

# The Mexican Dam Portage

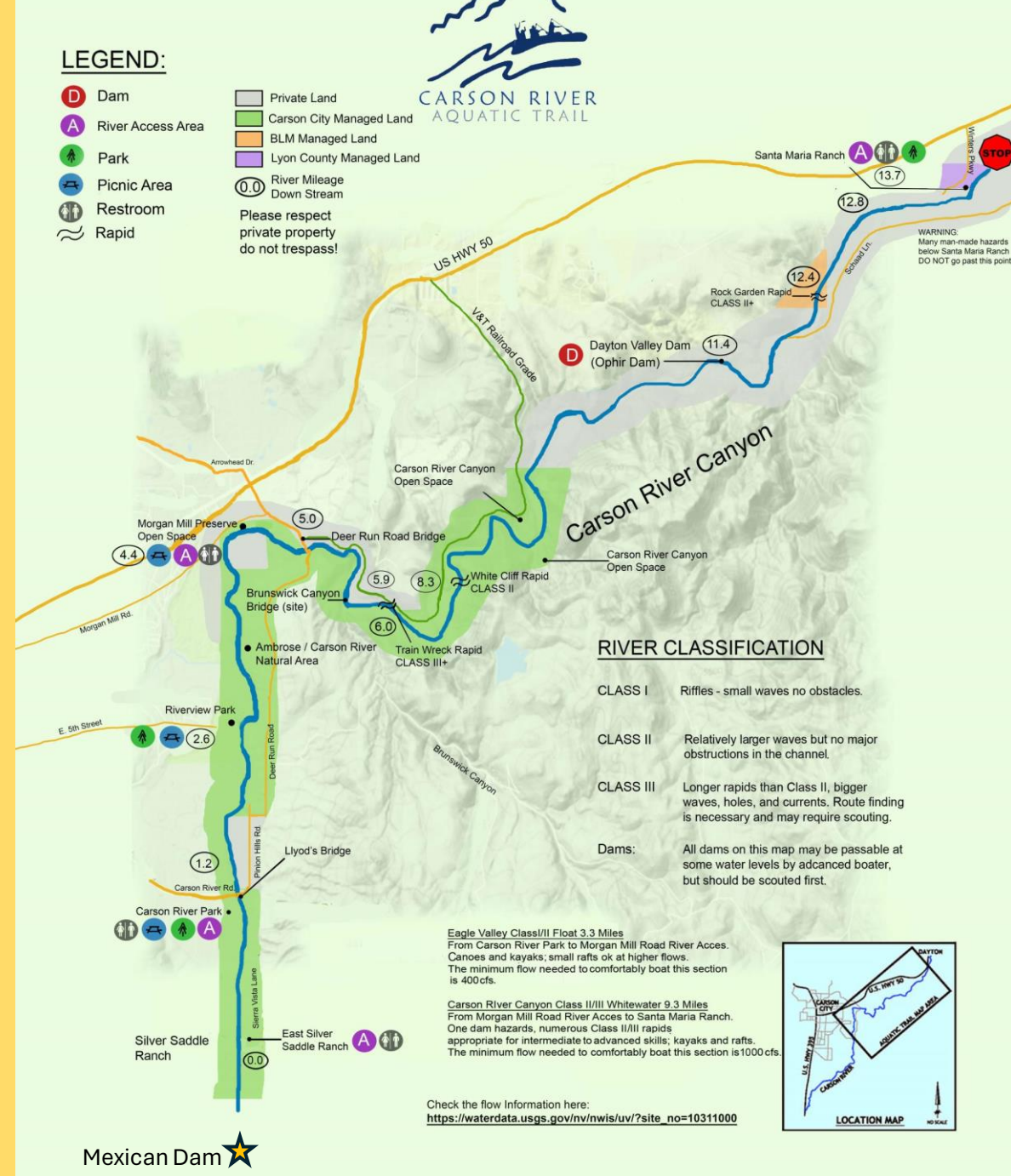
..... just around the bend.



Photo by Shane Fryer

# Carson River Aquatic Trail

- Collaboration of CC Culture & Tourism Authority, CWSD, and CC Parks, Recreation and Open Space
- Adopted into the City's Unified Pathways Master Plan 2006
- 13.7 Miles
  - Sierra Vista Lane in Carson City to Santa Maria Ranch in Lyon County
- Two sections
  - Eagle Vally Float (3.3 miles)
  - Carson River Canyon (9.3 miles)
- Provides river access and egress areas, signage, parks and amenities, rapid locations







Public Outreach



Morgan Mill Access



Public Safety

## Aquatic Trail Components - Needs and Opportunities

- Public Safety Improvement
- Natural Resource Management
- River Access Improvements
- Regional Coordination





# Eagle Valley Float

- Carson River Park to Morgan Mill Road Access
- 3.3 miles
- Class I/II rapids





# Carson River Canyon

- Morgan Mill Road Access to Santa Maria Ranch in Lyon County
- 9.3 miles
- Class II/III rapids

**WARNING**

DIFFICULT RAPIDS AHEAD

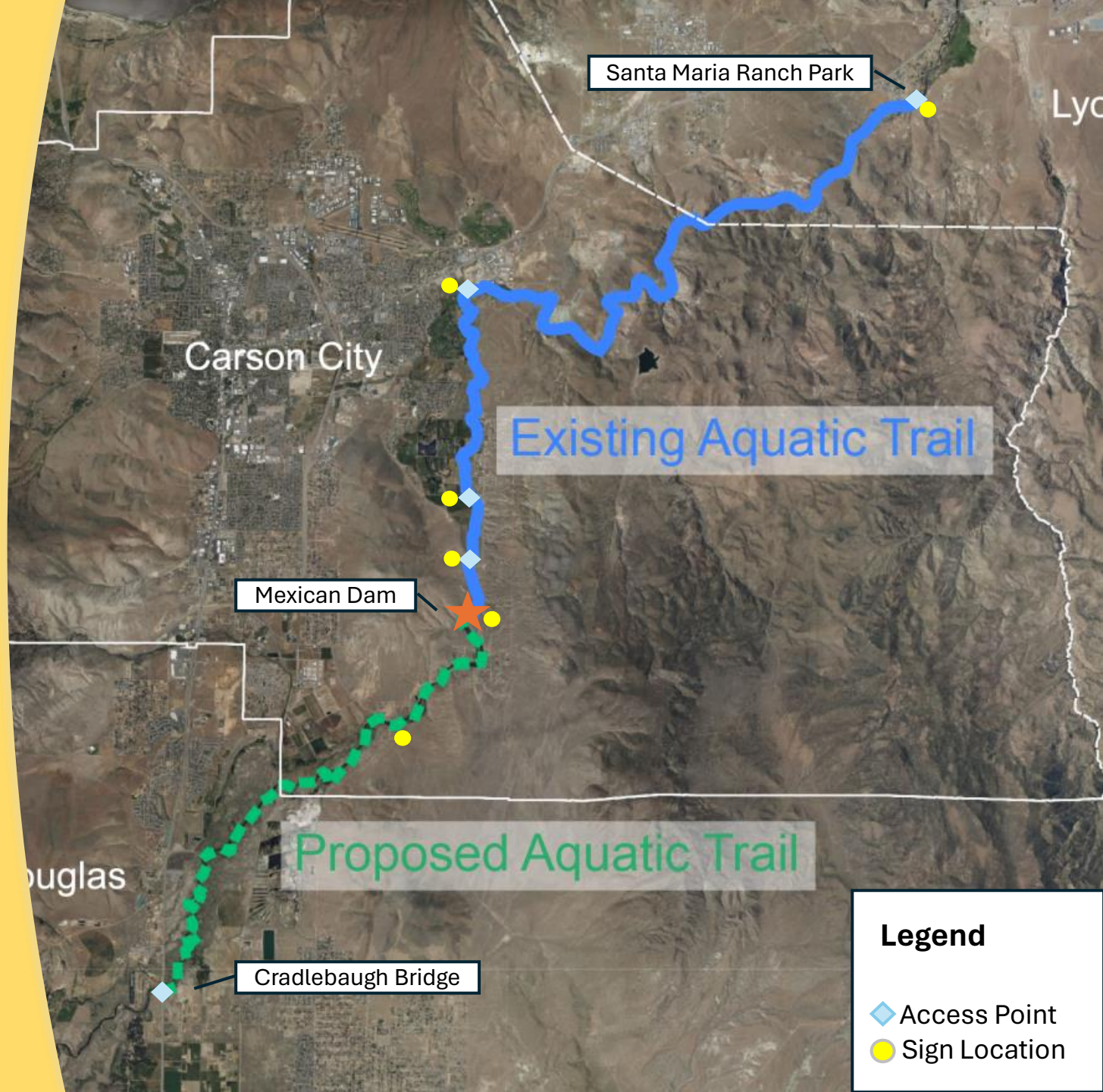
EXIT RIVER HERE





# Looking ahead -

- Extend aquatic trail into Douglas County:
  - Include 8 additional miles = 13-mile flat-water float (total)
  - Additional Access Points in Douglas County
- Once completed, Aquatic Trail will be 22 miles (total)
  - Cradlebaugh Bridge to Santa Maria Ranch Park (spanning 3 counties)







# Mexican Dam

- Located approx. 1.6 miles upstream of the Carson River Park
- Safety hazard for boaters
- Difficult take out due to steep vertical banks
- Adjacent private landowners



# Site Selection

- 300 feet upstream of dam
- Good site distance
- Owned by Carson City
- Relatively low velocity flows

 Proposed take-out ramp





# Existing Site

- Steep vertical banks
- Existing disturbance
- Site access



Photo by Shane Fryer



# Proposed Access Point



*Proposed ramp location*



*Existing trail between ramp and dam*



FIGURE B

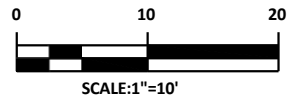
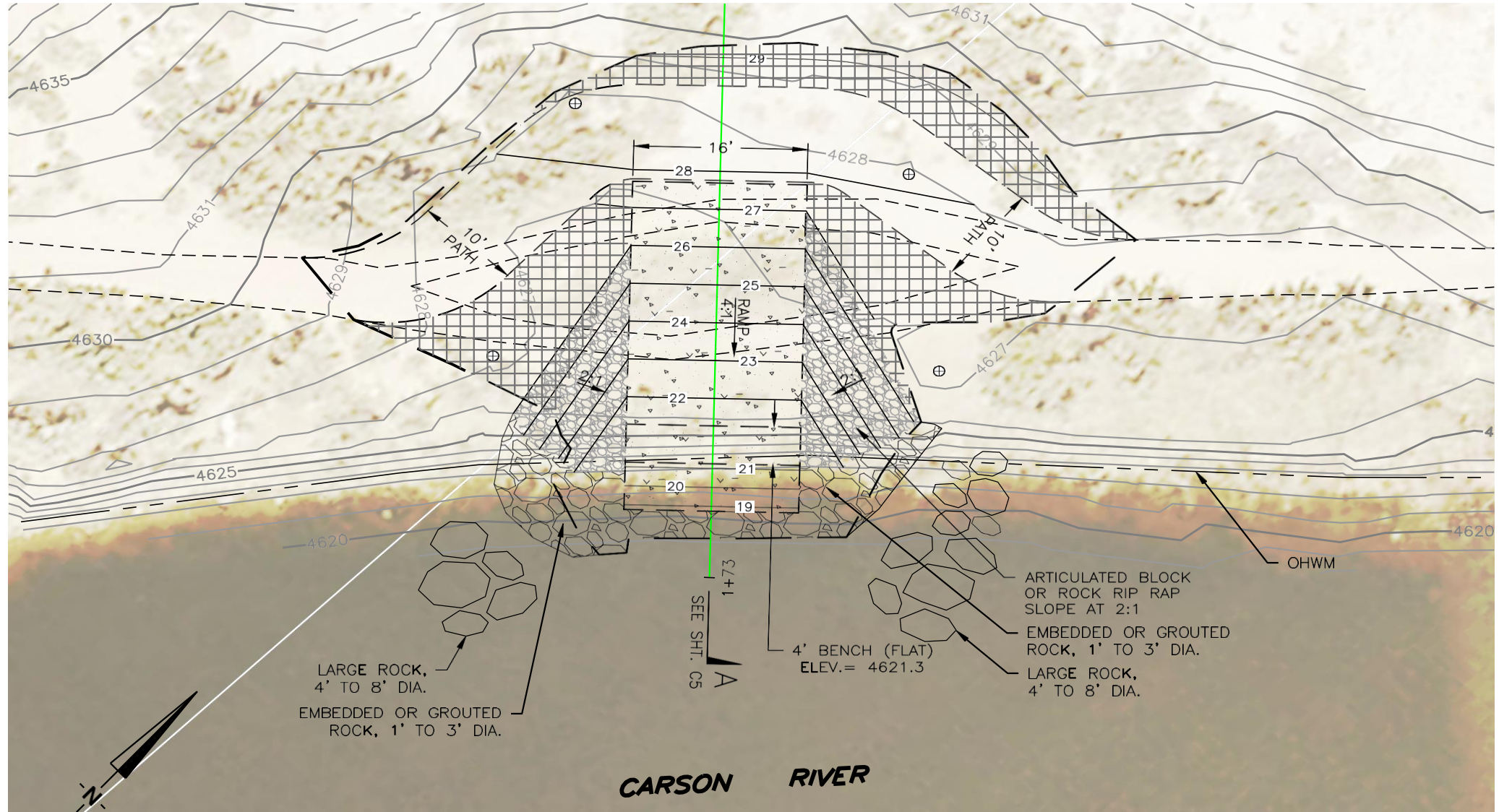








FIGURE B

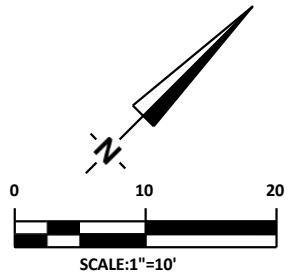
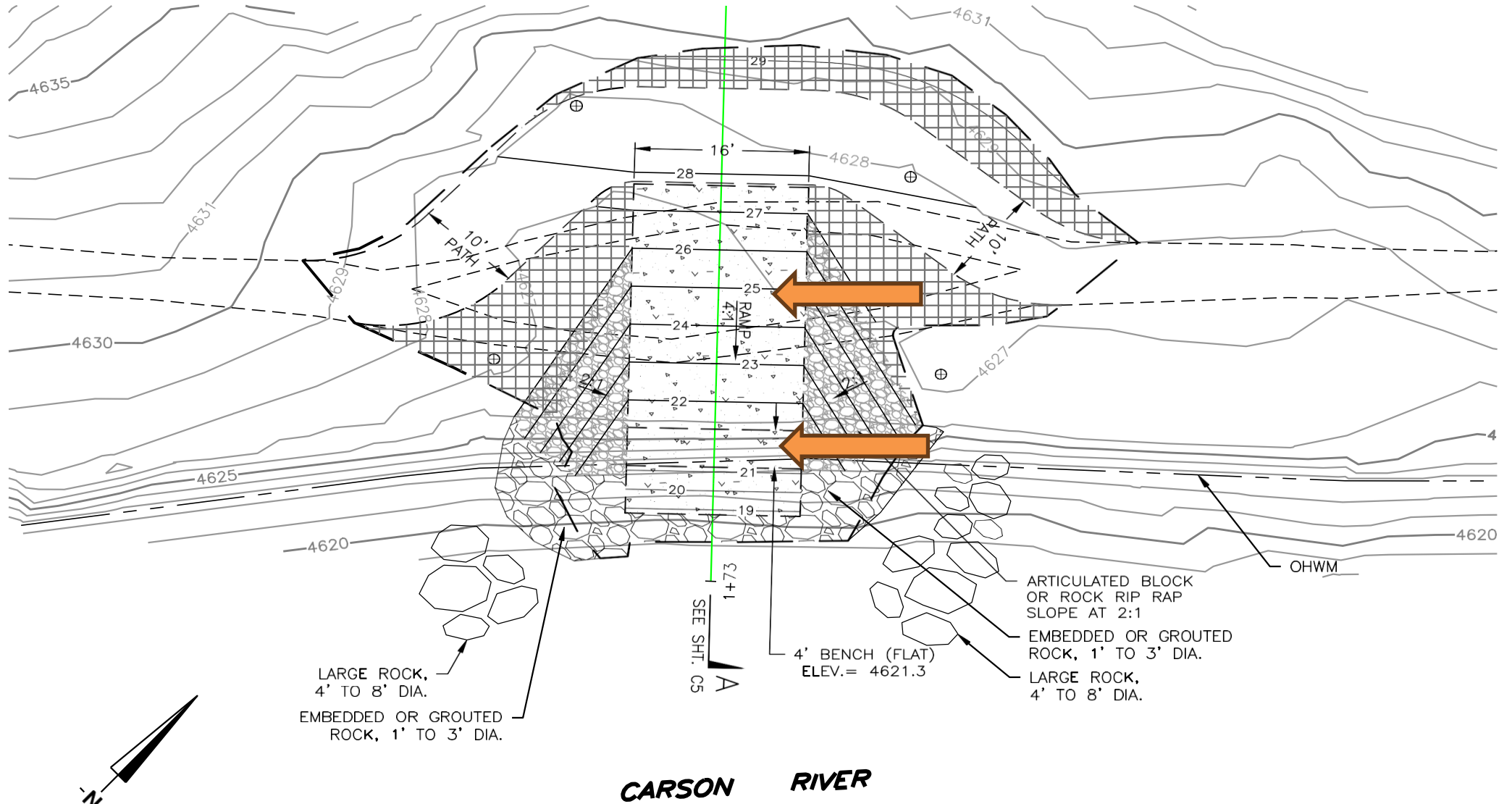




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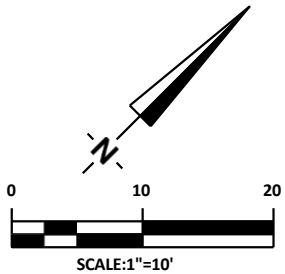
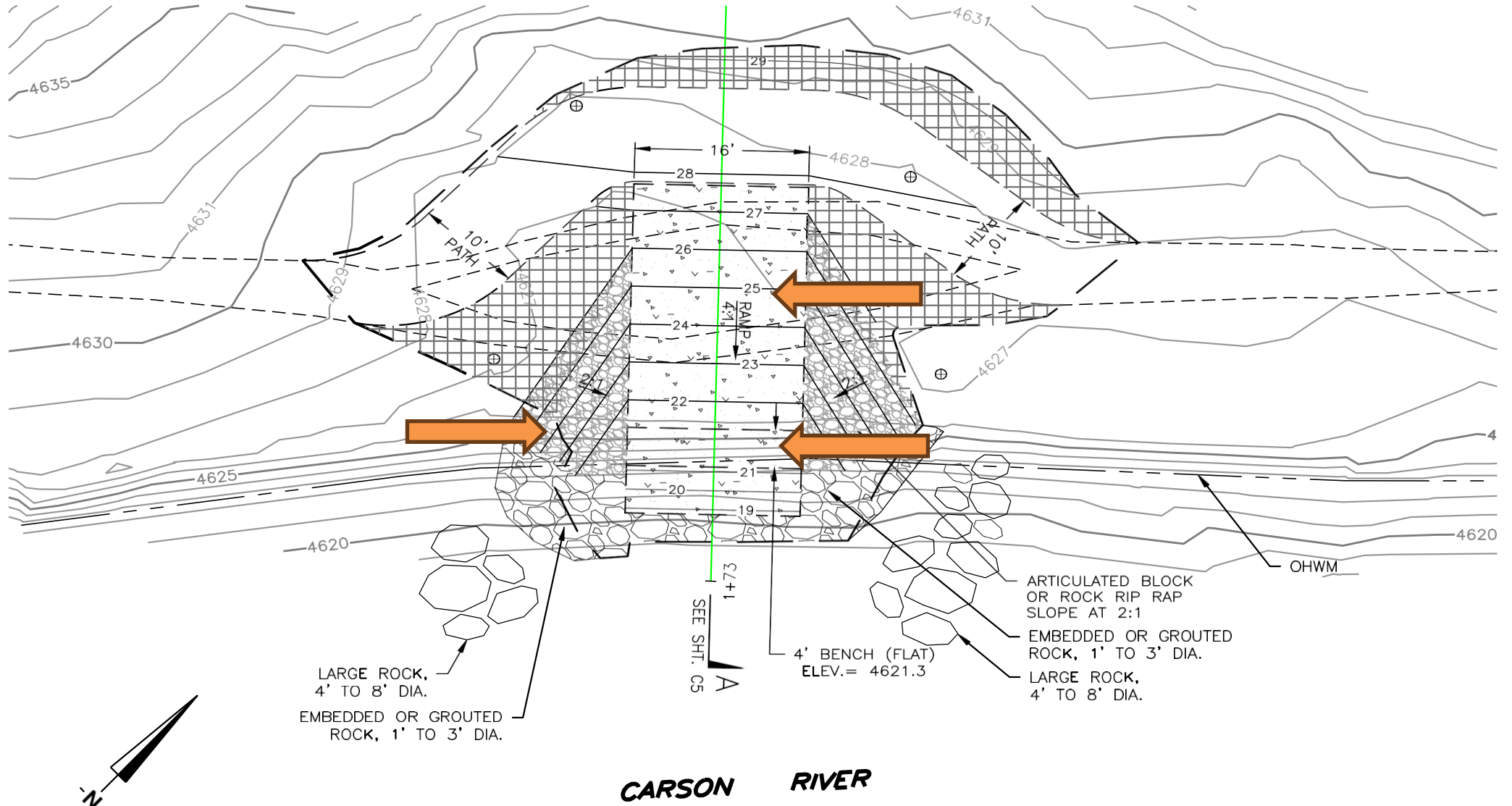




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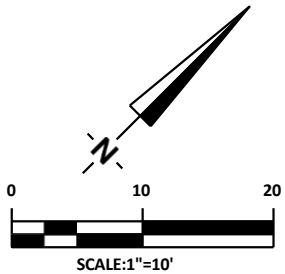
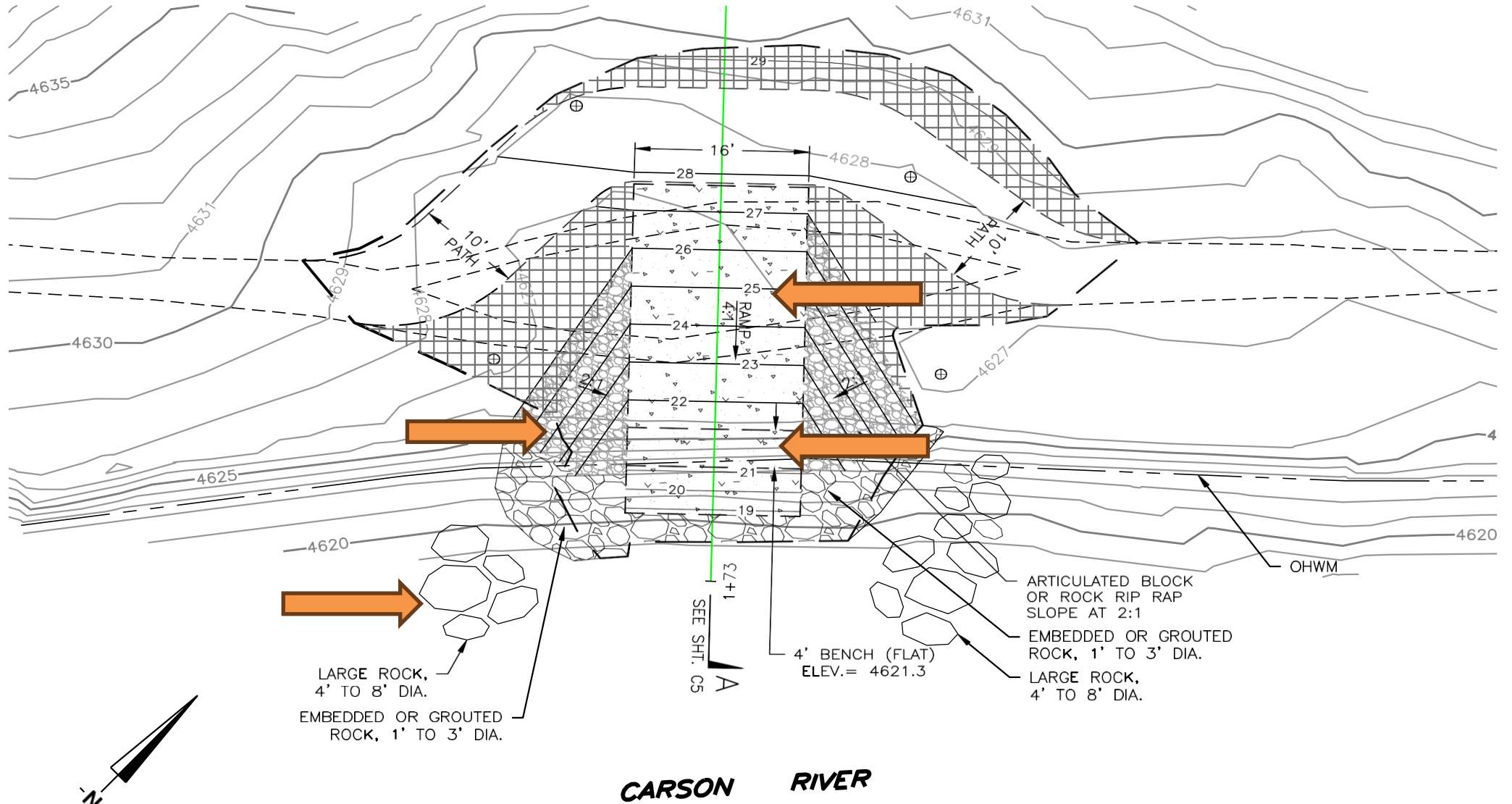




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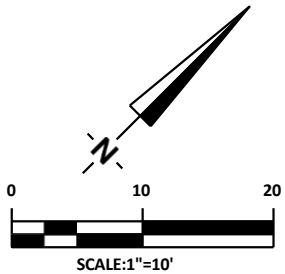
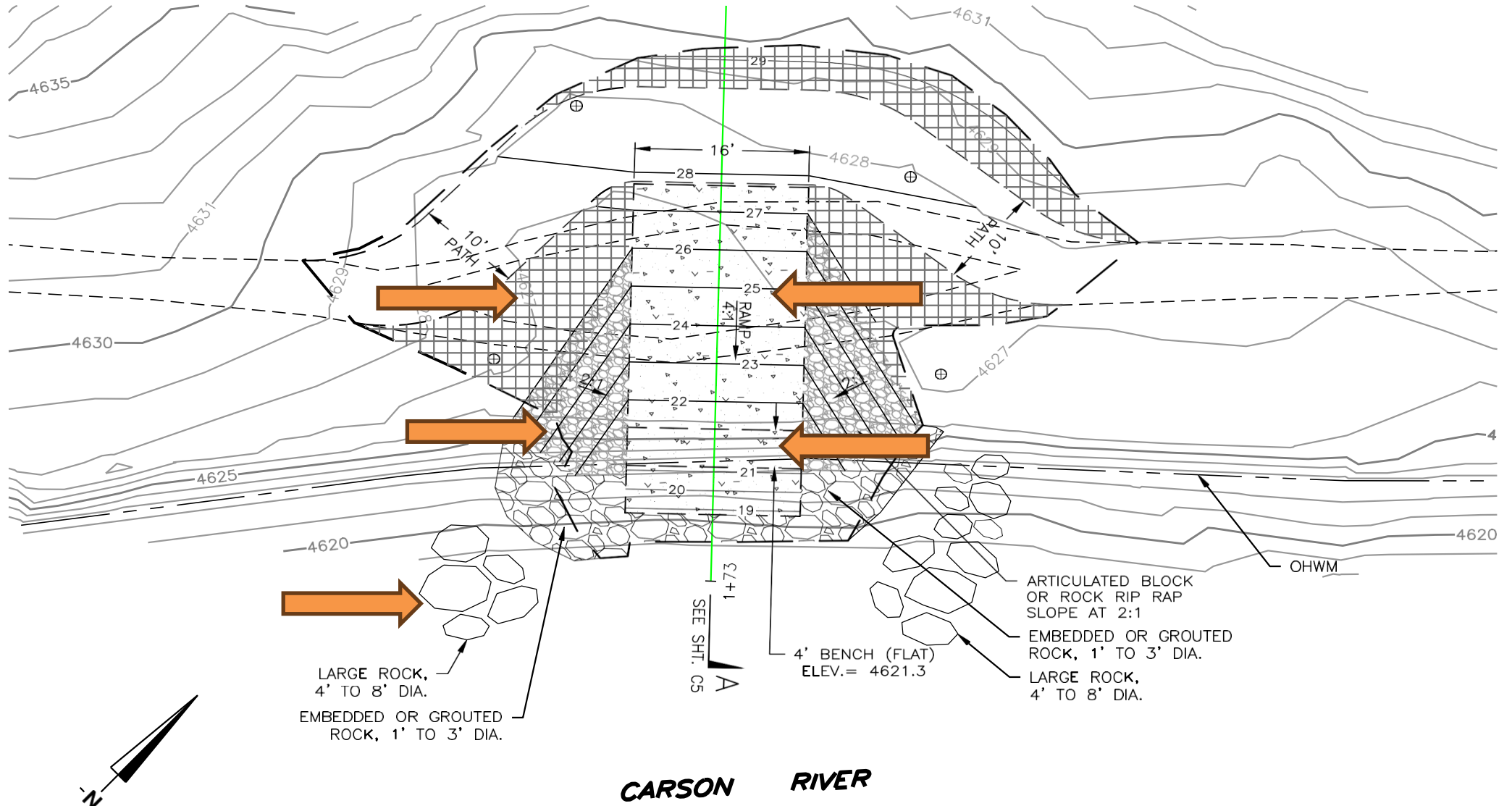
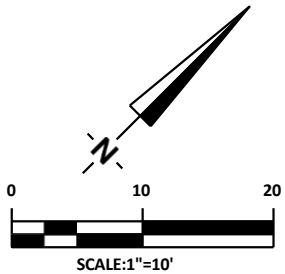
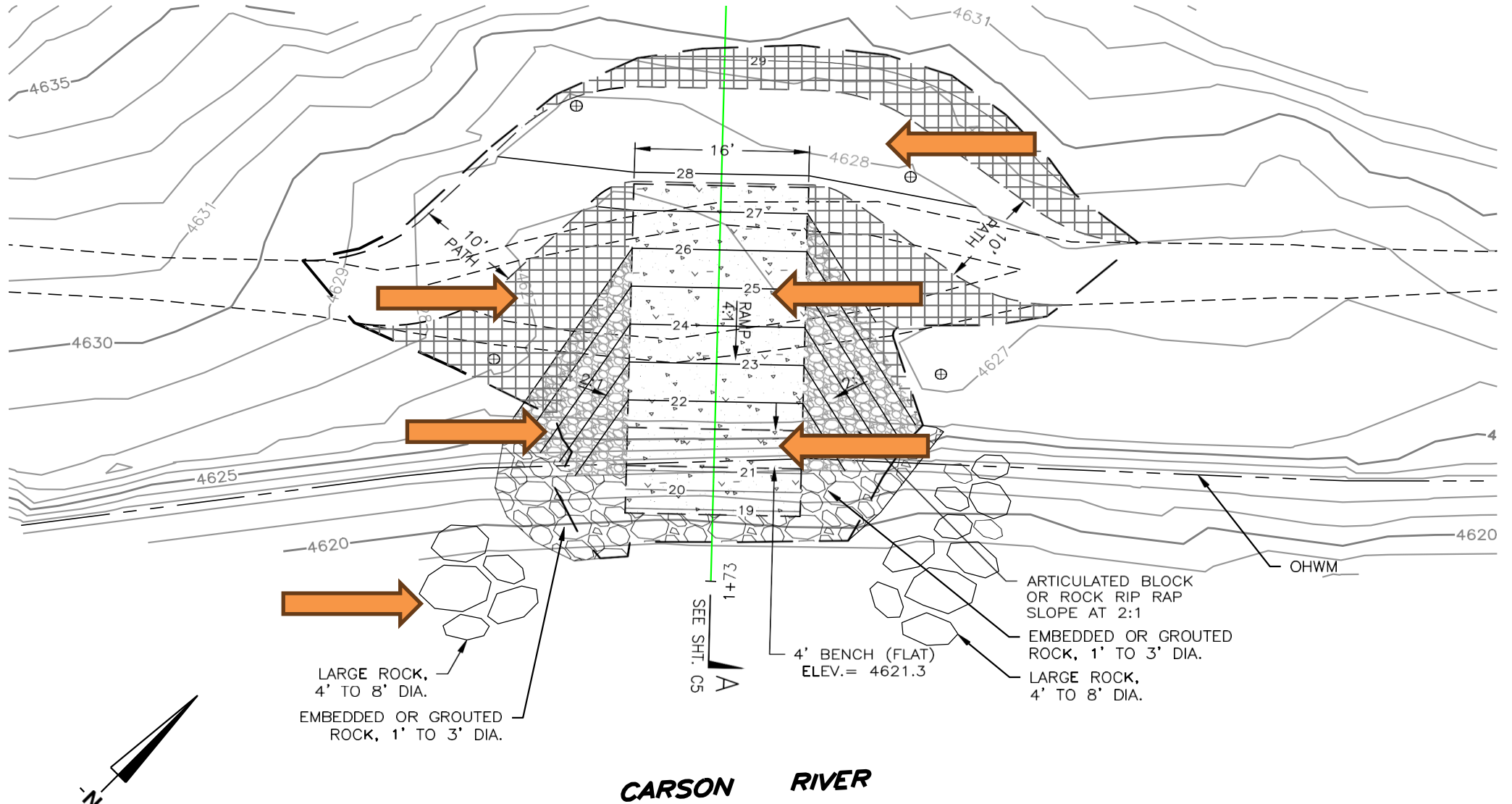




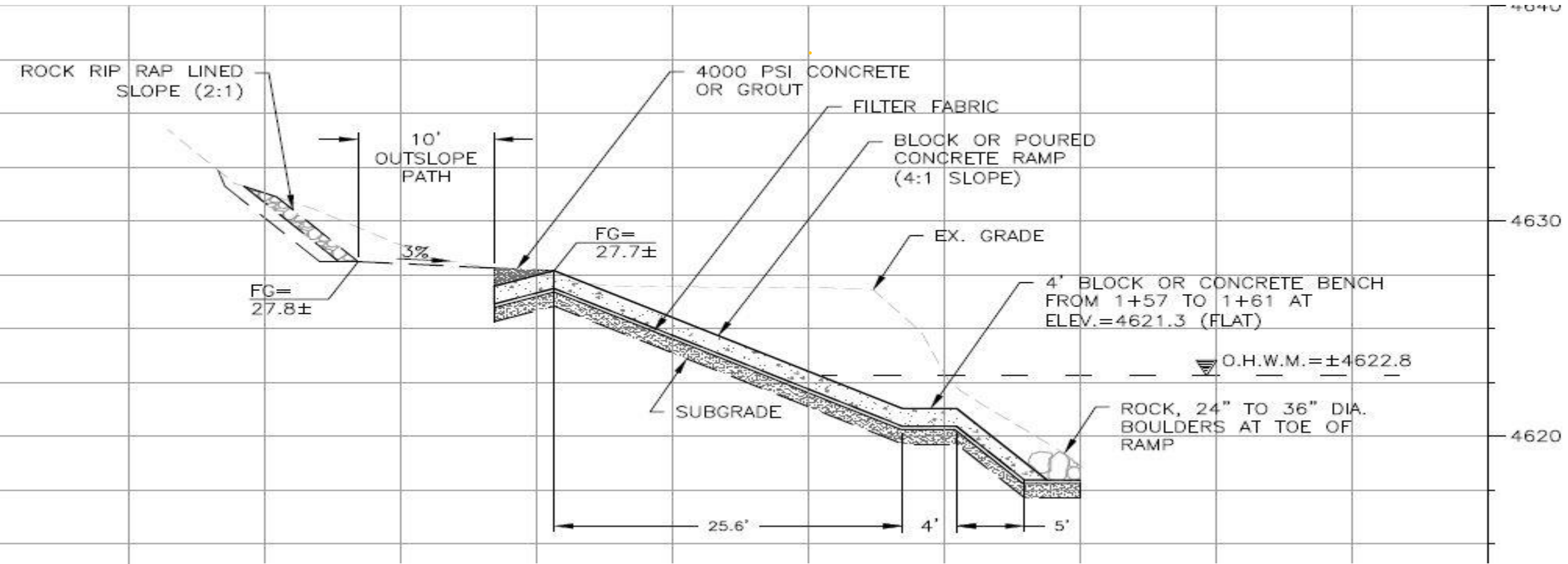
FIGURE B



CARSON RIVER



# Cross Section – 4:1 Slope Articulating Block Alternative



- 4622.1' Mexican Dam Spillway
- 4222.8' OHWM at Ramp
- 4621.3' Landing Bench
- Slope 4:1

- 28' Long Ramp
- 16' Wide Ramp
- 7' Cut into bank
- 10' Wide Path

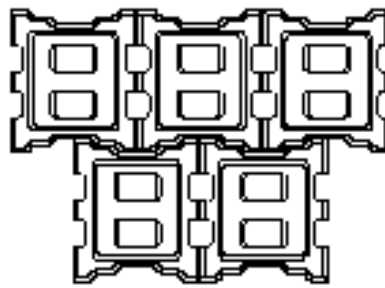


# CONTECH

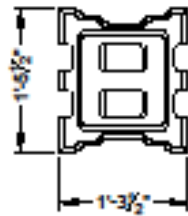
## Armorflex, Class HP 40

### Benefits of articulating blocks:

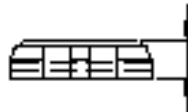
- Hand place and cable
- Conforms to topography
- Easily replaceable parts
- Doesn't scour as easily as concrete
- Less slippery than concrete
- Able to revegetate



PLAN



TOP



SIDE

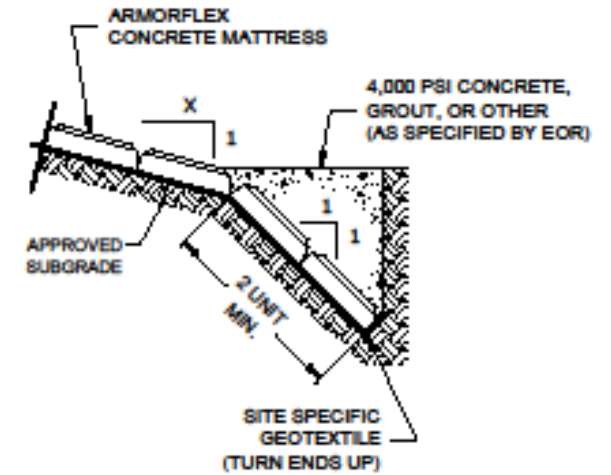


END

TYP. 40 BLOCK

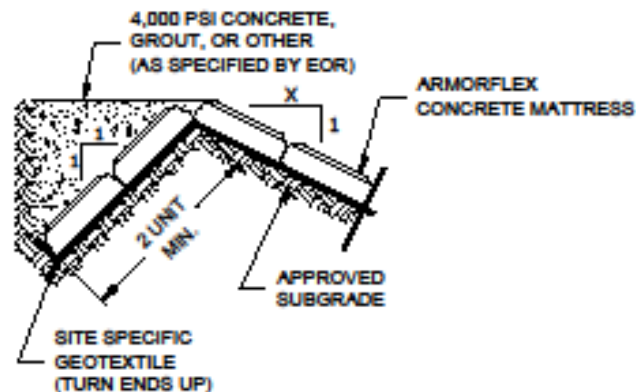
N.T.S.

1



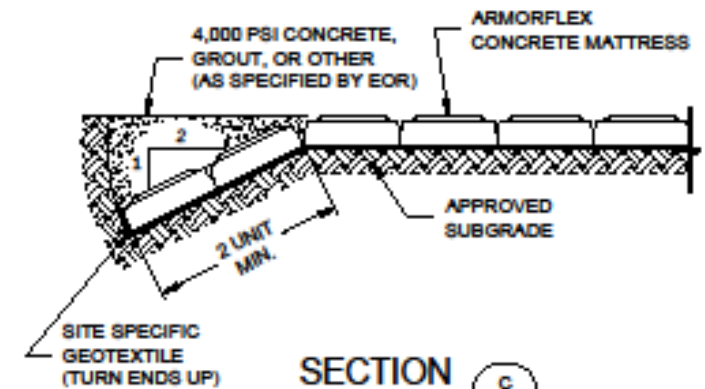
SECTION B

N.T.S.



SECTION A

N.T.S.



SECTION C

N.T.S.







Take out





Take out





Take out





Take out

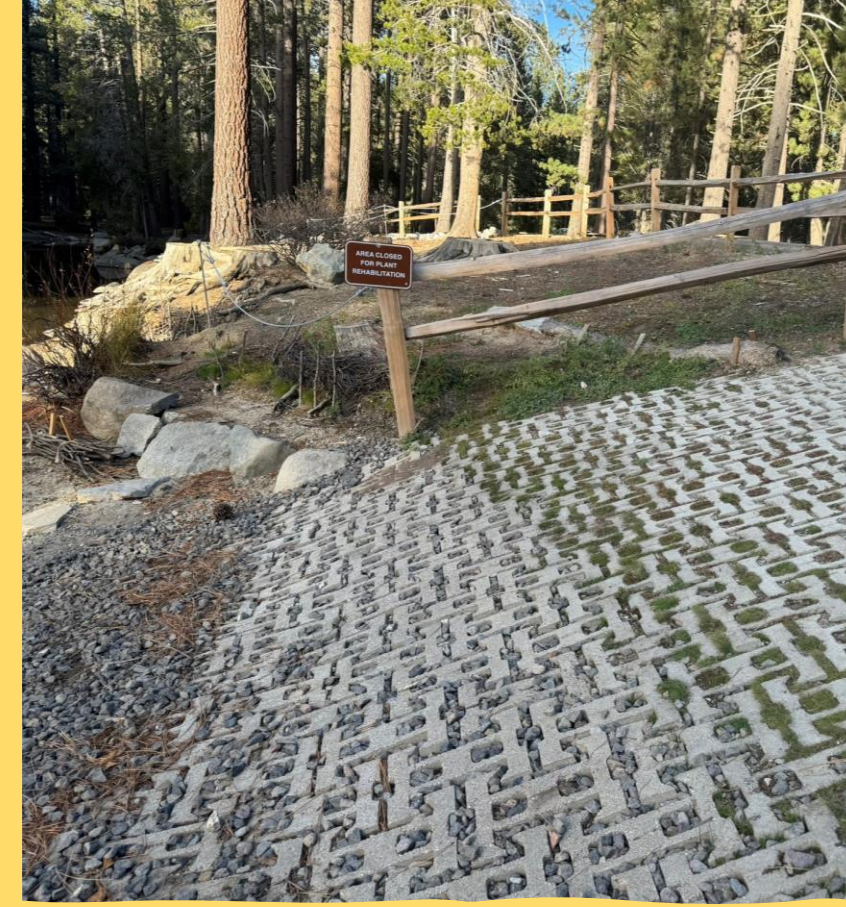


# Example of Articulating Blocks at Donner State Park

Project funded by and photos from Truckee River Watershed Council



*Initial Installation*



*Two years post construction*



# Environmental Review & Permitting

- Regional Trails Grant Program
  - Federal Highway Administration
  - Administered by NDOT
- NEPA Review
  - National Historic Preservation Act
  - Endangered Species Act
- Permitting
  - CWA Section 404/401
  - River & Harbors Act Section 10
  - State Lands
  - Temporary Working in Waterways



# NEPA Environmental Review

- Disclose potential environmental impacts and demonstrate compliance with other federal regulations
- Resources surveys
  - Class III Cultural Resource Survey
  - Aquatic Resource Delineation
- National Historic Preservation Act
  - State Historic Preservation Office
    - Historic dam structure
  - Tribal Consultation
- Endangered Species Act
  - Northwestern Pond Turtle (PT)





# Waters of the US

- Clean Water Act - Sections 404 / 401
  - Regulates placement of fill within Waters of the US
    - US Army Corps Nationwide Permit
    - NDEP Water Quality Certification
- Rivers and Harbors Act - Section 10
  - Regulates all impacts to Traditional Navigable Waters (TNW)
  - Carson River = designated TNW from Silver King Creek in Alpine County, CA to NV Highway 117 bridge above Fallon





# Water of the State

- State owns the bed and bank of Carson River the ordinary and permanent high-water line
- Managed by NV Div of State Lands
- Authorization for Use of Submerged Lands Permit
- NDEP Temporary Working in Water Ways
  - Applies to construction with waters of the State





**QUESTIONS?**

