

Appendix C. Photo documentation of aerial and underwater radiotelemetry antenna deployments at FCRPS dams: Bonneville to John Day

This Appendix includes photos and site metadata for locations of aerial antennas that were used to monitor radio-tagged adult salmon and steelhead at Bonneville, The Dalles, and John Day dams in 2013-2014. Many of the sites were also deployed in previous years, but not all sites were deployed in all years. Please see the database: **Receiver_Deployments_1996-2014** for annual details. **Appendix A** provides generalized maps of aerial and underwater antenna locations at main stem dams for all years.

Table E1. Summary of receivers described in this Appendix that were deployed at Bonneville, The Dalles, and John Day dams.

Receiver location	Receiver code
Bonneville Dam	1BO 2BO 4BO 8BO ABO BBO CBO DBO EBO FBO HBO JBO KBO LBO MBO NBO OBO PBO VBO WBO XBO
The Dalles Dam	1TD 2TD 4TD 5TD 6TD ATD ETD FTD GTD HTD JTD WTD YTD ZTD
John Day Dam	1JD 2JD 6JD 7JD 8JD 9JD AJD BJD GJD LJD MJD ZJD

1BO/1BL: Oregon shore tailrace



LAT/LON: 45.633000° N
-121.960631° W

RKM: 232.3

Receiver type: SRX

Antennas (1): A1 - yagi

Distance from receiver to antenna: 20 feet

Power source: Hard wired (AC)

Notes:

Receiver located inside a small shed west of the Bonneville fish hatchery, overlooking the Columbia River at the mouth of Tanner Creek. Antenna mounted on pole on outside of building.



2BO/2BL: Washington shore tailrace



LAT/LON: 45.633594° N
-121.965760° W

RKM: 232.3

Receiver type: SRX

Antennas (1): A1 - yagi

Distance from receiver to antenna: 10 feet

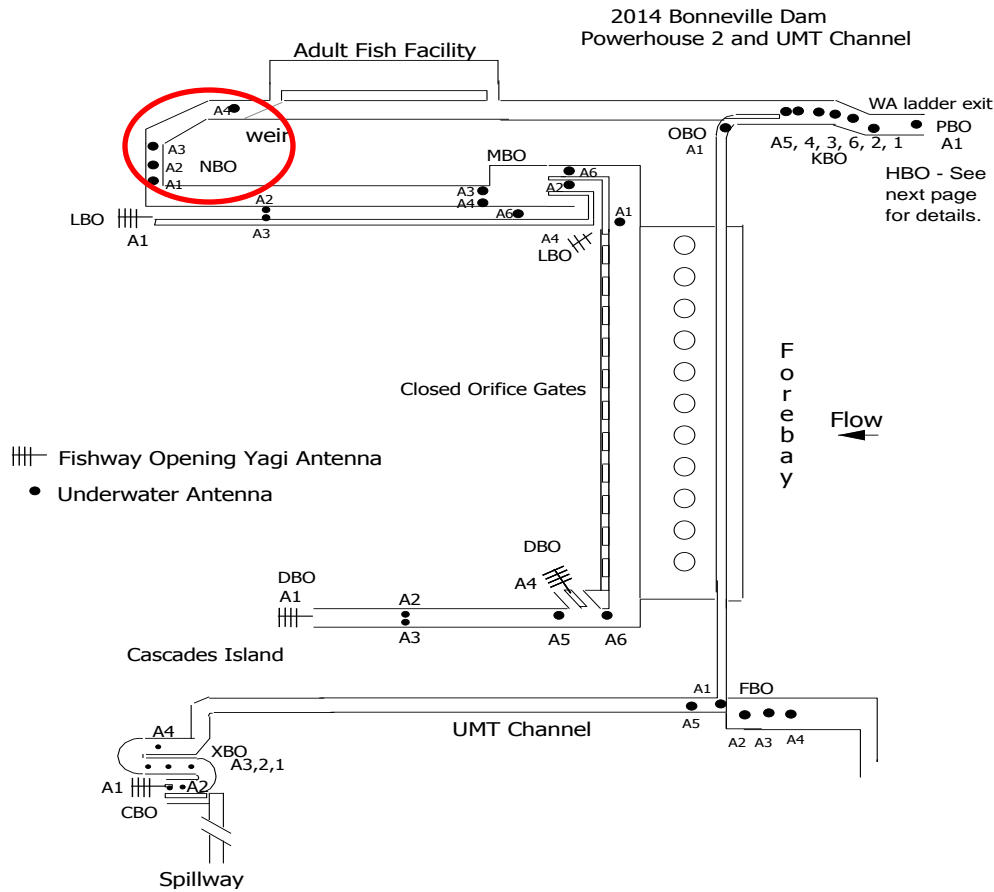
Power source: Solar

Notes:

Receiver located just downstream of the Hamilton Island boat ramp.

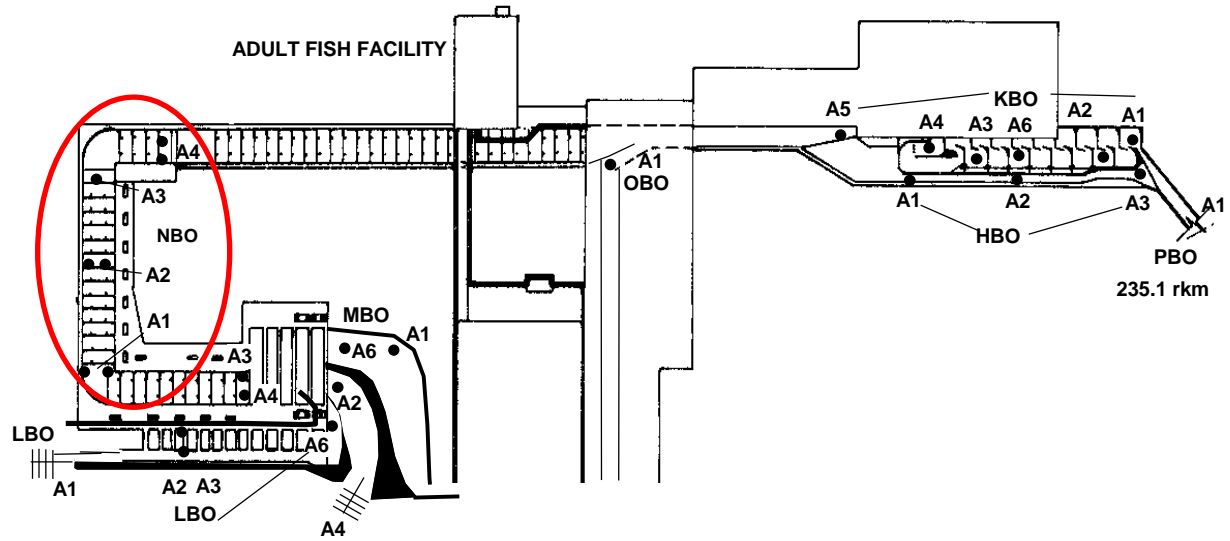


NBO: Washington shore lower ladder



LAT/LON:	45.649879°N -121.937162°W
RKM:	235.1
Receiver type:	DSP
Antennas (4):	A1 – two antennas rolled; parallel drop-ins on each fishway wall at 1 st weir A2 – two antennas rolled; parallel drop-ins on each fishway wall between 6 th and 7 th weirs A3 – two antennas rolled; parallel drop-ins on each side of the 15 th weir A4 – two antennas rolled; drop-ins on each fishway wall just downstream of AFF picket lead
Distance from receiver to antenna:	A1: 50 feet A2: 30 feet A3: 80 feet A4: 100 feet
Power source:	Hard wired (AC)
Notes:	

NBO: Washington shore lower ladder (continued)



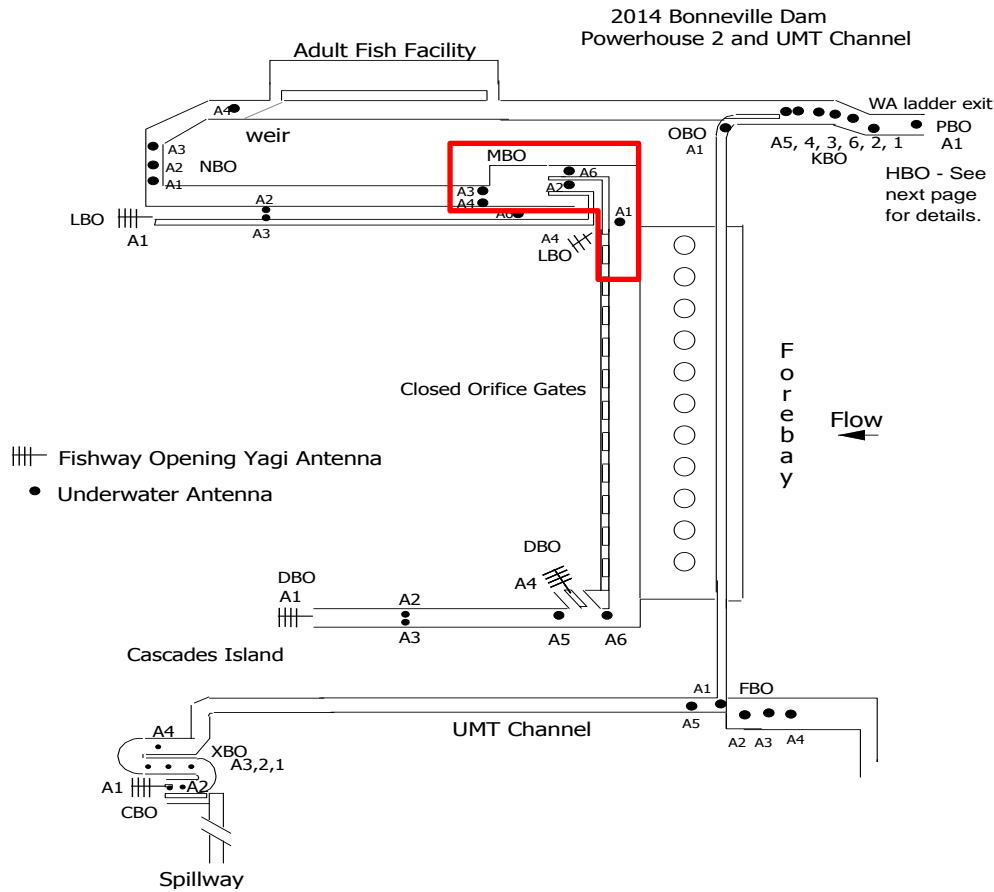
NBO: Washington shore lower ladder (continued)



- Parallel rolled antenna on near (west) wall, as well.

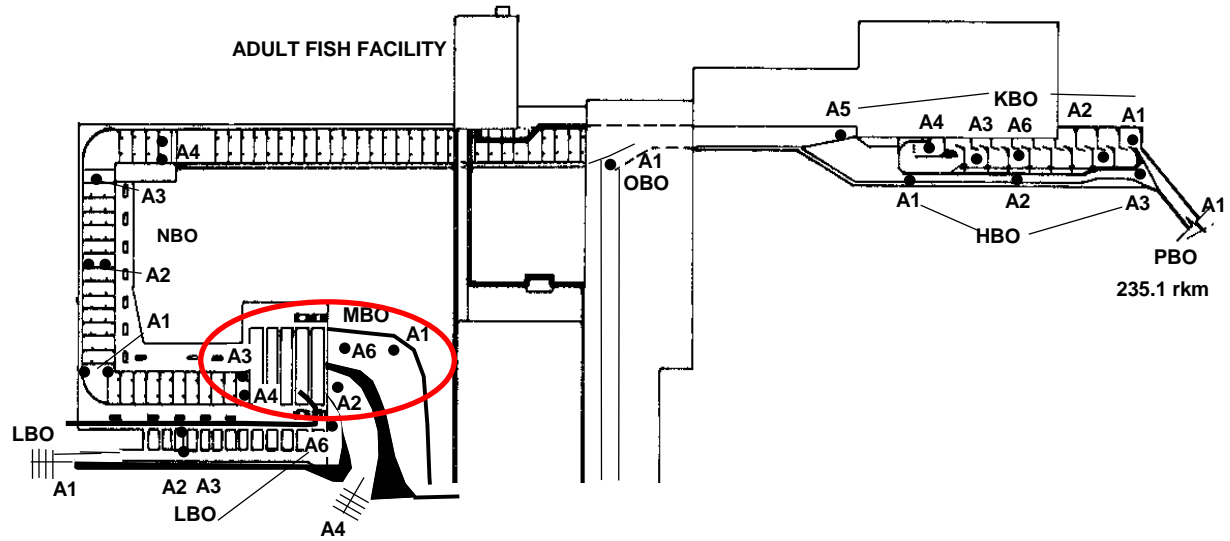


MBO: Washington shore transition pool

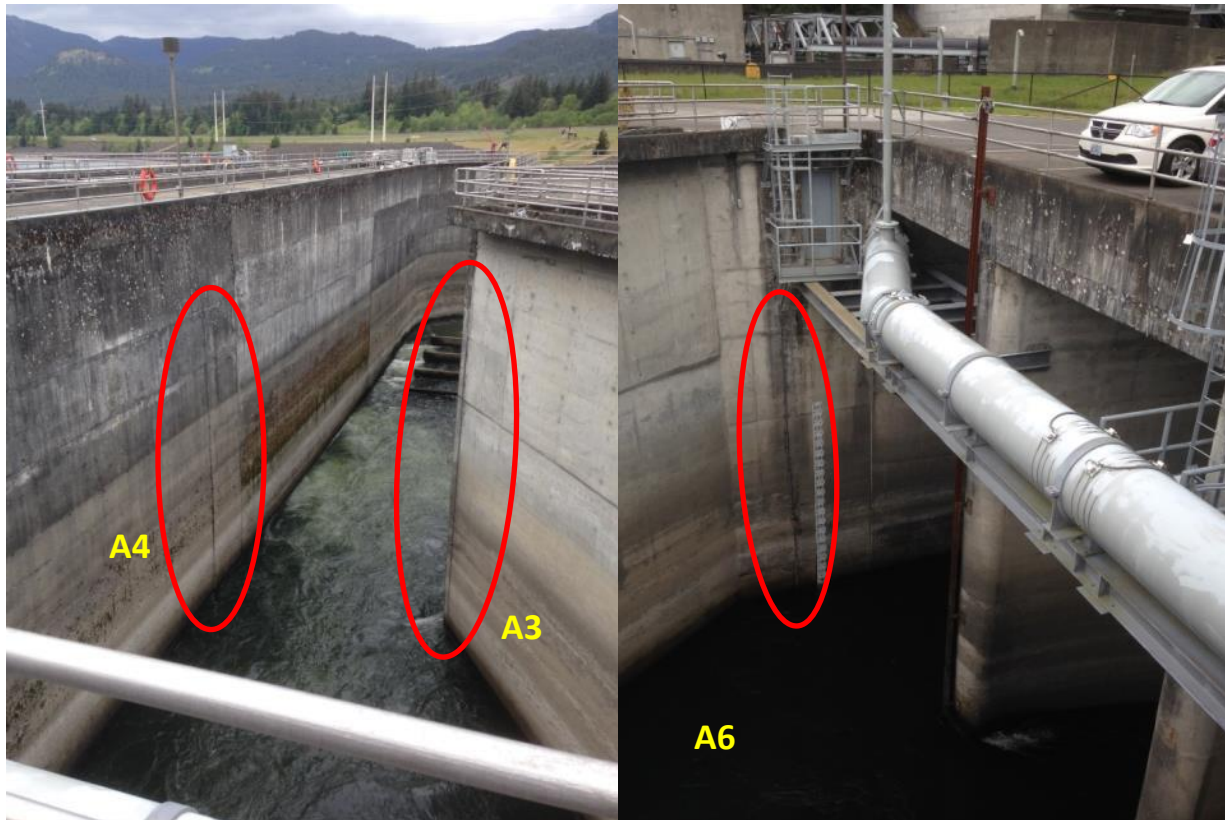
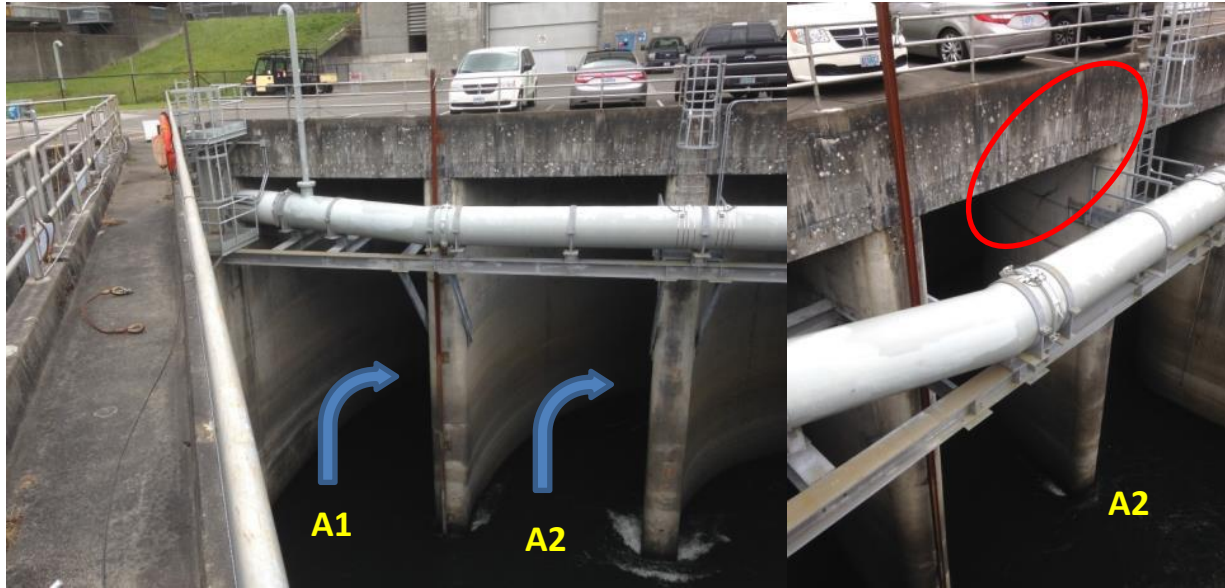


LAT/LON:	45.649503°N -121.936834°W
RKM:	235.1
Receiver type:	DSP
Antennas (5):	A1 – drop-in within north collection channel tunnel A2 – drop-in within north upstream entrance tunnel A3 – drop-in on north wall where fishway narrows; parallel to A4 A4 – drop-in on south wall where fishway narrows; parallel to A3 A6 – drop-in on north wall at exit of north collection channel tunnel
Distance from receiver to antenna:	A1: 100 feet A2: 80 feet A3: 60 feet A4: 75 feet A6: 30 feet
Power source:	Hard wired (AC)
Notes:	

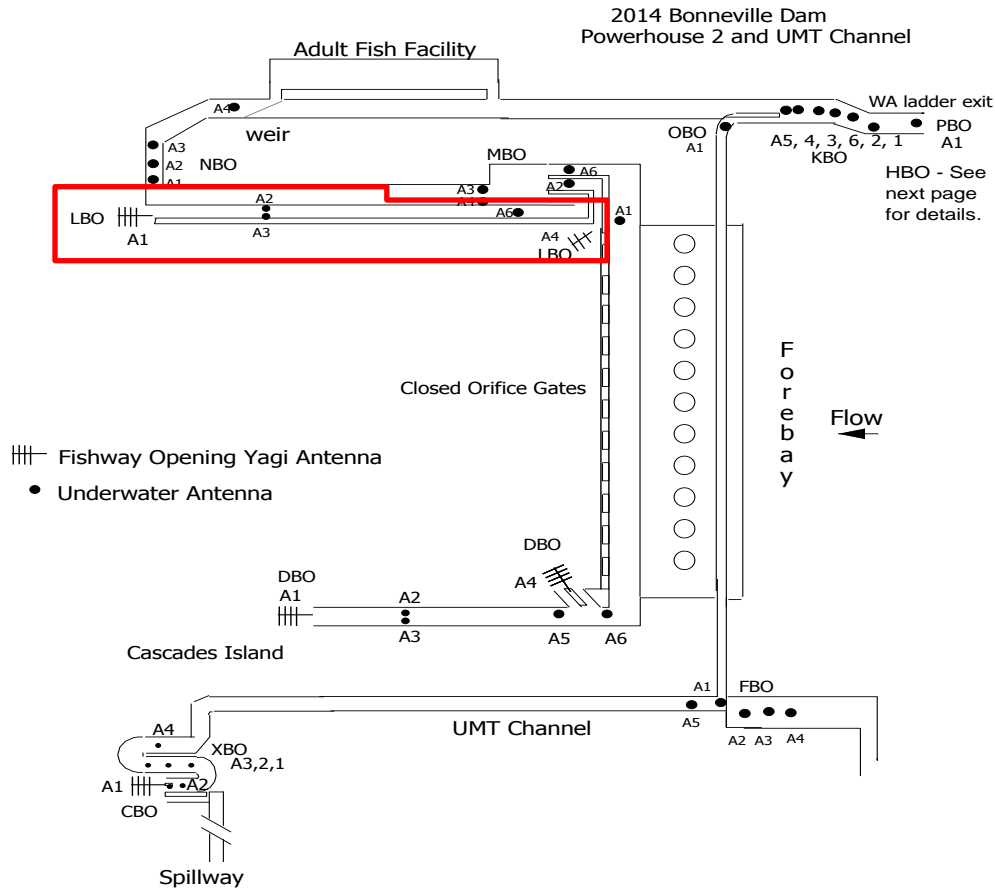
MBO: Washington shore transition pool (continued)



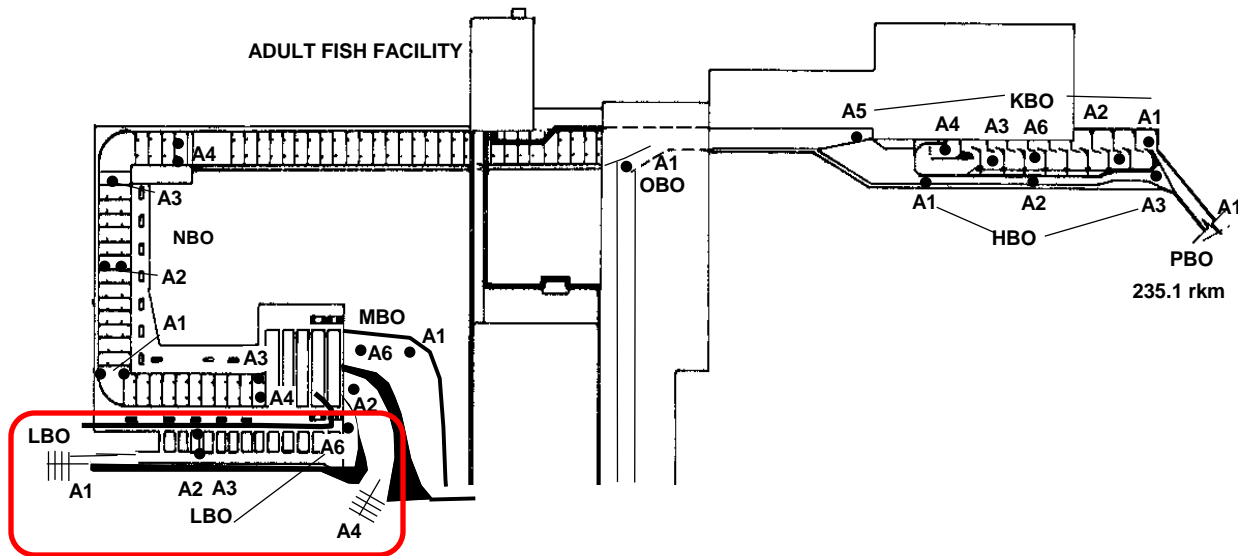
MBO: Washington shore transition pool (continued)



LBO: Washington shore/Powerhouse 2 north entrances



LBO: Washington shore/Powerhouse 2 north entrances (continued)



LAT/LON:	45.649452°N -121.937293°W
RKM:	235.1
Receiver type:	DSP
Antennas (5):	<p>A1 – yagi positioned at downstream entrance</p> <p>A2 – drop-in on north fishway wall between 7th and 8th crossbeams; parallel with A3</p> <p>A3 – drop-in on south fishway wall between 7th and 8th crossbeams; parallel with A2</p> <p>A4 – yagi positioned at upstream entrance</p> <p>A6 – drop-in hanging in fishway just downstream of fishway bend</p>
Distance from receiver to antenna:	<p>A1: 60 feet</p> <p>A2: 70 feet</p> <p>A3: 60 feet</p> <p>A4: 60 feet</p> <p>A6: 80 feet</p>
Power source:	Hard wired (AC)
Notes:	



LBO: Washington shore/Powerhouse 2 north entrances (continued)

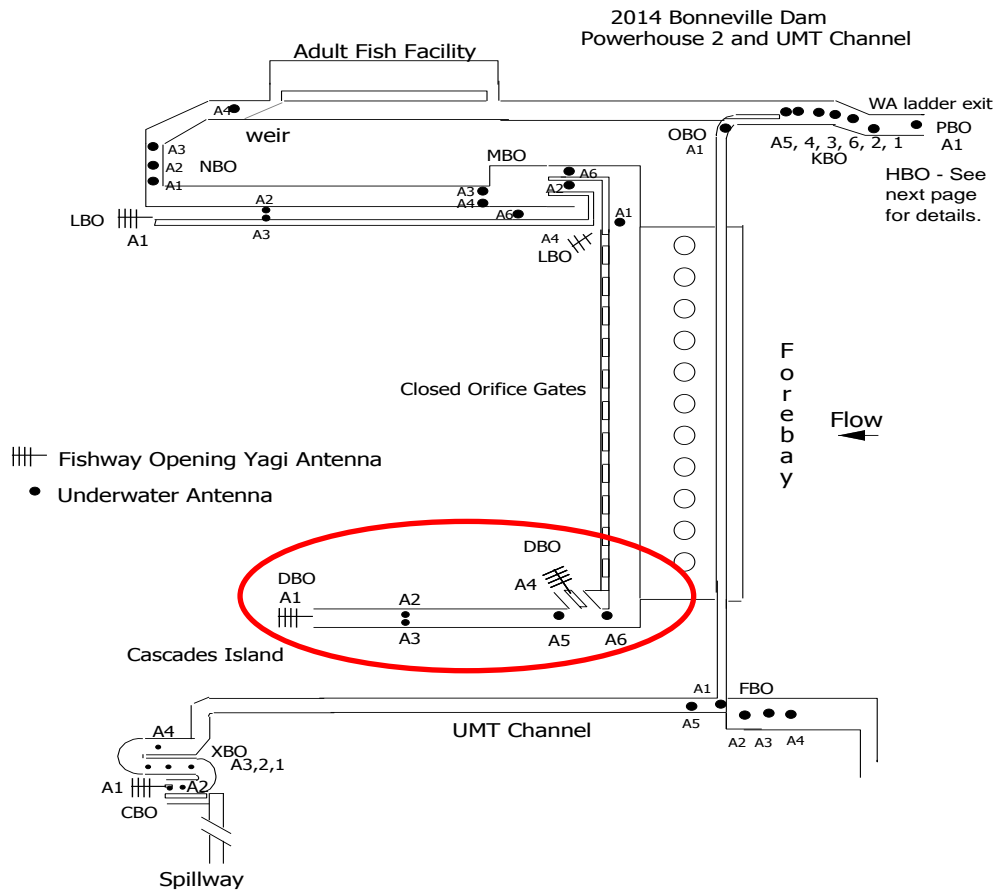


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DBO: Washington shore/Powerhouse 2 south entrances

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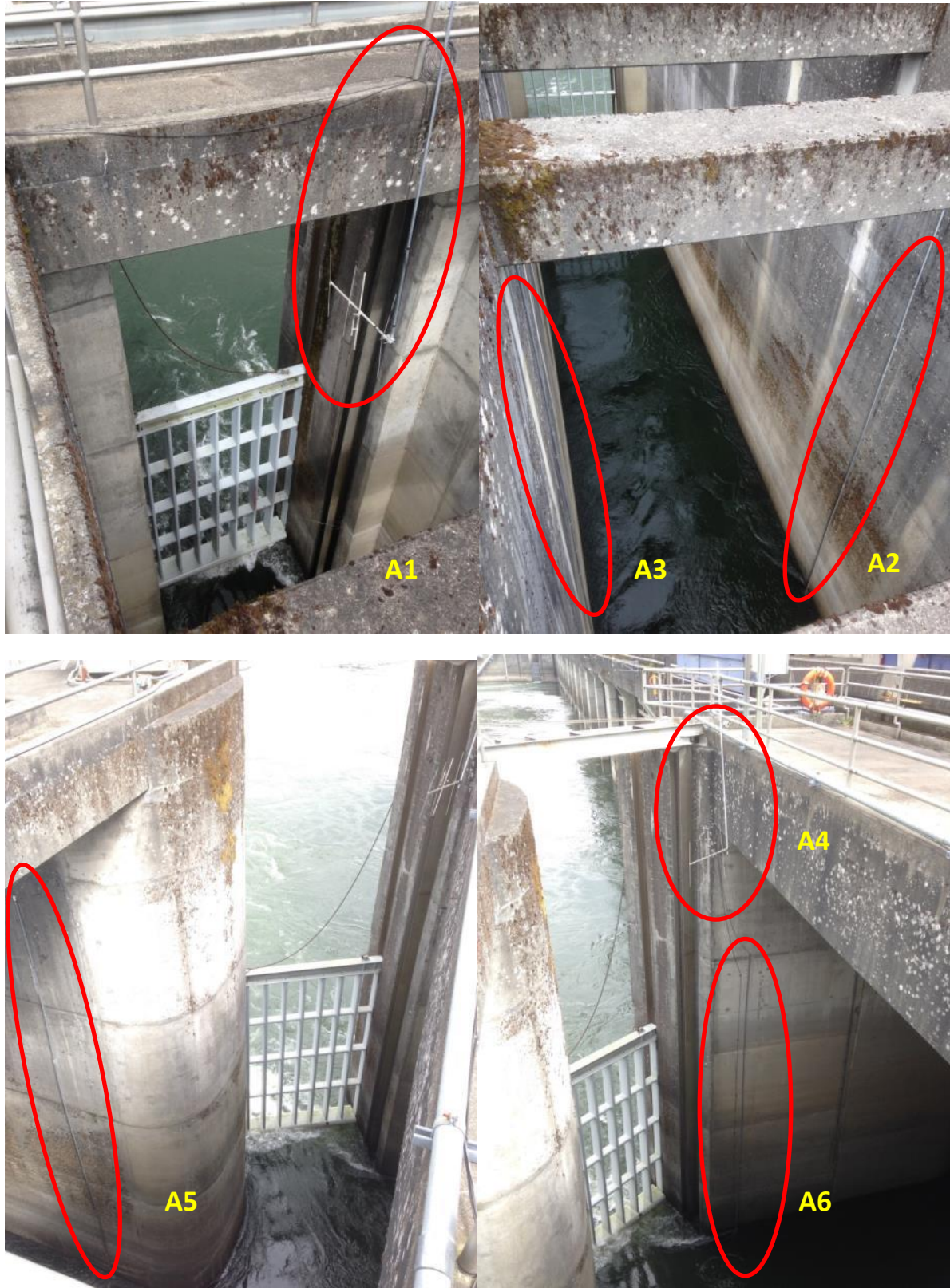


DBO: Washington shore/Powerhouse 2 south entrances (continued)

LAT/LON:	45.647738°N -121.939352°W
RKM:	235.1
Receiver type:	DSP
Antennas (6):	A1 – yagi positioned at downstream entrance A2 – drop-in on north fishway wall between 5 th and 6 th crossbeams A3 – drop-in on south fishway wall between 5 th and 6 th crossbeams A4 – yagi positioned at upstream entrance A5 – drop-in on north wall just downstream of upstream entrance A6 – drop-in on north wall just upstream of upstream entrance
Distance from receiver to antenna:	A1: 50 feet A2: 60 feet A3: 60 feet A4: 70 feet A5: 80 feet A6: 90 feet
Power source:	Hard wired (AC)
Notes:	

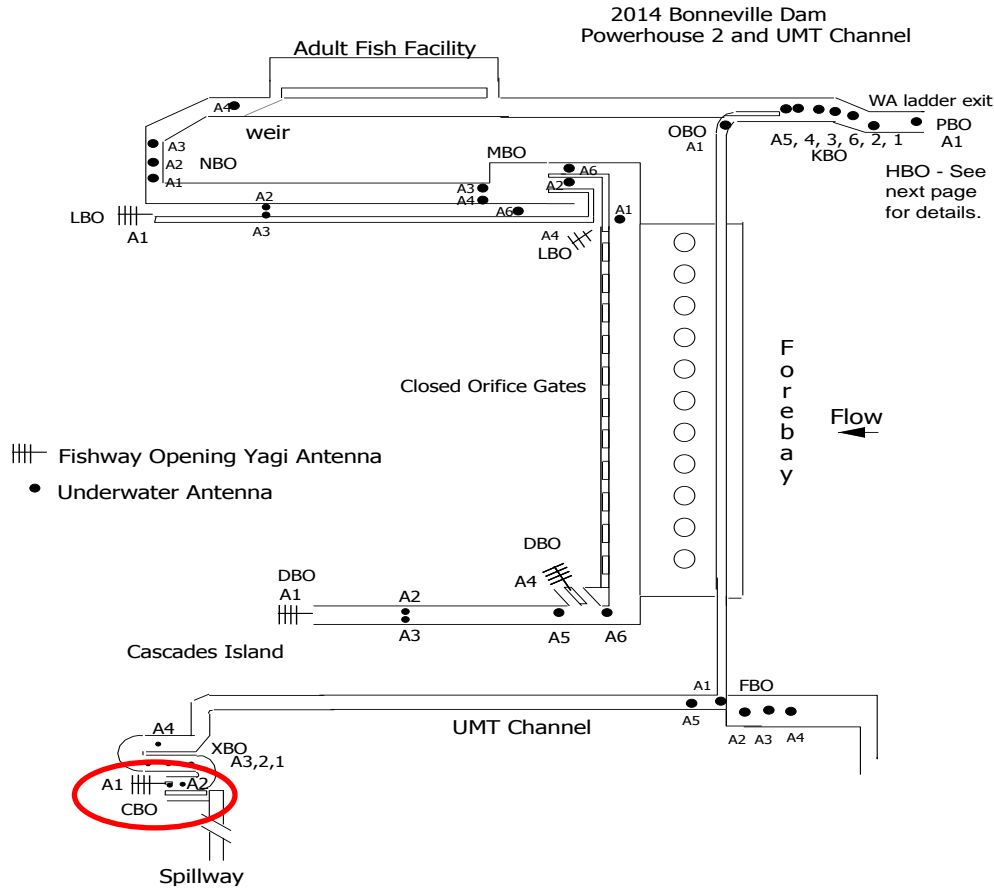


DBO: Washington shore/Powerhouse 2 south entrances (continued)



CBO: Cascades Island/north spillway entrance

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LAT/LON:	45.645810°N -121.941317°W
RKM:	235.1
Receiver type:	DSP
Antennas (2):	A1 – yagi positioned at entrance A2 – drop-in hanging in bend at first transition pool
Distance from receiver to antenna:	A1: 40 feet A2: 150 feet
Power source:	Hard wired (AC)
Notes:	Receiver located within small, metal shed by spillway; key needed for shed access. Key also needed to pass gate and access spillway area.

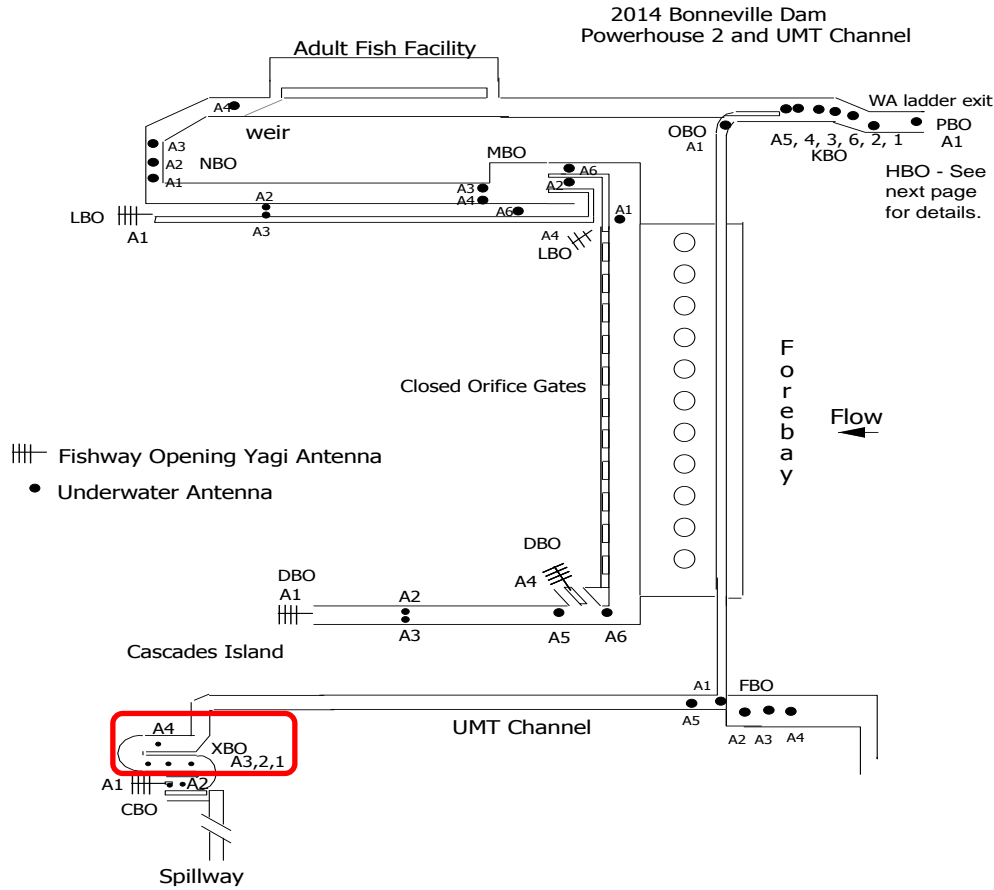
CBO: Cascades Island/north spillway entrance (continued)



CBO: Cascades Island/north spillway entrance (continued)



XBO: Cascades Island lower ladder



XBO: Cascades Island lower ladder (continued)

LAT/LON:	45.646047°N -121.942155°W
RKM:	235.1
Receiver type:	DSP
Antennas (4):	A1 – drop-in running down 1 st middle support in fishway A2 – drop-in running down 8 th middle support in fishway A3 – drop-in running down 17 th middle support in fishway (just before ladder turn) A4 – drop-in running down 3 rd middle support upstream from road crossing
Distance from receiver to antenna:	A1: 150 feet A2: 70 feet A3: 70 feet A4: 150 feet
Power source:	Hard wired (AC)
Notes:	Key needed to pass gate and access spillway area.



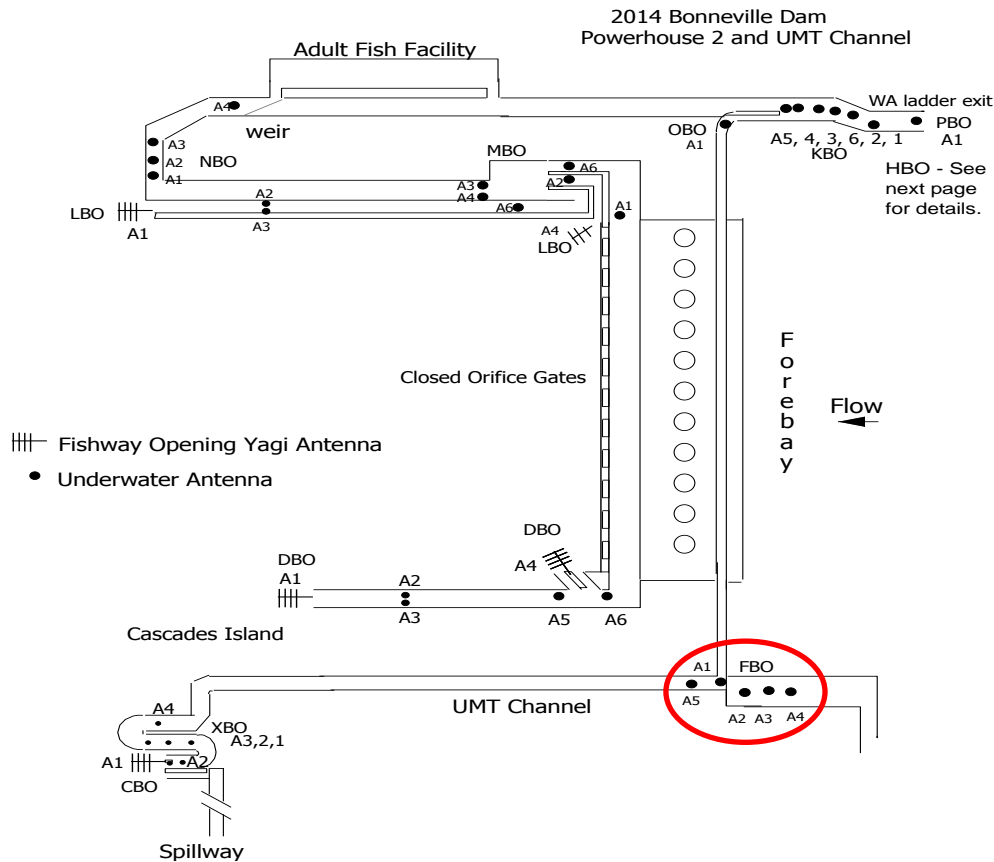
XBO: Cascades Island lower ladder (continued)

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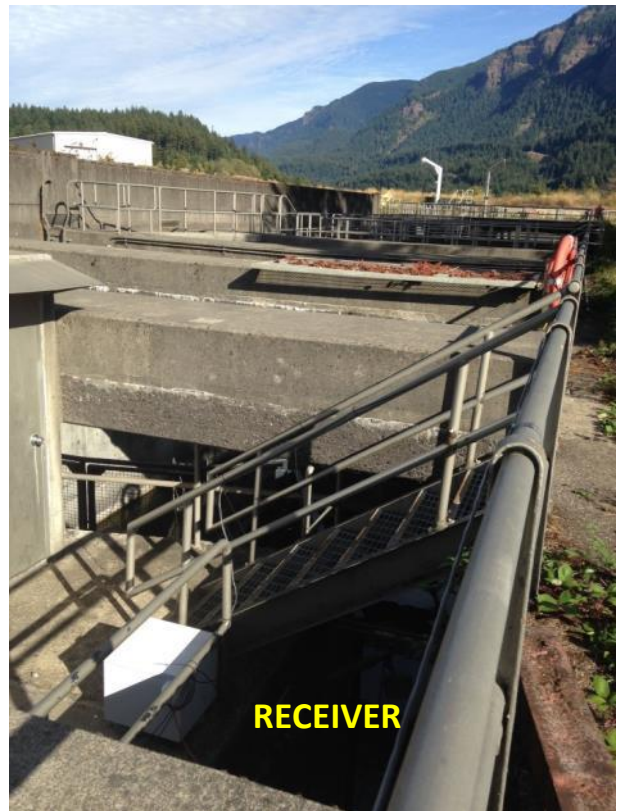
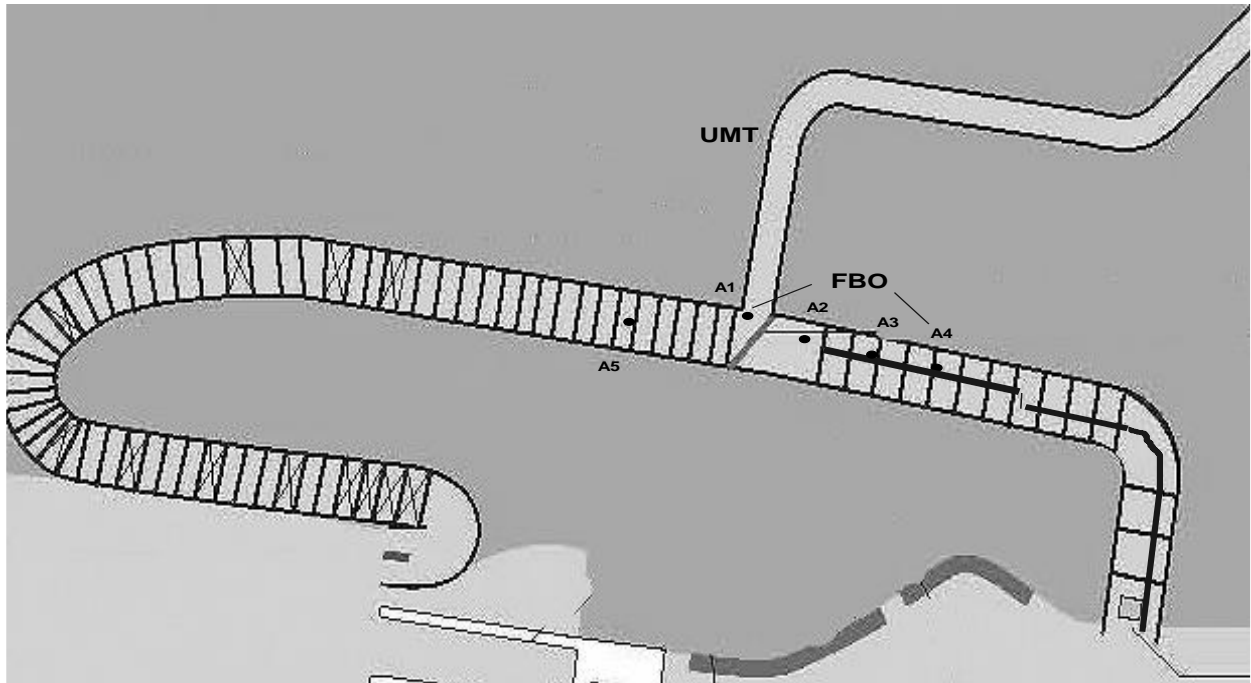
FBO: UMT entrance/Cascades Island Auxiliary Water Supply (AWS)

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FBO: UMT entrance/Cascades Island AWS (continued)

LAT/LON:	45.646263°N -121.939890°W
RKM:	235.1
Receiver type:	DSP
Antennas (5):	A1 – drop-in on north wall at UMT entrance A2 – drop-in on south wall of AWS just upstream of picket lead and behind count building A3 – drop-in on south wall of AWS just downstream of tainter gate A4 – drop-in on south wall of AWS upstream of tainter gate, between 2 nd and 3 rd crossbeams A5 – drop-in hanging in center of fishway between 1 st and 2 nd weirs downstream of UMT entrance
Distance from receiver to antenna:	A1: 35 feet A2: 30 feet A3: 50 feet A4: 90 feet A5: 80 feet
Power source:	Hard wired (AC)
Notes:	A5 added in 2014. Count window key needed to access A1 and A2.

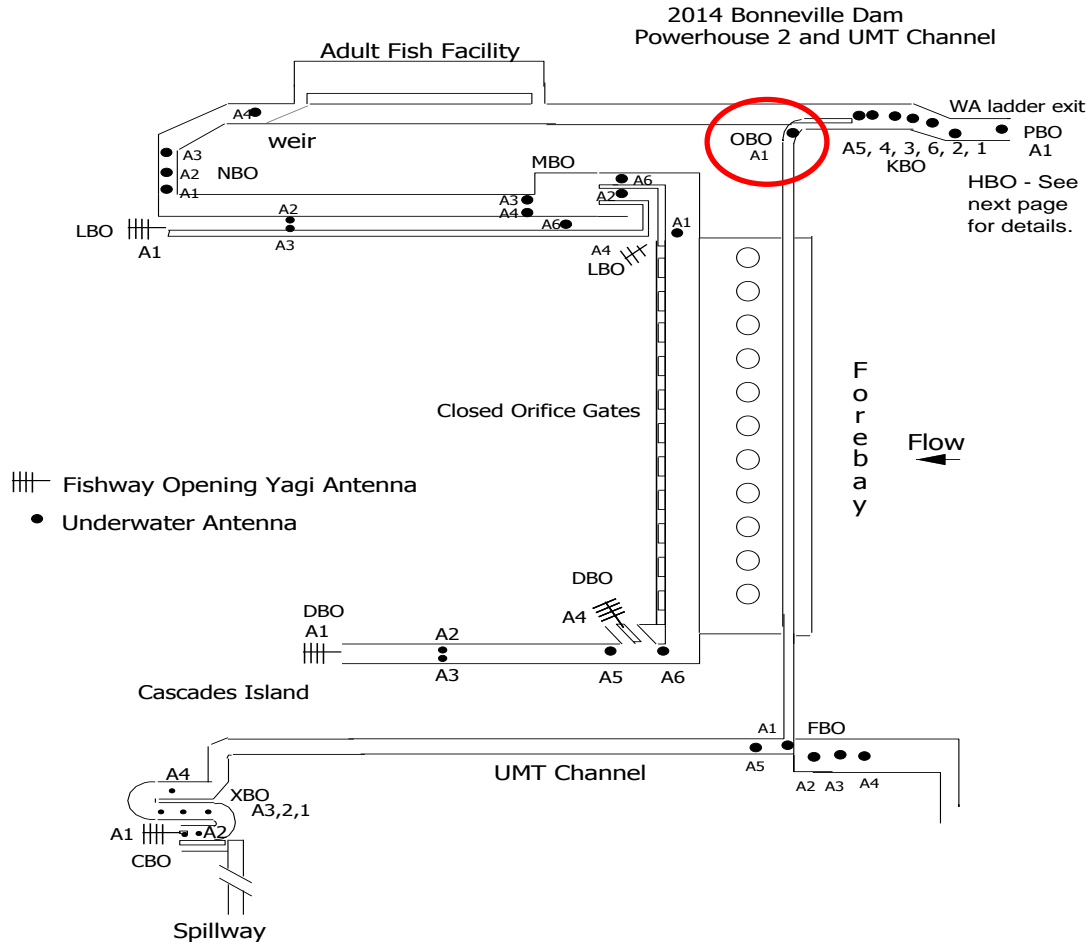


FBO: UMT entrance/Cascades Island AWS (continued)

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OBO: UMT exit



LAT/LON:	45.649325°N -121.935869°W
RKM:	235.1
Receiver type:	DSP
Antennas (1):	A1 – drop-in on west wall of UMT, approximately 25 feet downstream of WA shore ladder junction
Distance from receiver to antenna:	A1: 30 feet
Power source:	Hard wired (AC)
Notes:	Access receiver from enclosed stairway on the 90 deck. Receiver located at top of enclosed stairway to UMT count window; key needed for access.

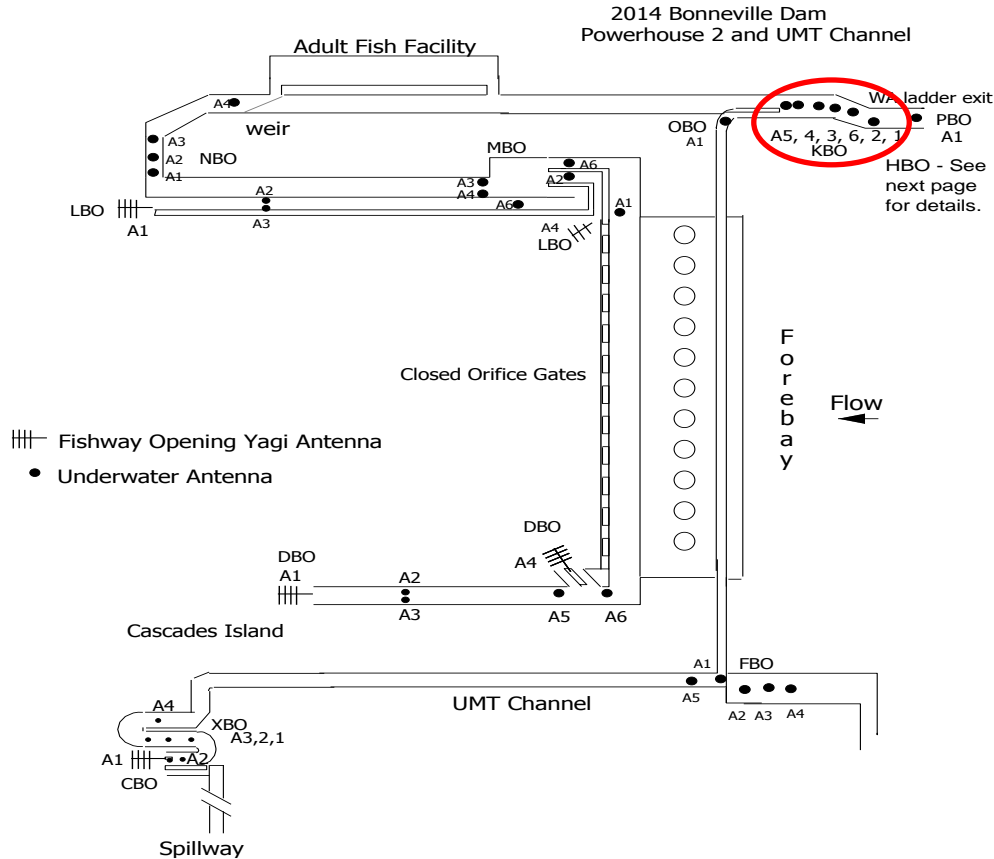
OBO: UMT exit (continued)

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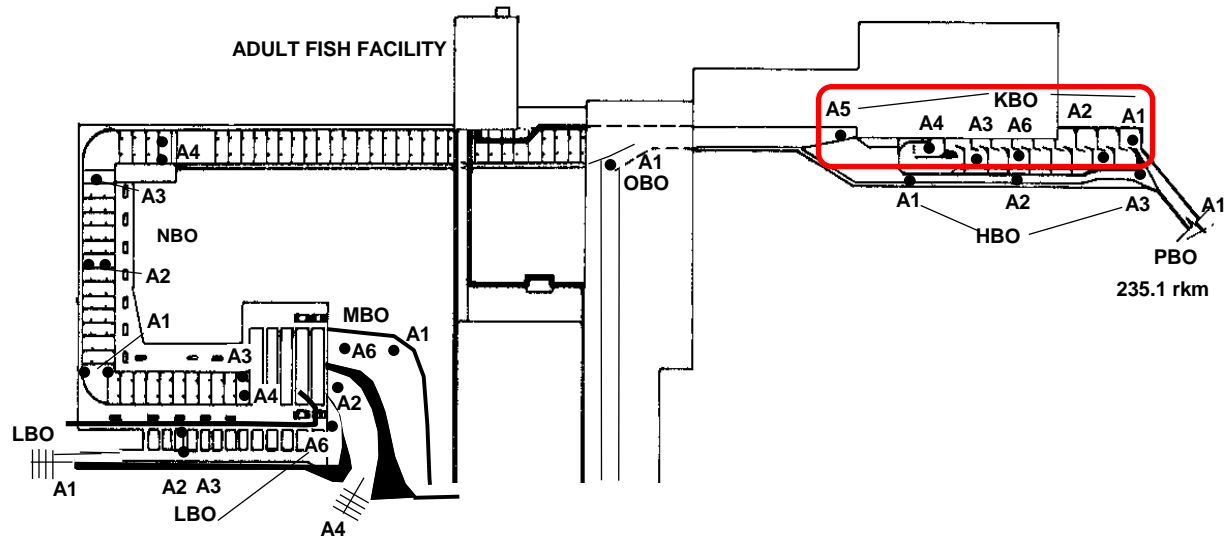
KBO: Washington shore serpentine weirs

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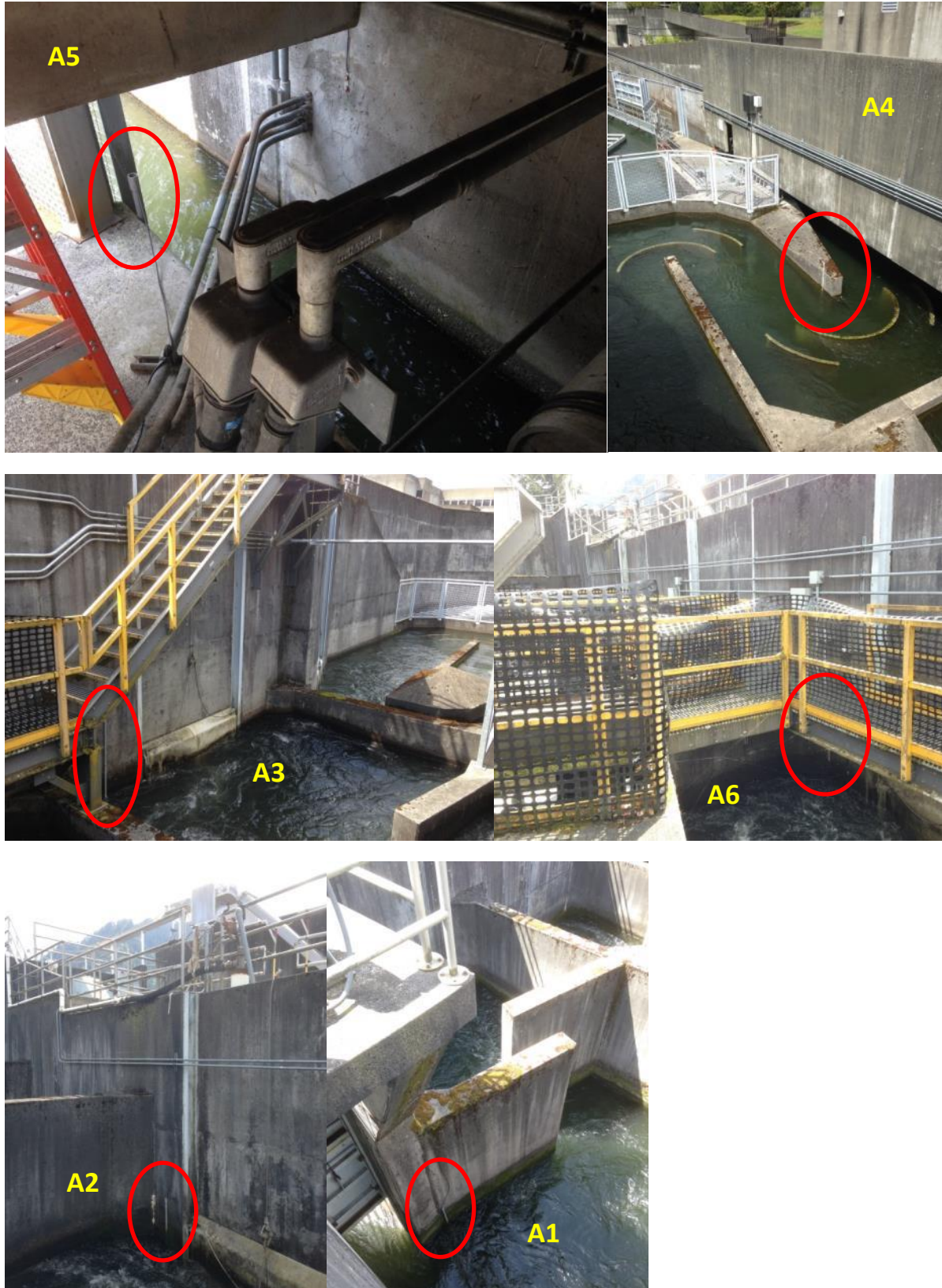
KBO: Washington shore serpentine weirs (continued)

LAT/LON:	45.648713°N -121.934989°W
RKM:	235.1
Receiver type:	DSP
Antennas (6):	A5 – drop-in just downstream of count window A4 – drop-in upstream of count window A3 – drop-in on south wall between 1 st and 2 nd weirs A6 – drop-in on south wall between 6 th and 7 th weirs (between 2 nd and 3 rd PIT readers) A2 – drop-in on south wall between 14 th and 15 th weirs A1 – drop-in on south wall at 18 th weir (end of serpentine weirs)
Distance from receiver to antenna:	A5: 150 feet A4: 100 feet A3: 80 feet A6: 60 feet A2: 80 feet A1: 100 feet
Power source:	Hard wired (AC)
Notes:	Antenna number sequence in reverse order. A6 added in 2014.



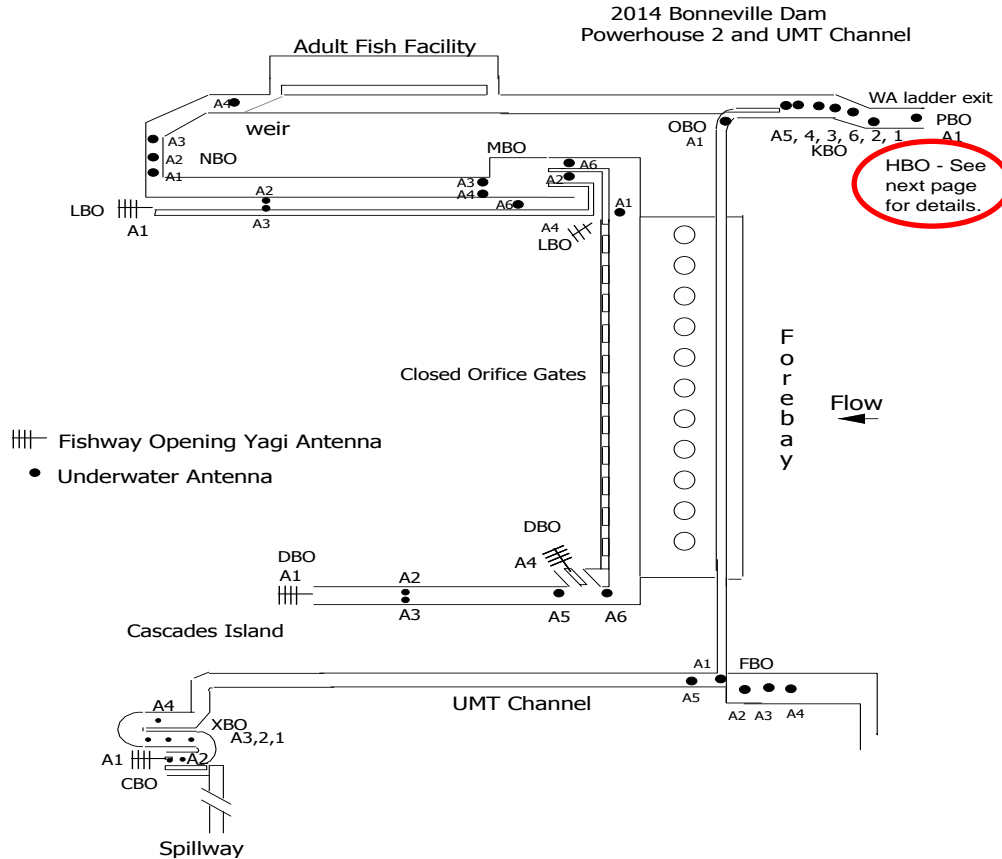
KBO: Washington shore serpentine weirs (continued)

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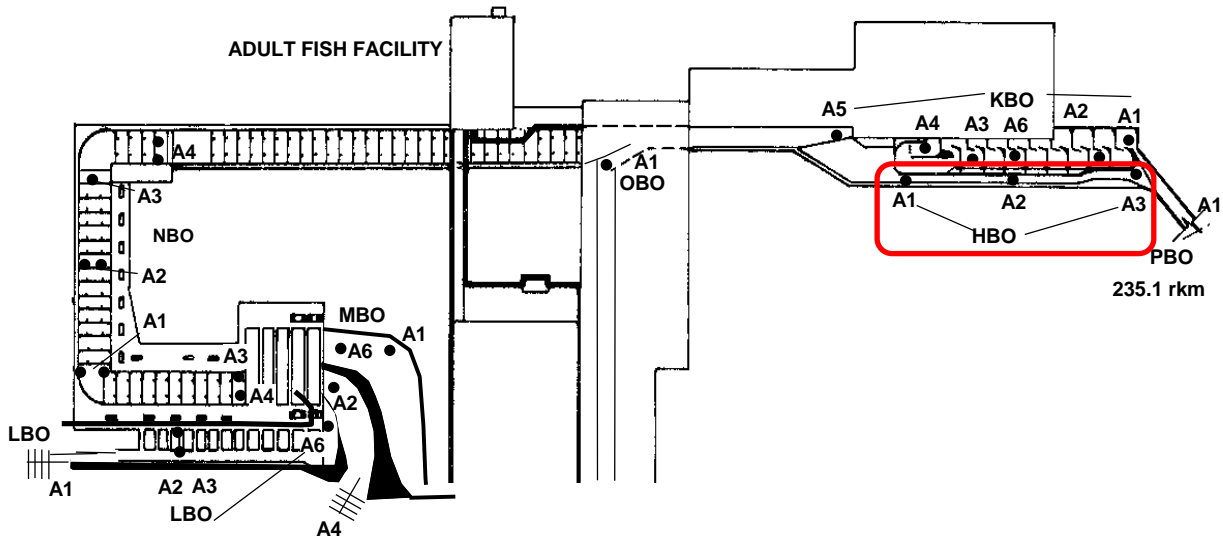
HBO: Washington shore Auxiliary Water Supply (AWS)

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LAT/LON:	45.648713°N -121.934989°W
RKM:	235.1
Receiver type:	DSP
Antennas (3):	A1 – drop-in on south wall of AWS between crowder and tainter gate A2 – drop-in on south wall of AWS approximately 50 feet upstream of tainter gate A3 – drop-in on south wall of AWS at entrance of LWS
Distance from receiver to antenna:	A1: 80 feet A2: 50 feet A3: 30 feet
Power source:	Hard wired (AC)
Notes:	Used for lamprey passage. Receiver placed along side of KBO.

HBO: Washington shore Auxiliary Water Supply (continued)

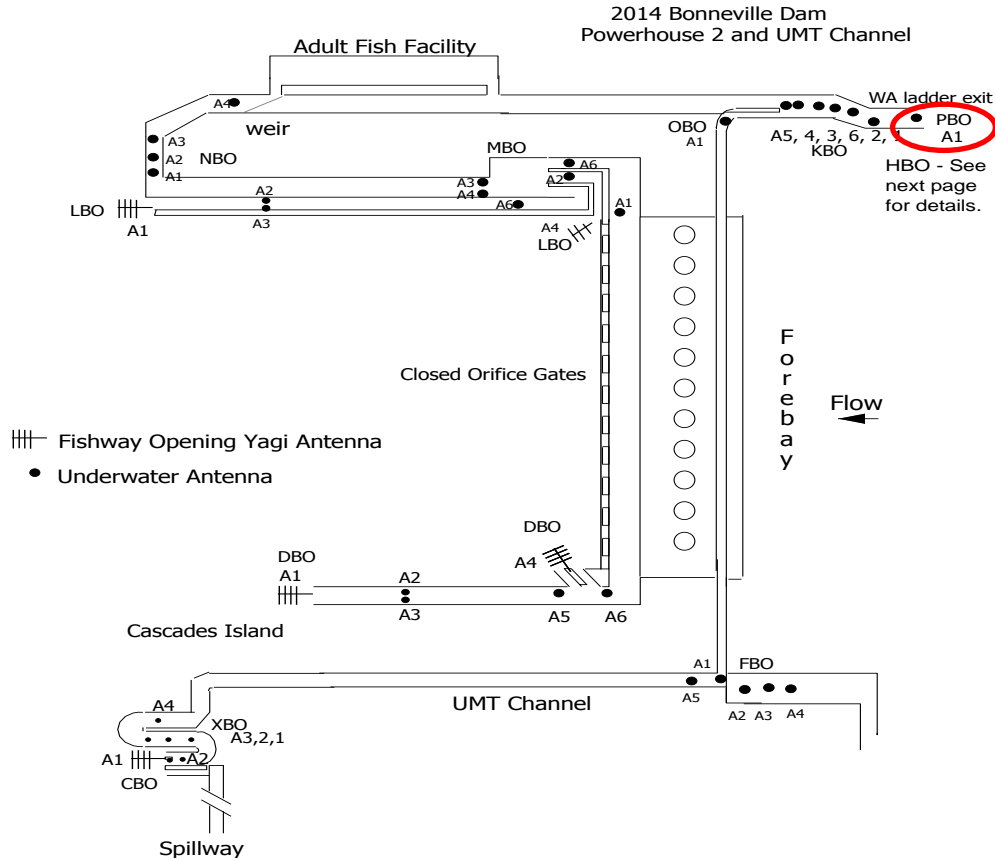


HBO: Washington shore Auxiliary Water Supply (continued)



PBO: Washington shore Top-of-Ladder

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LAT/LON:	45.647915°N -121.934060°W
RKM:	235.1
Receiver type:	DSP
Antennas (1):	A1 – drop-in hanging in fishway approximately 50 feet from ladder exit
Distance from receiver to antenna:	A1: 70 feet
Power source:	Hard wired (AC)
Notes:	Key needed to pass through gate and access site

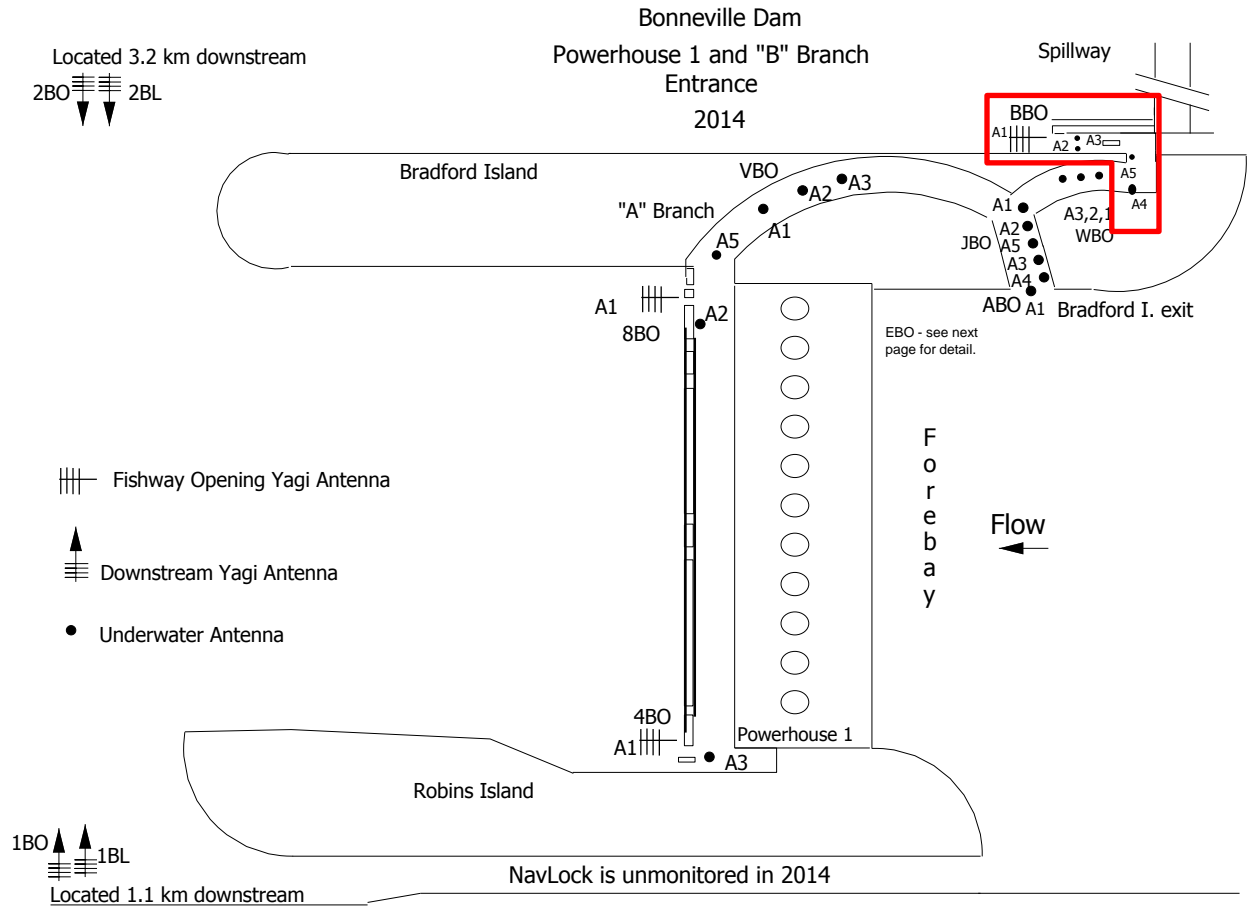
PBO: Washington shore Top-of-Ladder (continued)

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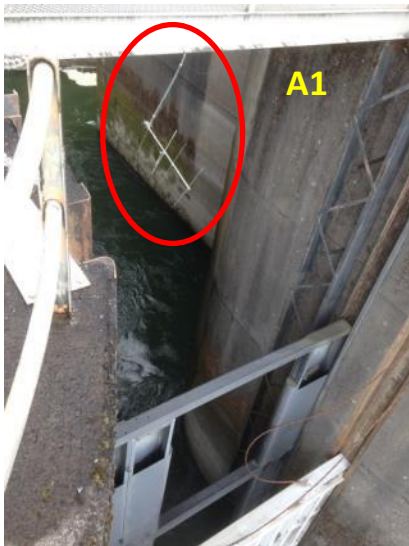
BBO: Bradford Island/south spillway entrance

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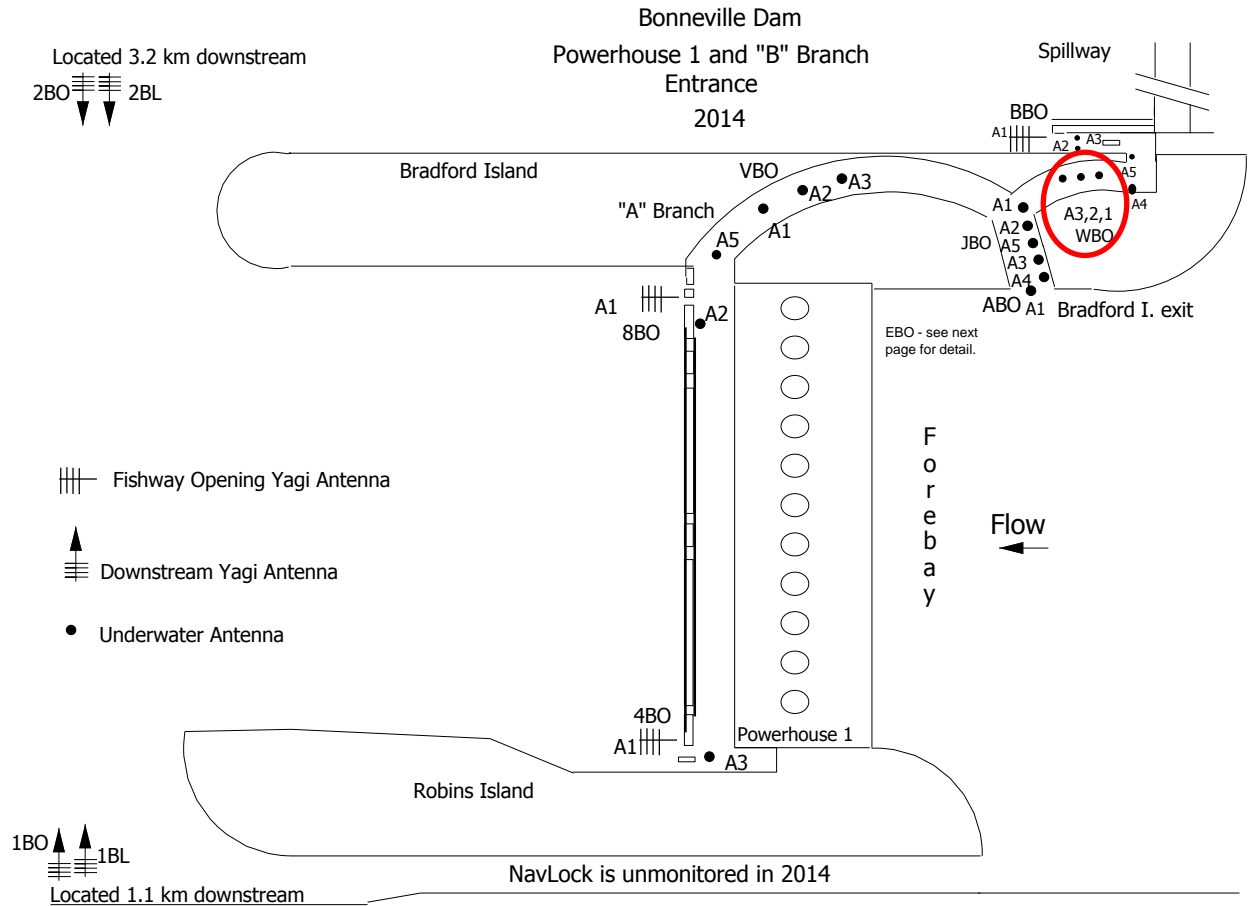
BBO: Bradford Island/south spillway entrance (continued)

LAT/LON:	45.642636°N -121.941426°W
RKM:	235.1
Receiver type:	DSP
Antennas (5):	A1 – yagi at entrance A2 – drop-in on south wall just inside entrance downstream of transition pool; parallel to A3 A3 – drop-in on north wall just inside entrance downstream of transition pool; parallel to A2 A4 – drop-in on south wall upstream of transition pool; parallel to A5 A5 – drop-in on north wall upstream of transition pool; parallel to A4
Distance from receiver to antenna:	A1: 50 feet A2: 80 feet A3: 100 feet A4: 40 feet A5: 60 feet
Power source:	Hard wired (AC)
Notes:	Key needed to pass gate and access spillway area.



WBO: Bradford Island B-Branch

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LAT/LON:	45.642582°N -121.942381°W
RKM:	235.1
Receiver type:	DSP
Antennas (3):	A1 – drop-in running down 1 st middle support of fishway A2 – drop-in running down 11 th middle support of fishway A3 – drop-in running down 25 th middle support of fishway
Distance from receiver to antenna:	A1: 100 feet A2: 50 feet A3: 80 feet
Power source:	Hard wired (AC)
Notes:	Key needed to pass gate and access spillway area.

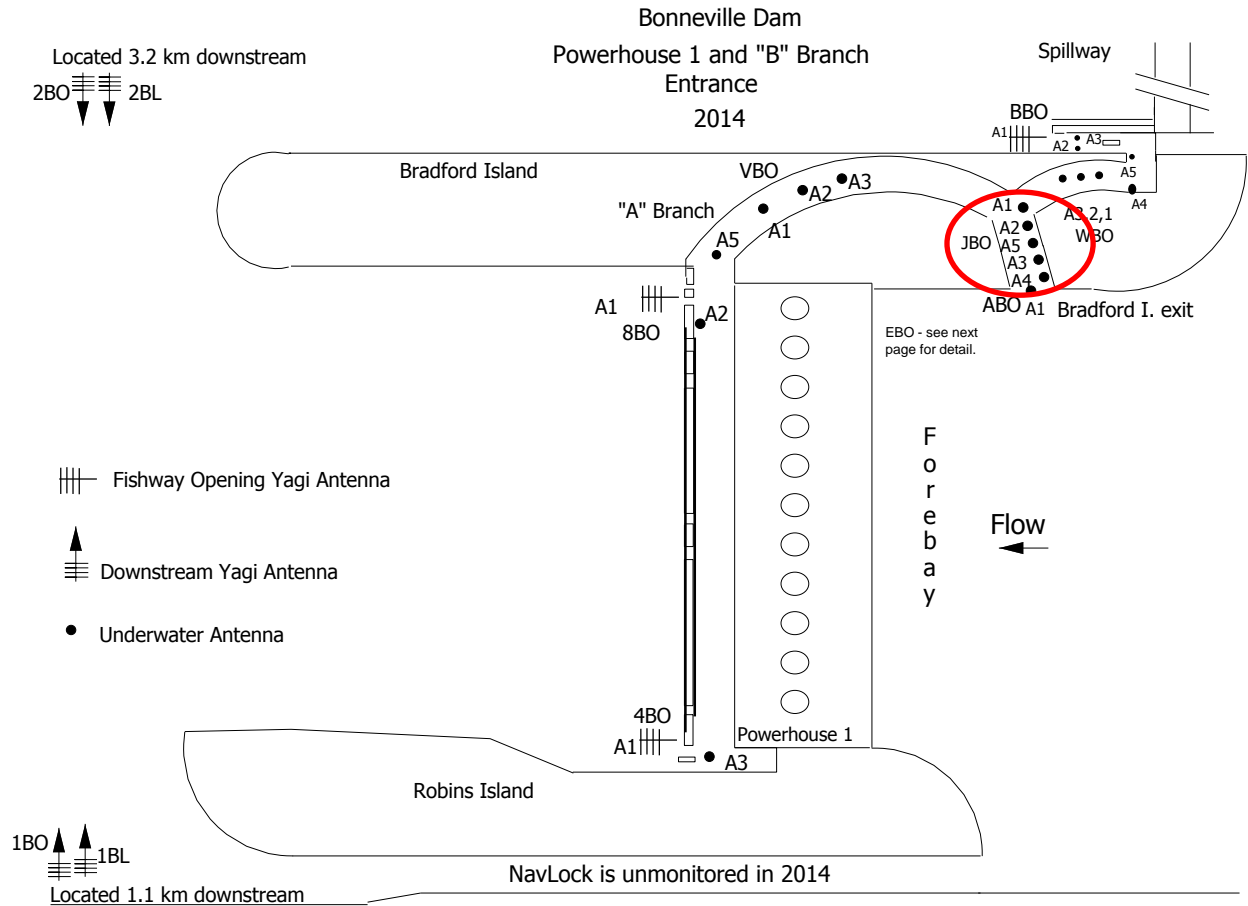
WBO: Bradford Island B-Branch (continued)

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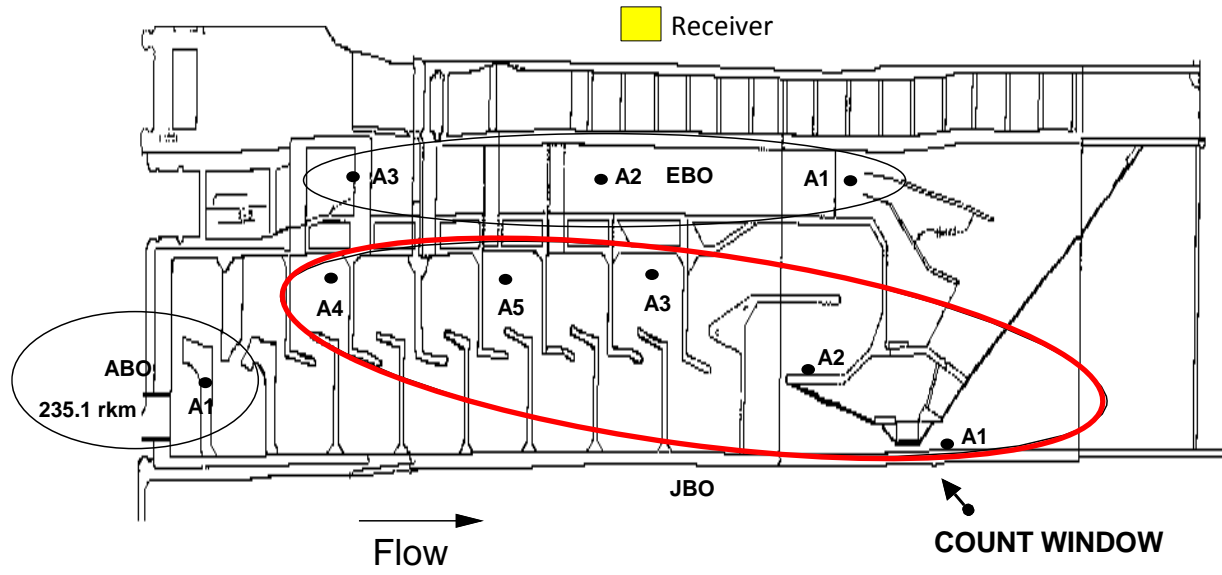
JBO: Bradford Island serpentine weirs

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JBO: Bradford Island serpentine weirs (continued)

LAT/LON:	45.641273°N -121.943934°W
RKM:	235.1
Receiver type:	DSP
Antennas (5):	A1 – drop-in downstream of count window A2 – drop-in upstream of count window A3 – drop-in on west wall between weirs 2 and 3 A5 – drop-in on west wall between weirs 6 and 7 (between PIT readers 2 and 3) A4 – drop-in on west wall between weirs 12 and 13
Distance from receiver to antenna:	A1: 80 feet A2: 60 feet A3: 35 feet A5: 35 feet A4: 50 feet
Power source:	Hard wired (AC)
Notes:	A5 added in 2014 between A3 and A4. Receiver located beside EBO.



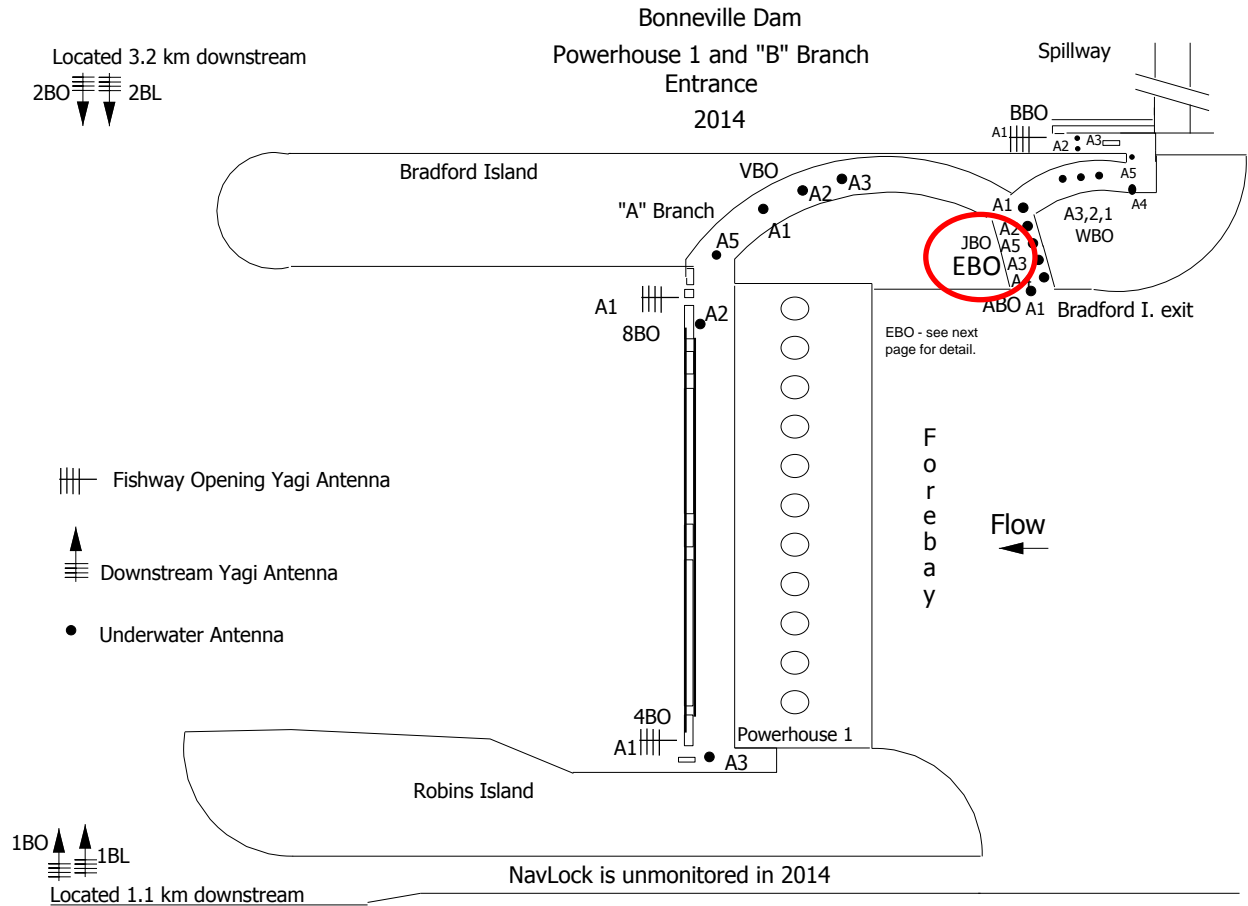
JBO: Bradford Island serpentine weirs (continued)

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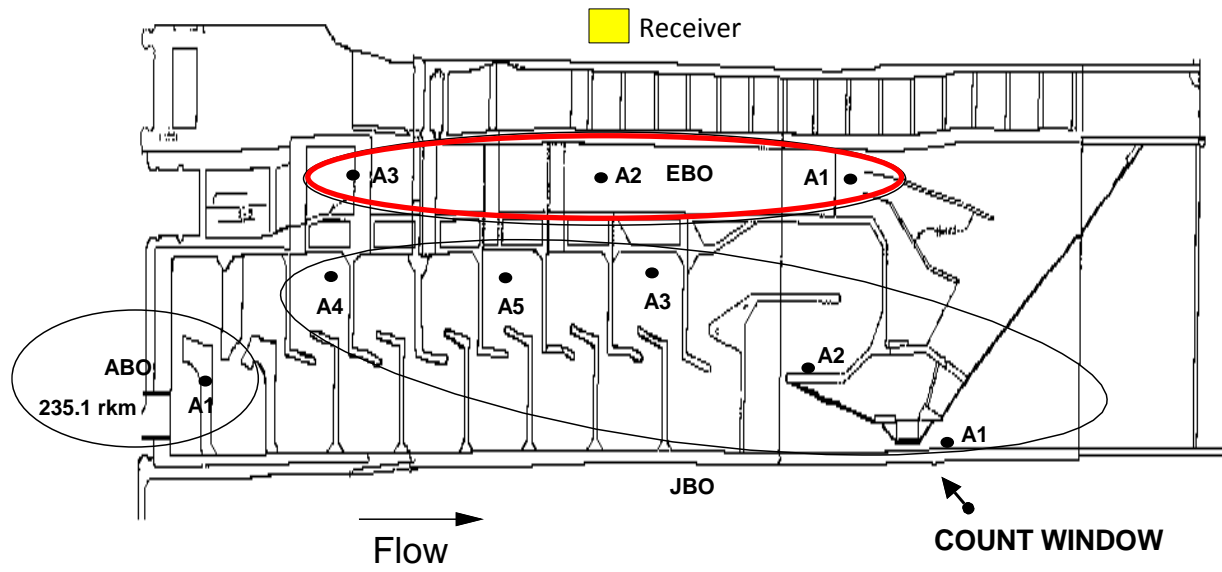
EBO: Bradford Island Auxiliary Water Supply (AWS)

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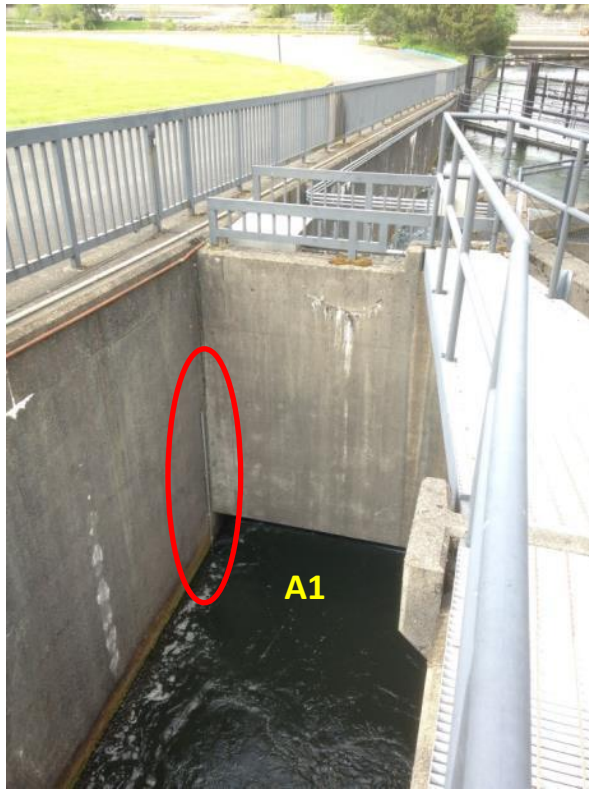


LAT/LON:	45.641273°N -121.943934°W
RKM:	235.1
Receiver type:	DSP
Antennas (3):	A1 – drop-in on west wall, upstream side of tainter gate A2 – drop-in on west wall at entrance of lamprey passage system (LPS) A3 – drop-in on west wall at top of AWS
Distance from receiver to antenna:	A1: 60 feet A2: 20 feet A3: 60 feet
Power source:	Hard wired (AC)
Notes:	Used for lamprey passage. Receiver located beside JBO.

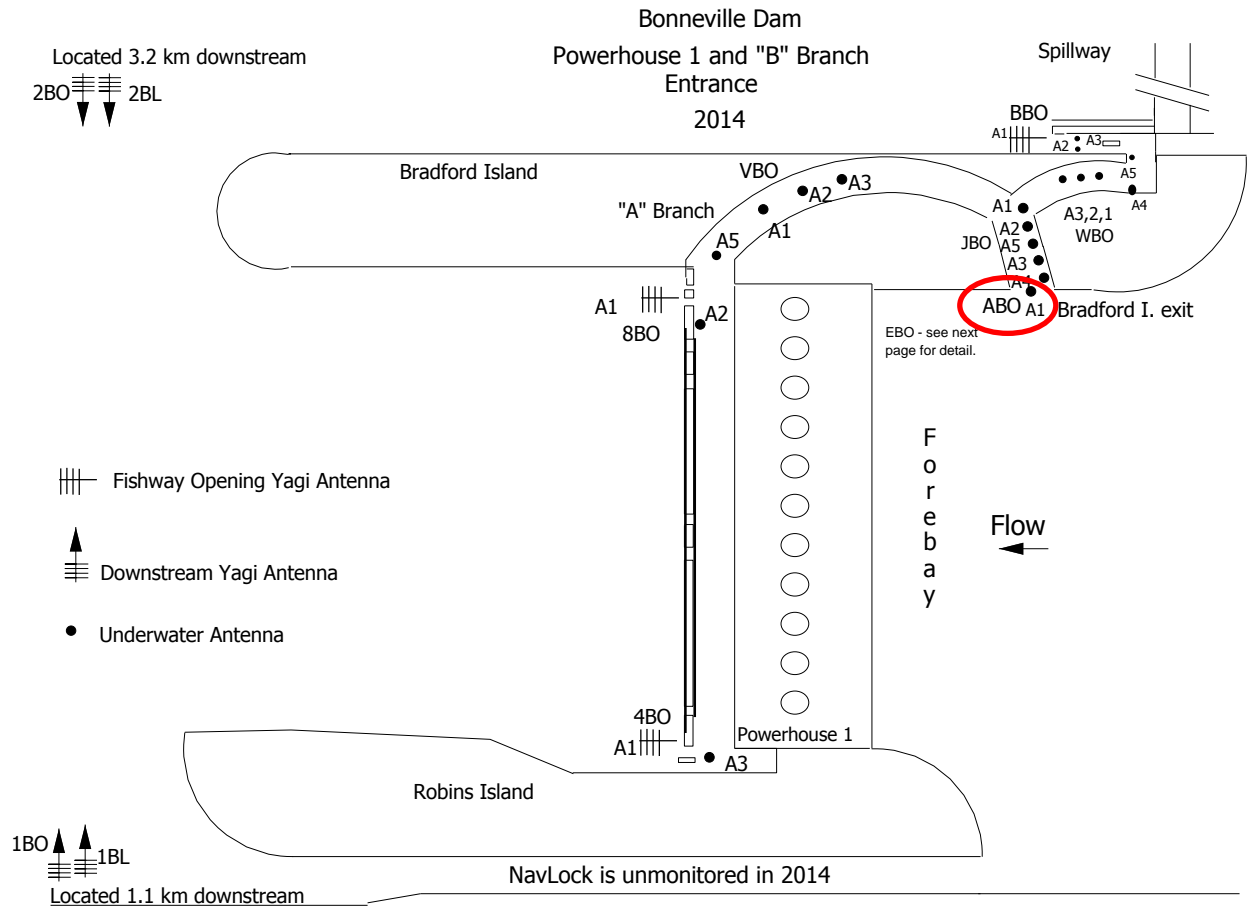
EBO: Bradford Island Auxiliary Water Supply (continued)



EBO: Bradford Island Auxiliary Water Supply (continued)

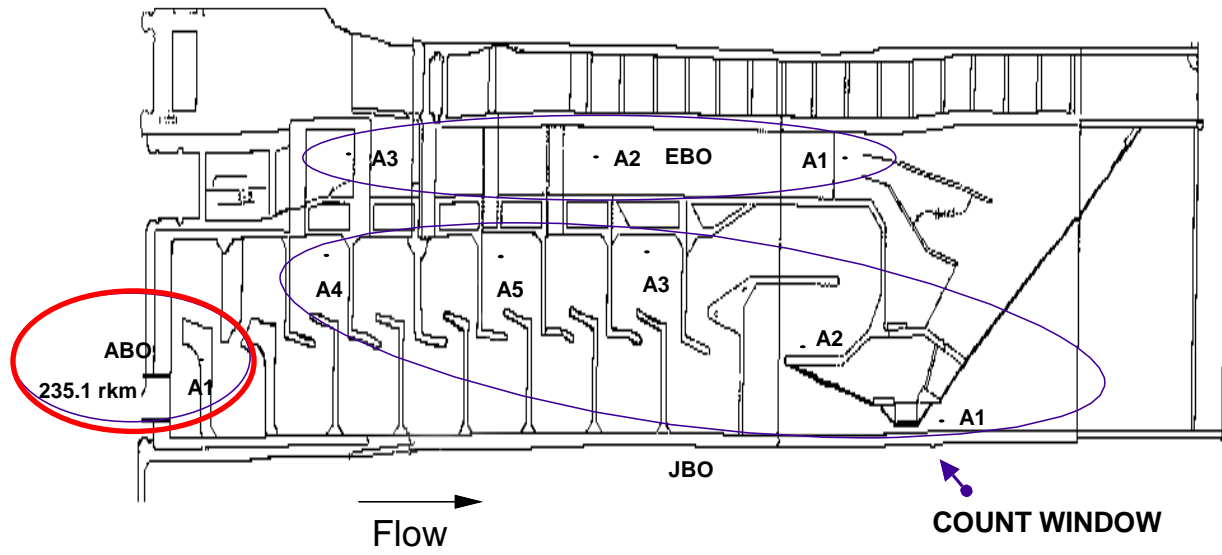


ABO: Bradford Island Top-of-Ladder

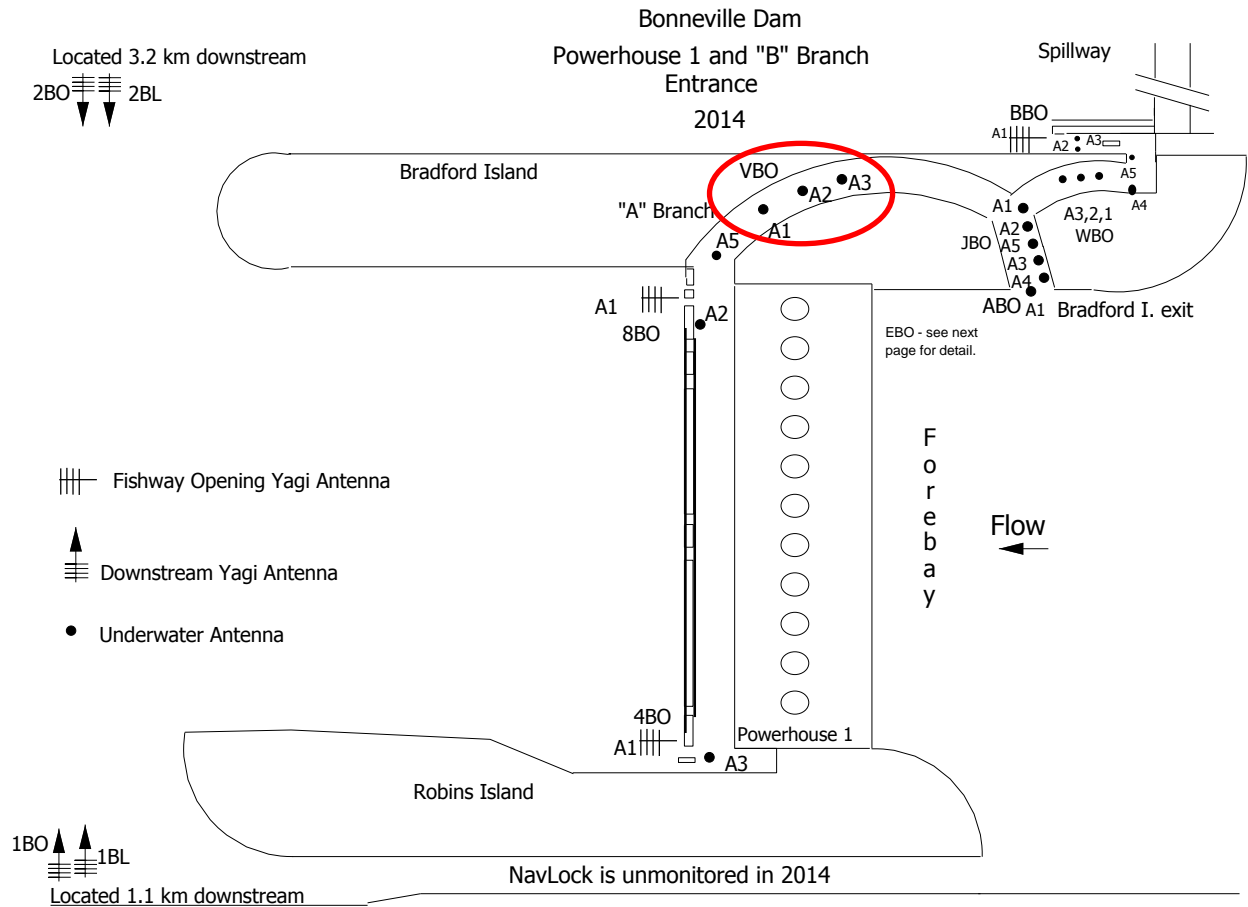


LAT/LON:	45.641065°N -121.943741°W
RKM:	235.1
Receiver type:	DSP
Antennas (1):	A1 – two antennas rolled; drop-ins on each of the outer walls of the last serpentine weir
Distance from receiver to antenna:	A1: 20 feet
Power source:	Hard wired (AC)
Notes:	Ladder exit site.

ABO: Bradford Island Top-of-Ladder (continued)



VBO: Bradford Island A-Branch



LAT/LON:	45.642064°N -121.945701°W
RKM:	235.1
Receiver type:	DSP
Antennas (3):	A1 – two antennas rolled; one drop-in on 1 st middle support and one drop-in on the adjacent east wall where fishway widens A2 – drop-in on the 11 th middle support of fishway from PH1 entrance A3 – drop-in on the 6 th middle support of fishway upstream from the Bradford Island Recreation Area bridge overpass
Distance from receiver to antenna:	A1: 80 feet A2: 40 feet A3: 80 feet
Power source:	Hard wired (AC)
Notes:	

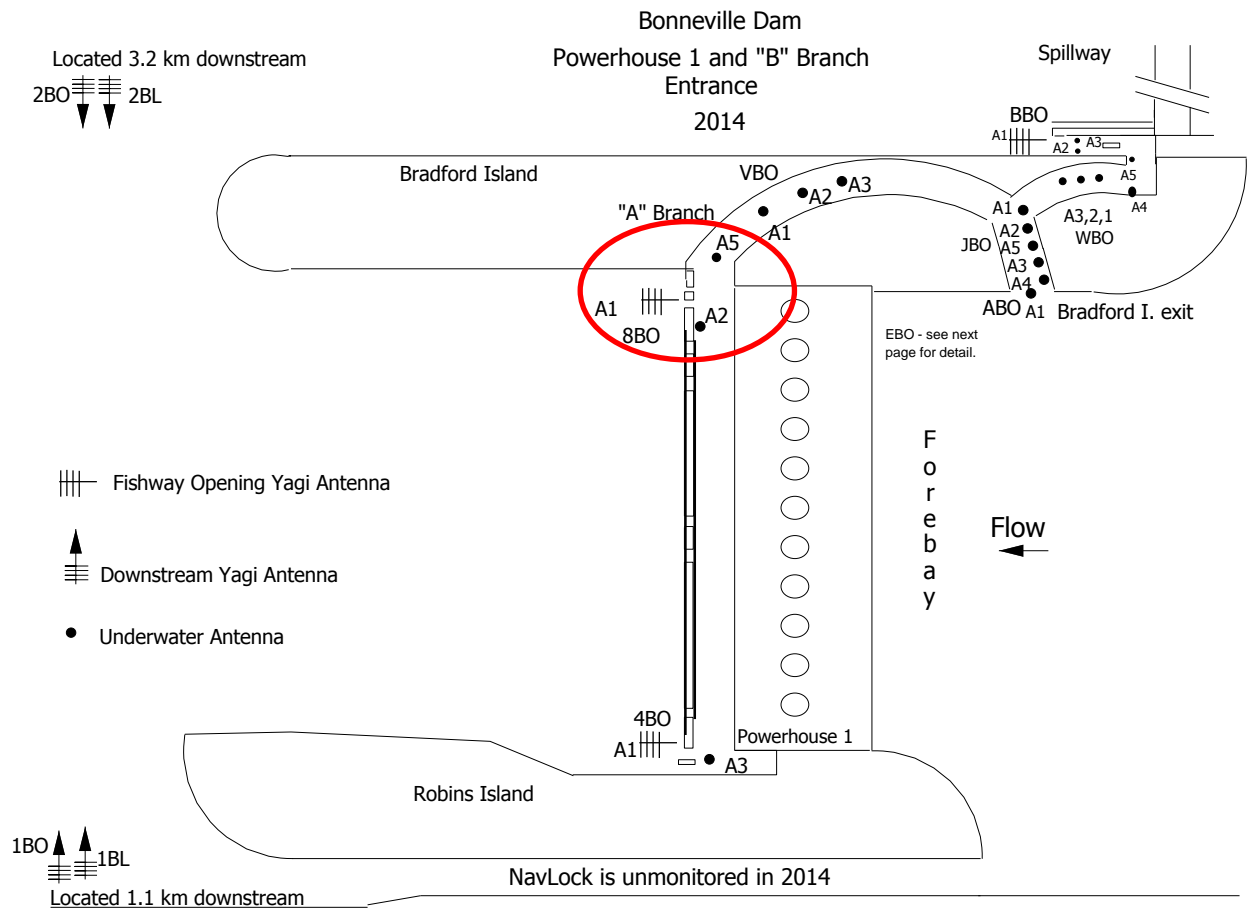
VBO: Bradford Island A-Branch (continued)



VBO: Bradford Island A-Branch (continued)



8BO: Powerhouse 1 North entrance

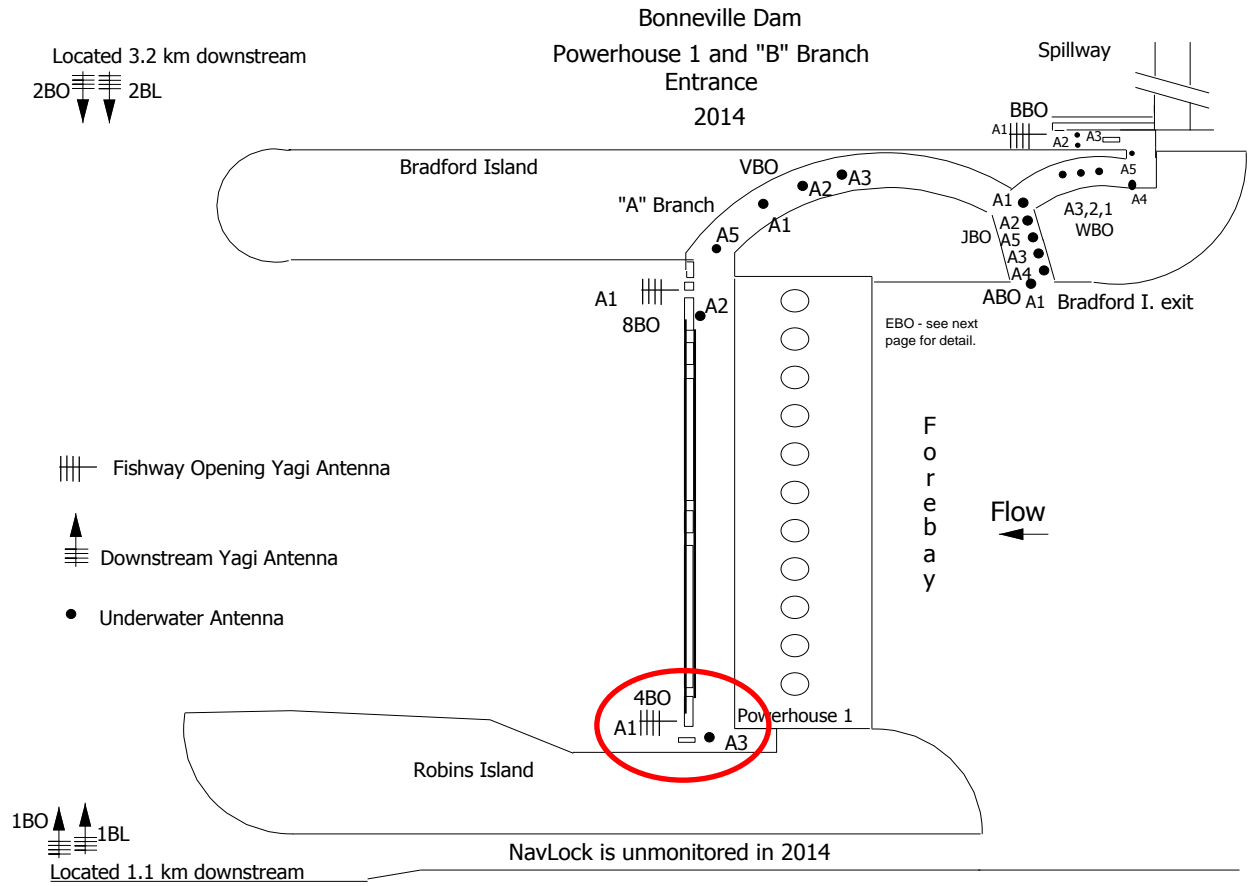


LAT/LON:	45.641446°N -121.946230°W
RKM:	235.1
Receiver type:	DSP
Antennas (3):	A1 – yagi pointed at PH1 north entrance A2 – drop-in hanging inside collection channel just downstream of entrance A5 – two antennas rolled, both at the 3 rd crossbeam across the fishway; one drop-in hanging towards east wall, one drop-in on west wall
Distance from receiver to antenna:	A1: 40 feet A2: 30 feet A5: 80 feet
Power source:	Hard wired (AC)
Notes:	

8BO: Powerhouse 1 North entrance (continued)



4BO: Powerhouse 1 South entrance



LAT/LON:	45.649251°N -121.947690°W
RKM:	235.1
Receiver type:	DSP
Antennas (2):	A1 – yagi pointed at the PH1 south entrance A3 – drop-in inside the collection channel, on opposite side of roadway
Distance from receiver to antenna:	A1: 30 feet A3: 60 feet
Power source:	Hard wired (AC)
Notes:	

4BO: Powerhouse 1 South entrance (continued)



1TD: The Dalles Dam Tailrace, Oregon Side



LAT/LON: 45.614991° N
-121.197498° W

RKM: 304.9

Receiver type: SRX

Antennas (1): A1 – 9-element yagi

Distance from receiver to antenna: 20 feet

Power source: Solar

Notes:
Address: 2345 River Road. Park in the PUD parking lot and walk through the lawn on the south side of the building, site located next to the river on the east side of the walking path.



2TD: The Dalles Dam Tailrace, Washington Side



LAT/LON: 45.608174° N
-121.169987° W

RKM: 304.9

Receiver type: SRX

Antennas (1): A1 – 9-element yagi

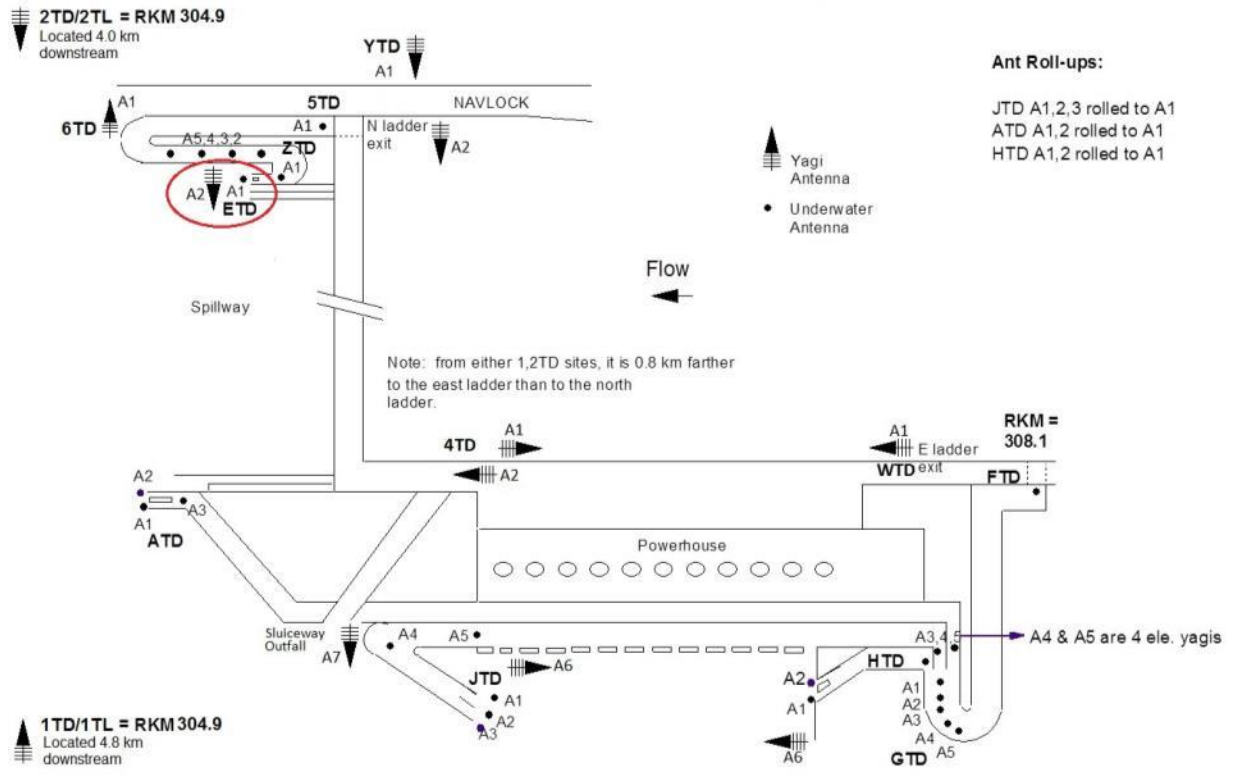
Distance from receiver to antenna: 50 feet

Power source: Solar

Notes:
Follow Dallesport Road west and take a left onto Old Ferry Road. Cross the railroad and turn left onto a gravel road just before the pavement ends. Follow this road 0.6 miles, site is on the left side.



ETD: The Dalles Dam North Ladder Approach

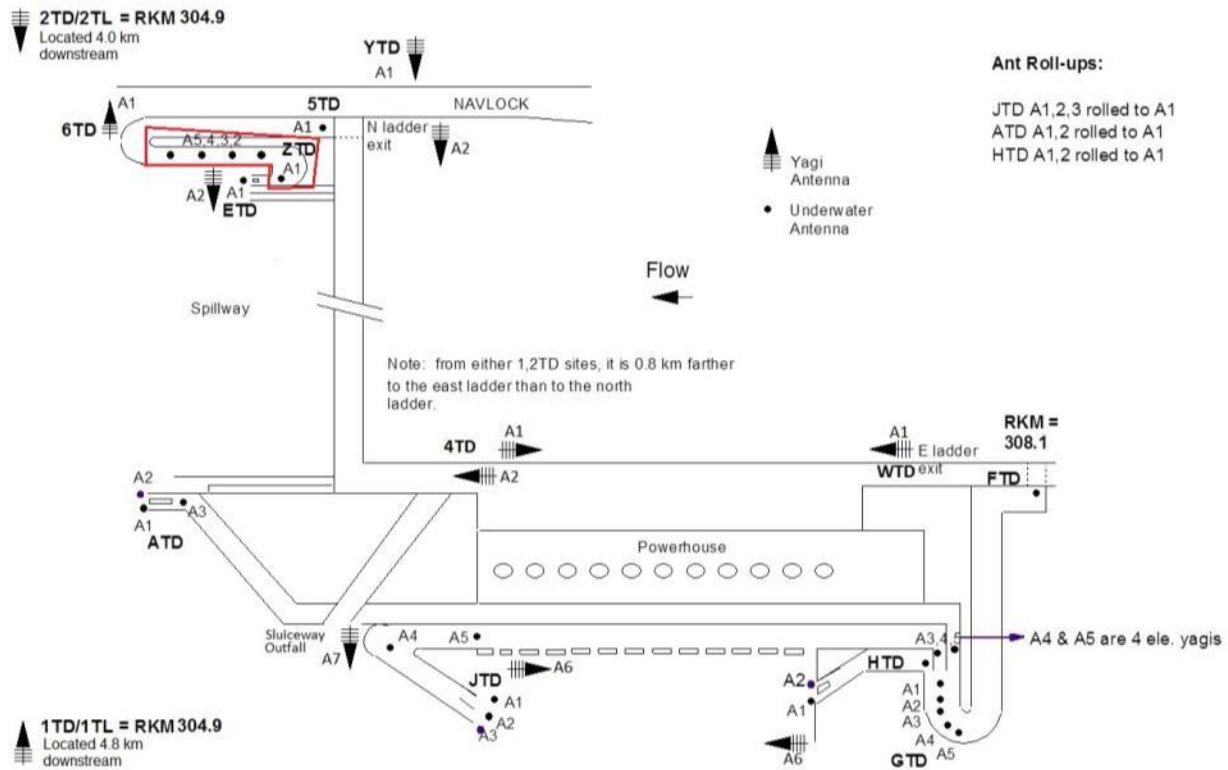


LAT/LON:	45.614367°N -121.136199°W
RKM:	308.1
Receiver type:	DSP
Antennas (2):	A1 – Drop in, approach antenna A2 – 6-element yagi, downstream of entrance, spill tailrace north of guidance wall.
Distance from receiver to antenna:	A1: 30 feet A2: 120 feet
Power source:	Hard wired (AC)
Notes:	A2 overwintering steelhead ant

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ZTD: The Dalles Dam North Ladder Mid Ladder



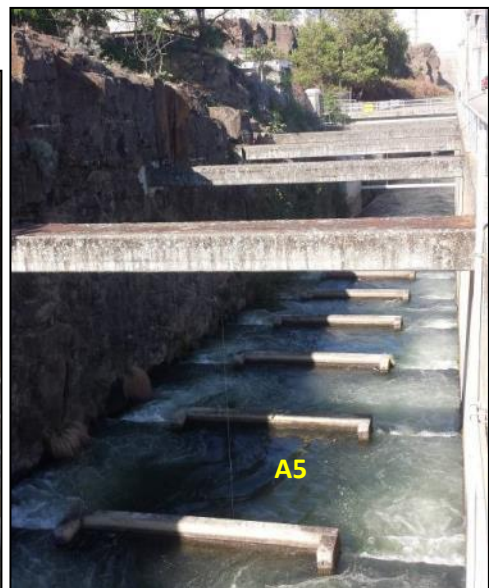
LAT/LON: 45.614432°N -121.136112°W
RKM: 308.1
Receiver type: DSP
Antennas (5): A1 – Two drop ins rolled together. Entrance antenna.
A2 – Drop in, 50’ upstream of 180° turn Below weir 1.
A3 – Drop in between weirs 3 and 4
A4 – Drop in between weirs 10 and 11
A5 – Drop in between weirs 21 and 22

Distance from receiver to antenna: A1: 60 feet
A2: 80 feet
A3: 120 feet
A4: 240 feet
A5: 350 feet

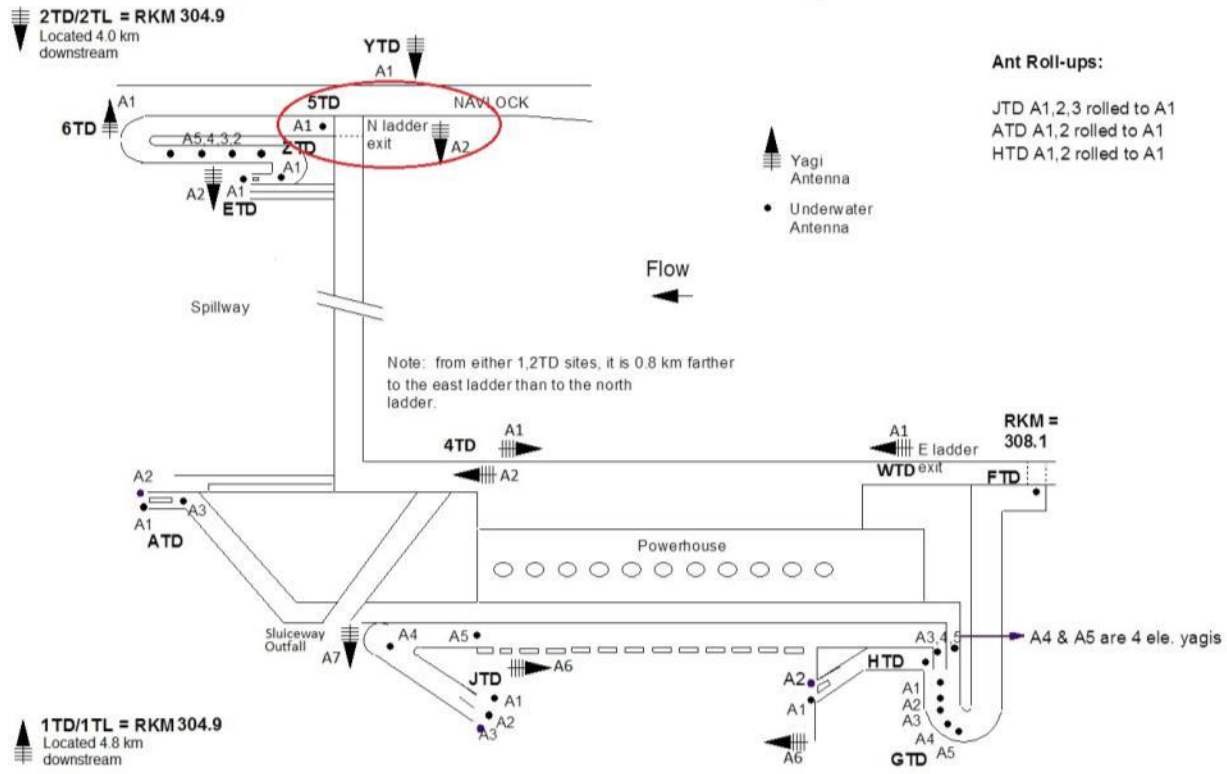
Power source: Hard wired (AC)

Notes:

Appendix C



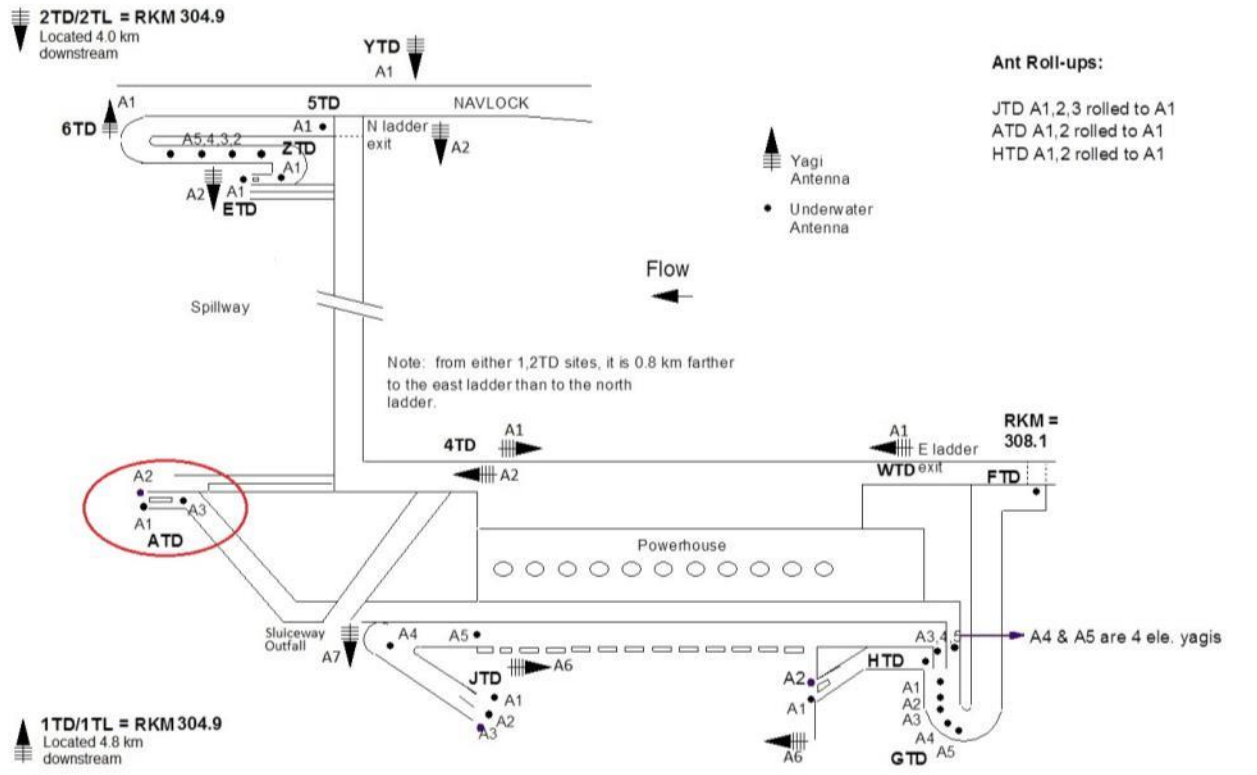
5TD: The Dalles Dam North Ladder Exit



LAT/LON:	45.615425°N -121.137036°W
RKM:	308.1
Receiver type:	DSP
Antennas (2):	A1 – Two underwater antennas rolled together; conduit mounted to last weir, drop in 30' upstream of last weir. Exit Antenna. A2 – 6-elemnt yagi antenna, north spillway forebay.
Distance from receiver to antenna:	A1: 30 feet A2: 130 feet
Power source:	Hard wired (AC)
Notes:	A2 overwintering steelhead ant

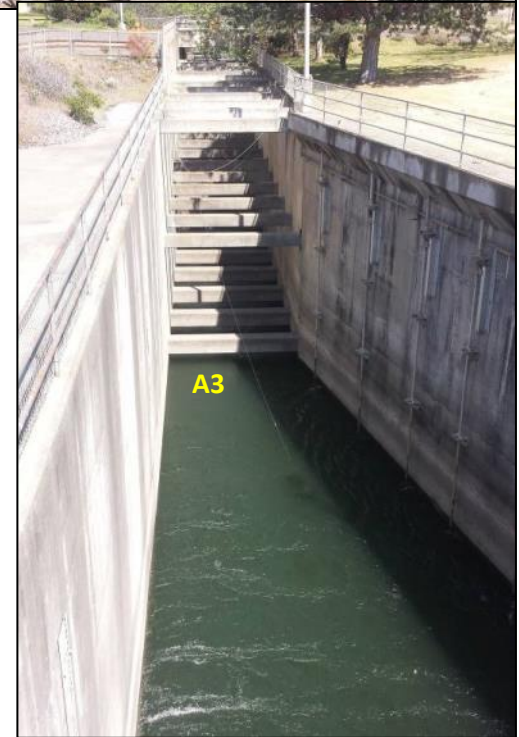
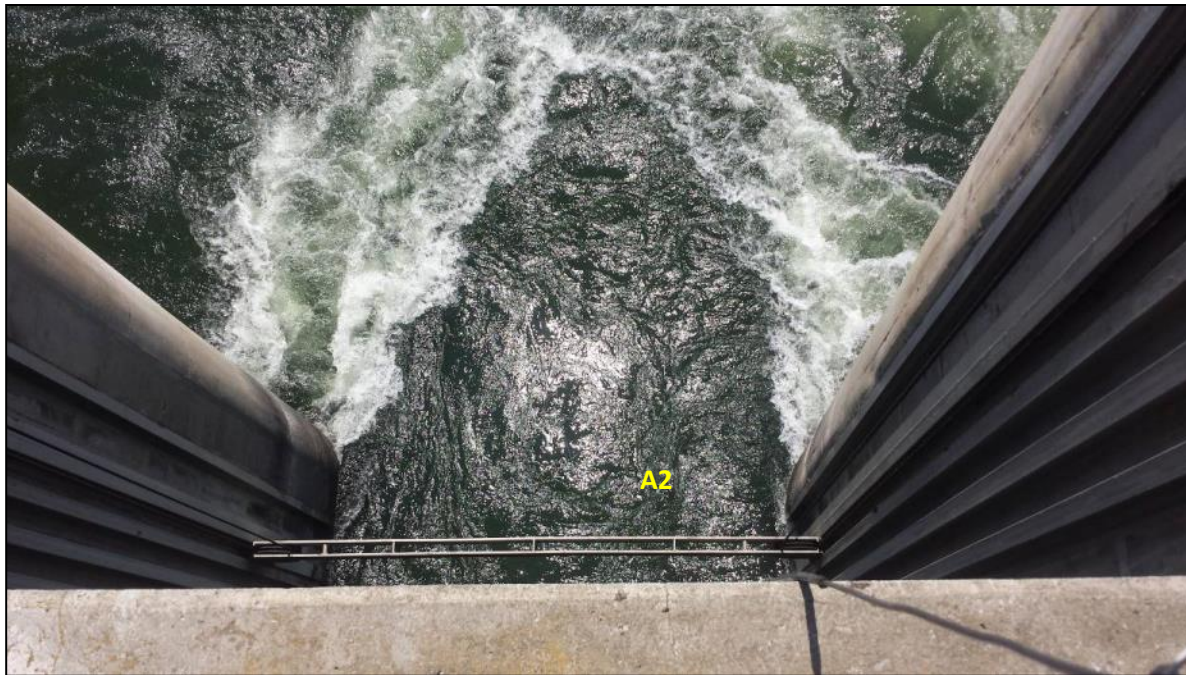


ATD: The Dalles Dam South Ladder Spillway Entrance

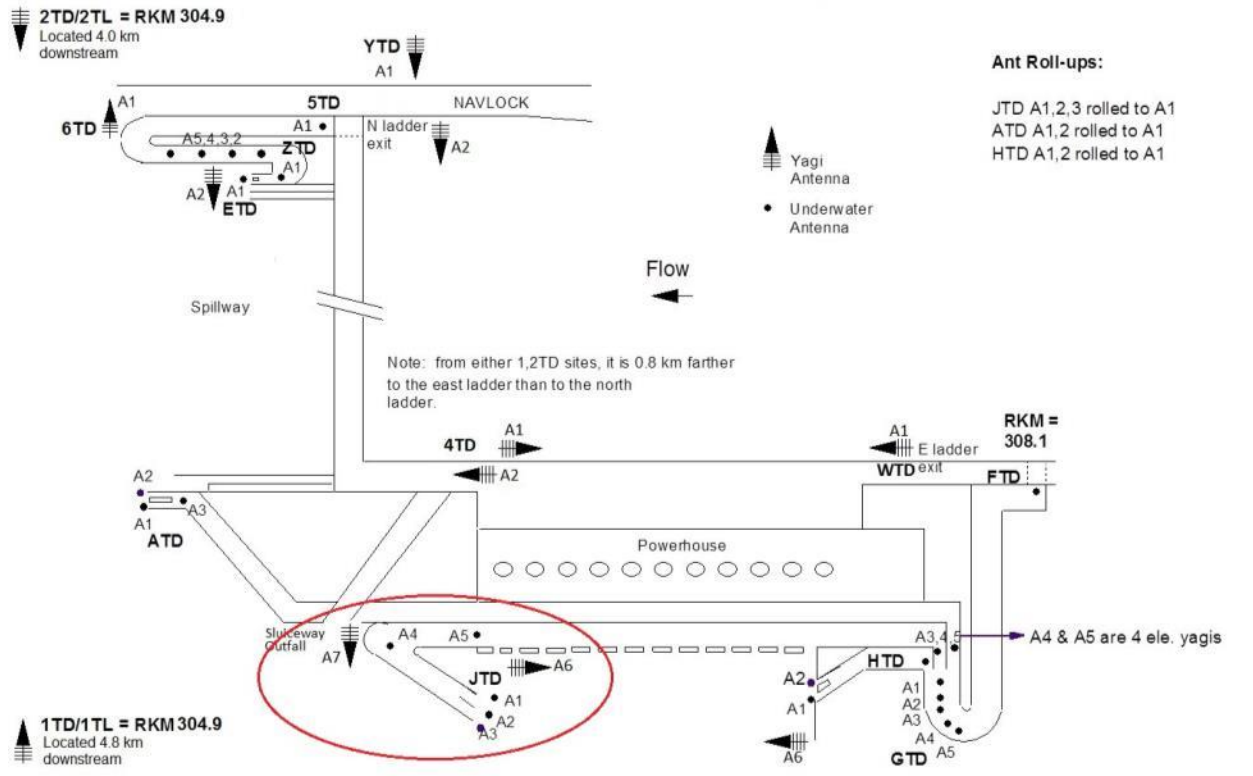


LAT/LON:	45.612036°N -121.131544°W
RKM:	308.1
Receiver type:	DSP
Antennas (3):	A1 – Drop in approach antenna. A2 – Drop in approach antenna. A3 – Drop in entrance antenna at upstream end of attraction flow pumps.
Distance from receiver to antenna:	A1: 30 feet A2: 40 feet A3: 140 feet
Power source:	Hard wired (AC)
Notes:	

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JTD: The Dalles Dam East Ladder West Powerhouse Entrance

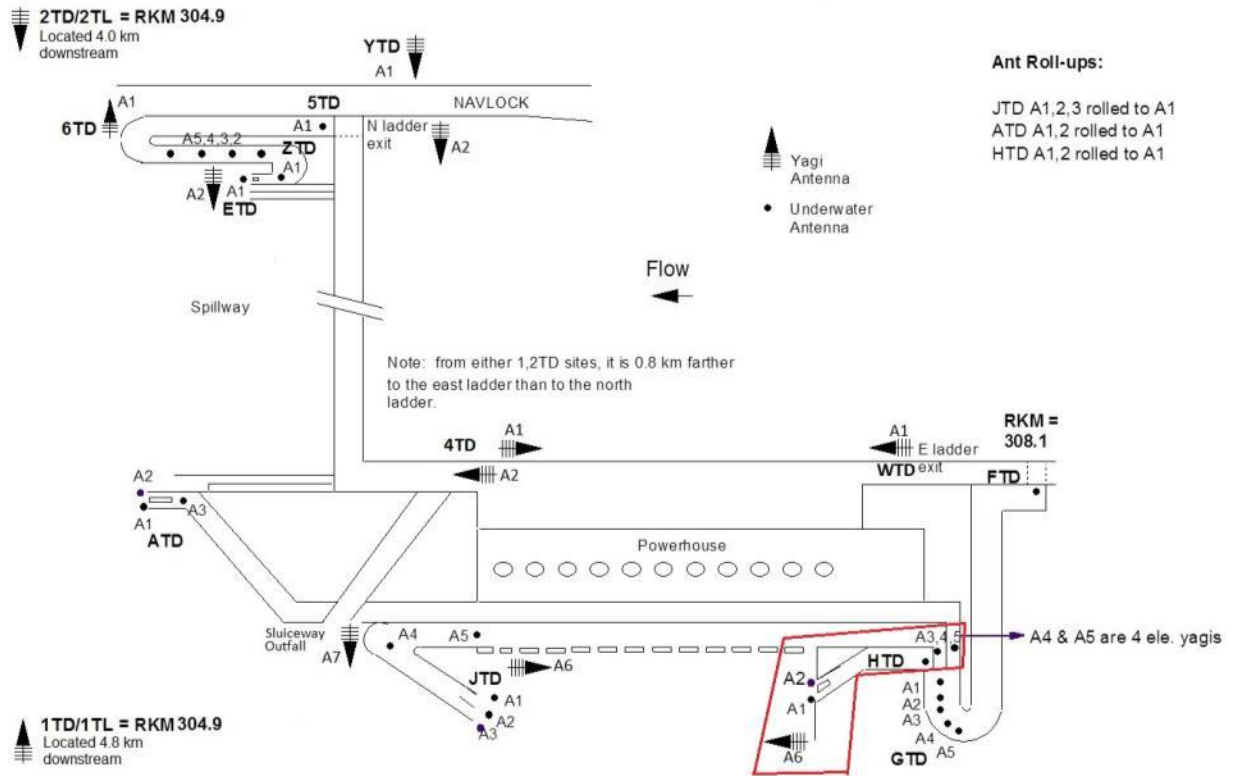


LAT/LON:	45. 615411°N -121. 126663°W
RKM:	308.1
Receiver type:	DSP
Antennas (7):	A1 – Drop in approach antenna. A2 – Drop in approach antenna. A3 – Drop in approach antenna. A4 – Drop in entrance antenna at 180° bend on roadway bridge. A5 – Drop in in collection channel downstream of first OG. A6 – 6-element yagi, west side of powerhouse tailrace. A7 – 4-element yagi, ice/trash outfall.
Distance from receiver to antenna:	A1: 30 feet A2: 40 feet A3: 50 feet A4: 130 feet A5: 120 feet A6: 20 feet A7: 250 feet
Power source:	Hard wired (AC)
Notes:	A6 and A7 are overwinter steelhead antennas.

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HTD: The Dalles Dam East Ladder East Powerhouse Entrance

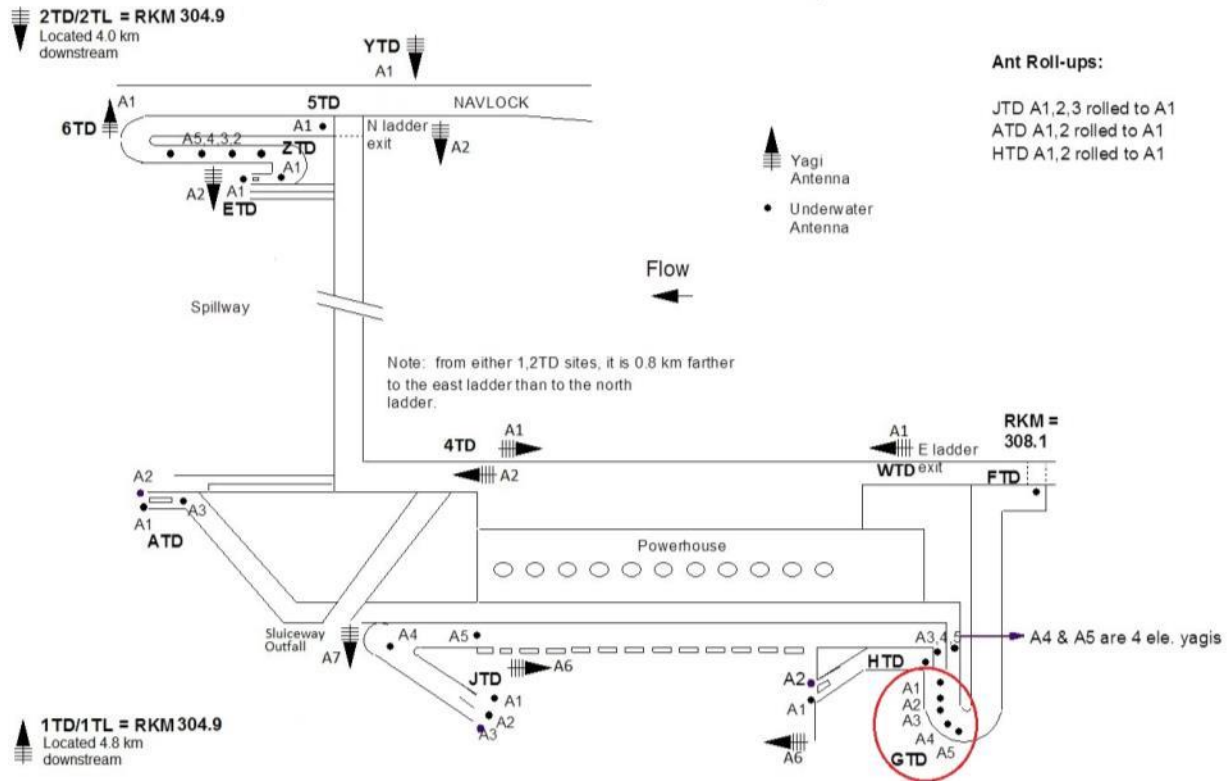


LAT/LON:	45. 619305°N -121. 120803°W
RKM:	308.1
Receiver type:	DSP
Antennas (6):	A1 – Drop in approach antenna. A2 – Two drop in approach antennas rolled together. A3 – Underwater conduit entrance antenna on the corner of the 90° bend. A4 – 4-element yagi, collection channel exit. A5 – 4-element yagi, south spillway exit. A6 – 6-element yagi, east side of powerhouse tailrace.
Distance from receiver to antenna:	A1: 30 feet A2: 50 feet A3: 90 feet A4: 140 feet A5: 170 feet A6: 40 feet
Power source:	Hard wired (AC)
Notes:	A6 is an overwintering steelhead antenna.

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GTD: The Dalles Dam East Ladder Transition Area

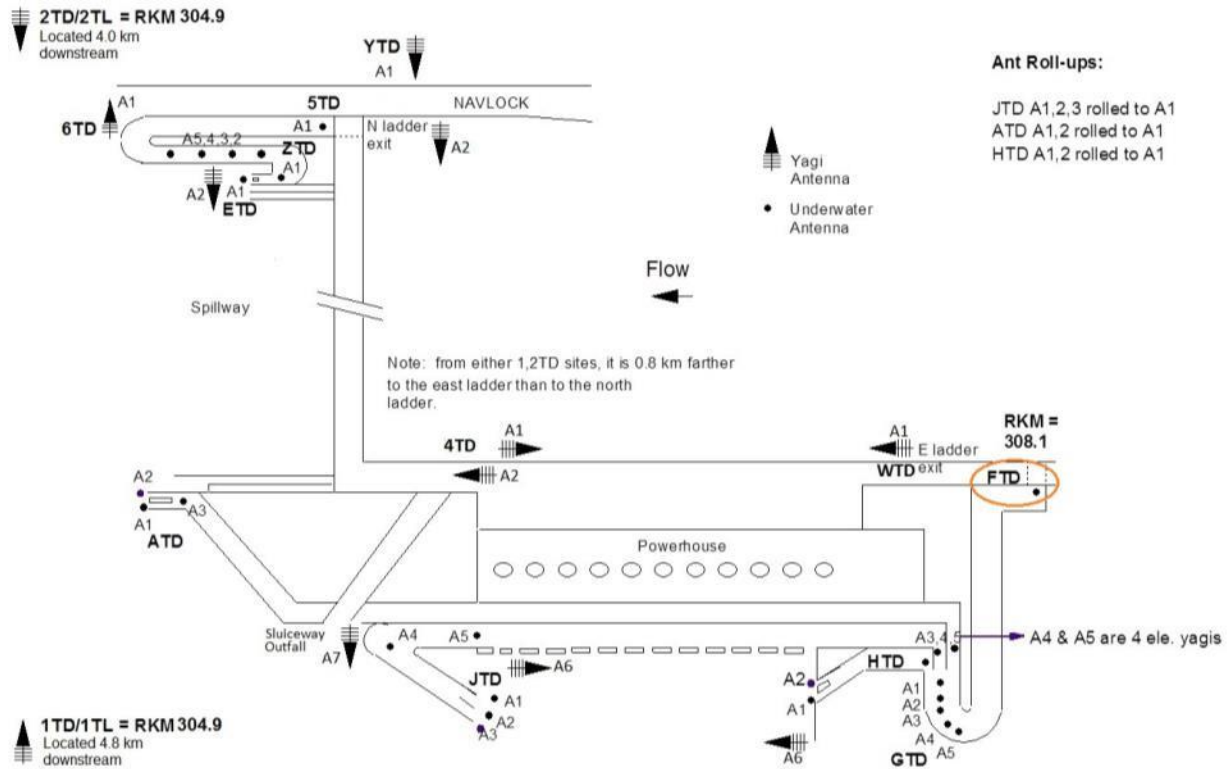


LAT/LON:	45. 618594°N -121. 119123°W
RKM:	308.1
Receiver type:	DSP
Antennas (5):	A1 – Underwater conduit before weir 1. A2 – Drop in between weir 6 and weir 7. A3 – Drop in between weir 11 and weir 12. A4 – Drop in between weir 15 and weir 16. A5 – Two underwater conduits between weir 20 and weir 21.
Distance from receiver to antenna:	A1: 380 feet A2: 300 feet A3: 240 feet A4: 200 feet A5: 130 feet
Power source:	Hard wired (AC)
Notes:	

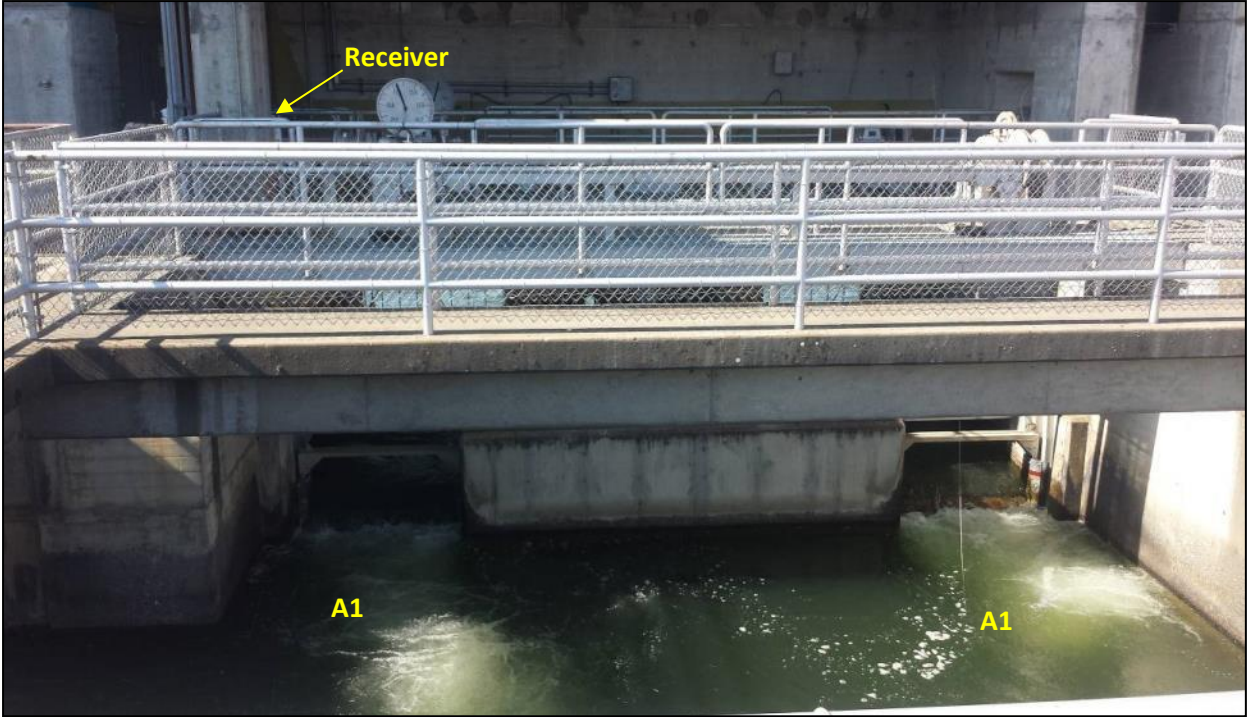
Appendix C



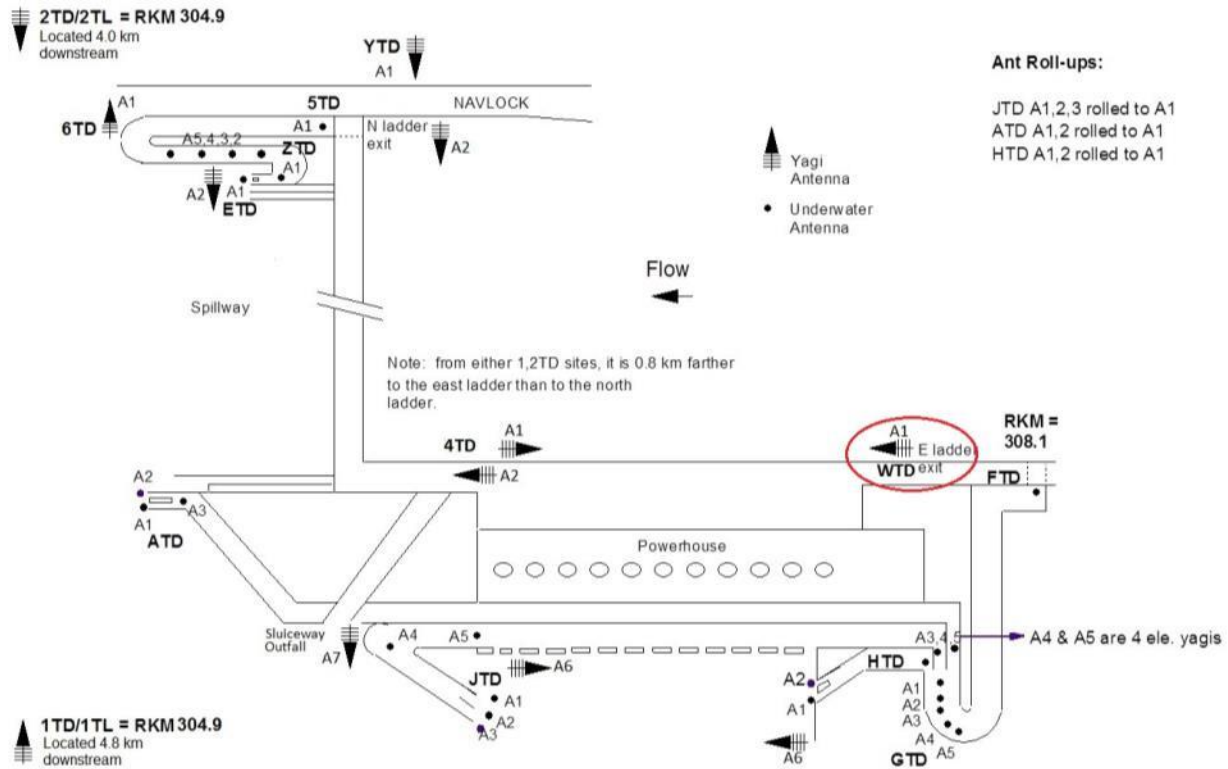
FTD: The Dalles Dam East Ladder Exit



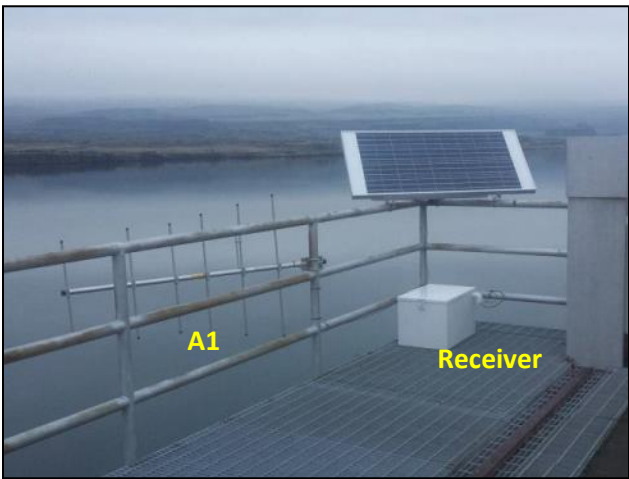
LAT/LON:	45. 620071°N -121. 120400°W
RKM:	308.1
Receiver type:	DSP
Antennas (1):	A1 – Two drop in antennas just downstream of the last weir.
Distance from receiver to antenna:	A1: 50 feet
Power source:	Hard wired (AC)
Notes:	



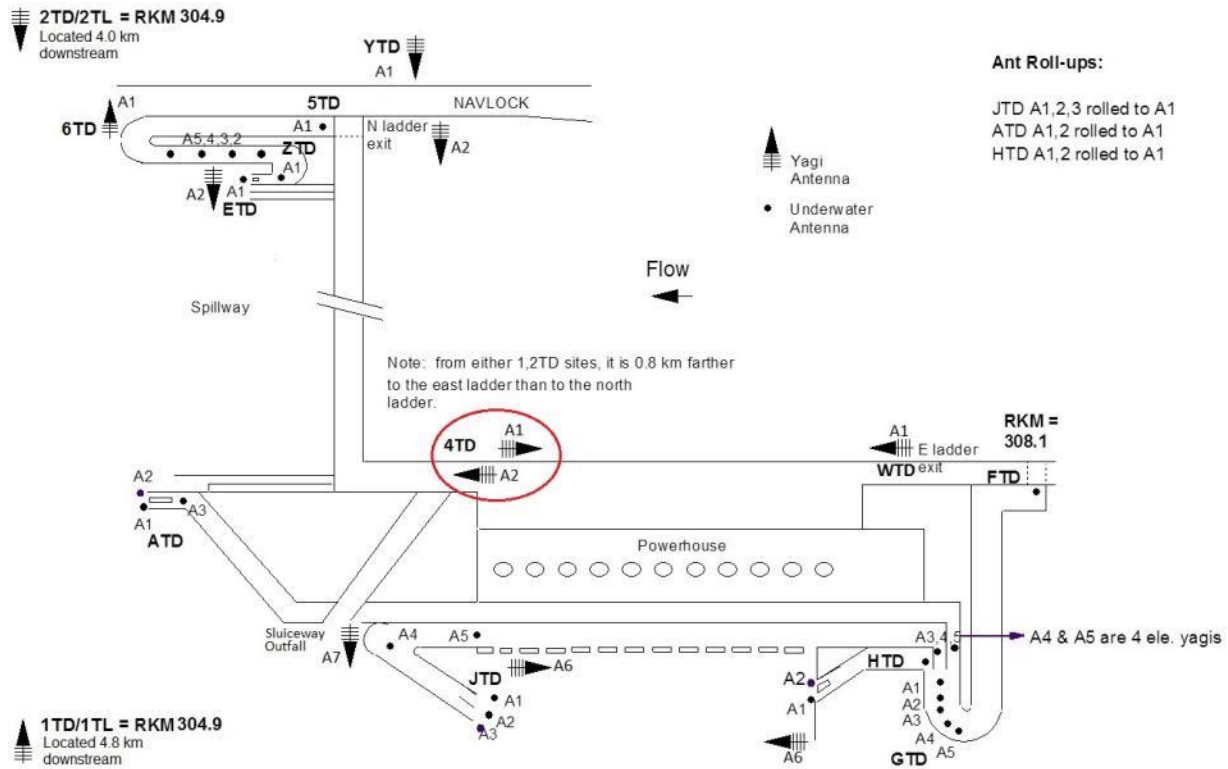
WTD: The Dalles Dam Forebay East



LAT/LON:	45.619879° N -121.121246° W
RKM:	308.1
Receiver type:	SRX
Antennas (1):	A1 – 6-element yagi
Distance from receiver to antenna:	20 feet
Power source:	Solar
Notes:	Overwintering steelhead site.



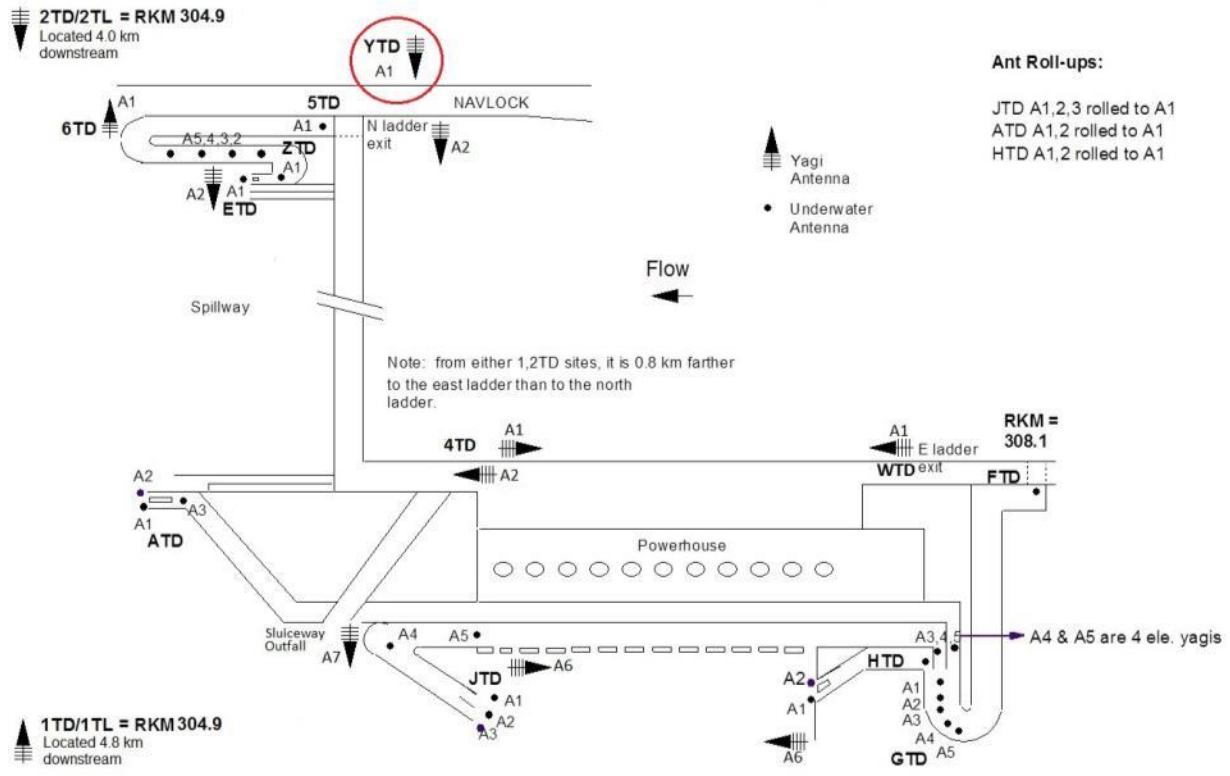
4TD: The Dalles Dam Forebay West



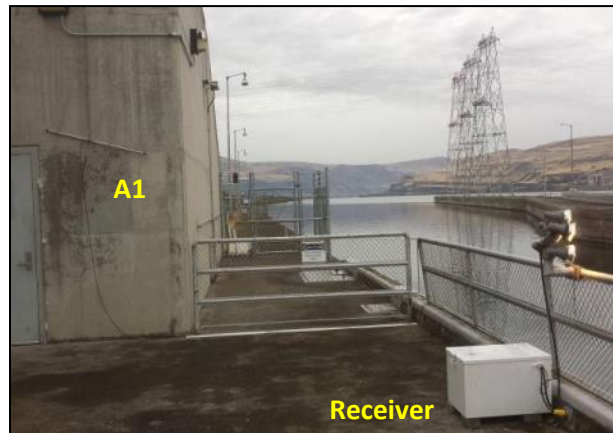
LAT/LON:	45. 615774°N -121. 127312°W
RKM:	308.1
Receiver type:	DSP
Antennas (1):	A1 – Forebay east side. A2 – Ice/trash sluiceway downstream of unit 1.
Distance from receiver to antenna:	A1: 10 feet A2: 80 feet
Power source:	Solar
Notes:	Overwintering steelhead site. Used three deep cycle batteries during the winter months, two in the fall and spring.



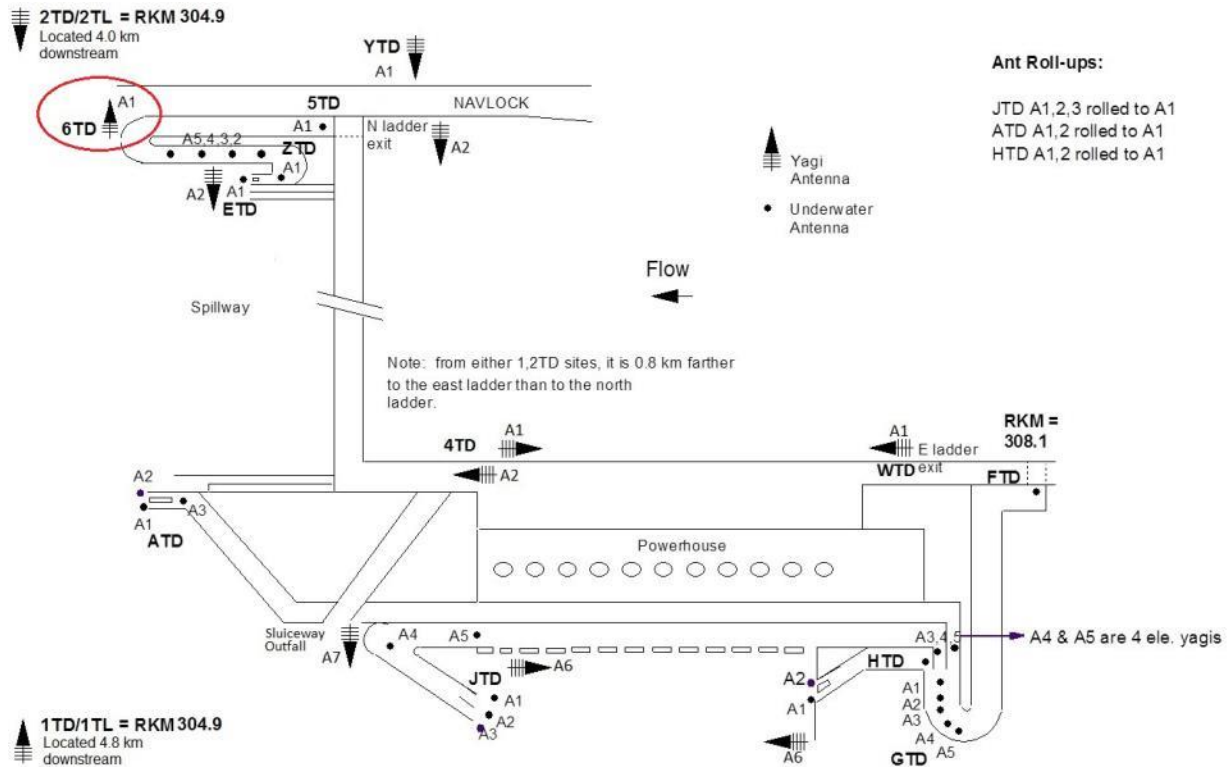
YTD: The Dalles Dam Navigation Lock Forebay



LAT/LON:	45.616001° N -121.138114° W
RKM:	308.1
Receiver type:	SRX
Antennas (1):	A1 – 4-element yagi
Distance from receiver to antenna:	30 feet
Power source:	Hard Wired (AC)
Notes:	Overwintering steelhead site.



6TD: The Dalles Dam Navigation Lock Tailrace



LAT/LON:	45.614064° N -121.140481° W
RKM:	308.1
Receiver type:	SRX
Antennas (1):	A1 – 4-element yagi
Distance from receiver to antenna:	40 feet
Power source:	Hard Wired (AC)
Notes:	Overwintering steelhead site.



1JD: John Day Dam Tailrace, Oregon Side



LAT/LON:	45.705311° N -120.714021° W
RKM:	345.0
Receiver type:	SRX
Antennas (1):	A1 – 9-element yagi
Distance from receiver to antenna:	20 feet
Power source:	Solar
Notes:	



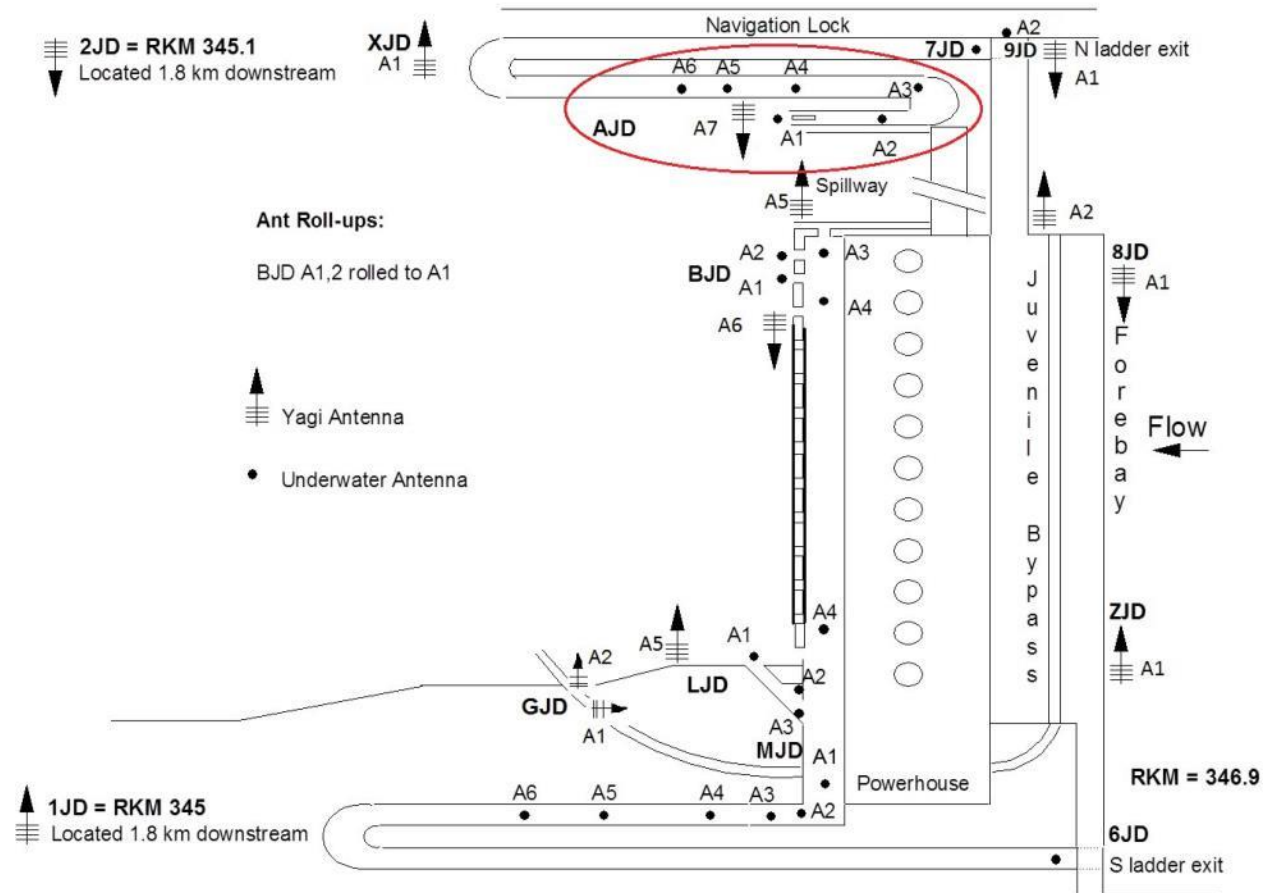
2JD: John Day Dam Tailrace, Washington Side



LAT/LON:	45.712403° N -120.716713° W
RKM:	345.1
Receiver type:	SRX
Antennas (1):	A1 – 9-element yagi
Distance from receiver to antenna:	20 feet
Power source:	Solar
Notes:	



AJD: John Day Dam North Ladder Entrance

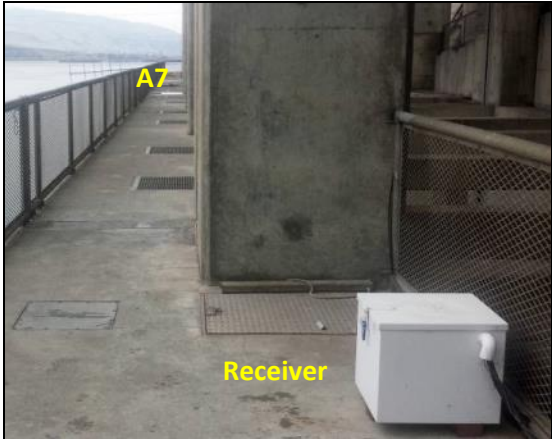


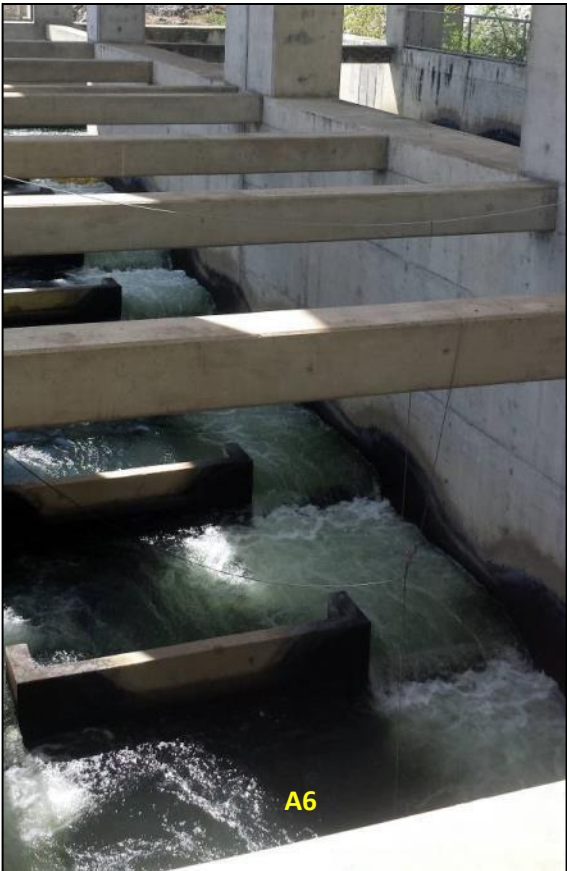
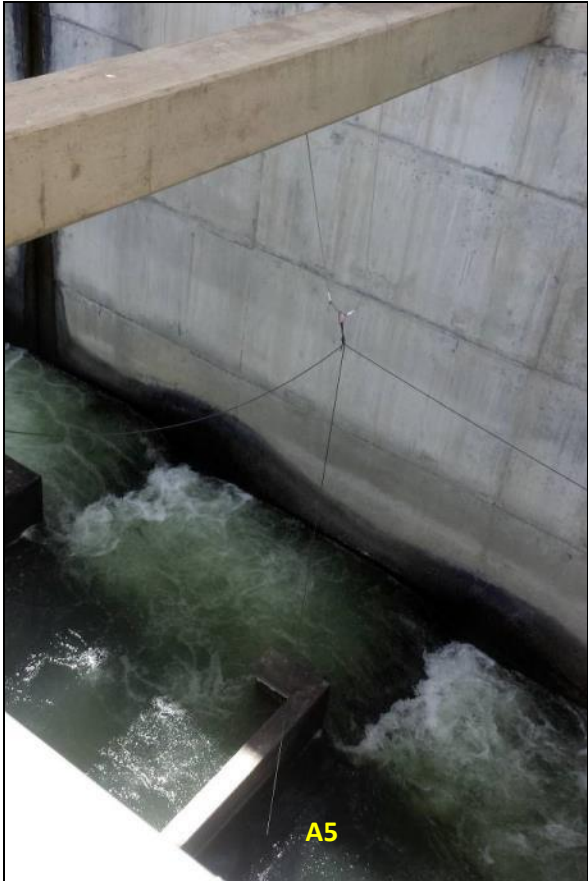
LAT/LON: 45.718742°N -120.697058°W
RKM: 346.9
Receiver type: DSP
Antennas (7): A1 – Drop in approach antenna
 A2 – Drop in entrance antenna
 A3 – Drop in upstream end of first 180° bend
 A4 – Drop in downstream of weir 1
 A5 – Drop in between weirs 6 and 7
 A6 – Drop in between weirs 9 and 10
 A7 – 6-element yagi, north spill tailrace

Distance from receiver to antenna: A1: 60 feet
 A2: 80 feet
 A3: 90 feet
 A4: 40 feet
 A5: 130 feet
 A6: 150 feet
 A7: 80 feet

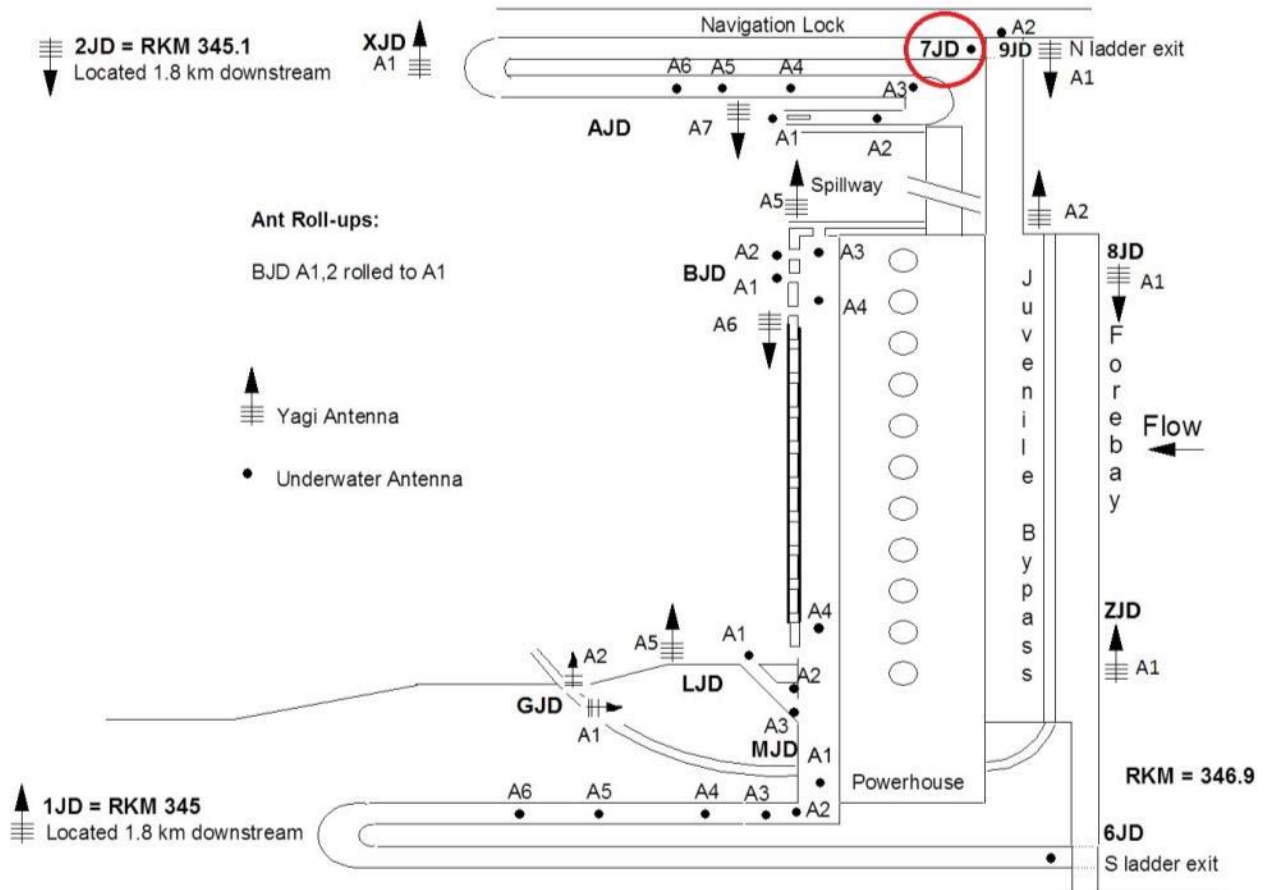
Power source: Hard wired (AC)
Notes: A7 overwintering steelhead antenna

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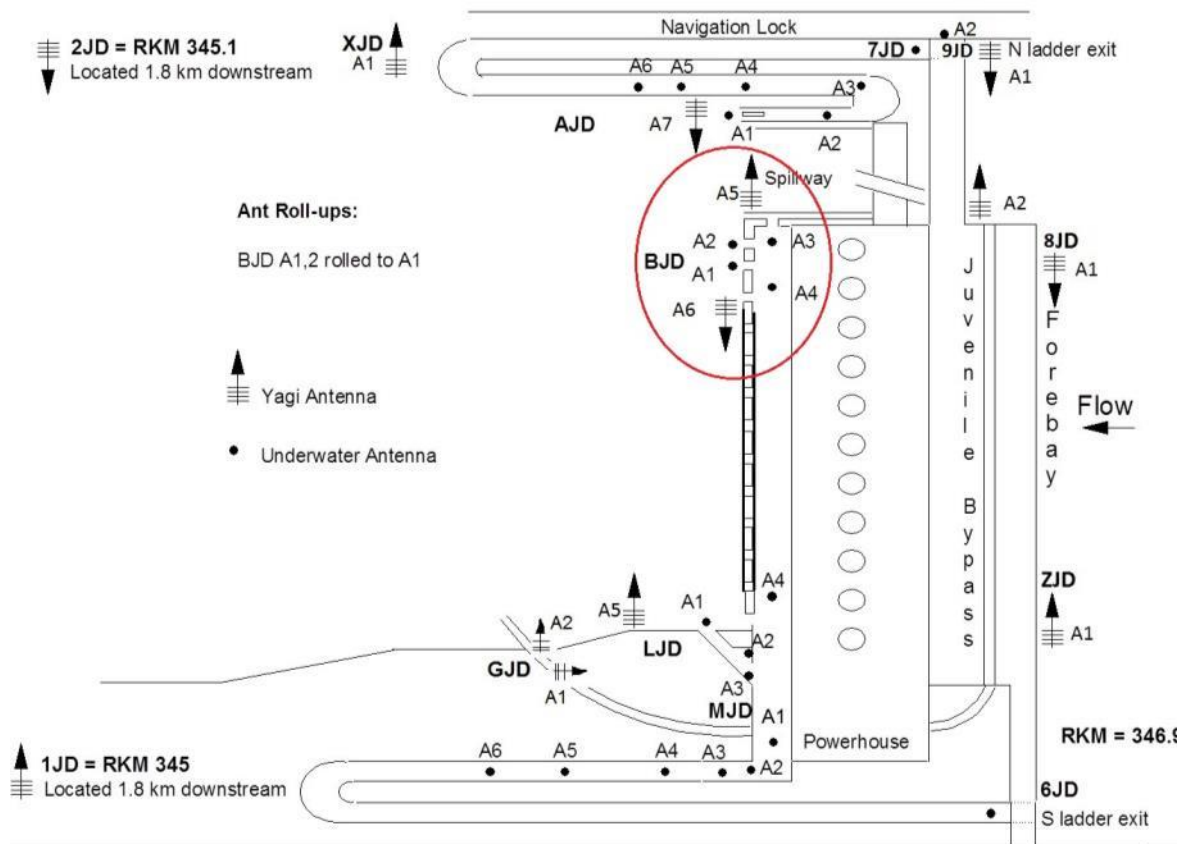
7JD: John Day Dam North Ladder Exit



LAT/LON:	45.719193° N -120.696722° W
RKM:	346.9
Receiver type:	DSP
Antennas (1):	A1 – Two drop ins, exit antenna
Distance from receiver to antenna:	20 feet
Power source:	Hard wired (AC)
Notes:	

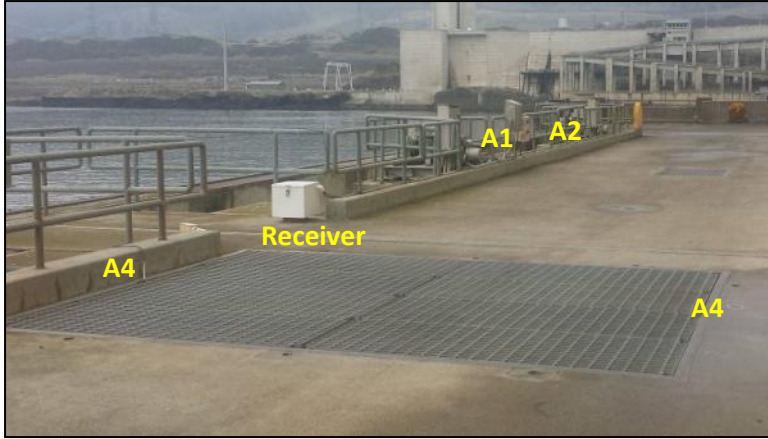


BJD: John Day Dam South Ladder North Entrance

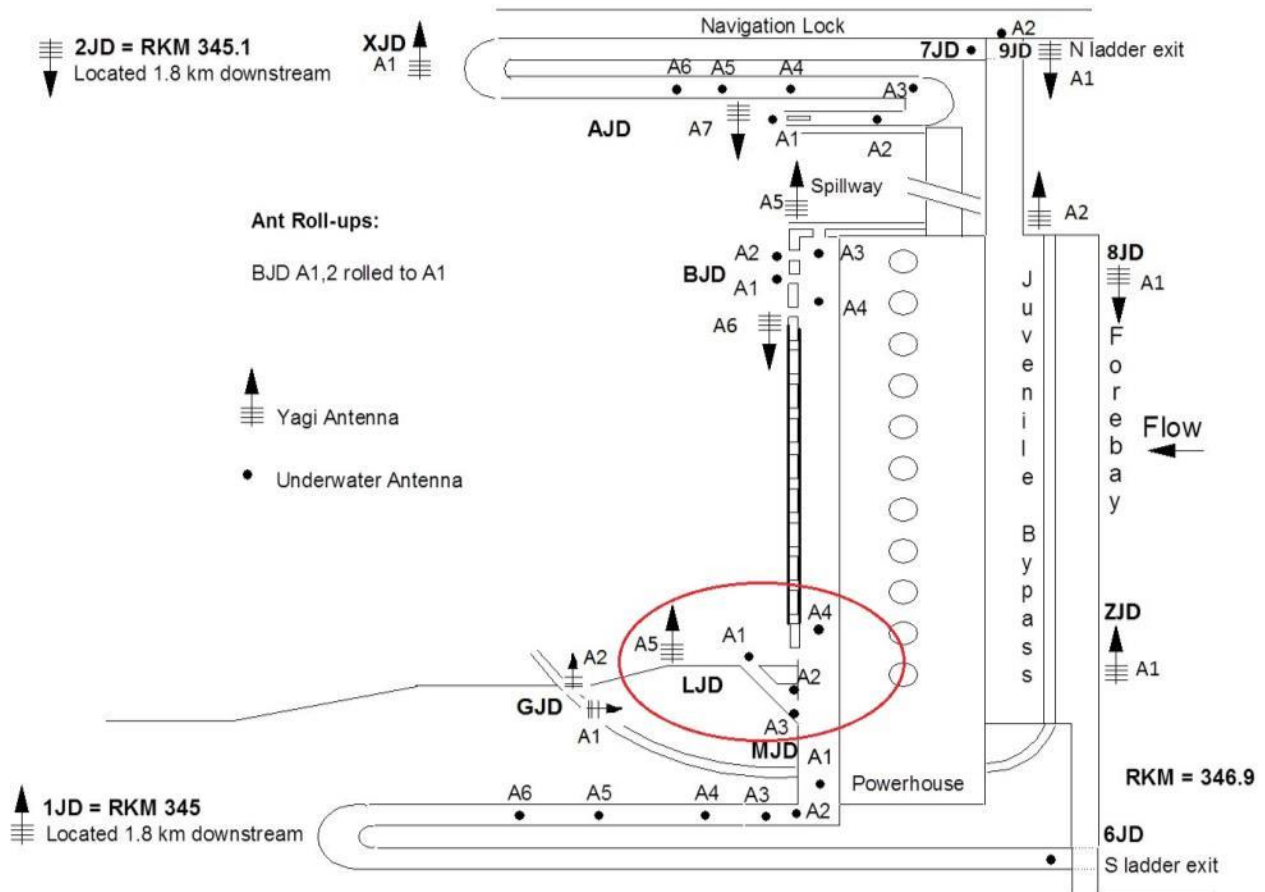


LAT/LON:	45.715678°N -120.693755°W
RKM:	346.9
Receiver type:	DSP
Antennas (6):	A1 – Drop in approach antenna A2 – Drop in approach antenna A3 – Drop in entrance antenna A4 – Two drop ins, collection channel upstream of entrance A5 – 6-element yagi south spill tailrace A6 – 6-element yagi north powerhouse tailrace
Distance from receiver to antenna:	A1: 40 feet A2: 90 feet A3: 120 feet A4: 40 feet A5: 130 feet A6: 20 feet
Power source:	Hard wired (AC)
Notes:	A5 & A6 are overwintering steelhead antennas.

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LJD: John Day Dam South Ladder South Entrance



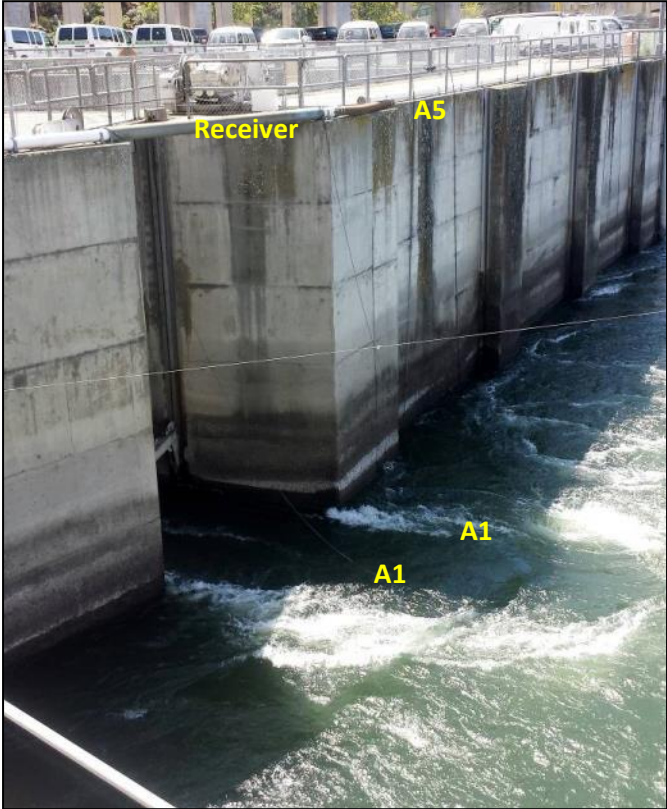
LAT/LON: 45.711756°N -120.689996°W
RKM: 346.9
Receiver type: DSP
Antennas (5): A1 – Two drop ins, approach antenna
 A2 – Underwater conduit entrance antenna
 A3 – Underwater conduit entrance antenna
 A4 – drop in collection channel between OGs
 A5 – 6-element yagi, south powerhouse tailrace

Distance from receiver to antenna: A1: 30 feet
 A2: 50 feet
 A3: 60 feet
 A4: 70 feet
 A5: 20 feet

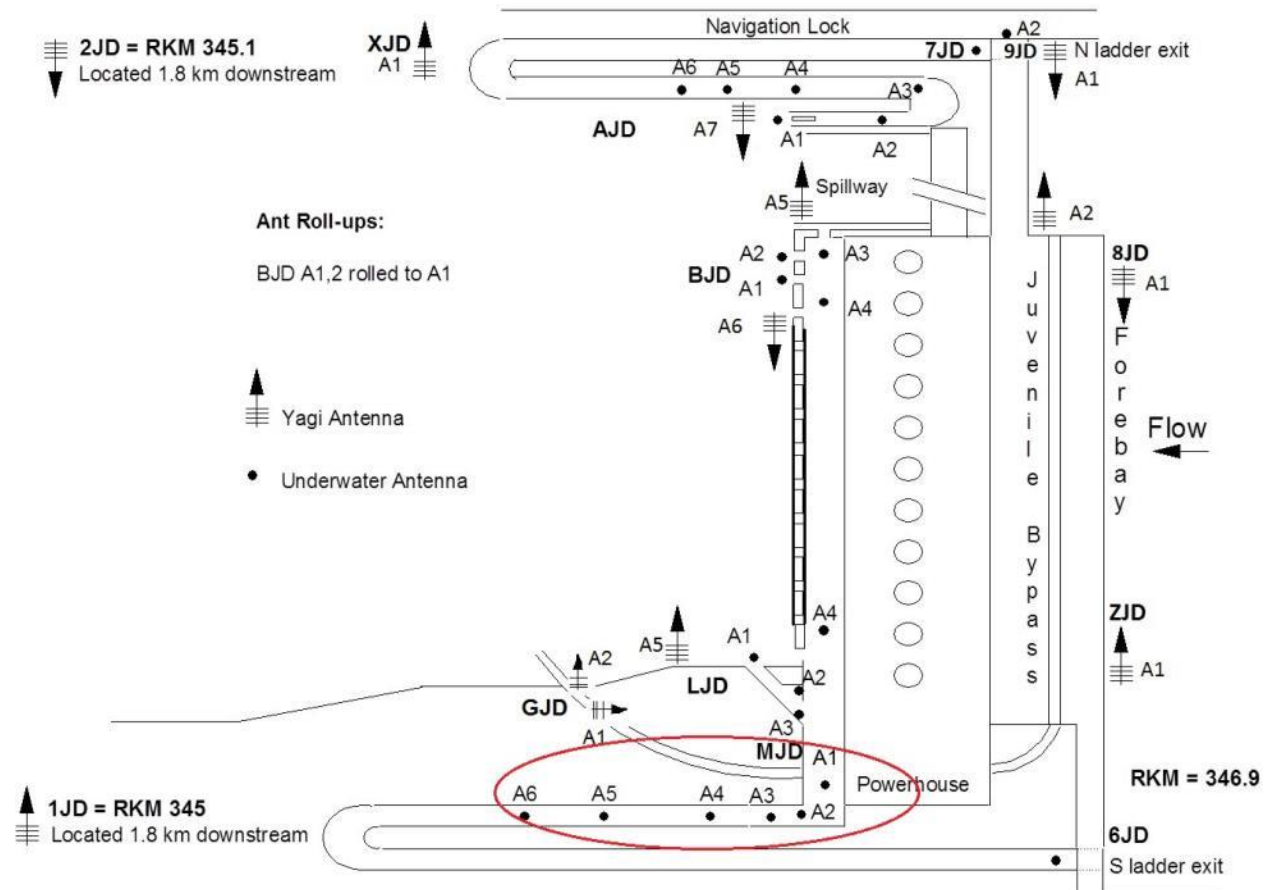
Power source: Hard wired (AC)

Notes: A5 is a overwintering steelhead antenna.

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MJD: John Day Dam South Mid Ladder



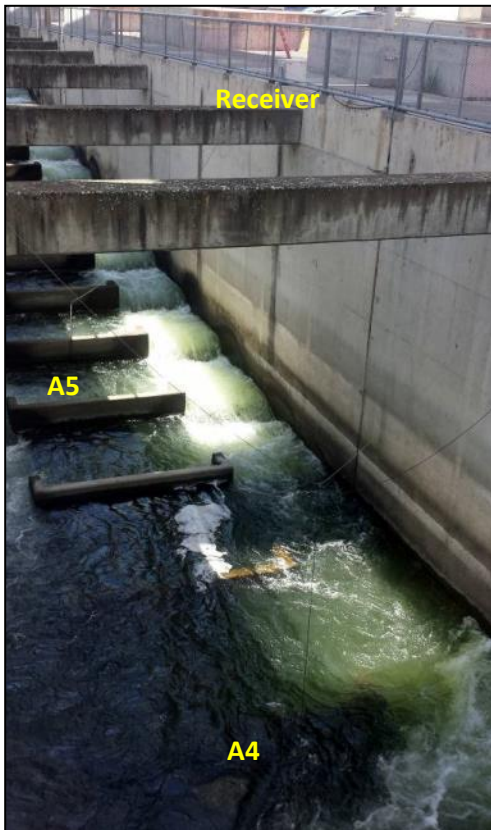
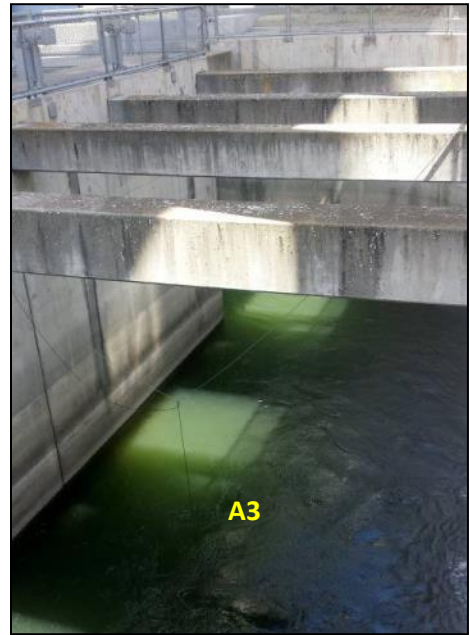
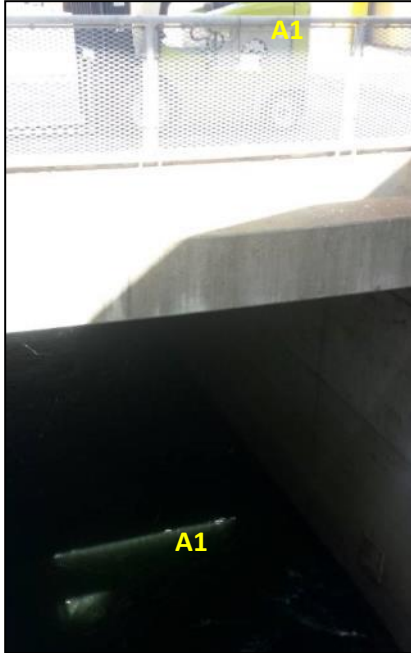
LAT/LON: 45.711217°N -120.689723°W
RKM: 346.9
Receiver type: DSP
Antennas (6): A1 – Drop in downstream of 90° turn
 A2 – Two underwater conduit antennas on 90° turn
 A3 – Drop in below weir 1
 A4 – drop in between weir 4 and weir 5
 A5 – Single conduit between weir 8 and weir 9
 A6 – Single conduit between weir 12 and weir 13

Distance from receiver to antenna: A1: 200 feet
 A2: 160 feet
 A3: 120 feet
 A4: 80 feet
 A5: 20 feet
 A6: 50 feet

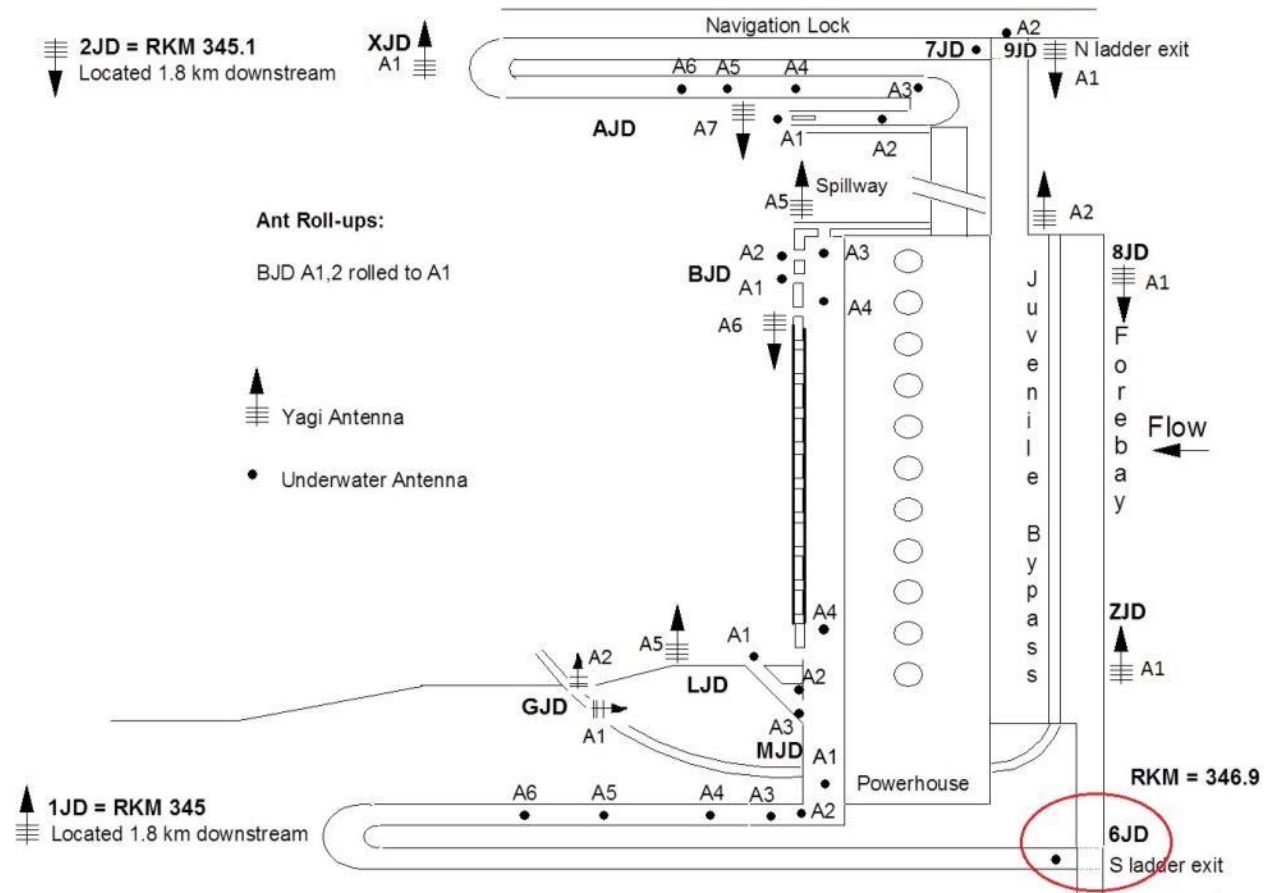
Power source: Hard wired (AC)

Notes:

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6JD: John Day Dam South Ladder Exit

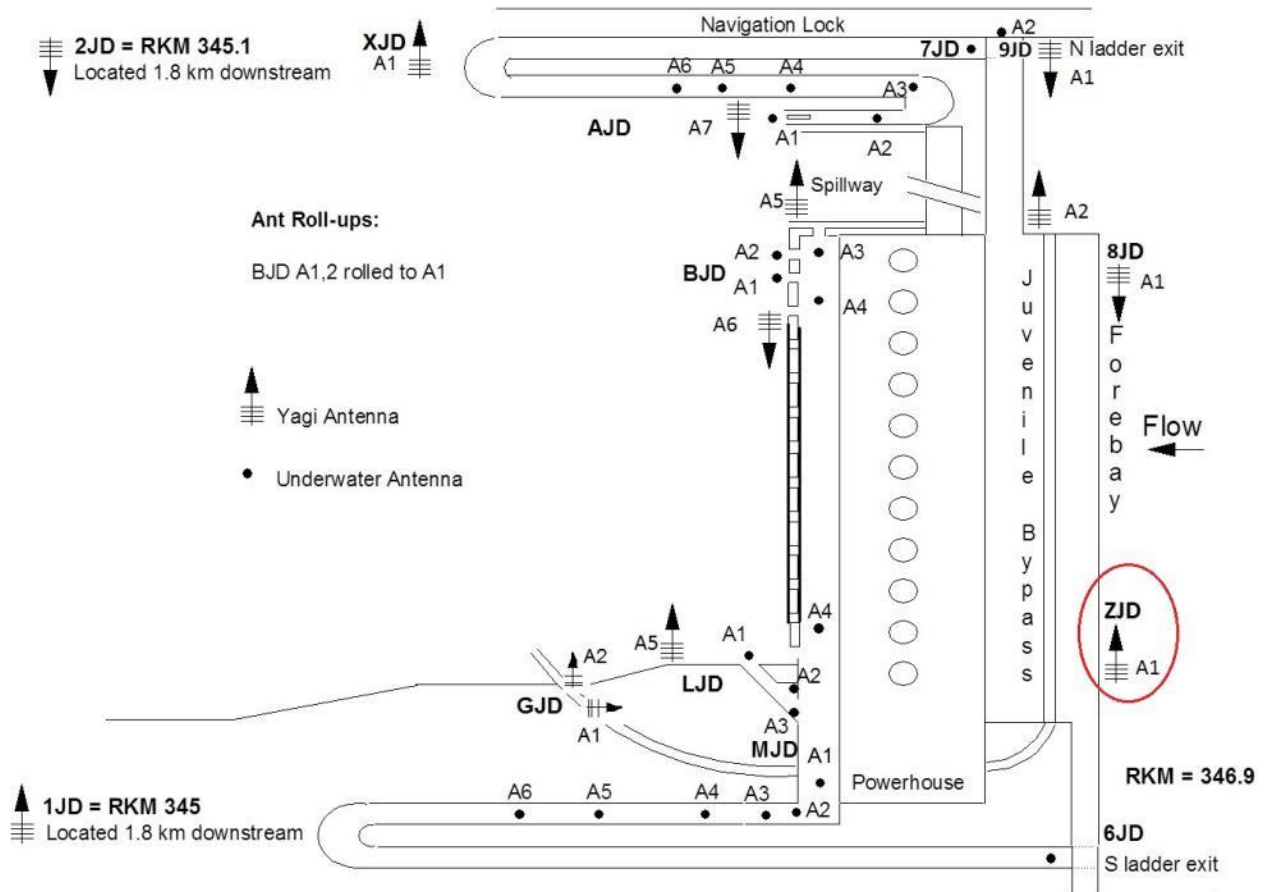


LAT/LON:	45.711537°N -120.688795°W
RKM:	346.9
Receiver type:	DSP
Antennas (1):	A1 – Two drop ins upstream of last weir
Distance from receiver to antenna:	A1: 20 feet
Power source:	Hard wired (AC)
Notes:	



ZJD: John Day Dam South Powerhouse Forebay

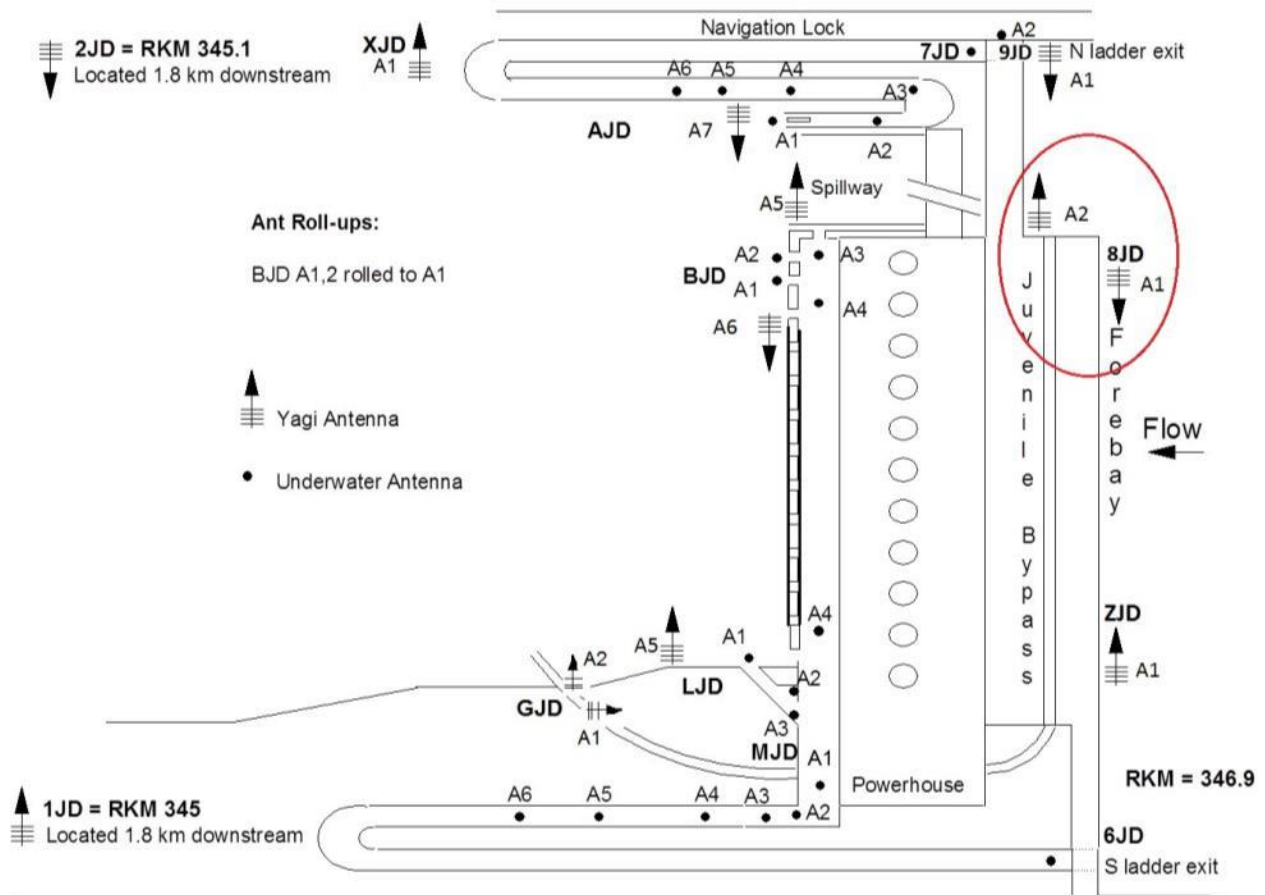
John Day Dam - 2014 RT Setup



LAT/LON:	45.712592° N -120.689623° W
RKM:	346.9
Receiver type:	SRX
Antennas (1):	A1 – 6-element, south powerhouse forebay. Located 5 pier noses from the south.
Distance from receiver to antenna:	50 feet
Power source:	Hard wired (AC)
Notes:	Overwintering steelhead site. Receiver located 7 pier noses from the southern end of the powerhouse.



8JD: John Day Dam North Powerhouse and South Spill Forebay

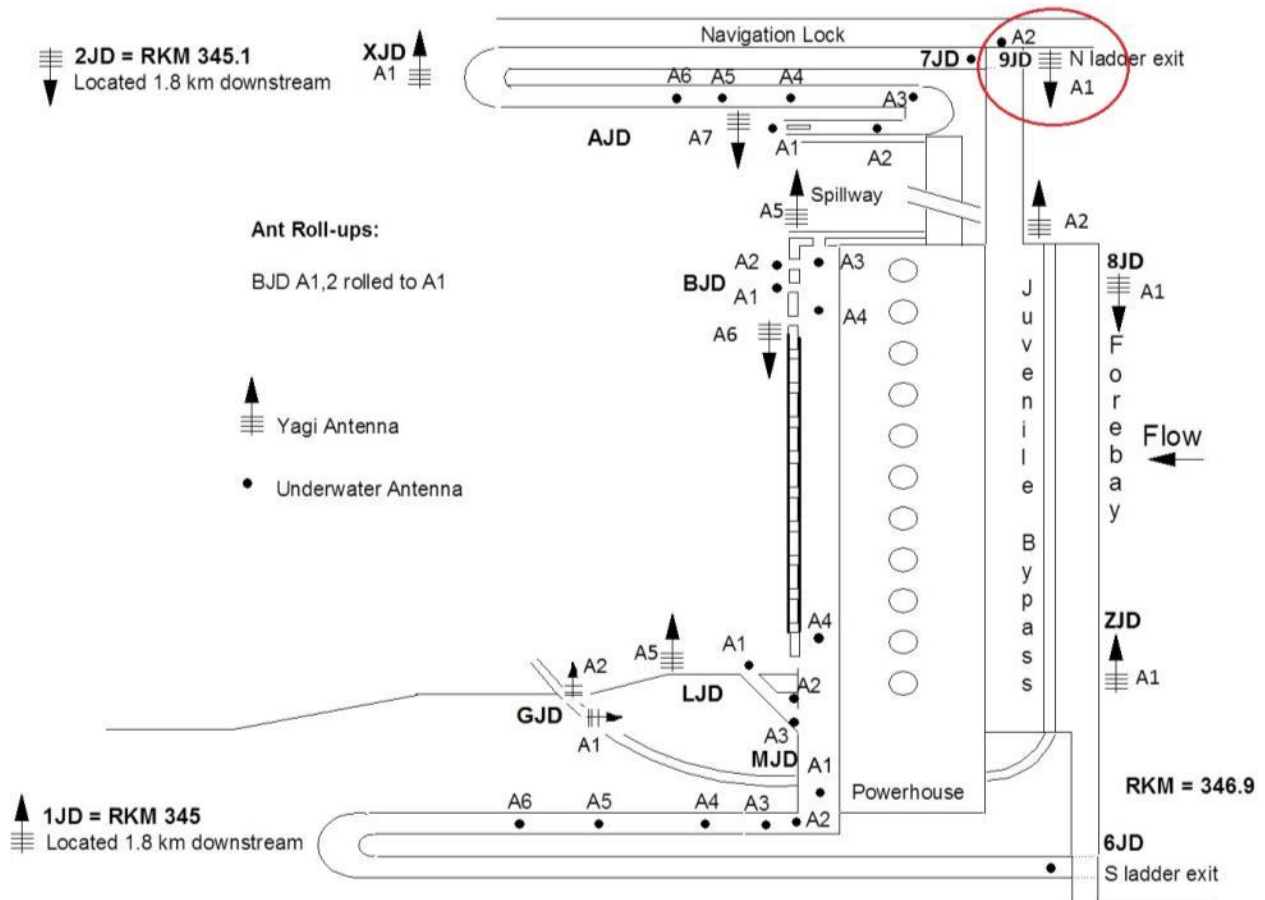


LAT/LON:	45.715787°N -120.692934°W
RKM:	346.9
Receiver type:	DSP
Antennas (2):	A1 – 6-element yagi, north powerhouse forebay. Located 13 pier noses south of spill. A2 – 6-element yagi, south spill forebay. Located between spill and powerhouse.
Distance from receiver to antenna:	A1: 200 feet A2: 180 feet
Power source:	Hard wired (AC)
Notes:	Overwintering steelhead site. Receiver located 7 pier noses south of spill.

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9JD: John Day Dam North Spill and Navigation Lock Forebay

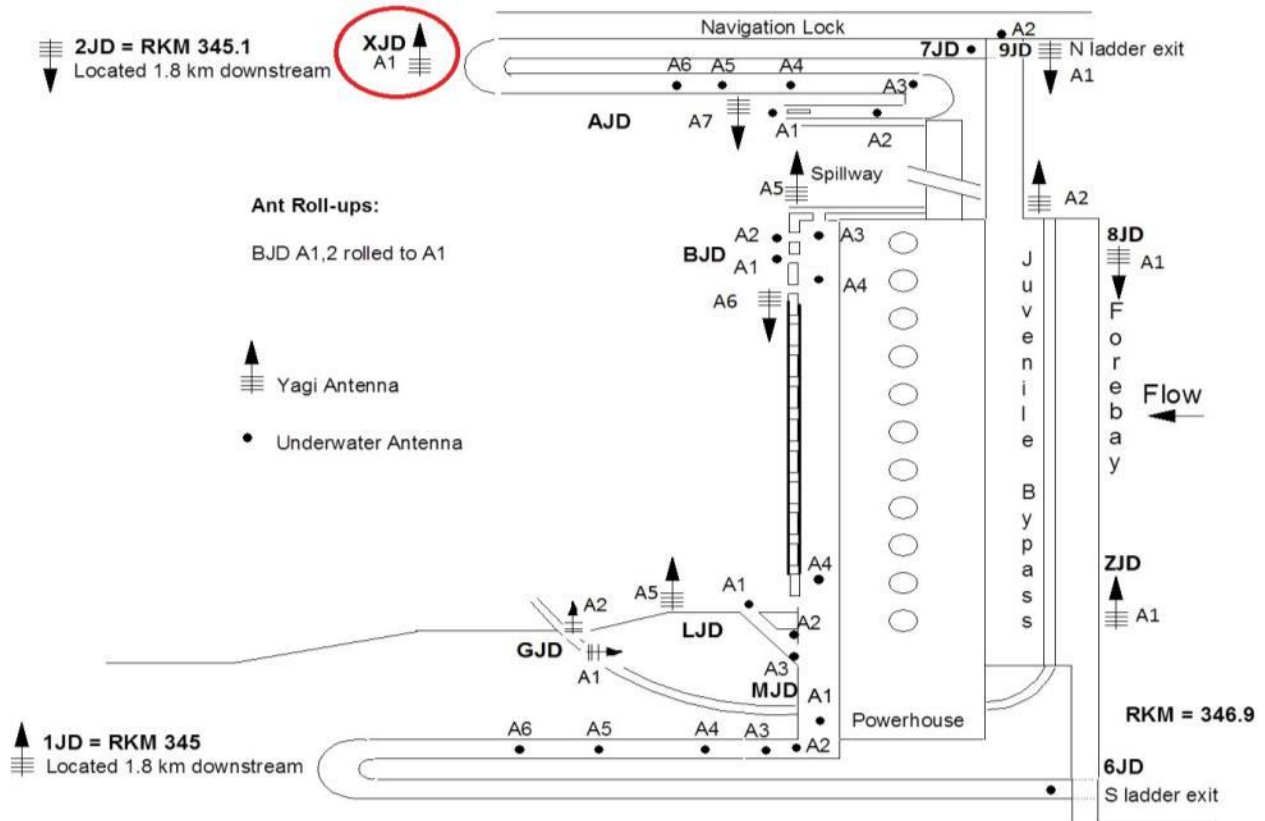


LAT/LON:	45.719363°N -120.696549°W
RKM:	346.9
Receiver type:	DSP
Antennas (2):	A1 – 6-element yagi, north spill forebay. Located east of storage room. A2 – Drop in, navigation lock forebay. Located in bulkhead slot.
Distance from receiver to antenna:	A1: 30 feet A2: 200 feet
Power source:	Hard wired (AC)
Notes:	Overwintering steelhead site. Receiver located in storage/bath room at north end of spill, south of navigation lock.

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XJD: John Day Dam Navigation Lock Tailrace



LAT/LON: 45.717740° N
-120.699939° W

RKM: 346.9

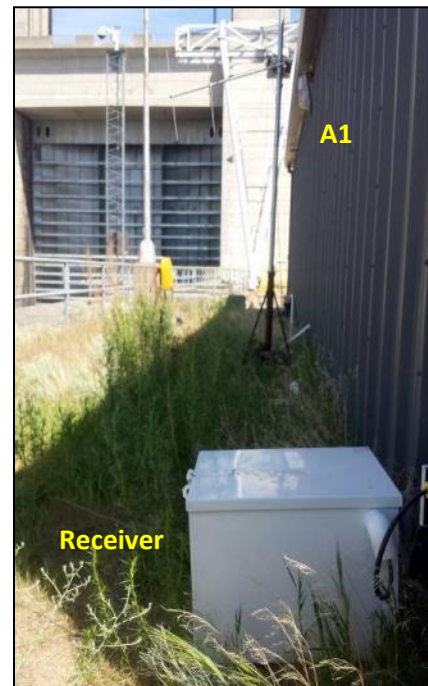
Receiver type: SRX

Antennas (1): A1 – 4-element, navigation lock tailrace.

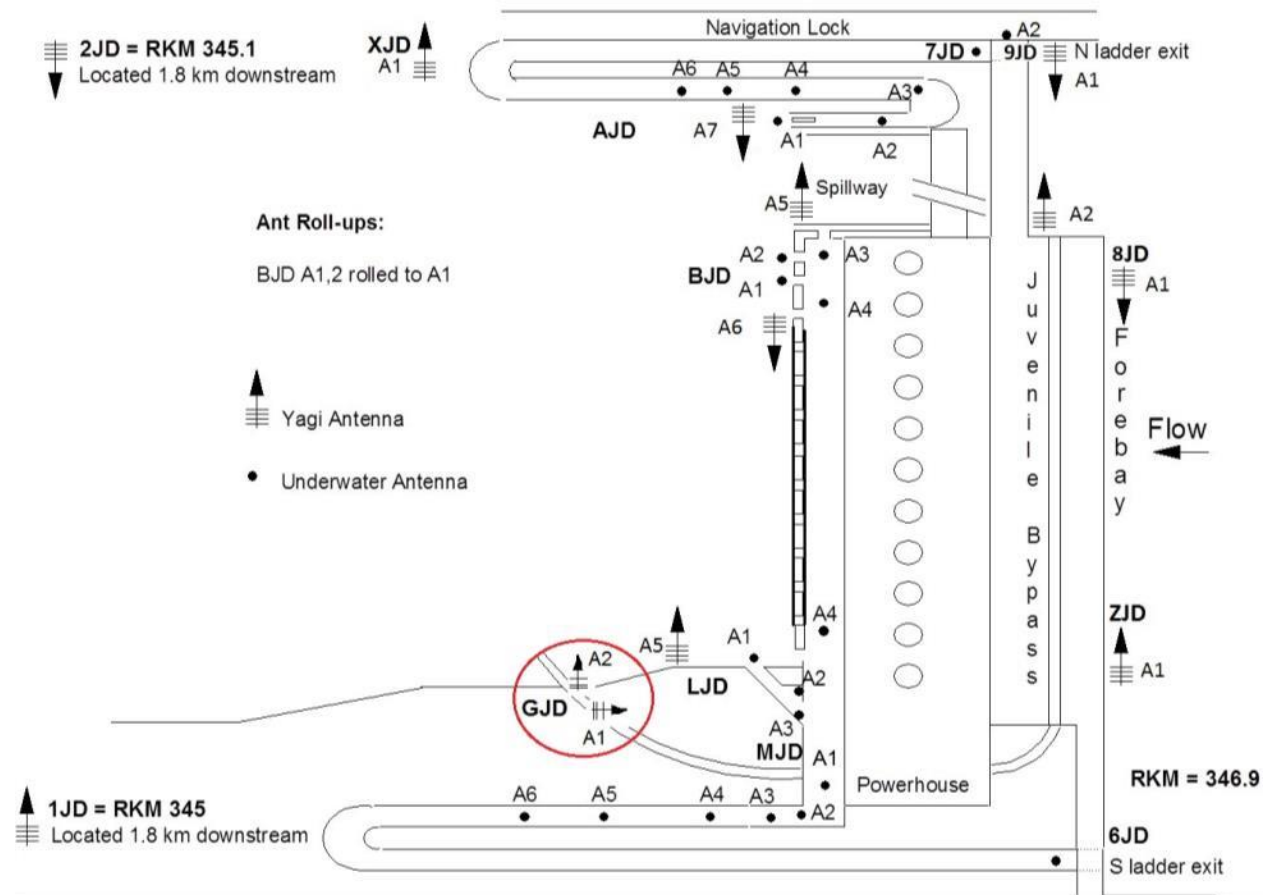
Distance from receiver to antenna: 30 feet

Power source: Hard wired (AC)

Notes: Overwintering steelhead site. Receiver located on north side of pump building.



GJD: John Day Dam Juvenile bypass outfall



LAT/LON:	45.710150°N -120.692918°W
RKM:	346.9
Receiver type:	DSP
Antennas (2):	A1 – 4-element yagi, JBS outfall directed upstream under parking lot. A2 – 4-element yagi, JBS outfall directed downstream.
Distance from receiver to antenna:	A1: 150 feet A2: 230 feet
Power source:	Hard wired (AC)
Notes:	Overwintering steelhead site. Receiver located behind JFF.

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