

Ironworker Falls 80 Feet through Bent Plate Gap

INCIDENT FACTS

REPORT #: 71-179-2019s

REPORT DATE: March 26, 2019

INCIDENT DATE: April 30, 2018

VICTIM: 29 years old

INDUSTRY: Structural steel and precast
concrete contractors

OCCUPATION: Ironworker

SCENE: High-rise building under construction

EVENT TYPE: Fall



A 29-year-old ironworker was severely injured after falling through a bent plate gap and landing 80 feet below in a debris net.

The ironworker's employer was a structural steel and precast concrete contractor.

He had worked for his employer for over four years and he had been an ironworker for 10 years.

The ironworker was a member of a “raising gang” crew of three. The crew was “shaking out” beams on the 18th floor of a high-rise building under construction.

They were positioning the beams on the floor deck so a crane could lift them into place to be secured to the building structure.

The ironworker and a coworker were guiding a beam on a shake out hook into place. The ironworker was at the end of the beam near the floor edge; the coworker was at the other end.

There was not much room for the ironworker to maneuver between the beam and the steel cable guardrails. There was a floor gap 36 inches long by 4 inches wide by the standing column near him.

As he stepped backward, he fell through the gap.

He landed 80 feet below in a net designed to catch debris, not people. Coworkers rescued him from the net.

He suffered numerous injuries, and still had not returned to work nearly a year after the incident.

State investigators found that all the guardrail systems at the site were placed outside the edge of deck/floor in the locations where the bent plates had not been placed, allowing for a space employees could fall through. Company procedure was to place bent plates over these gaps later in the construction process after the beam/column weld connections were made and the welds inspected.

Following the incident, the employer began corrective measures including: installing the bent plates as soon as structurally possible; decreasing the gap from 3 feet to 18 inches; moving the rail posts a few inches inward when possible; and wrapping cable rails around columns.

INJURY NARRATIVE

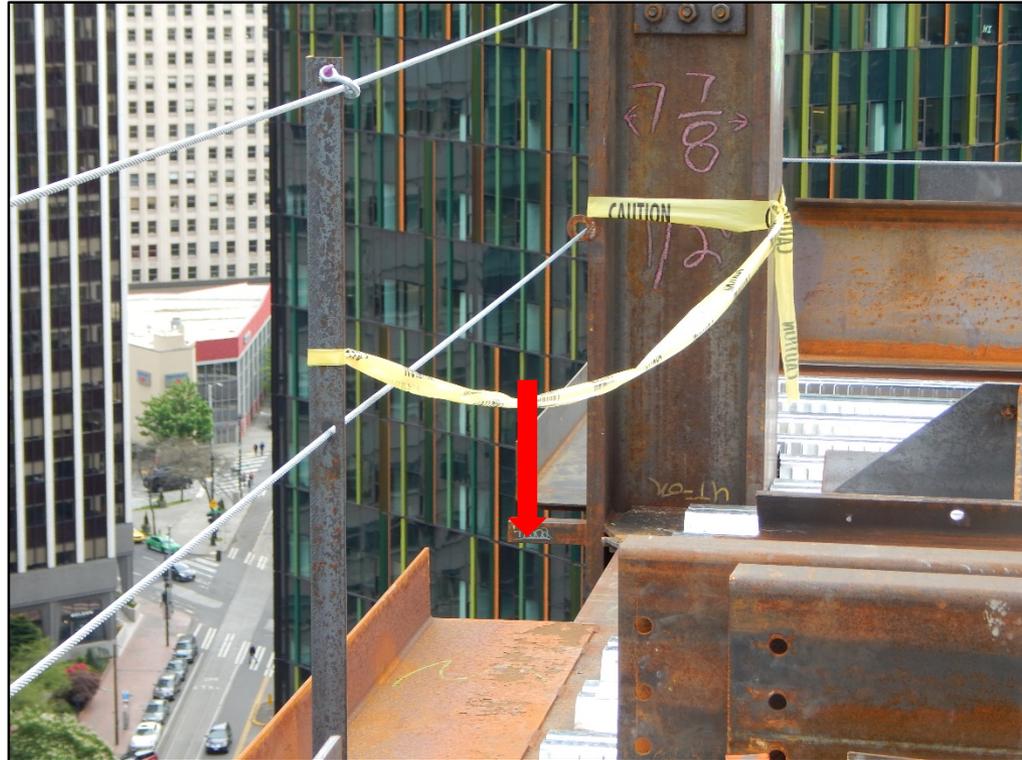


Photo 1. Gap the ironworker fell through when he stepped backward. The opening was 36 inches long by 4 inches wide from where the deck ends and the steel cable railing crosses. Caution tape was placed after the incident.

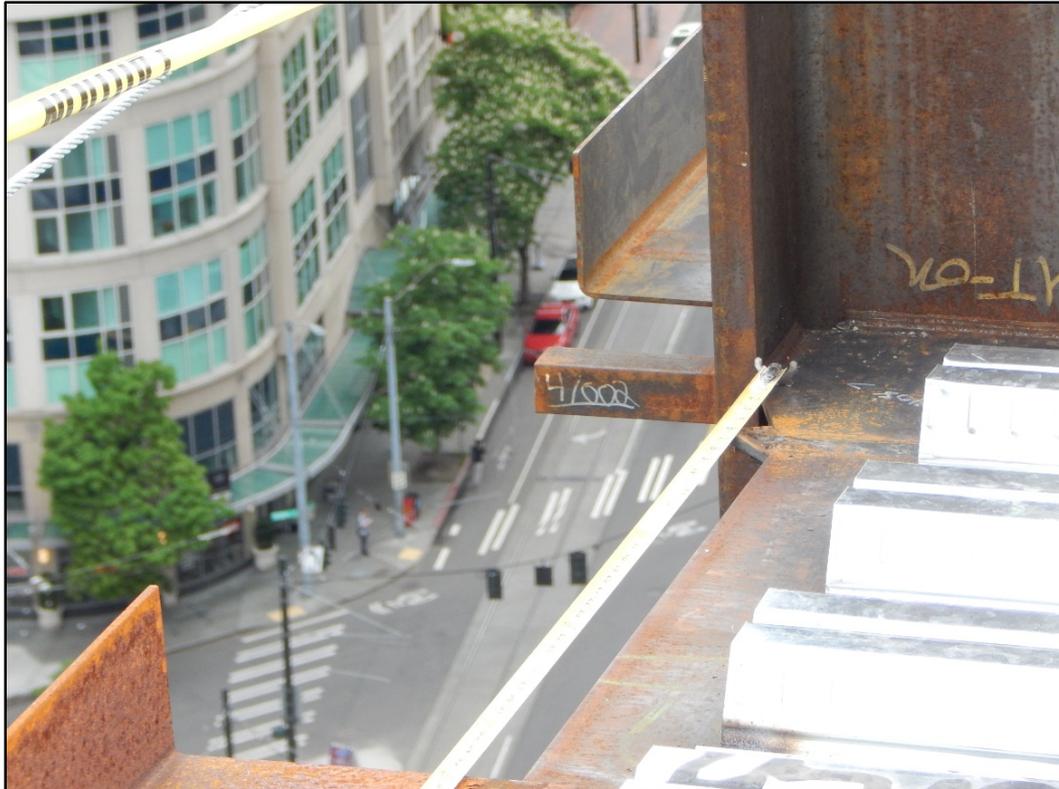


Photo 2. Close-up view of the gap the ironworker fell through.

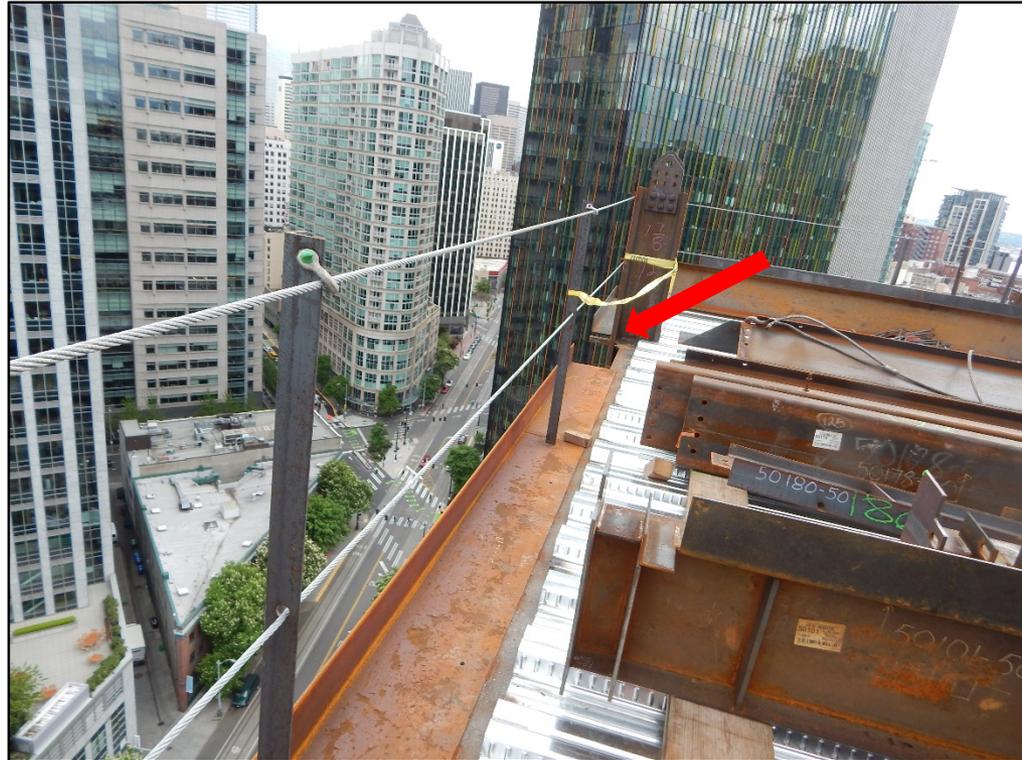


Photo 3. Work area on the building’s 18th floor showing the bent plate gap the ironworker fell through. He was “shaking out” a beam when when he stepped backward into the gap. Caution tape was placed after the incident.

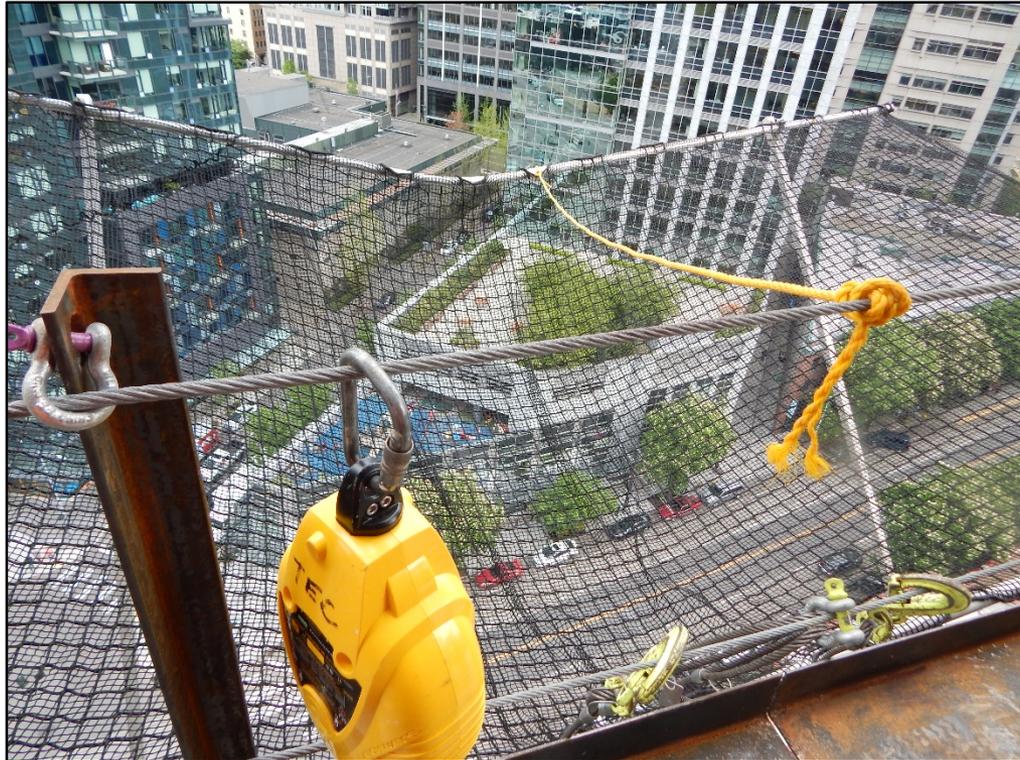


Photo 4. Debris net the ironworker landed in after falling 80 feet. The debris net was intended to catch falling objects, not people. The impact of the ironworker's fall bent the net's frame.



Photos 5 and 6. Injured ironworker being rescued from the debris net.
(Photo credit: Twitter @Luciana_soccer)

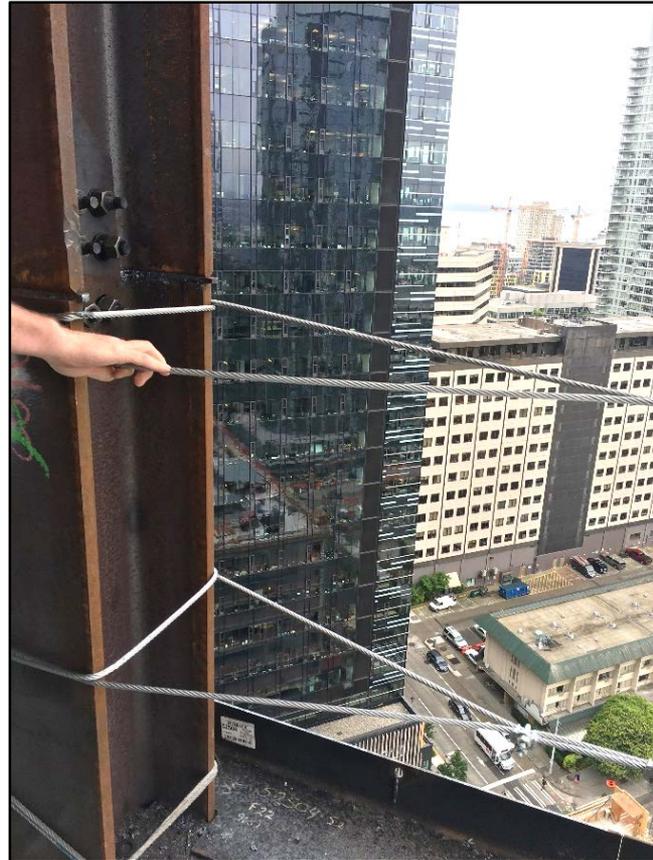


Photo 7. Post-incident pre-tensioned cable rails wrapped around a column.

Requirements

Ensure that the appropriate fall protection system is provided, installed, and implemented according to the requirements in this part when employees are exposed to fall hazards of 4 feet or more to the ground or lower level when on a walking/working surface.

See [WAC 296-155-24609\(1\)](#)

Recommendations

- Configure guardrail systems to prevent workers from reaching the unprotected floor edge.
- Place temporary covers over bent plate gaps.
- Decrease the size of bent plate gaps.
- Have a steel fabricator install bent plates prior to erection of columns.

This bulletin was developed to alert employers and employees of a serious traumatic injury of a worker in Washington State and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or conclusions regarding the cause of the injury.

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