

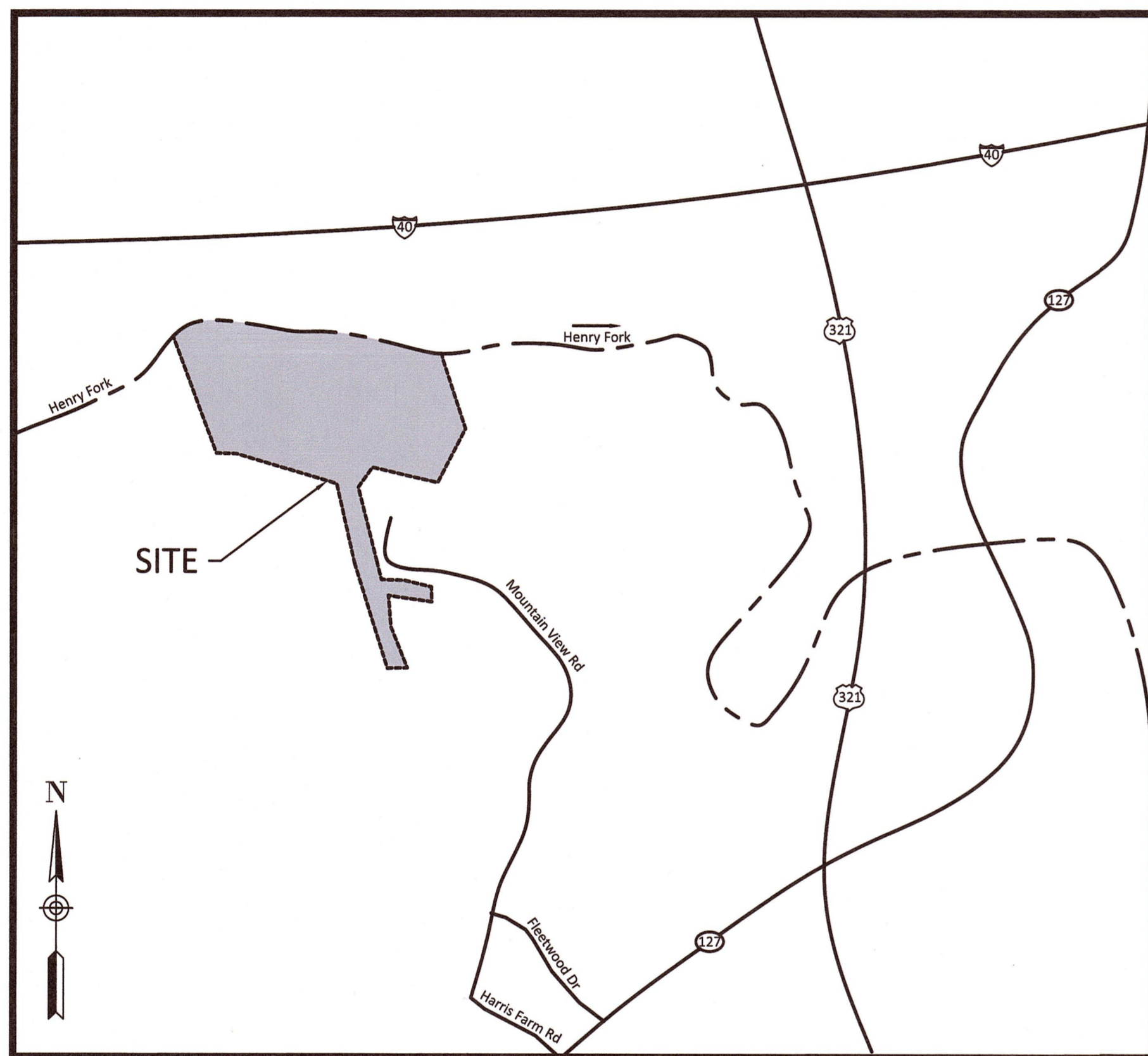
Henry Fork Mitigation Site Record Drawings

Catawba County, North Carolina

for

NCDEQ -

Division of Mitigation Services



Vicinity Map
Not to Scale

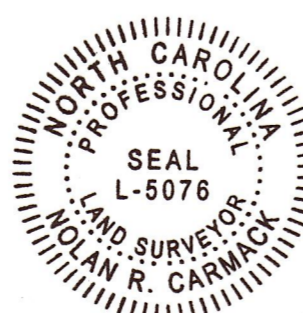
**RECORD DRAWINGS
ISSUED JUNE 21, 2016**

**CERTIFICATE OF SURVEY
AND
ACCURACY**

I, NOLAN R. CARMACK, CERTIFY THAT THE GROUND TOPOGRAPHIC SURVEY PORTION OF THIS PROJECT WAS COMPLETED UNDER MY DIRECT SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY DIRECT SUPERVISION, THAT THE RECORD DRAWINGS WERE PREPARED BY WILDLANDS ENGINEERING, INC FROM DIGITAL FILES PROVIDED BY KEY MAPPING AND SURVEYING, PA AS SHOWN ON AN AS-BUILT SURVEY FOR "THE STATE OF NC, DIVISION OF MITIGATION SERVICES" DATED APRIL 22, 2016; THAT THIS SURVEY WAS PERFORMED AT THE 95% CONFIDENCE LEVEL TO MEET THE FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS FOR A TOPOGRAPHIC SURVEY TO THE ACCURACY OF CLASS A HORIZONTAL AND CLASS C VERTICAL WHERE APPLICABLE; THAT THE ORIGINAL DATA WAS OBTAIN BETWEEN THE DATES OF 3/18/16 - 4/20/16; THAT THE CONTOURS SHOWN AS BROKEN LINES MAY NOT MEET THE STATED STANDARD AND ALL COORDINATES ARE BASED ON NAD 83 (NSRS 2011) AND ALL ELEVATIONS ARE BASE ON NAVD 88; THAT THIS MAP MEETS THE SPECIFICATIONS FOR TOPOGRAPHIC SURVEYS AS STATED IN TITLE 21, CHAPTER 56, SECTION .1606; THAT THIS MAP WAS NOT PREPARED IN ACCORDANCE WITH G.S. 47-30, AS AMENDED AND DOES NOT REPRESENT AN OFFICIAL BOUNDARY SURVEY.

WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS THE 21st DAY OF June, 2016.

OFFICIAL SEAL



Nolan R. Carmack
NOLAN R. CARMACK, PLS L-5076

Sheet Index

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-UT2	1.11 - 1.15
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Planting Plan	3.1 - 3.4

Project Directory

Engineering:
Wildlands Engineering, Inc
License No. F-0831
167-B Haywood Rd
Asheville, NC 28806
Jake McLean, PE, CFM
828-774-5547

Owner:
NCDEQ
Division of Mitigation Services
5 Ravenscroft Dr, Suite 102
Asheville, NC 28801
DMS Project Manager:
Matthew Reid
828-231-7912

Surveying:
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88 Central Avenue
Asheville, NC 28801
Nolan Carmack, PLS
828-575-9021

NCDEQ Contract No. 5782
DMS ID No. 96306



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Title Sheet

Revisions:

Date: May 25, 2016
Job Number: 005-02143
Project Engineer: JPM
Drawn By: RCP
Checked By: JPM

0.1






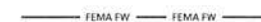








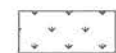



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 General Notes and Symbols

Revisions:









Date:	May 25, 2016
Job Number:	005-02143
Project Engineer:	JPM
Drawn By:	RCP
Checked By:	JPM

0.2














Existing & Design Features

-  Property Line (GIS/Unsurveyed)
-  Right of Way
-  FEMA Floodplain
-  FEMA Floodway
-  Conservation Easement
-  Property Line
-  Conservation Easement/Property Line
-  Design Thalweg Alignment
-  Design Floodplain Pilot Channel
-  Design Bankfull
-  Design Major Contour
-  Design Minor Contour
-  Existing Wetland
-  Tree Saved During Construction
-  Henry Fork (Open Water)
-  Existing Building

As-Built Features














-  As-Built Bankfull
-  As-Built Thalweg Alignment
-  As-Built Pilot Channel
-  As-Built Major Contour (5' Interval)
-  As-Built Minor Contour
-  As-Built Wetland Re-establishment
-  As-Built Wetland Rehabilitation
-  As-Built Wetland Enhancement

Design Stream Features (NTS)

-  Design Rock Step
-  Design Log Step
-  Design Root Wad
-  Design Brush Toe
-  Design Ephemeral Pool
-  Design Lunker Log
-  CR-CR Constructed Riffle
-  CR-WR Woody Riffle
-  CR-JZ Jazz Riffle
-  CR-CH Chunky Riffle
-  CASC Log-Rock Cascade Riffle
-  Design Sod Mat
-  Design Geo-Lift

Design Constructed Riffle Varies

As-Built Stream Features (NTS)

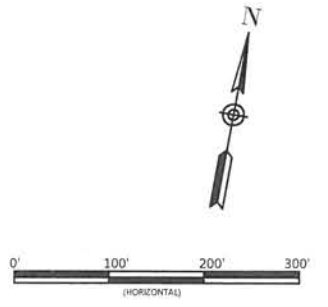
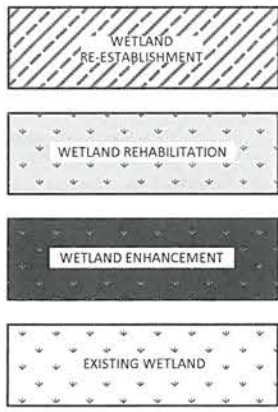
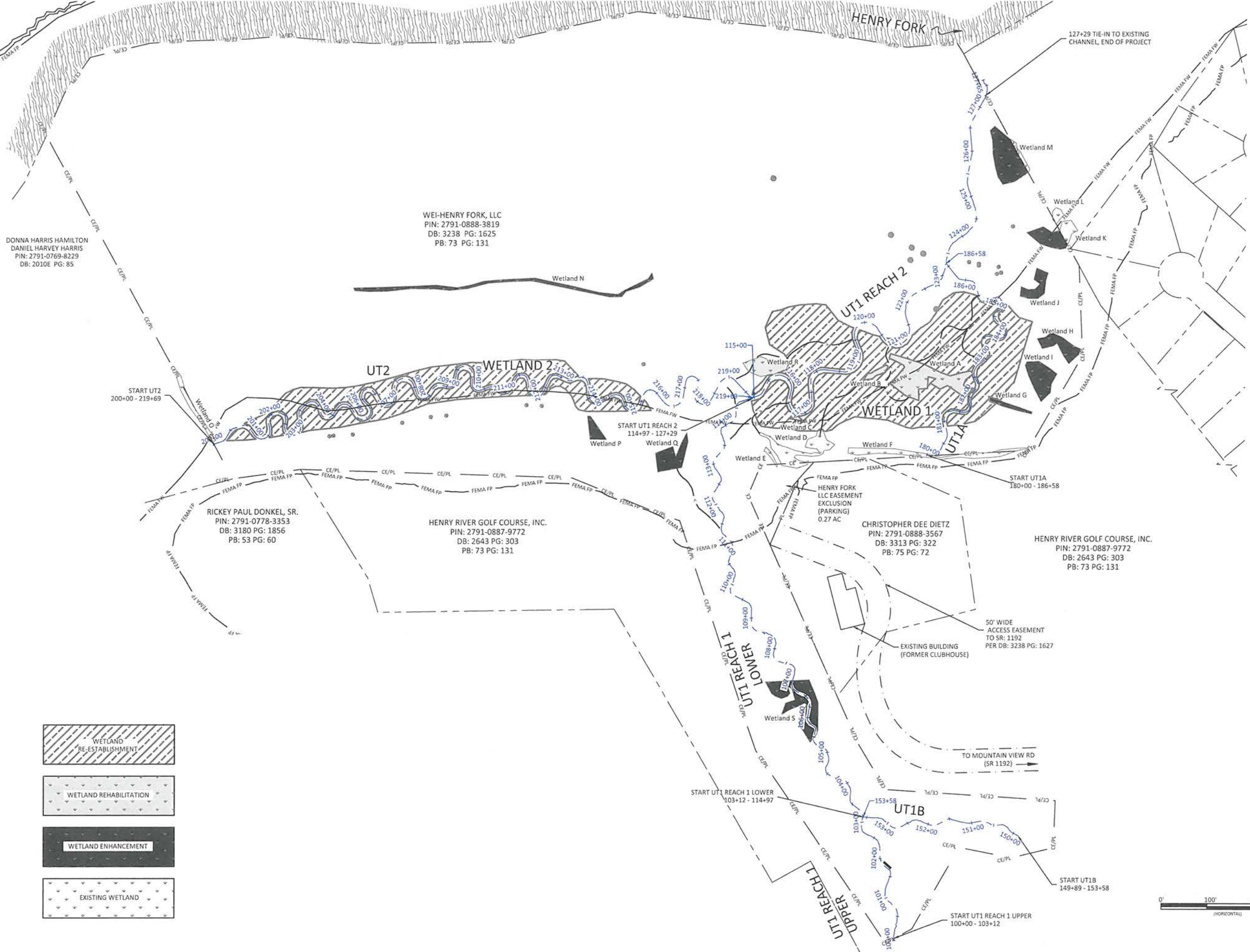
-  As-Built Rock Step
-  As-Built Log Step
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-  As-Built Brush Toe
-  As-Built Ephemeral Pool
-  As-Built Lunker Log
-  CR-CR Constructed Riffle
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-  CR-JZ Jazz Riffle
-  CR-CH Chunky Riffle
-  CASC Log-Rock Cascade Riffle
-  As-Built Sod Mat
-  As-Built Geo-Lift

As-Built Constructed Riffle Varies

*Deviation from design shown in red.

May 25, 2016

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Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Project Overview

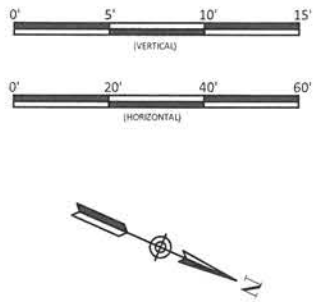
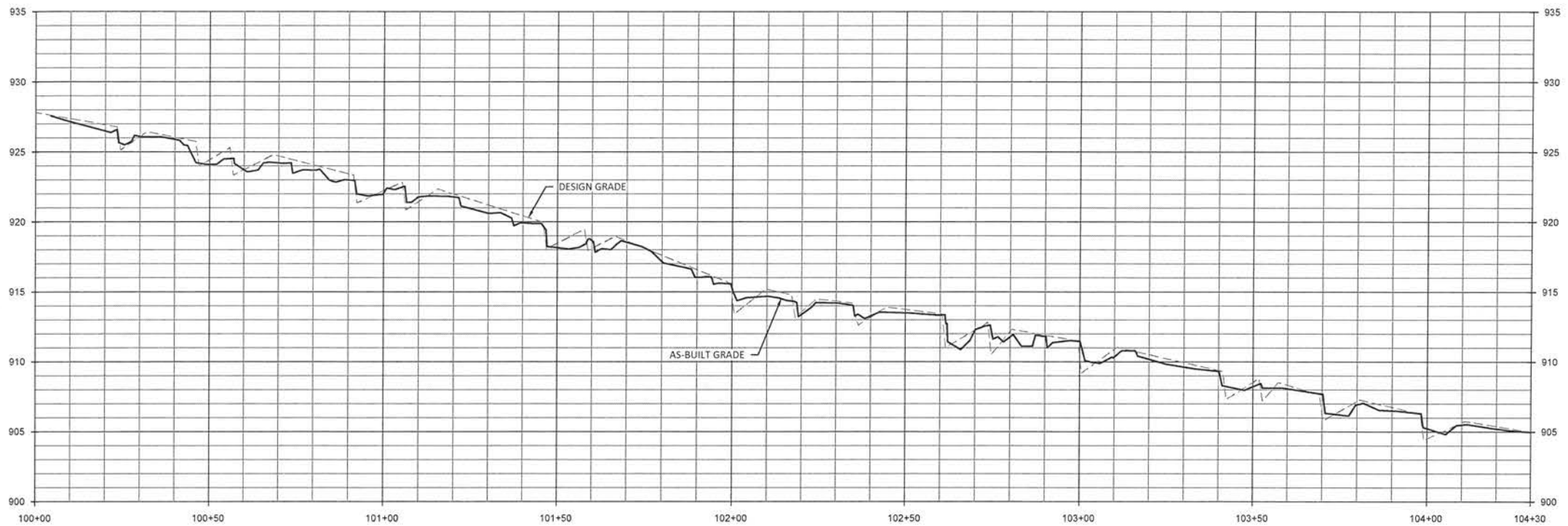
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Date: May 25, 2016
Job Number: 005-02143
Project Engineer: JPM
Drawn By: RCT
Checked By: JPM

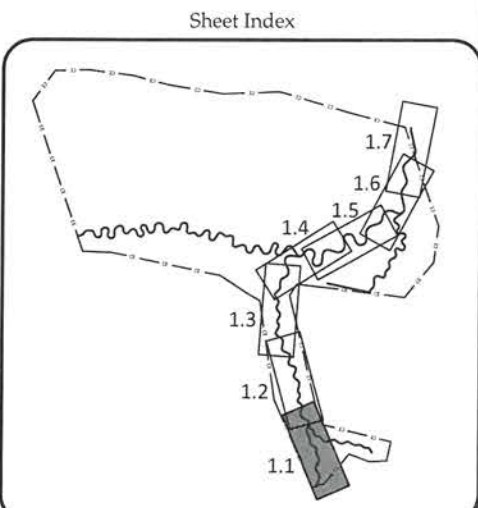
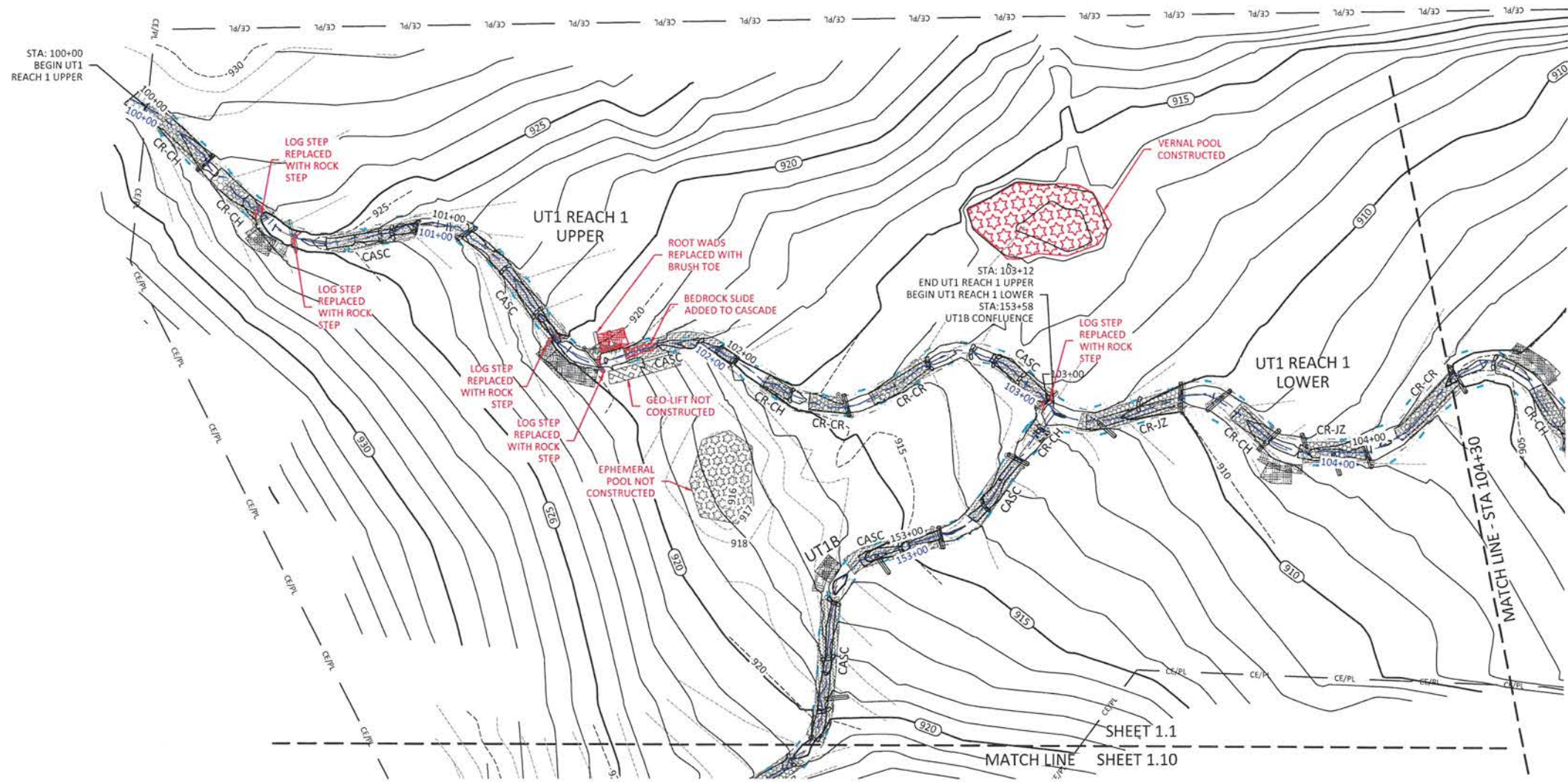
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May 25, 2016



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina
UT1 Reach 1 Upper & Lower
Stream Plan and Profile

Date:	May 25, 2016
Job Number:	005-02143
Project Engineer:	JTM
Drawn By:	RCT
Checked By:	JTM

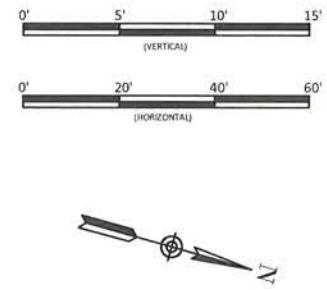
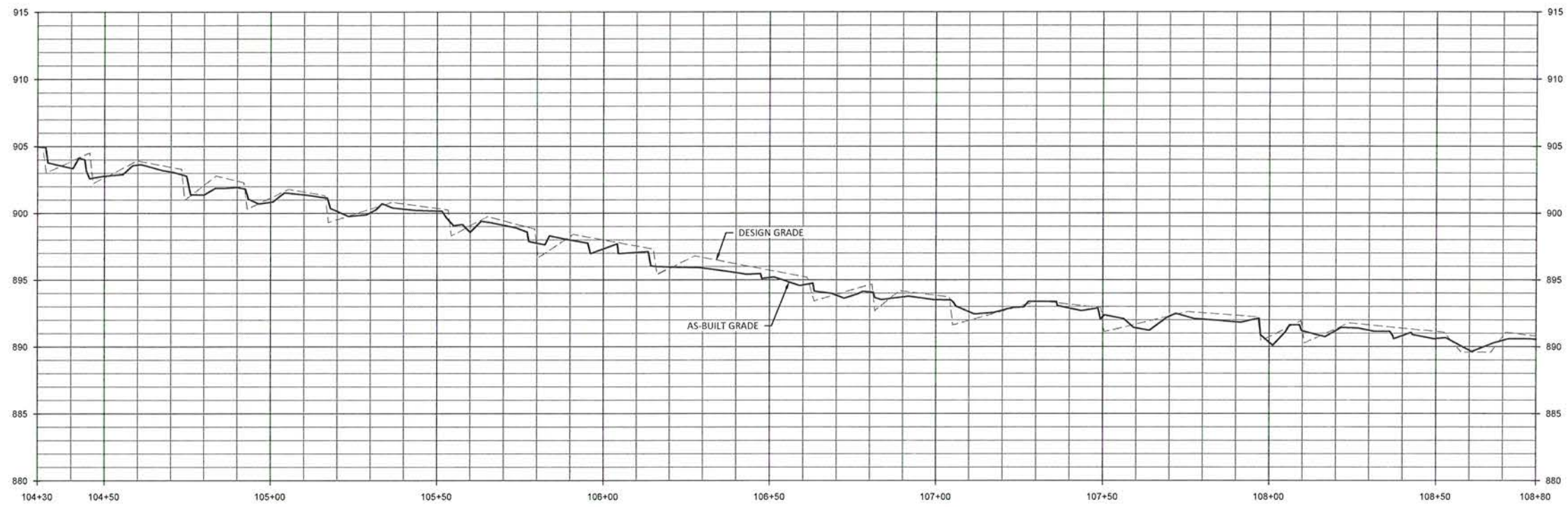
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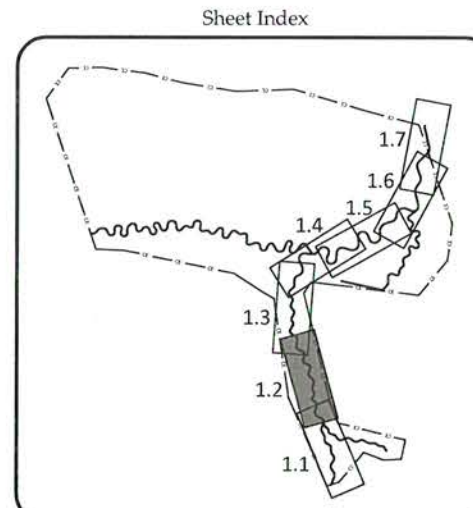
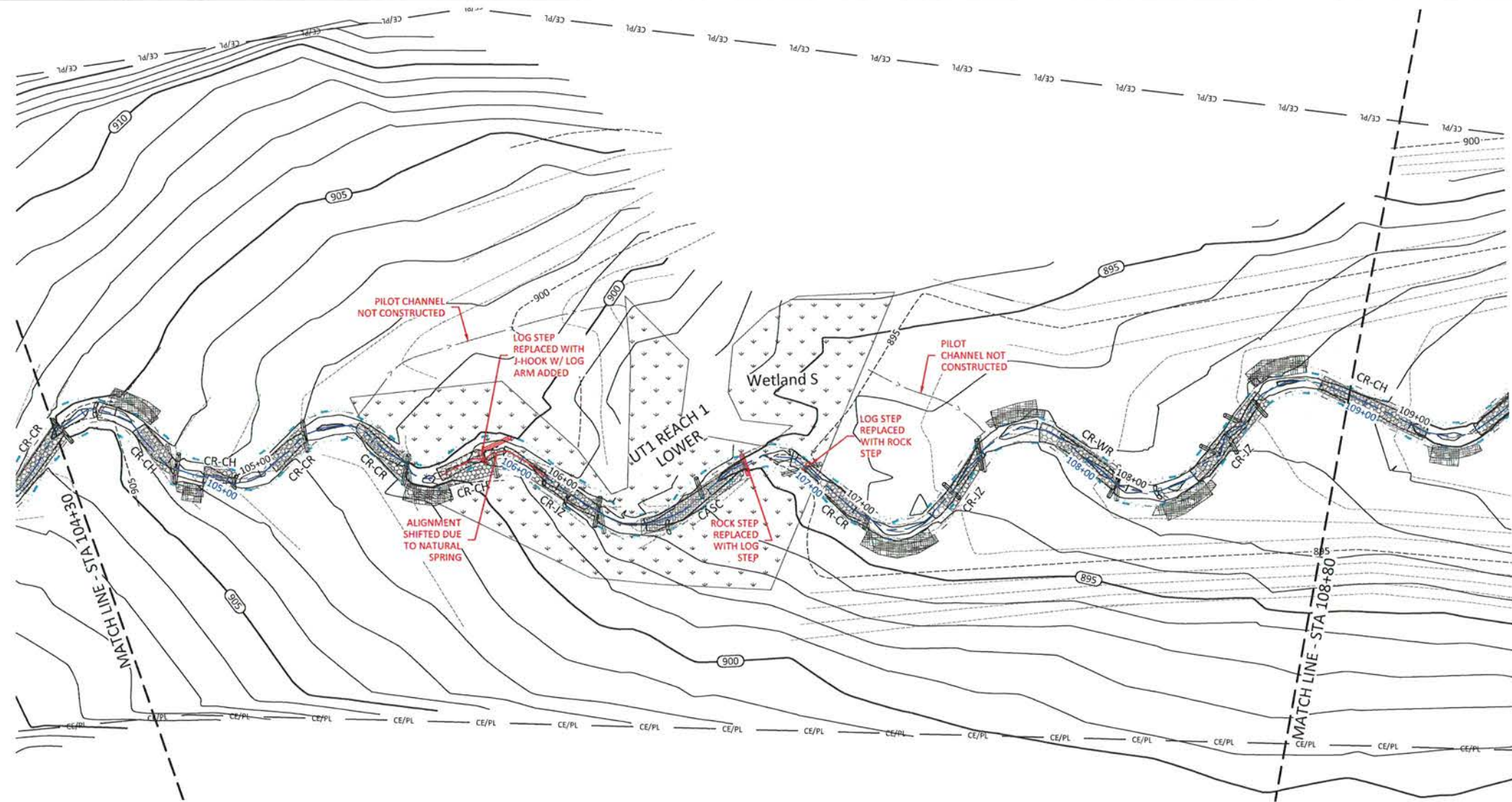
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167-B Haywood Road
Asheville, NC 28806
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Firm License No. F-0891



May 25, 2016



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 UT1 Reach 1 Lower
 Stream Plan and Profile

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 Fax: 704.332.3506
 Firm License No. P-0831

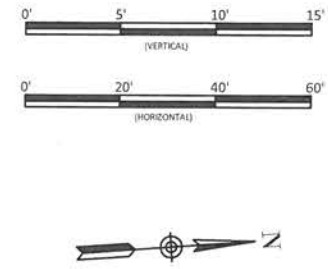
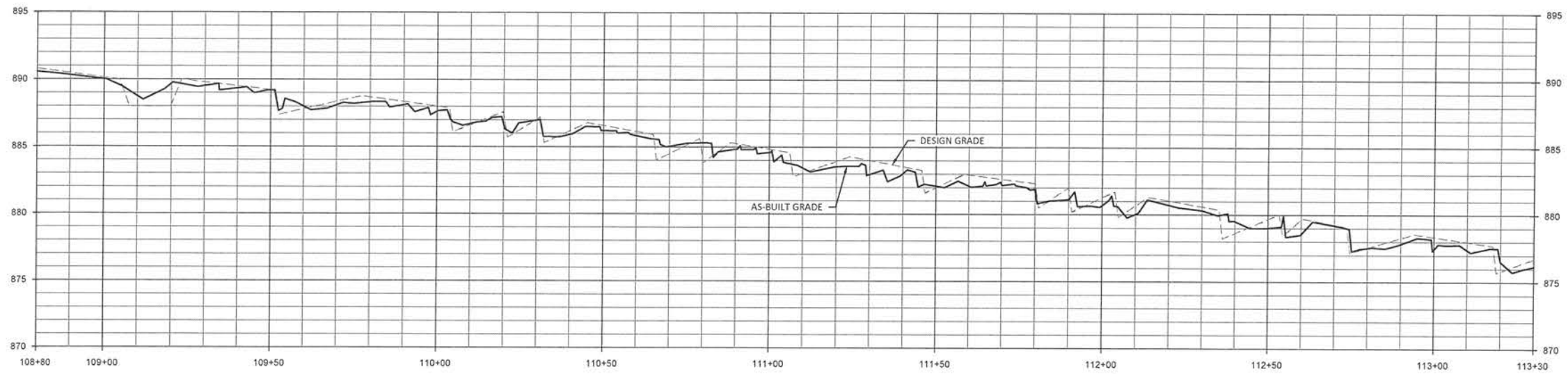


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Project Engineer:	JPM
Drawn By:	RCP
Checked By:	JPM

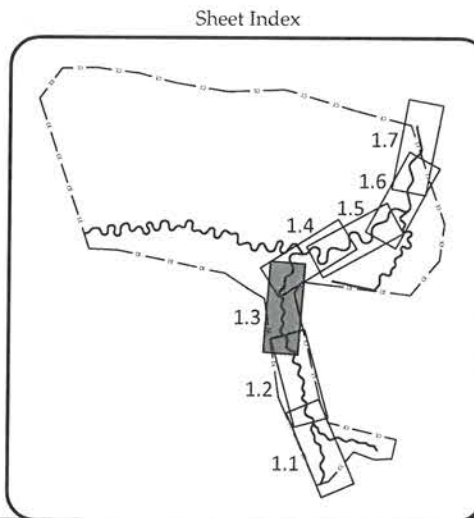
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Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina
UT1 Reach 1 Lower
Stream Plan and Profile

Revisions:	

Date: May 25, 2016
 Job Number: 005-02143
 Project Engineer: JTM
 Drawn By: RCT
 Checked By: JTM

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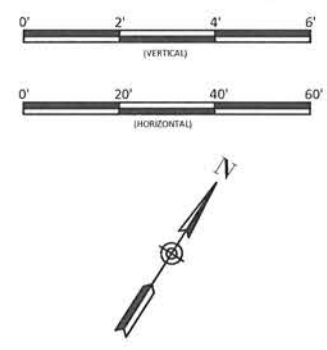
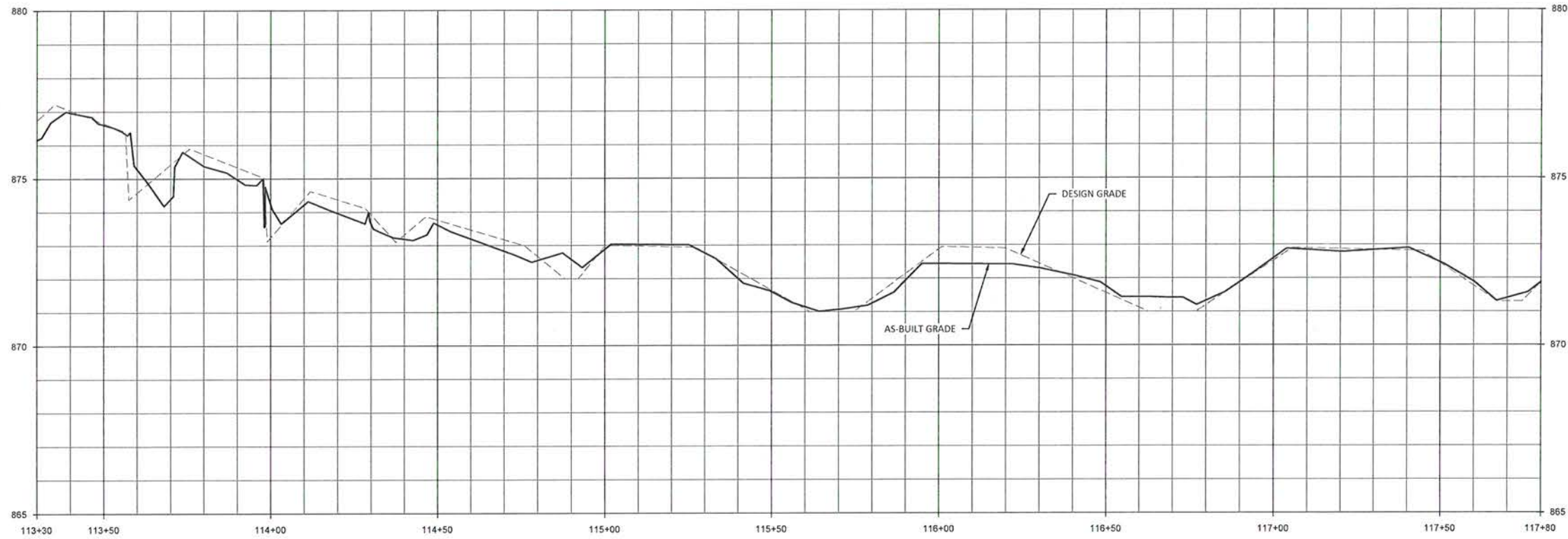
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 Fax: 828-774-5508
 Firm License No. F-0831

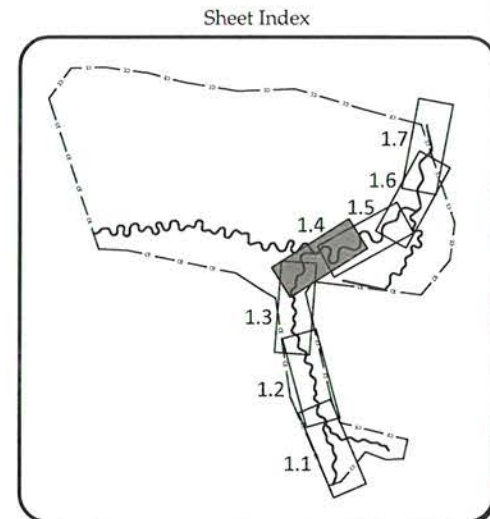
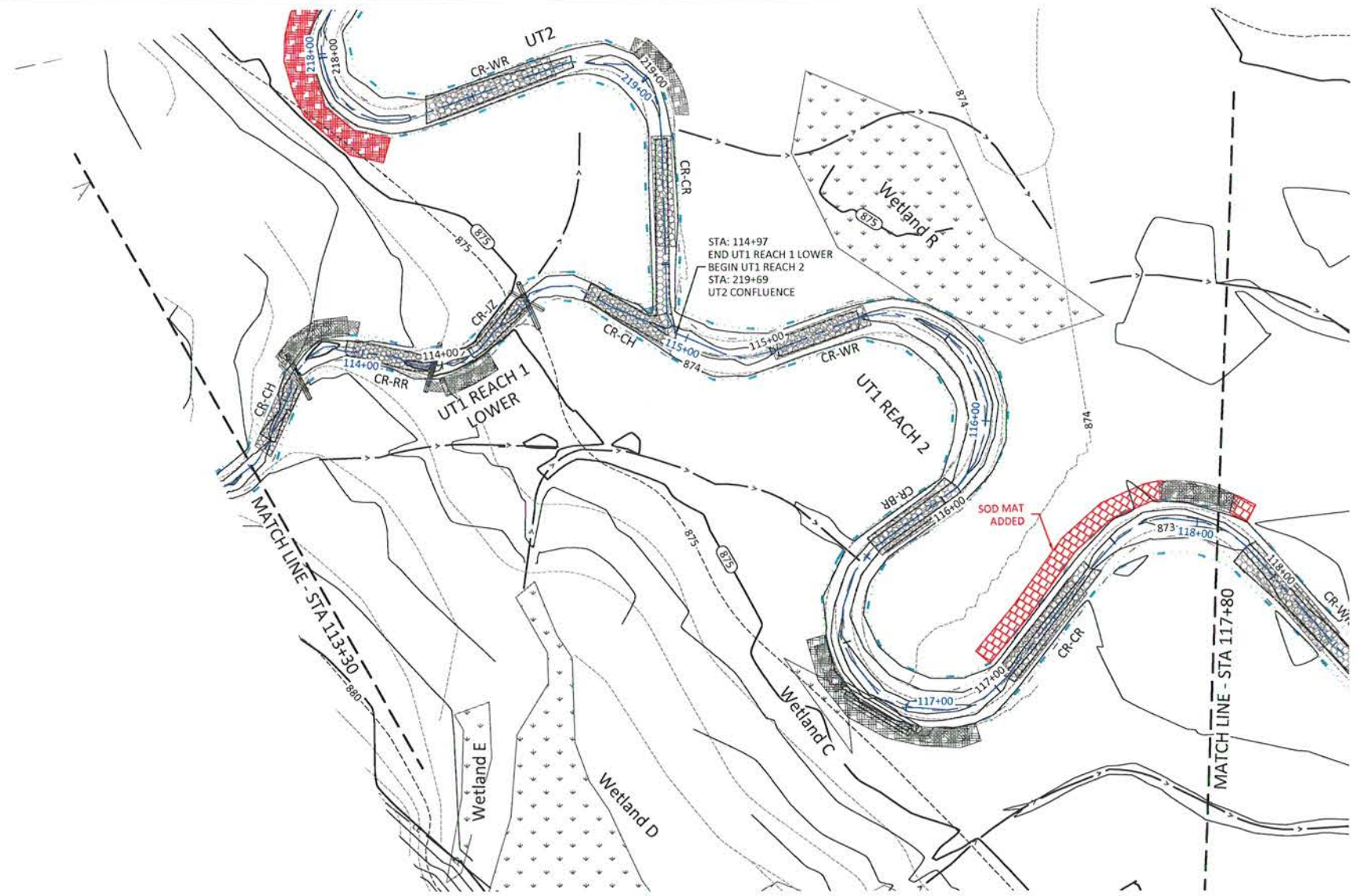


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May 25, 2016



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 UT1 Reach 1 Lower & UT1 Reach 2
 Stream Plan and Profile

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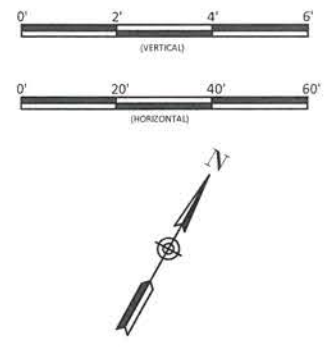
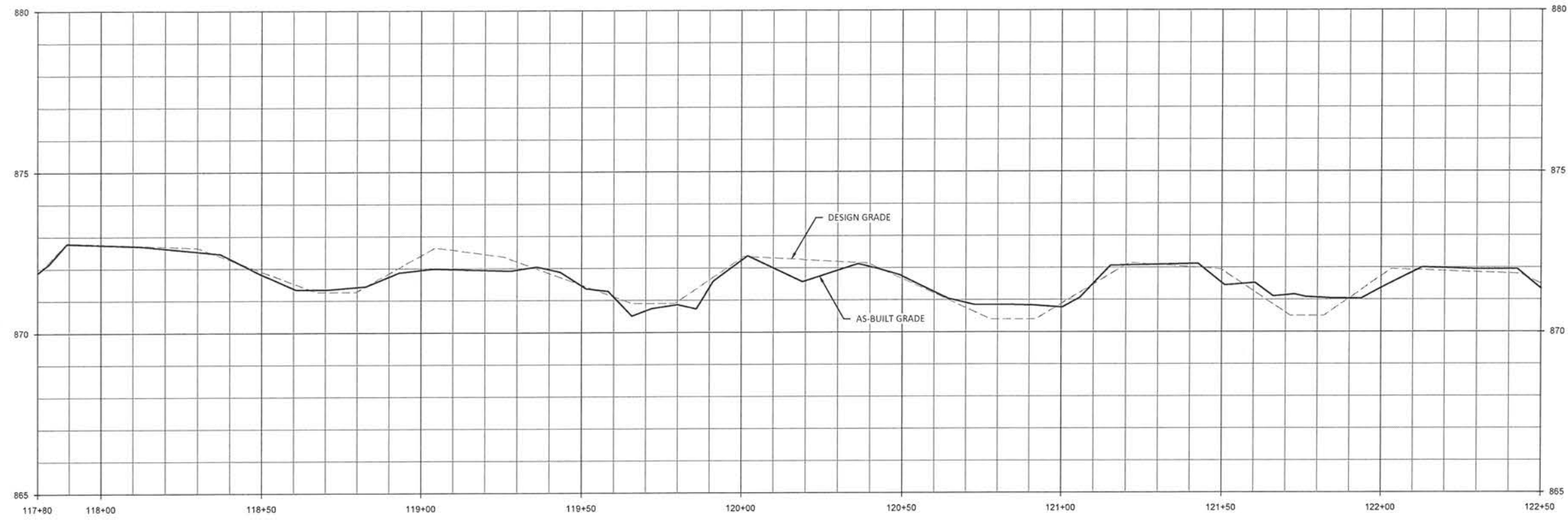
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 Project Engineer: JPM
 Drawn By: RCP
 Checked By: JPM

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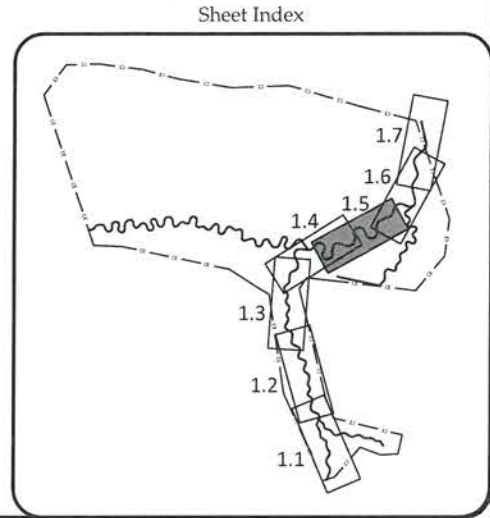
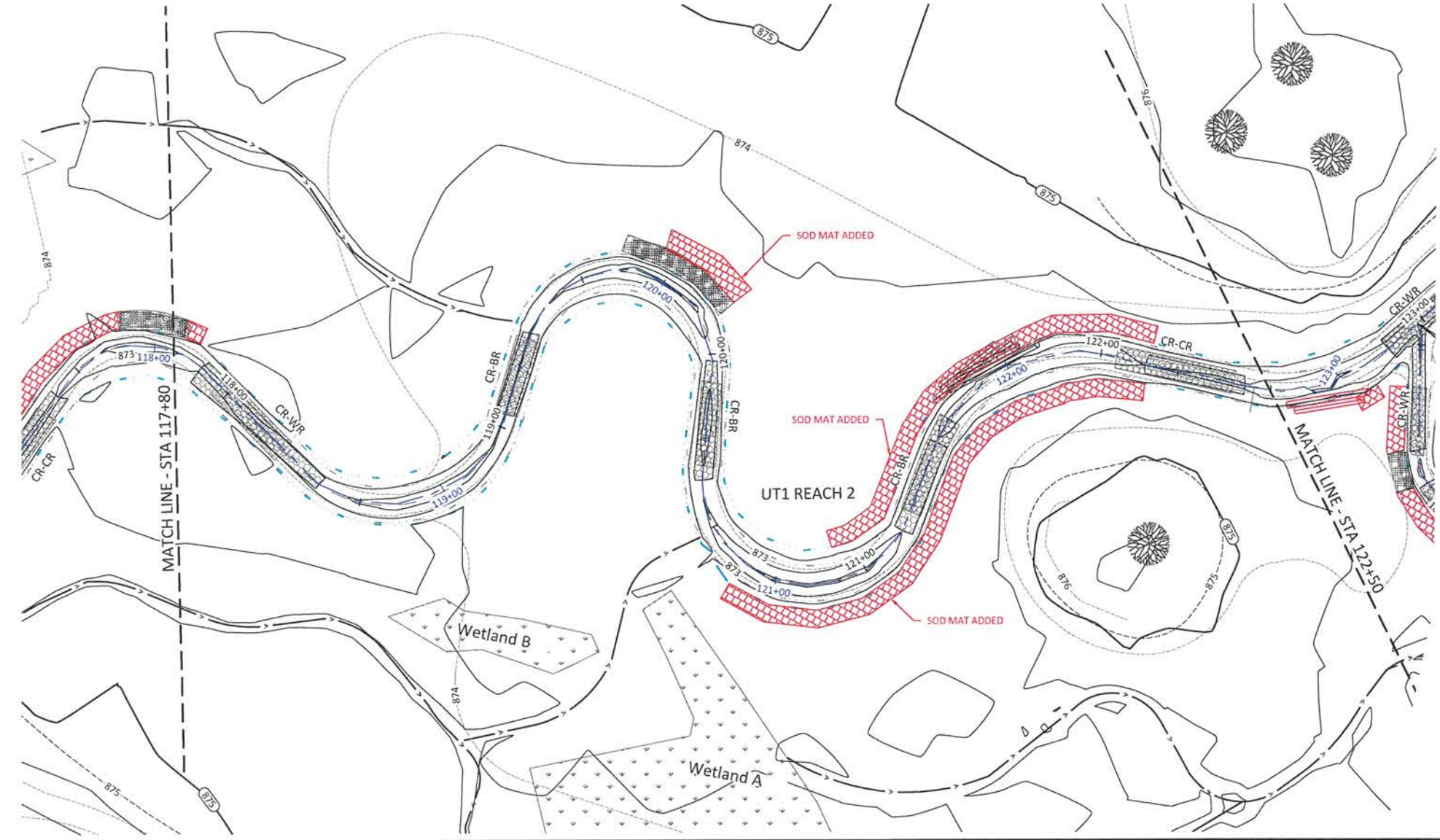
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May 25, 2016
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Note: Profile stations and match lines based on design alignment.



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Professional Engineer Seal
JAMES W. CAROLINA
033578
NORTH CAROLINA

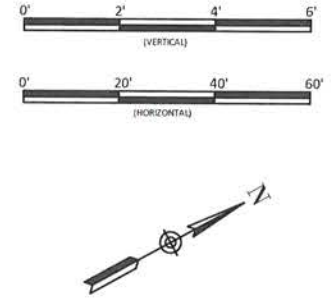
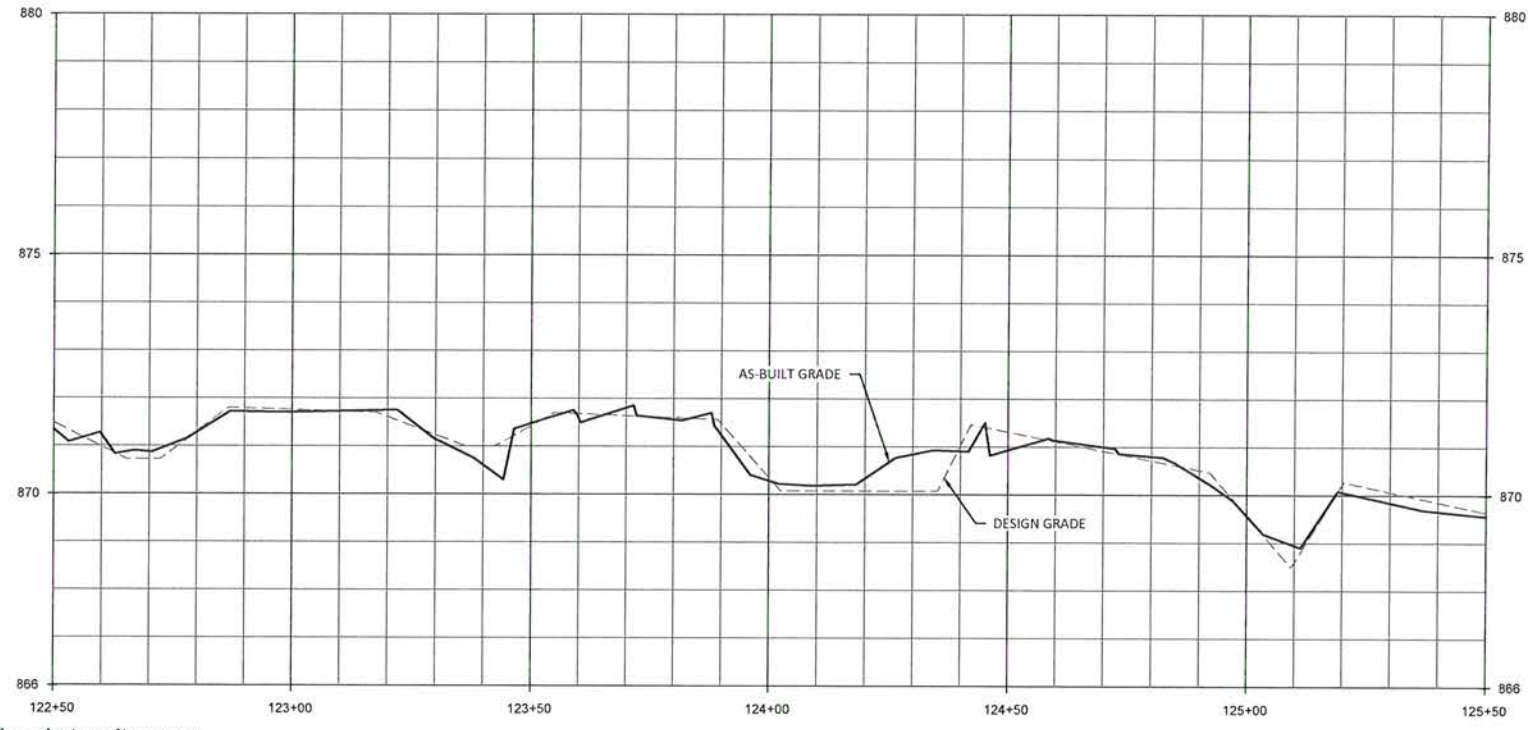
Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina
UT1 Reach 2
Stream Plan and Profile

Revision	Date	By	Check

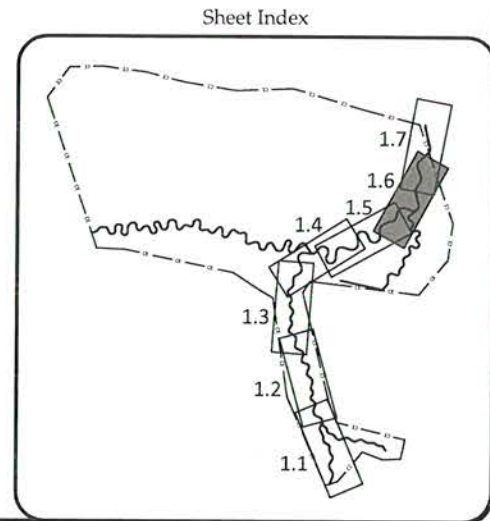
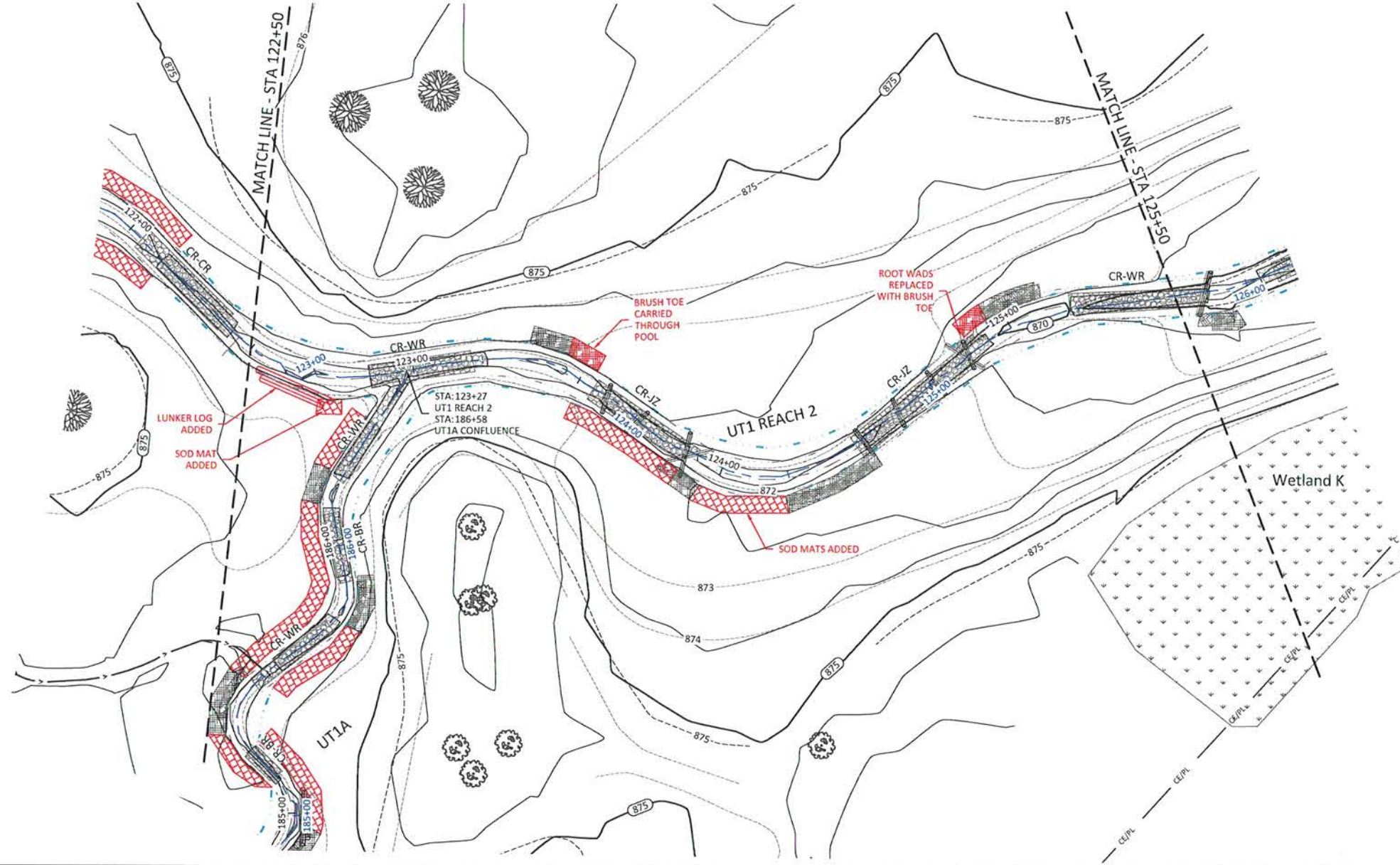
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Job Number: 005-02113
Project Engineer: JPM
Drawn By: RCP
Checked By: JPM

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May 25, 2016



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 UT1 Reach 2
 Stream Plan and Profile

DATE: May 25, 2016
 Job Number: 005-07143
 Project Engineer: JPM
 Drawn By: RCP
 Checked By: JPM

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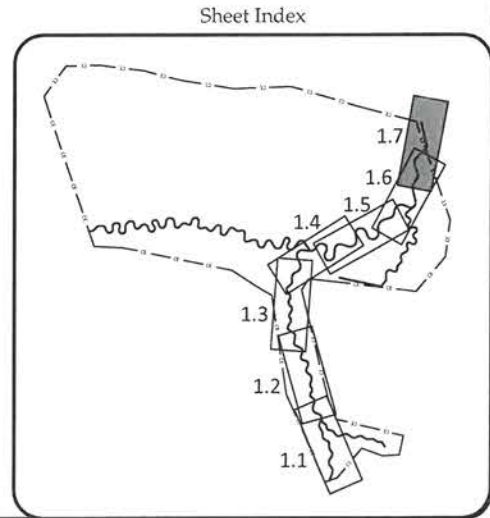
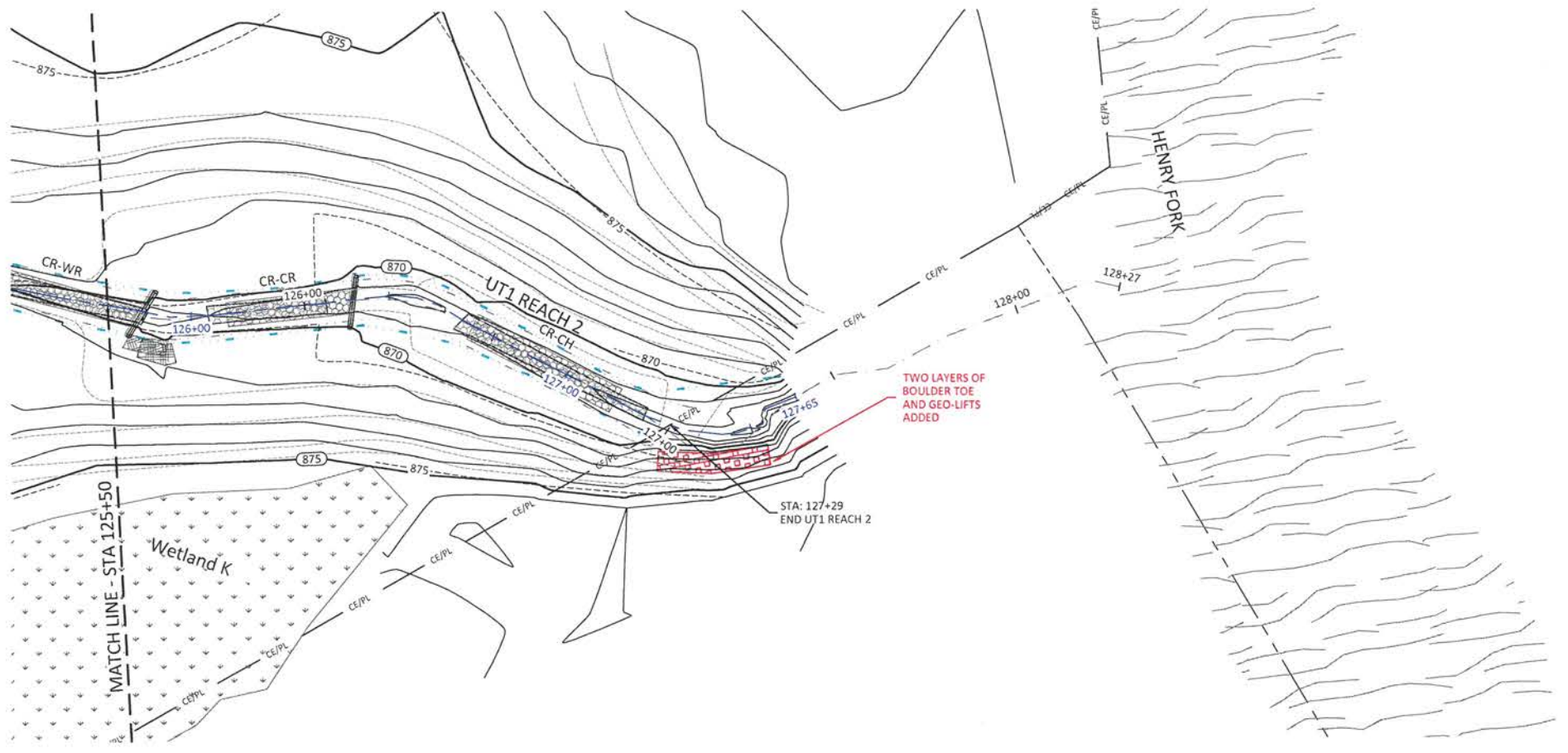
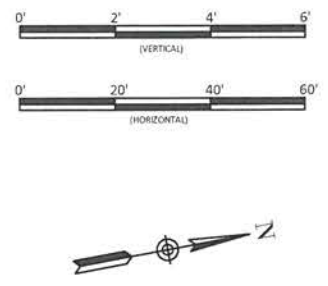
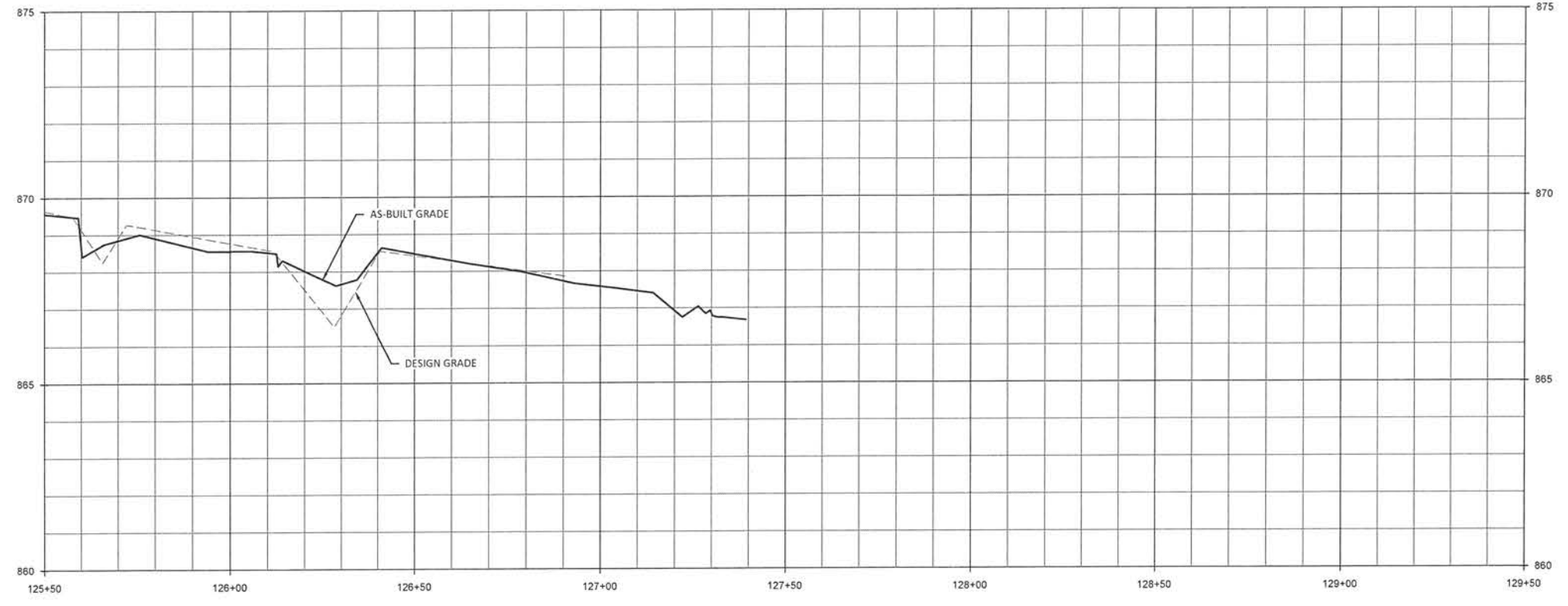
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 1675 Haywood Road
 Asheville, NC 28806
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Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina

UT1 Reach 2
 Stream Plan and Profile

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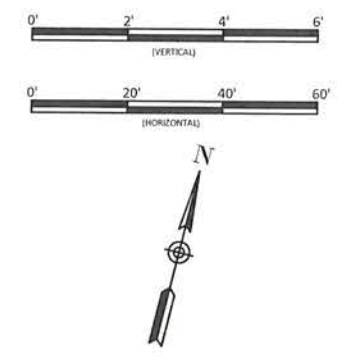
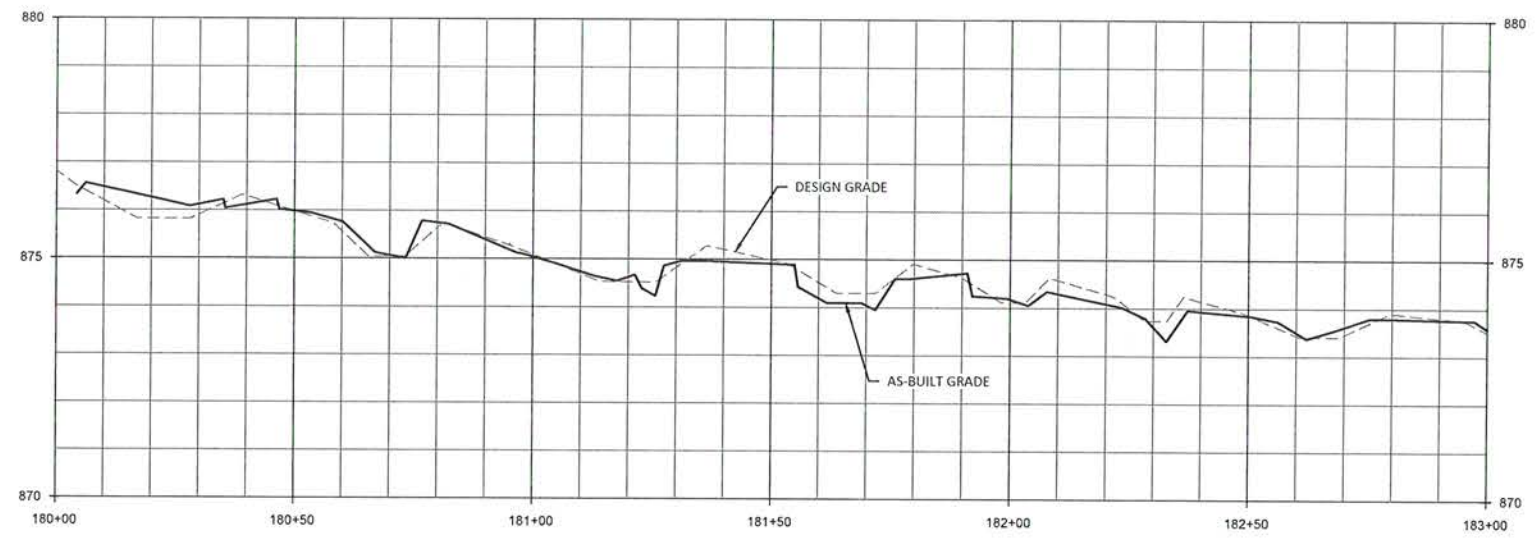
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Job Number:	005-02143
Project Engineer:	JPM
Drawn By:	RCT
Checked By:	JPM

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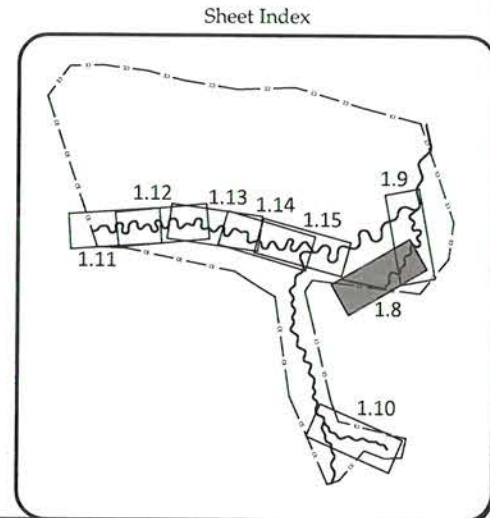
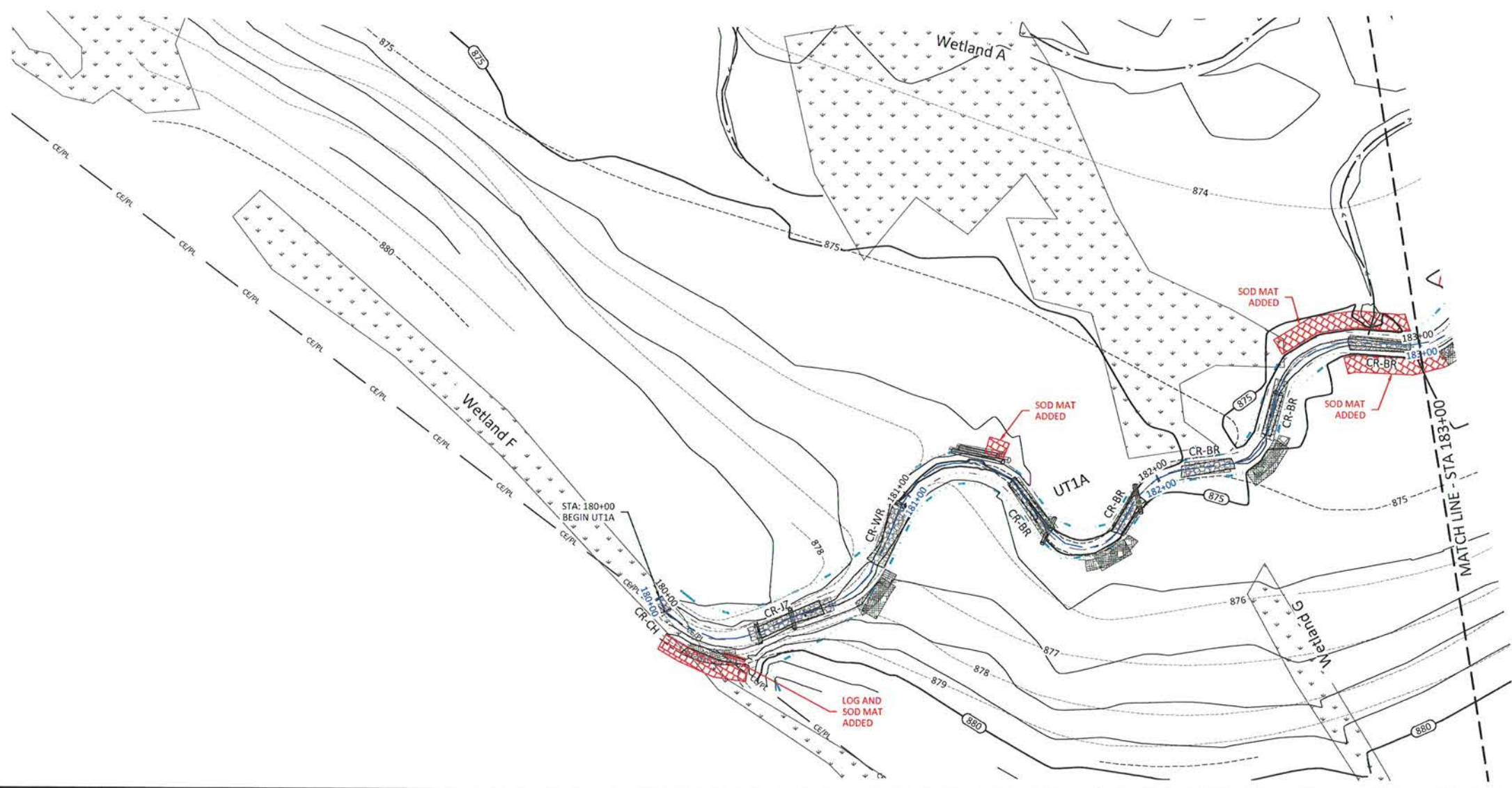
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May 25, 2016

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Note: Profile stations and match lines based on design alignment.



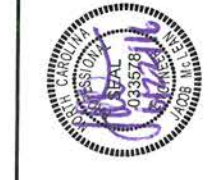
Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

UT1A
Stream Plan and Profile

Date:	May 25, 2016
Job Number:	05-02143
Project Engineer:	JPM
Drawn By:	RCP
Checked By:	JPM

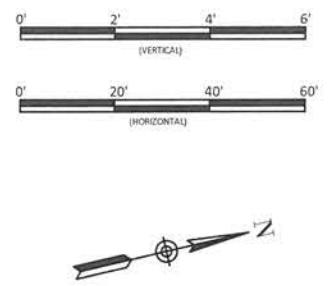
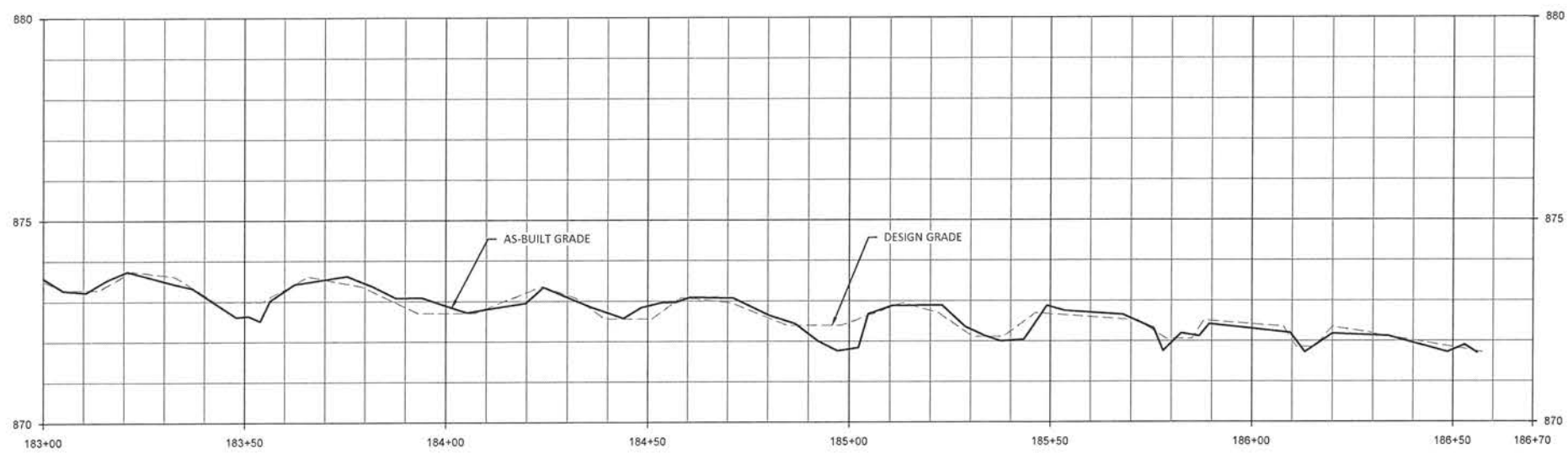
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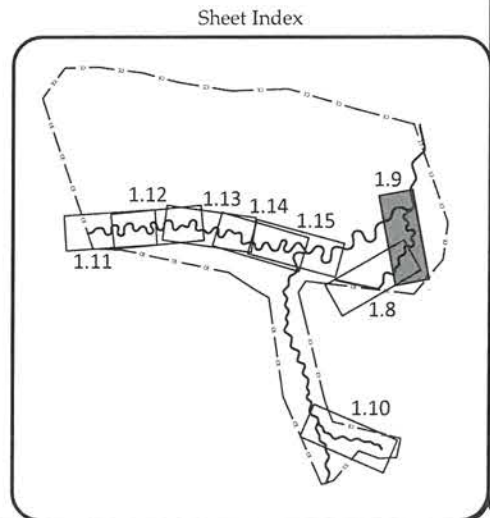
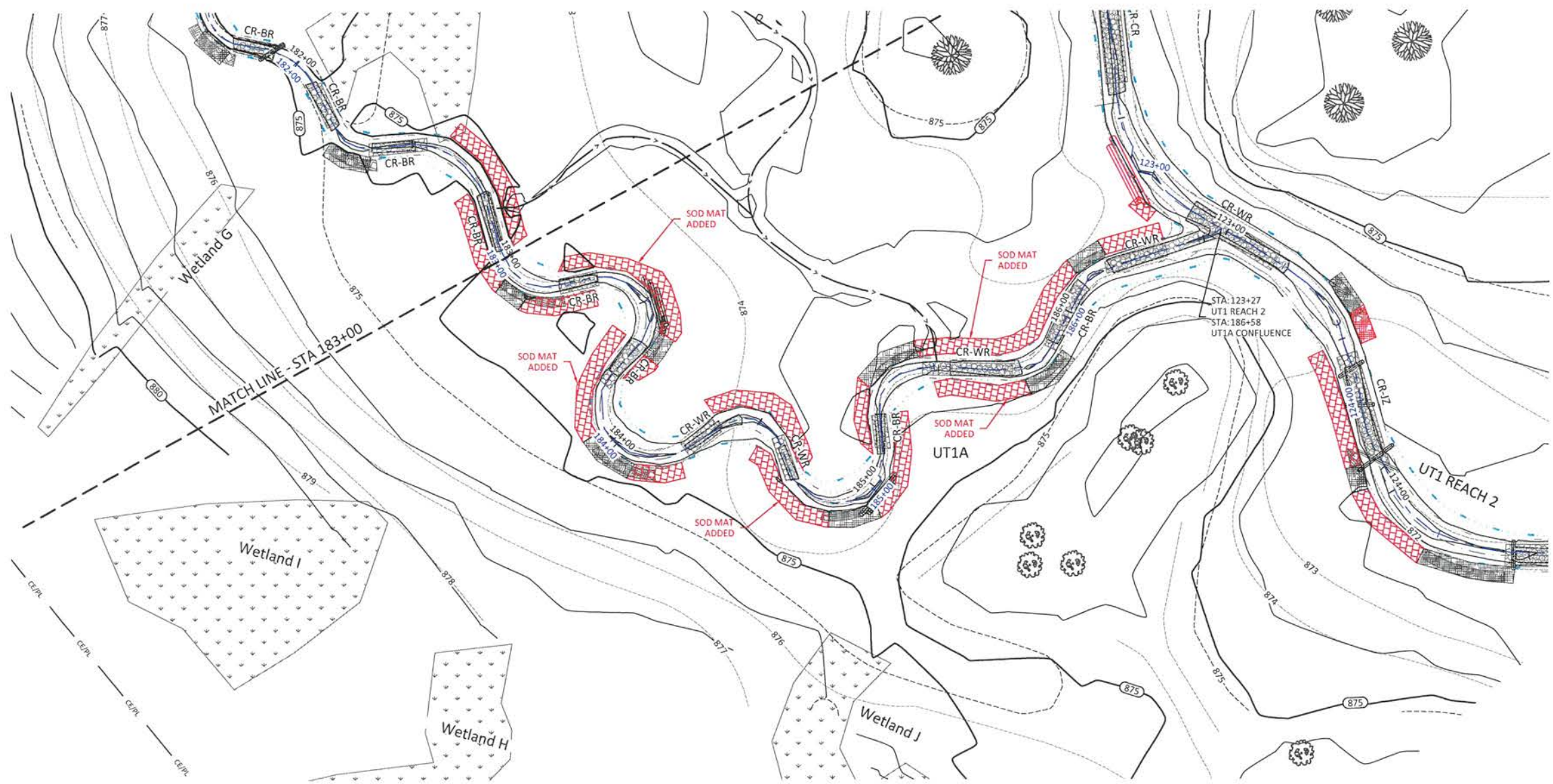


WILDLANDS
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Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

UT1A
Stream Plan and Profile

Date:	May 25, 2016
Job Number:	005-02143
Project Engineer:	JTM
Drawn by:	RCT
Checked by:	JTM

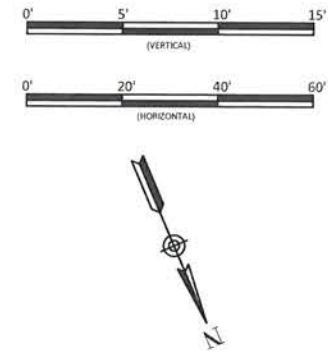
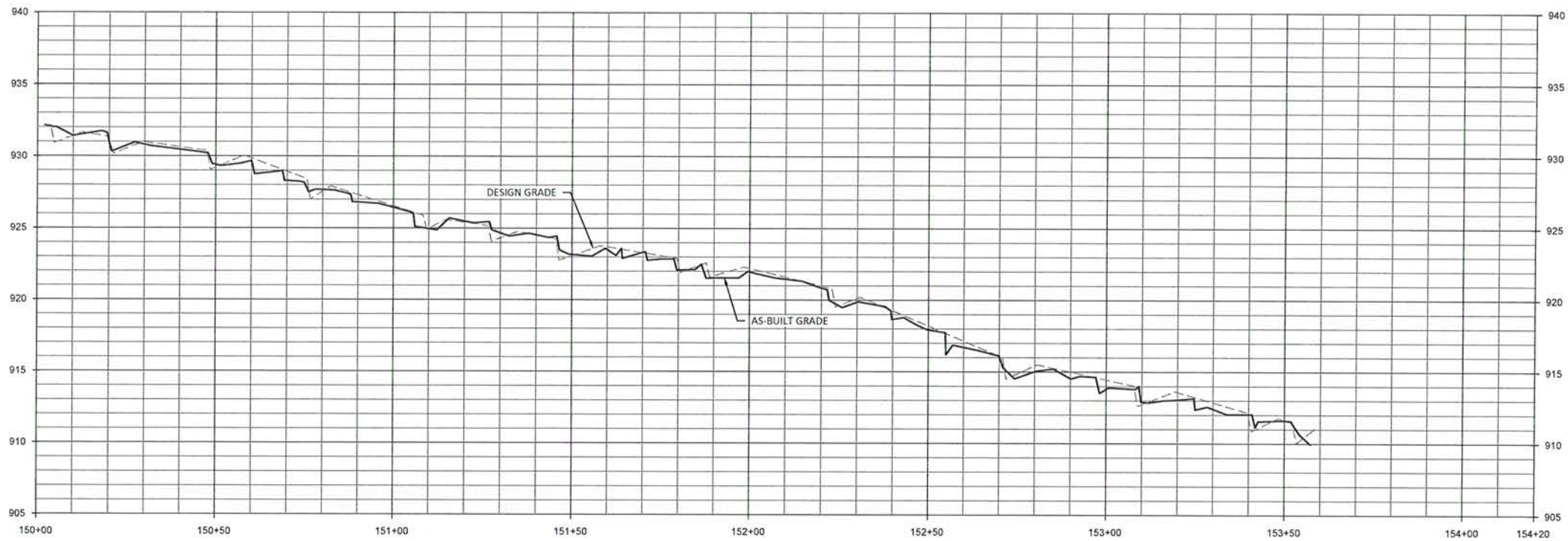
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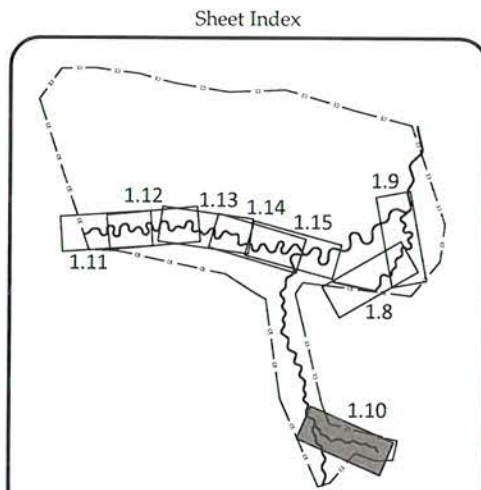
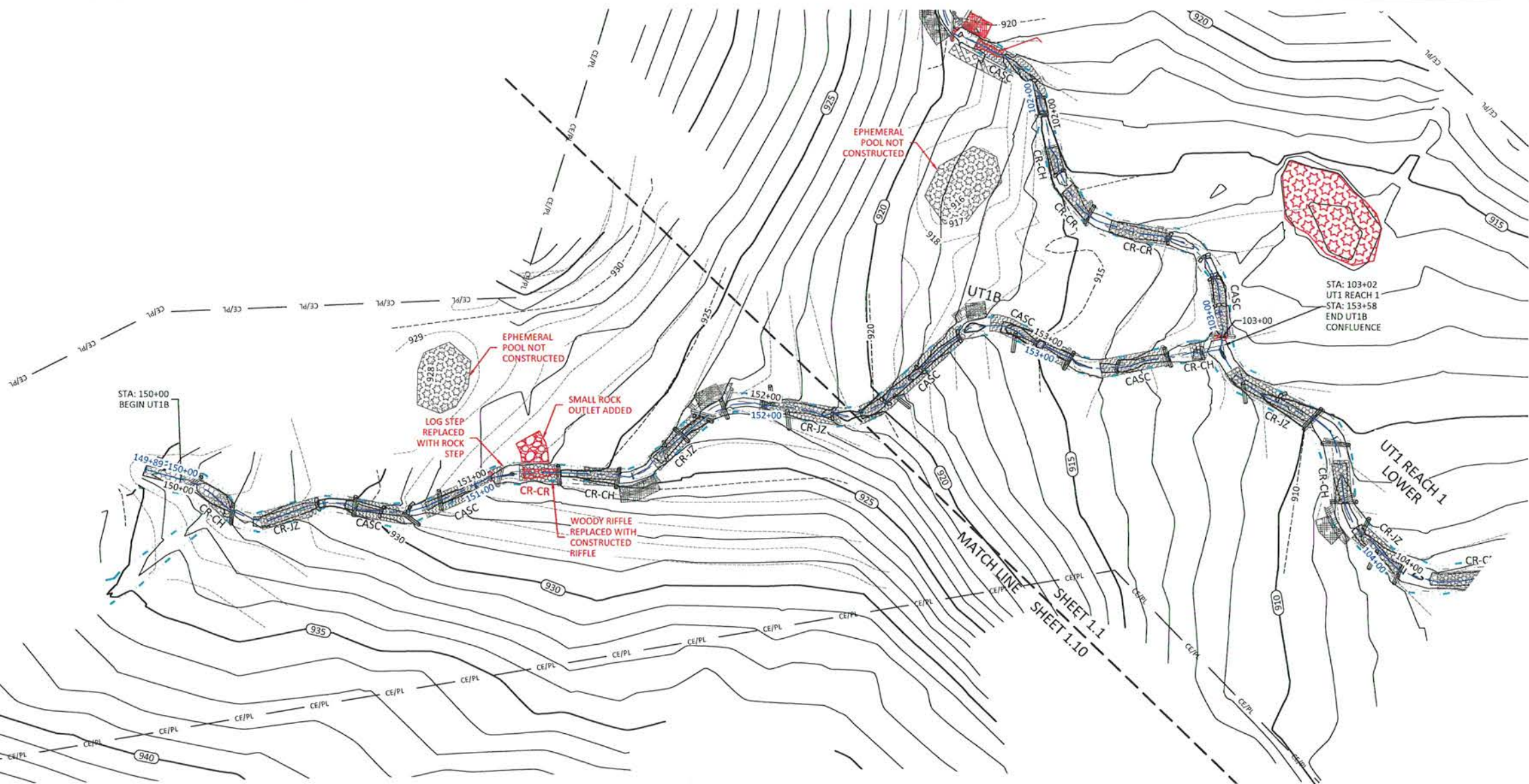
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ENGINEERING
10748 Highway 100
Charlotte, NC 28213
Tel: 828.774.5547
Fax: 704.332.3306
Firm License No. F-0831



May 25, 2016
PROJECT: HENRY FORK MITIGATION SITE RECORD DRAWINGS
DRAWN BY: JPM
CHECKED BY: JPM



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

UT1B
Stream Plan and Profile

Revisions:

No.	Description	Date

Date: May 25, 2016
Job Number: 005-02143
Project Engineer: JPM
Drawn By: JPM
Checked By: JPM

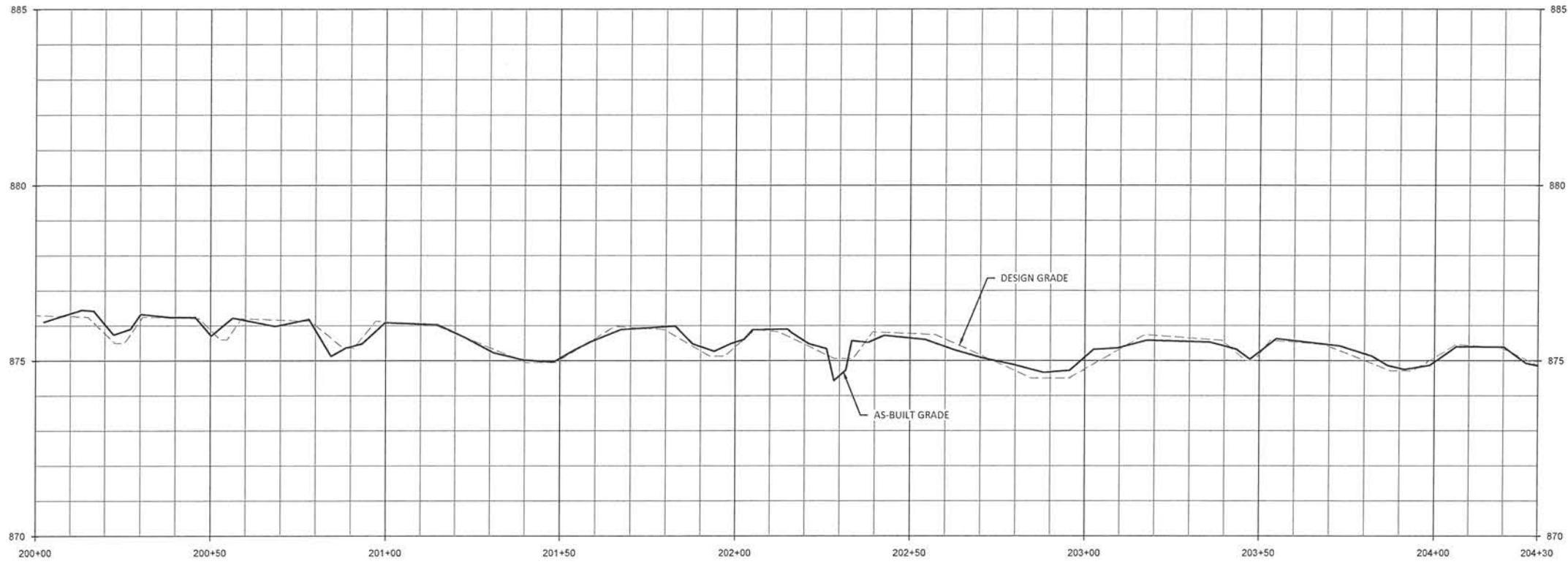
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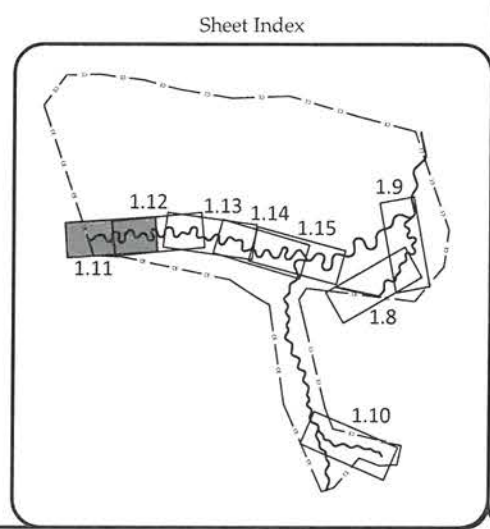
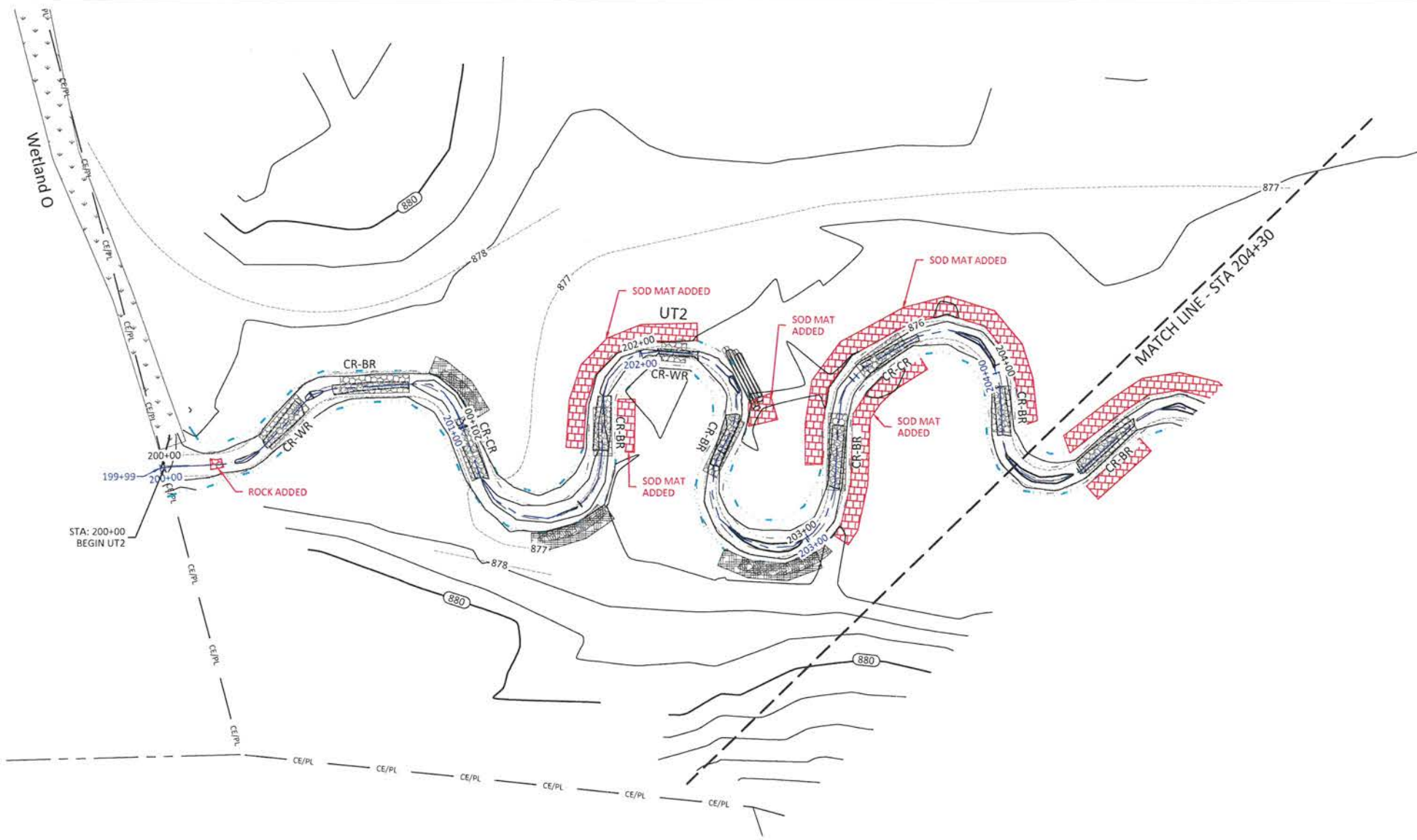
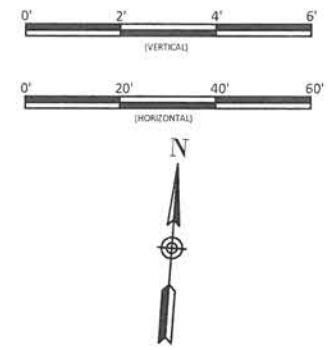
WILDLANDS
ENGINEERING
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1000 S. W. 10th St.
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May 25, 2016



Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

UT2
Stream Plan and Profile

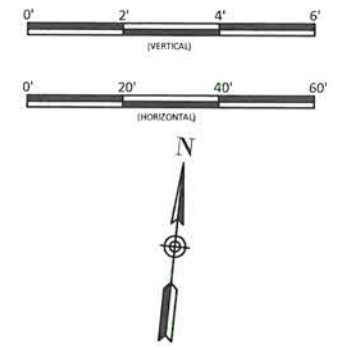
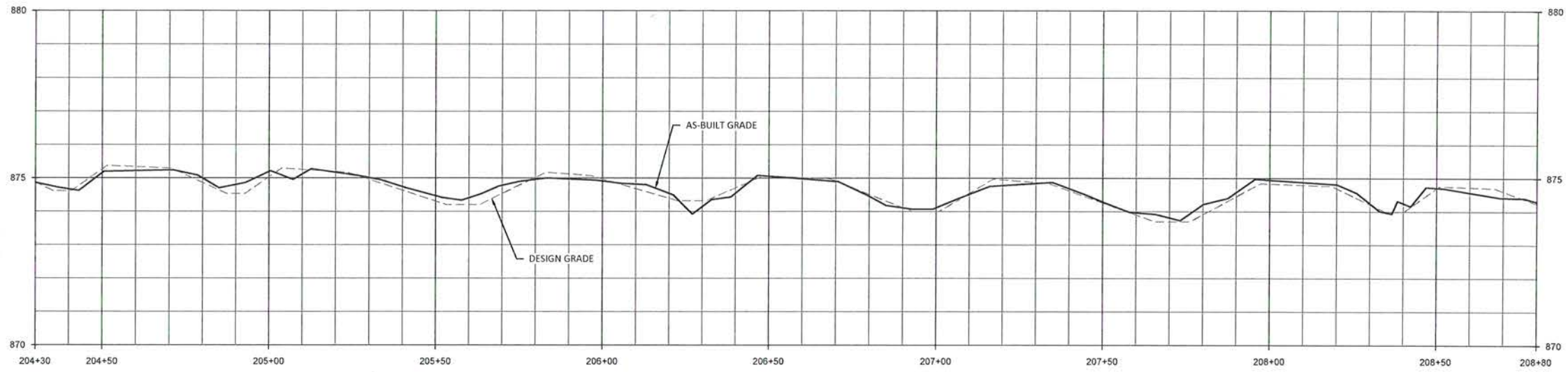
Date:	May 25, 2016
Job Number:	005-02143
Project Engineer:	JPM
Drawn By:	RCP
Checked By:	IPM

1.11
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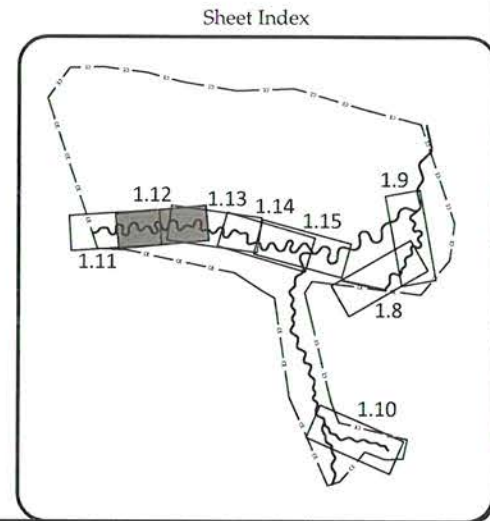
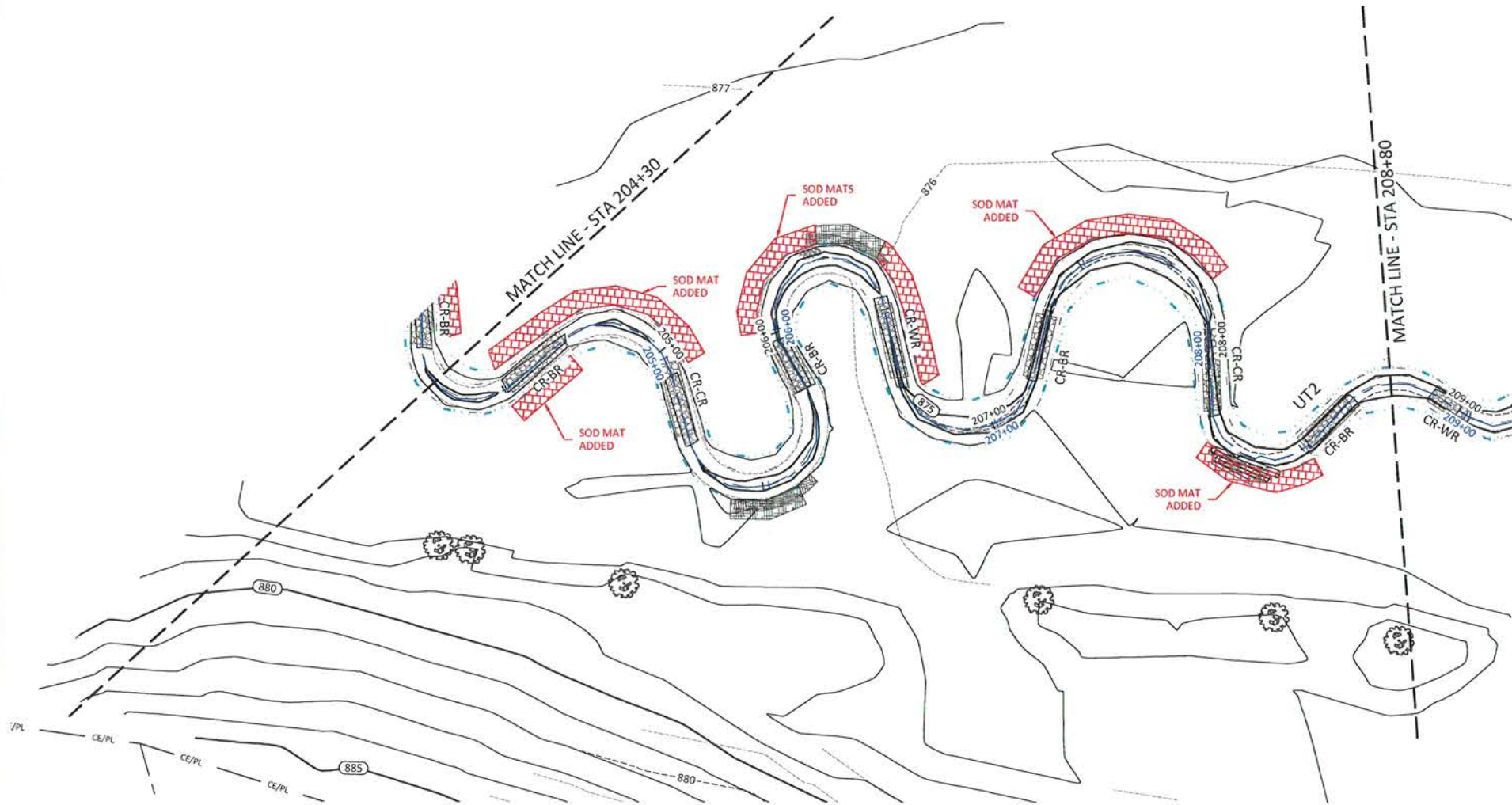
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Firm License No. F-06931





Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Date: May 25, 2016
Job Number: 005-02113
Project Engineer: JPM
Drawn By: RCP
Checked By: JPM

Revisions:

1.12

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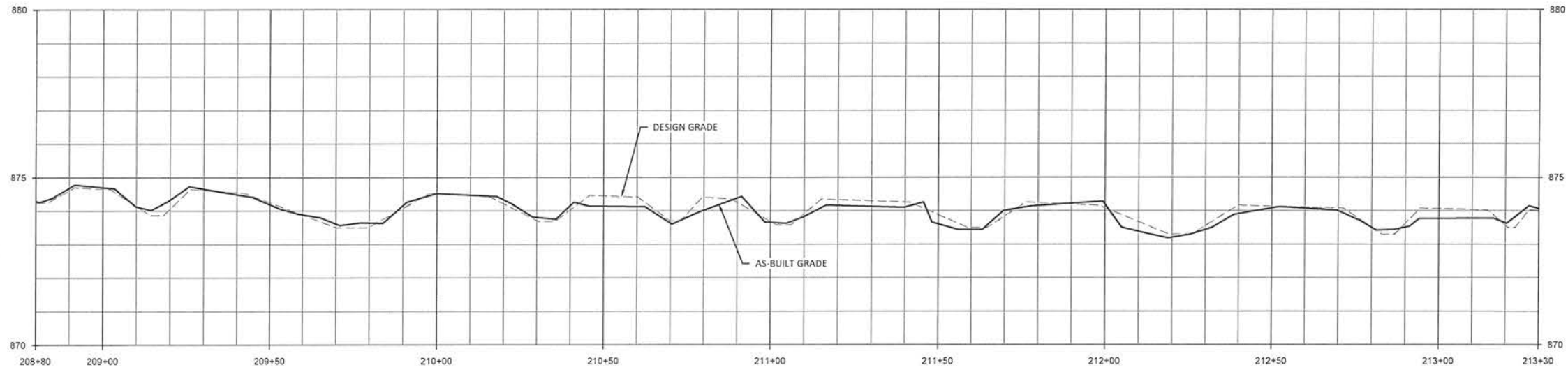
WILDLANDS
ENGINEERING, INC.
167-B Haywood Road
Asheville, NC 28806
Tel: 828.774.5547
Fax: 704.332.3306
Firm License No. F-08831



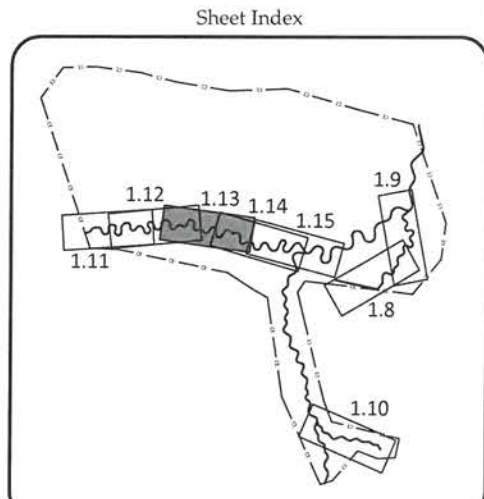
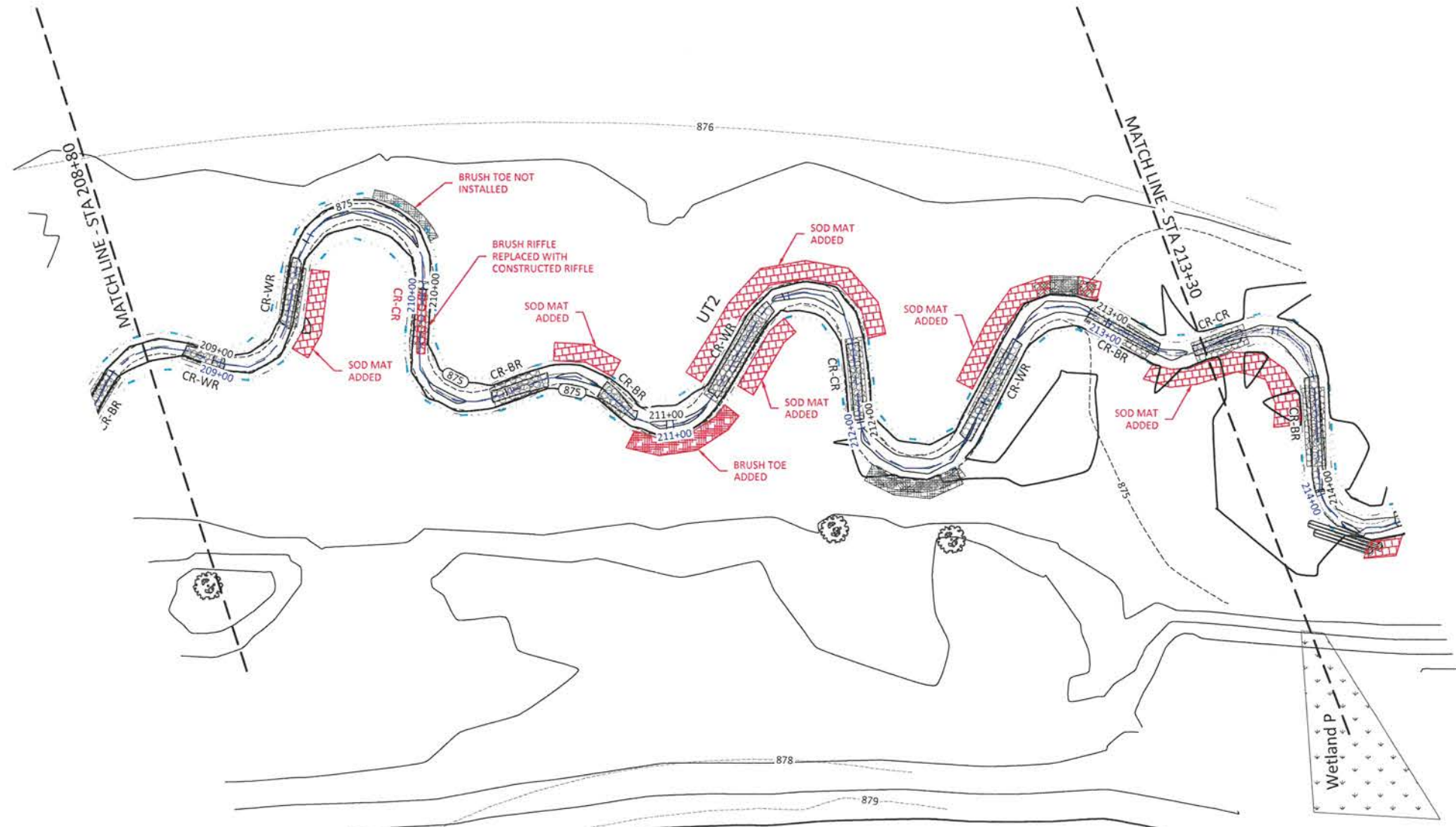
UT2
Stream Plan and Profile

May 25, 2016

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Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

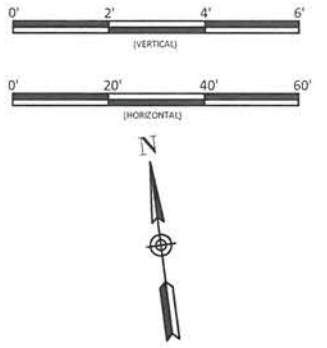
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Stream Plan and Profile

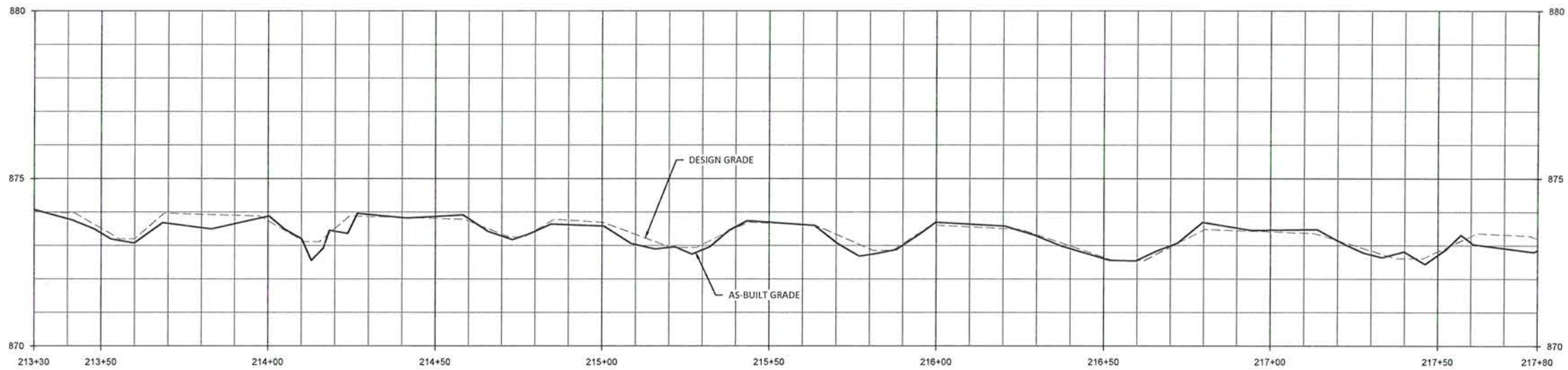
Date:	May 25, 2016
Job Number:	05-02143
Project Engineer:	JPM
Drawn by:	RCP
Checked by:	JPM

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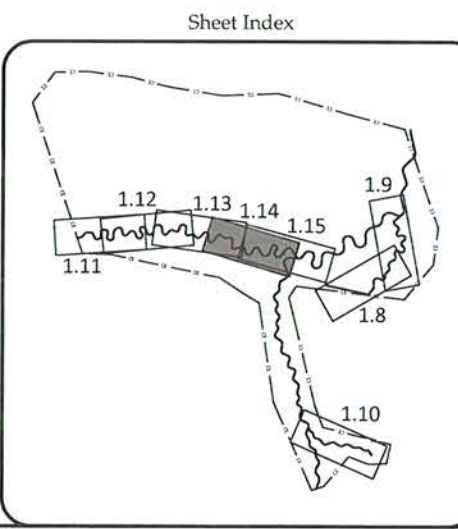
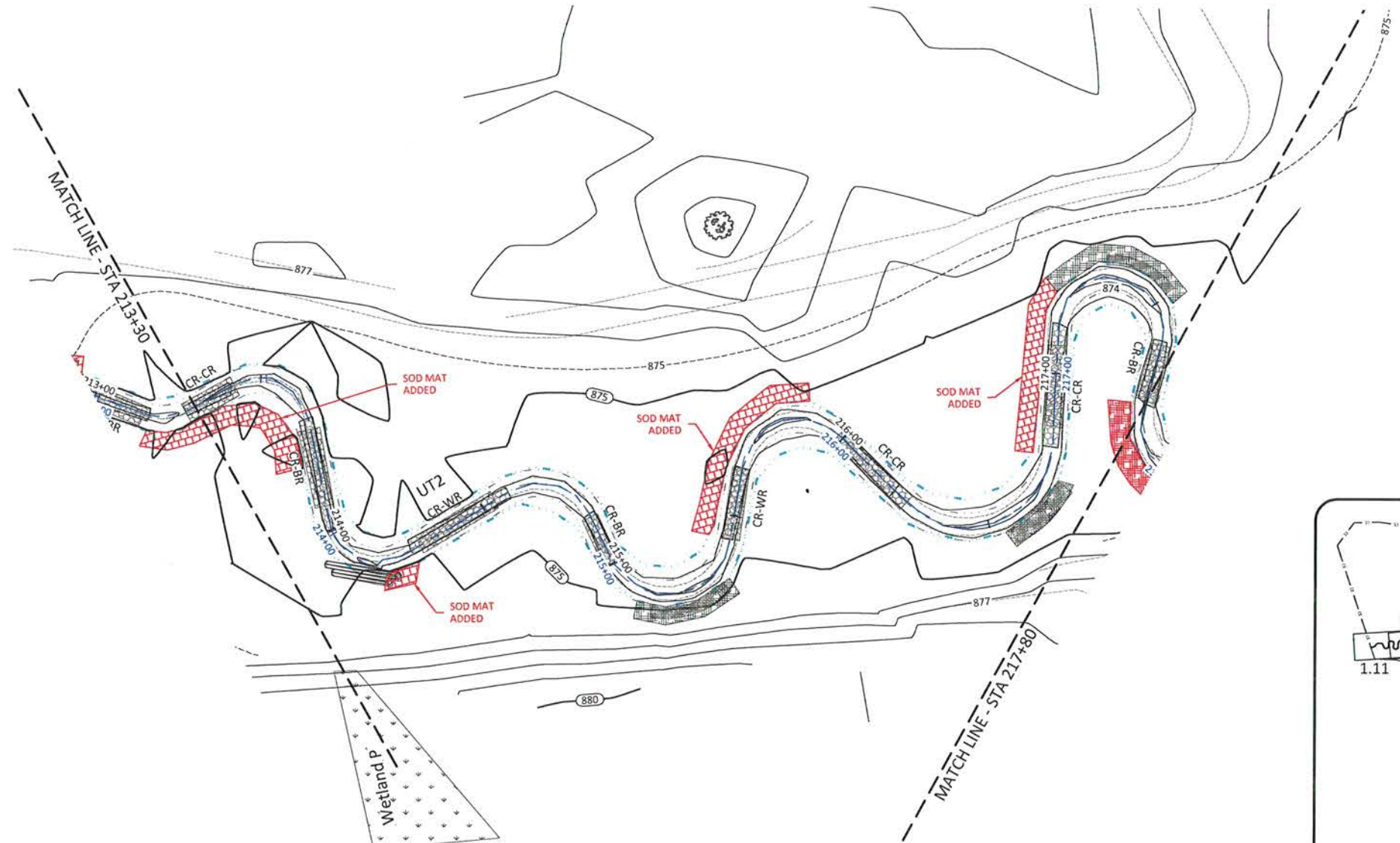
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Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 UT2
 Stream Plan and Profile

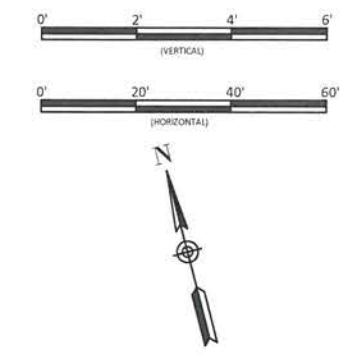
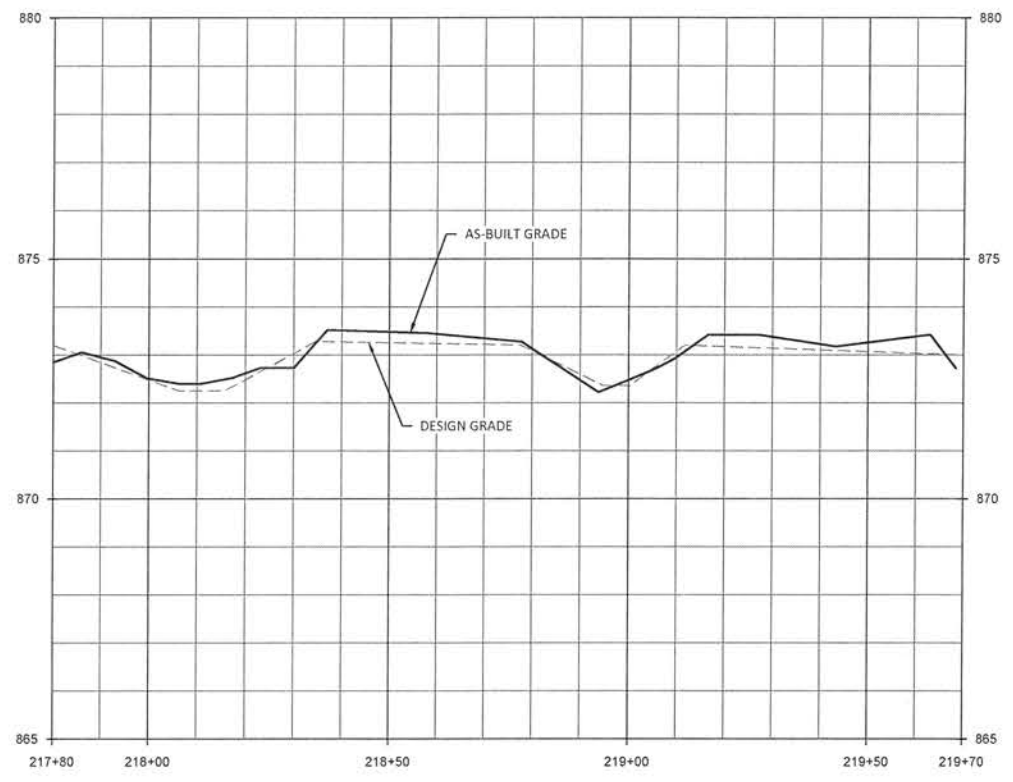
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Job Number:	005-02143
Project Engineer:	IPM
Drawn By:	RCP
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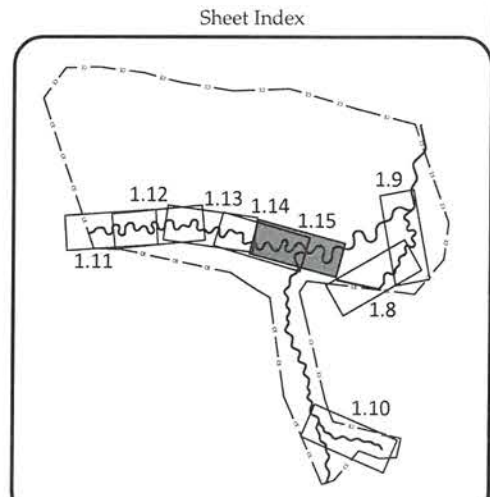
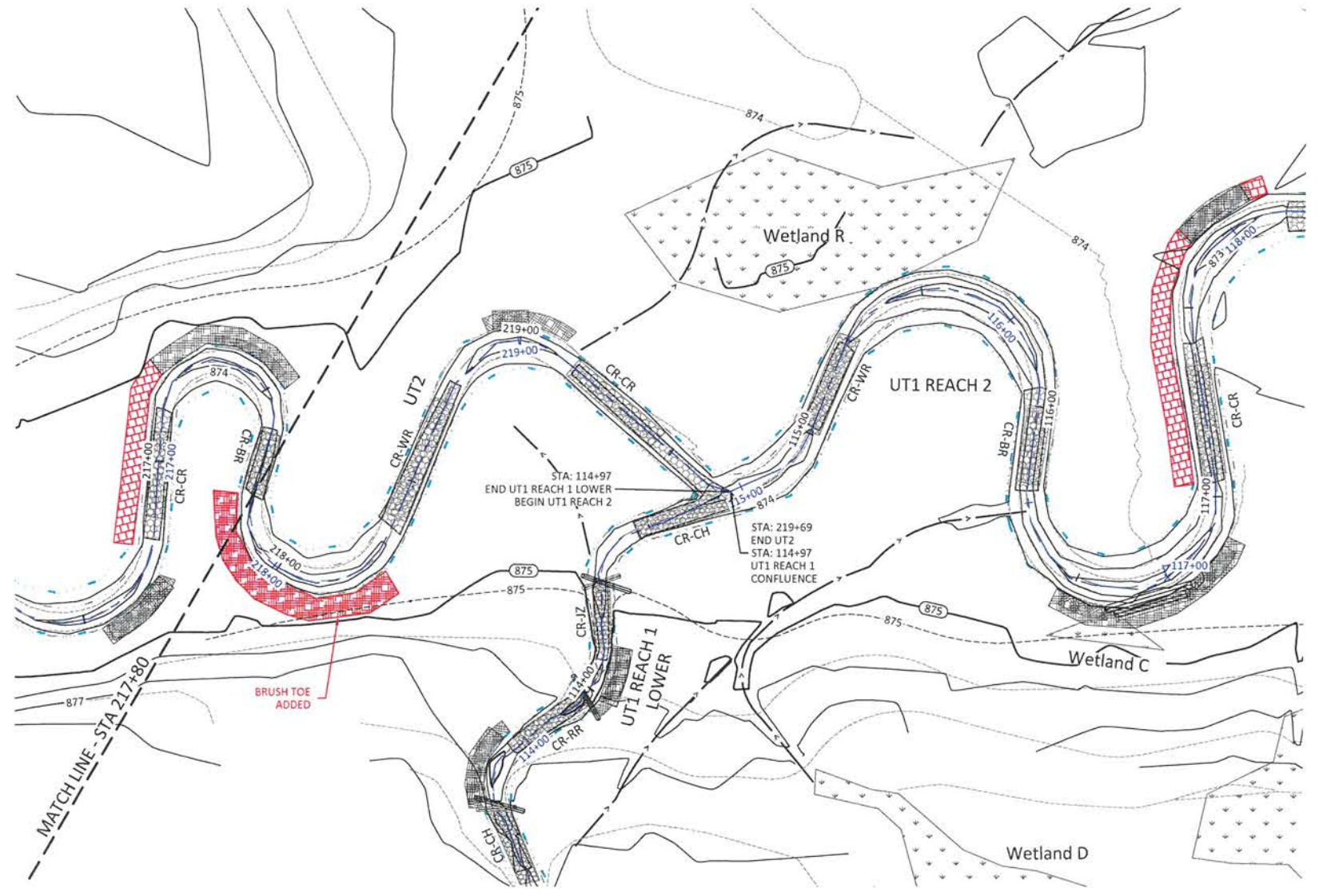
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Note: Profile stations and match lines based on design alignment.



Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina

UT2
 Stream Plan and Profile

Revisions	

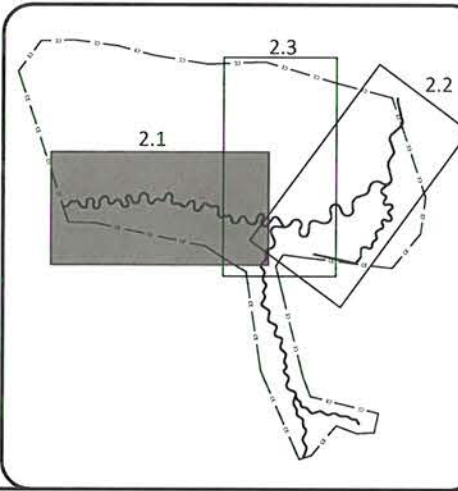
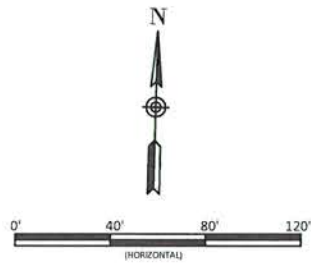
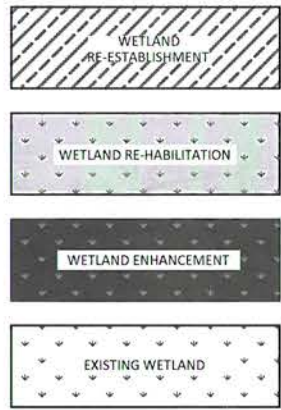
Date:	May 25, 2016
Job Number:	005-02143
Project Engineer:	JPM
Drawn By:	RCT
Checked By:	JPM

1.15

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Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Wetland Grading

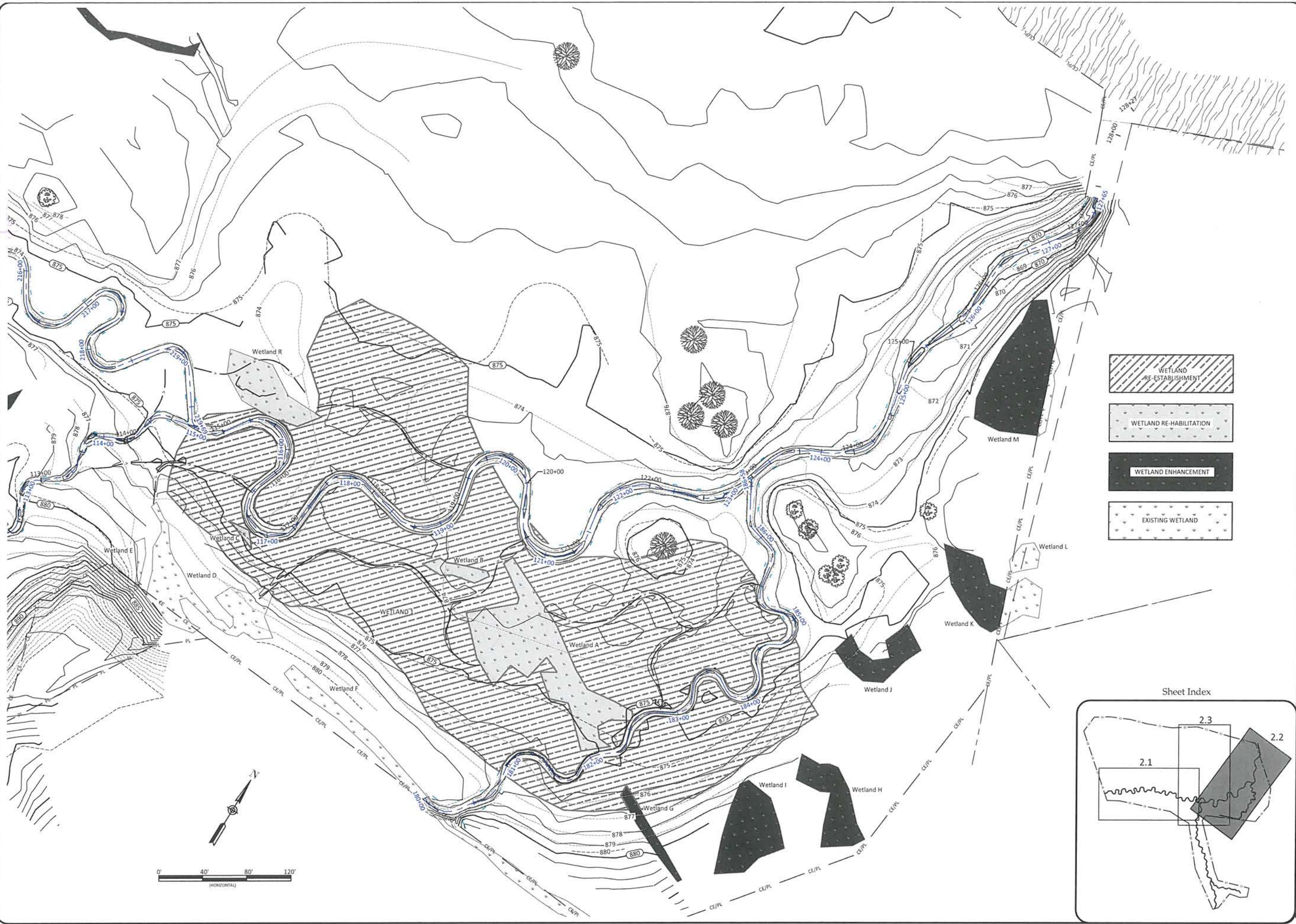
Date: May 25, 2016
Job Number: 005-02143
Project Engineer: JPM
Drawn By: RCP
Checked By: JPM





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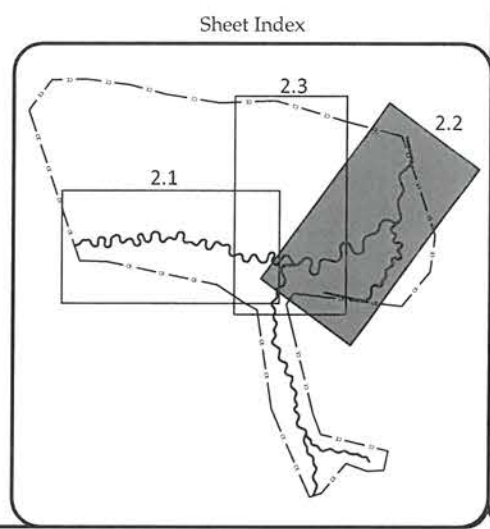
Revisions:



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 WETLAND RE-ESTABLISHMENT
 WETLAND RE-HABILITATION
 WETLAND ENHANCEMENT
 EXISTING WETLAND



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Wetland Grading

Date:	May 25, 2016
Job Number:	05-02113
Project Engineer:	JPM
Drawn By:	RCP
Checked By:	JPM

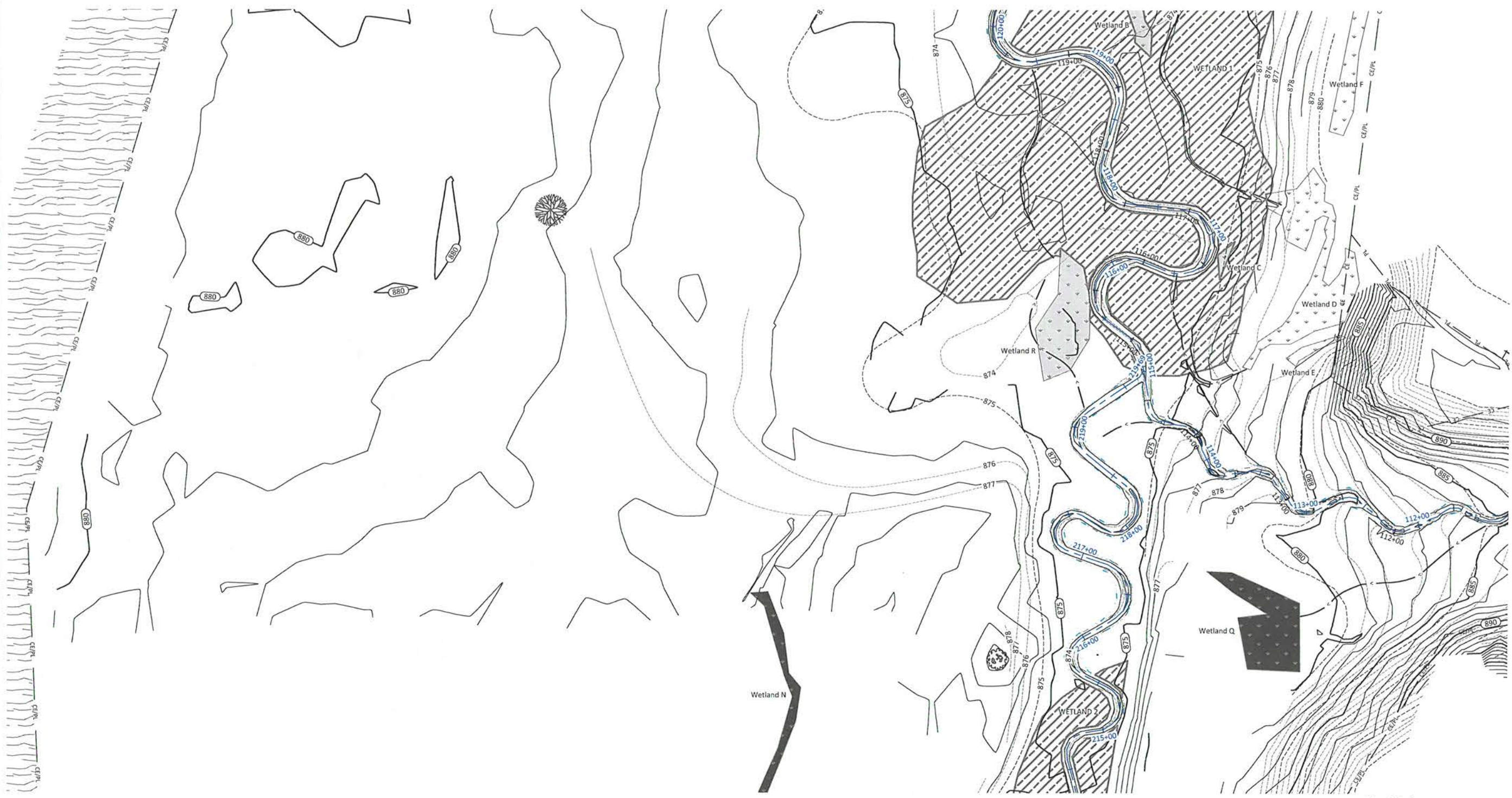
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2.2

Sheet


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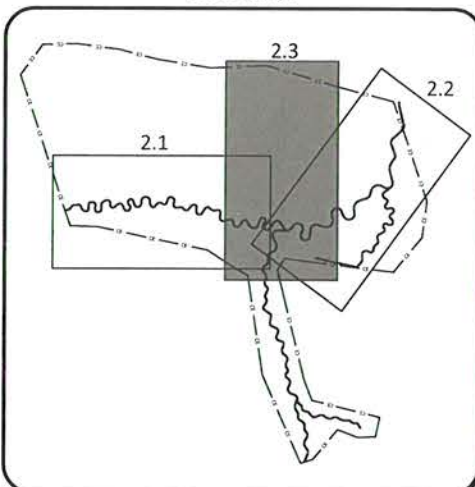


WETLAND RE-ESTABLISHMENT

WETLAND RE-HABILITATION

WETLAND ENHANCEMENT

EXISTING WETLAND



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina

Date: May 25, 2016
Job Number: 005-02143
Project Engineer: JPM
Drawn By: RCP
Checked By: JPM

2.3

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Revisions:

Wetland Grading



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May 25, 2016
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NOTE:
"PERMANENT SEEDING" IS FOR ALL DISTURBED AREAS WITHIN CONSERVATION EASEMENT. ALL DISTURBED AREAS SHALL RECEIVE TEMPORARY SEEDING AND MULCHING PER DETAIL 3/6.6 IN ADDITION TO PERMANENT SEEDING.

Approved Date	Scientific Name	Stratum	Common Name	Density (lbs/acre)
Permanent Seeding Pure Live Seed (20 lbs/acre)				
All Year	<i>Panicum rigidulum</i>	Herb	Redtop Panicgrass	2
All Year	<i>Agrostis hyemalis</i>	Herb	Winter Bentgrass	4
All Year	<i>Chasmanthium latifolium</i>	Herb	River Oats	3
All Year	<i>Rudbeckia subtomentosa</i>	Herb	Blackeyed Susan	2
All Year	<i>Coreopsis lanceolata</i>	Herb	Lanceleaf Coreopsis	2
All Year	<i>Carex vulpinoidea</i>	Herb	Fox Sedge	3
All Year	<i>Panicum clandestinum</i>	Herb	Deertongue	4

Herbaceous Plugs				
Scientific Name	Common Name	Max Spacing	Indiv. Spacing	Min. Size
<i>Juncus effusus</i>	Common Rush	3ft	3ft	1'-2" plug
<i>Carex lurida</i>	Shallow Sedge	3ft	3ft	1'-2" plug

Live Stake		
Scientific Name	Common Name	%
<i>Salix serotina</i>	Silky Willow	40%
<i>Cornus amomum</i>	Silky Dogwood	30%
<i>Sambucus canadensis</i>	Elderberry	30%

NOTE:
HATCHING, AS SHOWN, IS SYMBOLIC. ACTUAL PLACEMENT RELATIVE TO BANK SHALL OCCUR ACCORDING TO DETAIL 3/6.5. HERBACEOUS PLUGS SHALL BE EQUAL MIX OF SPECIFIED SPECIES.

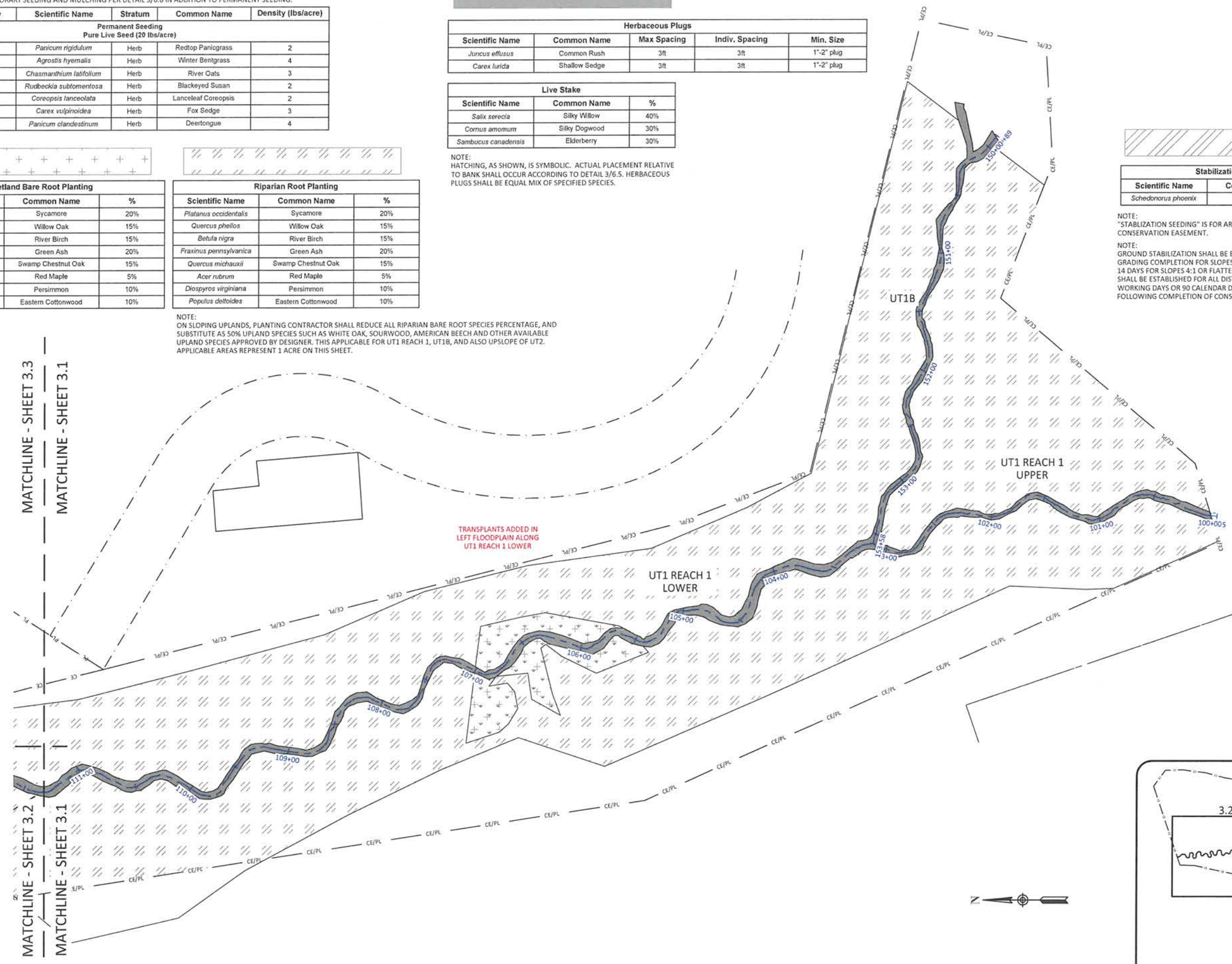
Wetland Bare Root Planting			Riparian Root Planting		
Scientific Name	Common Name	%	Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%	<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%	<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%	<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%	<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%	<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%	<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%	<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%	<i>Populus deltoides</i>	Eastern Cottonwood	10%

NOTE:
ON SLOPING UPLANDS, PLANTING CONTRACTOR SHALL REDUCE ALL RIPARIAN BARE ROOT SPECIES PERCENTAGE, AND SUBSTITUTE AS 50% UPLAND SPECIES SUCH AS WHITE OAK, SOURWOOD, AMERICAN BEECH AND OTHER AVAILABLE UPLAND SPECIES APPROVED BY DESIGNER. THIS APPLICABLE FOR UT1 REACH 1, UT1B, AND ALSO UPLSOPPE OF UT2. APPLICABLE AREAS REPRESENT 1 ACRE ON THIS SHEET.



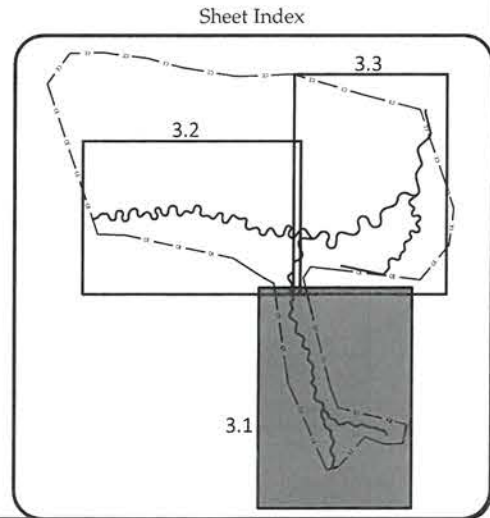
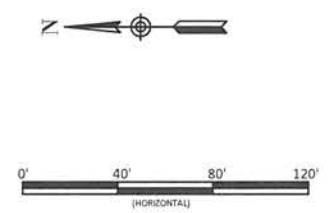
Stabilization Seeding		
Scientific Name	Common Name	lb/acre
<i>Schedonorus phoenix</i>	Tall Fescue	100

NOTE:
"STABILIZATION SEEDING" IS FOR AREAS OF DISTURBANCE OUTSIDE CONSERVATION EASEMENT.
NOTE:
GROUND STABILIZATION SHALL BE ESTABLISHED WITHIN 7 DAYS OF GRADING COMPLETION FOR SLOPES STEEPER THAN 4:1 AND WITHIN 14 DAYS FOR SLOPES 4:1 OR FLATTER. PERMANENT GROUND COVER SHALL BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION.



MATCHLINE - SHEET 3.2
MATCHLINE - SHEET 3.1
MATCHLINE - SHEET 3.2
MATCHLINE - SHEET 3.1

TRANSPLANTS ADDED IN LEFT FLOODPLAIN ALONG UT1 REACH 1 LOWER



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina
Planting Plan

Date: May 25, 2016
Job Number: 005-07143
Project Engineer: JPM
Drawn By: RCT
Checked By: JPM

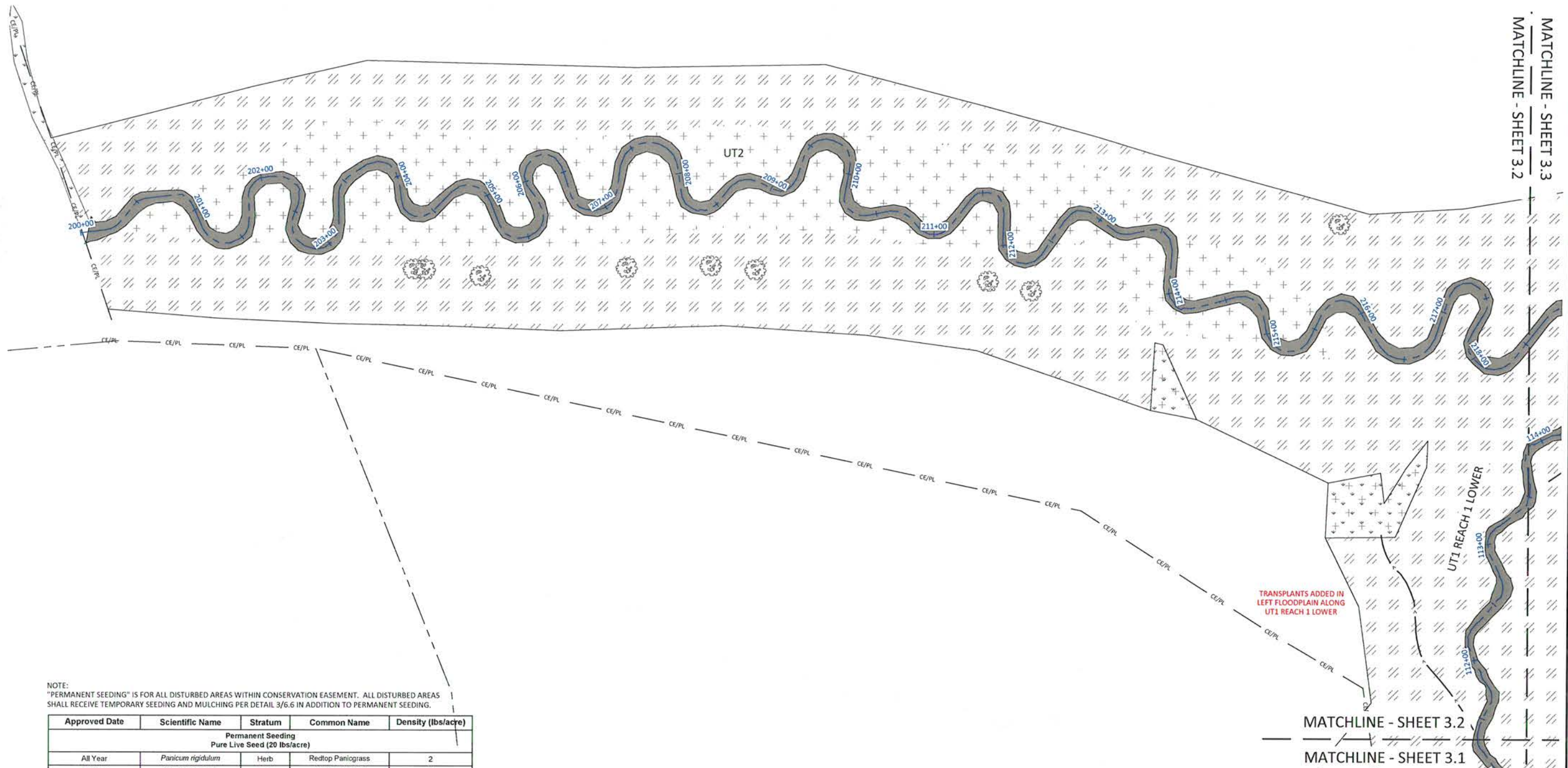
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Sheet

May 25, 2016



MATCHLINE - SHEET 3.3
MATCHLINE - SHEET 3.2

NOTE: "PERMANENT SEEDING" IS FOR ALL DISTURBED AREAS WITHIN CONSERVATION EASEMENT. ALL DISTURBED AREAS SHALL RECEIVE TEMPORARY SEEDING AND MULCHING PER DETAIL 3/6.6 IN ADDITION TO PERMANENT SEEDING.

Approved Date	Scientific Name	Stratum	Common Name	Density (lbs/acre)
Permanent Seeding Pure Live Seed (20 lbs/acre)				
All Year	<i>Panicum rigidulum</i>	Herb	Redtop Panicgrass	2
All Year	<i>Agrostis hyemalis</i>	Herb	Winter Bentgrass	4
All Year	<i>Chasmanthium latifolium</i>	Herb	River Oats	3
All Year	<i>Rudbeckia subtomentosa</i>	Herb	Blackeyed Susan	2
All Year	<i>Coreopsis lanceolata</i>	Herb	Lanceleaf Coreopsis	2
All Year	<i>Carex vulpinoidea</i>	Herb	Fox Sedge	3
All Year	<i>Panicum clandestinum</i>	Herb	Deertongue	4

Wetland Bare Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

Riparian Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

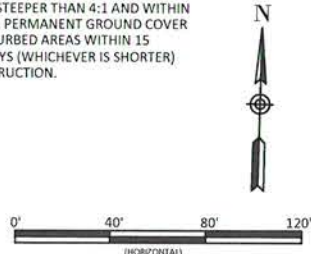
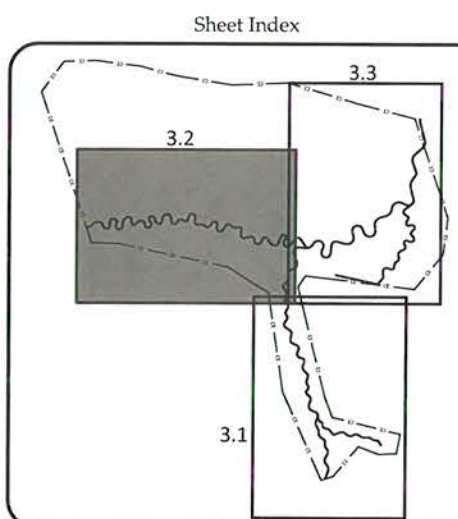
Herbaceous Plugs				
Scientific Name	Common Name	Max Spacing	Indiv. Spacing	Min. Size
<i>Juncus effusus</i>	Common Rush	3ft	3ft	1'-2" plug
<i>Carex lurida</i>	Shallow Sedge	3ft	3ft	1'-2" plug

Live Stake		
Scientific Name	Common Name	%
<i>Salix sericea</i>	Silky Willow	40%
<i>Cornus amomum</i>	Silky Dogwood	30%
<i>Sambucus canadensis</i>	Elderberry	30%

NOTE: HATCHING, AS SHOWN, IS SYMBOLIC. ACTUAL PLACEMENT RELATIVE TO BANK SHALL OCCUR ACCORDING TO DETAIL 3/6.5. HERBACEOUS PLUGS SHALL BE EQUAL MIX OF SPECIFIED SPECIES.

Stabilization Seeding		
Scientific Name	Common Name	lb/acre
<i>Schedonorus phoenix</i>	Tall Fescue	100

NOTE: "STABILIZATION SEEDING" IS FOR AREAS OF DISTURBANCE OUTSIDE CONSERVATION EASEMENT.
NOTE: GROUND STABILIZATION SHALL BE ESTABLISHED WITHIN 7 DAYS OF GRADING COMPLETION FOR SLOPES STEEPER THAN 4:1 AND WITHIN 14 DAYS FOR SLOPES 4:1 OR FLATTER. PERMANENT GROUND COVER SHALL BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION.



Henry Fork Mitigation Site Record Drawings
Catawba County, North Carolina
Planting Plan

DATE: May 25, 2016
JOB NUMBER: 005-02143
PROJECT ENGINEER: JPM
DRAWN BY: RCT
CHECKED BY: JPM

3.2

WILDLANDS
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FIRM LICENSE NO. F-0831



May 25, 2016
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Approved Date	Scientific Name	Stratum	Common Name	Density (lbs/acre)
Permanent Seeding Pure Live Seed (20 lbs/acre)				
All Year	<i>Panicum rigidulum</i>	Herb	Redtop Panicgrass	2
All Year	<i>Agrostis hyemalis</i>	Herb	Winter Bentgrass	4
All Year	<i>Chasmanthium latifolium</i>	Herb	River Oats	3
All Year	<i>Rudbeckia subtomentosa</i>	Herb	Blackeyed Susan	2
All Year	<i>Coreopsis lanceolata</i>	Herb	Lanceleaf Coreopsis	2
All Year	<i>Carex vulpinoidea</i>	Herb	Fox Sedge	3
All Year	<i>Panicum clandestinum</i>	Herb	Deertongue	4

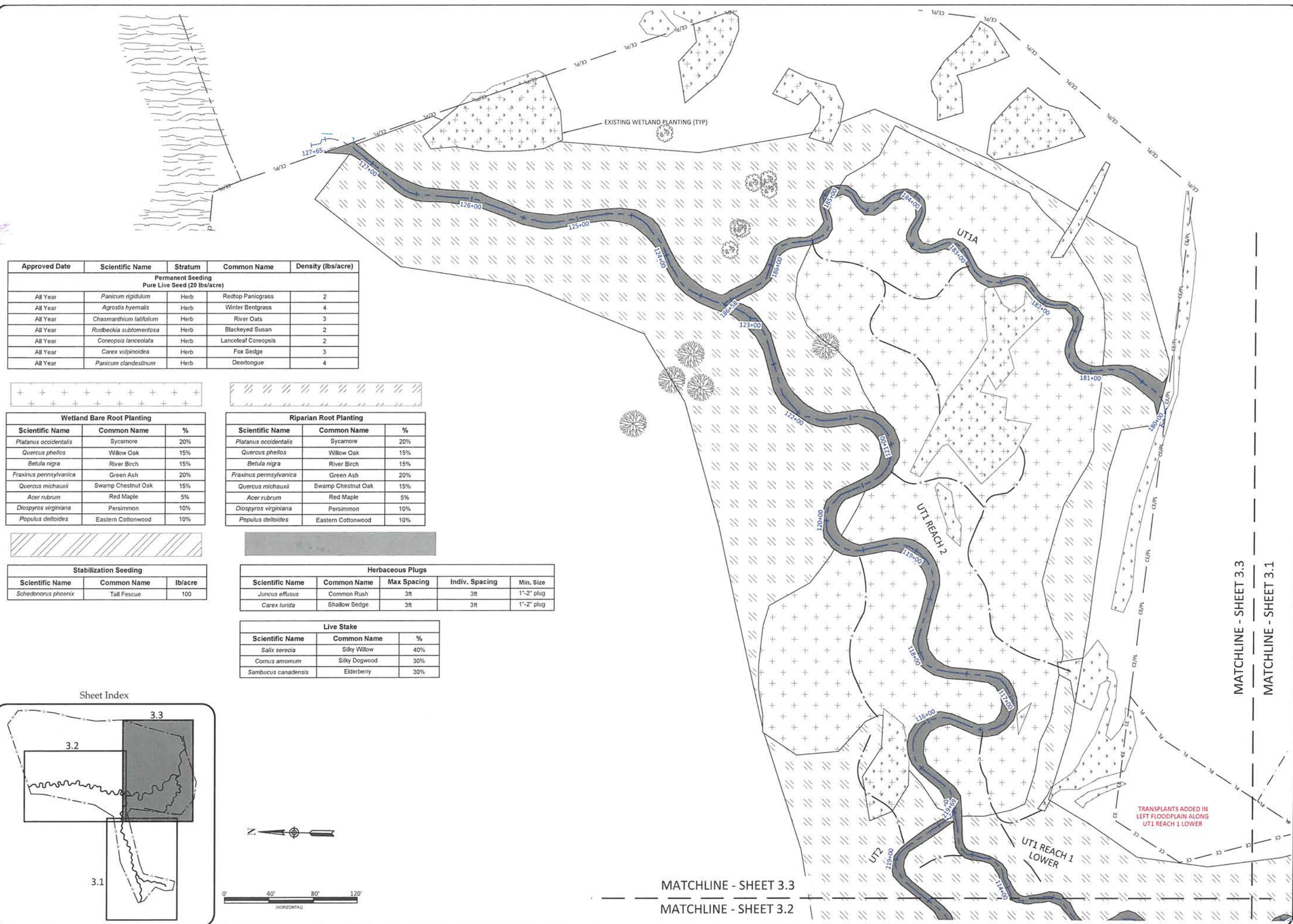
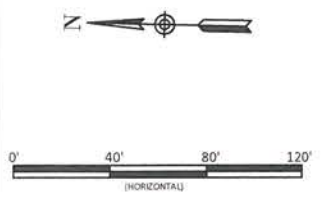
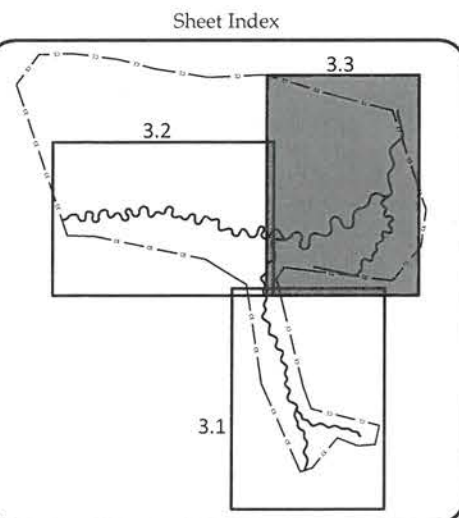
Wetland Bare Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

Riparian Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

Stabilization Seeding		
Scientific Name	Common Name	lb/acre
<i>Schedonorus phoenix</i>	Tall Fescue	100

Herbaceous Plugs				
Scientific Name	Common Name	Max Spacing	Indiv. Spacing	Min. Size
<i>Juncus effusus</i>	Common Rush	3ft	3ft	1'-2" plug
<i>Carex lurida</i>	Shallow Sedge	3ft	3ft	1'-2" plug

Live Stake		
Scientific Name	Common Name	%
<i>Salix sericea</i>	Silky Willow	40%
<i>Cornus amomum</i>	Silky Dogwood	30%
<i>Sambucus canadensis</i>	Elderberry	30%



MATCHLINE - SHEET 3.3
 MATCHLINE - SHEET 3.1

MATCHLINE - SHEET 3.3
 MATCHLINE - SHEET 3.2

TRANSPLANTS ADDED IN LEFT FLOODPLAIN ALONG UT1 REACH 1 LOWER


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Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 Planting Plan

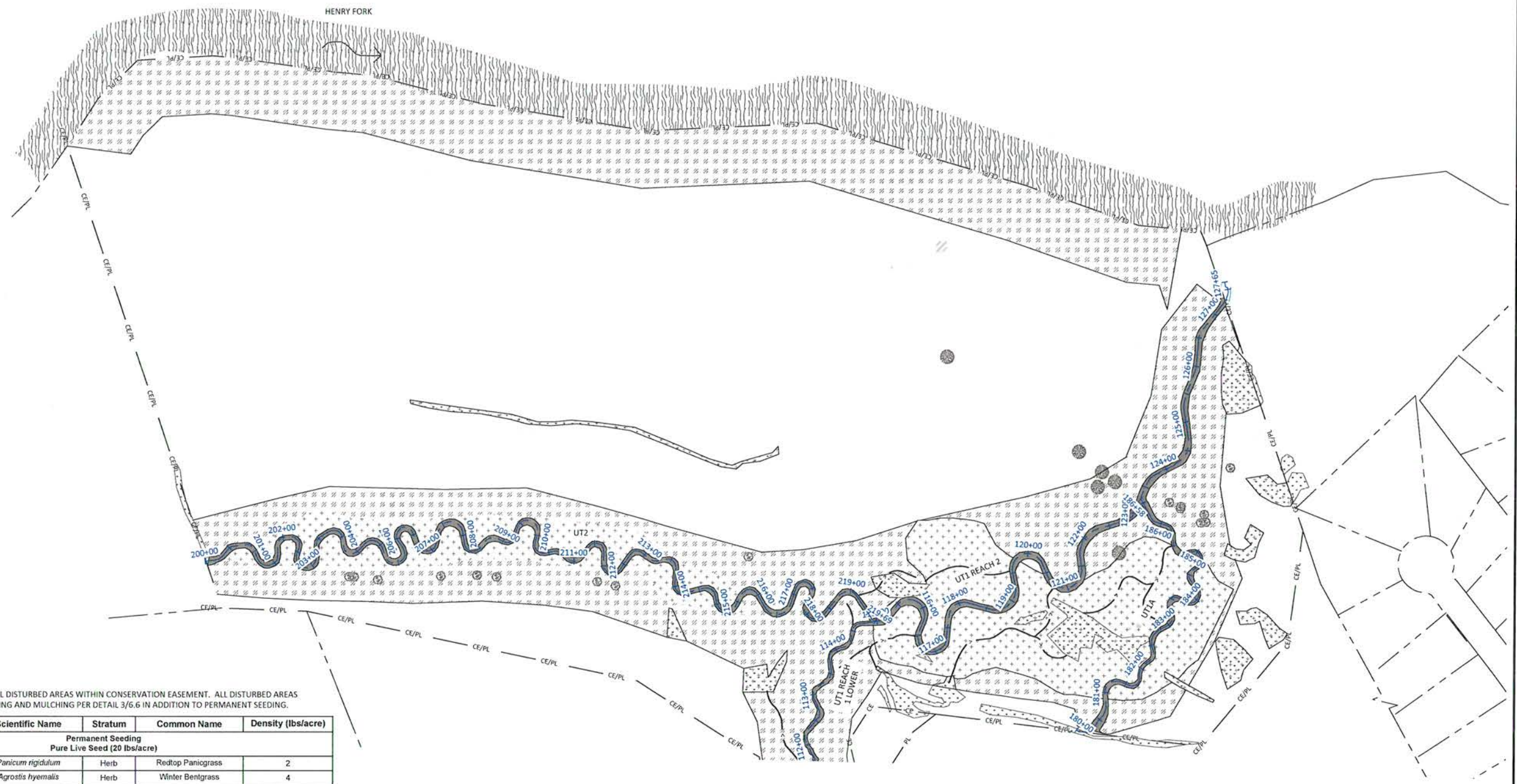
Revisions	

Date:	May 25, 2016
Job Number:	005-07143
Project Engineer:	JPM
Drawn By:	RCT
Checked By:	JPM

3.3

Sheet

May 25, 2016
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NOTE:
 "PERMANENT SEEDING" IS FOR ALL DISTURBED AREAS WITHIN CONSERVATION EASEMENT. ALL DISTURBED AREAS SHALL RECEIVE TEMPORARY SEEDING AND MULCHING PER DETAIL 3/6.6 IN ADDITION TO PERMANENT SEEDING.

Approved Date	Scientific Name	Stratum	Common Name	Density (lbs/acre)
Permanent Seeding Pure Live Seed (20 lbs/acre)				
All Year	<i>Panicum rigidulum</i>	Herb	Redtop Panicgrass	2
All Year	<i>Agrostis hyemalis</i>	Herb	Winter Bentgrass	4
All Year	<i>Chasmanthium latifolium</i>	Herb	River Oats	3
All Year	<i>Rudbeckia subtomentosa</i>	Herb	Blackeyed Susan	2
All Year	<i>Coreopsis lanceolata</i>	Herb	Lanceleaf Coreopsis	2
All Year	<i>Carex vulpinoidea</i>	Herb	Fox Sedge	3
All Year	<i>Panicum clandestinum</i>	Herb	Deertongue	4

Herbaceous Plugs				
Scientific Name	Common Name	Max Spacing	Indiv. Spacing	Min. Size
<i>Juncus effusus</i>	Common Rush	3ft	3ft	1'-2" plug
<i>Carex lurida</i>	Shallow Sedge	3ft	3ft	1'-2" plug

Stabilization Seeding		
Scientific Name	Common Name	lb/acre
<i>Schedonorus phoenix</i>	Tall Fescue	100

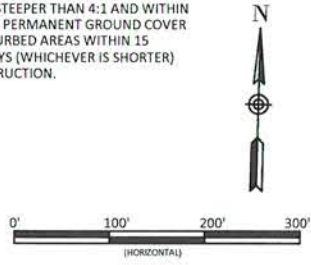
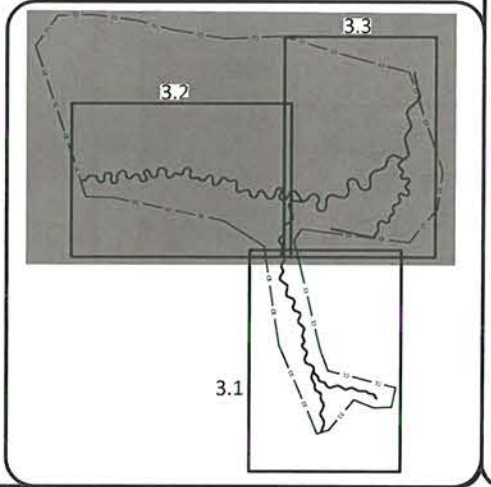
Live Stake		
Scientific Name	Common Name	%
<i>Salix sericea</i>	Silky Willow	40%
<i>Cornus amomum</i>	Silky Dogwood	30%
<i>Sambucus canadensis</i>	Elderberry	30%

NOTE:
 HATCHING, AS SHOWN, IS SYMBOLIC. ACTUAL PLACEMENT RELATIVE TO BANK SHALL OCCUR ACCORDING TO DETAIL 3/6.5. HERBACEOUS PLUGS SHALL BE EQUAL MIX OF SPECIFIED SPECIES.

Wetland Bare Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

Riparian Root Planting		
Scientific Name	Common Name	%
<i>Platanus occidentalis</i>	Sycamore	20%
<i>Quercus phellos</i>	Willow Oak	15%
<i>Betula nigra</i>	River Birch	15%
<i>Fraxinus pennsylvanica</i>	Green Ash	20%
<i>Quercus michauxii</i>	Swamp Chestnut Oak	15%
<i>Acer rubrum</i>	Red Maple	5%
<i>Diospyros virginiana</i>	Persimmon	10%
<i>Populus deltoides</i>	Eastern Cottonwood	10%

NOTE:
 ON SLOPING UPLANDS, PLANTING CONTRACTOR SHALL REDUCE ALL RIPARIAN BARE ROOT SPECIES PERCENTAGE, AND SUBSTITUTE AS 50% UPLAND SPECIES SUCH AS WHITE OAK, SOURWOOD, AMERICAN BEECH AND OTHER AVAILABLE UPLAND SPECIES APPROVED BY DESIGNER. THIS APPLICABLE FOR UT1 REACH 1, UT1B, AND ALSO UPSLOPE OF UT2. APPLICABLE AREAS REPRESENT 2/3 ACRE ON THIS SHEET.



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Henry Fork Mitigation Site Record Drawings
 Catawba County, North Carolina
 Planting Plan

Revisions:	

Date: May 25, 2016
 Job Number: 005-02143
 Project Engineer: JPM
 Drawn By: RCP
 Checked By: JPM

3.4

Sheet