

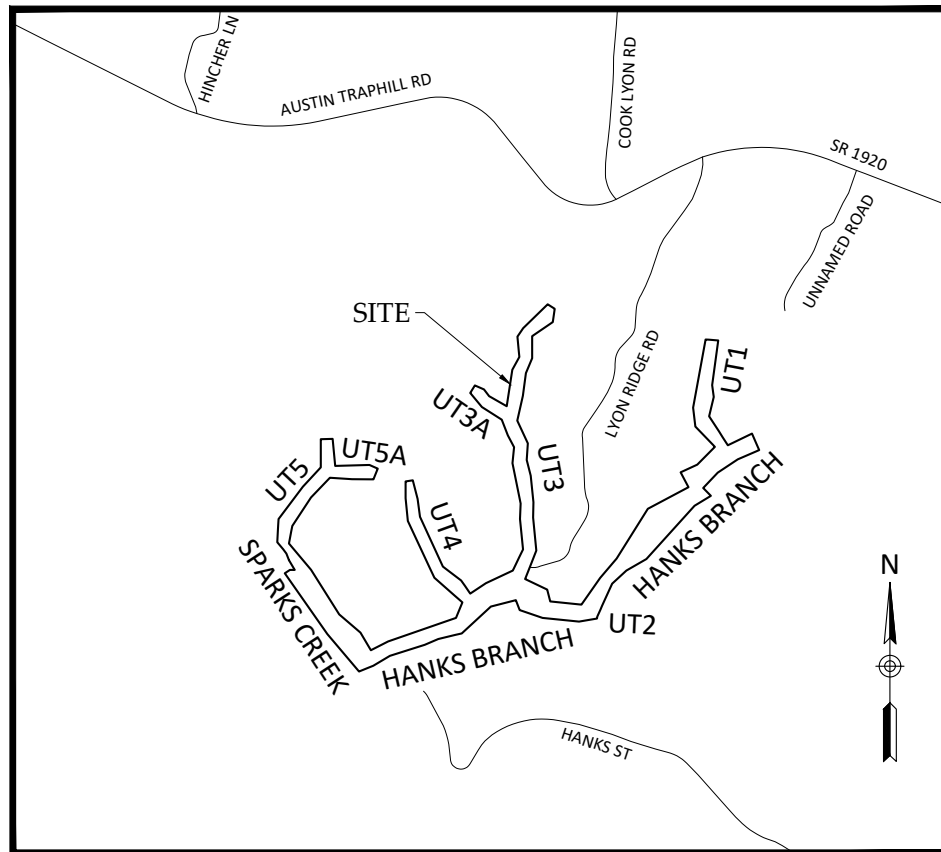
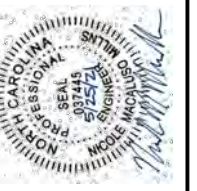
APPENDIX 5. Record Drawings

Lyon Hills Mitigation Site As-Built

Wilkes County, North Carolina

for NCDEQ

Division of Mitigation Services



Vicinity Map
Not to Scale



Sheet Index	
Title Sheet	0.1
Project Overview	0.2
General Notes and Symbols	0.3
Stream Plan & Profile	1.01-1.41
BMP Overview	2.00
BMP Plans	2.01-2.03
Planting Tables	3.00
Planting Overview	3.01
Planting Plans	3.02-3.10
Fencing Overview	4.00
Fencing Plan	4.01-4.18

Project Directory	
<p>Engineering: Wildlands Engineering, Inc License No. F-0831 312 W. Millbrook Rd, Suite 225 Raleigh, NC 27609 Jeff Keaton, PE, Project Manager Nicole Millns, PE, Project Engineer 919-851-9986</p> <p>Surveying: Kee Mapping and Surveying, PA 88 Central Avenue Asheville, NC 28801 Phillip B. Kee, PLS 828-645-8275</p>	<p>Owner: DEQ NCDMS 1652 Mail Service Center Raleigh, NC 27699-1652 Attention: Kelly Phillips 919-723-7365</p> <p>NCDEQ Contract No. 7620 DMS ID No. 100085 USACE Action ID No. SAW-2018-01784 NCDWR Project No. 2018-1274 v1</p>

**AS-BUILT AND RECORD
DRAWINGS
ISSUED MAY 28, 2021**

CERTIFICATE OF SURVEY AND ACCURACY

I, PHILLIP B. KEE, 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 KEE MAPPING AND SURVEYING, PA AS SHOWN ON AN AS-BUILT SURVEY FOR "LYON HILLS MITIGATION SITE", JOB # 2101003-AB, DATED 04/30/21; THAT THIS SURVEY WAS PERFORMED AT THE 95% CONFIDENCE LEVEL TO MEET THE FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS AND TO MEET THE REQUIREMENTS OF A TOPOGRAPHIC SURVEY TO THE ACCURACY OF CLASS A HORIZONTAL AND CLASS C VERTICAL WHERE APPLICABLE; THAT THE ORIGINAL DATA WAS OBTAINED BETWEEN THE DATES OF 02/17/21 - 04/26/21; 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 BASED 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, LICENSE NUMBER, AND SEAL THIS 10TH DAY OF JUNE, 2021, A.D.

DocuSigned by:

Phillip B. Kee

PHILLIP B. KEE, PLS L-4647



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Title Sheet

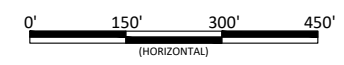
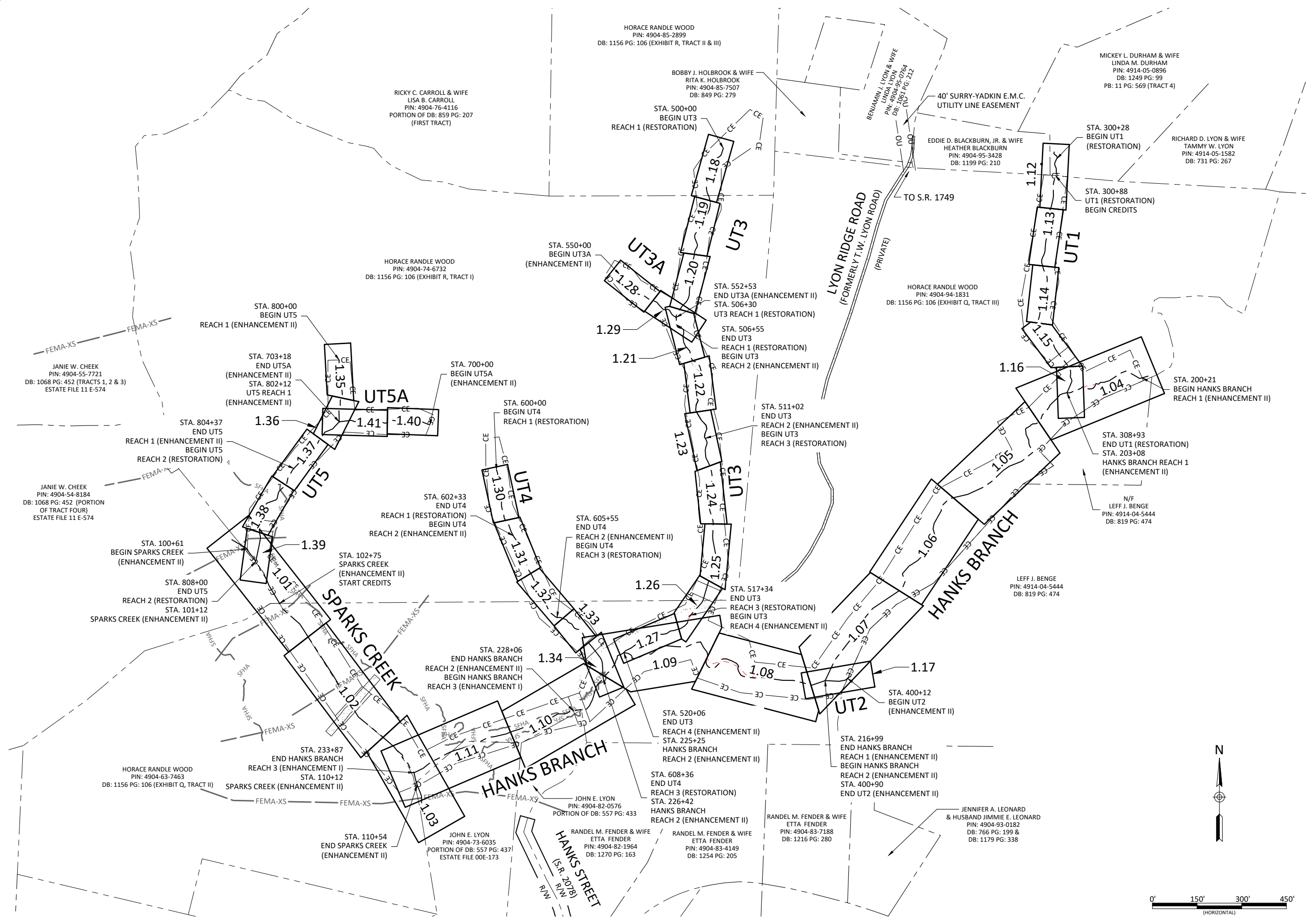
Revisions:

--	--	--	--	--	--	--	--	--	--

Date:	May 28, 2021
Job Number:	05-0217
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

0.1

June 10, 2021
X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring\2021\Plans\02177-AB General Overview.dwg



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Revisions:

No.	Description	Date

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

0.2

Sheet

Project Overview



WILDLANDS
ENGINEERING
312 W. Millbrook Rd, Suite 225
Raleigh, NC 27609
Tel: 919.851.9986
License No. F-0831

Pre-Construction Features

	EXISTING PROPERTY LINE
	EXISTING FENCING
	EXISTING STORM PIPE
	EXISTING BEDROCK
	EXISTING FARM ROAD
	EXISTING WETLAND
	EXISTING SPRING
	EXISTING ELECTRIC BOX

Design Features

	CE	CONSERVATION EASEMENT
	CE-IX	CONSERVATION EASEMENT INTERNAL CROSSING
		NOT FOR CREDIT
		DESIGN ENHANCEMENT I REACH
		DESIGN ENHANCEMENT II REACH
		DESIGN RESTORATION REACH
		DESIGN BANKFULL
	100	DESIGN MAJOR CONTOUR
		DESIGN MINOR CONTOUR
		DESIGN CULVERT
		DESIGN 5 WIRE FENCE
		DESIGN WOVEN WIRE FENCE
		DESIGN LOG VANE
		DESIGN LOG SILL
		DESIGN BOULDER SILL
		DESIGN LOG J-HOOK
		DESIGN ROCK VANE
		DESIGN ROCK STEP POOLS
		DESIGN ROCK CASCADE
		DESIGN FLOODPLAIN OUTLET
		DESIGN RIFFLE
		DESIGN STREAM BANK GRADING
		DESIGN FORD CROSSING
		DESIGN FARM ROAD
		DESIGN BOULDER TOE
		DESIGN TRANSPLANTED SOD MAT
		DESIGN BRUSH TOE
		DESIGN 2" TUBE STEEL GATE
		DESIGN DOUBLE 2" TUBE STEEL GATE

As-Built Features

	AS-BUILT STREAM ALIGNMENT	
	AS-BUILT STREAM ALIGNMENT DEVIATION	
	AS-BUILT BANKFULL	
	AS-BUILT MAJOR CONTOUR (5')	
	AS-BUILT MINOR CONTOUR (1')	
	LIMITS OF DISTURBANCE	
	AS-BUILT CULVERT	
	AS-BUILT 5 WIRE FENCE	
	AS-BUILT WOVEN WIRE FENCE	
	CROSS SECTION	
	PP ##	PHOTO POINT
	CG/FG	STREAM GAUGE - CREST/FLOW
	BAROTROLL	BAROTROLL
	VEG	VEGETATION PLOT
	VP ##	VEGETATION PLOT
		AS-BUILT LOG VANE
		AS-BUILT LOG SILL
		AS-BUILT BOULDER SILL
		AS-BUILT LOG J-HOOK
		AS-BUILT FLOODPLAIN OUTLET/RIP RAP
		AS-BUILT FARM ROAD
		AS-BUILT FORD CROSSING
		AS-BUILT RIFFLE
		AS-BUILT BOULDER TOE
		AS-BUILT TRANSPLANTED SOD MAT
		AS-BUILT BRUSH TOE
		AS-BUILT TREE
		AS-BUILT 2" TUBE STEEL GATE
		AS-BUILT DOUBLE 2" TUBE STEEL GATE

NOTE:
1. DEVIATIONS FROM THE DESIGN
WILL BE SHOWN IN RED.

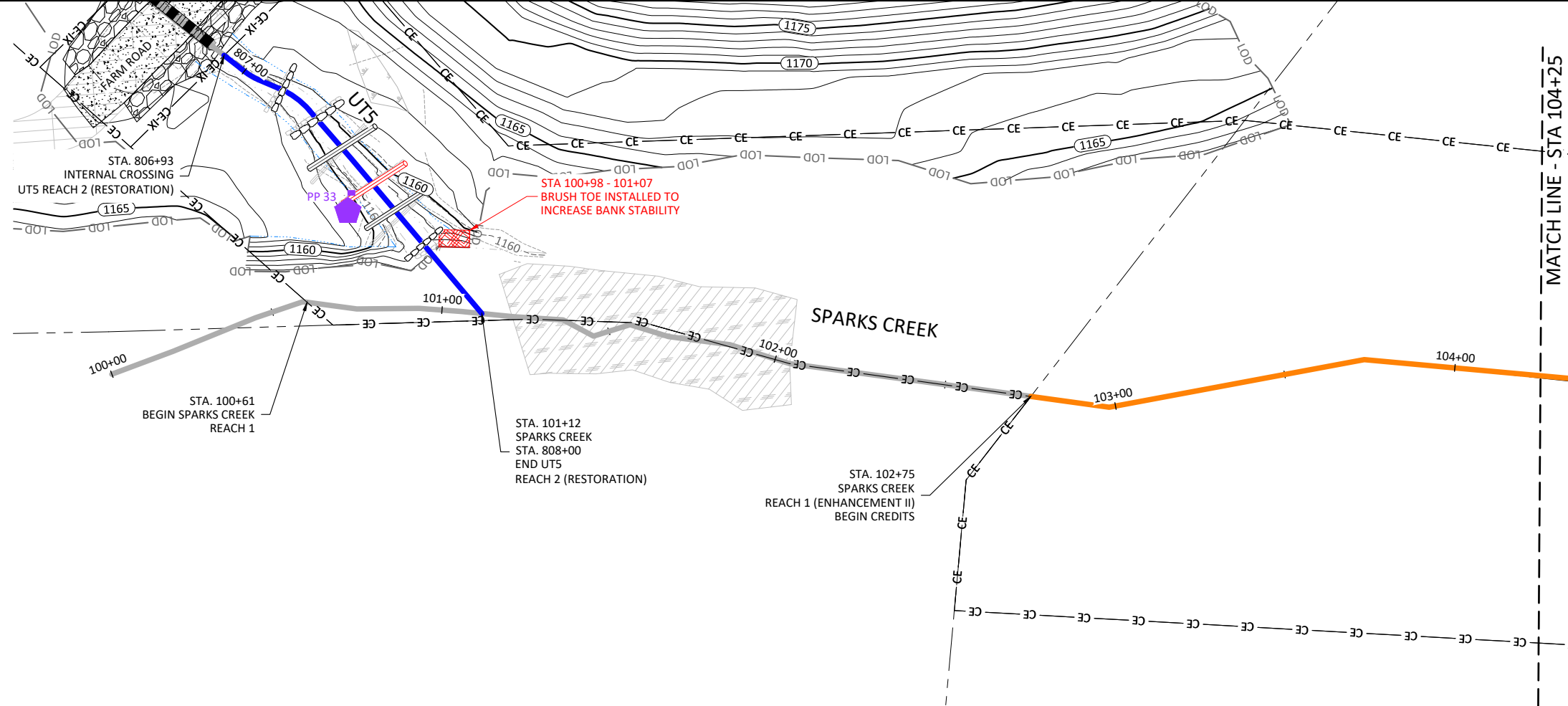


Lyon Hills Mitigation Site As-Built Wilkes County, North Carolina

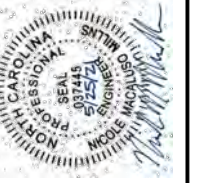
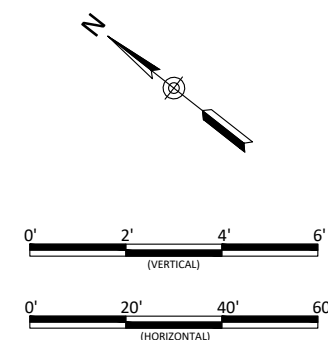
General Notes and Symbols

Revisions:	

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JMK



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT5 IS ADDRESSED ON SHEETS 1.35 THROUGH 1.39.



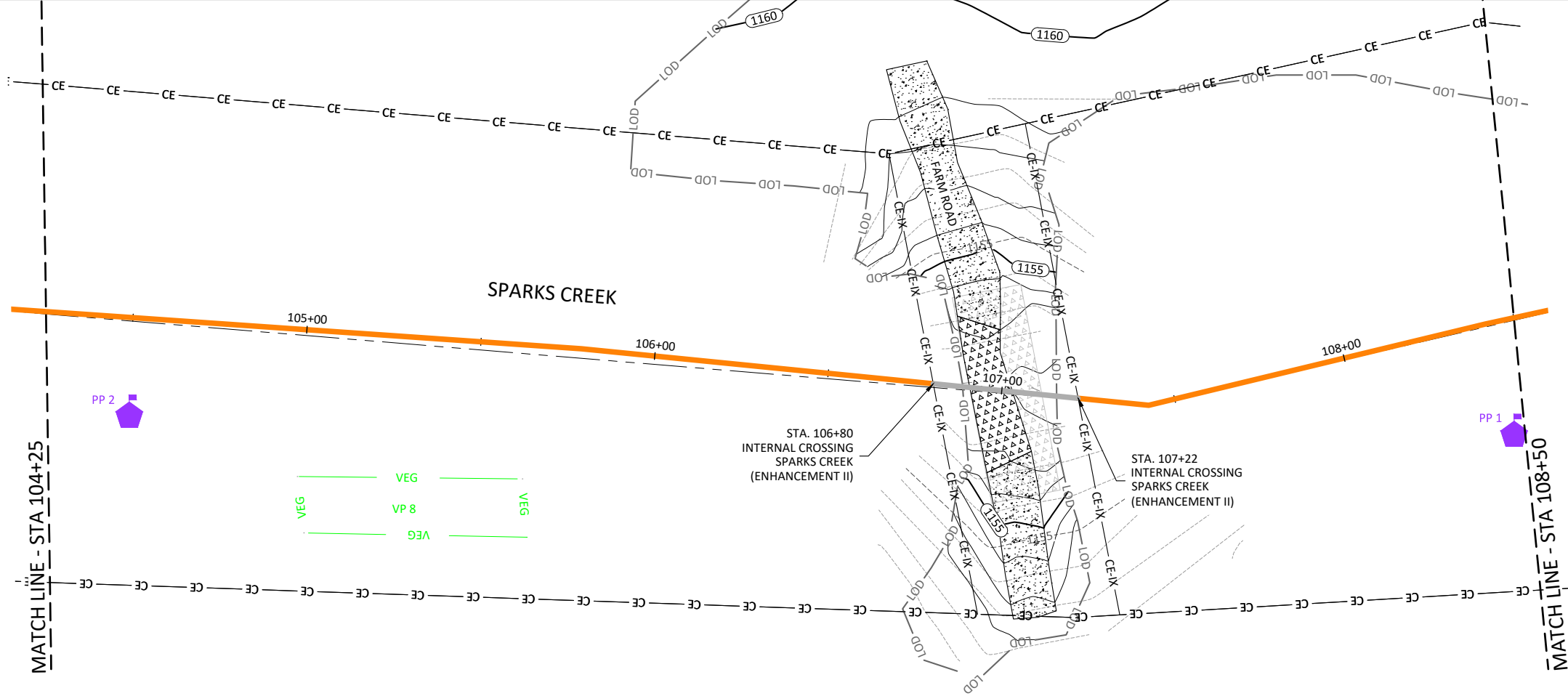
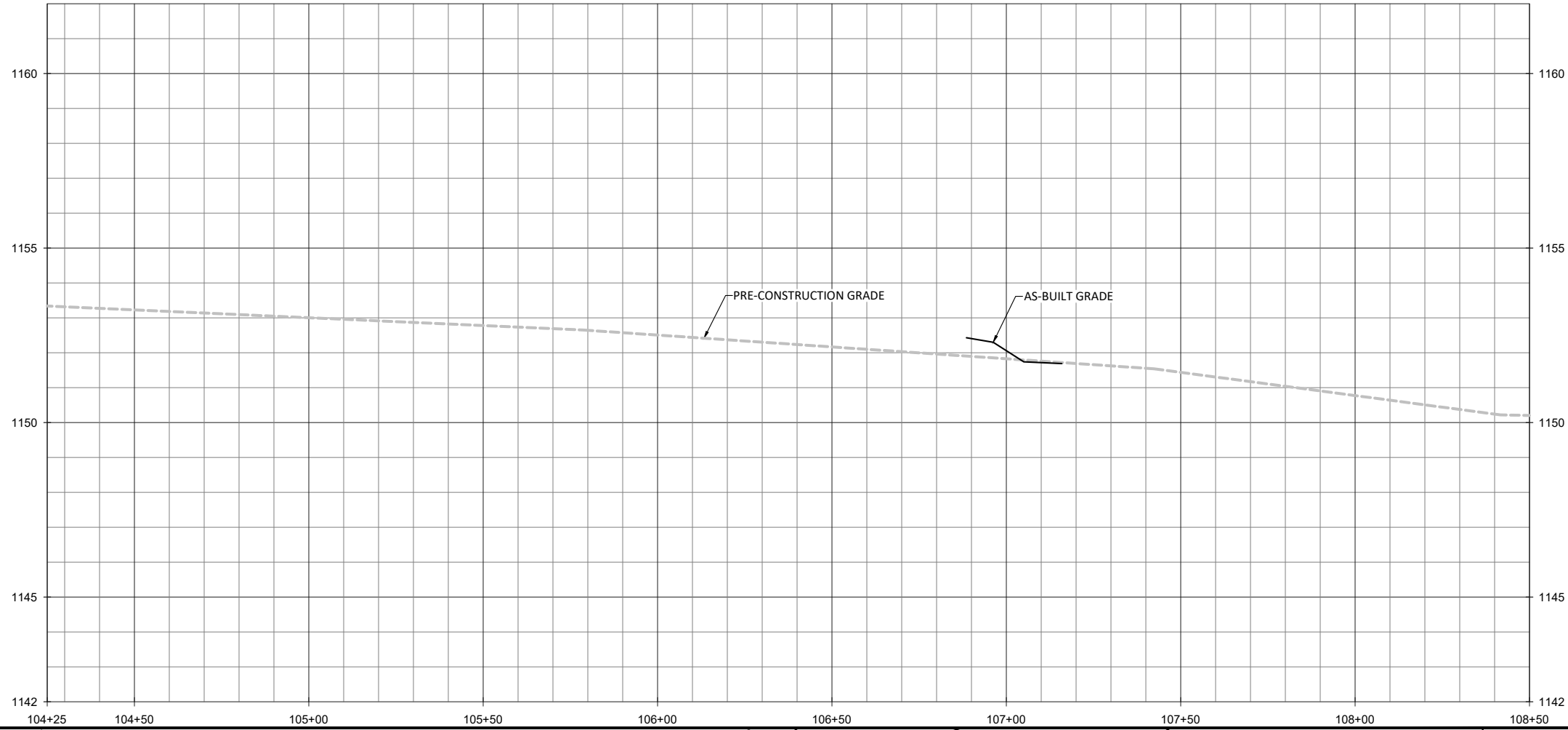
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Sparks Creek
Stream Plan and Profile

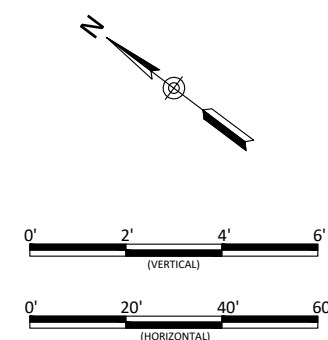
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.01



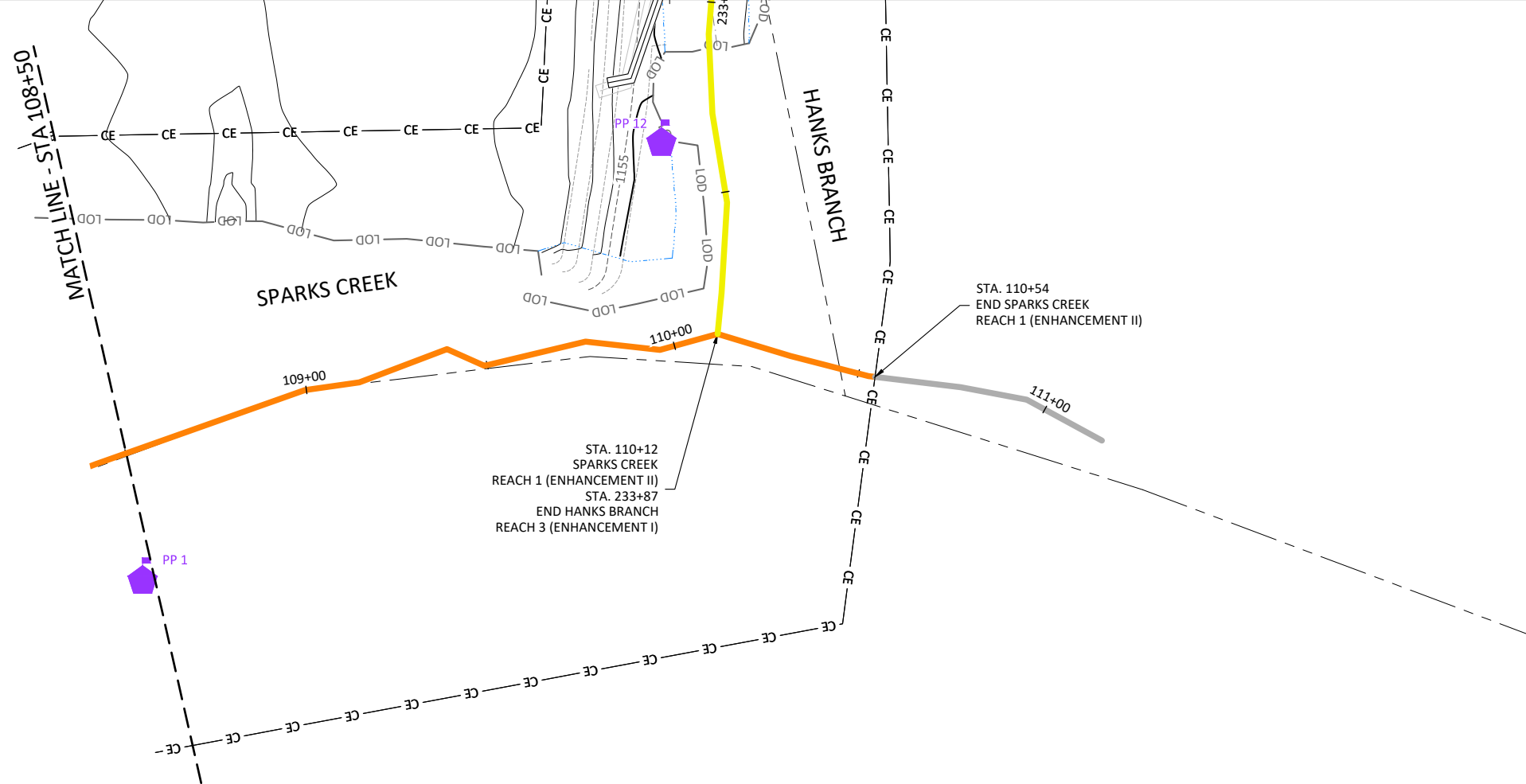
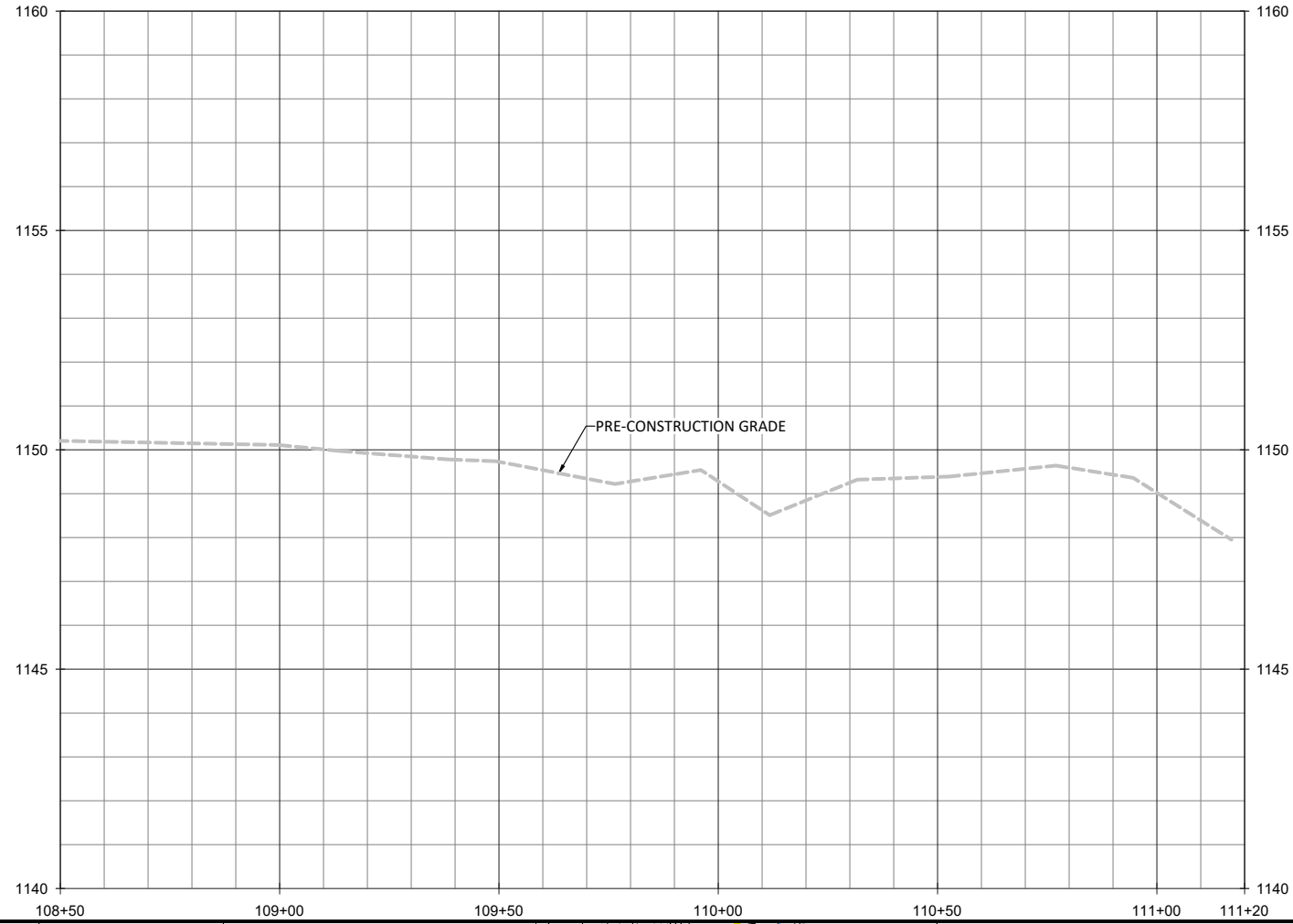
NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



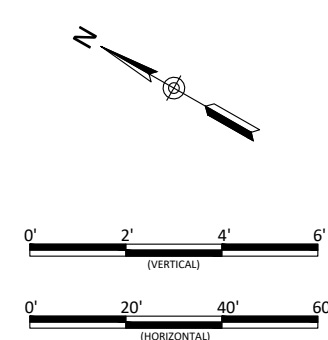
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Sparks Creek
Stream Plan and Profile

Revisions:

Date:	May 28, 2021
Job Number:	005-0217
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.

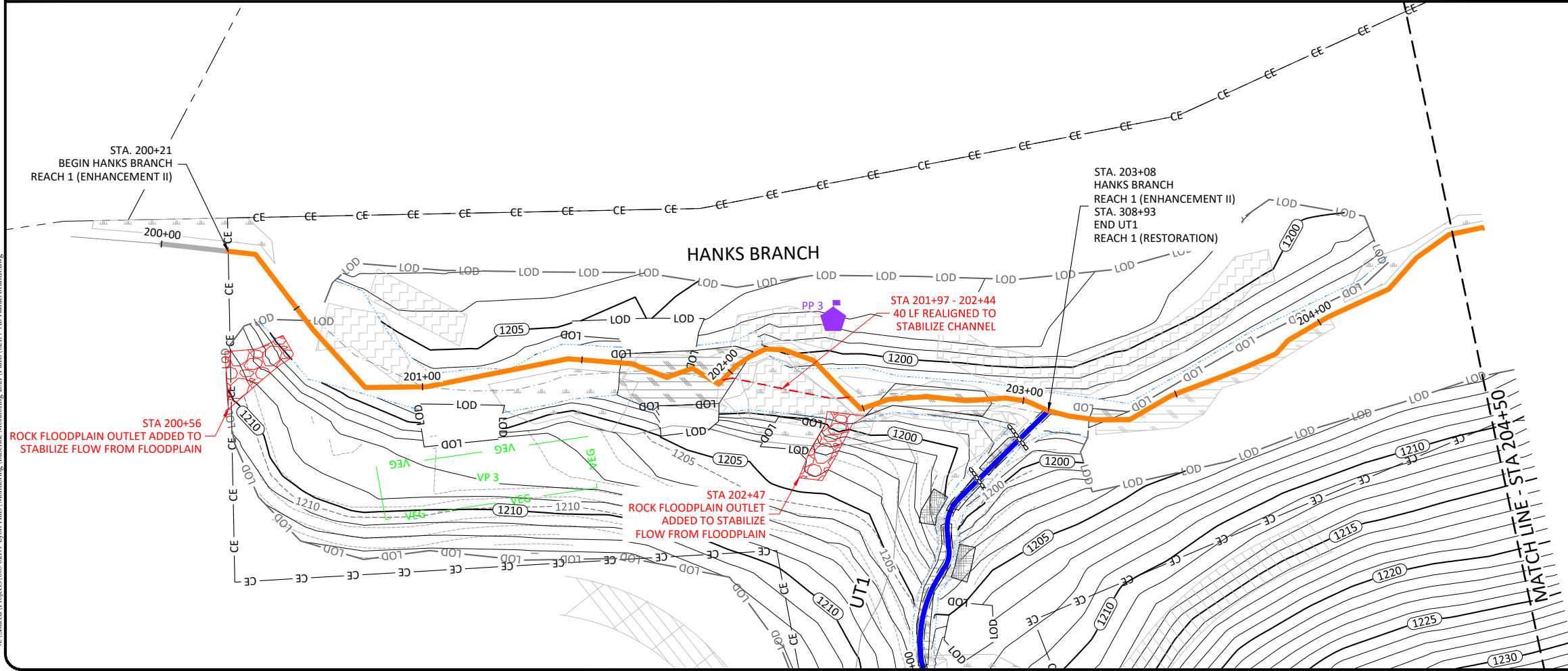


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 Sparks Creek
 Stream Plan and Profile

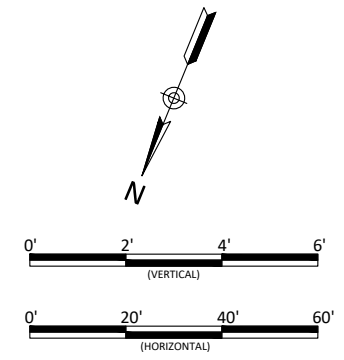
Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABF
 Checked By: JNK

June 10, 2021
X:\Shared\Projects\005-02177 Lyon Hills Monitoring Baseline Monitoring-2021\Plans\02177-AB Hanks Branch.dwg



- NOTES:**
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT1 IS ADDRESSED ON SHEETS 1.12 THROUGH 1.16



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

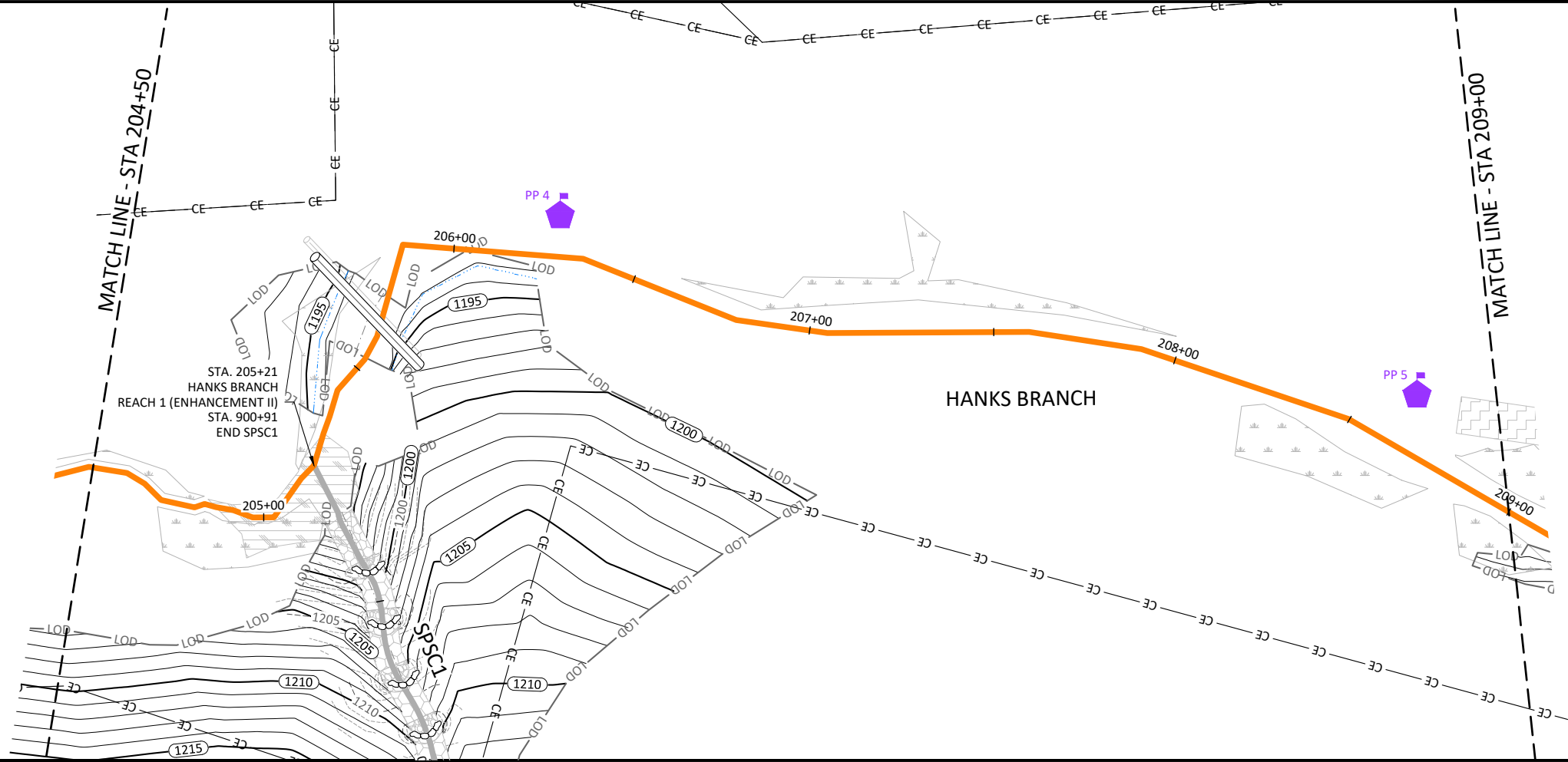
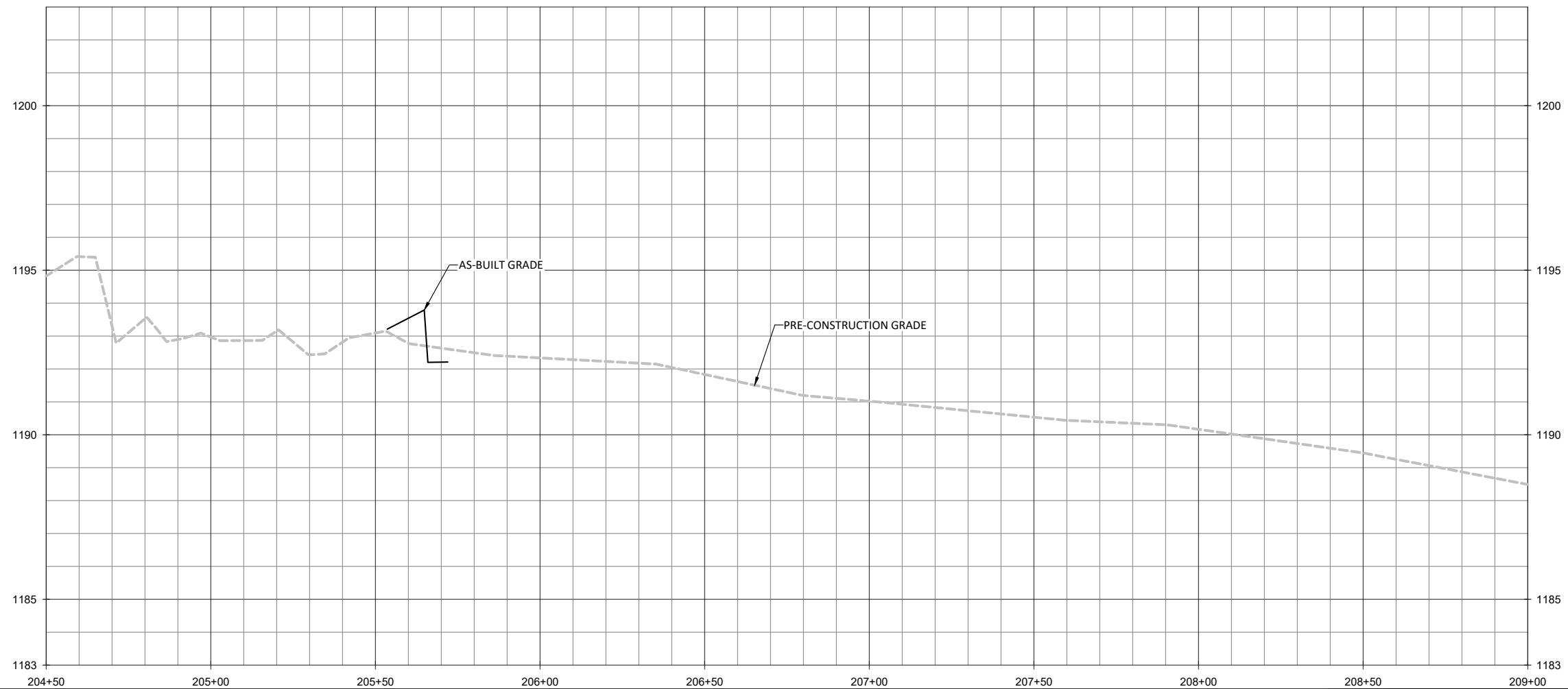
Hanks Branch
Stream Plan and Profile

Revisions:

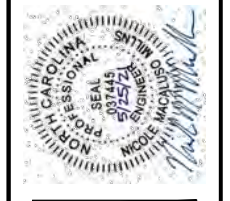
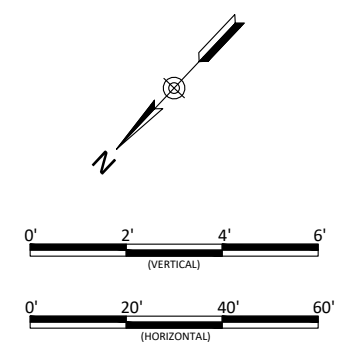
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.04

Sheet



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR SPSC1 IS ADDRESSED ON SHEET 2.01.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Stream Plan and Profile

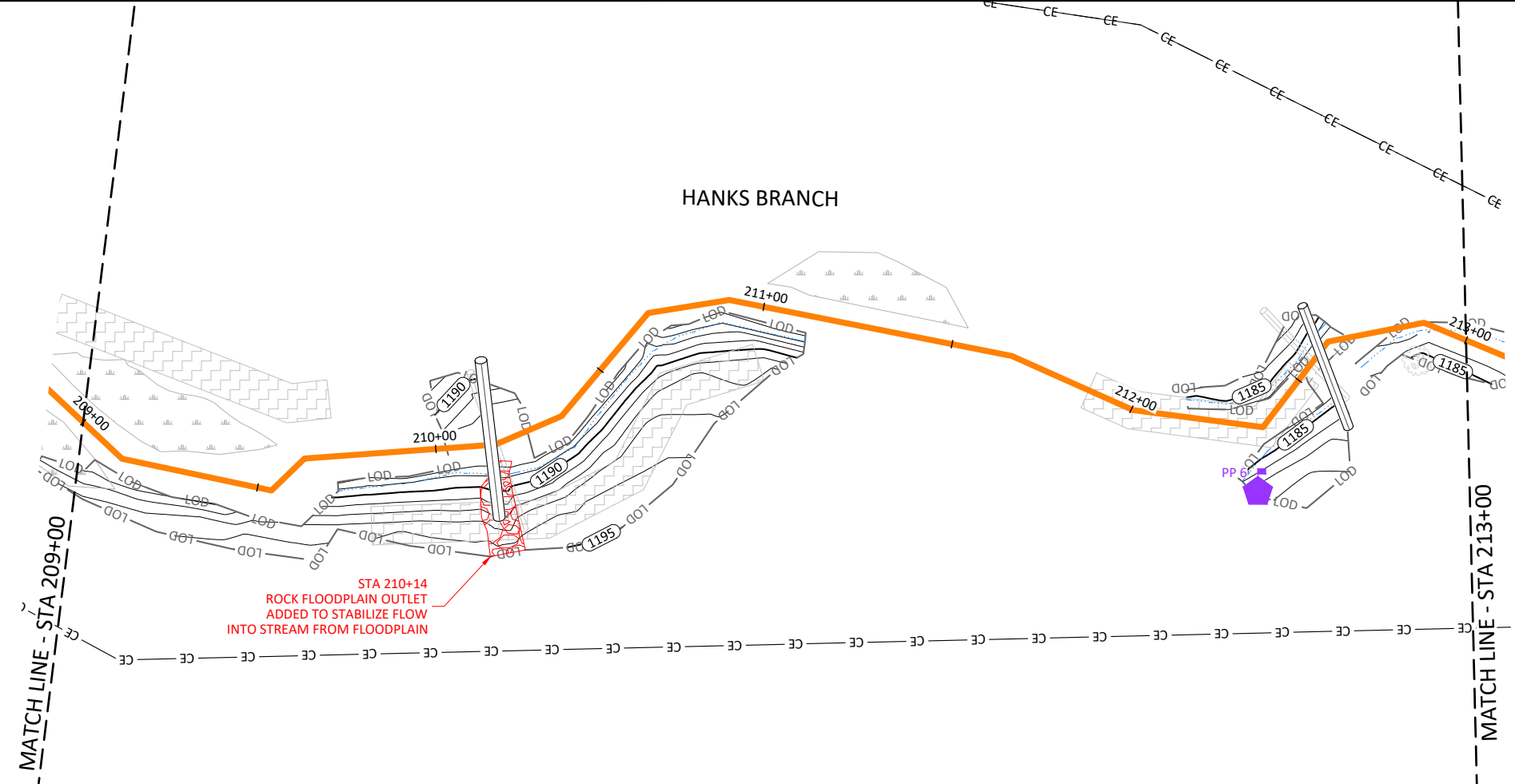
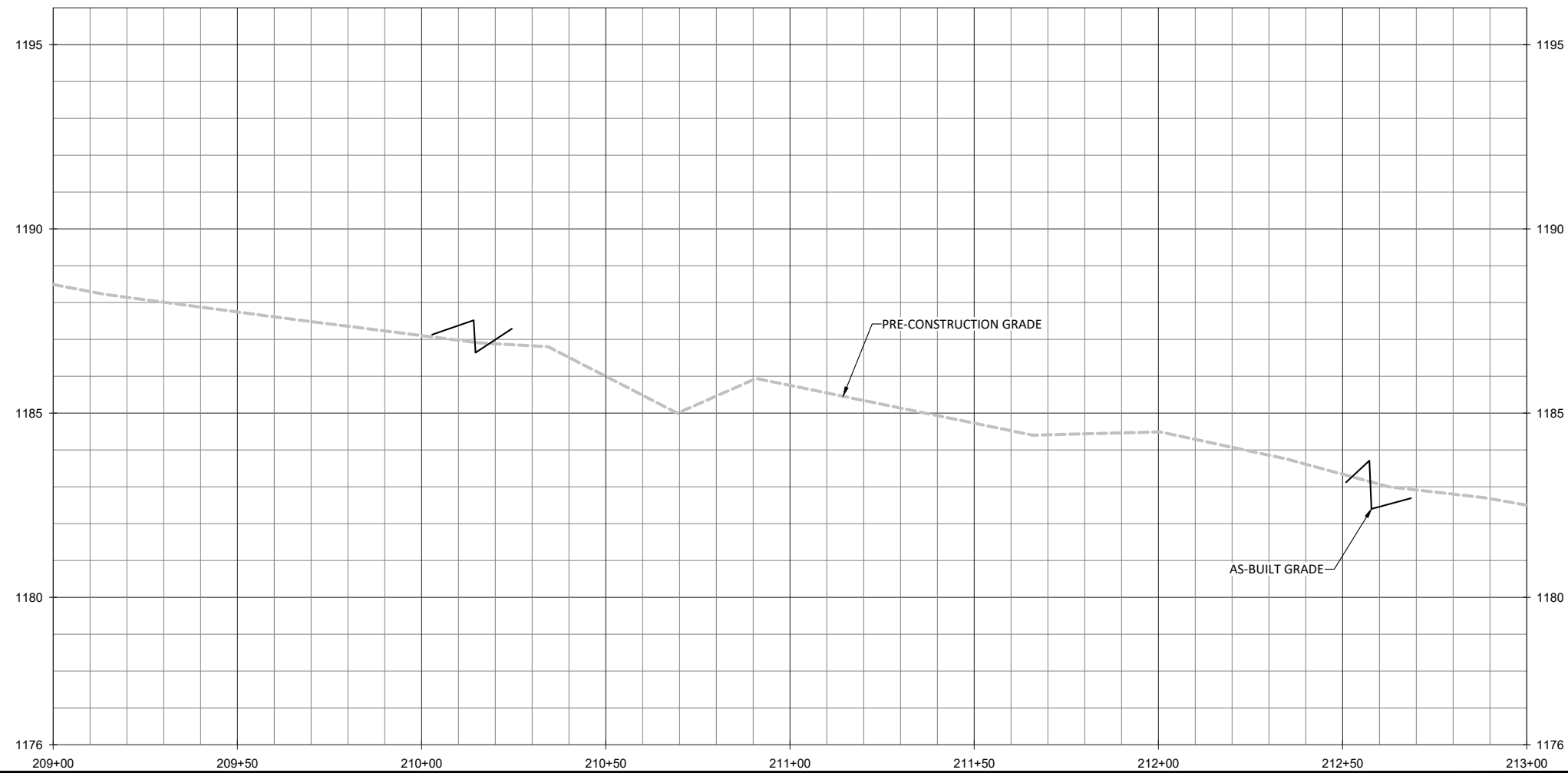
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

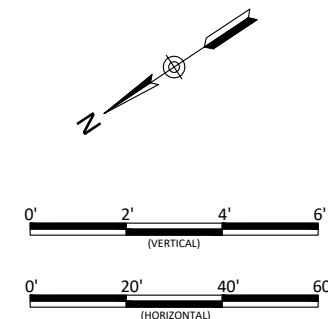
1.05

June 10, 2021

X:\Shared\Projects\005-0217-Lyon Hills Monitoring\Baseline Monitoring-2021\Plans\0217-AB Hanks Branch.dwg



NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Stream Plan and Profile

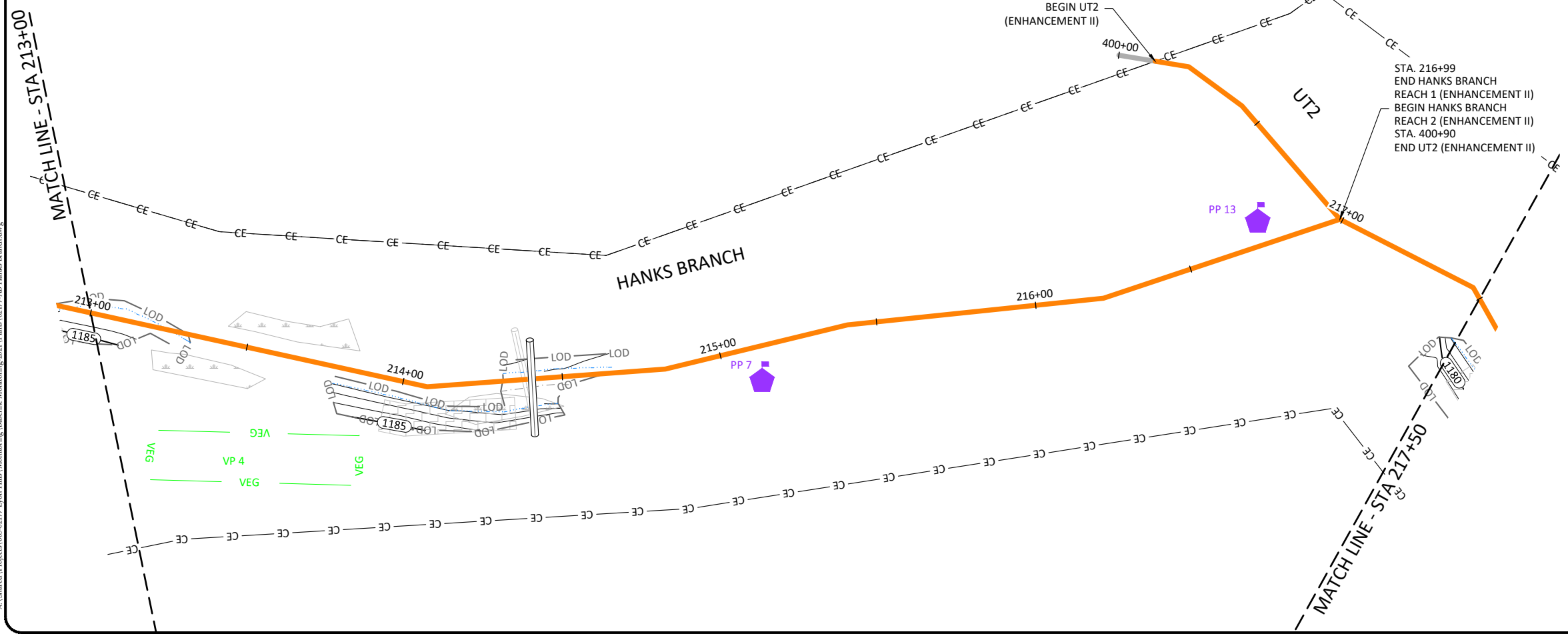
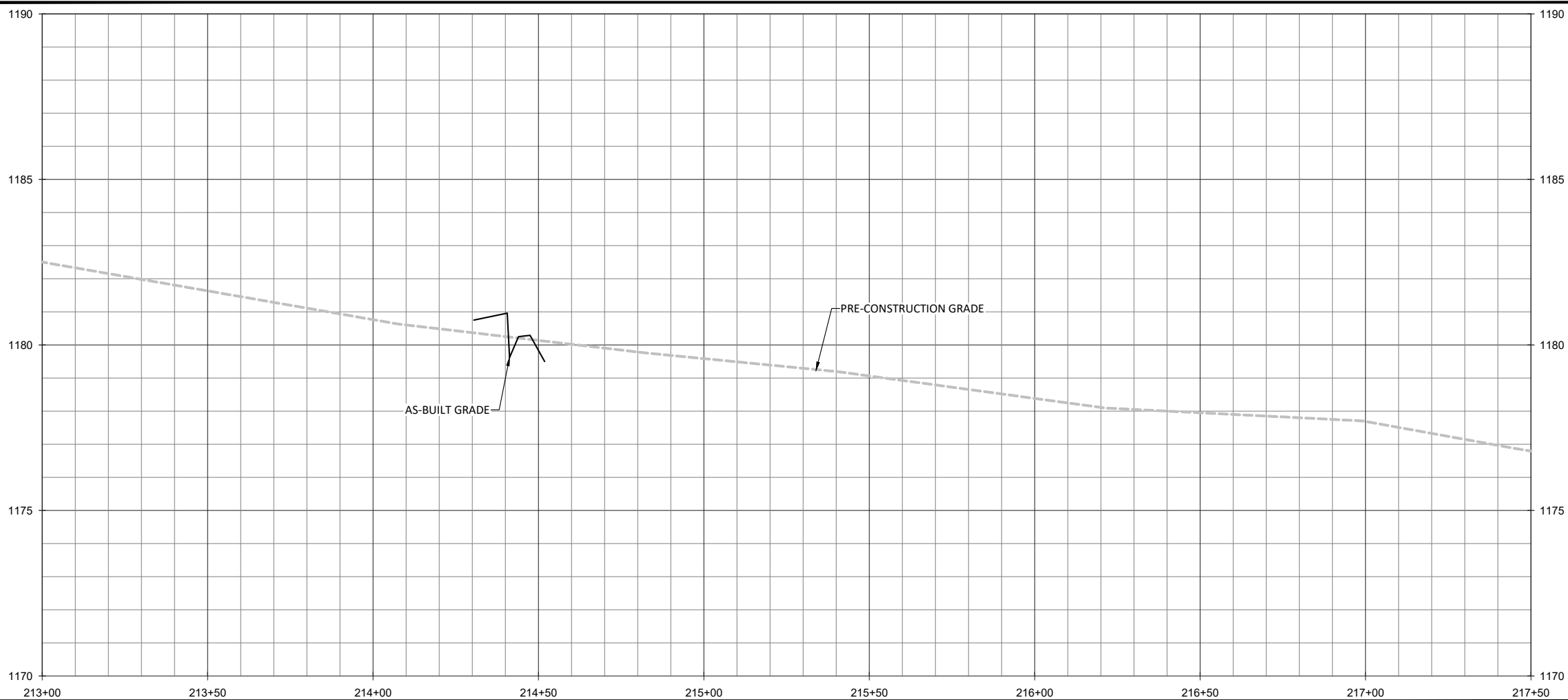
Revisions:

Date: May 28, 2021
Job Number: 005-0217
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

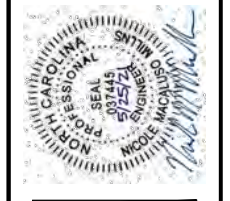
1.06

Sheet

June 10, 2021



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT2 IS ADDRESSED ON SHEET 1.17.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Stream Plan and Profile

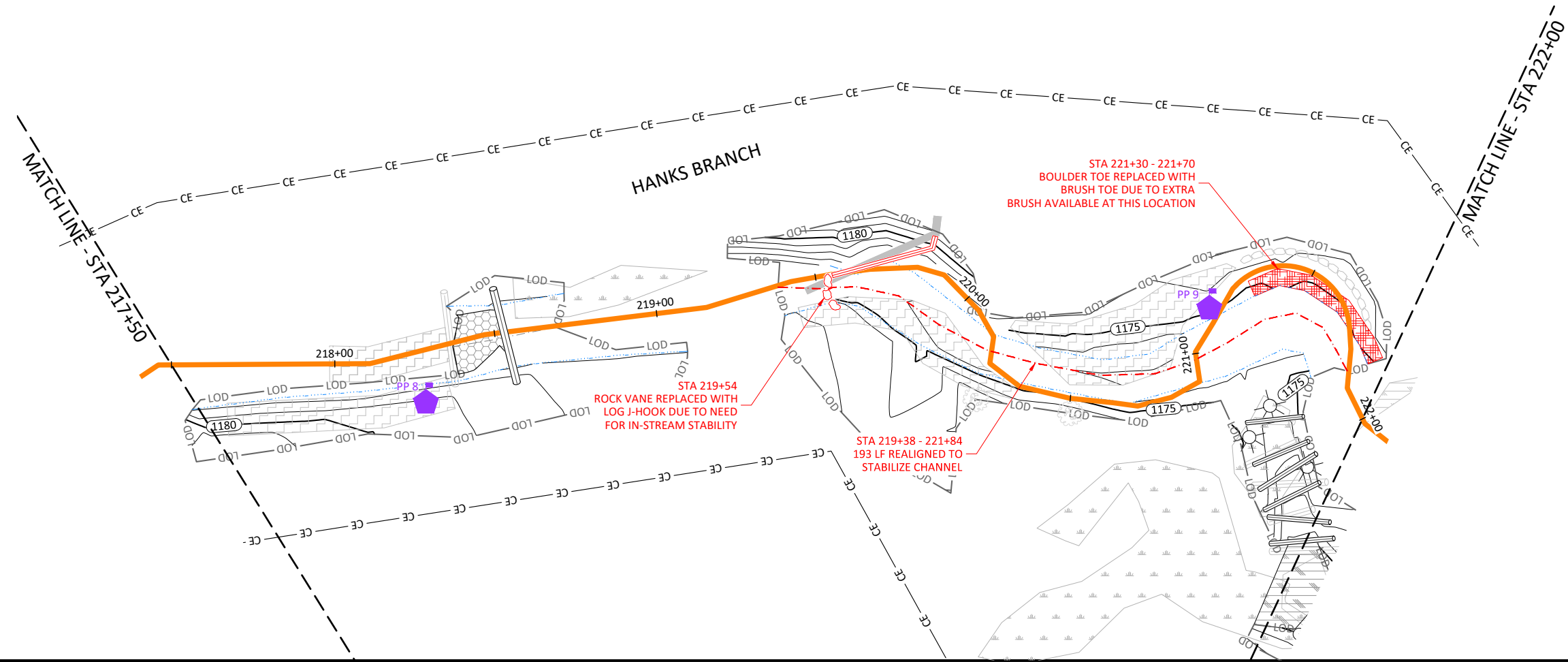
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

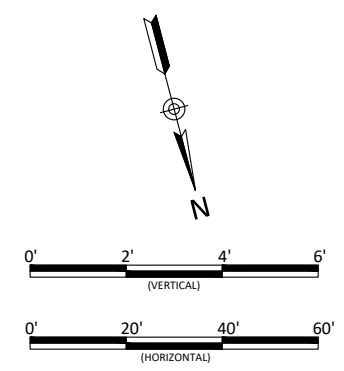
1.07

Sheet

X:\Shared\Projects\005-02177 Lyon Hills Mitigation\Baseline Monitoring\2021\Plans\02177-AB Hanks Branch.dwg

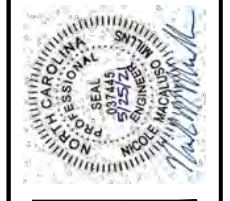


NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring\2021\Plans\02177-AB Hanks Branch.dwg

June 10, 2021

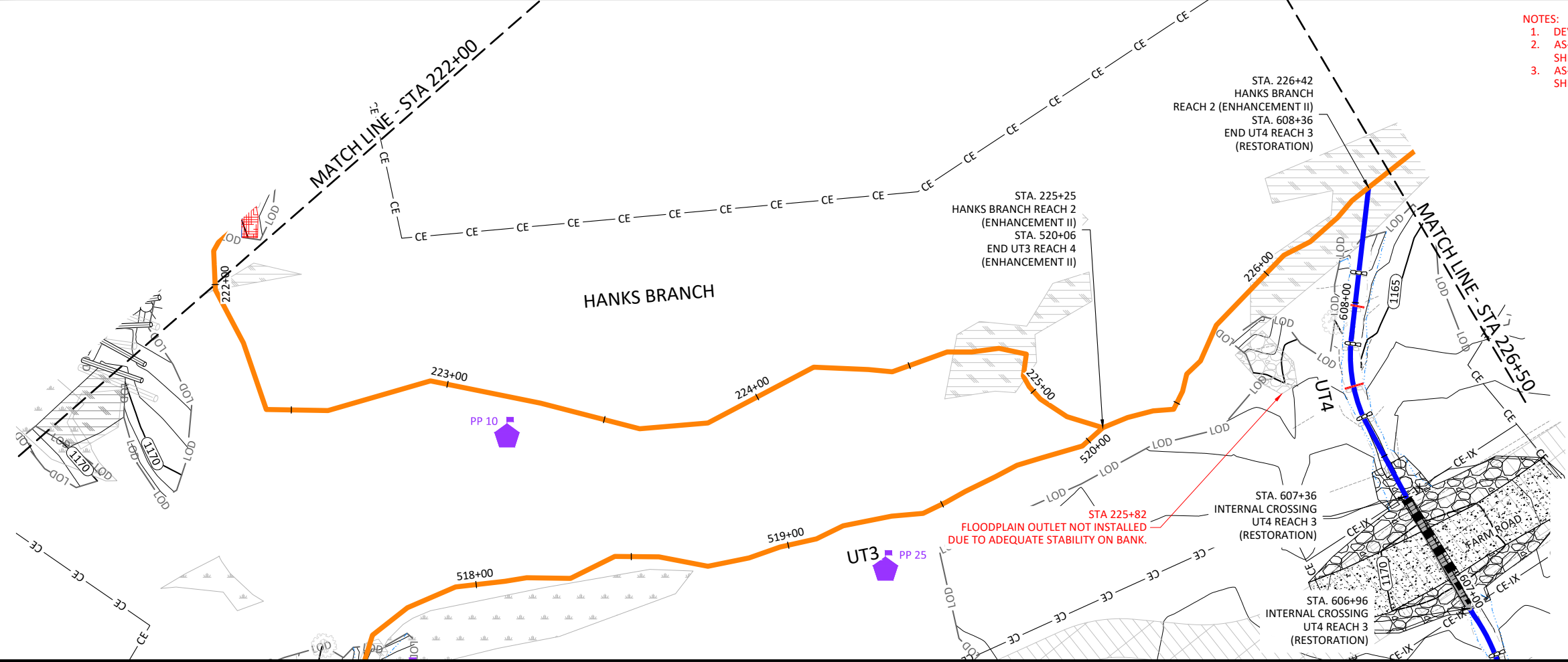


Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Stream Plan and Profile

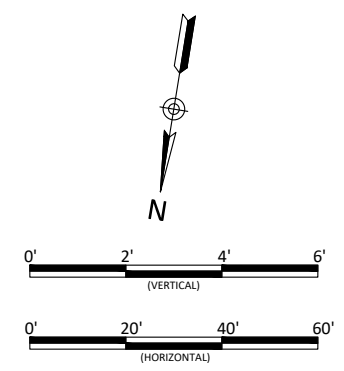
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

1.08

Sheet



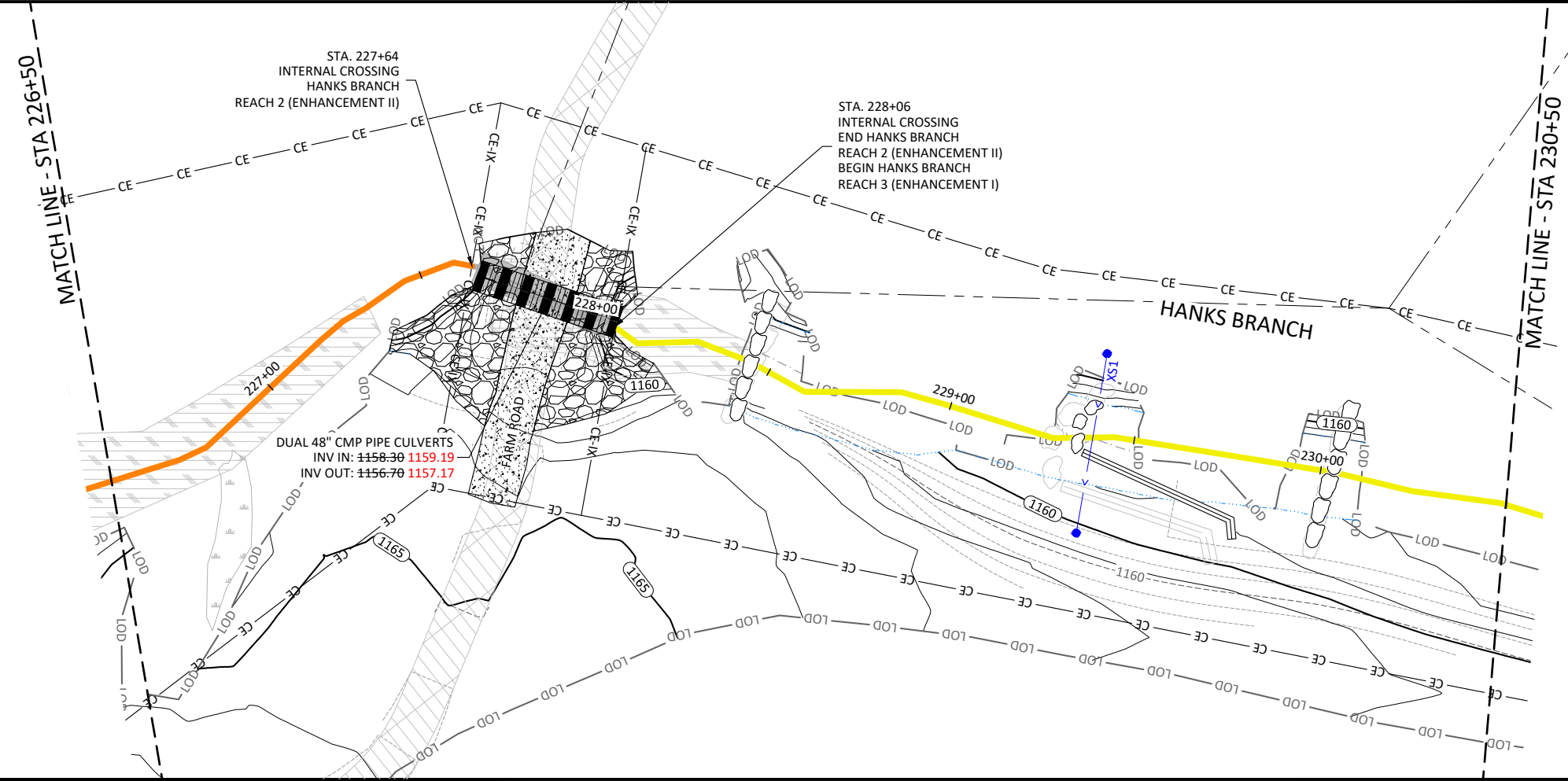
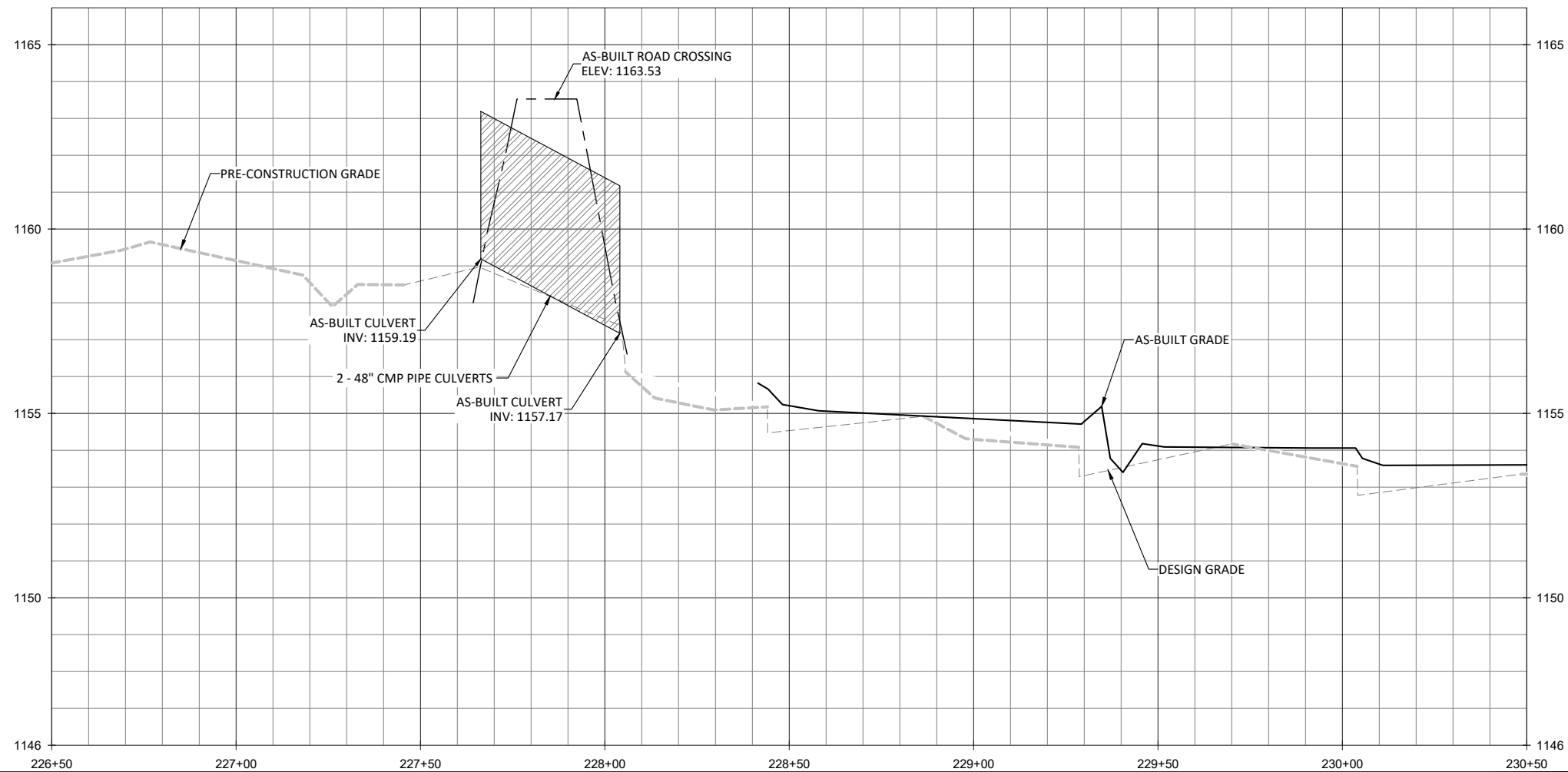
- NOTES:**
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT3 IS ADDRESSED ON SHEETS 1.18 THROUGH 1.27.
 3. AS-BUILT INFORMATION FOR UT4 IS ADDRESSED ON SHEETS 1.30 THROUGH 1.34



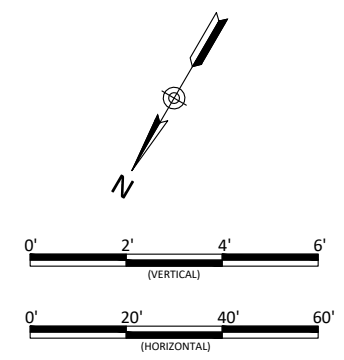
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Stream Plan and Profile

Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK



NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.

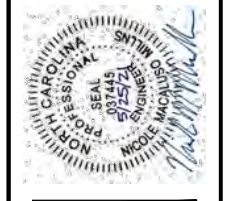


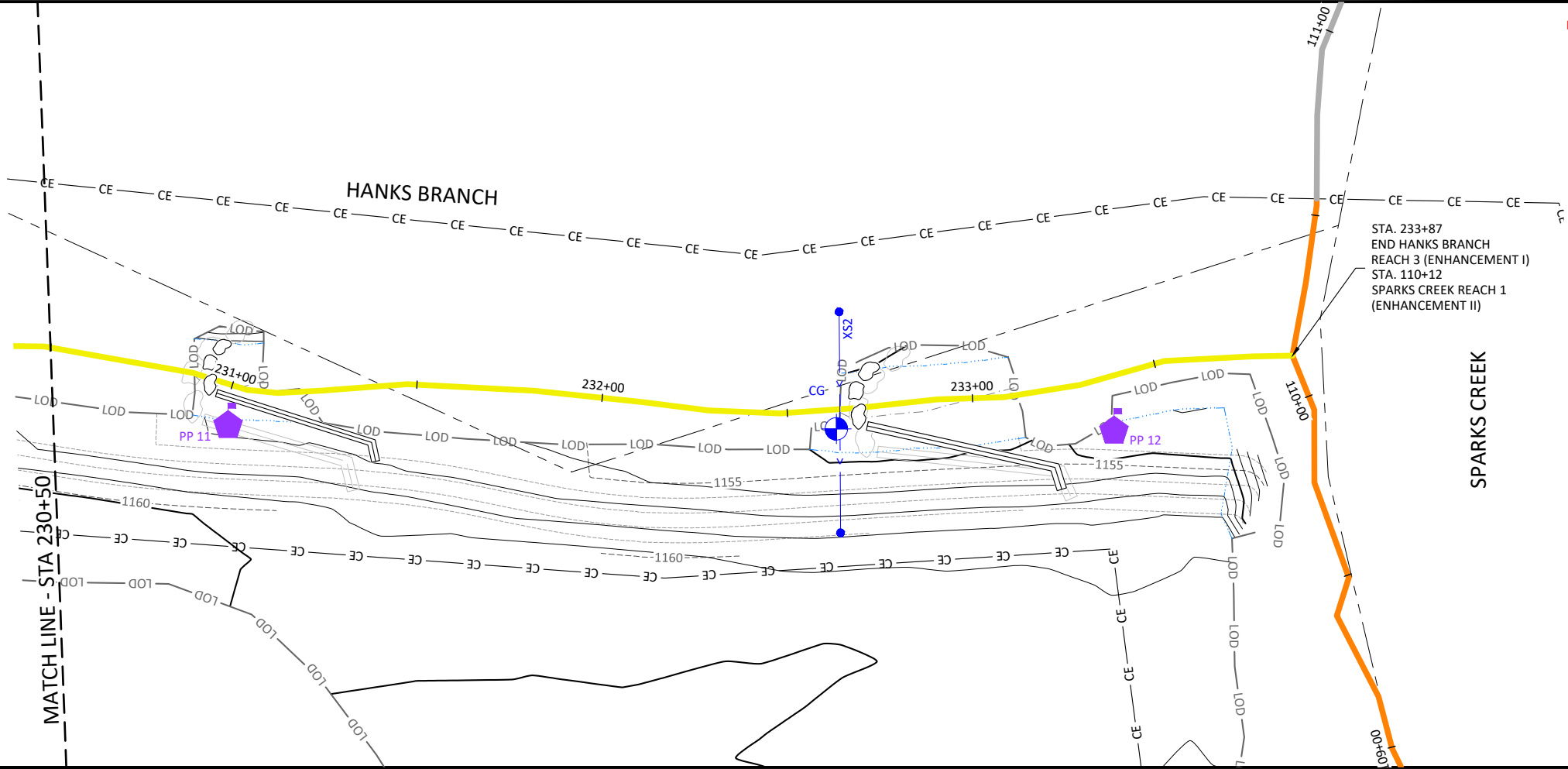
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 Hanks Branch
 Stream Plan and Profile

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JMK

1.10

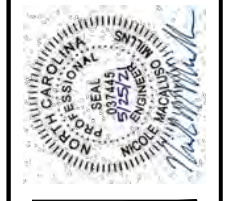
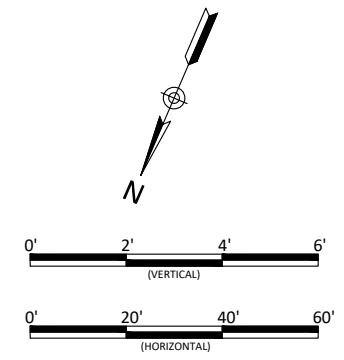
Sheet





- NOTES:**
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR SPARKS CREEK IS ADDRESSED ON SHEETS 1.01 THROUGH 1.03.

STA. 233+87
 END HANKS BRANCH
 REACH 3 (ENHANCEMENT I)
 STA. 110+12
 SPARKS CREEK REACH 1
 (ENHANCEMENT II)



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

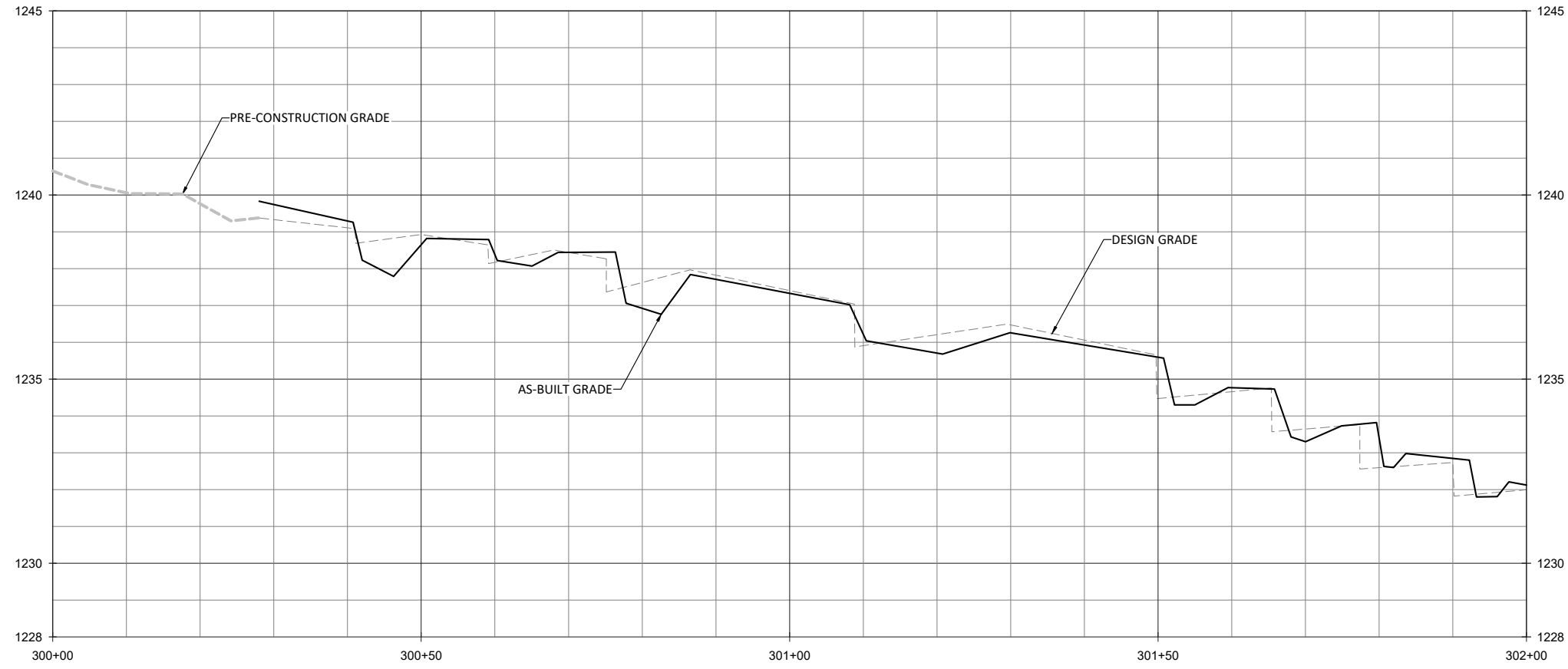
Hanks Branch
 Stream Plan and Profile

Revisions:

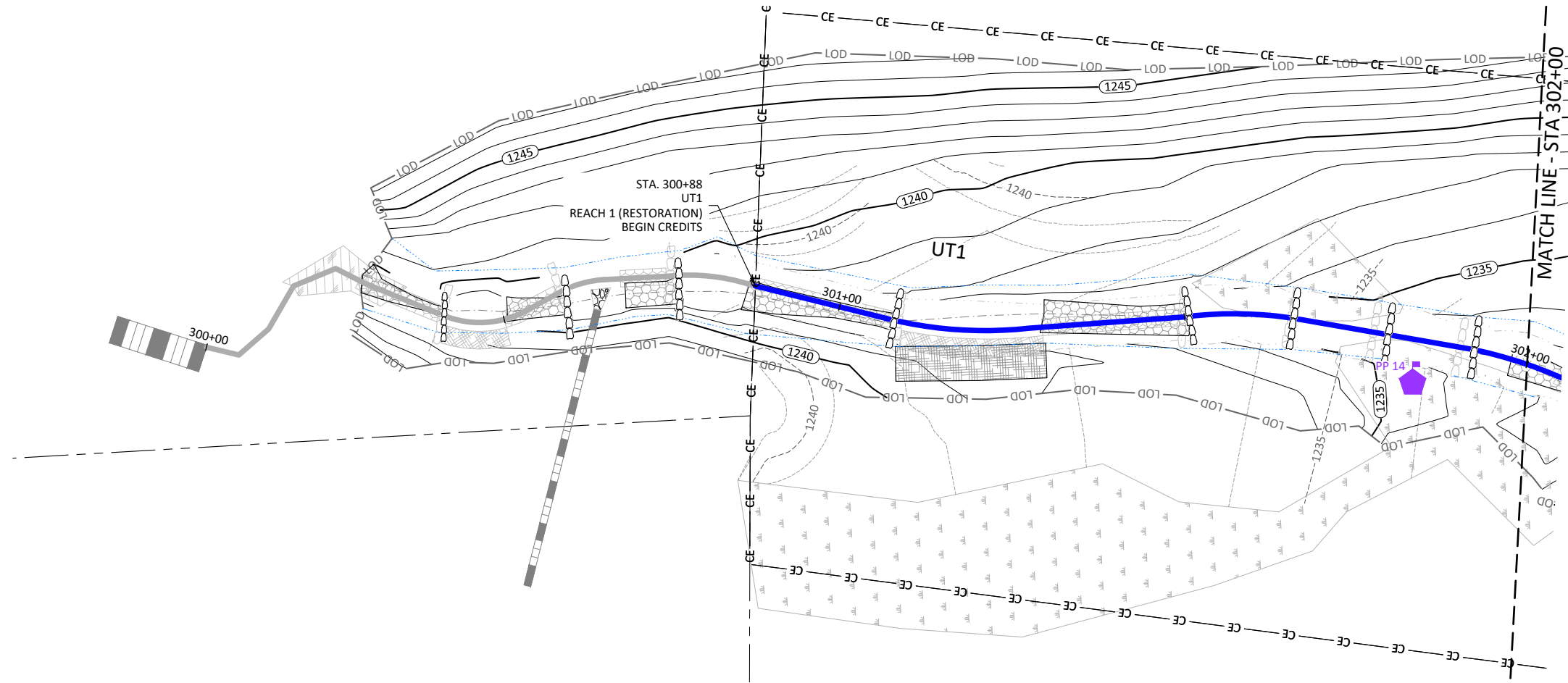
Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABF
 Checked By: JNK

1.11

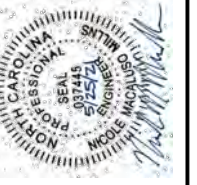
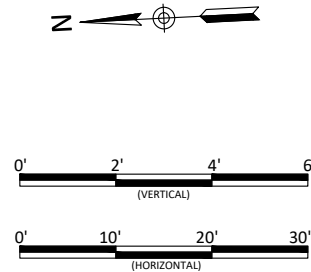
June 10, 2021



X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring-2021\Plans\02177-AB Sparks Creek UT1 UT2.dwg



- NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

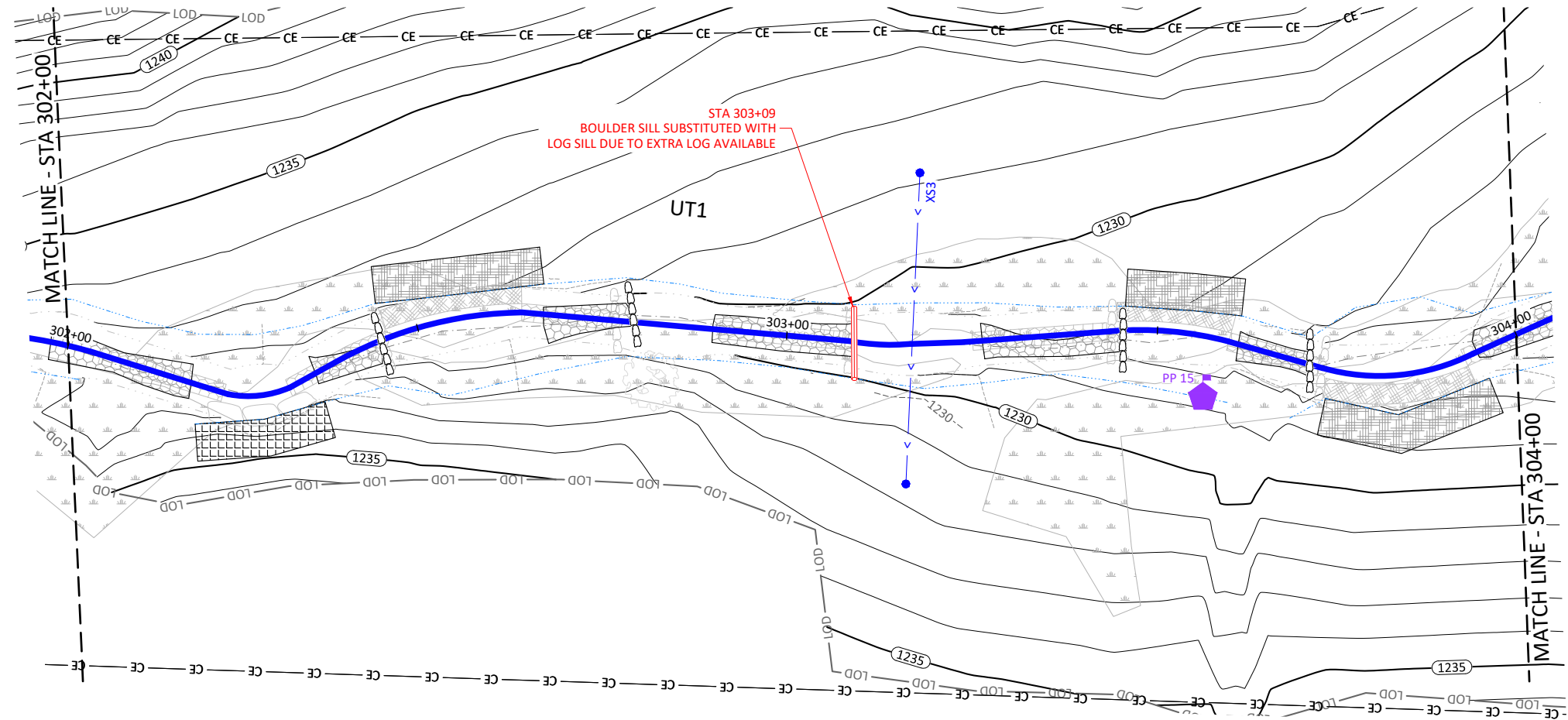
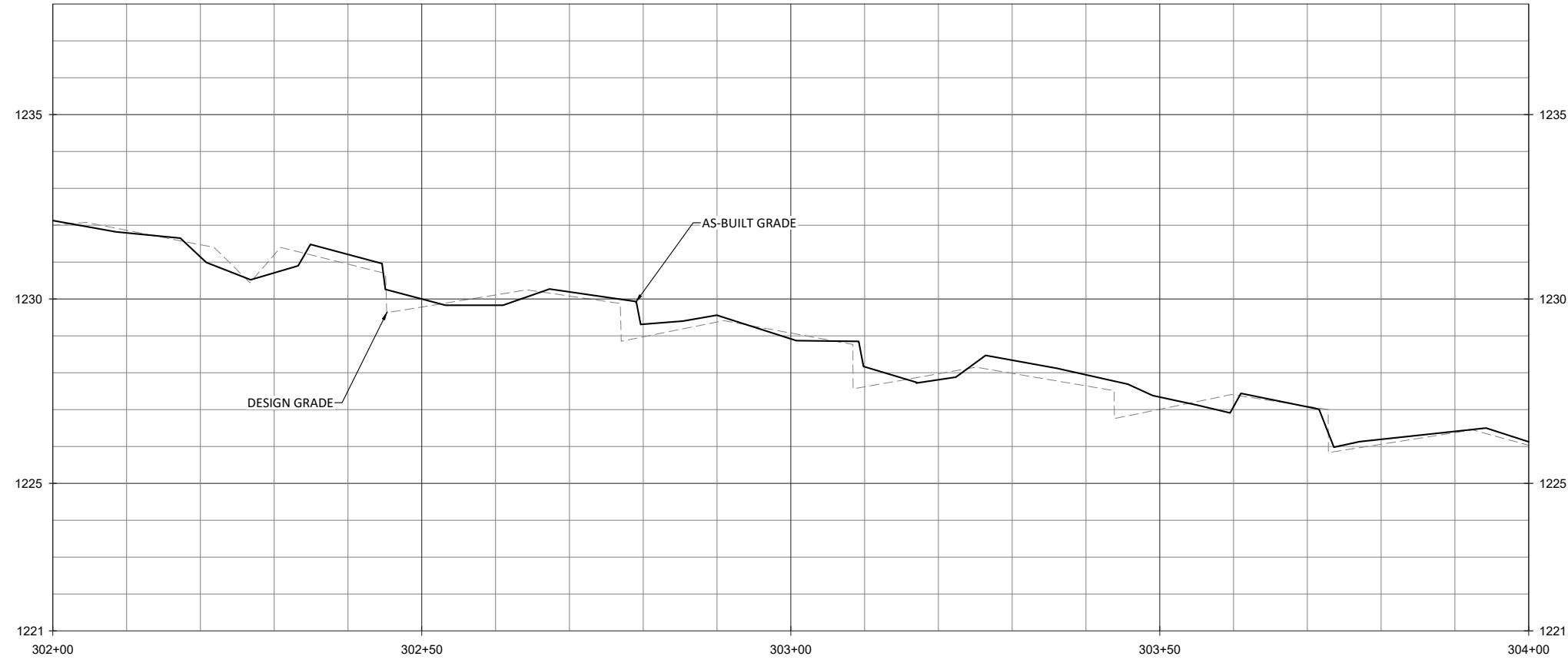
UT1
 Stream Plan and Profile

Revisions:

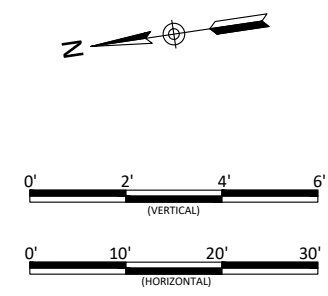
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

1.12

Sheet



NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Revisions:

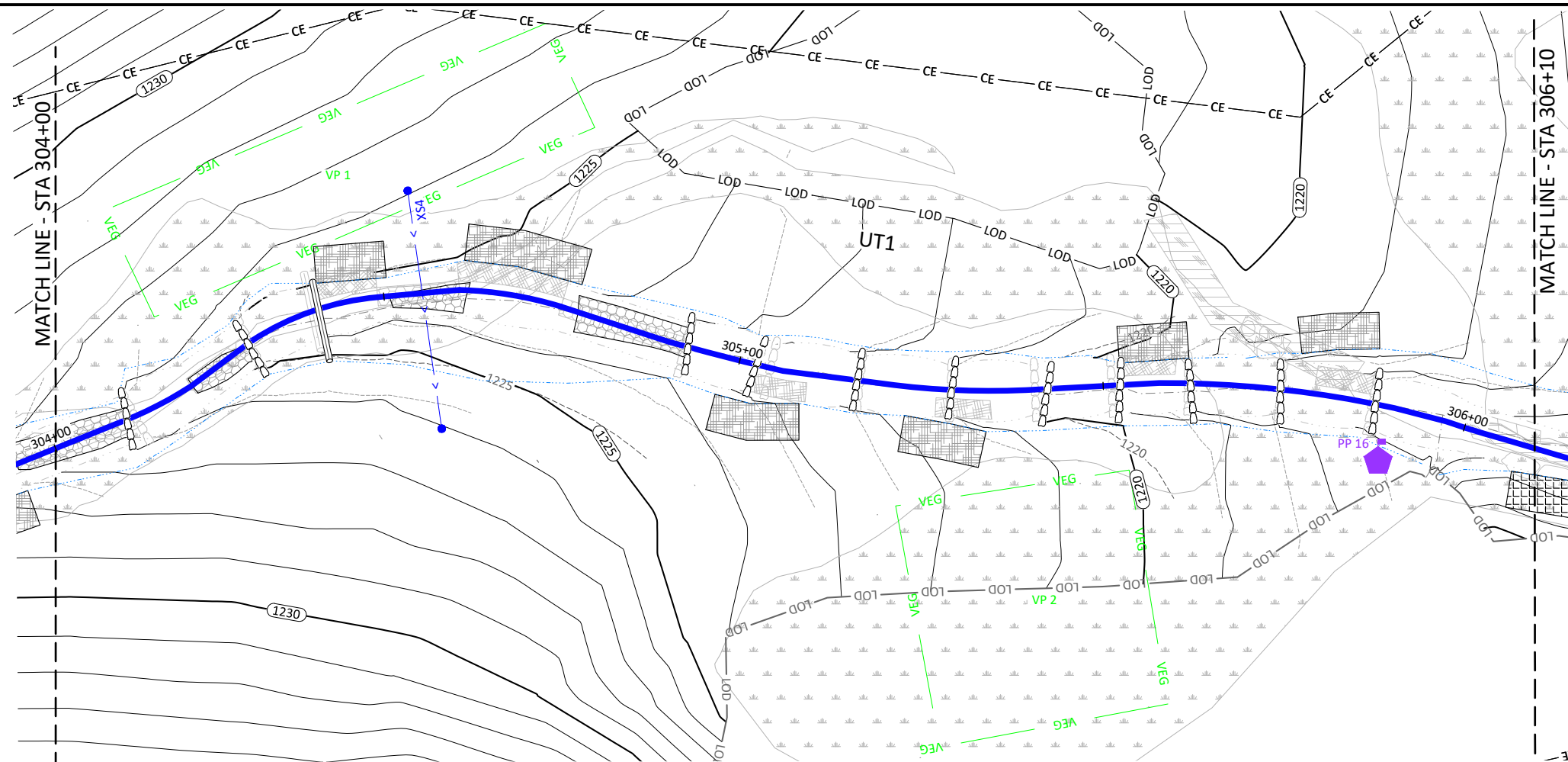
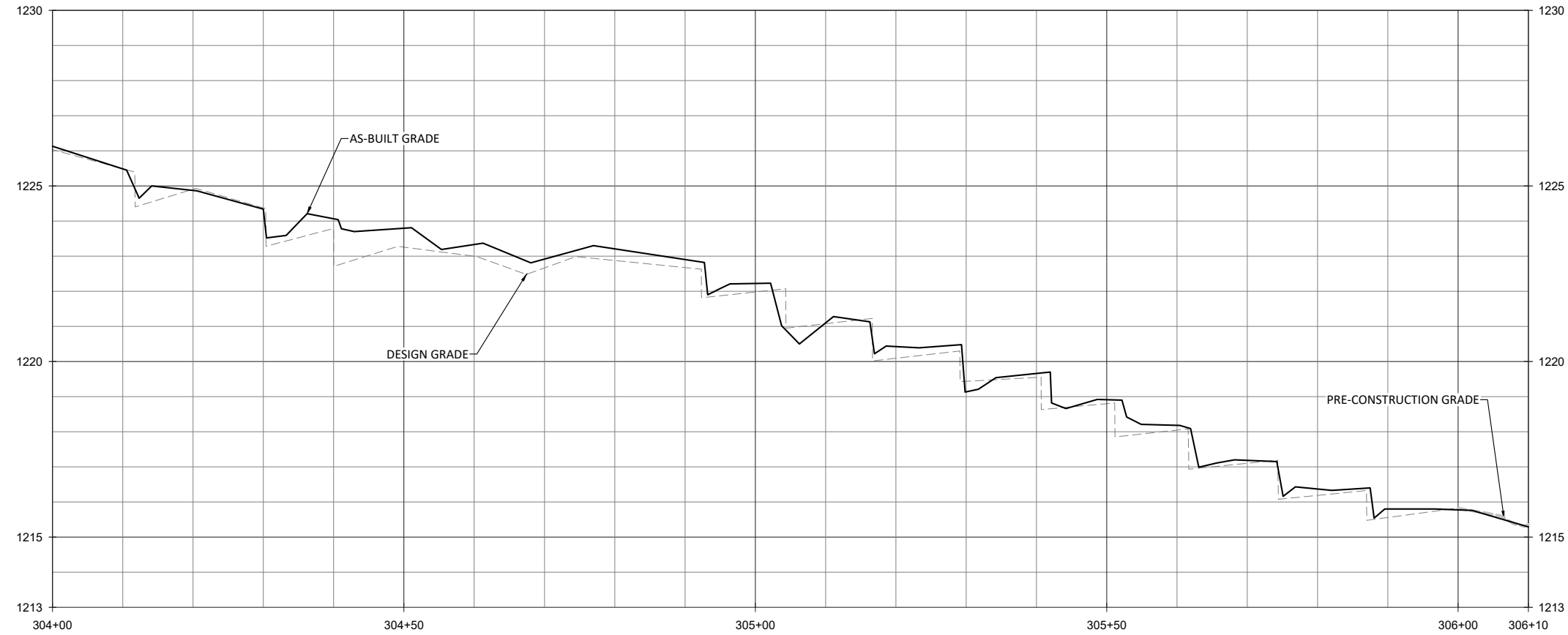
Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.13

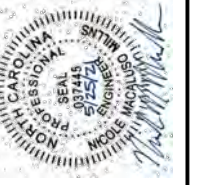
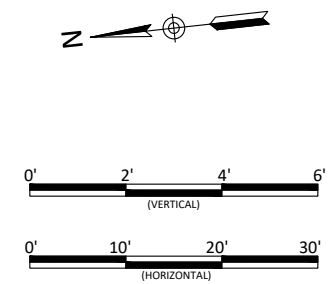
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT1
 Stream Plan and Profile





NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

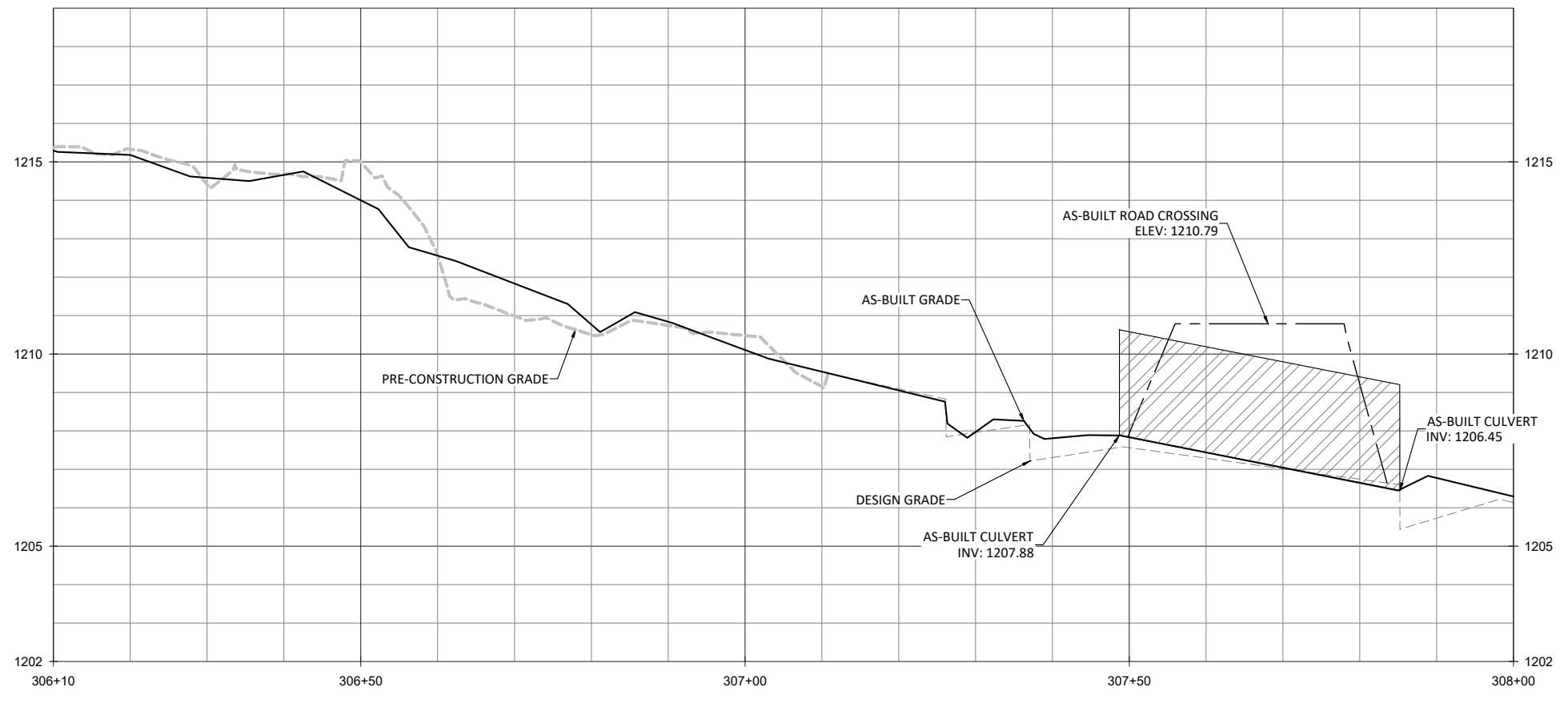
UT1
Stream Plan and Profile

Revisions:

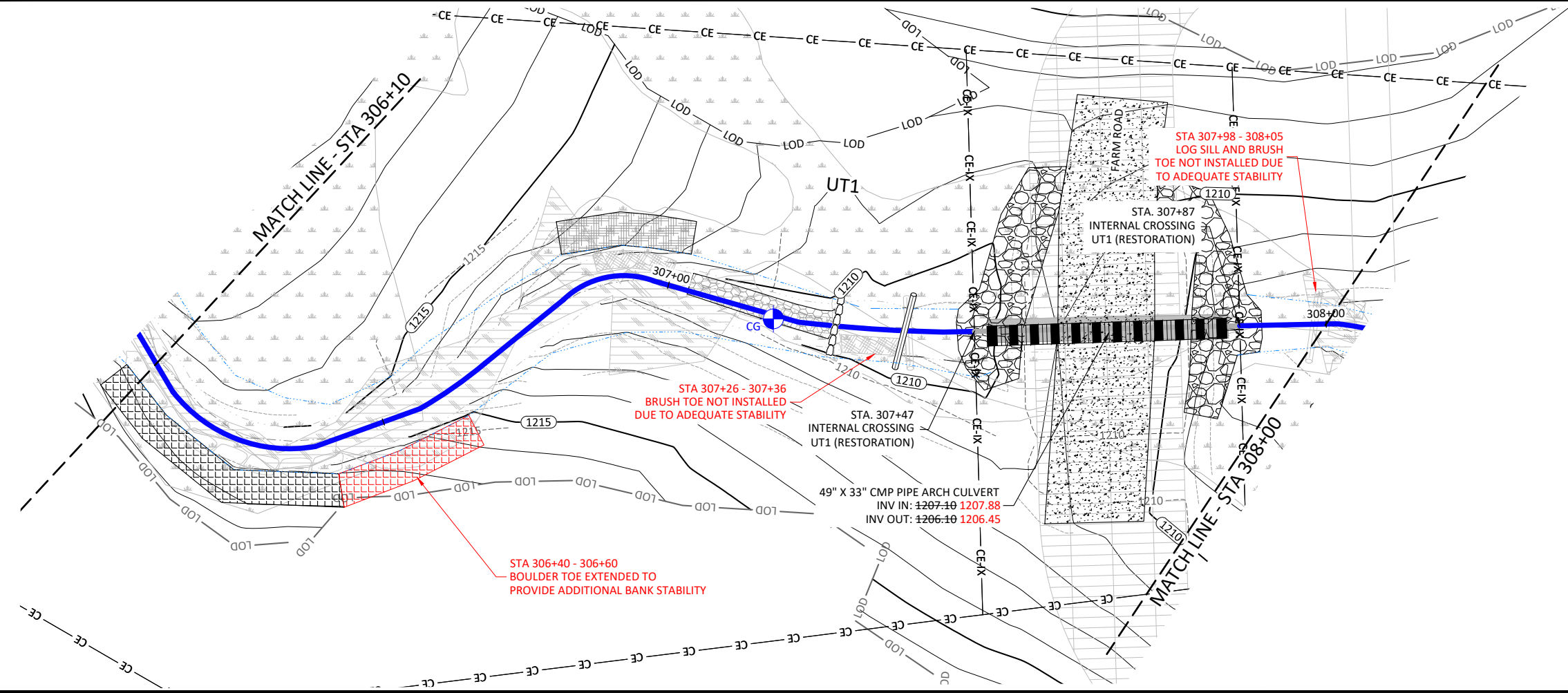
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.14

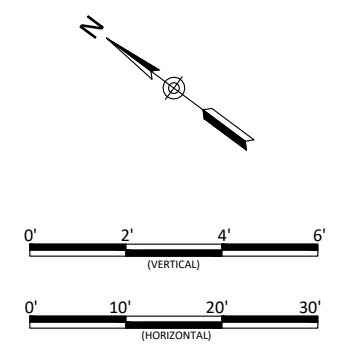
June 10, 2021



X:\Shared\Projects\005-02177 Lyon Hills Monitoring Baseline Monitoring-2021\Plans\02177-AB Sparks Creek UT1 UT2.dwg



NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

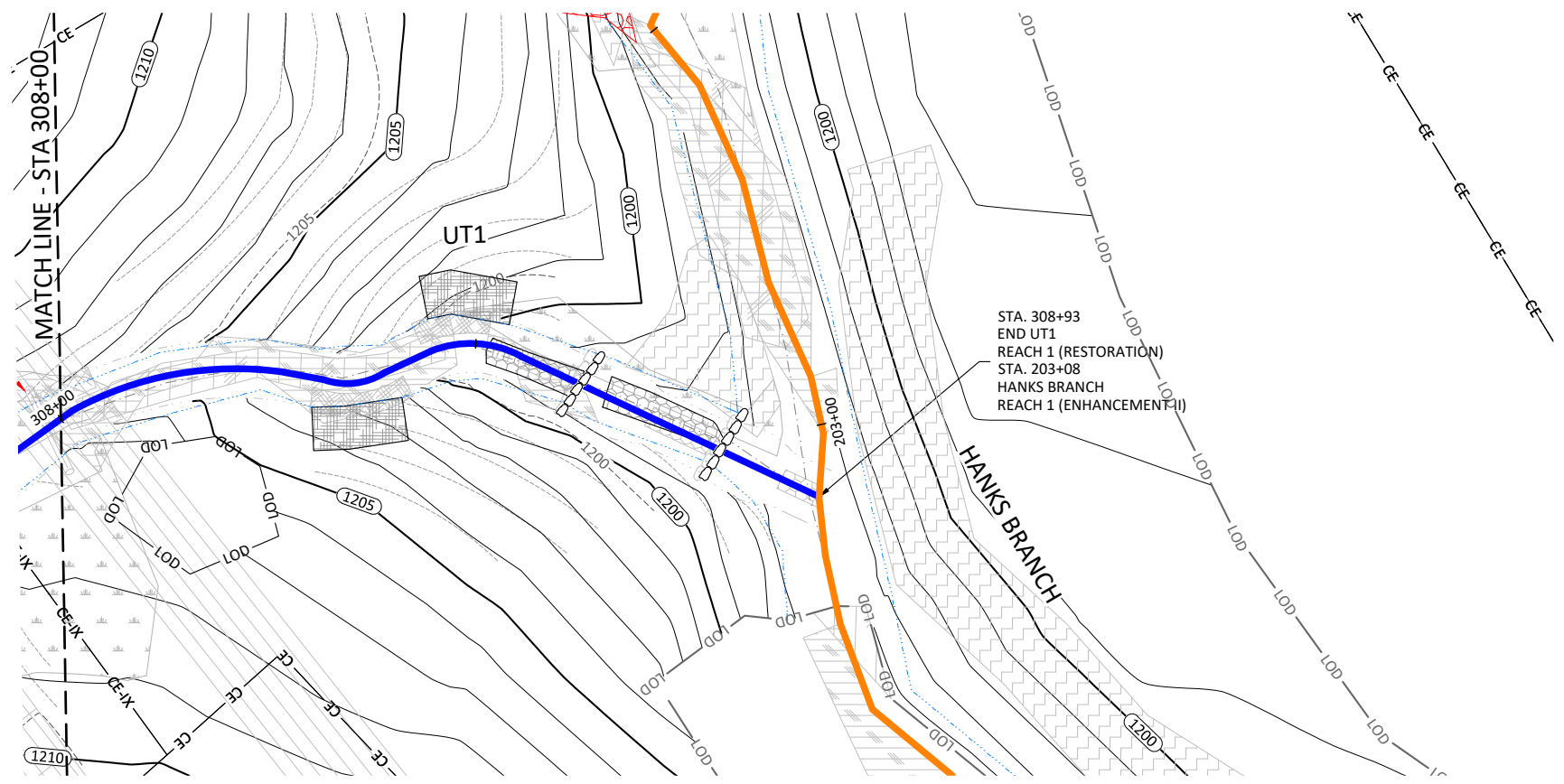
UT1
 Stream Plan and Profile

Revisions:

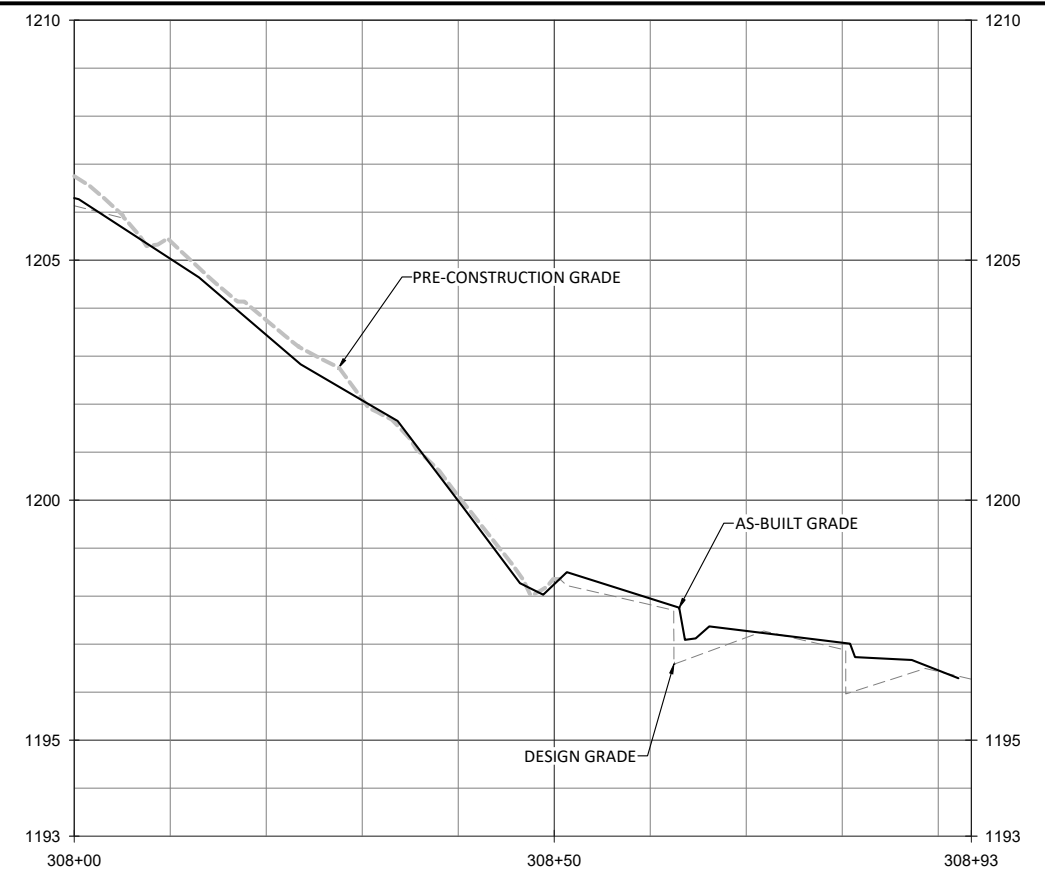
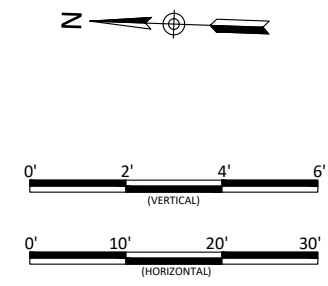
Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.15

Sheet



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.



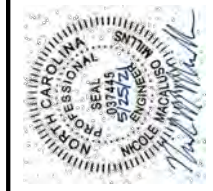
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

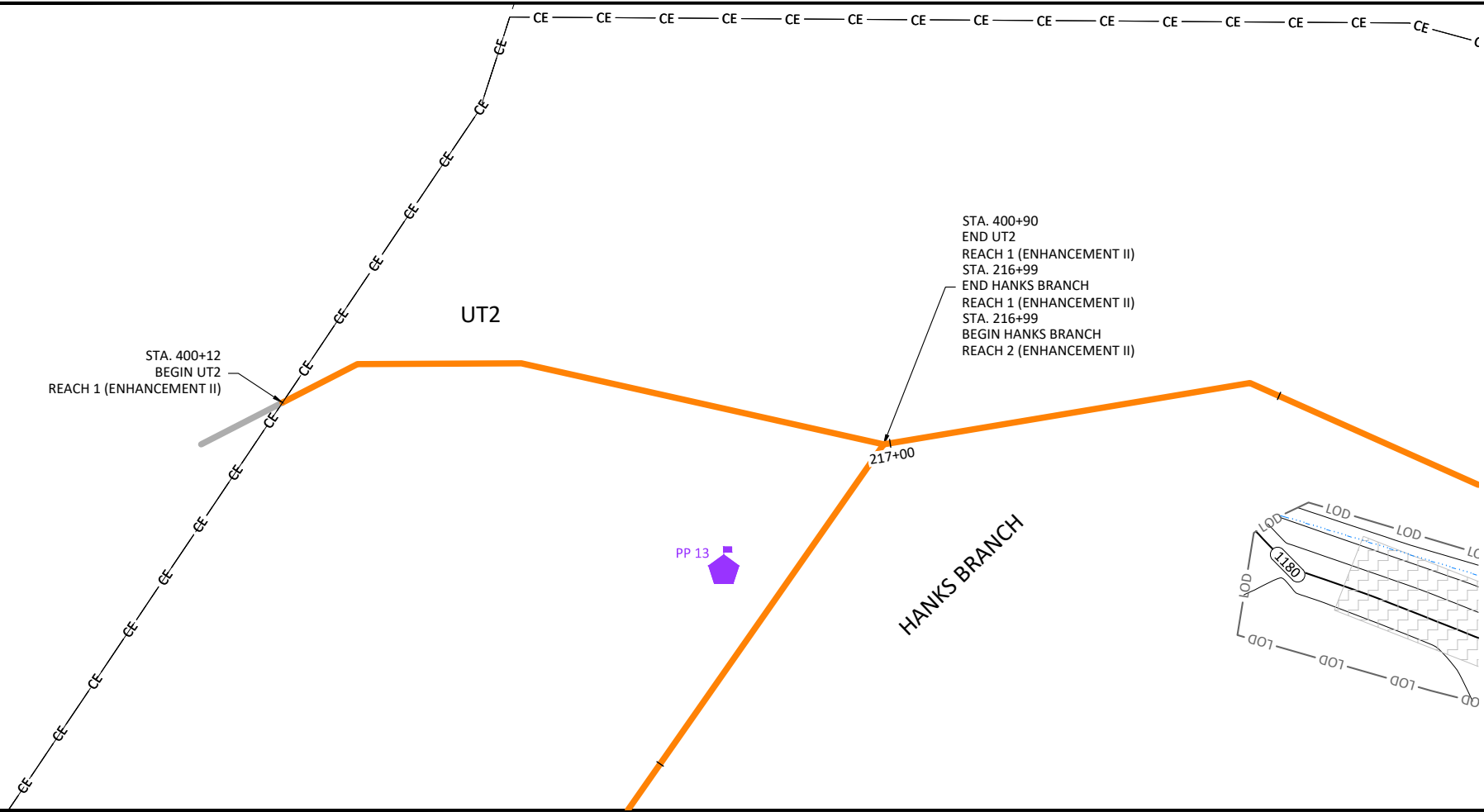
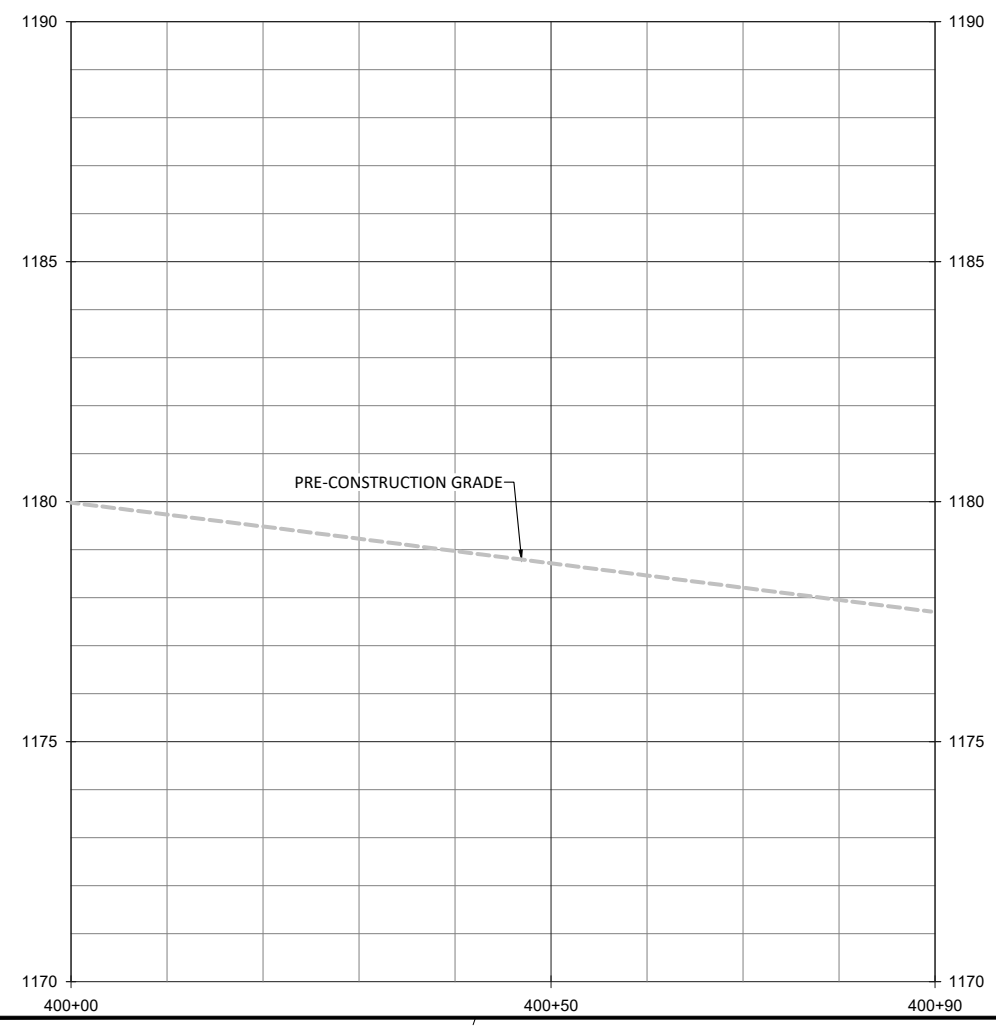
1.16

Sheet

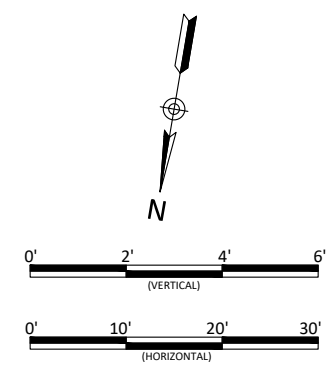
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT1
Stream Plan and Profile





- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

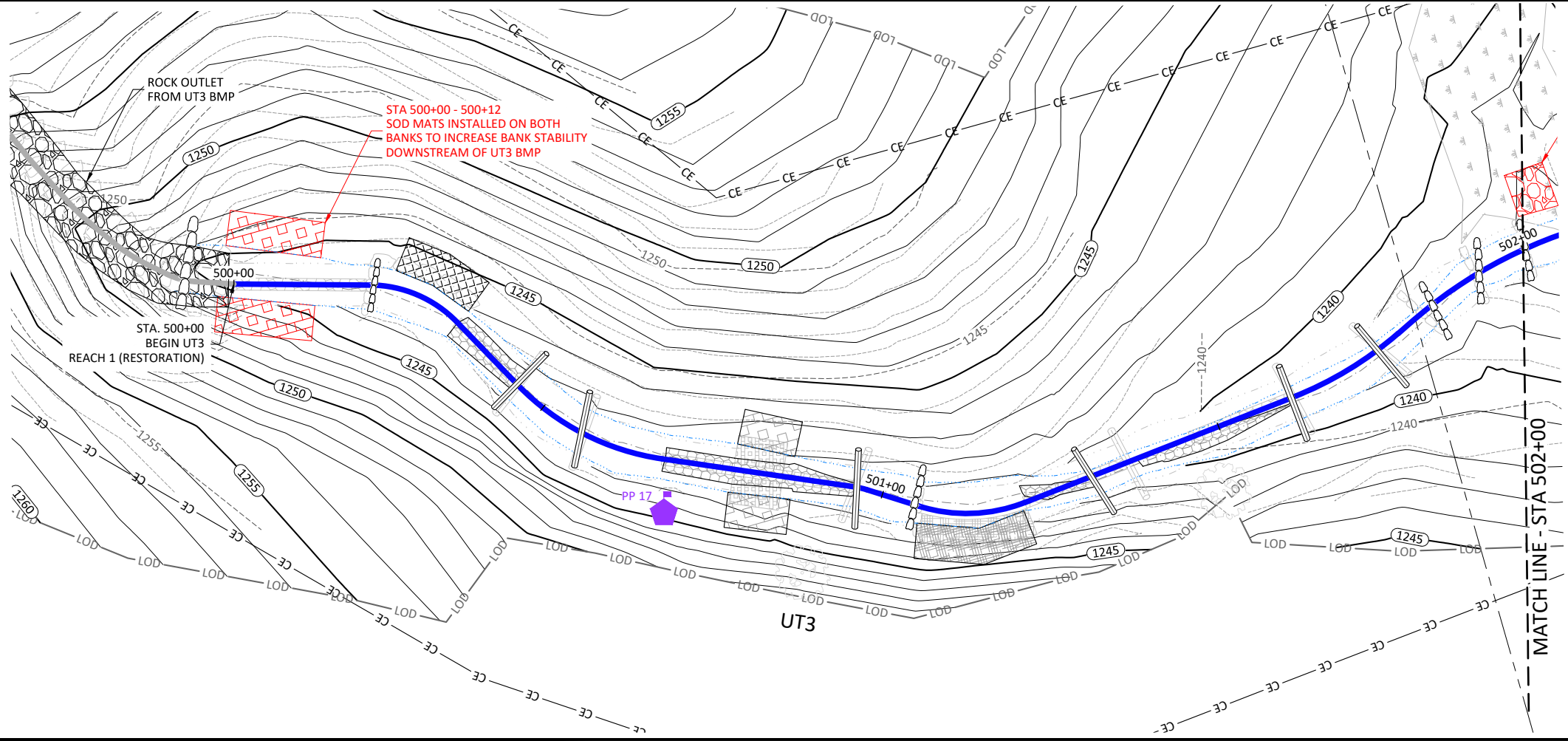
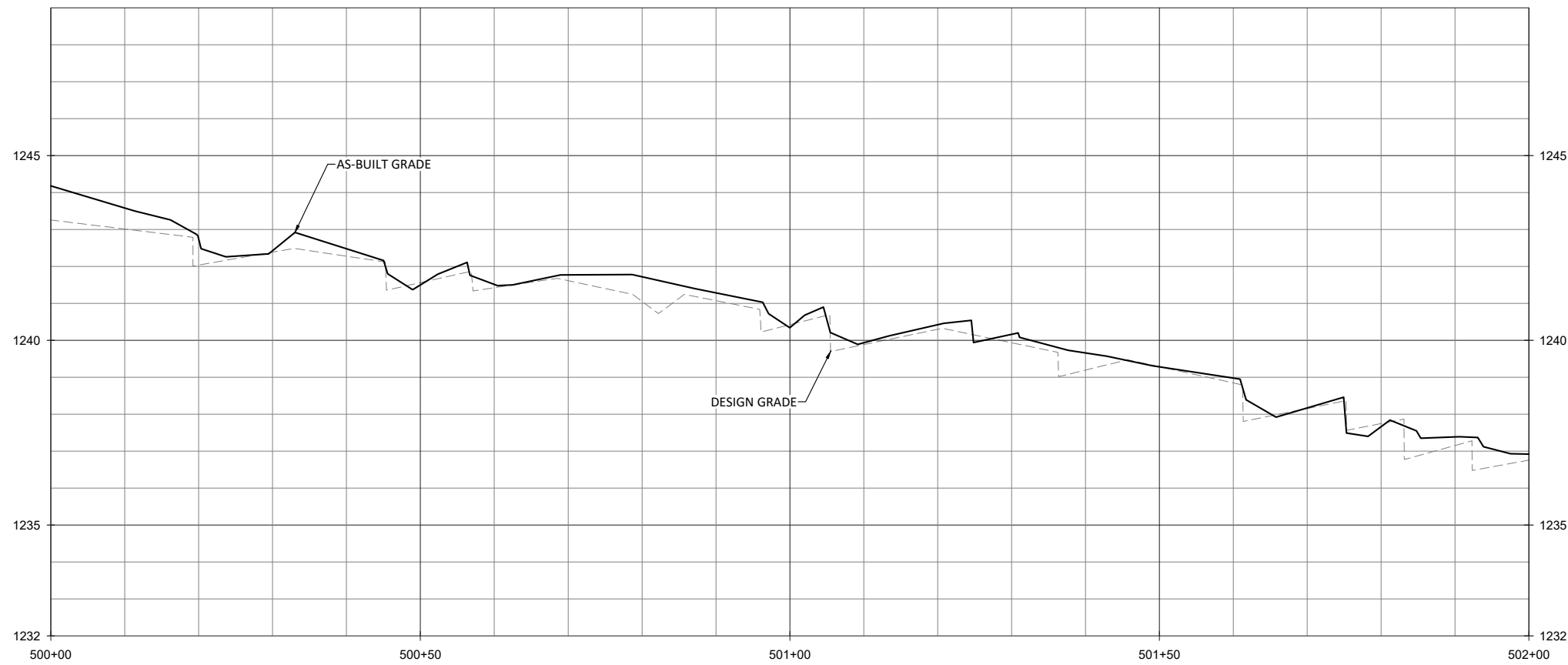
UT2
Stream Plan and Profile

Revisions:

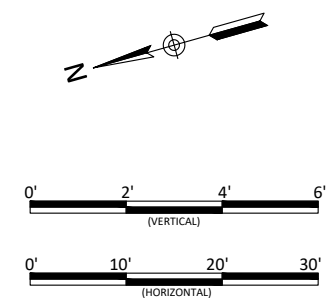
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.17





- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT3 BMP IS ADDRESSED ON SHEET 2.02.



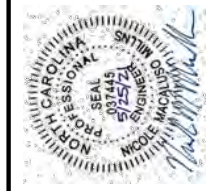
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

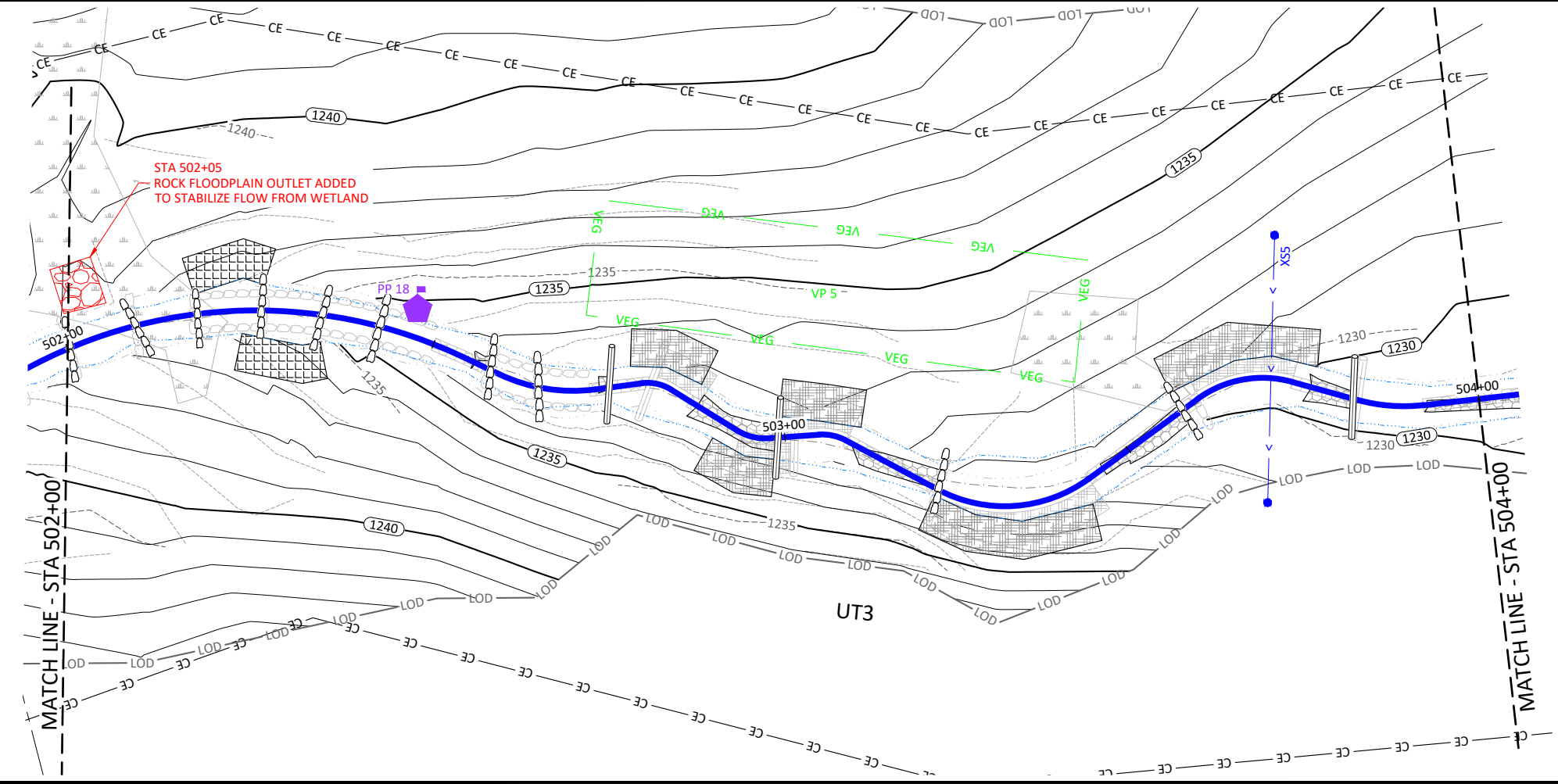
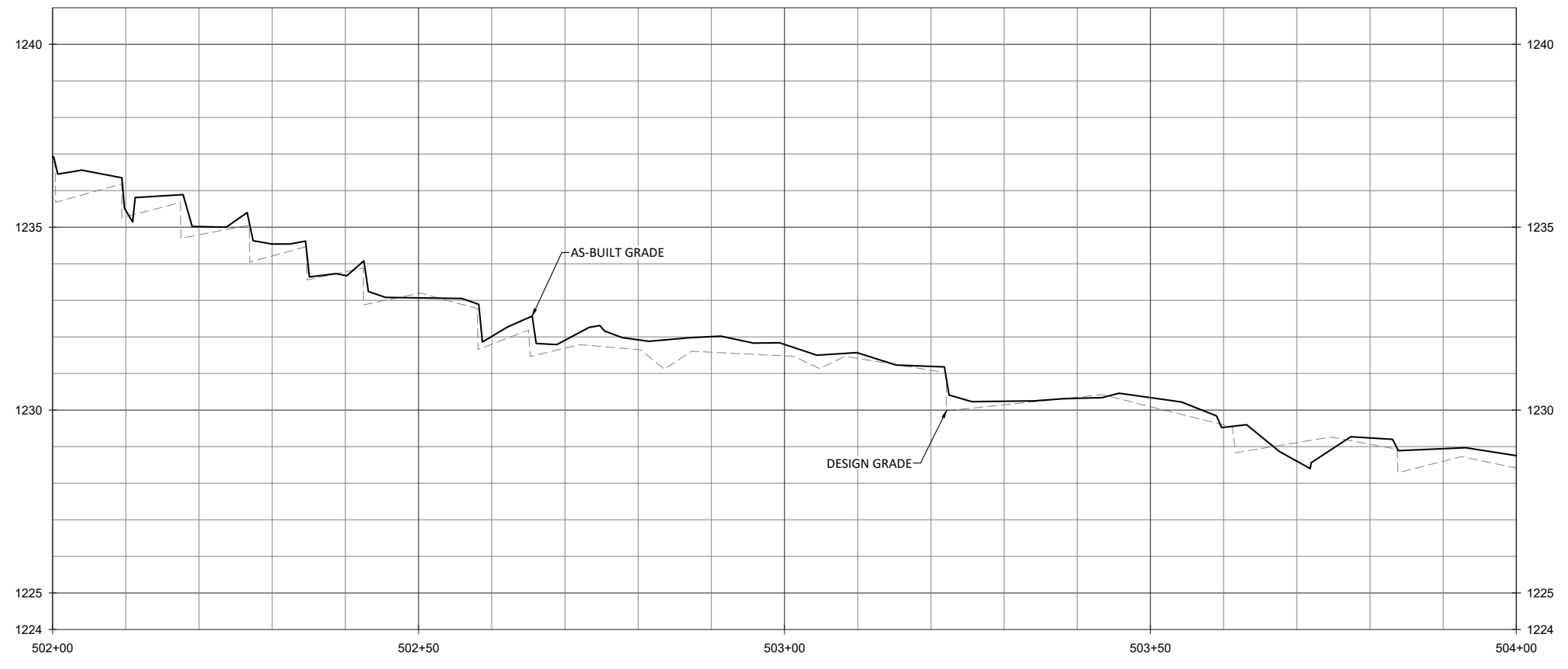
UT3
Stream Plan and Profile

Revisions:

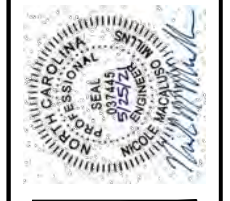
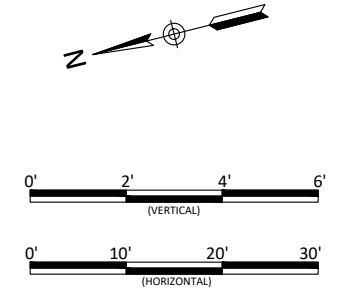
Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.18





NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



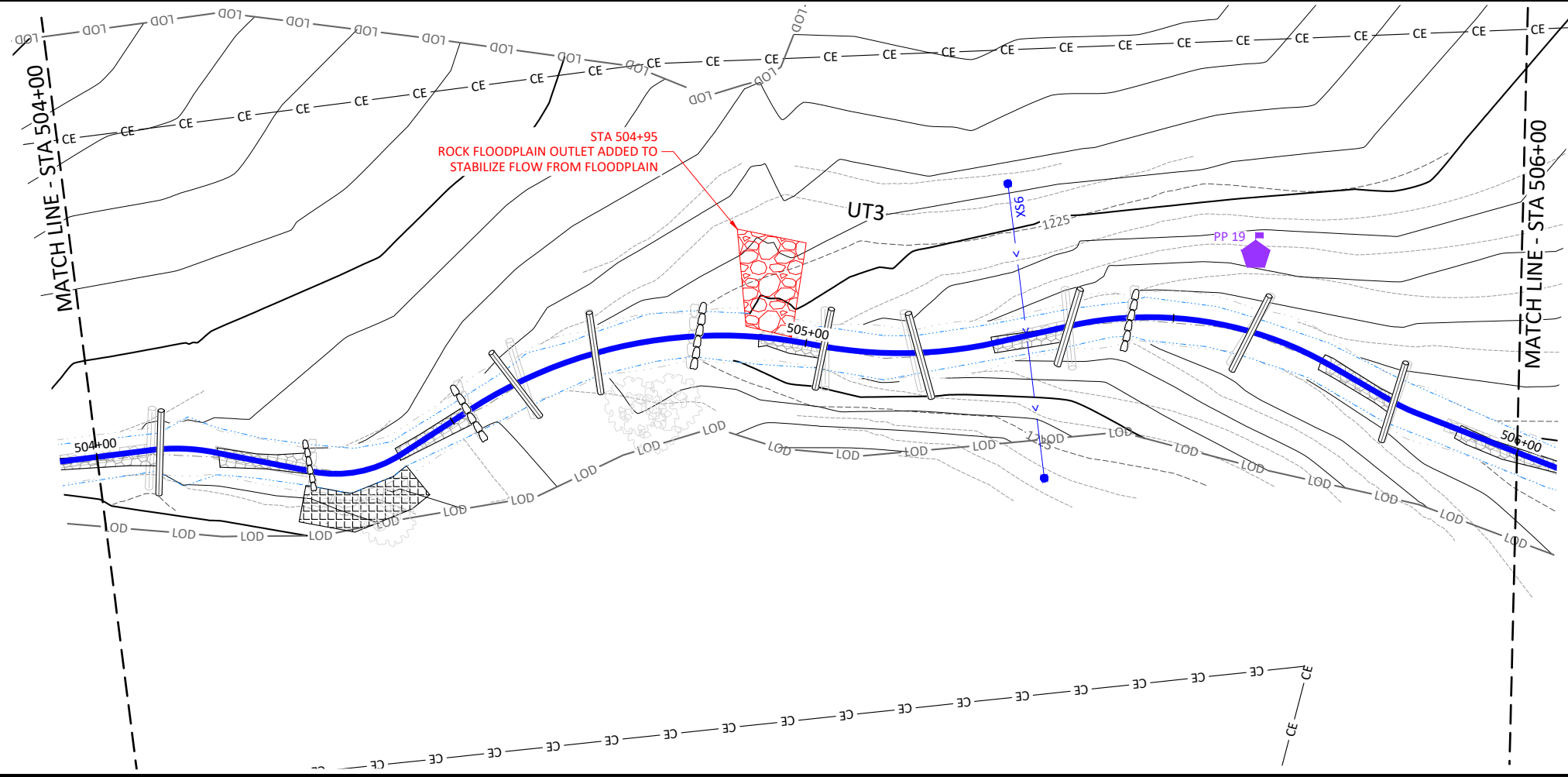
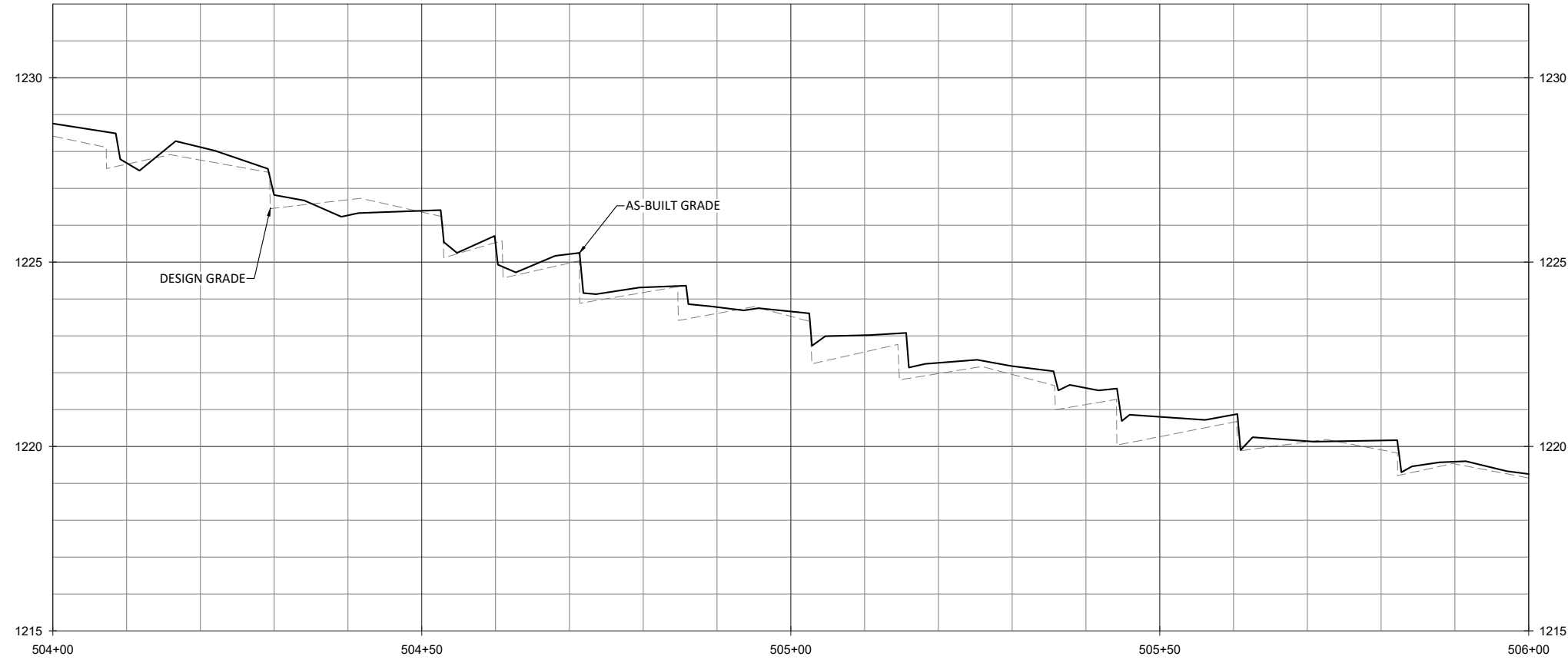
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT3
Stream Plan and Profile

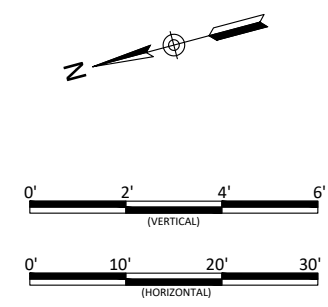
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.19



NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



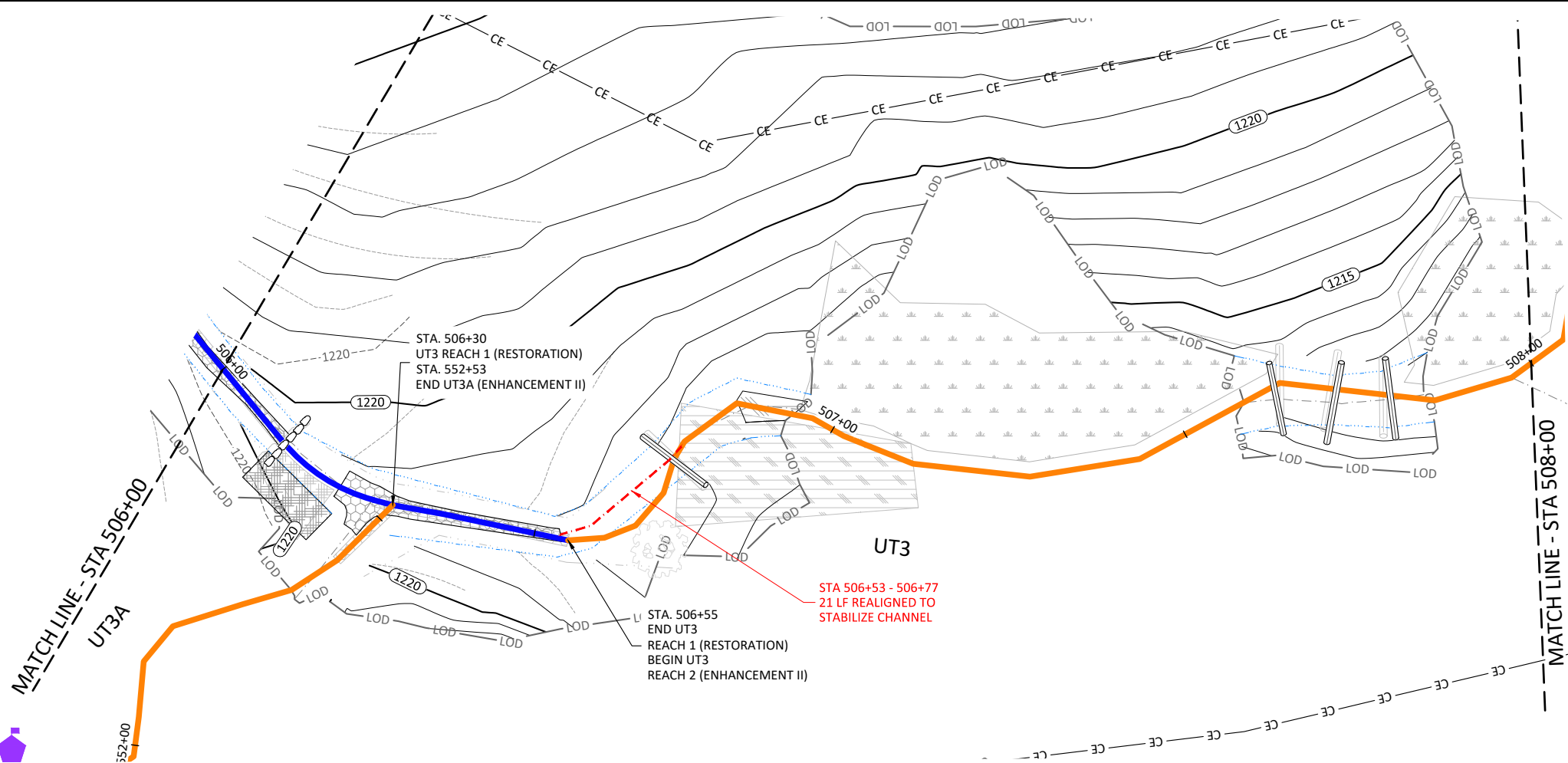
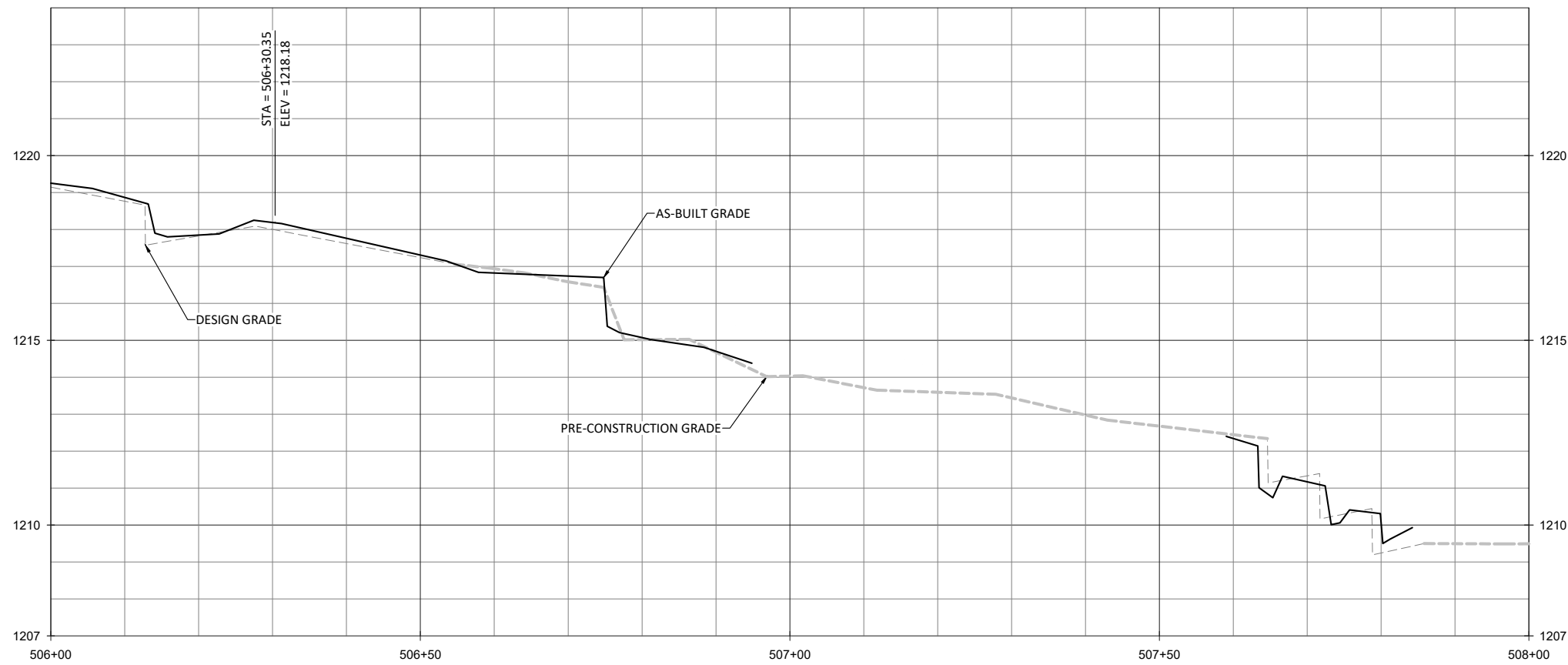
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT3
Stream Plan and Profile

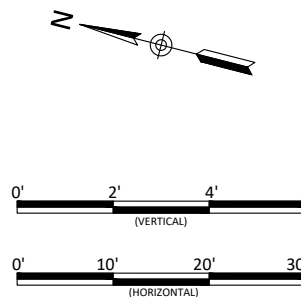
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.20



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT3A IS ADDRESSED ON SHEETS 1.28 AND 1.29.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

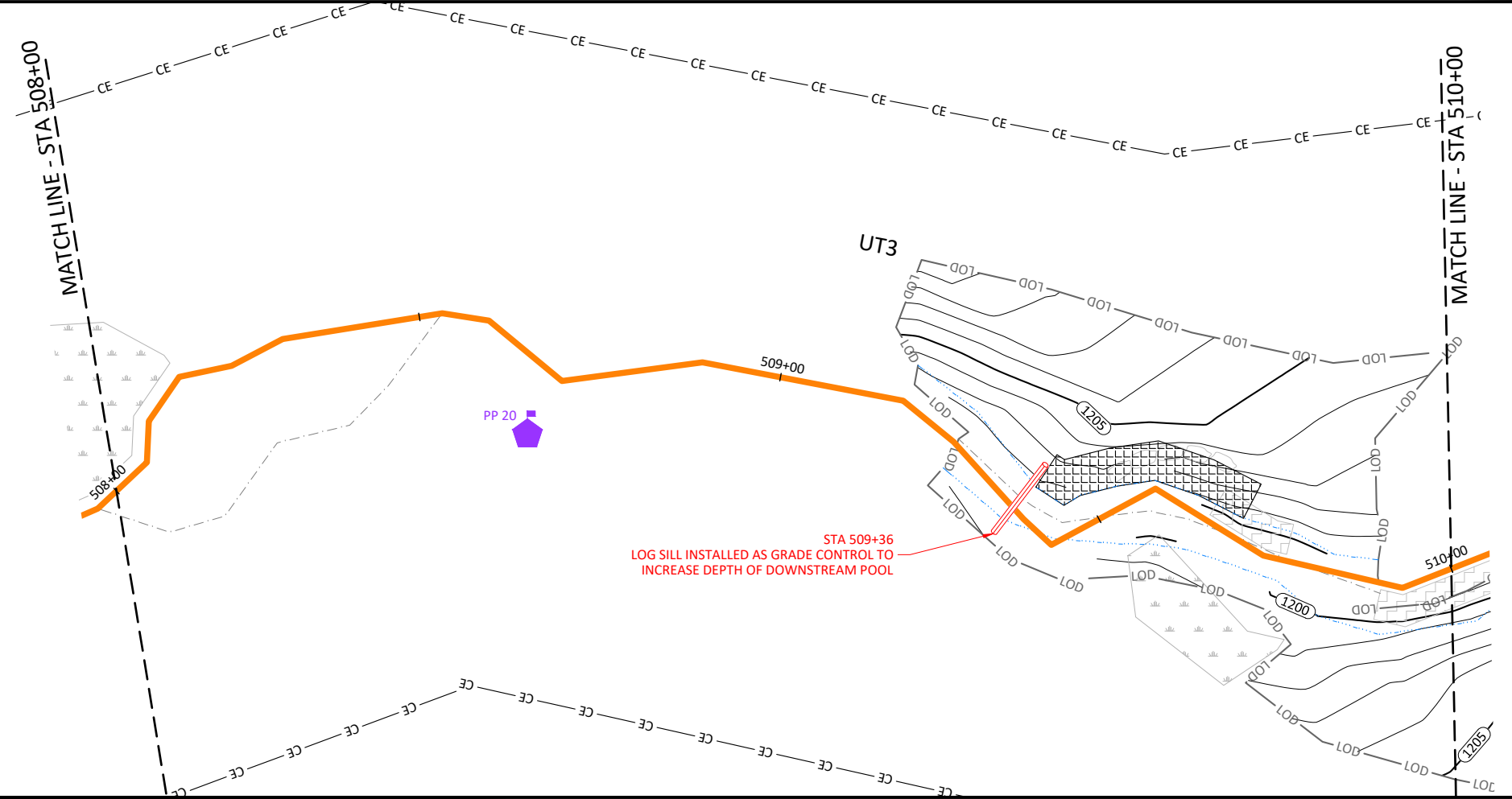
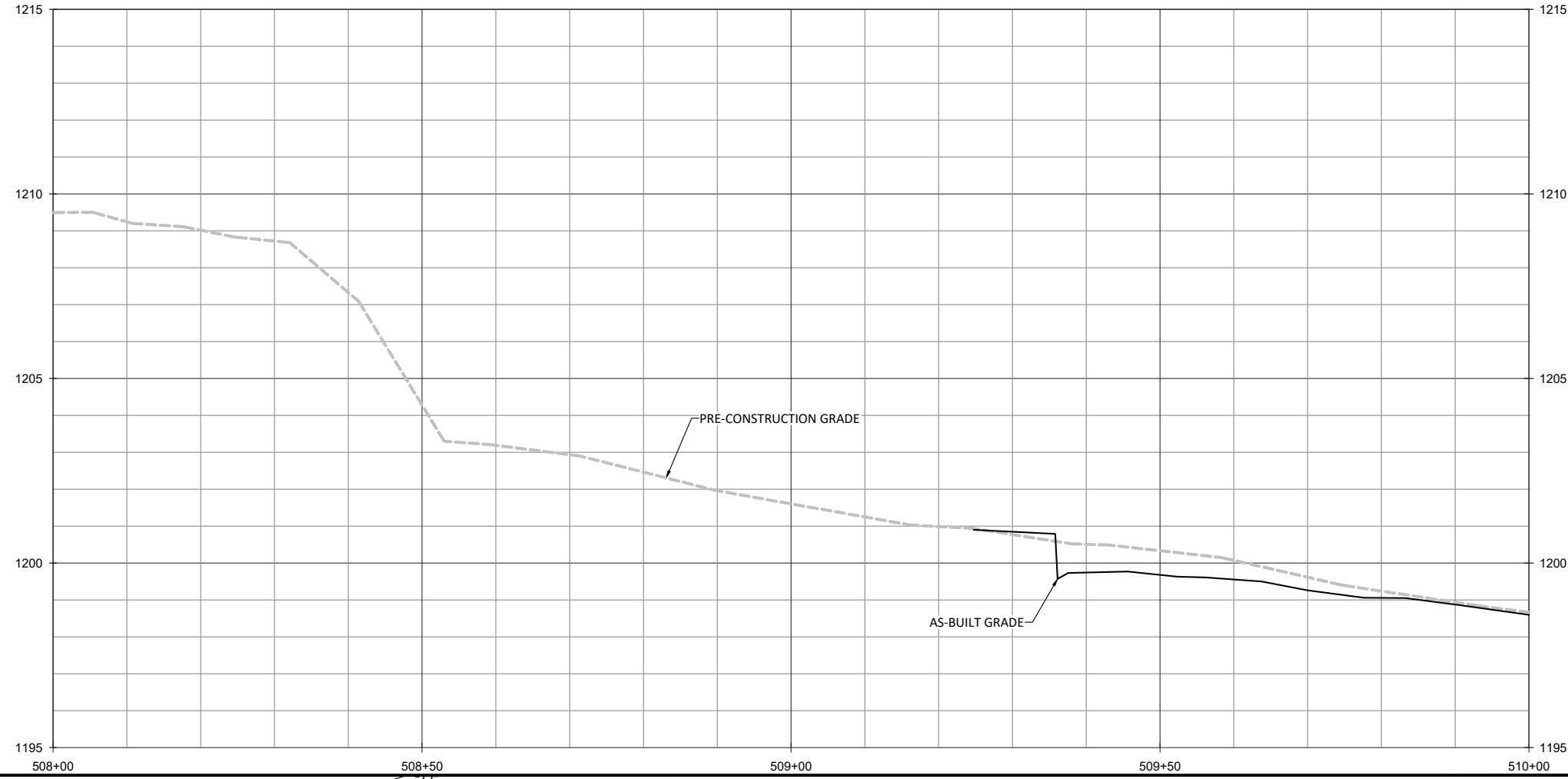
UT3
Stream Plan and Profile

Revisions:

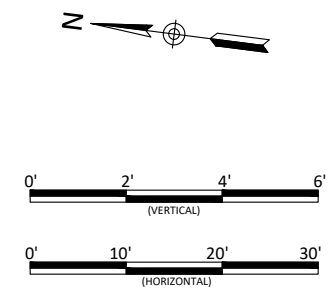
Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.21





NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



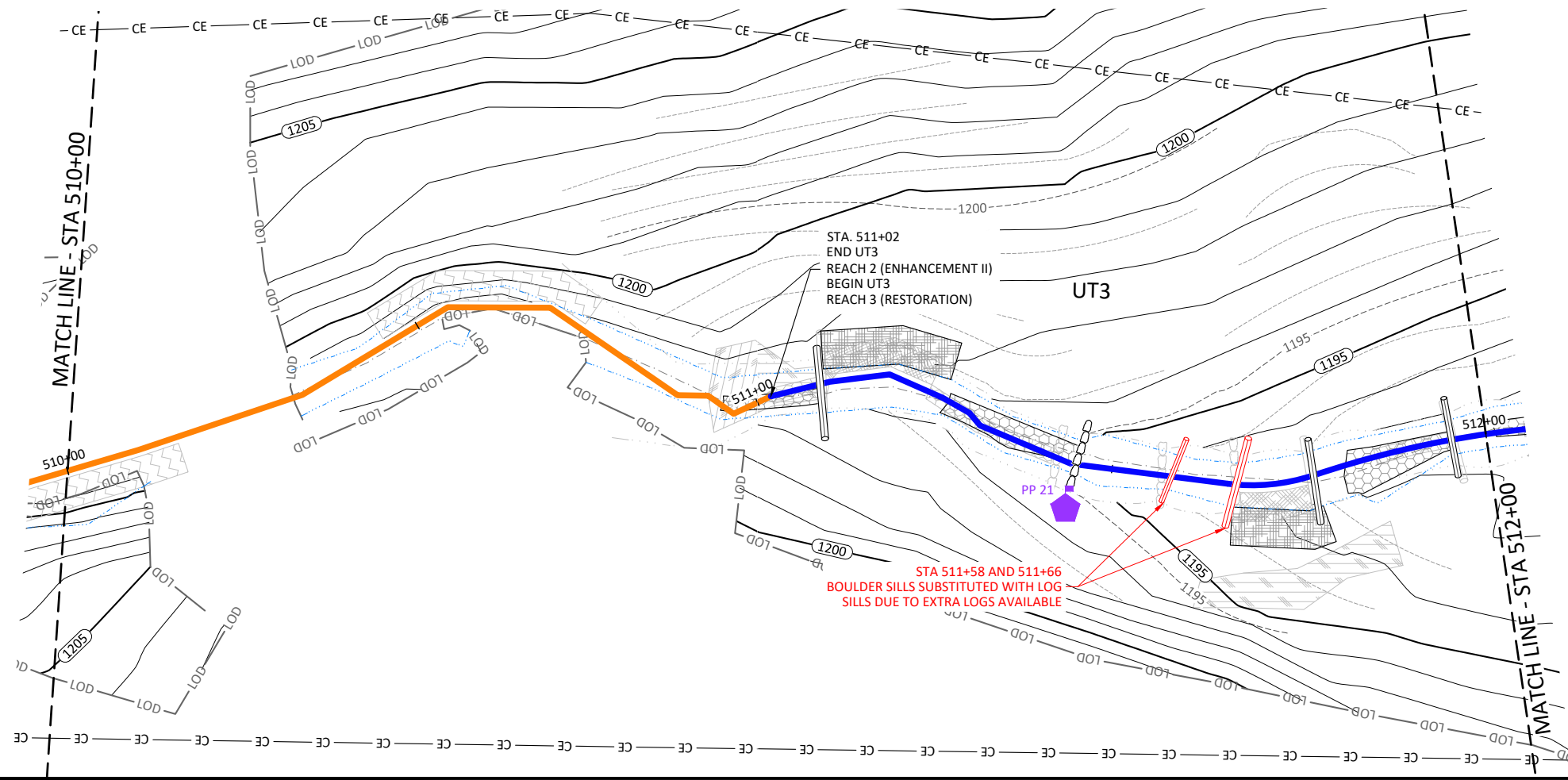
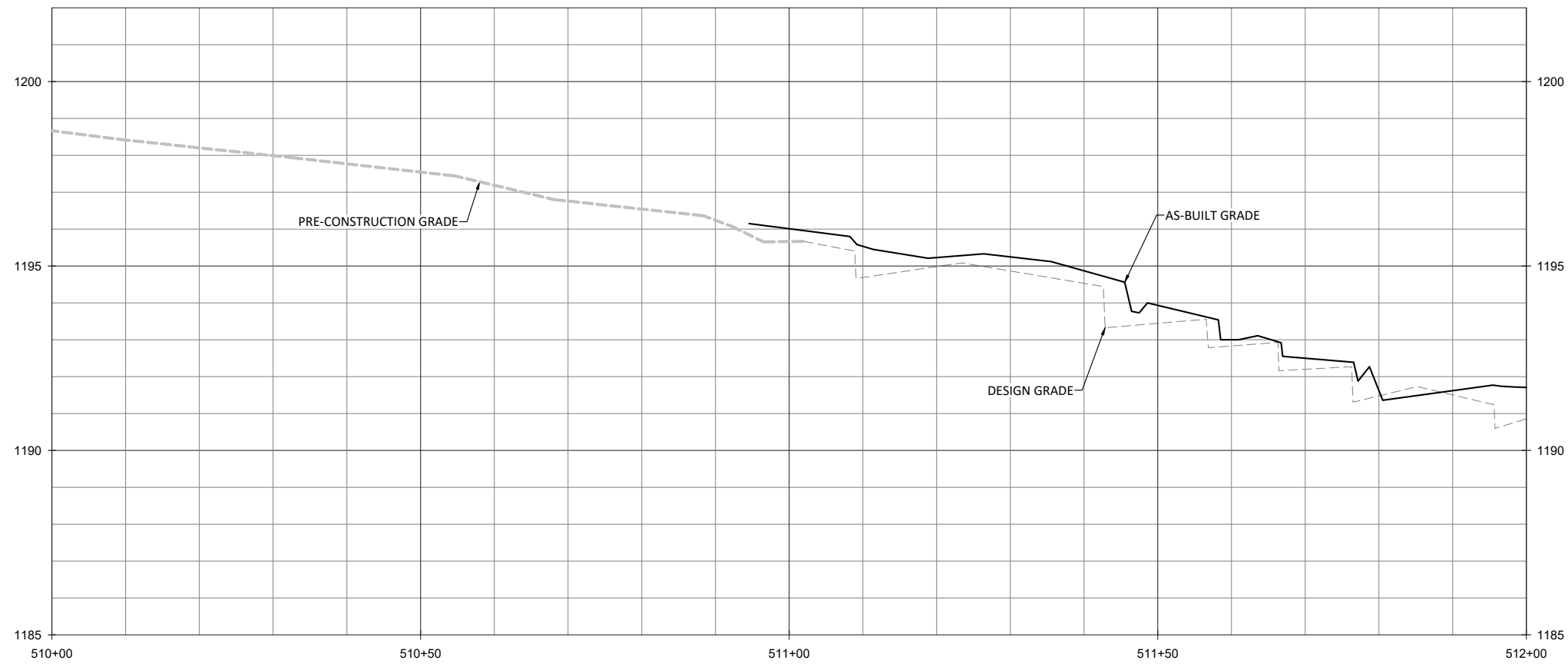
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT3
 Stream Plan and Profile

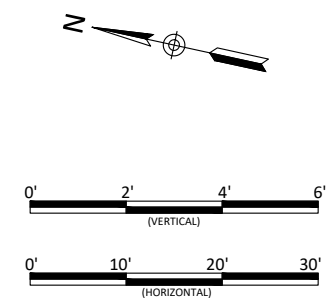
Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.22



NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



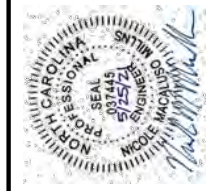
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

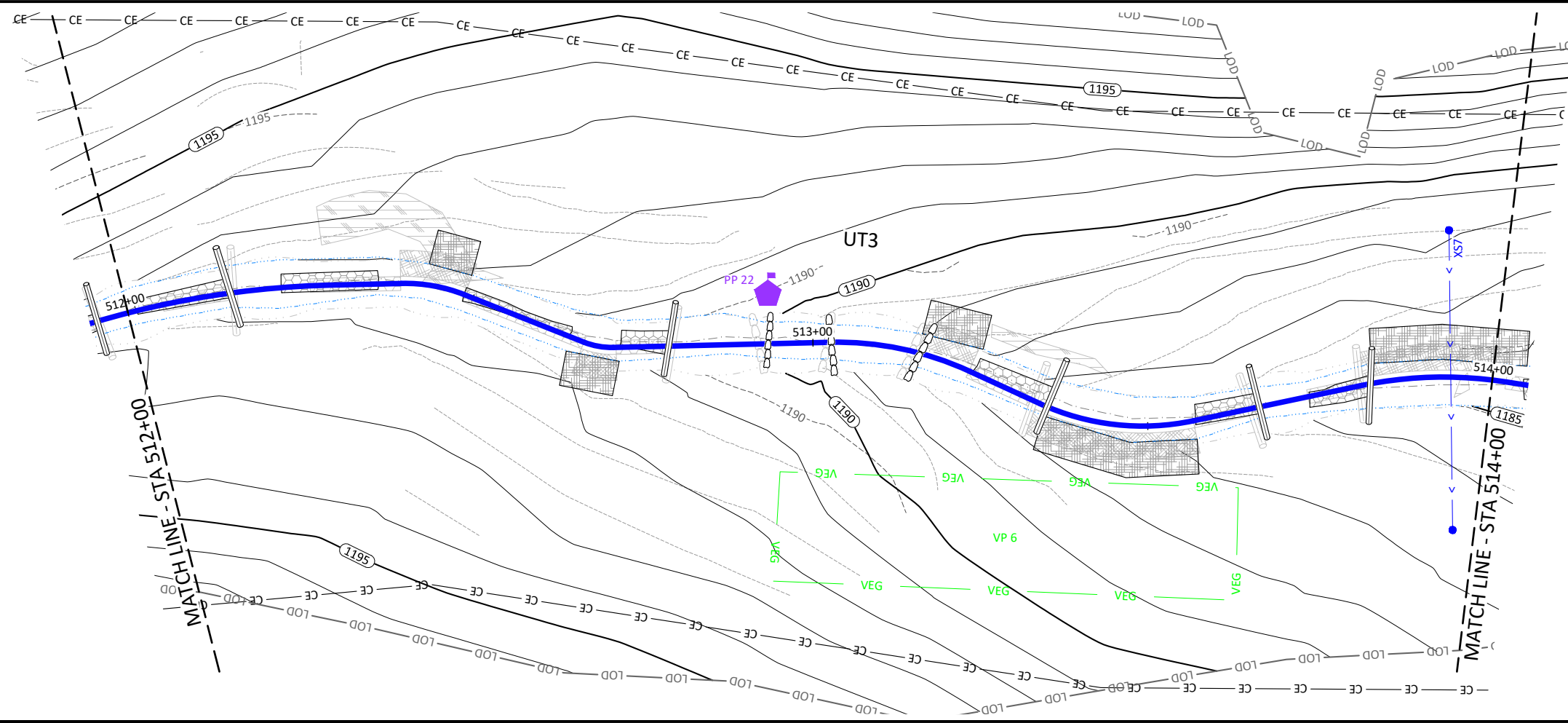
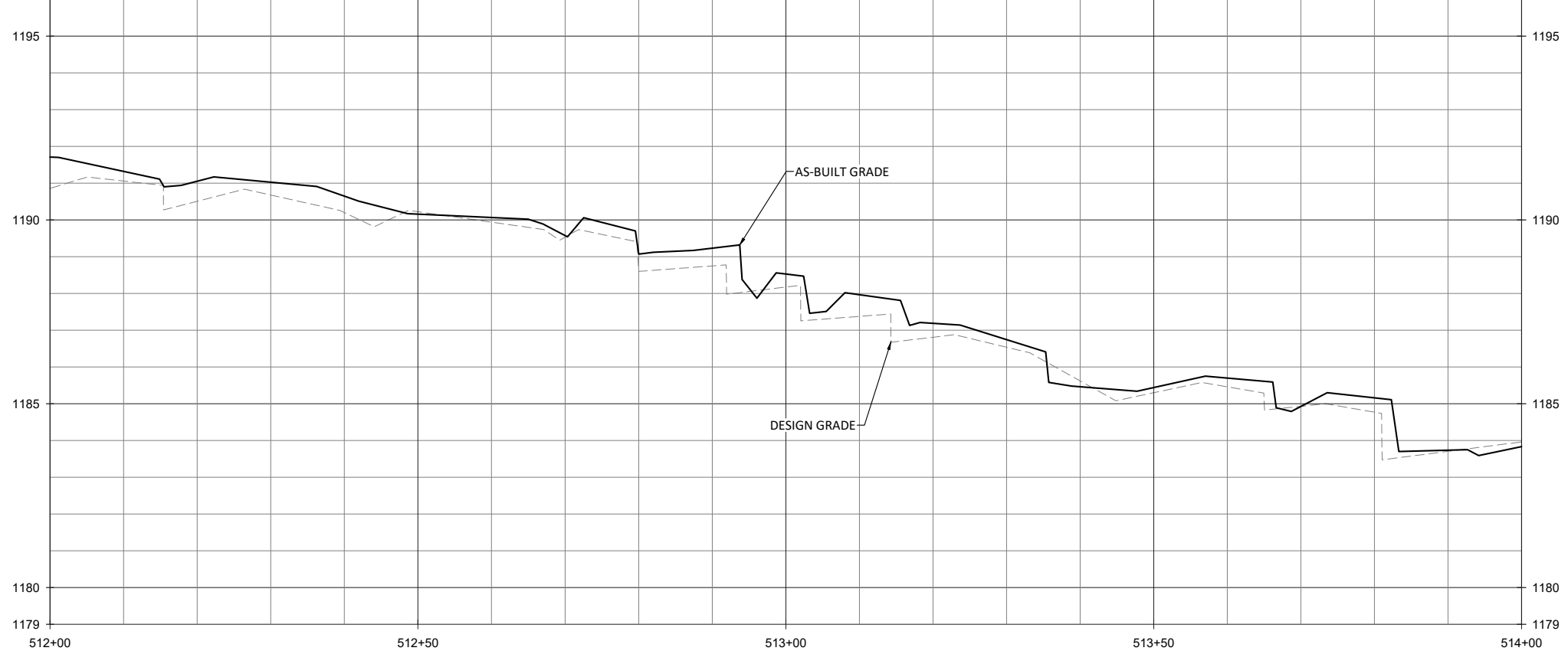
UT3
 Stream Plan and Profile

Revisions:

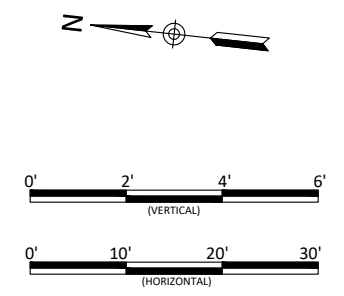
Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.23





NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



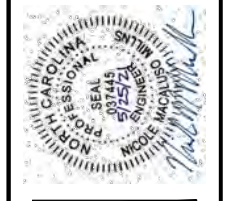
Revisions:

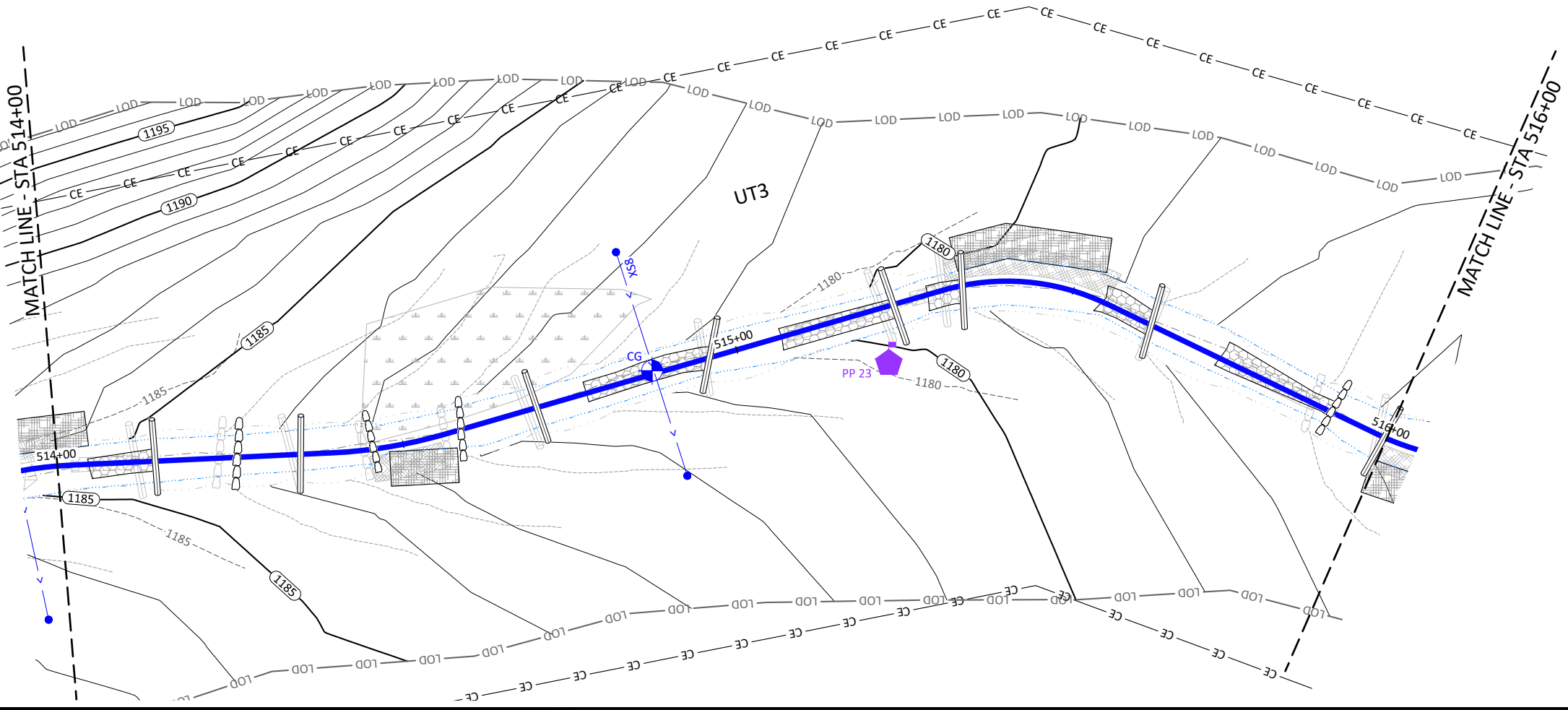
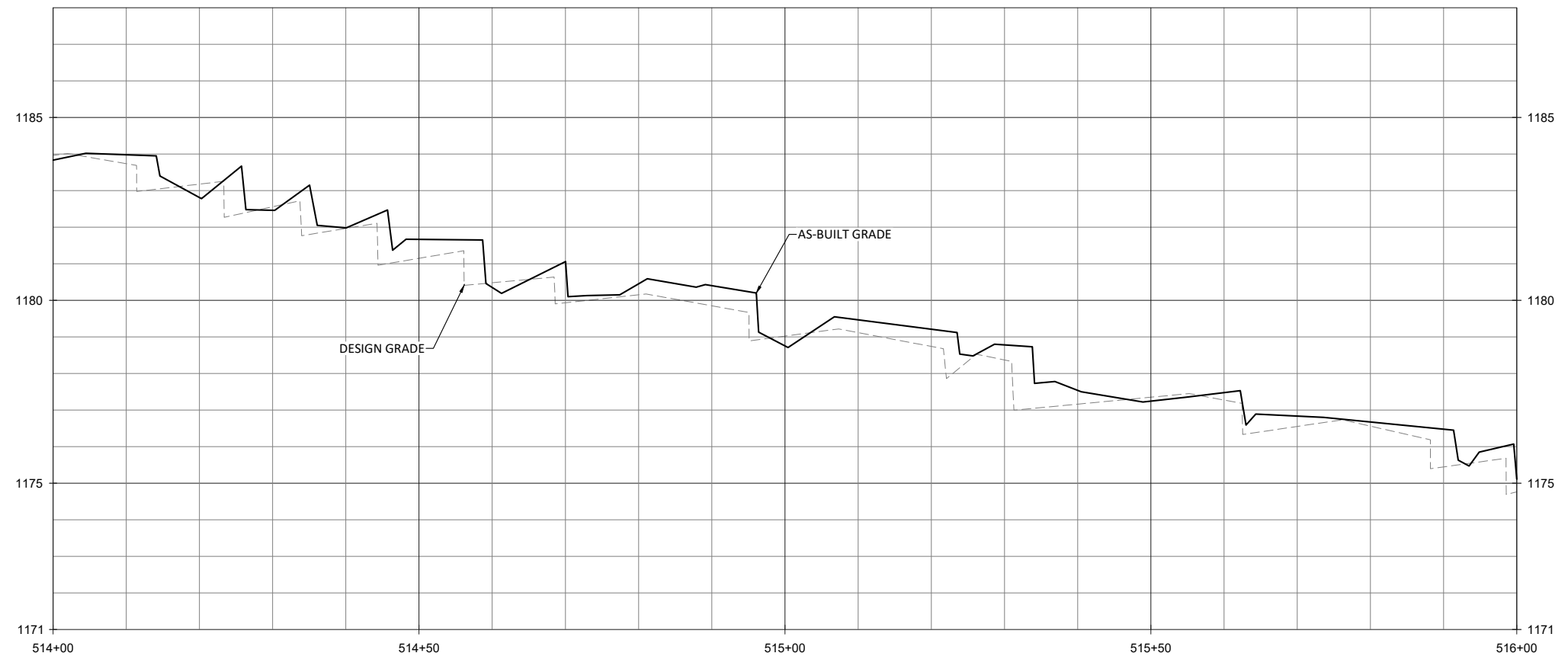
Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.24

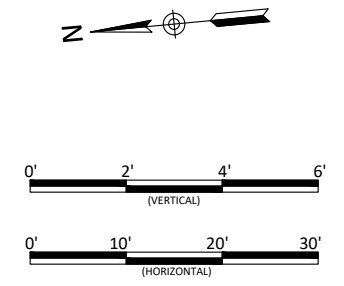
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT3
 Stream Plan and Profile





NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.

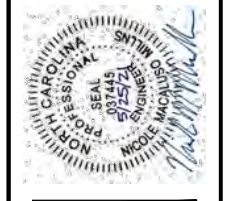


Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

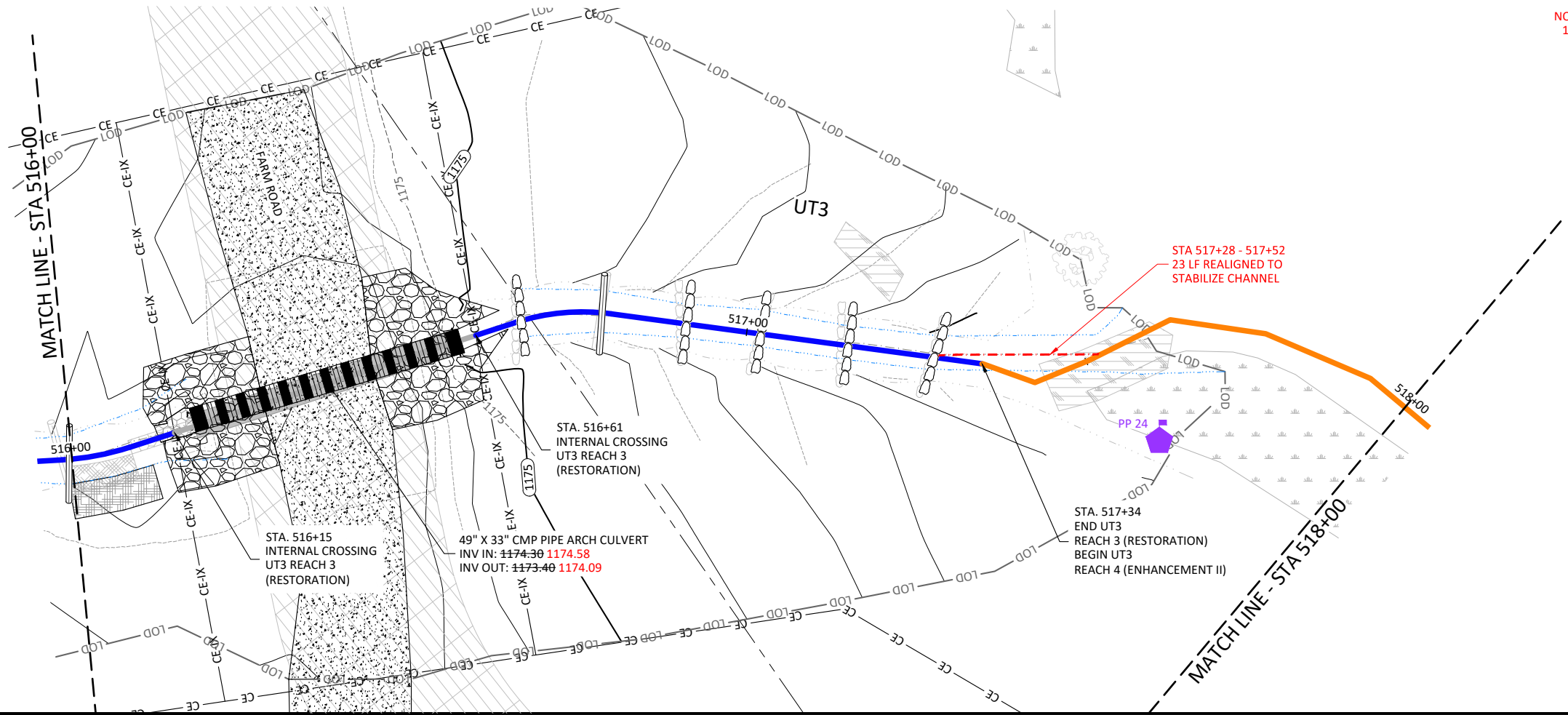
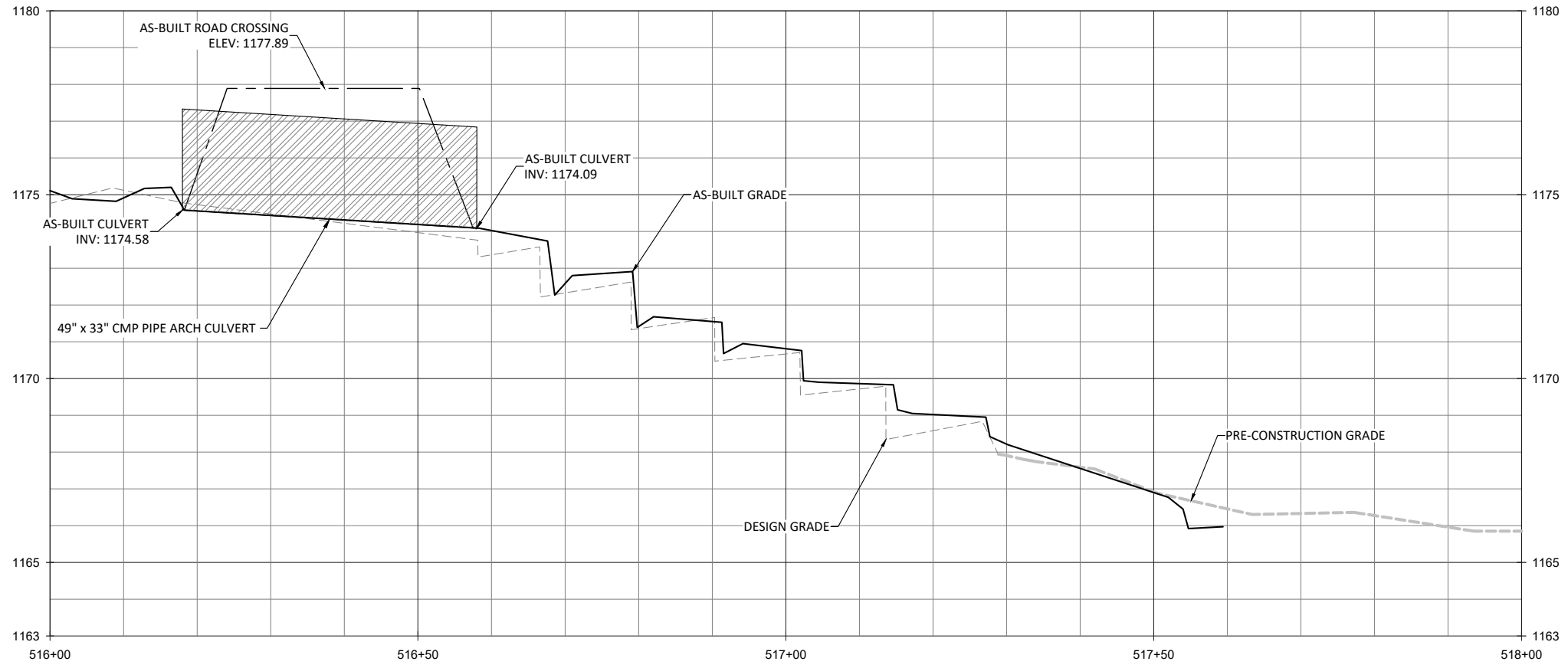
1.25

Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

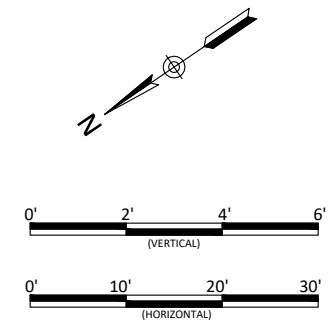
UT3
 Stream Plan and Profile



June 10, 2021
X:\Shared\Projects\005-02177 Lyon Hills Monitoring Baseline Monitoring-2021\Plans\02177-AB UT3 UT3A.dwg



NOTE:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



WILDLANDS
ENGINEERING
312 W. Millbrook Rd, Suite 225
Raleigh, NC 27609
Tel: 919.851.9886
License No. F-0831

Revisions:

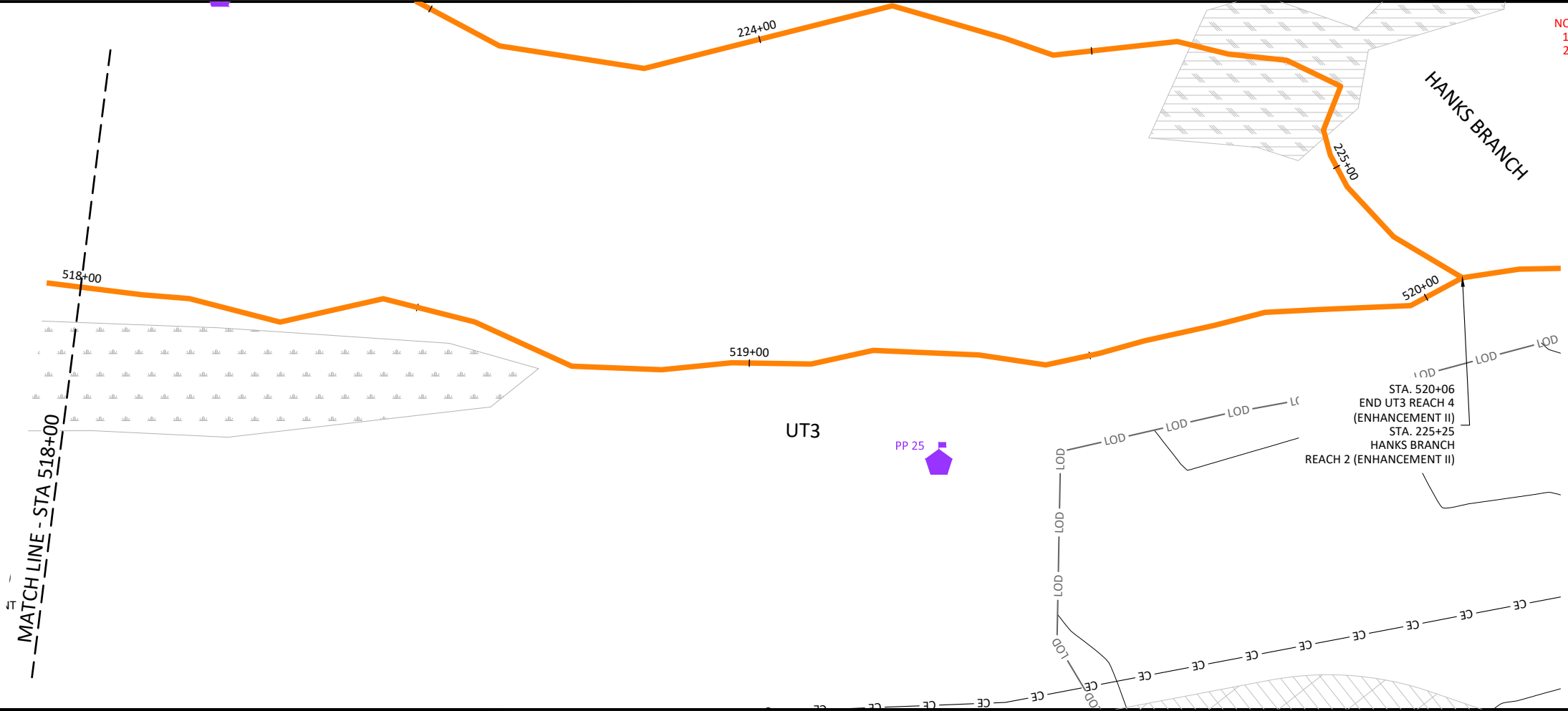
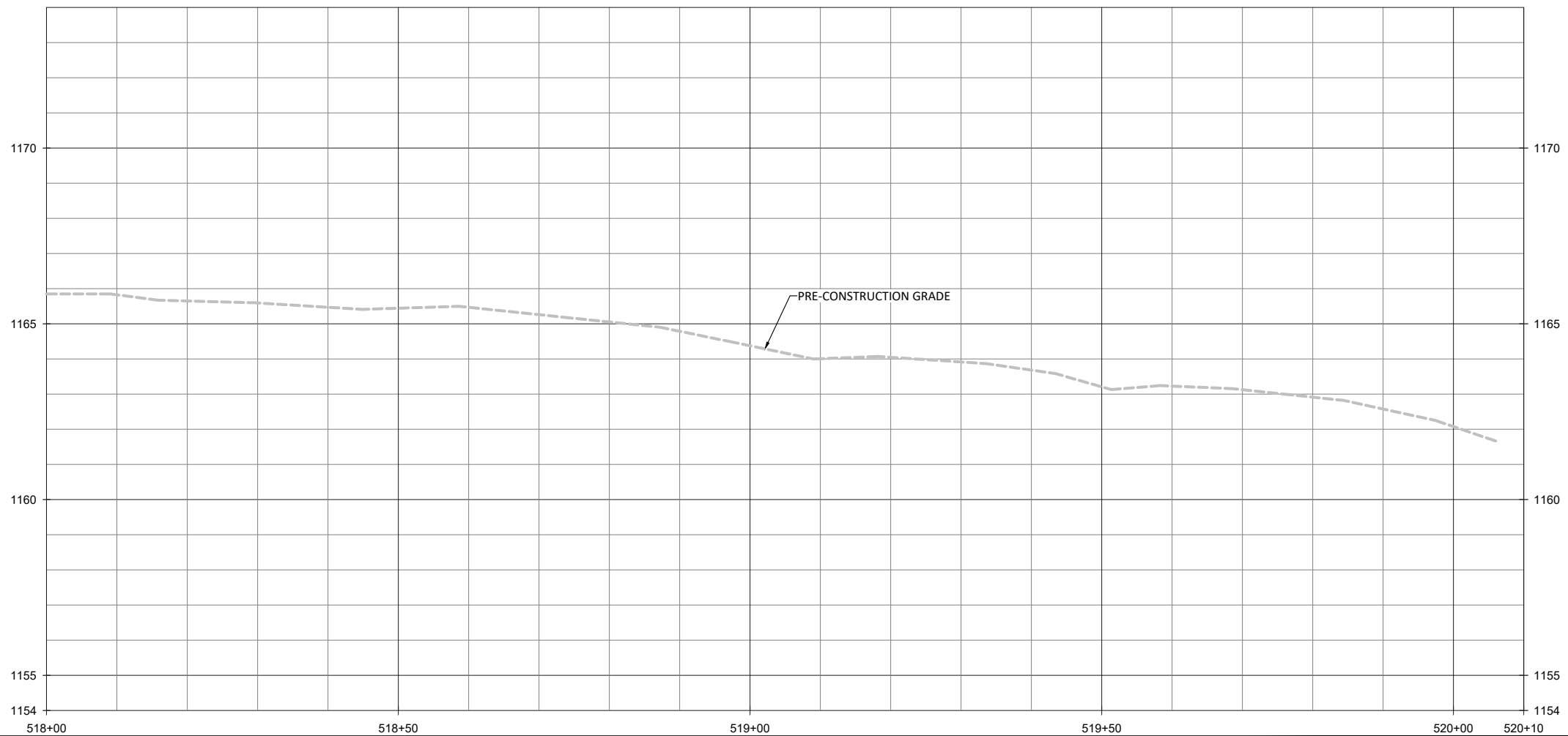
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.26

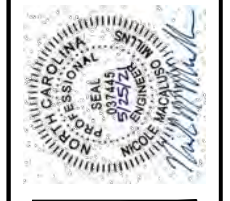
Sheet

Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT3
Stream Plan and Profile



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.



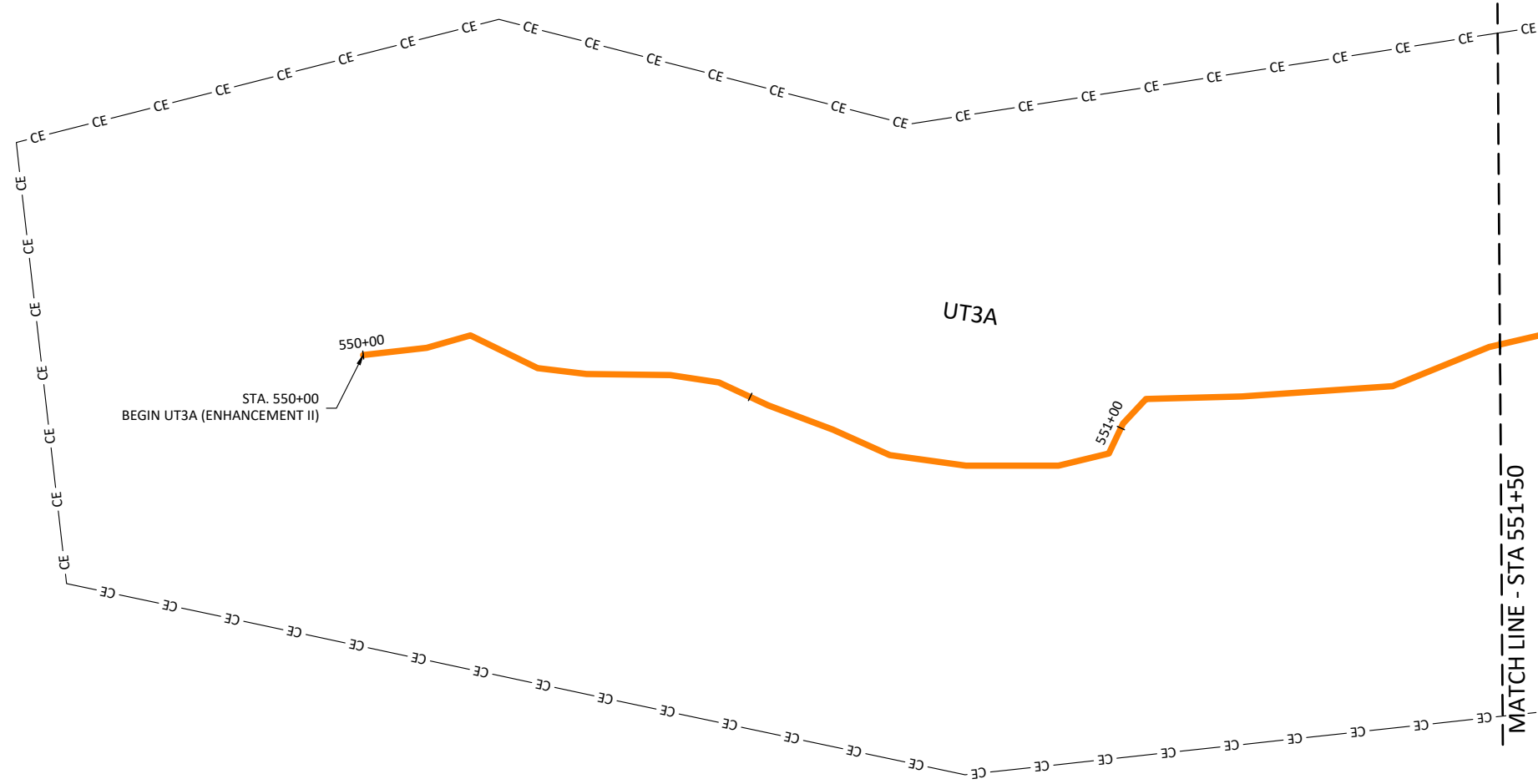
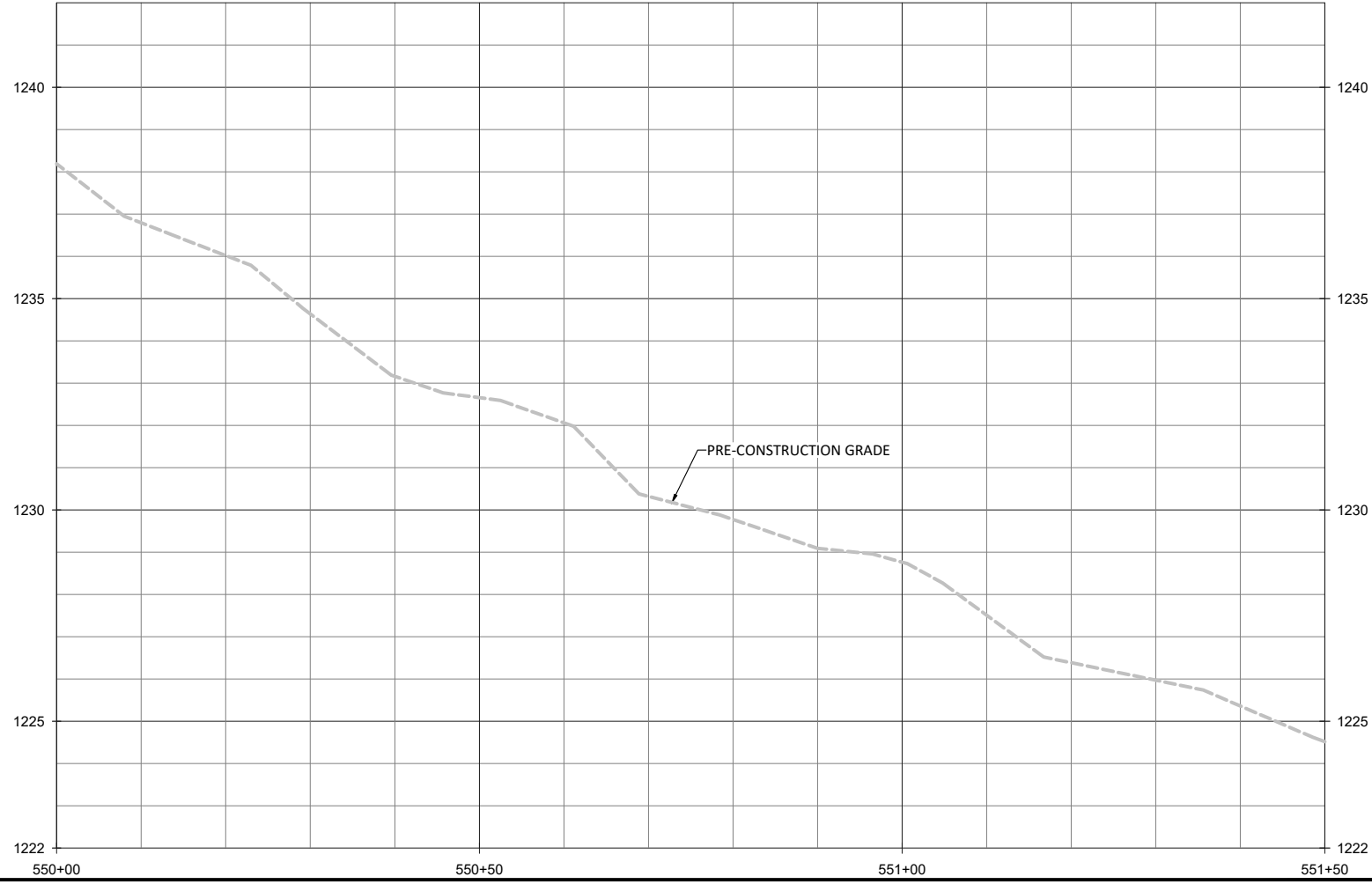
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT3
Stream Plan and Profile

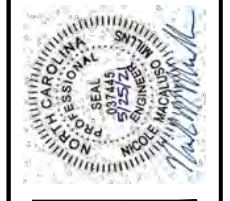
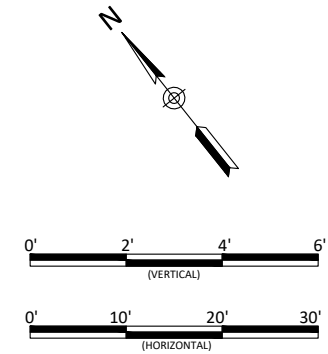
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.27



NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.

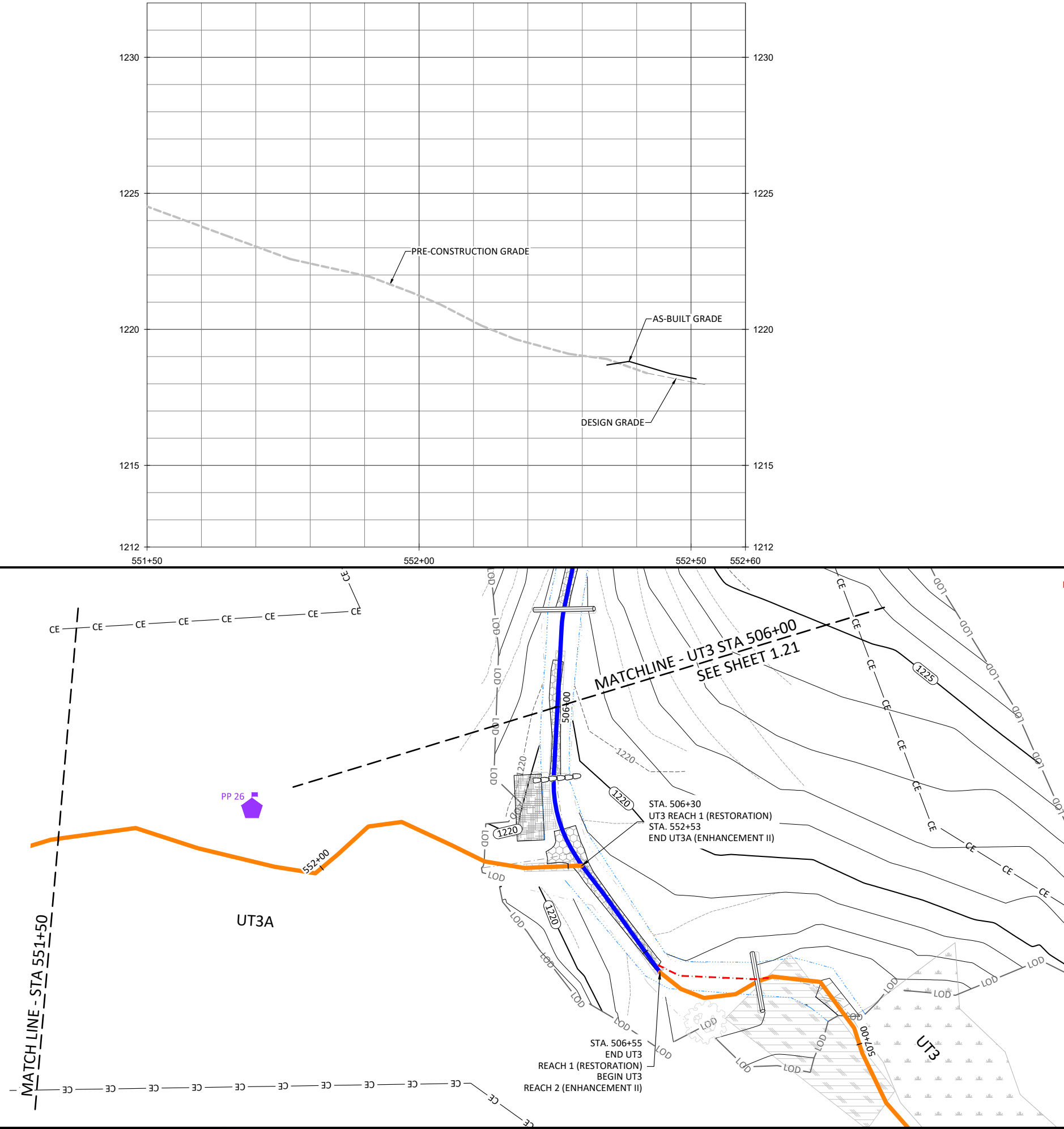


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 UT3A
 Stream Plan and Profile

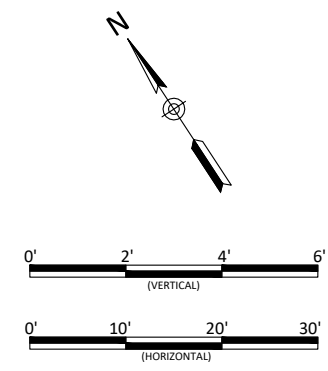
Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABF
 Checked By: JNK

1.28



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT3 IS ADDRESSED ON SHEETS 1.18 THROUGH 1.27.

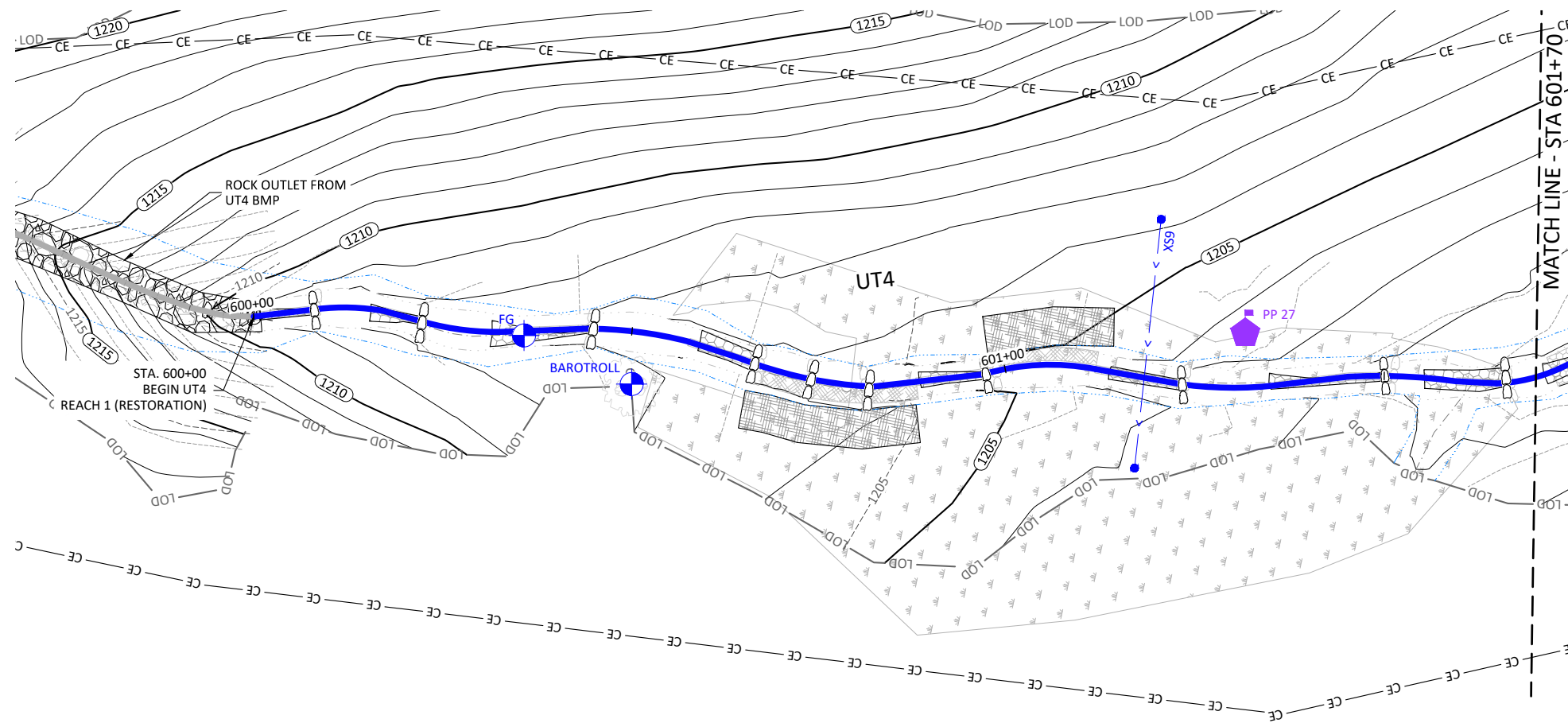
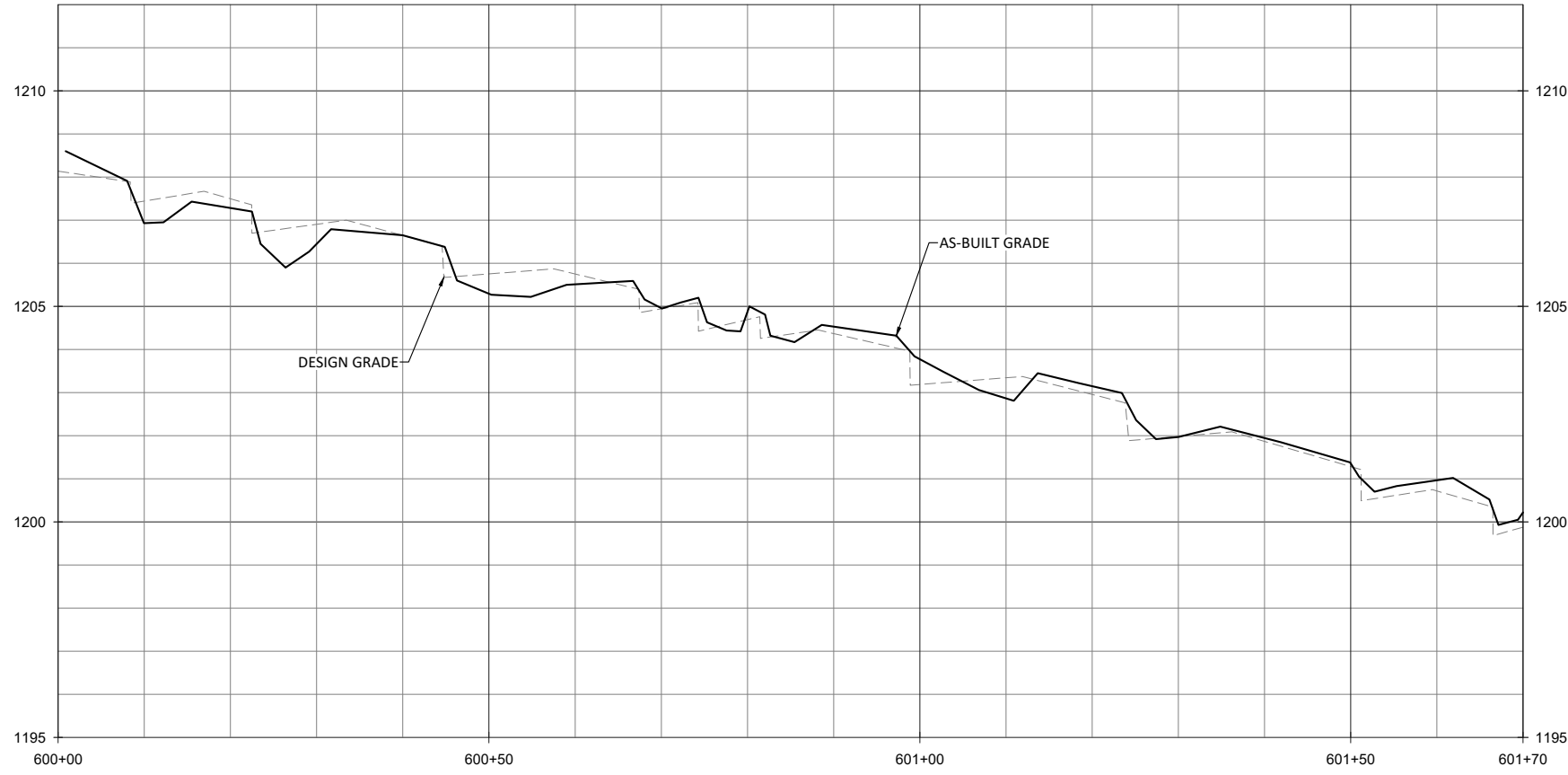


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

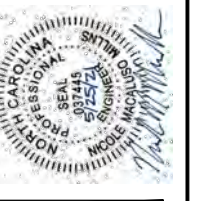
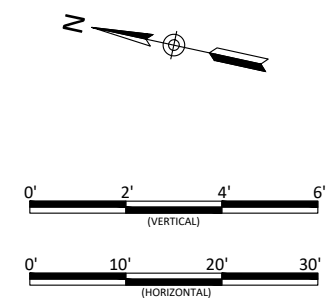
UT3A
 Stream Plan and Profile

Revisions:

Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT4 BMP IS ADDRESSED ON SHEET 2.03.



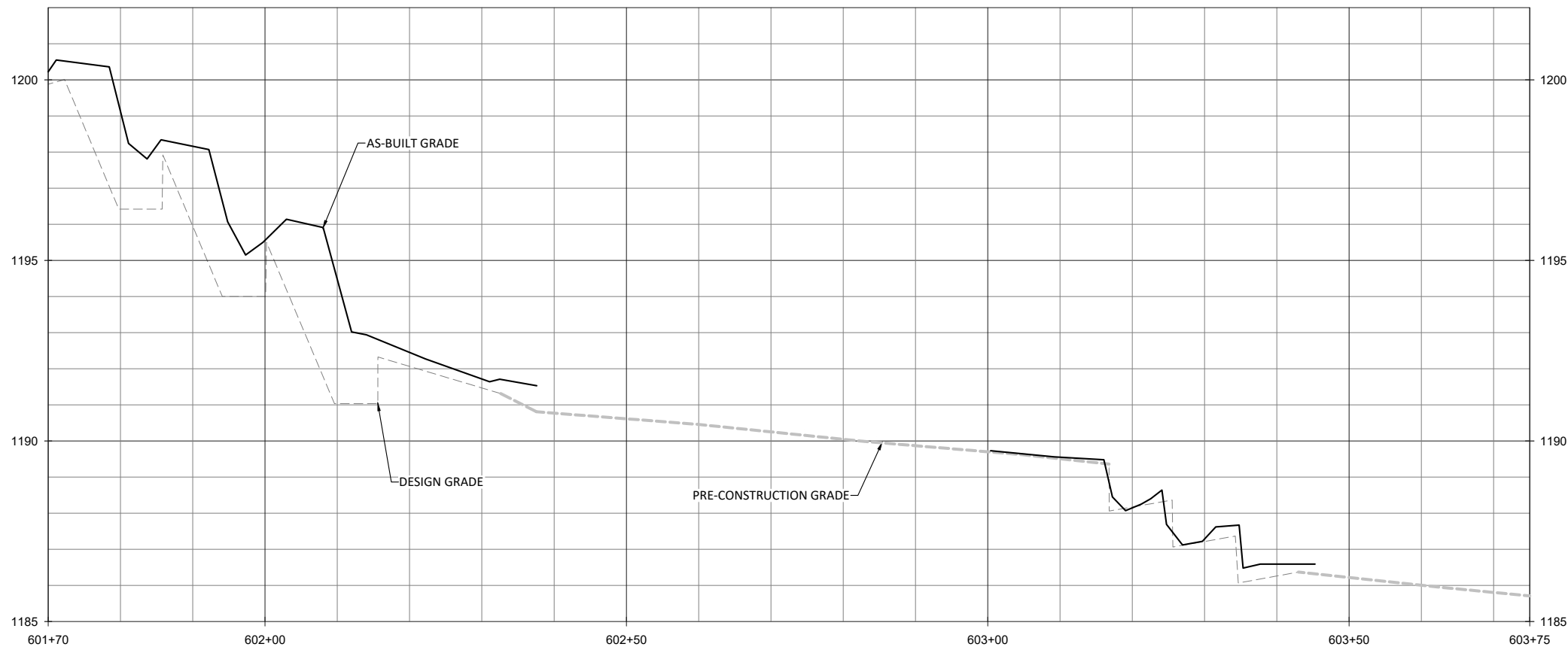
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT4
Stream Plan and Profile

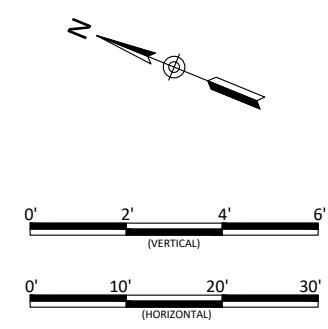
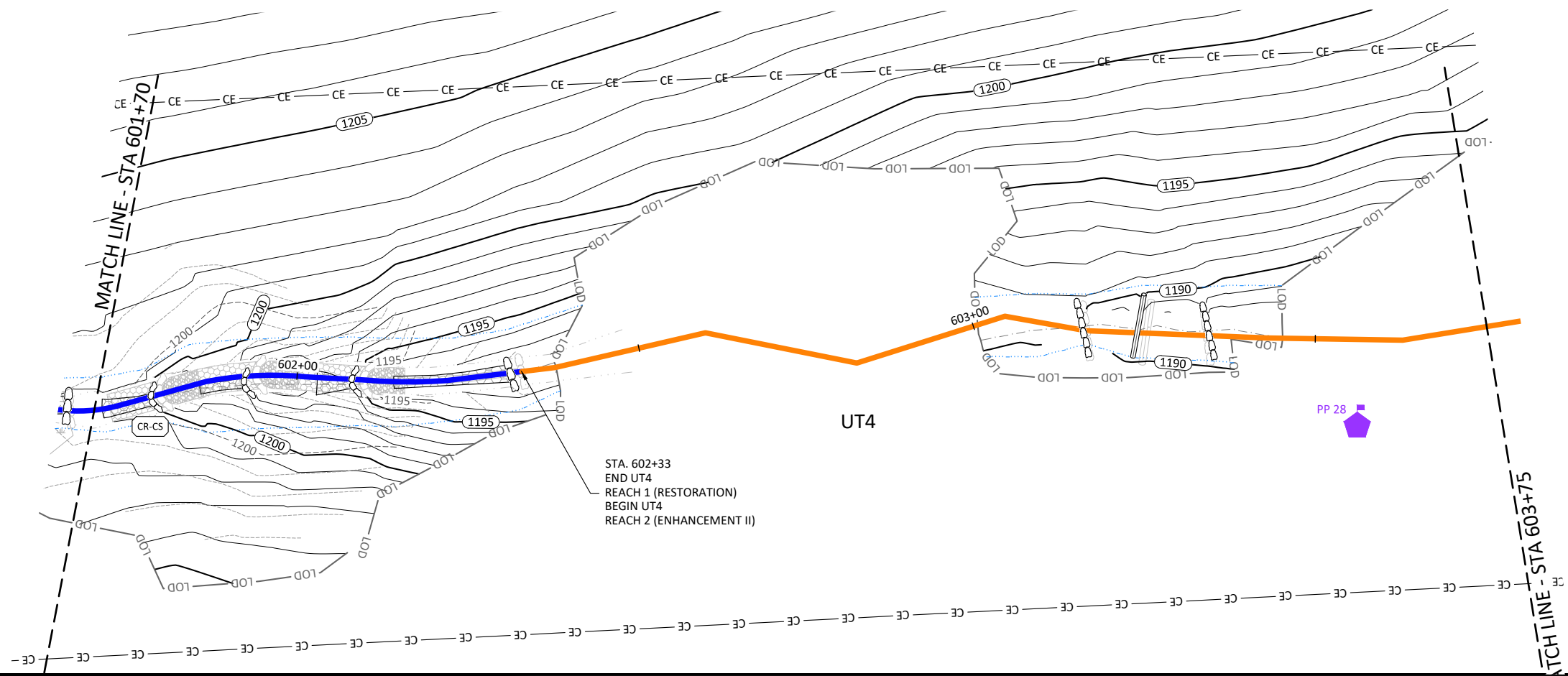
Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.30
Sheet

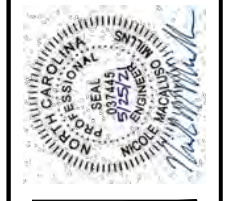


NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT4
 Stream Plan and Profile

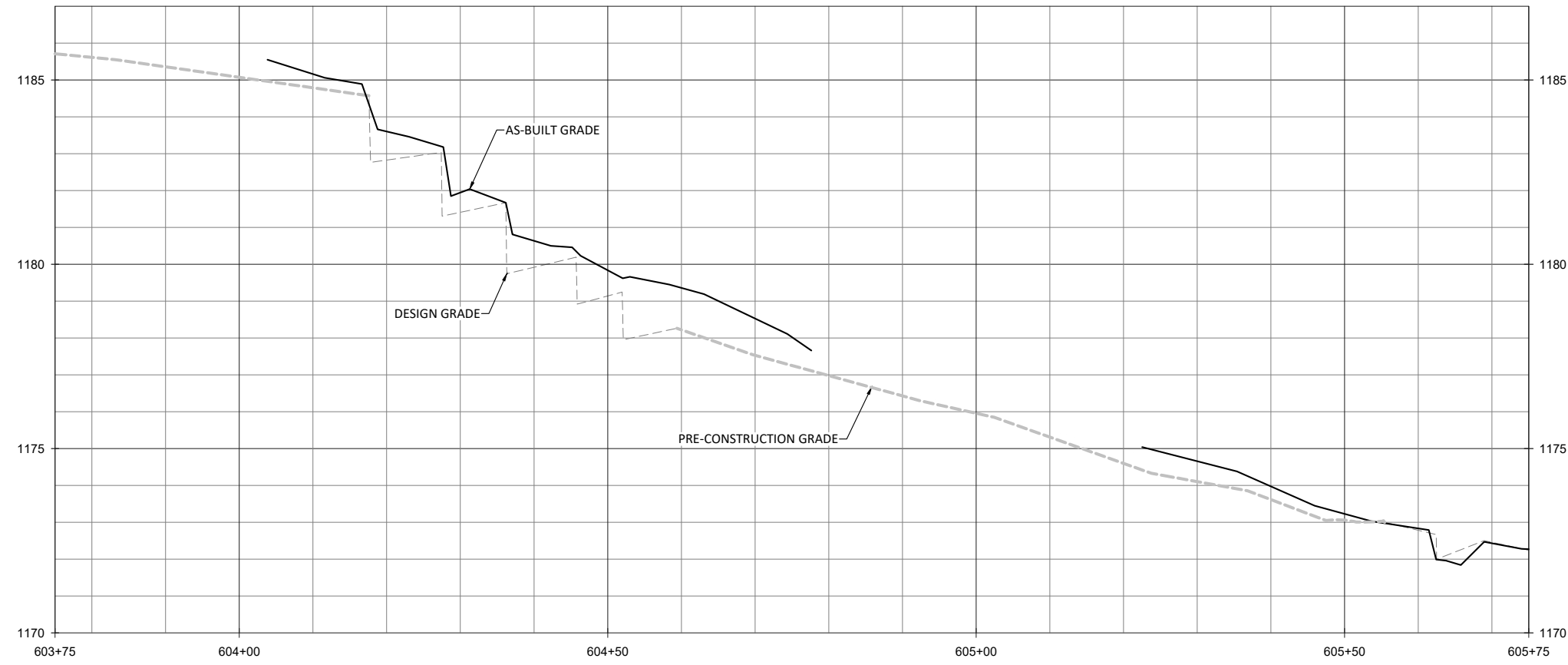


Revisions:

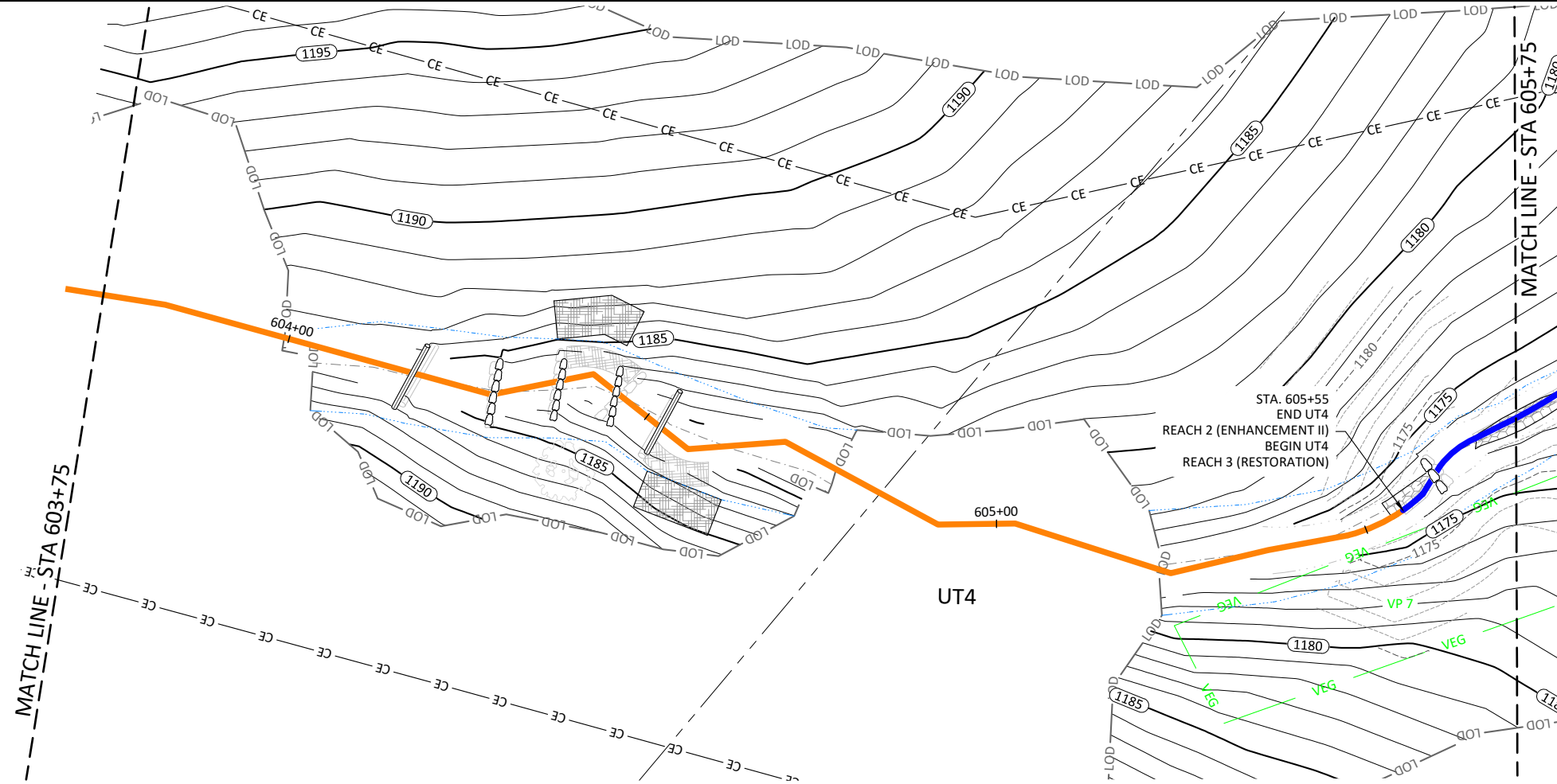
Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.31

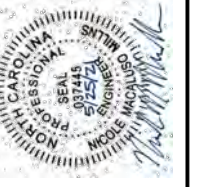
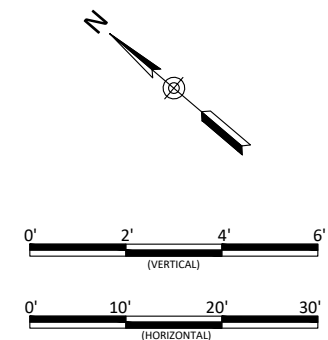
June 10, 2021



X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring-2021\Plans\0177-AB UT4 UT5 UT6.dwg



NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



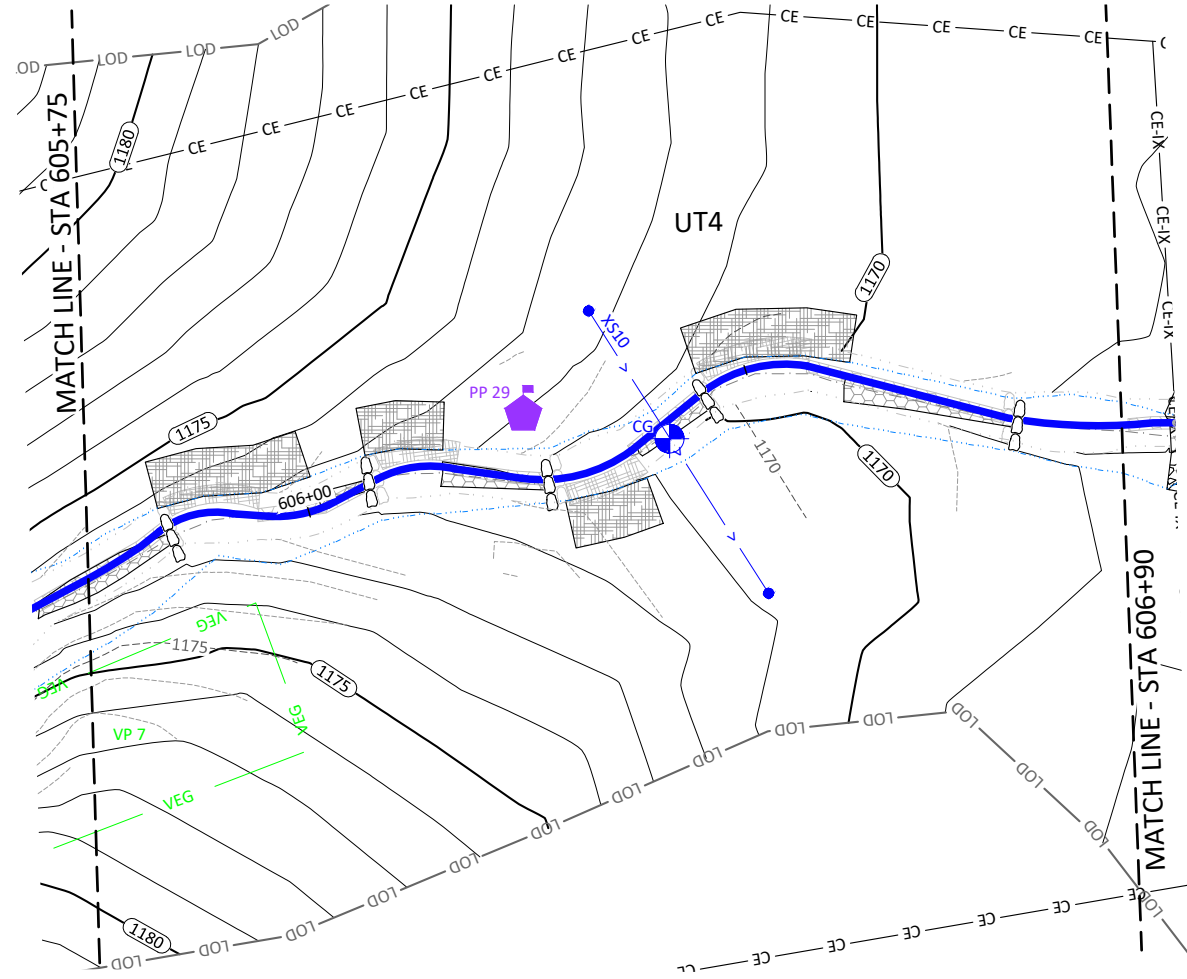
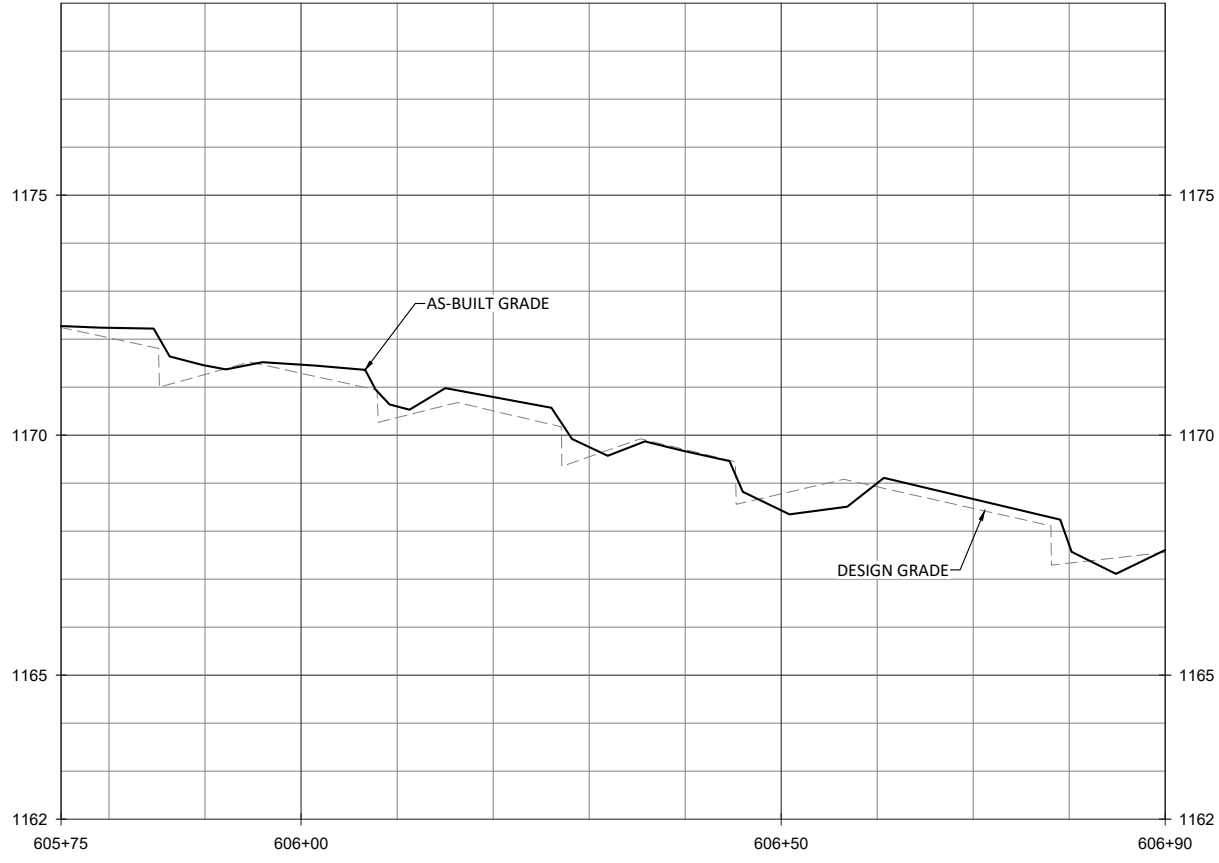
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT4
 Stream Plan and Profile

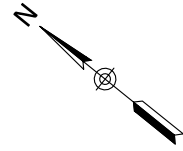
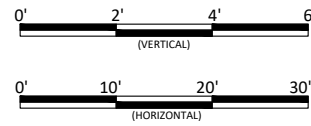
Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.32
 Sheet



NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

1.33

Sheet

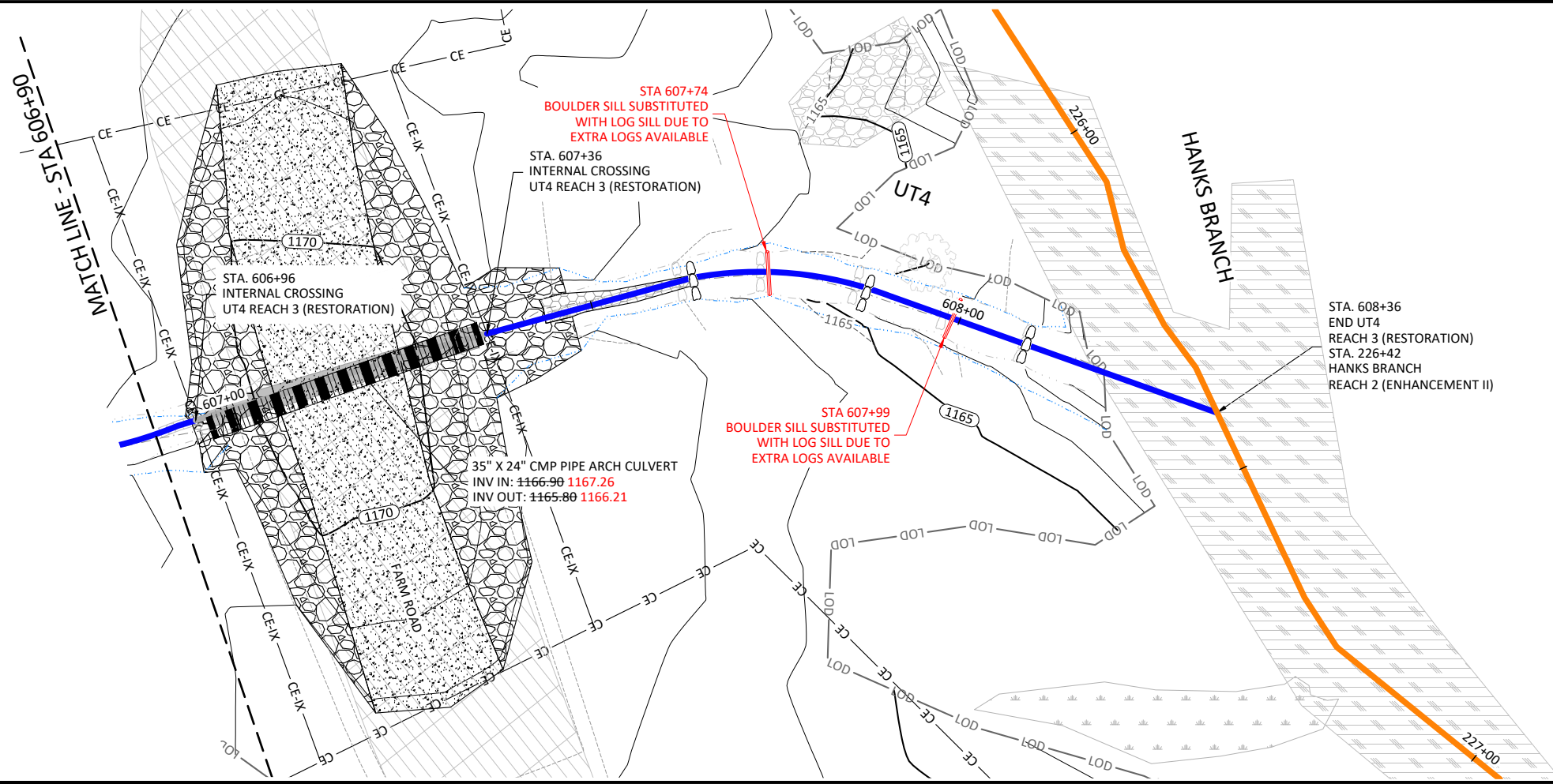
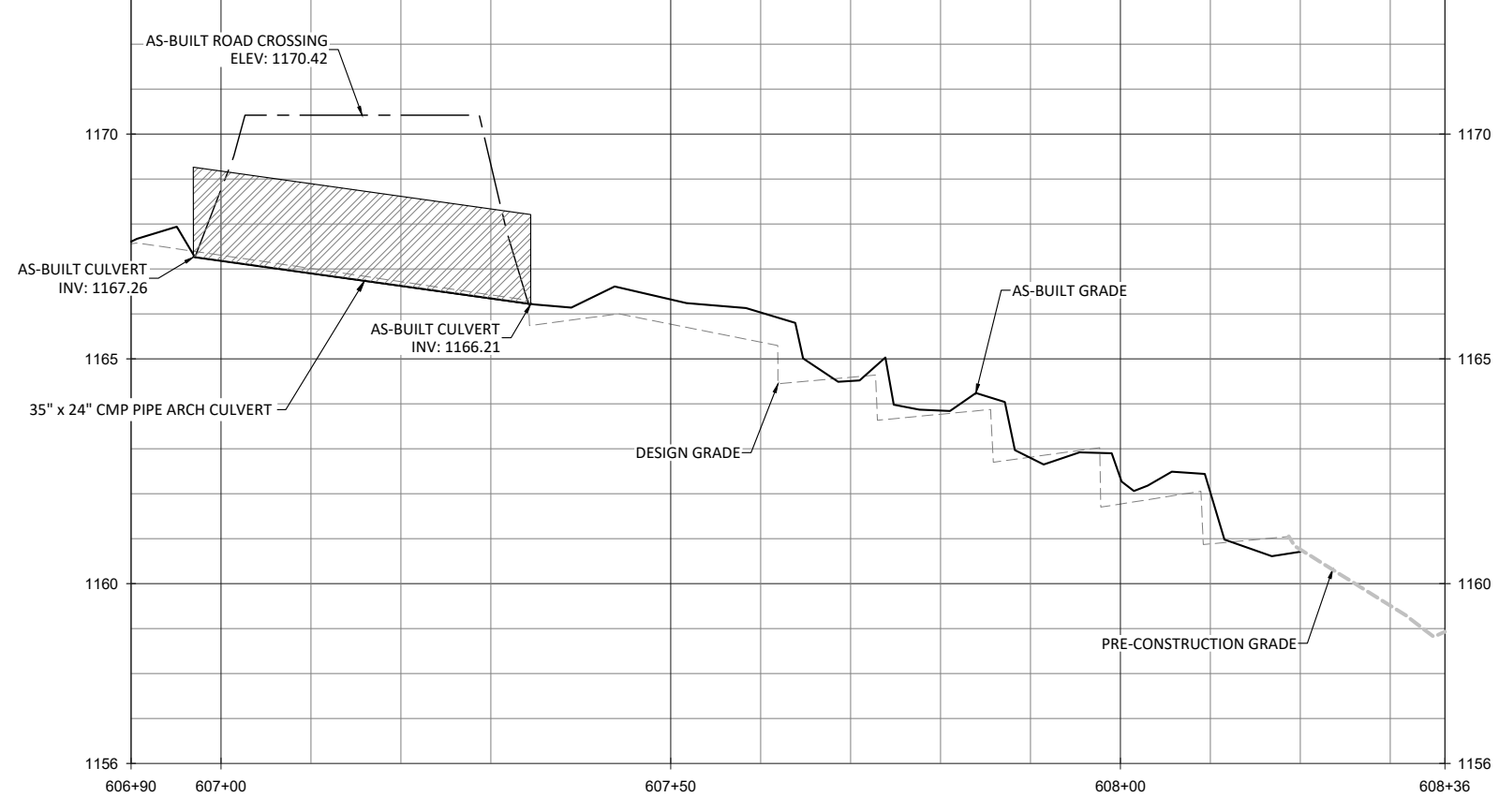
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT4
 Stream Plan and Profile

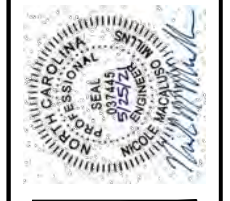
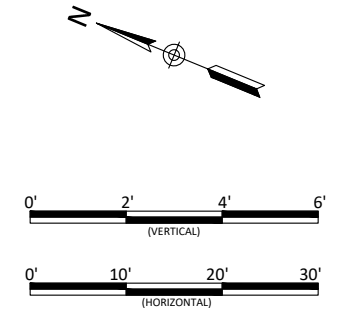


June 10, 2021

X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring\2021\Plans\02177-AB UT4 UT5.dwg



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

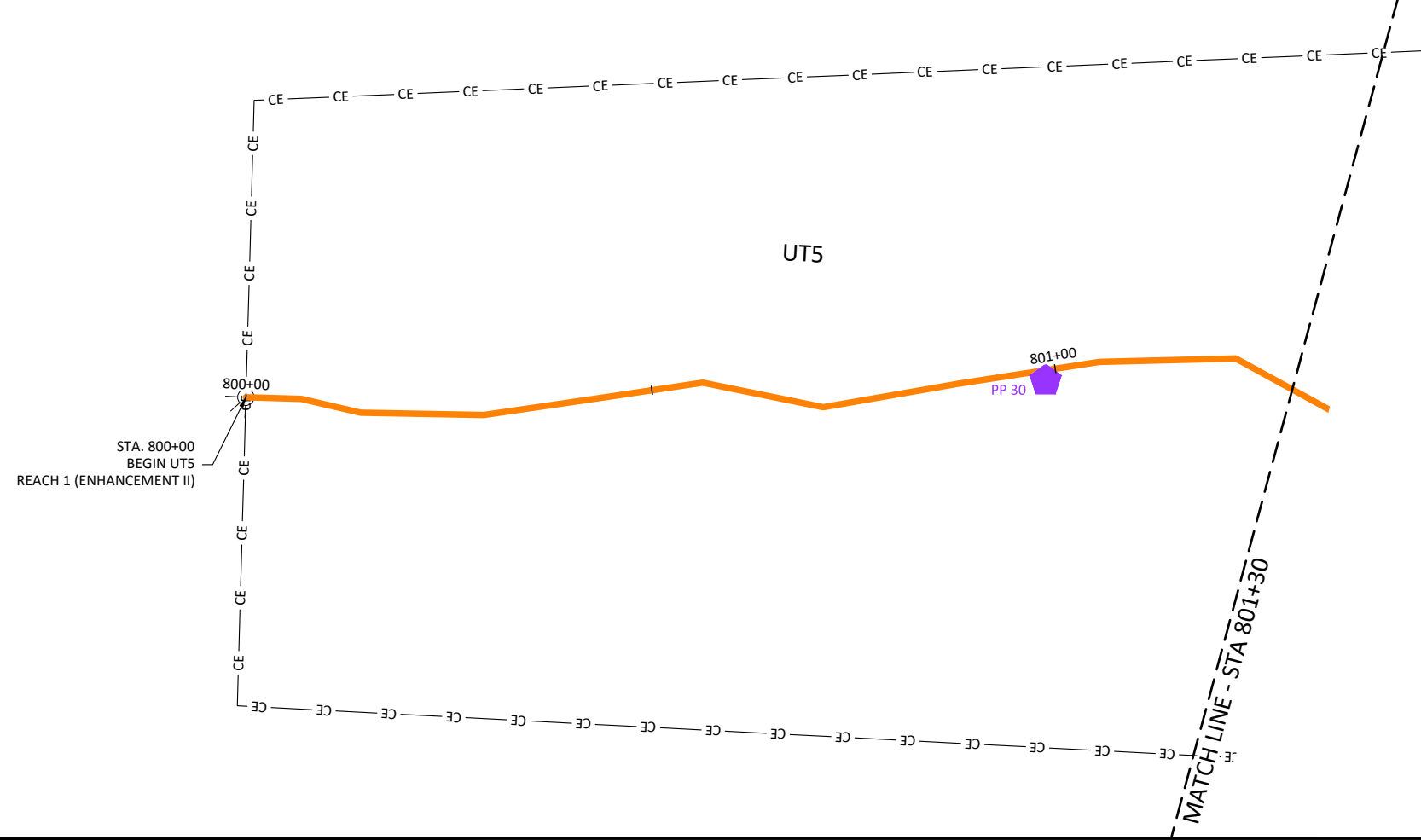
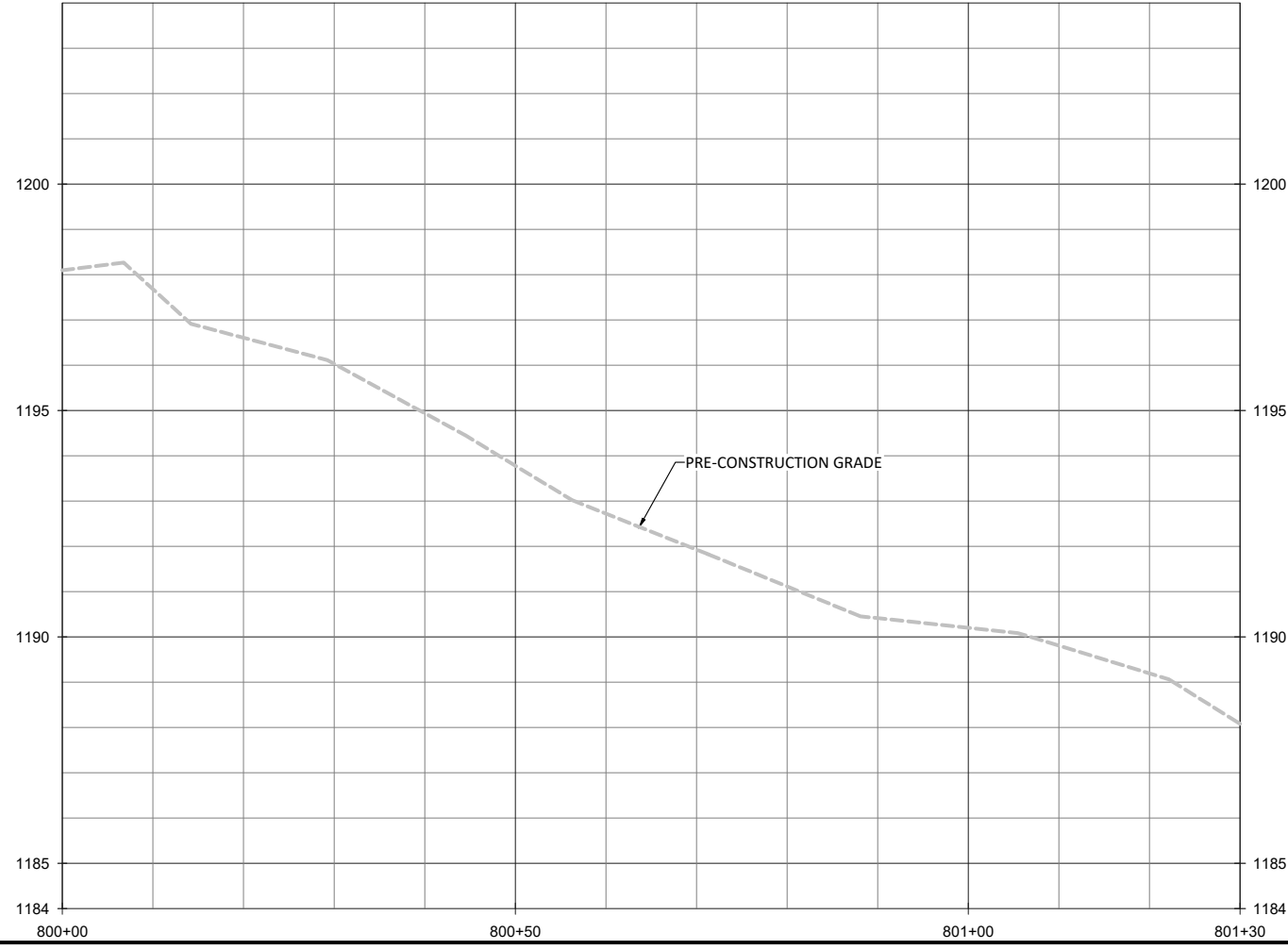
UT4
Stream Plan and Profile

Revisions:

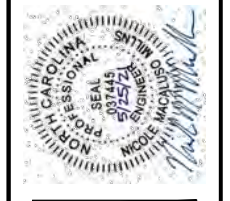
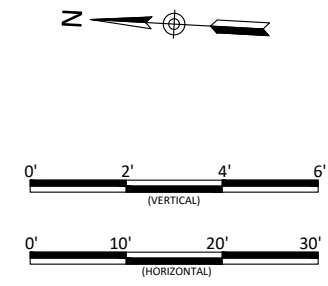
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

1.34

Sheet



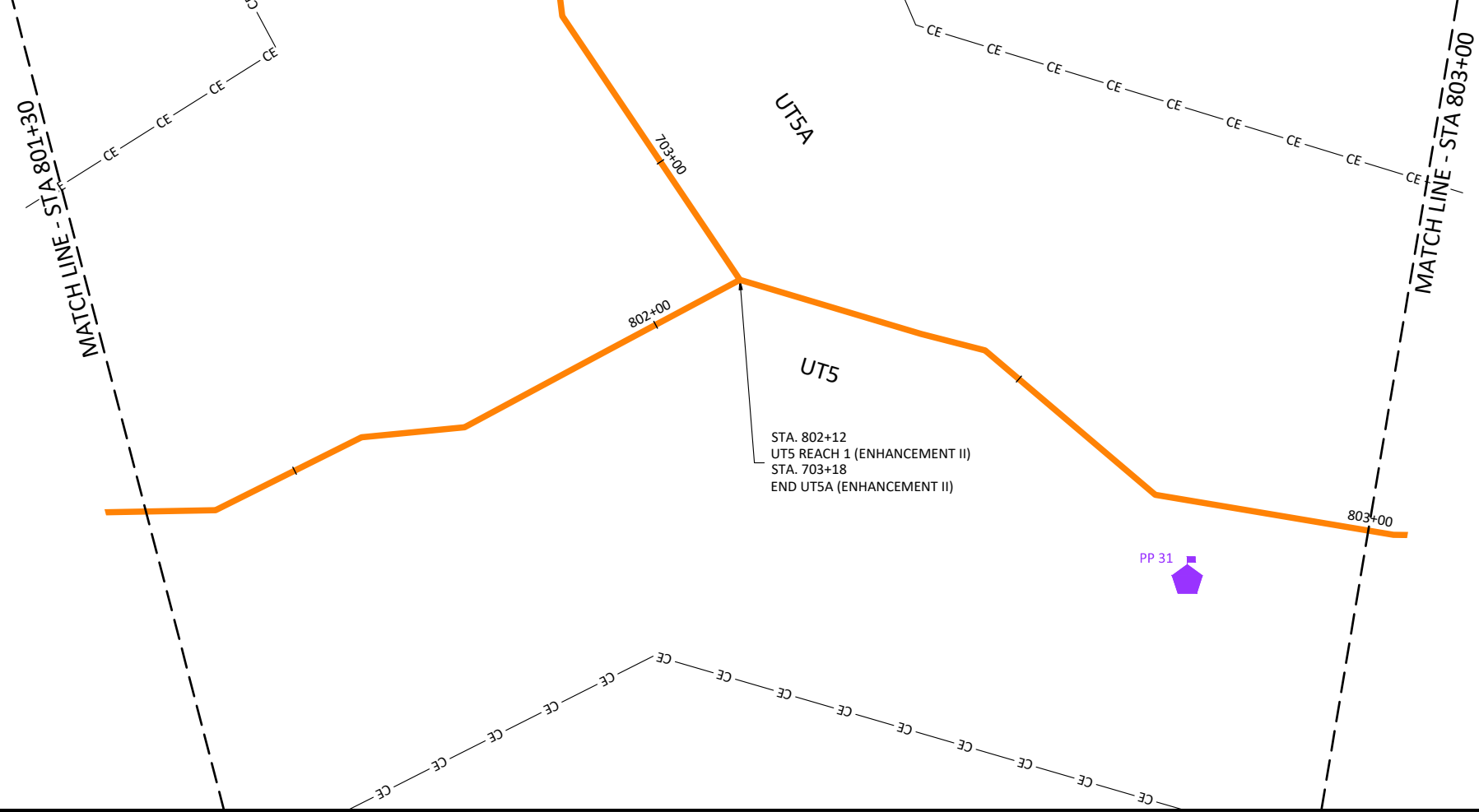
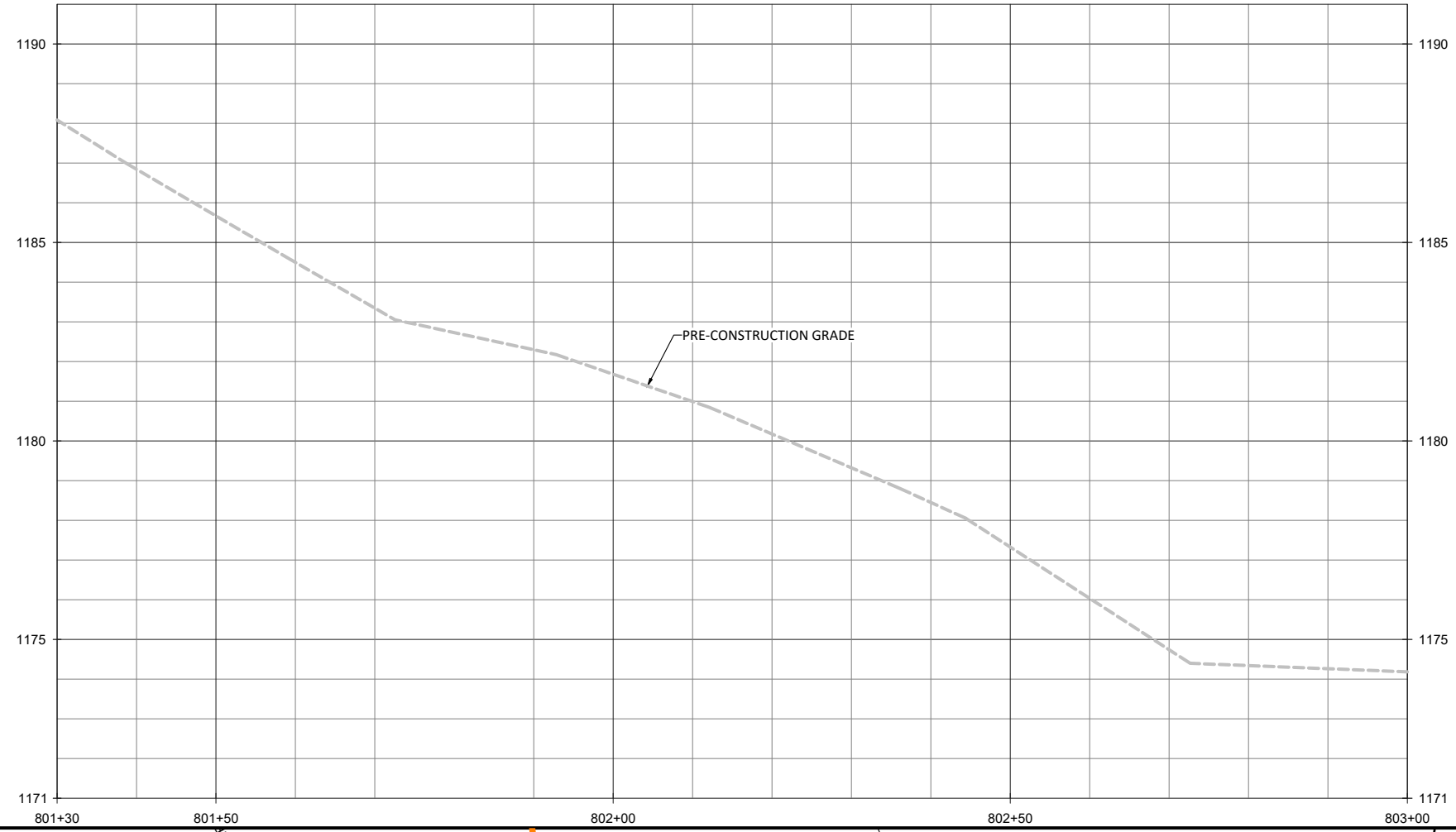
NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



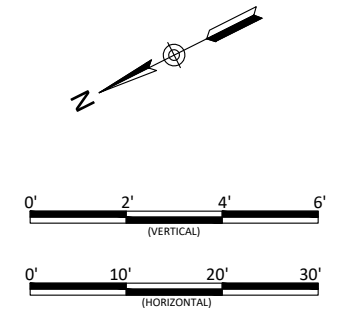
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 UT5
 Stream Plan and Profile

Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABF
 Checked By: JNK



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT5A IS ADDRESSED ON SHEETS 1.40 AND 1.41.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

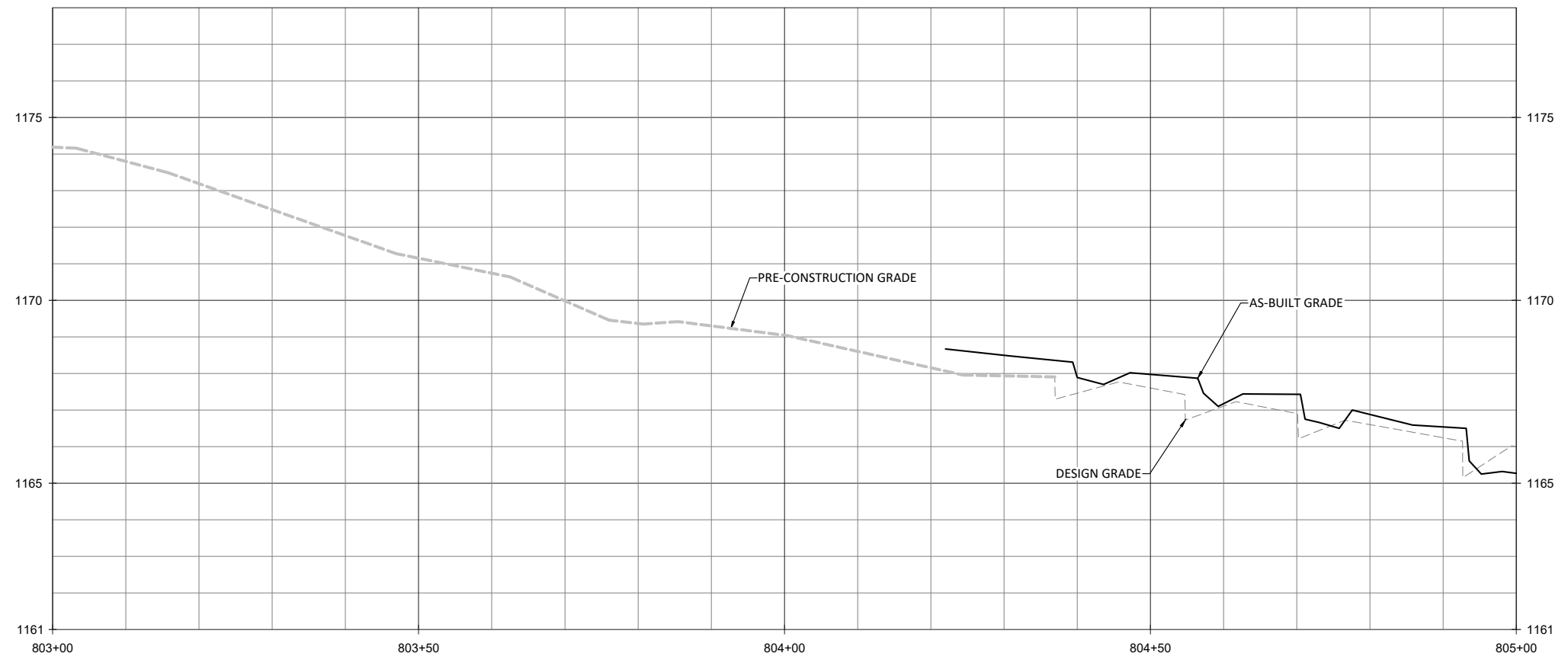
UT5
Stream Plan and Profile

Revisions:

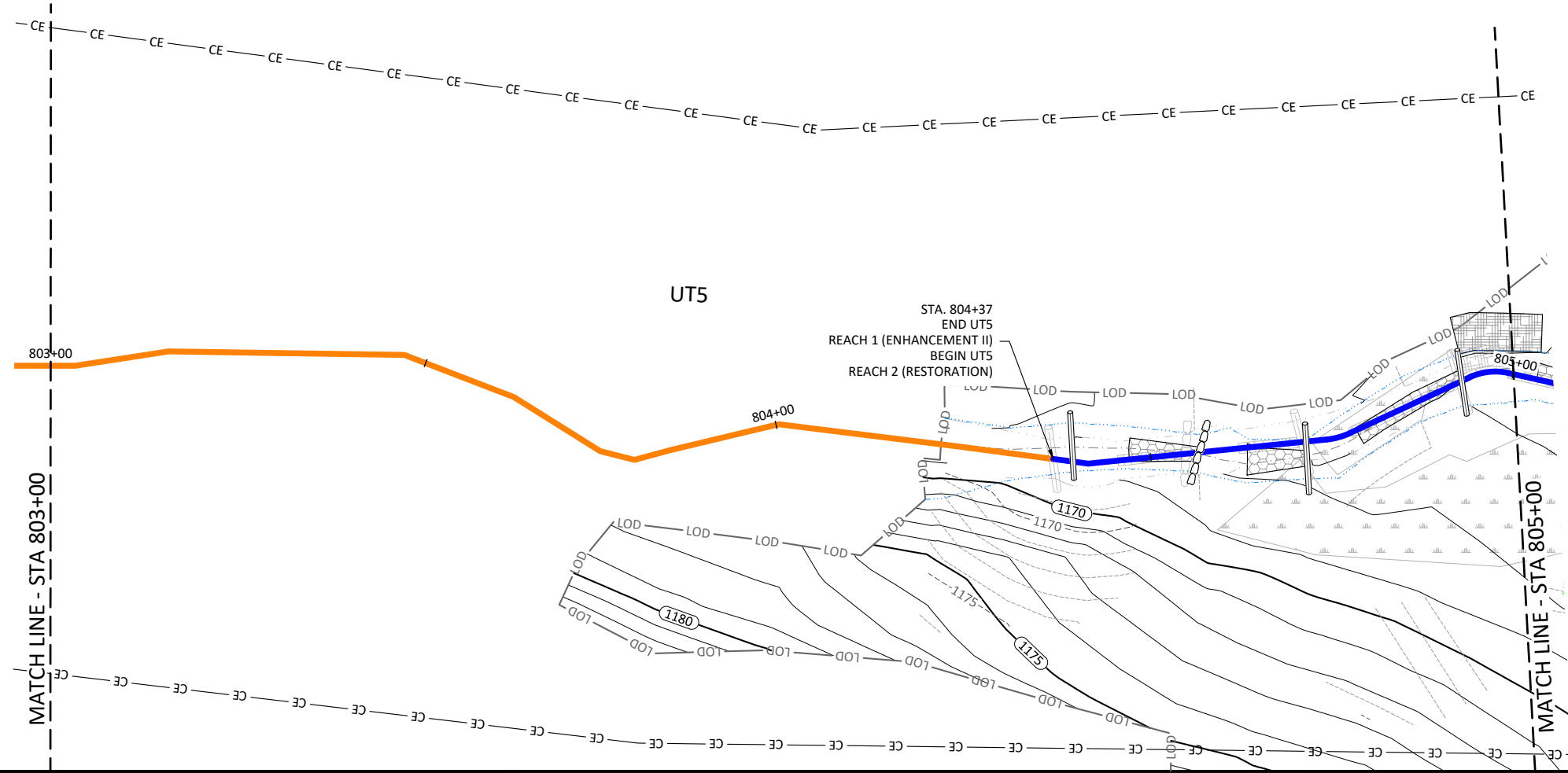
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABF
Checked By: JNK

1.36

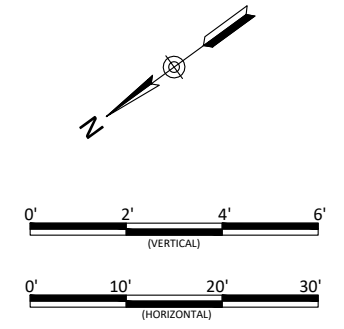
June 10, 2021



X:\Shared\Projects\005-02177 Lyon Hills Monitoring Baseline Monitoring-2021\Plans\02177-AB UT4 UT5.dwg



NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.



WILDLANDS
 ENGINEERING
 312 W. Millbrook Rd, Suite 225
 Raleigh, NC 27609
 Tel: 919.851.9886
 License No. F-0831



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

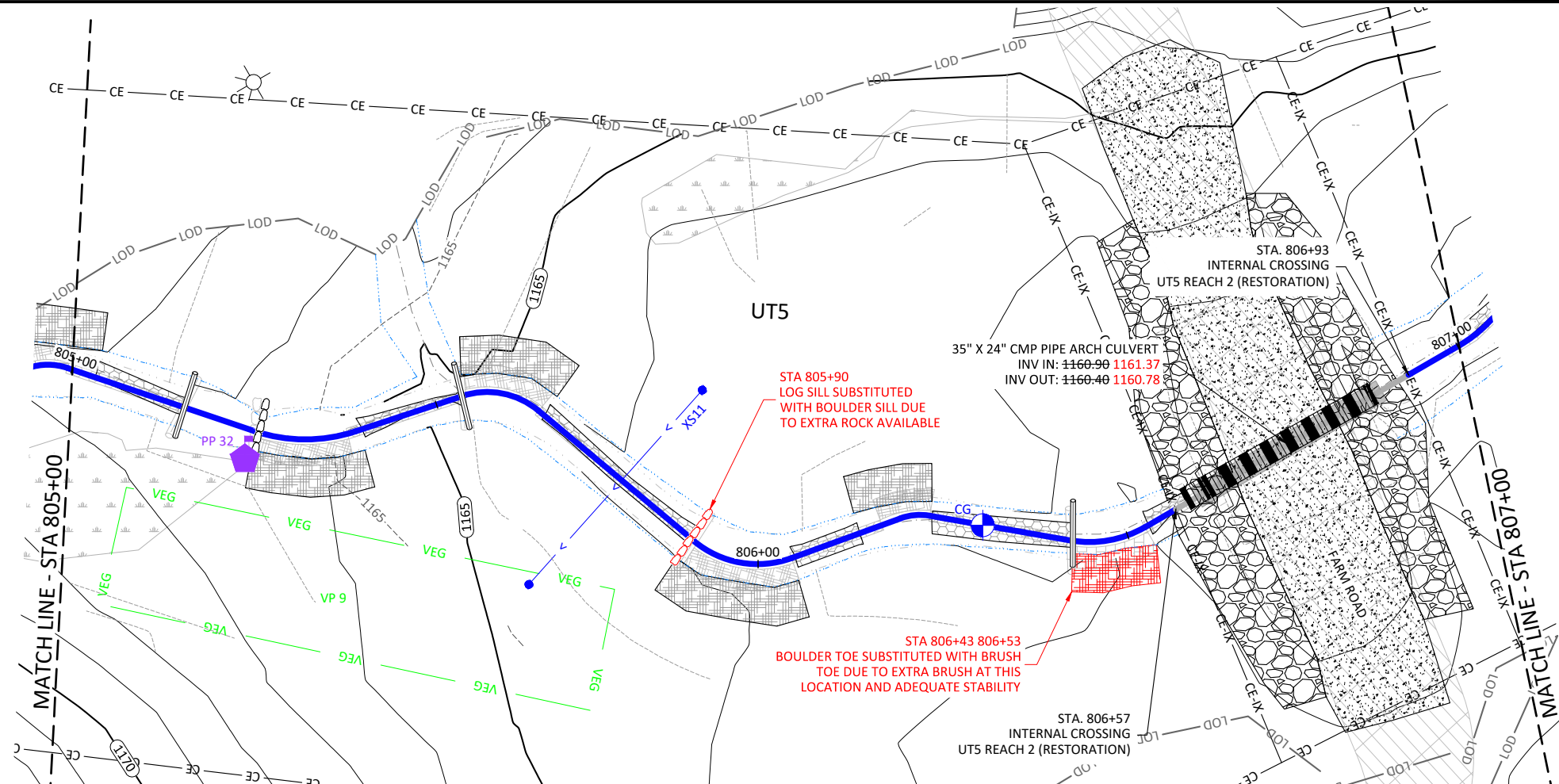
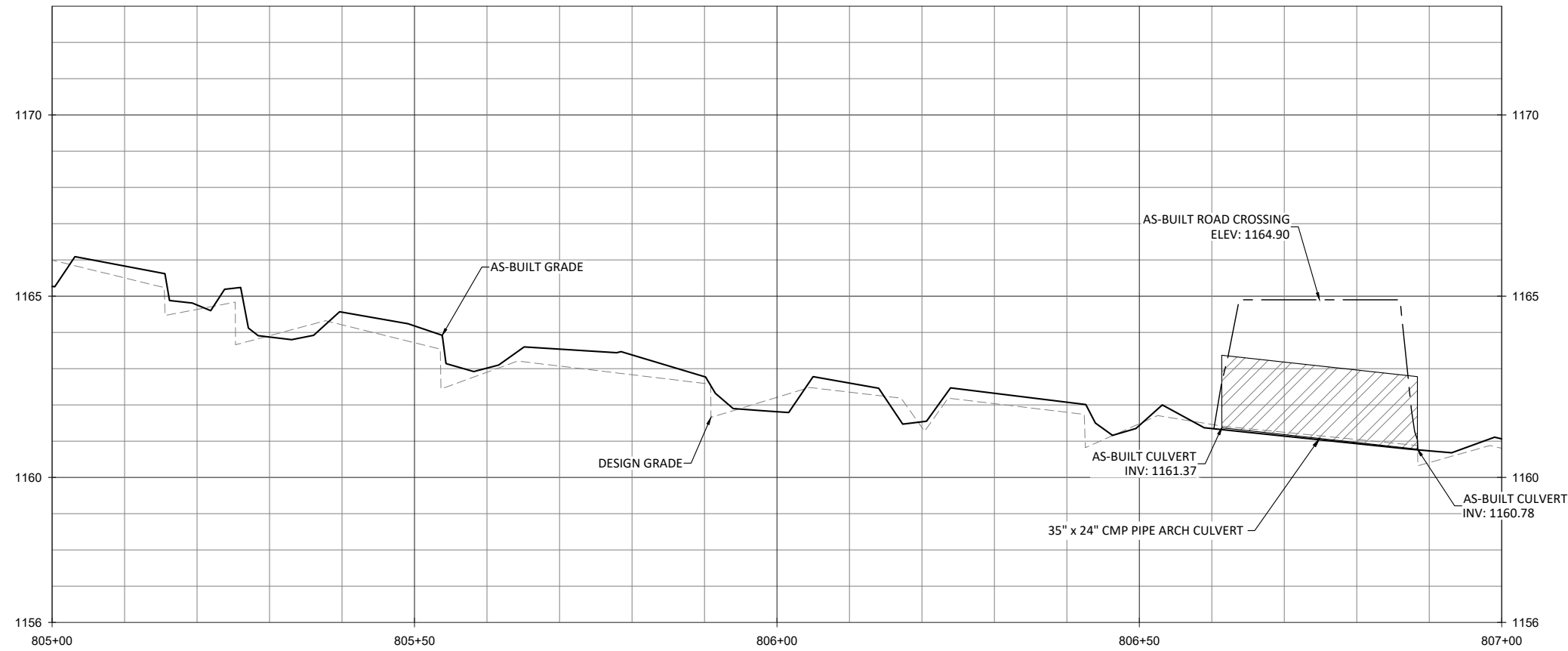
UT5
 Stream Plan and Profile

Revisions:

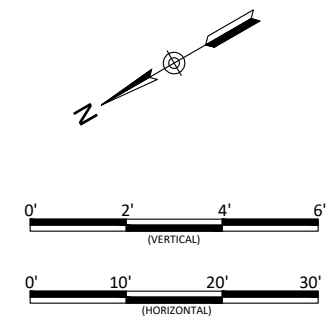
Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.37

Sheet



NOTE:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.

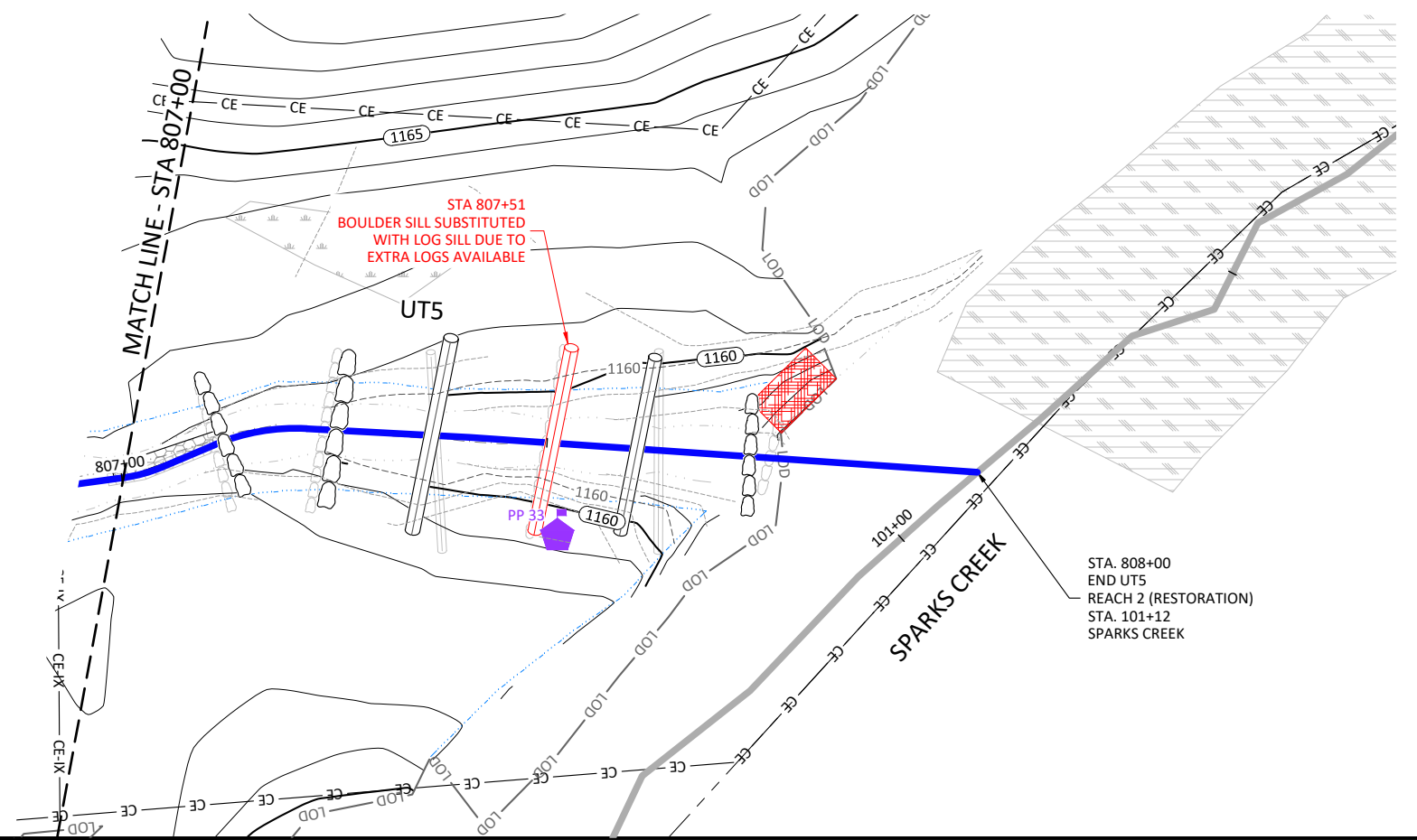
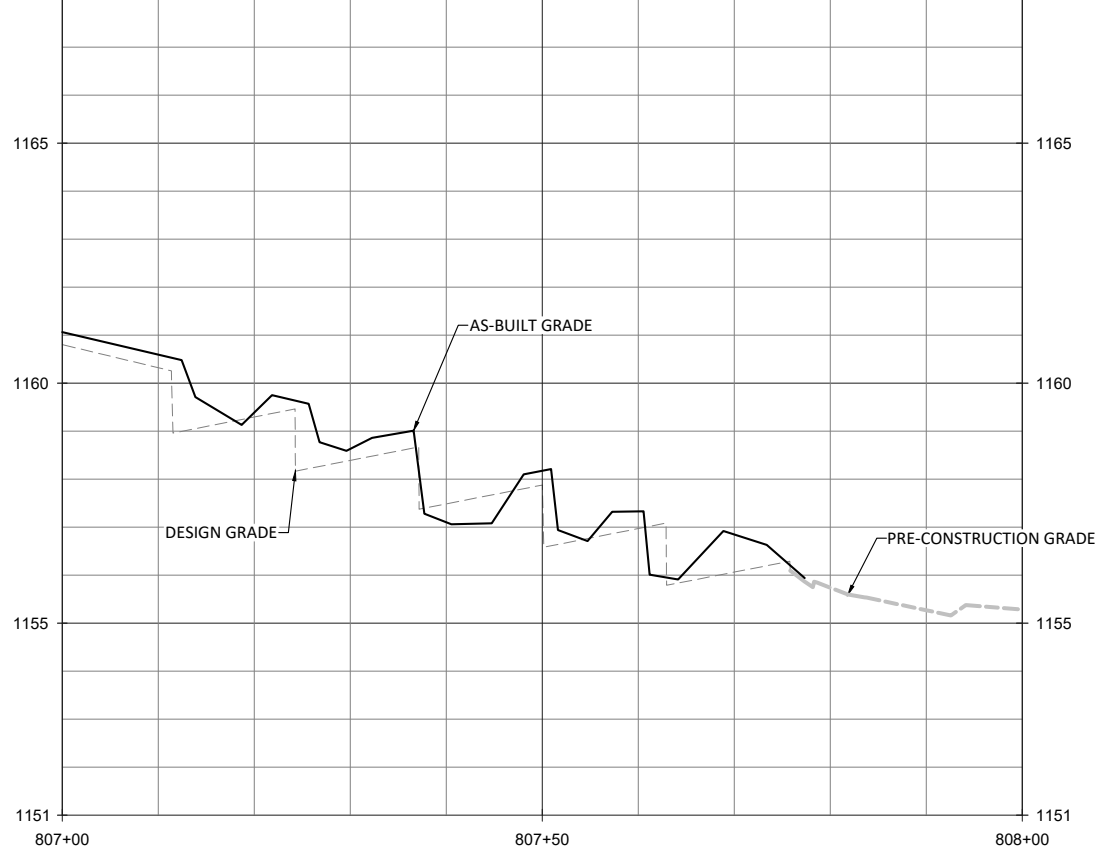


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

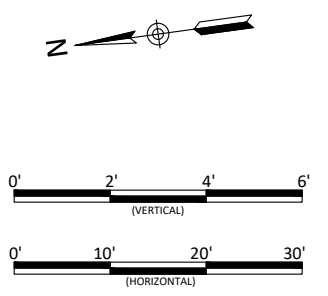
UT5
 Stream Plan and Profile

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

1.38



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR SPARKS CREEK IS ADDRESSED ON SHEETS 1.01 THROUGH 1.03.

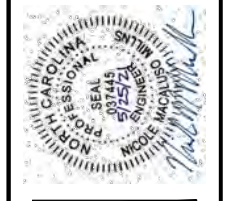


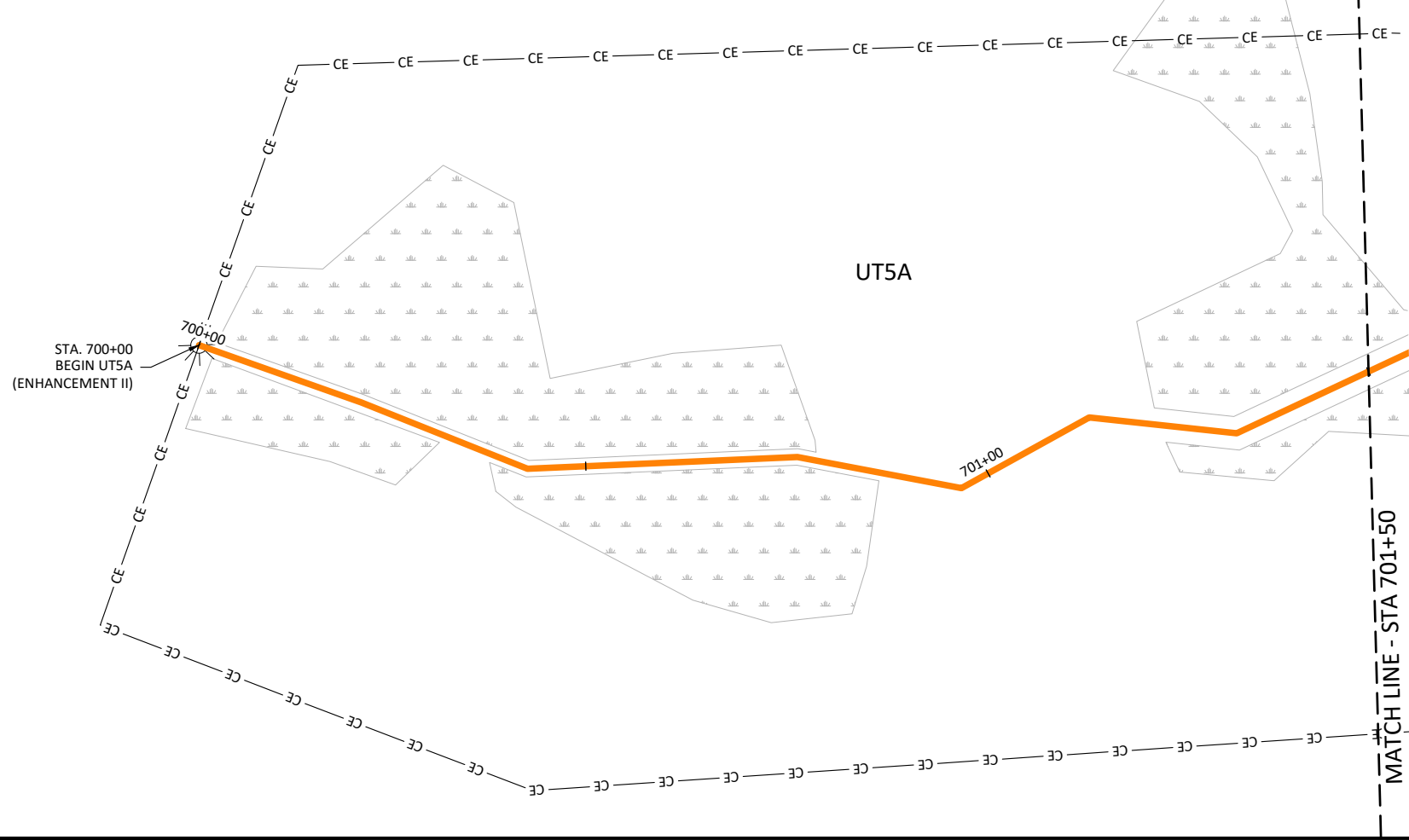
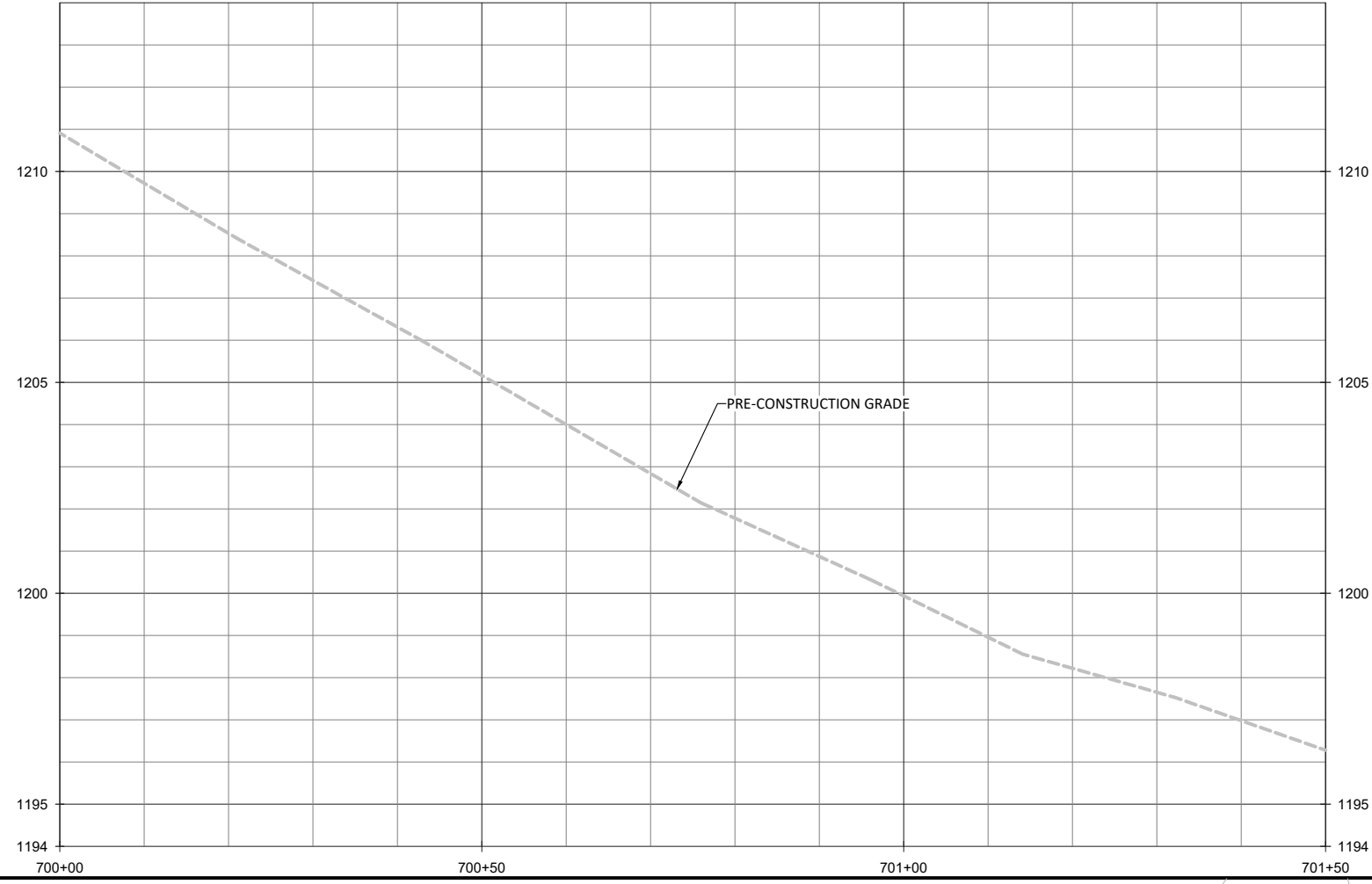
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT5
Stream Plan and Profile

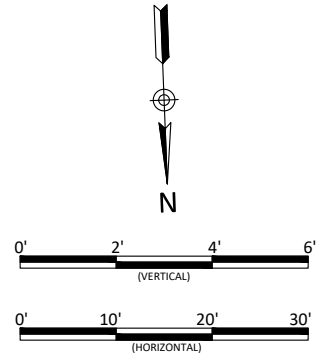
Date:	May 28, 2021
Job Number:	005-0217
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

1.39





NOTES:
 1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.

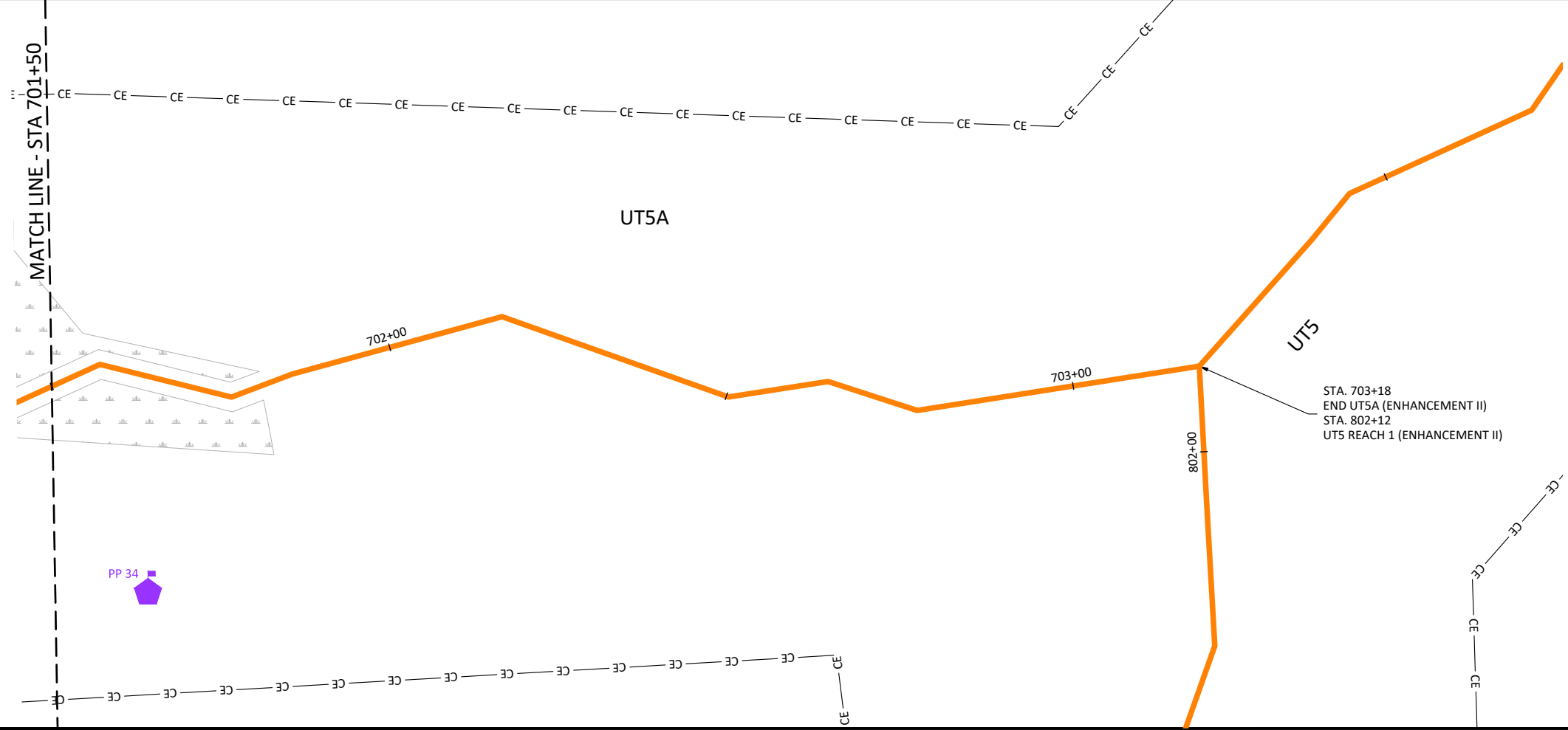
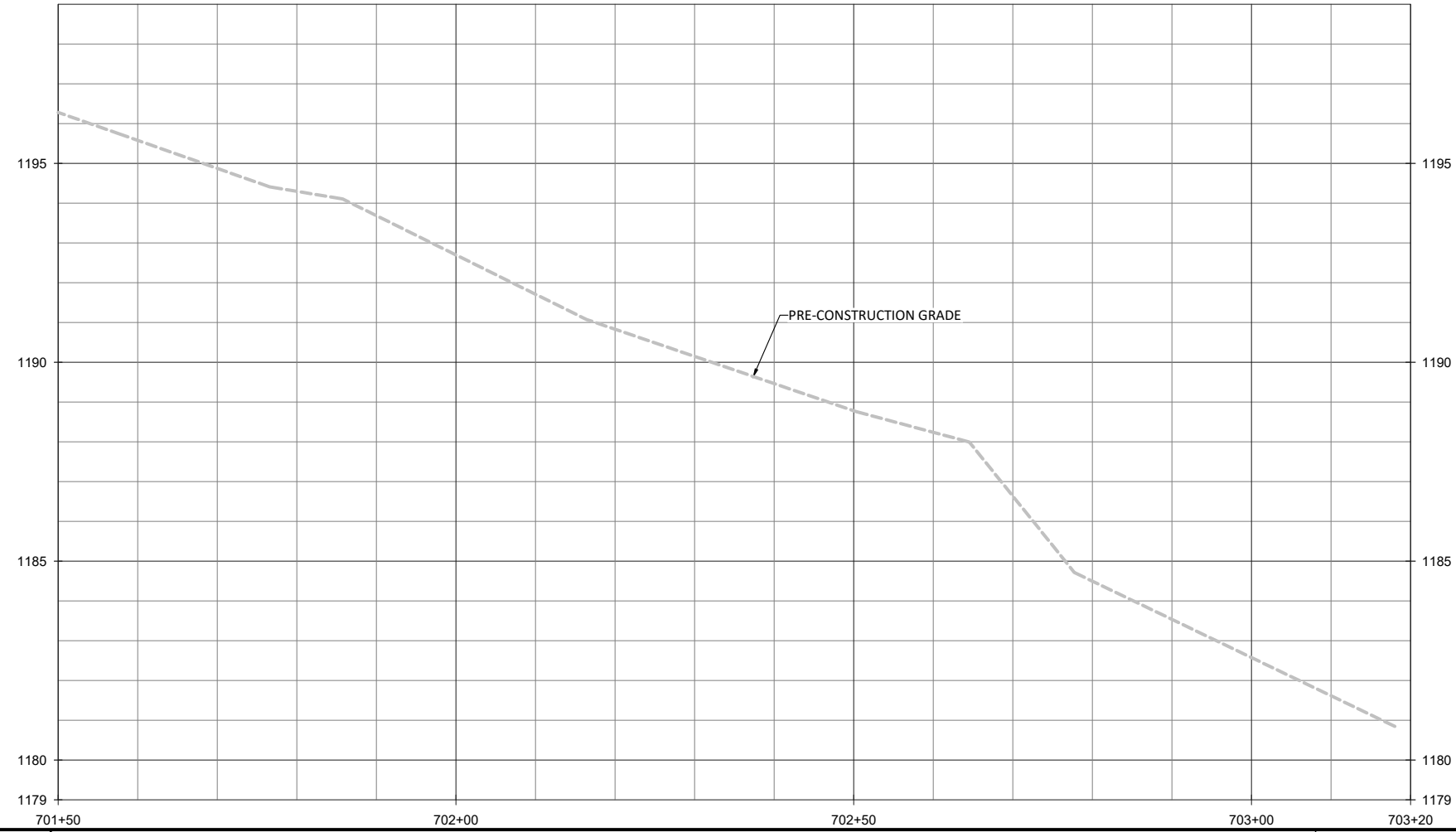


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 UT5A
 Stream Plan and Profile

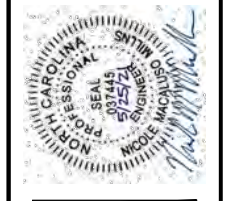
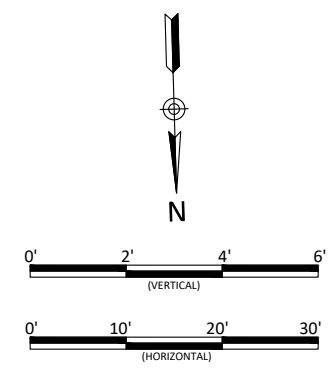
Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.40
 Sheet



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT5 IS ADDRESSED ON SHEETS 1.35 THROUGH 1.39.



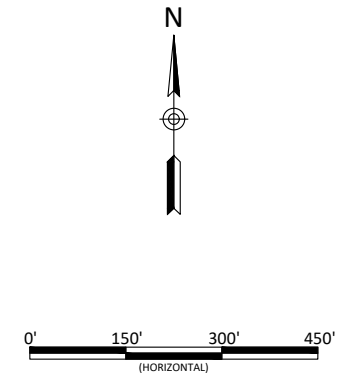
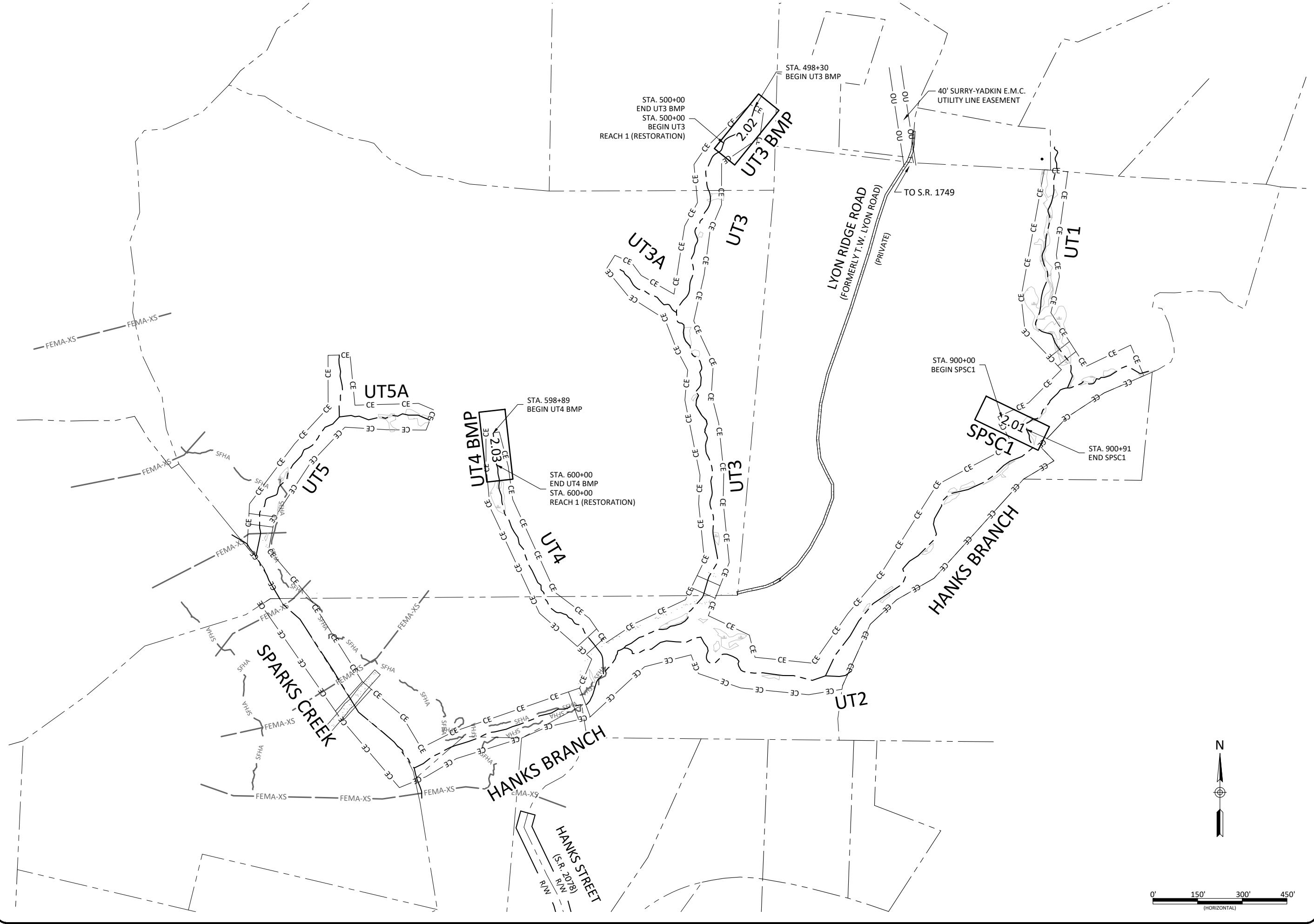
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT5A
 Stream Plan and Profile

Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

1.41



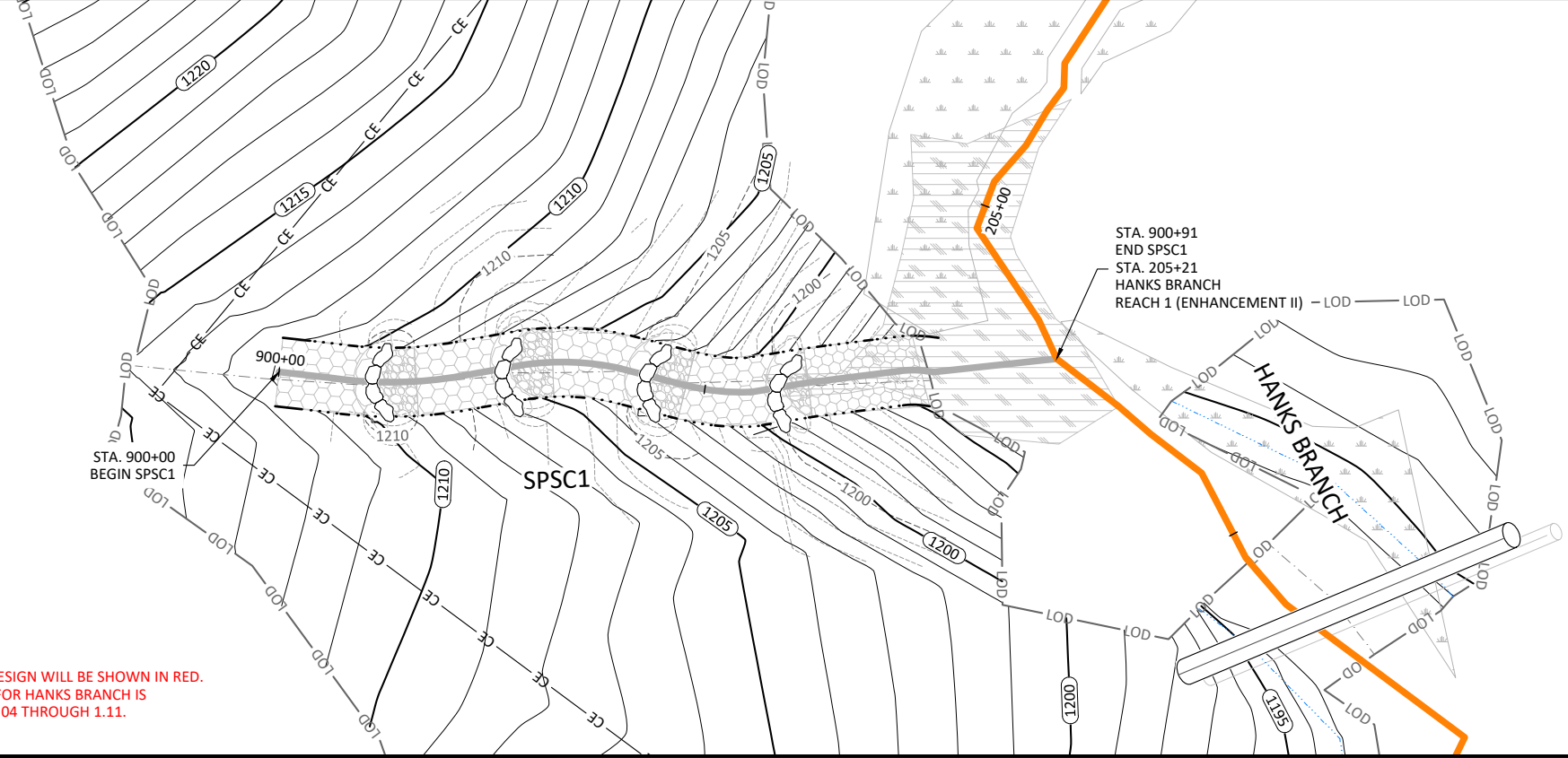
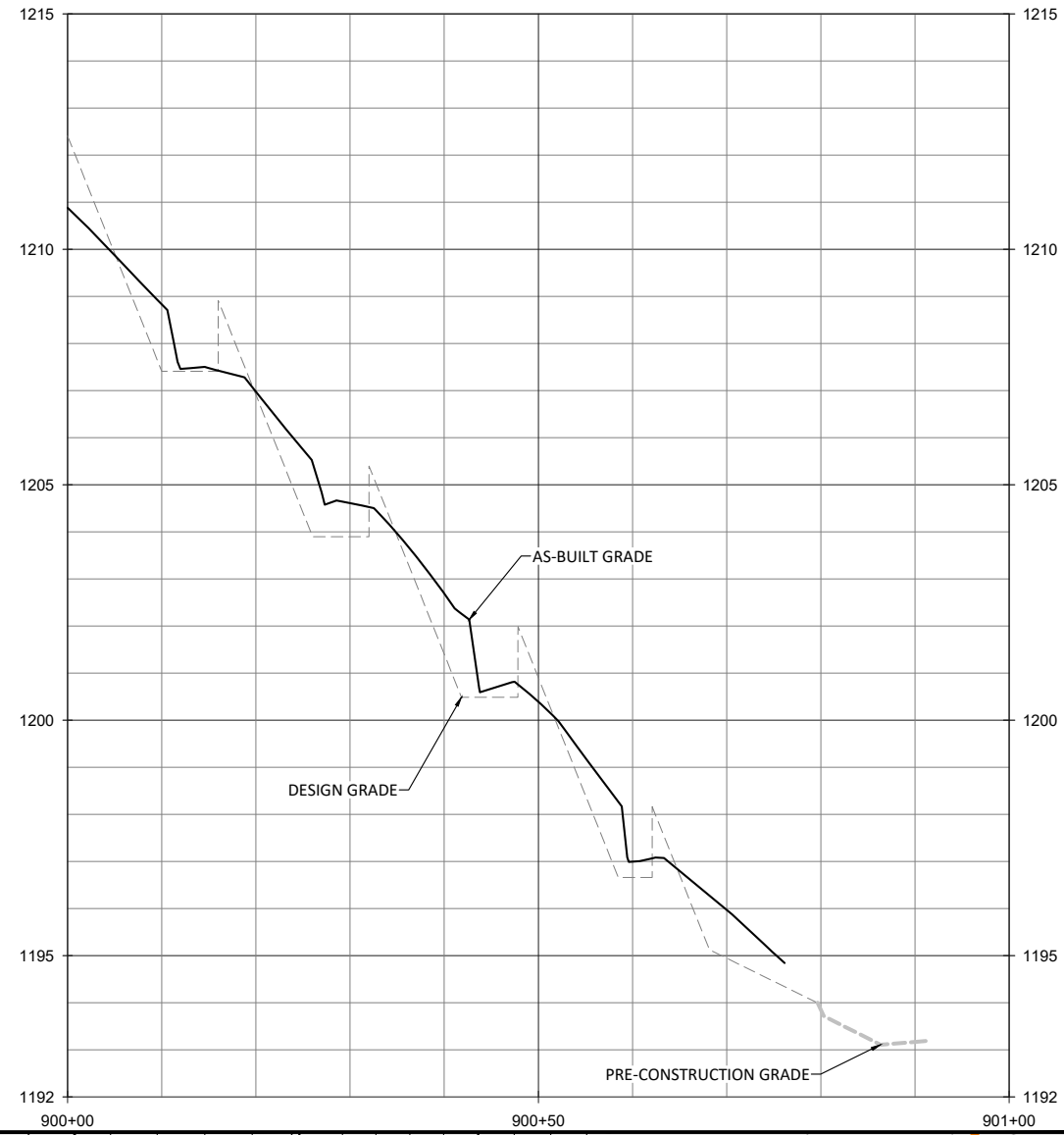
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

BMP Overview

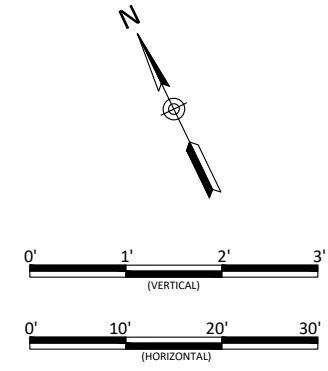
Revisions:	

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

2.00



- NOTES:**
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR HANKS BRANCH IS ADDRESSED ON SHEETS 1.04 THROUGH 1.11.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

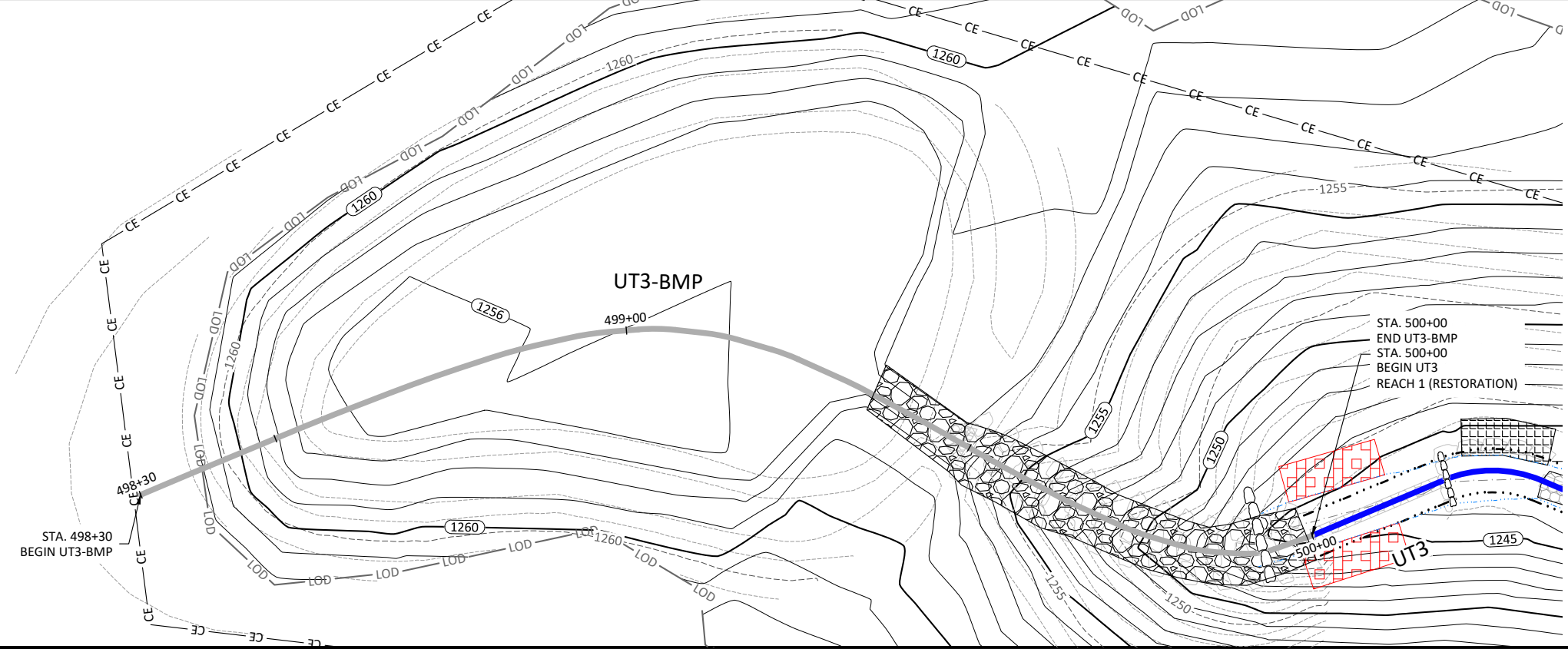
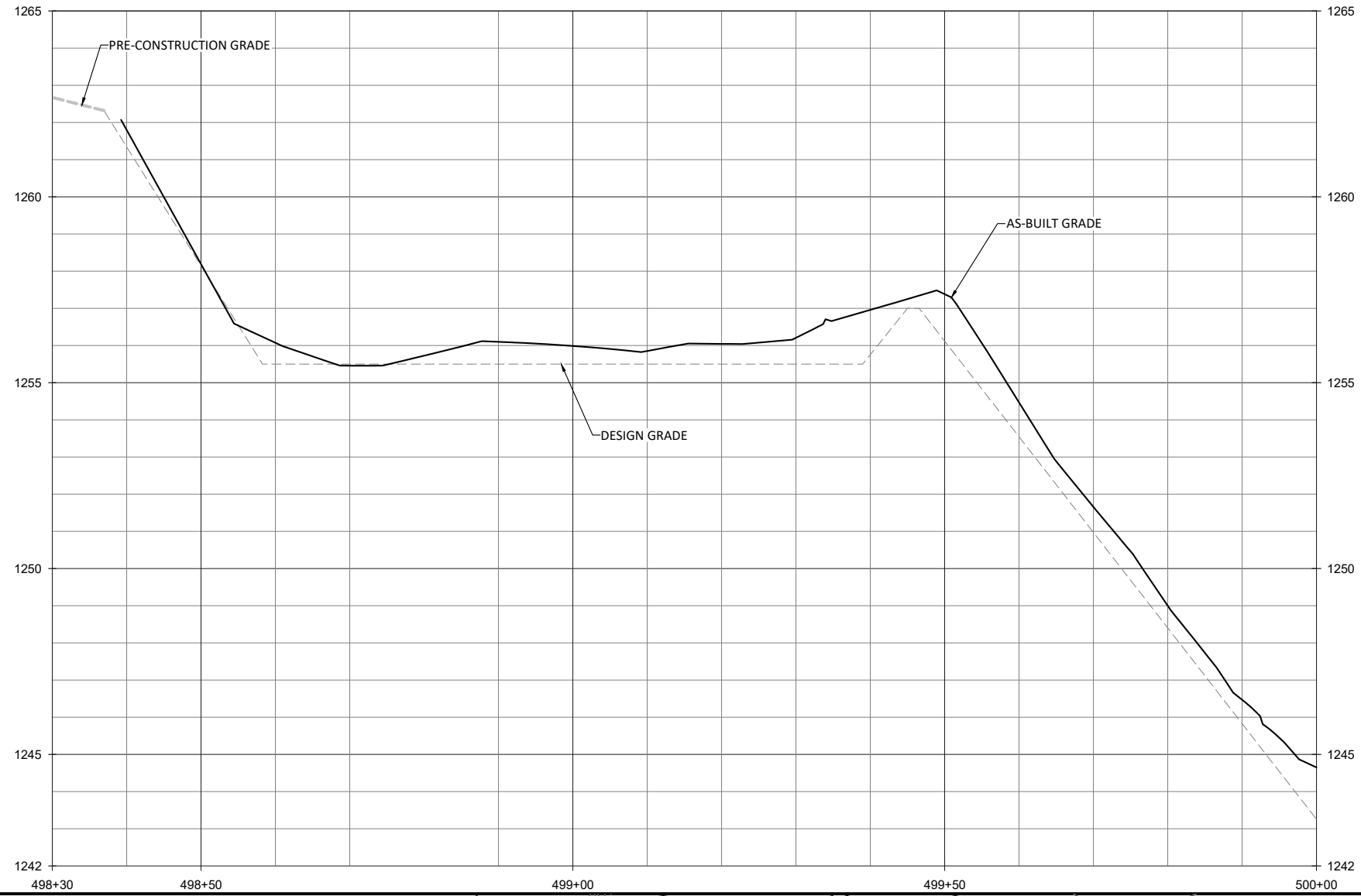
SPSC1
BMP Plans

Revisions:

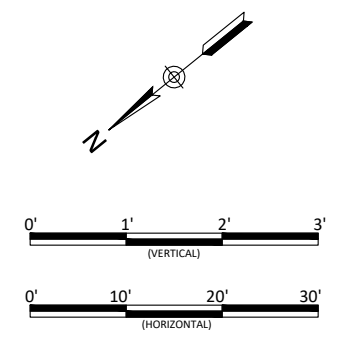
Date	Job Number	Project Engineer	Drawn By	Checked By
May 28, 2021	005-02177	NMM	ABT	JNK

2.01





- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT3 IS ADDRESSED ON SHEETS 1.18 THROUGH 1.27.

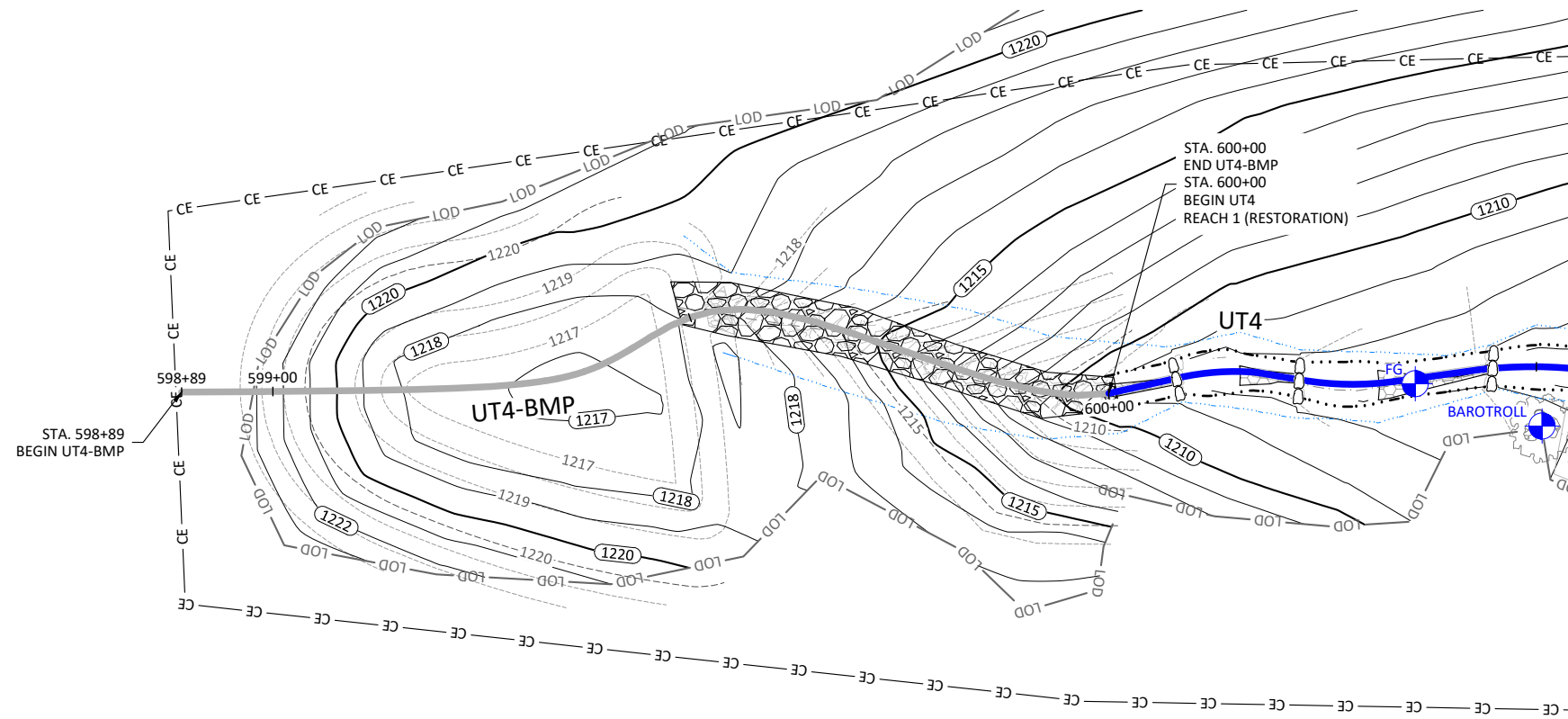
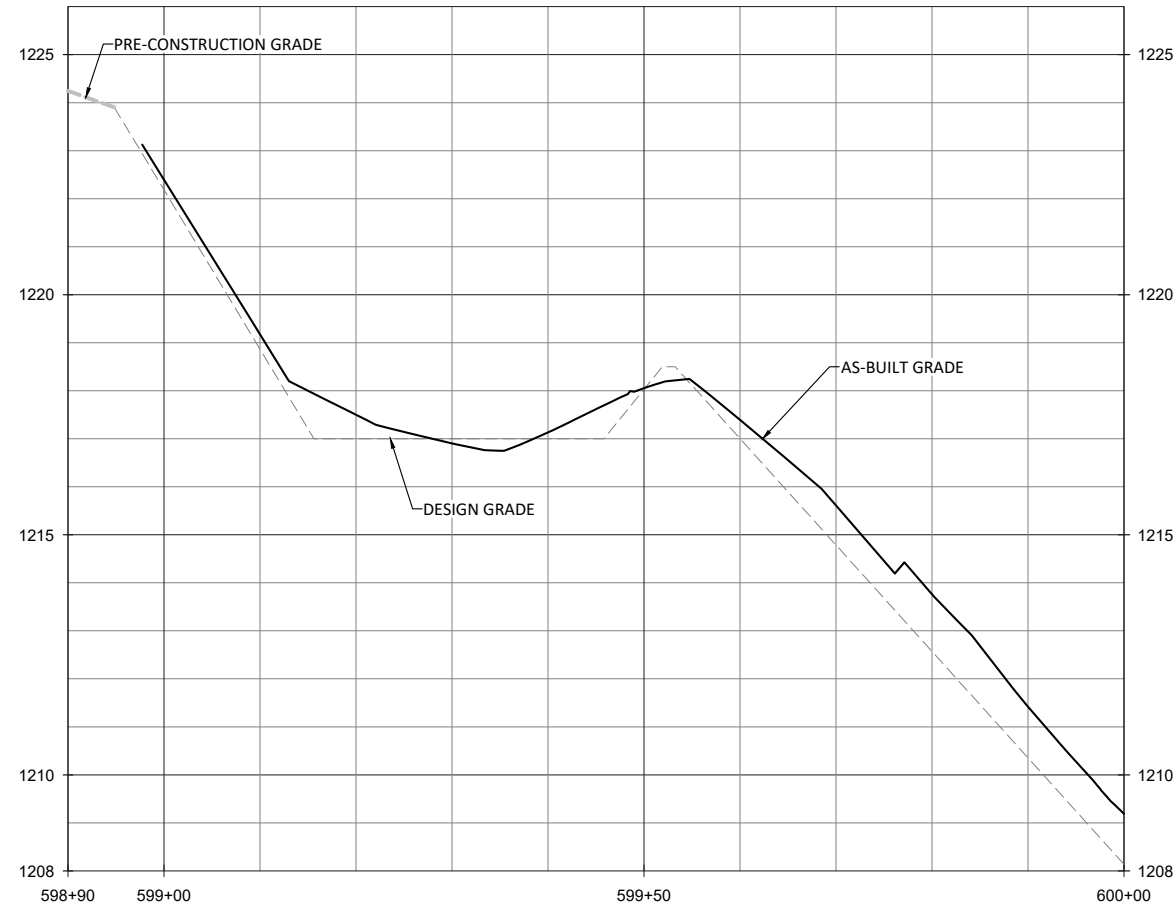


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

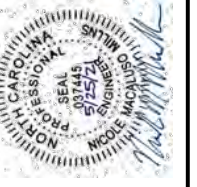
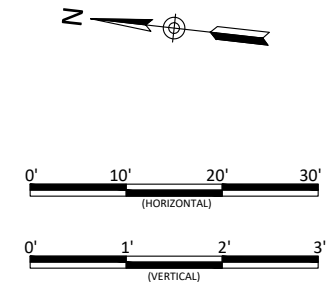
UT3 BMP
 BMP Plans

Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK



- NOTES:
1. DEVIATIONS FROM THE DESIGN WILL BE SHOWN IN RED.
 2. AS-BUILT INFORMATION FOR UT4 IS ADDRESSED ON SHEETS 1.30 THROUGH 1.34.



Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT4 BMP
 BMP Plans

Revisions:

Date: May 28, 2021
 Job Number: 005-0217
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

2.03

Streambank Planting Zone 1 - Hanks Branch (0.4 acres)						
Live Stakes						
Species	Common Name	Indiv. Spacing	Size	Stratum	Wetland Indicator Status	% of Stems
<i>Salix nigra</i>	Black Willow	3-6 ft.	0.5"-1.5" cal.	Shrub	OBL	35%
<i>Cornus amomomum</i>	Silky Dogwood	3-6 ft.	0.5"-1.5" cal.	Shrub	FACW	20%
<i>Salix sericea</i>	Silky Willow	3-6 ft.	0.5"-1.5" cal.	Shrub	OBL	25%
<i>Sambucus canadensis</i>	Elderberry	3-6 ft.	0.5"-1.5" cal.	Shrub	FACW	10%
<i>Cephalanthus occidentalis</i>	Buttonbush	3-6 ft.	0.5"-1.5" cal.	Shrub	OBL	10%
						100%
Herbaceous Plugs						
<i>Juncus effusus</i>	Common Rush	4 ft.	1.0"- 2.0" plug	Herb	FACW	40%
<i>Cyperus strigosus</i>	False Nutsedge	4 ft.	1.0"- 2.0" plug	Herb	FACW	15%
<i>Carex lurida</i>	Lurid Sedge	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
<i>Carex crinita</i>	Fringed Sedge	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
<i>Scirpus cyperinus</i>	Woolgrass	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
						100%

Streambank Planting Zone 2 - UT1-UT5 (0.5 acres)						
Live Stakes						
Species	Common Name	Indiv. Spacing	Min. Size	Stratum	Wetland Indicator Status	% of Stems
<i>Cornus amomomum</i>	Silky Dogwood	3-6 ft.	0.5"-1.5" cal.	Shrub	FACW	30%
<i>Salix sericea</i>	Silky Willow	3-6 ft.	0.5"-1.5" cal.	Shrub	OBL	30%
<i>Sambucus canadensis</i>	Elderberry	3-6 ft.	0.5"-1.5" cal.	Shrub	FACW	15%
<i>Cephalanthus occidentalis</i>	Buttonbush	3-6 ft.	0.5"-1.5" cal.	Shrub	OBL	15%
<i>Physocarpus opulifolium</i>	Ninebark	3-6 ft.	0.5"-1.5" cal.	Shrub	FACW	10%
						100%
Herbaceous Plugs						
<i>Juncus effusus</i>	Common Rush	4 ft.	1.0"- 2.0" plug	Herb	FACW	40%
<i>Cyperus strigosus</i>	False Nutsedge	4 ft.	1.0"- 2.0" plug	Herb	FACW	15%
<i>Carex lurida</i>	Lurid Sedge	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
<i>Carex crinita</i>	Fringed Sedge	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
<i>Scirpus cyperinus</i>	Woolgrass	4 ft.	1.0"- 2.0" plug	Herb	OBL	15%
						100%

Riparian Buffer Planting Zone 3 (10.3 acres)						
Bare Root						
Species	Common Name	Indiv. Spacing	Caliper Size	Stratum	Wetland Indicator Status	% of Stems
<i>Platanus occidentalis</i>	Sycamore	6-12 ft.	0.25"-1.0"	Canopy	FACW	15%
<i>Quercus rubra</i>	Northern Red Oak	6-12 ft.	0.25"-1.0"	Canopy	FACU	10%
<i>Betula nigra</i>	River Birch	6-12 ft.	0.25"-1.0"	Canopy	FACW	15%
<i>Morus rubra</i>	Red Mulberry	6-12 ft.	0.25"-1.0"	Canopy	FACU	5%
<i>Nyssa sylvatica</i>	Blackgum	6-12 ft.	0.25"-1.0"	Canopy	FAC	10%
<i>Ulmus americana</i>	American Elm	6-12 ft.	0.25"-1.0"	Canopy	FACW	10%
<i>Liriodendron tulipifera</i>	Tulip Poplar	6-12 ft.	0.25"-1.0"	Canopy	FACU	3%
<i>Quercus phellos</i>	Willow Oak	6-12 ft.	0.25"-1.0"	Canopy	FAC	15%
<i>Diospyros virginiana</i>	Common Persimmon	6-12 ft.	0.25"-1.0"	Canopy	FAC	7%
<i>Acer negundo</i>	Boxelder	6-12 ft.	0.25"-1.0"	Canopy	FAC	5%
<i>Prunus serotina</i>	Black Cherry	6-12 ft.	0.25"-1.0"	Canopy	FACU	5%
						100%

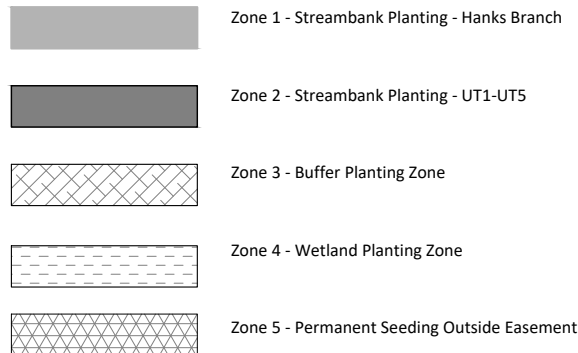
BMP Obligate Species Planting Zone (0.01 acres)						
Herbaceous Plugs						
Species	Common Name	Indiv. Spacing	Size	Stratum	Wetland Indicator Status	% of Stems
<i>Juncus effusus</i>	Common Rush	4 ft.	1.0"- 2.0" plug	Herb	FACW	30%
<i>Sparganium americanum</i>	Eastern Bur Reed	4 ft.	1.0"- 2.0" plug	Herb	OBL	10%
<i>Sagittaria latifolia</i>	Duck Potato	4 ft.	1.0"- 2.0" plug	Herb	OBL	30%
<i>Scirpus cyperinus</i>	Woolgrass	4 ft.	1.0"- 2.0" plug	Herb	OBL	10%
<i>Carex lurida</i>	Lurid Sedge	4 ft.	1.0"- 2.0" plug	Herb	OBL	20%
						100%

Wetland Planting Zone 4 (0.5 acres)						
Bare Root						
Species	Common Name	Indiv. Spacing	Caliper Size	Stratum	Wetland Indicator Status	% of Stems
<i>Platanus occidentalis</i>	Sycamore	6-12 ft.	0.25"-1.0"	Canopy	FACW	18%
<i>Ulmus americana</i>	American Elm	6-12 ft.	0.25"-1.0"	Canopy	FACW	10%
<i>Betula nigra</i>	River Birch	6-12 ft.	0.25"-1.0"	Canopy	FACW	18%
<i>Acer negundo</i>	Boxelder	6-12 ft.	0.25"-1.0"	Canopy	FAC	15%
<i>Ulmus rubra</i>	Slippery Elm	6-12 ft.	0.25"-1.0"	Canopy	FAC	6%
<i>Alnus serrulata</i>	Tag Alder	6-12 ft.	0.25"-1.0"	Shrub	OBL	3%
<i>Nyssa sylvatica</i>	Black gum	6-12 ft.	0.25"-1.0"	Canopy	FAC	15%
<i>Quercus phellos</i>	Willow Oak	6-12 ft.	0.25"-1.0"	Canopy	FAC	15%
						100%

Note: Wetland zone species to be planted on 6' spacing in rows spaced 12' apart.

Temporary Seeding (12.3 acres)				
Pure Live Seed				
Approved Dates	Species Name	Common Name	Stratum	Density (lbs/acre)
Aug 15 - May 1	<i>Secale cereale</i>	Rye Grain	Herb	80
May 1 - Aug 15	<i>Setaria italica</i>	German Millet	Herb	50

- Planting Notes:
1. Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting will occur within the Limits of Disturbance.
 2. Buffer zone species to be planted on 6' spacing in rows spaced 12' apart.
 3. Wetland Indicator Status data sourced from USDA Plant Database.
 4. Permanent riparian seed to be used for seeding Zone 3.
 5. Permanent wetland seeding to be used for Zone 4 and UT3 and UT4 BMPs.
 6. BMP obligate species herbaceous plugs were installed around perimeter of UT3 and UT4 BMPs at elevations specified on Sheets 3.07 and 3.09.
 7. No substitutions or changes were made to the planting plan.

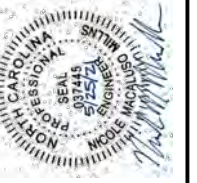







Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting will occur within the Limits of Disturbance.

Permanent Seeding Outside Easement Zone 5 (1.5 acres)					
Approved Dates					
Approved Dates	Species Name	Common Name	Stratum	Wetland Indicator Status	Density (lbs/acre)
All Year	<i>Festuca arundinacea</i>	Tall Fescue	Herb	FACW	70%
All Year	<i>Festuca rubra</i>	Creeping Red Fescue	Herb	FACW	10%
All Year	<i>Dactylis glomerata</i>	Orchardgrass	Herb	FACW	20%
					100%

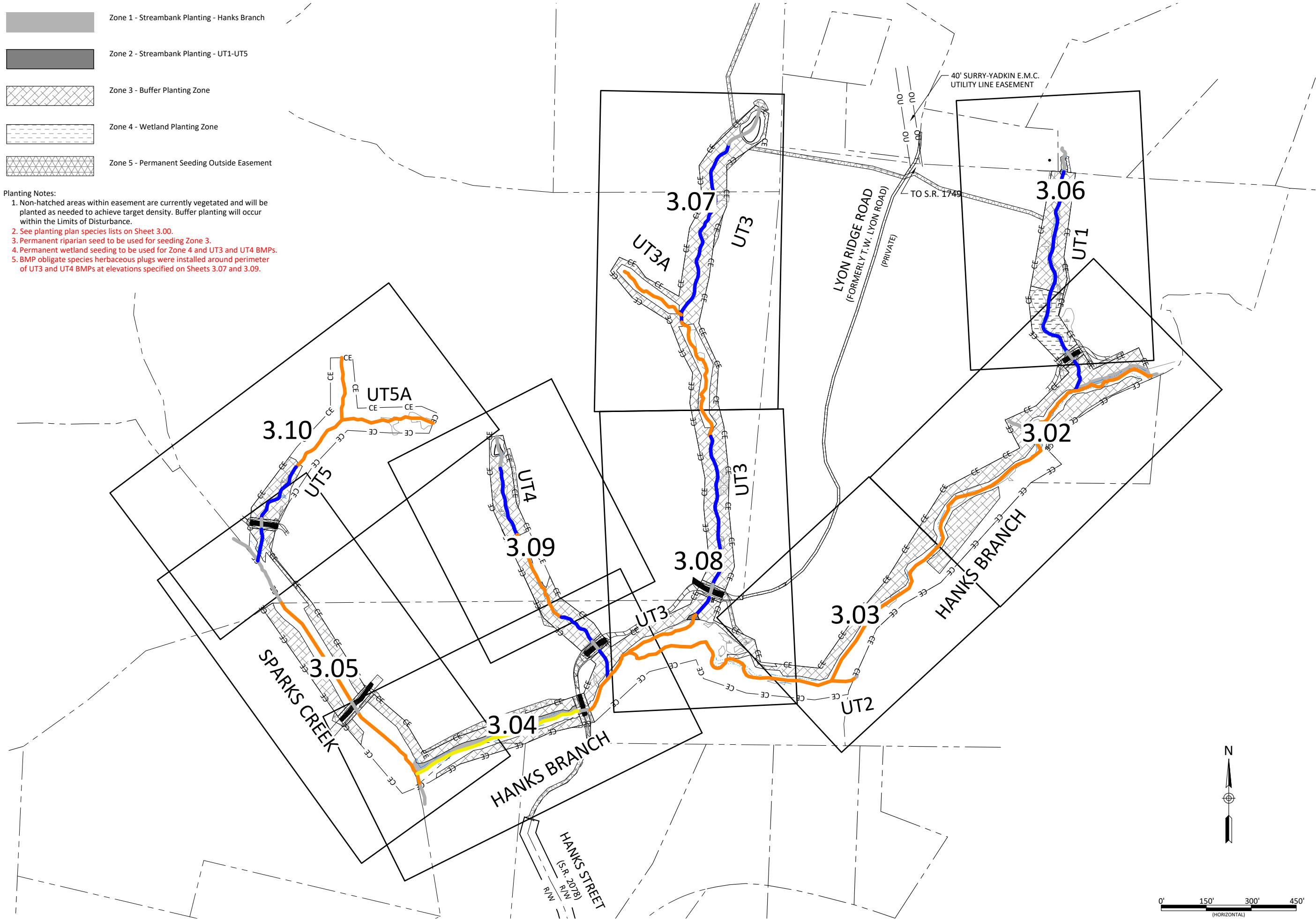
Permanent Wetland Seeding Zone 4 (0.5 acres)					
Pure Live Seed (20 lbs/acre)					
Approved Dates	Species Name	Common Name	Stratum	Wetland Indicator Status	Density (lbs/acre)
All Year	<i>Panicum rigidulum</i>	Redtop Panicgrass	Herb	FACW	1.2
All Year	<i>Agrostis hyemalis</i>	Winter Bentgrass	Herb	FAC	1.0
All Year	<i>Elymus virginicus</i>	Virginia Wild Rye	Herb	FACW	2.0
All Year	<i>Sparganium americanum</i>	Eastern Bur Reed	Herb	OBL	0.1
All Year	<i>Panicum virgatum</i>	Switchgrass	Herb	FAC	2.0
All Year	<i>Tripsacum dactyloides</i>	Eastern Gamagrass	Herb	FACW	2.5
All Year	<i>Panicum clandestinum</i>	Deertongue	Herb	FAC	3.0
All Year	<i>Caex lurida</i>	Lurid Sedge	Herb	OBL	0.5
All Year	<i>Carex vulpinoidea</i>	Fox Sedge	Herb	OBL	2.0
All Year	<i>Carex lupulina</i>	Hop Sedge	Herb	OBL	0.5
All Year	<i>Juncus effusus</i>	Common Rush	Herb	FACW	2.0
All Year	<i>Carex frankii</i>	Frank's Sedge	Herb	OBL	1.0
All Year	<i>Scirpus cyperinus</i>	Woolgrass	Herb	OBL	0.2
All Year	<i>Peltandra virginica</i>	Arrow Arum	Herb	OBL	0.4
All Year	<i>Bidens aristosa</i>	Bur-Marigold	Herb	FACW	1.6
					20.0

Permanent Riparian Seeding Zone 3 (10.3 acres)					
Pure Live Seed (20 lbs/acre)					
Approved Dates	Species Name	Common Name	Stratum	Wetland Indicator Status	lbs/acre
All Year	<i>Panicum rigidulum</i>	Redtop Panicgrass	Herb	FACW	2.0
All Year	<i>Schizachyrium scoparium</i>	Little Bluestem	Herb	FACU	1.8
All Year	<i>Sorghastrum nutans</i>	Indian Grass	Herb	FACU	2.0
All Year	<i>Chasmanthium latifolium</i>	River Oats	Herb	FACU	1.0
All Year	<i>Elymus virginicus</i>	Virginia Wild Rye	Herb	FACW	3.0
All Year	<i>Panicum clandestinum</i>	Deertongue	Herb	FAC	2.5
All Year	<i>Carex vulpinoidea</i>	Fox Sedge	Herb	OBL	2.0
All Year	<i>Rudbeckia hirta</i>	Blackeyed Susan	Herb	FACU	1.0
All Year	<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis	Herb	FACU	1.0
All Year	<i>Bidens aristosa</i>	Bur-marigold	Herb	FACW	1.0
All Year	<i>Chamaecrista fasciculata var. fasciculata</i>	Partridge Pea	Herb	FACU	1.0
All Year	<i>Achillea millefolium</i>	Yarrow	Herb	FACU	0.5
All Year	<i>Juncus coriaceous</i>	Leathery Rush	Herb	FACW	0.5
All Year	<i>Juncus tenuis</i>	Path Rush	Herb	FAC	0.5
All Year	<i>Pycnanthemum tenuifolium</i>	Slender Mountain Mint	Herb	FACW	0.2
					20.0



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

- Planting Notes:**
1. Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting will occur within the Limits of Disturbance.
 2. See planting plan species lists on Sheet 3.00.
 3. Permanent riparian seed to be used for seeding Zone 3.
 4. Permanent wetland seeding to be used for Zone 4 and UT3 and UT4 BMPs.
 5. BMP obligate species herbaceous plugs were installed around perimeter of UT3 and UT4 BMPs at elevations specified on Sheets 3.07 and 3.09.

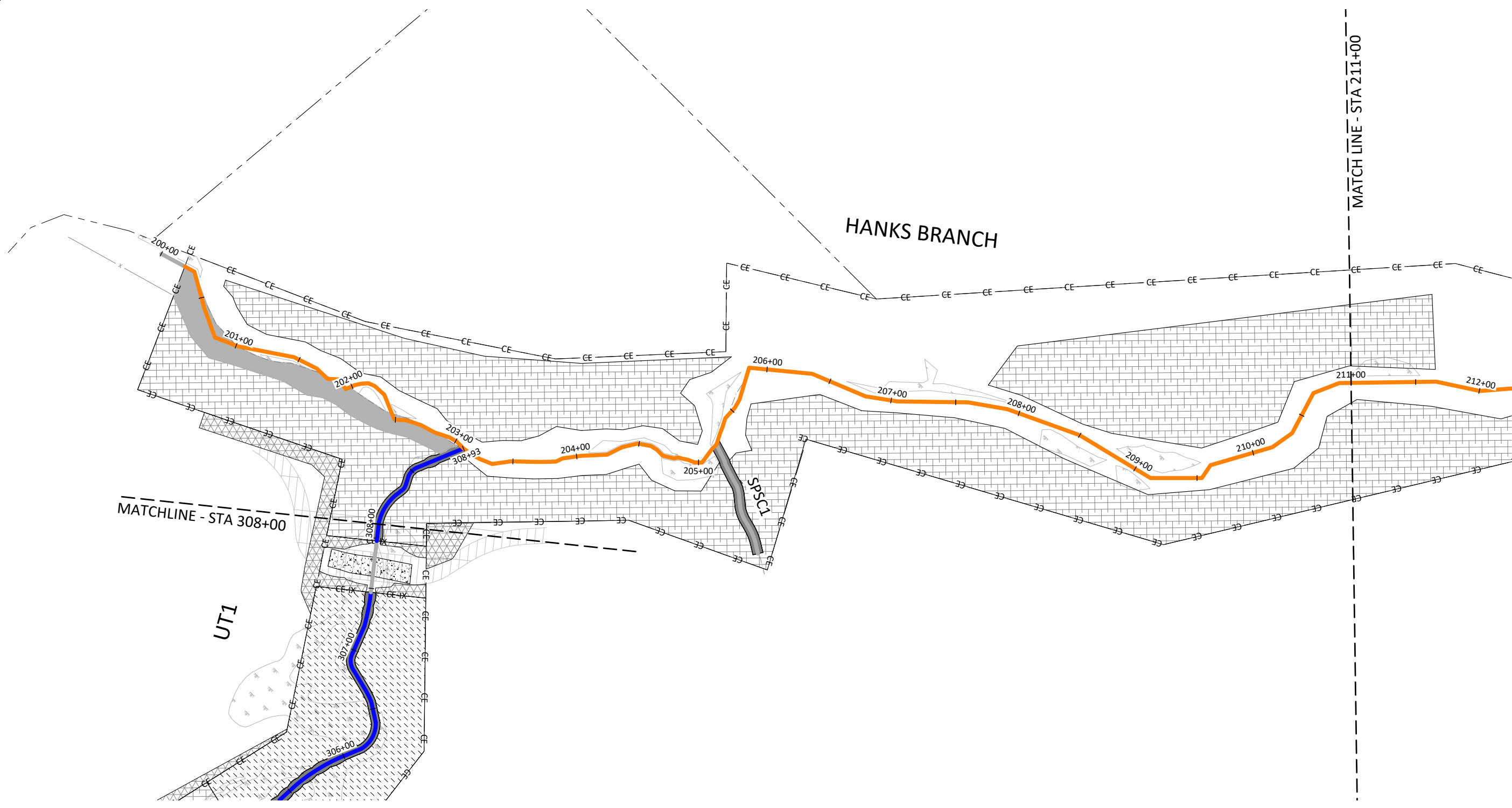







Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Planting Overview

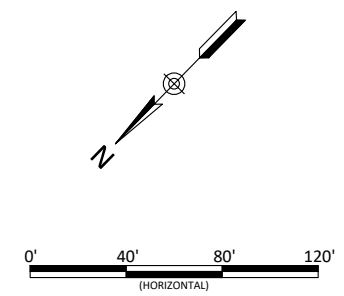
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK
Revisions:	
	9-21-2020 Construction Entrance Location Change

3.01



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



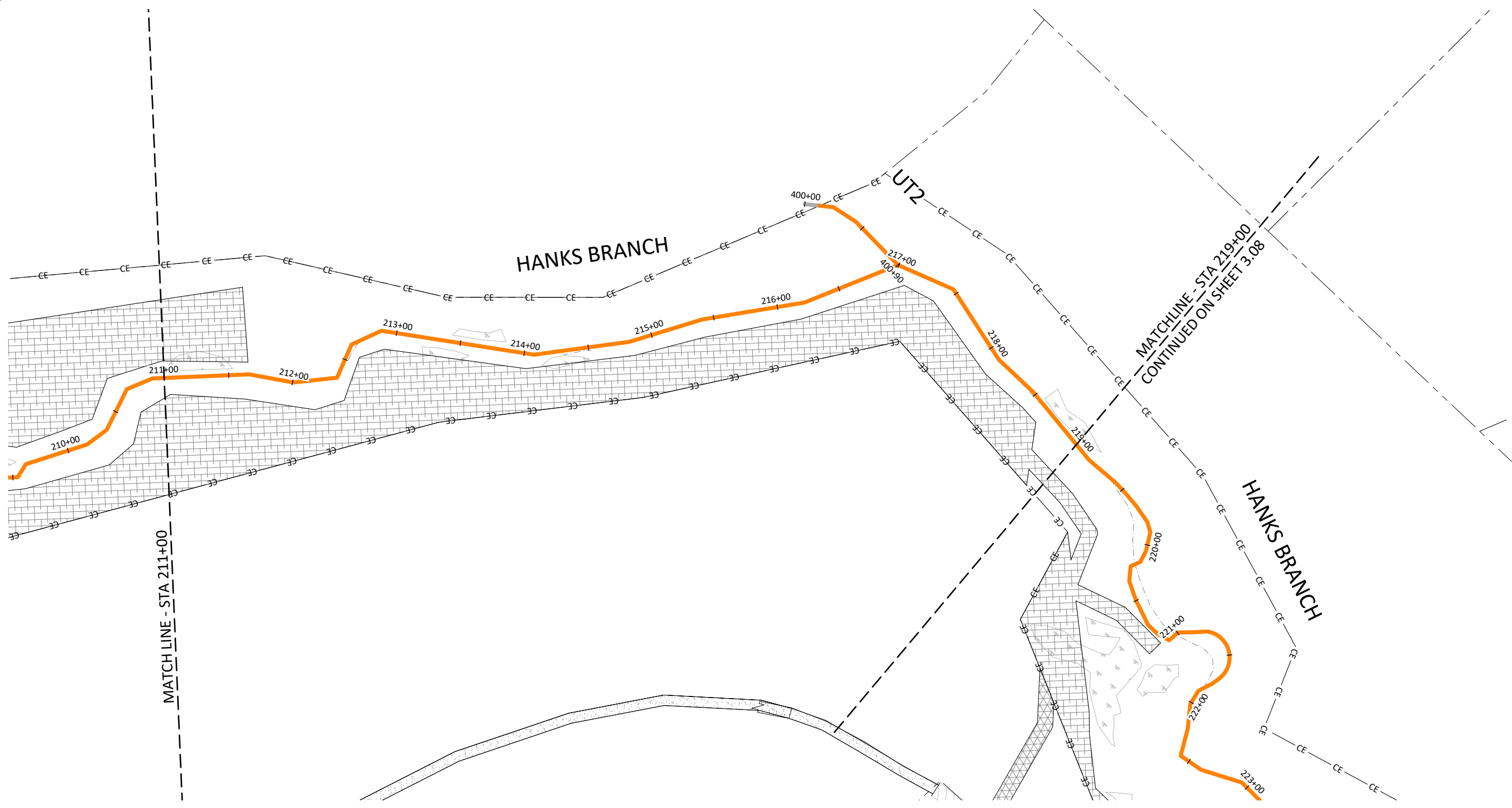
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Planting Plans






Revisions:

Date: May 28, 2021
Job Number: 005-0217
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

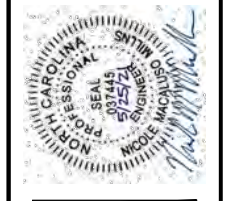
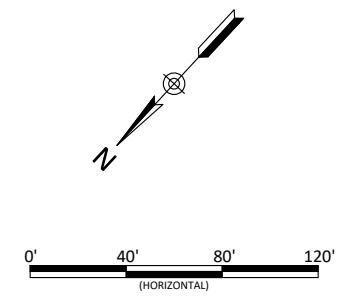
3.02





-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.

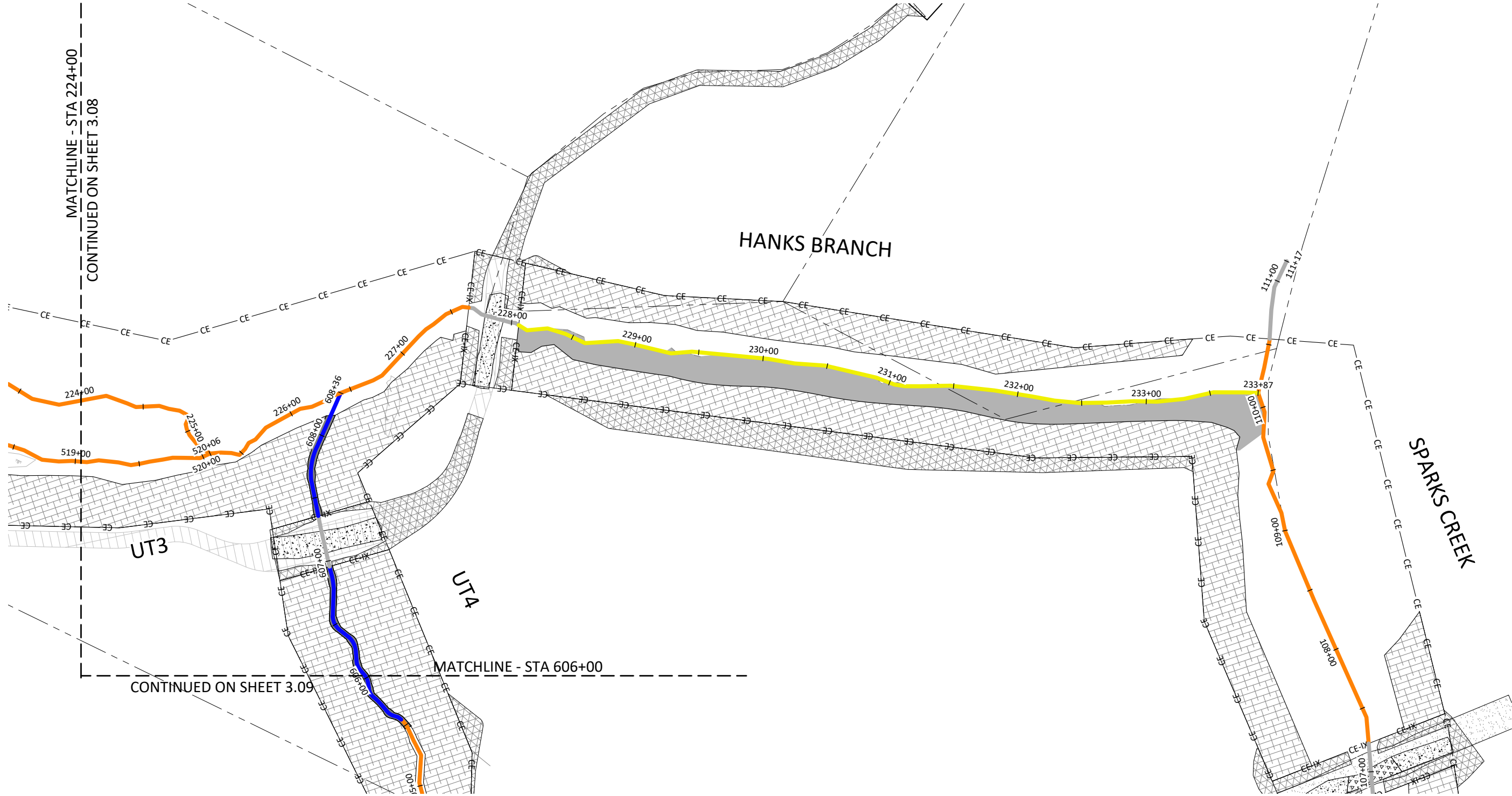


Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Planting Plans

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

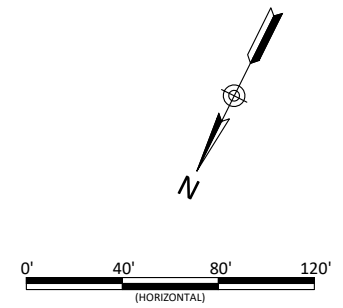
3.03

X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring\2021\Plans\02177-AB Planting Plan.dwg June 10, 2021



- Zone 1 - Streambank Planting - Hanks Branch
- Zone 2 - Streambank Planting - UT1-UT5
- Zone 3 - Buffer Planting Zone
- Zone 4 - Wetland Planting Zone
- Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Planting Plans

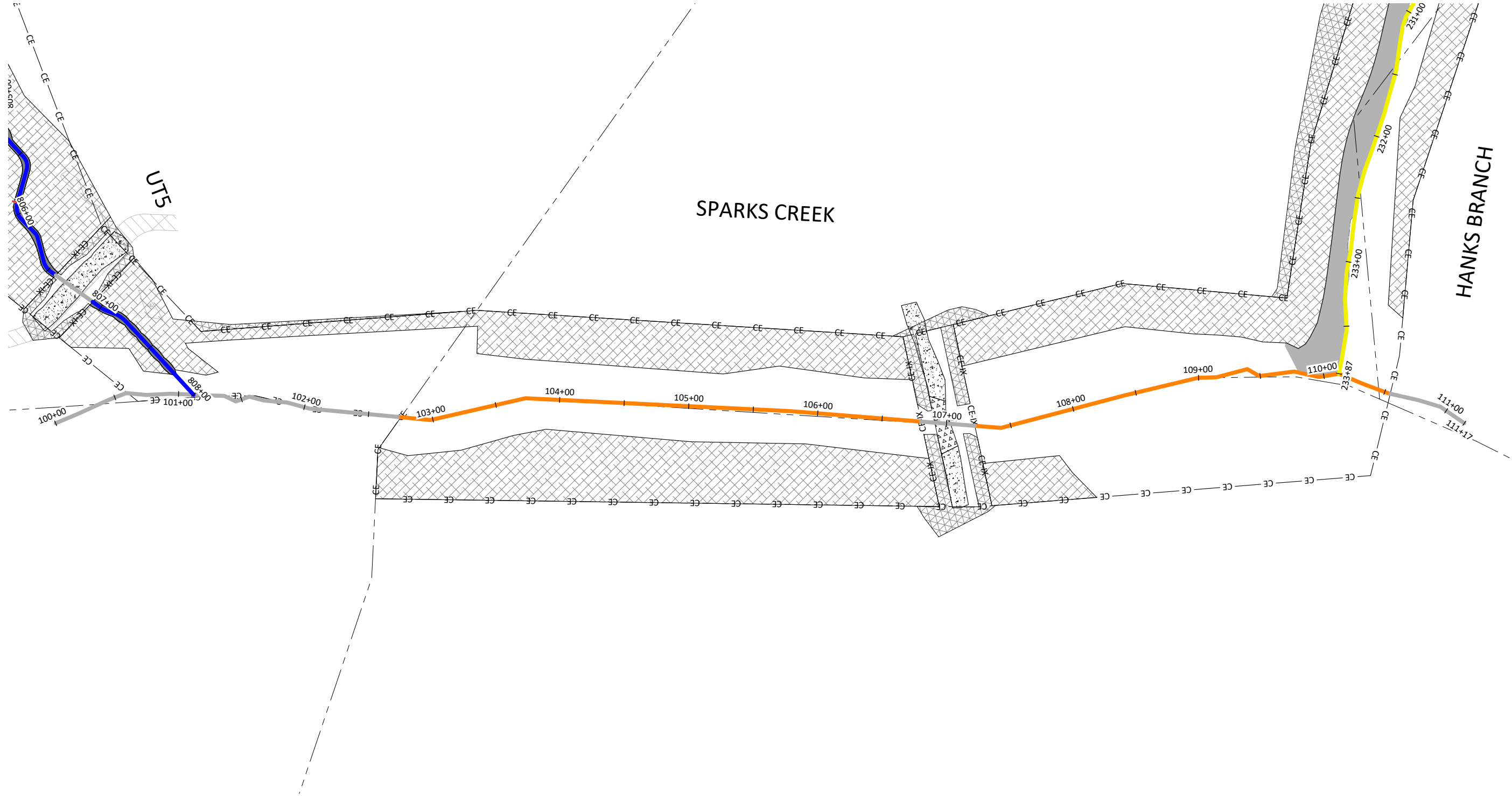
Revisions:






Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

3.04

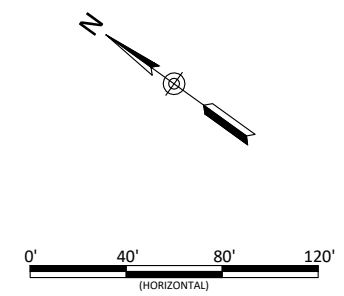
Sheet





-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

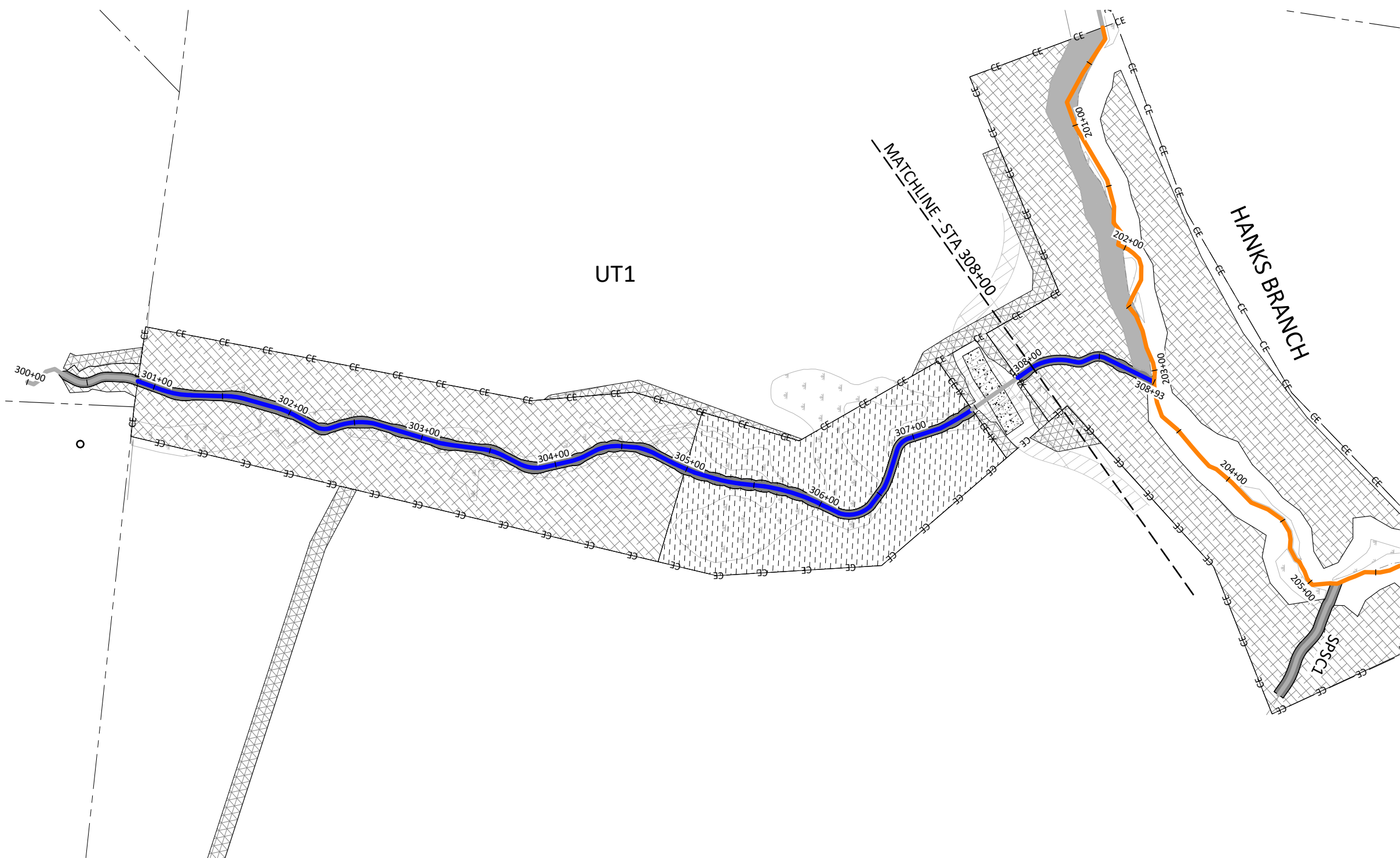
Sparks Creek
Planting Plans






Revisions:

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

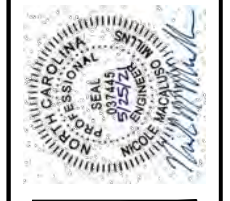
3.05





-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



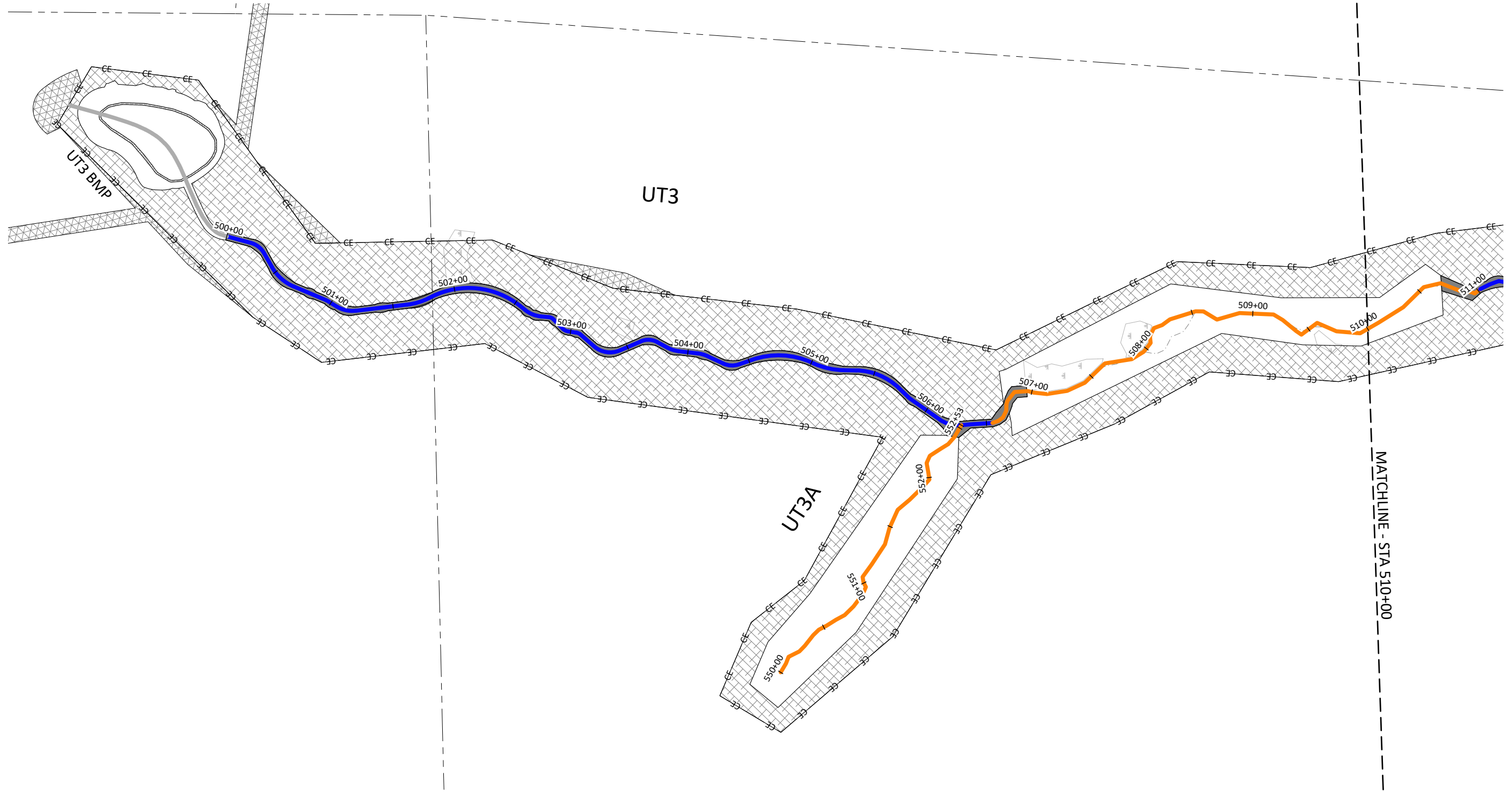
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina






UT1
Planting Plans

Revisions:

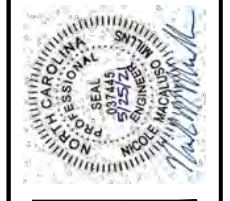
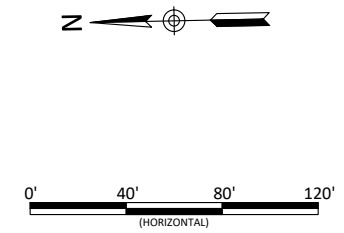
Date: May 28, 2021
Job Number: 005-0217
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

3.06



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.

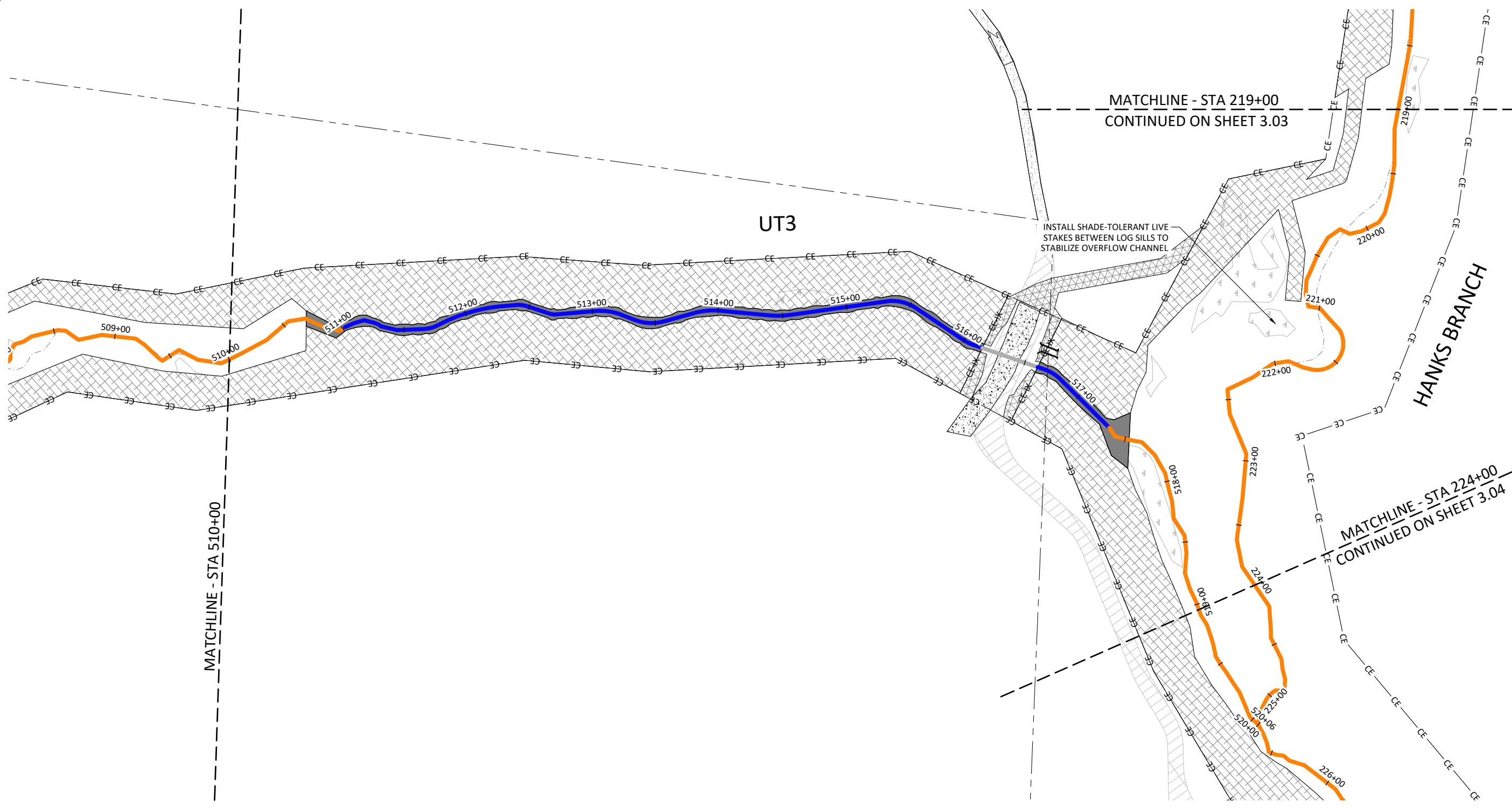







Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
UT3 & UT3A
Planting Plans

Revisions:

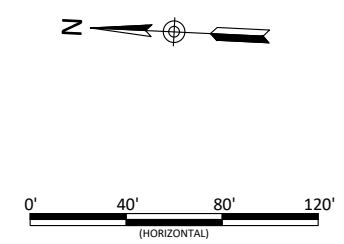
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

3.07
Sheet



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



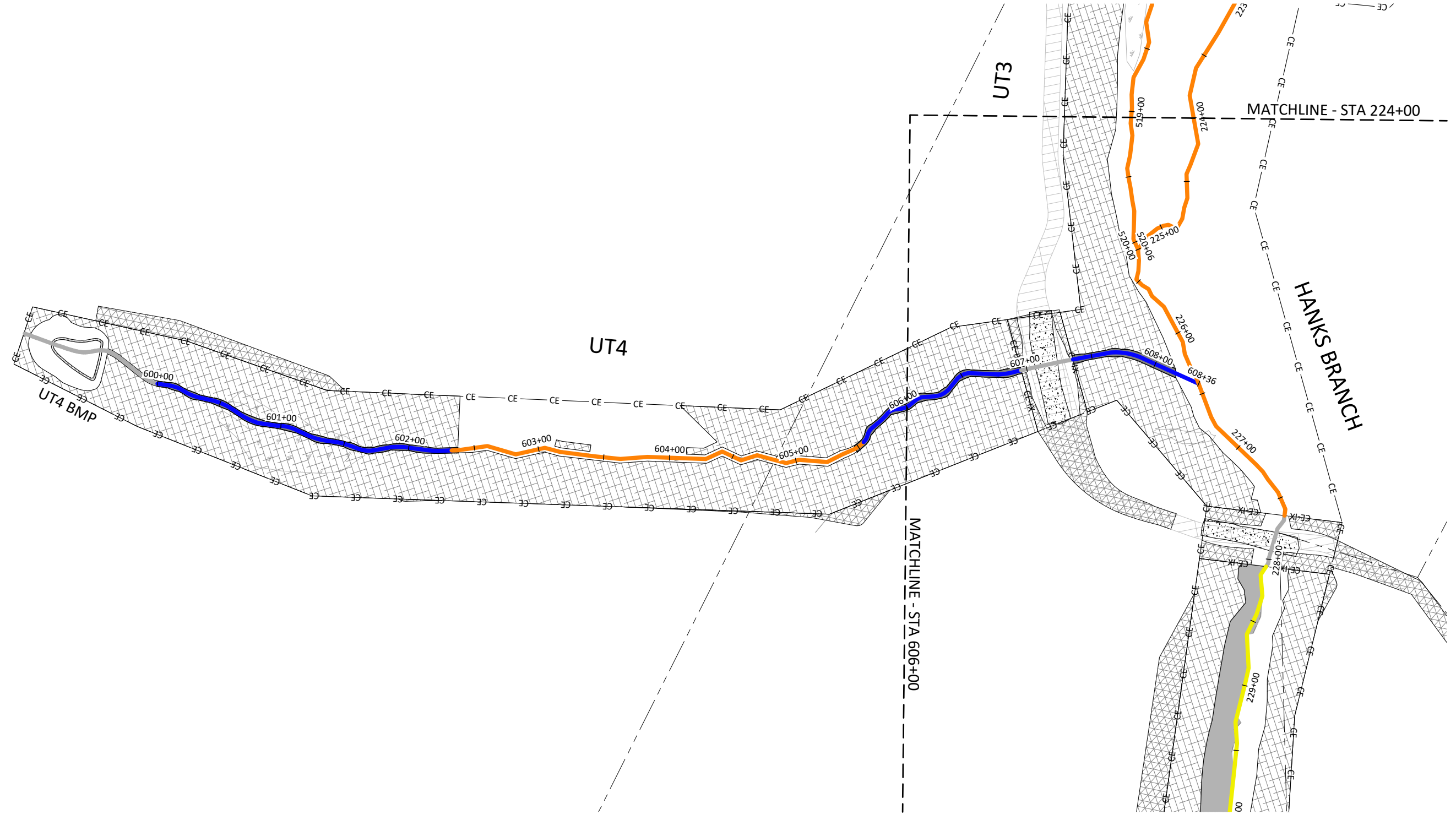
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina






UT3
Planting Plans

Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

3.08



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



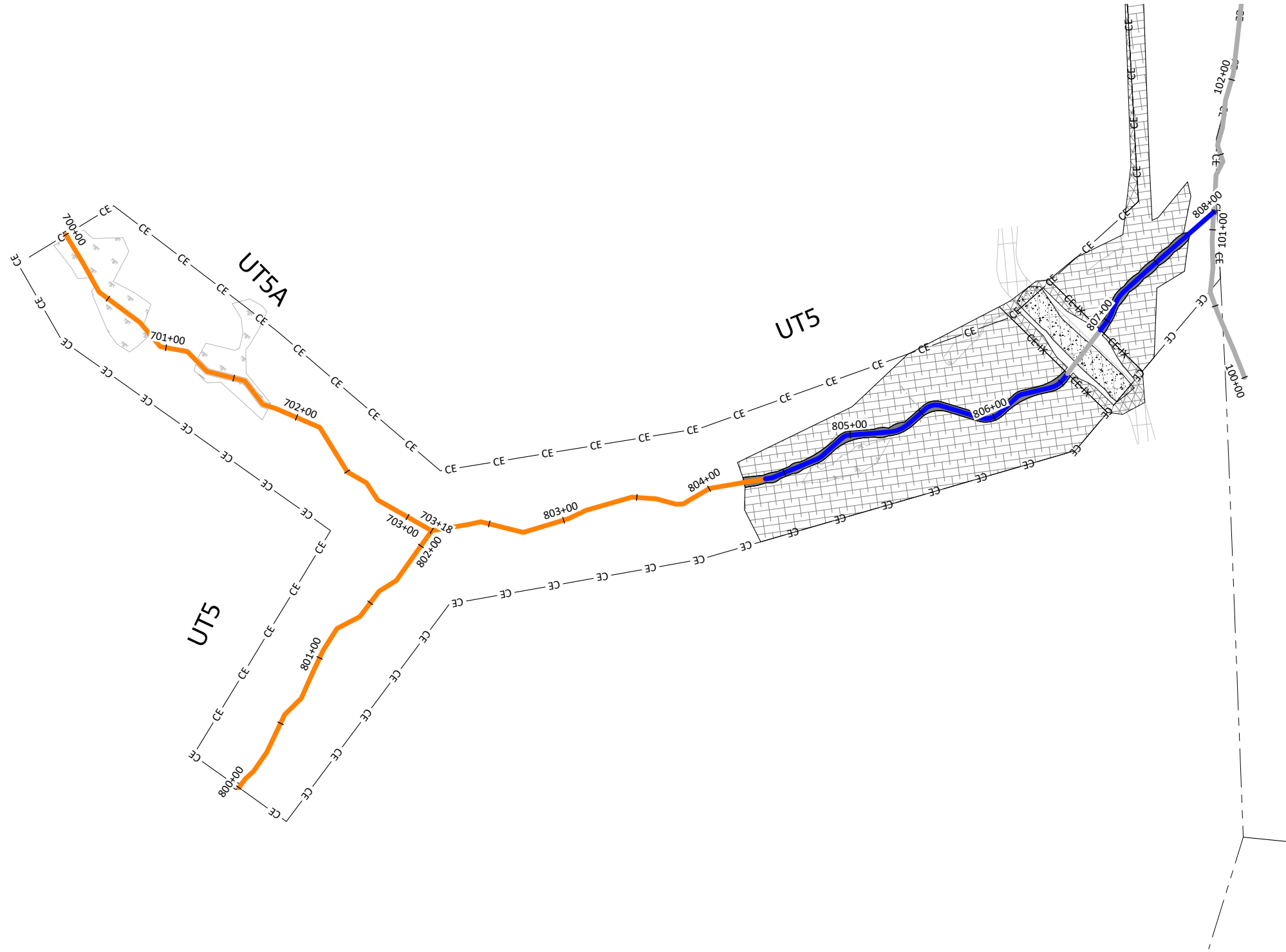
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina






UT4
Planting Plans

Revisions:

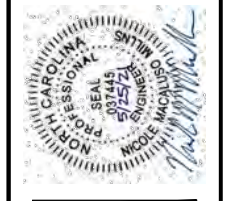
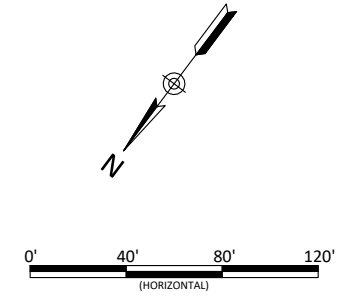
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

3.09



-  Zone 1 - Streambank Planting - Hanks Branch
-  Zone 2 - Streambank Planting - UT1-UT5
-  Zone 3 - Buffer Planting Zone
-  Zone 4 - Wetland Planting Zone
-  Zone 5 - Permanent Seeding Outside Easement

Note: Non-hatched areas within easement are currently vegetated and will be planted as needed to achieve target density. Buffer planting occurred within the Limits of Disturbance.



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
UT5 & UT5A
Planting Plans

Revisions:

Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

3.10

X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring-2021\Plans\02177-AB Fencing Overview.dwg
June 10, 2021



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Fencing Overview

Revisions:	

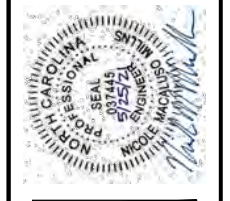
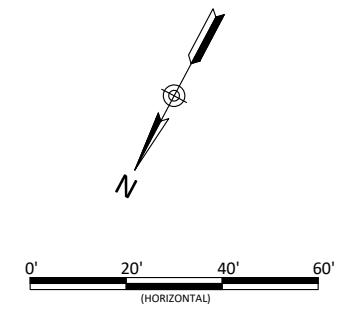
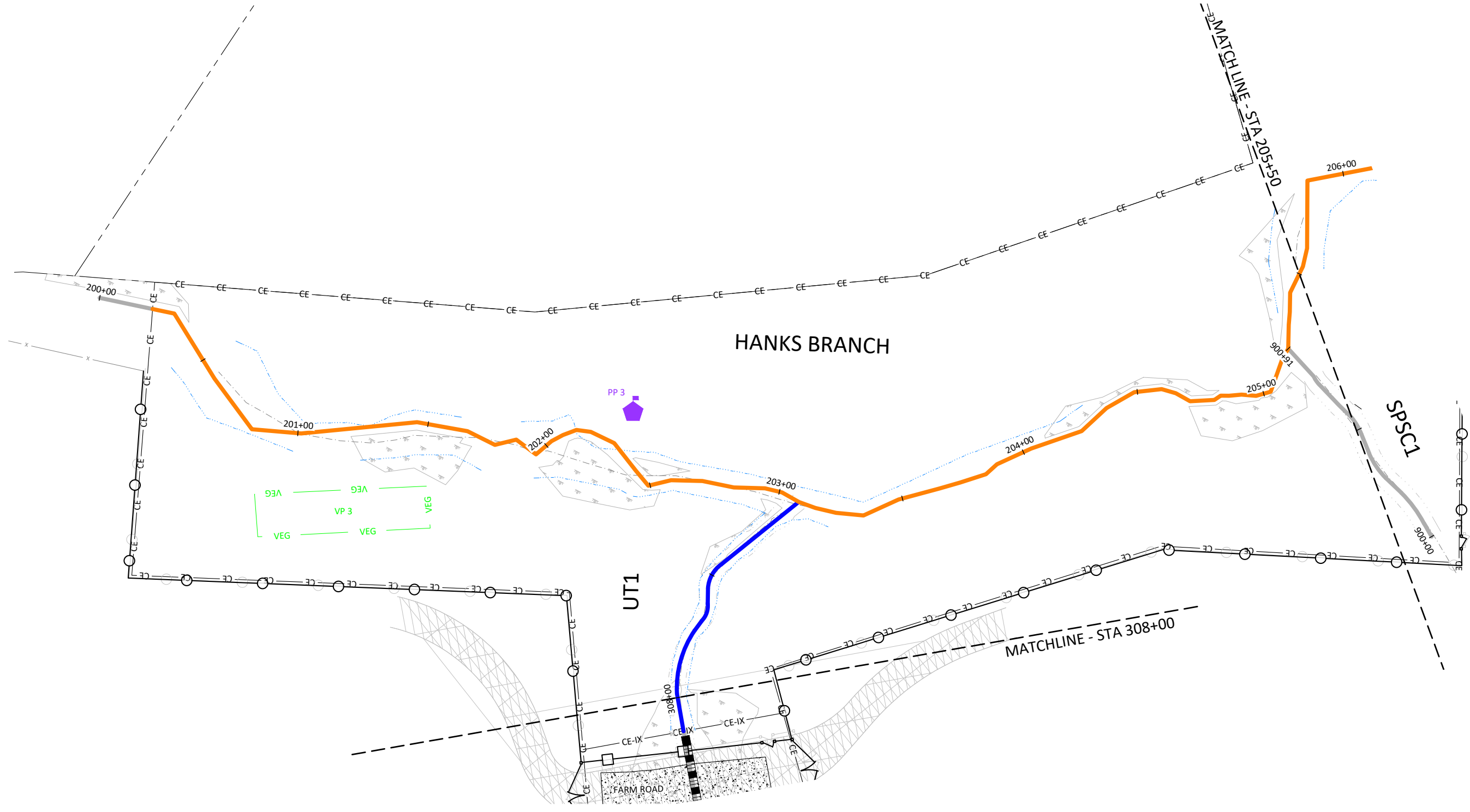
Date: May 28, 2021
Job Number: 005-02177
Project Engineer: NMM
Drawn By: ABT
Checked By: JNK

4.00

Sheet



WILDLANDS
ENGINEERING
312 W. Millbrook Rd, Suite 225
Raleigh, NC 27609
Tel: 919.851.9986
License No. F-0831

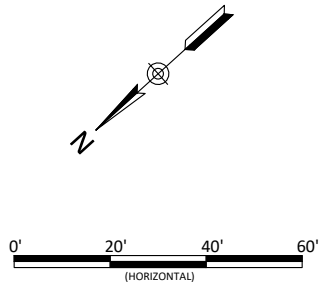
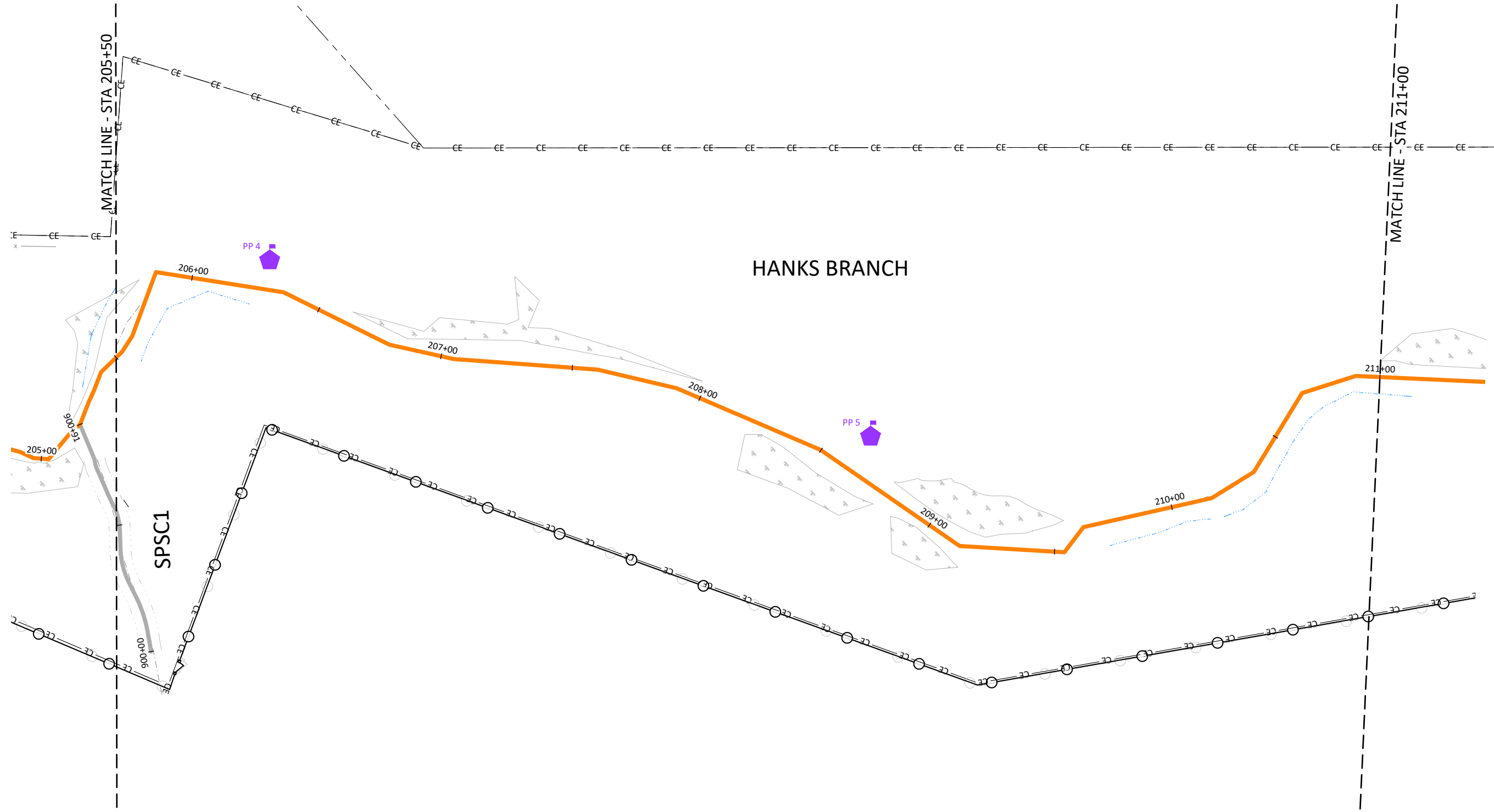


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 Hanks Branch
 Fencing Plan

Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

4.01



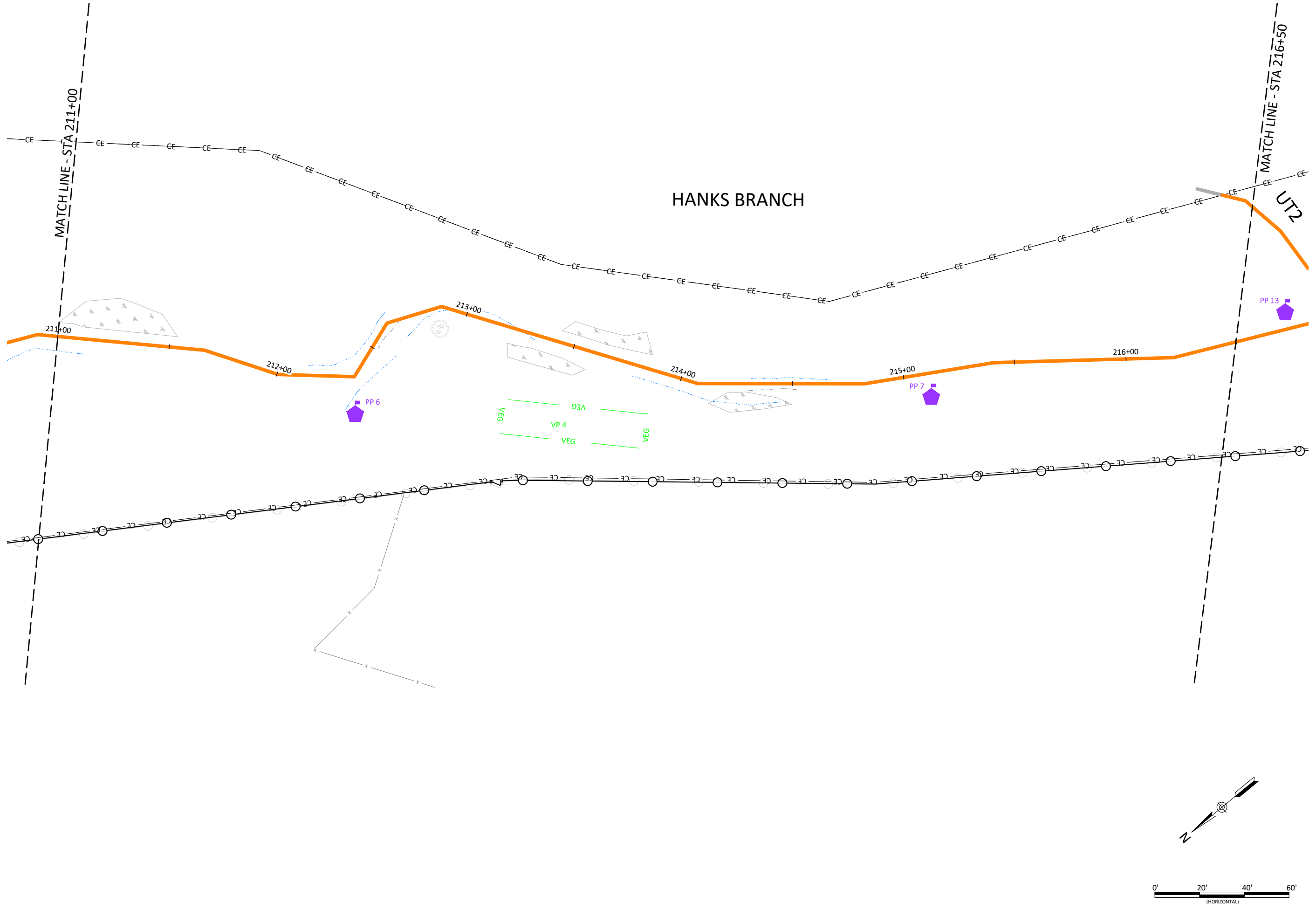
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 Hanks Branch
 Fencing Plan

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.02

Sheet





WILDLANDS
ENGINEERING

312 W. Millbrook Rd, Suite 225
Raleigh, NC 27609
Tel: 919.851.9886
License No. F-0831

Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

Hanks Branch
Fencing Plan

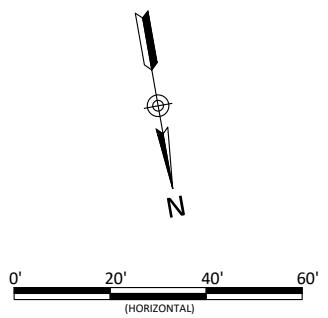
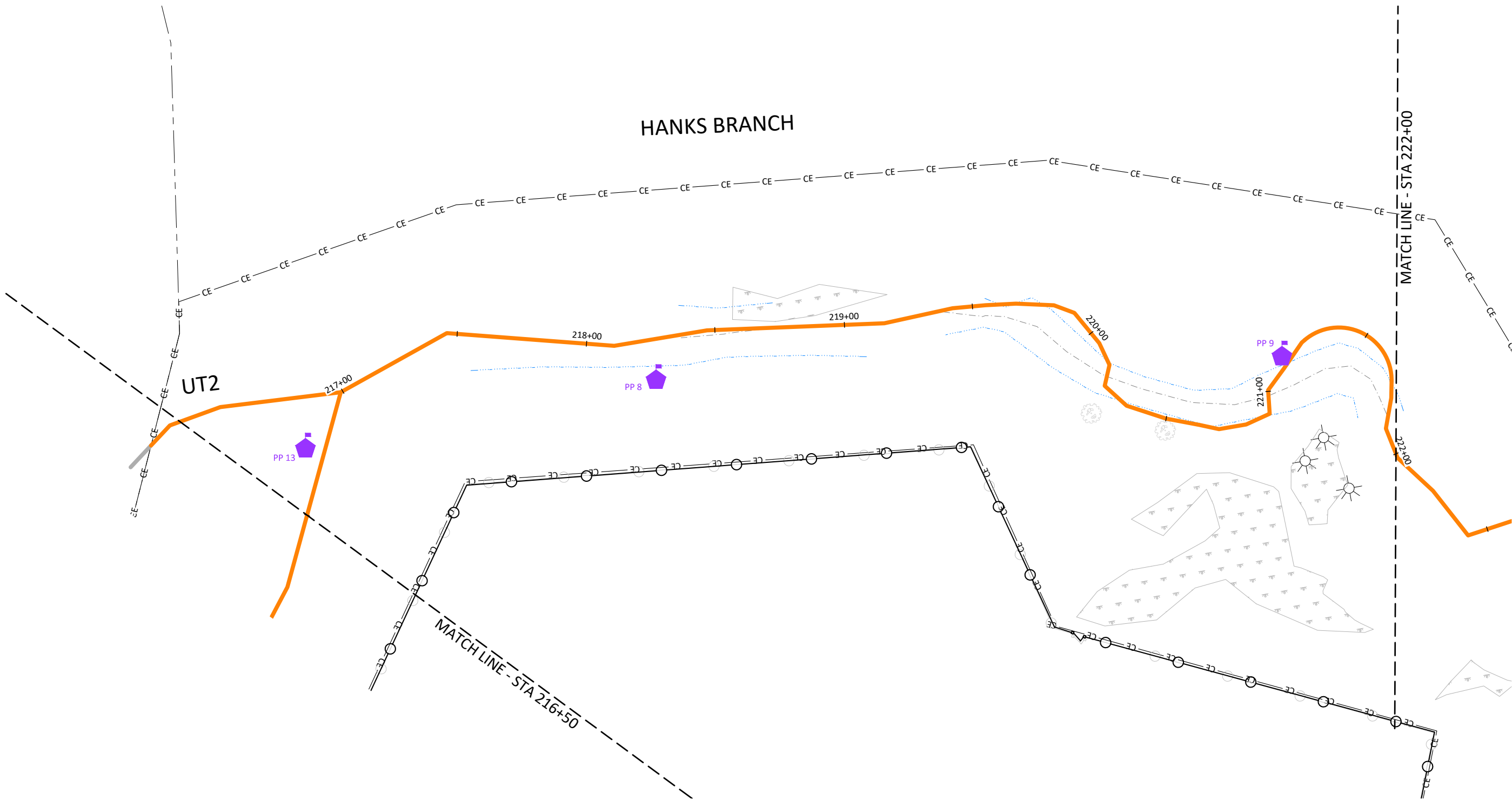
Revisions:	

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABF
Checked By:	JNK

4.03

Sheet

HANKS BRANCH

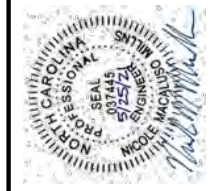


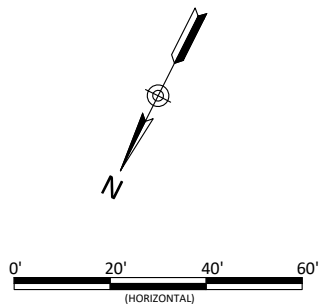
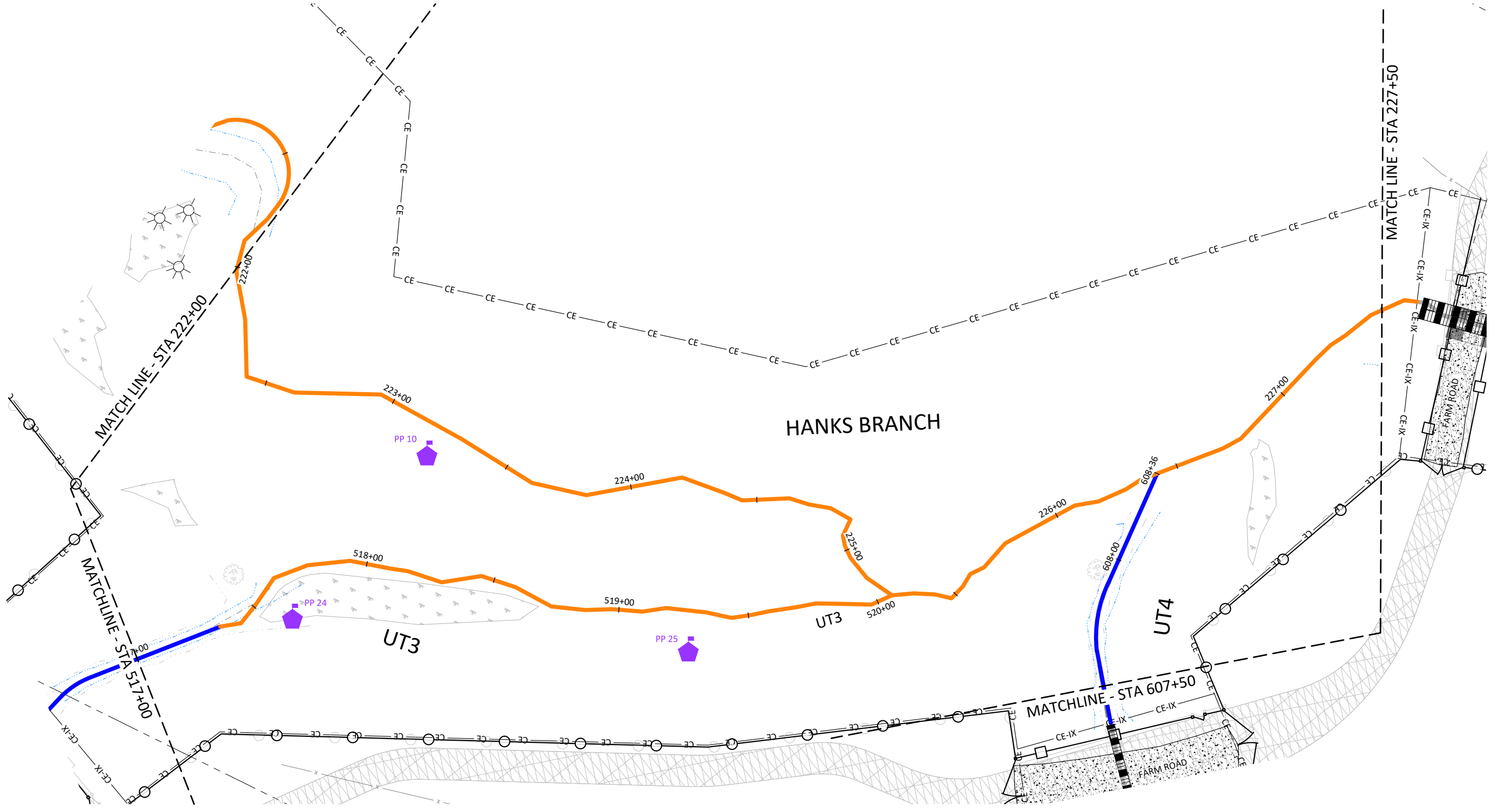
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch & UT2
Fencing Plan

Revisions:	

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

4.04





Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

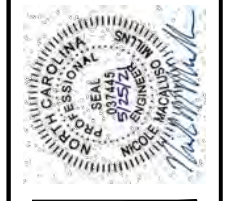
Hanks Branch
Fencing Plan

Revisions:

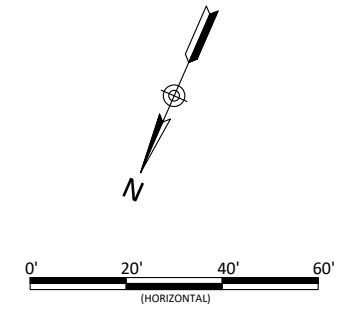
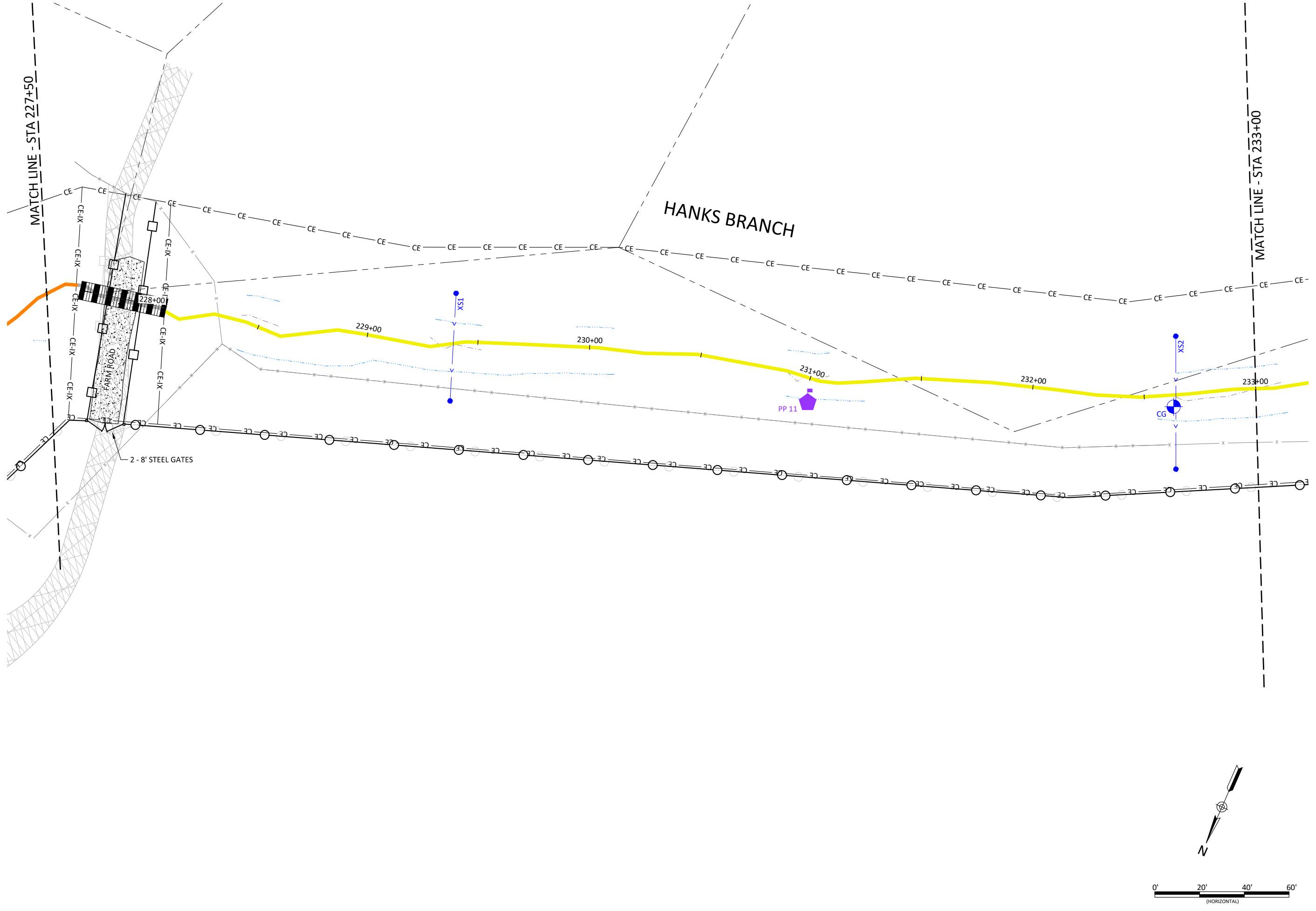
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.05

Sheet



X:\Shared\Projects\005-02177 Lyon Hills Monitoring\Baseline Monitoring-2021\Plans\02177-AB Fencing Plan.dwg
June 10, 2021



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Hanks Branch
Fencing Plan

Revisions:	

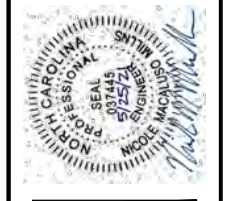
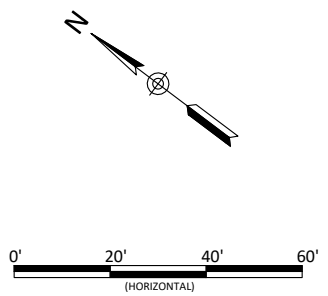
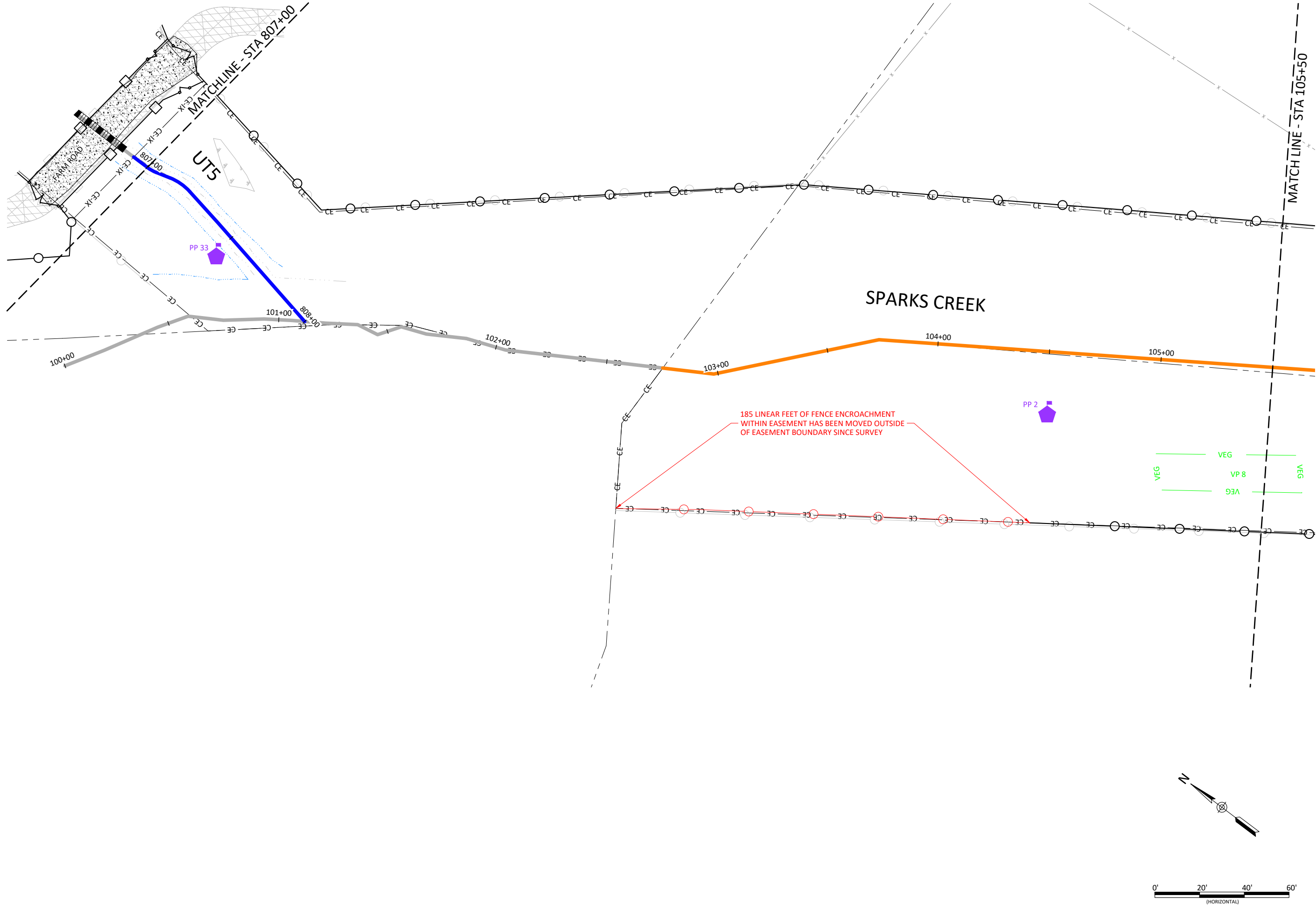
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.06

Sheet



WILDLANDS
ENGINEERING
312 W. Millbrook Rd, Suite 225
Raleigh, NC 27609
Tel: 919.851.9986
License No. F-0831



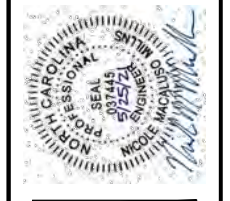
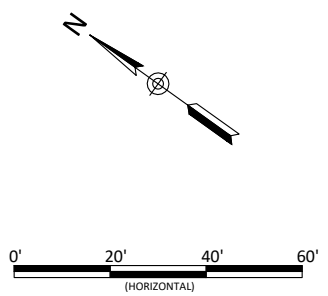
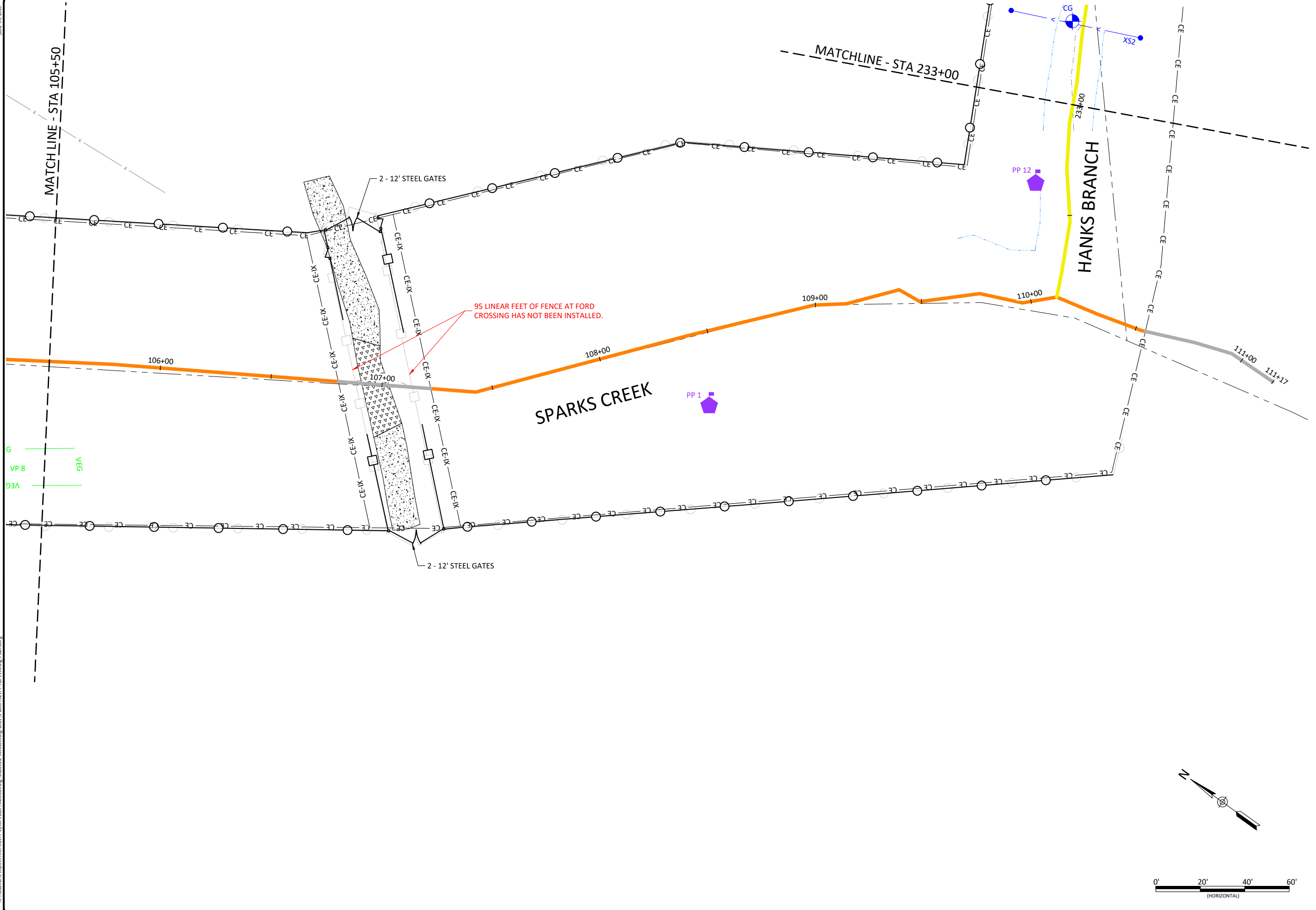
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

Sparks Creek
 Fencing Plan

Revisions:

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.07



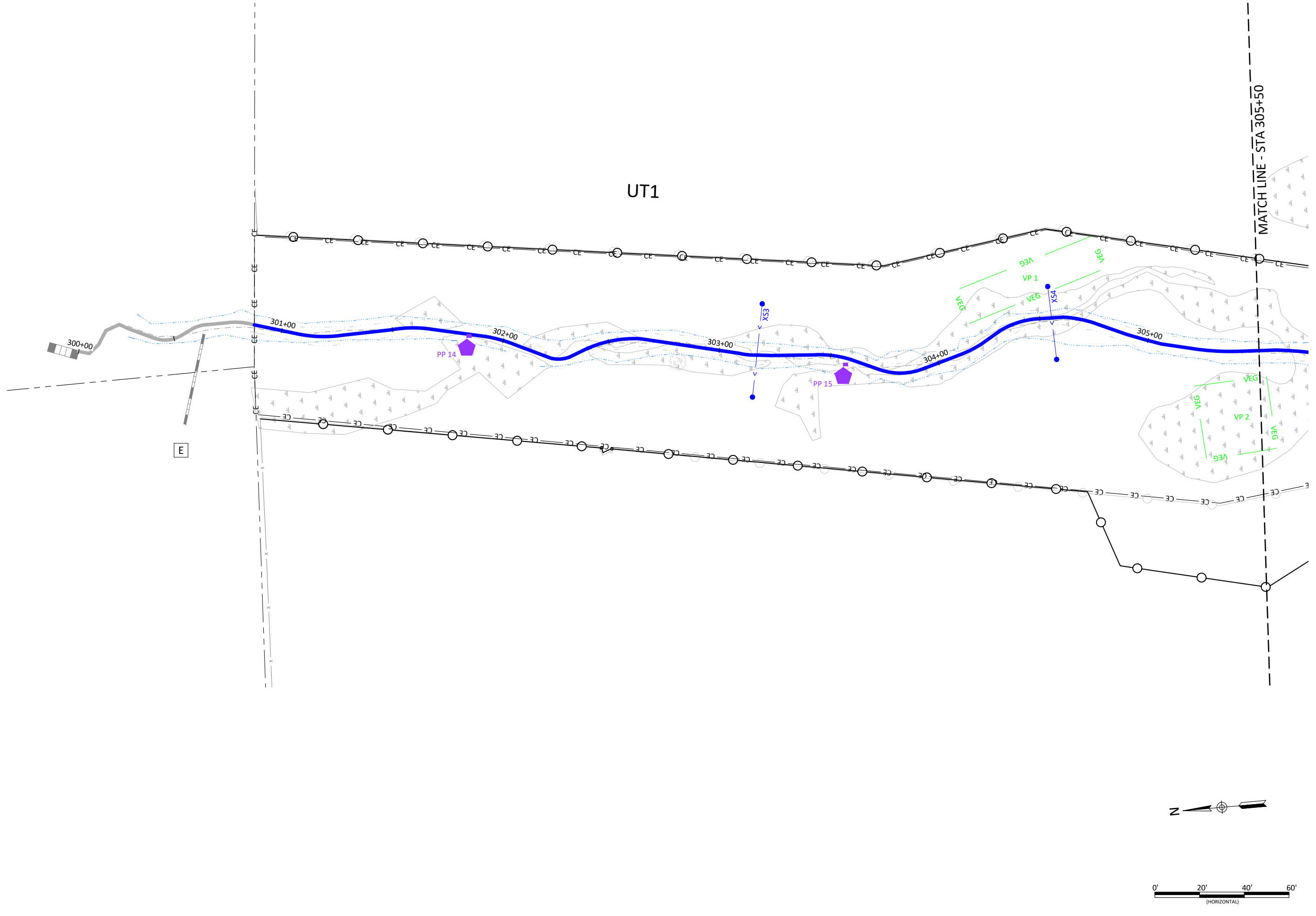
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
Sparks Creek
Fencing Plan

Revisions:	

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.08

Sheet



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT1
Fencing Plan

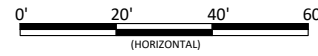
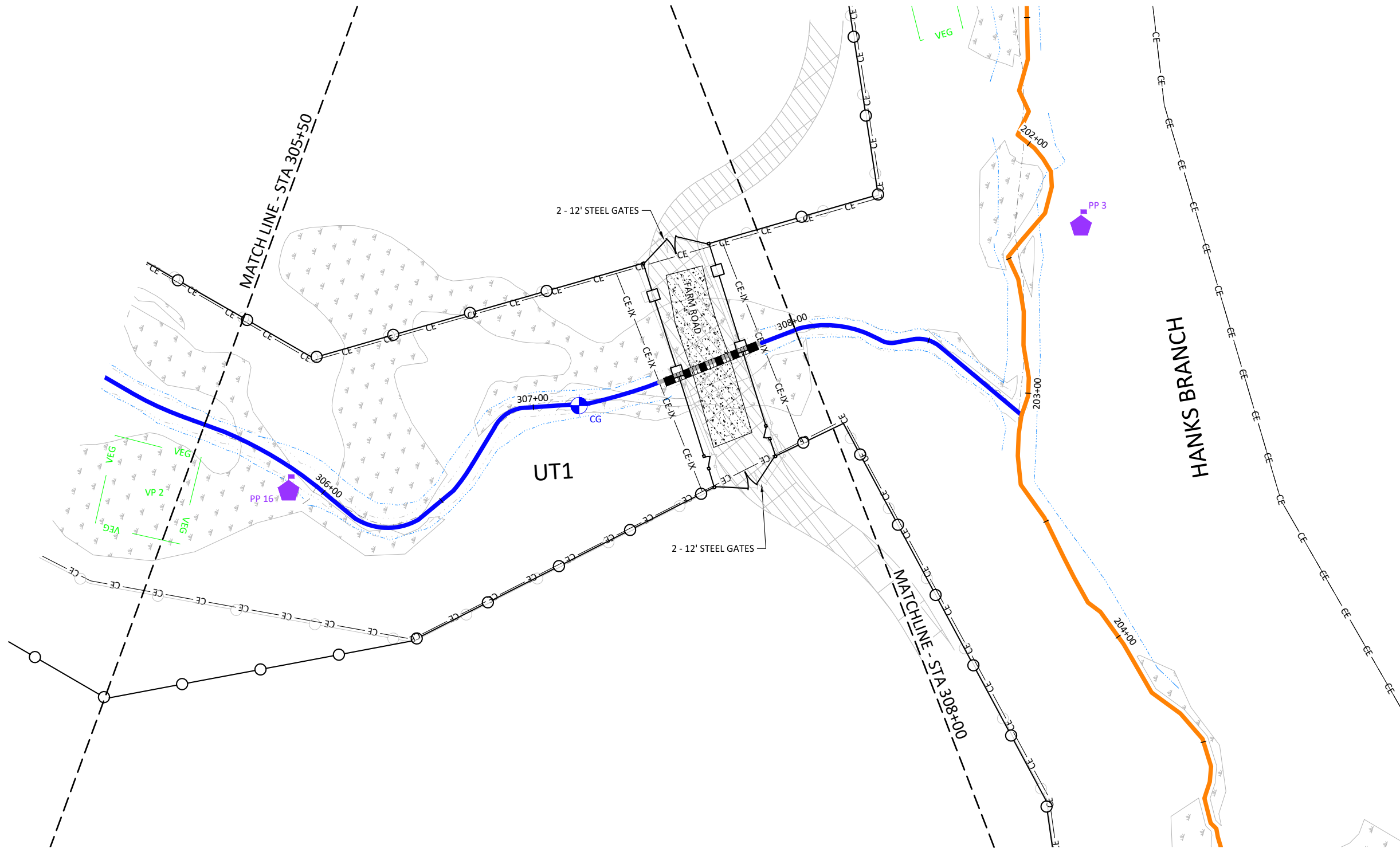
Date:	Job Number:	Project Engineer:	Drawn By:	Checked By:
May 28, 2021	005-02177	NMM	ABT	JNK

Revisions:

4.09

Sheet

WILDLANDS
 ENGINEERING
 312 W. Millbrook Rd, Suite 225
 Raleigh, NC 27609
 Tel: 919.851.9986
 License No. F-0831



Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABT
 Checked By: JNK

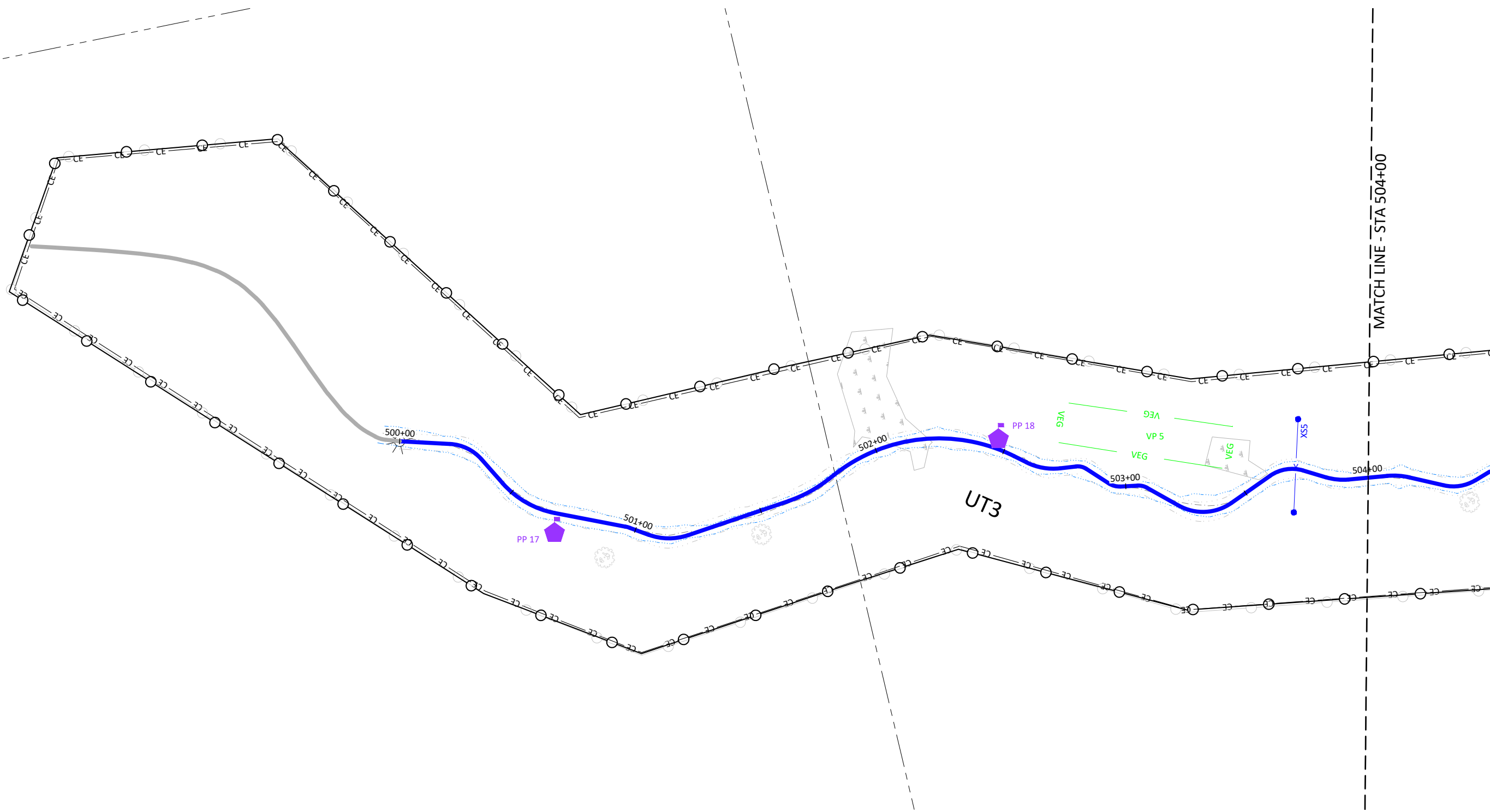
4.10

Sheet

Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT1
 Fencing Plan





Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

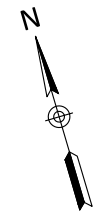
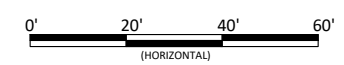
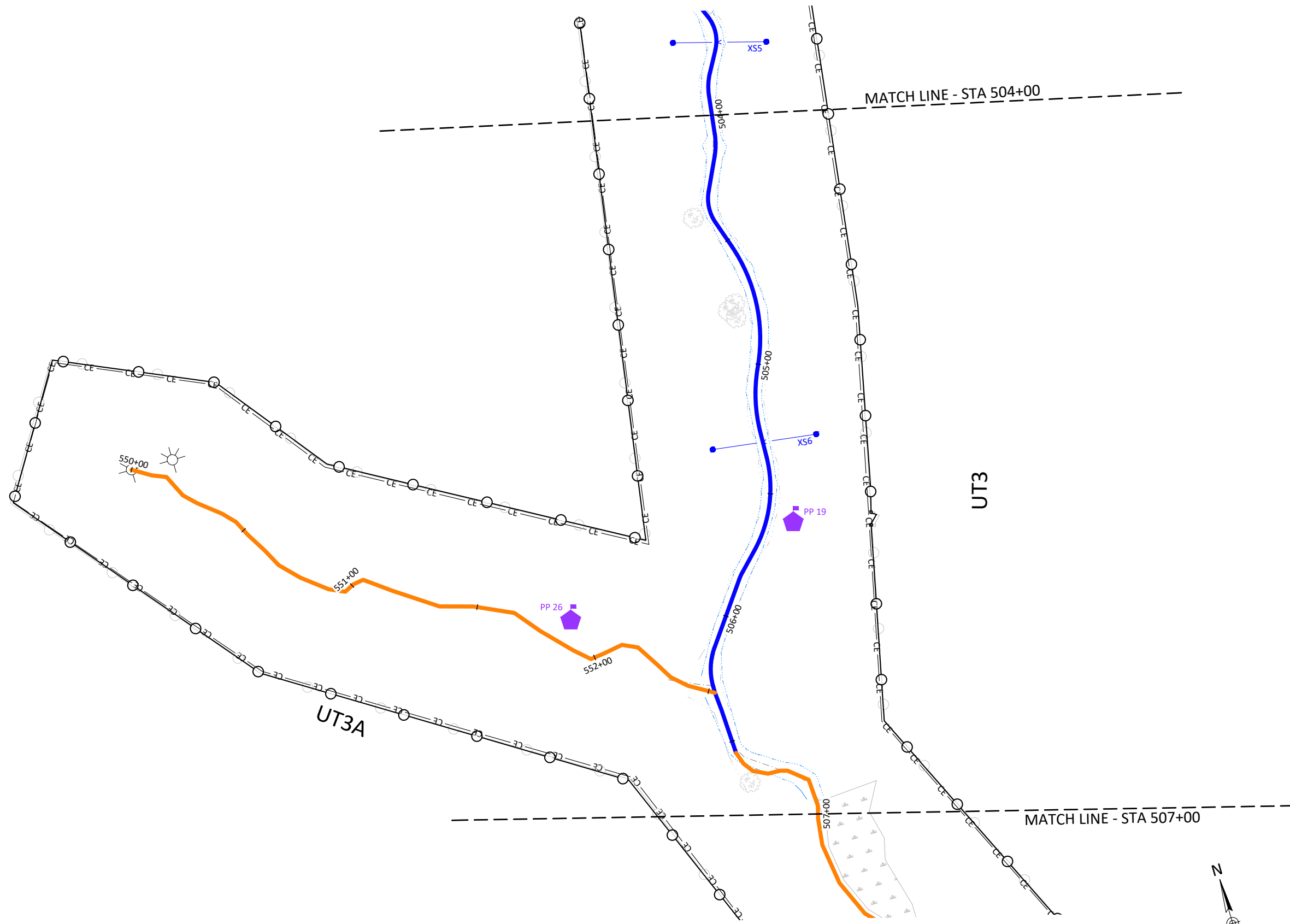
UT3
Fencing Plan

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABF
Checked By:	JNK

4.11

Sheet





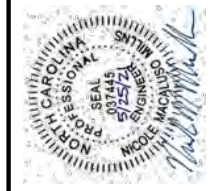
Revisions:

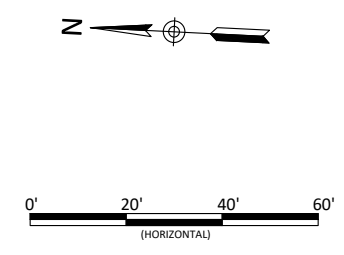
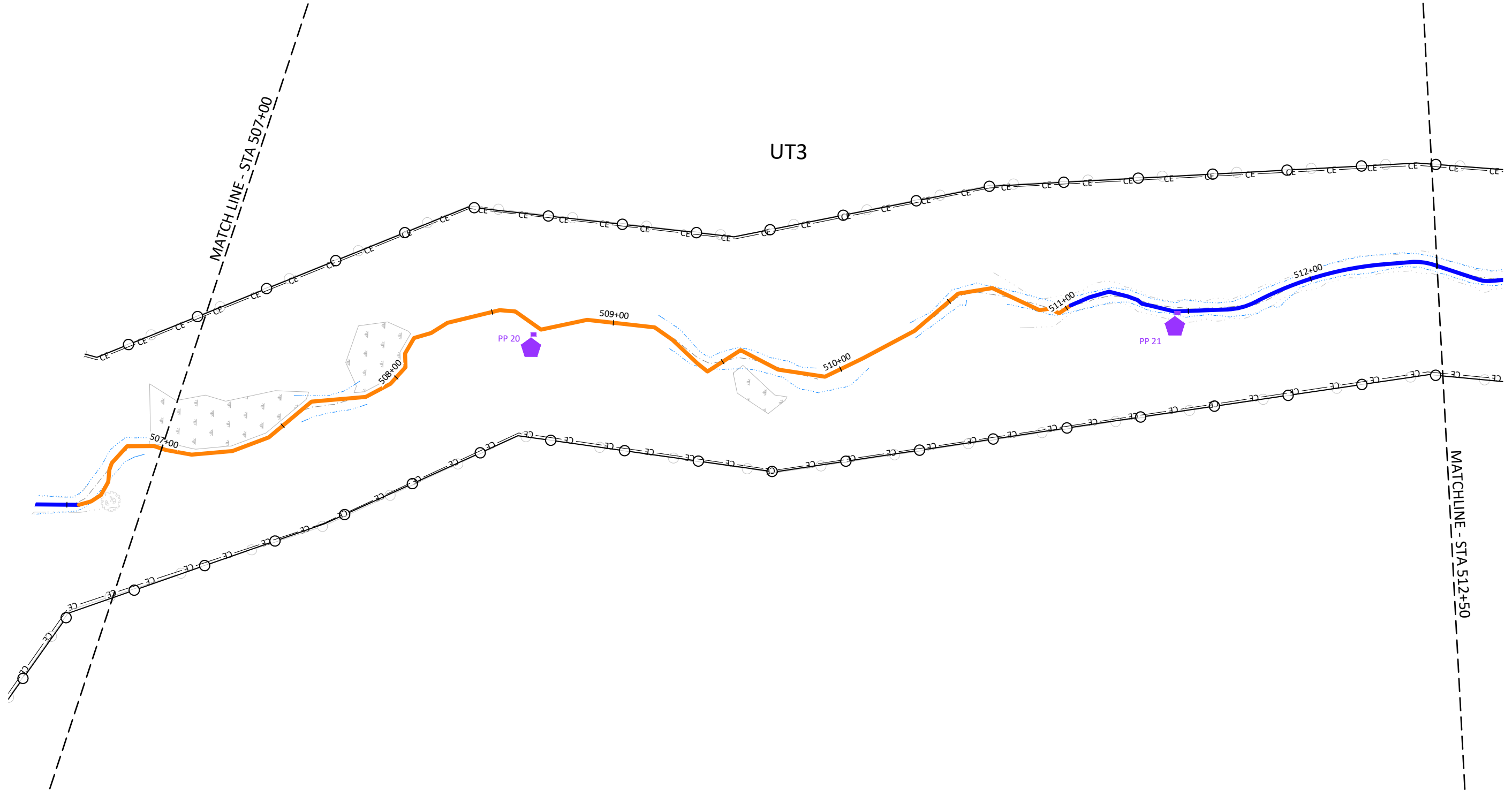
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABF
Checked By:	JNK

4.12

Sheet

Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina
UT3 & UT3A
Fencing Plan



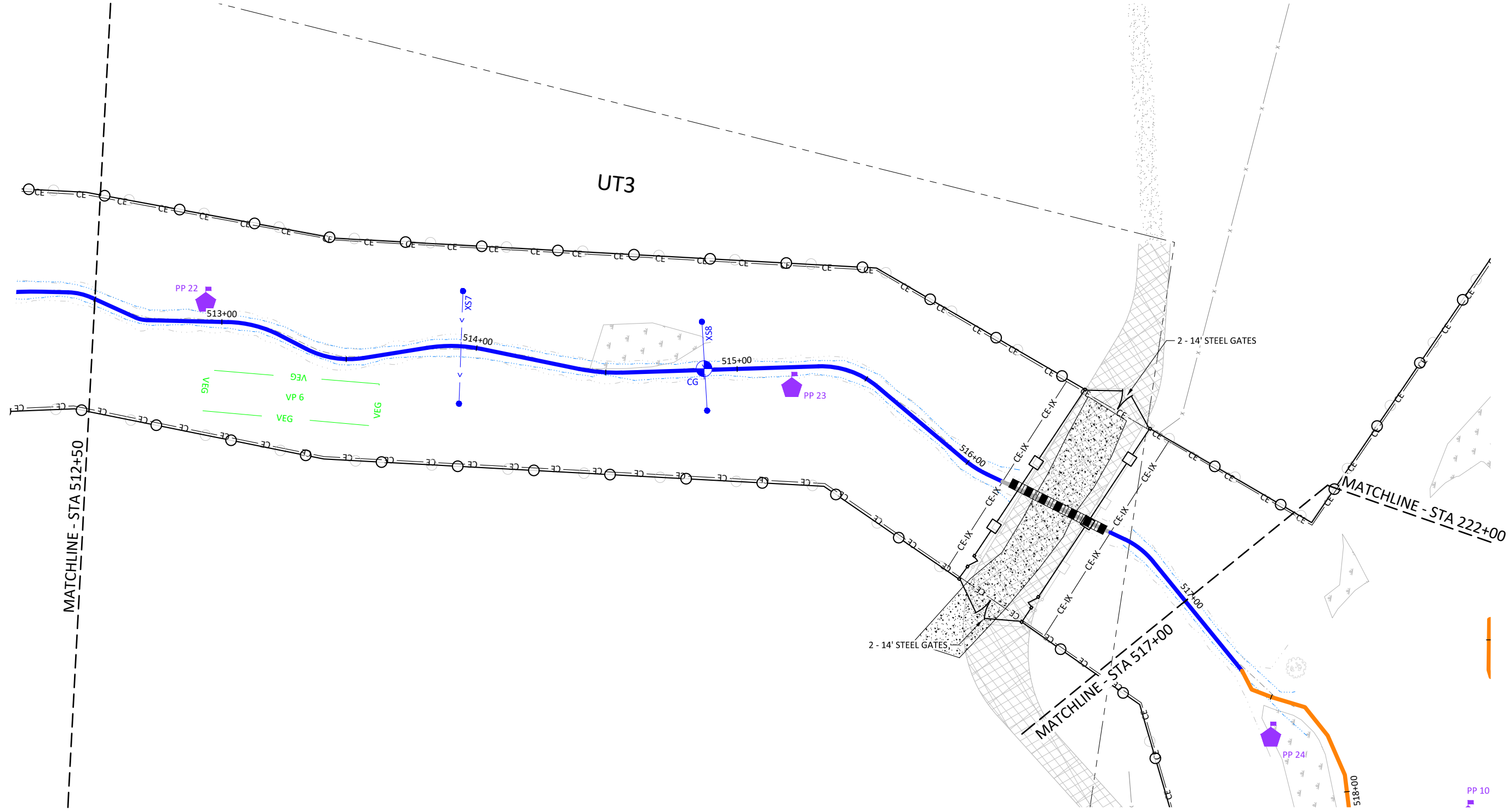


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 UT3
 Fencing Plan

Revisions:

Date: May 28, 2021
 Job Number: 005-02177
 Project Engineer: NMM
 Drawn By: ABF
 Checked By: JNK

4.13



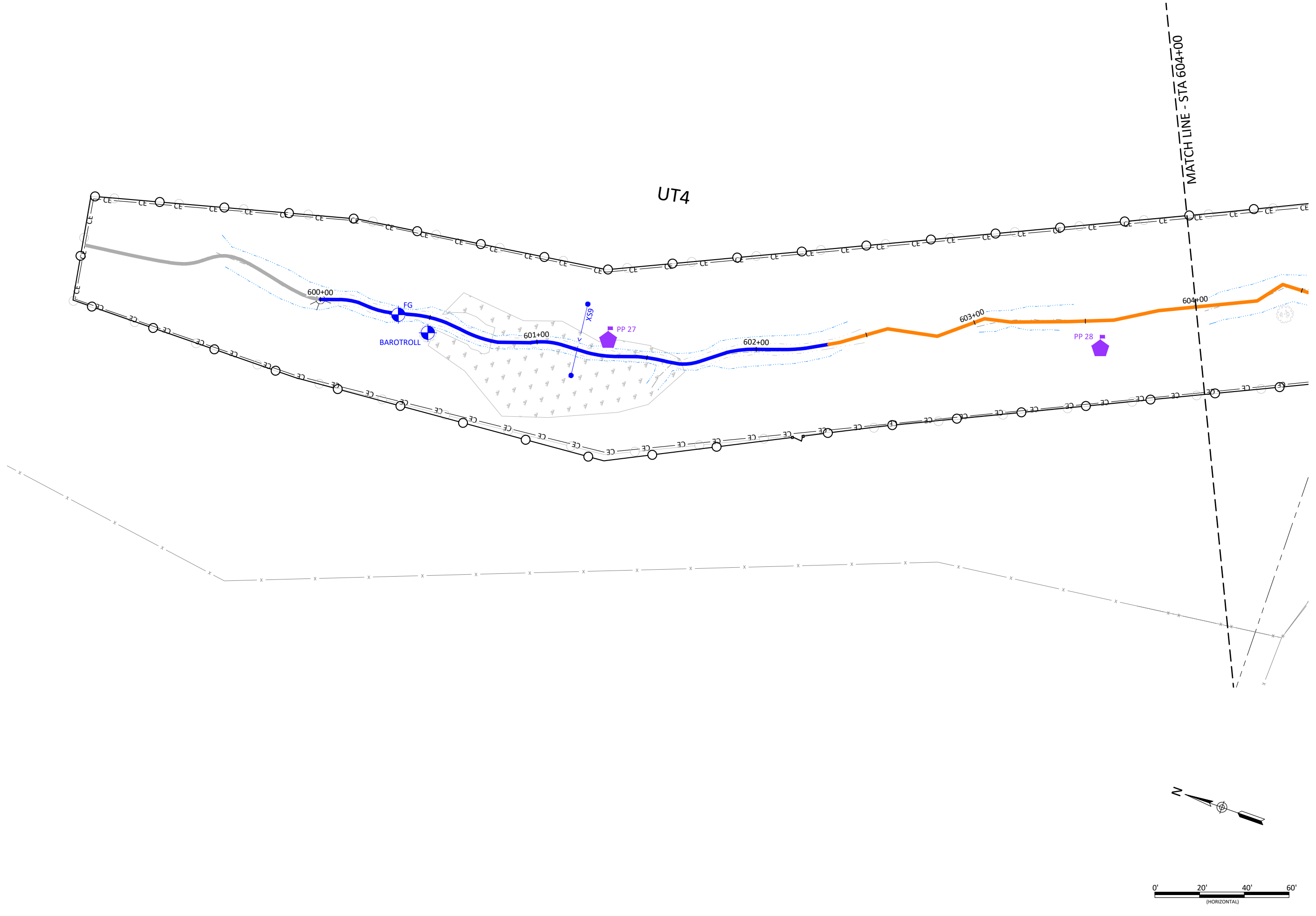
Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT3
Fencing Plan

Revisions:

Date: May 28, 2021
Job Number: 005-0217
Project Engineer: NMM
Drawn By: ABP
Checked By: JNK

4.14

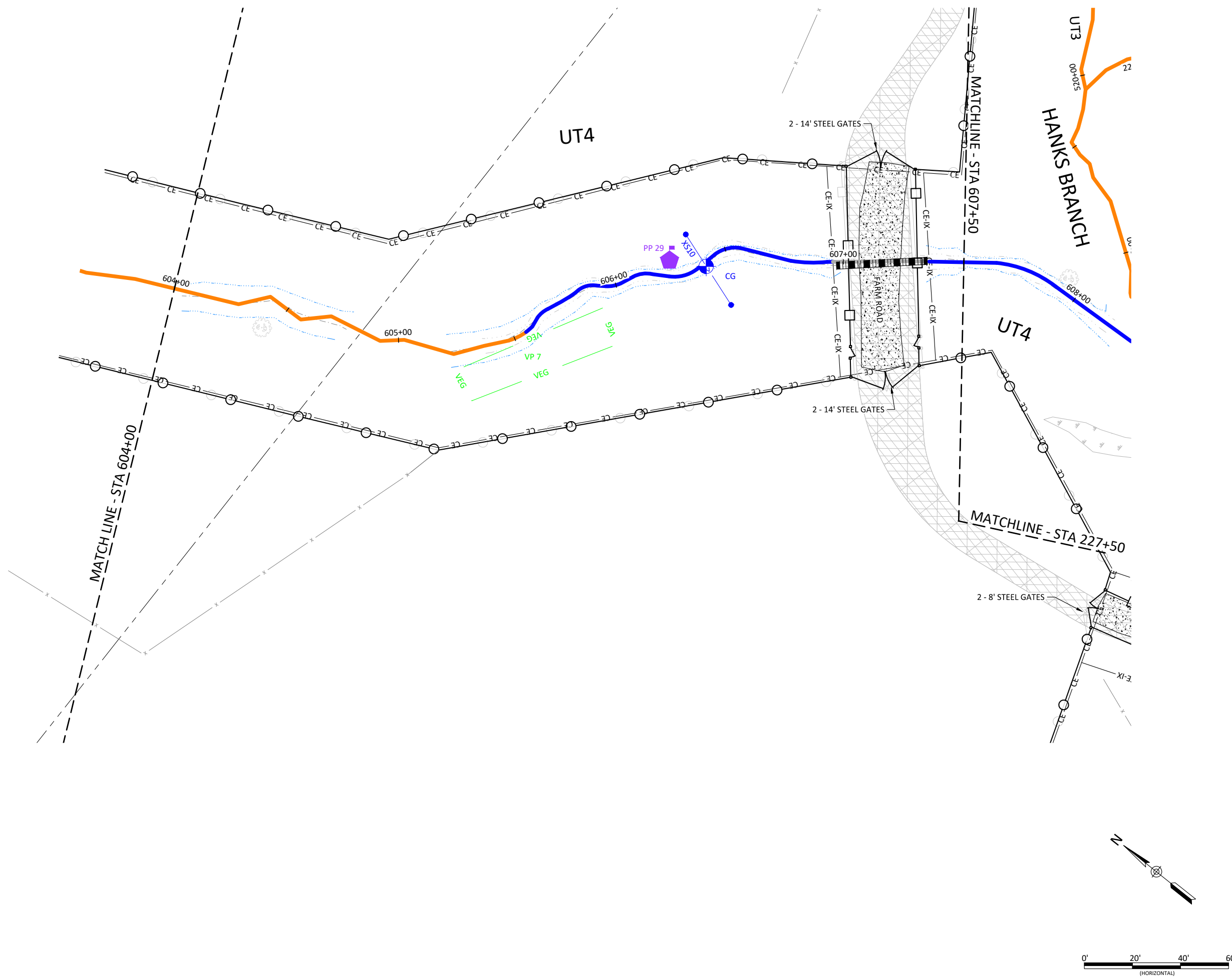


Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina

UT4
 Fencing Plan

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.15



Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

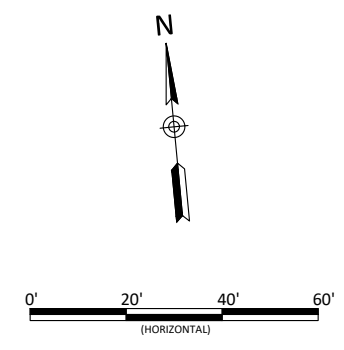
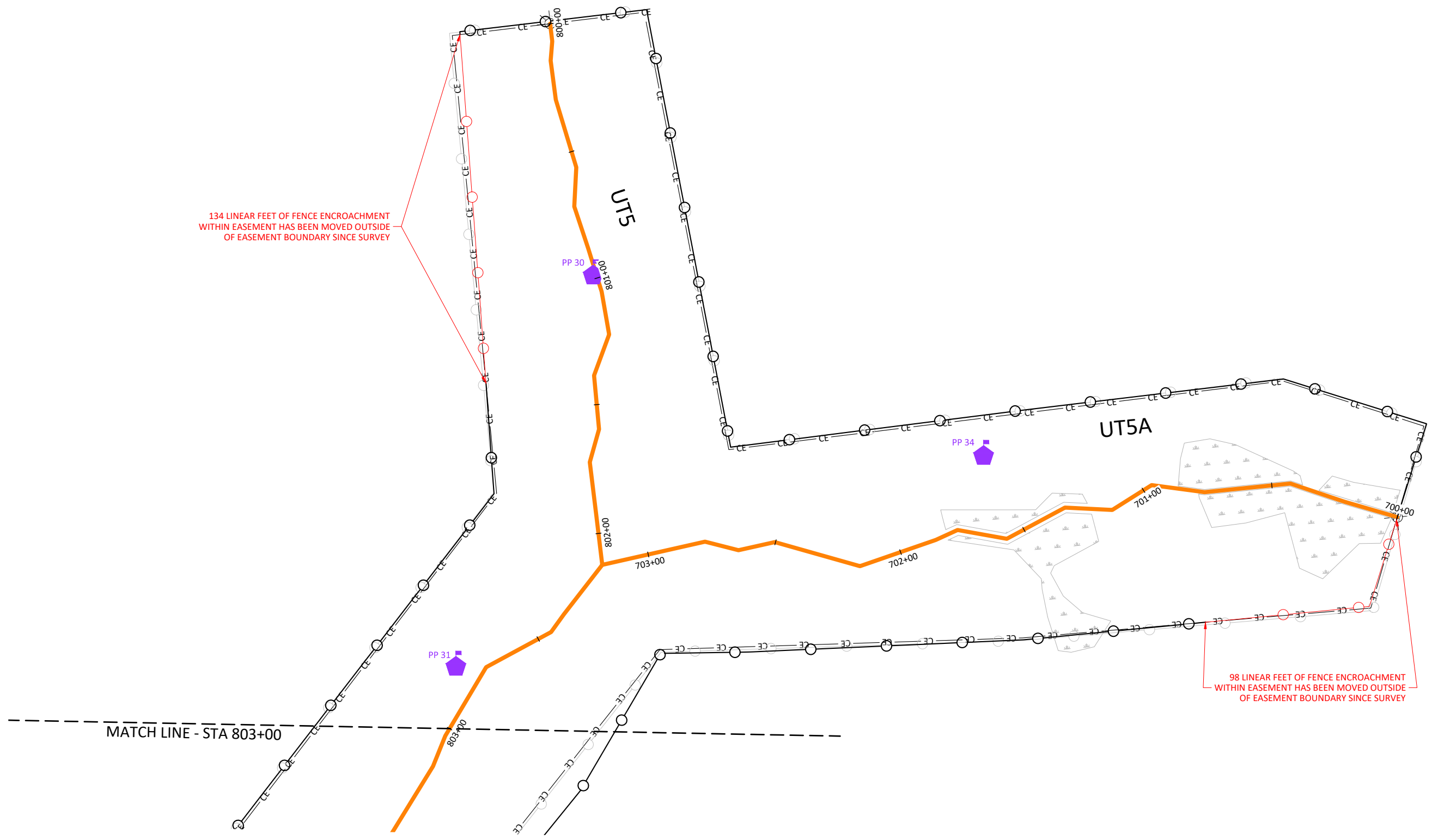
UT4
Fencing Plan

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.16

Sheet





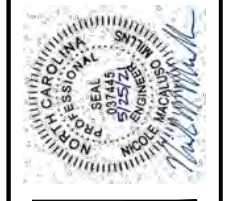
Lyon Hills Mitigation Site As-Built
 Wilkes County, North Carolina
 UT5 & UT5A
 Fencing Plan

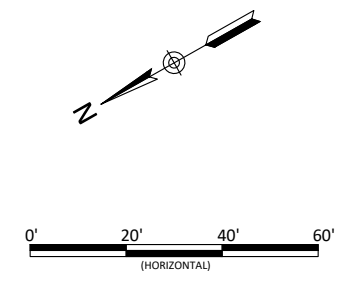
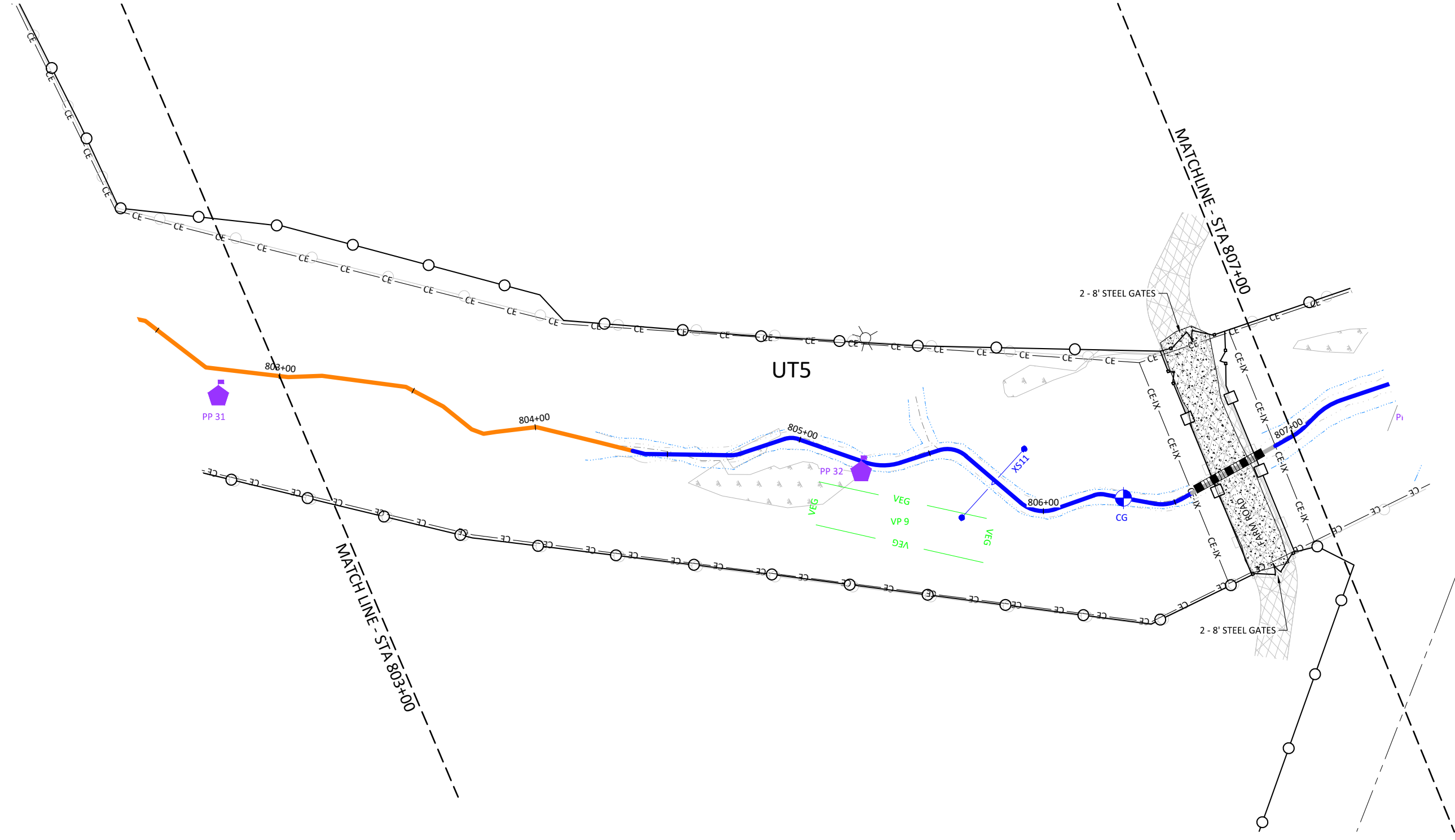
Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.17

Sheet

Revisions:





Lyon Hills Mitigation Site As-Built
Wilkes County, North Carolina

UT5
Fencing Plan

Date:	May 28, 2021
Job Number:	005-02177
Project Engineer:	NMM
Drawn By:	ABT
Checked By:	JNK

4.18

Sheet

