

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomapping, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Site A just above Eldorado parking area December 2017  
View downstream



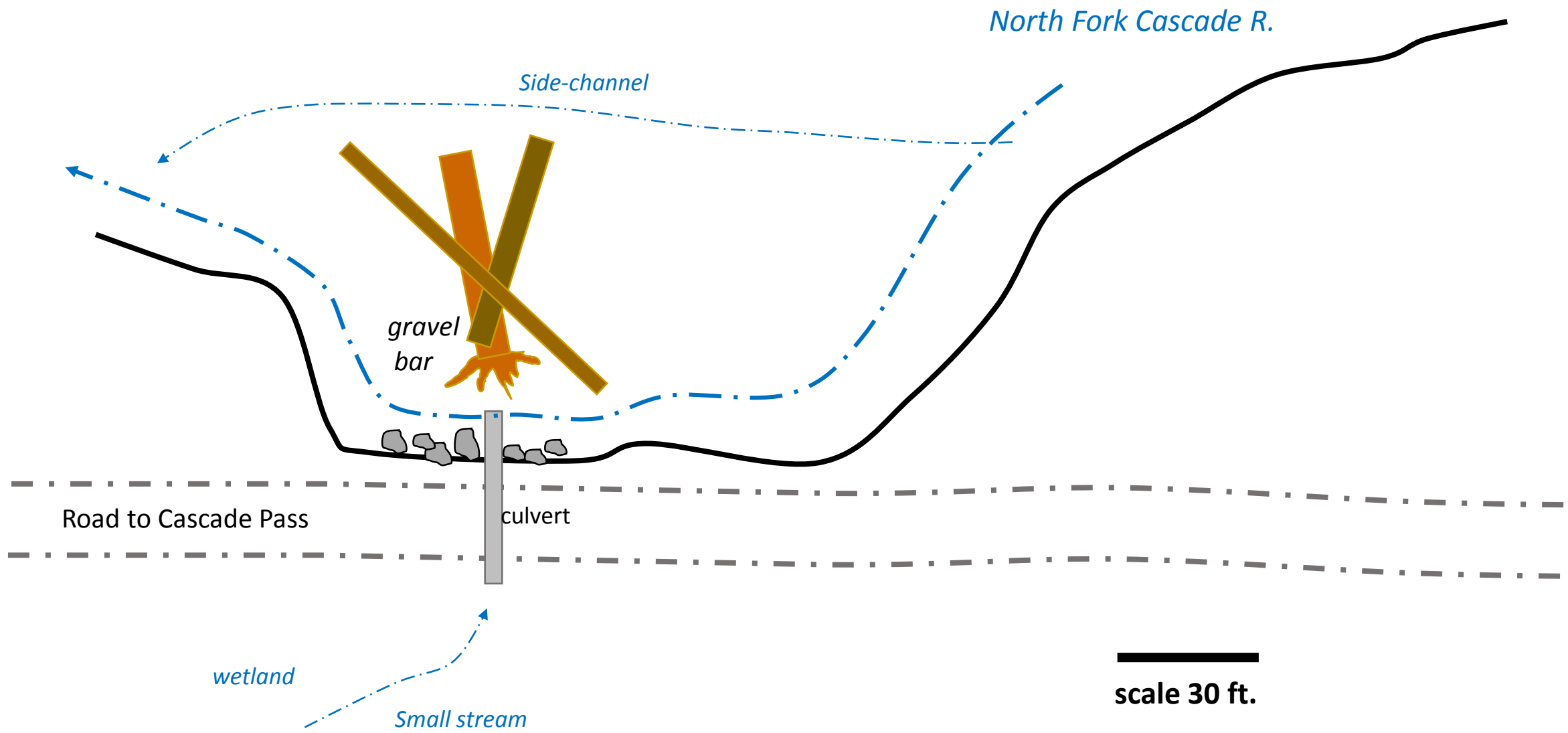
**Site A just above Eldorado parking area December 2017**  
**View upstream**



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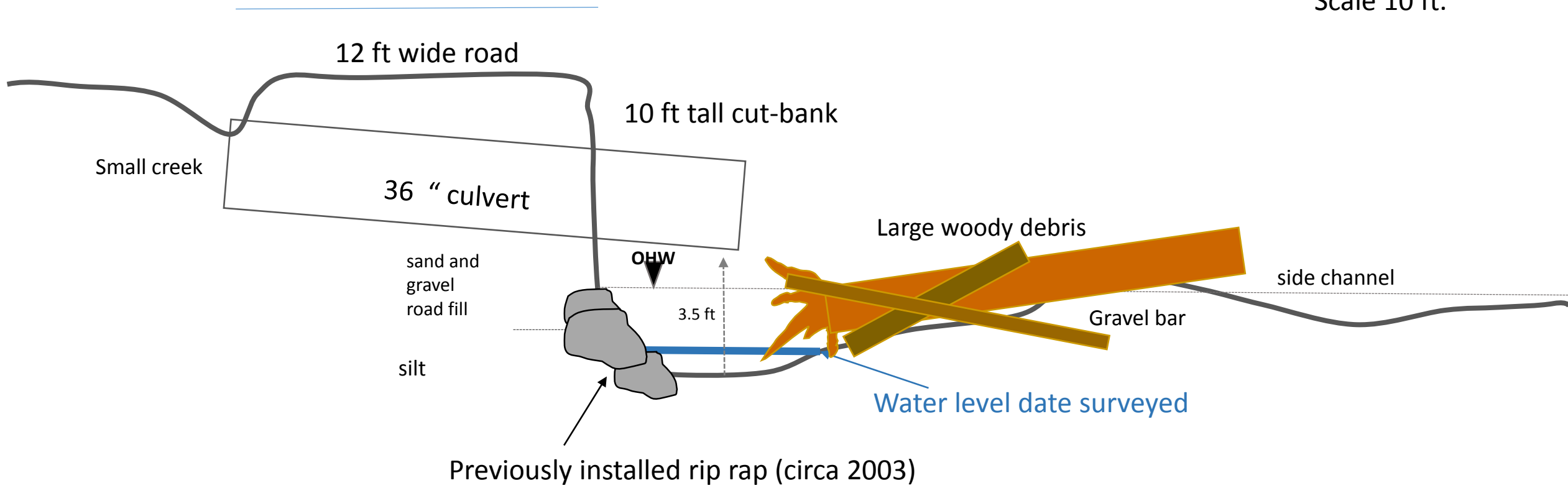


Cascade River Road near Eldorado Trailhead  
Site A Plan View  
Existing January 31, 2018



Cascade River Road near Eldorado Trailhead  
Site A Cross-Section View Downstream  
Existing January 31, 2018

Scale 10 ft.





Cascade River Road near Eldorado Trailhead  
Site A Plan View  
Proposed June 2018

floodplain

North Fork Cascade R.

Side-channel

floodplain

gravel  
bar

4. Install 3 ft diameter, 25 ft long logs with rootwads on streambed on either side of culvert. Anchor with boulders and rootwads (cabled).

Tie-in to existing logjam  
At upstream end

5. Fill with gravel to >OHW, then native soil and willow layer bioengineering to road edge  
At slope 1.5:1.

Road to Cascade Pass

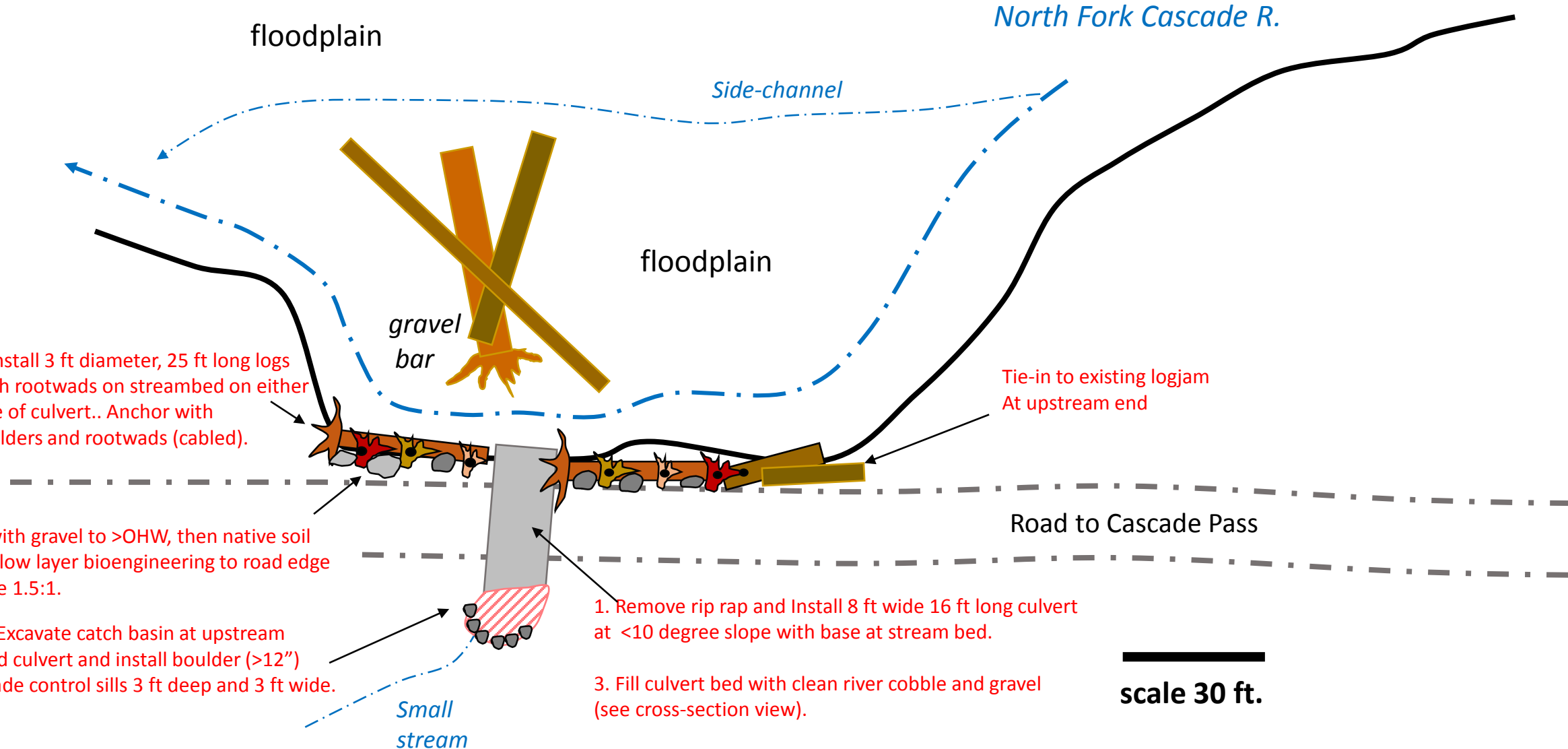
2. Excavate catch basin at upstream end culvert and install boulder (>12") grade control sills 3 ft deep and 3 ft wide.

1. Remove rip rap and Install 8 ft wide 16 ft long culvert at <10 degree slope with base at stream bed.

3. Fill culvert bed with clean river cobble and gravel (see cross-section view).

Small stream

scale 30 ft.

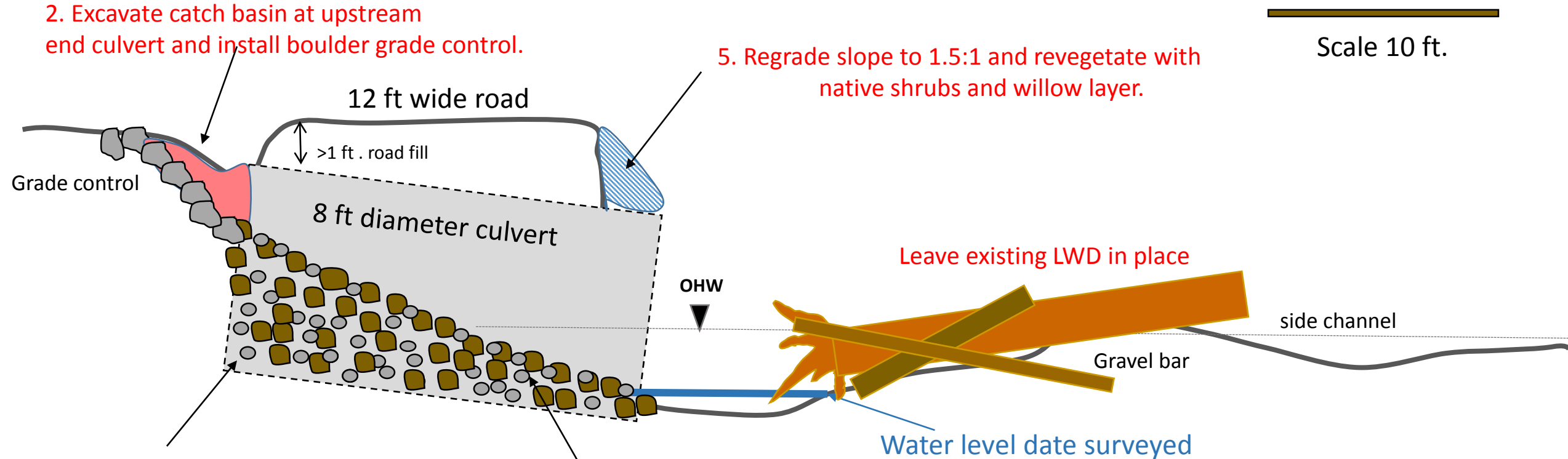


Cascade River Road near Eldorado Trailhead  
Site A Cross-Section View Downstream  
Proposed Culvert June 2018

2. Excavate catch basin at upstream end culvert and install boulder grade control.

5. Regrade slope to 1.5:1 and revegetate with native shrubs and willow layer.

Scale 10 ft.



1. Install 8 ft wide 16 ft long culvert at <10 degree slope with base of outlet below stream bed.

3. Fill culvert with river cobble and gravel and grade to stream bed from inlet (ideally <10 degrees).



**Site B above Eldorado parking area  
View downstream**

**Minor damage**



North Fork Bridge December 2017  
Site C

damage



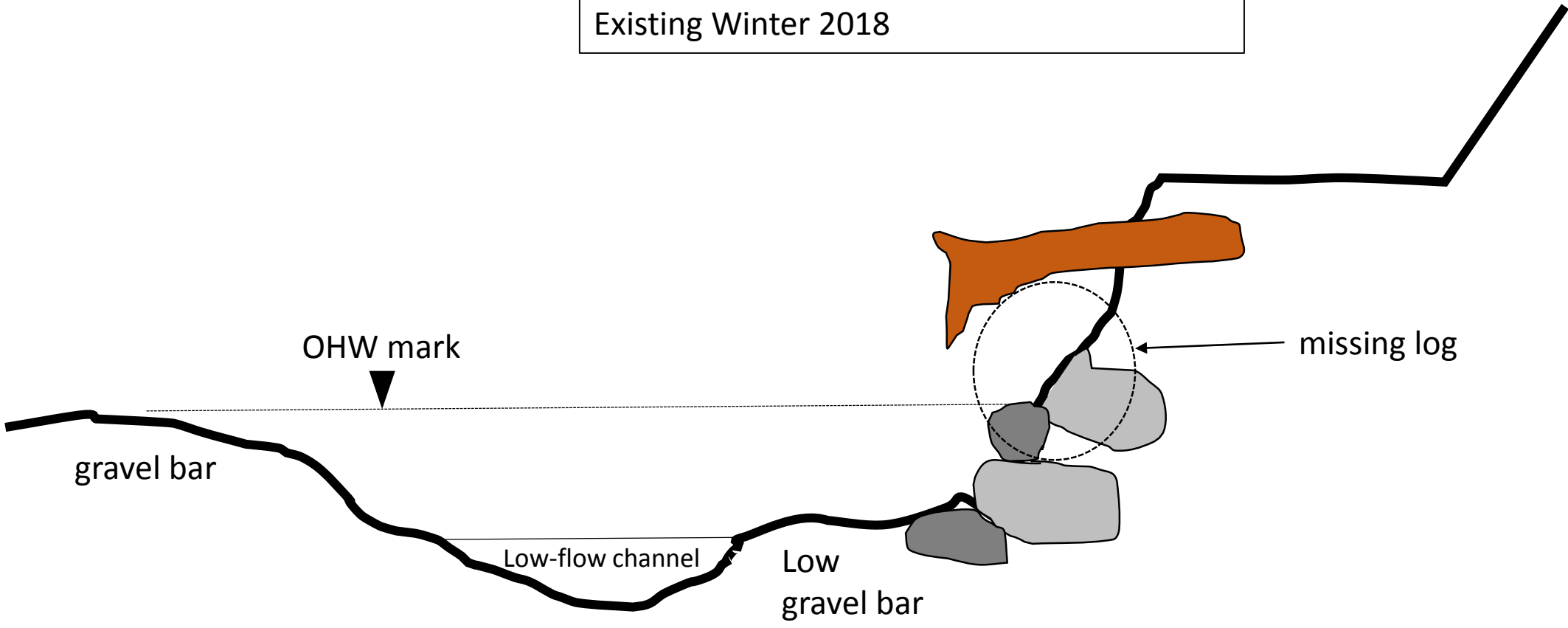
Cascade Road. Site D. View downstream at site of missing log



Cascade Road. Site D. View Upstream of Intact Logjam



Cascade River Road near Eldorado Trailhead  
Site D Cross-Section View Downstream  
Existing Winter 2018



gravel bar

OHW mark

Low-flow channel

Low  
gravel bar

missing log

Cascade River Road near Eldorado Trailhead  
Site D Cross-Section View Downstream  
Proposed Winter 2018

Replace missing log with 30-40 ft long,  
3 ft diameter log, ideally with rootwad.  
Cable to overhanging log and downstream log  
And anchor upstream end with dead man  
Under road. Use rocks to fill any gaps and to  
Protect upstream end of log.

