



Figure 2. USGS Topographic Map

Unit 5 Inactive Ash Basin
Dam Decommissioning Project
Rogers Energy Complex - Cliffside Steam Station
Cleveland and Rutherford Counties, North Carolina

Legend

- Main Dam
Decommissioning LOD
Boundary (13.36 acres)
- Unit 5 Inactive Ash Basin
(USIAB) Closure Phases
1-5 LOD Boundary (75.34
acres)
- USGS 1:24k Topographic
Quadrant Boundary



The map shown here has been created with all data and information for use with WSP Environment & Infrastructure Inc. (WSP) project number 7818230106. WSP assumes no liability, direct or indirect, whatsoever for any such third party use.

Job No.	7818230106
Drawn By:	MJC
Reviewed By:	JC
Date:	6/28/2023

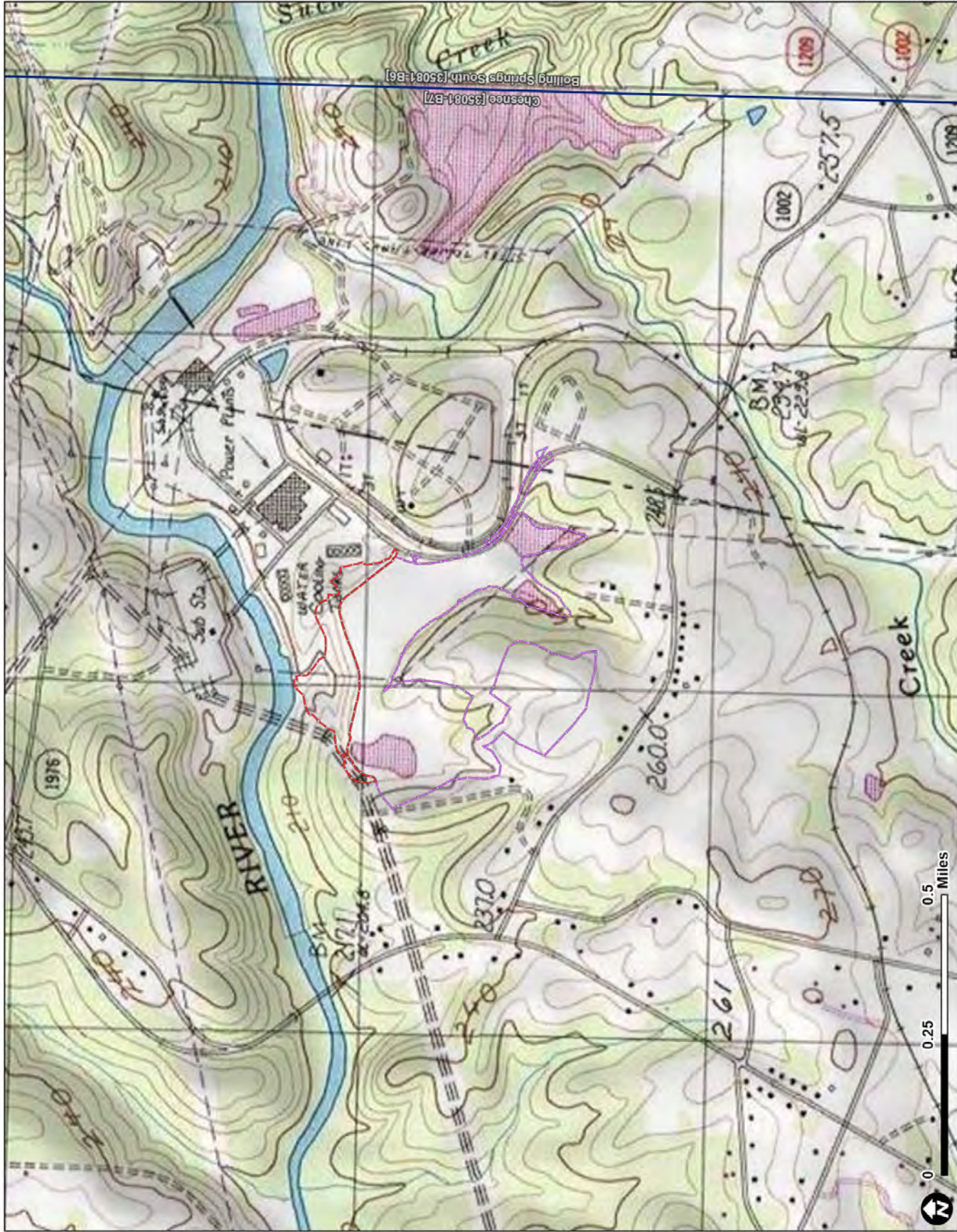




Figure 5. Jurisdictional Features Map

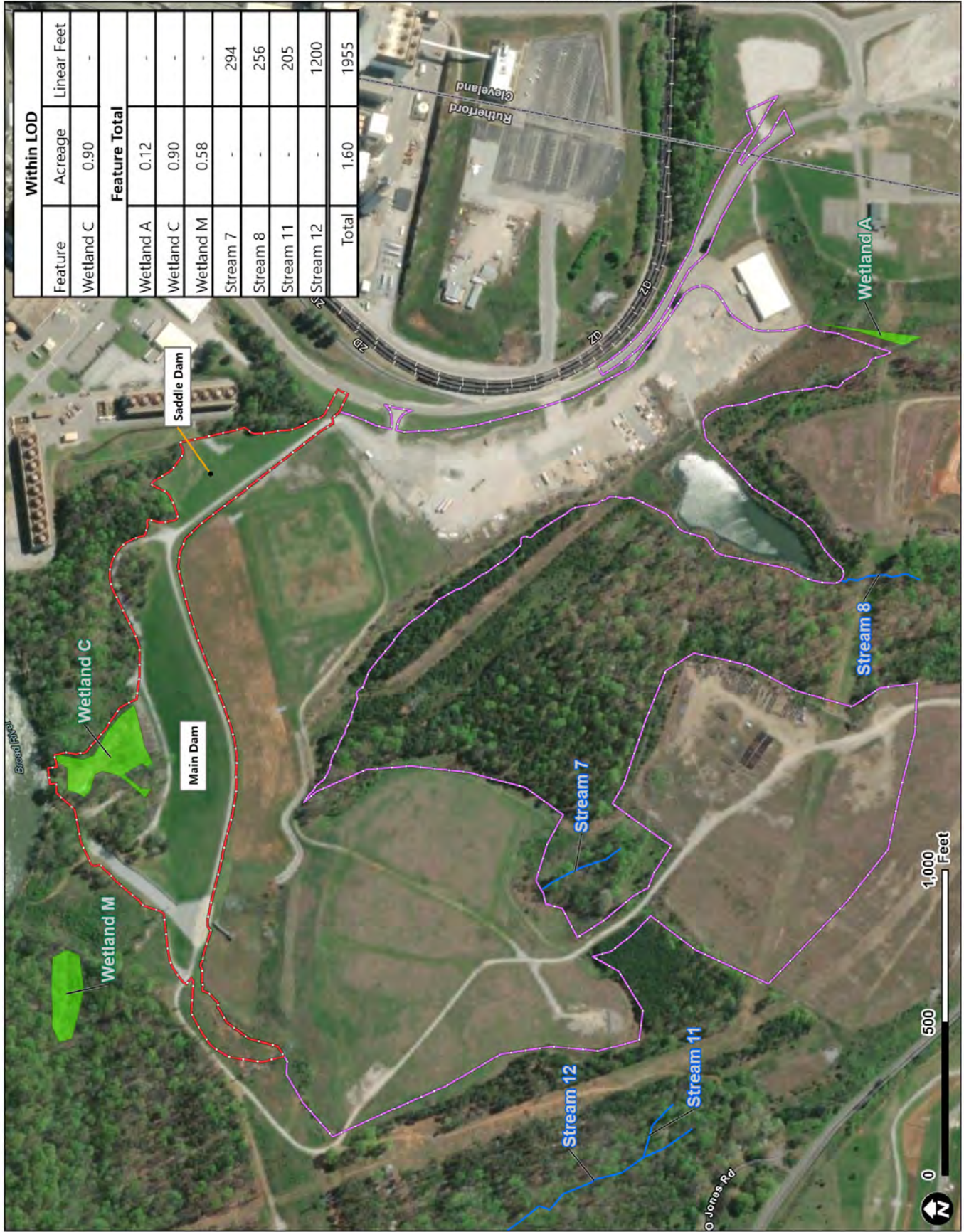
Unit 5 Inactive Ash Basin
 Dam Decommissioning Project
 Rogers Energy Complex - Cliffside Steam Station
 Cleveland and Rutherford Counties, North Carolina

- Legend**
- Main Dam Decommissioning LOD Boundary (13.36 acres)
 - Unit 5 Inactive Ash Basin (USIAB) Closure Phases 1-5 LOD Boundary (75.34 acres)
 - County Boundary
 - Jurisdictional Wetland
 - Jurisdictional Stream

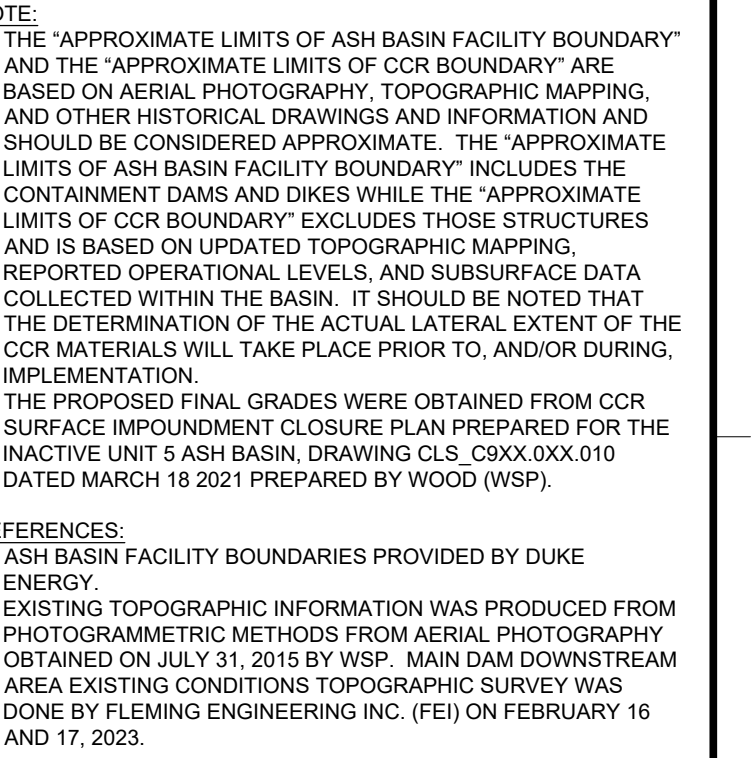


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Job No.	7818230106
Drawn By	MUC
Reviewed By	JC
Date	6/26/2023



Within LOD		
Feature	Acreage	Linear Feet
Wetland C	0.90	-
Feature Total		
Wetland A	0.12	-
Wetland C	0.90	-
Wetland M	0.58	-
Stream 7	-	294
Stream 8	-	256
Stream 11	-	205
Stream 12	-	1200
Total	1.60	1955



THE "APPROXIMATE LIMITS OF ASH BASIN FACILITY BOUNDARY" AND THE "APPROXIMATE LIMITS OF CCR BOUNDARY" ARE BASED ON AERIAL PHOTOGRAPHY, TOPOGRAPHIC MAPPING, AND OTHER HISTORICAL DRAWINGS AND INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE. THE "APPROXIMATE LIMITS OF CCR BASIN FACILITY BOUNDARY" INCLUDES THE CONTAINMENT DAMS AND DIKES WHILE THE "APPROXIMATE LIMITS OF CCR BOUNDARY" EXCLUDES THOSE STRUCTURES AND IS BASED ON UPDATED TOPOGRAPHIC MAPPING.

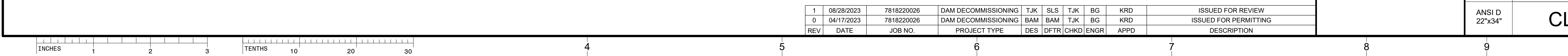
REPORTED ELEVATION, CHANNEL LEVEL, AND SUBSURFACE DATA COLLECTED WITHIN THE BASIN. IT SHOULD BE NOTED THAT THE DETERMINATION OF THE ACTUAL LATERAL EXTENT OF THE CCR MATERIALS WILL TAKE PLACE PRIOR TO, AND/OR DURING, IMPLEMENTATION.



THE PROPOSED FINAL GRADES WERE OBTAINED FROM CCR SURFACE IMPOUNDMENT CLOSURE PLAN PREPARED FOR THE INACTIVE UNIT 5 ASH BASIN, DRAWING CLS_C9XK.00X.010 DATED MARCH 18 2021 PREPARED BY WOOD (WSP).

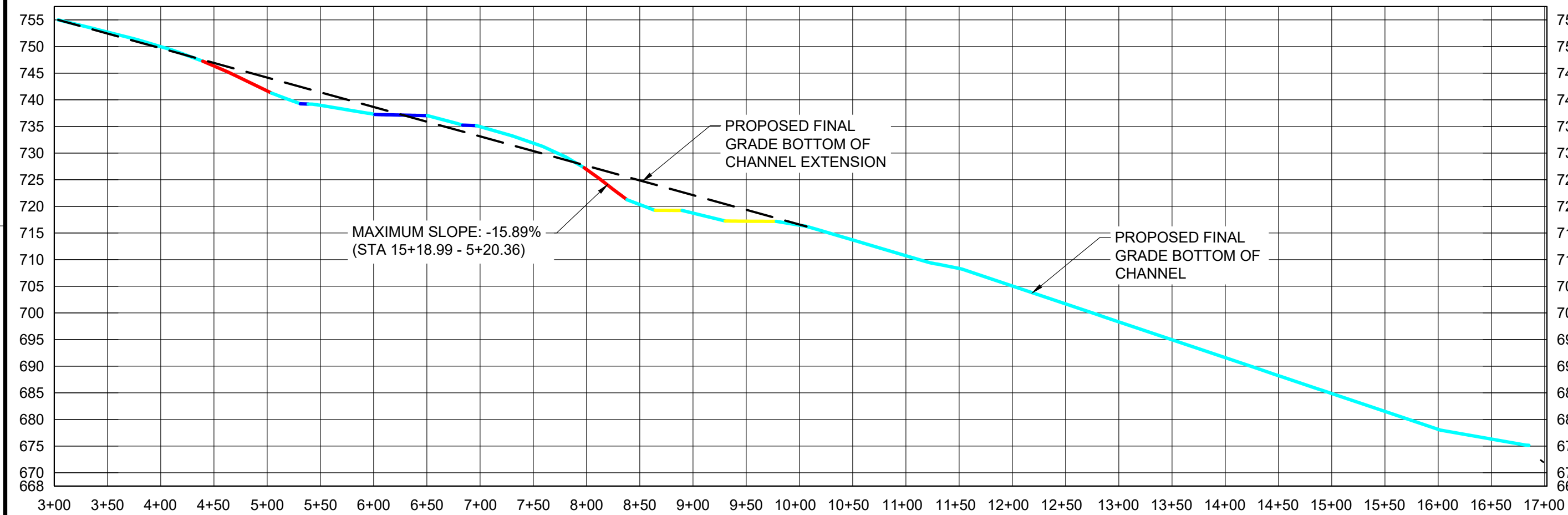
REFERENCES:

ASH BASIN FACILITY BOUNDARIES PROVIDED BY DUKE ENERGY.

EXISTING TOPOGRAPHIC INFORMATION WAS PRODUCED FROM PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY OBTAINED ON JULY 31, 2015 BY WSP. MAIN DAM DOWNSTREAM AREA EXISTING TOPOGRAPHIC INFORMATION SURVEY WAS DONE BY FLEMING ENGINEERING INC. (FEI) ON FEBRUARY 16 AND 17, 2023.

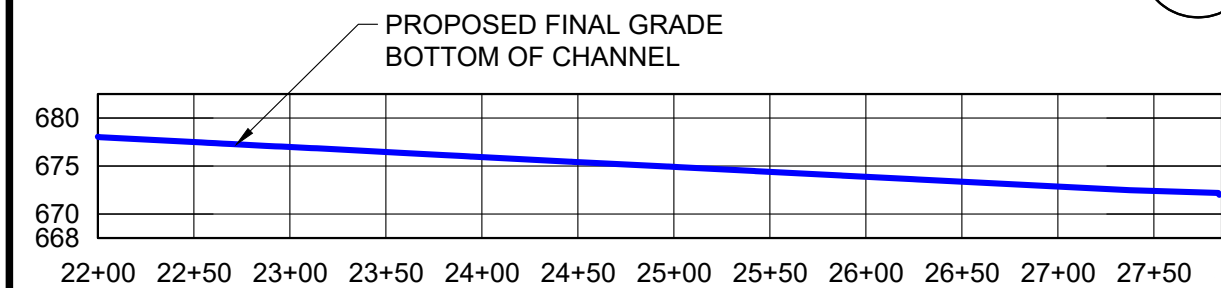


	TITLE MAIN DAM (RUTHE-070, SCOPE 8) AND SADDLE DAM (RUTHE-072, SCOPE 3) DECOMMISSIONING PLAN ROGERS ENERGY COMPLEX - CLIFFSIDE STEAM STATION		
	WSP USA ENVIRONMENT & INFRASTRUCTURE INC. 2801 YORKMOTTE ROAD, SUITE 100 CHARLOTTE, NC 28208 TEL. (704) 357-8600 N.C. ENG. LICENSE/URE: F-1253		
SEAL	PROPOSED FINAL GRADES (STAGE 6) FOR ISSUED FOR REVIEW		
ISSUED FOR REVIEW		SCALE: AS SHOWN	DES: BAM
		DWG TYPE: DWG	DFT: BAM
		JOB NO: 7818220026	CHKD: TJK
		DATE: 8/28/2023	ENGR: BG
	FILENAME: CLS_C999.011.007 PROPOSED FINAL GRADES (STAGE 5)	APPD: KR	
DWG SIZE	DRAWING NO.		REVISION
ANSI D 22"x34"	CLS_C999.011.007		1

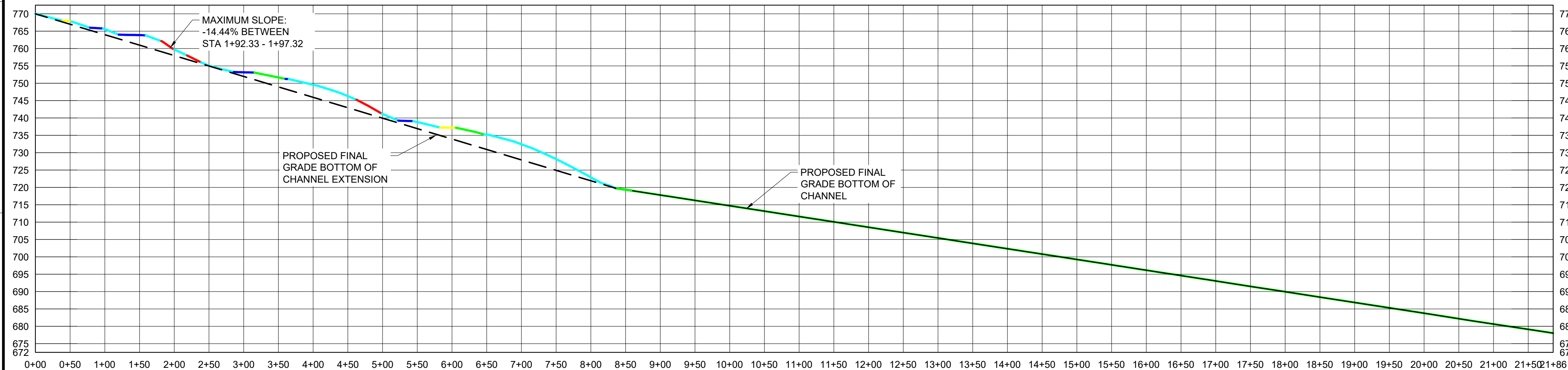


1
.017
CHANNEL 1
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 30'

Channel ID	Channel Lining	Maximum Allowable Slope
1R	Grouted Riprap	N/A
1R	Gabion Mattress	7.91%
1R	Class 2 Riprap	2.87%
1R	Class 1 Riprap	1.93%
1R	Class B Riprap	1.48%
1R	Class A Riprap	0.60%

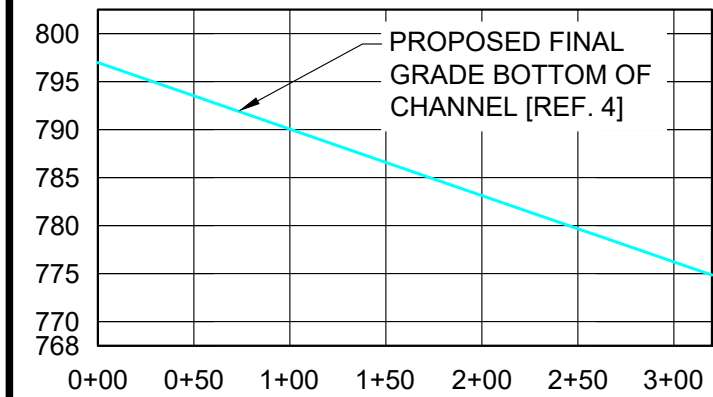


2
.017
CHANNEL 2
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 30'

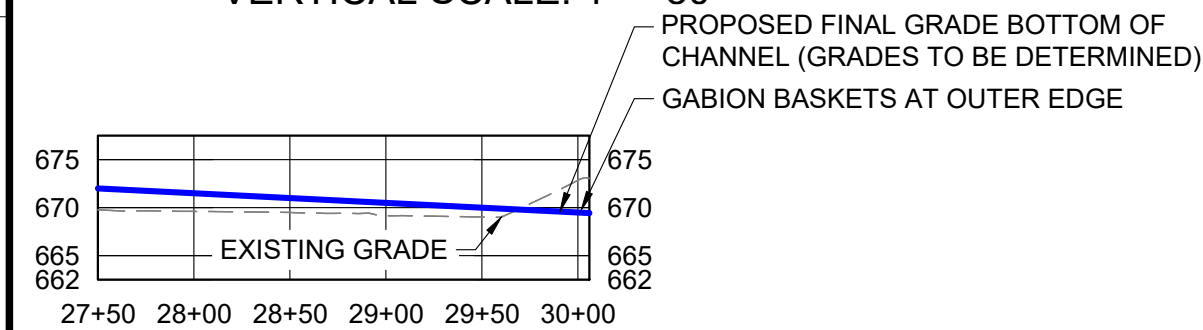


3
.017
CHANNEL 3
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 30'

Channel ID	Channel Lining	Maximum Allowable Slope
3R	Grouted Riprap	N/A
3R	Gabion Mattress	13.19%
3R	Class 2 Riprap	4.43%
3R	Class 1 Riprap	2.95%
3R	Class B Riprap	2.25%
3R	Class A Riprap	0.85%



4
.017
CHANNEL 4
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 30'



5
.017
CHANNEL 5
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 30'

CHANNEL LINING LEGEND	
	GROUTED RIPRAP
	GABION MATTRESS
	CLASS 2 RIPRAP
	CLASS 1 RIPRAP
	CLASS B RIPRAP
	CLASS A RIPRAP

REFERENCES:

1. STORMWATER CHANNEL CAPACITY AND STABILITY CALCULATIONS FOUND IN CALCULATION PACKAGE TITLED 'CHANNEL AND DAM BREACH CALCULATION' DATED AUGUST 28, 2023.
2. OTHER CHANNEL LININGS WITH EQUIVALENT PERFORMANCE CAN ALSO BE USED FOR THE PROPOSED CHANNELS.
3. CHANNEL 5 ALIGNMENT IS SUBJECT TO CHANGE BASED ON USACE AND NCEM WETLANDS PERMITTING.
4. SEE DRAWING CLS_C999.011.201 FOR CHANNEL GEOMETRY AND STABILIZATION DETAILS.

WSP USA ENVIRONMENT & INFRASTRUCTURE INC.
2801 YORKMONT ROAD, SUITE 100
CHARLOTTE, NC 28208
TEL: (704) 357-6800
N.C. ENG. LICENSURE: F-1253

SEAL

ISSUED FOR REVIEW

TITLE
MAIN DAM (RUTHE-070, SCOPE 8) AND SADDLE DAM (RUTHE-072, SCOPE 3) DECOMMISSIONING PLAN
ROGERS ENERGY COMPLEX - CLIFFSIDE STEAM STATION

CHANNEL PROFILES

FOR
ISSUED FOR REVIEW

SCALE: AS SHOWN
DWG TYPE: DWG
JOB NO: 7818220026
DATE: 8/28/2023

DES: BAM
DFTR: BAM
CHKD: TJK
ENGR: BG
APPD: KRD

FILENAME: CLS_C999.011.016 CHANNEL PROFILES



DWG SIZE
ANSI D 22"x34"

DRAWING NO.
CLS_C999.011.017

REVISION
1

1	08/28/2023	7818220026	DAM DECOMMISSIONING	TJK	SLS	TJK	BG	KRD	ISSUED FOR REVIEW
0	04/17/2023	7818220026	DAM DECOMMISSIONING	BAM	BAM	TJK	BG	KRD	ISSUED FOR PERMITTING
REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION

3	GABION OUTLET DETAIL
.201	N.T.S.

		TITLE MAIN DAM (RUTHE-070, SCOPE 8) AND SADDLE DAM (RUTHE-072, SCOPE 3) DECOMMISSIONING PLAN ROGERS ENERGY COMPLEX - CLIFFSIDE STEAM STATION			
WSP USA ENVIRONMENT & INFRASTRUCTURE INC. 2801 YORKMONT ROAD, SUITE 100 CHARLOTTE, NC 28208 TEL (704) 357-8600 N.C. ENG. LICENSEURE: F-1253		DETAILS 1			
SEAL		FOR ISSUED FOR REVIEW			
ISSUED FOR REVIEW		<div>  <div> <div>DUKE</div> <div>ENERGY®</div> </div> </div>		SCALE: AS SHOWN	DES: BAM
		DWG TYPE: DWG		DFTR: BAM	
		JOB NO: 7818220026		CHKD: TJK	
		DATE: 8/28/2023		ENGR: BG	
		FILENAME: CLS_C999.011.201 DETAILS 1		APPD: KRD	
DWG SIZE		DRAWING NO.		REVISION	
ANSI D 22"x34"		CLS_C999.011.201		1	