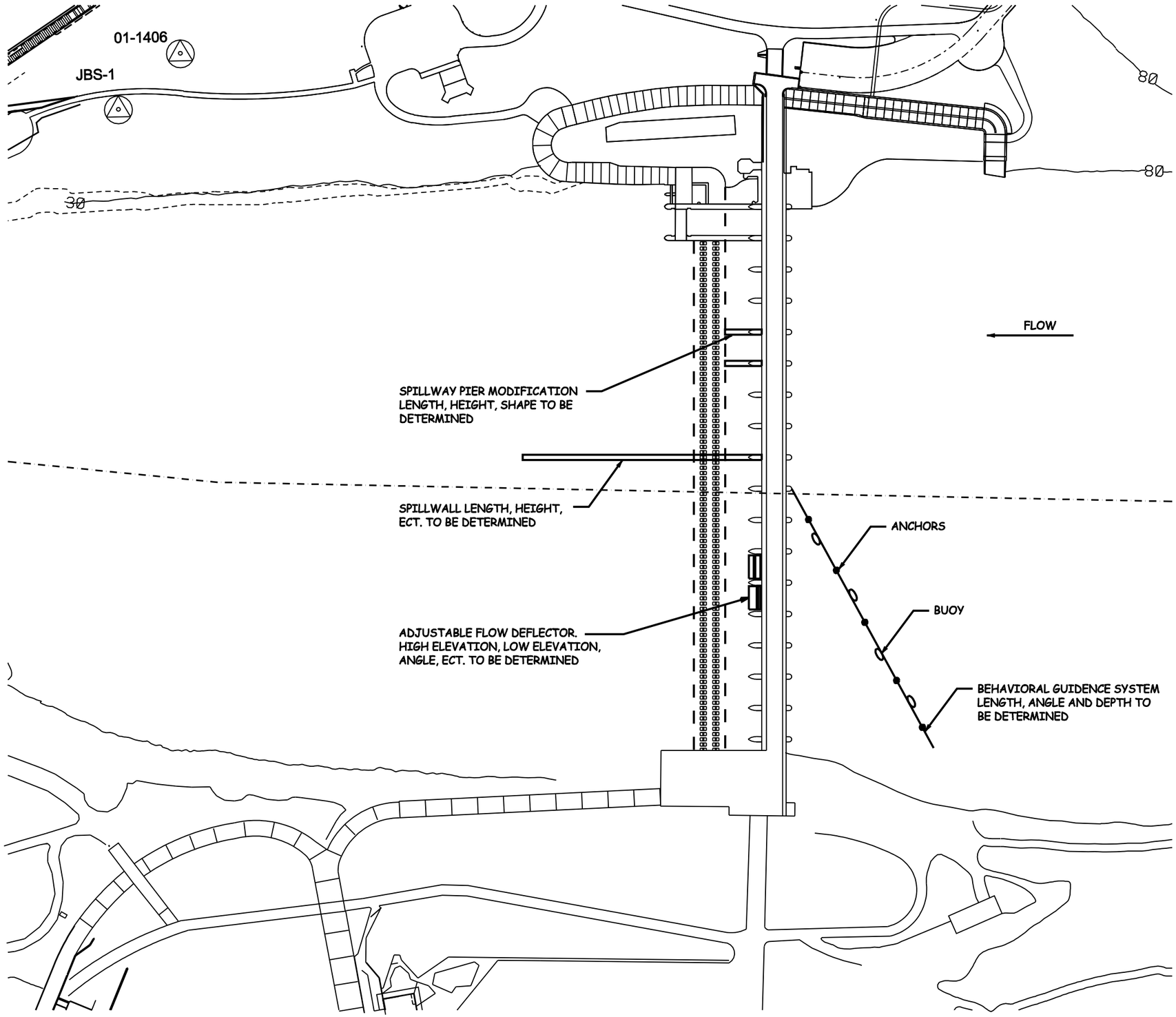


US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: $$SCALE$$ | PLOT DATE: $$DATE$$ | DRAWING NUMBER:
SIZE: | FILE NAME: $$FILEN$$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

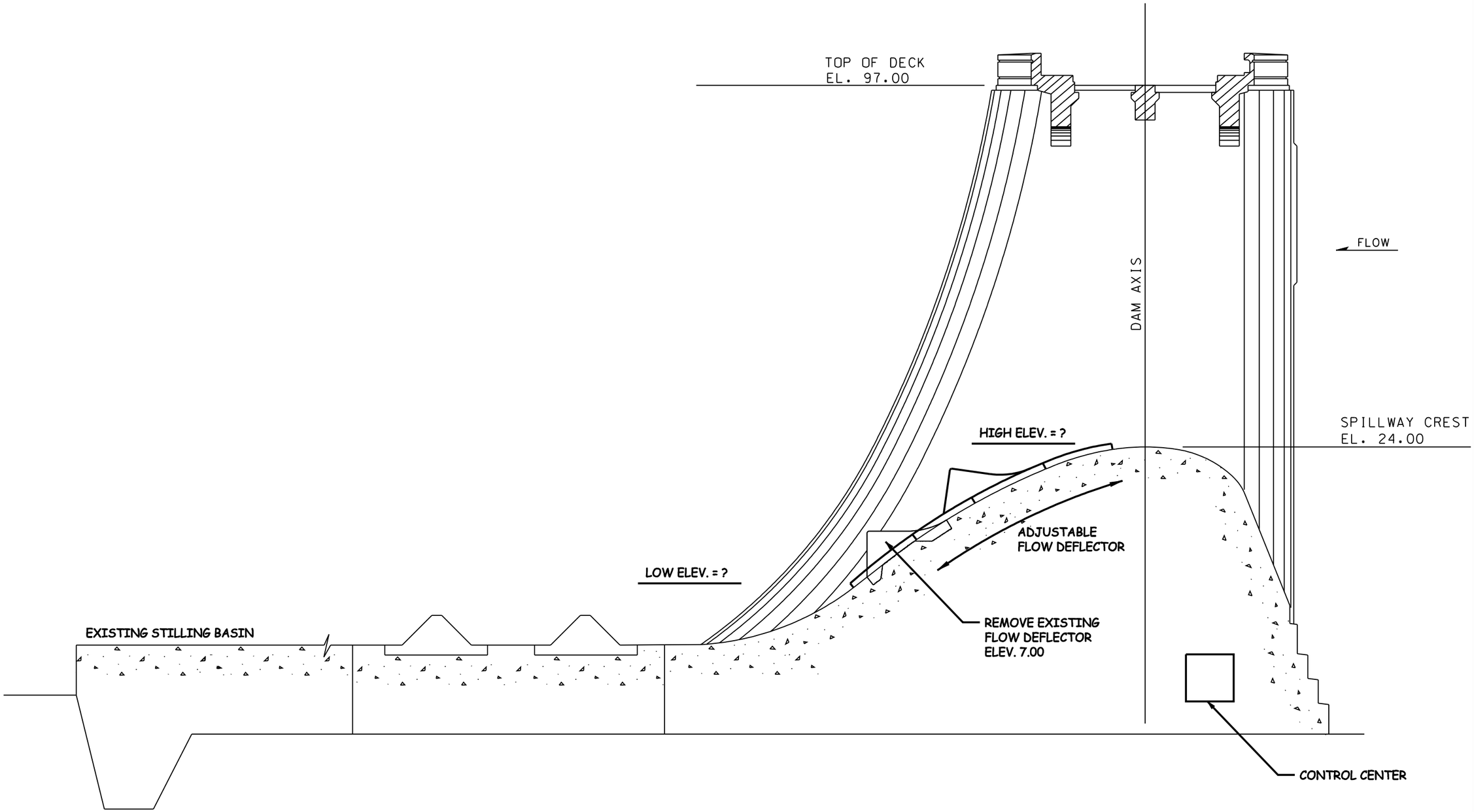
VARIOUS ALTERNATIVES

SHEET IDENTIFICATION

SHEET OF

11/7/2008 | lmerhaut | SHEET NAME:

BD-KP1.DGN



CONCEPTUAL ELEV VIEW OF FLOW DEFLECTOR

SCALE: 1" = 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: | DRAWING NUMBER:
SIZE: | FILENAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

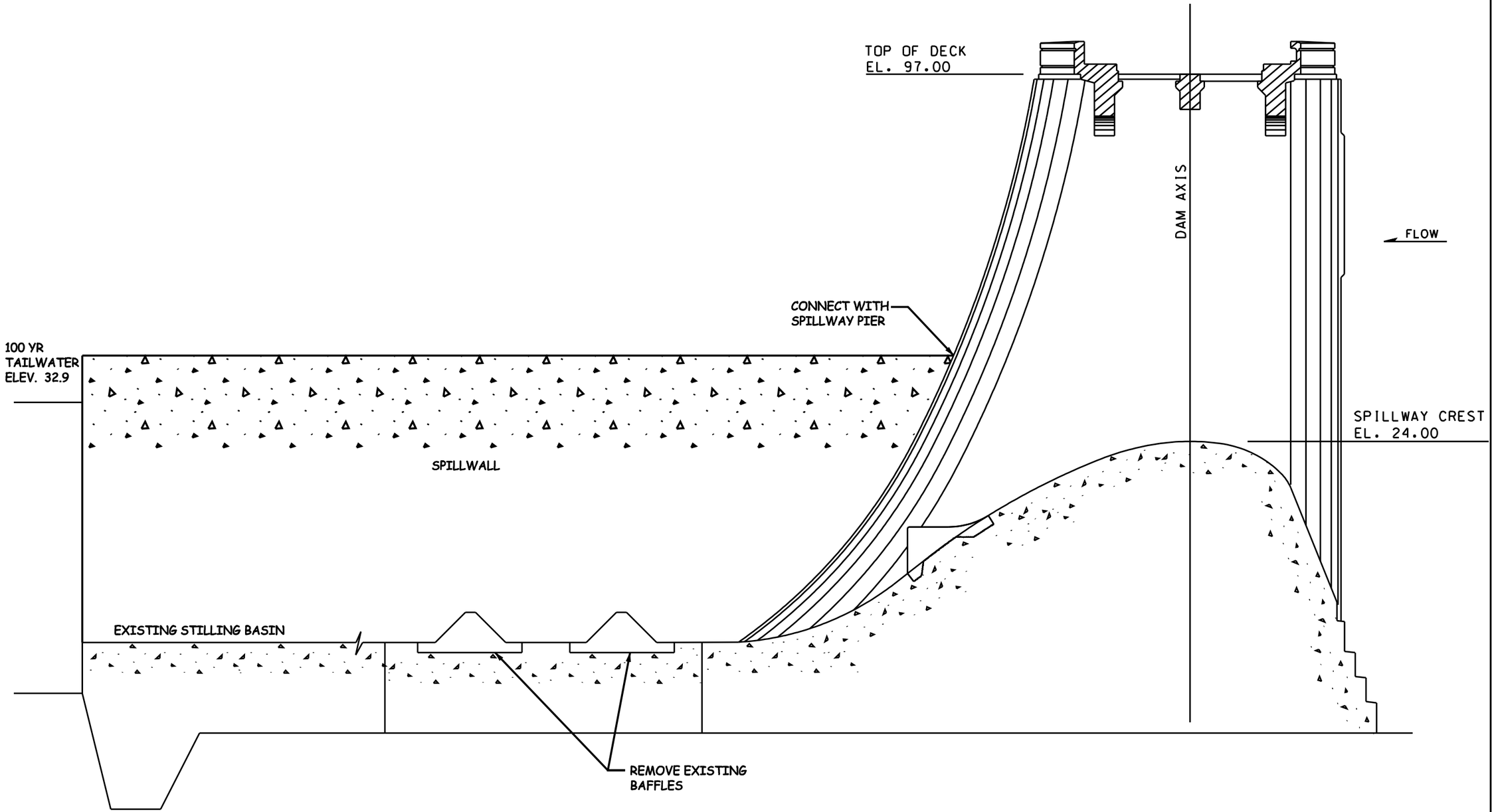
BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

SHEET IDENTIFICATION

SHEET OF

BD-E1.DGN

11/7/2008 | lmerhout | SHEET NAME:



CONCEPTUAL ELEV VIEW OF SPILLWALL

SCALE: 1"= 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DATE:
DESIGNED BY:
DWN BY:
CKD BY:
SUBMITTED BY:
PLOT SCALE:
PLOT DATE:
DRAWING NUMBER:
SIZE:
FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

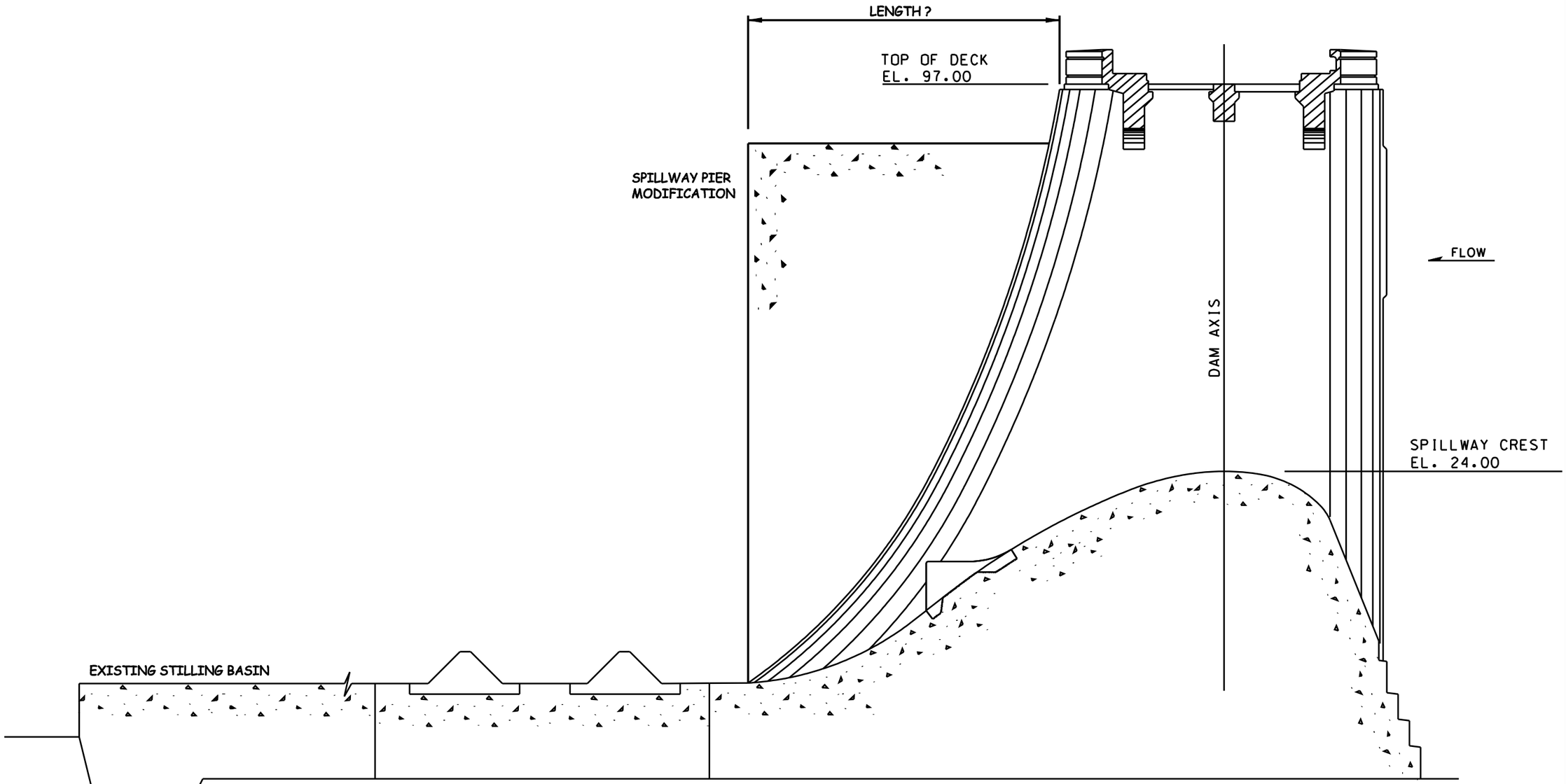
CONCEPTUAL
ELEVATION VIEW OF
SPILLWALL

SHEET IDENTIFICATION

SHEET OF

80-E2.DGN

11/7/2008 Imerhaut SHEET NAME:



CONCEPTUAL ELEV VIEW OF SPILLWAY PIER MODIFICATION

SCALE: 1" = 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY:
DWN BY:
CKD BY:
SUBMITTED BY:
PLOT SCALE: $$$$
PLOT DATE: $$$$DATE$$$$
DRAWING NUMBER:
SIZE:
FILENAME: $FILEN$
DATE:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

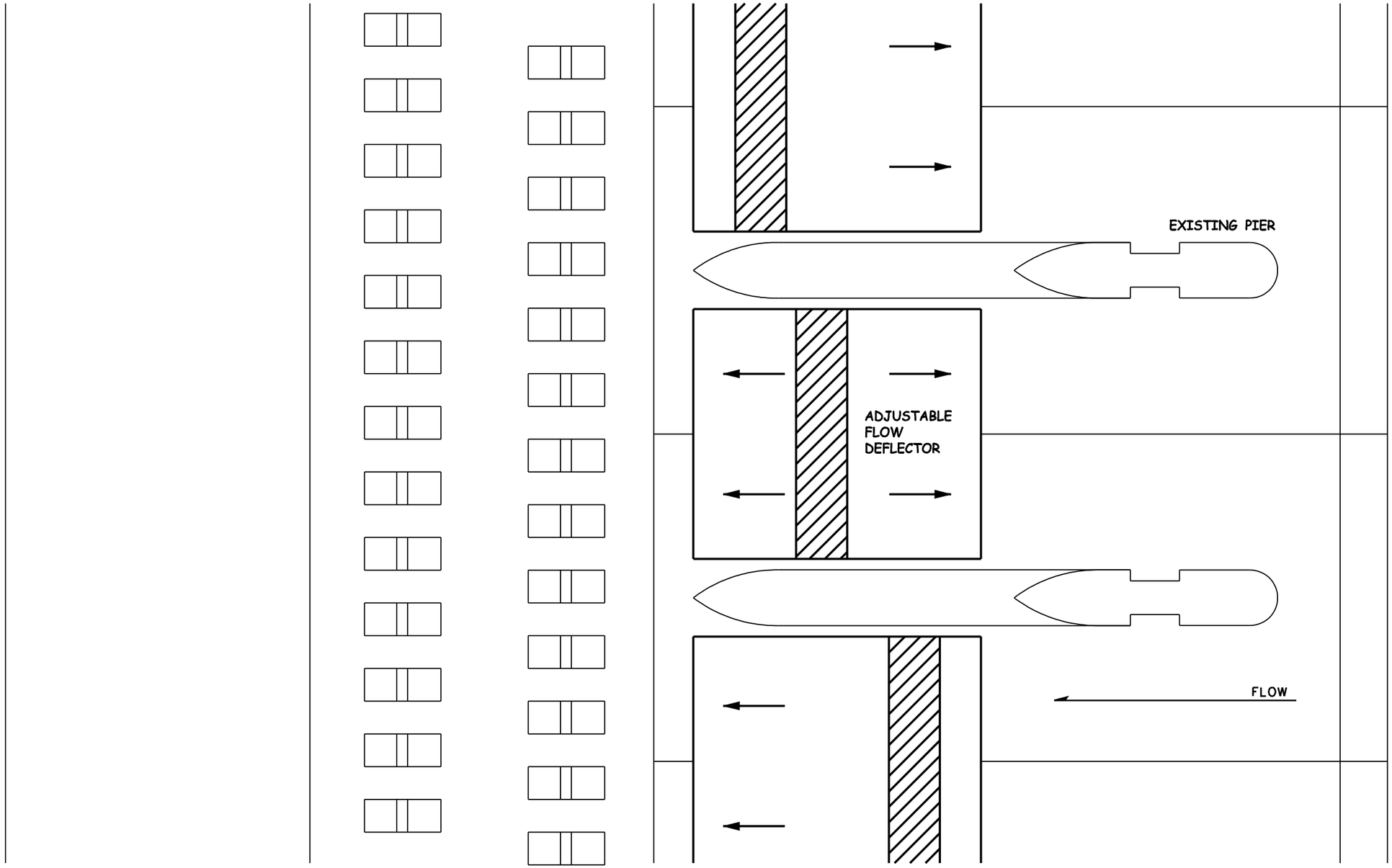
CONCEPTUAL ELEVATION VIEW
OF SPILLWAY PIER
MODIFICATION

SHEET IDENTIFICATION

SHEET OF

BD-E3.DGN

11/7/2008 lmerhout SHEET NAME:



CONCEPTUAL PLAN VIEW OF ADJUSTABLE FLOW DEFLECTORS

SCALE: 1" = 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: DATE:
DWN BY: CKD BY:
SUBMITTED BY:
PLOT SCALE: PLOT DATE: DRAWING NUMBER:
SIZE: FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

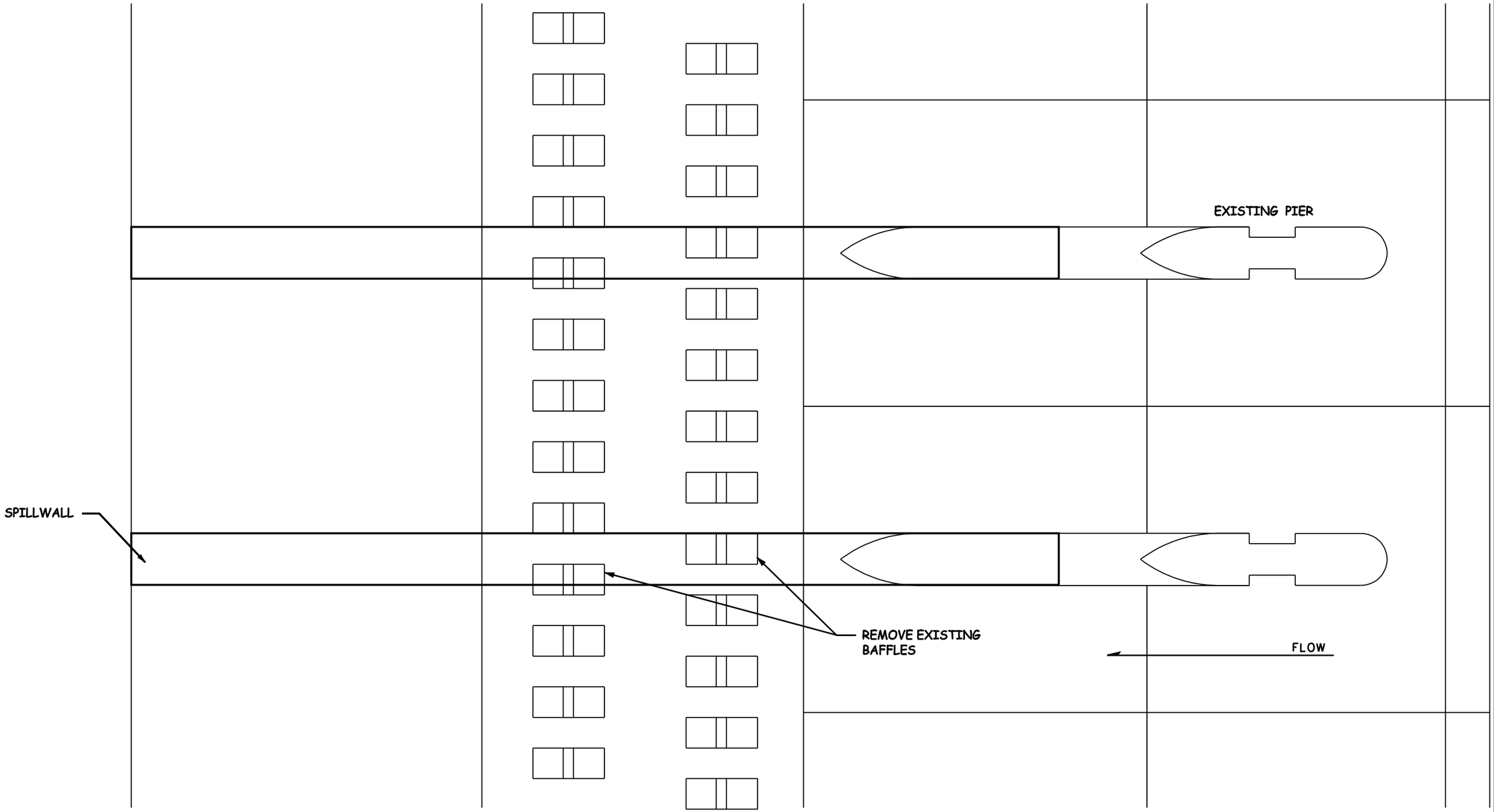
CONCEPTUAL PLAN VIEW
OF ADJUSTABLE
FLOW DETECTORS

SHEET IDENTIFICATION

SHEET OF

BD-P1.DGN

11/7/2008 Imerhout SHEET NAME:



PLAN VIEW OF SPILLWALL

SCALE: 1" = 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY:
DWN BY:
CKD BY:
SUBMITTED BY:
PLOT SCALE: $$SCALE$$
PLOT DATE: $$DATE$$
SIZE:
FILENAME: $$FILEN$$
DATE:
DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

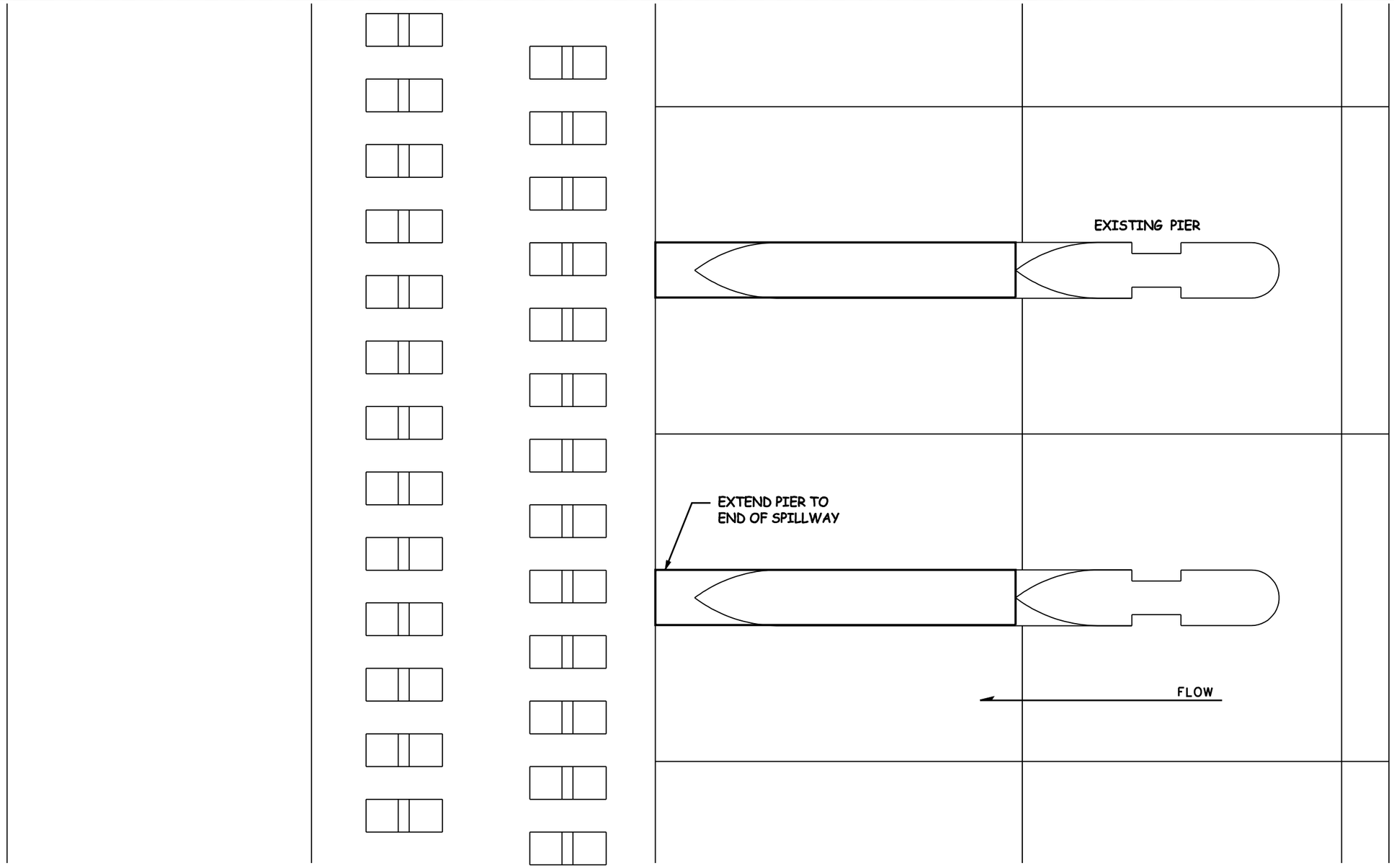
PLAN VIEW OF SPILLWALL

SHEET IDENTIFICATION

SHEET OF

BD-P2.DGN

11/7/2008 lmerhout SHEET NAME:



CONCEPTUAL PLAN VIEW OF SPILLWAY PIER MODIFICATION

SCALE: 1" = 20'

20' 0 20'

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: $$SCALE$$ | PLOT DATE: $$DATE$$ | DRAWING NUMBER:
SIZE: | FILENAME: $$FILEN$$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

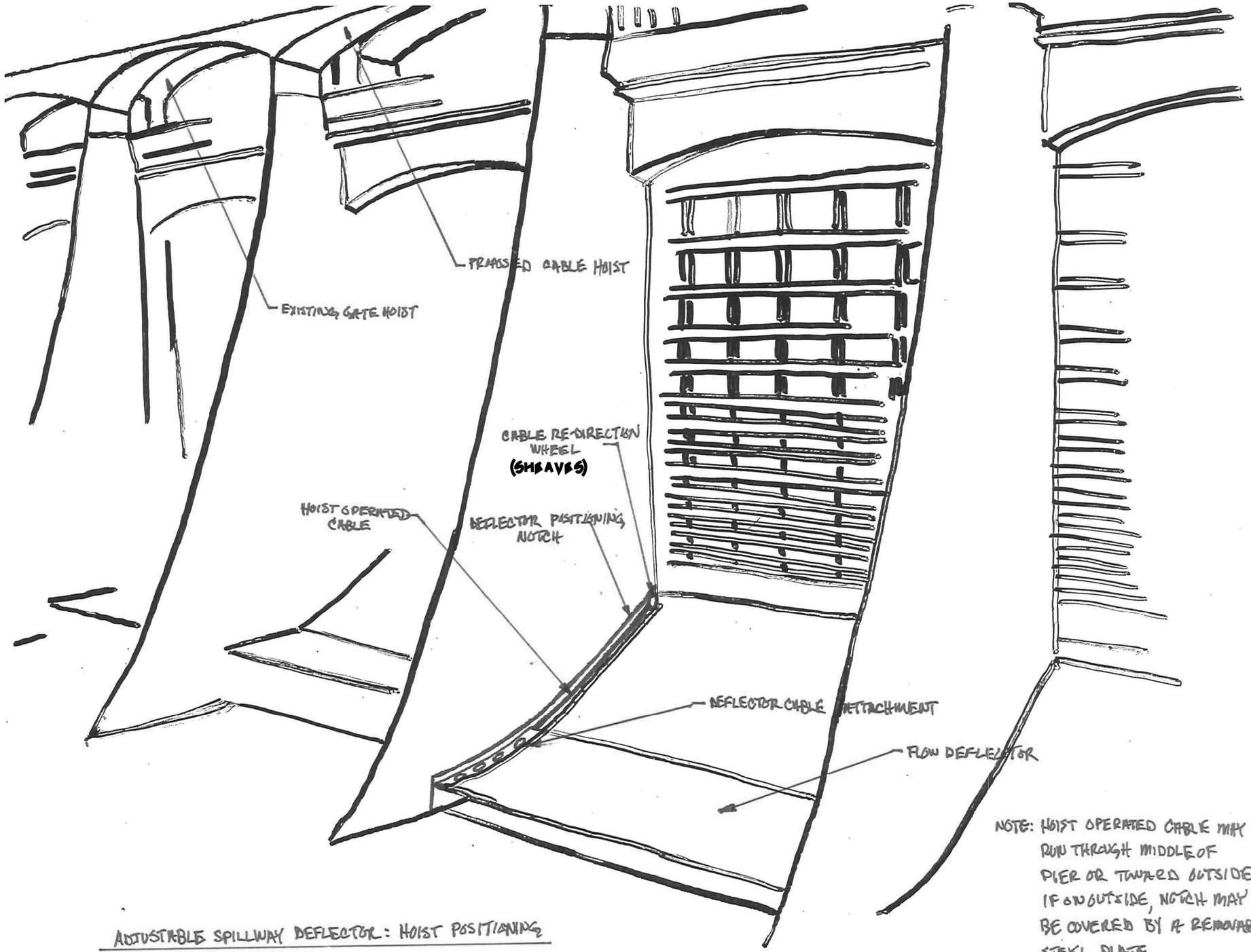
CONCEPTUAL PLAN VIEW OF
SPILLWAY PIER MODIFICATION

SHEET IDENTIFICATION

SHEET OF

BD-P3.DGN

11/7/2008 | lmerhout | SHEET NAME:



NOTE: HOIST OPERATED CABLE MAY RUN THROUGH MIDDLE OF PIER OR TOWARD OUTSIDE. IF ON OUTSIDE, NOTCH MAY BE COVERED BY A REMOVABLE STEEL PLATE

ADJUSTABLE SPILLWAY DEFLECTOR: HOIST POSITIONING

Figure 1 10-31-08

US Army Corps of Engineers® Portland District

NOTES:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

DESIGNED BY: DATE:
DWN BY: CKD BY:
SUBMITTED BY:
PLOT SCALE: PLOT DATE: DRAWING NUMBER:
SIZE: FILE NAME: SPILENB

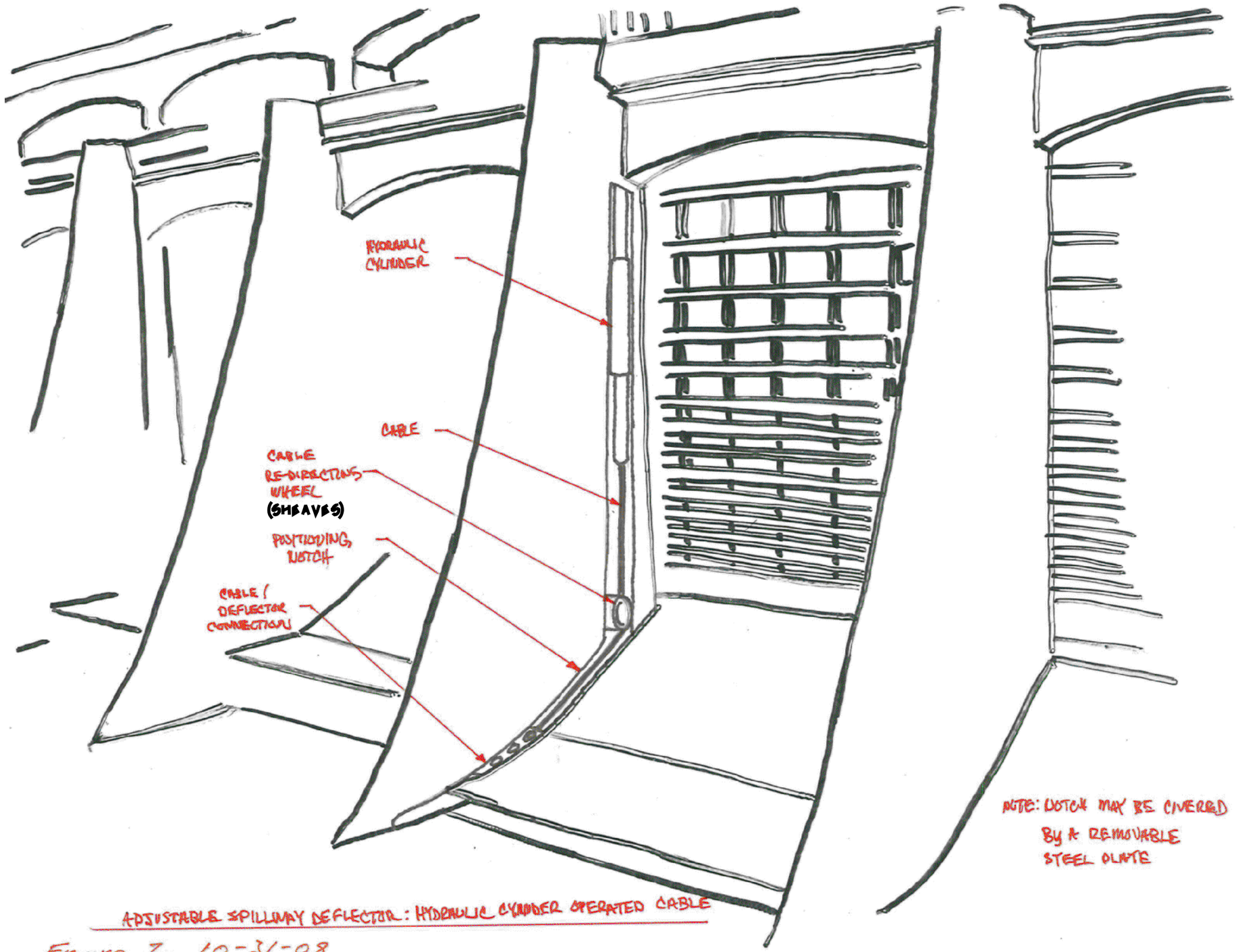
BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

ADJUSTABLE SPILLWAY DEFLECTOR: HOIST POSITIONING

SHEET IDENTIFICATION

SHEET OF

11/7/2008 Imerhaut SHEET NAME:



ADJUSTABLE SPILLWAY DEFLECTOR: HYDRAULIC CYLINDER OPERATED CABLE

Figure 2 10-31-08

US Army Corps of Engineers® Portland District

NOTES:

DESIGNED BY: DATE:
DWN BY: CKD BY:
SUBMITTED BY:
PLOT SCALE: PLOT DATE: DRAWING NUMBER:
SIZE: FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

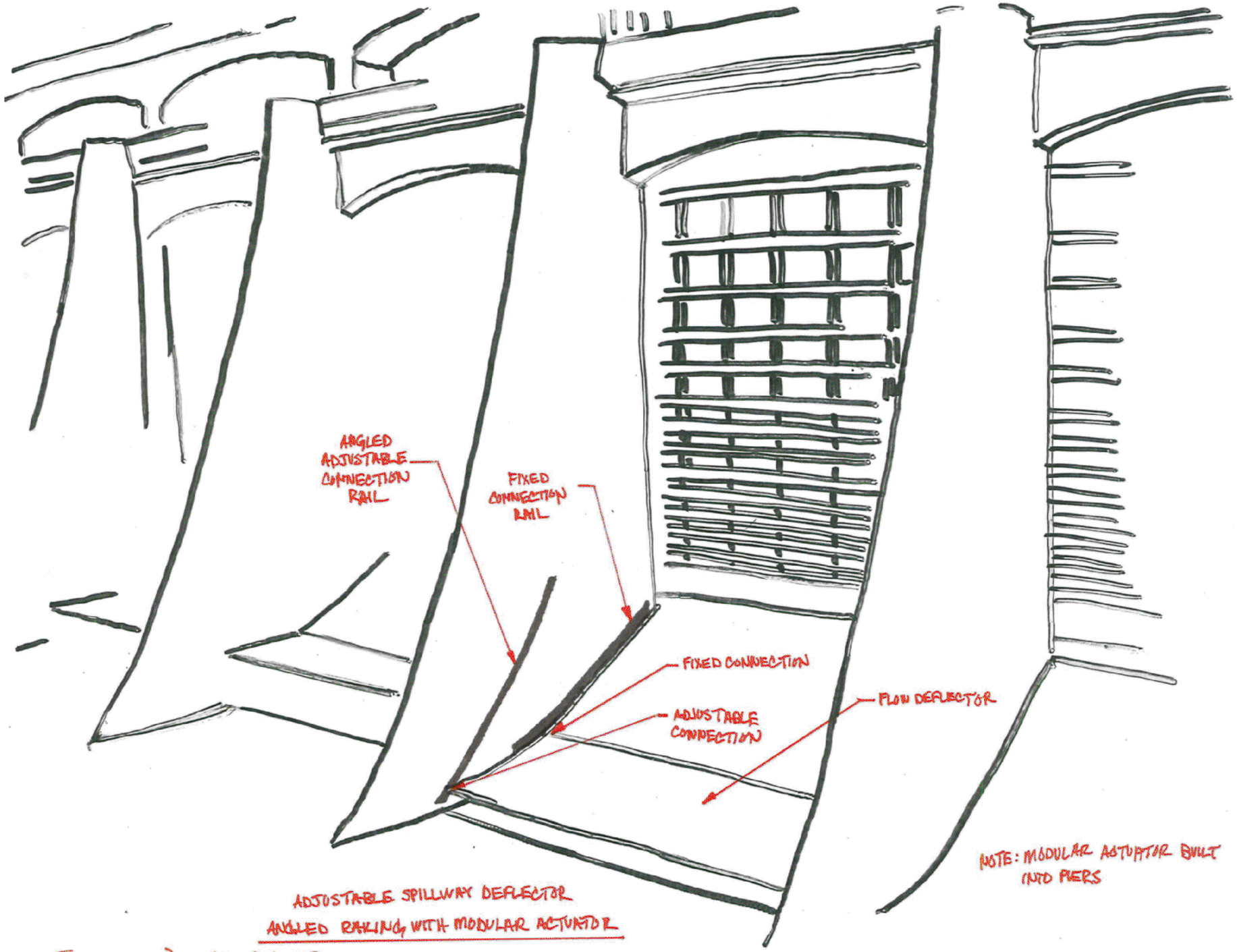
ADJUSTABLE SPILLWAY DEFLECTOR: HYDRAULIC CYLINDER OPERATED CABLE

SHEET IDENTIFICATION

SHEET OF

M2.dgn

11/7/2008 lmerhout SHEET NAME:



ADJUSTABLE SPILLWAY DEFLECTOR
ANGLED RAILING WITH MODULAR ACTUATOR

Figure 3 10-31-08

US Army Corps of Engineers®
Portland District

NOTES:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: | DRAWING NUMBER:
SIZE: | FILE NAME: $FILEN$

BONNEVILLE DAM SPILLWAY AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

ADJUSTABLE SPILLWAY DEFLECTOR: ANGLED RAILING WITH MODULAR ACTUATOR

SHEET IDENTIFICATION
SHEET OF

M3.dgn

11/7/2008 | Imerhout | SHEET NAME:

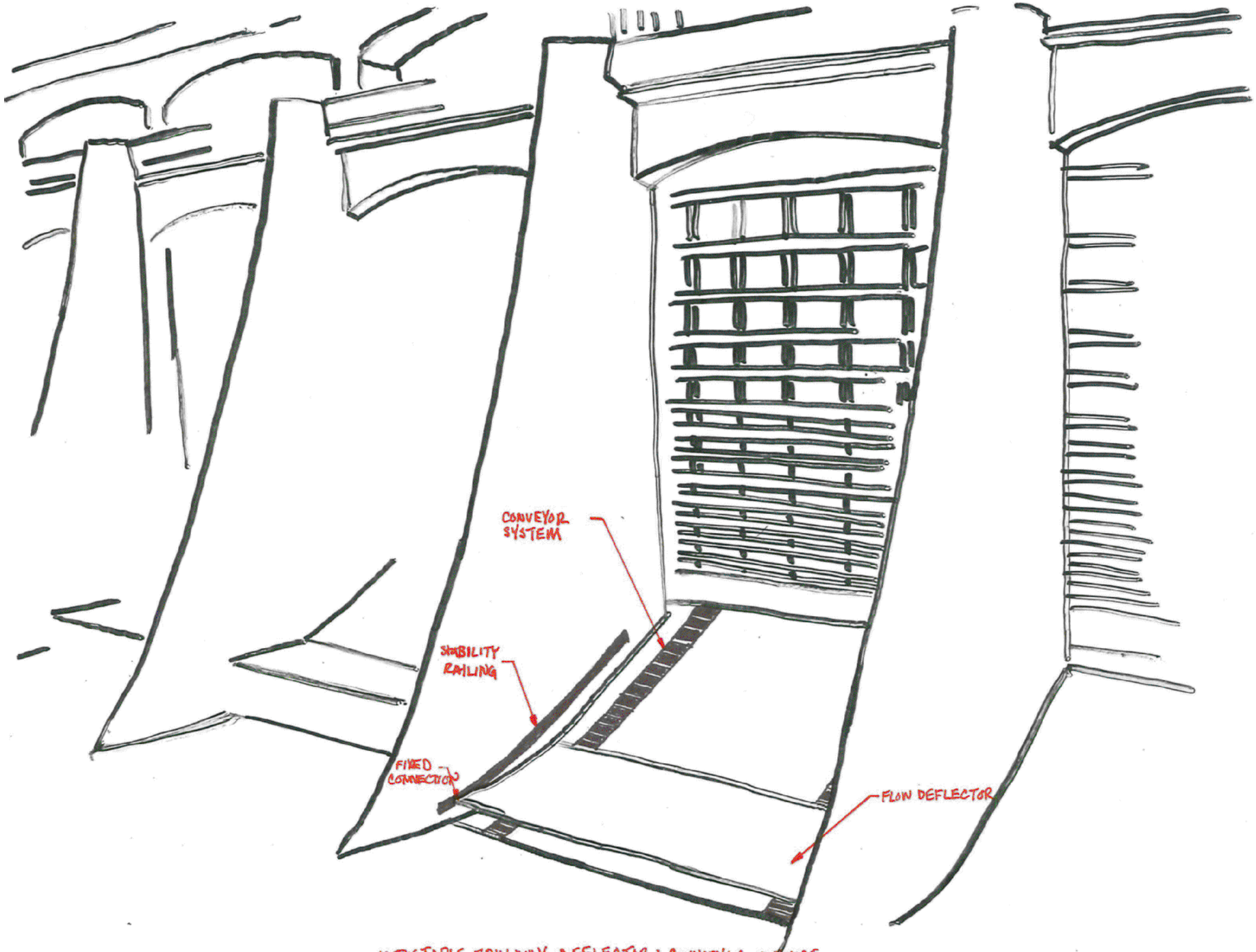


Figure 4 10-31-08 ADJUSTABLE SPILLWAY DEFLECTOR: CONVEYOR DEVICE

US Army Corps of Engineers®
Portland District

NOTES:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: | DRAWING NUMBER:
SIZE: | FILE NAME: $FILEN$

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

CONCEPTUAL ELEVATION VIEW OF FLOW DEFLECTOR

SHEET IDENTIFICATION

SHEET OF

M4.dgn

11/7/2008 | Imerhout | SHEET NAME:

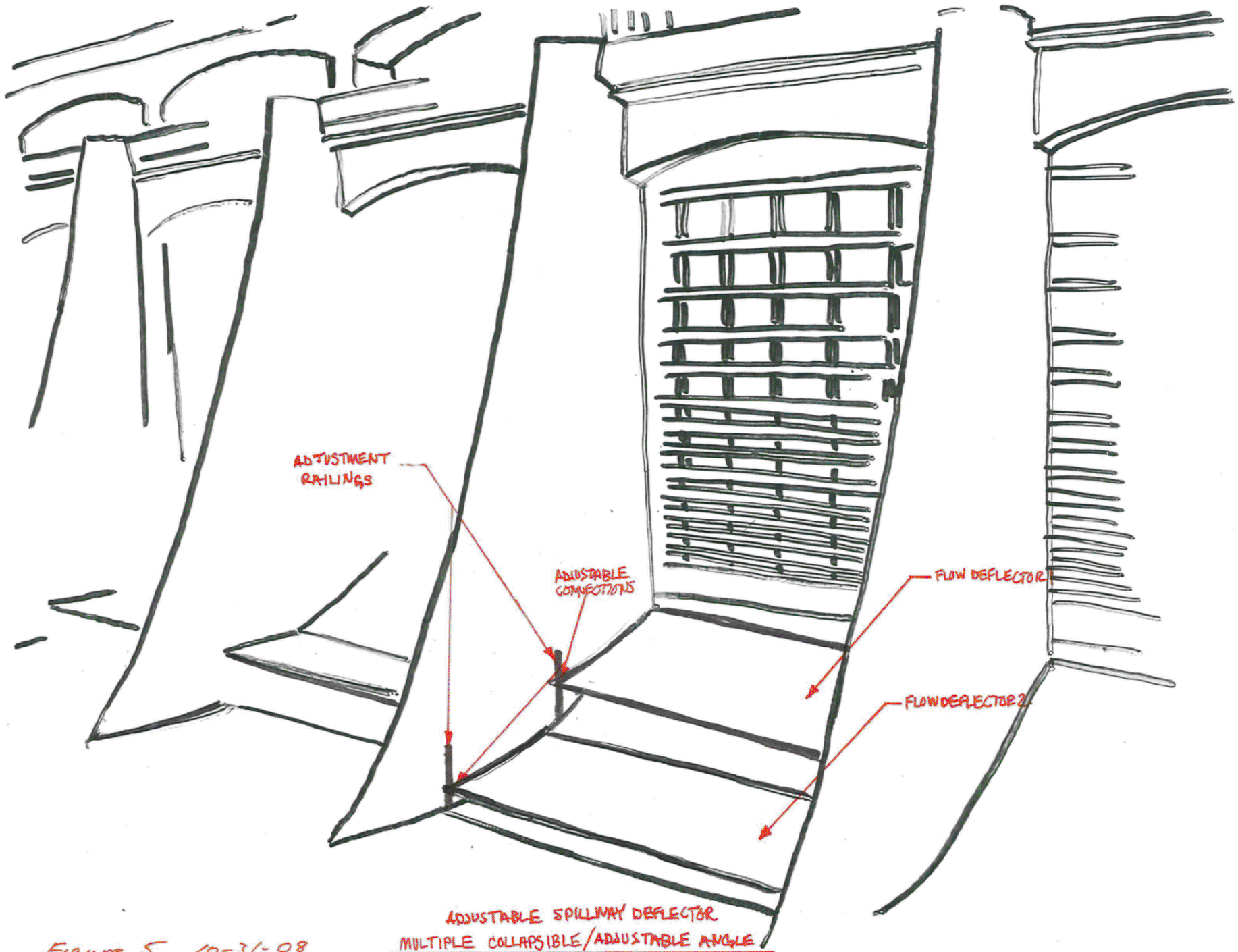


Figure 5 10-31-08

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: $$$DATE$$$ | DRAWING NUMBER:
SIZE: | FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

ADJUSTABLE SPILLWAY DEFLECTOR:
MULTIPLE COLLAPSIBLE/
ADJUSTABLE ANGLE

SHEET IDENTIFICATION

SHEET OF

M5.dgn

11/7/2008 | Imerhout | SHEET NAME:

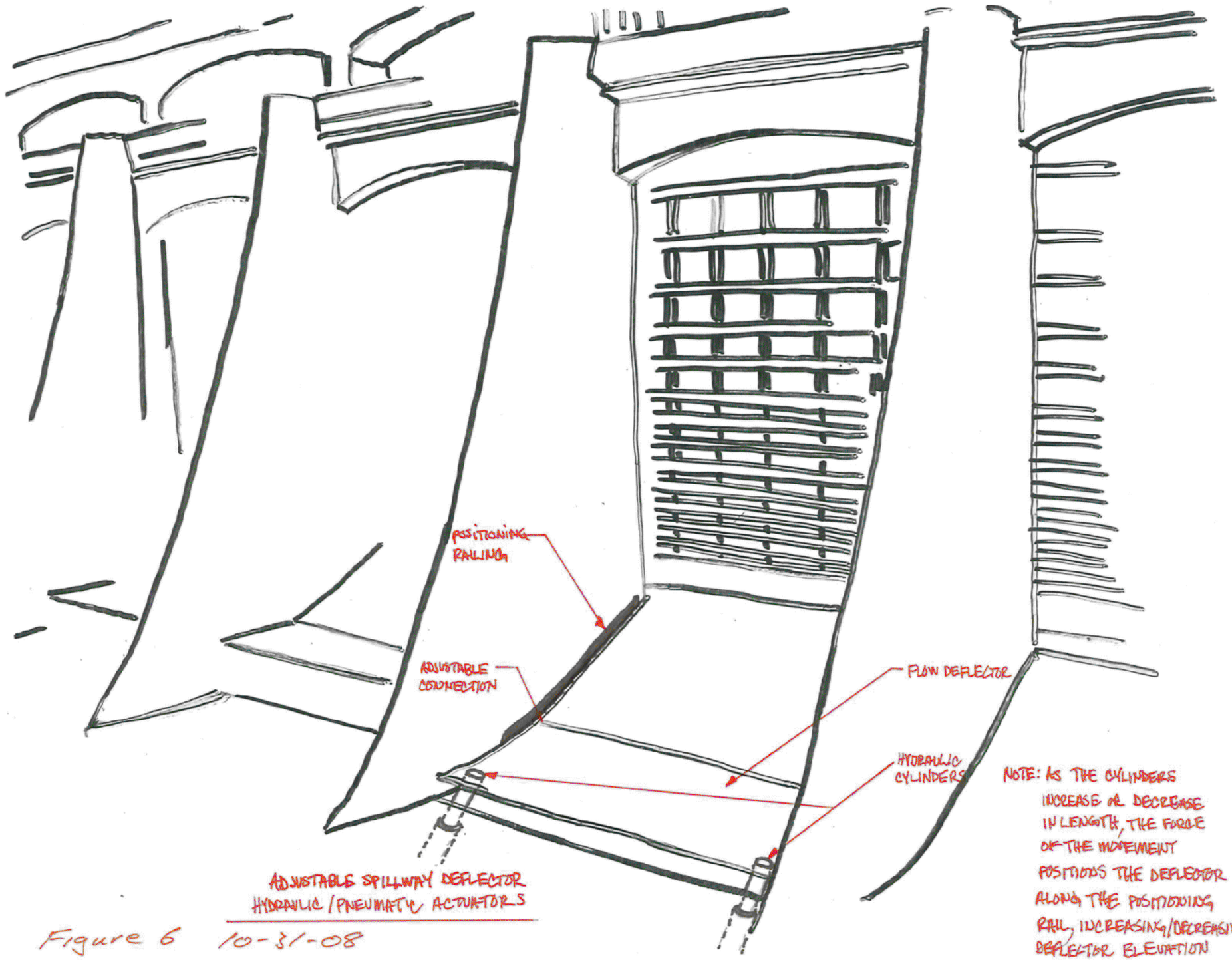


Figure 6 10-31-08

US Army Corps of Engineers®
Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: $$$$DATE$$$$ | DRAWING NUMBER:
SIZE: | FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

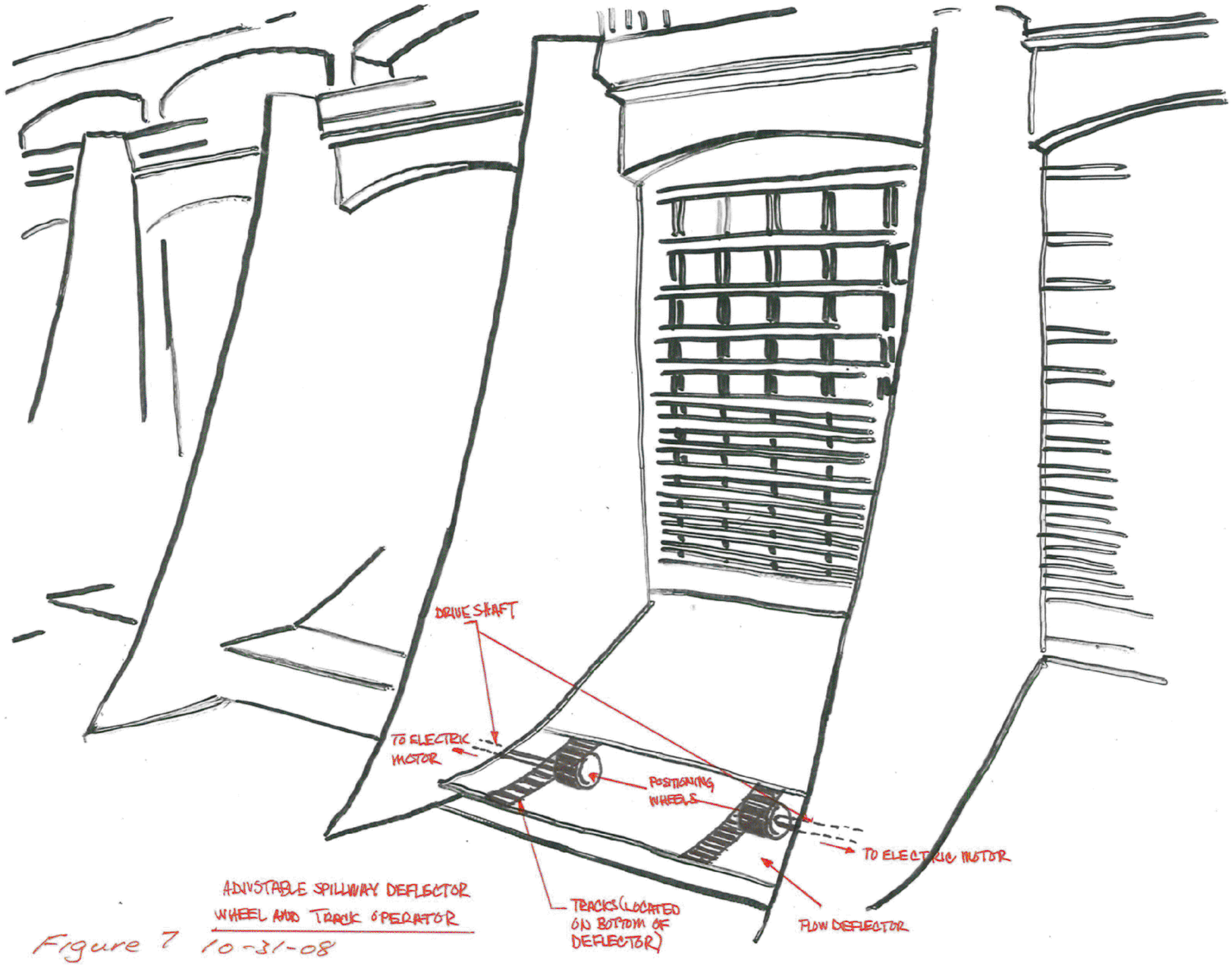
ADJUSTABLE SPILLWAY
DEFLECTOR: HYDRAULIC/
PNEUMATIC ACTUATORS

SHEET IDENTIFICATION

SHEET OF

M5.dgn

11/7/2008 | Imerhout | SHEET NAME:



ADJUSTABLE SPILLWAY DEFLECTOR
WHEEL AND TRACK OPERATOR

Figure 7 10-31-08

US Army Corps of Engineers®
Portland District

NOTES:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

DESIGNED BY: DATE:
DWN BY: CKD BY:
SUBMITTED BY:
PLOT SCALE: PLOT DATE: DRAWING NUMBER:
SIZE: FILE NAME: $FILEN$

BONNEVILLE DAM SPILLWAY
AND STILLING BASIN
RECONFIGURATION FOR FISH PASSAGE
ALTERNATIVE REPORT

ADJUSTABLE SPILLWAY
DEFLECTOR: WHEEL AND
TRACK OPERATOR

SHEET IDENTIFICATION

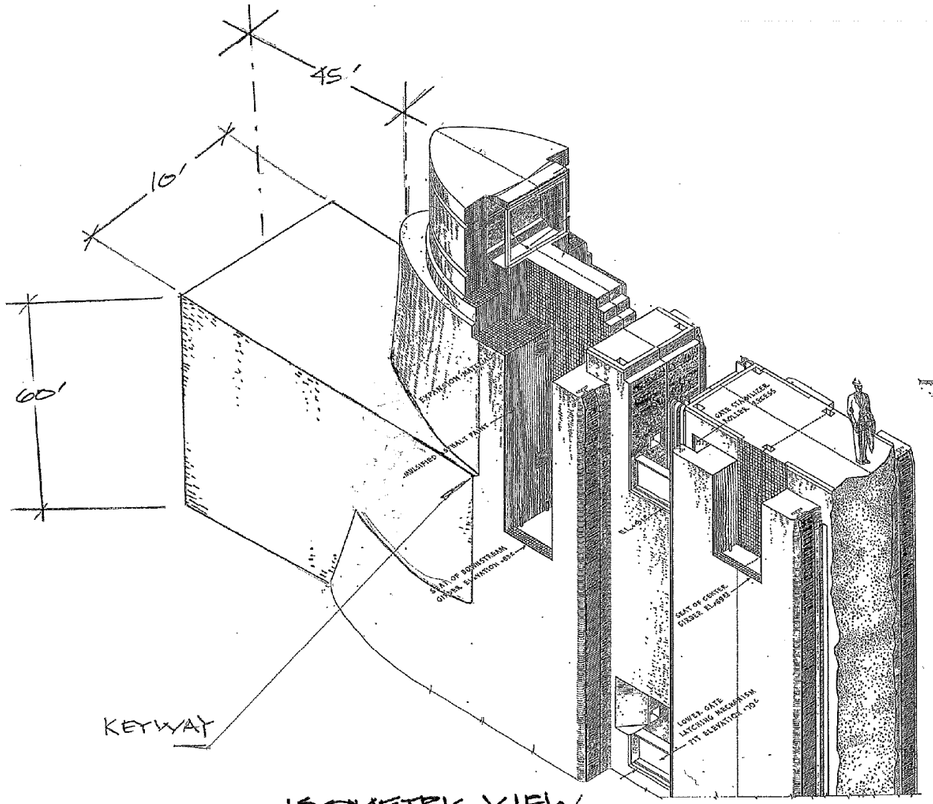
SHEET OF

M7.dgn

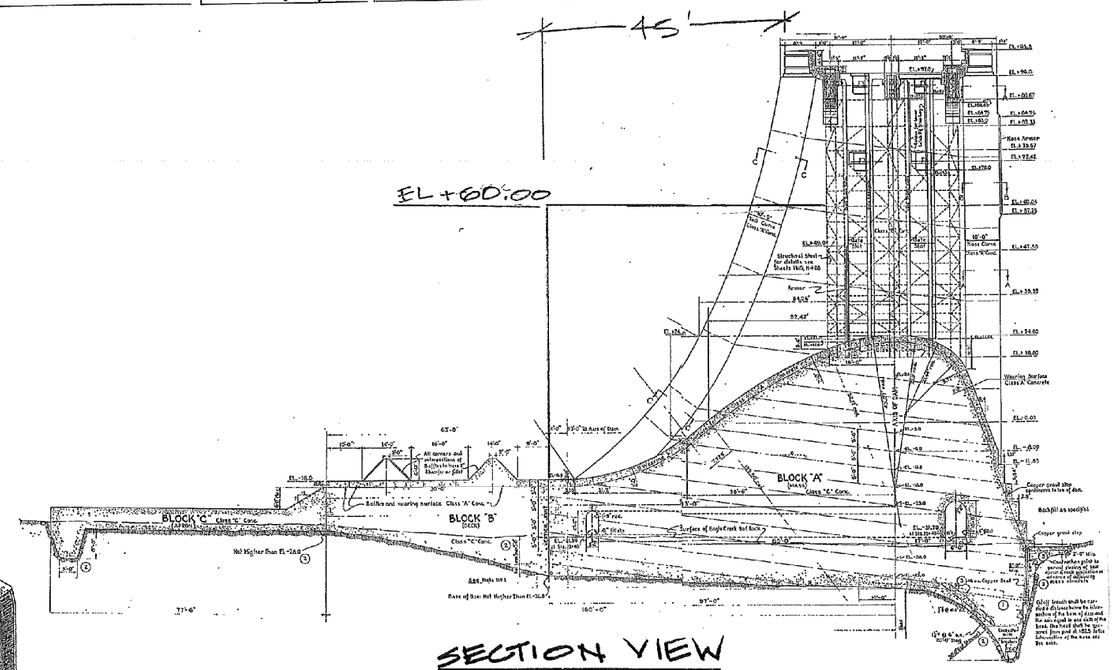
11/7/2008 Imerhaut SHEET NAME:

Project USACE BONNEVILLE DAM		Computed CS	
Subject ALTERNATIVE B: SPILLWAY MODIFICATION	Project Number 102-94045	Date 10/31/08	Sheet / Of

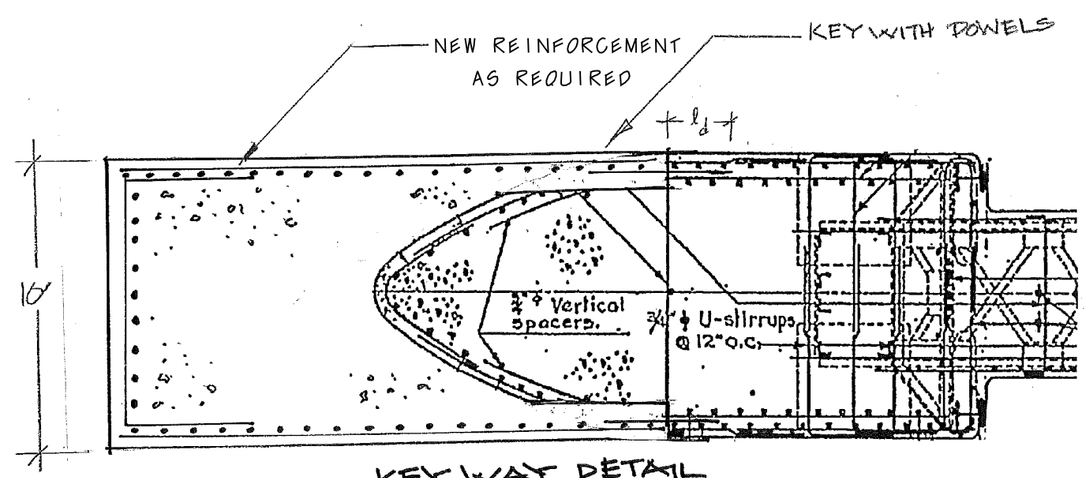
HDR



ISOMETRIC VIEW



SECTION VIEW



KEY WAY DETAIL

US Army Corps of Engineers® Portland District

NOTES:

DATE:
DESIGNED BY:
DWN BY:
CKD BY:
SUBMITTED BY:
PLOT SCALE:
PLOT DATE:
DRAWING NUMBER:
SIZE:
FILE NAME: S1.dgn

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

ALTERNATIVE B: SPILLWAY MODIFICATION

SHEET IDENTIFICATION

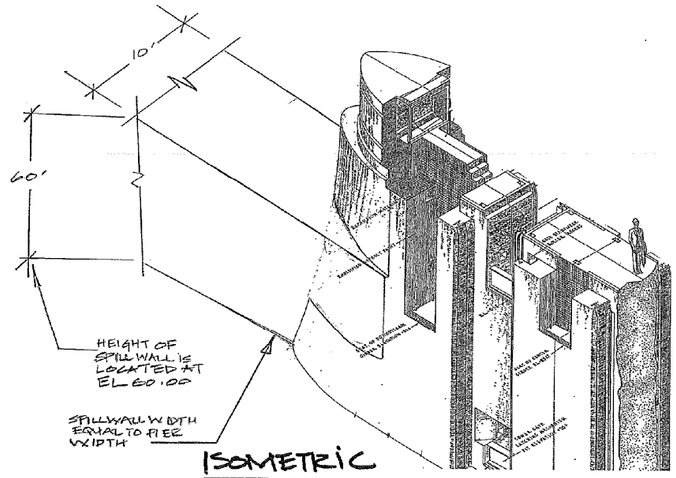
SHEET OF

S1.dgn

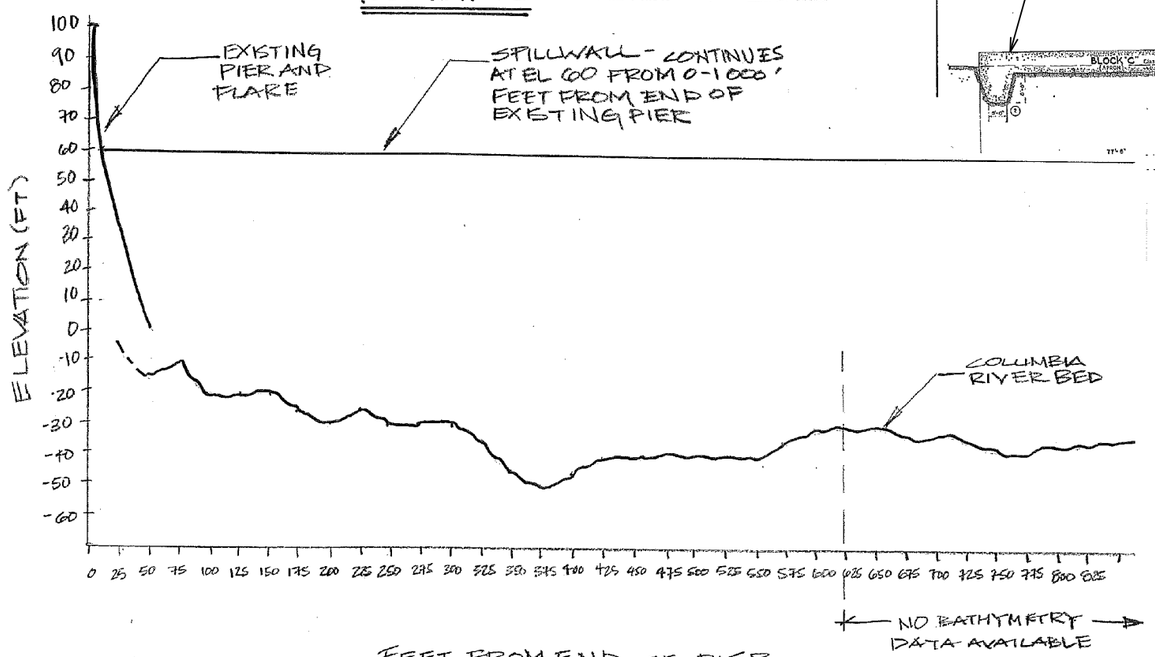
11/7/2008 | Imerhaut | SHEET NAME:

Project USACE BONNEVILLE DAM		Computed CS	
Subject ALTERNATIVE C: SPILLWALL	Project Number 102-94045	Date 10/31/08	Sheet / Of

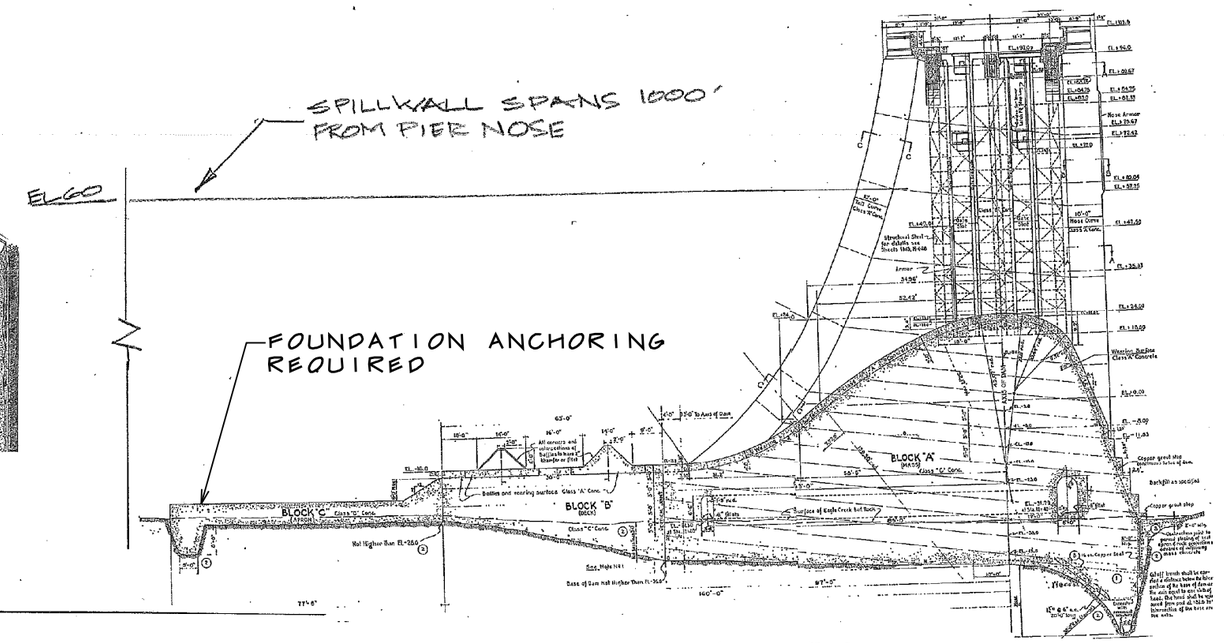
HDR



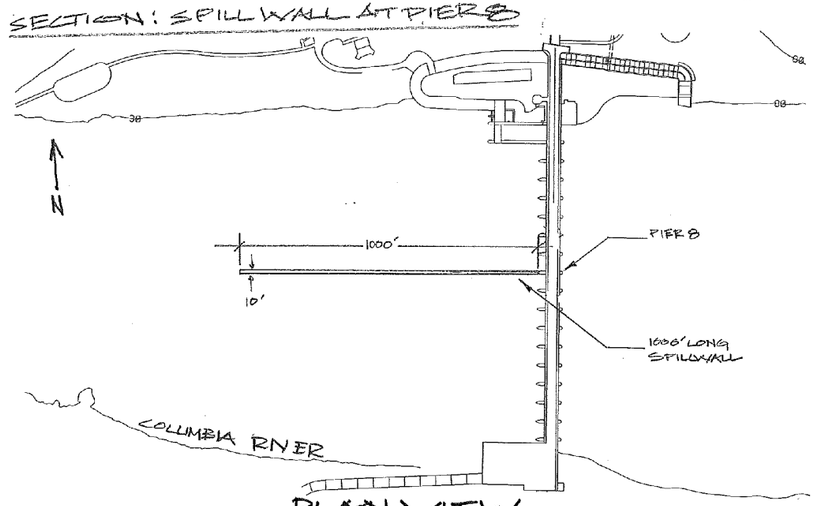
ISOMETRIC



ELEVATION OF SPILLWALL



SECTION: SPILLWALL AT PIER 8



PLAN VIEW

US Army Corps of Engineers® Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: $$DATE$$
SIZE: | FILENAME: $$FILEN$$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

ALTERNATIVE C: SPILLWALL

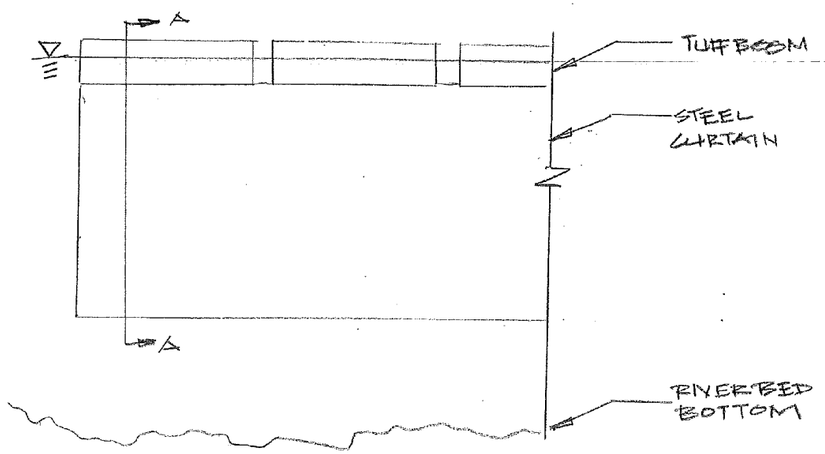
SHEET IDENTIFICATION

SHEET OF

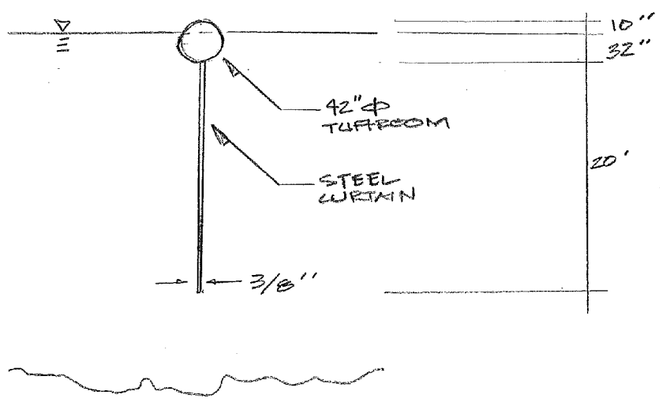
S2.dgn

Project USACE BONNEVILLE DAM		Computed CS	
Subject ALTERNATIVE D: FOREBAY BEHAVIORAL GUIDANCE STRUCTURE	Project Number 102-94045	Date 10/31/08	Sheet / Of

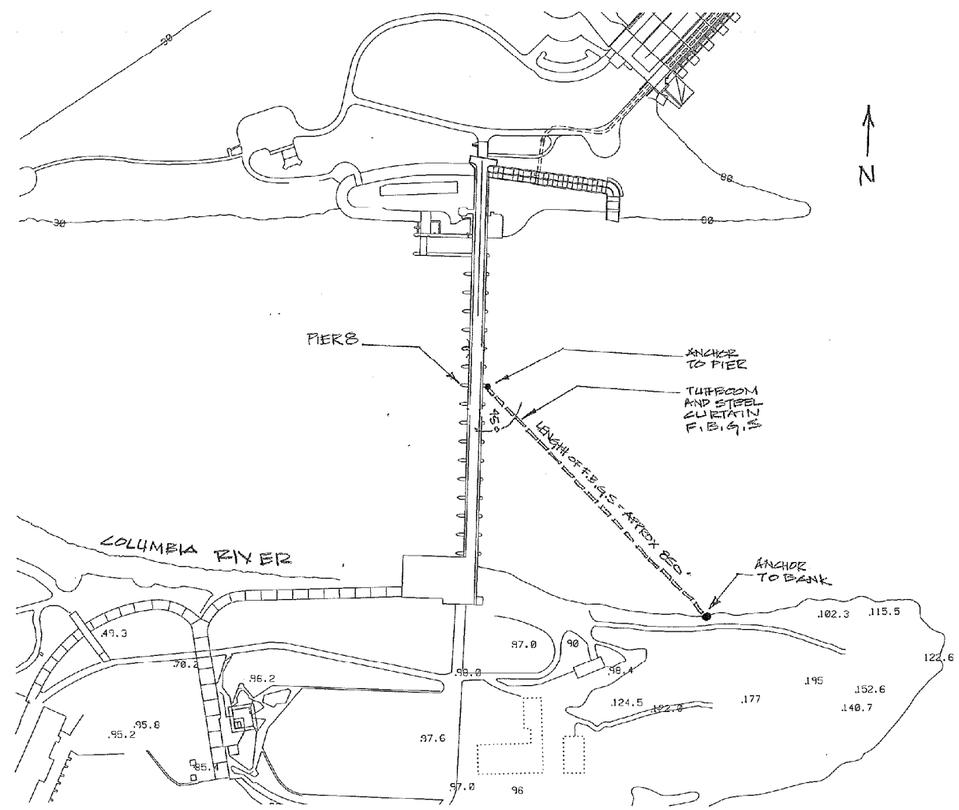
HDR



FRONT VIEW
3/32" = 1'-0"



SECTION AA
3/32" = 1'-0"



PLAN VIEW

US Army Corps of Engineers® Portland District

NOTES:

DESIGNED BY: | DATE:
DWN BY: | CKD BY:
SUBMITTED BY:
PLOT SCALE: | PLOT DATE: | DRAWING NUMBER:
SIZE: | FILE NAME: $FILEN$

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

HDR ENGINEERING INC.

BONNEVILLE DAM SPILLWAY AND STILLING BASIN RECONFIGURATION FOR FISH PASSAGE ALTERNATIVE REPORT

ALTERNATIVE D: FOREBAY BEHAVIORIAL GUIDANCE STRUCTURE

SHEET IDENTIFICATION

SHEET OF

S3.dgn

11/7/2008 | Imerhout | SHEET NAME: