

Zink Pool Proposed
Elevation - 620

Zink Pool Current
Elevation - 617

IH 244

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W2 STS

W4 STS

W5 STS

W3 STS

W6 STS

W7 STS

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IH 244

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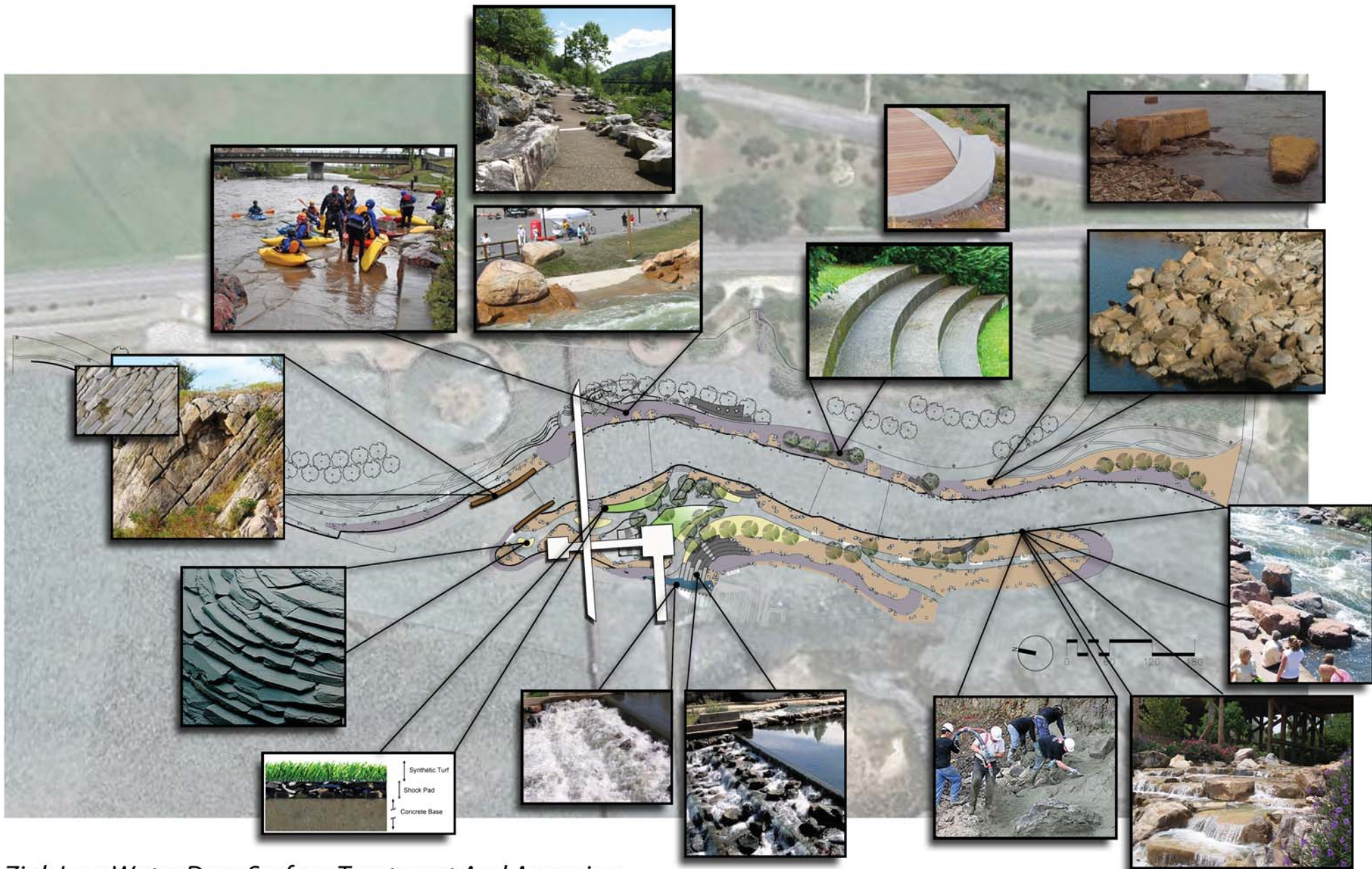
E255 STS

E256 STS

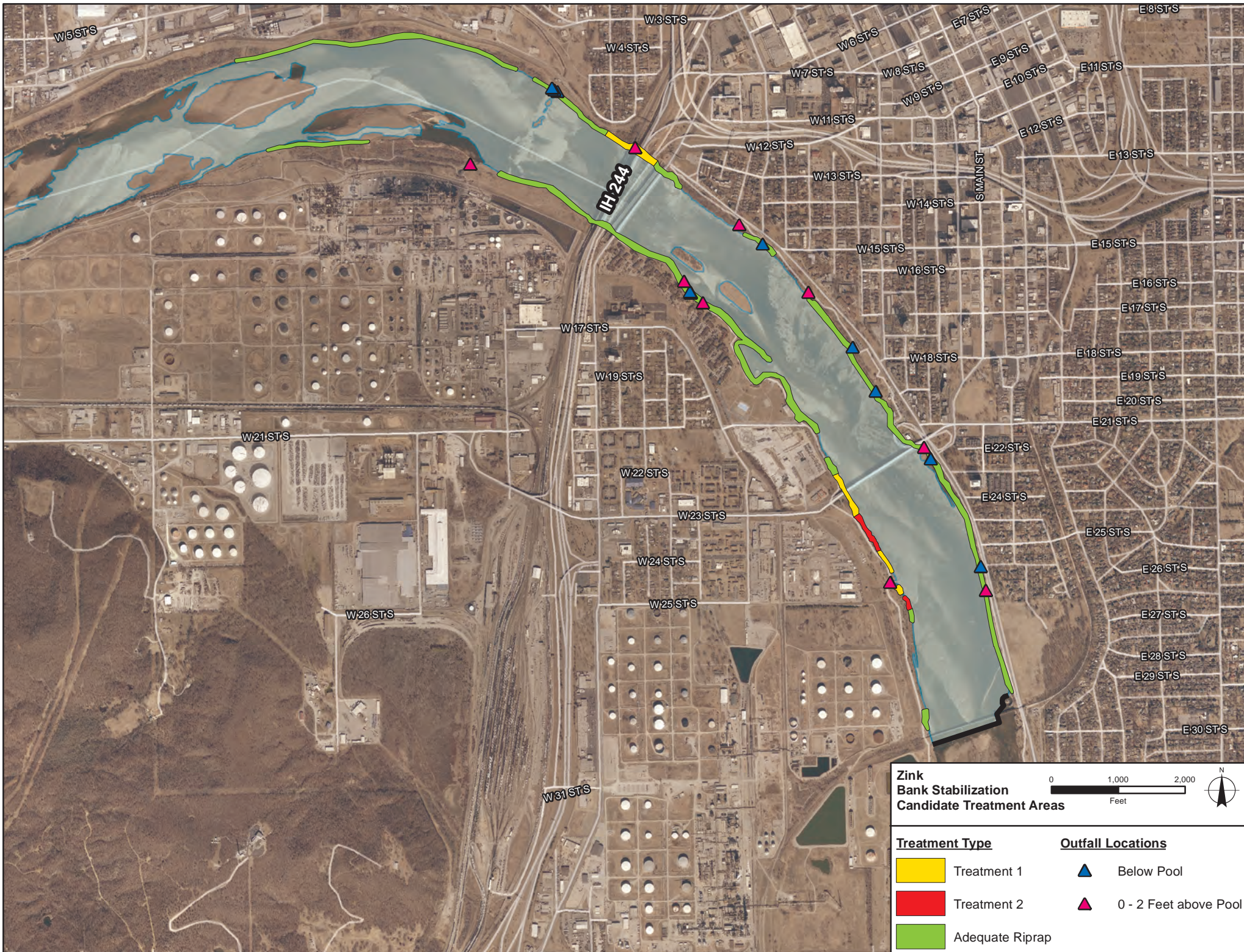


Zink Low Water Dam Overall Plan

APRIL 2015



Zink Low Water Dam Surface Treatment And Armoring

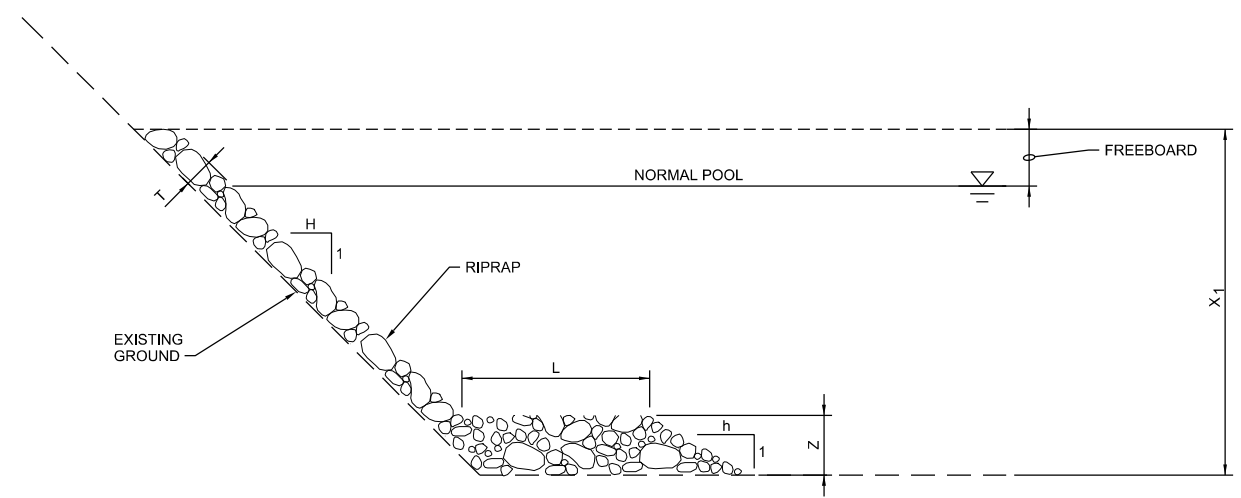


Zink Bank Stabilization Candidate Treatment Areas

0 1,000 2,000
Feet

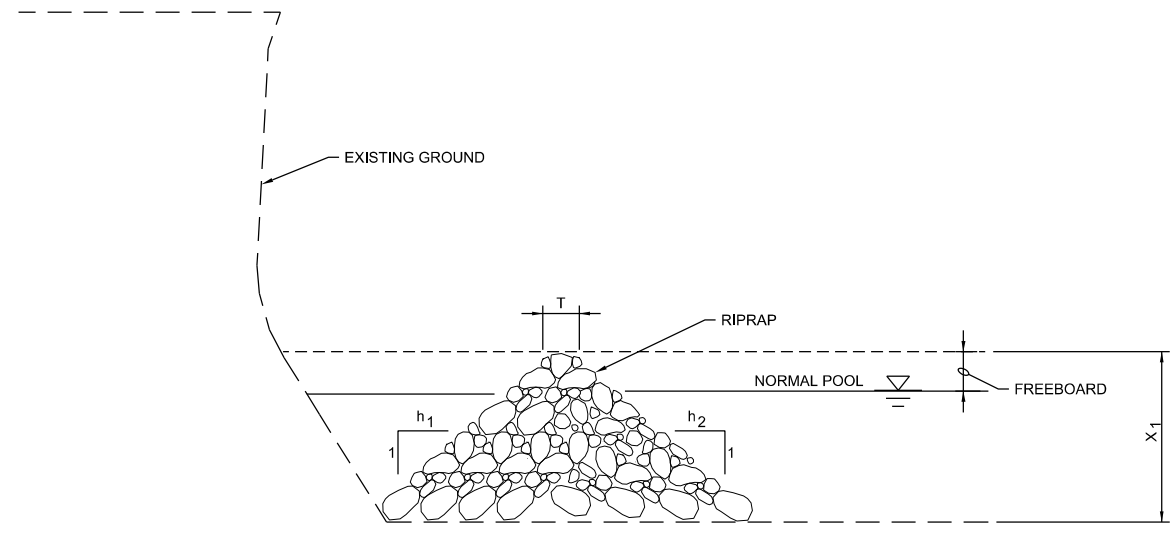
N

<u>Treatment Type</u>		<u>Outfall Locations</u>	
	Treatment 1		Below Pool
	Treatment 2		0 - 2 Feet above Pool
	Adequate Riprap		



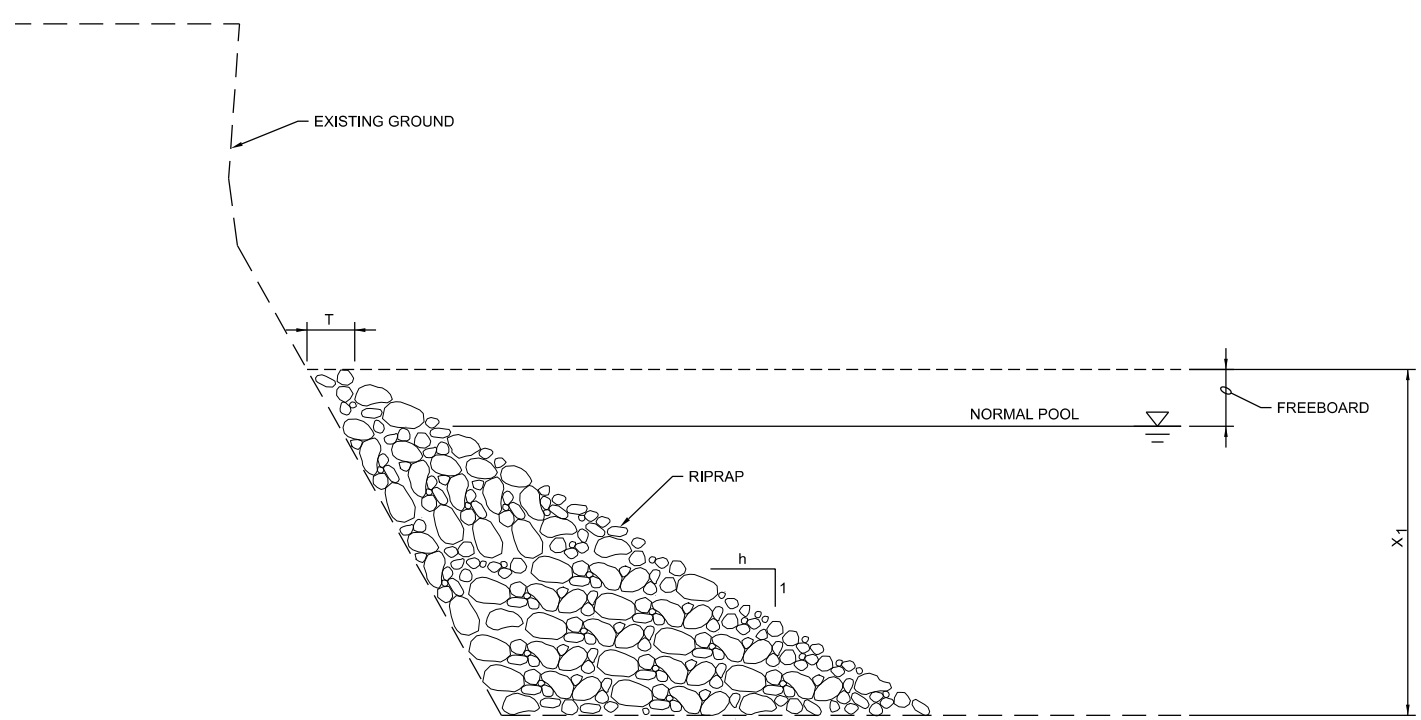
REVETMENT RIPRAP WITH LAUNCHABLE STONE TOE

1 TREATMENT
NTS



LONGITUDINAL PEAKED STONE TOE

3 TREATMENT
NTS



STONE TOE WEDGE

2 TREATMENT
NTS

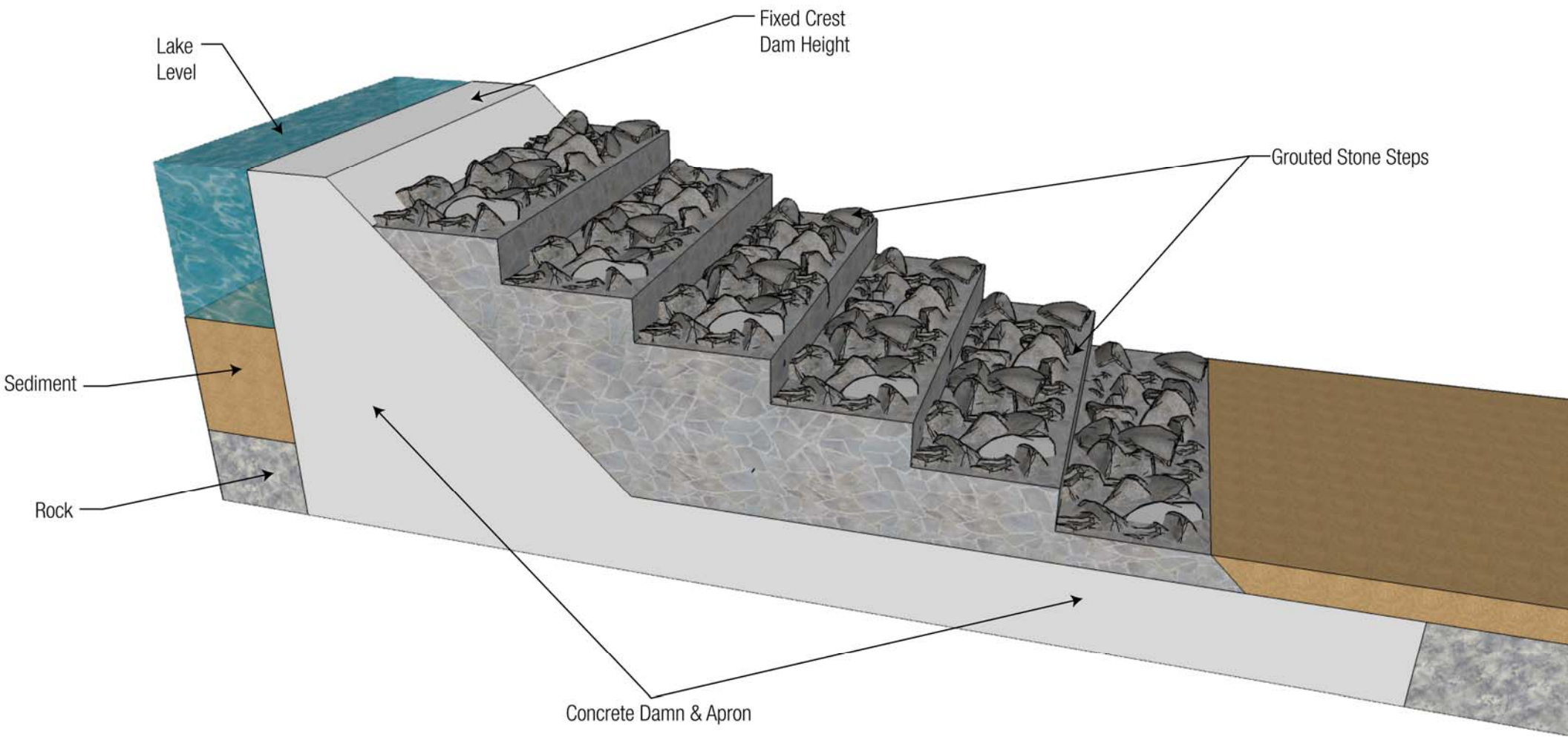
NOTES:

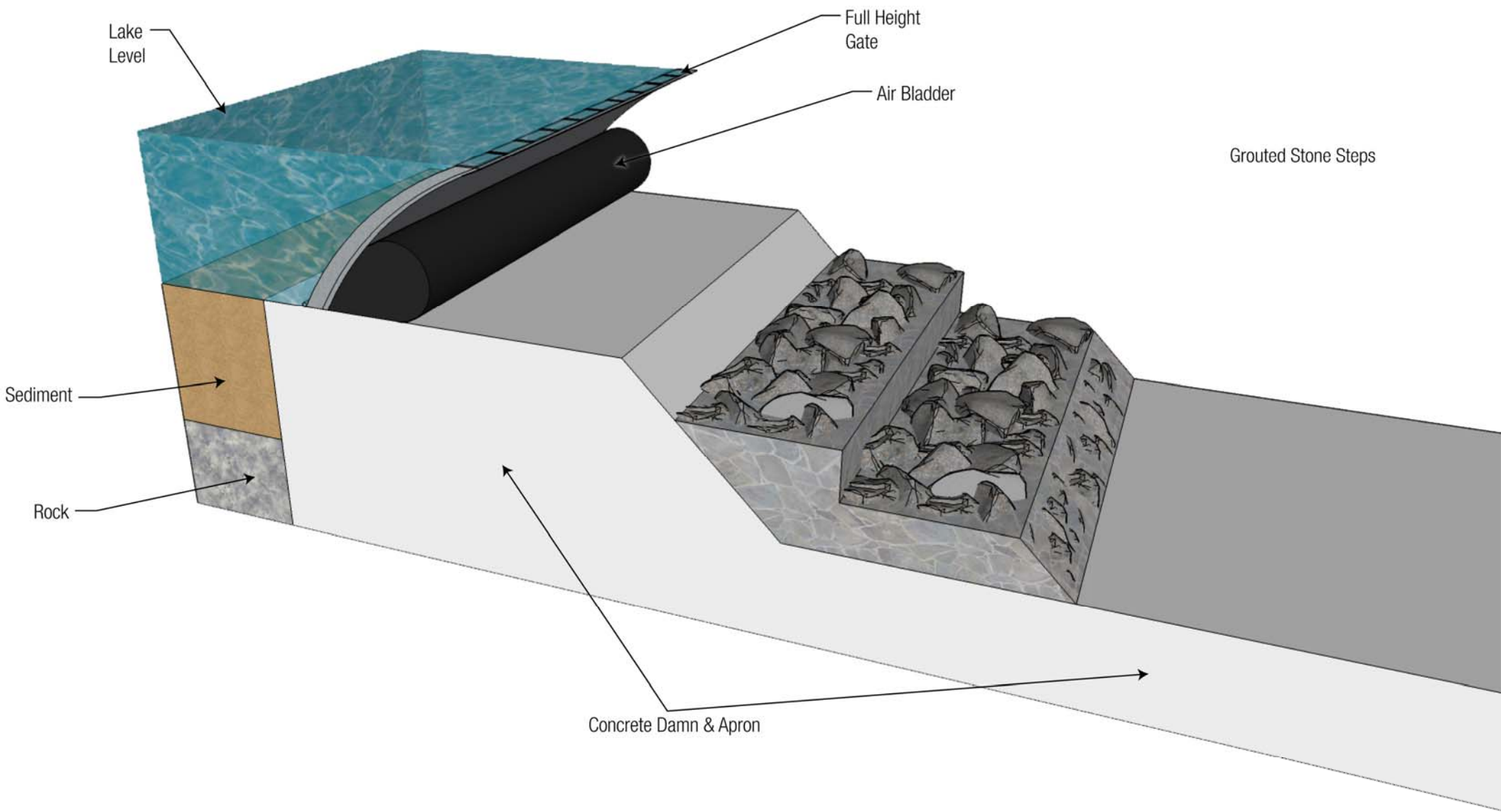
1. ALL TRASH AND WOODY DEBRIS SHOULD BE REMOVED FROM BANK FACE AND TOE WITHIN THE RANGE OF X1 AND THE FOOTPRINT OF TREATMENT PRIOR TO INSTALLING RIPRAP.
2. DIMENSION X1 IS A FUNCTION OF THE TREATMENT LOCATION / STATION ALONG THE RIVER. FOR OTHER TREATMENT DIMENSIONS USED FOR COST-ESTIMATING PURPOSES, REFER TO THE "BANK TREATMENT DIMENSIONS" TABLE BELOW.

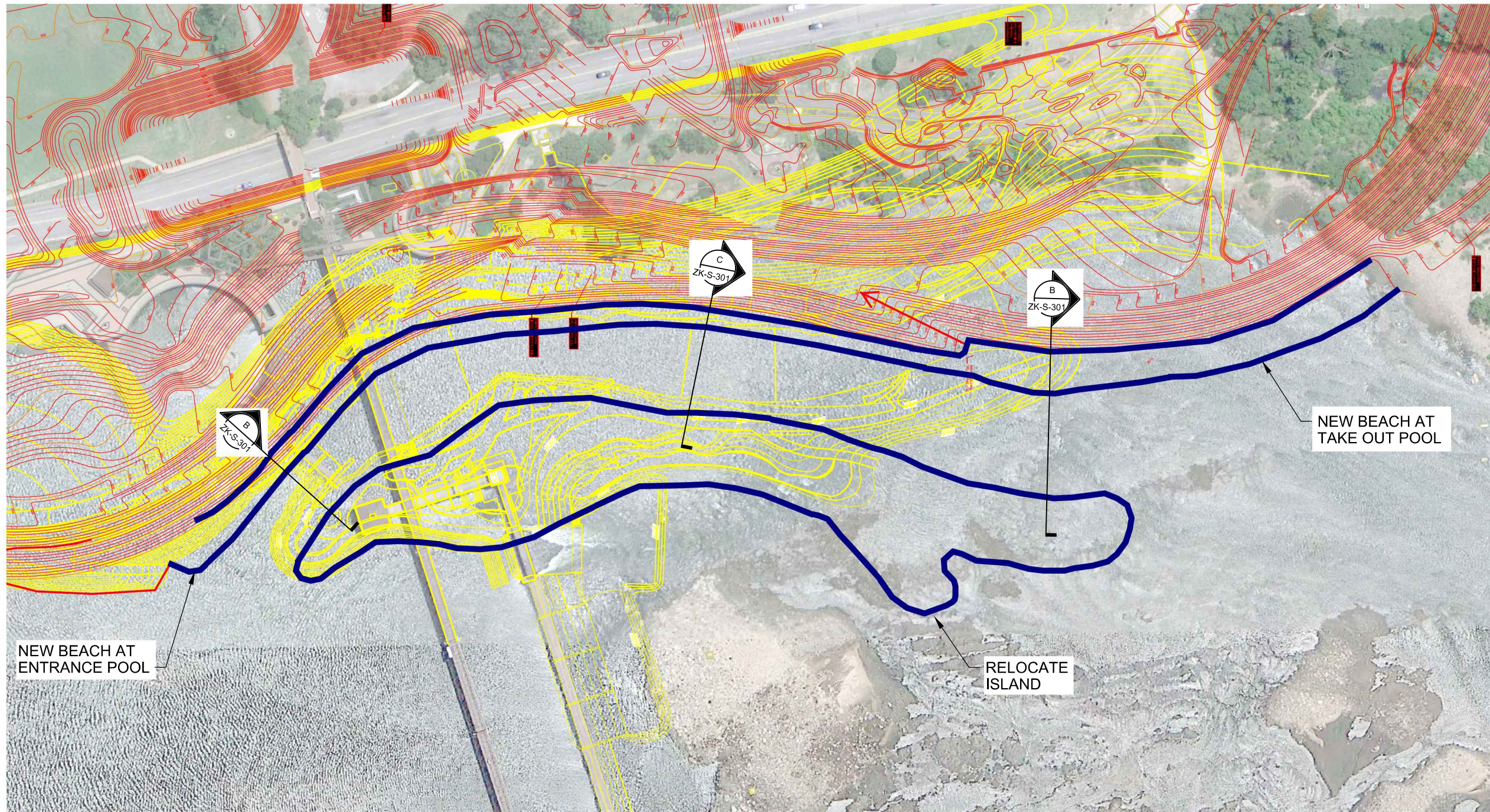
BANK TREATMENT DIMENSIONS

COMMON DIMENSIONS FOR ALL TREATMENTS	
VERTICAL FREEBOARD	2.0 FT
RIPRAP MEDIAN DIAMETER, D50	1.5 FT
TREATMENT THICKNESS (T)	3.0 FT
TREATMENT 1	
STONE TOE THICKNESS (Z)	6.0 FT
STONE TOE LENGTH (L)	12.0 FT
STONE TOE SLOPE (H)	2.0 FT/FT
TREATMENT 2	
WEDGE SLOPE (H)	3.0 FT/FT
TREATMENT 3	
PEAK STONE TOE SLOPE, BANK SIDE (H1)	2.5 FT/FT
PEAK STONE TOE SLOPE, RIVER SIDE (H2)	2.5 FT/FT

FIGURE 1
BANK STABILIZATION TREATMENTS
ARKANSAS RIVER LOW WATER DAMS
CITY OF TULSA, OKLAHOMA







NOTES:

1. PLAN DEPICTS REQUIRED CHANGES AT EAST BANK TO ACCOMODATE THE GATHERING PLACE PROJECT.
2. RED CONTOURS REPRESENT THE GATHERING PLACE PROJECT.
3. YELLOW CONTOURS REPRESENT THE ZINK DAM PRELIMINARY DESIGN.

PLAN - EAST BANK AND ISLAND

1"=60'



ZINK DAM
 CIVIL
 PLAN
 EAST BANK AND ISLAND

ARKANSAS RIVER LOW WATER DAMS
 TULSA COUNTY
 OKLAHOMA

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	
PROJ	
DWG	ZK-C-100
SHEET	of

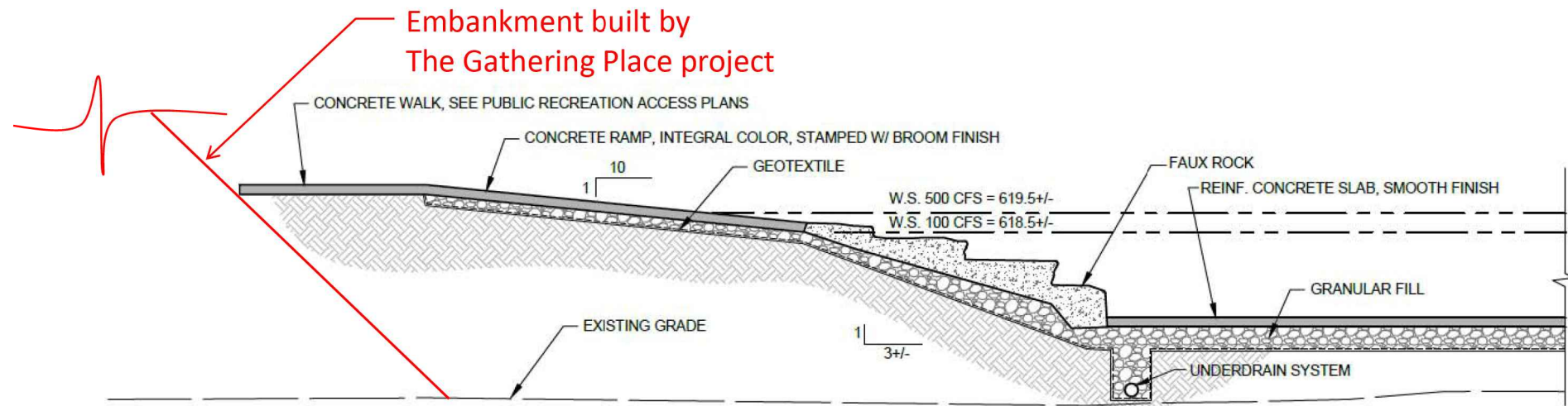
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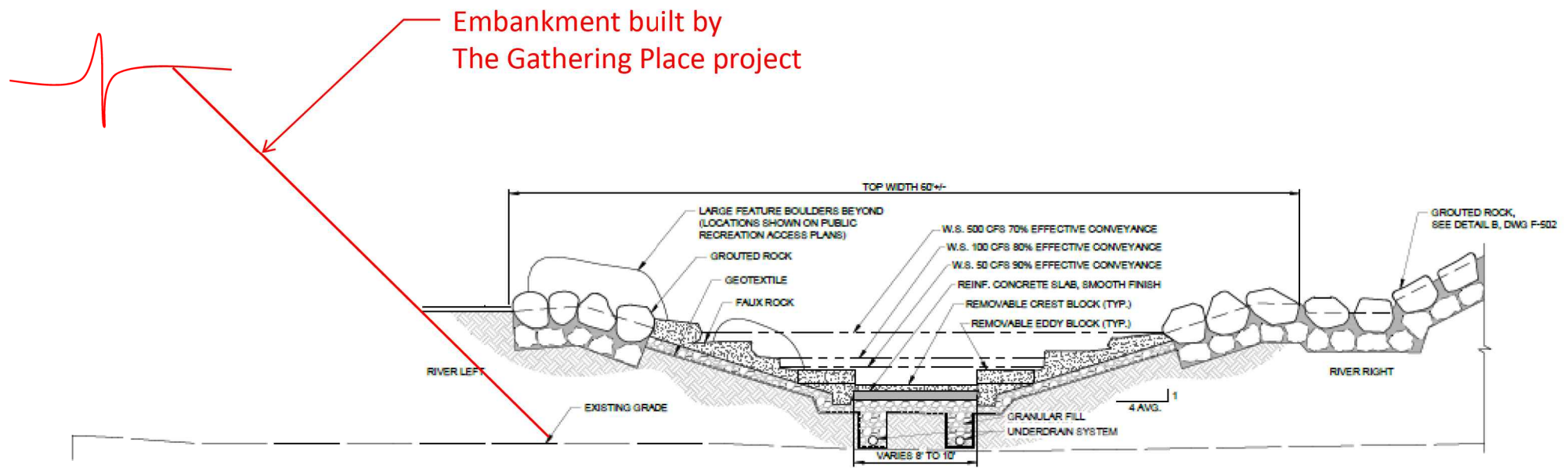
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A
B
C
D

1 2 3 4 5 6



(B) PARTIAL SECTION AT LAUNCH POOL (TAKE OUT POOL SIMILAR)
 SCALE: 1" = 5'
 F-100



(C) RECREATIONAL FLUME SECTION AT TYPICAL RAPID STA. 4+00, 7+90
 SCALE: 1" = 5'
 F-100

ch2m

ARKANSAS RIVER LOW WATER DAMS
 TULSA COUNTY
 OKLAHOMA

ZINK DAM
 CIVIL
 SECTIONS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	
PROJ	
DWG	ZK-C-301
SHEET	of

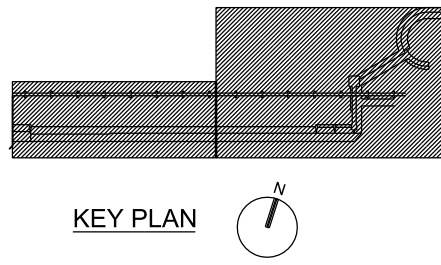
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PLAN - OVERALL
1"=50'



KEY PLAN

PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DATE	DR	CHK	REVISION	APVD	BY	APVD

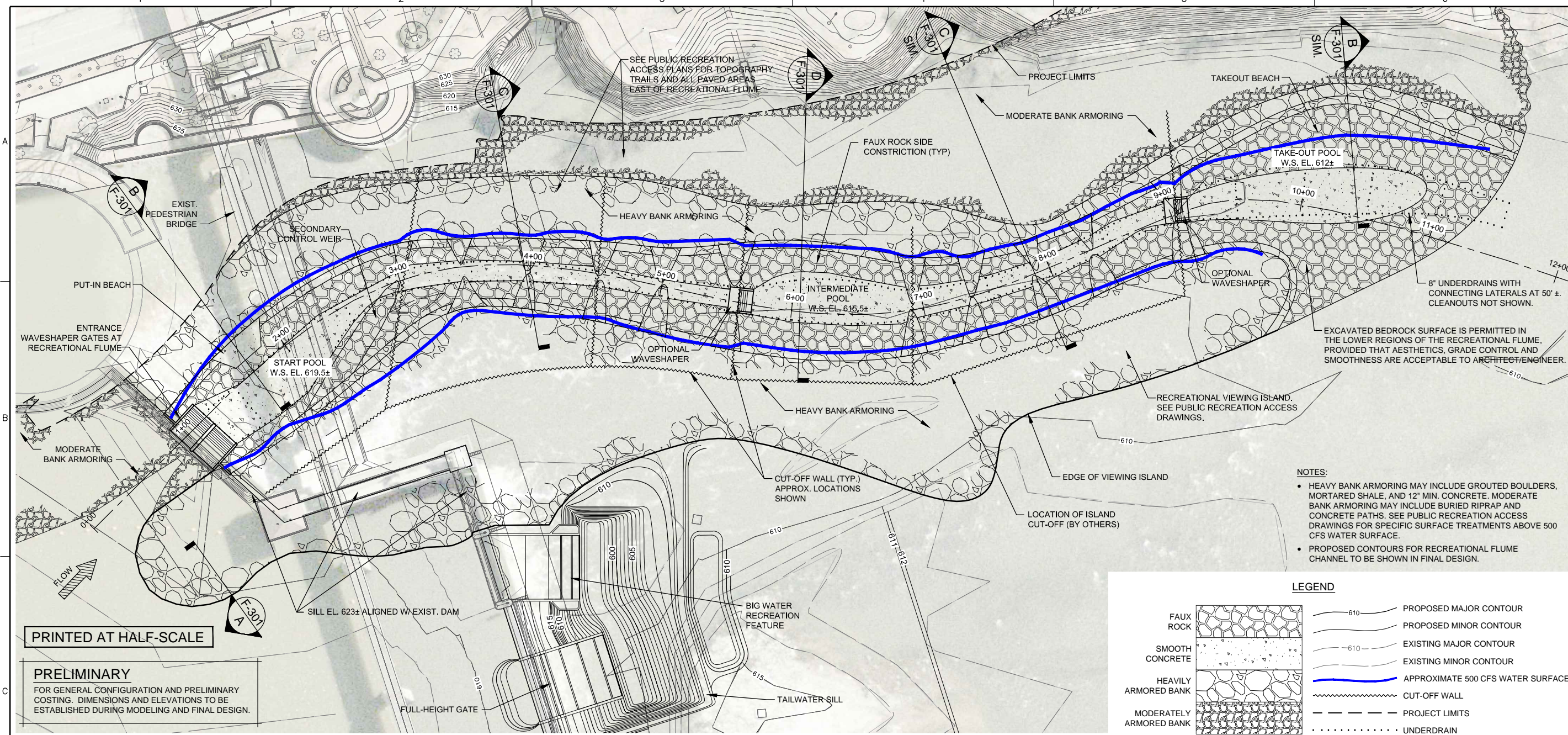
ARKANSAS RIVER LOW WATER DAMS
CITY OF TULSA
TULSA COUNTY
OKLAHOMA

CH2MHILL®
ZINK DAM MODIFICATIONS
STRUCTURAL
PLAN - OVERALL

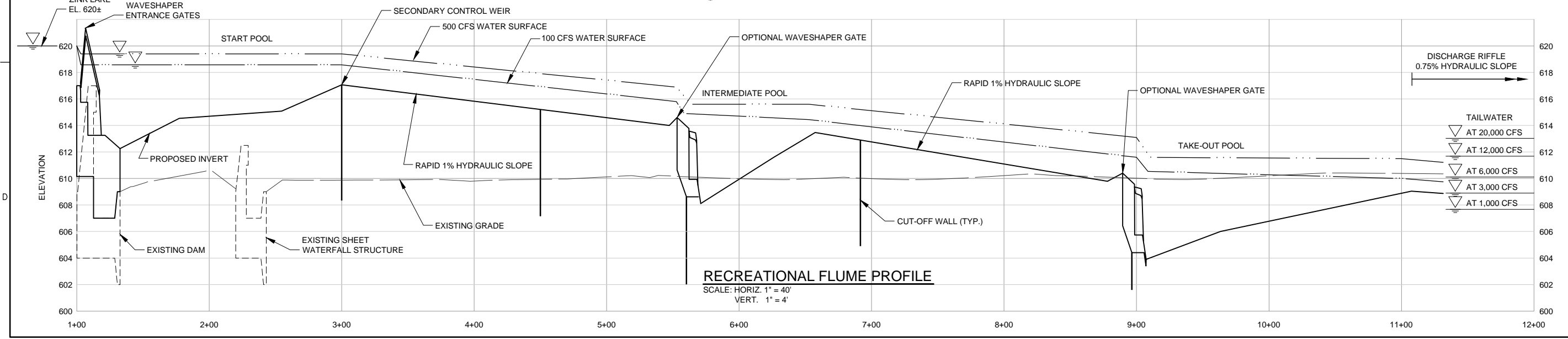
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWINGS.	
DATE	JUNE 2012
PROJ	386594
DWG	S-100
SHEET	13 of 33

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ML FLEMING

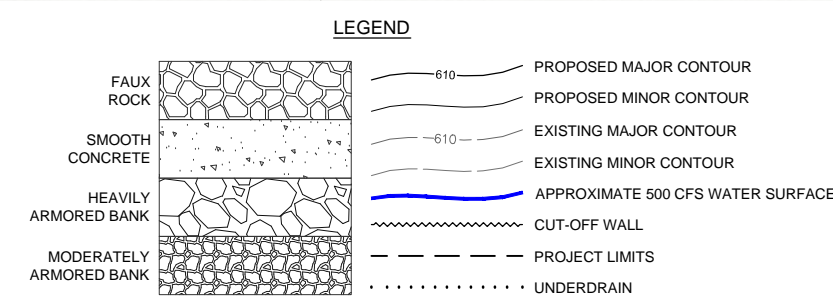


RECREATIONAL FLUME PLAN
SCALE: 1" = 40'



RECREATIONAL FLUME PROFILE
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

- NOTES:**
- HEAVY BANK ARMORING MAY INCLUDE GROUTED BOULDERS, MORTARED SHALE, AND 12" MIN. CONCRETE. MODERATE BANK ARMORING MAY INCLUDE BURIED RIPRAP AND CONCRETE PATHS. SEE PUBLIC RECREATION ACCESS DRAWINGS FOR SPECIFIC SURFACE TREATMENTS ABOVE 500 CFS WATER SURFACE.
 - PROPOSED CONTOURS FOR RECREATIONAL FLUME CHANNEL TO BE SHOWN IN FINAL DESIGN.



PRINTED AT HALF-SCALE

PRELIMINARY
FOR GENERAL CONFIGURATION AND PRELIMINARY COSTING. DIMENSIONS AND ELEVATIONS TO BE ESTABLISHED DURING MODELING AND FINAL DESIGN.

PRELIMINARY
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NO.	DATE	DR	REVISION	CHK	BY	APVD

McLaughlin Whitewater
ENGINEERS ARCHITECTS
1000 N. W. 10th St., Suite 100
Tulsa, Oklahoma 74103
Phone: (918) 438-3333
Fax: (918) 438-3334
www.mclaughlinwhitewater.com

ARKANSAS RIVER LOW WATER DAMS
CITY OF TULSA
TULSA COUNTY
OKLAHOMA

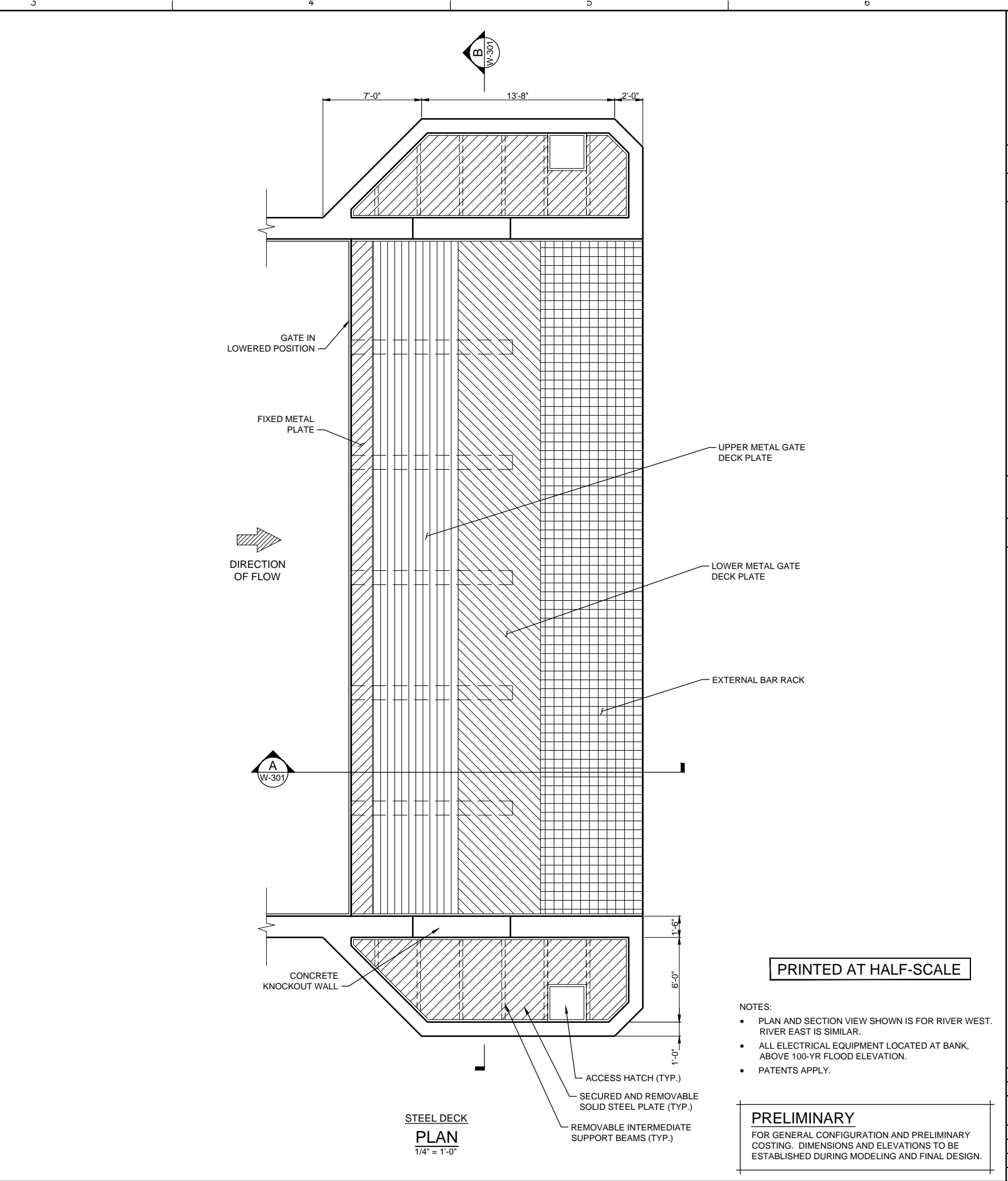
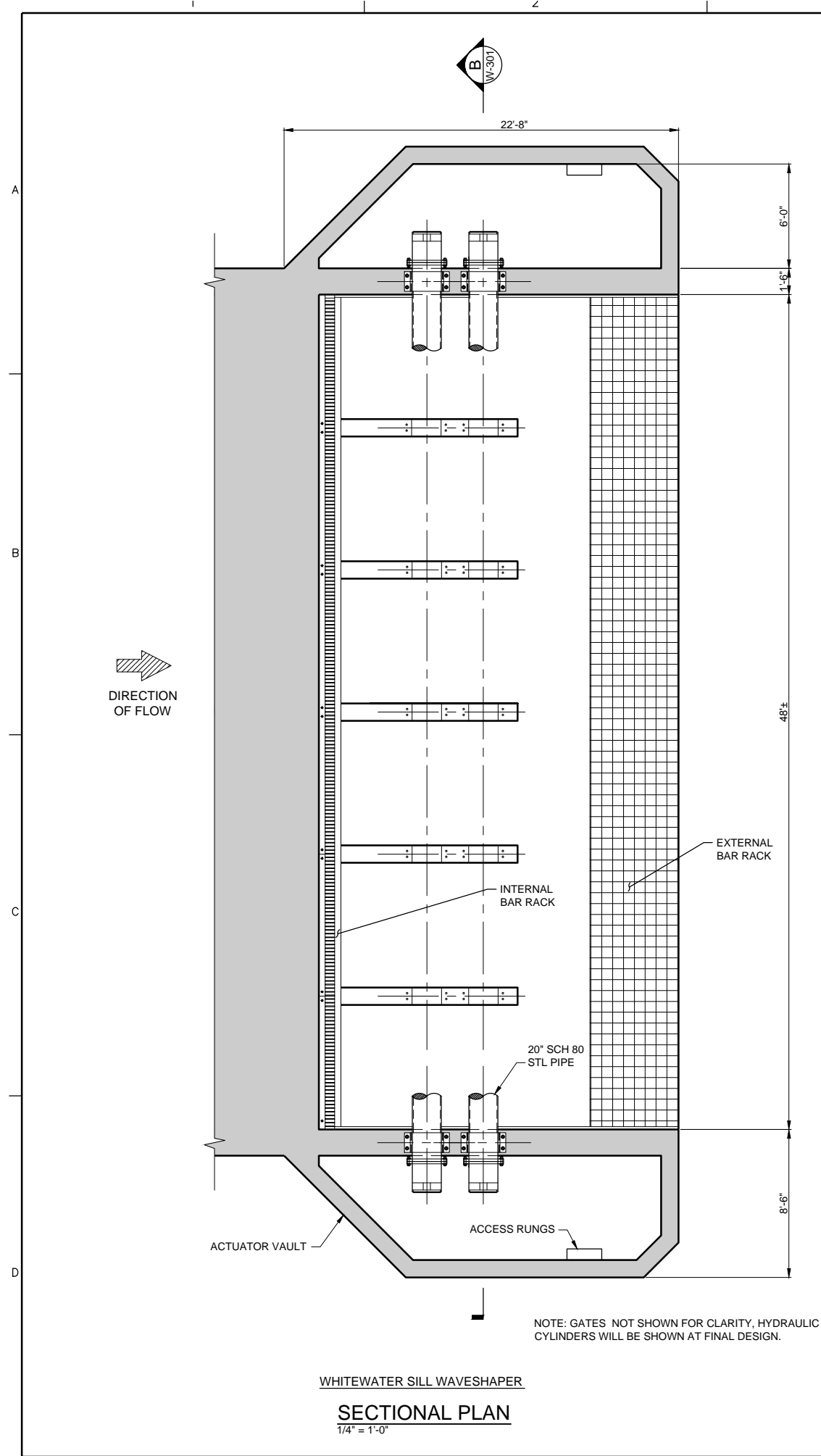
CH2MHILL

ZINK DAM MODIFICATIONS
RECREATIONAL FLUME PLAN AND PROFILE

1" = 40'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JUNE 2012
PROJ	386594
DWG	F-100
SHEET	24 of 33

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NOTES:
 • PLAN AND SECTION VIEW SHOWN IS FOR RIVER WEST. RIVER EAST IS SIMILAR.
 • ALL ELECTRICAL EQUIPMENT LOCATED AT BANK, ABOVE 100-YR FLOOD ELEVATION.
 • PATENTS APPLY.

PRELIMINARY
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ZINK DAM MODIFICATIONS
 WAVESHAPER GATES
 PLANS

ARKANSAS RIVER LOW WATER DAMS
 CITY OF TULSA
 TULSA COUNTY
 OKLAHOMA

PRELIMINARY
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 CONSTRUCTION

NO.	DATE	DR	CHK	BY	APVD

J. PANEK
 A. GORSEVSKI
 R. MC LAUGHLIN
 A. GORSEVSKI

VERIFY SCALE
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 0 1"

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