STEEL SECTION REMAINING TOOL

Reference Title

Steel Section Remaining Tool

Reference Revision and Year:

Version 1.0, 2026

Reference Introduction and Discussion

Inspectors can use this reference as a tool to document the amount of steel section remaining on certain elements. The use of this reference or a similar means of documenting steel section remaining on certain elements shall be required as detailed below. This reference does not require the tool to be included in the inspection report, however, SCDOT requires detailed notes for the elements and this tool can produce the required level of detail for the elements.

Reference Description

Section 1 is for steel beam reporting. Steel beam reporting shall be followed for girders, stringers, diaphragms that act as primary members, and truss members. Section 2 is for steel pile reporting.

1.0 STEEL BEAM MEASUREMENTS

Reminder: Always report section remaining. For steel beam corrosion defect notes, each note must contain the following information:

- Girder Number in Span-Beam Number format (Girder #-#)
- Location of defect along Beam Length (measuring from the closest edge of defect area to centerline of bearing)
- Corrosion type/category (corrosion, pitting, knife edging, corrosion hole, etc.)
- Defect dimensions (Length x Width or Height x Section Remaining)

Example:

Girder 6-4: 5.5’ from Bent 6, Left Web Face has (corrosion) 26" L x 9" H x 0.25" of material thickness remaining starting 4" from the bottom of web. (CS4, 3LF, Photo XX).

Girder section loss notes must be listed individually, with separate lines for different locations, and Beam parts (Top Flange, Web, Bottom Flange) and the left or right side of the beam where the measurement was performed.



Dimensions Needed for Steel Beam Measurements

Girder Number (Span-Beam Number format (Girder #-#)) shall be taken from the labeling diagram. Consultants shall correct labeling diagrams, if needed. District inspectors shall contact the BMO to correct a labeling diagram, if needed.

Web measurements are typically measured as "thickness remaining" with a D-meter, flange measurements are typically measured as "thickness remaining" with electronic calipers.

Appendix V, Steel Beam Measurement Tool
AUG 2024, V1

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SCDOT

Asset ID:

Directions:

1. Bridge element numbering orientation shall match the labeling diagram.
2. Web measurements are typically measured "thickness remaining" with a D-meter.
3. Flange measurements are typically measured as "thickness remaining" with calipers.

Beam — Girder Number (in Span-Beam Number format - e.g. 4-4)
Element — Web, Top Flange, Bottom Flange, etc.
Side — Left or Right Side
X — (decimal feet) Distance from Corner Line of Bearing to defect start
L — (decimal inches) Length of Defect
B — Bent Number (where "X" is measured from)
H — (decimal inches) Height of Defect (for web)
W — (decimal inches) Width of Defect (for flanges)
Y — (decimal inches) Start Distance Up Web for Defect (Web), or left of the bottom
T — (decimal inches) Thickness Remaining

Start Distance (x)
Length (L)
Height (H)
Start Distance (y)
BRG
BRG
Width (W)
Remaining Thickness (t_{rem})

Inspection Date	Inspector Initials	Location of Defect					Field Measurements						Notes
		Beam	Element	Side (L/R)	X (ft)	B	L (in)	H (in)	W (in)	Y (in)	T (in)		

Steel Beam Measurements Template

2.0 STEEL PILE MEASUREMENTS

Reminder: Always report section remaining. For steel pile corrosion defect notes, each note must contain the following information:

- Pile Number in Bent-Pile Number format (Pile #-#)
- Location, (both on pile, and vertical location from bottom of cap to start of defect)
- Corrosion type/category (corrosion, pitting, knife edging, corrosion hole, etc.)
- Defect dimensions (Length x Width x Section Remaining)
- Example:

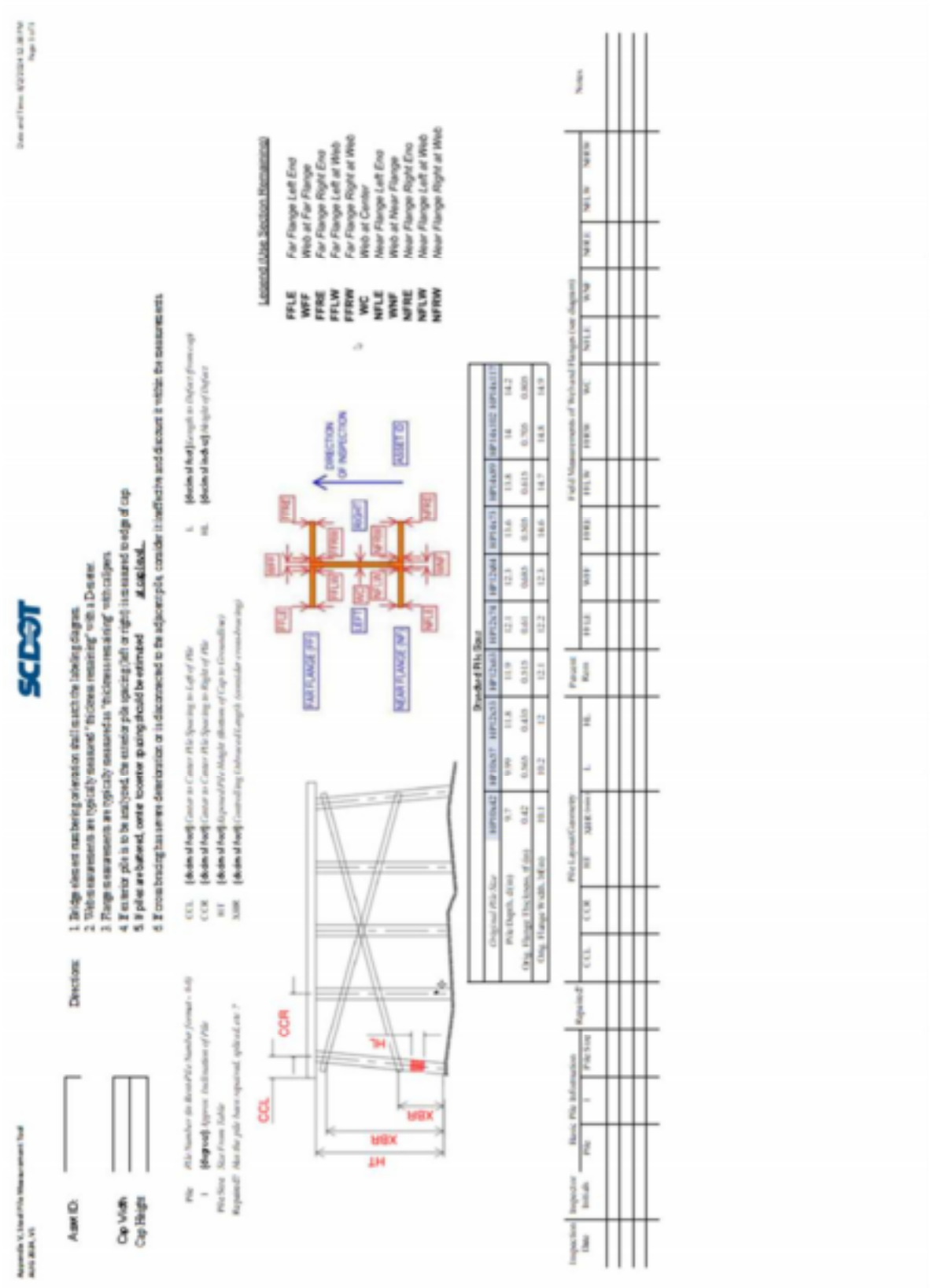
Pile 3-1 has corrosion 6'' (L), 6 ft down from the cap, .125” section remaining to full width of all flanges (CS4, 1LF, Photo XX).



Dimensions Needed for Steel Pile Measurements

Pile Number (in Bent-Pile Number format - Pile #-#) shall be taken from the labeling diagram. Consultants shall correct labeling diagrams, if needed. District inspectors shall contact the BMO to correct a labeling diagram, if needed.

Web measurements are typically measured as "thickness remaining" with a D-meter, flange measurements are typically measured as "thickness remaining" with electronic calipers.



Steel Pile Measurements Template