

Dominion Energy Southeast Services, Inc.
400 Otarre Parkway
Cayce, SC 29033



July 31, 2020

Mr. Greg Cassidy
State Voluntary Cleanup Program
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

**Re: Congaree River Project
Attachment B – Cofferdam Design Drawings
Columbia, South Carolina**

Dear Mr. Cassidy:

In support of the Dominion Energy South Carolina (DESC) Congaree River Project, the attached Cofferdam Design Drawings will be included as Attachment B in the United States Army Corps of Engineers (USACE) permit application that will be submitted by September 30, 2020.

The Cofferdam Design Drawings are the culmination of various engineering studies and evaluations previously reviewed and approved by SCDHEC. The Cofferdam Design Drawings present significant details relating to the construction of the cofferdams in Area 1 and Area 2 of the stakeholder-developed Modified Removal Areas (MRA).

The Department's written approval/concurrence of the attached Cofferdam Design Drawings is an important component of the permit application submittal to the United States Army Corps of Engineers.

If you have any questions regarding this submittal, please contact Paul Biery of DESC at 803-217-5016.

Sincerely,

A handwritten signature in blue ink that reads "T. N. Effinger".

Thomas N. Effinger, P.E.
Director, Environmental Services

Enclosures

cc: P. Biery – DESC
R. Contrael – ACE
W. Zeli – Apex

CONGAREE RIVER REMEDIATION COLUMBIA, SOUTH CAROLINA

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314P1788.001-A14	14	CONSTRUCTION SEQUENCE

A



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SHEET 1

TITLE SHEET

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

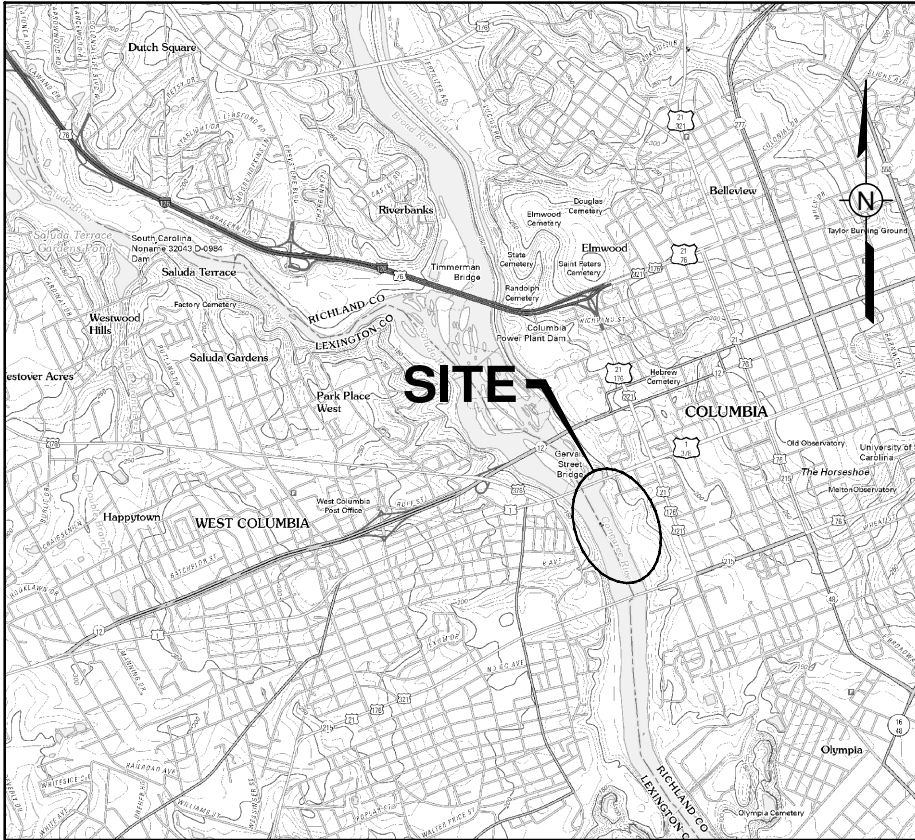
PREPARED FOR
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COLUMBIA, SOUTH CAROLINA

Drawn By: *RAZ 10092019*

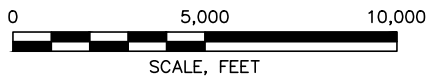
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Approved: *SPO 07242020*

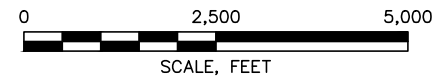
DWG No.: 314P1788.001-A01



VICINITY MAP



AERIAL IMAGE



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SHEET 2

**SITE VICINITY MAP
AND AERIAL MAP**

**CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA**

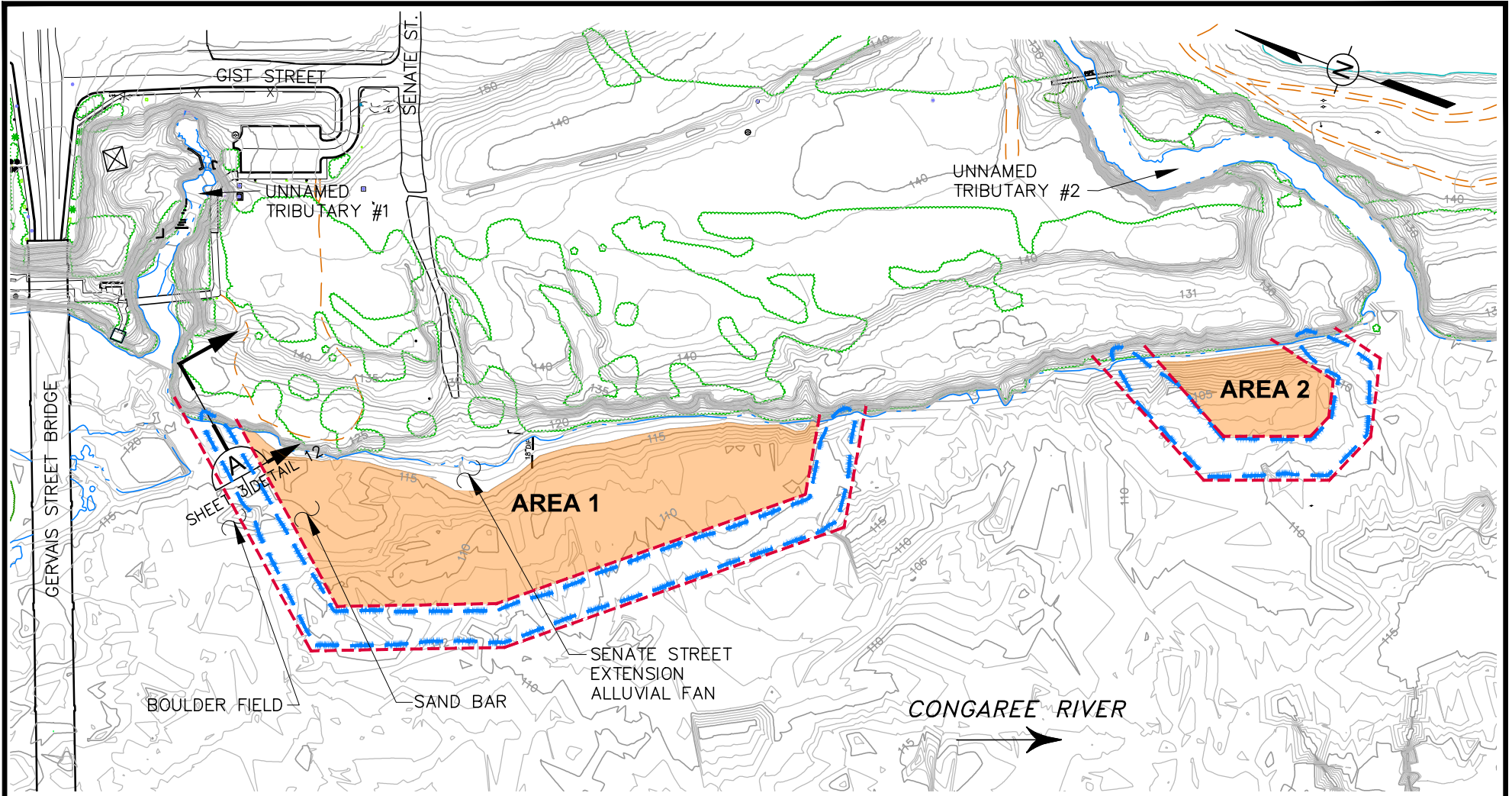
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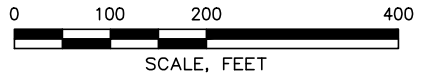
Approved: *SPO 07132020*

DWG No.: 314P1788.001-A02



LEGEND

-  BATHYMETRIC LINE (FEET NGVD29)
-  MODIFIED REMOVAL AREA
-  APPROXIMATE COFFERDAM FOOTPRINT
-  COFFERDAM LIMITS



REFERENCE:

APEX COMPANIES LLC DRAWING TITLED, "STAKEHOLDER APPROVED MRA PLAN, SEDIMENT REMEDIATION AREAS", DATED FEBRUARY 8, 2019, FIGURE 1, CONGAREE RIVER, COLUMBIA, SOUTH CAROLINA.

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK & WHITE REPRODUCTION MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

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SHEET 3

GENERAL ARRANGEMENT PLAN

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

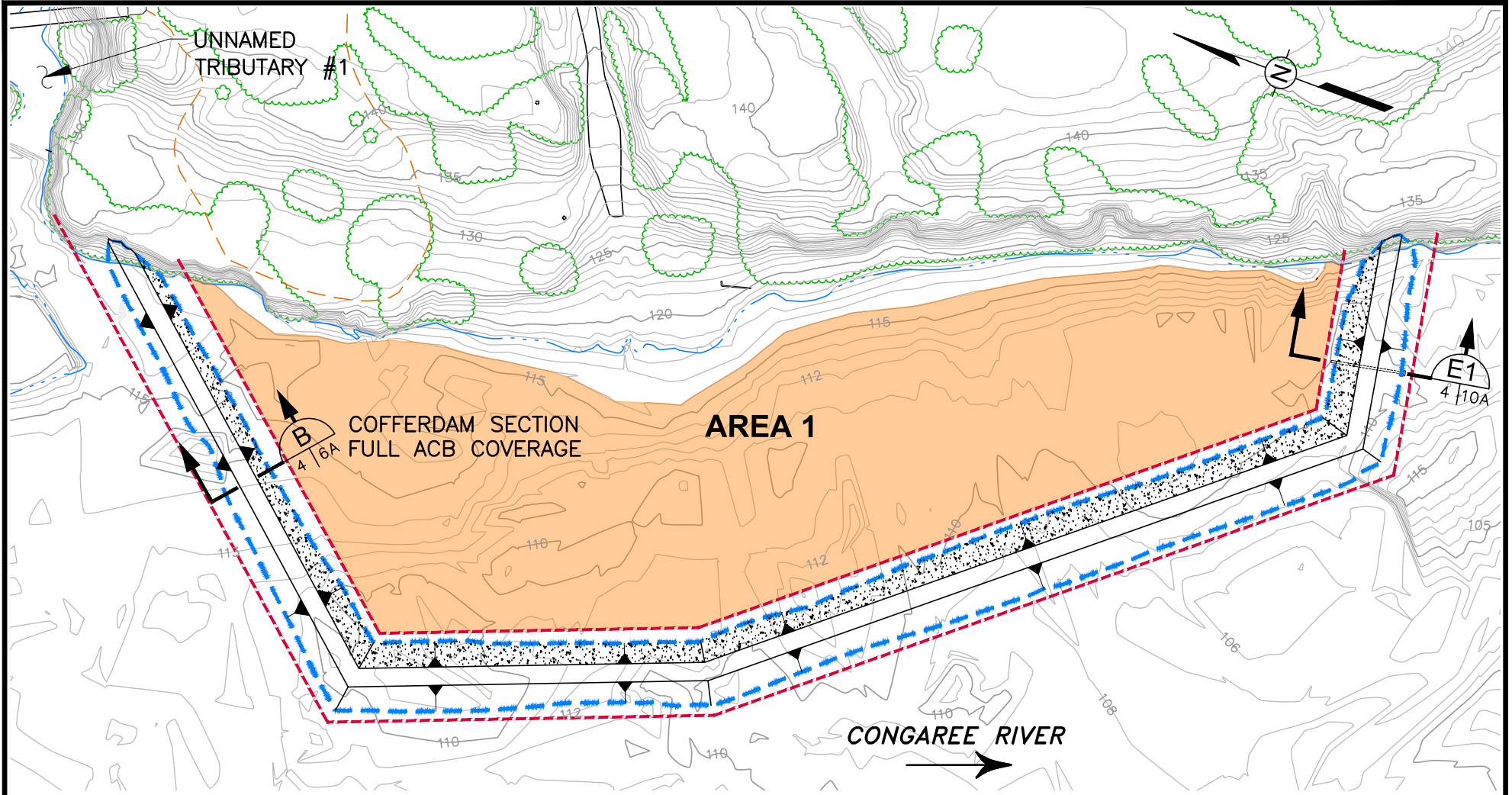
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DWG No.: 314P1788.001-A03




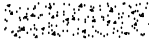



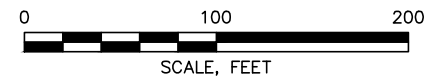
COFFERDAM SECTION
FULL ACB COVERAGE

AREA 1

CONGAREE RIVER

LEGEND

-  BATHYMETRIC LINE (FEET NGVD29)
-  MODIFIED REMOVAL AREA
-  APPROXIMATE COFFERDAM FOOTPRINT
-  COFFERDAM LIMITS
-  OVERTOPPING STRUCTURE



REFERENCE:

APEX COMPANIES LLC DRAWING TITLED, "STAKEHOLDER APPROVED MRA PLAN, SEDIMENT REMEDIATION AREAS", DATED FEBRUARY 8, 2019, FIGURE 1, CONGAREE RIVER, COLUMBIA, SOUTH CAROLINA.

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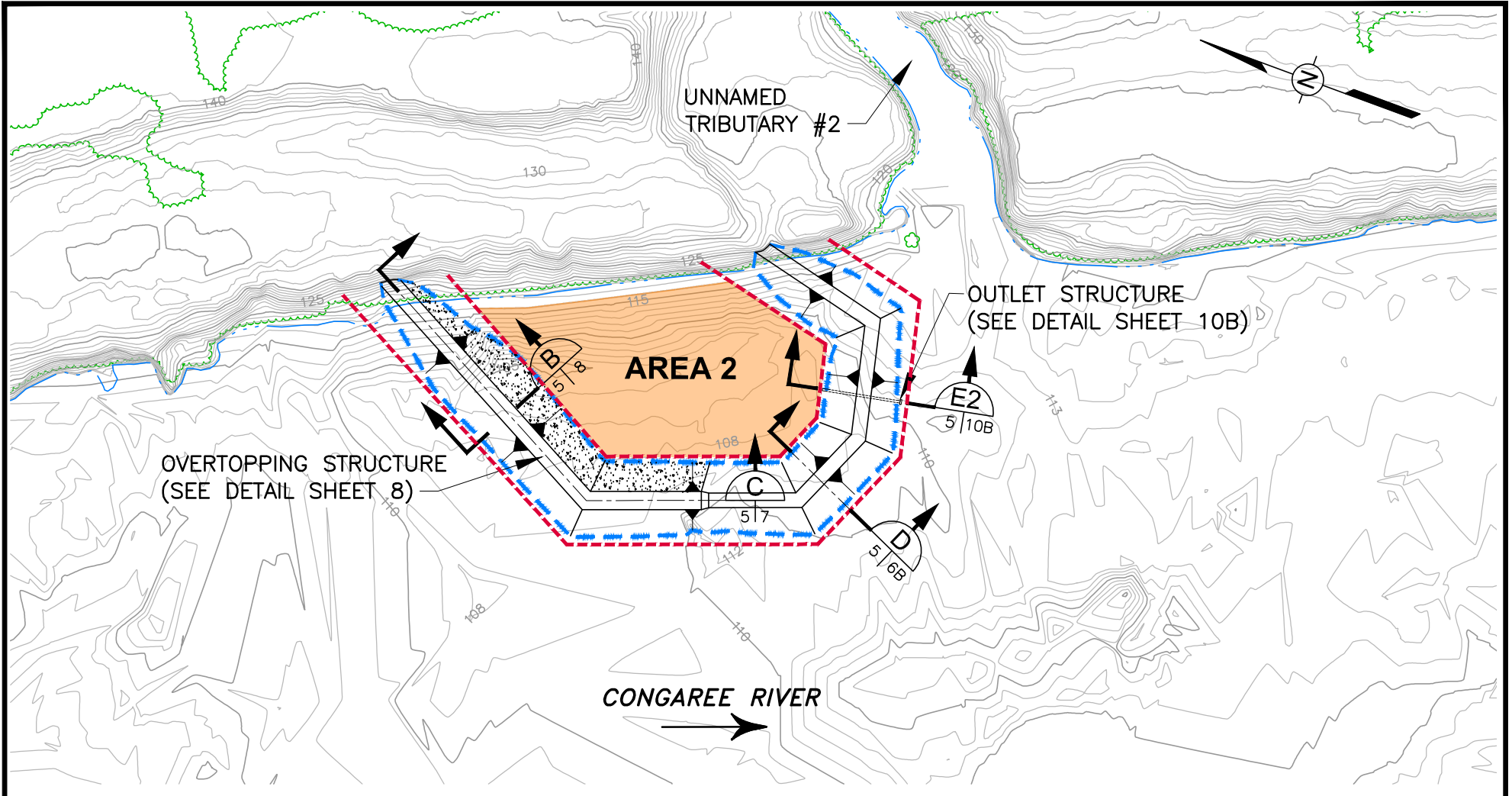
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SHEET 4





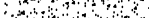
CONSTRUCTION AREA 1

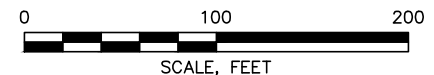
CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA
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COLUMBIA, SOUTH CAROLINA

Drawn By: *RAZ 10/02/2019*
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Approved: *SPO 07/22/2020*
DWG No.: 314P1788.001-A04



LEGEND

-  BATHYMETRIC LINE (FEET NGVD29)
-  MODIFIED REMOVAL AREA
-  APPROXIMATE COFFERDAM FOOTPRINT
-  COFFERDAM LIMITS
-  OVERTOPPING STRUCTURE



REFERENCE:

APEX COMPANIES LLC DRAWING TITLED, "STAKEHOLDER APPROVED MRA PLAN, SEDIMENT REMEDIATION AREAS", DATED FEBRUARY 8, 2019, FIGURE 1, CONGAREE RIVER, COLUMBIA, SOUTH CAROLINA.

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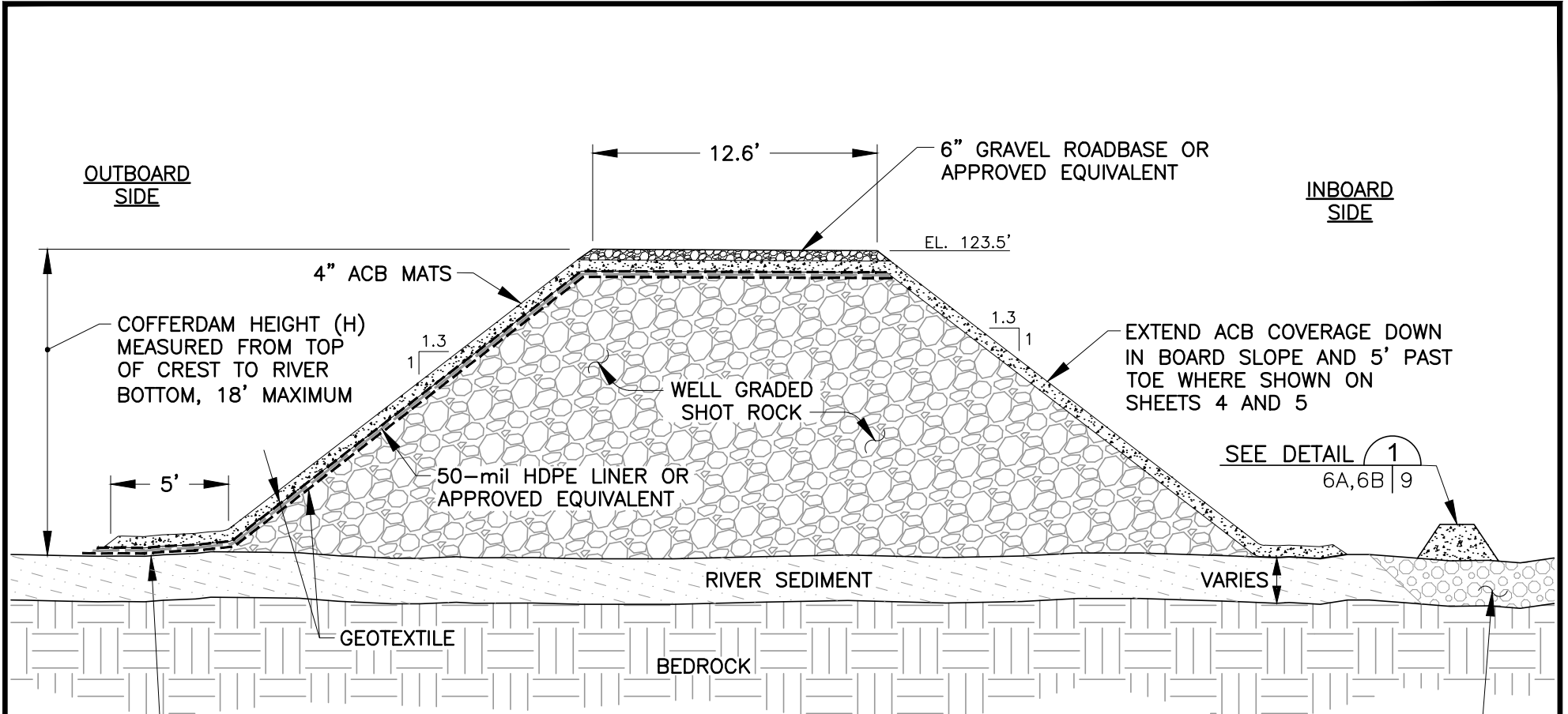
SHEET 5

CONSTRUCTION AREA 2

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

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DWG No.: 314P1788.001-A05

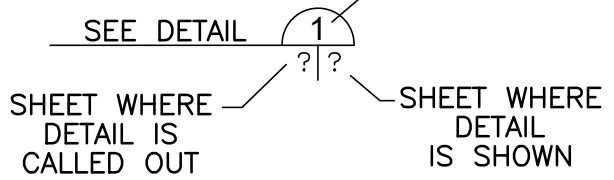


EXTEND ACB COVERAGE DOWN IN BOARD SLOPE AND 5' PAST TOE WHERE SHOWN ON SHEETS 4 AND 5

SEE DETAIL 1
6A,6B | 9

NO EXCAVATION WITHIN 10' OF TOE OF SLOPE WITHOUT PRIOR APPROVAL FROM DESC. EXCAVATED AREAS WITHIN 10' MAY REQUIRE BACKFILL AFTER REMOVAL OF MATERIAL IF DIRECTED BY DESC.

LEGEND:




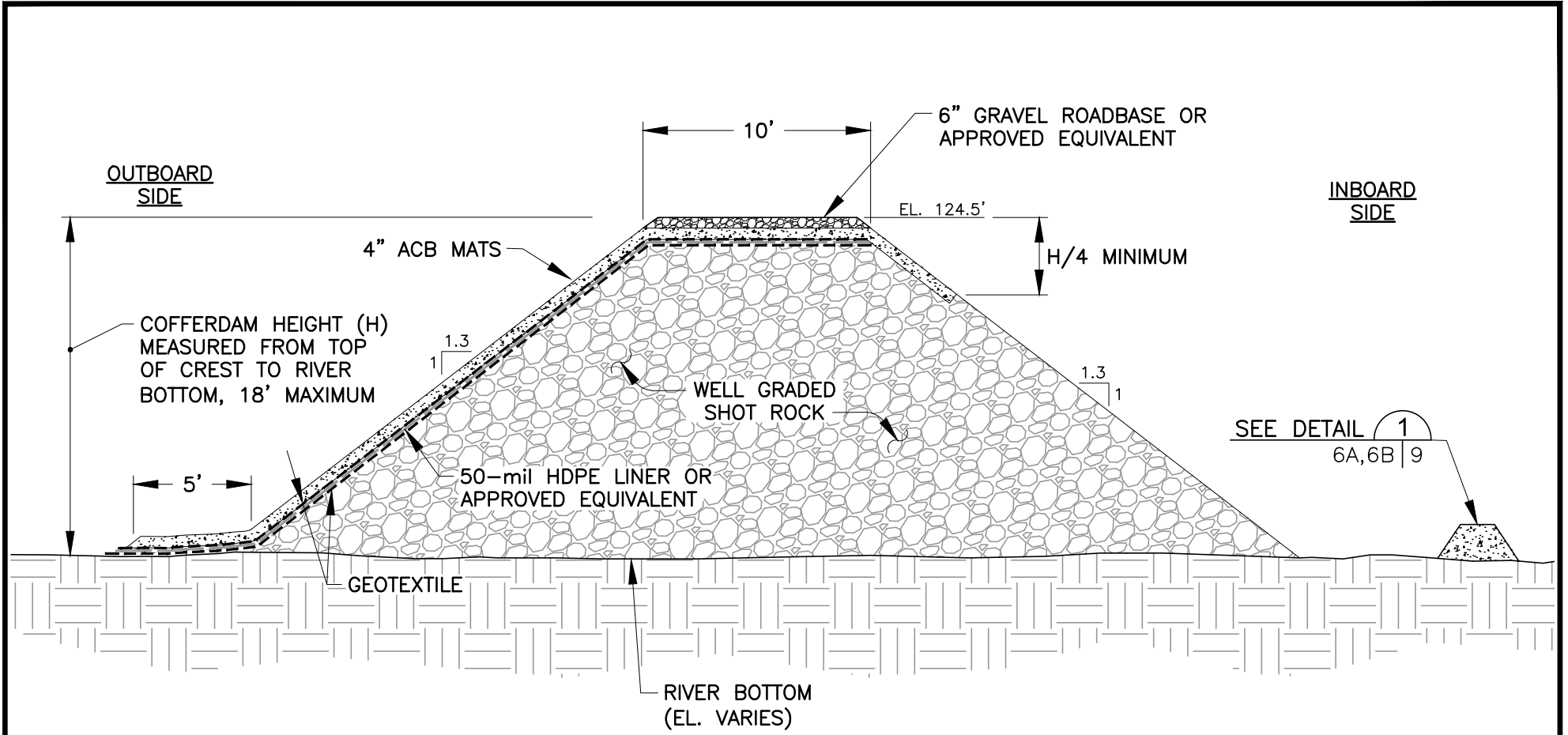
SECTION F
4,5 | 6B



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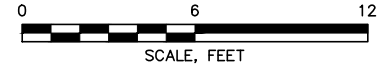
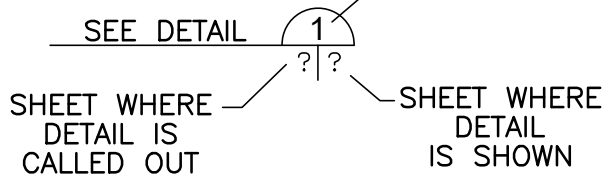
A

 WSP USA Inc. 11 STANWIX STREET SUITE 950 PITTSBURGH, PA 15222 TEL: +1 412.604.1040	SHEET 6A	CONGAREE RIVER COLUMBIA, SOUTH CAROLINA PREPARED FOR DOMINION ENERGY SOUTH CAROLINA, INC. COLUMBIA, SOUTH CAROLINA	Drawn By: <i>RAZ 05272020</i>
	COFFERDAM SECTION IN AREA 1 AND PARTIAL AREA 2		Checked: <i>TE 07142020</i>
			Approved: <i>SPO 07242020</i>
			DWG No.: 314P1788.001-A06b



SECTION D
5 | 6A

LEGEND:



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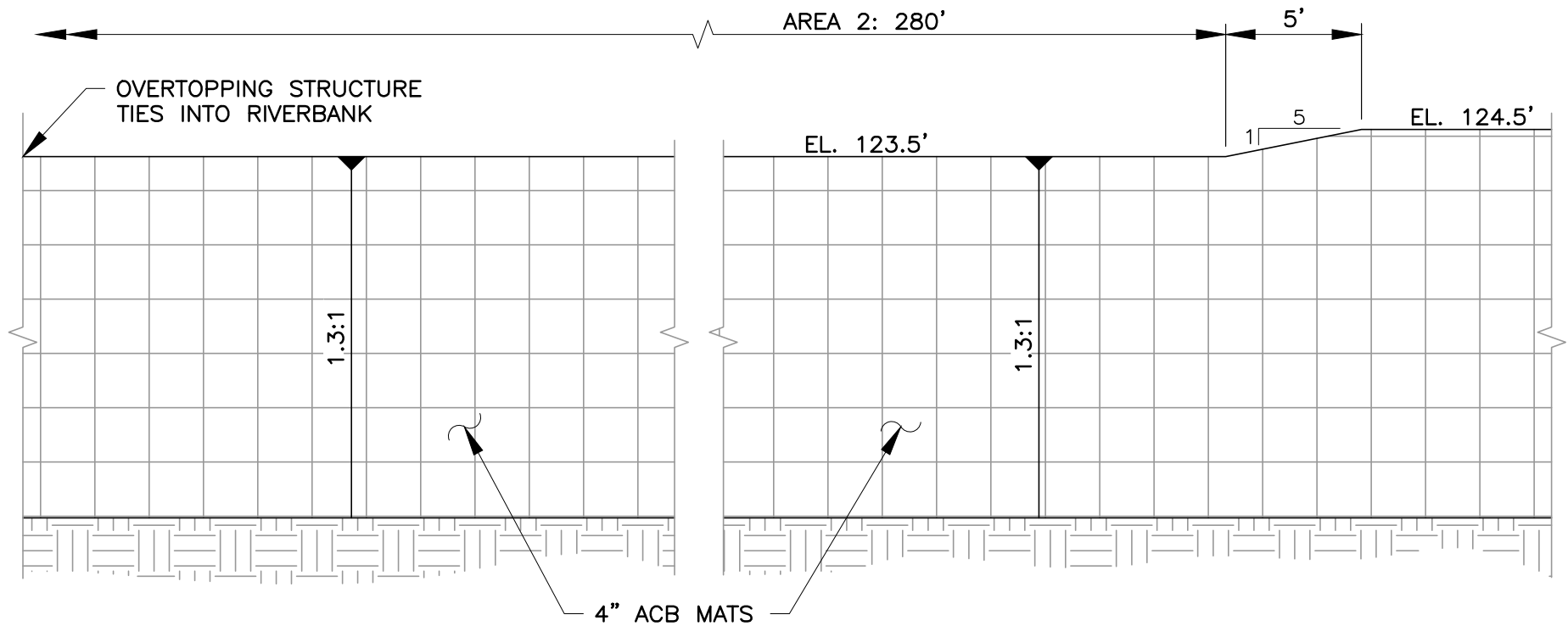


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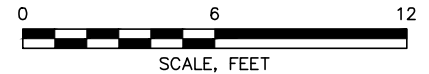
SHEET 6B
TYPICAL COFFERDAM SECTION
IN AREA 2

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SECTION C
5 | 7



A



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SHEET 7

TYPICAL OVERTOPPING STRUCTURE
IN AREA 2

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

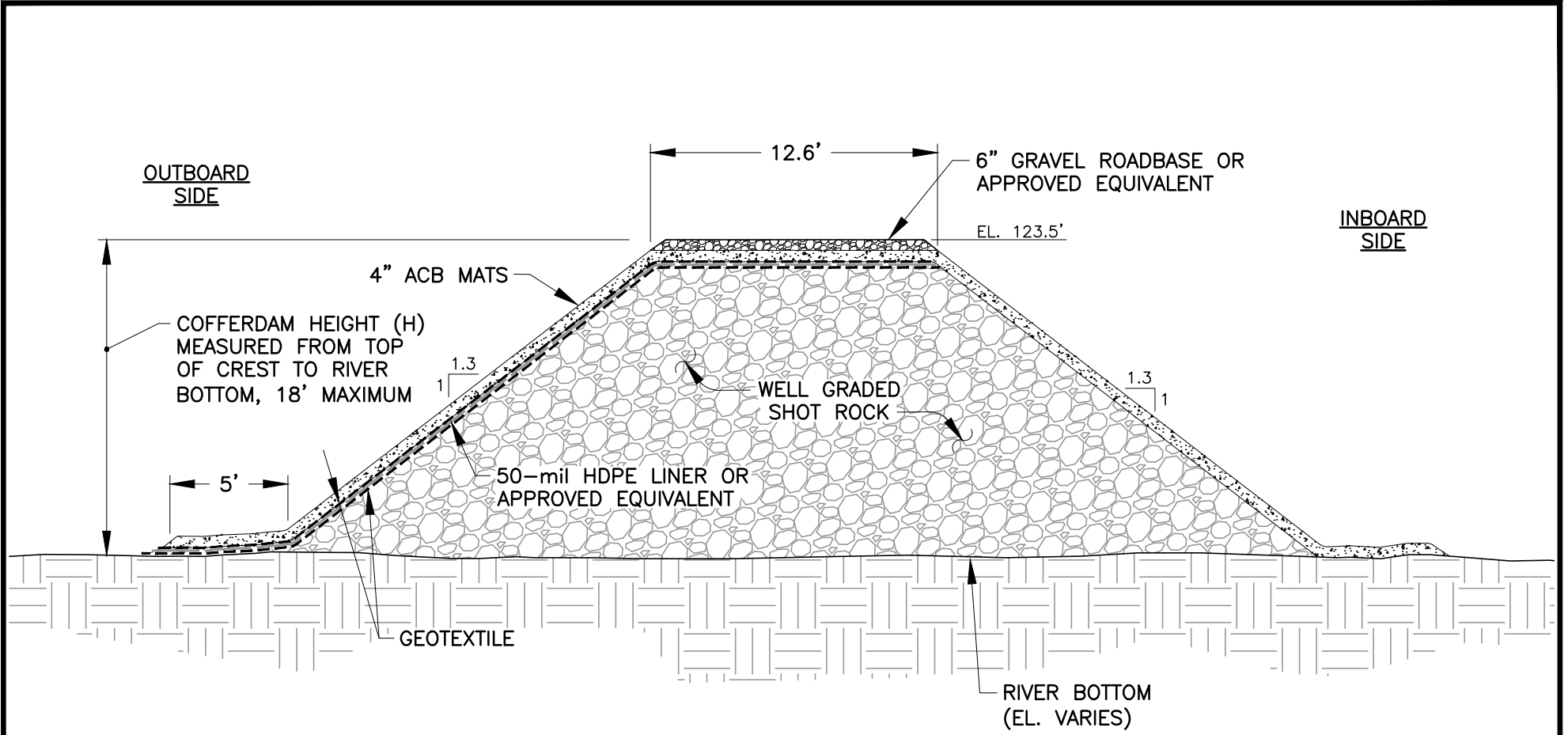
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DWG No.: 314P1788.001-A07



SECTION B
4,5 | 8

LEGEND:

SEE DETAIL 1 ———— DETAIL NO.
 ? | ? ———— SHEET WHERE
 SHEET WHERE ———— SHEET WHERE
 DETAIL IS ———— DETAIL
 CALLED OUT ———— IS SHOWN



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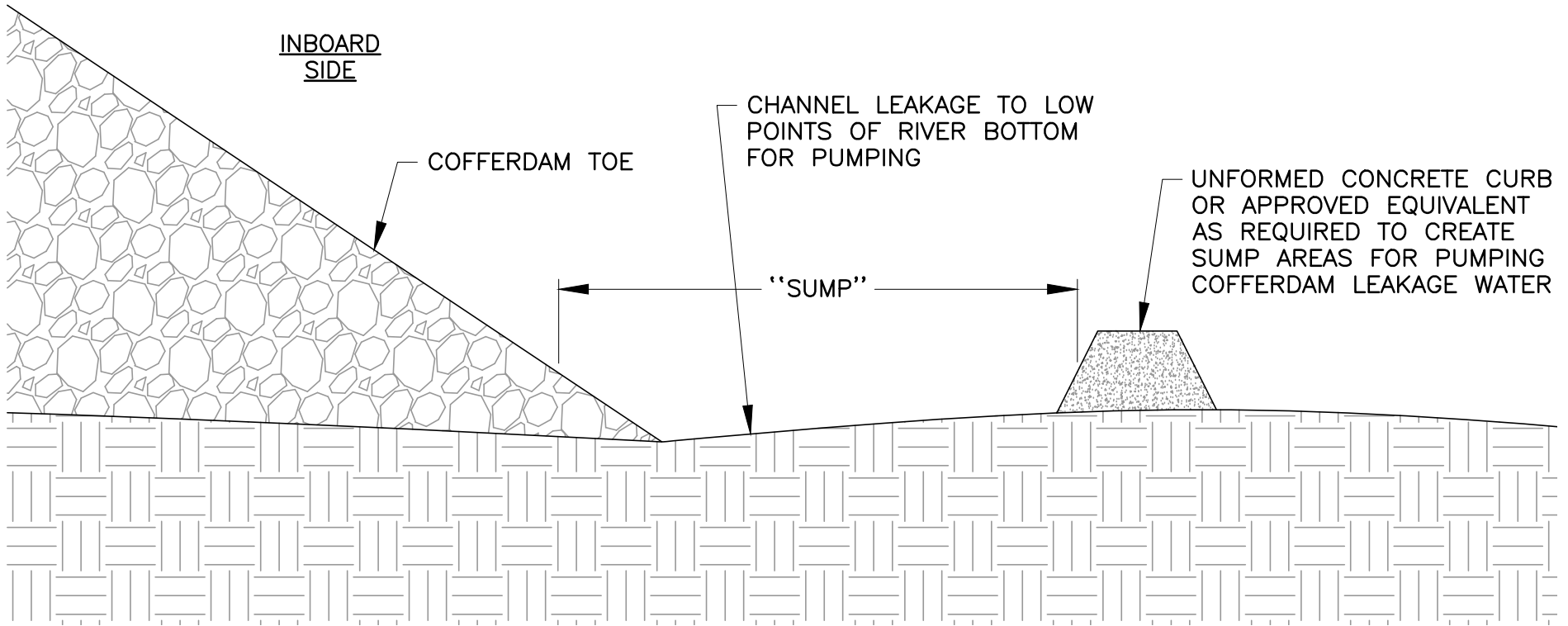


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SHEET 8
 TYPICAL OVERTOPPING SECTION
 IN AREA 2

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DETAIL 1
6A,6B | 9

LEGEND:

SEE DETAIL



DETAIL NO.

SHEET WHERE
DETAIL IS
CALLED OUT

SHEET WHERE
DETAIL
IS SHOWN



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SHEET 9

DETAIL - LEAKAGE CONTROL

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

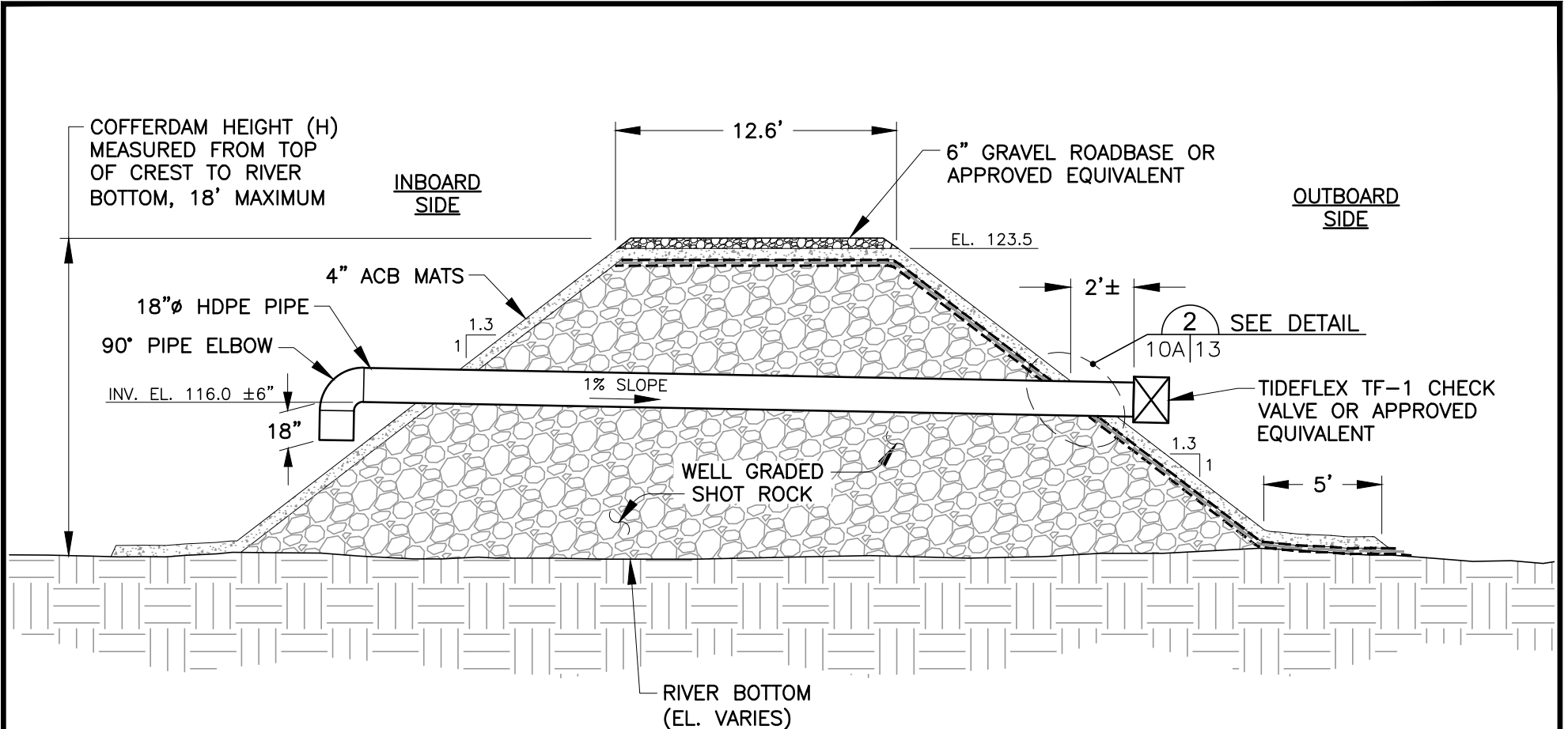
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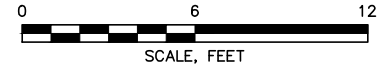
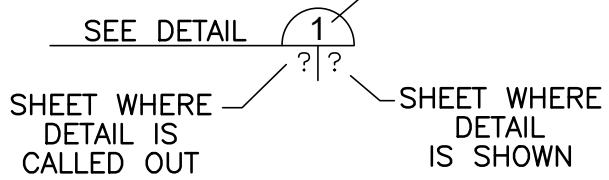
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DWG No.: 314P1788.001-A09



SECTION E1
4 | 10A

LEGEND:



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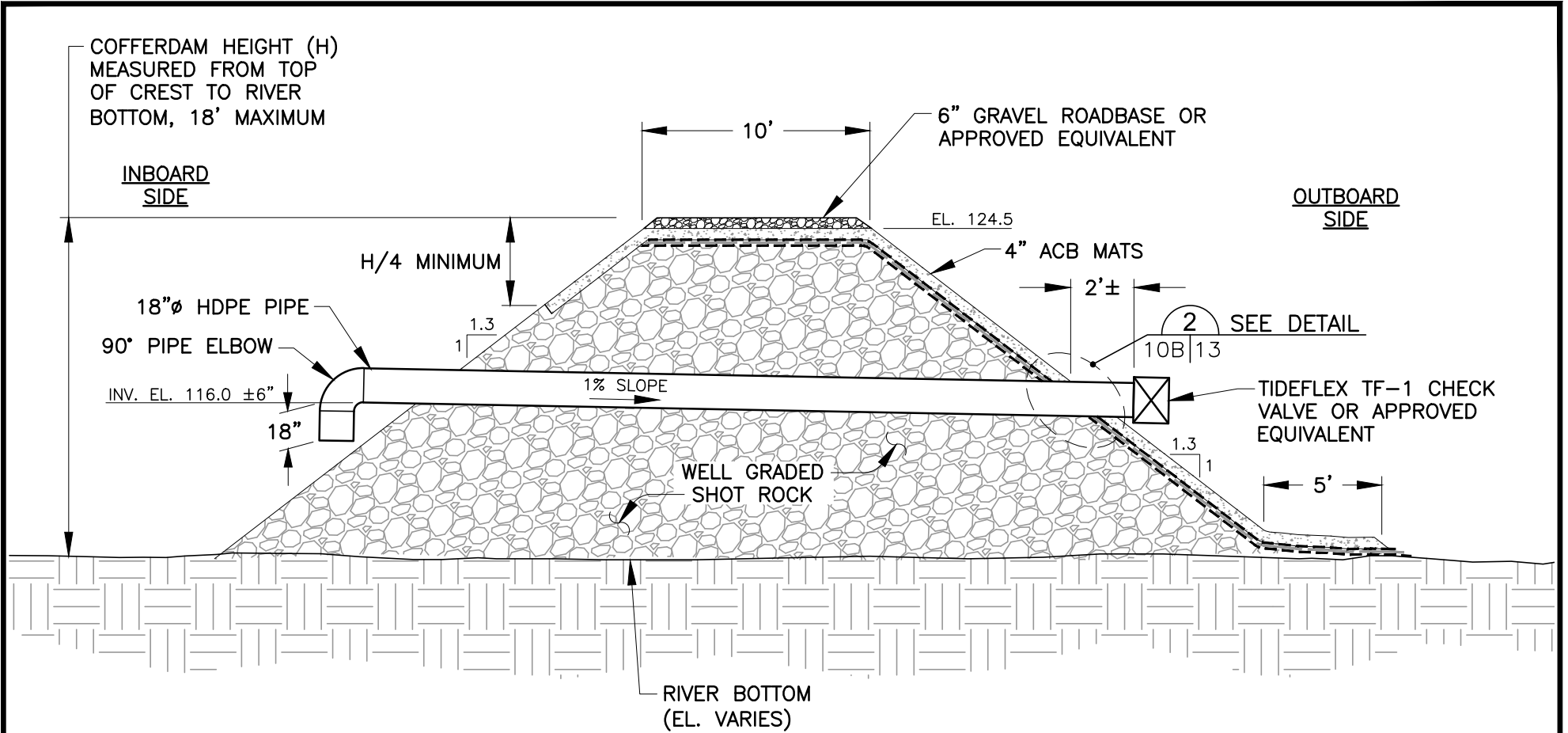


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SHEET 10A
AREA 1 OUTLET STRUCTURE

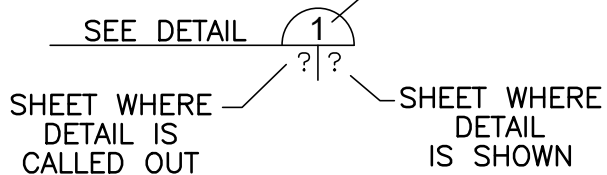
CONGAREE RIVER
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COLUMBIA, SOUTH CAROLINA

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SECTION E2
5|10B

LEGEND:



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SHEET 10B

AREA 2 OUTLET STRUCTURE

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

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COLUMBIA, SOUTH CAROLINA

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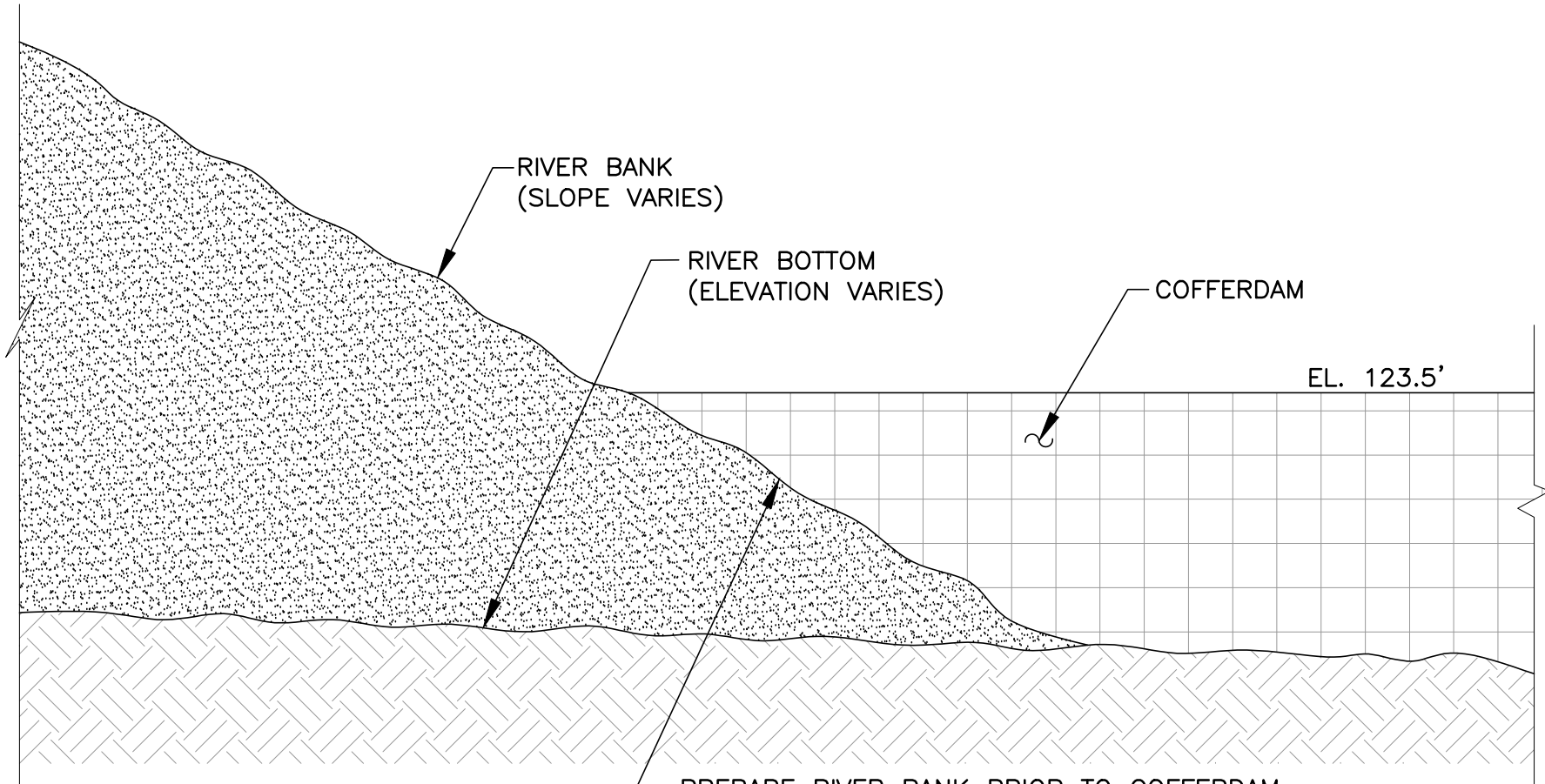
DWG No. 314P1788.001-A10b

NOTES:

1. COFFERDAM TO REMAIN IN PLACE AT EACH AREA UNTIL SEDIMENT REMOVAL IS COMPLETE.
2. LINER MATERIAL, ACB MATS, AND OUTLET STRUCTURE MAY BE REUSED BETWEEN AREAS SUBJECT TO OWNER'S APPROVAL.
3. CONTRACTOR SHALL DEWATER INBOARD AREA OF COFFERDAM USING DIVERSION BERMS, SUMPS, AND PUMPS.
4. MAXIMUM LIFT THICKNESS FOR SHOTROCK IS 18" OR AS APPROVED BY DESC. SHOTROCK TO BE COMPACTED WITH MINIMUM TWO PASSES OF EARTH MOVING EQUIPMENT ABOVE WATER LEVEL OR AS DIRECTED BY DESC.
5. COFFERDAM SHALL BE CONSTRUCTED FROM WELL GRADED SHOT ROCK WITH A MAXIMUM STONE SIZE OF 6".
6. SHOT ROCK SHALL BE FREE DRAINING AND CONTAIN LESS THAN 5 PERCENT OF FINE-GRAINED MATERIALS (i.e., LESS THAN THE NO. 200 SIEVE).
7. SHOT ROCK SHALL CONSIST OF ANGULAR CRUSHER RUN MATERIAL SUITABLE FOR MARINE APPLICATIONS.
8. SHOT ROCK SHALL COMPLY WITH SCDOT SPECIFICATIONS FOR SUITABLE ROCK FILL.
9. LARGE BOULDERS IN THE FOOTPRINT OF THE REINFORCED COFFERDAM SHALL BE MOVED IF REQUIRED.
10. CONTRACTOR SHALL PROVIDE SUFFICIENT PUMPING CAPACITY TO PERFORM THE SEDIMENT REMOVAL IN BOTH WORK AREAS.
11. ACB MATS SHALL EXTEND DOWN THE INBOARD SLOPE A MINIMUM DISTANCE OF ONE-FOURTH OF COFFERDAM HEIGHT, OR OTHERWISE ACB MATS SHALL COVER THE ENTIRE INBOARD SLOPE AND EXTEND APPROXIMATELY 5- FEET FROM THE TOE AS SHOWN ON SHEETS 4 AND 5, AND AS DIRECTED BY DESC.

A

 <p style="font-size: small; margin: 0;">WSP USA Inc. 11 STANWIX STREET SUITE 950 PITTSBURGH, PA 15222 TEL: +1 412.604.1040</p>	SHEET 11	<p style="margin: 0;">CONGAREE RIVER COLUMBIA, SOUTH CAROLINA</p> <p style="font-size: x-small; margin: 0;">PREPARED FOR DOMINION ENERGY SOUTH CAROLINA, INC. COLUMBIA, SOUTH CAROLINA</p>	Drawn By: <i>RAZ 10/02/2019</i>
	NOTES		Checked: <i>TE 07092020</i> Approved: <i>SPO 07222020</i> DWG No.: 314P1788.001-A11



RIVER BANK
(SLOPE VARIES)

RIVER BOTTOM
(ELEVATION VARIES)

COFFERDAM

EL. 123.5'

PREPARE RIVER BANK PRIOR TO COFFERDAM
CONSTRUCTION. PREPARATION TO CONSIST OF
REMOVAL OF ALL ORGANIC MATERIAL AND
TOPSOIL AND COMPACTION OF PREPARED
SURFACE AS COFFERDAM IS CONSTRUCTED

SECTION A
3 | 12

(NOT TO SCALE)

A



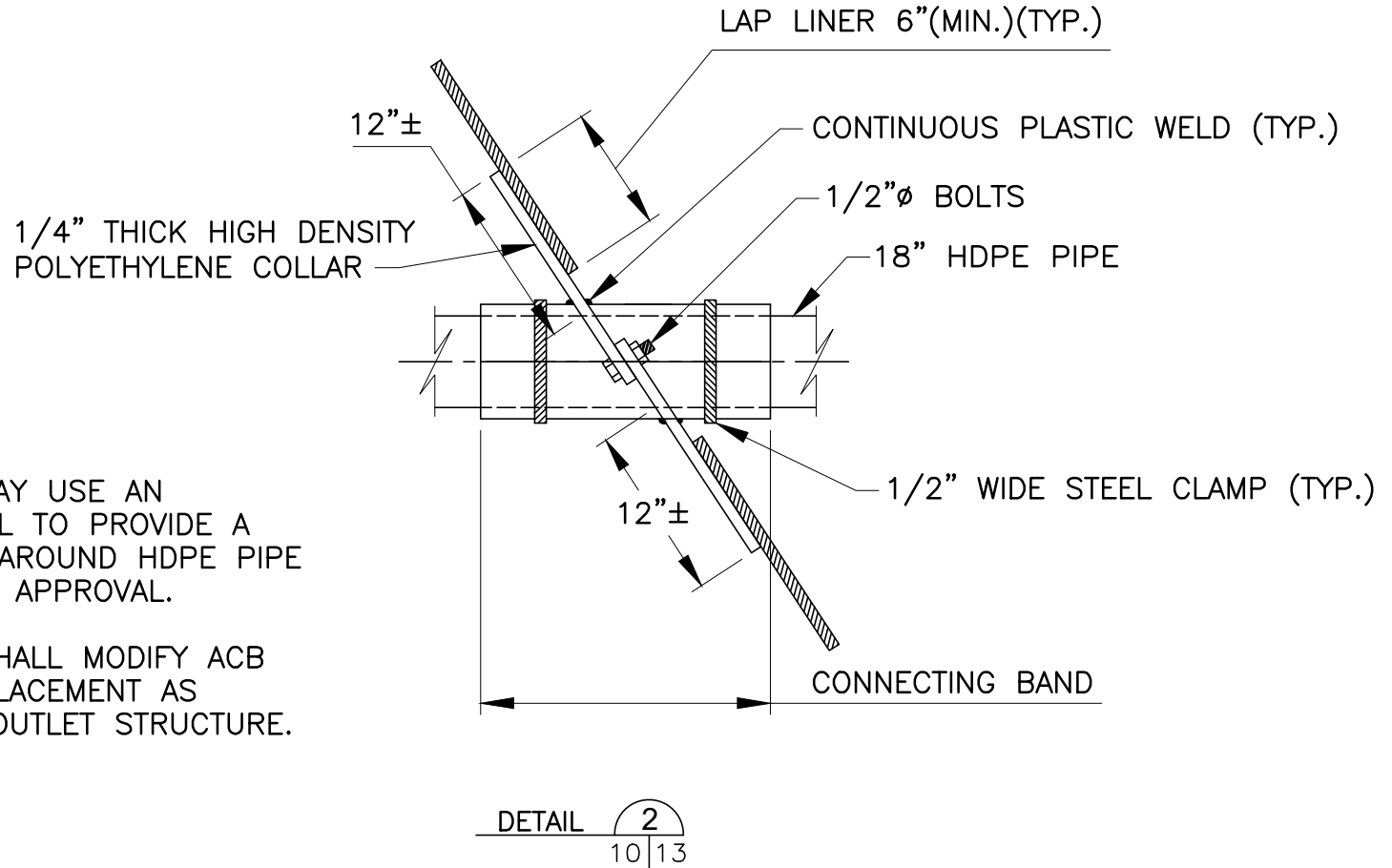
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SHEET 12

TYPICAL RIVER BANK PROFILE

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA
PREPARED FOR
DOMINION ENERGY SOUTH CAROLINA, INC.
COLUMBIA, SOUTH CAROLINA

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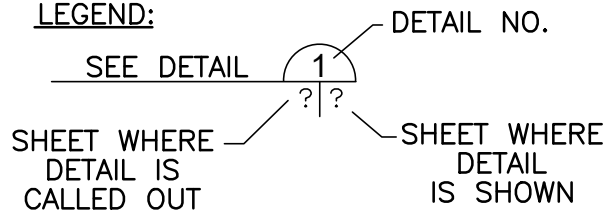


NOTES:

1. CONTRACTOR MAY USE AN ALTERNATIVE DETAIL TO PROVIDE A WATERTIGHT SEAL AROUND HDPE PIPE SUBJECT TO DESC APPROVAL.
2. CONTRACTOR SHALL MODIFY ACB REINFORCEMENT PLACEMENT AS NEEDED AROUND OUTLET STRUCTURE.

DETAIL $\frac{2}{10|13}$

LEGEND:



(NOT TO SCALE)

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SHEET 13

HDPE COLLAR DETAILS

CONGAREE RIVER
COLUMBIA, SOUTH CAROLINA

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DOMINION ENERGY SOUTH CAROLINA, INC.
COLUMBIA, SOUTH CAROLINA

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DWG No.: 314P1788.001-A13

GENERAL COFFERDAM CONSTRUCTION SEQUENCE:

1. STRIP RIVER BANK IN AREA WHERE COFFERDAM WILL BE CONSTRUCTED.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES.
3. CONSTRUCT MIDDLE CORE OF BERM AROUND AREA 1.
4. PLACE SHOTROCK IN LIFTS.
5. INSTALL OUTLET STRUCTURE AS SHOTROCK IS BEING PLACED.
6. PLACE ACB MATS AND LINER ALONG CREST AND SLOPES OF COFFERDAM.
7. COMPLETE INITIAL DEWATERING OF AREA 1 USING PUMPING SYSTEM.
8. CONSTRUCT MIDDLE CORE OF BERM AROUND AREA 2.
9. CONSTRUCT AREA 2 COFFERDAM FOLLOWING SAME CONSTRUCTION SEQUENCE WHILE MOVING SHOTROCK AND OTHER MATERIAL FROM AREA 1 TO AREA 2.
10. FINAL CONSTRUCTION SEQUENCE TO BE DEVELOPED BY CONTRACTOR AND APPROVED BY DESC.
11. AFTER COMPLETION OF SEDIMENT REMOVAL, REMOVE ALL COFFERDAM MATERIAL FROM RIVER.

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 <p>WSP USA Inc. 11 STANWIX STREET SUITE 950 PITTSBURGH, PA 15222 TEL: +1 412.604.1040</p>	SHEET 14	<p>CONGAREE RIVER COLUMBIA, SOUTH CAROLINA</p> <p>PREPARED FOR DOMINION ENERGY SOUTH CAROLINA, INC. COLUMBIA, SOUTH CAROLINA</p>	Drawn By: <i>RAZ 10/02/2019</i>
	CONSTRUCTION SEQUENCE		Checked: <i>TE 07/09/2020</i>
			Approved: <i>SPO 07/13/2020</i>
			DWG No.: 314P1788.001-A14