Buckman Direct Diversion

ENGINEERING FEASIBILITY

Diversion Options

April 2, 2026

City of Santa Fe

AECOM Imagine it. Delivered.

CONCEPTUAL - FOR DISCUSSION ONLY

PRESENTATION OVERVIEW

- BDD Intake Existing Conditions Overview
- Intake Design, Components, & Feasibility Evaluation Criteria
- Selected Diversion Options
- Path Forward

EXISTING CONDITIONS OVERVIEW

Buckman Direct Diversion River Intake Existing Conditions Issues

- Intake elevation near river bed
- Entrains bedload sediment
- High and Highly Variable suspended load and bedload
- Defective Screens (fitment)
- Airburst Cleaning System not adequate and must be cleaned manually
- Maintenance and Access Limitations
- Bed elevation fluctuations (dynamic equilibrium)

Buckman Direct Diversion River Intake Existing Conditions

2011

Buckman Direct Diversion River Intake Existing Conditions

2015

Figure 25. Photograph from April 2015 Inspection Showing Excessive Sediment on Screens

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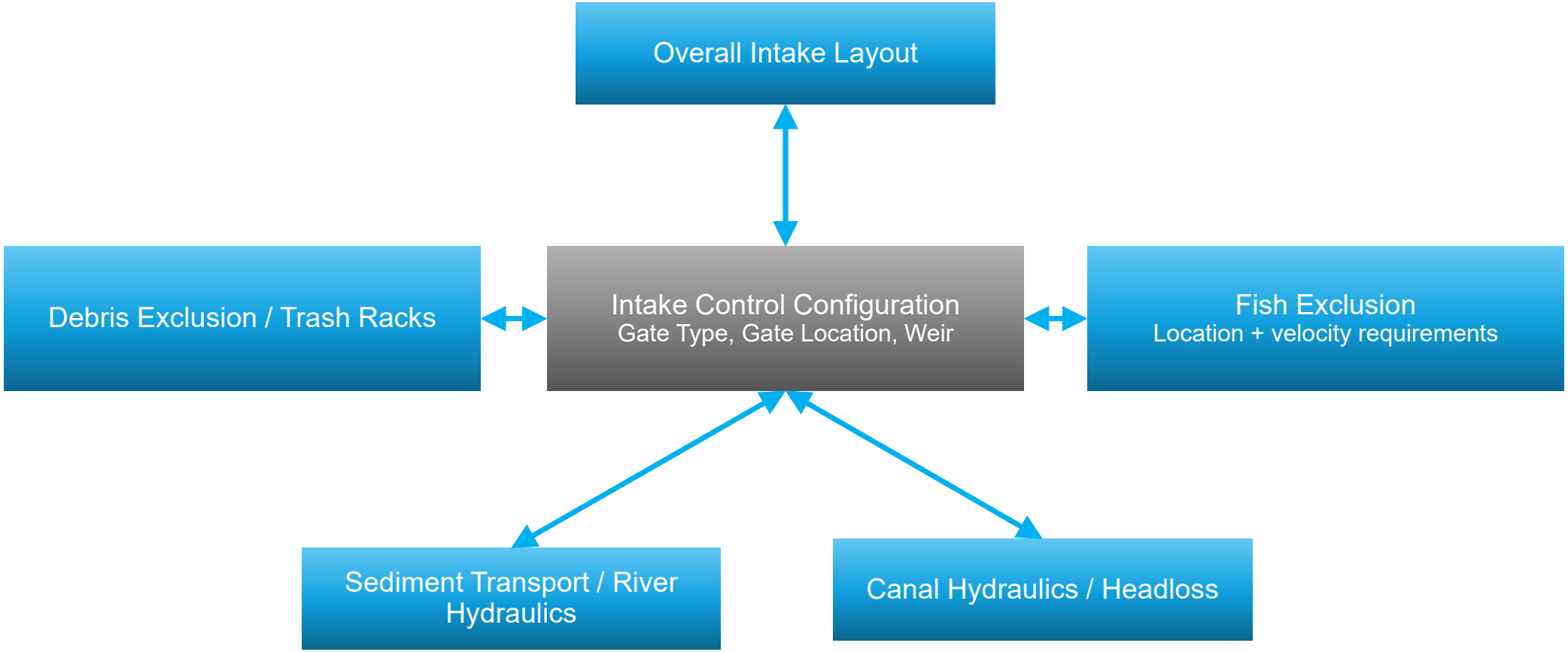
Buckman Direct Diversion River Intake Existing Conditions

2015

INTAKE DESIGN, COMPONENTS & FEASIBILITY EVALUATION CRITERIA

INTAKE DESIGN

Intake Components as an Integrated System



- All intake components are hydraulically and operationally linked

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OPTIONAL COMPONENTS

Category	Alternative Options
Location / Configuration	**In-channel (e.g. Craig, Colorado)**
	Off-channel (side channel / bypass, e.g., Albuquerque)
	Off-channel with forebay
	Bank intake (e.g. Current BDD)
	Ranney Well (supplement of 3-5 MGD) - Investigation Ongoing
	Infiltration gallery/Riverbank filtration
	Submerged Suction Bell Intake (Shore-Mounted Pump)
Fish Screening / Exclusion	Farmers Screen
	Vertical / cylindrical screens
	Cone Screens
	Traveling Screens
	Coanda screens
	Flat Plate Screens
	Modular Inclined Screens
	Bioacoustic Fish Fence (BAFF)
In-Channel Hydraulic Features	Rock or boulder vanes, Spur dikes, etc.
	Iowa Vanes (Sediment Vanes)
	Engineered Riffle/Boulder Grade Control
	Grade Control with Control gates / weirs/Obermeyer inflatable gate across River

OPTIONAL COMPONENTS

Category	Alternative Options
Intake Gate Type	Obermeyer gate
	Hinged crest gate
	Slide gate (Downward opening)
Sediment Handling	**Settling basin**
	Lamella plate clarifiers
	Low Pressure Membrane Filtration
	Media or dual media filters
	Clarifiers with tube settlers
	Hydrocyclones (Lakos)
	Sediment flushing sluice
Debris and Trash Management	Trash Racks
	Automated rakes
	Floating Boom/log Boom
	Debris Deflector Bar
	Bollards
	Traveling screens

OPTIONAL COMPONENTS-GATES

WEIR GATE

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OPTIONAL COMPONENTS-GATES

CREST GATE

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OPTIONAL COMPONENTS-GATES

OBERMEYER GATE

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OPTIONAL COMPONENTS-FISH SCREENS

CONE SCREEN

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OPTIONAL COMPONENTS-FISH SCREENS

CYLINDER SCREEN

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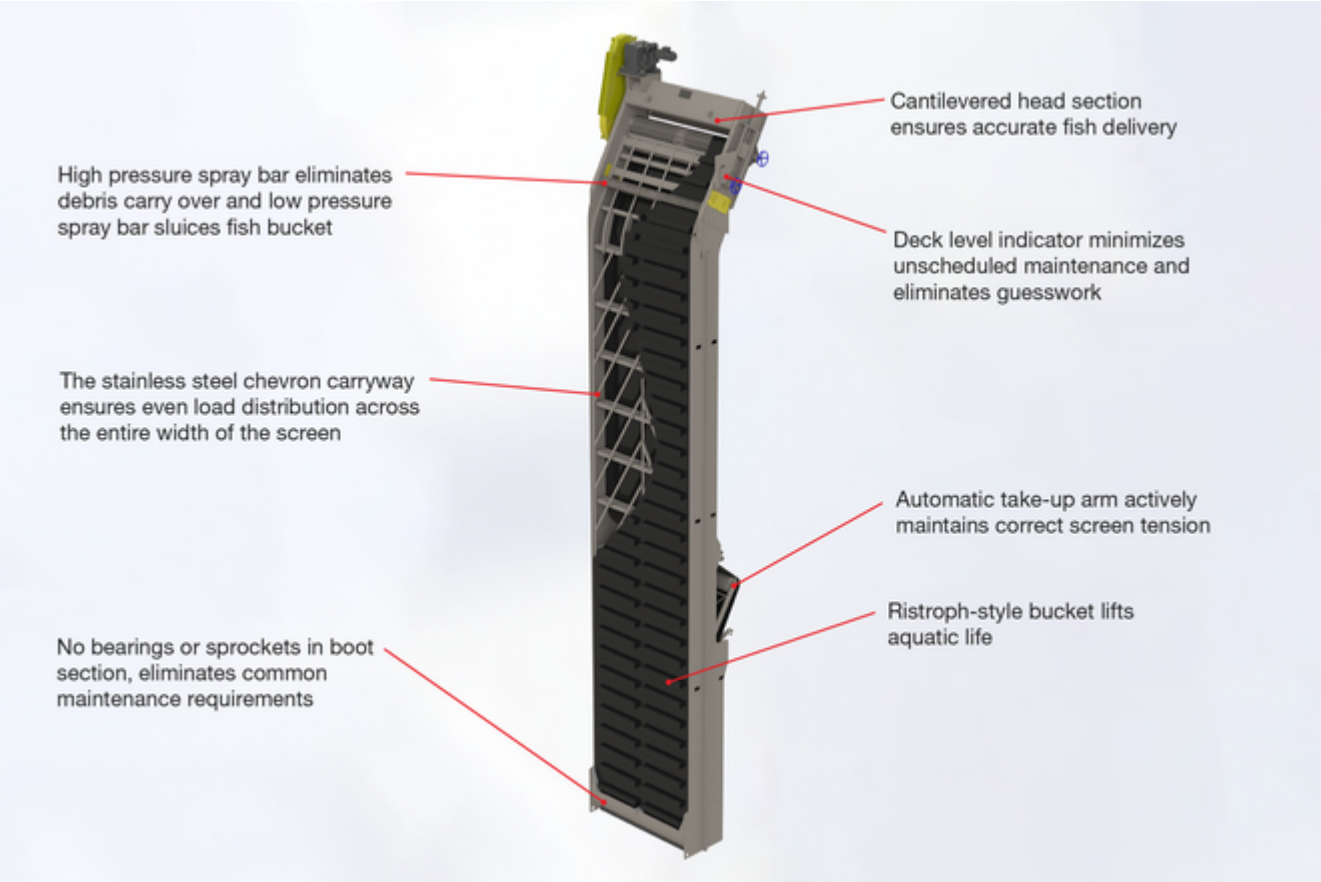
OPTIONAL COMPONENTS-FISH SCREENS



TRAVELING SCREEN

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

RIO GRANDE-ALBUQUERQUE, NM

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

YAKIMA RIVER-YAKIMA, WA

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

COLORADO RIVER-WINDY GAP, CO

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

ANIMAS-LA PLATA PUMP STATION-DURANGO,CO

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

SOUTH PLATTE RIVER-FORT LUPTON, CO

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

LOWER YELLOWSTONE DIVERSION DAM, MT

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OPTIONAL COMPONENTS-LOCATION/CONFIGURATION

YAMPA RIVER-CRAIG, CO

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EVALUATION CRITERIA (PERFORMANCE)

- Sediment & Debris Management Capability
  - Sediment (including fines) management across all conditions
  - Debris handling and resilience to bed variability
  - Protection of pumps and downstream facilities
  - Reliable operation with turbidity compliance
- Hydraulic Performance & Diversion Capability
  - Consistent diversion performance (20.8 MGD)
  - Operates across full seasonal flow range
  - Stable under changing stage and channel conditions
  - Resilient during high-flow and event conditions

EVALUATION CRITERIA (IMPLEMENTATION & COST)

- Implementation Feasibility & Risk
  - Permitting (CWA, NHPA, and ESA including RGSM egg exclusion)
  - Constructability and site constraints
  - Maintain operations during construction
  - Schedule and delivery risk
- Operations & Maintenance Burden
  - Maintenance frequency and operator burden
  - Access-dependent reliability
  - Downstream impacts from fine sediment
  - Lifecycle durability and risk
- Capital Cost (CAPEX)
  - Planning-level capital cost
  - Structural and system complexity
  - Temporary works and bypass needs
  - Access and construction risk

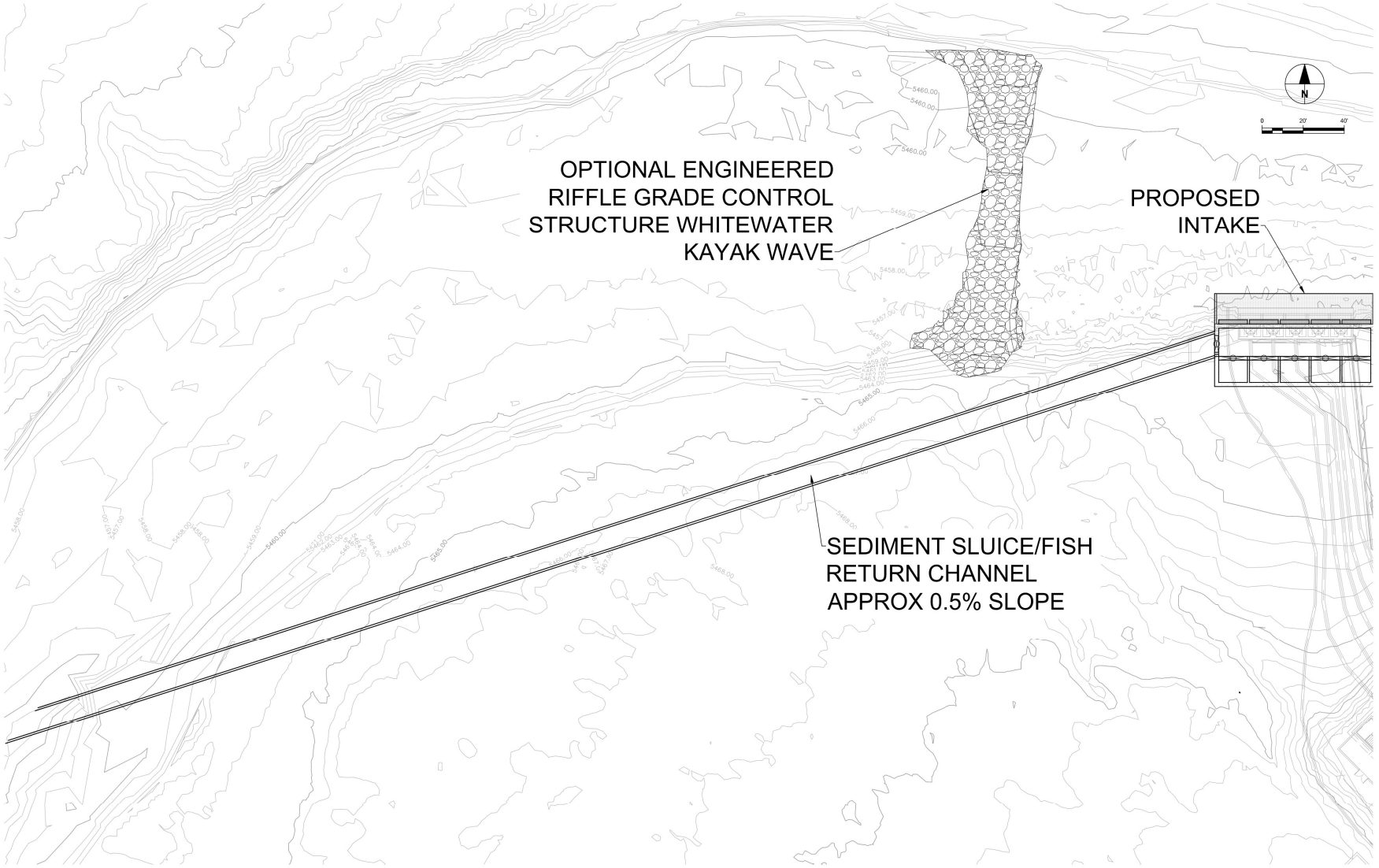
INTAKE CONCEPTS

INTAKE CONCPETS

The goal of these concepts is to provide direction to the selected 30% Design Engineering Firm. The three concepts are as follows:

- Replacement / Retrofit
  - Existing footprint
  - Existing intake modified or demolished
  - Alternative engineered riffle/whitewater wave
- New Intake Adjacent to Existing Intake
  - Maintains existing intake
  - Provides redundancy & supply during construction
  - Alternative engineered riffle/whitewater wave
- New Upstream Off-Channel Intake
  - Maintains existing intake.
  - Provides redundancy & supply during construction
  - Alternative engineered riffle/whitewater wave

REPLACE / RETROFIT



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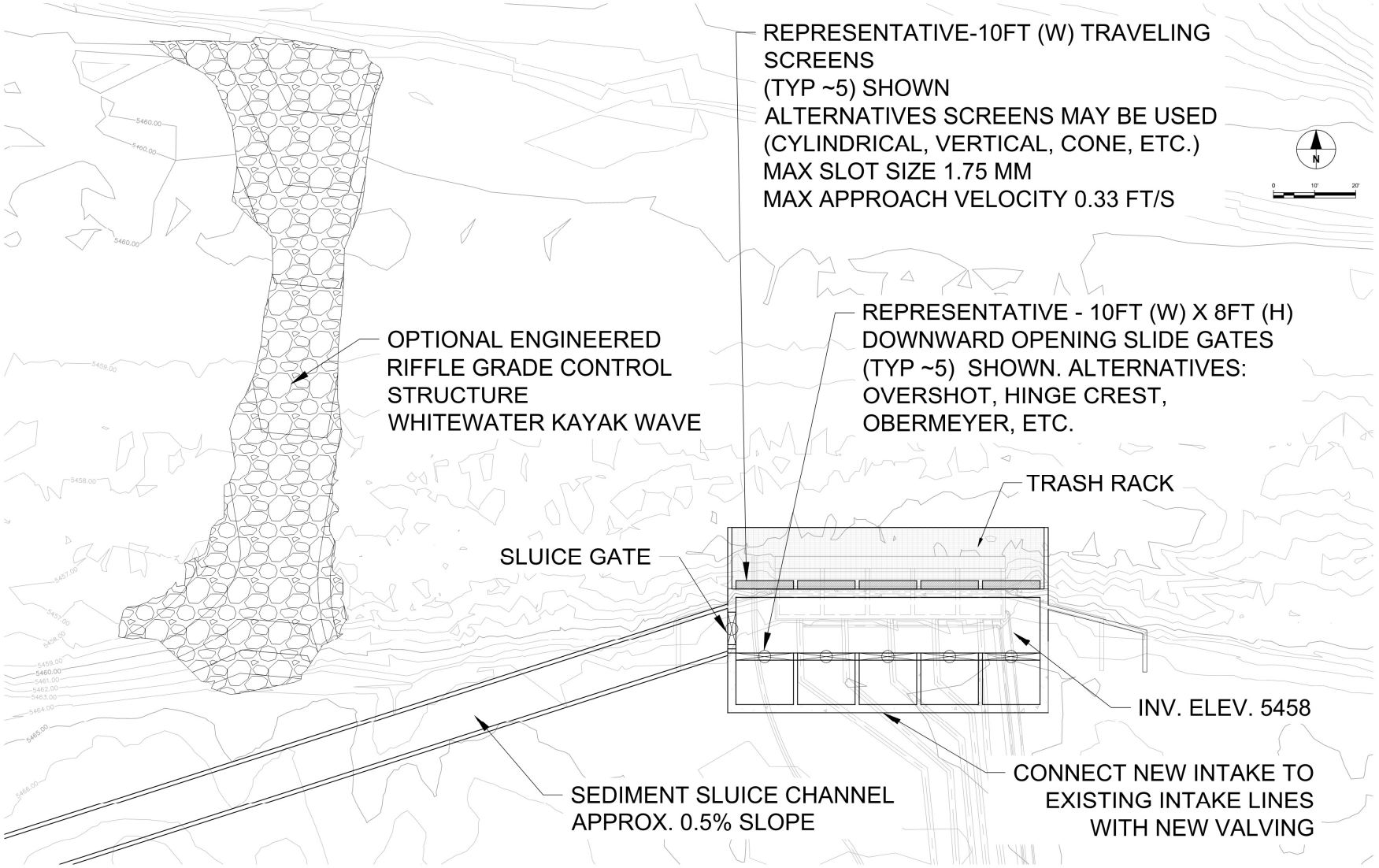
REPLACE / RETROFIT



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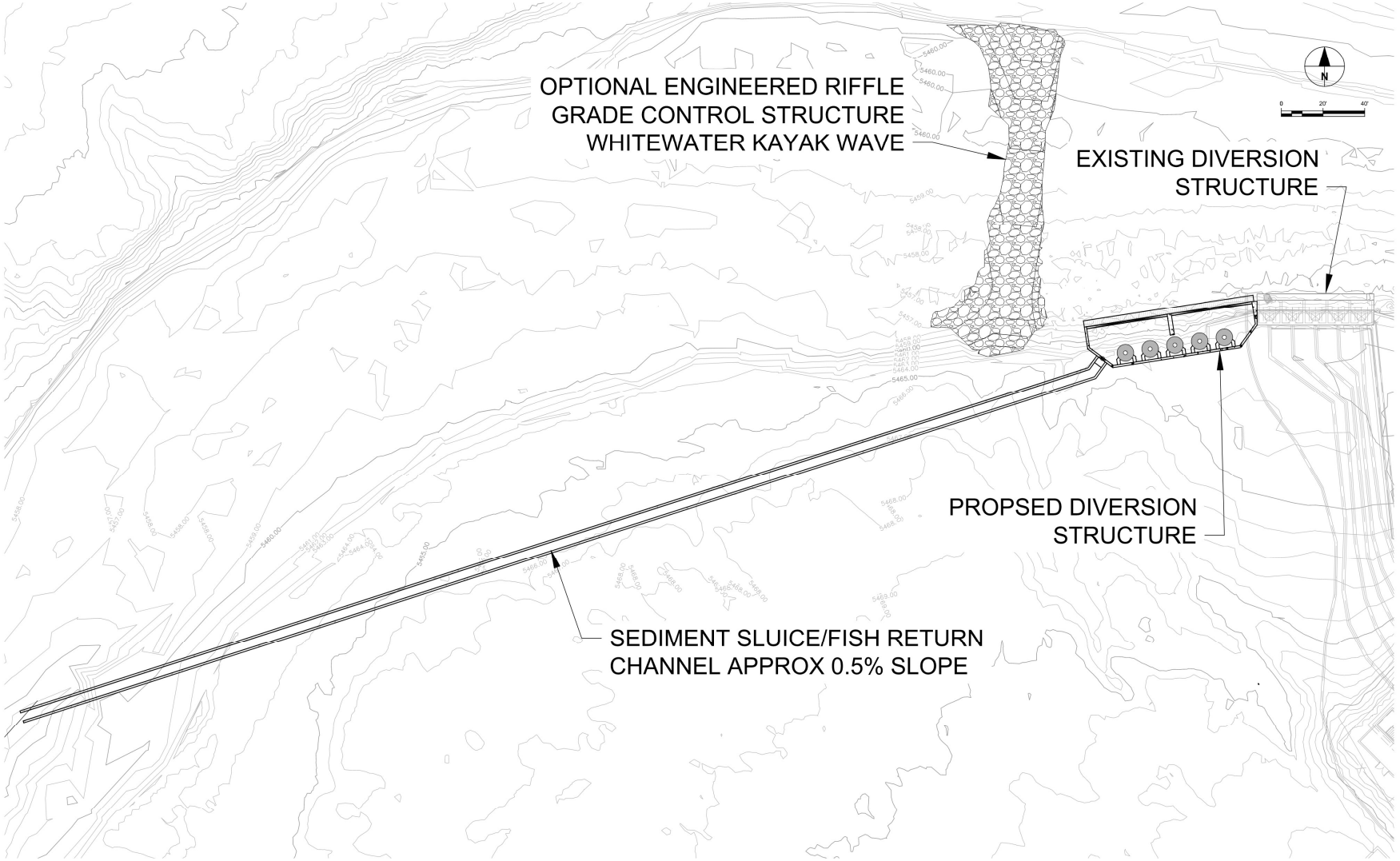
NEW INTAKE ADJACENT TO EXISTING



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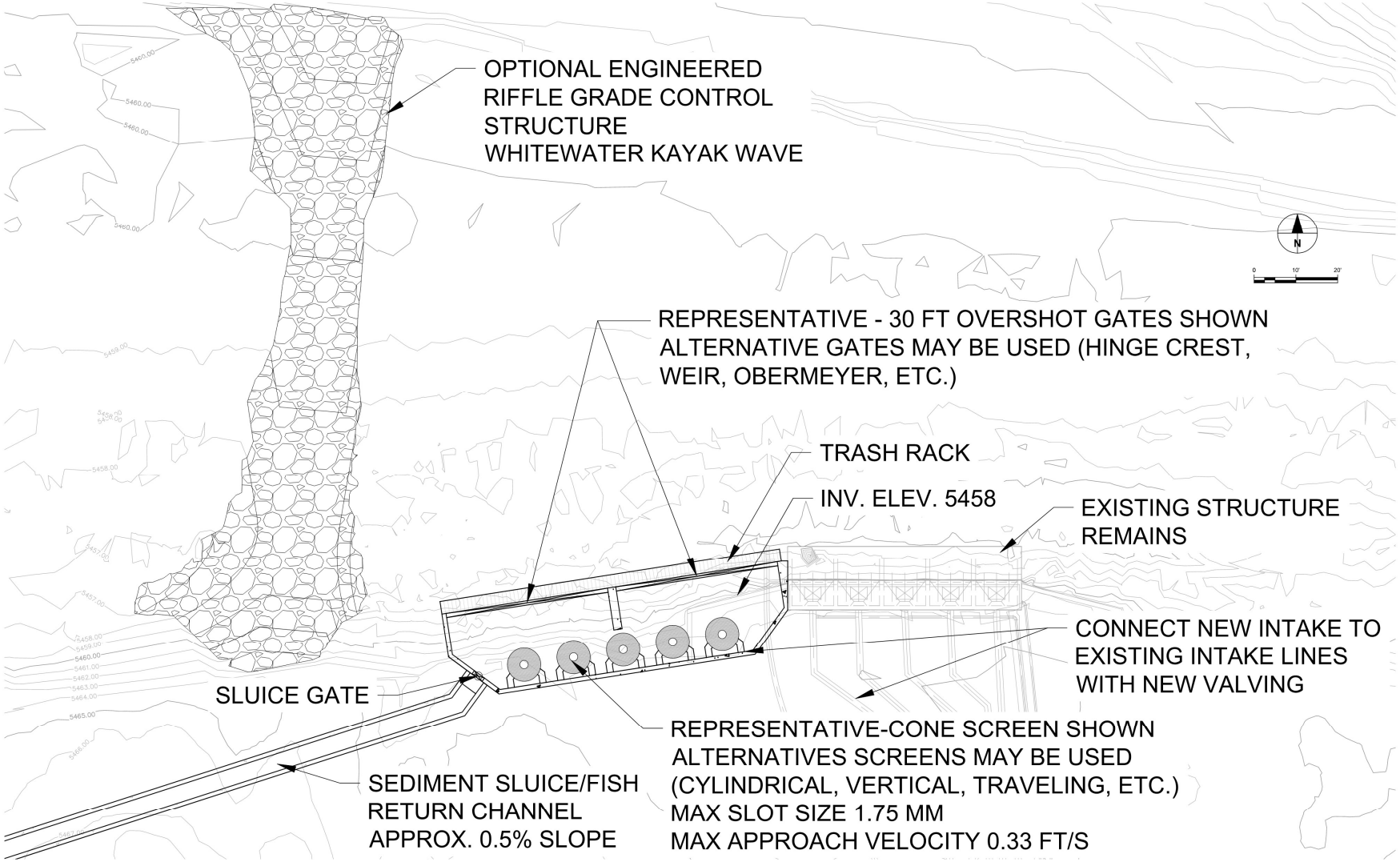
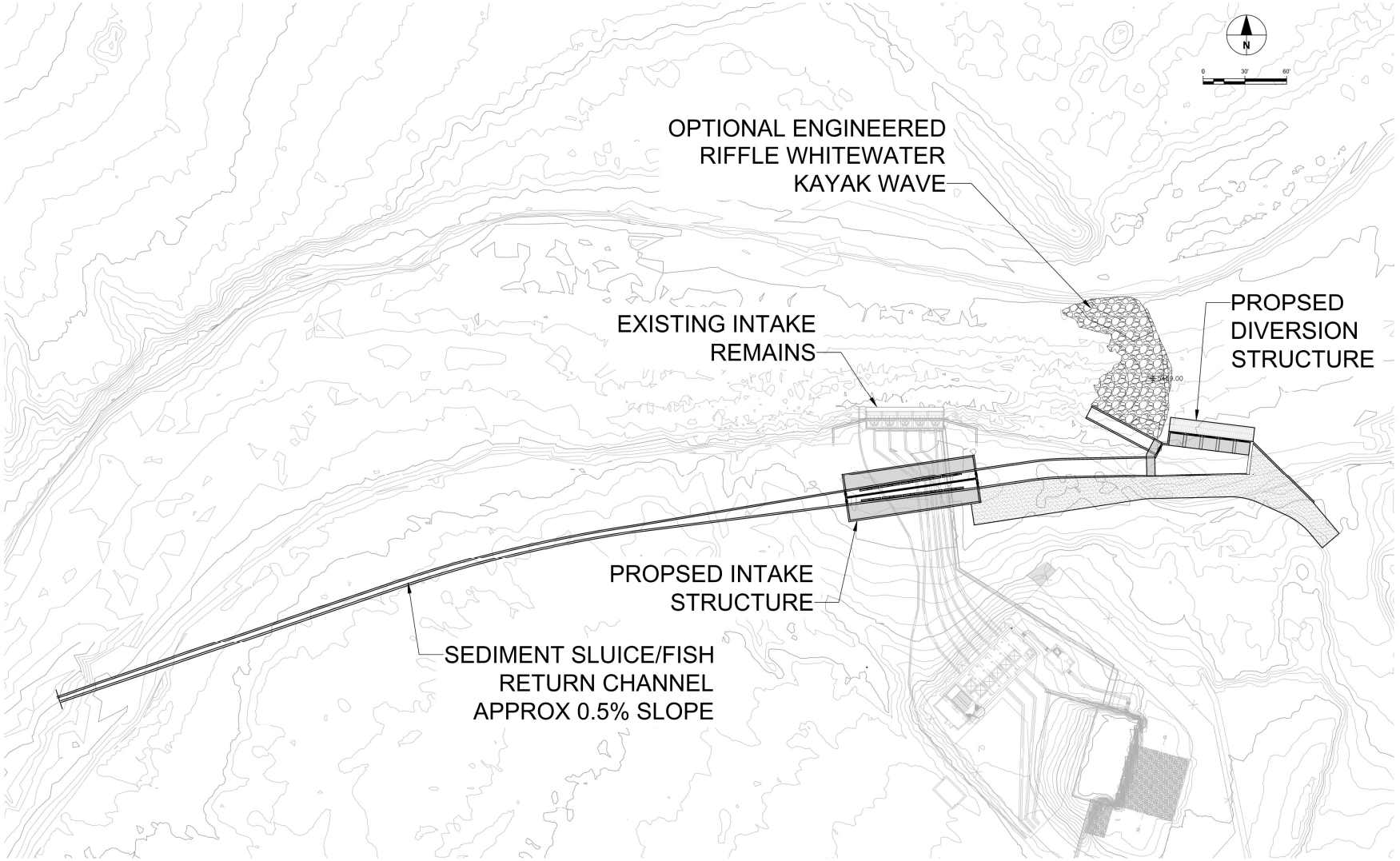


CONCEPTUAL - FOR DISCUSSION ONLY

NEW UPSTREAM OFF CHANNEL INTAKE



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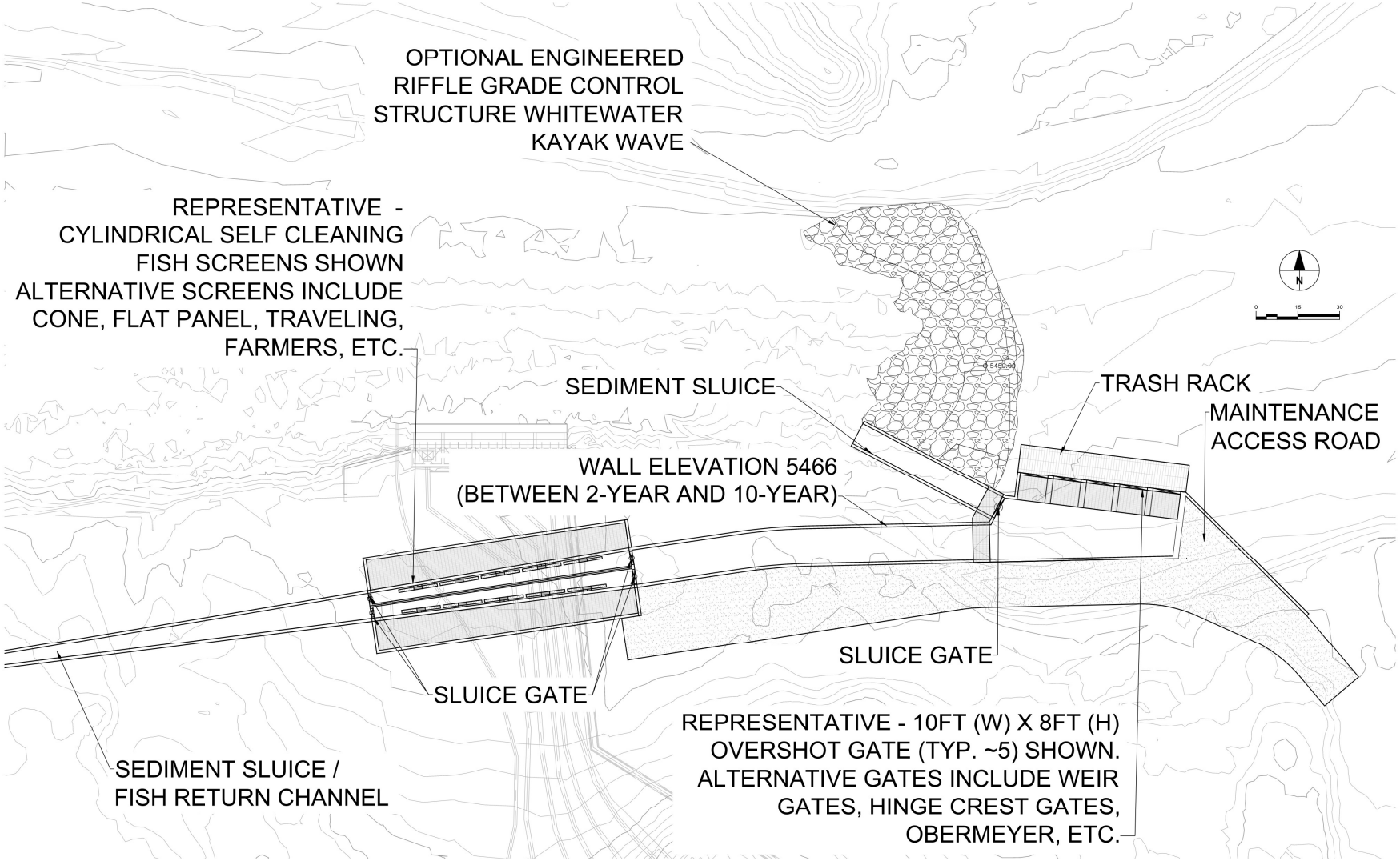

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NEXT STEPS

NEXT STEPS

- Finalize three concept layouts
- Finalize feasibility study report and documentation
- Issue final RFQ for Alternatives Analysis and 30% Design

¿QUESTIONS?

THANK YOU