

Lamprey Minor Fishway Modifications: Reference Photos of BON Washington Shore Fish Ladder

(For Proposed 2014-15 IWW Period Actions)

Sean Tackley

Fish Biologist

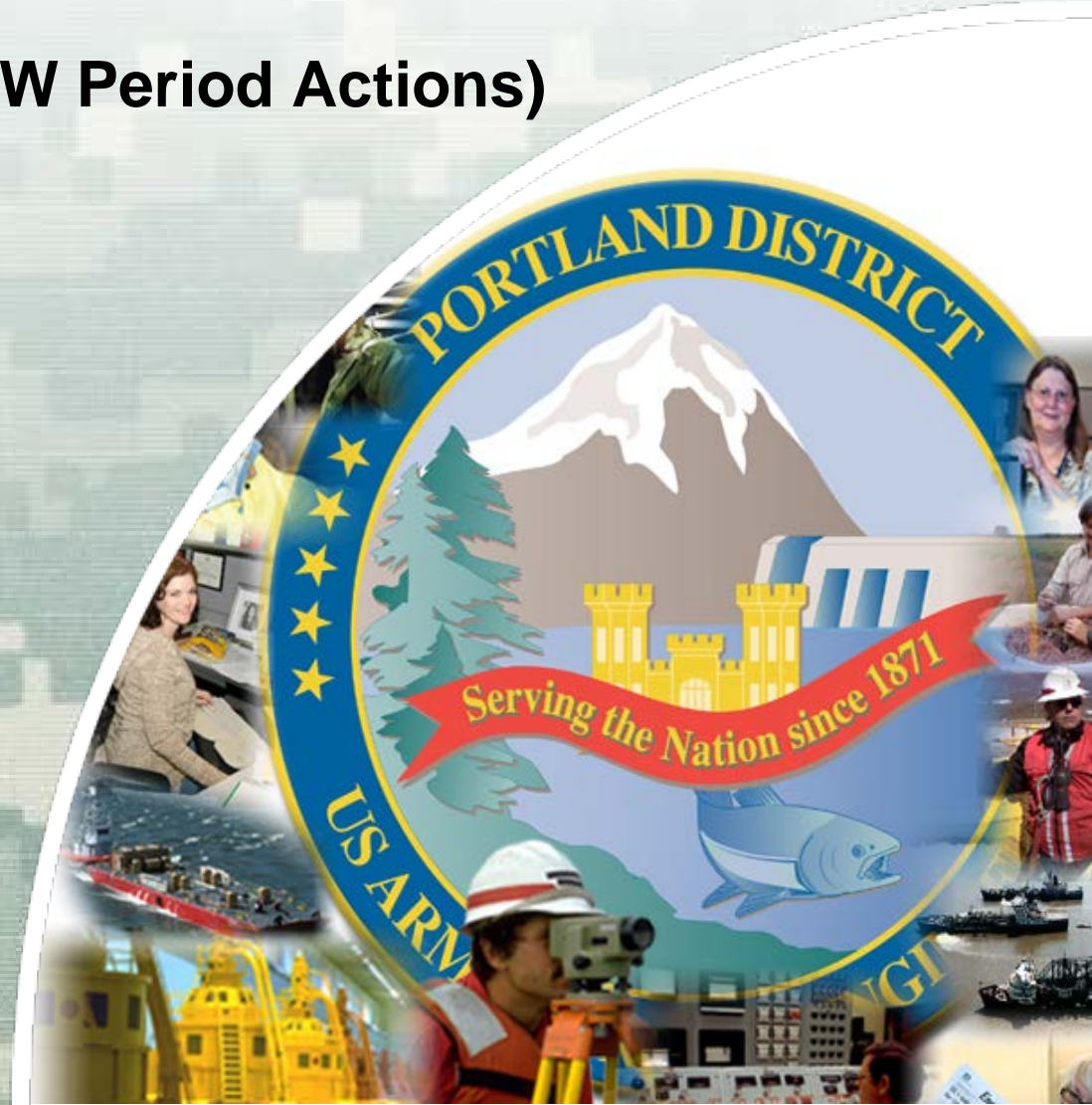
NWP Fish Passage Section

Updated: 14 July 2014



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Proposed Modifications

(2014-15 IWW Period Construction)

1. Remove existing prototype lamprey diffuser plating and replace with “mushroom” style plating upstream and downstream of weir orifices in lower section of WA Shore Ladder
2. Modify four (4) main entrance weirs at WA Shore Ladder (Powerhouse 2) to facilitate surface attachment:
 - a. Rounded caps on entrance weir crests (4-inch radius)
 - b. Skin plates on downstream faces of entrance weirs



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WA Shore Ladder Transition Pool Overflow Weirs

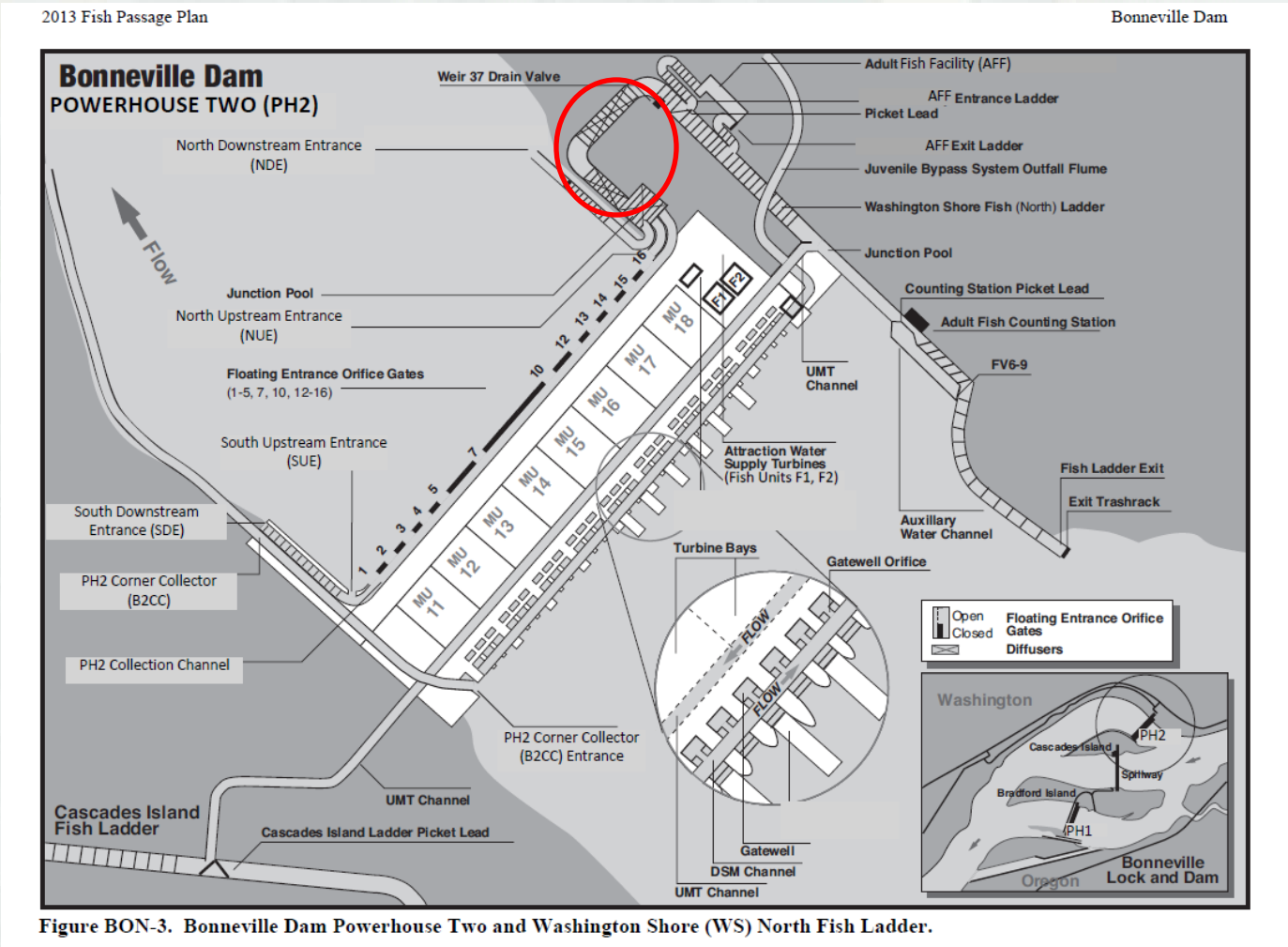
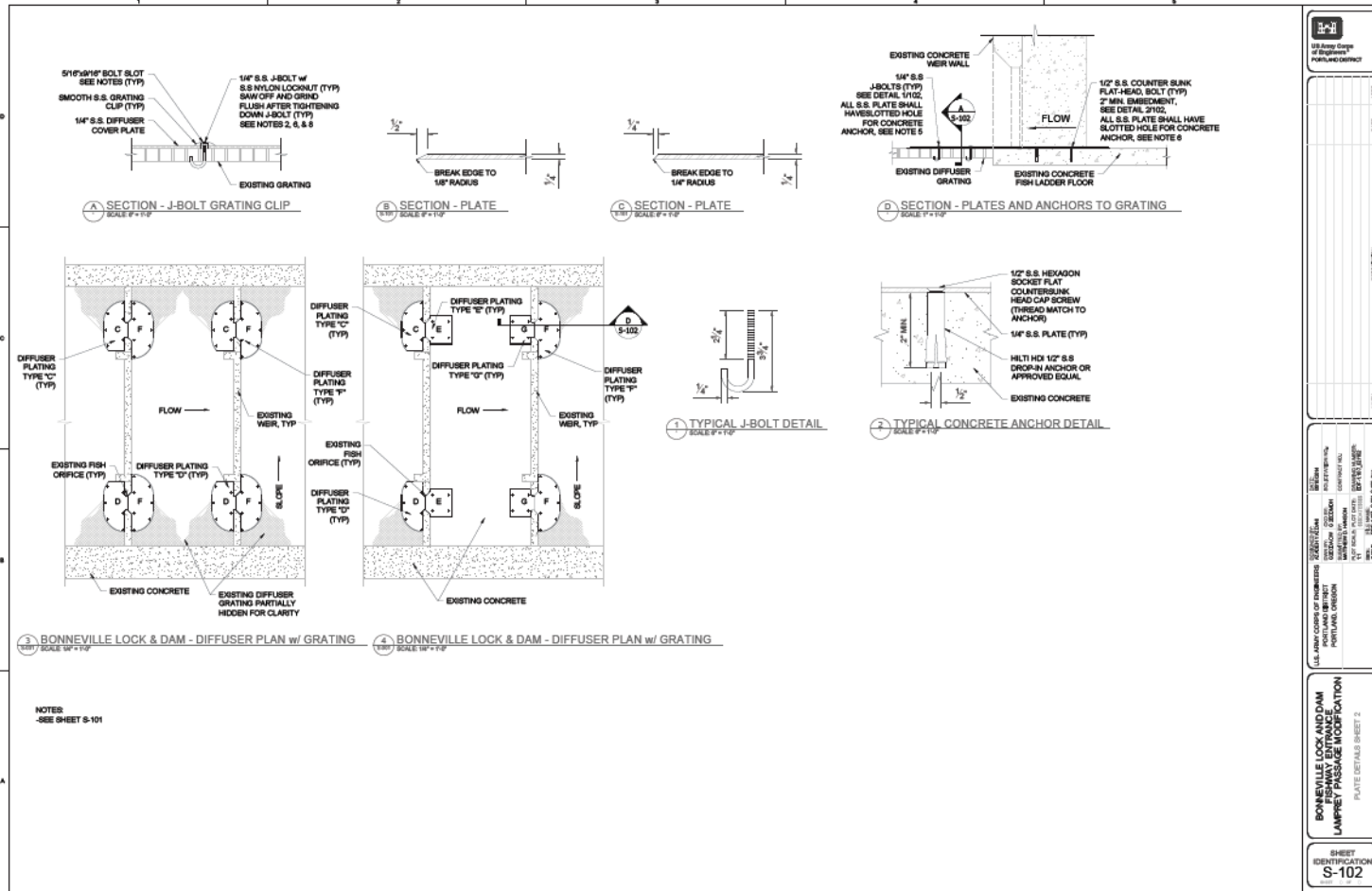


Figure BON-3. Bonneville Dam Powerhouse Two and Washington Shore (WS) North Fish Ladder.



BON WA Shore Ladder "Mushroom" Lamprey Diffuser Plating



U.S. Army Corps of Engineers
PORTLAND DISTRICT

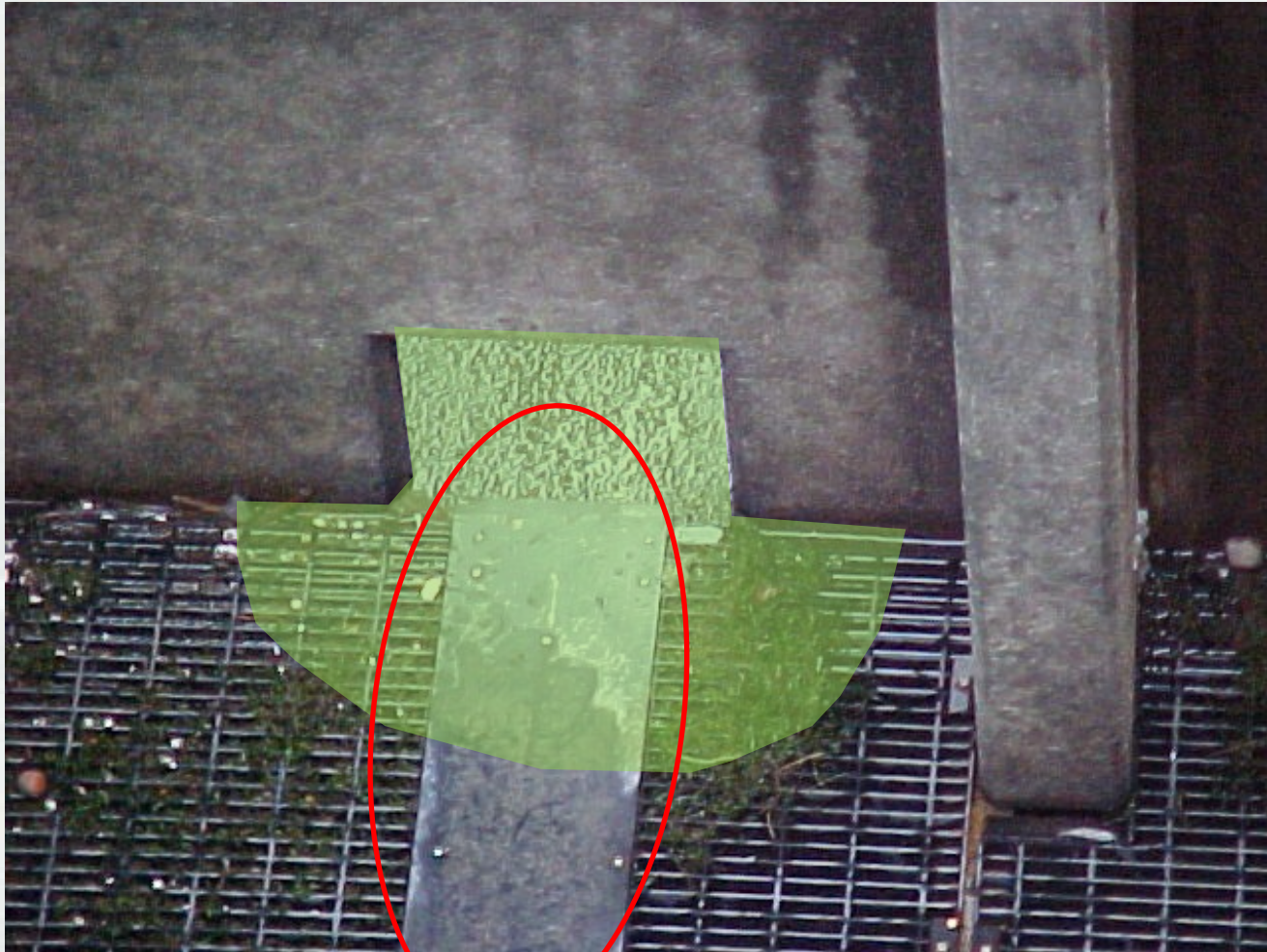
DATE: 10/13/10
 DRAWN BY: J. J. JAMES
 CHECKED BY: J. J. JAMES
 DESIGNED BY: J. J. JAMES
 PROJECT: BONNEVILLE LOCK AND DAM
 SHEET: S-102

BONNEVILLE LOCK AND DAM
 FISH PASSAGE IMPROVEMENT
 LAMPREY DIFFUSER PLATING
 PLATE DETAILS SHEET 2

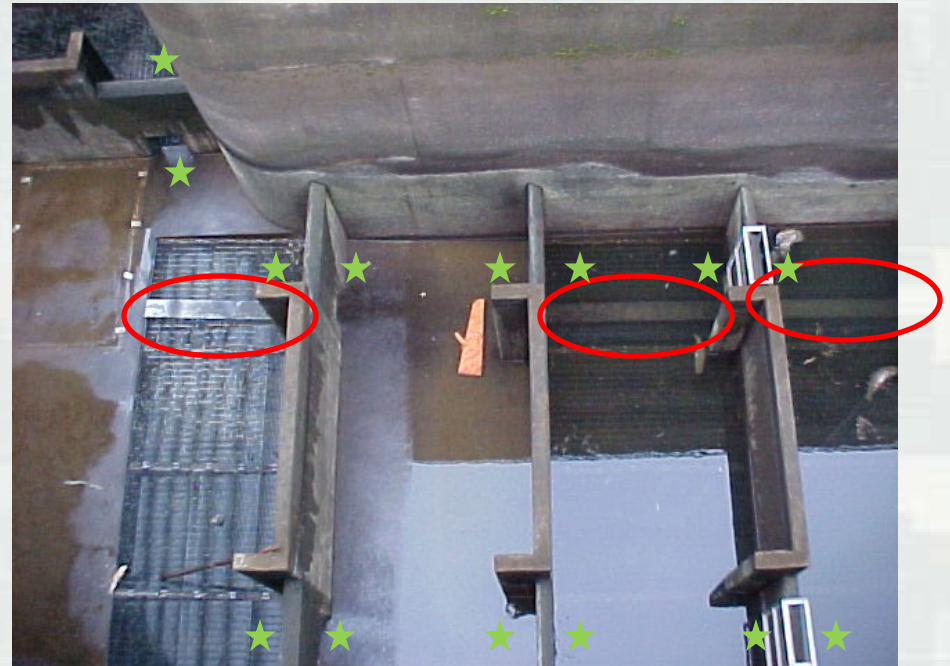
SHEET IDENTIFICATION
 S-102



Existing plating at WA Shore Ladder transition pool overflow weirs (w/ new in green)



Existing plating at WA Shore Ladder transition pool overflow weirs (w/ new in green)



- Existing plating extends through junction pool. *Only* remove plating at overflow weirs in transition pool.
- Transition pool continues upstream of 90-degree bend in photo.



WA Shore Ladder Junction Pool



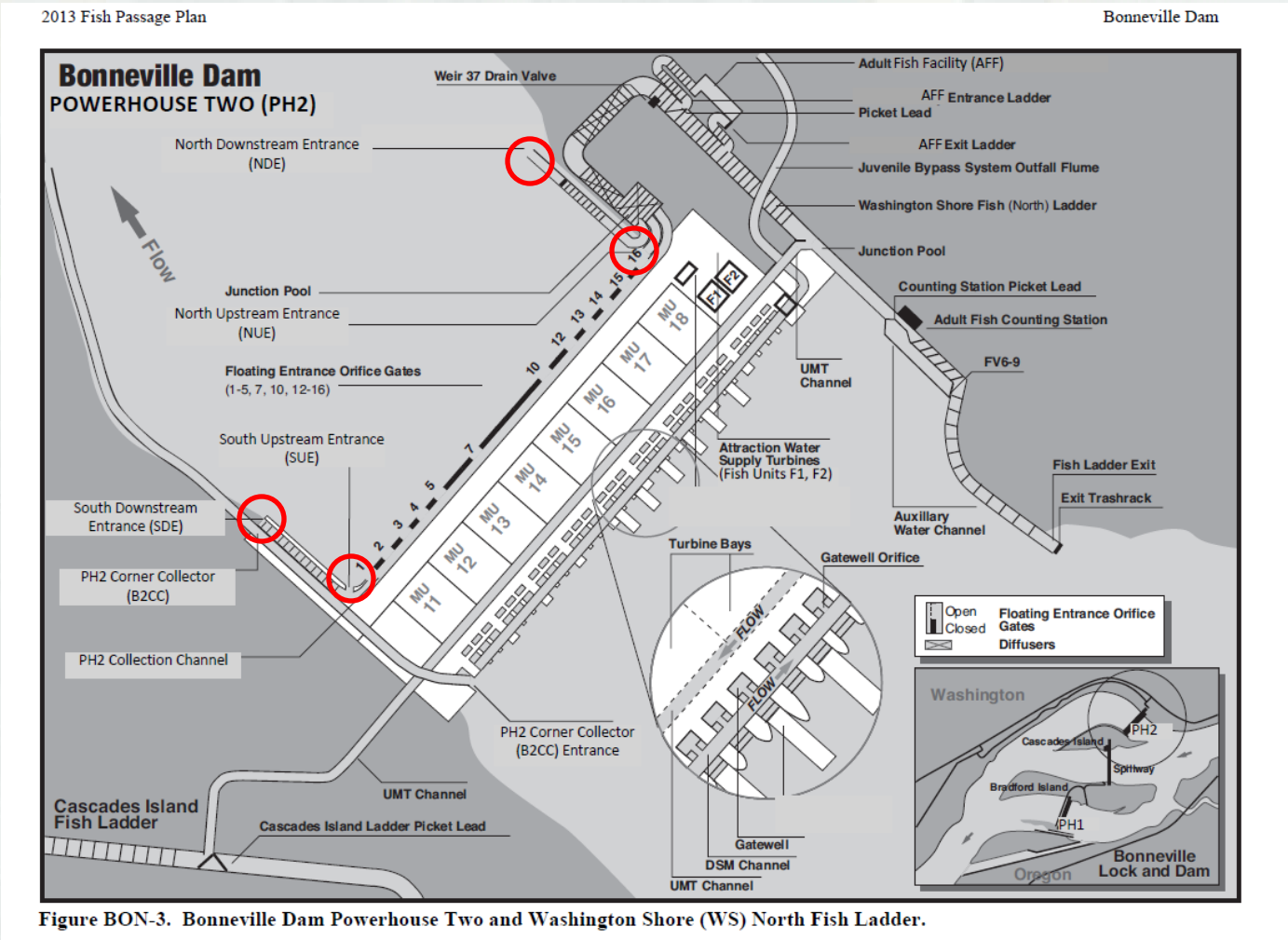
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Four main WA Shore entrances (PH2)



North Downstream Entrance (NDE)

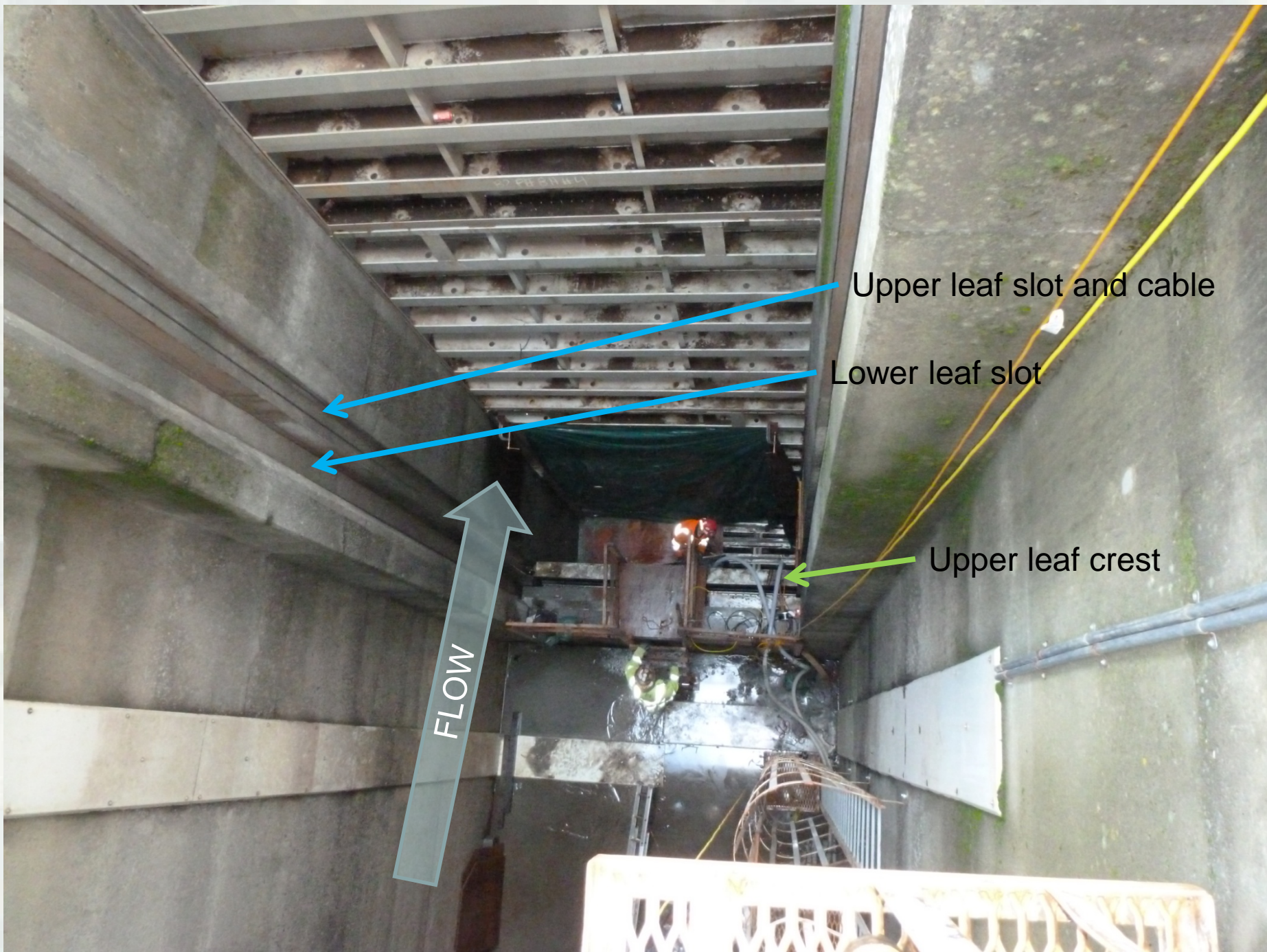


NDE construction photos in the following slides are from 2012-13
construction of Lamprey Flume System
(*BDF-1.102 WA Shore Ladder Entrance Modifications* in ProjectWise)



Corroded face of NDE weir? (consult w/ Brent Welton or Mike Adams)





Upper leaf slot and cable

Lower leaf slot

Upper leaf crest

FLOW



Upper leaf guide slot and cable



Upper leaf crest



FLOW



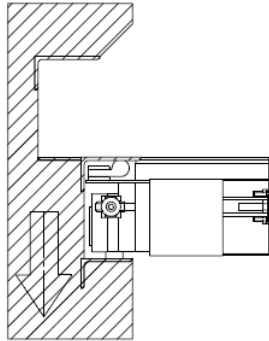
FLOW

At NDE only, the upper entrance of Lamprey Flume System is positioned between bulkhead slot and entrance weir. Aqua colored thimble is part of this structure.

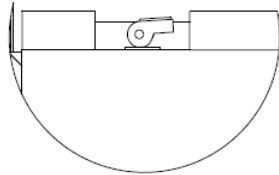
Upper leaf crest w/
rough sketch of rounded
crest (note lifting eye)

Bulkhead

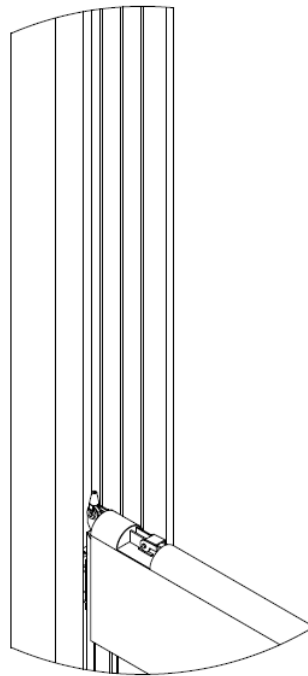
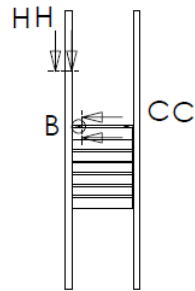
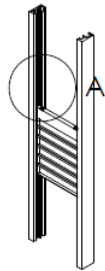
BON WA Shore Ladder Rounded Entrance Weir Caps



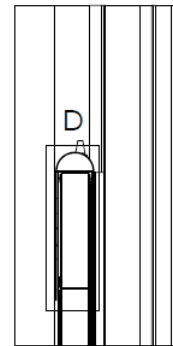
SECTION H-H
SCALE 1 : 10



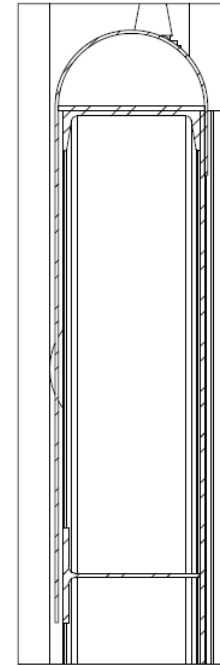
DETAIL B
SCALE 1 : 10



DETAIL A
SCALE 1 : 20



SECTION C-C
SCALE 1 : 20



DETAIL D
SCALE 1 : 5

