

**PROPOSAL FOR PACIFIC GAS & ELECTRIC COMPANY,  
DRAFT LICENSE SURRENDER APPLICATION, POTTER VALLEY PROJECT (P-77)**

Sonoma County Water Agency, Mendocino County Inland Water and Power Commission, and  
Round Valley Indian Tribes

July 31, 2023, updated August 3, 2023

*PG&E is considering a proposal for Cape Horn Dam and Van Arsdale Diversion advanced by Sonoma County Water Agency, Mendocino County Inland Water and Power Commission, and Round Valley Indian Tribes. This proposal is called the New Eel-Russian Facility.*

*PG&E will include the proposal in the final license surrender application if, consistent with the schedule attached as Attachment 1, a Regional Entity has:*

- (1) been formed and has the legal, and is developing the financial, capacity to be responsible for ownership, construction, and operation of the Facility;*
- (2) selected a design that, as documented in a design report, fully implements co-equal objectives of fish migration and water diversions. The Facility will be designed for upstream and downstream fish migration with a goal of achieving naturally reproducing, self-sustaining and harvestable native anadromous fish populations. The Facility will include the physical capacity for material and continued water diversion through the existing tunnel from the Eel River into the Russian River. Fish migration and Eel River diversions in the selected design will be on conditions, mutually agreeable to the Proponents, that protect the fishing rights and water rights of the Round Valley Indian Tribes;*
- (3) agreed with PG&E on terms for a Purchase and Sale Agreement for the project works listed in Attachment 2, which agreement: (a) assures that this entity will bear the additional costs, risks, and liabilities of this proposal relative to what would otherwise be PG&E's decommissioning plan, (b) provides appropriate consideration for the purchase of the project works, and (c) provides for closing and transfer of fee title to the project works listed in Attachment 2, concurrent with partial transfer of P-77 license; and*
- (4) received support for the proposal from National Marine Fisheries Service and California Department of Fish and Wildlife, and from representative governmental and non-governmental entities from the Russian and Eel River basins.*

*The final license surrender application will request that FERC create a nonpower license for the project works listed in Attachment 2, to be held by the Regional Entity. The nonpower license will authorize construction of the Facility. This nonpower license will be effective once FERC issues the license surrender order for the remaining P-77 project works and further, PG&E and the proponents confirm that the license surrender order and nonpower license are consistent with the relevant terms of the Purchase and Sale Agreement.*

*PVP Proposal (July 31, 2023, updated August 3, 2023)*

**Attachment 1.**  
**Schedule for Coordination with PG&E in Further Development of Proposal Leading to Filing of License Surrender Application**

Date	Event
August 15, 2023	Sonoma County Water Agency, Mendocino County Inland Water and Power Commission, and Round Valley Indian Tribes (Proponents) and PG&E begin discussions on a Purchase and Sale Agreement (PSA). Proponents are proxy for the Regional Entity.
October 31, 2023	Proponents report to PG&E on outcome of preliminary consultation with NMFS, CDFW, and stakeholders in the Russian and Eel River Basins to support incorporation of proposal in draft license surrender application. Proponents consult on the options described in Attachment 3. By this time, Proponents also convene a table to negotiate a settlement with respect to the approach to the Eel-Russian Facility in the license surrender application.
November 30, 2023	PG&E releases draft license surrender application for its own stakeholder consultation.
December 31, 2023	Proponents form a JPA as Regional Entity. This entity and original Proponents coordinate with respect to subsequent steps. This entity becomes PG&E's counter-party in the PSA negotiations.
March 31, 2024	Per Proposal paragraph (2), Proponents tentatively select a design option, for the purpose of continuing consultation with agencies and stakeholders.
May 31, 2024	PG&E releases revised draft license surrender application. Before this date, Proponents submit to PG&E a draft of the license surrender application that deals with Eel-Russian Facility, proposing a nonpower license. This application reflects progress on Proposal paragraphs (1) – (4) as needed for a complete draft application.
November 30, 2024	PG&E and Regional Entity reach agreement on the PSA terms (binding Term Sheet).
November 30, 2024	Proponents reach agreement (Term Sheet or Agreement in Principle) with agencies and representative stakeholders on key terms related to the license surrender application dealing with the Eel-Russian Facility.
January 31, 2025	PG&E files the license surrender application with FERC. Regional Entity is co-applicant for that part of the application dealing with Eel-Russian Facility.

**Attachment 2.**  
**Project Facilities Proposed to be Transferred to Regional Entity**

Project Facility/Feature
<b>River Gages</b>
E2 - Eel R BL Scott Dam NR Potter Valley CA (11470500)
<b>Project Facility Access Roads</b>
Gage E2 Access Rd
Penstock, Pipeline and Butterfly Valve House Access Rd
Powerhouse Main Access Rd
<b>Intake Structures</b>
Van Arsdale Diversion Intake
<b>Tunnels and Adits</b>
Tunnel No. 1
Tunnel No. 2
Tunnel No. 1 Slide Gate and Adit
Tunnel No. 1 Gage Shaft
<b>Conduits, Penstocks, Control and Valve Houses</b>
Conduit No. 1 (Upper Wood Stave, Steel Pipe and Components)
Conduit No. 2 (Lower Wood Stave, Steel Pipe and Components)
Conduit No. 1, 72-inch Butterfly Valve House
Conduit No. 1 Standpipe and Surge Chamber Vent
Penstock No. 1
Penstock No. 2
Penstock Nos. 1 and 2, 60-inch Gate Valves (2)
Penstock Bypass Channel
Powerhouse Bypass System
<b>Powerhouse, Switchyard, and Tailrace</b>
Potter Valley Powerhouse
Potter Valley Powerhouse Tailrace, Radial Gate, and Venturi Flume
Potter Valley Powerhouse Discharge Canal
<b>Diversion Gages</b>
E5 - Potter Valley Irrig CN E5 NR Potter Valley CA (11471105)
E6 - Potter Valley Irrig CN E6 NR Potter Valley CA (11471106)
E16 - Potter Valley PH Intake near Potter Valley CA (11471000)
<b>River Gages</b>
E11 - Eel River at Van Arsdale Dam near Potter Valley CA (11471500)
<b>Leakage Weirs and Piezometers</b>
Cape Horn Dam Leakage Weirs

<b>Project Facility/Feature</b>
Cape Horn Dam Piezometers
<b>Fish Screen and Associated Facilities</b>
Van Arsdale Fish Screen Facility
Van Arsdale Fish Screen Facility Back-up Generator Building
Van Arsdale Fish Screen Facility Motor Control Building
Van Arsdale Fish Return Channel
Storage Building
<b>Project Communication/Power Lines</b>
Conduit No. 1, 72-inch Butterfly Valve House Communication
Cape Horn Dam Control Building Communication/Power Line
Fish Screen Facility Communication/Power Line
Tunnel No. 1 Slide Gate and Adit Communication/Power Line
Penstock Nos. 1 and 2, 60-inch Stop Valves Communication/Power Line
<b>Helicopter Landing Sites</b>
Potter Valley Powerhouse Helicopter Landing Site
<b>Ancillary and Support Facilities</b>
Potter Valley Powerhouse Operators Office
Potter Valley Powerhouse Maintenance Office
Potter Valley Powerhouse Operators Restrooms
Potter Valley Powerhouse Weather Station (USACE owns a station, discuss fate outside process)
<b>Project Facility Access Roads</b>
Cape Horn Dam East Access Rd
Intake Access Rd
Penstock, Pipeline and Butterfly Valve House Access Rd (Access for private landowner)
Powerhouse Main Access Rd
<b>Project Facility Access Trails</b>
Gage E11 Access Trail
<b>Project Water Rights</b>
The 1905 water right owned by PG&E that authorizes diversions from the Eel River
<b>Project Communication Line</b>
Scott Dam Block Building Communication Line* - <i>only if needed for E2 gage</i>

<b>Potter Valley Project Facilities and Features Partial Transfer – Open to Discussion</b>	
<b>Dam and Associated Facility/Features</b>	
	<i>Cape Horn Dam - condition of transfer requires more discussion. Either PG&amp;E or Diverters will remove CHD pending discussions and PSA. The preliminary removal parameters are outlined in Attachment 3.</i>
	<i>Cape Horn Dam Instream Flow Release - condition of transfer requires more discussion. Either PG&amp;E or Diverters will remove CHD pending discussions and PSA. The preliminary removal parameters are outlined in Attachment 3.</i>
<b>Reservoir</b>	
	<i>Van Arsdale Reservoir - condition of transfer requires more discussion. Either PG&amp;E or Diverters will remove CHD pending discussions and PSA. The preliminary removal parameters are outlined in Attachment 3.</i>
<b>Powerhouse, Switchyard, and Tailrace</b>	
	<i>Potter Valley Powerhouse Switchyard - distribution switchyard to be partitioned and retained by PG&amp;E, Diverters would like to retain station service transformers and access to south side of powerhouse. Balance of switchyard can remain with PG&amp;E or be transferred to Diverters, with easements granting access as needed to the other party.</i>
<b>Fish Ladder and Associated Facilities</b>	
	<i>Fish Attraction Facility - condition of transfer requires more discussion. Either PG&amp;E or Diverters will remove CHD pending discussions and PSA. The preliminary removal parameters are outlined in Attachment 3.</i>

**Attachment 3.**  
**Design Options for Eel-Russian Facility**

Cape Horn Dam and Van Arsdale Reservoir will be substantially removed, although parts of foundations and the right abutment will be retained to provide the anchorage for diversion or passage elements. The details and extent of the removal will be further developed along with the design for the new diversion and fish screening facilities. Two alternatives are currently under consideration for CHD removal, and the current preliminary descriptions, are below. Preliminary drawings follow at the end of this attachment.

**Alternative C1 – Control Section with Pump Station**

Alternative C1 would include lowering a section of the concrete gravity portion of Cape Horn Dam from elevation 1,490.4 feet down to about 1,452.0 feet to create a control section, then fitting a pump station adjacent to the control section. The final height and dimensions of the control section, and the potential need for a bladder dam, are currently the subject of hydraulic modeling.

The portion removed would begin at the concrete retaining wall and would be relatively flat and would extend toward river left approximately 70 feet. At that point, the crest would slope downward at 3H:1V for 15 feet to reach an elevation of 1447.0. From there the remainder of the control section would continue at elevation 1,447.0 feet for another 15 feet. This latter portion of the control section would help ensure adequate flow depths at low flow, while the upper portion would provide adequate flow area for high flows. In total, the control section would be approximately 100 feet long and would pass all Eel River flows, except for those diverted. At the end of the control section a vertical section of the dam would remain up to elevation 1,477.0, beyond which the dam would slope at about a 3H:1V slope to match the existing crest elevation of 1,490.4 feet.

The section of dam lowered to elevation 1,477.0 feet would marry up with a new reinforced concrete pump station.

Due to the existing top elevation of the retaining wall at 1,519.0 feet and the proposed lowered dam crest elevation between 1,447.0 and 1,452.0 feet, the retaining wall would be 67 feet tall. Due to this excessive height and the concern for stability, the maximum elevation of the retaining wall is proposed to be lowered to elevation 1,472.0 feet, leaving a retaining wall that is approximately 20 feet tall. Lowering the retaining wall would require excavating out the earth fill portion of the dam down to an approximate elevation of 1,467.0 feet. This excavation will include partial demolition of the mass concrete core wall and possibly some of the reinforced concrete core wall. Rock riprap removed during earth fill excavation would then be re-placed and augmented with armor material to convert the earth fill portion of the dam to an auxiliary spillway. The auxiliary spillway would be activated at elevation 1,467.0 feet and would flow approximately 10 feet deep before overtopping the new lowered section of the dam and the intake pump station.

Alternative C1 includes lowering a 100-foot section of Cape Horn Dam by 38.4 and 43.4 feet. The new control section will include a 10-foot-wide low flow section set to elevation 1,447.0 feet that slopes up at 3H:1V to a 70-foot-long section set to elevation 1,452.0 feet. Downstream of the low flow section approximately 100 feet, the existing fish hotel and exclusion barrier would be removed down to elevation 1,446.0, with the area between the two vertical controls occupied by a deep pool. And downstream of the lower fish hotel and exclusion barrier approximately 100 to 125 feet, an existing bedrock control maintains a riffle at an approximate elevation of 1,445.0 feet. From a fish passage perspective, upstream migrants would first encounter the existing plunge pool, followed by a maximum vertical drop of 1 foot at the former exclusion barrier. Just upstream, migrants would encounter another deep pool, followed by another maximum drop of 1 foot at the control section.

*PVP Proposal (July 31, 2023, updated August 3, 2023)*

## Alternative C2 – Roughened Channel with Gravity Supply

Alternative C2 considers the complete removal of the concrete gravity portion of Cape Horn Dam and construction of a roughened channel and new diversion weir near the intake to the Van Arsdale Diversion facility. The length and dimensions of the roughened channel are currently the subject of hydraulic modeling.

Alternative C2 would include lowering the entire concrete gravity portion of Cape Horn Dam from elevation 1,490.4 feet down to about 1,457.5 feet. Roughly 100 feet downstream of the dam, the fish hotel and exclusion barrier would also be lowered, from a variable elevation down to about elevation 1,453.7 feet. The remainder of the concrete dam and fish hotel/exclusion barrier would maintain vertical control at those locations. Approximately 280 feet downstream of the exclusion barrier, vertical control is maintained at about 1,445.0 feet by an existing bedrock control. Between the downstream bedrock control and the fish hotel/exclusion barrier a roughened channel is proposed. The roughened channel would resemble a boulder cascade, with very large rock material providing hydraulic complexity and channel stability sufficient to withstand extreme high flow events. A similar roughened channel would extend upstream of the dam approximately 420 feet, terminating at a sheet pile control weir with a maximum crest elevation set to 1,473.0 feet. The upstream sheet pile control weir would include a low flow section approximately 20 feet wide with a crest elevation of 1,470.0 feet.

The entire roughened channel would be approximately 800 feet long and would be about 10 to 15 feet deep on average. Areas on river left near the existing dam would likely not require hardening due to the presence of significant bedrock. The roughened channel would include a low flow corridor that matches the existing channel at the downstream terminus and matches the low flow section at the upstream control weir. The overall planform of the channel includes a single valley-wide bend with a radius of curvature of about 400 to 500 feet. The low flow corridor would include two smaller bends with a radius of curvature of approximately 80 to 100 feet. The slope of the roughened channel thalweg would be roughly 3.1 percent.

The upstream control weir would span the channel, connecting on river left to the existing diversion facility and on river right to a reinforced concrete extension of the existing dam wingwall. The wall extension would be approximately 150 feet long. The upstream control weir would serve as a backwater control for a modified diversion structure.

## Dewatering and Construction Sequencing

Cape Horn Dam removal can take place either before or after Scott Dam removal. Hydraulic modeling currently underway will help to determine if removal before or after Scott Dam is preferred or advantageous. If Cape Horn Dam is removed prior to Scott Dam removal, the new diversion and conveyance facility to Potter Valley would be up and running when demolition begins on Scott Dam. Also, delivery of water to Potter Valley could take place in the summer months, as under existing conditions, or in the winter and spring months, provided that infrastructure and operations are in place on the Russian River to accommodate the additional stored volume of water. However, there would be no way to control the short- and mid-term impacts due to sediment releases from Scott Dam. By comparison, constructing the new diversion and conveyance at Cape Horn Dam at some point after removal of Scott Dam would allow the Eel River to potentially reach a new equilibrium bed profile, or perhaps close, potentially mitigating some of the greater risks associated with sediment

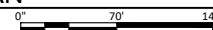
transport after Scott Dam removal. For this reason, it is assumed here that Cape Horn Dam removal activities and construction of a new diversion and conveyance system would take place after Scott Dam removal.





**ALTERNATIVE C-1 PLAN**

SCALE: 1" = 70'



REV	DATE	BY	DESCRIPTION
A	07/14/21	KRJ	DRAFT FEASIBILITY STUDY

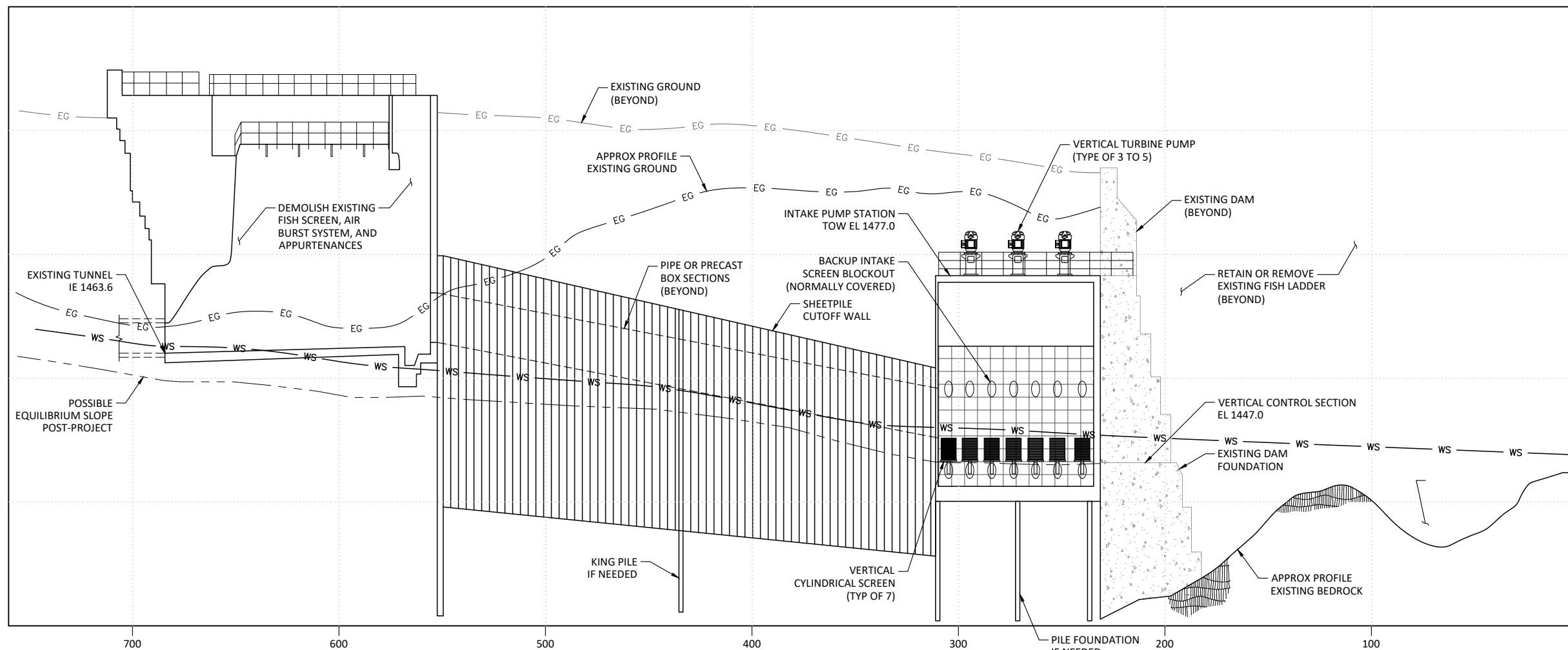
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CALTROUT  
 POTTER VALLEY PROJECT FEASIBILITY STUDY

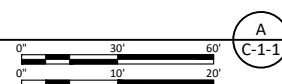
CAPE HORN DAM REMOVAL  
 ALTERNATIVE C-1 PLAN





**SECTION**

SCALE: HORIZ 1" = 30'  
VERT 1" = 10'



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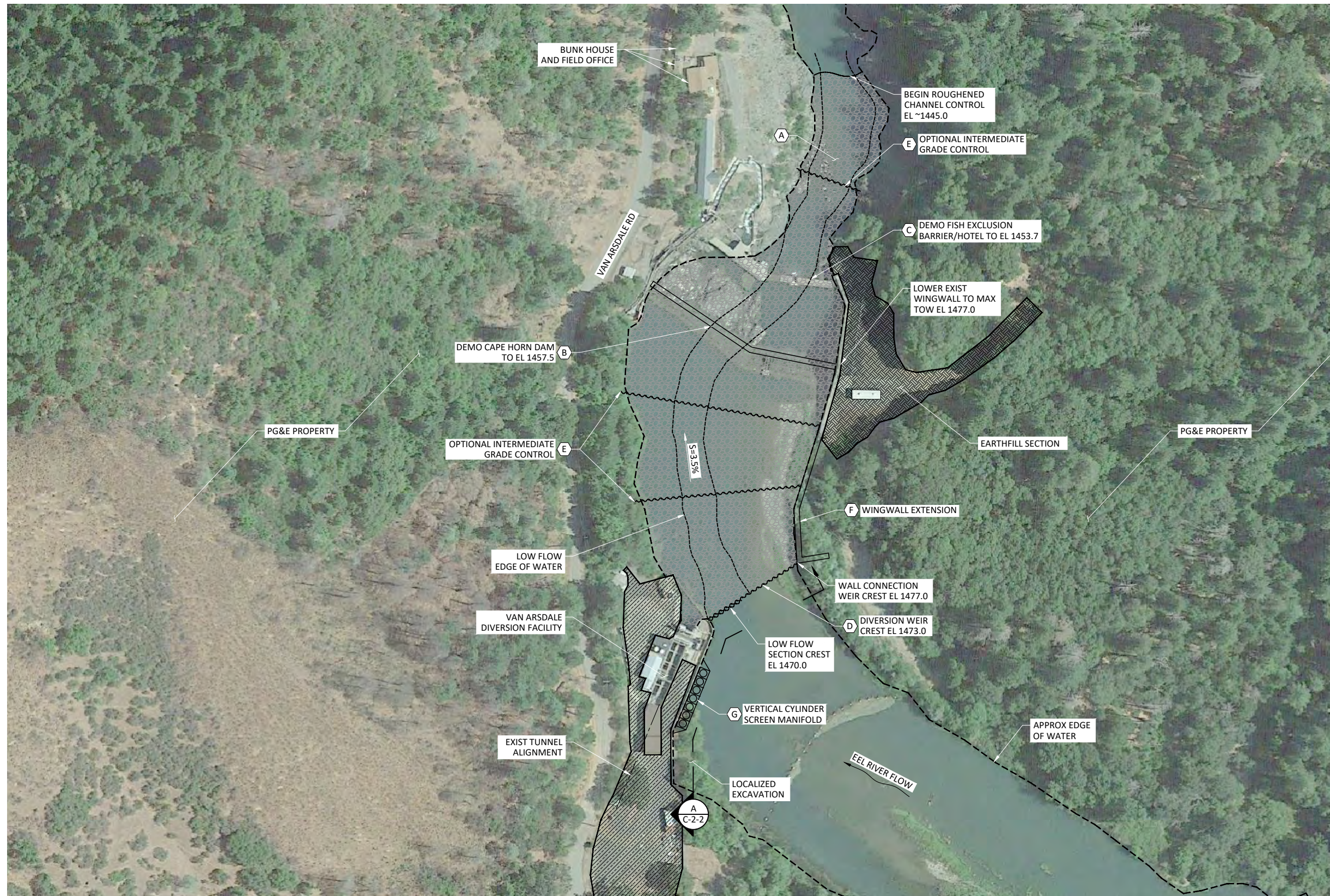
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POTTER VALLEY PROJECT FEASIBILITY STUDY

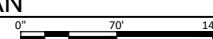
CAPE HORN DAM REMOVAL  
ALTERNATIVE C-1 SECTION






**ALTERNATIVE C-2 PLAN**

SCALE: 1" = 70'



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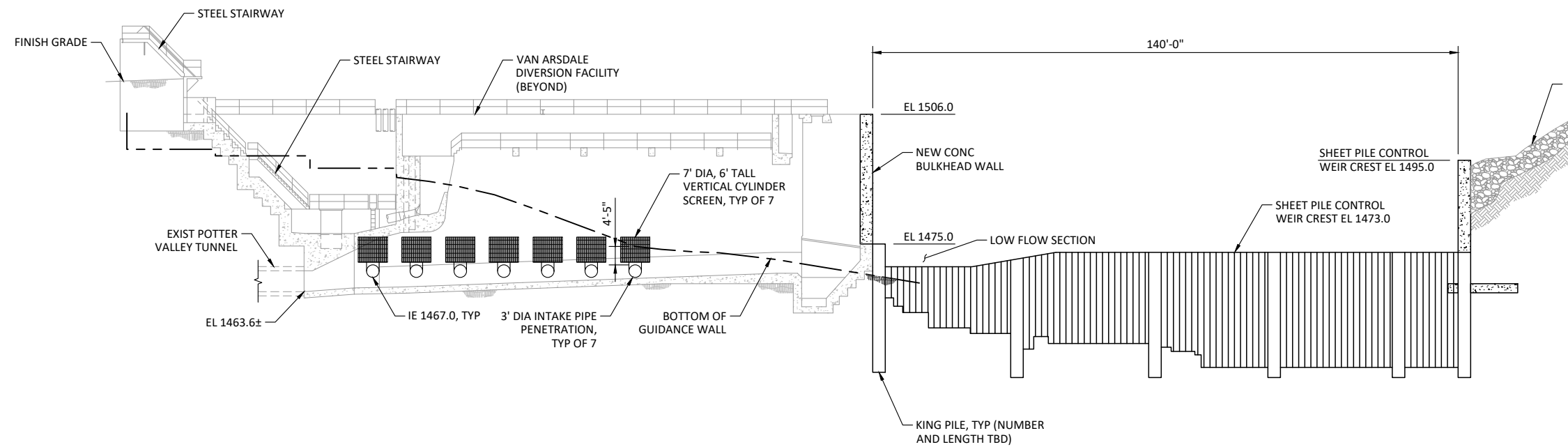


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 POTTER VALLEY PROJECT FEASIBILITY STUDY

CAPE HORN DAM REMOVAL  
 ALTERNATIVE C-2 PLAN

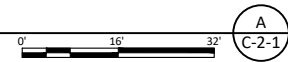
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SECTION

SCALE: 1/16" = 1'-0"



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WARNING  
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 POTTER VALLEY PROJECT FEASIBILITY STUDY

CAPE HORN DAM REMOVAL  
 ALTERNATIVE C-2 SECTION