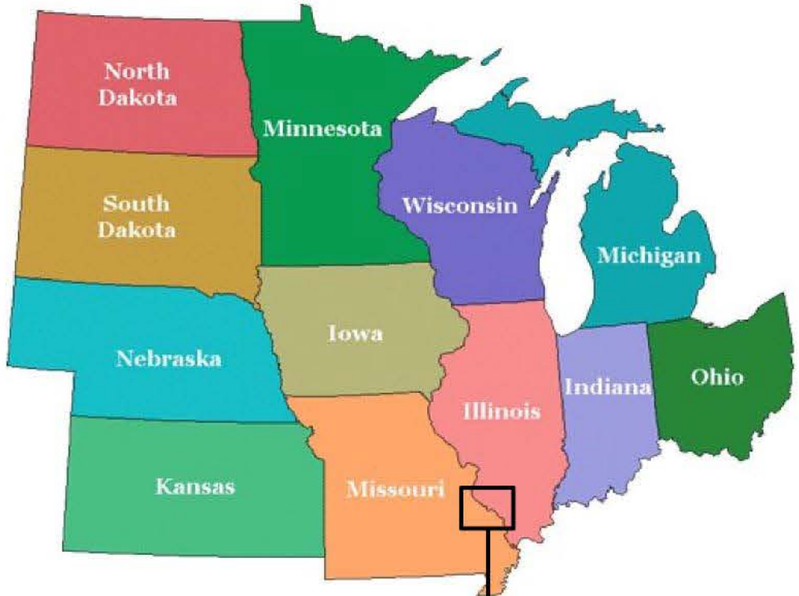

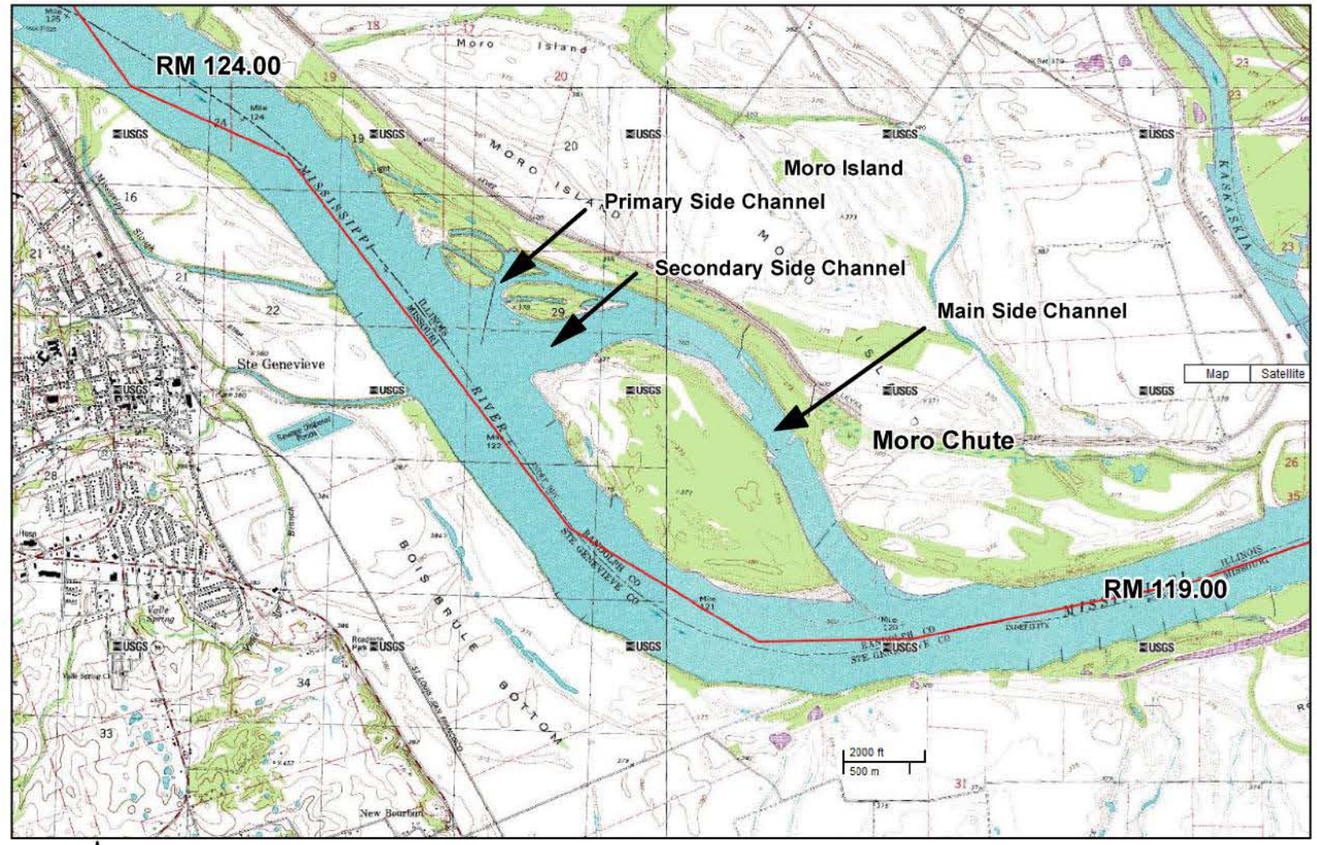

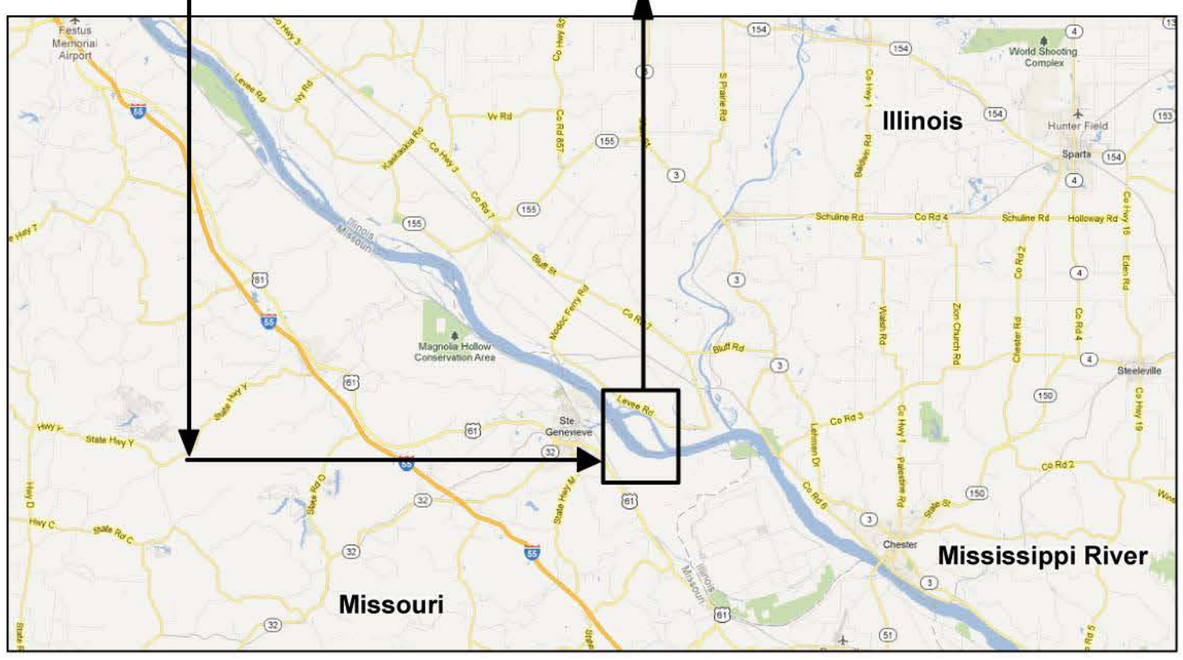

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APPLIED RIVER ENGINEERING CENTER

N W E S

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SUBMITTED BY I. NGUYEN	CHECKED BY B. KRISCHEL
PLOT DATE 1/28/2014	APPROVED BY R. DAVINROY, P.E.
FILENAME MORO CHUTE HSR MODEL.MDX	

U.S. ARMY ENGINEERING DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

MORO CHUTE
LOCATION AND
VICINITY

PLATE
NUMBER
1

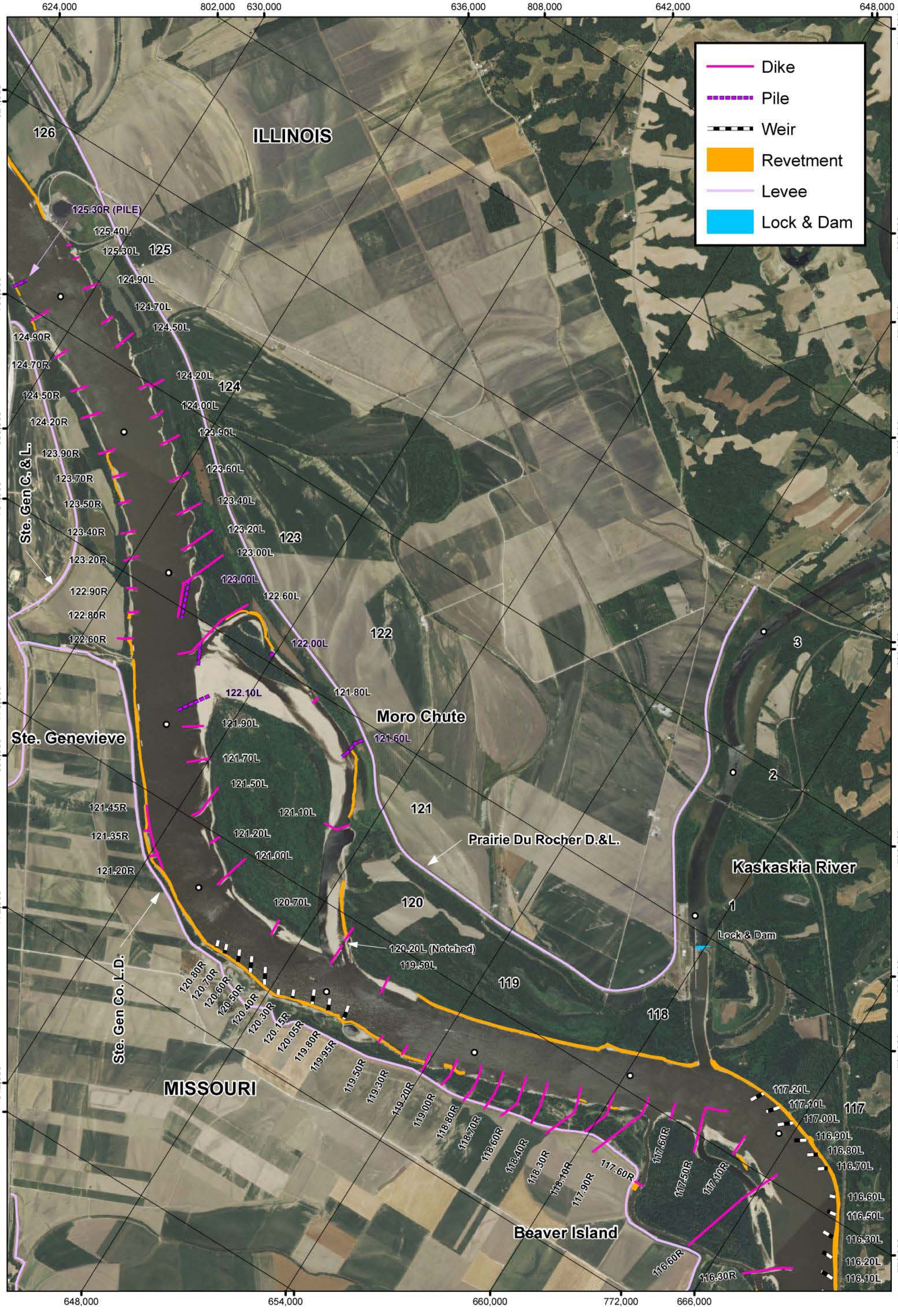

PLATE NUMBER 2

0 1,500 3,000 6,000 Feet

MORO CHUTE PLANFORM AND NOMENCLATURE 2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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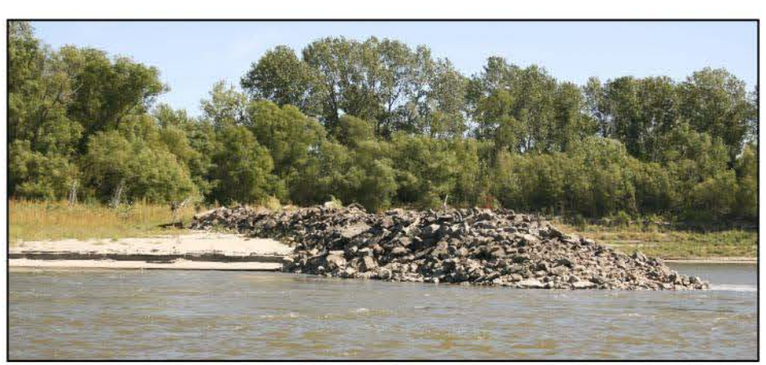
Photograph 1: Dike 125.40L

Photograph 2: Dike 125.30L

Photograph 3: Dike 125.30R



Photograph 4: Dike 124.90L

Photograph 5: Dike 124.90R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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FILENAME: MORO CHUTE HSR MODEL.MDX	

U.S. ARMY ENGINEERING DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 1

PLATE NUMBER
3

Photograph 1: Dike 124.70L

Photograph 2: Dike 124.70R

Photograph 3: Dike 124.50L

Photograph 4: Dike 124.50R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 2

PLATE NUMBER
4

Photograph 1: Dike 124.20L

Photograph 2: Dike 124.20R

Photograph 3: Dike 124.00L

Photograph 4: Dike 123.90L

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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FILENAME: MORO CHUTE HSR MODEL.MDX	

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 3

PLATE NUMBER
5

Photograph 1: Dike 123.90R

Photograph 2: Dike 123.70R

Photograph 3: Dike 123.60L

Photograph 4: Dike 123.50R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 4

PLATE NUMBER 6

Photograph 1: Dike 123.40L

Photograph 2: Dike 123.40R

Photograph 3: Dike 123.20L

Photograph 4: Dike 123.20R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 5

PLATE NUMBER
7

St. Louis, MO Gage = 2.5 Feet LWRP

Photograph 1: Dike 123.00L (Helicopter Photo Taken September 24, 2012)

Photograph 2: Dike 122.90R

Photograph 3: Dike 122.80R

Photograph 4: Dike 122.60R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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FILENAME: MORO CHUTE HSR MODEL.MDX	

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 6

PLATE NUMBER 8

Photograph 1: Longitudinal Peaked Stone Toe Protection (LPSTP)
Moro Chute primary entrance RM 122.70L

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

Photograph 2: Looking downstream at Pile Dike 122.00L

US Army Corps of Engineers
St. Louis District

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 7

PLATE NUMBER
9

Photograph 1: Looking downstream (Moro Chute entrances) at Dike 122.60L
St. Louis, MO Gage = 2.5 Feet LWRP

Photograph 2: Moro Chute primary entrance and Dike 122.60L
St. Louis, MO Gage = 2.5 Feet LWRP

Photograph 3: Dike 122.60L

Photograph 4: Pile Extension from Dike 122.60L

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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REVIEWED BY: A. COX	CHECKED BY: B. KRISCHEL	APPROVED BY: R. DAVINROY, P.E.	

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CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12 & 24, 2012
MORO CHUTE FIELD VISIT
PART 8

PLATE NUMBER 10

Photograph 1: Dike 122.10L

Photograph 2: Dike 121.90L

Photograph 3: Dike 121.70L

Photograph 4: Dike 121.50L

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

US Army Corps of Engineers
St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
FILENAME: MORO CHUTE HSR MODEL.MDX	

U.S. ARMY ENGINEERING DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 9

PLATE NUMBER
11

Photograph 1: Pile Dike X inside Moro Chute (does not appear on the Master Plan)

Photograph 2: Looking upstream at Pile Dike X inside Moro Chute (does not appear on the Master Plan)

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

Photograph 3: Looking at Pile Dike X inside Moro Chute (does not appear on the Master Plan)

Photograph 4: Looking downstream at Pile Dike 121.60L inside Moro Chute

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St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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FILENAME: MORO CHUTE HSR MODEL.MDX	

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 10

PLATE NUMBER 12

Photograph 1: Dike 121.45R, 121.35R, 121.20R, and Revetment

Photograph 2: Dike 120.50R (Helicopter Photo take Sept. 20, 2012)
STL Gage = 2.5 feet LWRP

Photograph 3: Dike 121.00L

Photograph 4: Dike 120.70L

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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FILENAME: MORO CHUTE HSR MODEL.MDX	

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 11

PLATE NUMBER 13

St. Louis, MO Gage = 2.5 Feet LWRP

Photograph 1: Looking upstream into Moro Chute and Dike 120.20L
(Helicopter Photo Taken Sept. 20, 2012)

Photograph 2: Dike 120.20L

Photograph 3: Dike 119.50L

Photograph 4: Dike 119.50R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
FILENAME: MORO CHUTE HSR MODEL.MDX	

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 12

PLATE NUMBER 14

Photograph 1: Dike 119.30R

Photograph 2: Dike 119.20R

Photograph 3: Dike 119.00R

Photograph 4: Dike 118.80R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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FILENAME: MORO CHUTE HSR MODEL.MDX	

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 13

PLATE NUMBER 15

Photograph 1: Dike 118.70R

Photograph 2: Dike 118.60R

Photograph 3: Dike 118.40R

Photograph 4: Dike 118.30R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
FILENAME: MORO CHUTE HSR MODEL.MDX	

U.S. ARMY ENGINEERING DIVISION
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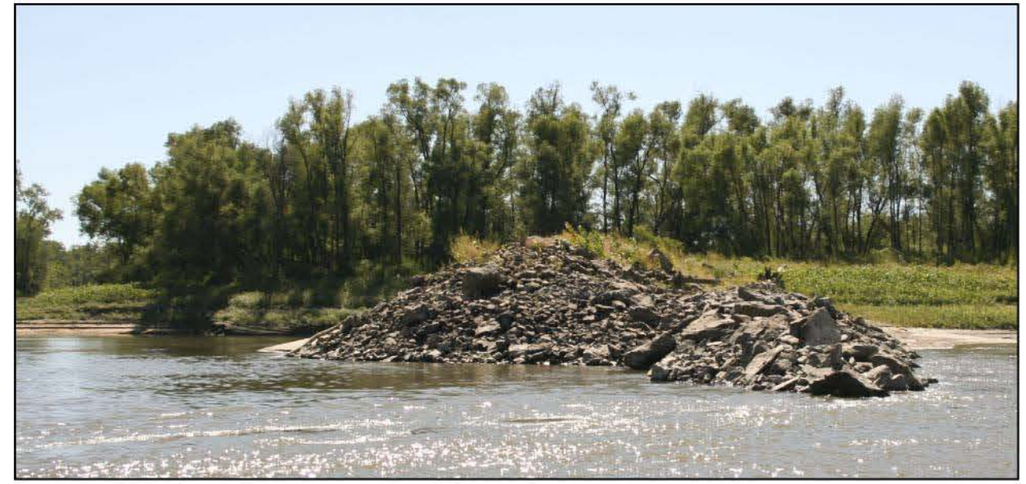
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

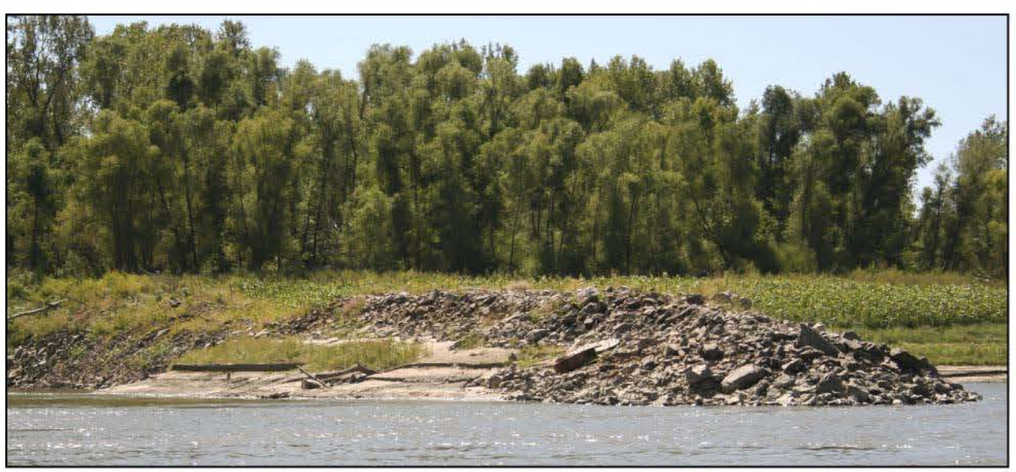
SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 14

PLATE NUMBER 16

Photograph 1: Dike 118.10R



Photograph 2: Dike 117.90R



Photograph 3: Dike 117.60R

Photograph 4: Dike 117.50R

Chester, IL Gage = 341.78 Feet NGVD29 Elevation or 1.4 Feet LWRP

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St. Louis District

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 15

PLATE NUMBER
17

Photograph 1: Kaskaskia and Mississippi River confluence (Helicopter Photo Taken Sept. 20, 2012)

Photograph 2: Dike 117.10R (Helicopter Photo Taken Sept. 20, 2012)

Photograph 3: Looking downstream at Beaver Island side channel (Helicopter Photo Taken Sept. 20, 2012)

Photograph 4: Looking upstream at Dike 116.60R and Dike 116.30R (Helicopter Photo Taken Sept. 20, 2012)

St. Louis, MO Gage = 2.5 Feet LWRP

US Army Corps of Engineers
St. Louis District

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ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

SEPTEMBER 12, 2012
MORO CHUTE FIELD VISIT
PART 16

PLATE NUMBER 18

Photograph 1: Looking downstream at Moro Chute secondary entrance

5/4/2000
Chester, IL Gage = +7.86 Feet LWRP

Photograph 2: Looking at Dike 122.60L and Moro Chute primary entrance

Photograph 3: Looking upstream at Moro Chute primary entrance

11/6/2001
Chester, IL Gage = +9.08 Feet LWRP

Photograph 4: Looking at Dike 122.60L and Moro Chute primary entrance

US Army Corps of Engineers
St. Louis District

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MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

MORO CHUTE
PRIMARY & SECONDARY
ENTRANCE PHOTOGRAPHS

PLATE
NUMBER
19

Photograph 1: Looking upstream at Moro Chute primary entrance

Photograph 2: Moro Chute primary entrance bankline failure

Photograph 3: Looking at the outside bend of Moro Chute primary entrance.

US Army Corps of Engineers
St. Louis District

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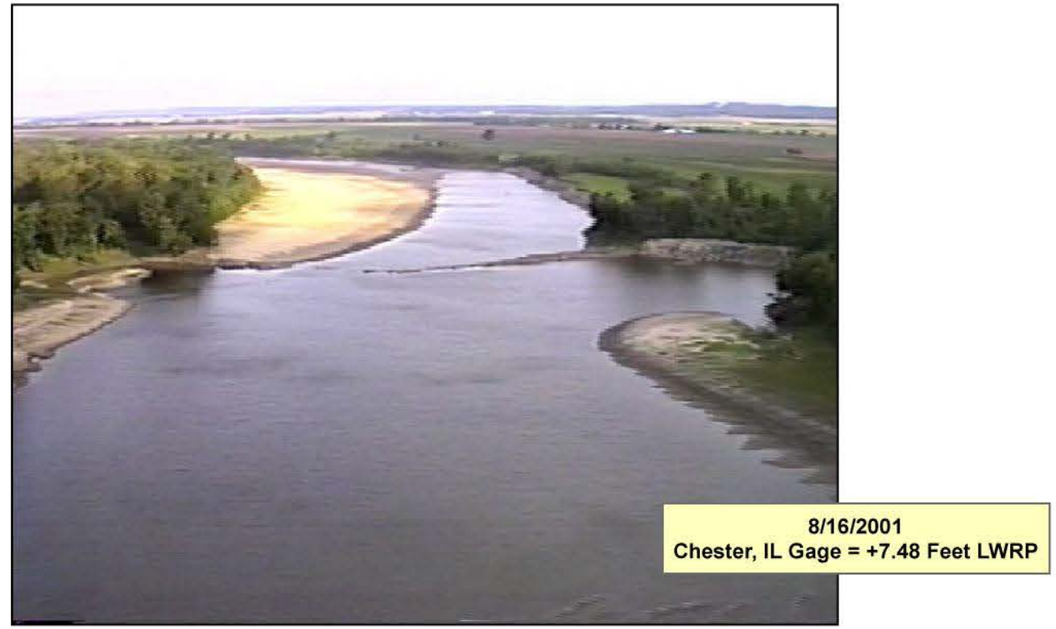
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

MORO CHUTE
PRIMARY ENTRANCE
2001 PHOTOGRAPHS

PLATE NUMBER
20

Photograph 1: Looking downstream at Dike 120.20L inside Moro Chute



Photograph 2: Looking upstream inside Moro Chute at Dike 121.10L

Photograph 3: Looking upstream at Dike 120.20L along the LDB

Photograph 4: Looking down at Dike 121.10L inisde More Chute

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REVIEWED BY: A. COX
CHECKED BY: B. KRISCHEL
APPROVED BY: R. DAVINROY, P.E.

DIKE 120.20L
DIKE 121.10L
2001 PHOTOGRAPHS

PLATE NUMBER 21

11/6/2001
Chester, IL Gage = +9.08 Feet LWRP

Photograph 1: Looking downstream at Dike 122.60L

Photograph 2: Looking downstream at Dike 122.60L

8/16/2001
Chester, IL Gage = +7.48 Feet LWRP

Photograph 3: Looking upstream at Pile Dike 121.60L

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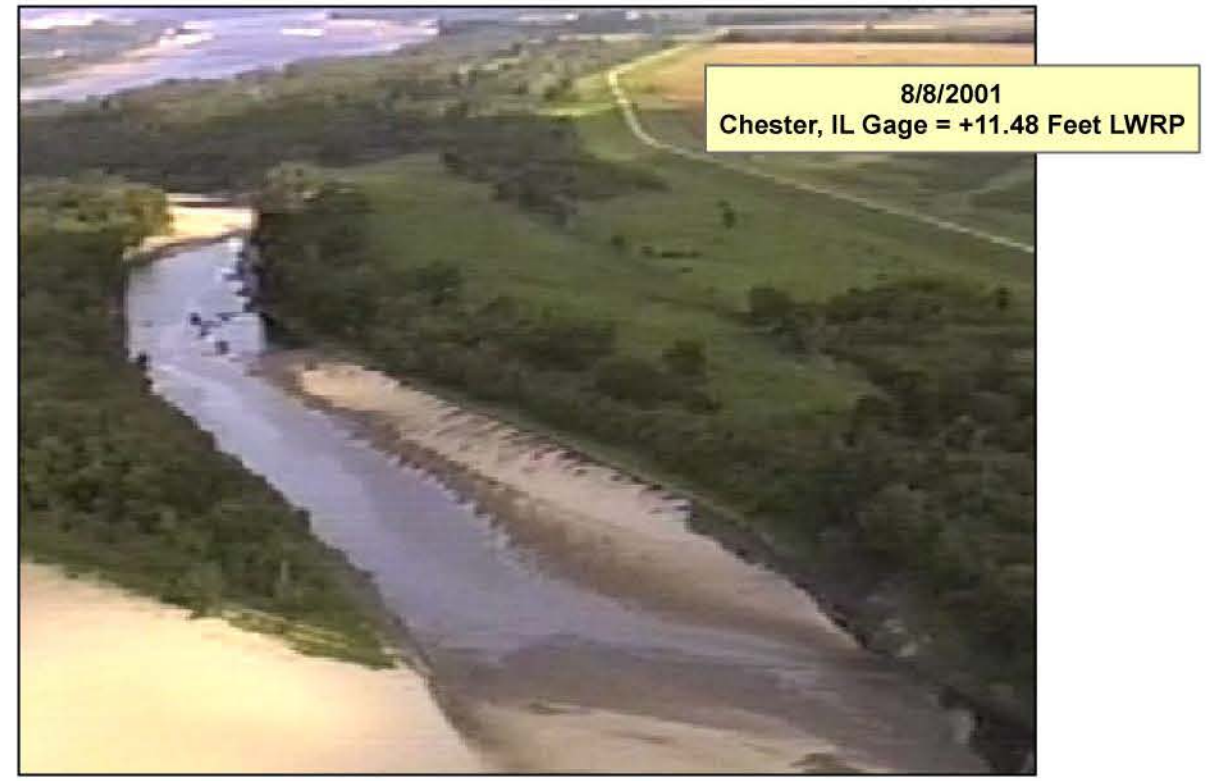
MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

DIKE 122.60L
DIKE 121.60L
2001 PHOTOGRAPHS

PLATE NUMBER
22

Photograph 1: Looking at outside bend inside Moro Chute



Photograph 2: Looking upstream at Moro Chute

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SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
FILENAME: MORO CHUTE HSR MODEL.MDX	

U.S. ARMY ENGINEERING DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

MIDDLE MISSISSIPPI RIVER BASIN
MORO CHUTE HSR MODEL
AVOID AND MINIMIZE PROGRAM 2012

MORO CHUTE
MAIN SIDE CHANNEL
2001 PHOTOGRAPHS

PLATE NUMBER
23

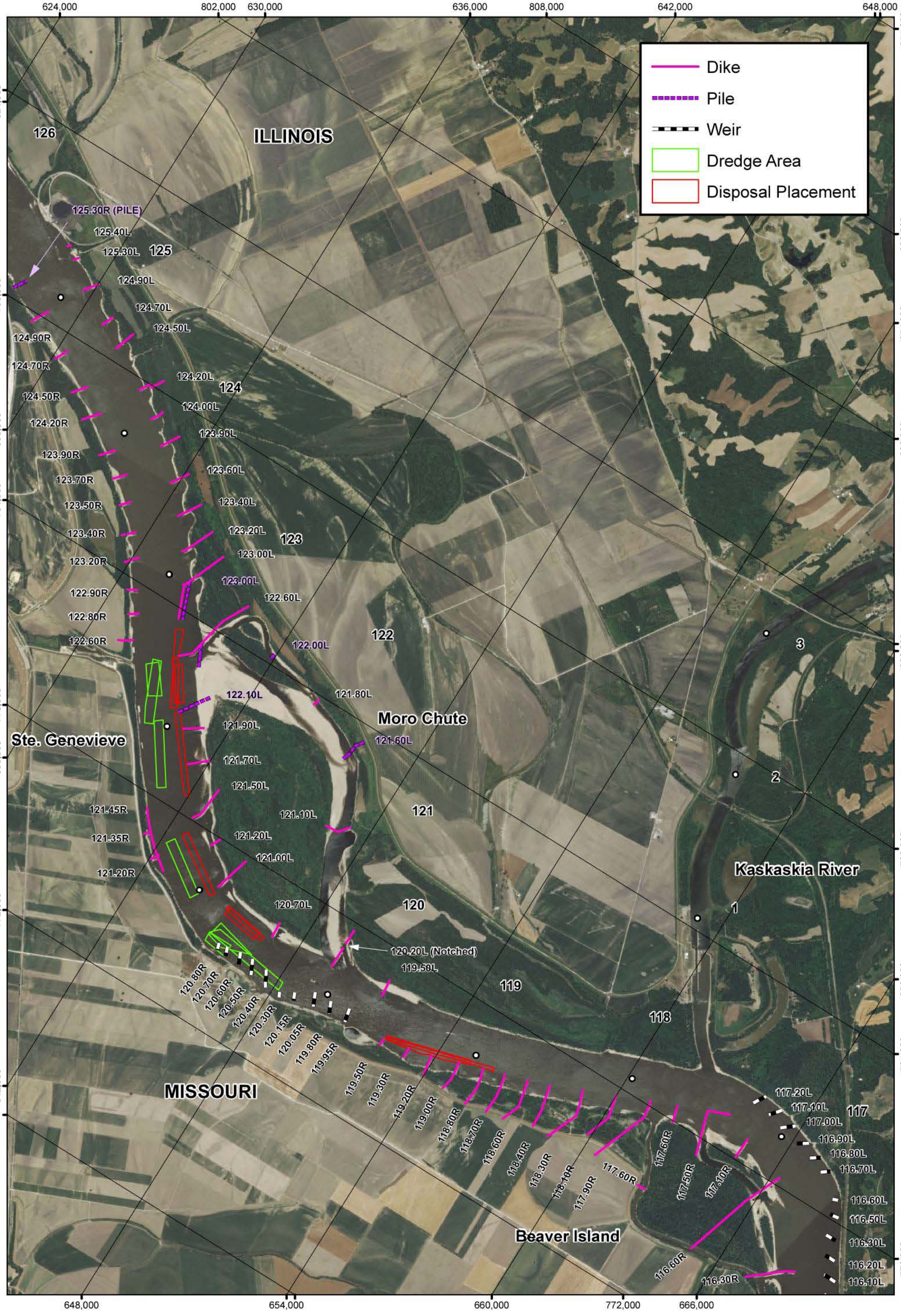

PLATE NUMBER 24

0 1,500 3,000 6,000 Feet

DREDGE CUT AND PLACEMENT 2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers St. Louis District

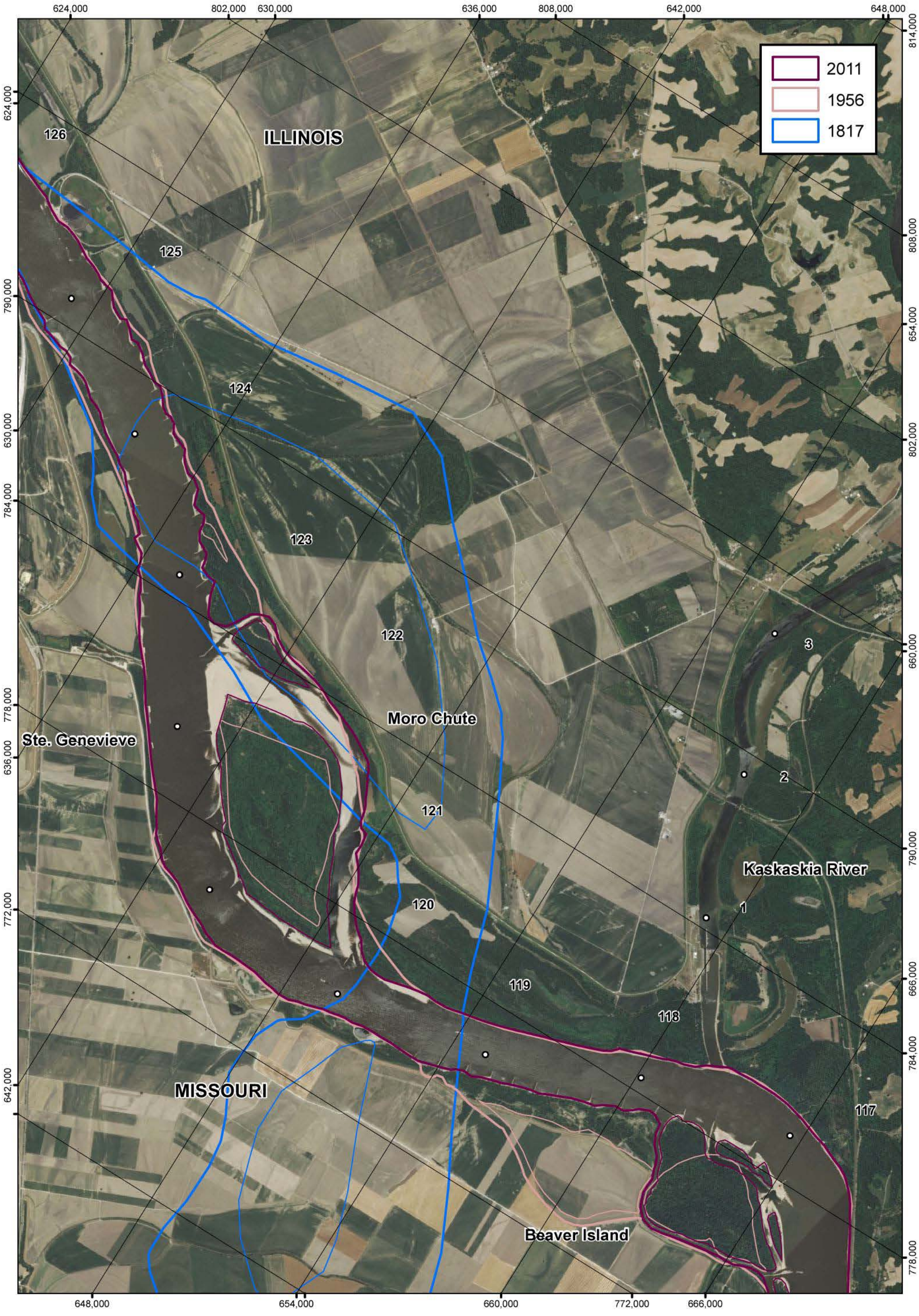

PLATE NUMBER 25

0 1,500 3,000 6,000 Feet

MORO CHUTE
GEOMORPHOLOGY (1817 - 2011)
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
St. Louis District

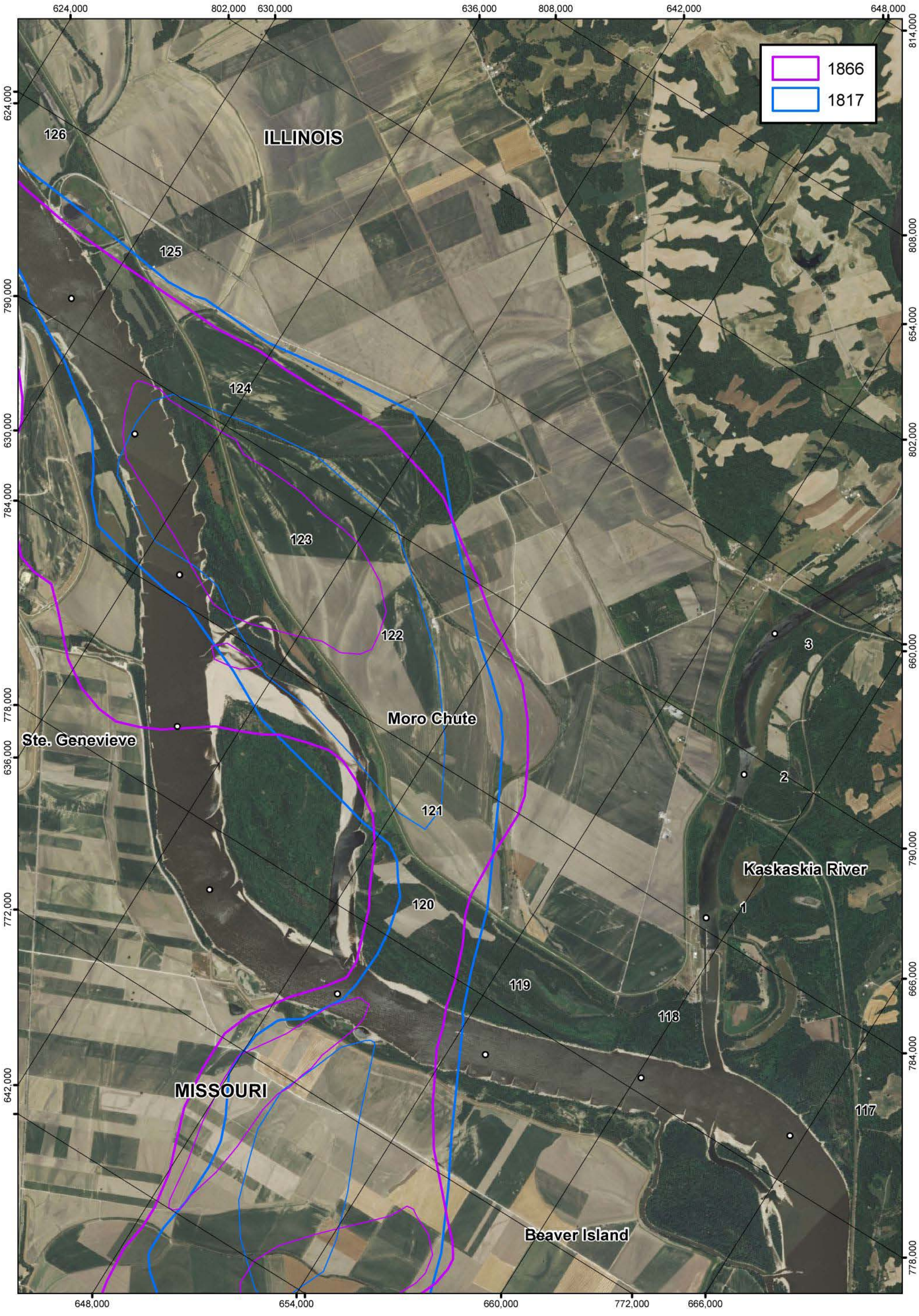

PLATE NUMBER 26

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1817 - 1866
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
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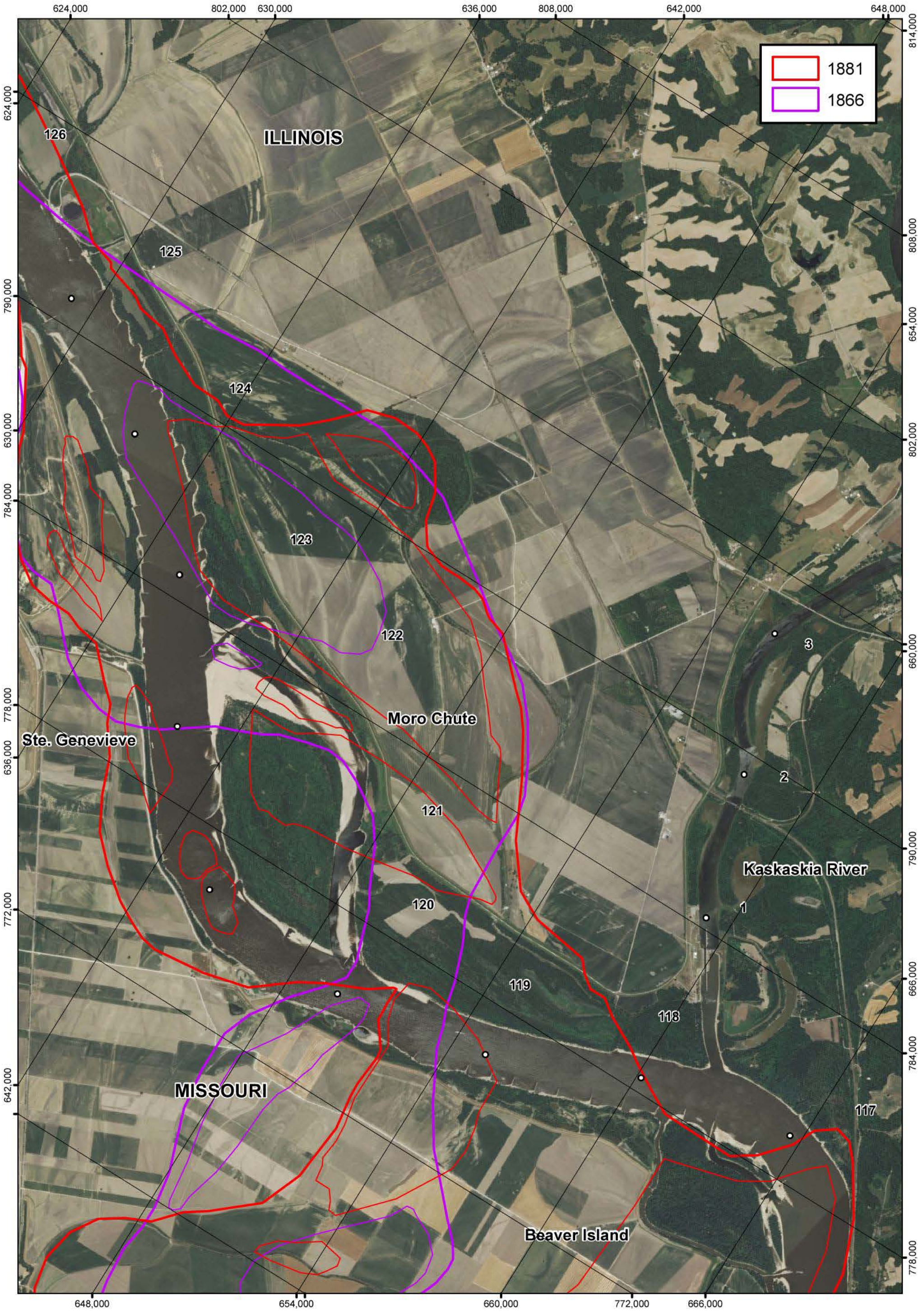

PLATE NUMBER 27

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1866 - 1881
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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PLATE NUMBER 28

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1881 - 1908
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
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	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
St. Louis District

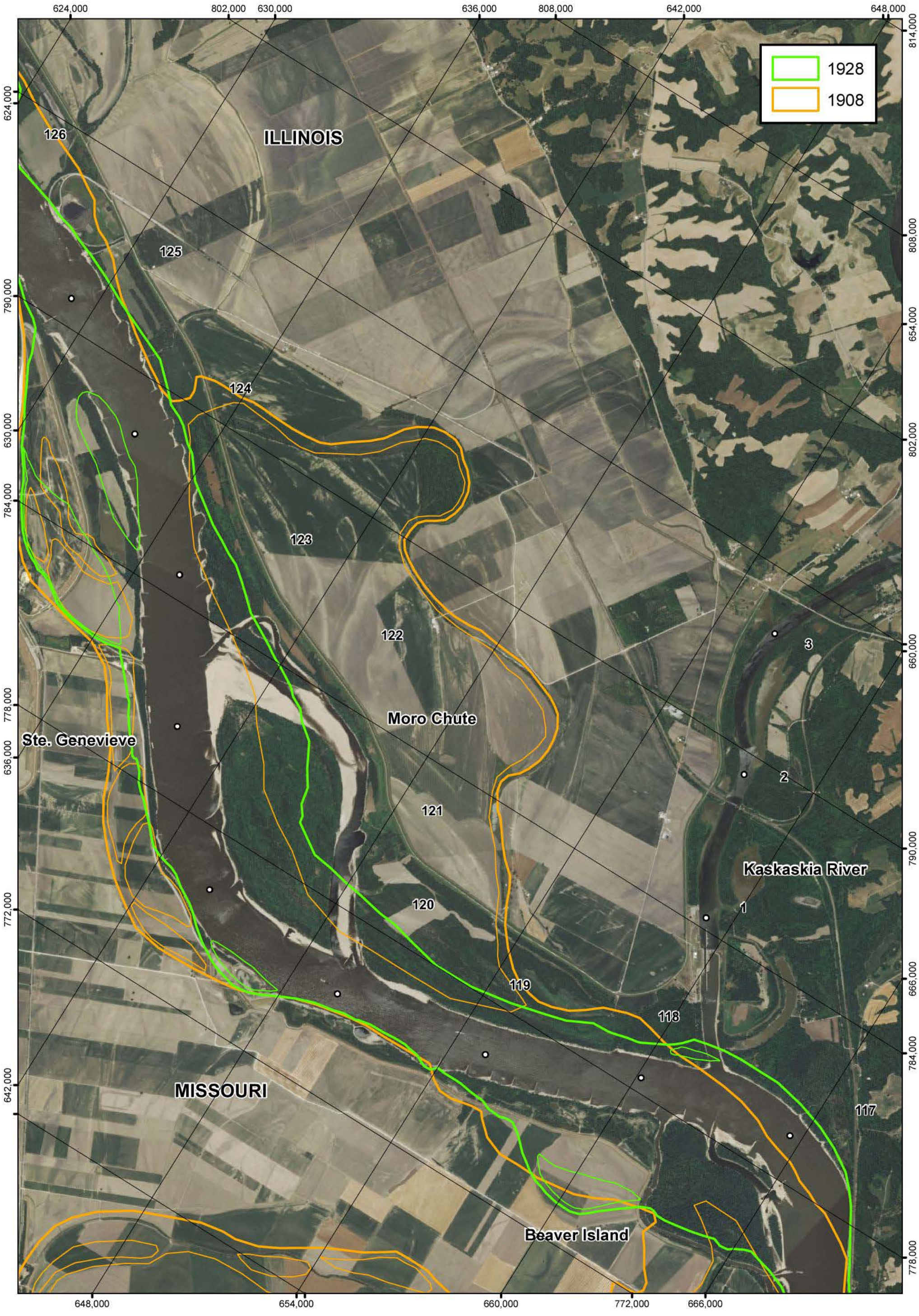

PLATE NUMBER 29

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1908 - 1928
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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	FILENAME: MODELS\MORO CHUTE.MDX	

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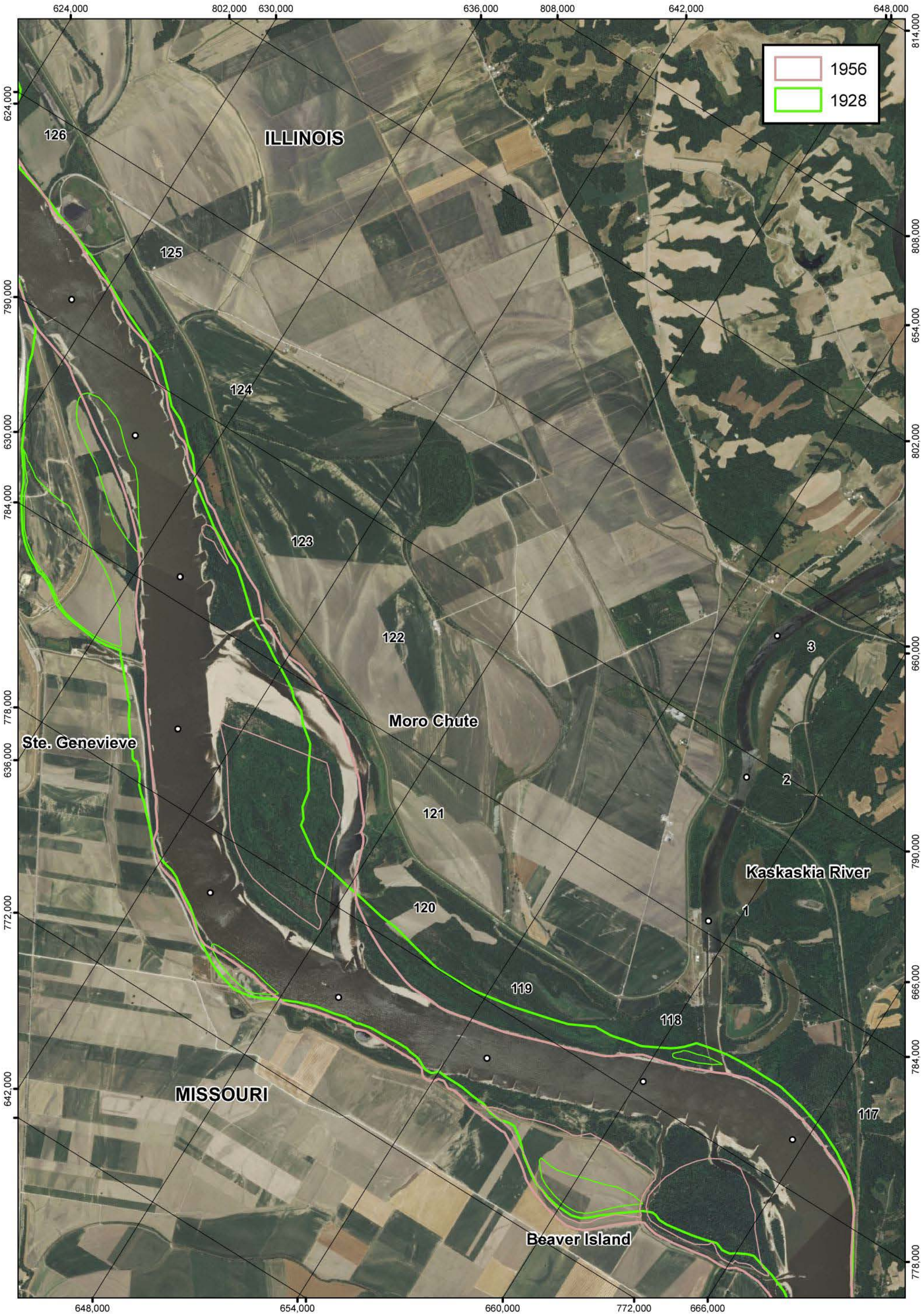

PLATE NUMBER 30

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1928 - 1956
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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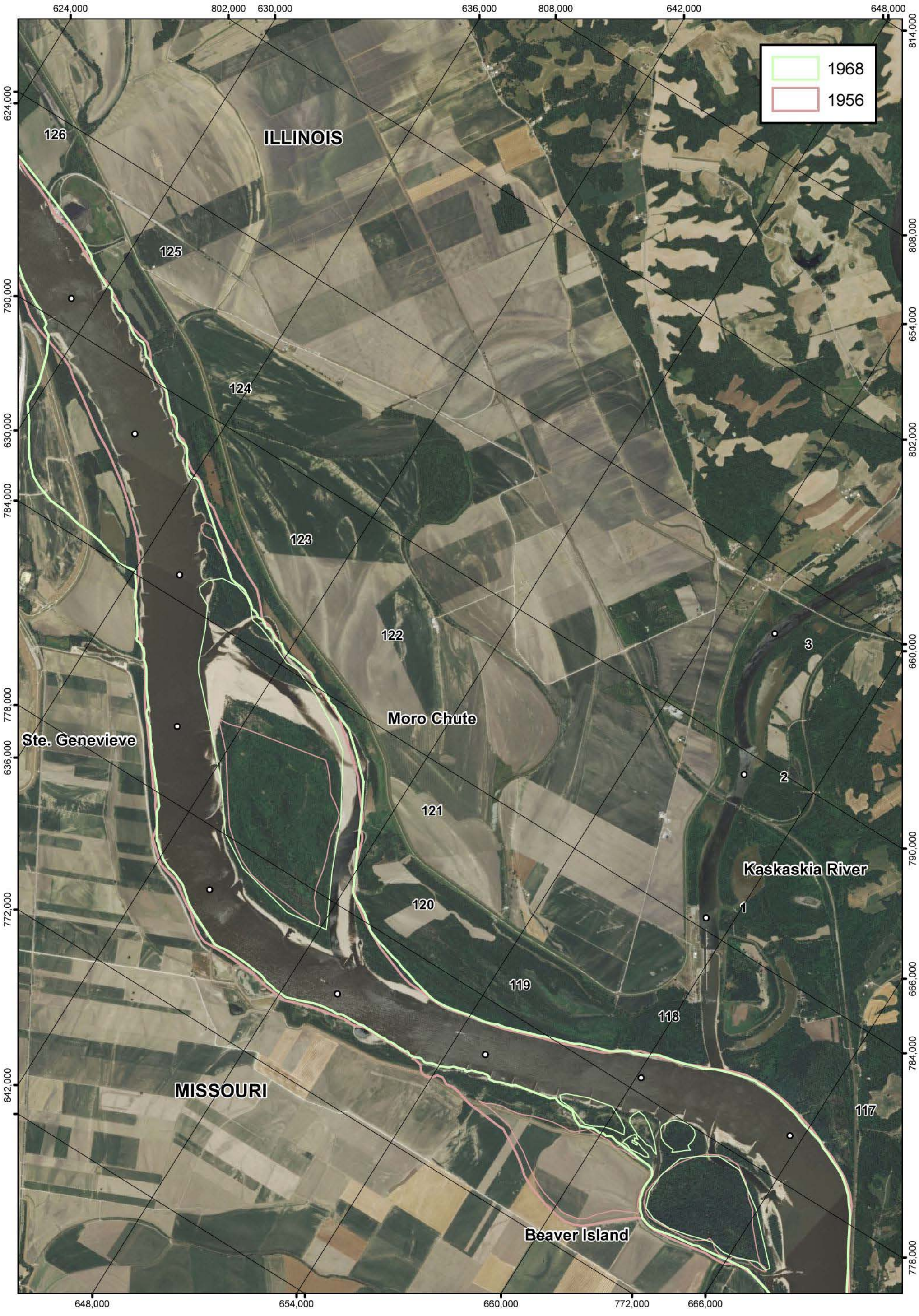

PLATE NUMBER 31

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1956 - 1968
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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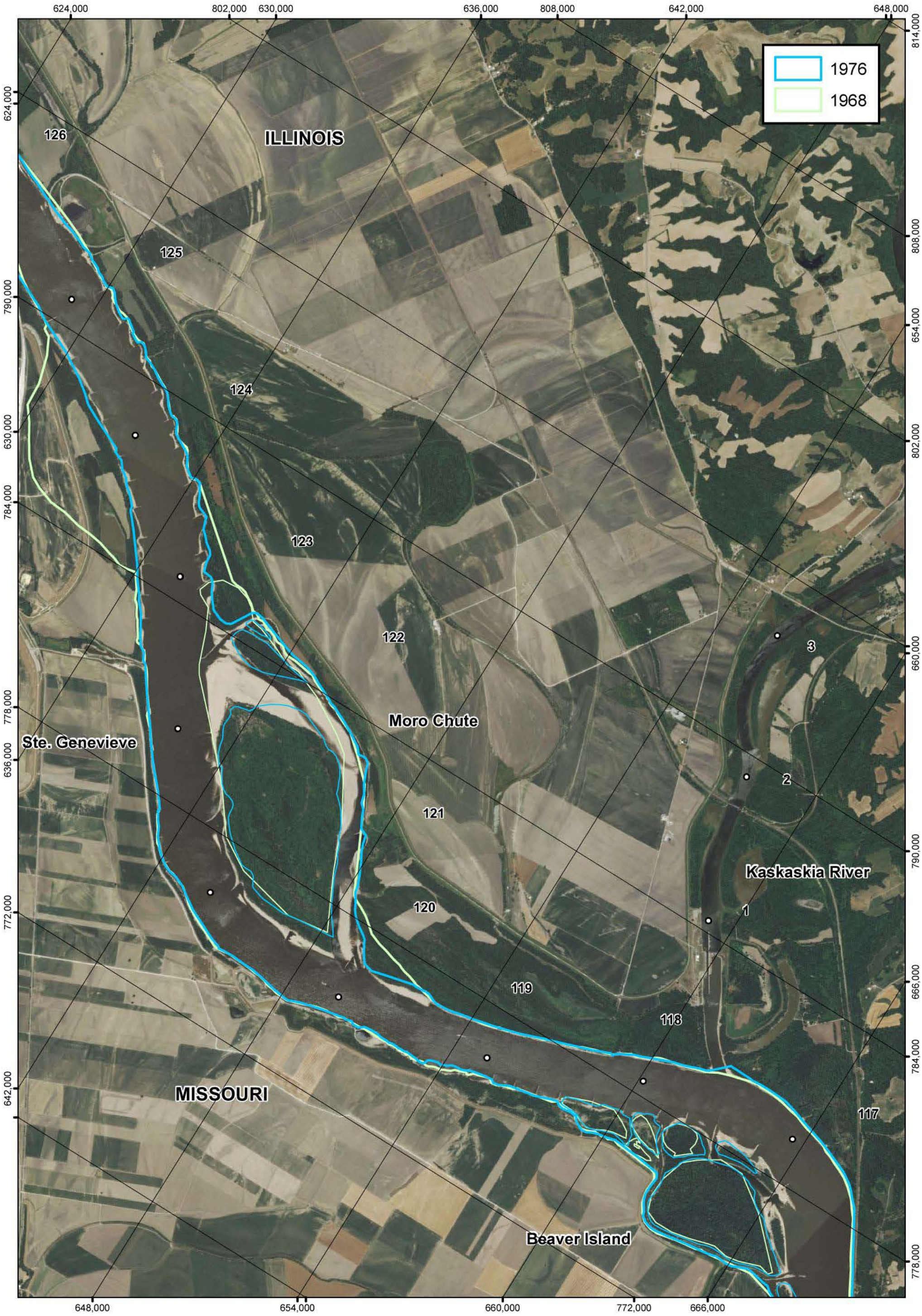

PLATE NUMBER 32

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1968 - 1976
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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	FILENAME: MODELS\MORO CHUTE.MDX	

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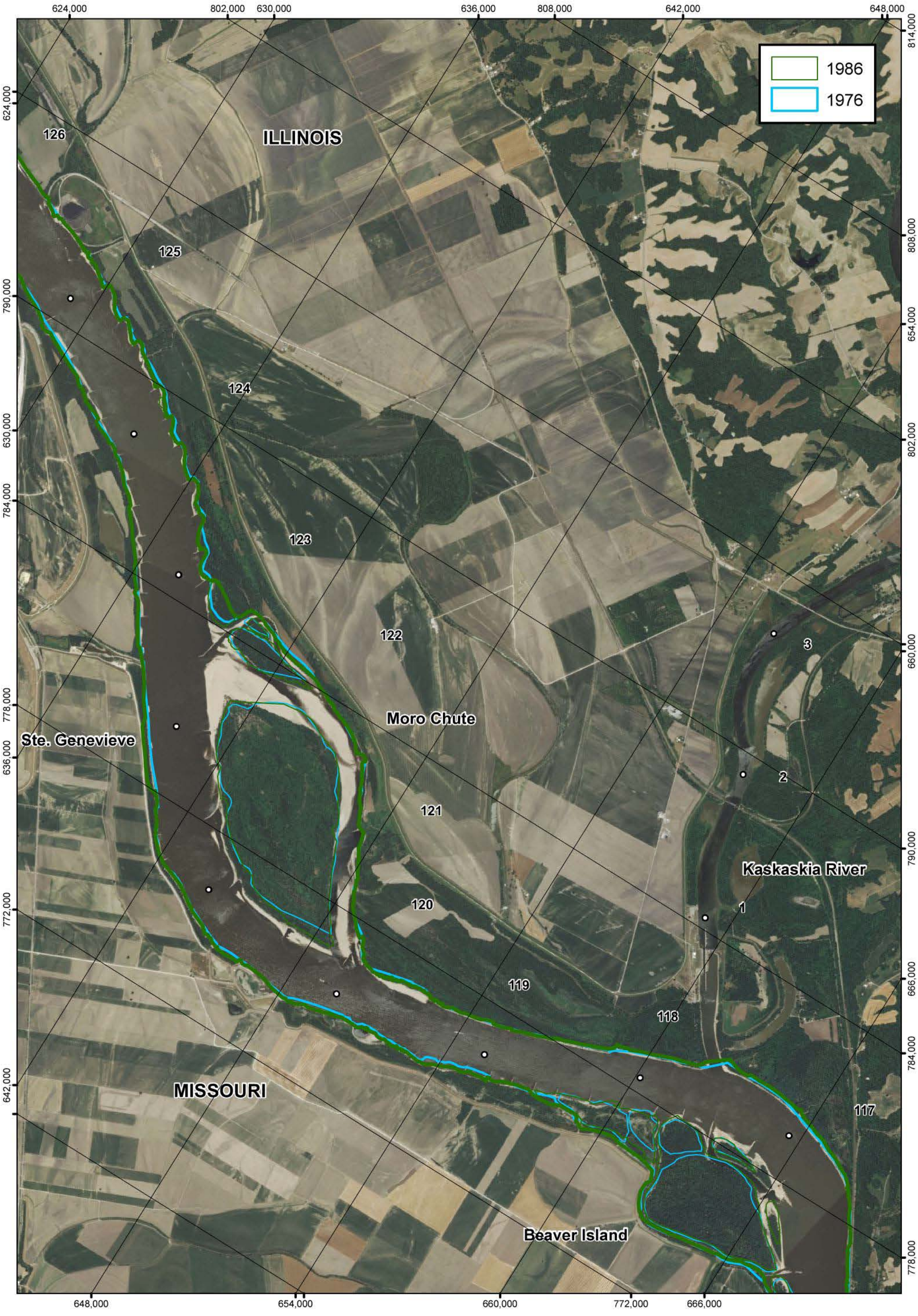

PLATE NUMBER 33

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1976 - 1986
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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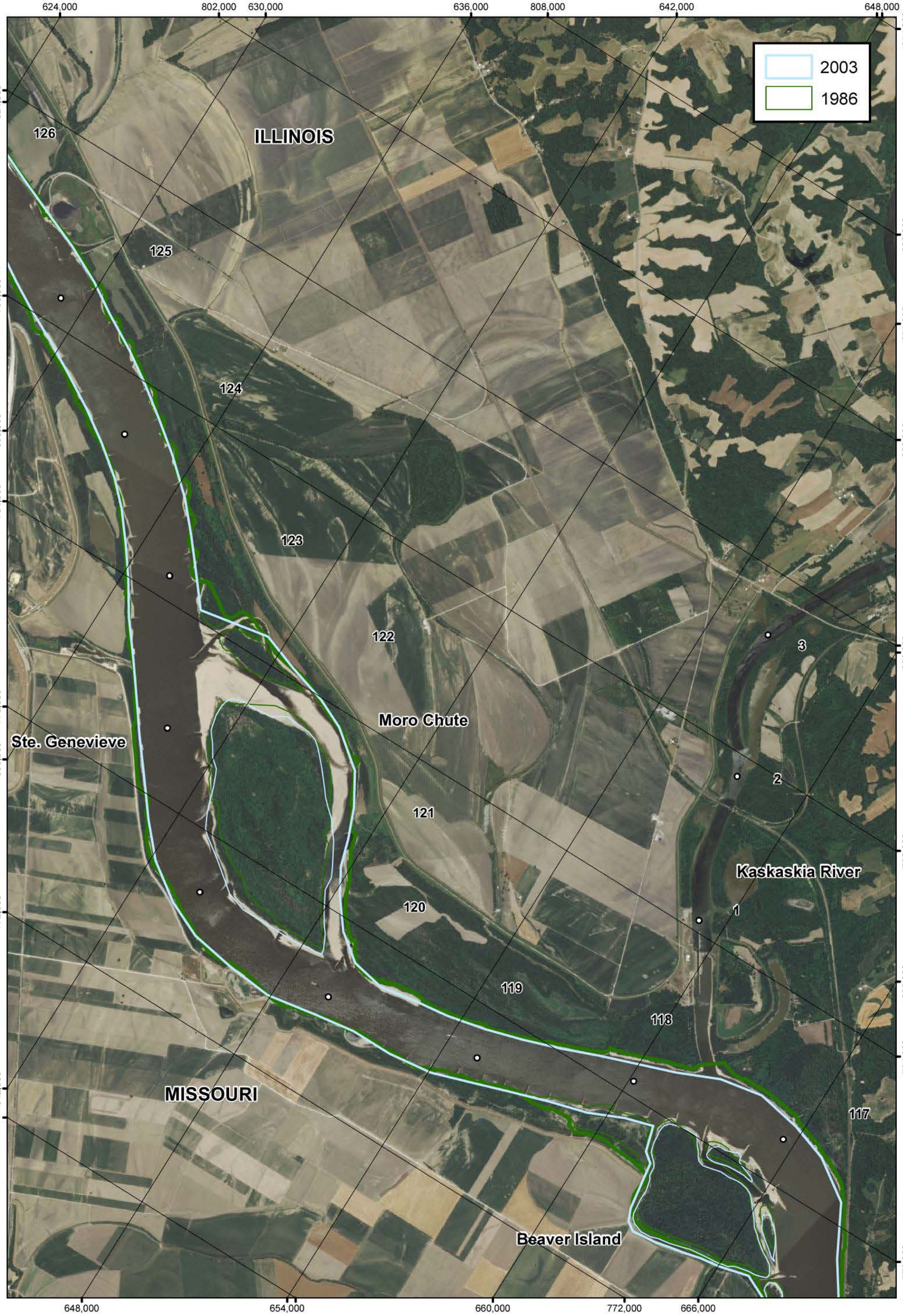

PLATE NUMBER 34

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
1986 - 2003
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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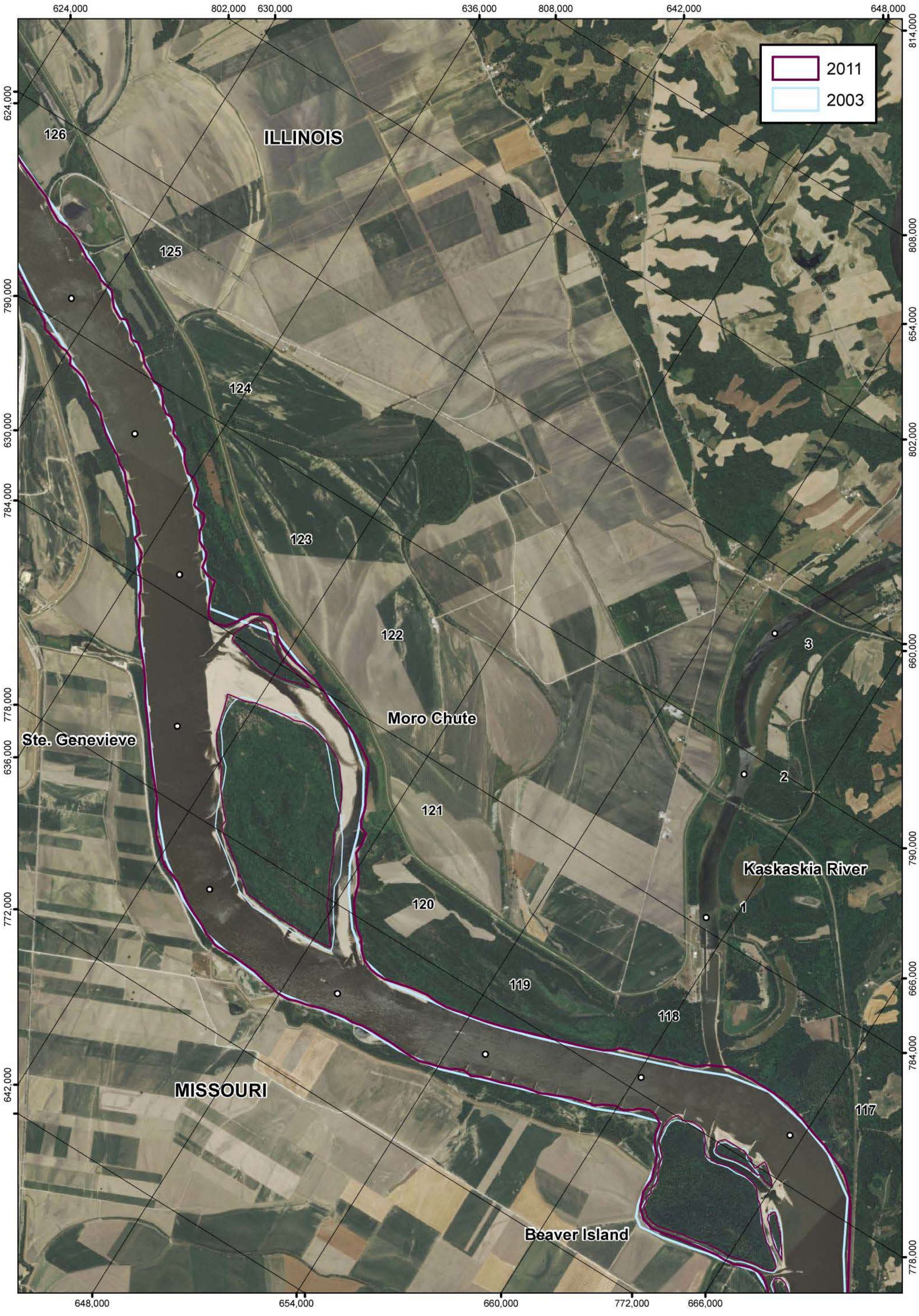

PLATE NUMBER 35

0 1,500 3,000 6,000 Feet

GEOMORPHOLOGY
2003 - 2011
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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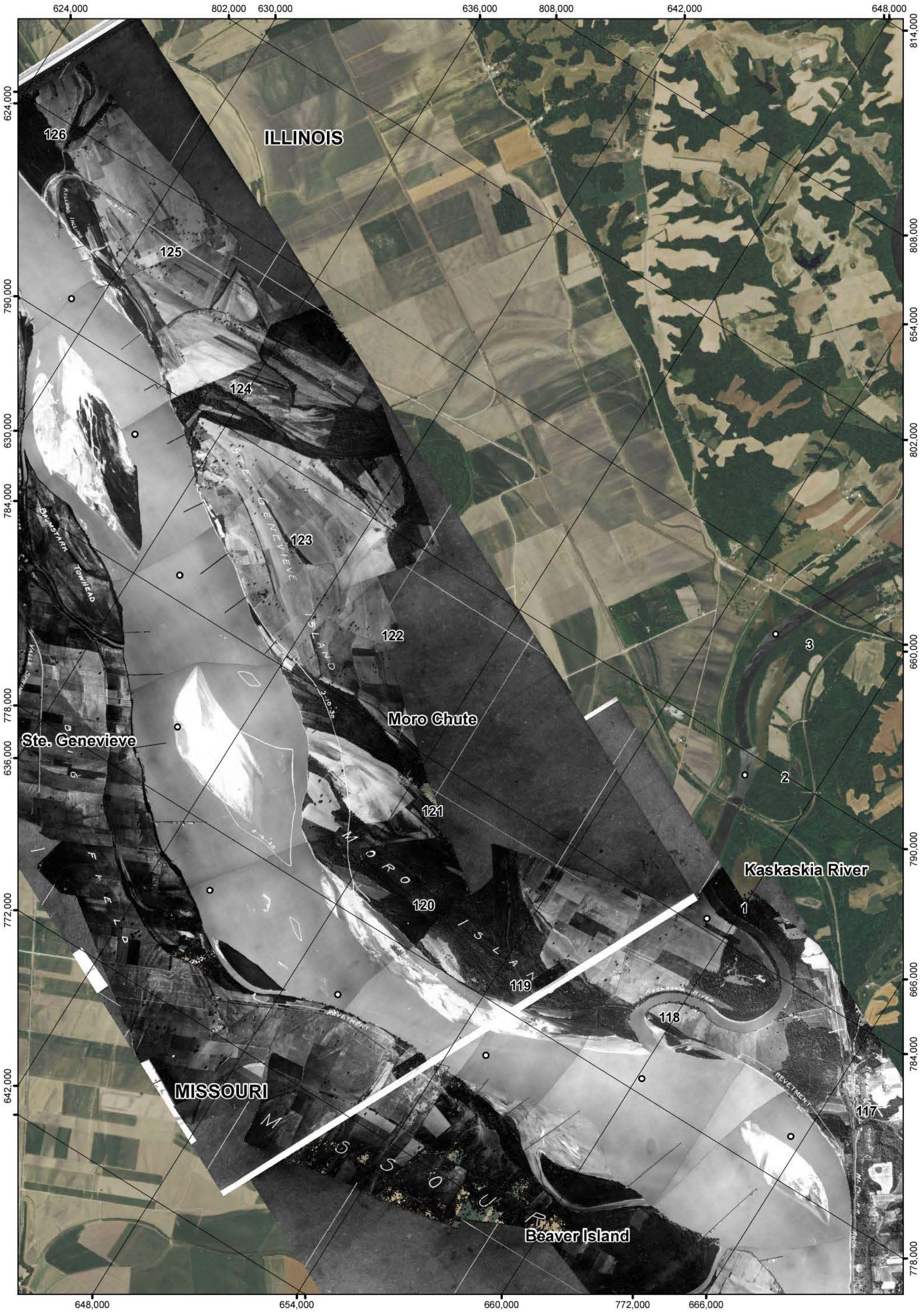

PLATE NUMBER 36

0 1,500 3,000 6,000 Feet

1928 AERIAL PHOTOGRAPH AND 2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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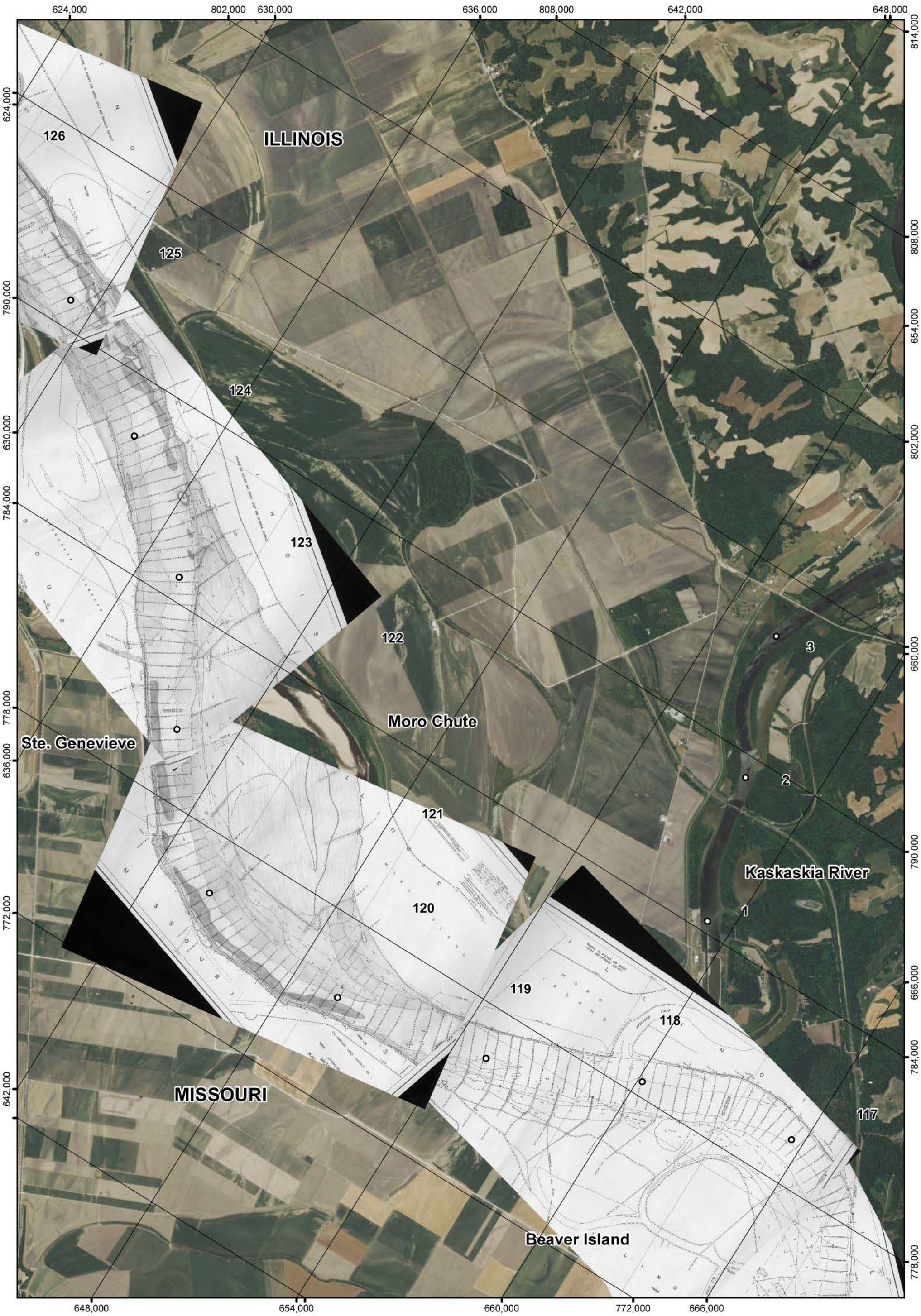

PLATE NUMBER 37

0 1,500 3,000 6,000 Feet

1956 SURVEY
OVERLAY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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PLATE NUMBER 38

0 1,500 3,000 6,000 Feet

HISTORIC MAP OVERLAY
JULY 1, 1941
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
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	FILENAME: MODELS\MORO CHUTE.MDX	

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PLATE NUMBER 39

0 1,500 3,000 6,000 Feet

1968 SURVEY
OVERLAY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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	FILENAME: MODELS\MORO CHUTE.MDX	

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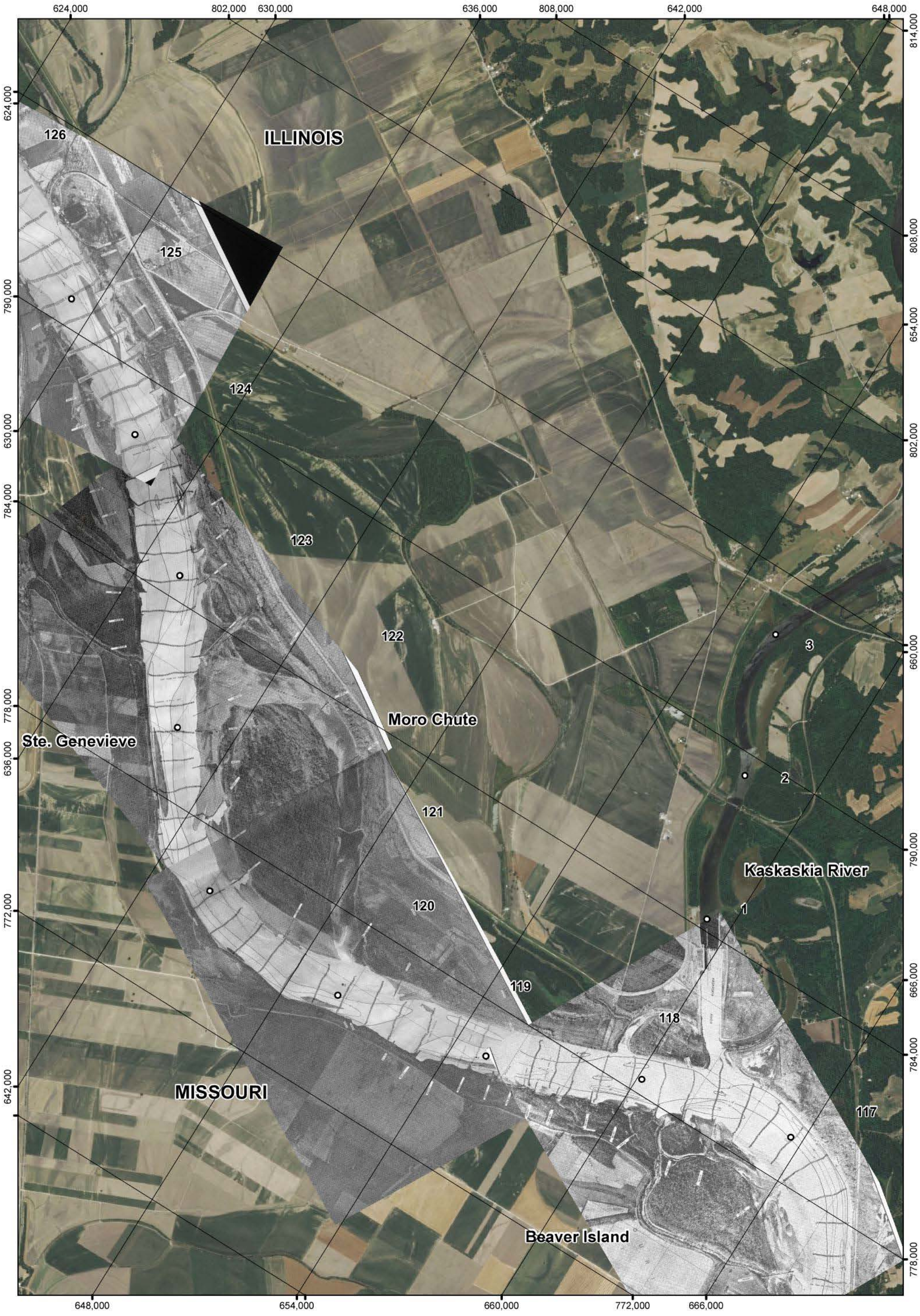

PLATE NUMBER 40

0 1,500 3,000 6,000 Feet

1976 SURVEY OVERLAY 2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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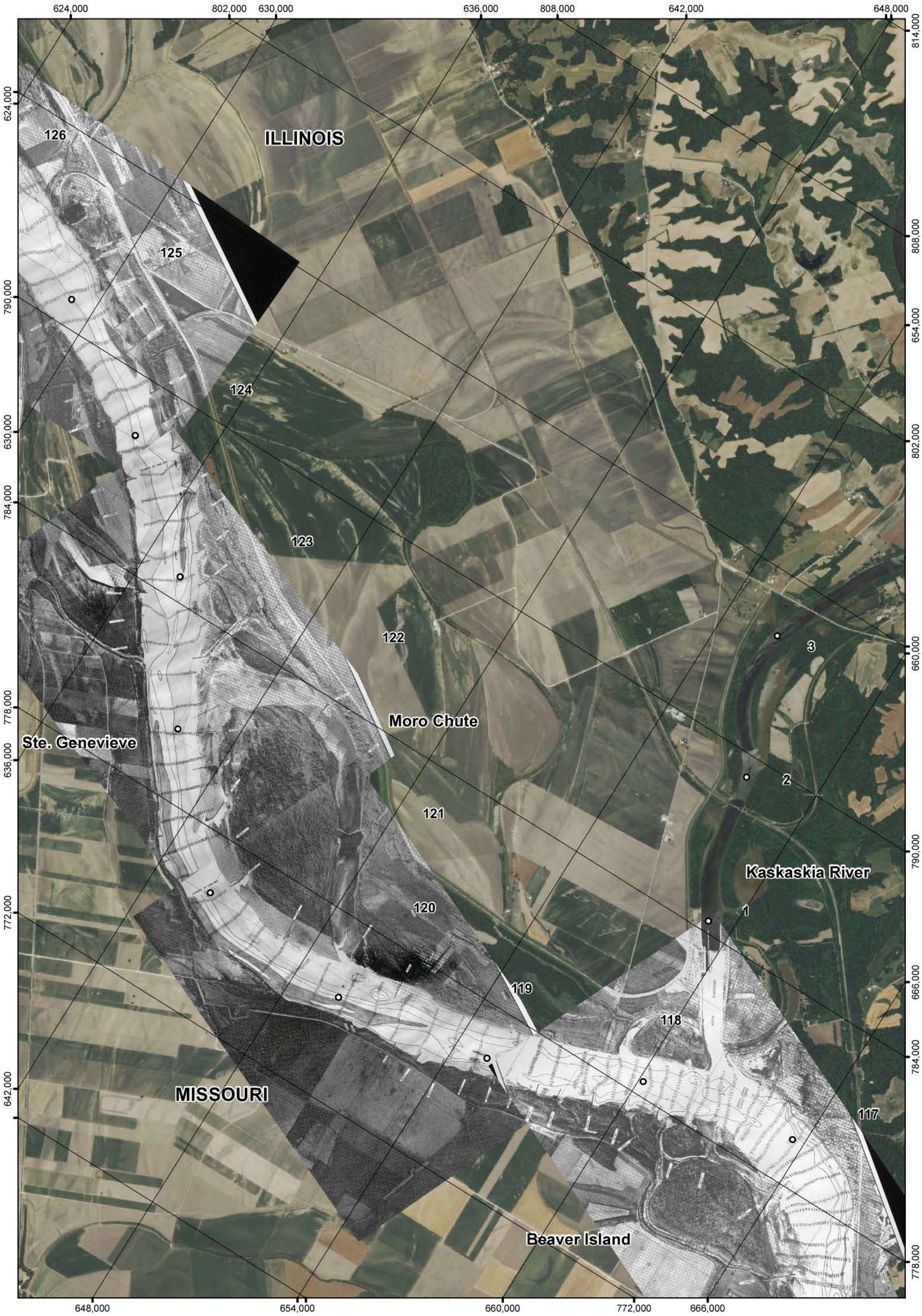

PLATE NUMBER 41

0 1,500 3,000 6,000 Feet

1982 SURVEY
OVERLAY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
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PLATE NUMBER 42

0 1,500 3,000 6,000 Feet

1986 SURVEY
OVERLAY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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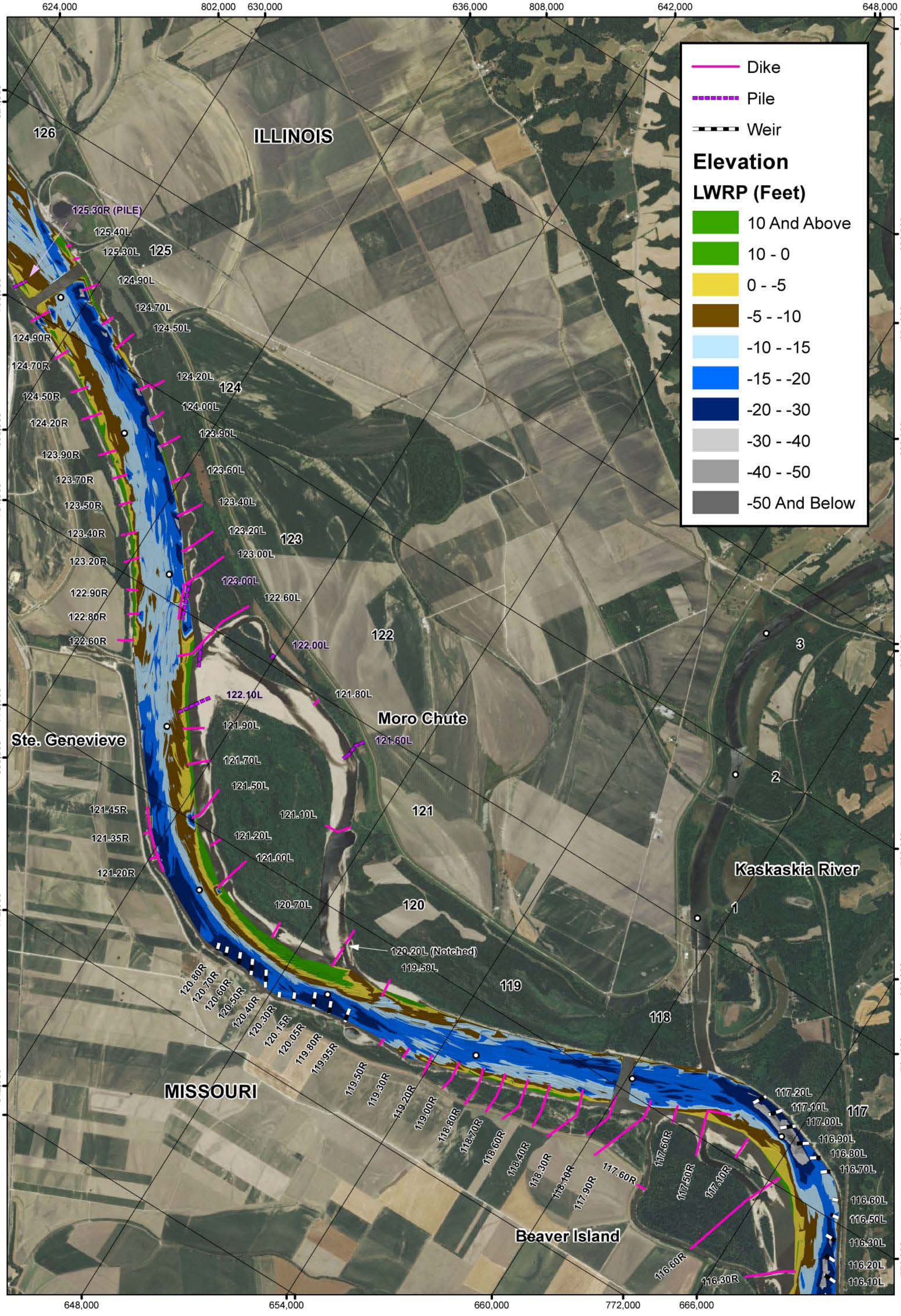

PLATE NUMBER 43

0 1,500 3,000 6,000 Feet

2005 HYDRO SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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	FILENAME: MODELS\MORO CHUTE.MDX	

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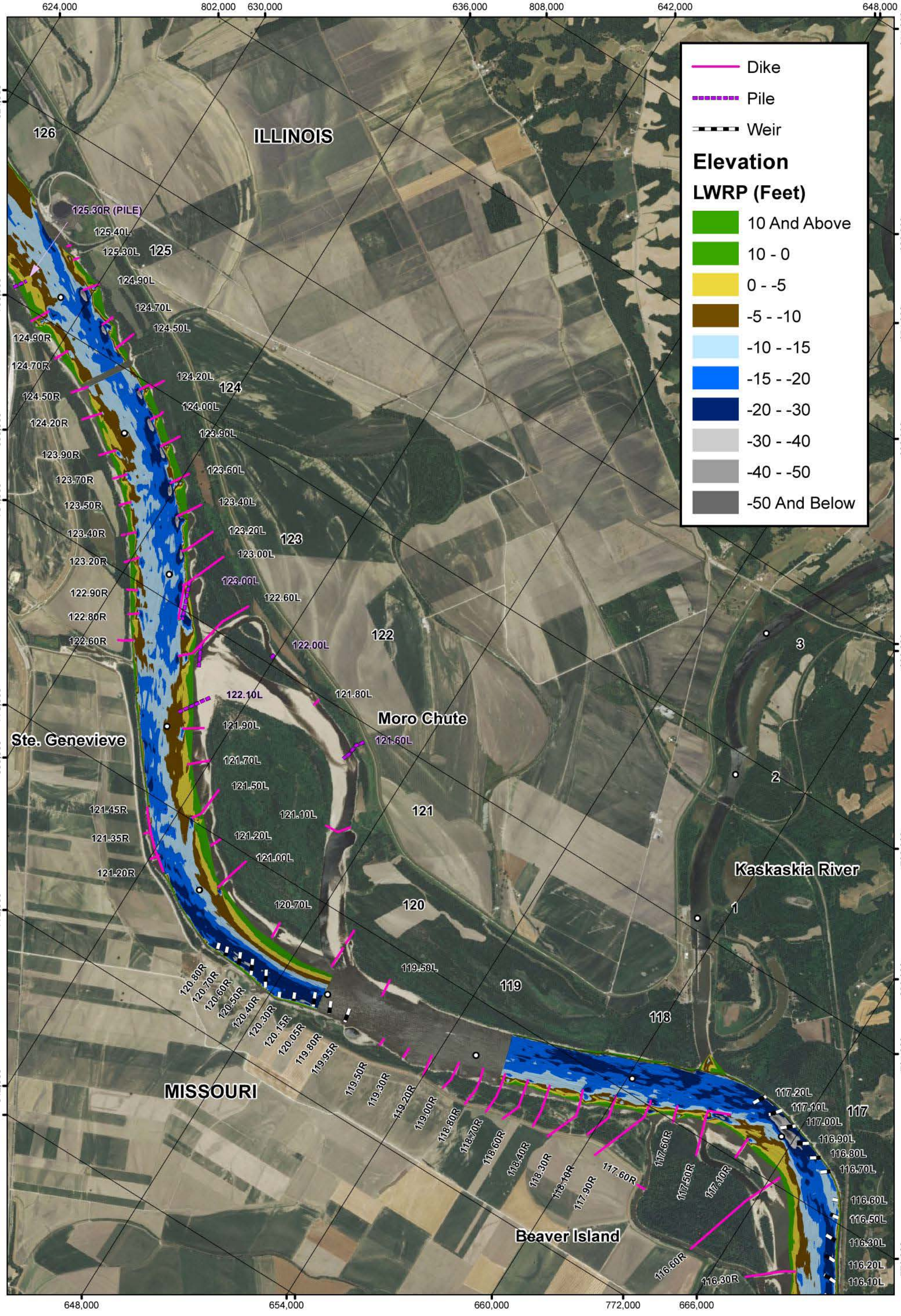

PLATE NUMBER 44

0 1,500 3,000 6,000 Feet

NOV 21, 2007
HYDRO SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/26/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

US Army Corps of Engineers
St. Louis District

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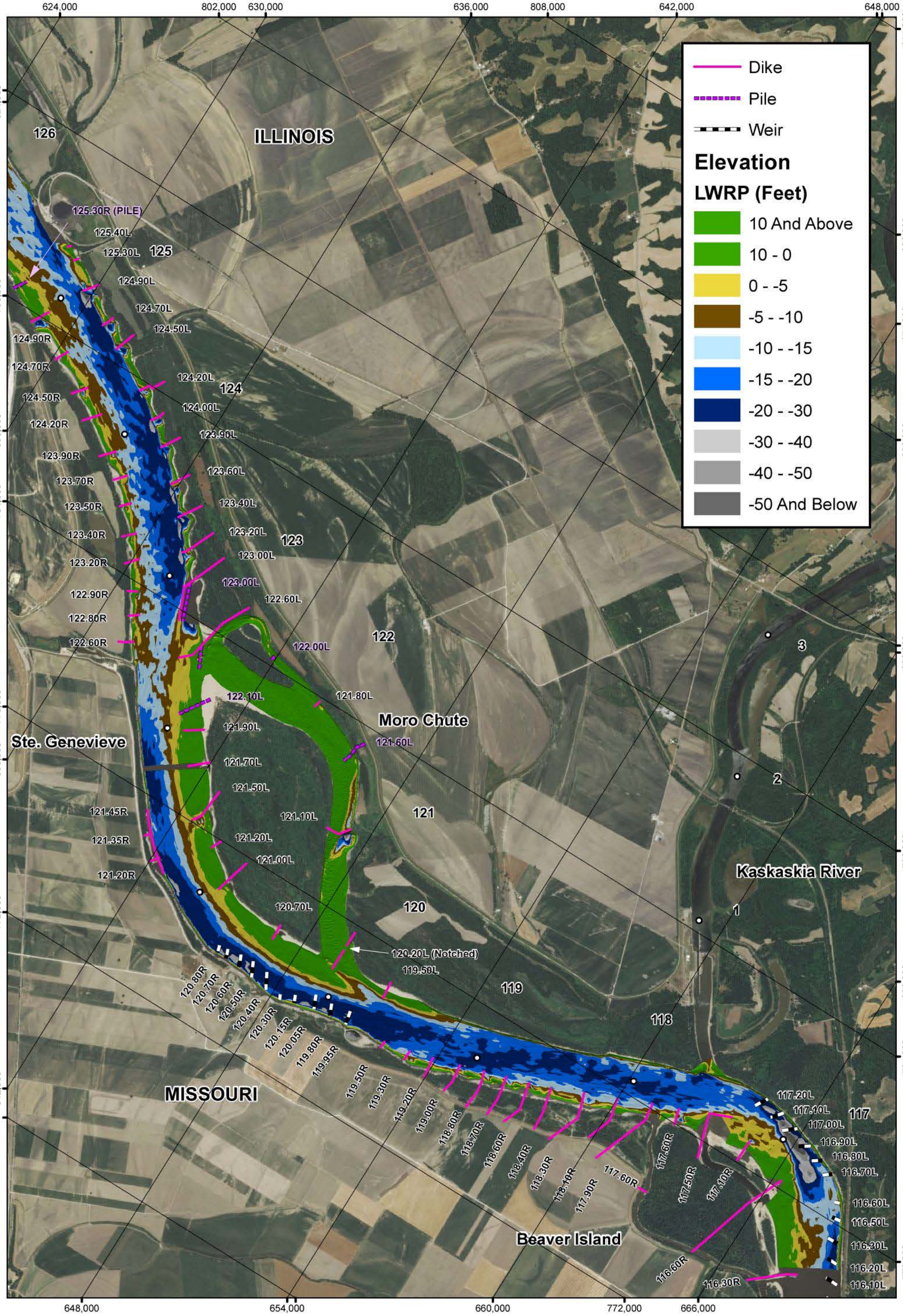

PLATE NUMBER 45

0 1,500 3,000 6,000 Feet

SEPT 2, 2010 MAIN CHANNEL
MAY 4, 2011 SIDE CHANNEL
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
St. Louis District

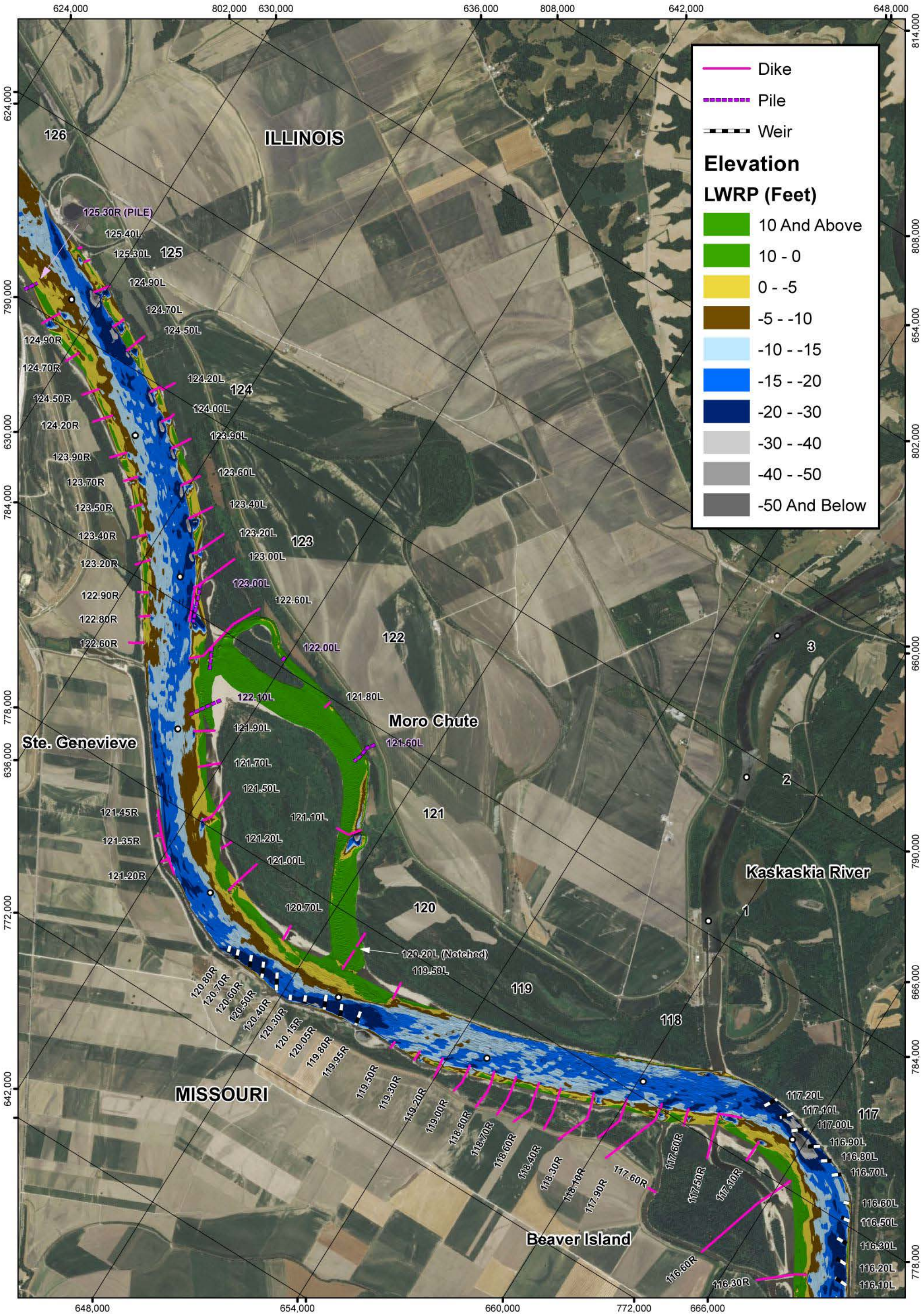

PLATE NUMBER 46

0 1,500 3,000 6,000 Feet

JULY 7, 2012 MAIN CHANNEL
MAY 4, 2011 SIDE CHANNEL
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
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	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
St. Louis District

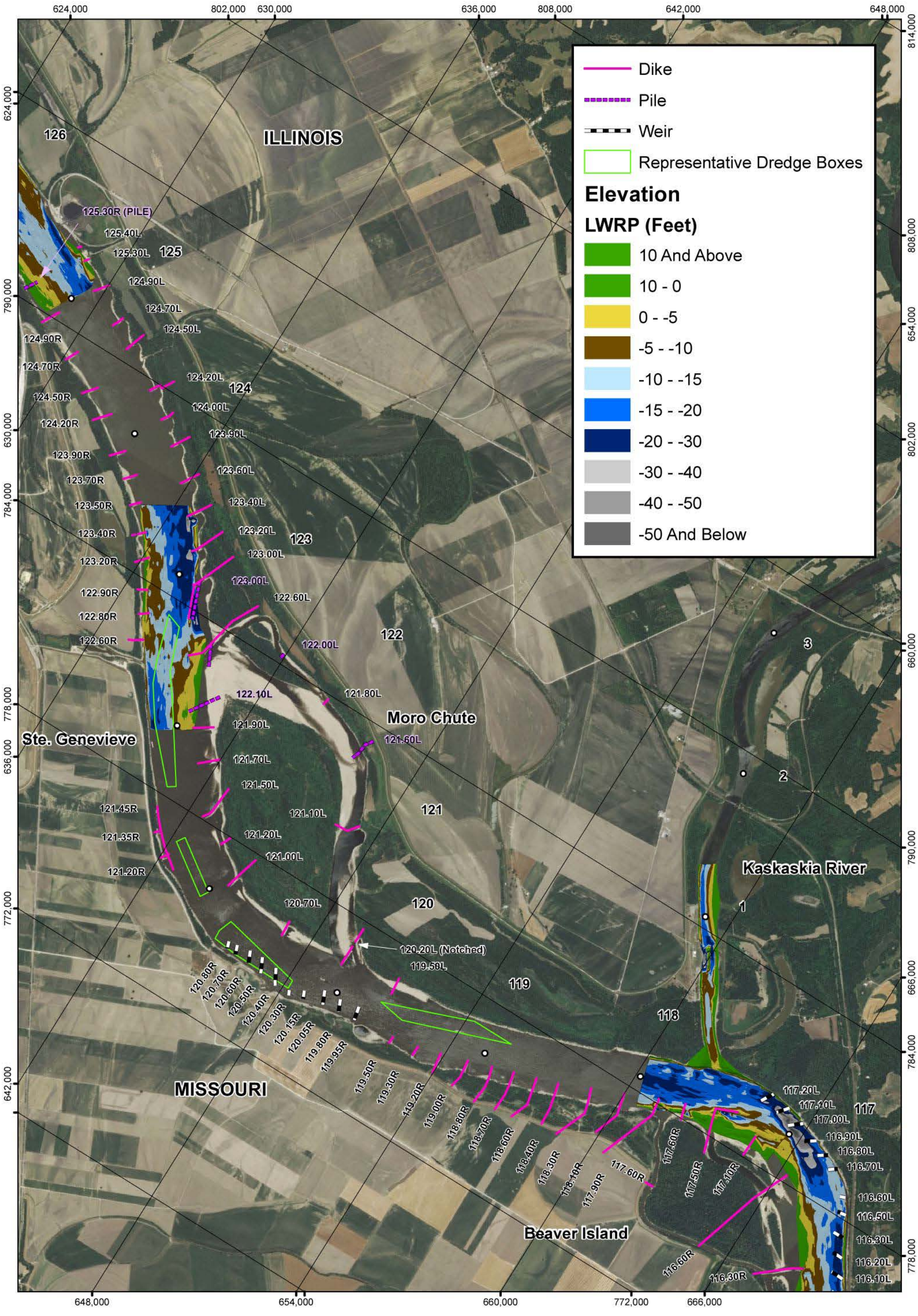

PLATE NUMBER 47

0 1,500 3,000 6,000 Feet

SEPTEMBER 10, 2009
PRE-DREDGE SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

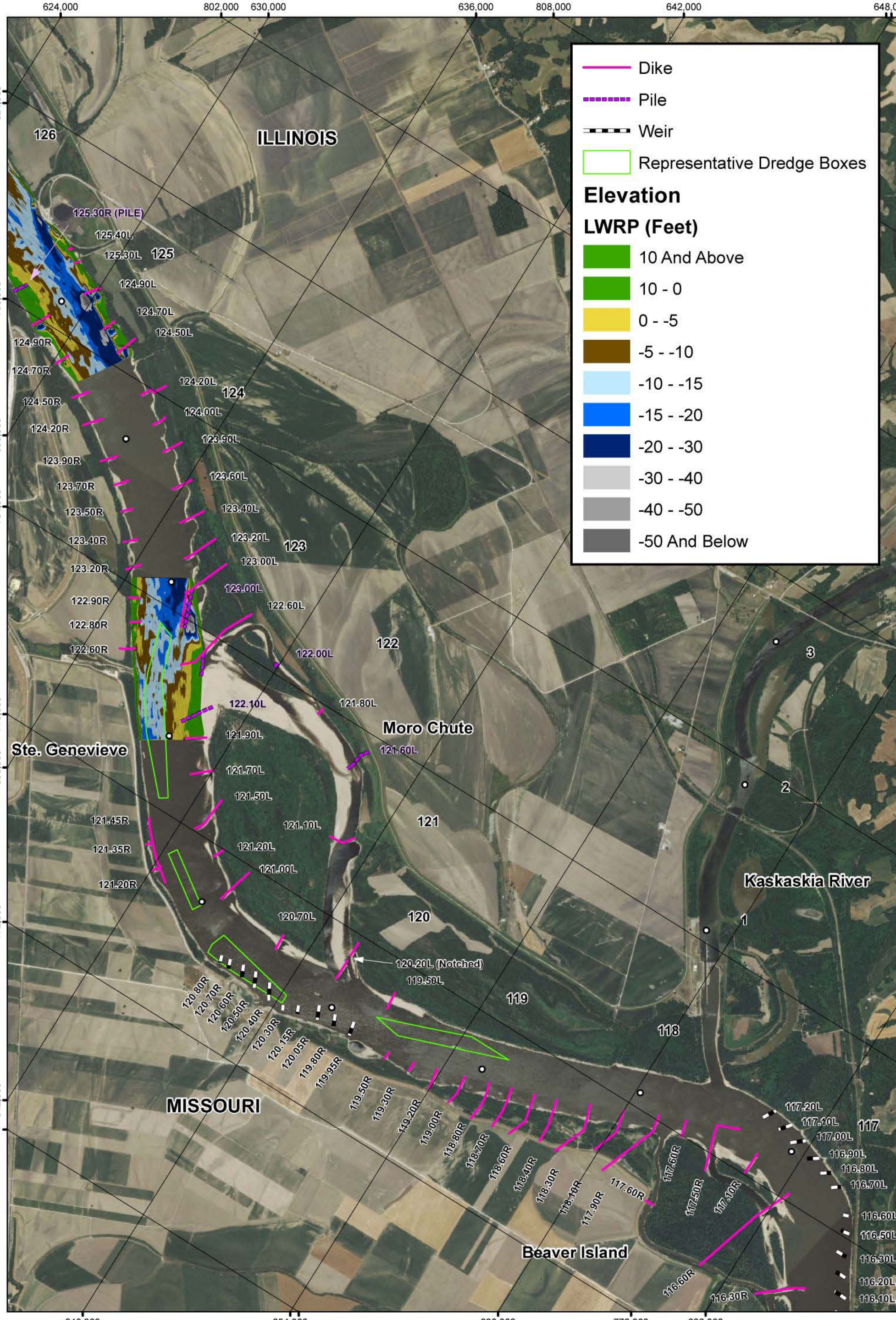

PLATE NUMBER 48

0 1,500 3,000 6,000 Feet

NOVEMBER 5, 2010
PRE-DREDGE SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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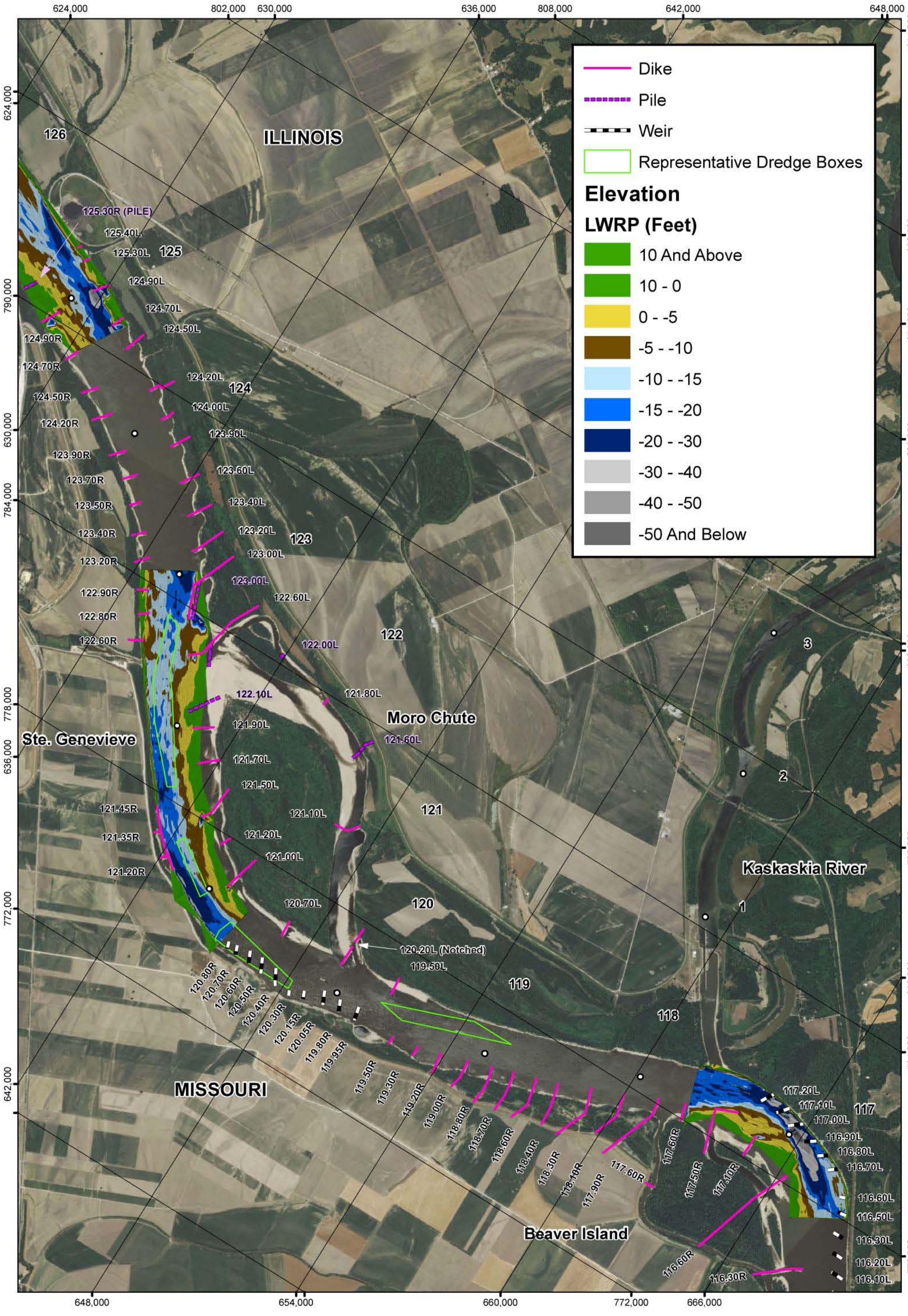

PLATE NUMBER 49

0 1,500 3,000 6,000 Feet

SEPTEMBER 28, 2011
PRE-DREDGE SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 1/29/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
St. Louis District

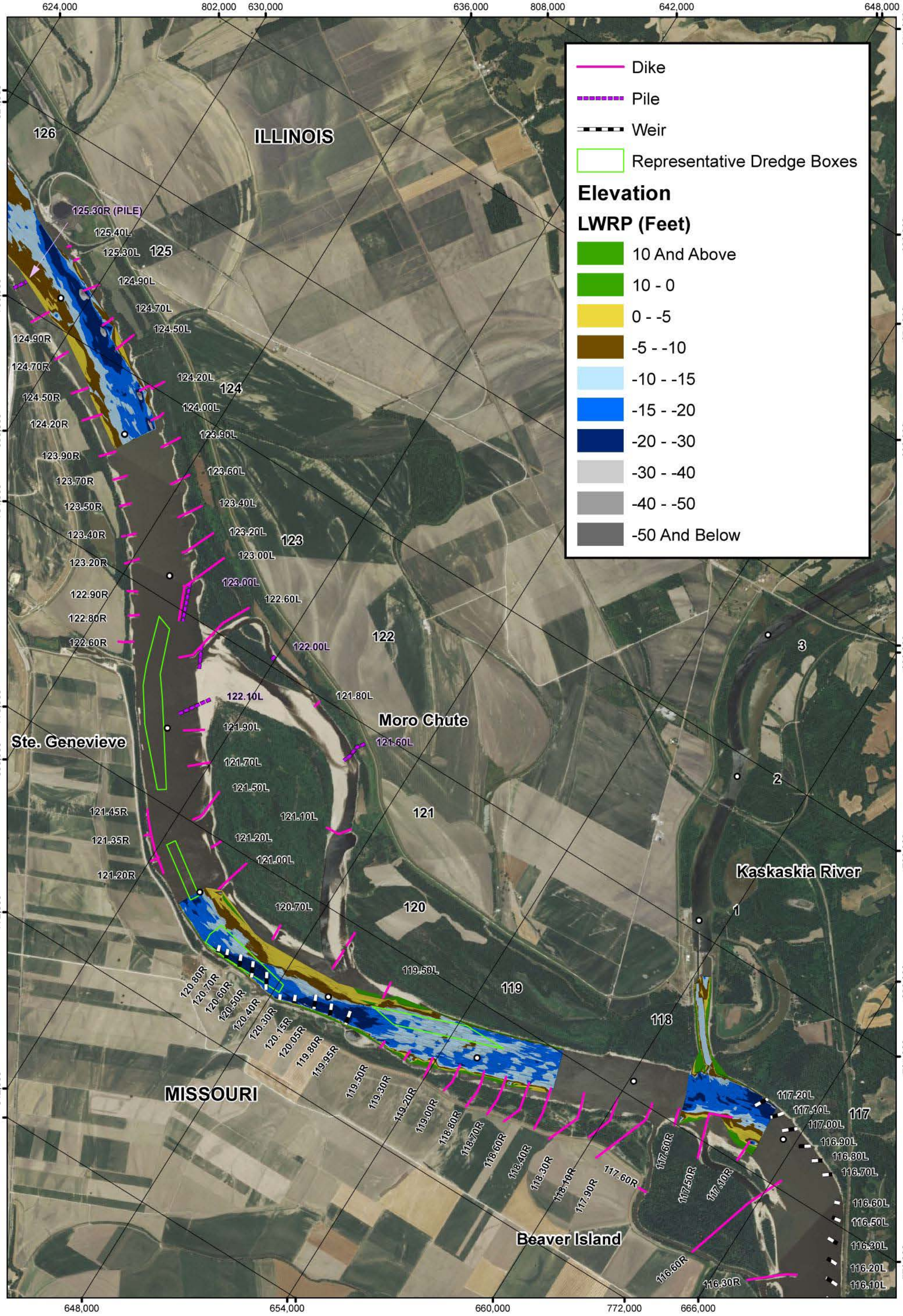


PLATE NUMBER 50

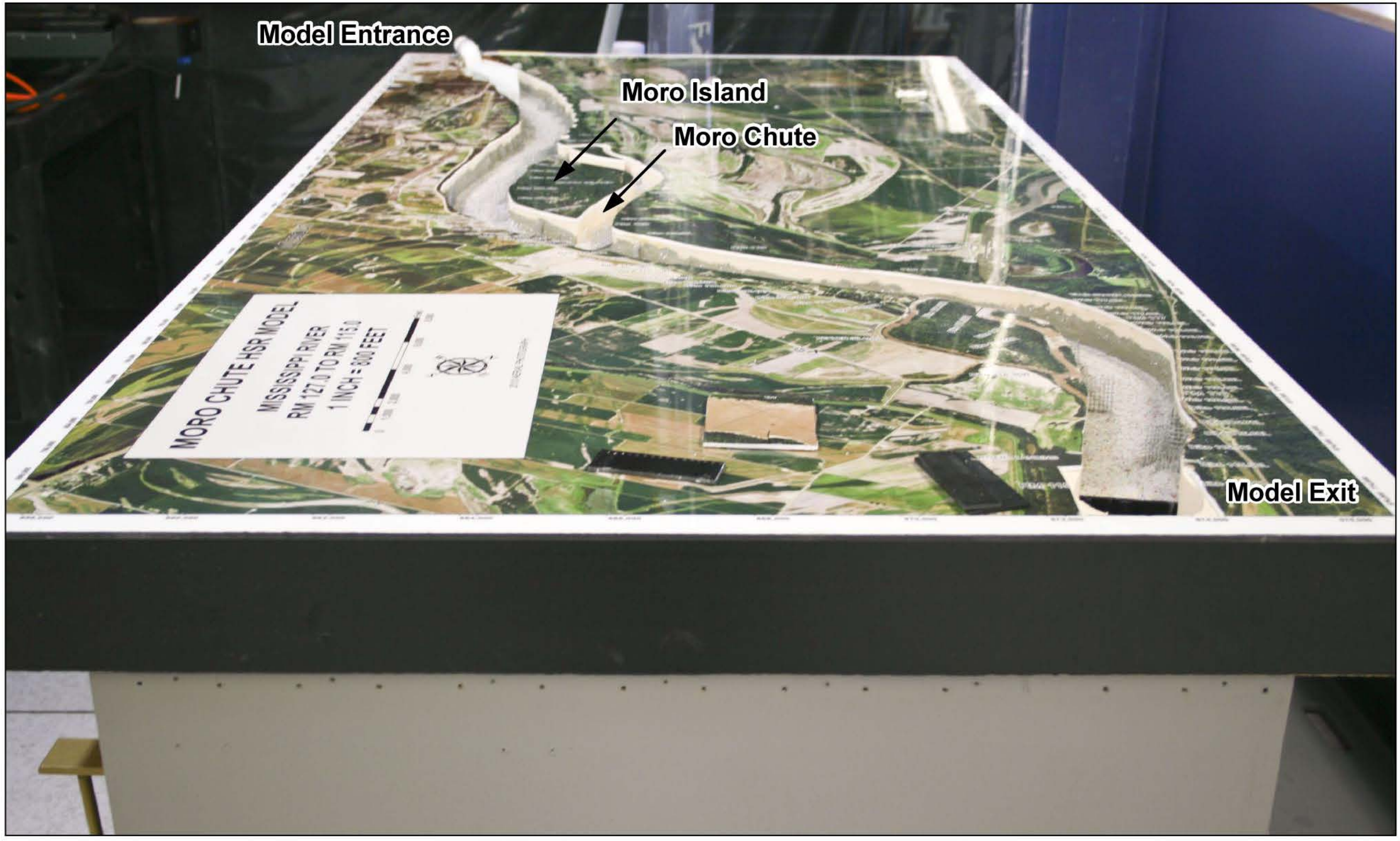
0 1,500 3,000 6,000 Feet

SEPTEMBER 18, 2012
PRE-DREDGE SURVEY
2012 AERIAL PHOTOGRAPH

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: B. KRISCHEL
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY, P.E.
	FILENAME: MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



Photograph 1: Moro Chute HSR Model Insert Scale= 1" = 800'

US Army Corps of Engineers
St. Louis District

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N W E S

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN SUBMITTED BY: I. NGUYEN PLOT DATE: 2/26/2014 FILENAME: MORO CHUTE HSR MODEL.MDX
MIDDLE MISSISSIPPI RIVER BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	REVIEWED BY: A. COX CHECKED BY: B. KRISCHEL APPROVED BY: R. DAVINROY, P.E.

MORO CHUTE
HSR MODEL
PHOTOGRAPH

PLATE
NUMBER
51

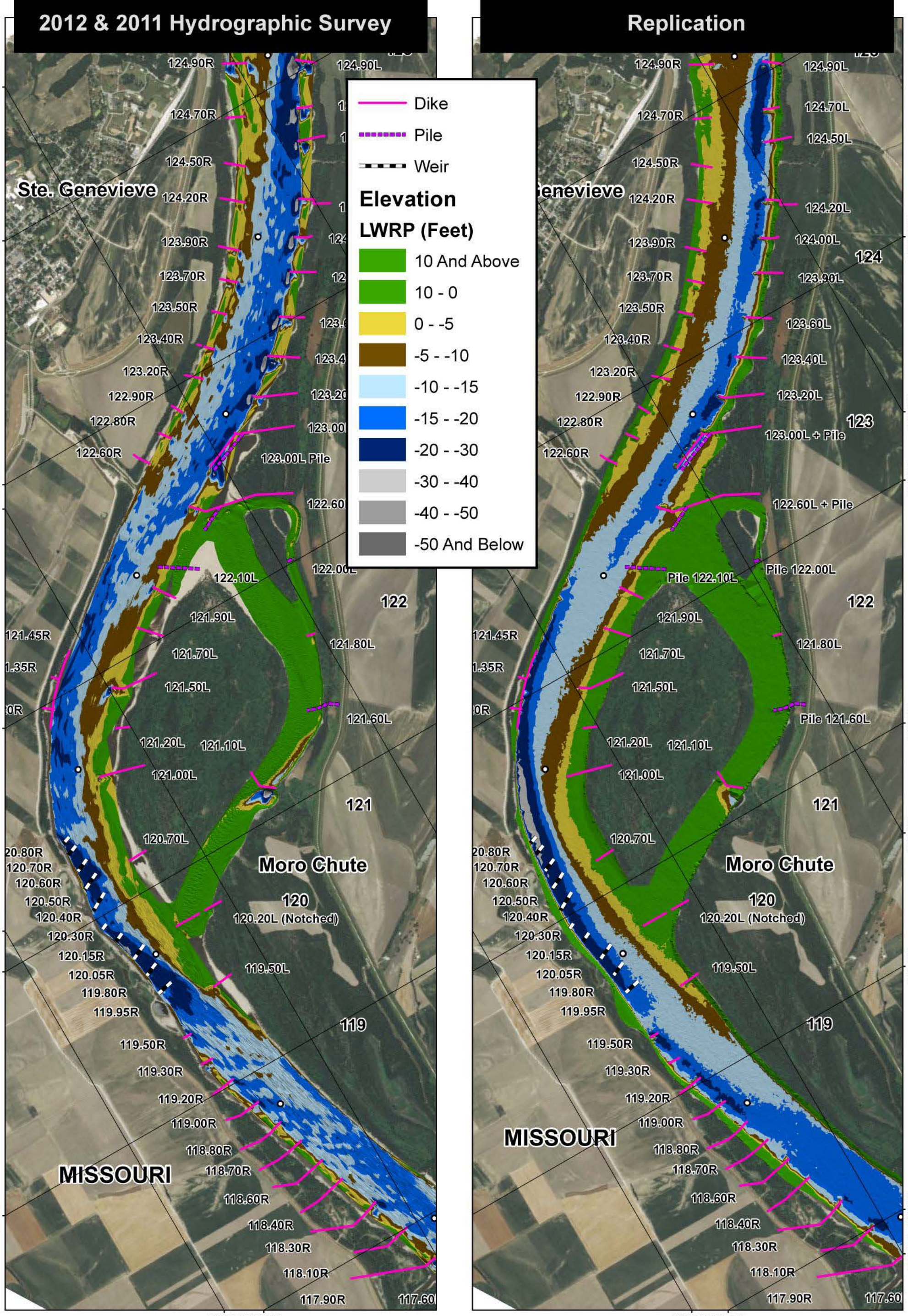

PLATE NUMBER 52

0 1,200 2,400 4,800 Feet

REPLICATION TEST
2012 MAIN CHANNEL
2011 SIDE CHANNEL

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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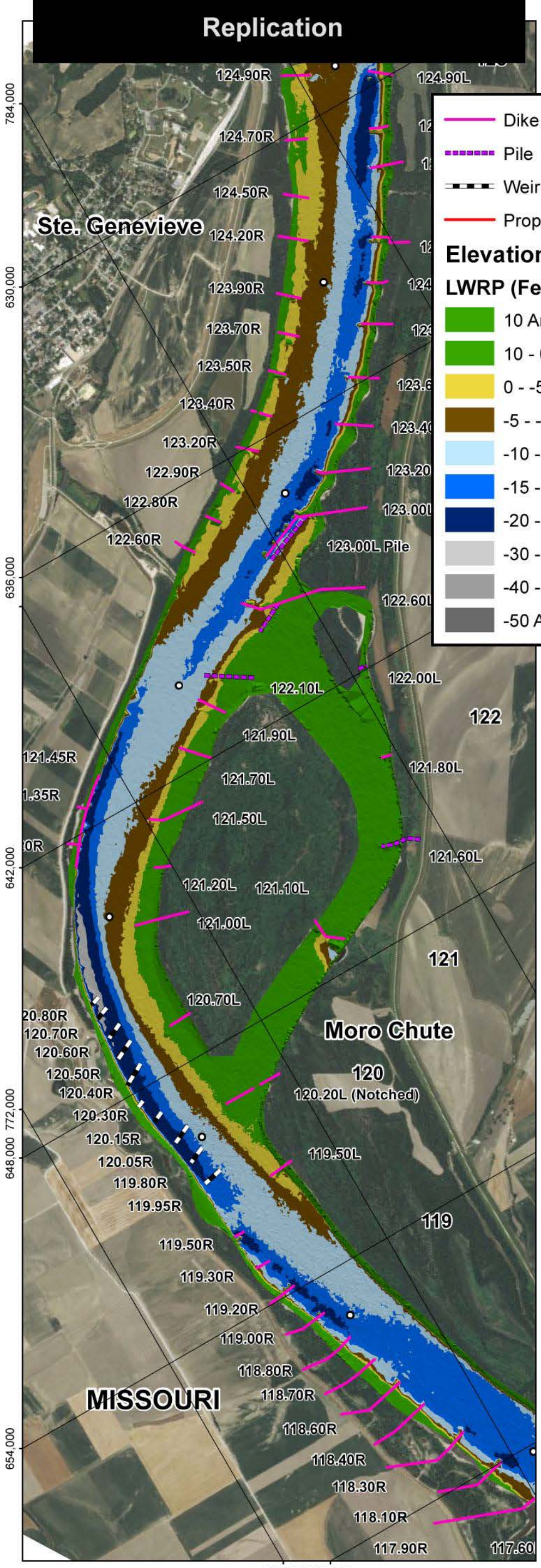

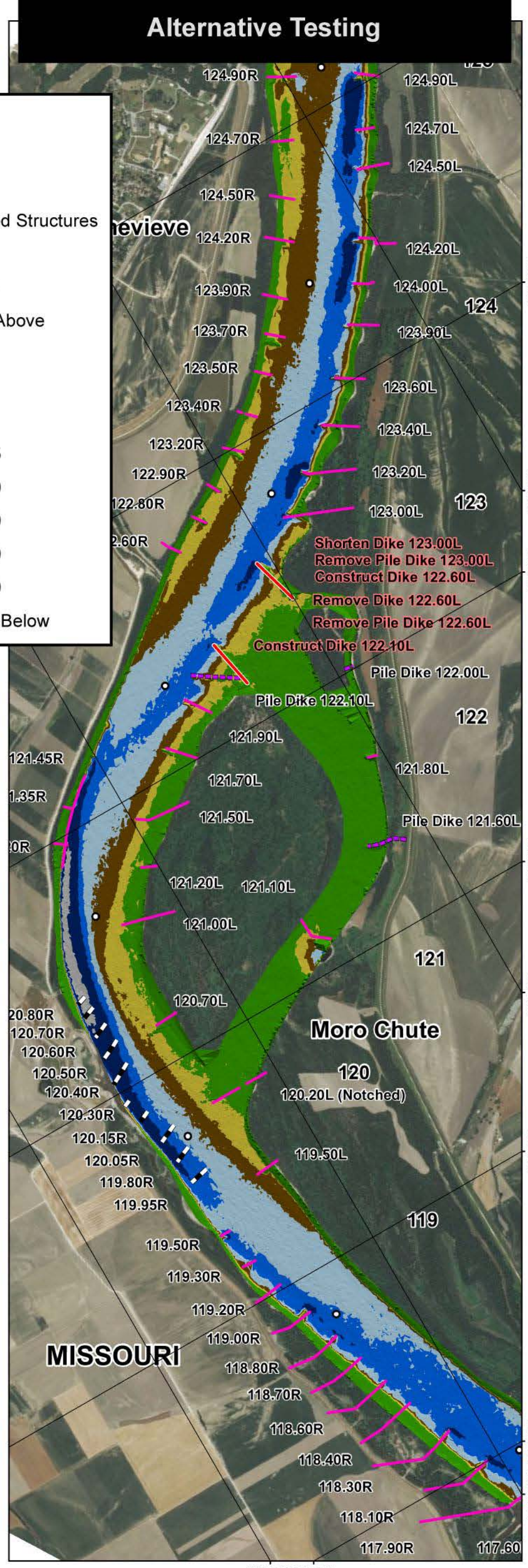

PLATE NUMBER 53

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 1

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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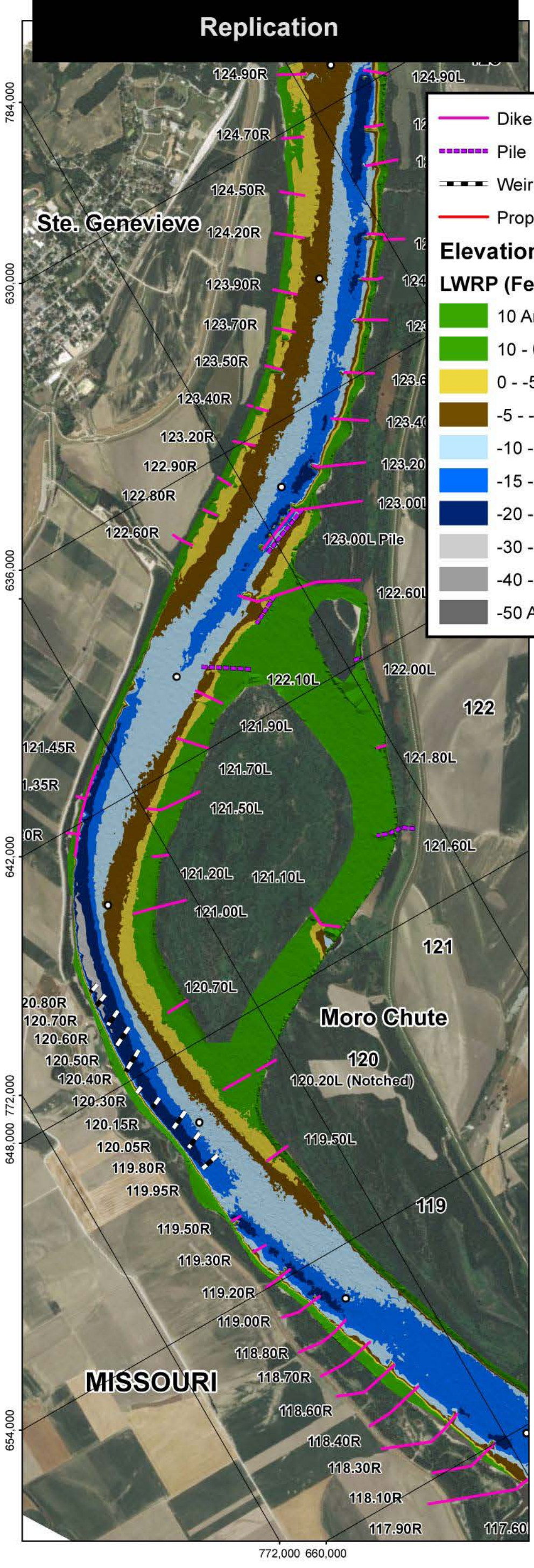

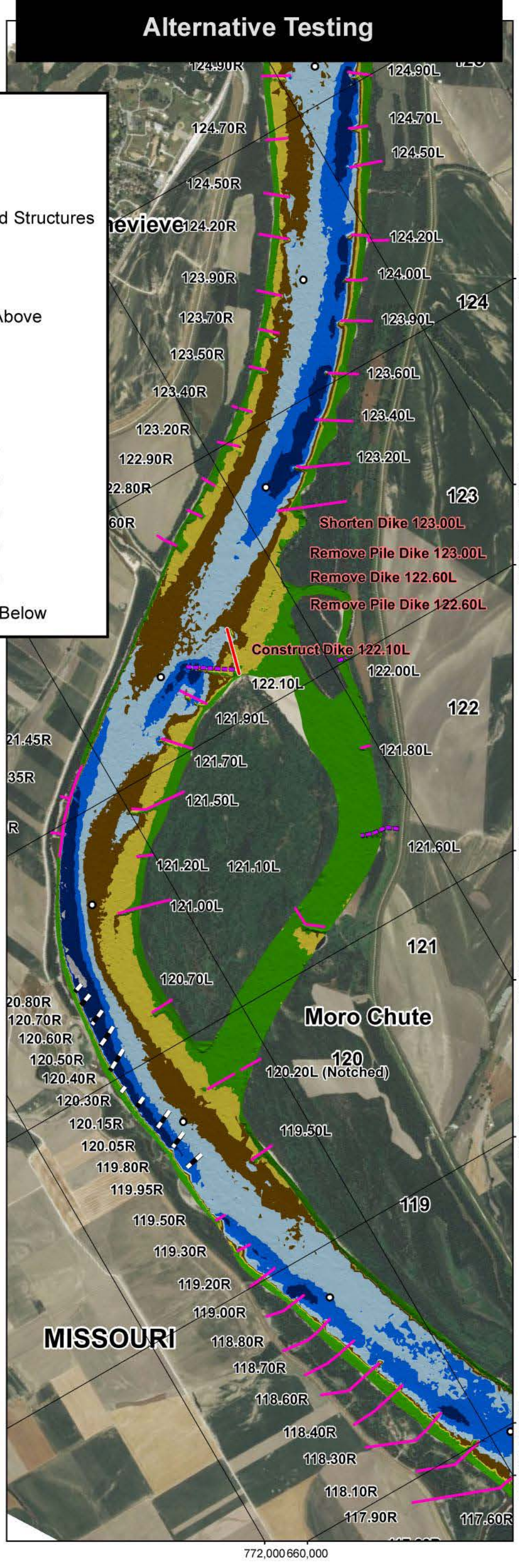

PLATE NUMBER 54

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 2

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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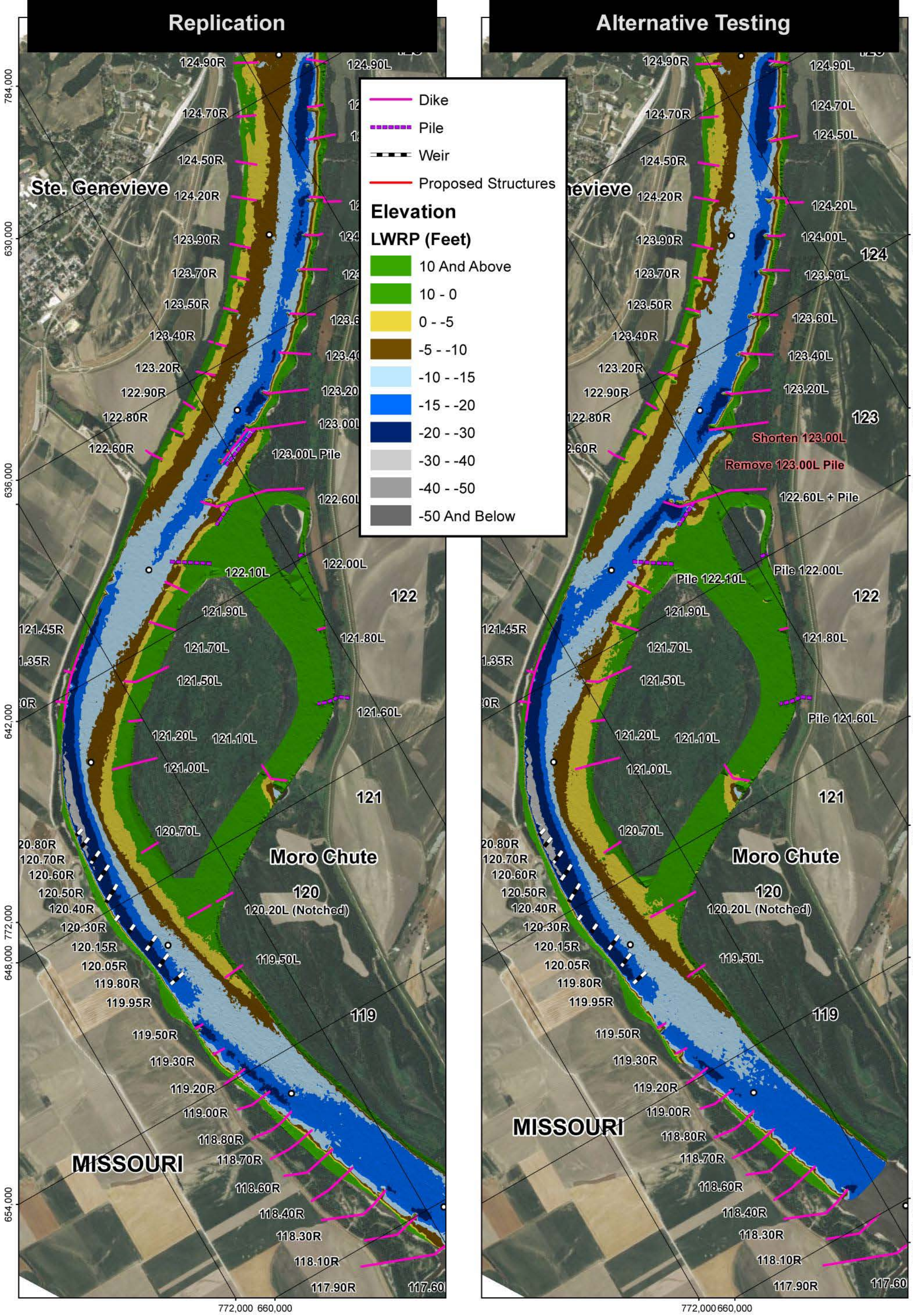

PLATE NUMBER 55

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 3

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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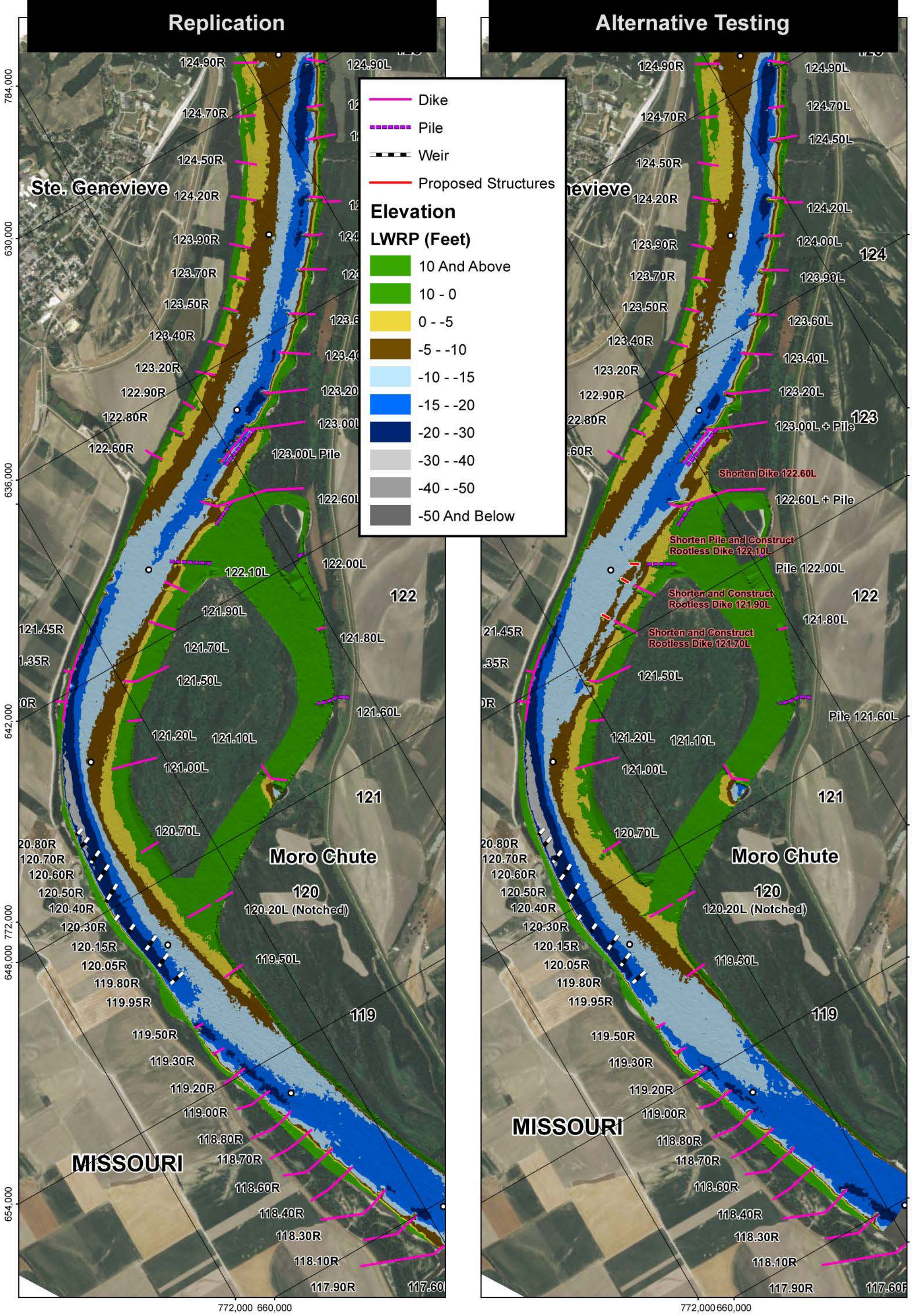

PLATE NUMBER 56

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 4

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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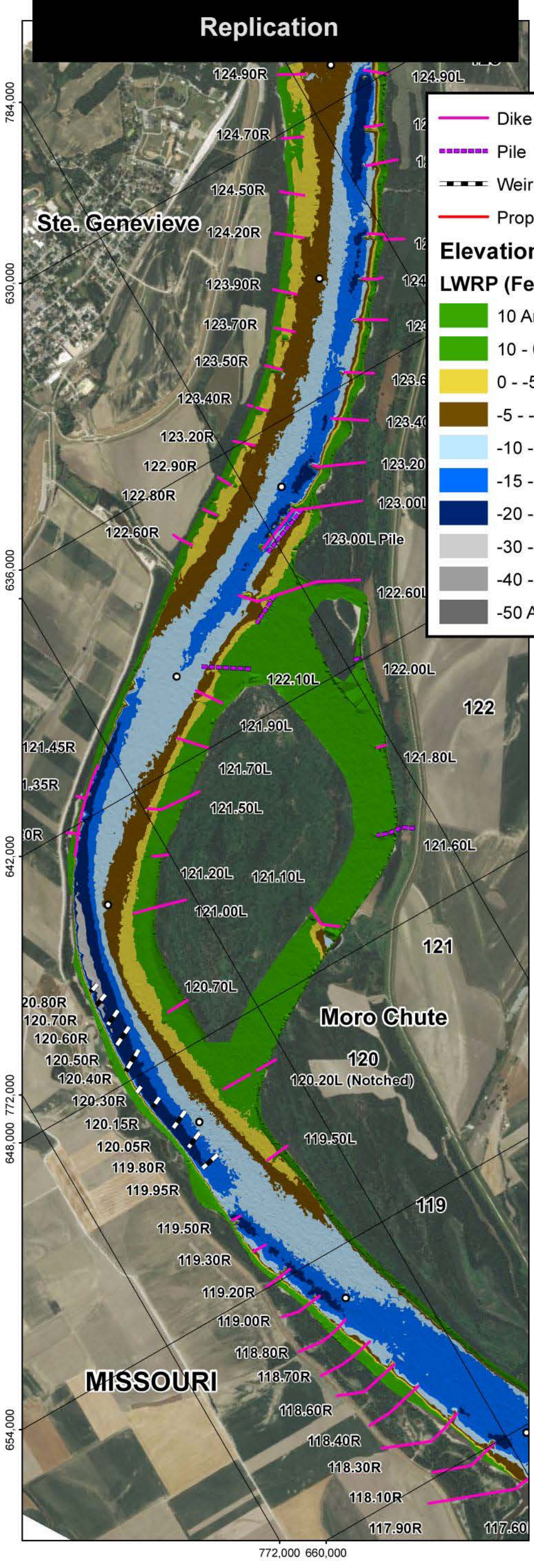

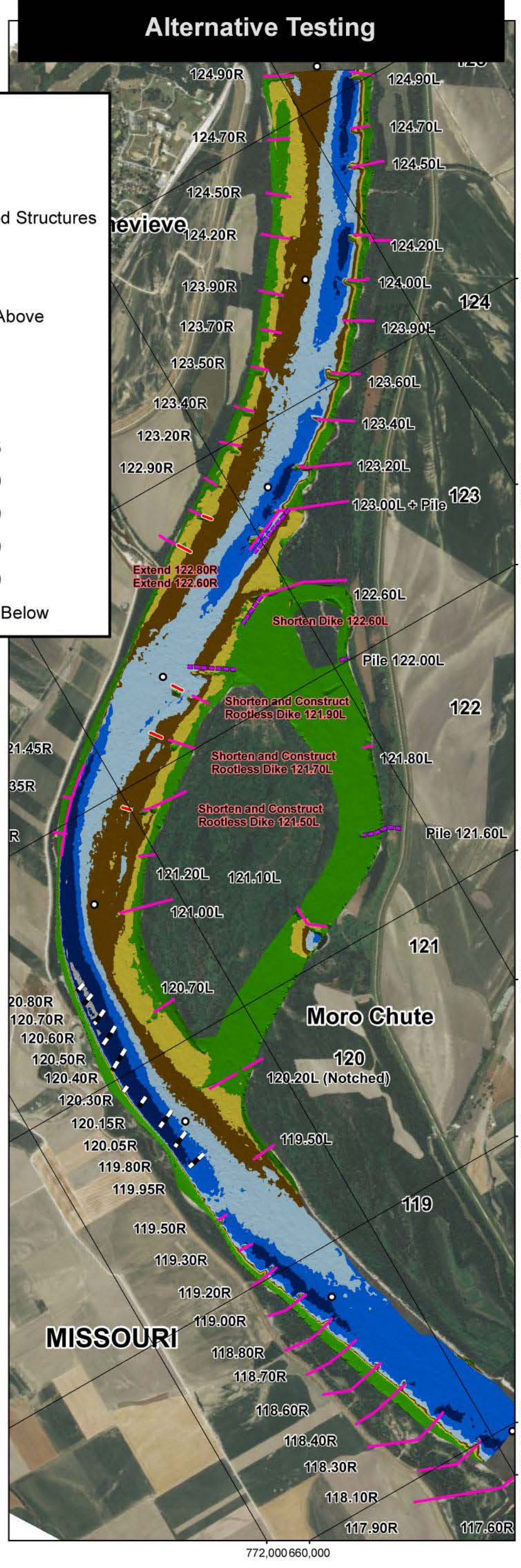

PLATE NUMBER 57

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 5

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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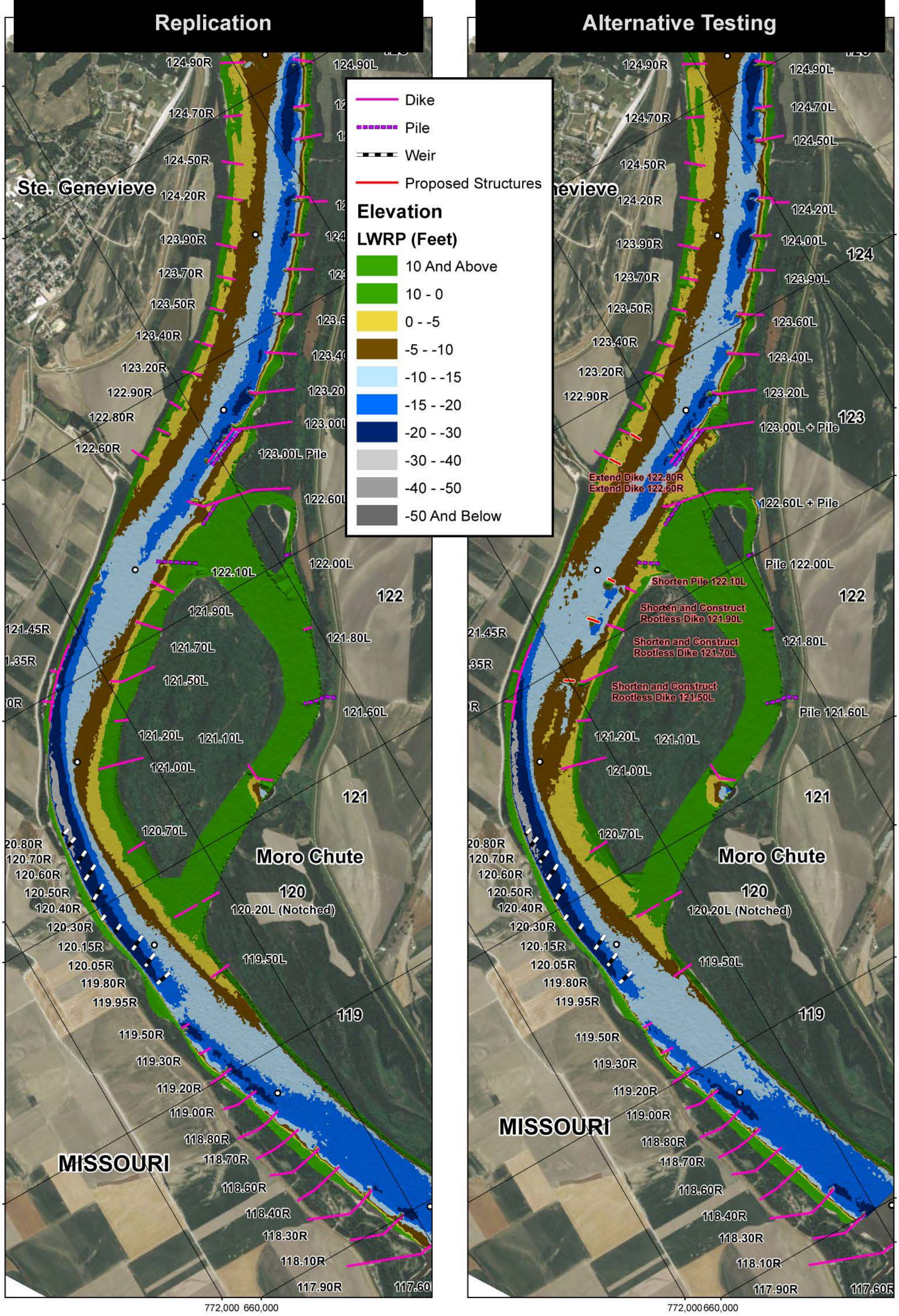

PLATE NUMBER 58

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 6

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

US Army Corps of Engineers
St. Louis District
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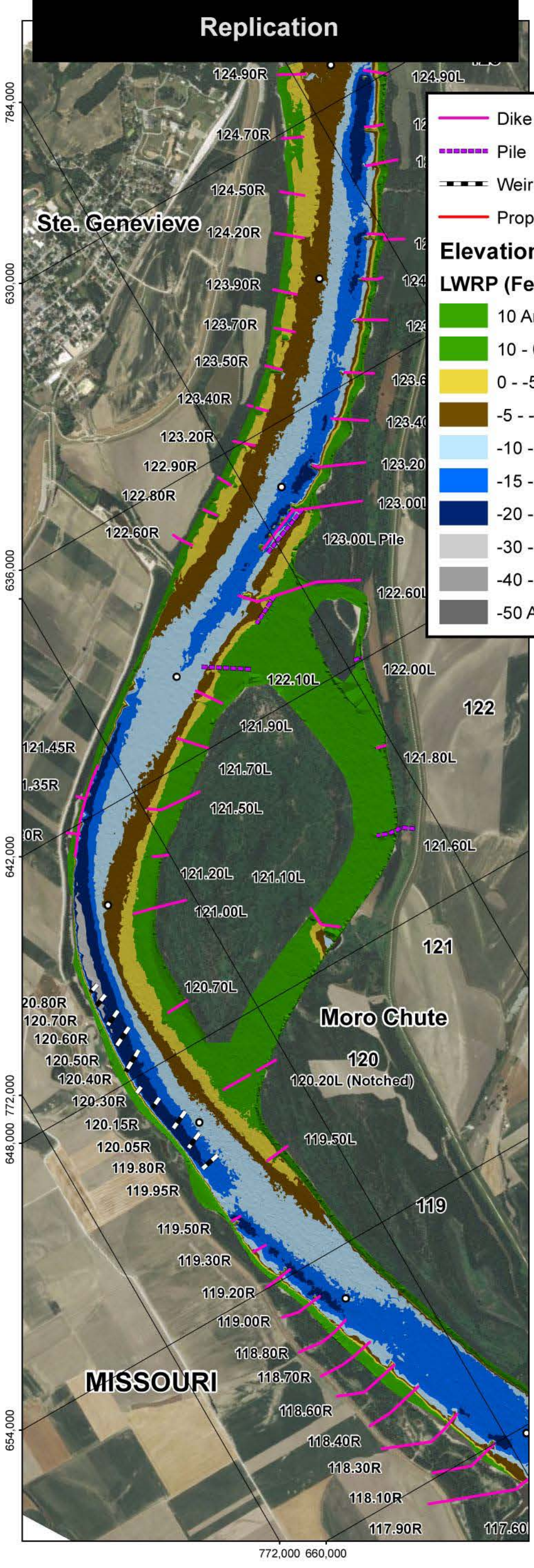

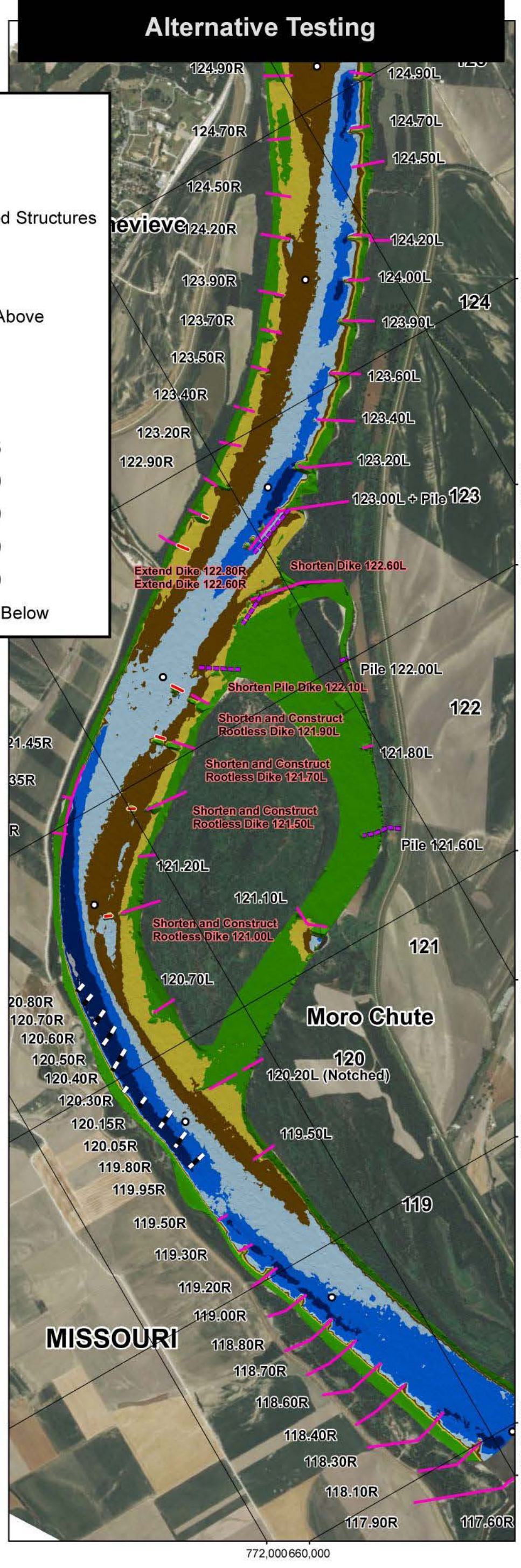

PLATE NUMBER 59

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 7

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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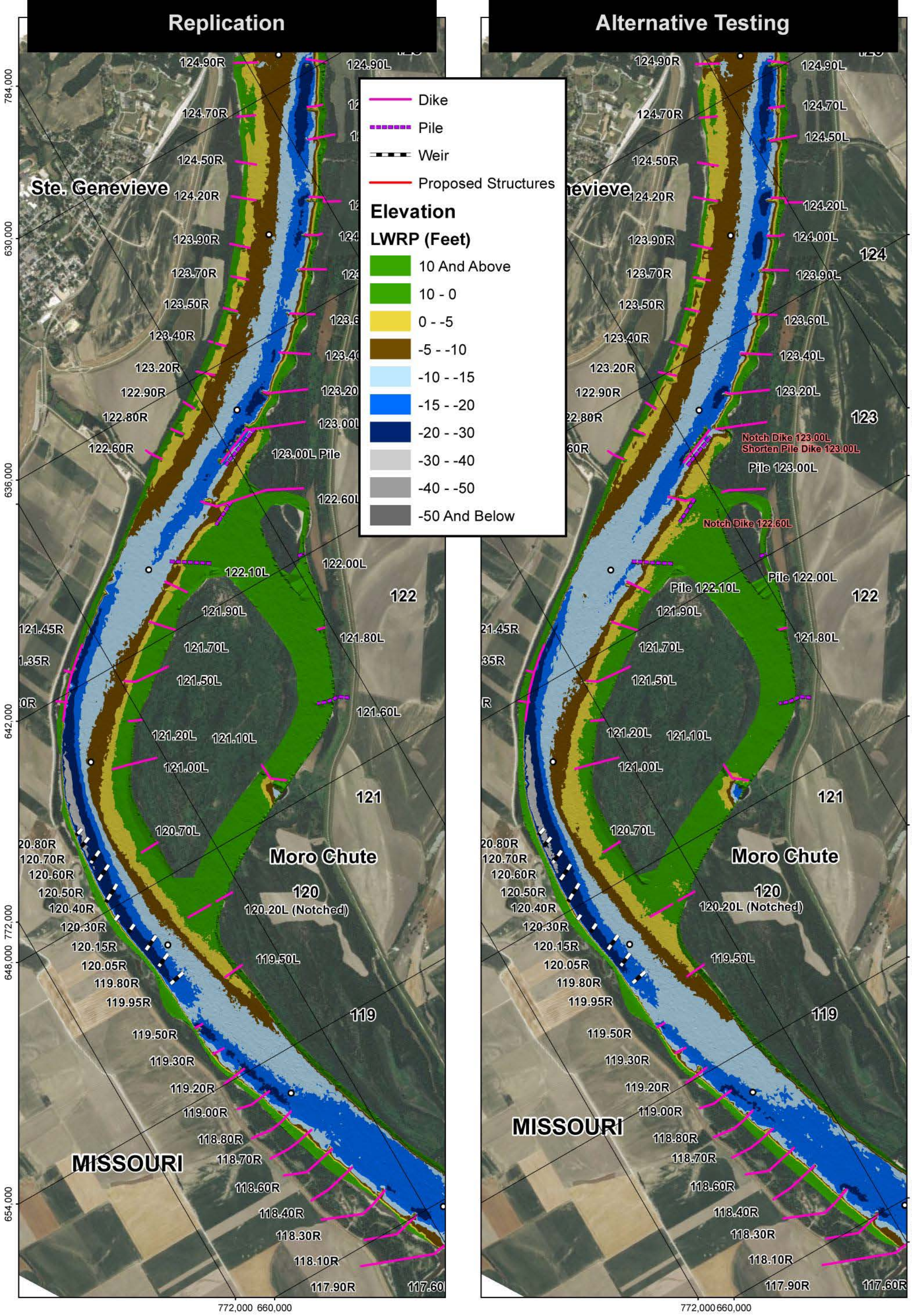

PLATE NUMBER 60

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 8

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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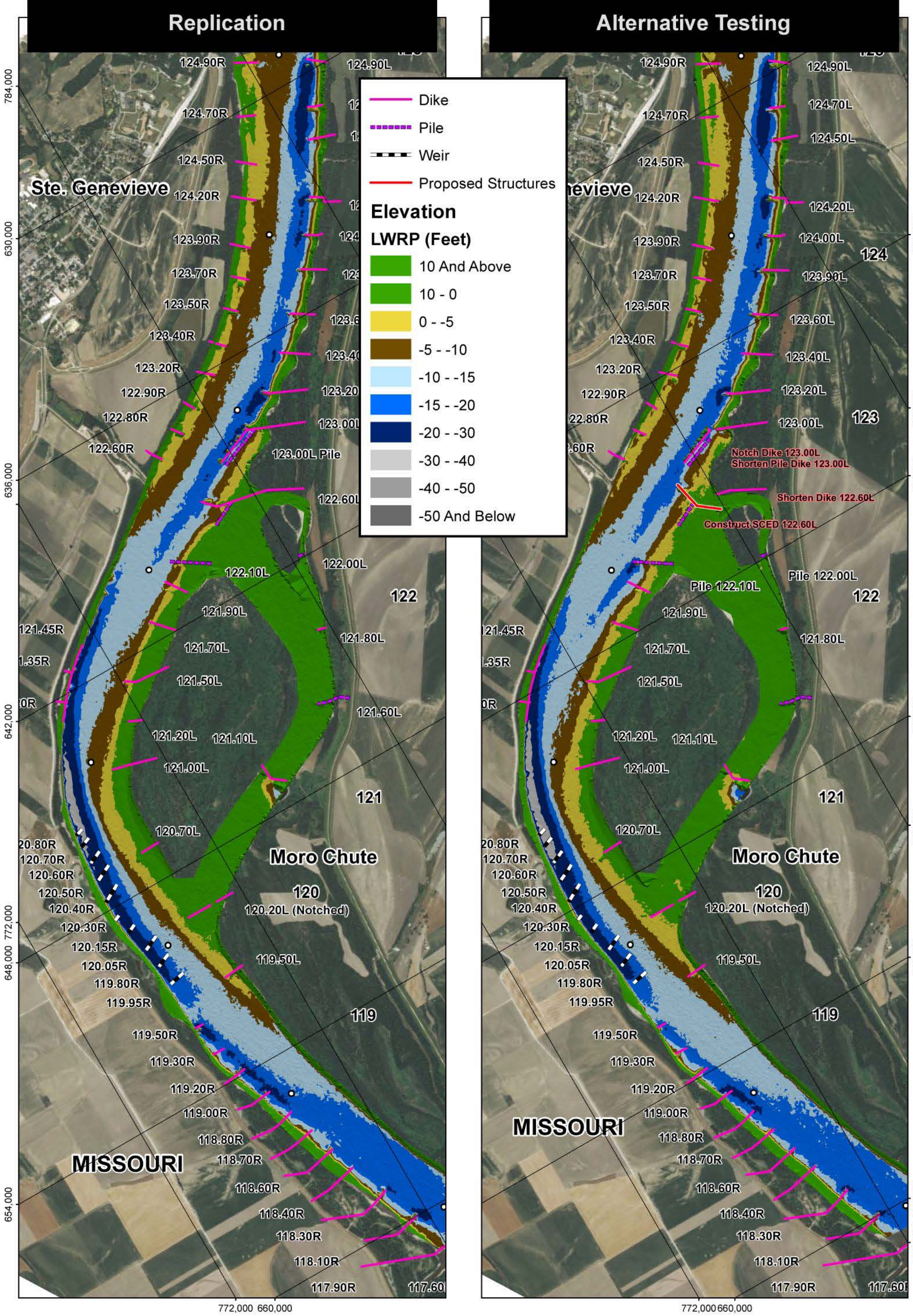

PLATE NUMBER 61

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 9

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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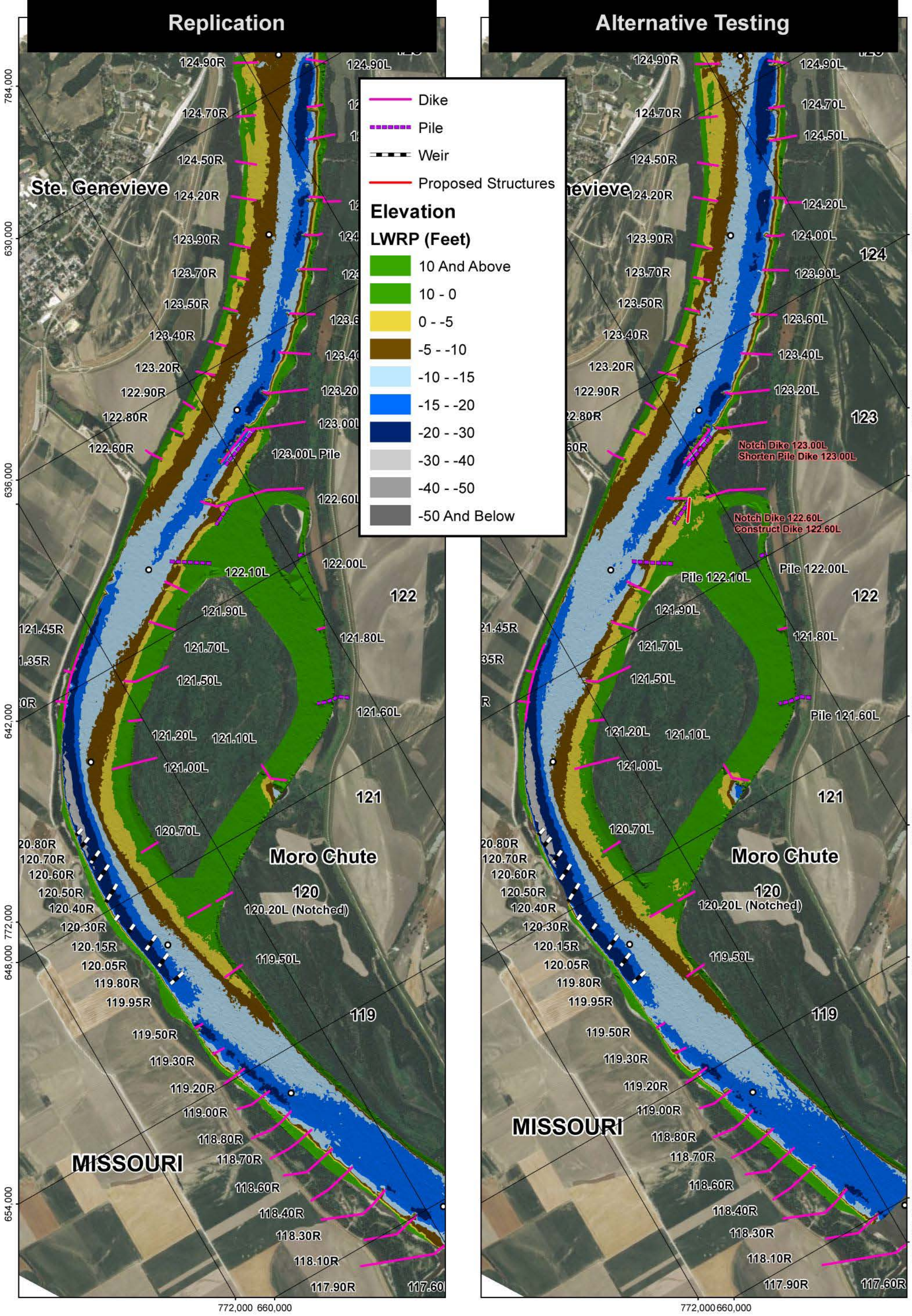

PLATE NUMBER 62

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 10

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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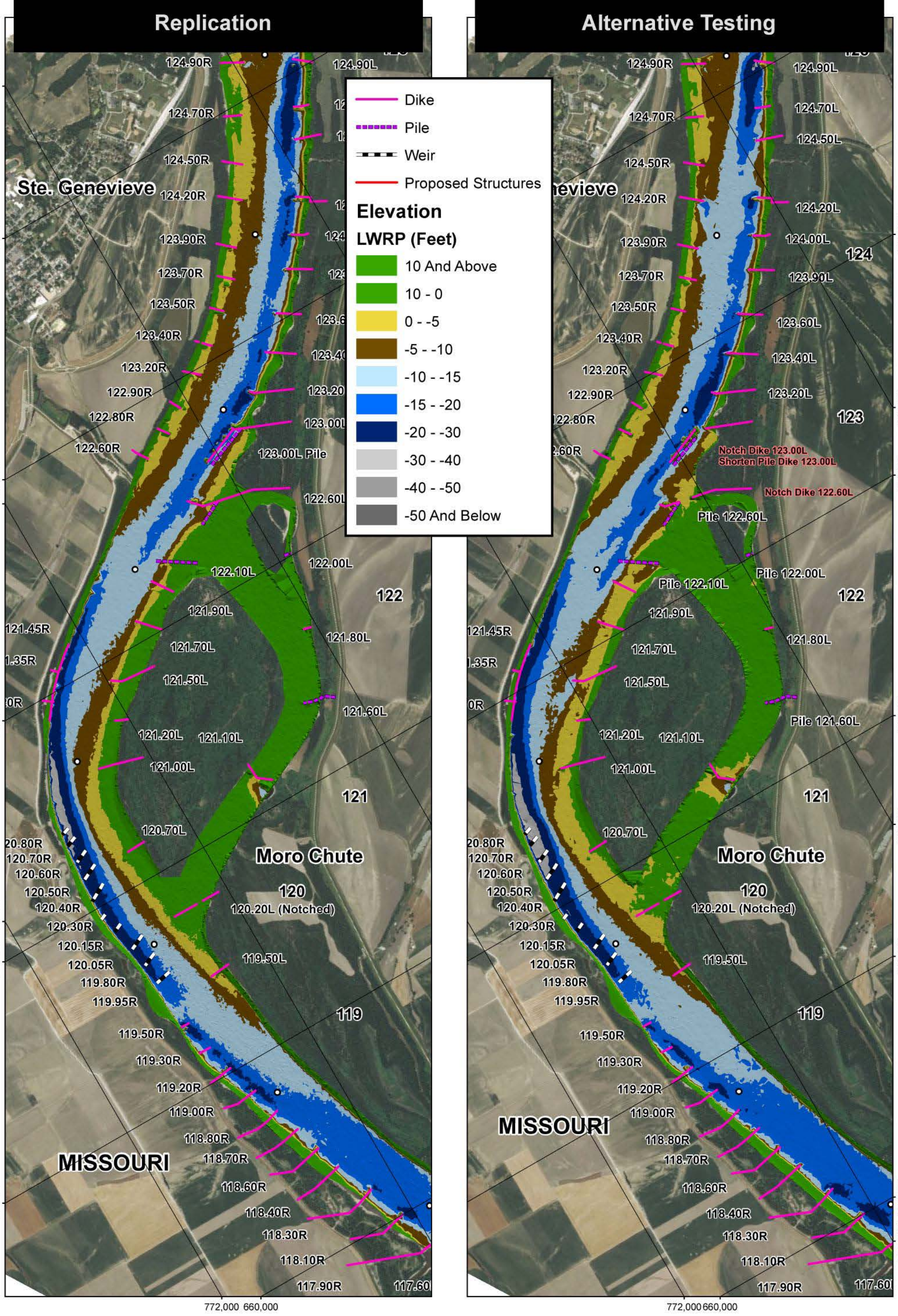

PLATE NUMBER 63

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 11

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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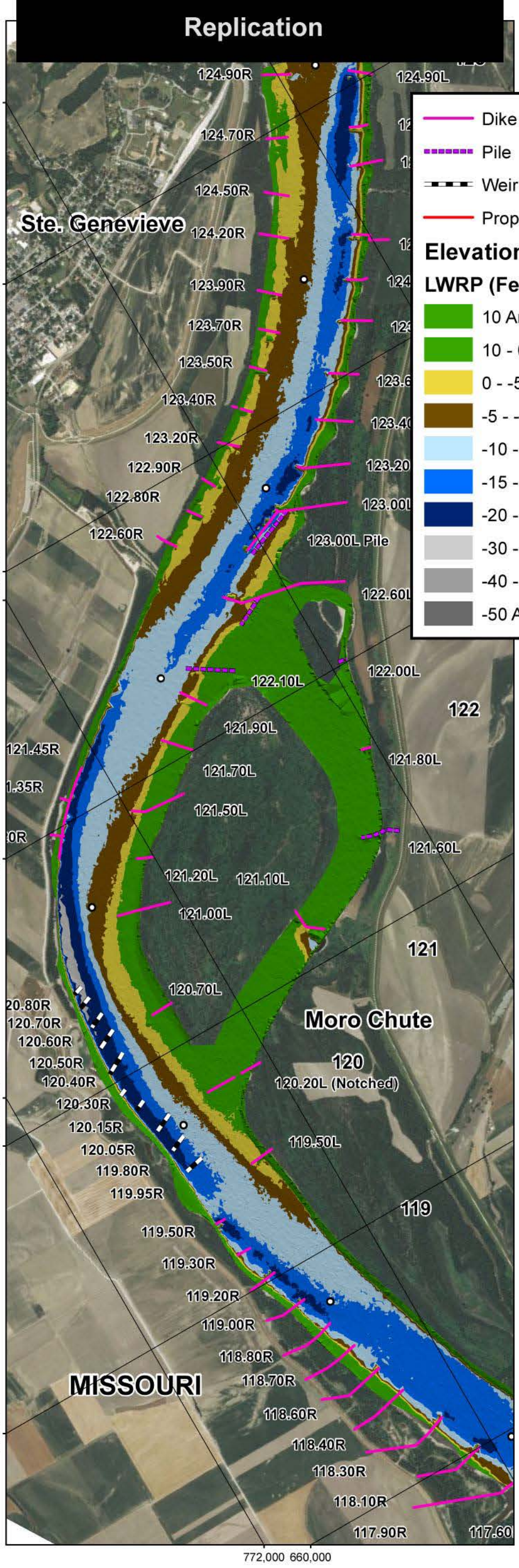

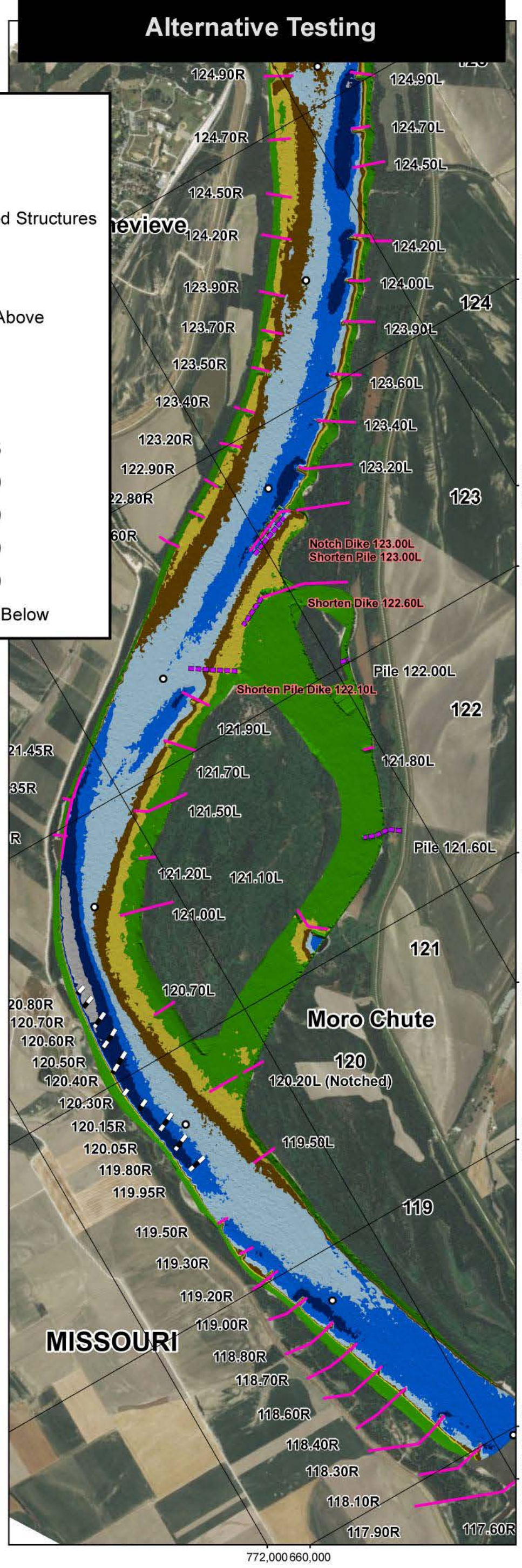

PLATE NUMBER 64

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 12

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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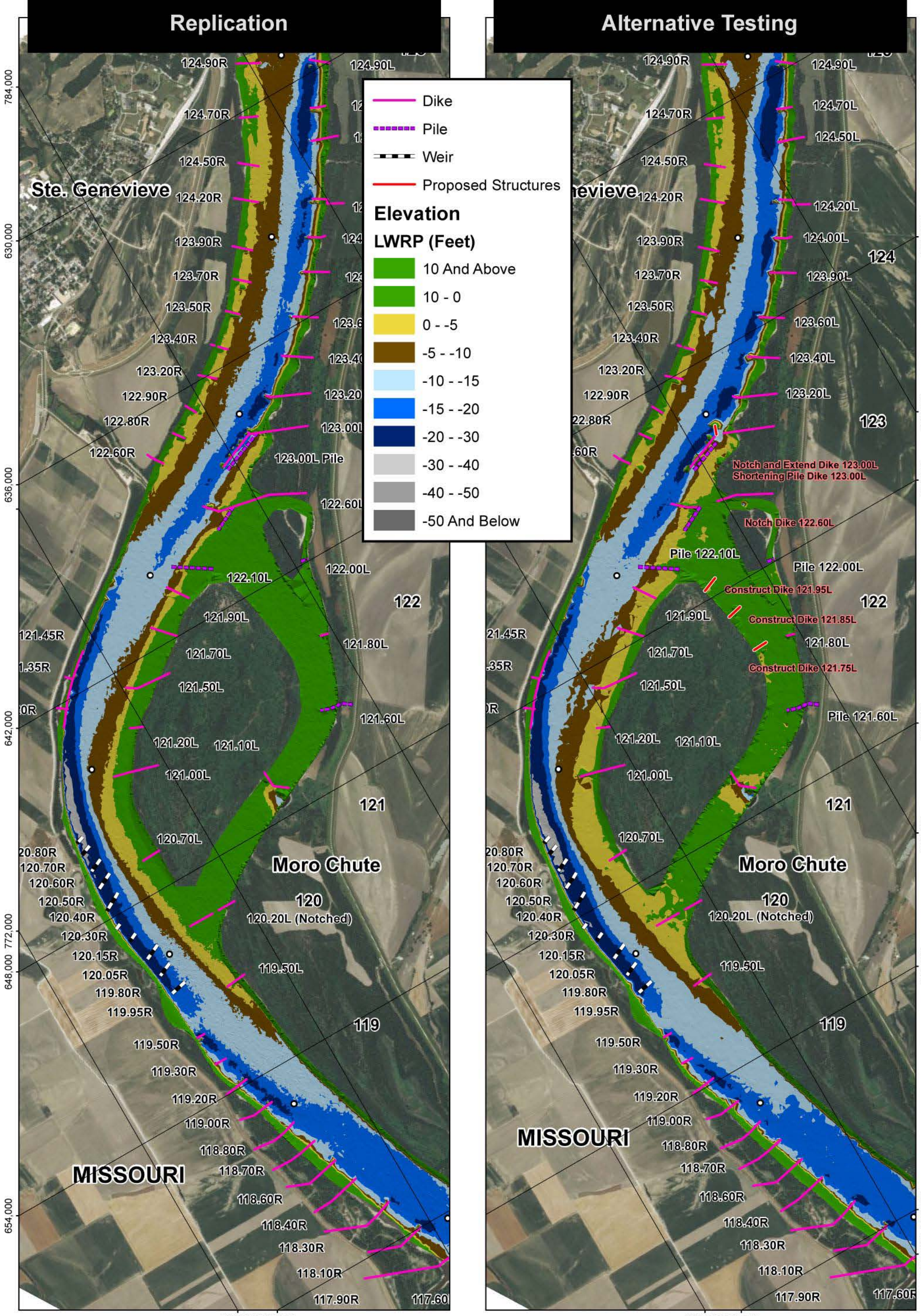

PLATE NUMBER 65

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 13

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

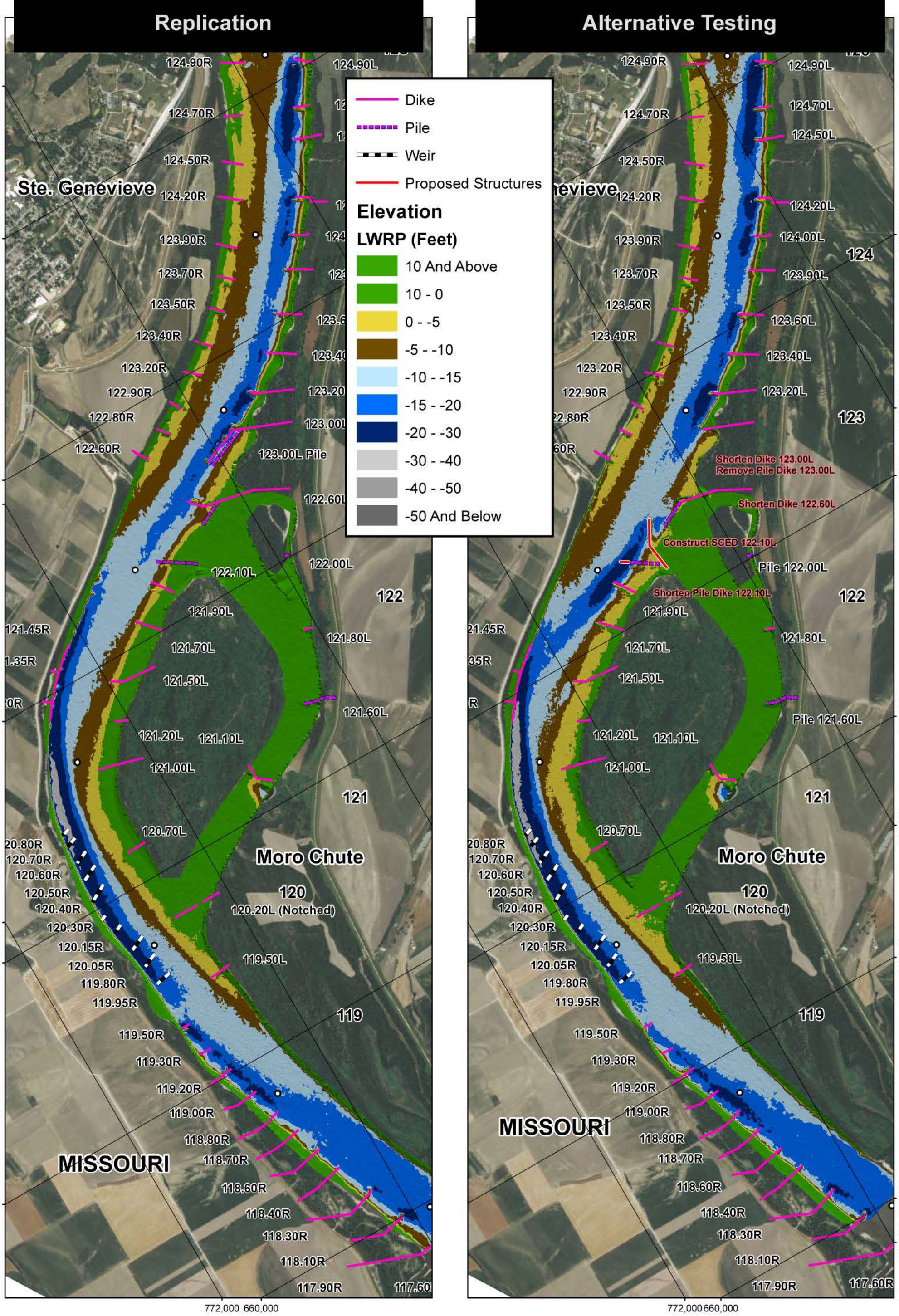

PLATE NUMBER 66

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 14

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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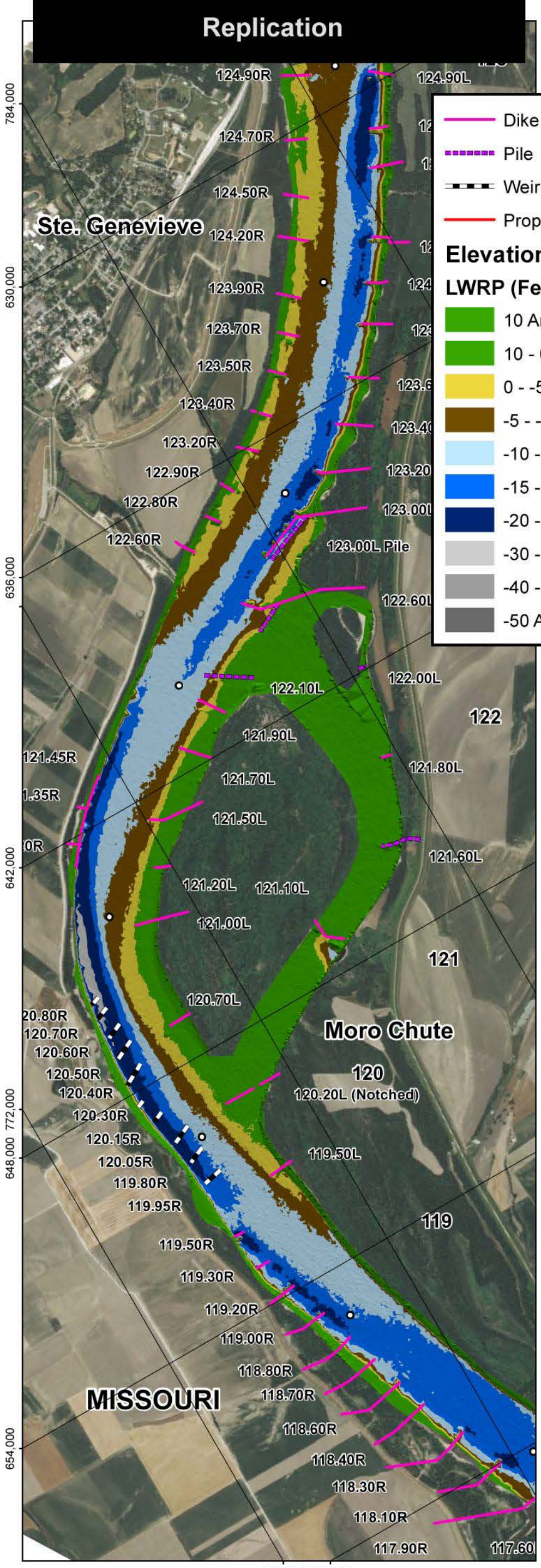
St. Louis District



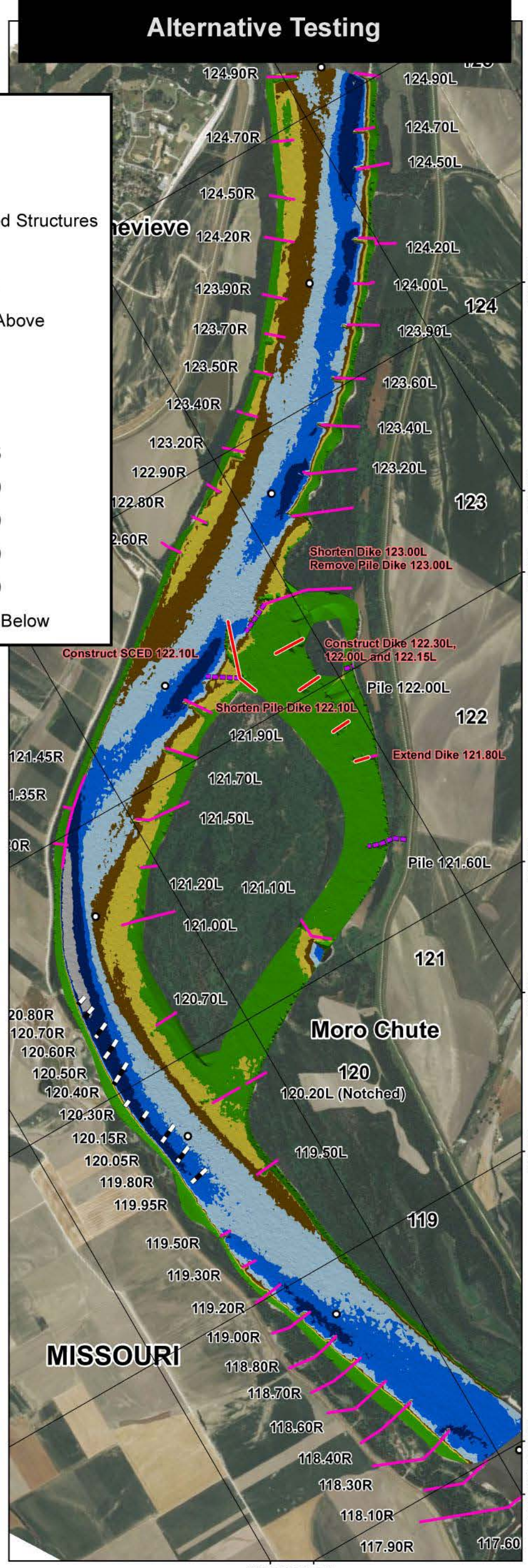


PLATE NUMBER 67

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 15

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

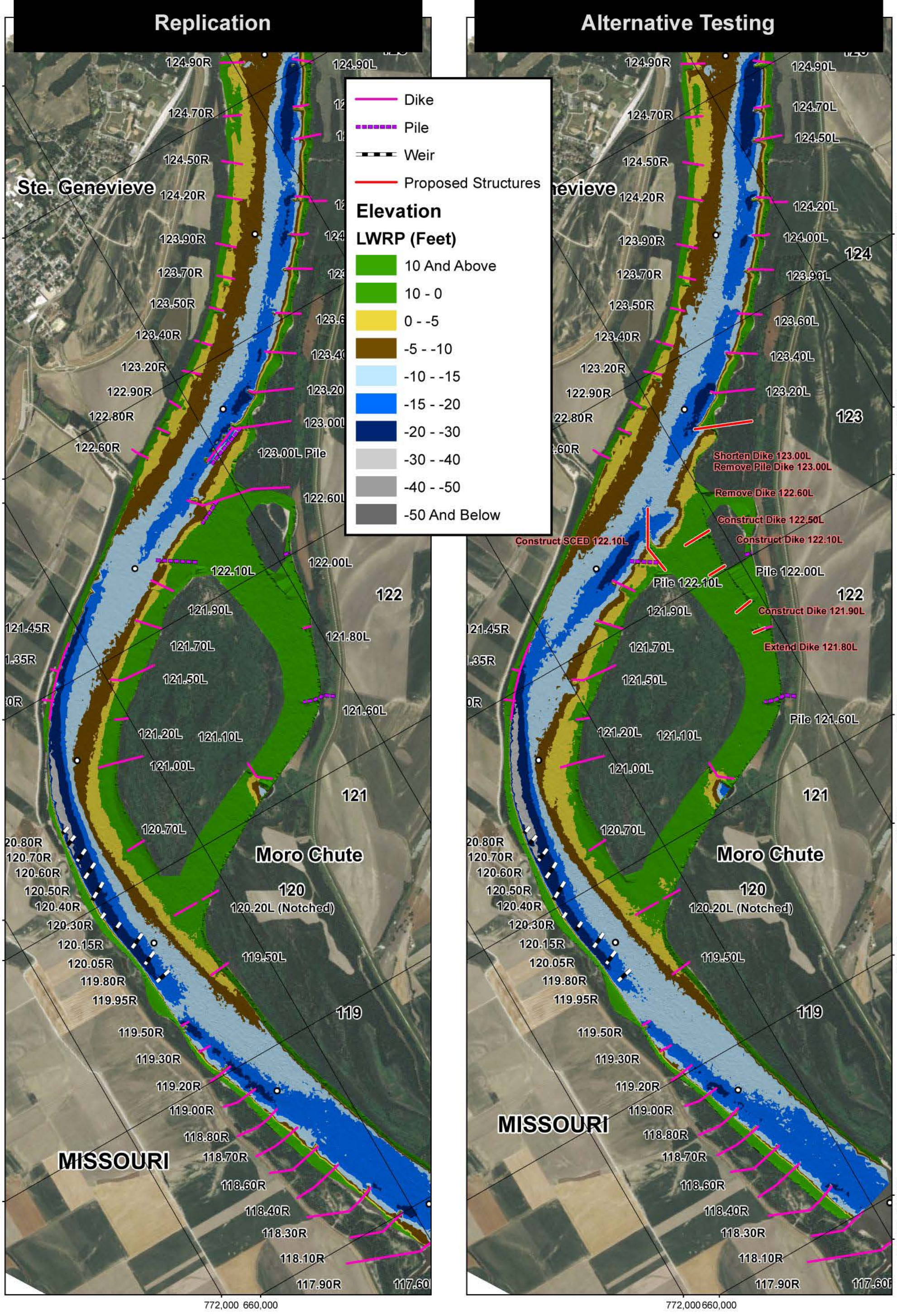


PLATE NUMBER 68

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 16

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

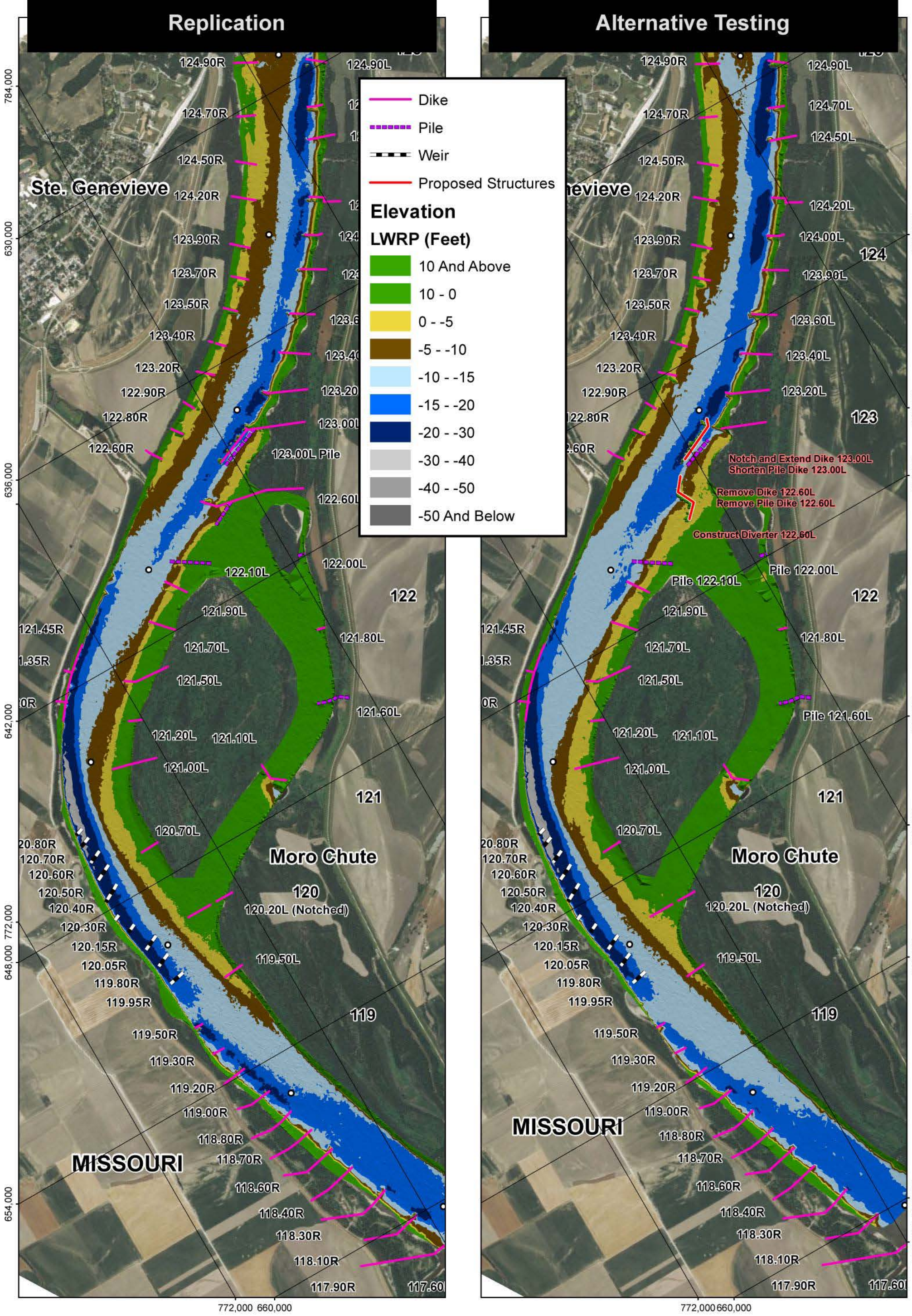


PLATE NUMBER 69

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 17

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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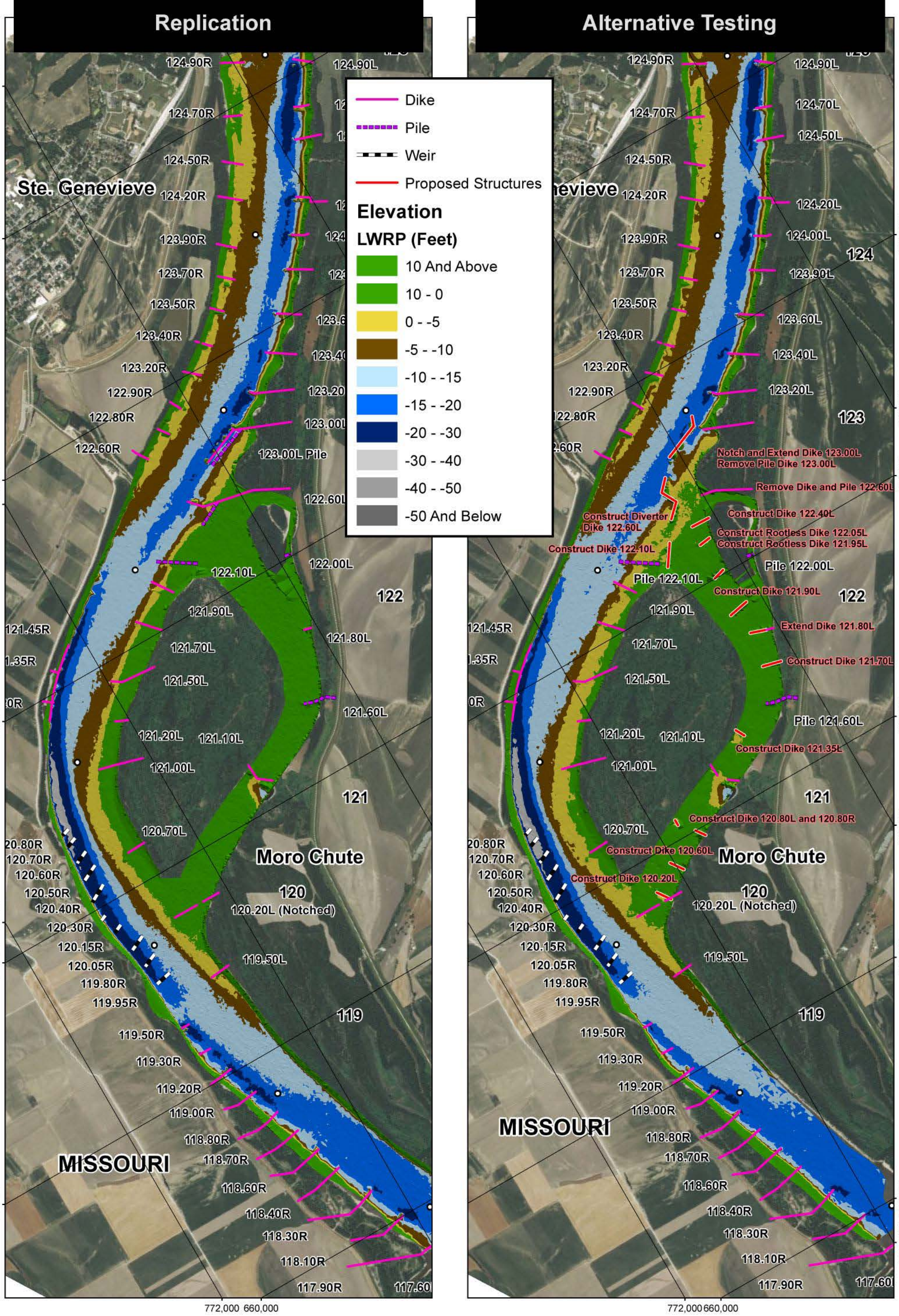

PLATE NUMBER 70

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 18

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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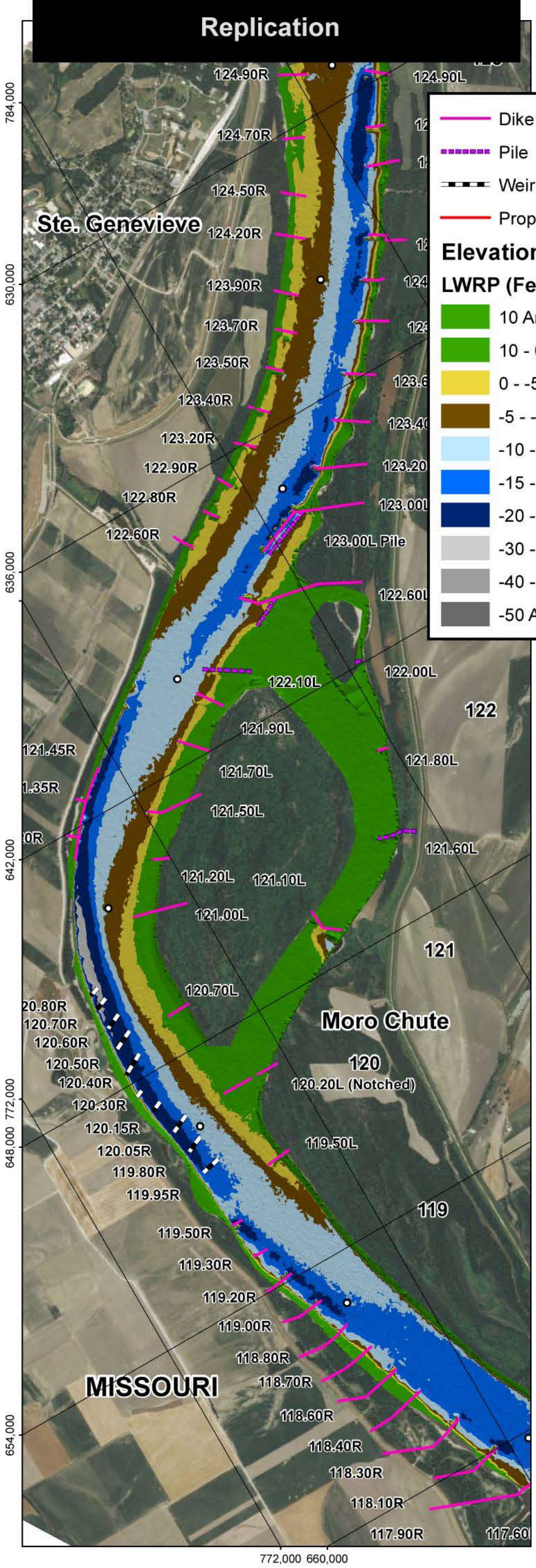

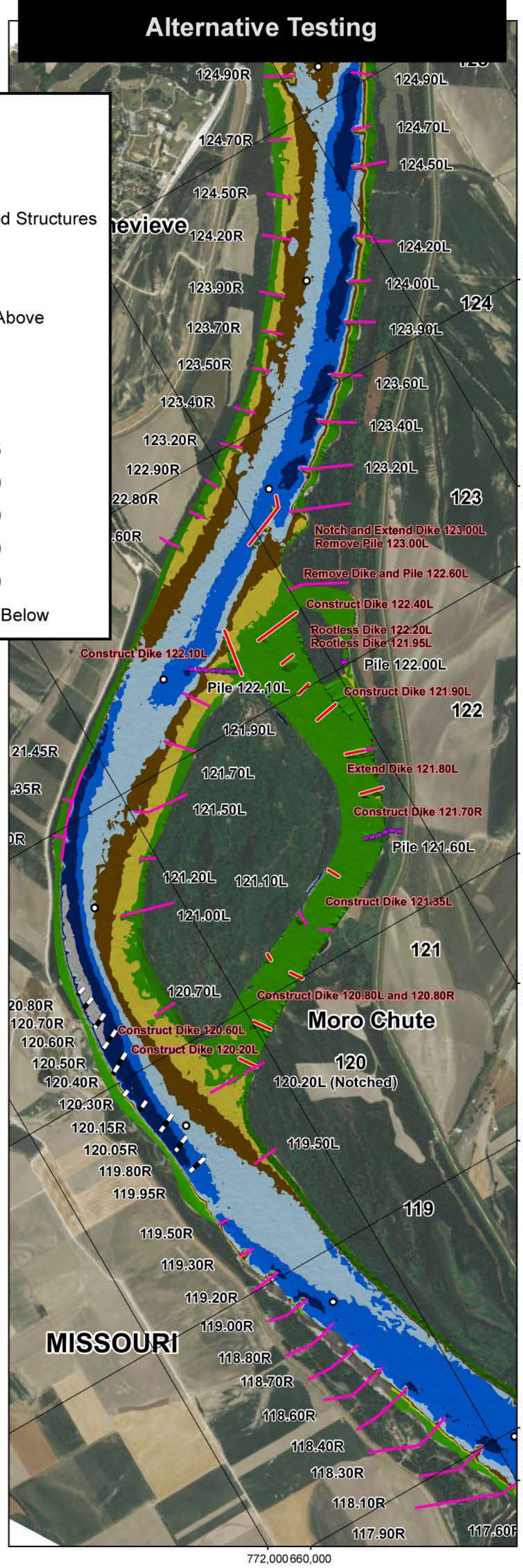

PLATE NUMBER 71

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 19

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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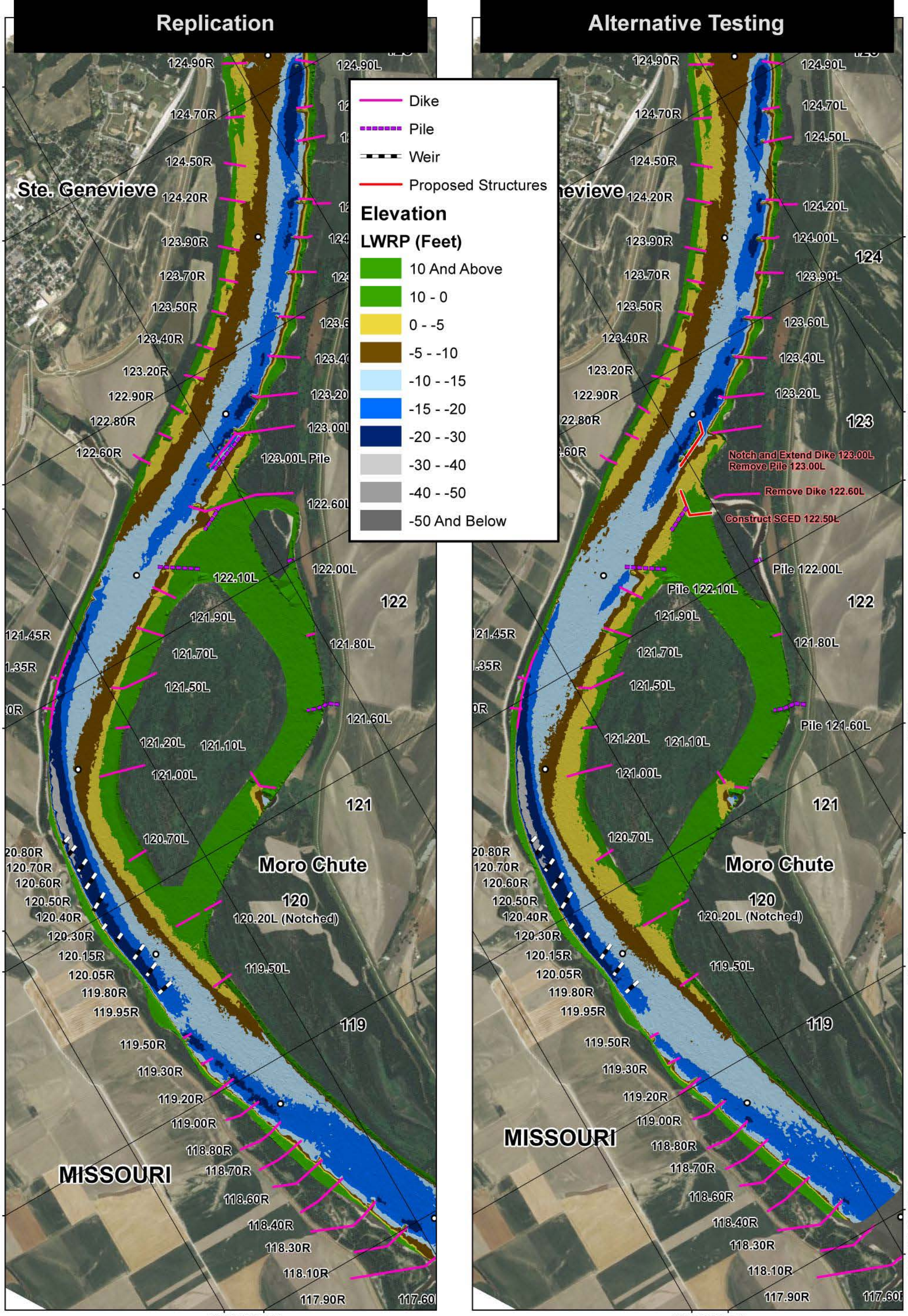


PLATE NUMBER 72

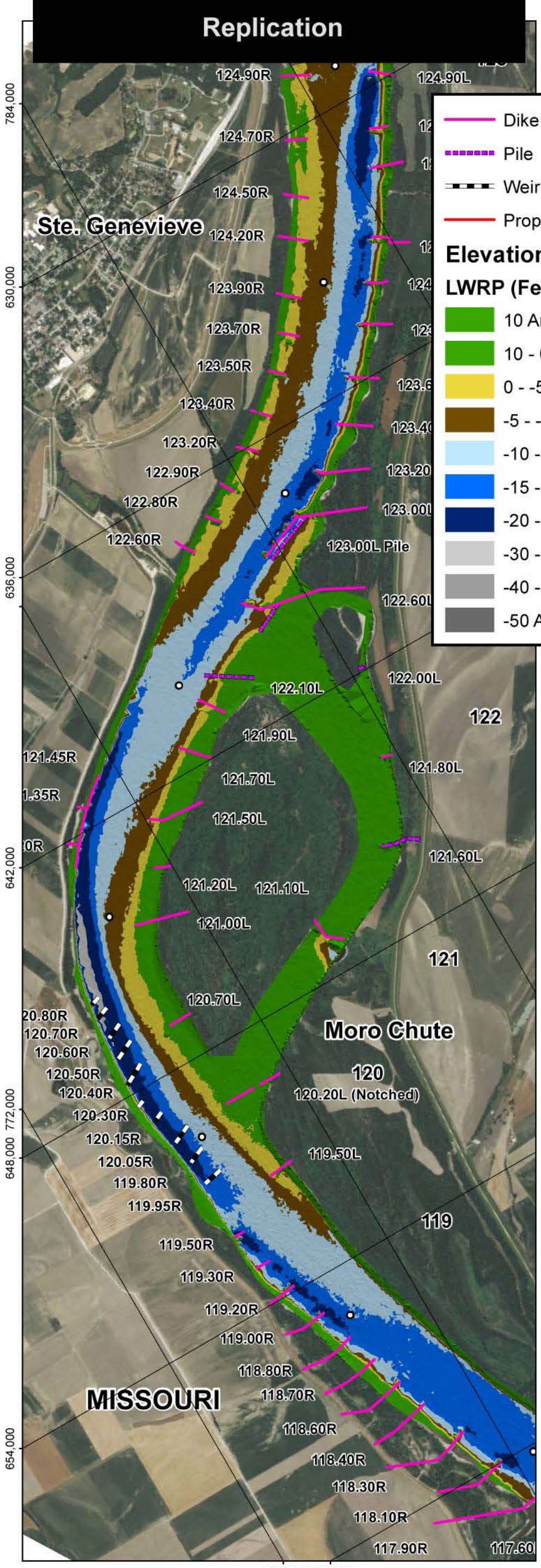
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 20

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



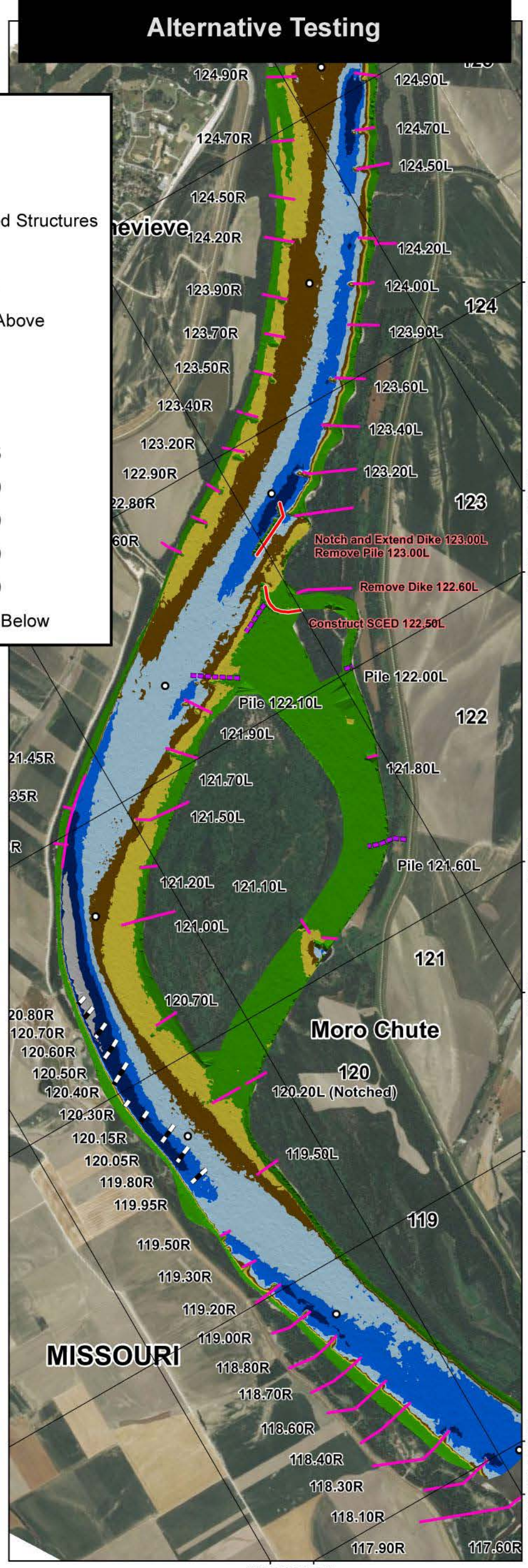


PLATE NUMBER 73

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 21

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

N W E S

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US Army Corps of Engineers
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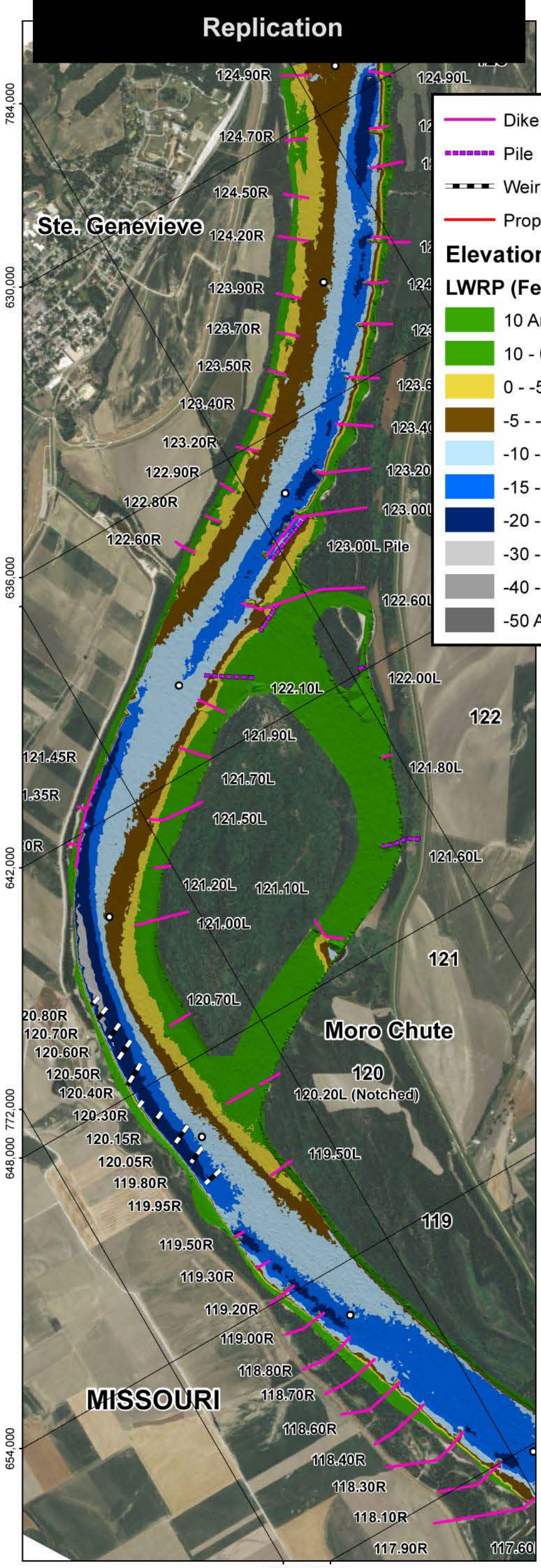

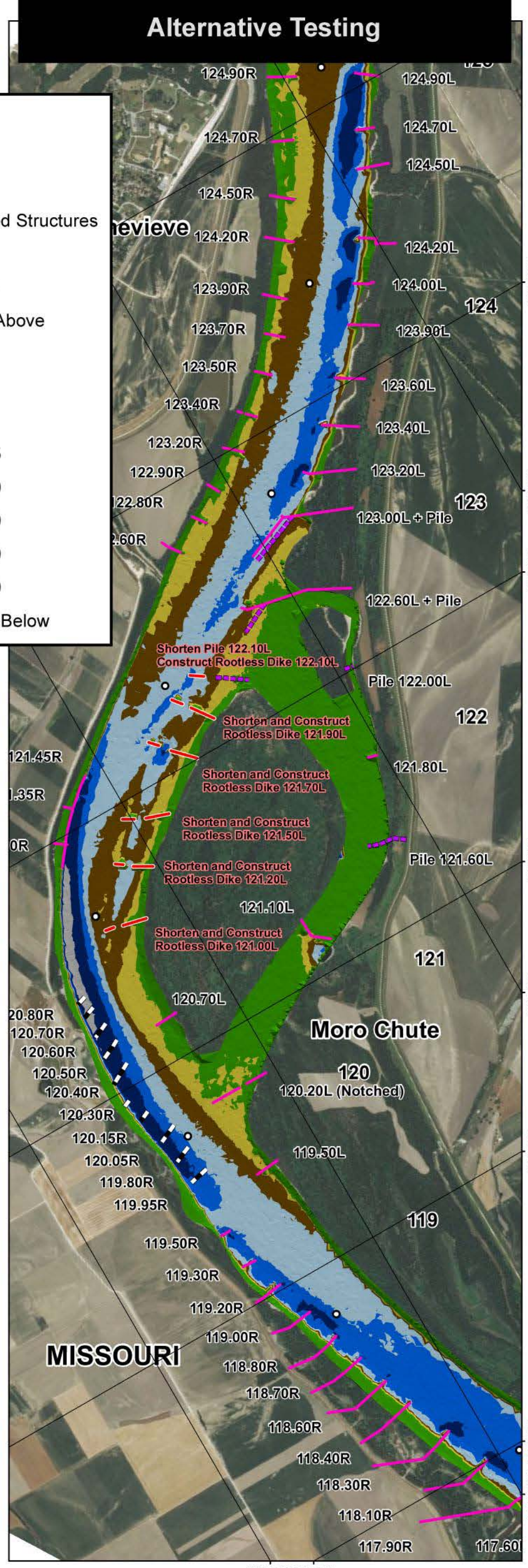

PLATE NUMBER 74

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 22

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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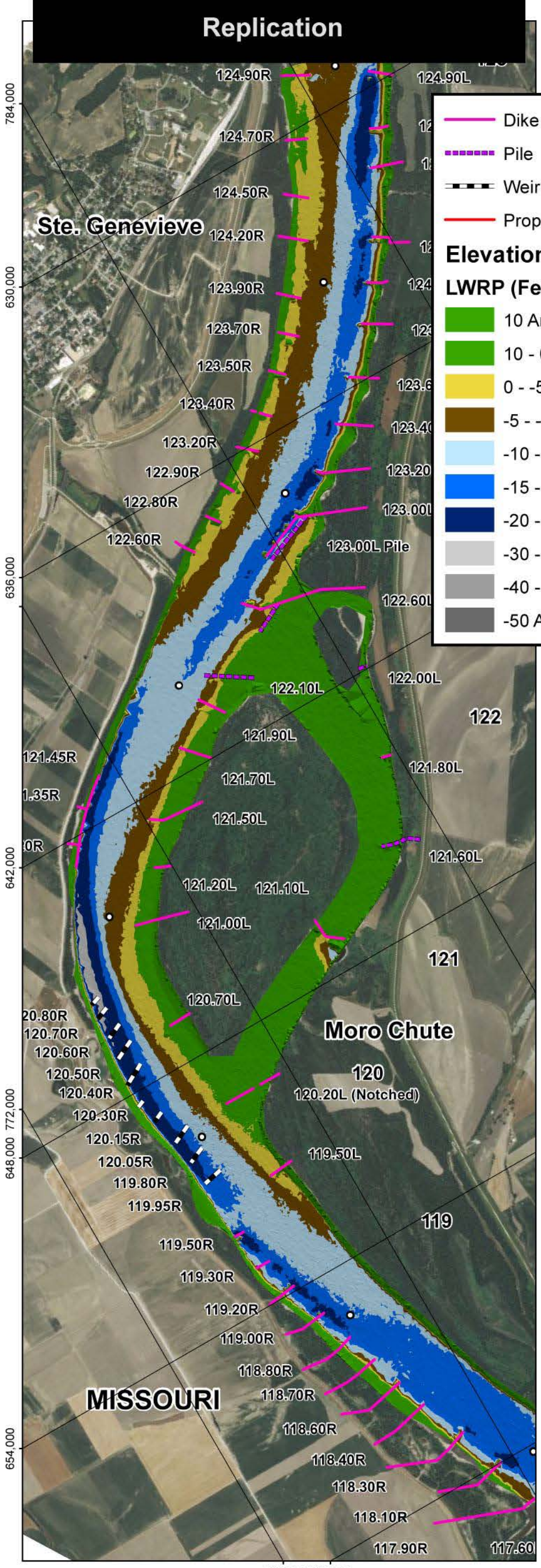

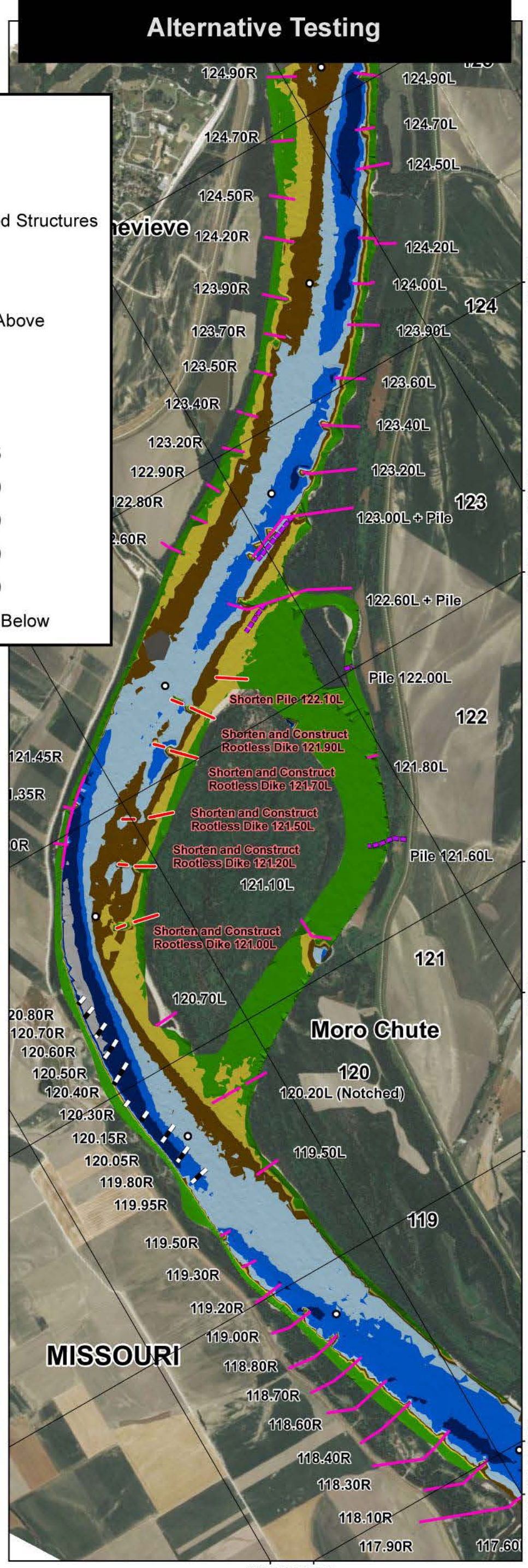

PLATE NUMBER 75

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 23

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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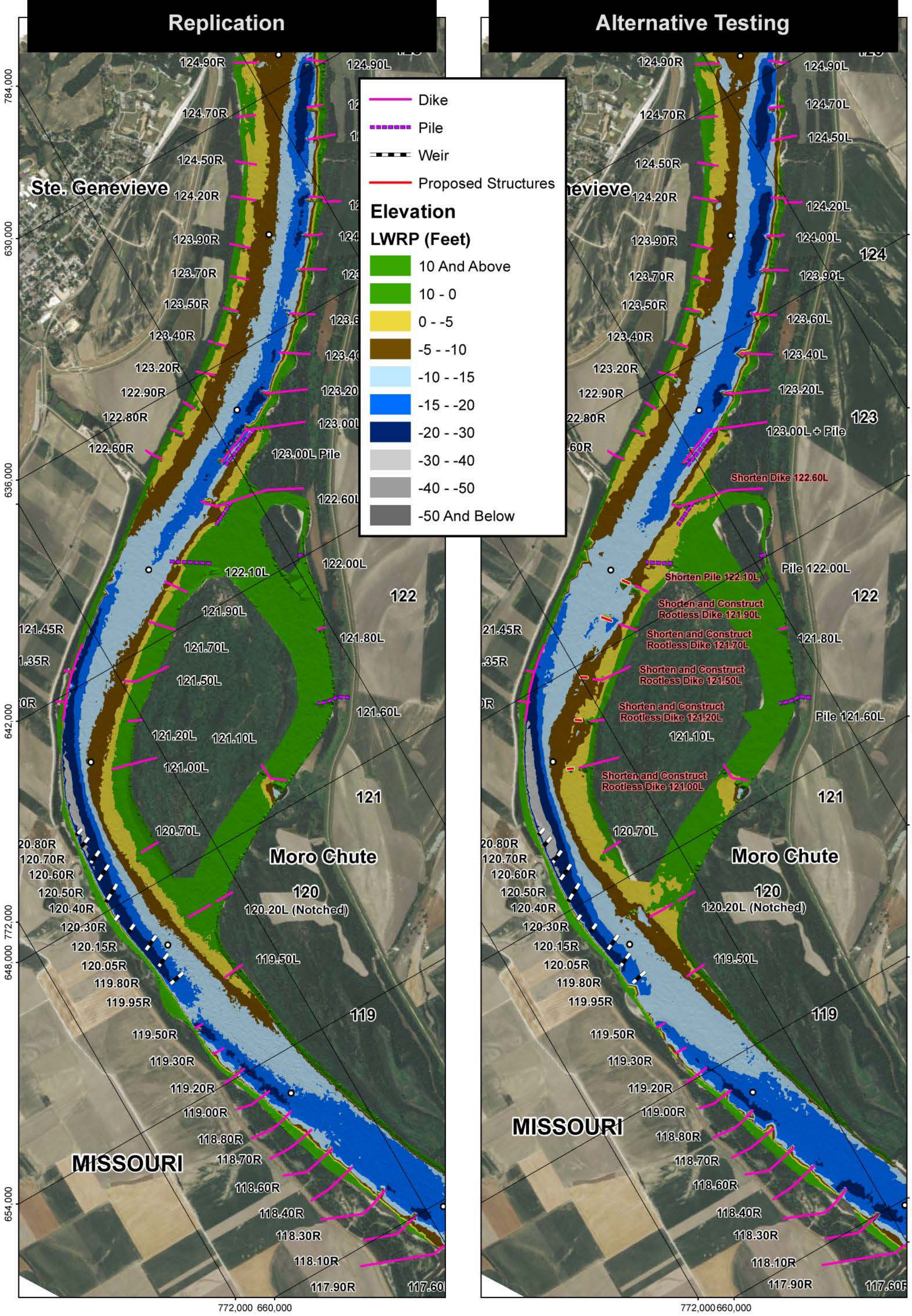

PLATE NUMBER 76

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 24

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

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US Army Corps of Engineers
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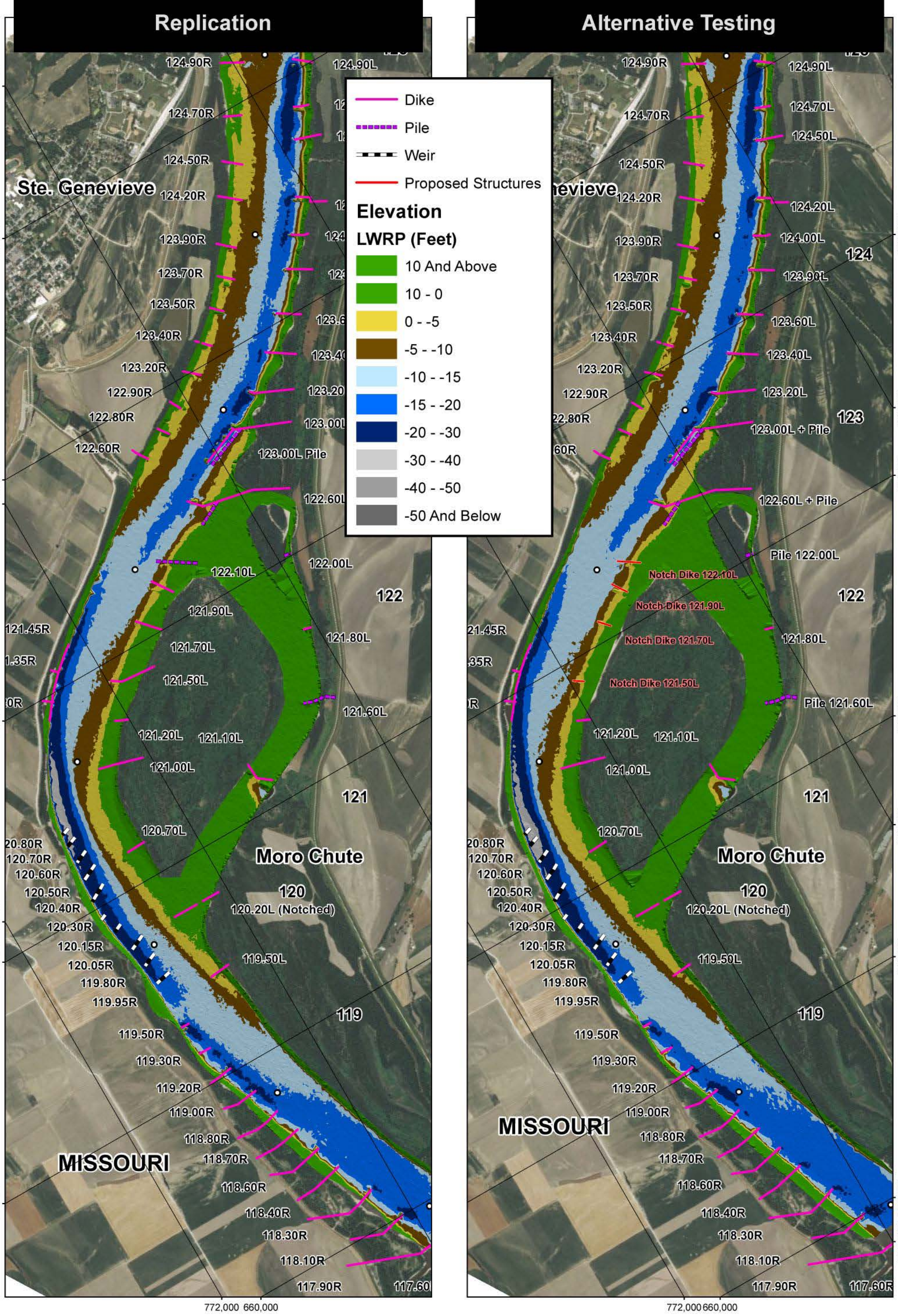


PLATE NUMBER 77

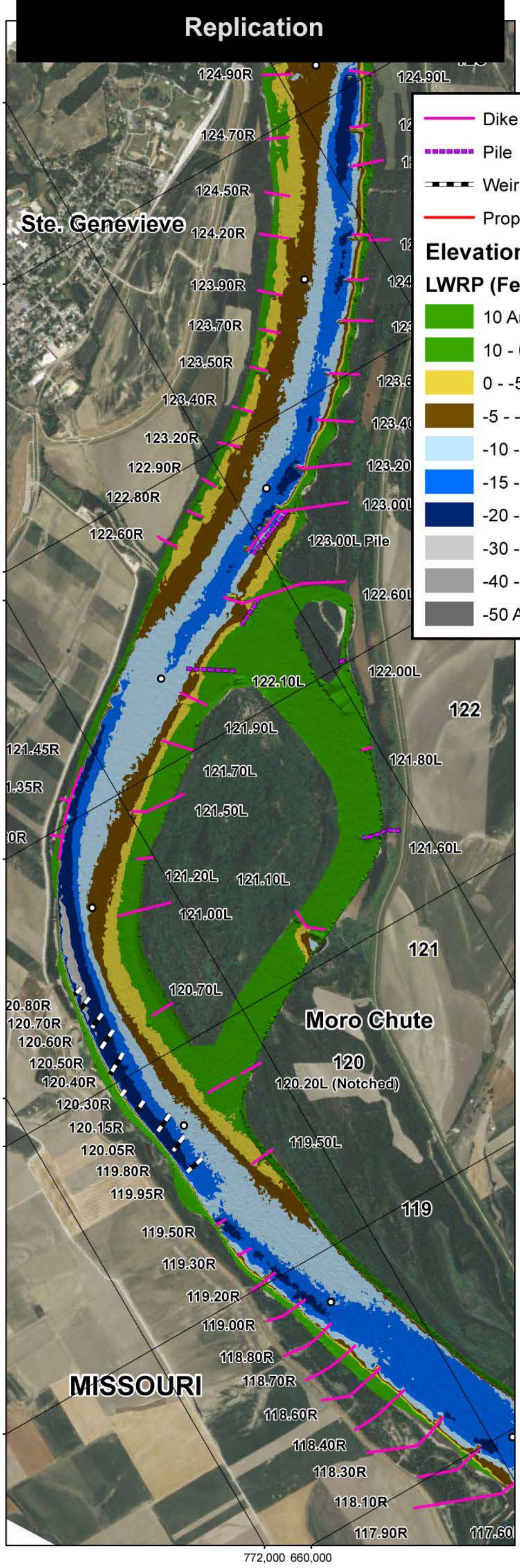
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 25

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



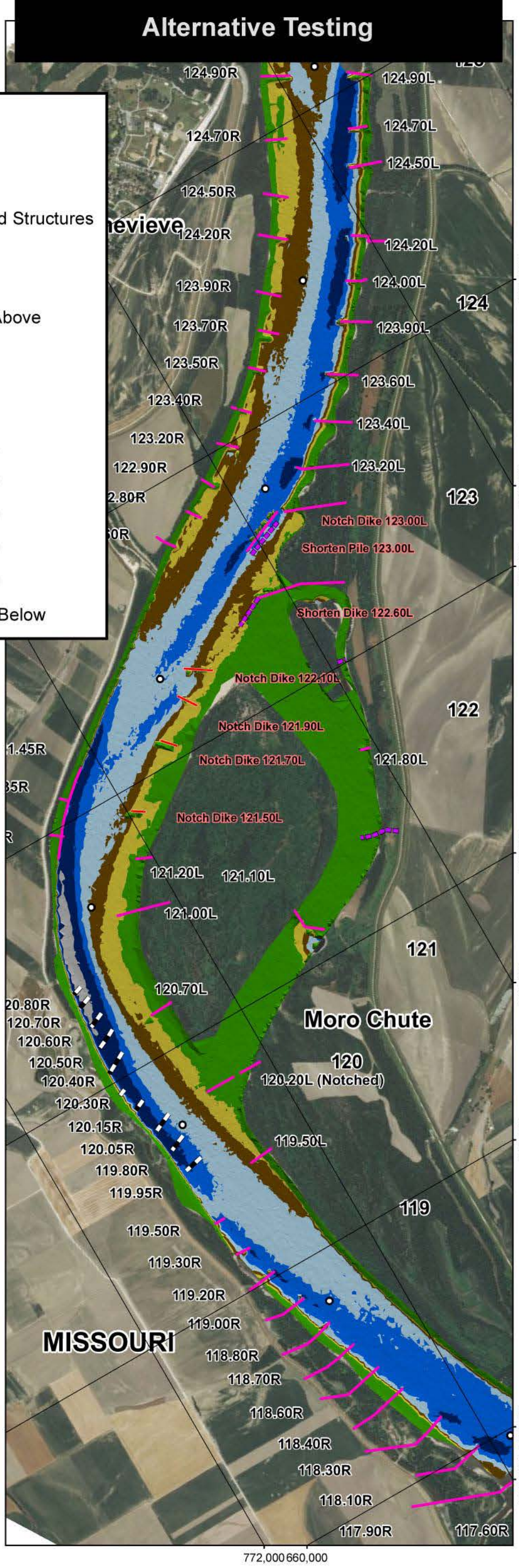


PLATE NUMBER 78

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 26

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

N W E S

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

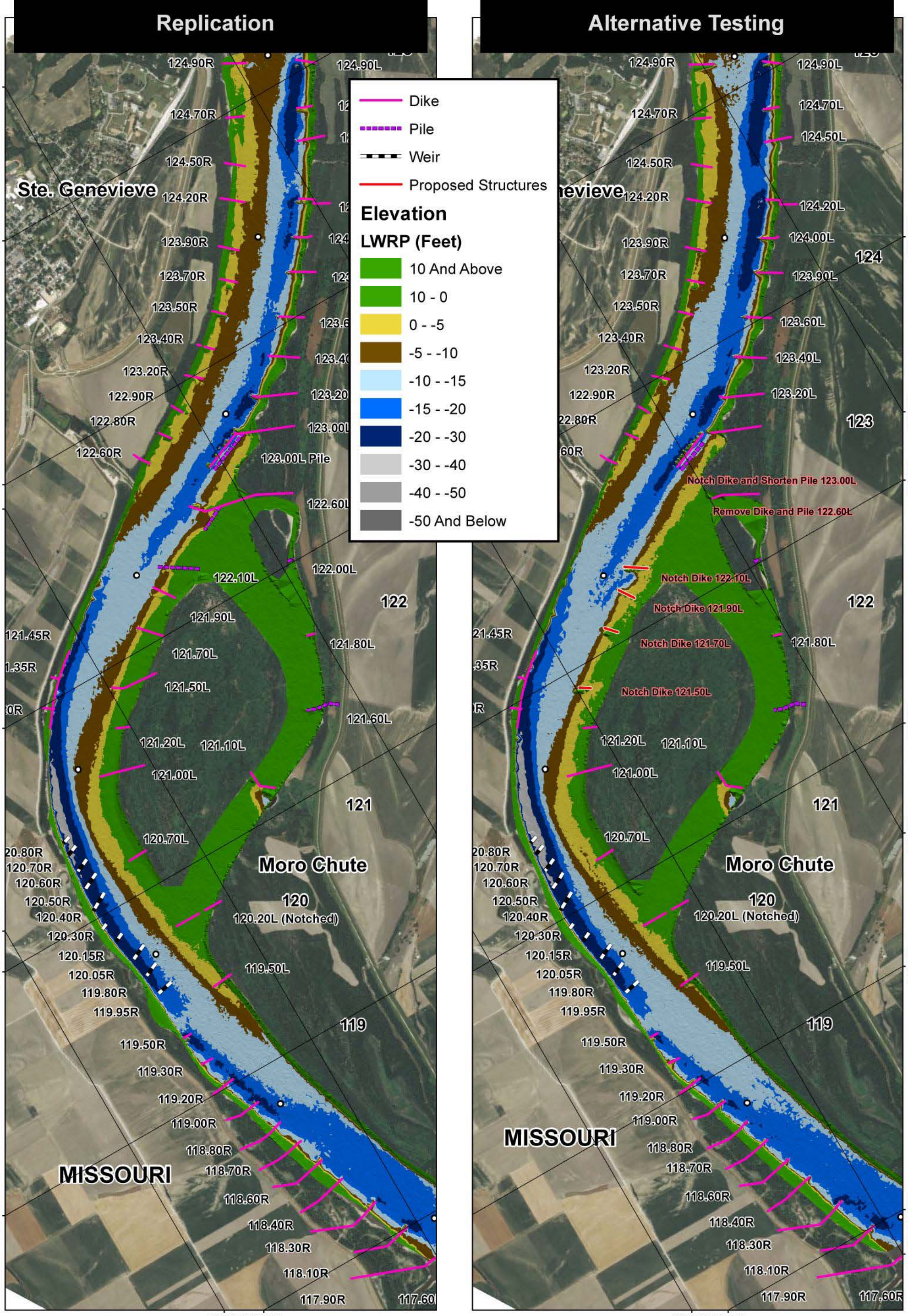


PLATE NUMBER 79

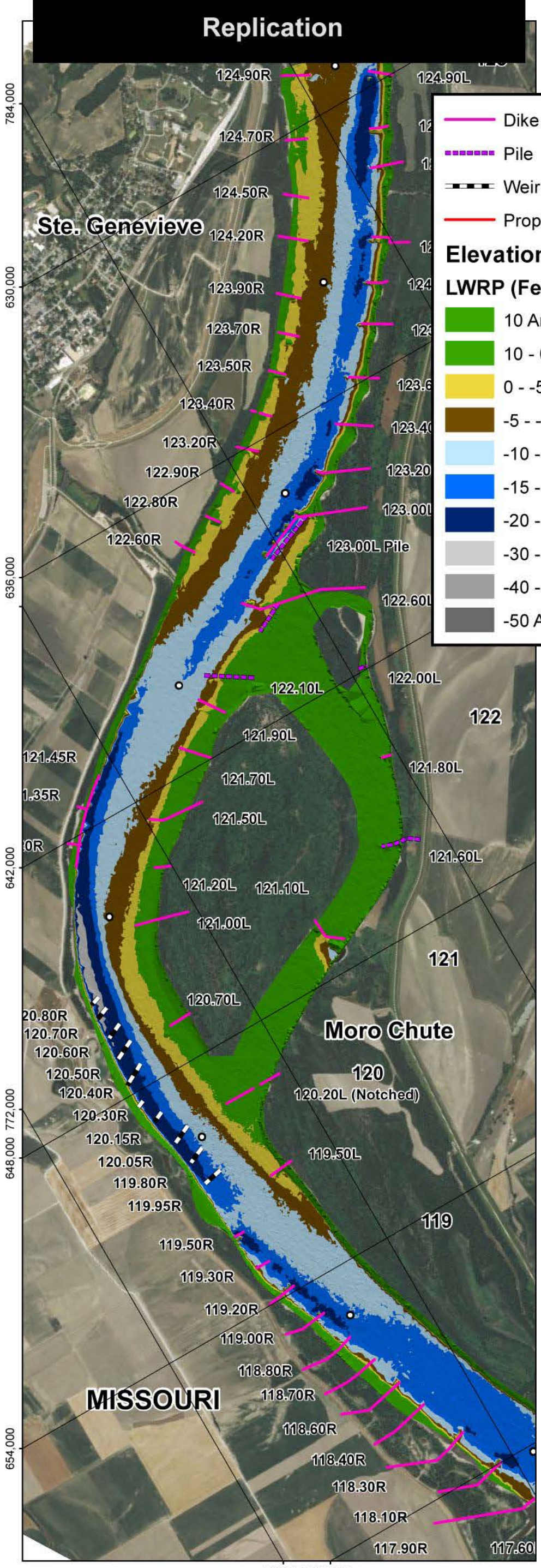
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 27

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



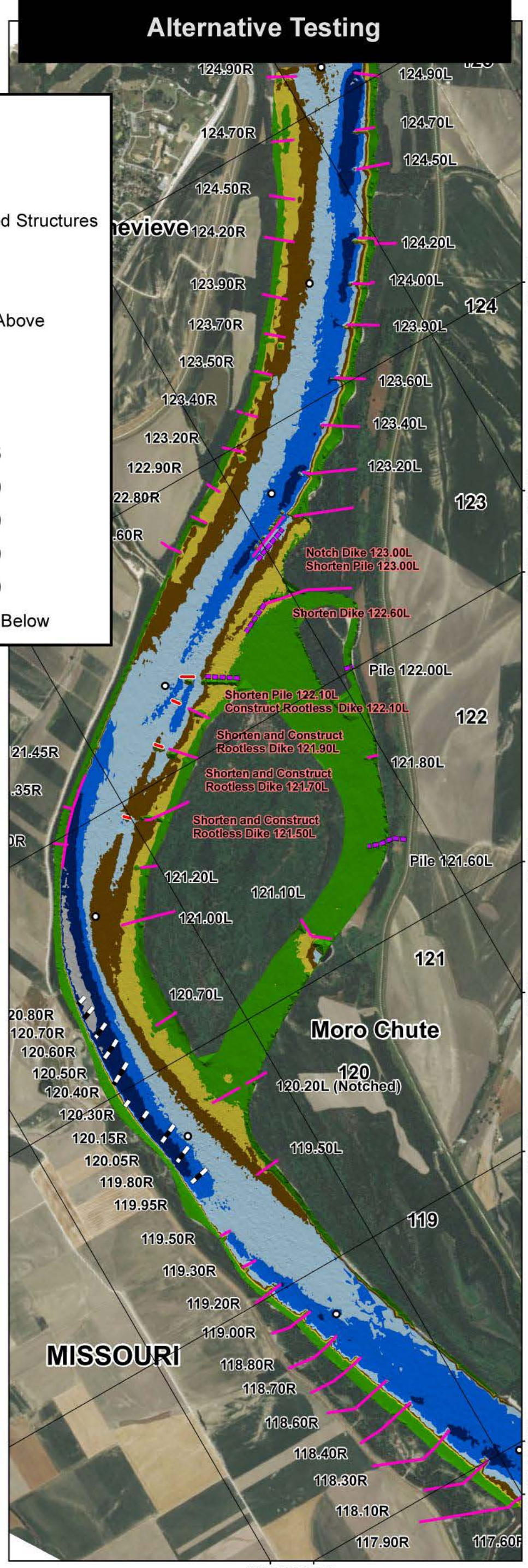


PLATE NUMBER 80

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 28

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
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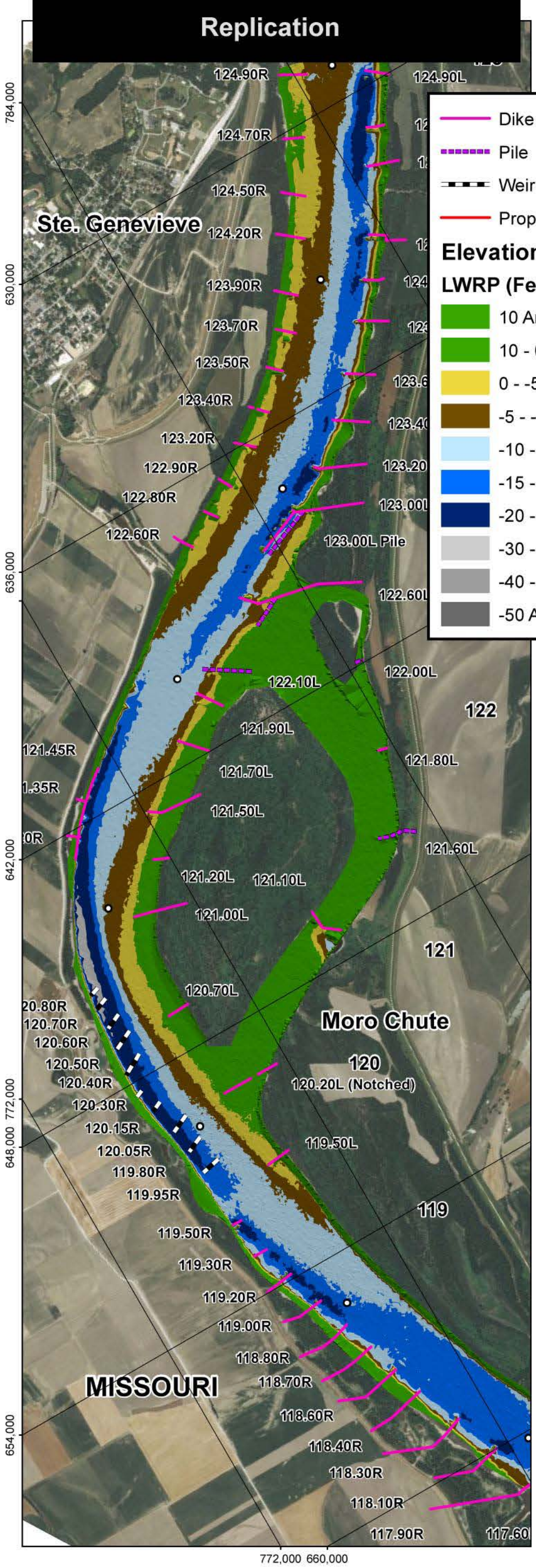


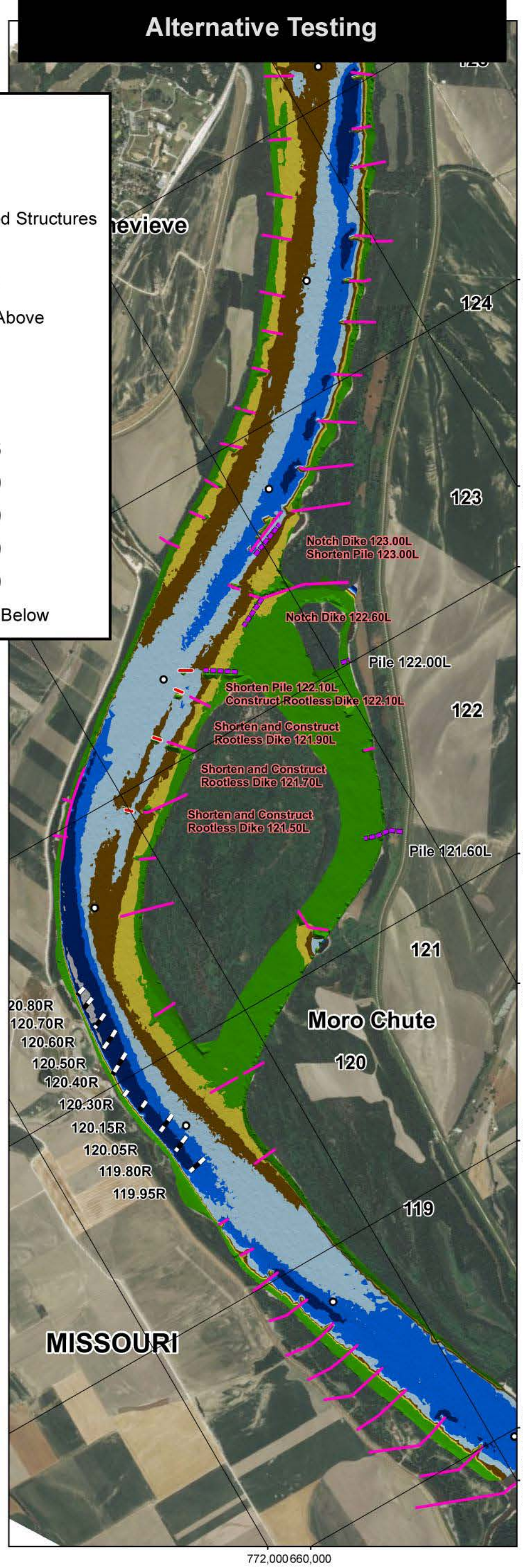


PLATE NUMBER 81

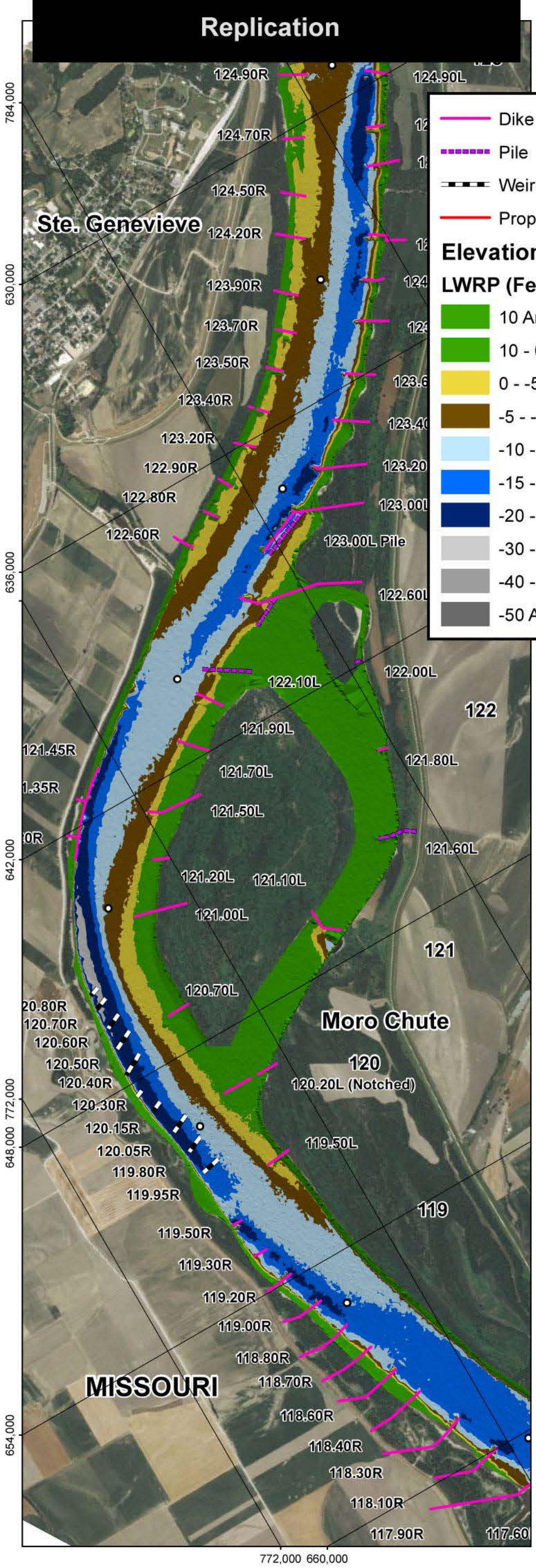
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 29

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



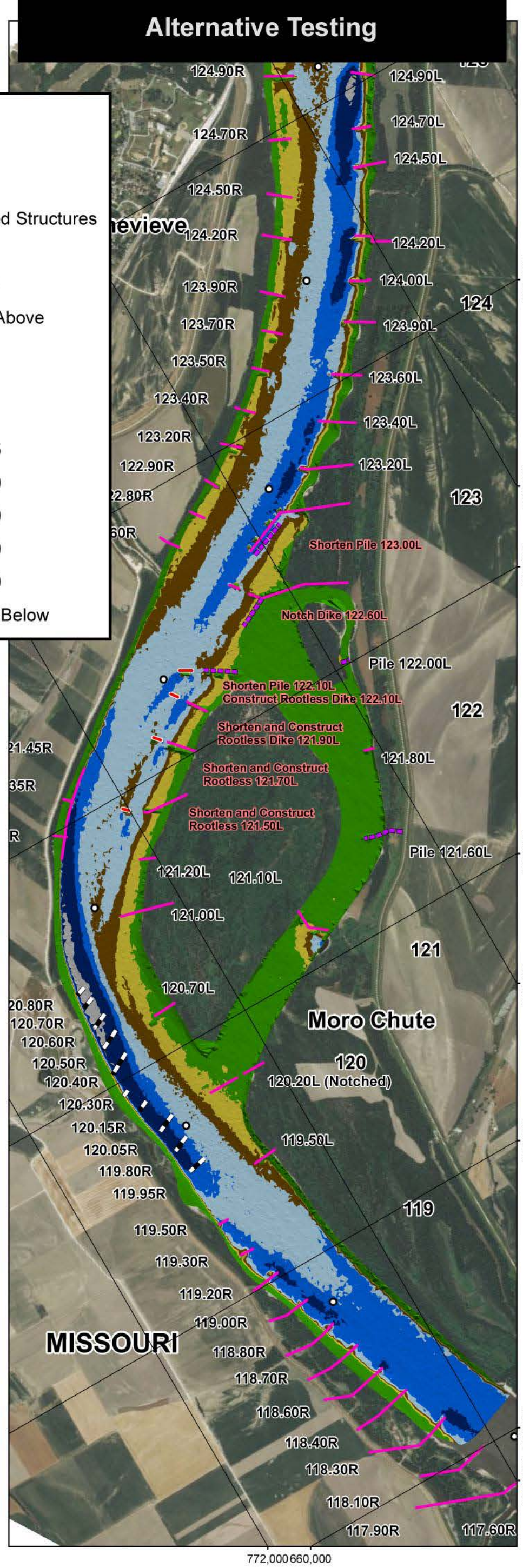


PLATE NUMBER 82

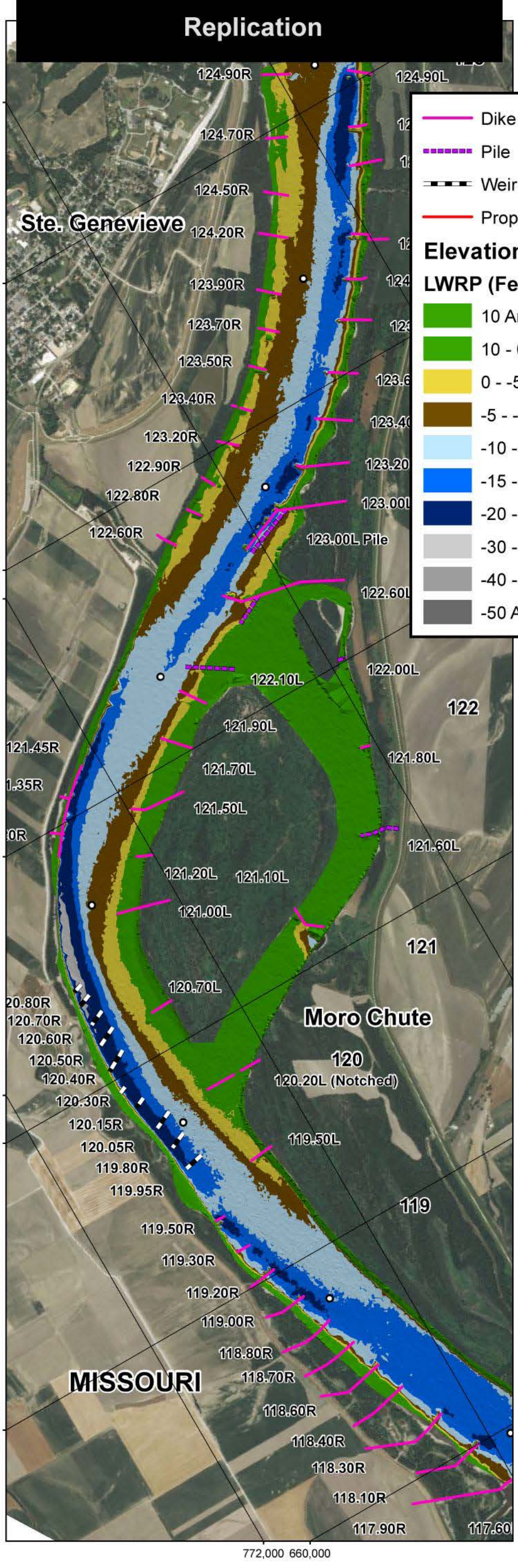
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 30

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



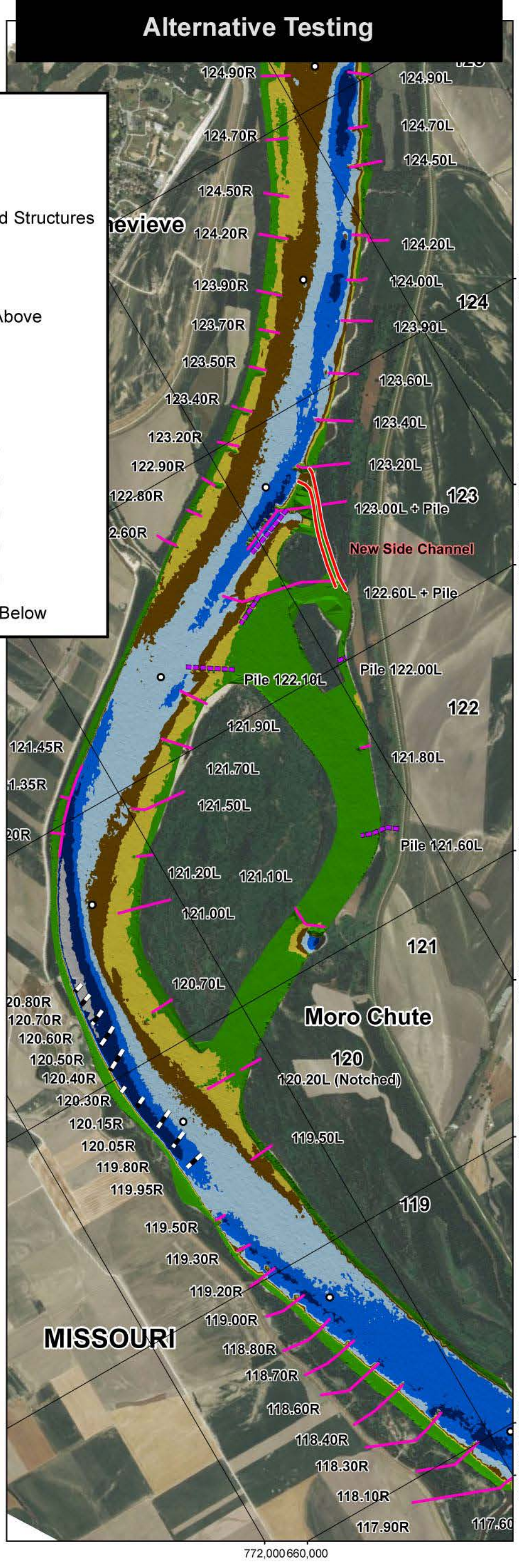


PLATE NUMBER 83

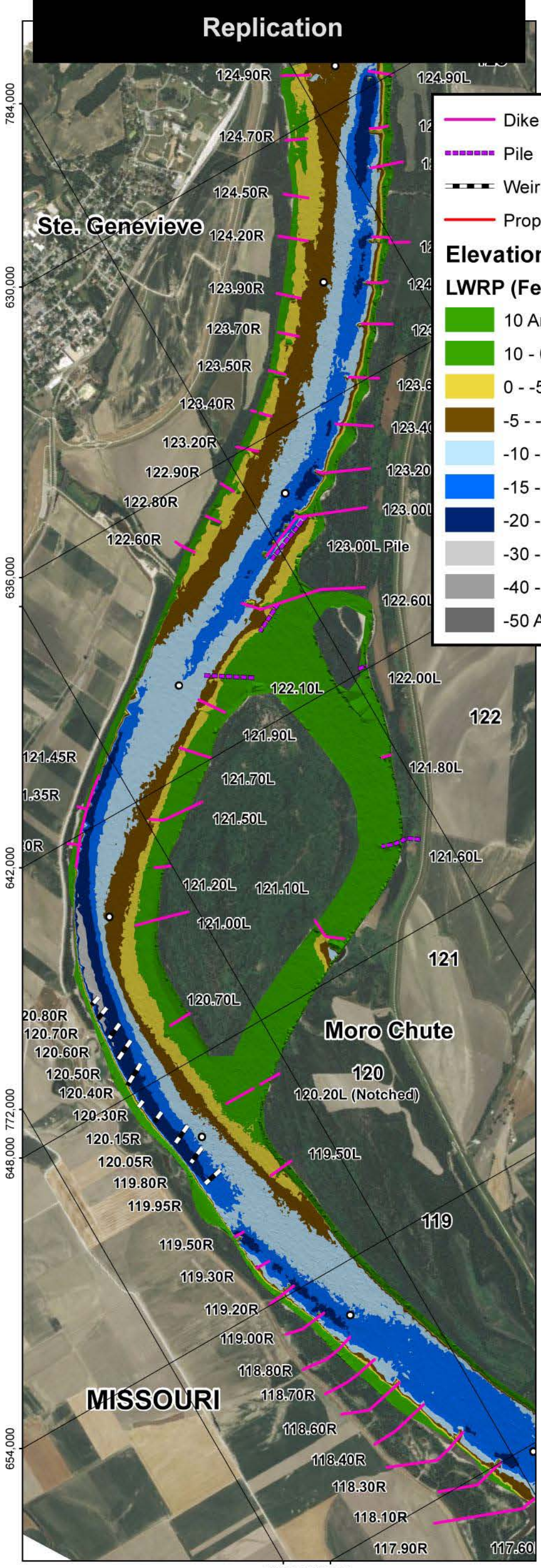
0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 31

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District



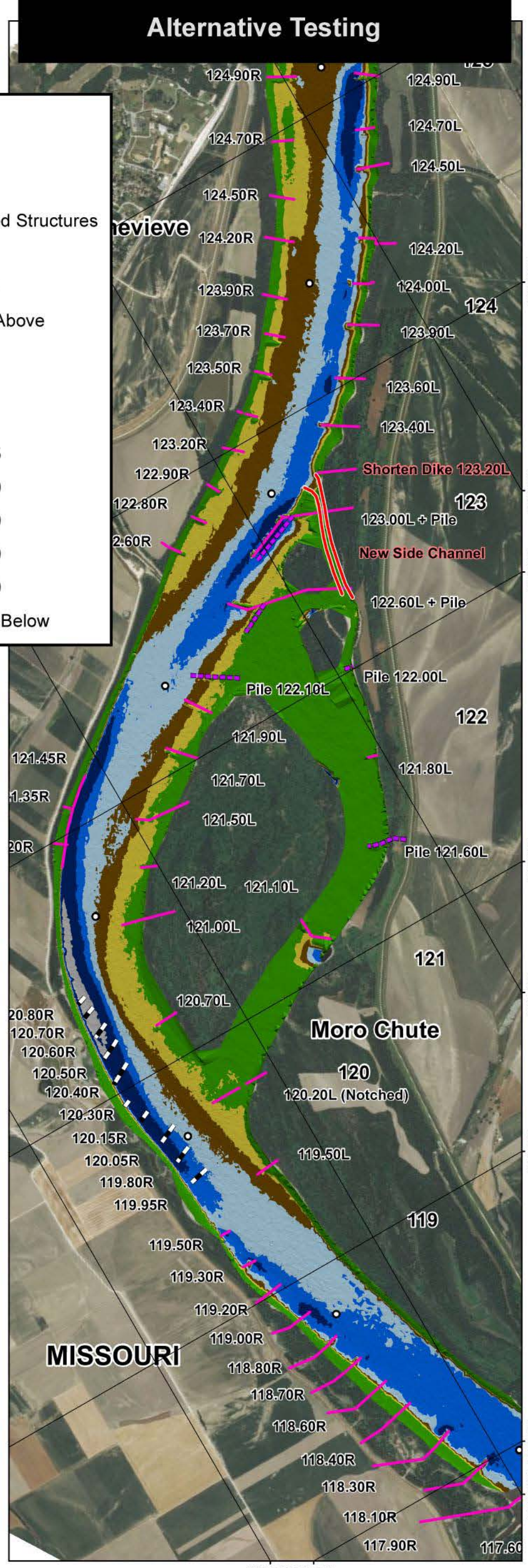


PLATE NUMBER 84

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 32

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

N W E S

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District

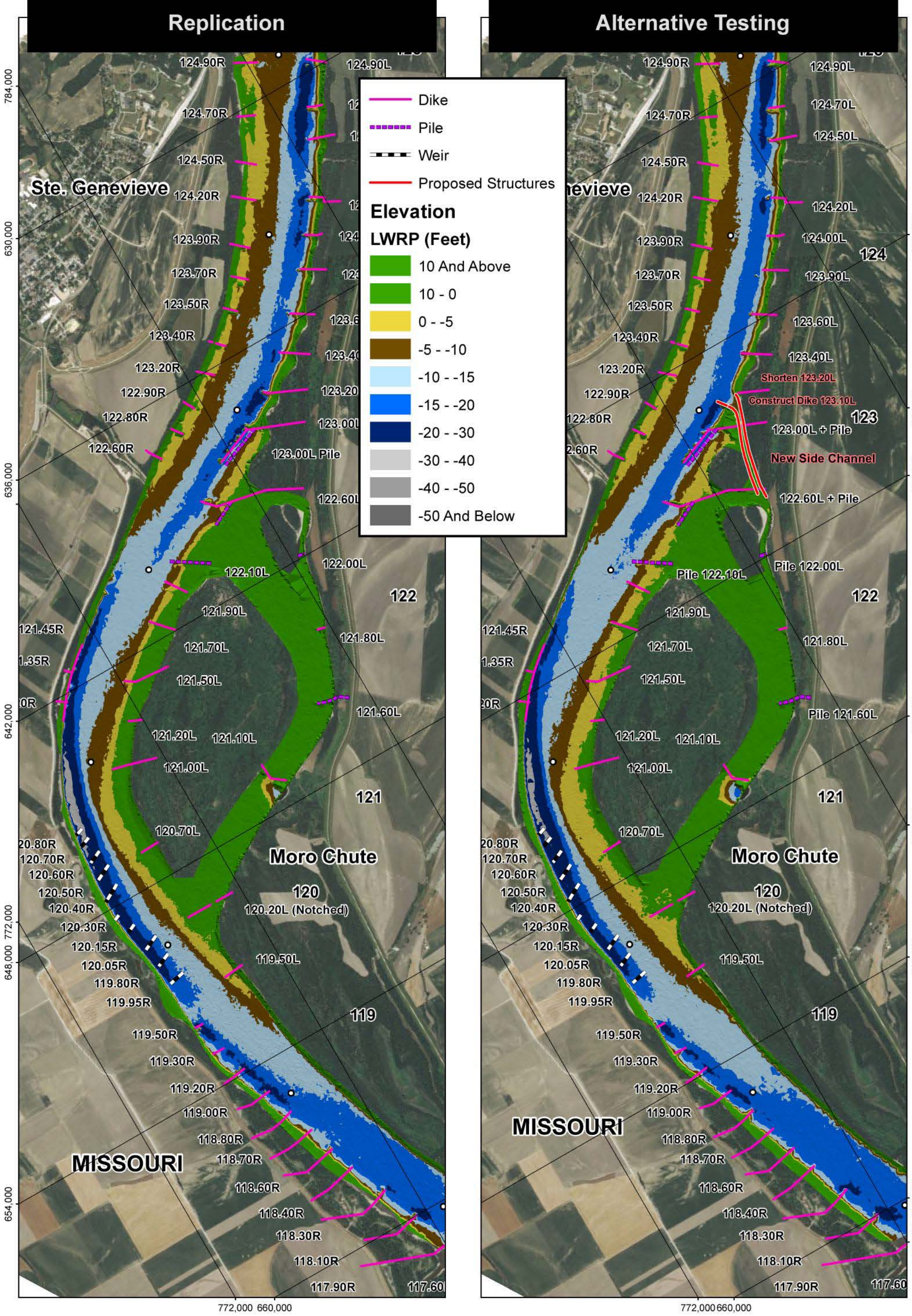


PLATE NUMBER 85

0 1,200 2,400 4,800 Feet

REPLICATION TEST
VS.
ALTERNATIVE 33

U.S. ARMY ENGINEERING DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	DRAWN BY: I. NGUYEN	REVIEWED BY: A. COX
	SUBMITTED BY: I. NGUYEN	CHECKED BY: E. BRAUER
MIDDLE MISSISSIPPI BASIN MORO CHUTE HSR MODEL AVOID AND MINIMIZE PROGRAM 2012	PLOT DATE: 2/4/2014	APPROVED BY: R. DAVINROY
	FILENAME: L:\HSR\MODELS\MORO CHUTE.MDX	

APPLIED RIVER ENGINEERING CENTER

US Army Corps of Engineers
St. Louis District