

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038



ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

1T1

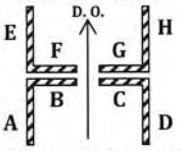
6

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/7/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L...)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments / PL's		Photo	✓
	1	T1	L1L2@L1	.306	N/A	N/A	.314	.317	.297	.314	.286			<125,26,27>	
			4L5x3x5/16	.310			.316	.278	.312	.250	.266				
				.315			.325	.261			.316				
				.310 1%	~leg F	~leg G	0%	.285 9%	.305 3%	.282 10%	.289 8%				
	1	T1	LØL1@L1	similar but less SL than L1L2@L1											
	1	T1	L2L3@	~~.304~~			~~.285~~	.264	.241	.139	.274	L PL	R PL	<134,35,36>	
			Tie PL #1	~~.293~~			~~.278~~	.271	.291	.224	.284	.167	.157		
			4L5x3½x5/16	~~.291~~			~~.287~~	.279			.279	.281	.280		
			+2PL 11x5/16									.280	.293		
												.224	.299		
				~~5%~~			~~9%~~	13%	15%	42%	11%	24%	18%		
	1	T1	L2L3@	.304			.285	.245	.193	.201	.275	L PL	R PL	<137,38,39>	
			Tie PL #3	.293			.278	.258	.225	.226	.277	.132	.181		
			(same as above)	.291			.287	.268			.266	.231	.283		
				5%			9%	18%	33%	~~25%~~ 32%	13%	.281	.299		
												.274	.241		
												27%	20%		
	1	T1	U3L3@L3	.318	NSSL	.226	.297	.305	NSSL	.234	.292			<142,43,44>	
			4L5x3x5/16	.311		.219	.298	.300		.209	.294				
				.312			.302	.312			.304				
				-		29%	4%	2%		29%	5%				
	1	T1	L3L4@L4	NSSL	———		NSSL	NSSL	.279	.271	NSSL	Loca, inside panel point, obvious not Control; for info only		<149,50,51,52>	
			4L5x3½x7/16 (.430)						.333	.246					
			+2PL 11x3/8 (.372)						30%	41%					

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

1T1

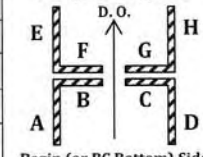
7

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/7/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	1	T1	U5L5@L5	NSSL	.310	.212	NSSL	NSSL	.253	.230	.285			<162, 63>	
			4L5x3x5/16		.246	.233			.311	.242	.266				
					11%	29%			10%	24%	.295				
											10%				
	1	T1	U6L6 sim.											<176, 77>	
	1	T1	L5U6@L5	.291	NSSL	NSSL	.233	N/A						<164, 65, 66, 6	
			2L5x3x5/16	.293			.228								
				.297			.246								
				6%			25%								
	1	T1	L5L6@tie	.428	—	—	.424	.367	.362	.274	.395	LPL .320	RPL .331	<168, 69, 70, 71,	
			PL#5	.417	Sim to legs F,G		.415	.370	.360	.307	.390	.325	.324		
			4L5x3½x7/16					.376			.227	.320	.319		
			+2PL 11x7/8	3%			4%	15%	17%	34%	23%	.190	.312		
												23%	14%		
	1	T1	U5L6@L6	N/A				.324	NSSL	NSSL	.285			<173, 74, 75>	
			2L3x3x5/16					.313			.302				
								-			6%				
	1	T1	L6U7@L6	.328	NSSL	NSSL	.306	.318	NSSL	NSSL	.310			<178, 79, 80>	
			4L5x3x5/16	.314			.288	.314			.315				
				.318			.289								
				-			6%	-			-				
	1	T1	L6L7	.272	—	—	.257	.259	.181	.180	.288	LPL .162	RPL .192	<181, 82, 83, 84>	
			@tie PL#3	.275	Sim to F+G		.256	.288	.224	.162	.257	.295	.295		
			4L5x3½x5/16	12%			18%	.295		.177	.246	.280	.271		
			+2PL 11x5/16					10%	35%	45%	16%	.185	.141		
												26%	28%		

%SL	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	3/4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

1 T2

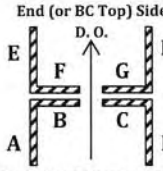
8

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/7/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L...)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	1	T2	L0L1@L0	No better than Leg E	—	No better than F&G	No better than Leg H	.310	.134	.220	.202			<202,3,4,5,6>	
	4L5x3x5/16							.303	.203	.207	.200				
								.276	.217		.227				
								5%	41%	32%	33%				
	1	T2	L0L1@L1	.240	—	—	.325	.275	.151	.125	.323			<207,08>	
	(same as above)			.312	No better than F&G		226	.284	.139	.171	.212				
				.331			207	.204	.198	.242	.279				
				6%			19%	19%	48%	43%	13%				
	1	T2	L2L3@L3	.289	—	—	.253	.284	.206	.141	.313	LT	RT	<218,19,20,21	
	4L5x3½x5/16			.292			.264	.279	.193	.202	.293	.264	.263	22>	
	+2T						.286	.285	.160	.209	.302	.298	.304		
				7%			14%	10%	40%	41%	3%	.293	.290		
												.275	.111		
												25%	35%		
	1	T2	U2L3@L3	.320	NSSL	NSSL	.312	.252	NSSL	NSSL	.293			<223,24,25,	
	4L4x3x5/16			.309			.317	.277			.298			26>	
				.277			.314	.297			.301				
				3%			-	12%			5				
	1	T2	U3L3@L3	.291	.203	.314	.311	.304	.292	.314	.271			<227,28,29>	
	4L5x3x5/16			.279	.218	.293	.261	.278	.212	.299	.272				
				.266			.260	.274	0k		.291				
				11%	33%	3%	11%	9%	W 5/16						
									46%	2%	11%				
	1	T2	L3U4@L3	.271	NSSL	NSSL	.272	N/A						<230,31,32>	
	2L3x3x5/16			.266			.269								
				.261			.288								
				15%			12%								

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

1T2

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

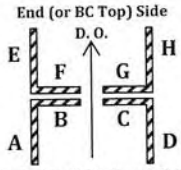
9

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/7/2012
3/8/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	1	T2	L3L4	.393	—	—	.406	.419	.330	.309	.420	LPL .295	RPL .338	<33,34,35,	
	@8.2' from L3			.381			.396	.402 .411	.422	.346	.402 .415	.367	.364	36,37,38>	
	4L5x3½x7/16"			12%			8%	6%	14%	25%	6%	.258 .335	.353 .319		
	+2PL11x3/8"											W1/8"			
												16%	8%		
3/7															
18	1	T2	U3L4@L4					.271	NSSL	NSSL	.323			<39,40,41>	
	2L5x3x5/16"							.255			.298				
								.244			.289				
								18%			3%				
	1	T2	U4L4@L4	.271	W3/16"	.304	.299							<42,43,44,	
	4L5x3x5/16"			.259	.230	.292	.297							45>	
				.269	.242		.314								
				15%	29%	5%	3%	3%±	29%±	5%	NSSL				
	1	T2	U5L5@L5	.297	.232	.297	.301							<52,53,54,55>	
	4L5x3x5/16"			.288	.225	.316	.306								
				.294			.314								
				6%	27%	2%	2%	NSSL	27%±	2%	2%				
	1	T2	L5U6@L5	.302	NSSL	NSSL	.274	N/A						<56,57>	
	2L5x3x5/16"			.313			.272								
				.308			.248								
				2%			15%								
	1	T2	L5L6	.430	.352	.357	.429	.436	.351	.312	.427	LPL .373	RPL .344	<58,59,60>	
	@Tie PL #2			.422	.342	.332	.419	.420	.338	.308	.418	.365	.366		
	4L5x3½x7/16							.418			.428	.364 .359	.362 .297		
	+2PL11x3/8														
				3%	21%	21%	3%	3%	21%	29%	3%	3%	9%		

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	.0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

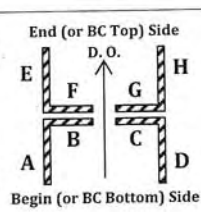
1T2

10

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/8/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments	Photo	✓
	1	T2	U5L6@L6					.313	NSSL	NSSL	.293		<261, 62, 63,	
			2L3x3x5/16"		N/A			.284			.310			
								.291			.319			
								5%			2%			
	1	T2	U6L6	.296	.272	NSSL	.292	.307	.191	.305	.287		<264, 65, 66,	
			4L5x3x5/16"	.281	.246		.279	.265	.235	.320	.285		67>	
				.277			.314	.253	.201		.311			
				9%	17%		6%	12%	33%	-	6%			
	1	T2	L6U7	5%±	0%	0%	10%	5%	0%	0%	10%±		<268, 69, 70>	
			4L5x3x5/16"											
	1	T2	L6L7	.266	w 3/16"	.216	.268	.275	.289	.211	.294	LP .247 / RP .235	<271, 72, 73, 7	
			@Tie #1	.281	.254	.152	.265	.284	.308	.229	.277	.300 / .305		
			4L5x3½x5/16	.271	.304		.293	.282		.281	.271	.307 / .275		
			+2 #11x	13%	11%	~~6%~~ 41%	12%	10%	4%	23%	10%	.147 w 1/4" / .195		
												33% / 33%		
	1	T2	U7L7@L7	5%	10%	5%	NSSL	5%	10%	5%	NSSL		<275, 76, 77, 78,	
			4L5x3x5/16											
	1	T2	L7U8@L7	10%	0%	0%	5%	10%	0%	0%	10%		<279, 80>	
			4L4x3x7/16"											
	1	T2	L7L8@L8	.293	NSSL	NSSL	.314	.304	NSSL	NSSL	.323		<281, 82, 83, 8	
			(worst of L7-L9)	~~.372~~			.309	.308			.297		85>	
			4L5x3x5/16"	.310			.317	.314			.293			
				4%			-	1%			3%			

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038



ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

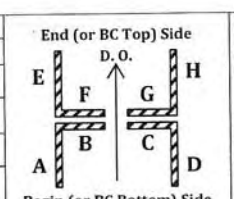
2T1

11

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/8/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L....)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	2	T1	L1L2@L1	.312	N	N	.310	.282	N	N	.301			<305, 06, 07, 08>	
			4L5x3x5/16"	.303			.312	.287			.288				
								.283			.297				
				2%			-	9%			5%				
	(2	T1	L0L1)											<302>	
	2	T1	U2L2@L2	N	.352	.274	N	N	.350	.293	N			<312, 13>	
			12" below top of		.353	.236			.364	.319					
			PP Gusset PLs		6%				5%	18%					
			5X3X3/8		6%	32%									
	2	T1	U1L2@L2	5%±	0%	0%	5%±	0%	0%	0%	0%			<309, 10, 11>	
	2	T1	L2L3	.285	.312	.278	.272	.174	.224	.292	.293	LR .081	RR .195	<314, 15, 16, 17>	
			@Tie PL#5	.276		.287	.283	.178	.276	.225	.276	.234	.301		
			4L5x3½x5/16"	.290			.291	.205	.312	.173	.267	.187	.290		
				9%	-	10%	10%	41%	13%	26%	11%	.066	.086		
												62%	42%		
	2	T1	U2L3@L3	5%±	0%	0%	5%±	.318	0%	0%	.280			<318, 19, 20>	
			4L4x3x5/16" ✓					.303			.287				
											.299				
								1%			8%				
	2	T1	U3L3@L3	.303	NSSL	.231	.299	.266	.310	.221	.292			<321, 22>	
			4L5x3x5/16"	.296		.246	.264	.297	.315	.236	.280				
				.292		.265	.285	.305	.318	.209	.287				
				5%		21%	10%	7%	-	29%	8%				
	2	T1	L3U4@L3	.303	NSSL	NSSL	.305	N/A						<323, 24, 25>	
			2L3x3x5/16	.284			.266								
				.292			.298								
				6%			7%								

%SL	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	3/4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038



ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

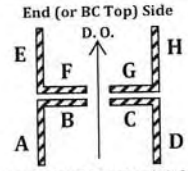
2T1

12

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/8/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	2	T1	L3L4@	.428	.406	409	.422	.394	.390	.386	383	LPL .278	RPL .302	<326,27,28,29	
			btwn Tie PL's #1&#2	.424	.422	403	.408	.390		.372	395	.327	.342		
			4L5x3½x7/16					.395			387	.326	.353		
			+2PL11x3/8	3%	5%	7%	5%	10%	11%	13%	11%	.338	.318		
												27%	12%		
	2	T1	U3L4@L4	— N/A —				5%	0%	0%	.265			<330,31,32>	
			2L5x3x5/16								.273				
											.311				
											9%				
	2	T1	U4L4@L4	.310	.306	.179	.281	.297	.295	.186	.283			<333,34,35>	
			4L5x3x5/16	.292	.292	.201	.258	.287		.182	.286				
				.286		.255	.273	.292		.225					
				5%	4%	32%	13%	7%	6%	37%	9%				
	2	T1	L4U5@L4	— NSSL —										<336,37>	
			2L3x3x5/16												
	2	T1	L4L5 all	<5%				≤5%				≤5% LPL	≤5% RPL	<338>	
			4L5x3½x½												
	2	T1	U4L5@L5	— N/A —				— NSSL —						<339,40>	
			2L3x3x5/16												
	2	T1	U5L5@L5	5%	5%	10%	5%	5%	5%	10%	5%			<341,42>	
			4L5x3x5/16												
	2	T1	L5U6@L5	0%	0%	0%	.322	— N/A —						<343,44,45>	
			2L5x3x5/16"				.275								
							.272								
							7%								
	2	T1	L5L6@	.427	.413	.323	.423	.412	.342	.415	.419	LPL .303	RPL .337	<346,47,48,49>	
			btwn Tie PL's #2&#3	.412	.410	.318	.417	.402	.422	.333	.406	.361	.372		
			4L5x3½x7/16					.416			.412	.352	.359		
												.352	.367		
				4%	6%	27%	4%	6%	13%	15%	6%	9%	4%		

%SL	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	3/4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038



ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

2T1

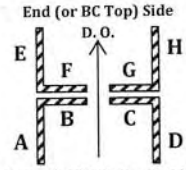
13

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/8/2012

✓	Span	T#	Member ID (L, U, M) / Member Build (4L...)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments	Photo	✓
	2	T1	U5L6@L6	N/A				10%	0%	0%	5%		<350,51,52>	
			2L3x3x5/16"											
>	2	T1	U6L6@L6	10%	5%	10%	0%	10%	5%	10%	0%		<353,54,55>	
			4L5x3x5/16"											
>	2	T1	L6U7@L6	.333	.310	.307	.284	.313	.305	.301	.272		<356,57,58,59>	
			4L4x3x5/16"	.330	.302	.293	.282	.315			.276			
				.288			.319	.325						
				-	2%	4%	6%	-	2%	4%	12%			
>	2	T1	L6L7@	.305	.286	.303	.293	.275	.223	.275	.286	LPR .243 / RPR .281	<360,61,62,6	
			btwn Tie PR's 2&3	.310	.305	.271	.288	.295	.261	.295	.293	.293 / .290		
			4L5x3½x5/16				.290	.310	.311	.317	.305	.287 / .288		
			+2PR 11x5/16"									.230 / .191		
				2%	5%	8%	7%	6%	15%	5%	6%	16%	16%	
>	2	T1	U7L7@L7	5%	0%	0%	5%	5%	0%	0%	0%		<364,65,66,67	
			4L5x3x3/8"											
	2	T1	L7U8@L7	0%	0%	0%	5%	.416	0%	0%	.420		<368,69,71,72,	
			4L4x3x3/8"					.427			.419		73,74,75>	
								.419						
								-			-			
	2	T1	U8L8@L8	— NSSL —				— NSSL —					<376,77,78,79,	
			4L3x3x5/16"										80,81,82,83,	
>	2	T1	L8L9@L8	.330	.308	.159	.328	.321	.154	.199	.304		<370,84,85,	
			(Controls L7-L9)	.312	.304	.205	.273	.313	.265	.158	.300		86,87>	
			4L5x3x5/16"	.316		W 1/4"	.317	.310		.140	.324			
				-	2%	42%	2%	-	33%	47%	1%			

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

212

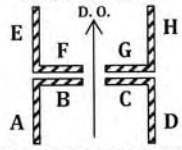
14

BIN NH 070/117
Curry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/9/2012

✓	Span	T#	Member ID (L, U, M) / Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	2	T2	L0L1@L0	.296	.303	.313	.316	.308	.299	.311	.302			<388,89,90,91>	
			4L5x3x5/16"	.292	.299	.294	.312	.306	.312	.291	.309			<394>	
				.293			.312	.282			.316			L1L2	
				6%	4%	3%	0	4%	2%	4%	1%				
	2	T2	U1L2@L2	.289	0%	0%	.442	5%	0%	0%	5%			<395,96,97,98>	
			4L4x3x7/16	.192			.440								
				.432											
				31%			-								
	2	T2	L2L3@	.284	.260	.310	.283	.269	.208	.314	.297	LPL .237	RPL .132	<401,02,03,04	
			Tie PL #3	.288	.234	.304	.298	.295	.198	.207	.289	.313	.301		
			4L5x3½x5/16"	.302			.308	.295		.204	.277	.282	.277		
			+2PL11x5/16"									.247	.208		
				7%	21%	2%	5%	8%	35%	23%	8%	14%	27%		
	2	T2	U2L3@L3	.319	0%	0%	.282	.278	0%	0%	.247			<405,06,07>	
			4L4x3x5/16" (fat)	.308			.324	.281			.324				
								.307			.190				
				-			3%	8%			19%				
	2	T2	U3L3@L3	.311	.293	.313	.283	.294	.294	.295	.290			<408,09>	
			4L5x3x5/16"	.287	.305	.292	.307	.300	.313	.295	.258				
				.291			.297	.312			.269				
				5%	4%	3%	5%	3%	3%	6%	13%				
	2	T2	L3U4@L3	.299	0%	0%	.269	N/A						<410,11>	
			2L3x3x5/16	.274			.283								
				.275			.307								
				10%			8%								

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses 2T2

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

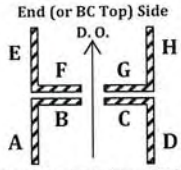
15

BIN NH 070/117
Curry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/9/2012

✓	Span	T#	Member ID (L, U, M) / Member Build (4L...)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments		Photo	✓
	2	T2	L3L4 @ 2	E .397	F .322	G .402	H .418	A .413	B .400	C .266	D .420	LT	RT	<412,13,14,15,16>	
	btwn Tie Pl's 2 & 3			.390	.331	.334	.382	.399	.397	.401	.410	.297	.327		
	4L5x3½x7/16"			.413	.442	.312	.397	.436		.409	.415	.355	.353		
	+2 Pl 11x3/8			~~5%~~	~~9%~~	~~18%~~	~~5%~~	~~9%~~	~~17%~~	~~20%~~	~~9%~~	.353	.348		
				5%	9%	18%	5%	9%	17%	20%	9%	.307	.334		
												13%	9%		
	2	T2	U3L4@L4	N/A				.283	0%	0%	.292			<417,18,19>	
	2L5x3x5/16"							.281			.304				
								.308							
								7%			5%				
	2	T2	U4L4@L4	0%	.262	.318	.278	.299	.258	.314	.270			<420,21>	
	4L5x3x5/16"				.252	.304	.294	.297	.221	.295	.273				
					.188		.303		w 3/16		.304				
					w 3/16										
					25%	-	7%	5%	23%	3%	10%				
	2	T2	L4U5@L4	NSSL				N/A						<422>	
	2L3x3x5/16														
	2	T2	L4L5@	0%	.335	.301	0%	0%	.404	.282	0%	LT	RT	<423,24,25,26>	
	Tie Pl #1				.284	.361			.355	.385		0%	0%		
	4L5x3x7/16								.293	.441					
	+2 Pl 11x3/8				29%	24%			20%	16%					
	2	T2	U4L5@L5	N/A				NSSL						<427,28>	
	2L3x3x5/16														
	2	T2	U5L5@L5	≤5%				≤5%						<429,30>	
	4L5x3x5/16"														
	2	T2	L5U6@L5	.222	0%	0%	.262	N/A						<431,32>	
				.210			.280								
				.207			.320								
				32%			8%								

%SL	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	3/4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

2T2

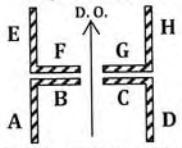
16

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/9/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments			Photo	✓
	2	T2	L5L6 @	.436	.371	.367	.410	.424	.309	.425	.433	LPL	RPL		<433,34,35,36,37	
	btwn Tie PL's 4 & 5			.404	.348	.356	.415	.421	.326	.314	.404	.356	.333			
	4L5x3½x7/16"							.413	.406	.297	.393	.359	.372			
	+2PL 11x3/8			4%.	18%.	17%.	6%.	4%.	21%.	21%.	6%.	.354 .312	.359 .335			
												8%.	7%.			
	2	T2	U5L6@L6	N/A				.295	0%	0%	.252				<438,39>	
	2L3x3x5/16"							.284			.260					
								.274			.279					
								9%.			16%.					
	2	T2	U6L6@L6	.310	.199	.321	.306	.317	.261	.318	.298				<440,41,42>	
	4L5x3x5/16"			.288	.187	.307	.288	.291	.233	.307	.301					
				.270	W 3/16"	.298	.330	.287	W 1/8"		.310					
				7%.	38%.	1%.	1%.	5%.	21%.	0	3%.					
	2	T2	L6U7@L6	.323	0%	0%	.297	.304	0	0	.295				<443,44,45>	
	4L4x3x5/16"			.310			.293	.321			.325					
				.302			.271				Rivet					
				-		Rivet	8%.	1%.			-					
	2	T2	L6L7 @	.267	.221	.210	.274	.305	.179	.185	.293	LPL	RPL		<446,447,48,	
	Tie PL #1			.270	.230	.205	.277	.295	.158	.197	.299	.288 .291	.264 .304		49,50>	
	4L5x3½x5/16			.287			.295	.303	W 1/8"	W 1/4"	.301	.296	.288			
	+2PL 11x5/16			12%.	28%.	34%.	10%.	4%.	46%.	39%.	5%.	.208	.223			
												13%.	14%.			
	- ditto -							.348	.222	.309	.340	LPL	RPL		<451,52,53>	
	@ Tie PL #2			Not taken				.355	.286	.224	.327	.249 .309	.207 .307			
	- ditto -							.345			.254	.301	.305			
												.247	.237			
								-	19%.	15%.	2%.	12%.	16%.			

%SL	3 / 16"	1 / 4"	5 / 16"	3 / 8"	7 / 16"	1 / 2"	9 / 16"	3 / 4"
0	0.1875	0.250	0.3125	0.375	0.4375	0.500	0.5625	0.750
15	0.159	0.213	0.266	0.319	0.372	0.425	0.478	0.638
25	0.141	0.188	0.234	0.281	0.328	0.375	0.422	0.563
33.33	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.500
50	0.094	0.125	0.156	0.188	0.219	0.250	0.281	0.375
66.66	0.063	0.083	0.104	0.125	0.146	0.167	0.188	0.250
75	0.047	0.063	0.078	0.094	0.109	0.125	0.141	0.188
85	0.019	0.025	0.031	0.056	0.066	0.075	0.084	0.112
95	0.009	0.013	0.016	0.019	0.022	0.025	0.028	0.038

End (or BC Top) Side



Begin (or BC Bottom) Side

ISEC Member Section Losses

Legend:
k or 0k: knife edge
w or wane: width loss
p or perf: perforation
SL: section loss
GSL or SLG: gross SL
Units: inch UON

2T2

(17)

BIN NH 070/117
Carry Sewells Falls Road
Cross Merrimack River
D.O. Northeast
Date 3/9/2012

✓	Span	T#	Member ID (L, U, M) Member Build (4L…)	Leg A	Leg B	Leg C	Leg D	Leg E	Leg F	Leg G	Leg H	Comments	Photo	✓
	2	T2	U7L7@L7	10%	0%	0%	5%	10%	0%	0%	5%		<454,55>	
			4L5x3x3/8" ✓											
	2	T2	L7U8	.450	0%	0%	.443	.442	0%	0%	.441		<456,457,58>	
			4L4x3x7/16"	0%				.421			.456			
								.435			.466			
				✓				1%			-			
	2	T2	L7L8 ≤5% SL(all); See L8L9										<459>	
	2	T2	U8L8@L8 —— NSSL ——					—— NSSL ——					<460,61>	
	2	T2	L8L9@L9	.327	.301	.302	.323	.334	.140	.213	.310		<462,63,64,65,	
			4L5x3x5/16"	.297	.233	.315	.306	.308	.181	.304	.294		66>	
				.320			.277	.279	.264	.320	.276			
				-	15%	11%	3%	2%	38%	11%	6%			

ABUTMENTS
22 23 Joint with Deck
24 25 Brgs, AB's, & Pads
26 27 Br Seat & Pedestals
28 29 Backwall
30 31 Stem
32 33 Erosion / Scour
34 35 Footings
36 37 Piles
Span "A" Span "A"

WINGWALLS
40 41 Walls
42 43 Footings
44 45 Erosion / Scour
46 47 Piles
Span "A"

STREAM CHANNEL
48 Alignment
49 Erosion / Scour
50 Waterway Opening
51 Bank Protection
Span "A"

APPROACHES
53 Drainage
54 Embankment
55 Settlement
56 Erosion
57 Pavement
58 Guiderailing Span "A"

Field Note Sheet (18)

STANDARD PHOTOS
LoadPosting
ApproachBegin
ApproachEnd
FeatureCrossedLeft
FeatureCrossedRight
AbutmentBegin
AbutmentEnd
ElevationLeft/Right Span1
Framing:FramingSpan1/etc
FramingFloor Truss
Pier1/etc
Utility-1/-2/etc
SpecialEmphasis-1/-2/etc.

BIN NH 070/116
Carry Sewalls Falls Rd
Cross Merrimack R.
D.O. NNE
Dates 3/8/2012

DECK ELEMENTS
19 Wearing Surface
20 Curbs
21 Sidewalks & Fascias
22 Railings & Parapets
23 Scuppers
24 Gratings
25 Median
26 Mono Deck Surface

SUPERSTRUCTURE
27 Deck
28 Primary
29 Secondary
30 Paint
31 Joints

PIER
33 Brgs, AB's, & Pads
34 Pedestals
35 Top of Cap or Beam
36 Stem Solid Pier
37 Cap Beam
38 Pier Columns
39 Footings
40 Erosion / Scour
41 Piles

UTILITIES
43 Light Stds & Fixtures
44 Sign Stucture
45 Utilities & Supports

✔	Span	Item	Photo Location / Description / ○Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔
	1		T1 L1U1	<124>	
	1		T1 U1L2	<128,29,30, 31>	
	1		T1U2L2	<132,33>	
	1		T1 U2 L3 Est. 5% ± SL	<140,41>	
	1		T1 L3 U4 " " " "	<145,46,47,48	
	1		T1 U3 L4 NSSL	<153,54>	
	1		T1 U4 L4 NSSL	<155,56>	
	1		T1 L4 U5 NSSL	<157,58>	
	1		T1 L4L5 Est. 5% ± SL	<159>	
	1		T1 U4L5 NSSL	<160,61>	
	1		T1 U7L7 NSSL	<185,86,87,88,	
	1		T1 L7 U8 Est 5% ± SL	<189,190>	
	1		T1 L7L8 Vertical legs = 5% SL, horizontal legs NSSL	<191,92,93>	
	1		T1 U8L8 NSSL	<194,95>	
	1		T1 L8L9 NSSL	<196>	
	1		T2U1L1 NSSL	<209,10>	
	1		T2L1L2@L1 Similar not as bad as L0L1	<211,12>	
	1		T2U1L2 ≤5% SL	<213,14 15>	
	1		T2U2L2 NSSL	<216,17>	
	1		T2 L4U5 NSSL	<246,47>	
	1		T2L4L5 ≤5% SL	<248,49>	
	1		T2 U4L5 ≤5% SL	<250,51>	
	1		T2L8U8 NSSL	<286,87,88>	
	2		T1 L1U1 NSSL <484>	<303,304>	
	2		T2 U1L1 NSSL	<392,93>	
	2		T2 U2L2	<399,406>	
	2		T2 L8	<483>	
	1	41	PPL1-L8 T1 L8	<467-474>	
	1		T2 L1	<475,76,77>	
	1		T2 L8 Span 2	<478>	
	2		T1 L1	<479>	
	2		T2 L1	<480>	
	2		T2 L7	<481,82>	

%SL	3 / 8"	7 / 16"	1 / 2"	9 / 16"	5 / 8"	11 / 16"	3 / 4"	7 / 8"
0	0.375	0.4375	0.500	0.5625	0.625	0.6875	0.750	0.875
15	0.319	0.372	0.425	0.478	0.531	0.584	0.638	0.744
25	0.281	0.328	0.375	0.422	0.469	0.516	0.563	0.656
33.33	0.250	0.292	0.333	0.375	0.417	0.458	0.500	0.583
50	0.188	0.219	0.250	0.281	0.313	0.344	0.375	0.438
66.66	0.125	0.146	0.167	0.188	0.208	0.229	0.250	0.292
75	0.094	0.109	0.125	0.141	0.156	0.172	0.188	0.219
85	0.056	0.066	0.075	0.084	0.094	0.103	0.112	0.131
95	0.019	0.022	0.025	0.028	0.031	0.034	0.038	0.044

Gusset Plate Section Losses

(19)

Span: 1

(T1) T2

PP: LØ

BIN NH 070/117

Carry Sewells Falls Road

Cross Merrimack River

D.O. Northeast

Date 3/7/2012

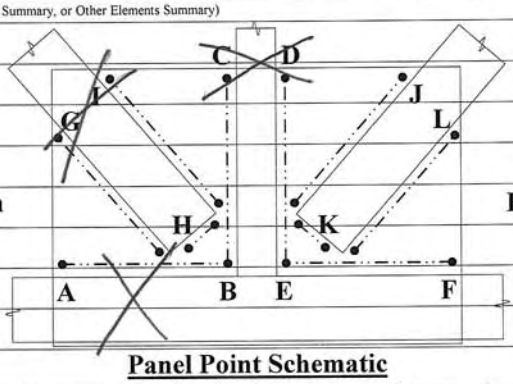
✔	Span	Item	Photo Location / Description / ◯Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔

Left Plate

Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness: 3/8"



←(SSW) Begin

End (NNE)→

(NSSL)

Panel Point Schematic

	Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		

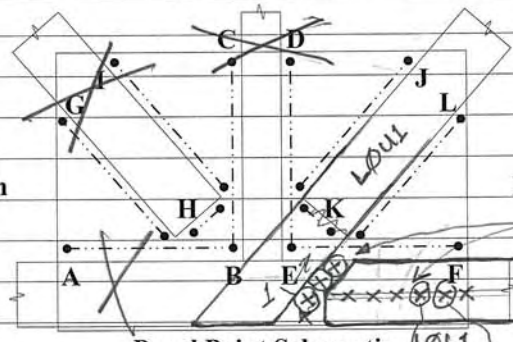
Right Plate

Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness: 3/8"

<116, 17, 18, 19, 20, 21, 22, 23>



←(SSW) Begin

End (NNE)→

X = SL ~~est @ 50%~~ measured

not accessible for d-meter/grinder

Panel Point Schematic

LØL1

	Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF Line X	Line JK	Line K	Line KL		
Low									.234	.272				
Mid									.262	.280				
high									301					

29% 26% very localized

%SL	3 / 8"	7 / 16"	1 / 2"	9 / 16"	5 / 8"	11 / 16"	3 / 4"	7 / 8"
0	0.375	0.4375	0.500	0.5625	0.625	0.6875	0.750	0.875
15	0.319	0.372	0.425	0.478	0.531	0.584	0.638	0.744
25	0.281	0.328	0.375	0.422	0.469	0.516	0.563	0.656
33.33	0.250	0.292	0.333	0.375	0.417	0.458	0.500	0.583
50	0.188	0.219	0.250	0.281	0.313	0.344	0.375	0.438
66.66	0.125	0.146	0.167	0.188	0.208	0.229	0.250	0.292
75	0.094	0.109	0.125	0.141	0.156	0.172	0.188	0.219
85	0.056	0.066	0.075	0.084	0.094	0.103	0.112	0.131
95	0.019	0.022	0.025	0.028	0.031	0.034	0.038	0.044

Gusset Plate Section Losses

(20)

Span: 1

T1 (T2)

PP: LØ

BIN NH 070/117

Carry Sewells Falls Road

Cross Merrimack River

D.O. Northeast

Date 3/7/2012

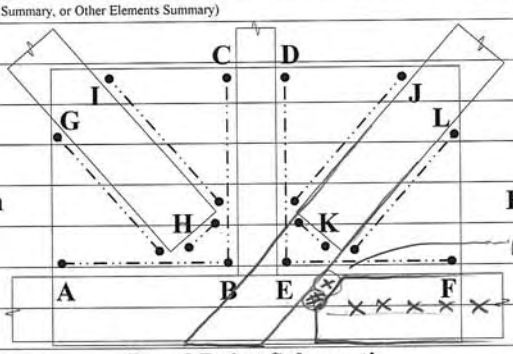
✔	Span	Item	Photo Location / Description / ◯Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔

Left Plate

Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness: 3/8"



←(SSW) Begin

End (NNE)→

Not accessible
appears relat. minor SL

Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		

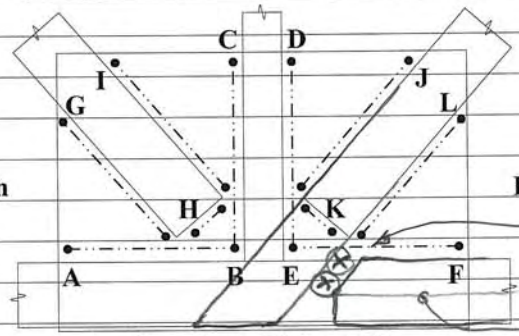
Right Plate

Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness: 3/8"

<97, 98, 99, 200, 01>



←(SSW) Begin

End (NNE)→

379, 380
Orig. 350 (?)

NSSL (GPR)

Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		

(Inconclusive
appears minor SL)

%SL	3 / 8"	7 / 16"	1 / 2"	9 / 16"	5 / 8"	11 / 16"	3 / 4"	7 / 8"
0	0.375	0.4375	0.500	0.5625	0.625	0.6875	0.750	0.875
15	0.319	0.372	0.425	0.478	0.531	0.584	0.638	0.744
25	0.281	0.328	0.375	0.422	0.469	0.516	0.563	0.656
33.33	0.250	0.292	0.333	0.375	0.417	0.458	0.500	0.583
50	0.188	0.219	0.250	0.281	0.313	0.344	0.375	0.438
66.66	0.125	0.146	0.167	0.188	0.208	0.229	0.250	0.292
75	0.094	0.109	0.125	0.141	0.156	0.172	0.188	0.219
85	0.056	0.066	0.075	0.084	0.094	0.103	0.112	0.131
95	0.019	0.022	0.025	0.028	0.031	0.034	0.038	0.044

Gusset Plate Section Losses

(21)

Span: 2

T1 T2

PP: L3

BIN NH 070/117

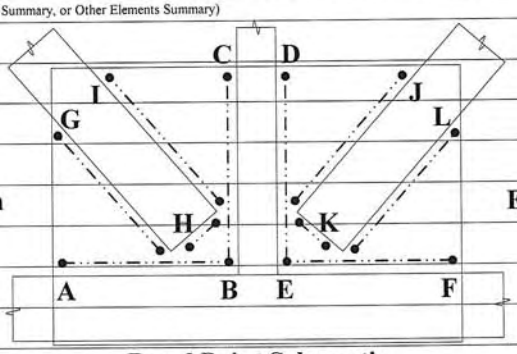
Carry Sewells Falls Road

Cross Merrimack River

D.O. Northeast

Date 3/8/2012

✔	Span	Item	Photo Location / Description / ◯Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔



←(SSW) Begin

End (NNE)→

Left Plate

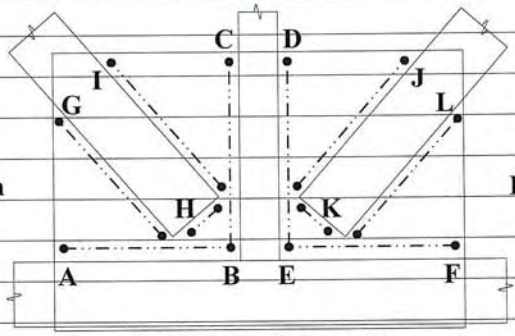
Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness:

Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		
	NSSL							.377					
								.361					
								.382					
								0%					



←(SSW) Begin

End (NNE)→

Right Plate

Plate Size:

Meas. Thickness: 3/8"

Nominal Thickness:

Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		
	NSSL							.286					
								.275					
								.344					
								.375					
								.361					
								12%					

%SL	3 / 8"	7 / 16"	1 / 2"	9 / 16"	5 / 8"	11 / 16"	3 / 4"	7 / 8"
0	0.375	0.4375	0.500	0.5625	0.625	0.6875	0.750	0.875
15	0.319	0.372	0.425	0.478	0.531	0.584	0.638	0.744
25	0.281	0.328	0.375	0.422	0.469	0.516	0.563	0.656
33.33	0.250	0.292	0.333	0.375	0.417	0.458	0.500	0.583
50	0.188	0.219	0.250	0.281	0.313	0.344	0.375	0.438
66.66	0.125	0.146	0.167	0.188	0.208	0.229	0.250	0.292
75	0.094	0.109	0.125	0.141	0.156	0.172	0.188	0.219
85	0.056	0.066	0.075	0.084	0.094	0.103	0.112	0.131
95	0.019	0.022	0.025	0.028	0.031	0.034	0.038	0.044

Gusset Plate Section Losses (22)

Span: 2

T1 (T2)

PP: L6

BIN NH 070/117

Carry Sewells Falls Road

Cross Merrimack River

D.O. Northeast

Date 3/9/2012

✔	Span	Item	Photo Location / Description / ◯Rating. / (Overall Summary, or Other Elements Summary)	Photo	✔

Left Plate

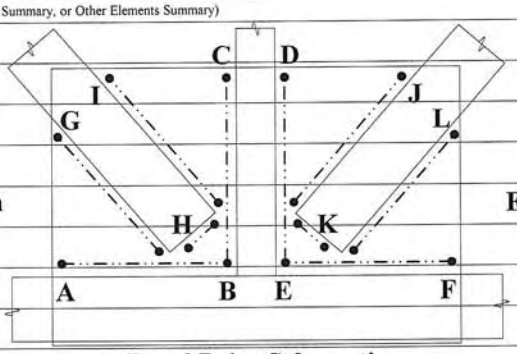
Plate Size:

Meas. Thickness: (fat) 3/8"+

Nominal Thickness: 3/8"

←(SSW) Begin

End (NNE)→



Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		
.373								.369					
.354								.365					
.362								0% SL					
3%								2%					

Right Plate

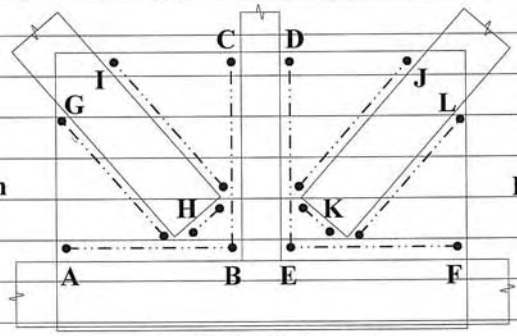
Plate Size:

Meas. Thickness: (fat) 3/8"+

Nominal Thickness: 3/8"

←(SSW) Begin

End (NNE)→



Panel Point Schematic

Line AB	Line BC	Line GH	Line H	Line HI			Line DE	Line EF	Line JK	Line K	Line KL		
.351								.347					
.363								.279					
.372								.387 (fat)					
3%								10%					

CHA

CHA COMPUTATION PAD

COMPLETED BY: Joe Albert / C. Snyder
CHECKED BY:
PROJECT NAME: Sewalls Falls
PROJECT LOCATION: Concord, New Hampshire

PROJECT: 23968 PHASE: 1000 ORG:
SHEET #: 1 OF 2 (23)
DATE: 3/6/2012
SUBJECT: Stringer Section Loss

Stringers

Span 1, Floor panel 1 (FB0-FB1)

S4 @ 9.5' from Begin approach — Top Cover PL: 30%; Web: 50%

S5 & S6 @ 8.0' from Begin approach — Top Cover PL: 100%; BF: 35%
7.5' " " " "

Span 1, Floor Panel 2 (FB1-FB2)

S5 @ 9.0' from FB1 — Web: 50% 3 drilled bolt holes deteriorating; TF: 20% 1 " " "

Floor Panel 3 (FB2-FB3)

S3 @ 5' From FB2 — Web 30%

A → S6 @ FB3 - 2' — Web: Shot, 80% + over length of 2' A High shear Zone

S7 " " " " — Web: 20% (high shear zone)

Floor Panel 4 (FB3-FB4)

A S4 @ 2' from FB3 — Web: 45% (High shear Zone) A

A S5 @ 2' From FB4 — Web: 30% " " " A

A S6 " " " — Web: 60% " " " A

A S7 " " " — Web: 90% " " " A

≈8"x4" hole in web

Floor Panel 5 (FB4-FB5)

A S3 @ 2' From FB4 — Web: 40% A

S5 @ 2' From FB5 — Web: 20% small hole in web

Floor Panel 8 (FB7-FB8)

A S6 @ 2' from FB7 — Web: 60% 4"x4" hole in web A

Floor Panel 9 (FB8-FB9)

S4 @ 3' From FB8 — Web: 30%

S5 " 2' " — Web: 30%

S6 " 2.5' " " — Web: 25% TF cover PL: 20%

S7 " 0.5' & 2.5' " — Web: 10% & 20% respectively

CHA COMPUTATION PAD

COMPLETED BY: Joe Albert / C. Snyder
CHECKED BY:
PROJECT NAME: Sewalls Falls Bridge Inspection
PROJECT LOCATION: Concord, New Hampshire

PROJECT: 23968 PHASE: 1000 ORG:
SHEET #: 2 OF 2 (24)
DATE: 3/6/2012
SUBJECT: Stringer Section Loss

Stringers:

Span 1: Floor Panel 9 (FB8-FB9) ctd.
S6 @ 10.8' From FB8 — Web: 45% over 1' length; TF cover PL: 35%; TF: 10%

★ S2,3,4 over FB9 30% loss of bearing area ★ (over pier)

Span 2: Floor Panel 1 (FB0-FB1)
S3 @ 0.5' From FB0 — Web: 35%
S5 @ 1.0' From FB0 — TF: 30%
S2 @ 0.5' From FB1 — Web: 25%
S7 @ 1.0' " FB1 — Web: 30%

Floor Panel 2 (FB1-FB2)
S4 @ 2.0' From FB2 — Web: 20%
S5 @ 1.0' from FB2 — Web: 30%
A S6 @ 1.0' from FB2 — Web: 40% A

Floor Panel 3 (FB2-FB3)
A S3 & S5 @ 2' from FB2 — Web: 50% & 25% respectively

Floor Panel 7 (FB6-FB7)
S5 @ 9.3' From FB6 — TF: 15% over 8" length (near mid panel)

Floor Panel 8 (FB7-FB8)
S5 @ 5.0' from FB7 — TF: 30% over 8" length (1/3 span)
S5 @ 1.0' from FB8 — TF: 35% over 3" length

Floor Panel 9 (FB8-FB9)
S5 (Functional) @ 10' From FB8 — BF: 40% (hole in flange)
entire stringer → A S3 all along Top Flange, average of 40% loss w/max of 70% in 2 locations 1 @ 7.0' from FB8 and another @ 11.1' from FB8 A

CHA COMPUTATION PAD

COMPLETED BY: Joe Albert / C. Snyder
CHECKED BY:
PROJECT NAME: Sewalls Falls Bl
PROJECT LOCATION: Concord, New Hampshire

PROJECT: 23968 PHASE: 1000 ORG:
SHEET #: 1 OF 1 (25)
DATE: 3/5/2012 - 3/6/2012
SUBJECT: Floor beam Section Loss

Floor beams (SL through X section)

Span 1 FB1 Begin side bottom flange 3 locations of chunks of steel missing. in between stringers 3-6 S3-S4 (80%)A, S4-S5 (30%), S5-S6 (50%)

End side holes between S3-S4 & S5-S6 (50%) (85%)A

Span 1 FB4 Begin side bottom flange multiple holes in between stringers 4-6 (50% max)
End side " " holes between S3-S4 & S5-S6 (35%) (55%)A

Span 1 FB6 End side bottom flange holes 6"-8" in length under S6 (70% max)A

SP 1 FB7 Begin side bottom flange holes between S3-S4 (90%)A

Span 1 FB8 End side bottom flange gouges between S5-S6 (25%)

Span 2

FB1 between stringers 4-6 begin side, gashes in BF (60% max)
FB2 End side between S5-S6 holes in BF (70% max)

FB4 Begin side between S3-S4 holes in BF (30% max)

FB6 End side between S2-S3 holes in BF (80% max)

FB7 End side between S2-S3 holes in BF over a length of 78" (50% max) (90% avg)