

East Fork of Rock Creek Dam Rehabilitation

DNRC State Water Projects Bureau

Troy Benn, Ph.D., PE

Rehabilitation Section Supervisor

MADCS Annual Meeting, Billings,
Oct. 7, 2026





“The last clear definite function of man—muscles aching to work, minds aching to create beyond the single need—this is man. To build a wall, to build a house, a dam, and in the wall and house and dam to put something of Manself, and to Manself take back something of the wall, the house, the dam; to take hard muscles from the lifting, to take the clear lines and form from conceiving. For man, unlike any other thing organic or inorganic in the universe, grows beyond his work, walks up the stairs of his concepts, emerges ahead of his accomplishments.”

- John Steinbeck, *The Grapes of Wrath* (Ch. 14), 1939.

Outline

Funding and Timeline
Dam Safety Deficiencies
Construction
Lessons Learned



Photo: DOWL, 7/16/2026

Funding / Timeline

Feasibility Study (November 2017 – April 2020)

Source – Hydropower Earnings \$585,813

Env. Consultation (June 2021 – July 2023)

Water Storage State Special Revenue \$98,265

Design (June 2022 – July 2023)

Source - Hydropower Earnings \$992,665

Construction (July 2024 – November 2026)

Oversight - Hydropower Earnings \$2,629,610

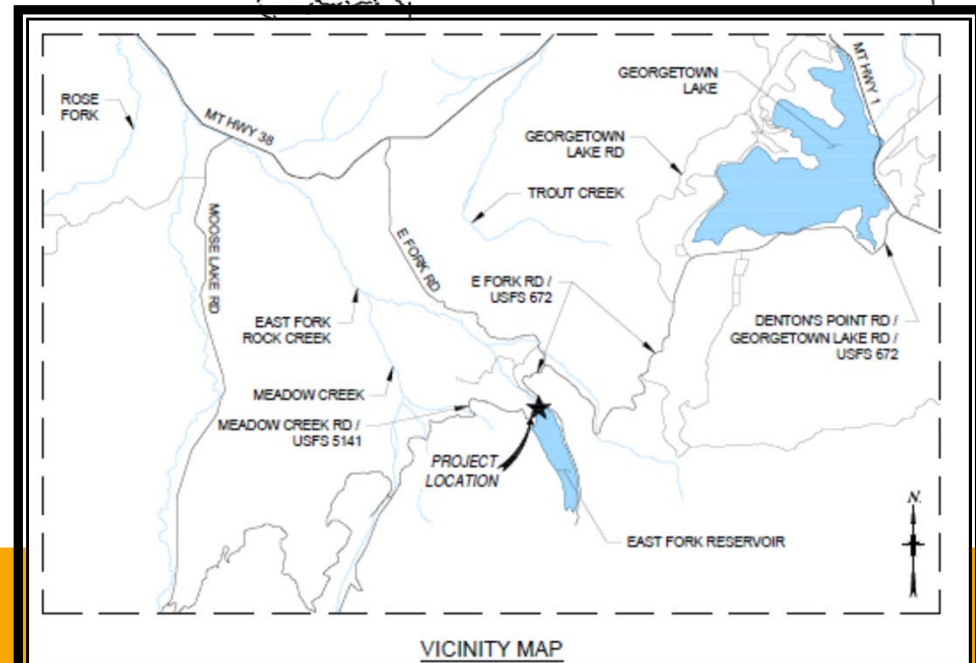
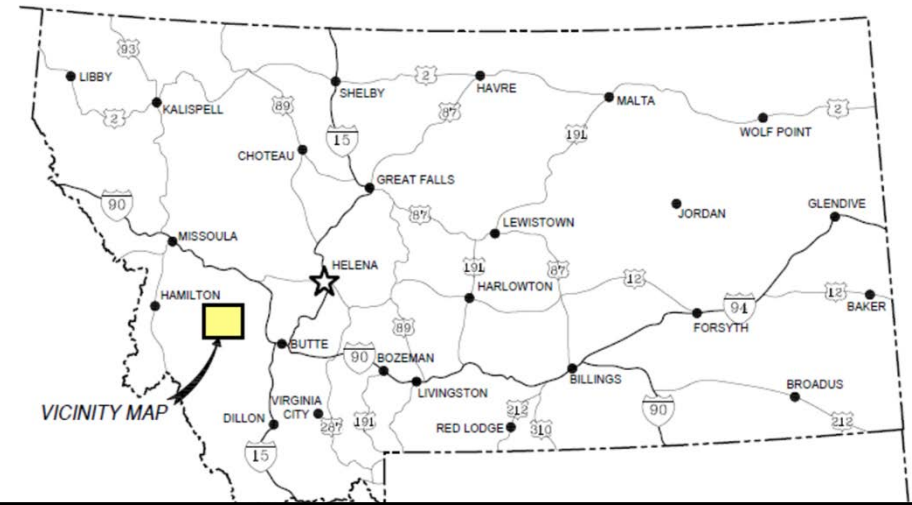
Construction \$20,359,977

CARDD Resource Dev. Grant,
Water Users Association,
CARDD Loan (Coal Severance Tax Bonds)

TOTAL - \$24,666,330



Maps: DNRC/Schnabel, design plans



Dam Safety Deficiencies

Spillway Bridge

Piers within spillway approach

Outlet Conduit

Collars, unfiltered toe exit

Foundation Seepage

Unfiltered exits

Spillway

Inadequate chute capacity,
poor concrete



Construction Management Team

Engineer

Engineer of Record,
Tom Fitzgerald, PE
Project Manager,
Brian Toombs, PE
RPR, Marius Sima



Owner, DNRC-SWPB

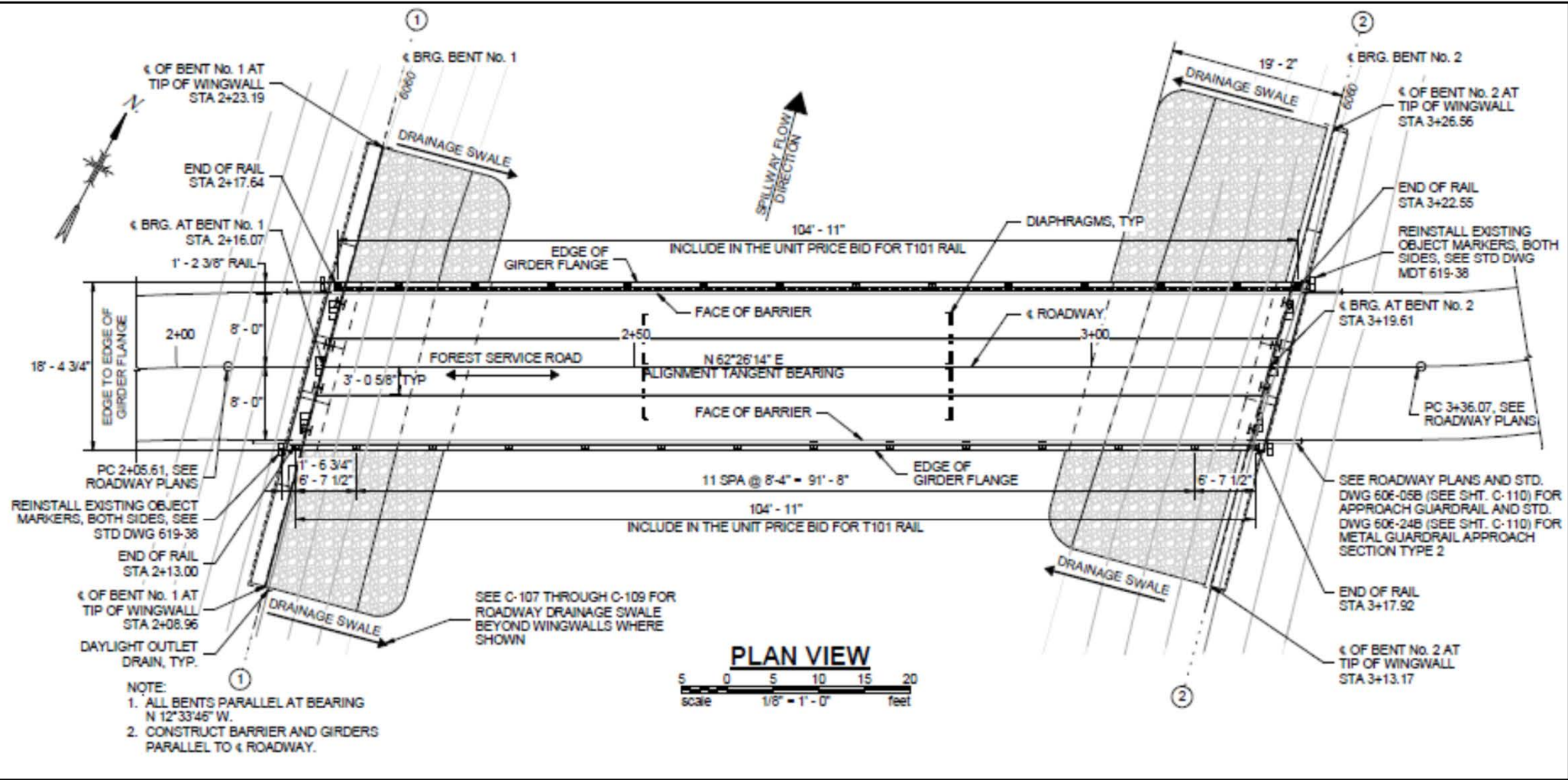
Sean West, PE – Project Manager

Contractor

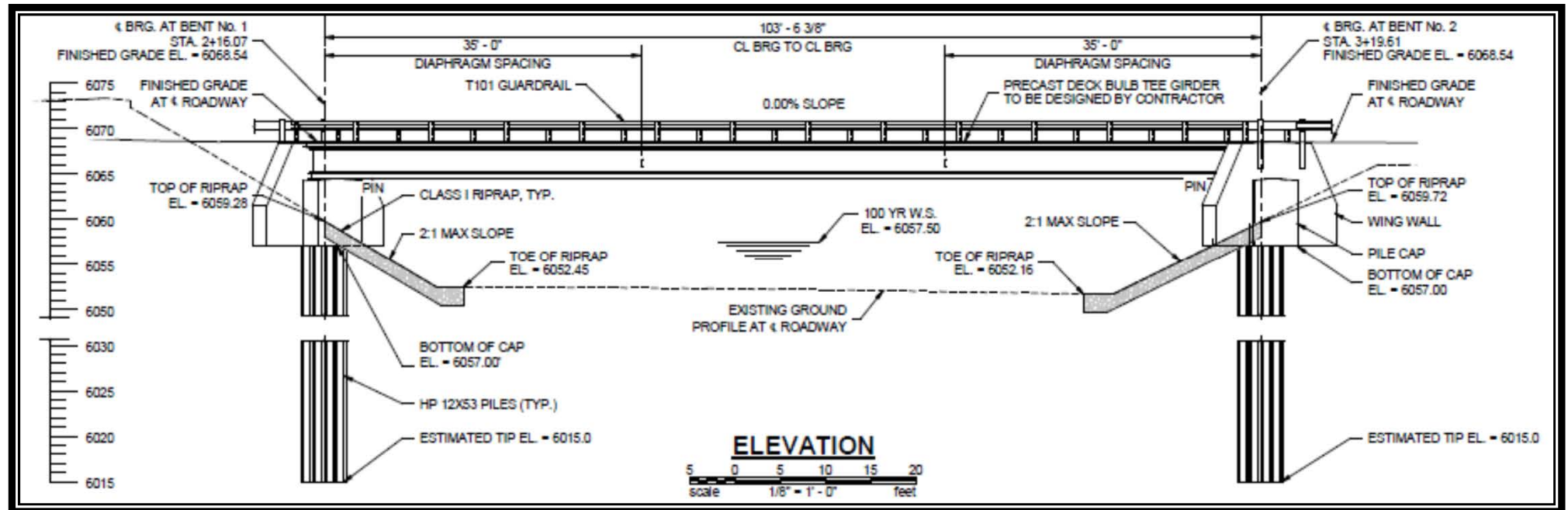
Missouri River Contractors, Helena (Prime)
Project Manager, Tyrel Wilson, PE
Superintendent, Mike Puccinelli
Steed Inc., Helena (concrete sub)
Project Manager, Nick Steed



Design – Bridge



Design – Bridge



Construction - Bridge



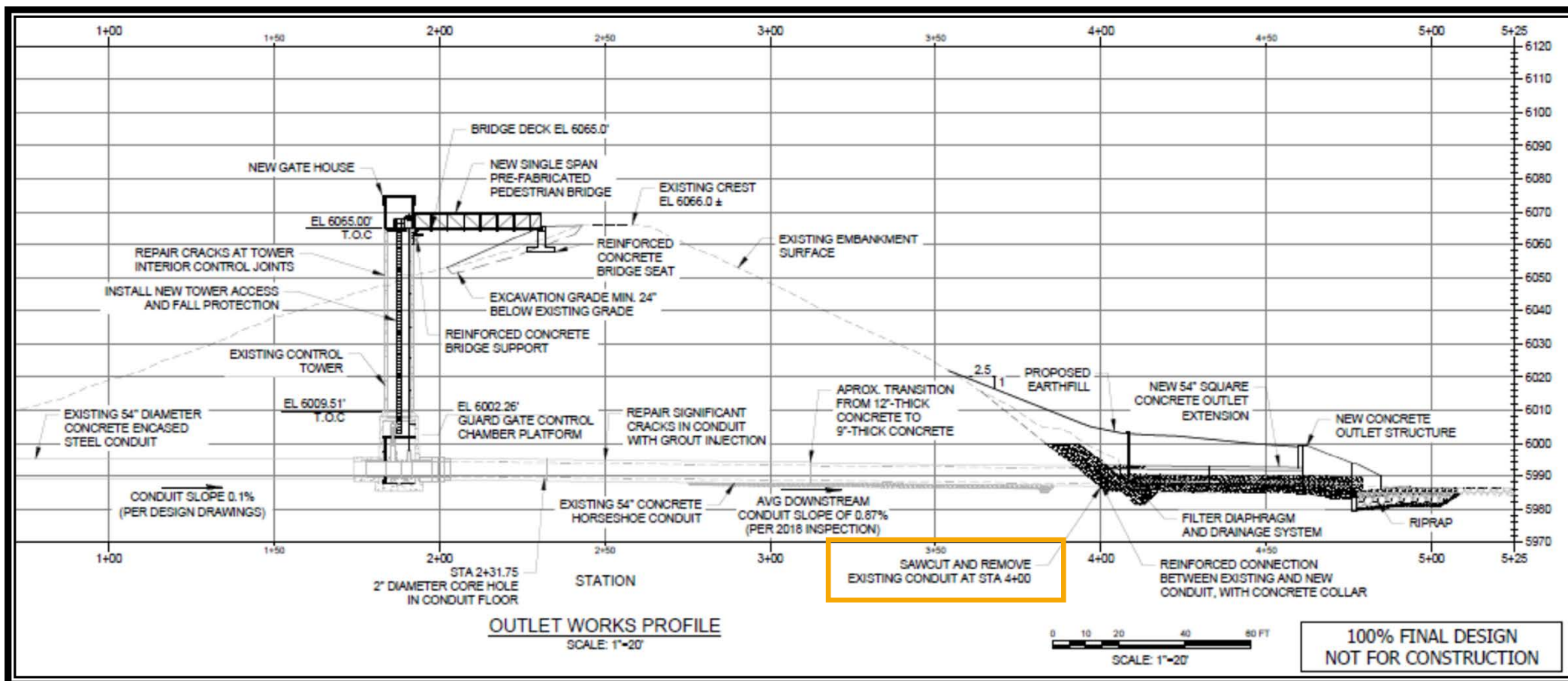
Photos: DNRC

Construction - Bridge

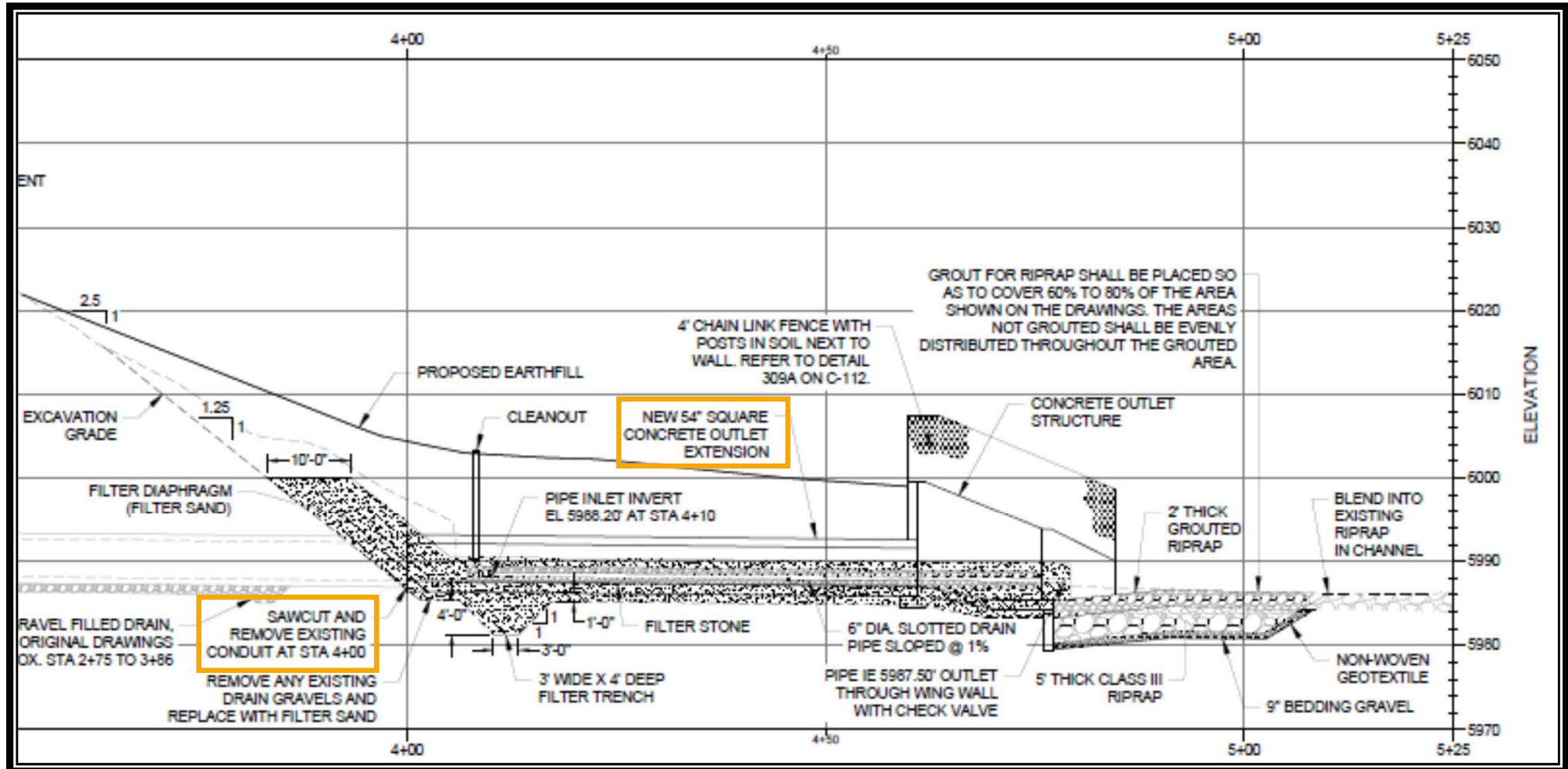


Photos: DNRC

Design – Outlet Conduit Extension



Design – Outlet Conduit Extension



Construction – Outlet Conduit Extension



Photos: DNRC

Construction – Outlet Conduit Extension



Photos: DNRC

Construction – Outlet Conduit Extension



Photos: DNRC

Construction – Outlet Conduit Extension



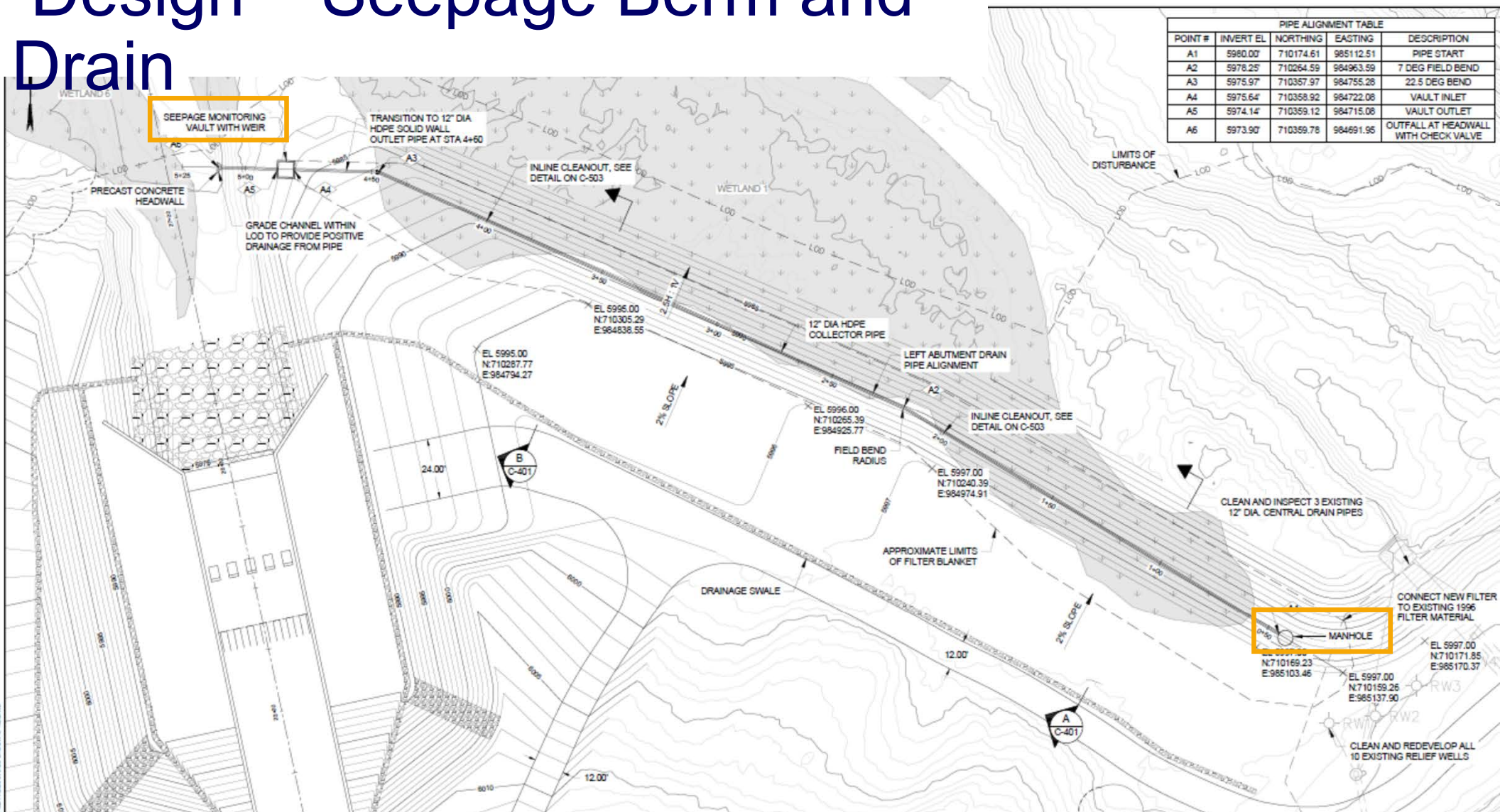
Photos: DNRC

Construction – Outlet Conduit Extension

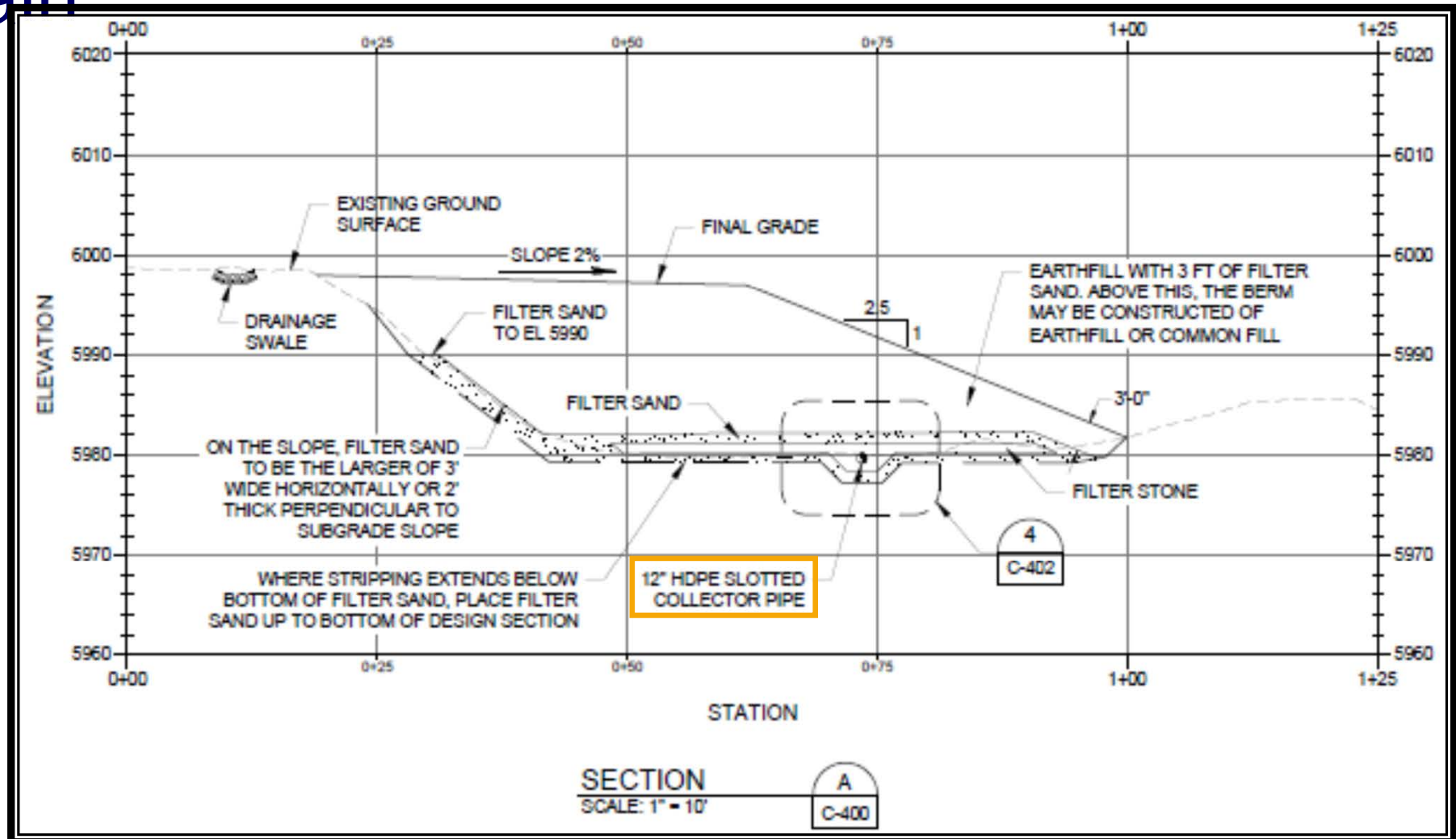


Photo: DNRC

Design – Seepage Berm and Drain



Design – Seepage Berm and Drain



Construction – Seepage Berm and Drain



Photo: DNRC

Construction – Seepage Berm and Drain



Photos: DNRC

Construction – Seepage Berm and Drain



Photo: DNRC

Construction – Seepage Berm and Drain



Photos: DNRC

Construction – Seepage Berm and Drain



Photos: DNRC

Construction - Gatehouse



Photos: DNRC

Construction – Spillway Demolition



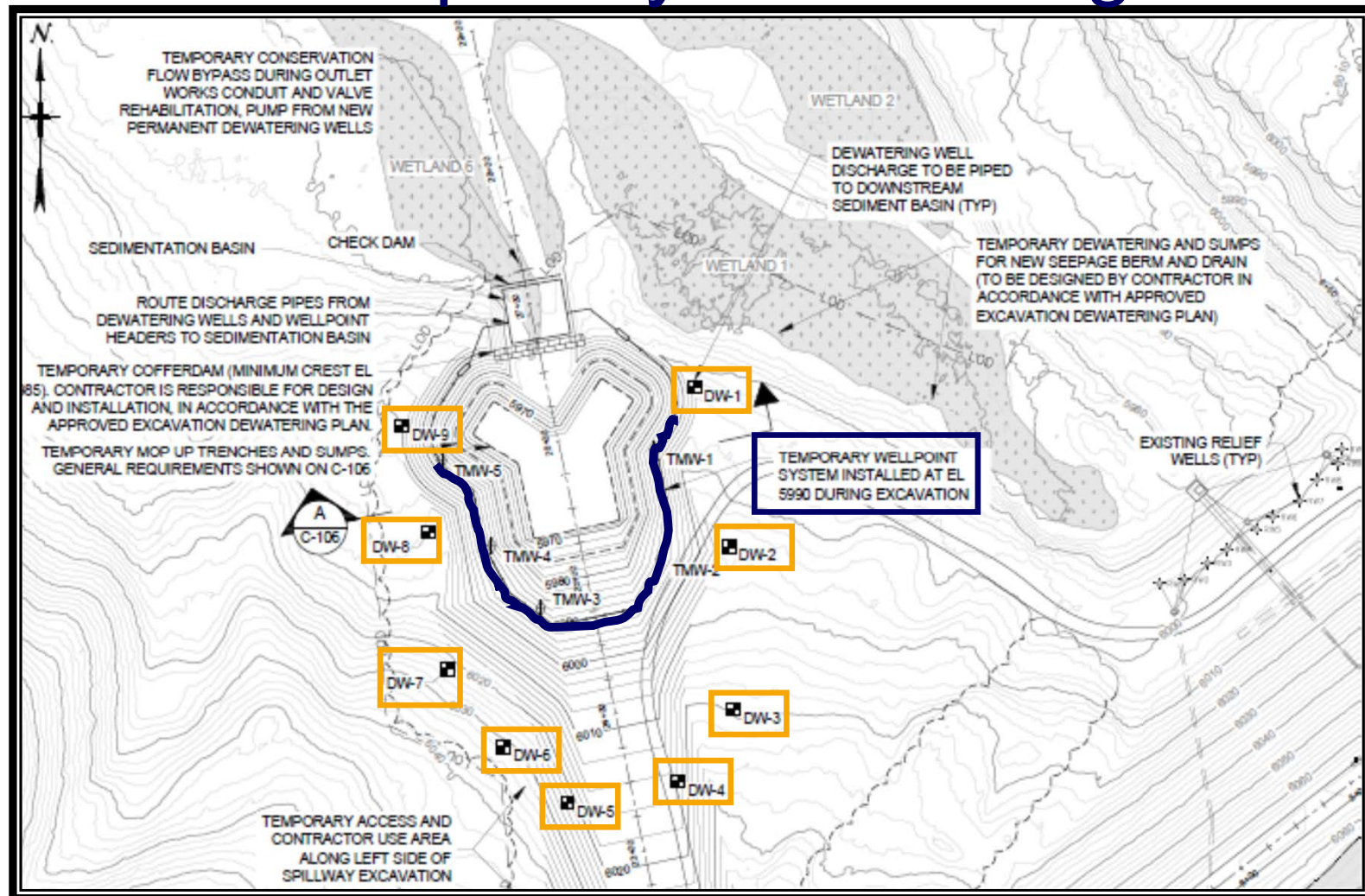
Photo: DNRC

Construction – Spillway Dewatering

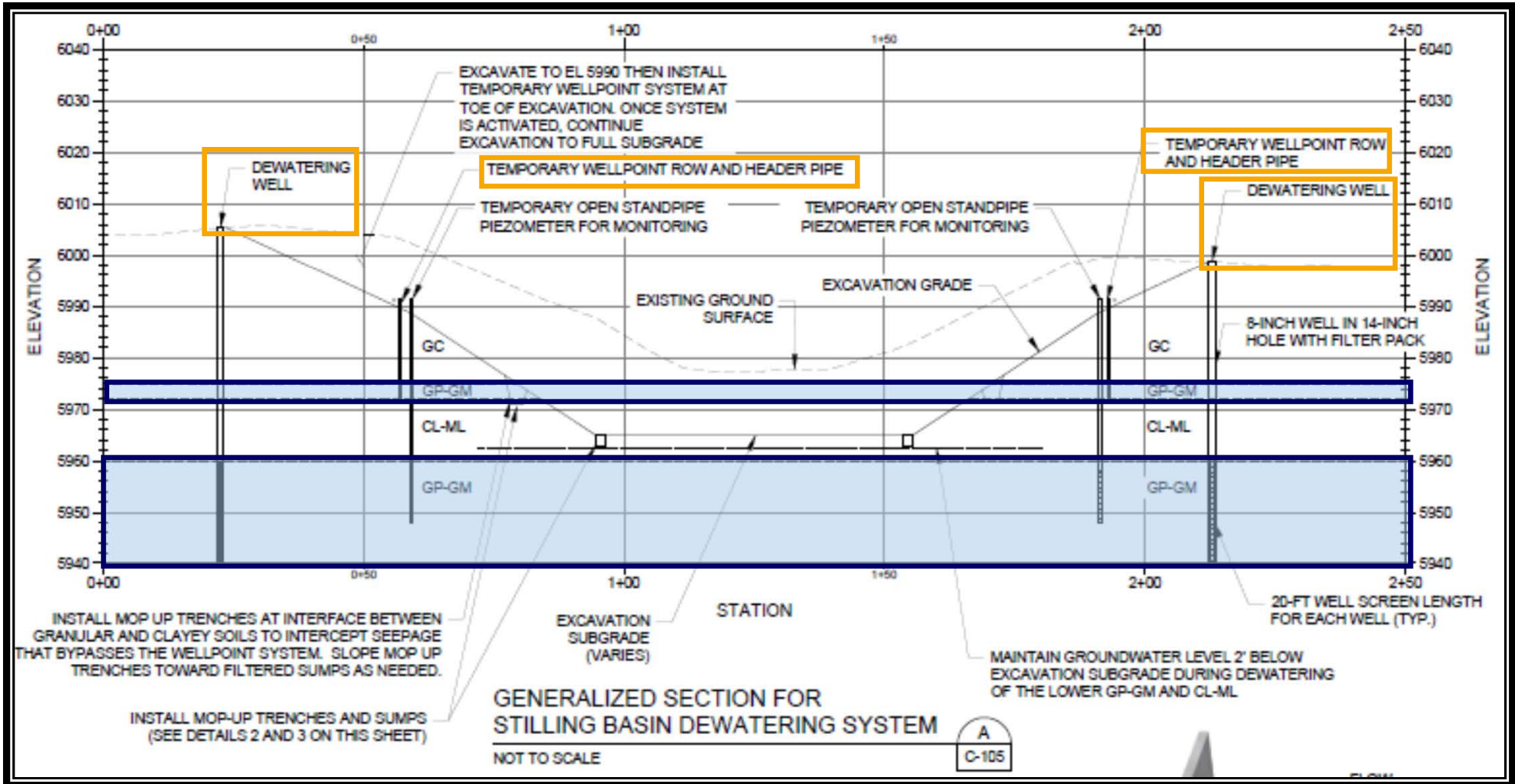


Photo: DNRC

Construction – Spillway Dewatering



Construction – Spillway Dewatering



Construction – Spillway Dewatering



Photo: DNRC

Construction – Spillway Dewatering



Photo: DNRC

Construction – Spillway Dewatering



Photos: DNRC

Construction – Spillway Dewatering



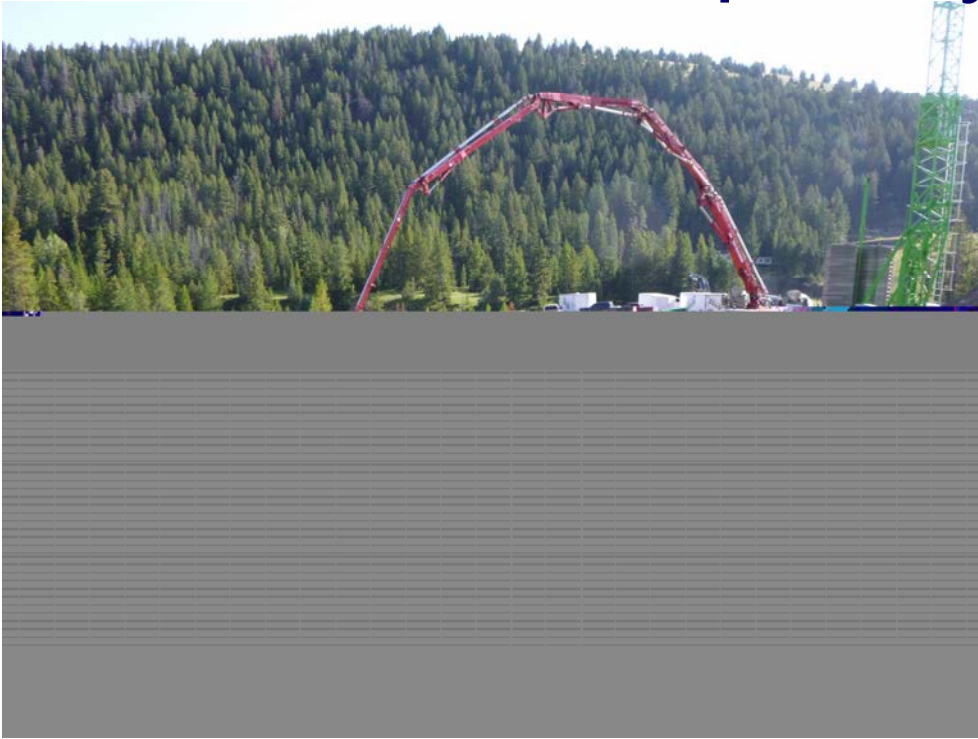
Photos: DNRC

Construction – Spillway Chute



Photos: DNRC

Construction – Spillway Chute



Photos: DNRC

Construction – Spillway Chute



Photos: DNRC

Construction – Spillway Chute



Construction equipment and materials
Photo: DNRC

Construction – Spillway Chute



Winter Shutdown, 12/10/2025
Photos: DNRC

Construction – Spillway Chute



Spring Startup, 4/9/26
Photos: DNRC

Construction – Spillway Chute



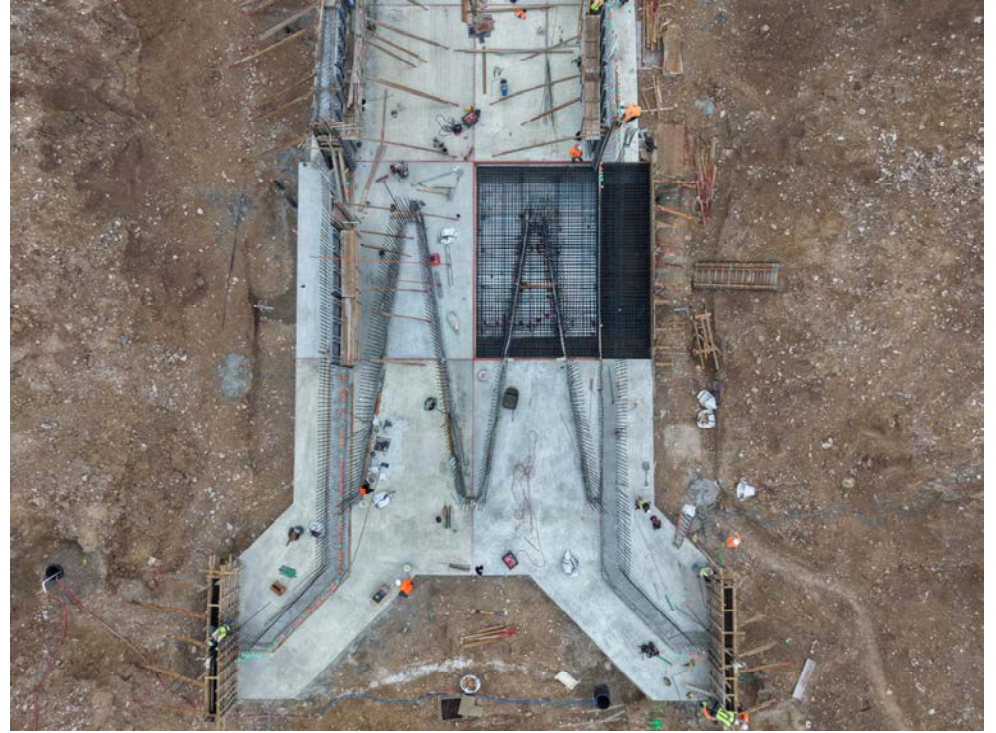
Foundation Preparation
Photos: DNRC

Construction – Spillway Chute



Construction Sequence
Photos: DNRC

Construction – Spillway Labyrinth Weir



Photos: Schnabel (Sima)

Before and After, Spillway Weir



Photos: DNRC (left), Schnabel (right, Sima)

Before and After, Outlet Conduit



Photos: DNRC

Before and After, Outlet Conduit



Photos: DNRC

Spillway Chute – Before and After



Photos: DNRC

Spillway Stilling Basin – Before and After



Photos: DNRC

Construction – Before and After



Photos: DNRC (left), Schnabel (right, Sima)

Stats and Keys to Success

~4,500 yards spillway concrete

~44,000 yards spillway excavation

Change Orders: 23+, \$600 - \$440,000

- Total changes ~\$1M

Total Construction Cost: ~\$21.4M

Timeline – 9 years (2.5 construction)

DNRC Staff: 2+ division administrators,
4 SWP chiefs, 3 rehab section
supervisors, 3 project managers



Attention to detail.

Experience and expertise are critical.

Personnel continuity throughout project.

Project timelines are longer than many employees' tenures.

Agencies/firms need robust organization to retain experience/expertise.

Owner, Engineer, and Contractor were dedicated to the project.

"What is best for the project?"

Credits

Engineering Firms

Schnabel Engineering (Prime)
DOWL (feasibility study, bridge design, survey)
MSI Engineers (electrical)
Morrison-Maierle
(environmental consultation and permitting)

Flint Creek Water Users Association

Katie McDonald, President

USFS Pintler Ranger District

Cameron Rasor, District Ranger



Contractors

Missouri River Contractors, Helena (Prime)
Steed Industries, LLC (concrete sub)
AFFCO (valve sub)
Pavlik Electric Co., Inc. (electrical sub)
Vector Construction Group
(concrete repair sub)
Pioneer Technical Services
(materials testing sub)
Brown and Associates, Inc. (survey QC)
O'Keefe (drilling sub)
KLM Contracting (logging sub)
FenceCrafters (fence and gates)
A-Core (concrete conduit sawcutting)
Rain for Rent (wellpoint system)
Western Water Wells (dewatering wells)

This project is based on work supported by the Department of Natural Resources and Conservation under Agreement No. (RIT-24-8914) (CARDD RDGP Grant).

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