
Temporary Bridge

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- Oregon Bridge Maintenance
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Presentation Outline

- Why Bailey as Temporary Bridge?
- Tools needed to Assemble
- Steps to Assemble the bridge
- Projects done in Oregon
- What Maintenance needed

What is a Bailey Bridge

- A Pre-fabricated Truss Bridge designed for the military during WWII
- Bridge needed to be flexible to carry various size loads, and be adaptable to various size gaps



Why a Bailey Bridge

- A versatile bridge that span a variety of gaps
- Easy & quickly assembled by manpower alone
- can be moved from one site to another.
- But it is one lane, 12'-6" bridge



Bailey Bridge Distinctive Features

- Each part of the bridge is a standard
- Parts are interchangeable
- no heavy equipment needed
- It is highly mobile.
- Designed so all parts of the bridge can be transported by 5-ton dump trucks and trailers.



Bailey Bridge History

- The Bailey bridge used in World War II
- was designed to be moved, rebuilt, even under enemy fire.
- The Bailey bridge was invented by *Donald Bailey*, an English civil engineer.
- Donald Bailey was knighted in 1946 for contribution to the victory in WW II.



Bailey Bridge Distinctive Features

- Light-steel made entirely from prefabricated parts
- Through-type truss bridge
- The trusses in each girder are formed by 10-foot panels
- panels linked by pinned end to end
- Roadway is carried by transoms



Various applications

- Simple-span bridge can be from 30 to 210 feet long.
- The bridge can be assembled to meet varying conditions of span and load.



Preparation for Construction

- Decide the bridge length
- List parts needed for the bridge
- Deliver the parts for the bridge span needed



Preparation for Construction

- Determine the layout for construction roller
- Assemble launching nose
- Counter weight and launching nose
- Ensure the clamps & bolts are in working order



Transportation



All the Parts loaded



Ready to Move



Tools for Bailey Construction



Bailey Parts

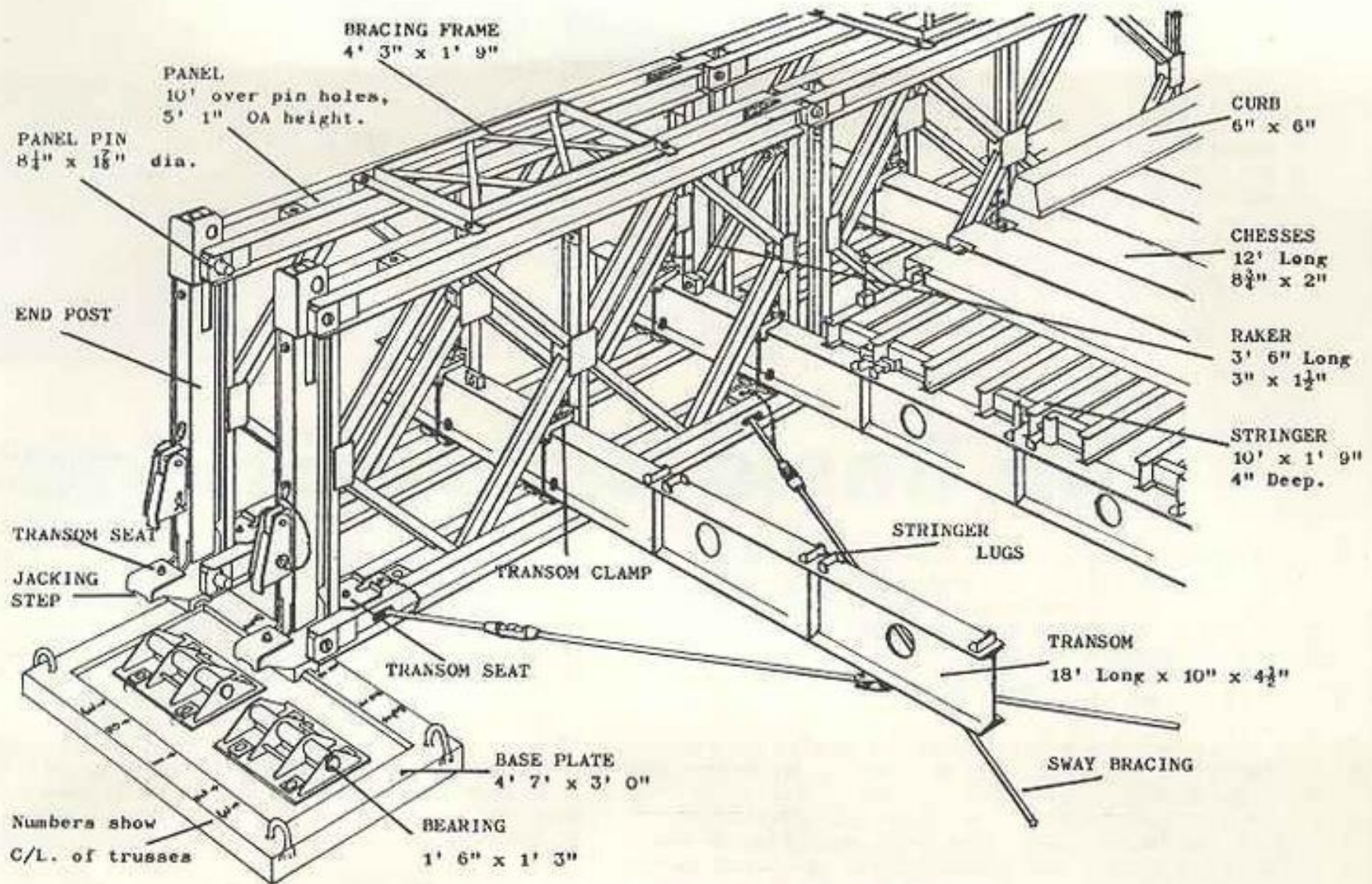


DIAGRAM OF DOUBLE TRUSS - SINGLE STOREY (DS)

Bailey Parts



- truss panels connect them with transoms and transom clamps.

- Panel pins & Pin clips



- Sway Bracing
- Frame Bracing



- Strings to support floor beam



- Timber planks & Curbs to hold floor boards

Construction

- Prepare Foundation-timber grillage & ground work for rollers
- End truss sit on cylindrical bearings - rest on a steel base plate.
- used under the base" plates to distribute load



Assembling the bridge

- Begin by standing up truss panels on the construction rollers
- Proper spacing of the rollers



Assembling the bridge

- Connect the panels with panel pins and pin clips
- After truss panels are standing, connect them with transoms and transom clamps



Assembly continued

- Attach sway Bracing
- Attach Frame Bracing
- Stringers are placed after the panel and transom assembly
- Heavy equipment can be utilized to help push and pull



Assembling Launching Nose

- First several panels are a skeleton frame
- Number of panels depend on the length and size of bridge being launched



Construction Continued

- Transverse floor beams, transoms, are clamped to the bottom chords of the trusses
- Sway braces between the girders provide horizontal bracing
- bracing frames provide lateral bracing within each panel



Constructing the Deck

- Timber plank are used
- Steel Grading can be used
- Install curb to hold floor boards in place



Finishing

- Construct Ramps
- Grade Approaches
- Traffic Control



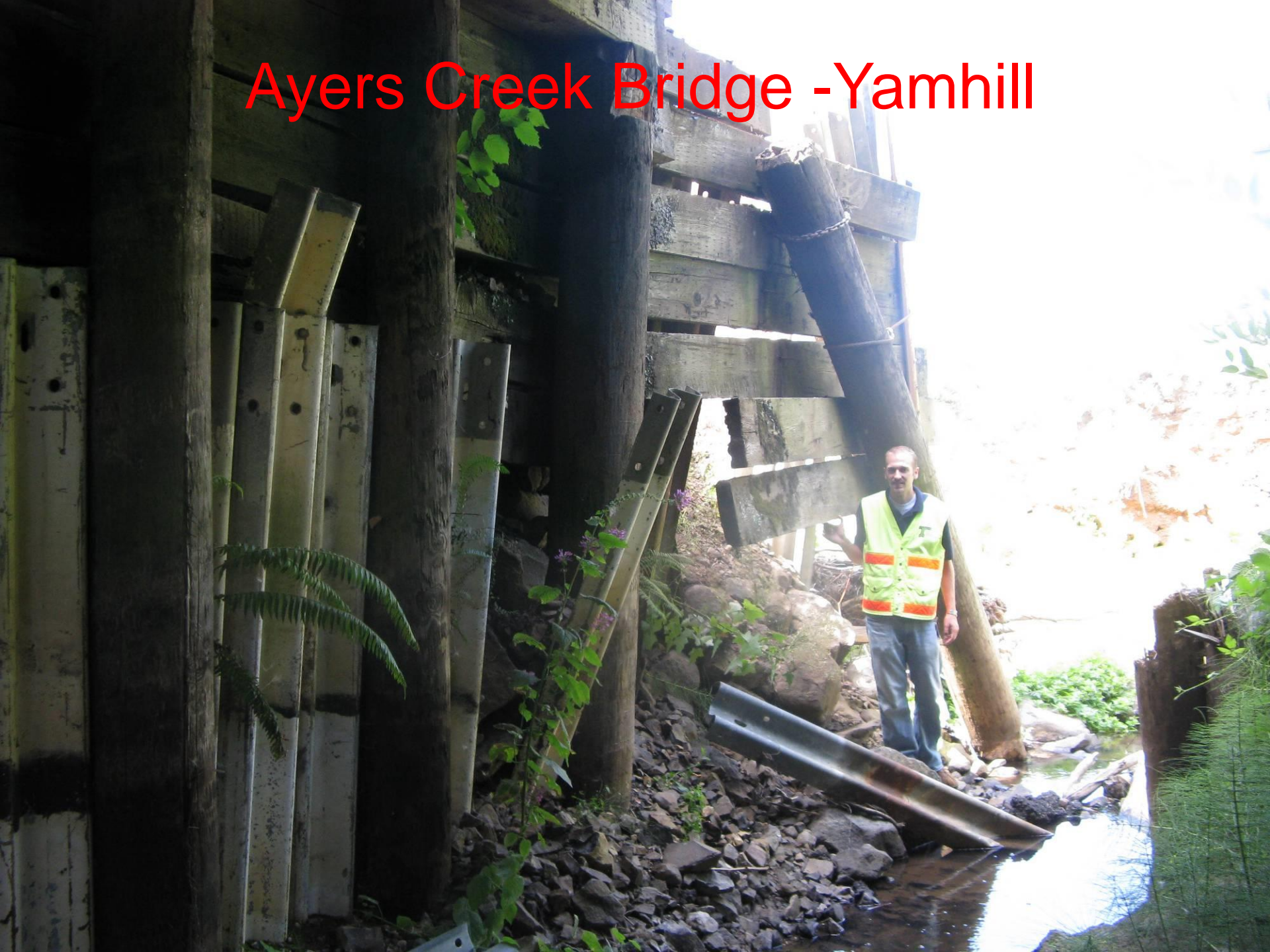
Bailey Bridges in Oregon

- Tomas Creek, Main St (Scio), Linn County
- Ayers Creek Bridge –Yamhill
- Boulder Creek, Blaine Rd: Tillamook Co

Tomas Creek, Main St (Scio), Linn County



Ayers Creek Bridge - Yamhill



Ayers Creek Bridge - Yamhill



Ayers Creek –Bailey (single-double)



Ayers Creek –Bailey (single-double)



Ayers Creek –Bailey (single-double)



Ayers Creek –Bailey (single-double)



Boulder Creek Beaver – Blaine Rd

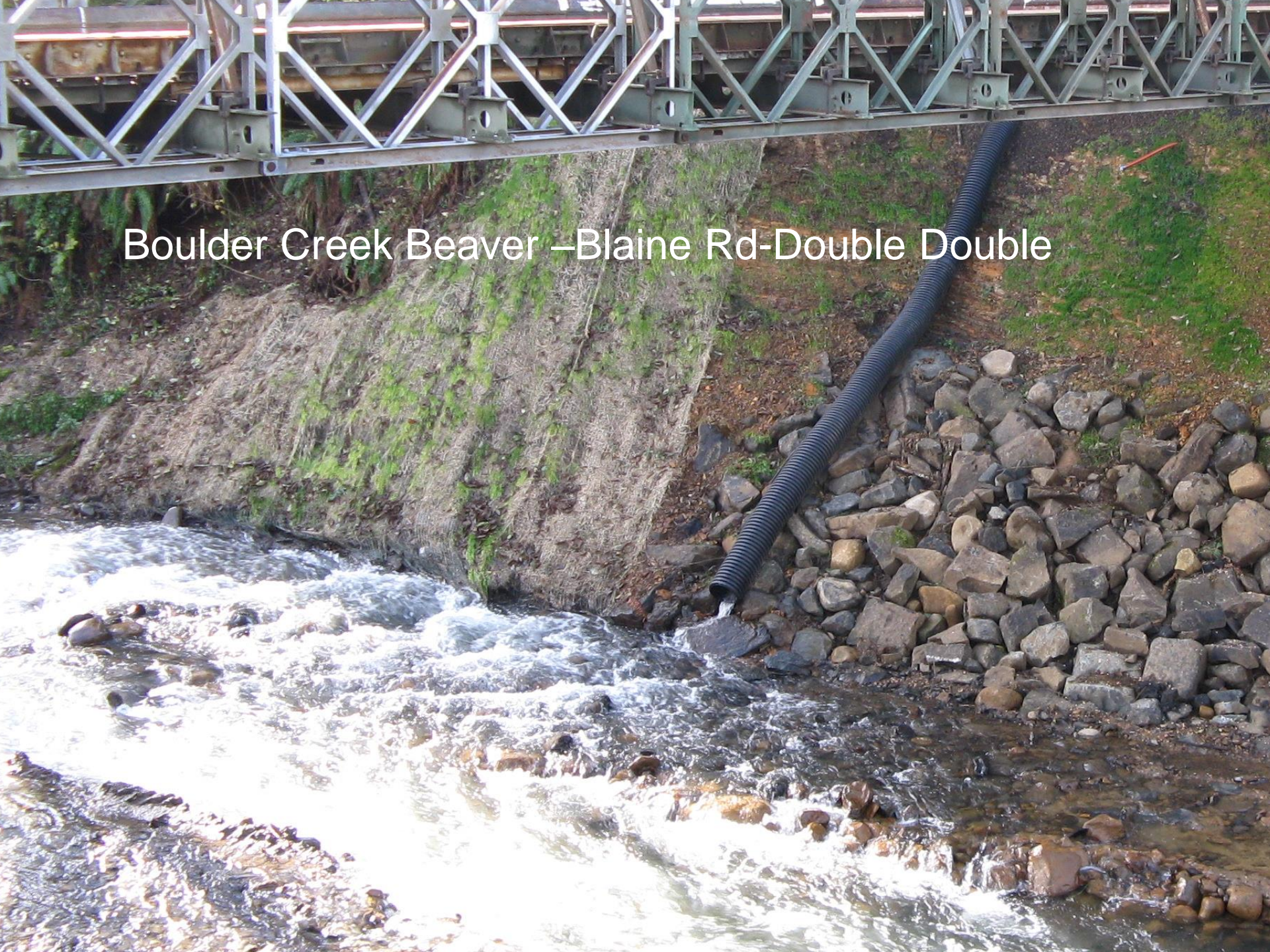


Boulder Creek Beaver - Blaine Rd





Boulder Creek Beaver –Blaine Rd-Double Double





Boulder Creek Beaver – Blaine Rd-DD



Boulder Creek Beaver – Blaine Rd-DD



Bailey Bridge maintenance

- Bolts and Nuts Tightening
- Transom Clamp Tightening
- Timber Plank checking
- Need continue maintenance
- One lane bridge, 12'-6" (C to C)

Thank you!

