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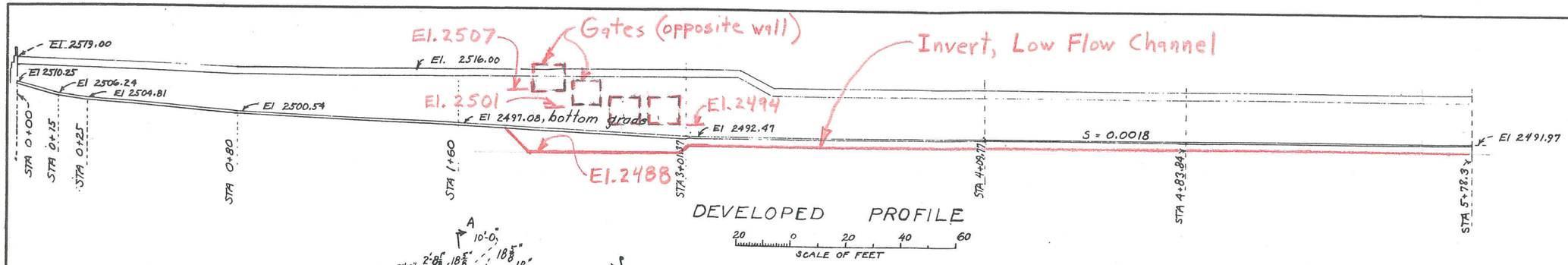
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA PROJECT – WASHINGTON

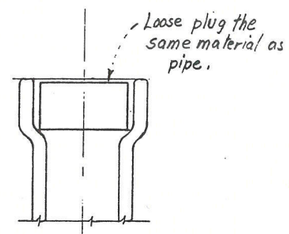
KEECHELUS DAM
DOWNSTREAM PASSAGE

MODIFY SPILLWAY WITH MULTIPLE LEVEL GATES

CADD SYSTEM AutoCAD Rel. 15.06	CADD FILENAME DRAWING6.DWG	DATE AND TIME PLOTTED FEBRUARY 19, 2003 10:36
BOISE, IDAHO	NOVEMBER 2002	DRAWING 6

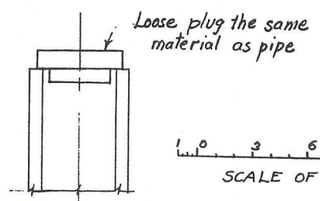
DRAWING 7





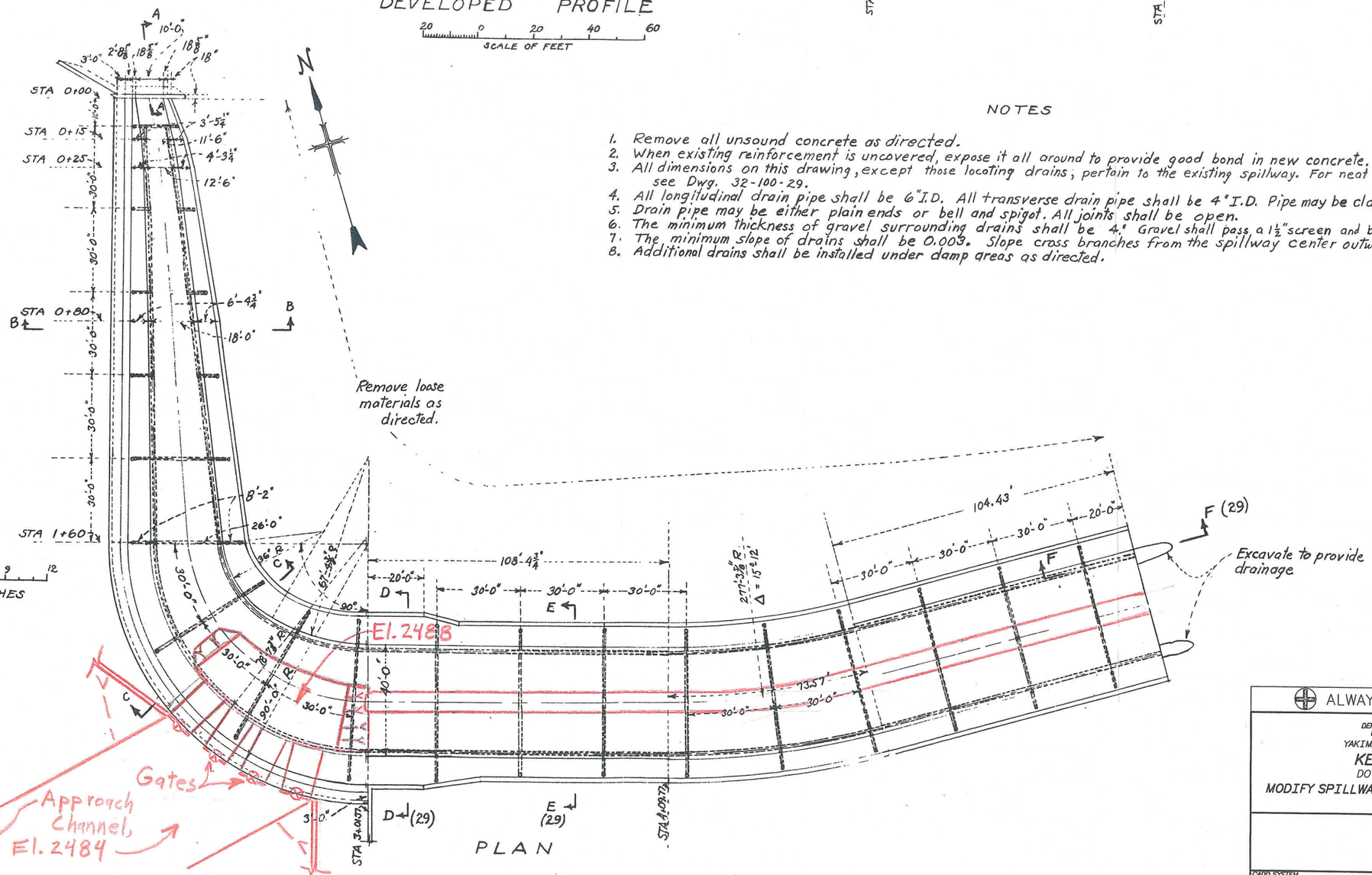
DETAIL OF PLUG
FOR BELL END PIPE

All ends of branch drains shall be plugged. Approx. 37 required.



DETAIL OF PLUG
FOR PLAIN END PIPE

SCALE OF INCHES



NOTES

1. Remove all unsound concrete as directed.
2. When existing reinforcement is uncovered, expose it all around to provide good bond in new concrete.
3. All dimensions on this drawing, except those locating drains, pertain to the existing spillway. For neat lines of new concrete, see Dwg. 32-100-29.
4. All longitudinal drain pipe shall be 6" I.D. All transverse drain pipe shall be 4" I.D. Pipe may be clay tile or concrete.
5. Drain pipe may be either plain ends or bell and spigot. All joints shall be open.
6. The minimum thickness of gravel surrounding drains shall be 4". Gravel shall pass a 1½" screen and be retained on a ½" screen.
7. The minimum slope of drains shall be 0.003. Slope cross branches from the spillway center outward to the main drains.
8. Additional drains shall be installed under damp areas as directed.

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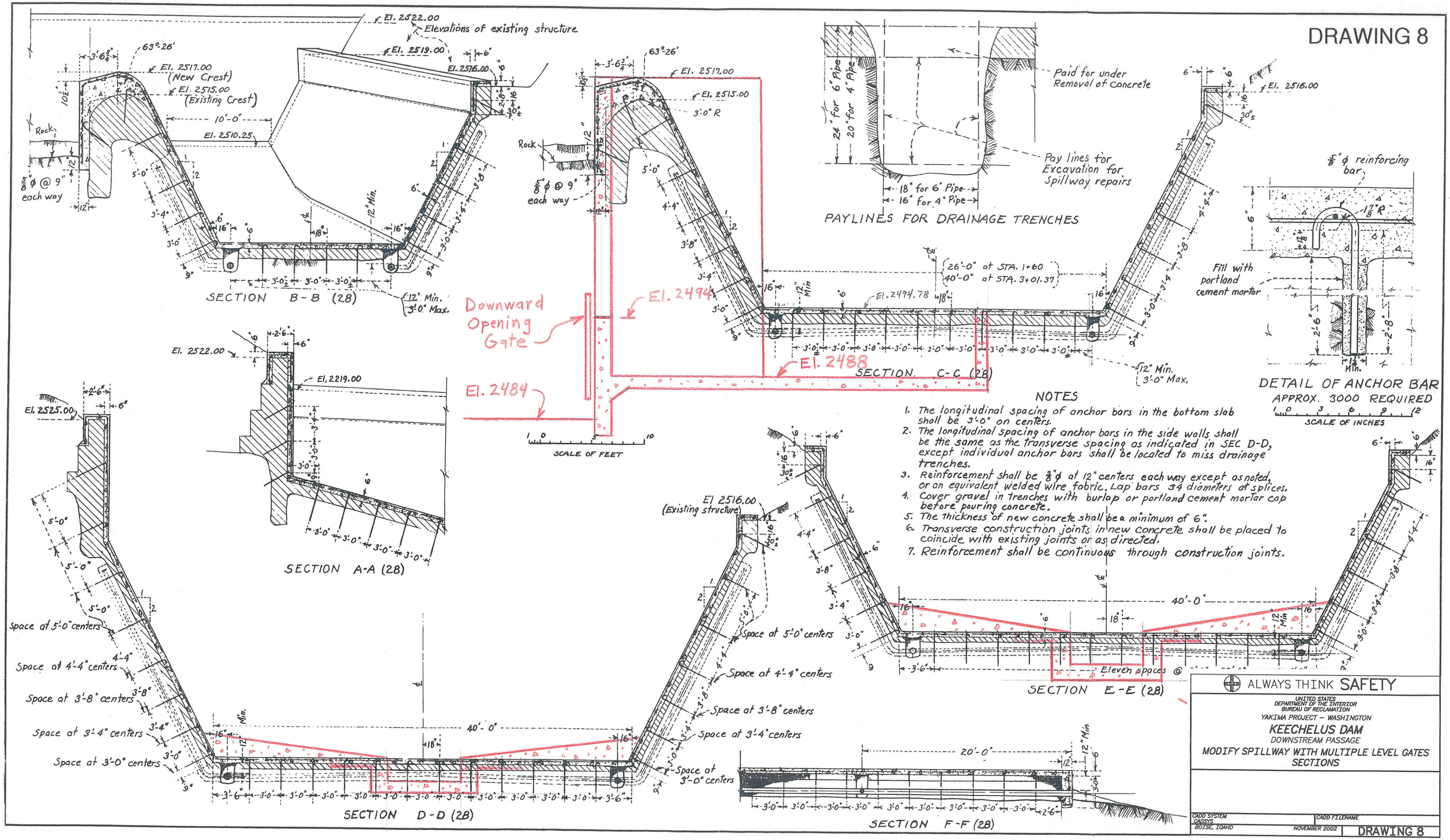
KEECHELUS DAM
DOWNSTREAM PASSAGE
MODIFY SPILLWAY WITH MULTIPLE LEVEL GATES
DETAIL

CADD SYSTEM	CADD FILENAME	
CADSYS BOISE, IDAHO	NOVEMBER 2002	DRAWING 7

DRAWING 8



NOTES

1. The longitudinal spacing of anchor bars in the bottom slab shall be 3'-0" on centers.
2. The longitudinal spacing of anchor bars in the side walls shall be the same as the transverse spacing as indicated in SEC D-D, except individual anchor bars shall be located to miss drainage trenches.
3. Reinforcement shall be 3/8" ϕ at 12" centers each way except as noted, or an equivalent welded wire fabric. Lap bars 34 diameters at splices.
4. Cover gravel in trenches with burlap or portland cement mortar cap before pouring concrete.
5. The thickness of new concrete shall be a minimum of 6".
6. Transverse construction joints in new concrete shall be placed to coincide with existing joints or as directed.
7. Reinforcement shall be continuous through construction joints.

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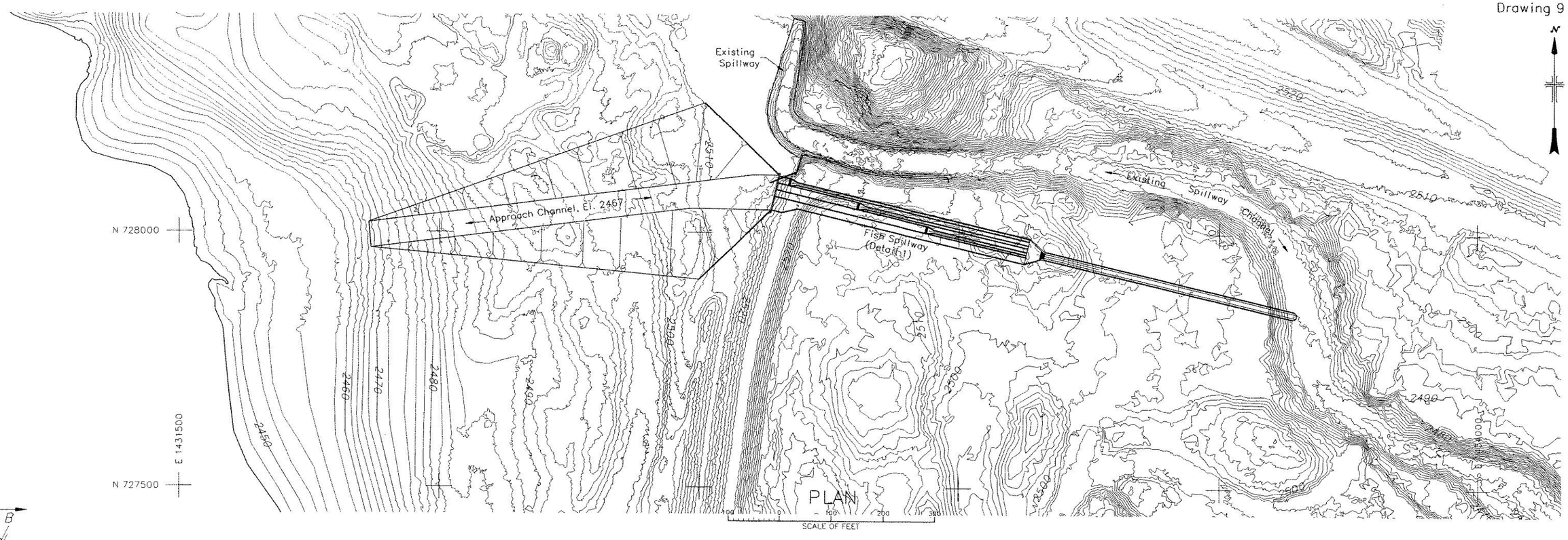
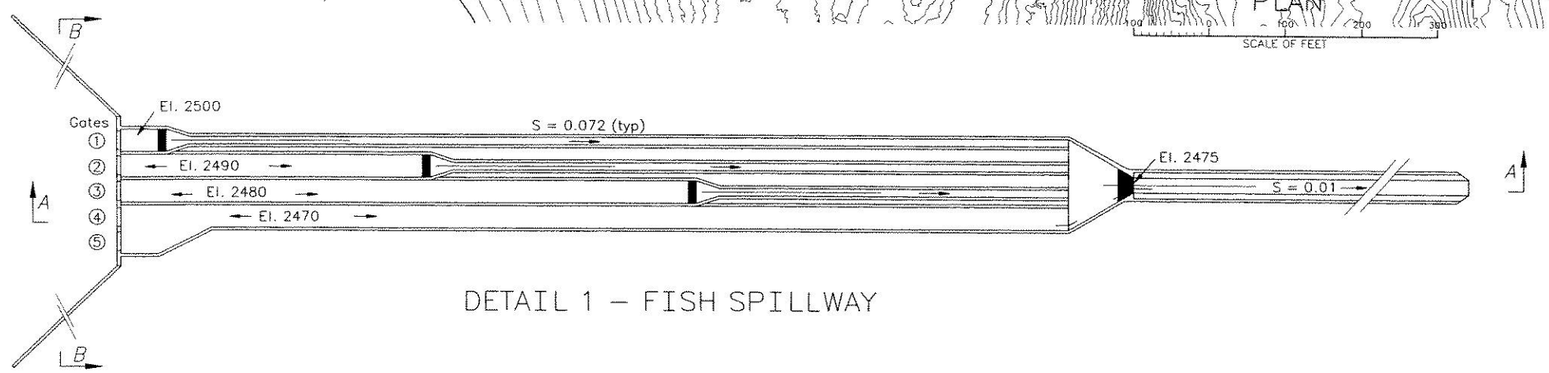
YAKIMA PROJECT – WASHINGTON

KEECHELUS DAM
DOWNSTREAM PASSAGE
MODIFY SPILLWAY WITH MULTIPLE LEVEL GATES
SECTIONS

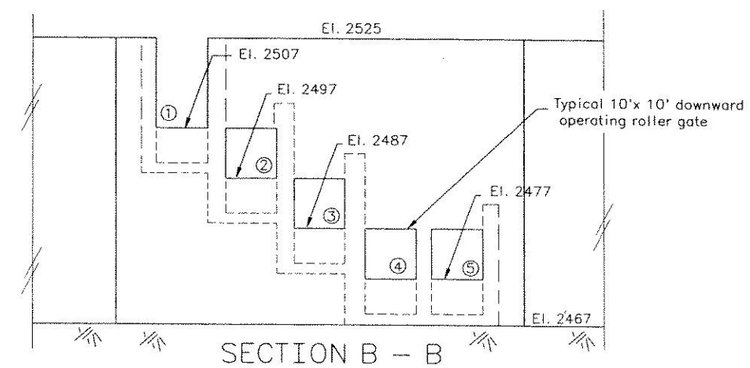
CADD SYSTEM CADDS BOISE, IDAHO	CADD FILENAME NOVEMBER 2002	DRAWING 8

Drawing 9

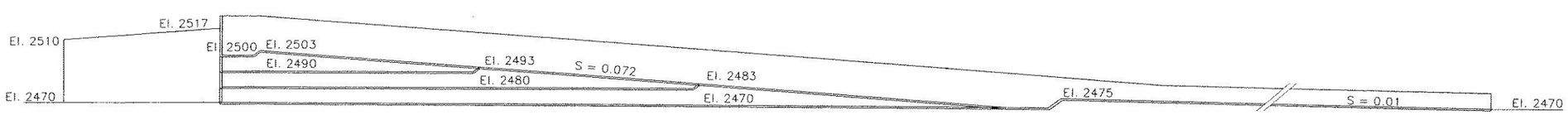




DETAIL 1 – FISH SPILLWAY



SECTION B – B



SECTION A – A

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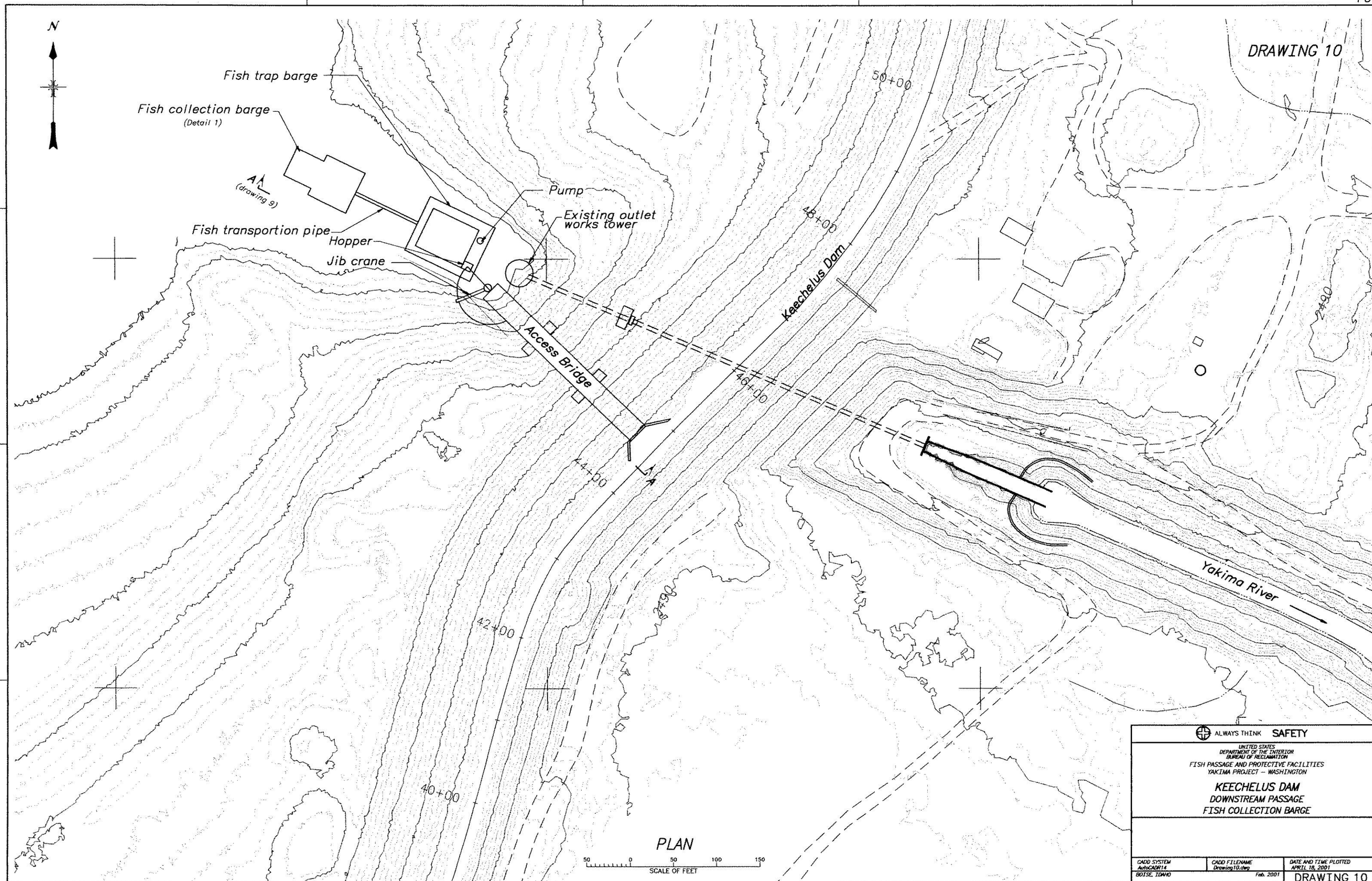
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA PROJECT – WASHINGTON

KEECHELUS DAM
DOWNSTREAM PASSAGE
NEW SPILLWAY

DESIGNED _____ CHECKED _____
DRAWN _____ TECH. APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM AutoCAD Rel. 15.06 BOISE, IDAHO
CADD FILENAME --DWG-9.DWG
Nov 2002
DRAWING 9



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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

FISH PASSAGE AND PROTECTIVE FACILITIES
YAKIMA PROJECT -- WASHINGTON

KEECHELUS DAM
DOWNSTREAM PASSAGE
FISH COLLECTION BARGE

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCADR14	Drawing10.dwg	APRIL 18, 2001
BOISE, IDAHO	Feb. 2001	DRAWING 10