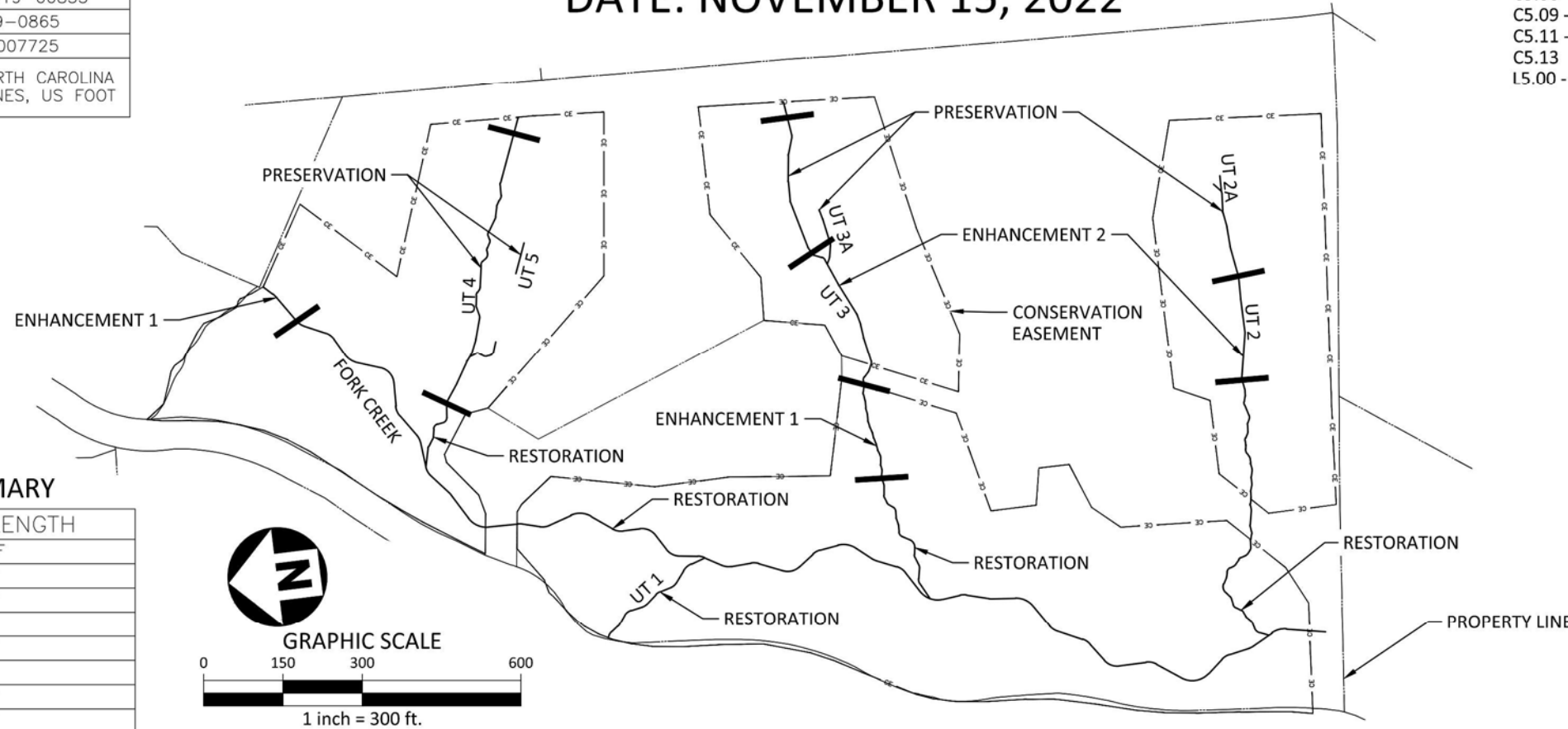


NC DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF MITIGATION SERVICES

AS-BUILT DRAWINGS LAUREL SPRINGS SITE AVERY COUNTY DATE: NOVEMBER 15, 2022

SITE DATA TABLE	
RIVER BASIN	FRENCH BROAD
8-DIGIT HUC	6010108
TOTAL DISTURBED AREA	27.53 AC
DMS PROJECT ID NO.	100122
FULL DELIVERY CONTRACT NO.	7890
USACE ACTION ID NO.	SAW-2019-00835
DWR PROJECT NO.	2019-0865
RFP NO.	16-007725
COORDINATE SYSTEM	NAD83 NORTH CAROLINA STATE PLANES, US FOOT

SHEET INDEX	
C1.00	EASEMENT AND CONTROL POINTS EXHIBIT
C1.01	INDEX OF SYMBOLS
C1.02	PROJECT OVERVIEW
C5.00 - C5.04	FORK CREEK PLAN AND PROFILE
C5.05	UT 1 PLAN AND PROFILE
C5.06 - C5.08	UT 2 PLAN AND PROFILE
C5.09 - C5.10	UT 3 PLAN AND PROFILE
C5.11 - C5.12	UT 4 PLAN AND PROFILE
C5.13	DRIVEWAY GRADING
L5.00 - L5.01	PLANTING PLAN

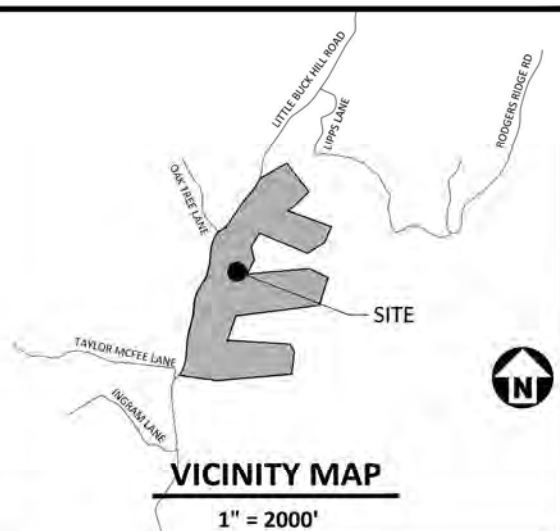


AS-BUILT MITIGATION SUMMARY

TRIBUTARY	AS-BUILT LENGTH
FORK CREEK	2,334 LF
UT 1	235 LF
UT 2	851 LF
UT 2A	25 LF
UT 3	921 LF
UT 3A	103 LF
UT 4	657 LF
UT 5	127 LF

RESTORATION LEVEL	STREAM (LF)	RIPARIAN WETLAND (AC)	NON-RIPARIAN WETLAND (AC)
RESTORATION	3,286	-	-
ENHANCEMENT I	274	-	-
ENHANCEMENT II	449	-	-
PRESERVATION	1,244	0.198*	-
REESTABLISHMENT	-	7.656	-
REHABILITATION	-	1.845*	-
ENHANCEMENT	-	0.148*	-
TOTALS	5,253	9.847	-

*TOTAL STREAM MITIGATION UNITS INCLUDE UNITS FROM THE WIDER BUFFER TOOL
*WETLAND REHABILITATION, ENHANCEMENT, PRESERVATION, AND SOME RE-ESTABLISHMENT ARE NOT CREDIT GENERATING.



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AXIOM ENVIRONMENTAL, INC.
218 SNOW AVENUE
RALEIGH, NC 27603
CONTACT: GRANT LEWIS
PHONE: 919. 215. 1693



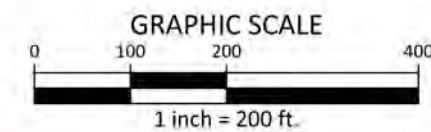
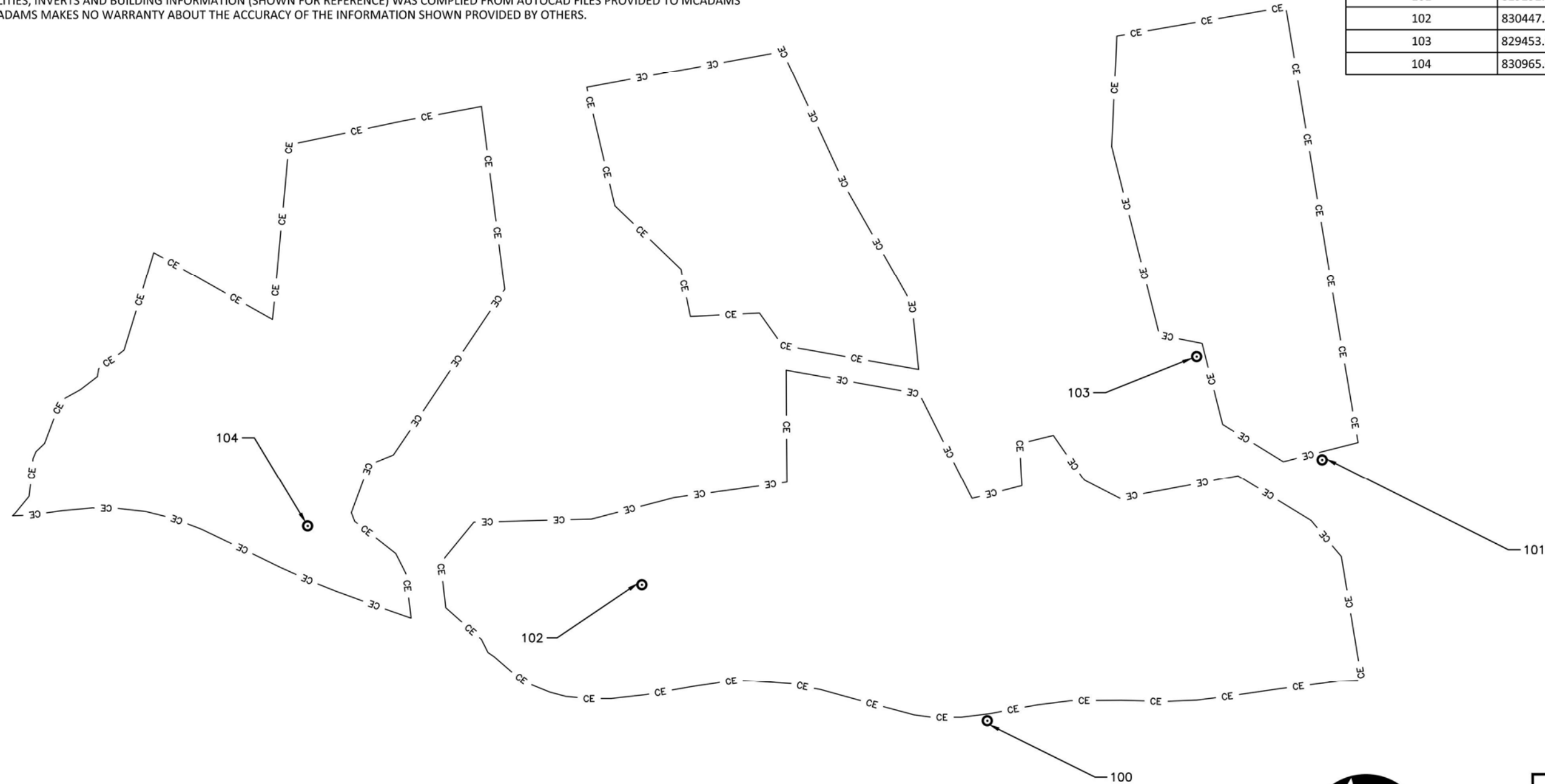
CLIENT
RESTORATION SYSTEMS, LLC
1101 HAYNES ST, SUITE 211
RALEIGH, NC 27604
CONTACT: WORTH CREECH
PHONE: 919. 389. 3888



GENERAL NOTES:

1. COORDINATE SYSTEM: NAD83 NORTH CAROLINA STATE PLANES, US FOOT
2. TOPOGRAPHY AND SPOT ELEVATIONS SHOWN ARE FROM AN ACTUAL FIELD SURVEY COMPLETED BY K2 DESIGN GROUP.
3. PLANIMETRICS, UTILITIES, INVERTS AND BUILDING INFORMATION (SHOWN FOR REFERENCE) WAS COMPILED FROM AUTOCAD FILES PROVIDED TO MCADAMS FROM OTHERS. MCADAMS MAKES NO WARRANTY ABOUT THE ACCURACY OF THE INFORMATION SHOWN PROVIDED BY OTHERS.

CONTROL POINT LOCATIONS			
CONTROL POINT	NORTHING	EASTING	ELEVATION
100	829943.8048	1117697.5263	2951.36
101	829292.7246	1117983.3841	2948.17
102	830447.4092	1118061.3990	2941.26
103	829453.9034	1118202.3079	2973.08
104	830965.0697	1118294.5656	2958.02



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LAUREL SPRINGS MITIGATION PLAN
 AS-BUILT DRAWINGS
 AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION
 PROJECT NO. AXI-19000
 FILENAME AXI19010-ESMT
 CHECKED BY RAS
 DRAWN BY CHJ
 SCALE 1" = 60'
 DATE 07.18.2022

CONSERVATION EASEMENT
 AND CONTROL POINTS EXHIBIT

C1.00

LEGEND AND SYMBOLS

	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED CONSERVATION EASEMENT
	EXISTING PROPERTY LINE
	EXISTING OVERHEAD UTILITY EASEMENT
	PROPOSED STREAM CENTERLINE
	PROPOSED TOP OF BANK

	PROPOSED LOG CROSS VANE
	PROPOSED LOG VANE
	PROPOSED STEP SILL
	PROPOSED STEP POOL
	PROPOSED DROP STRUCTURE

	WETLAND REHABILITATION AREA
	WETLAND RE-ESTABLISHMENT AREA
	WETLAND PRESERVATION AREA
	MARSH TREATMENT AREA

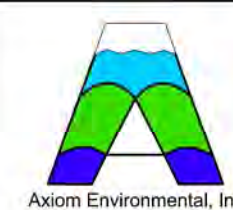
AS-BUILT LEGEND AND SYMBOLS

	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP OF BANK
	LOG CROSS VANE
	LOG VANE
	ROCK SILL
	LOG J-HOOK
	STREAM CULVERT
	MONITORING - VEGETATION PLOT
	MONITORING - CROSS SECTION
	MONITORING - STREAM GAGUE
	MONITORING - GROUNDWATER WELL
	MONITORING - RAIN GAGUE



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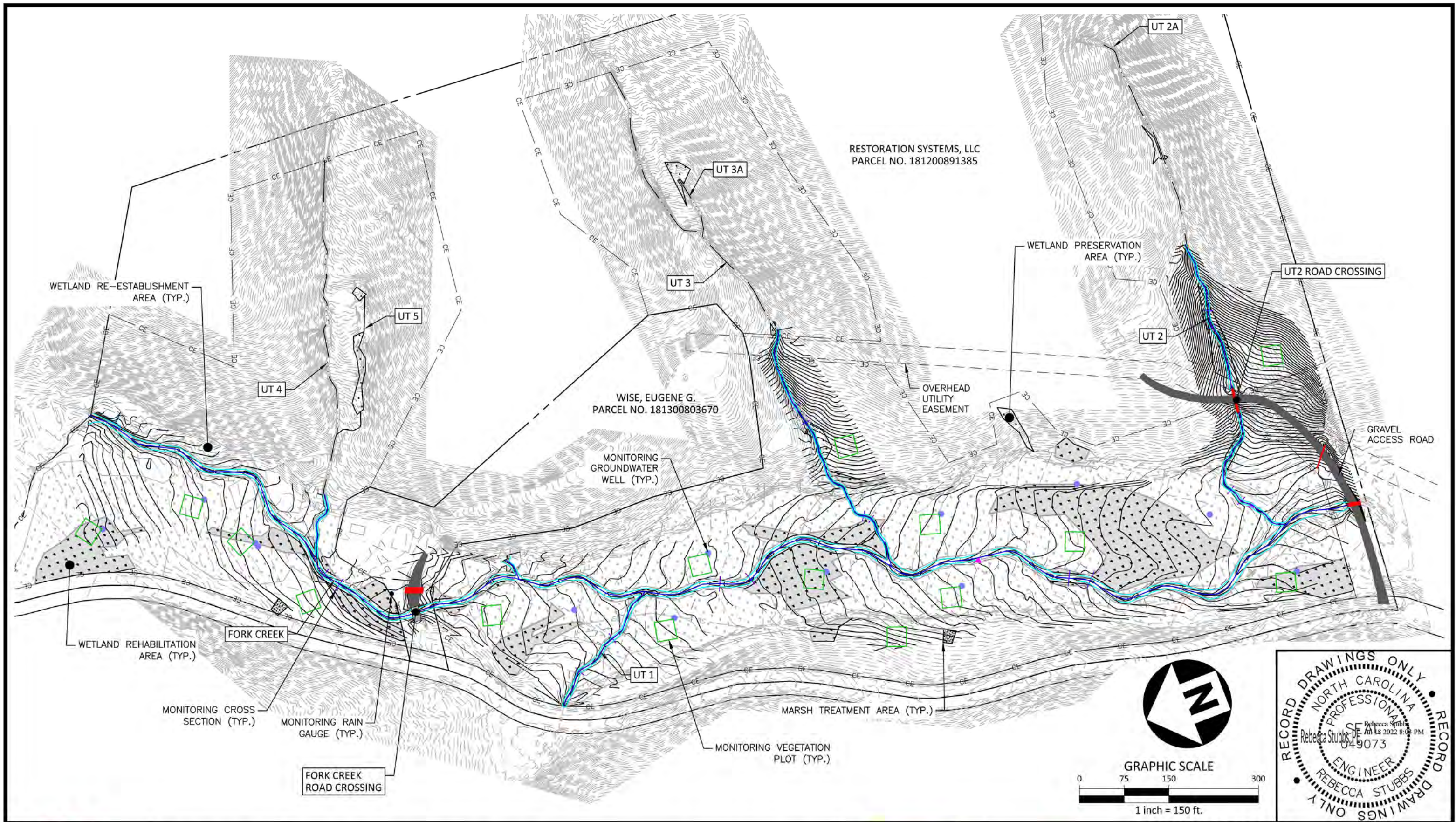
LAUREL SPRINGS MITIGATION PLAN
 AS-BUILT DRAWINGS
 AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	NTS
DATE	07.18.2022

LEGEND AND SYMBOLS
C1.01



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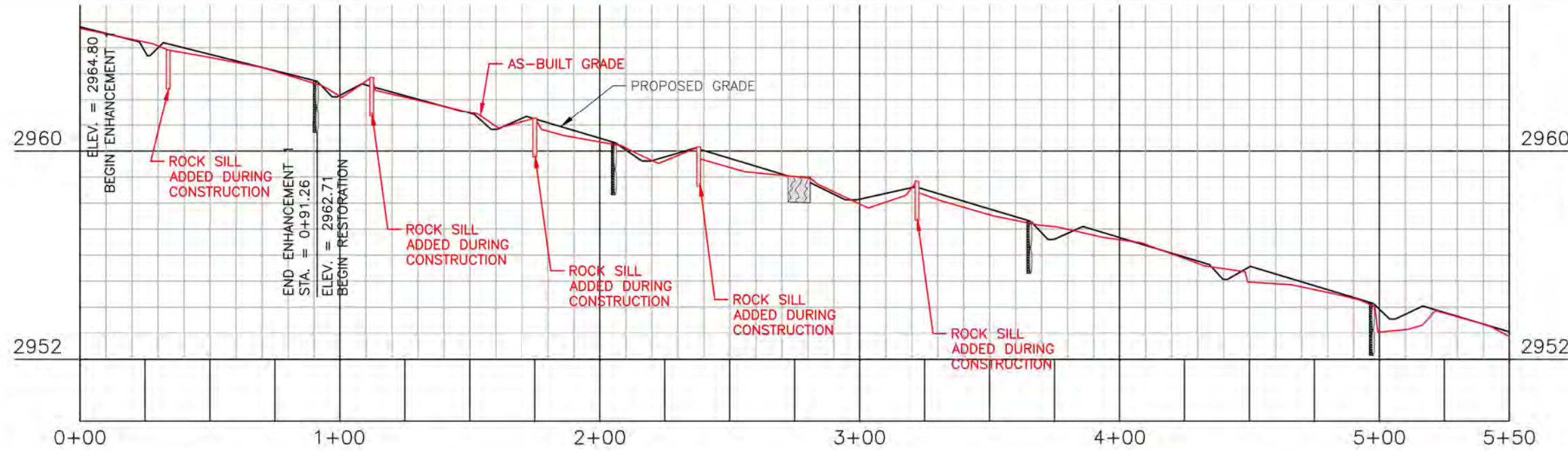
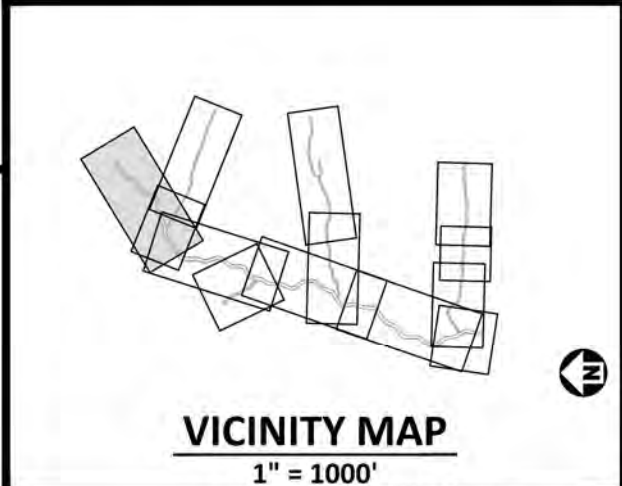
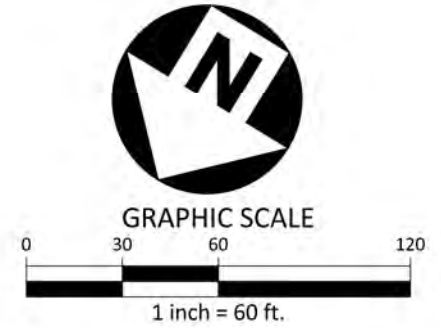
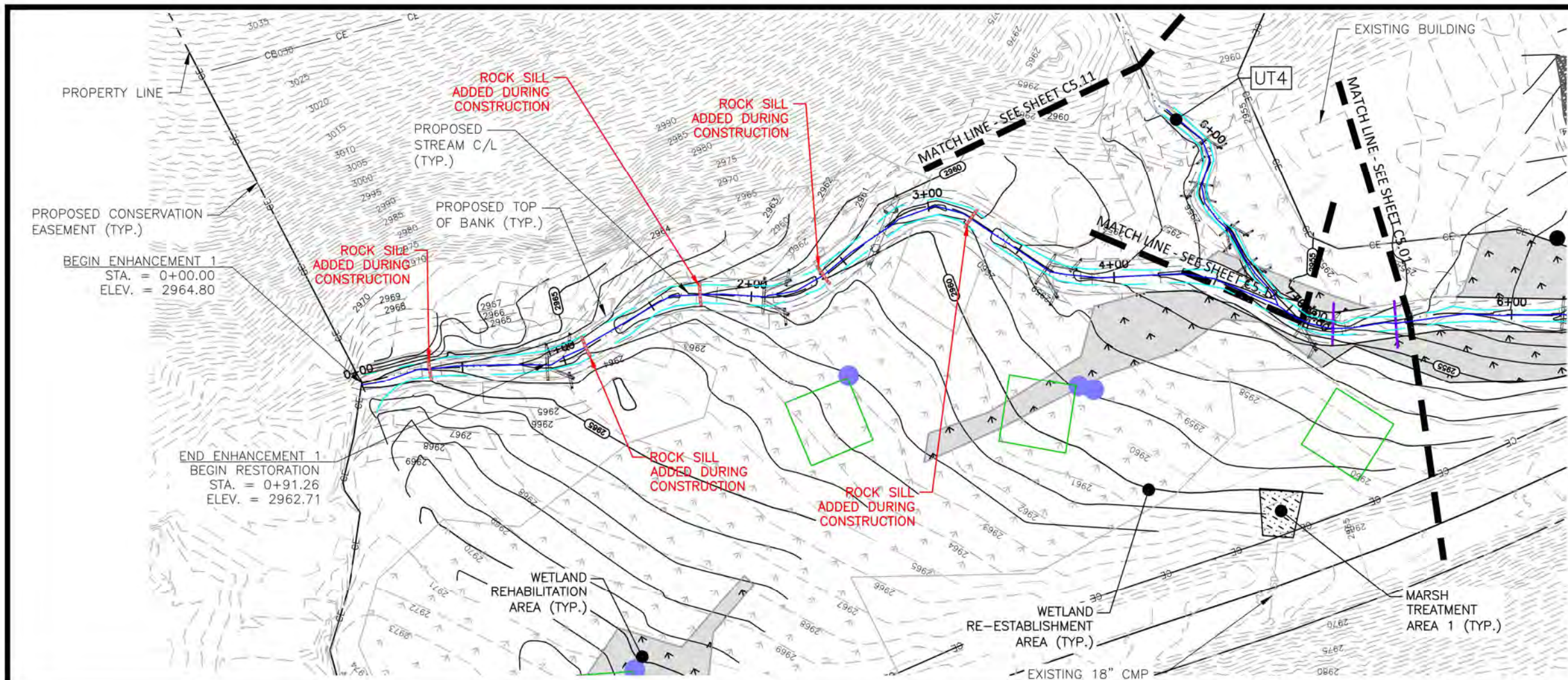
LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS
 AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION	
PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1" = 150'
DATE	07.18.2022

PROJECT OVERVIEW
C1.02



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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

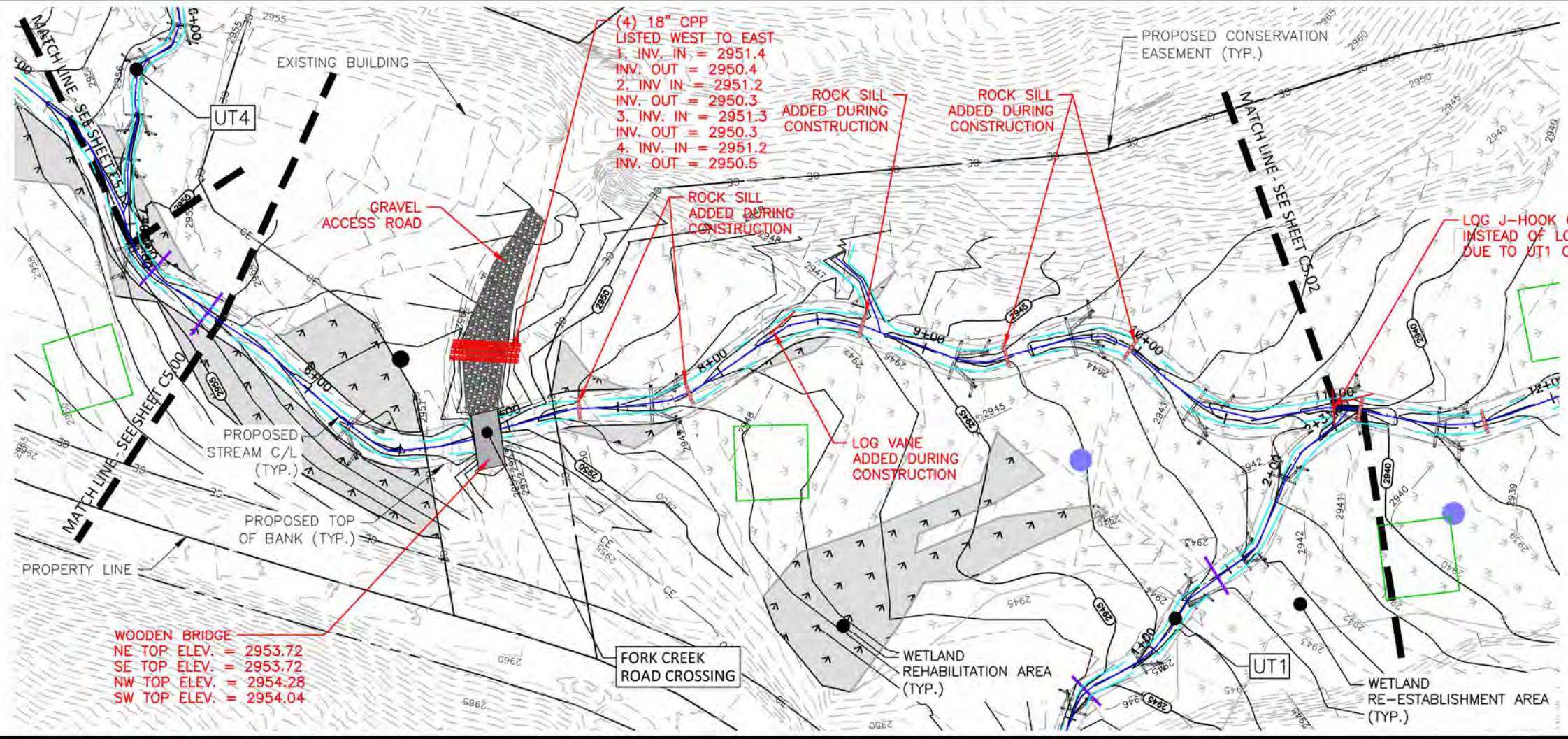
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FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=50'
DATE	07.18.2022

PLAN AND PROFILE

FORK CREEK

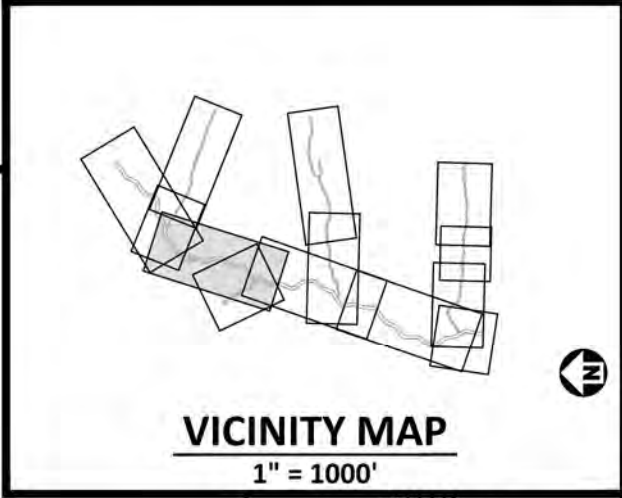
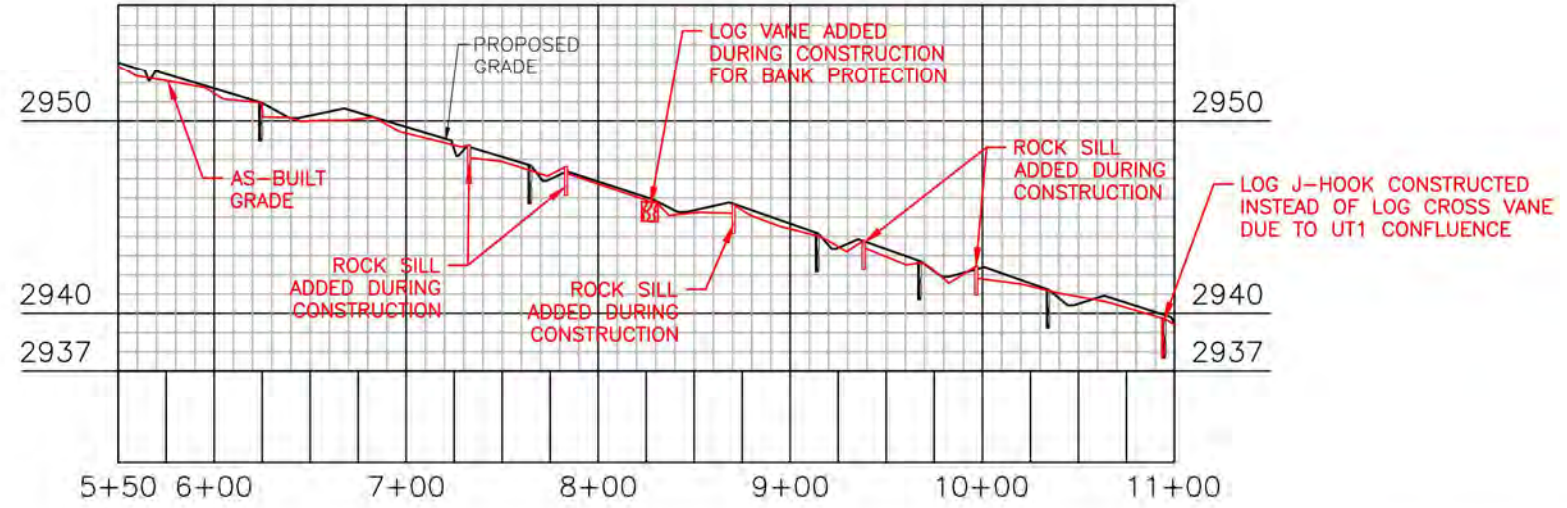
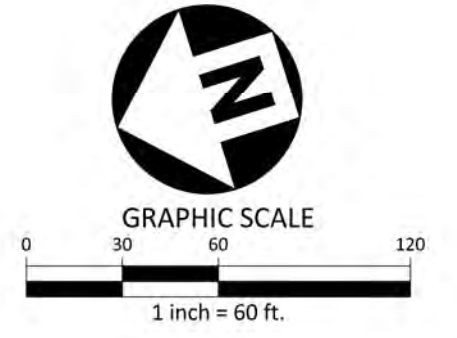
STA. 00+00 THRU STA. 5+50

C5.00



WOODEN BRIDGE
 NE TOP ELEV. = 2953.72
 SE TOP ELEV. = 2953.72
 NW TOP ELEV. = 2954.28
 SW TOP ELEV. = 2954.04

(4) 18" CPP LISTED WEST TO EAST
 1. INV. IN = 2951.4
 INV. OUT = 2950.4
 2. INV. IN = 2951.2
 INV. OUT = 2950.3
 3. INV. IN = 2951.3
 INV. OUT = 2950.3
 4. INV. IN = 2951.2
 INV. OUT = 2950.5




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

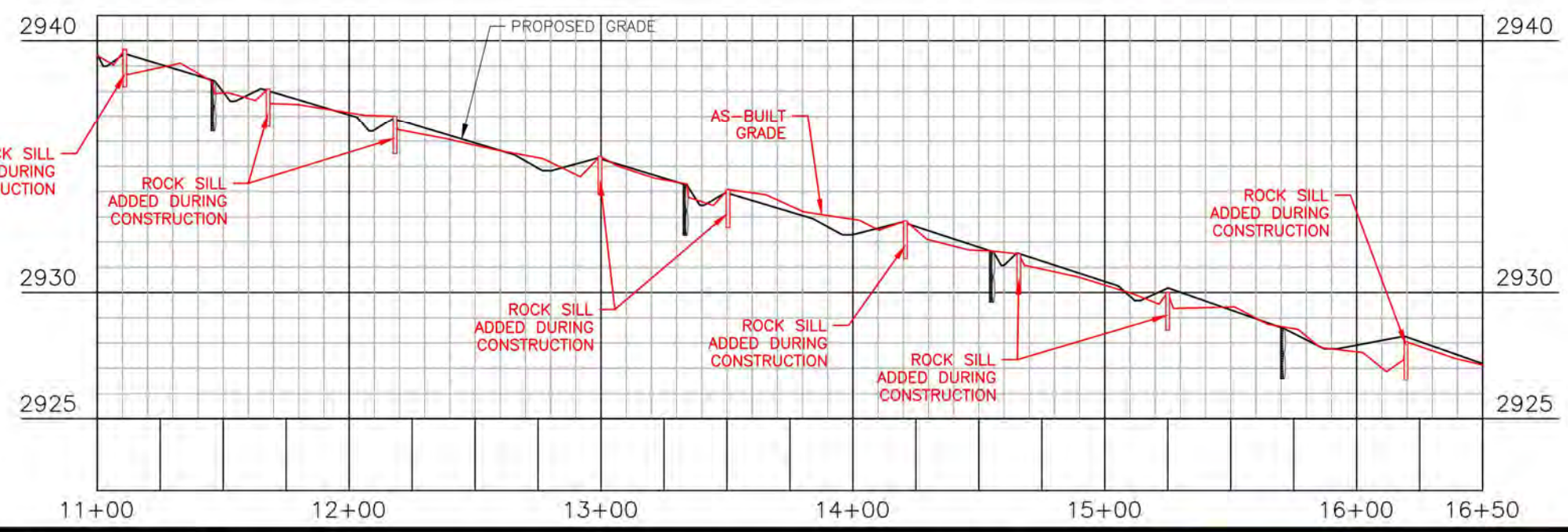
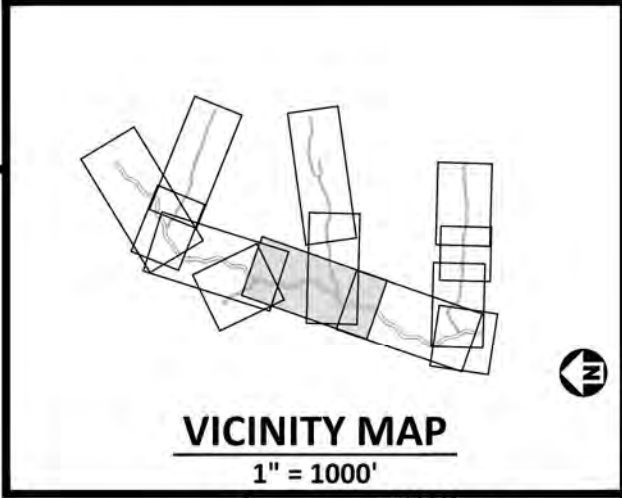
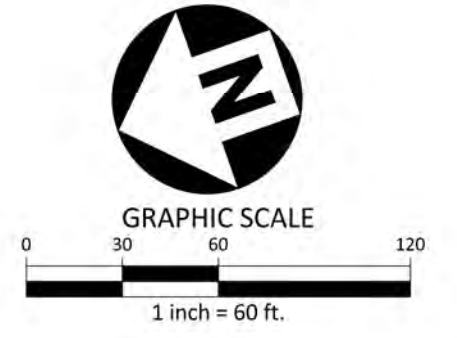
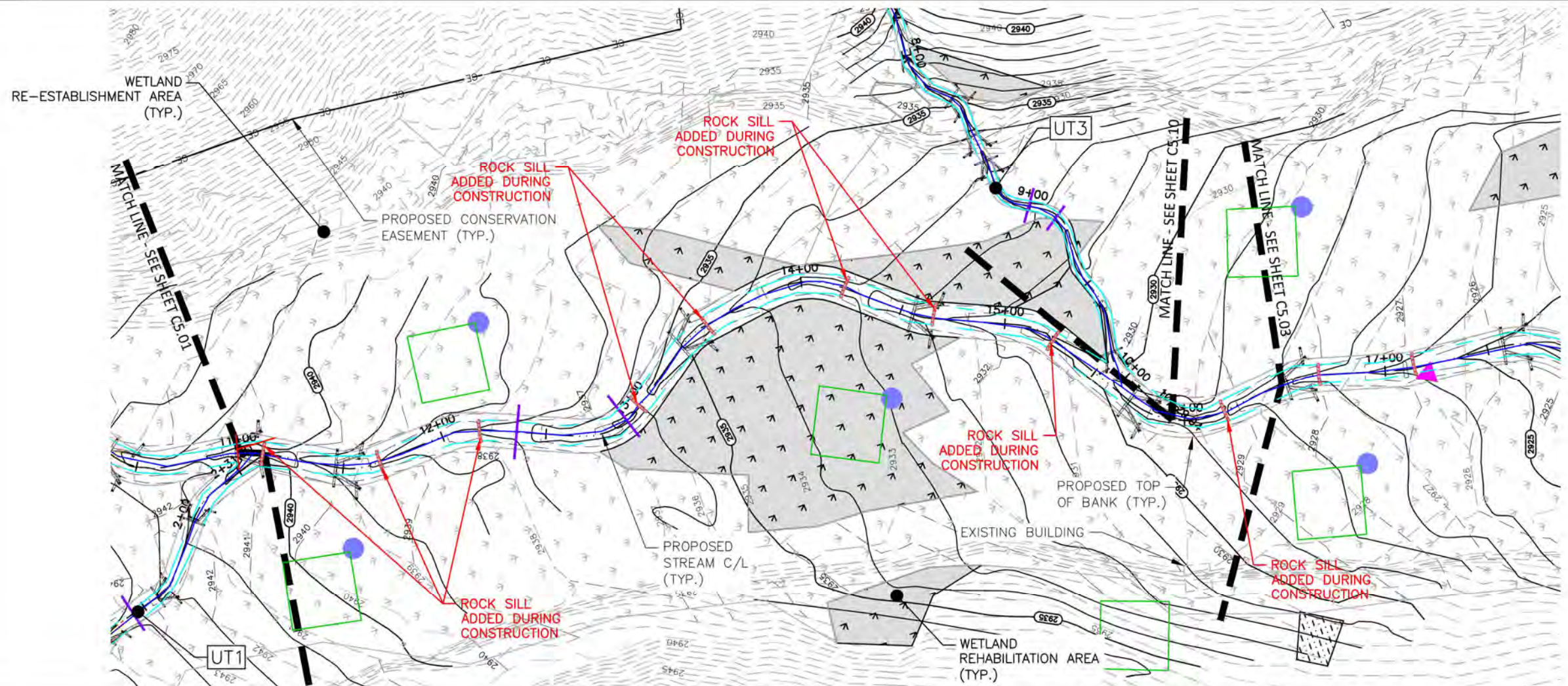
AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=100'
DATE	07.18.2022

PLAN AND PROFILE
 FORK CREEK
 STA. 05+00 THRU STA. 11+00
C5.01



RECORD DRAWINGS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER

Rebecca Stubbs PE

049073

RECORD DRAWINGS ONLY

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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

RESTORATION SYSTEMS, LLC

Axiom Environmental, Inc.

PLAN INFORMATION

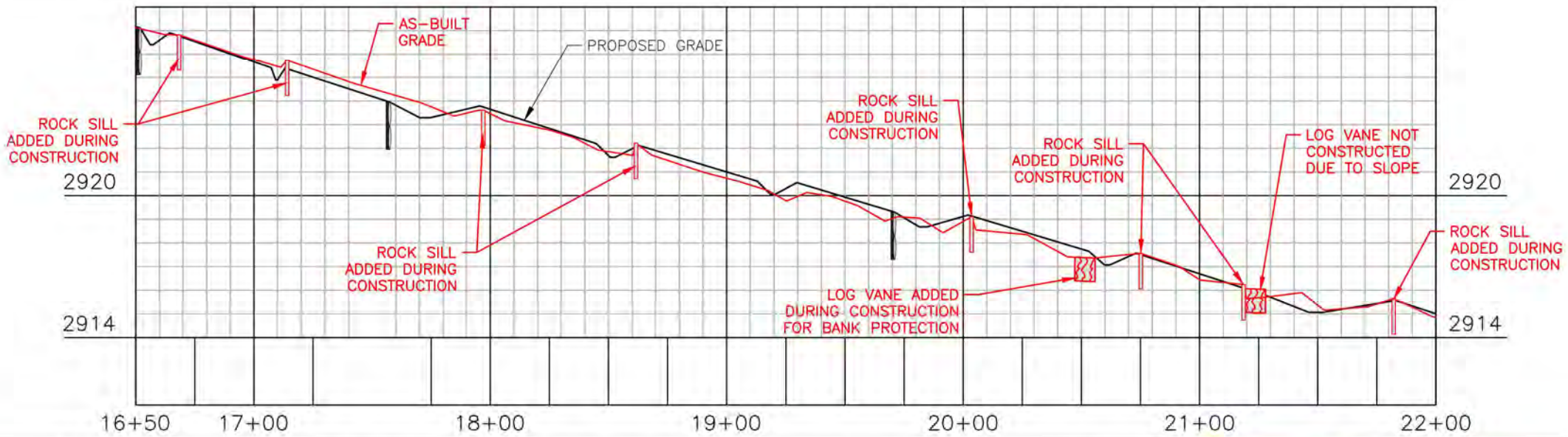
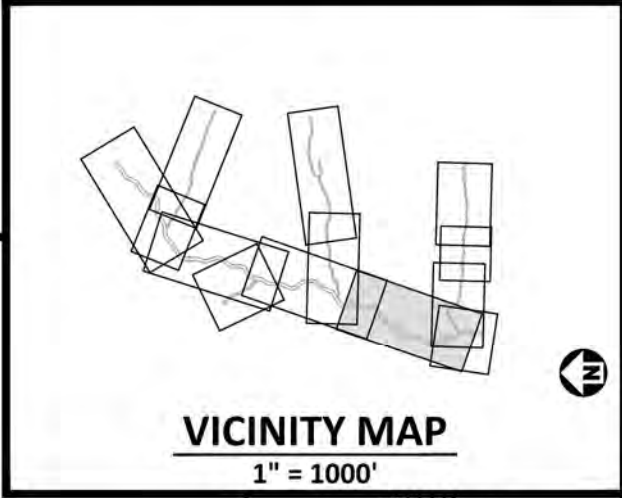
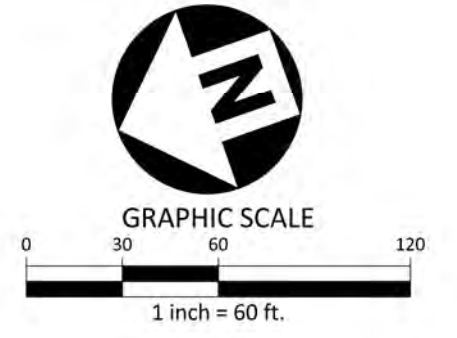
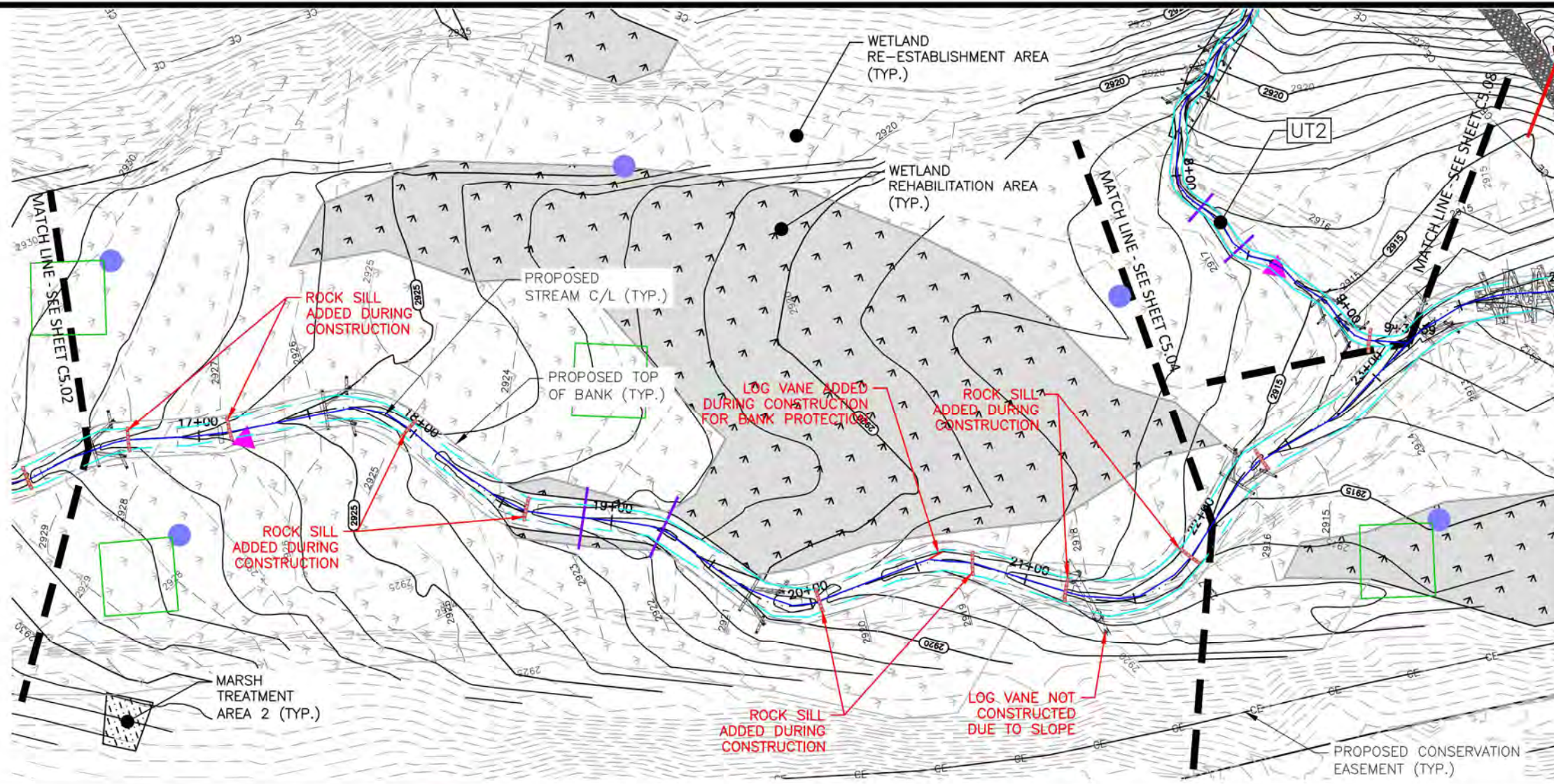
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FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=60'
DATE 07.18.2022

PLAN AND PROFILE

FORK CREEK

STA. 11+00 THRU STA. 16+50

C5.02



RECORD DRAWINGS ONLY

REBECCA STUBBS

ENGINEER

049073

RECORD DRAWINGS ONLY

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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

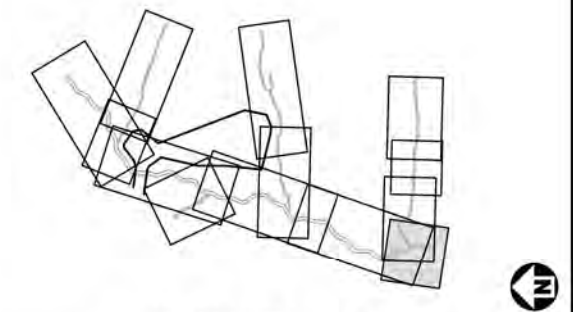
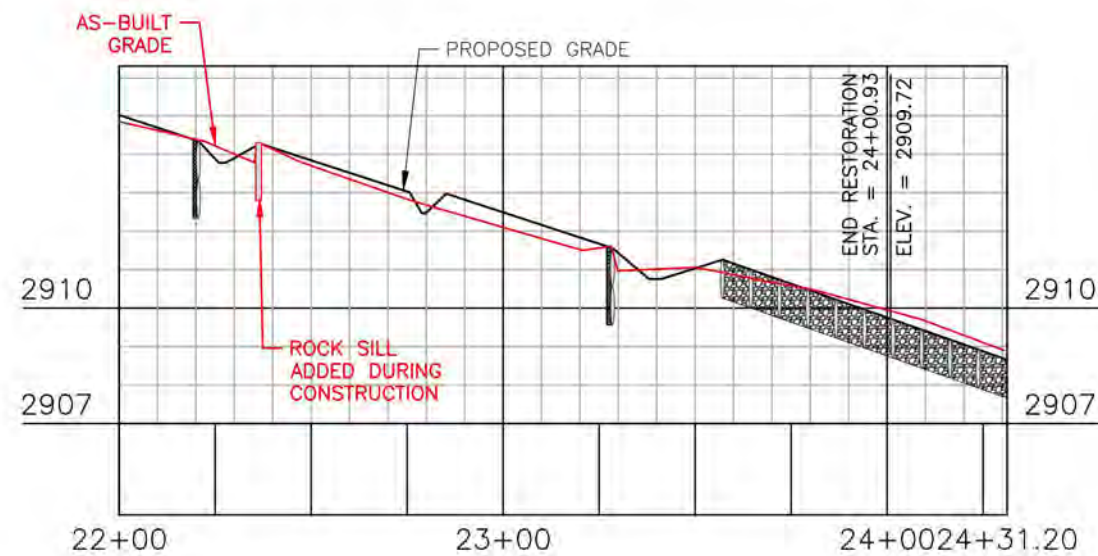
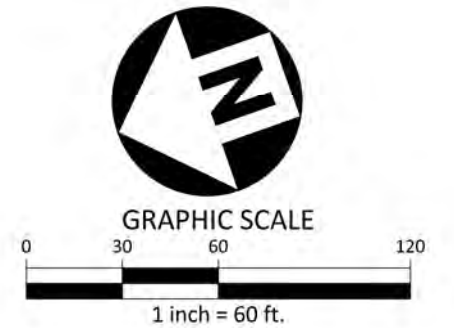
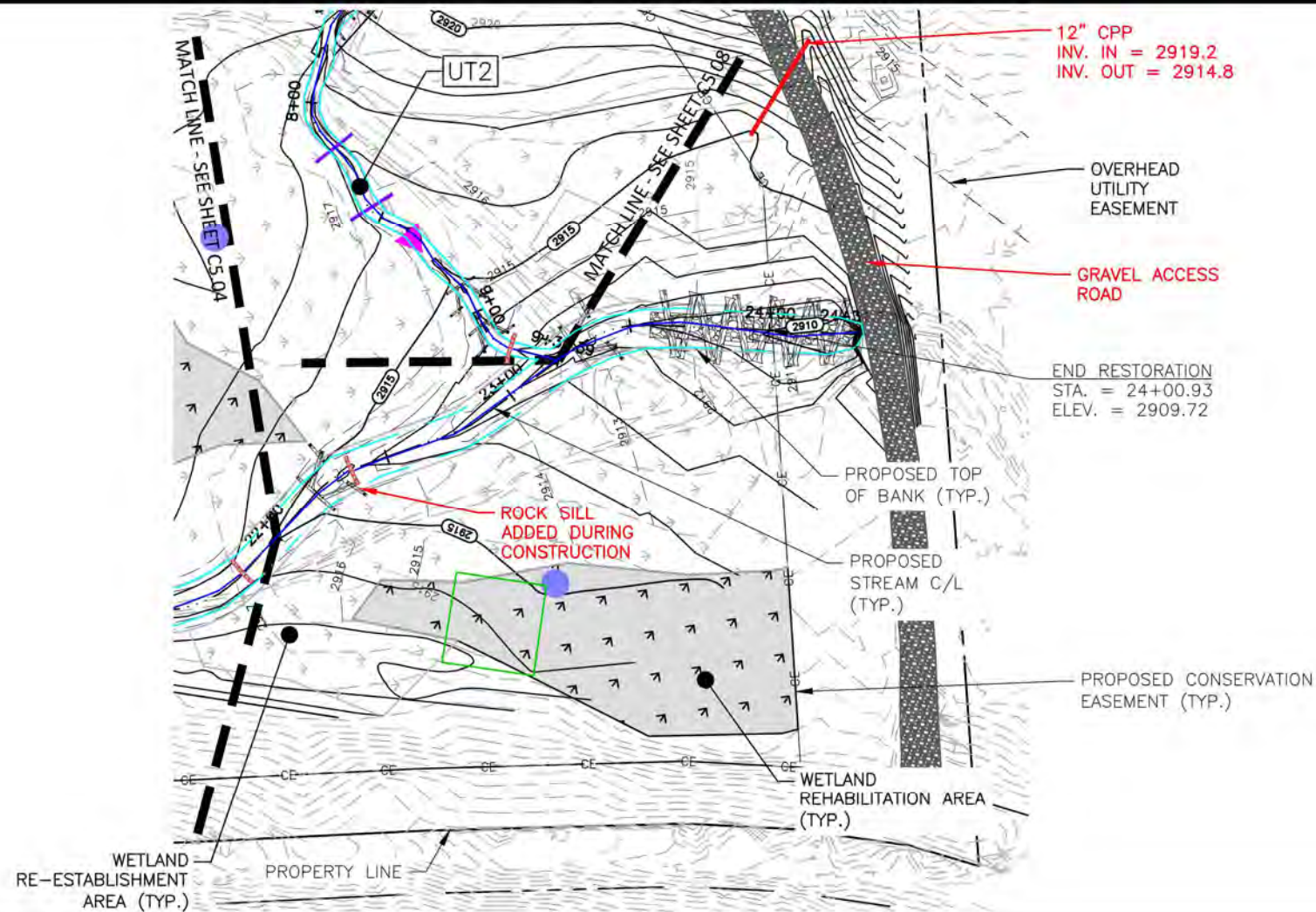
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FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=60'
DATE 07.18.2022

PLAN AND PROFILE

FORK CREEK

STA. 16+50 THRU STA. 22+00

C5.03



VICINITY MAP
1" = 1000'



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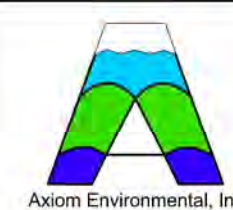
phone 919. 361. 5000
fax 919. 361. 2269
license number: C-0293, C-187

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LAUREL SPRINGS MITIGATION PLAN

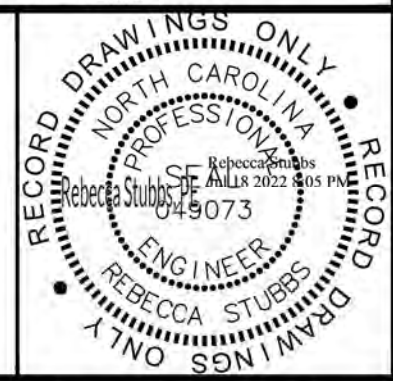
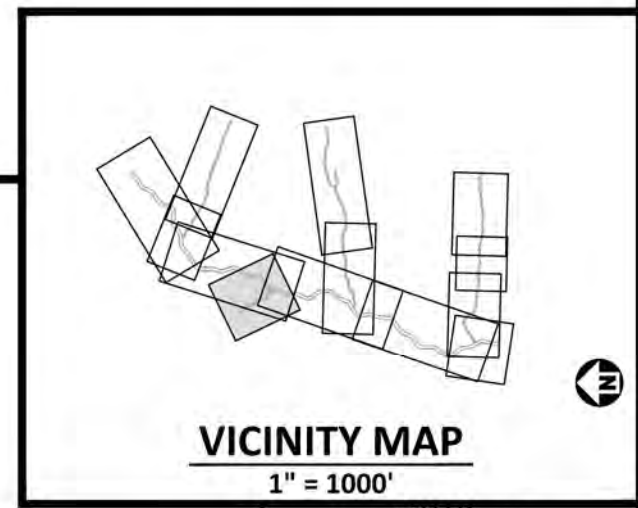
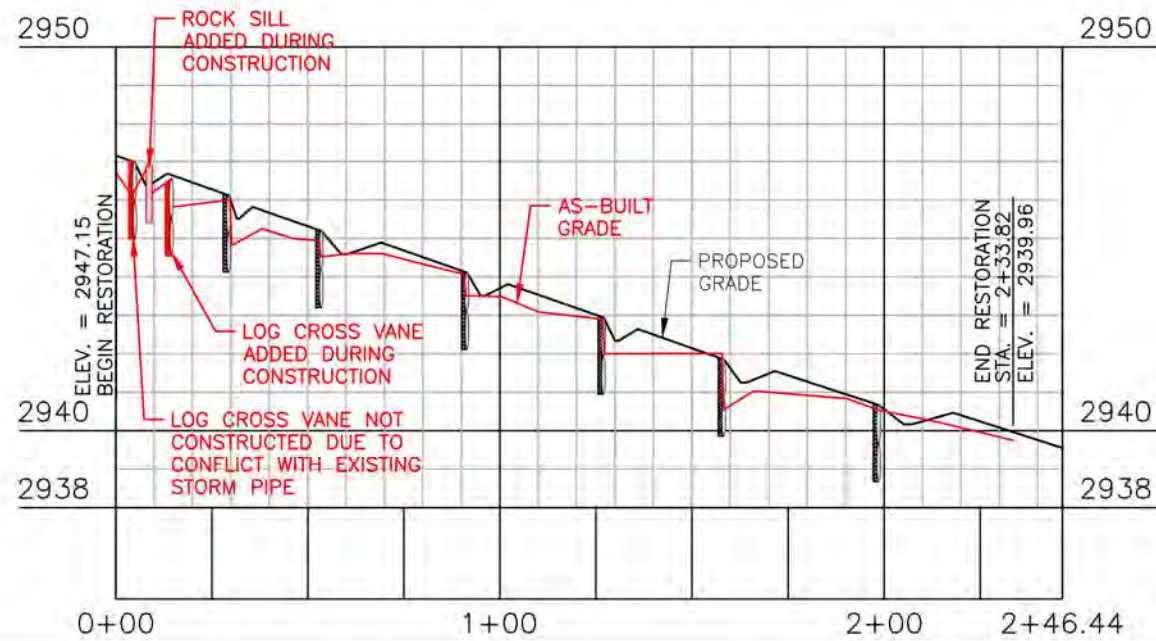
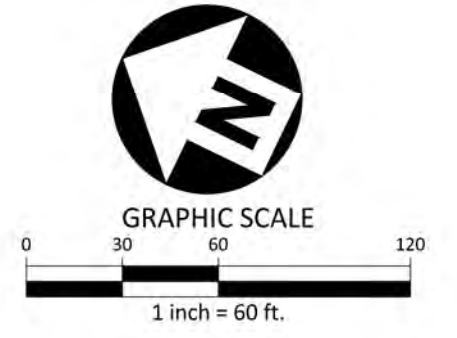
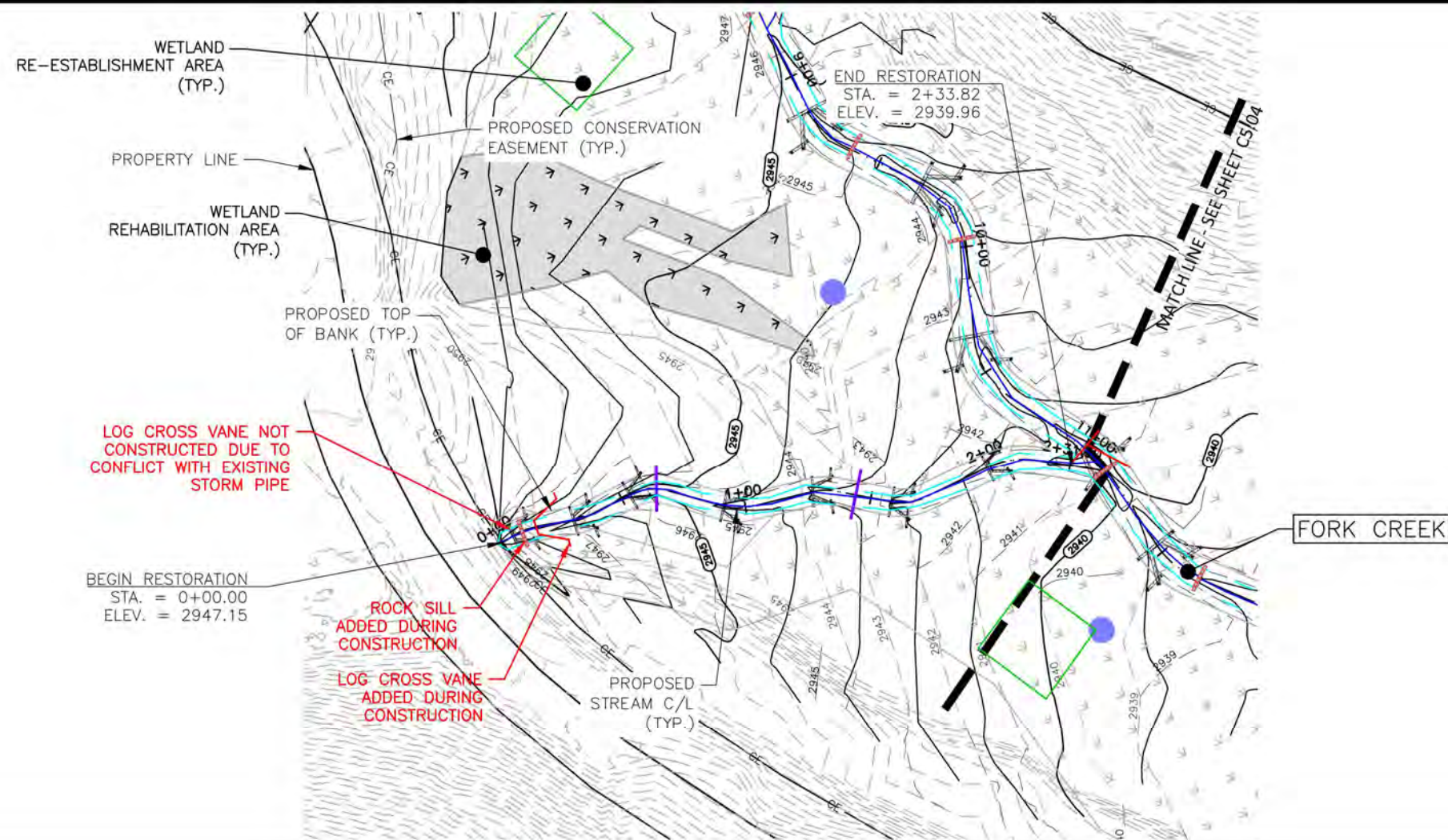
AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION
PROJECT NO. AXI-19000
FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=50'
DATE 07.18.2022

PLAN AND PROFILE
FORK CREEK
STA. 22+00 THRU STA. 24+31.20
C5.04



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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

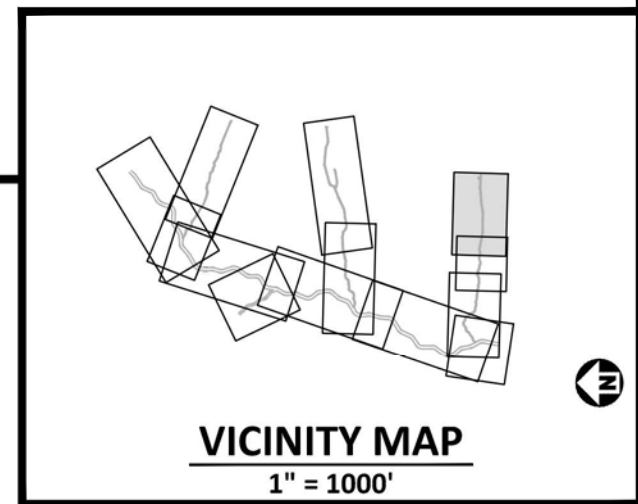
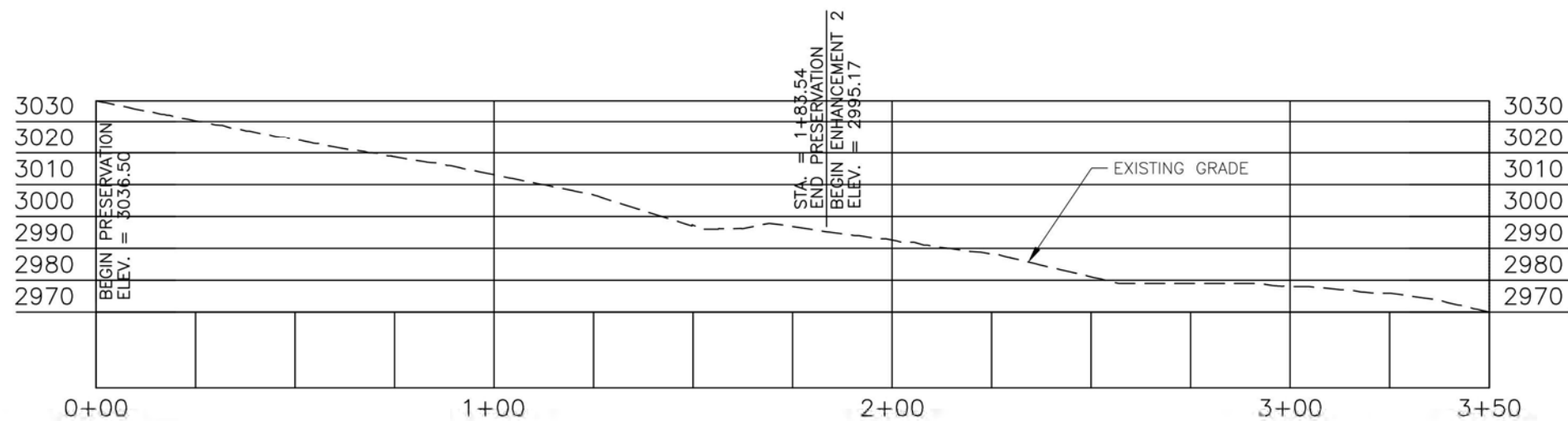
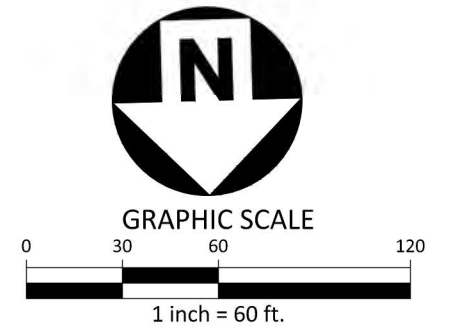
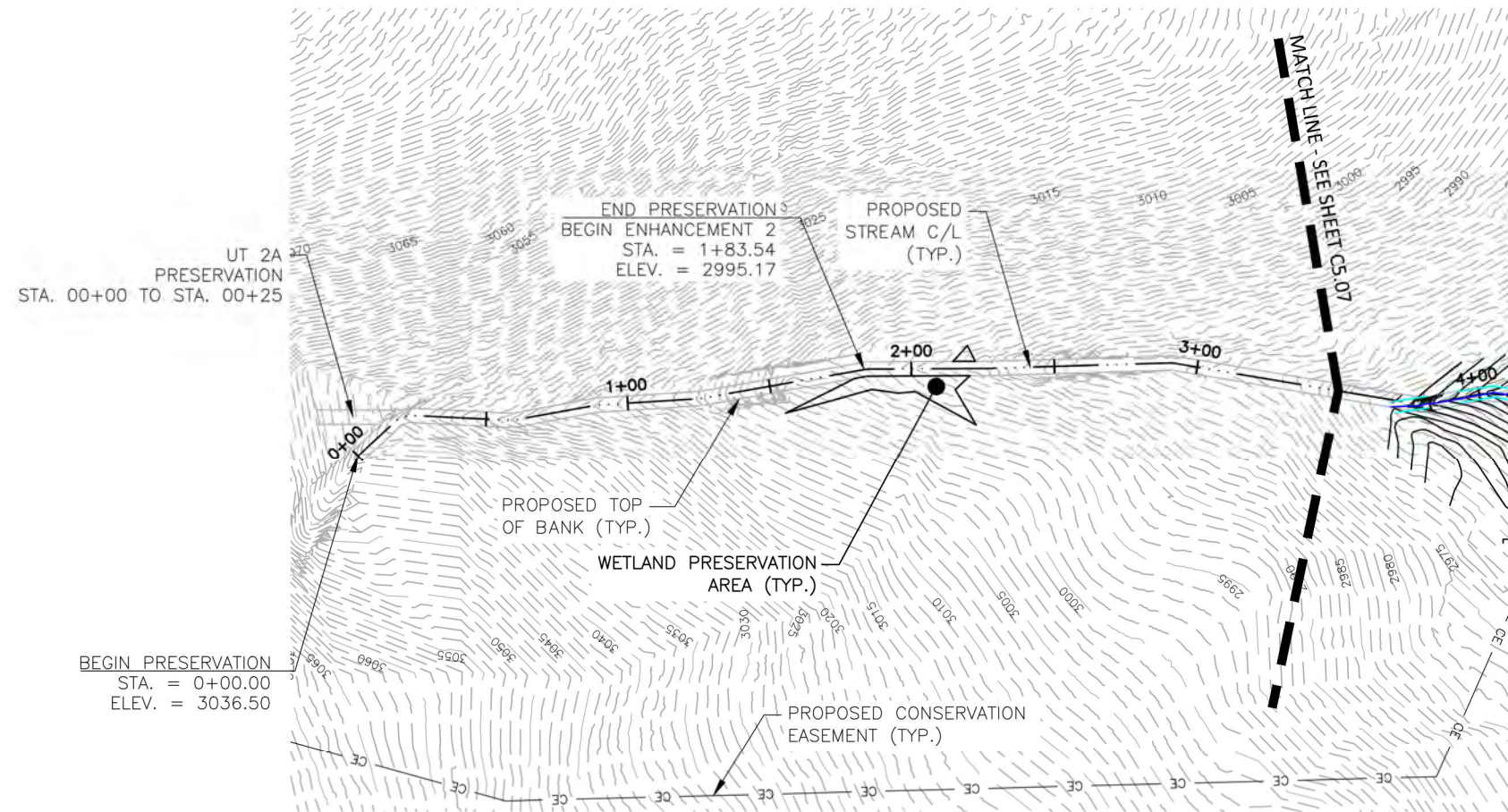


PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=50'
DATE	07.18.2022

PLAN AND PROFILE
UT1
STA. 00+00 THRU STA. 2+46.66

C5.05



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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

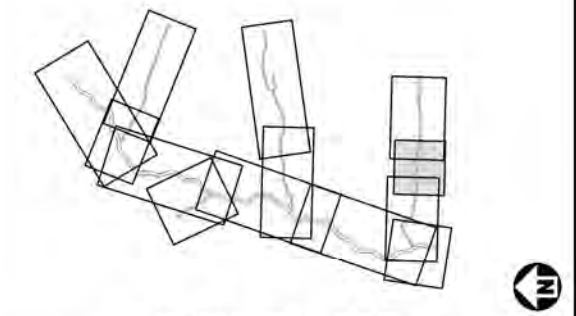
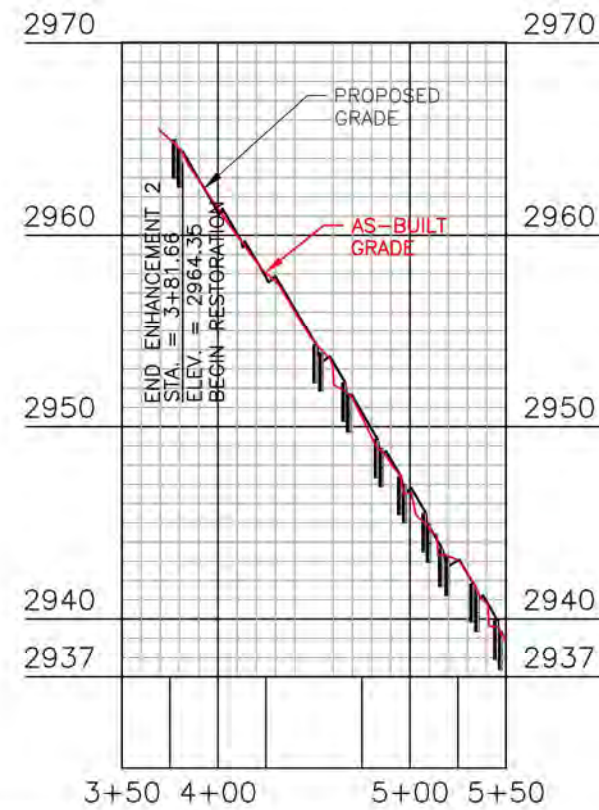
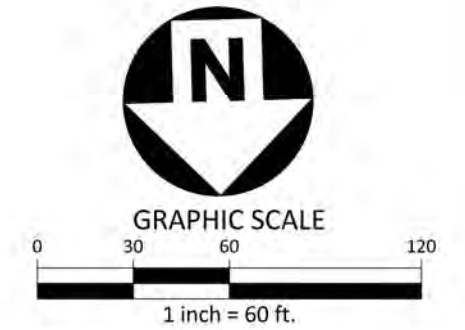
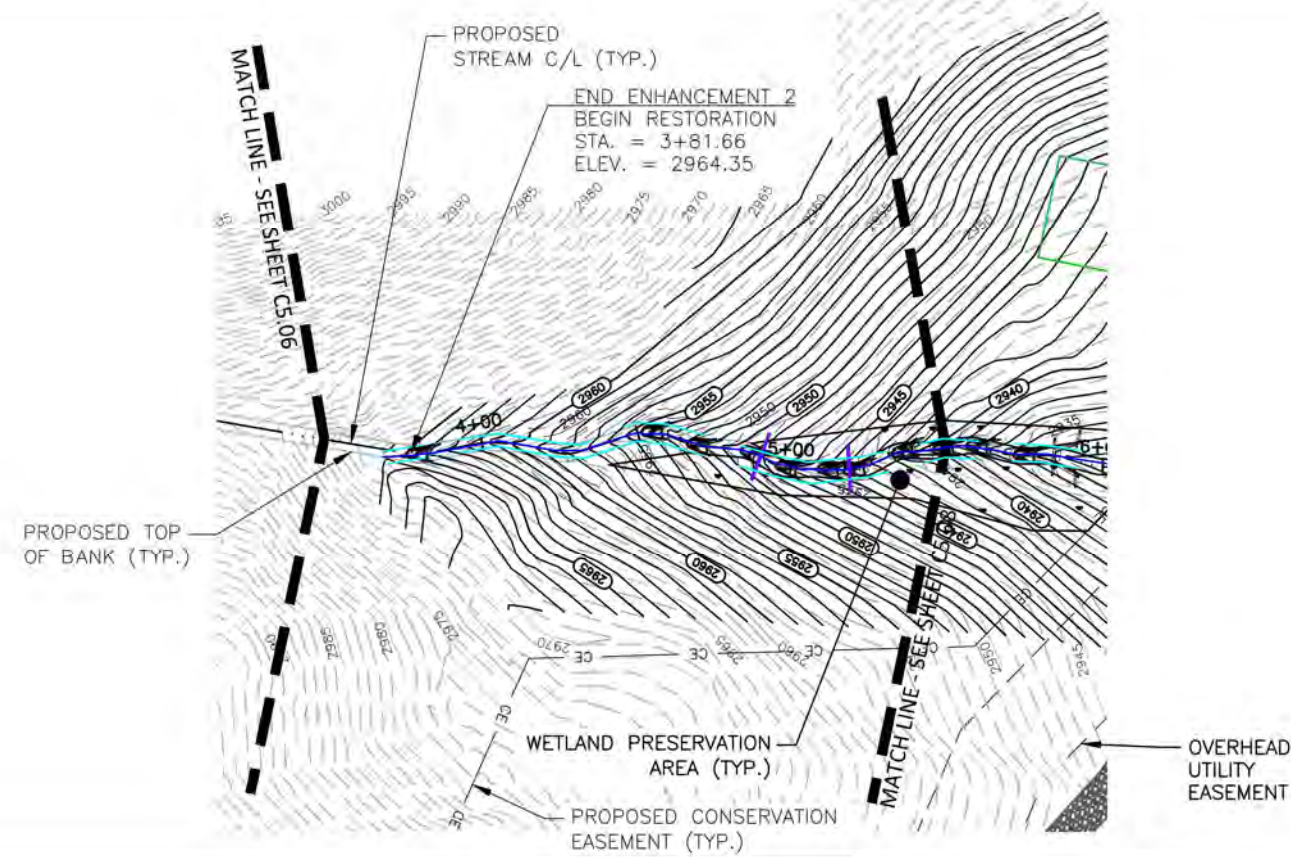
AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

PROJECT NO. AXI-19000
FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=40'
DATE 07.18.2022

PLAN AND PROFILE
UT2
STA. 00+00 THRU STA. 03+50
C5.06



VICINITY MAP
1" = 1000'



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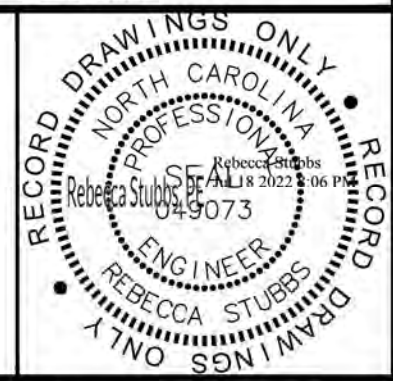
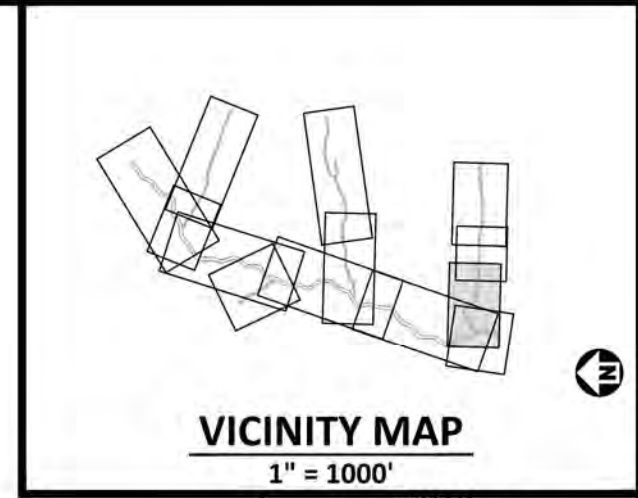
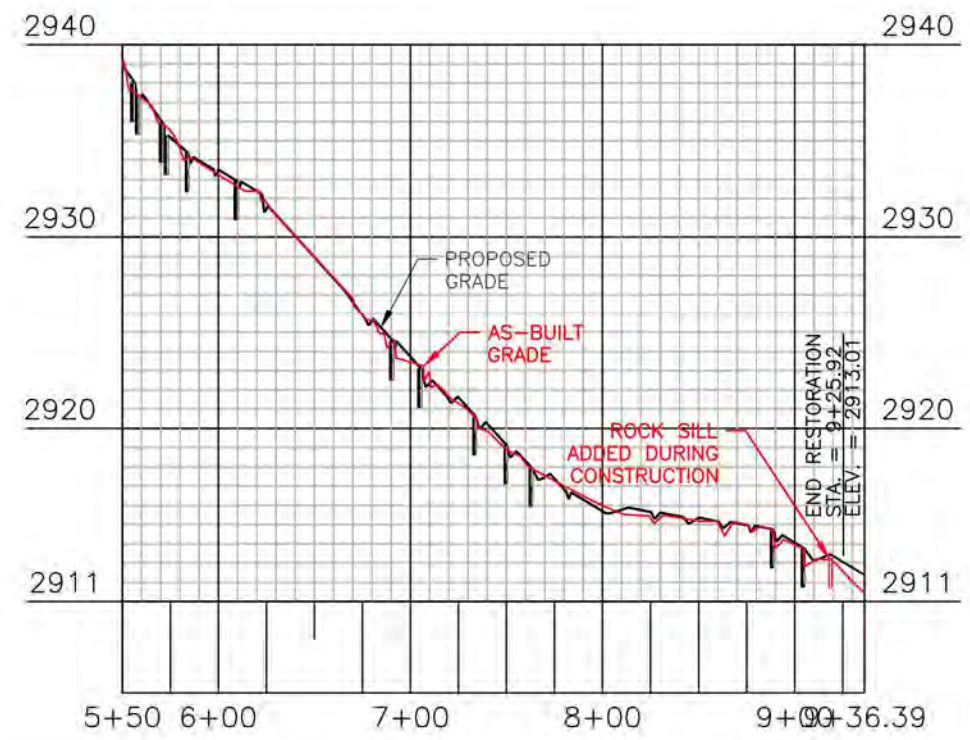
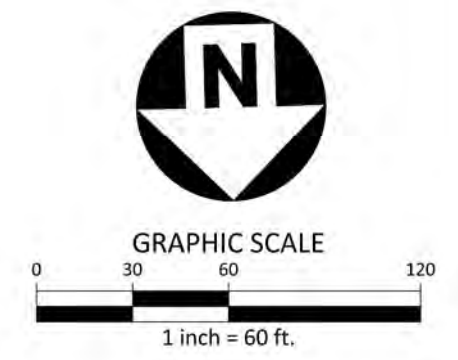
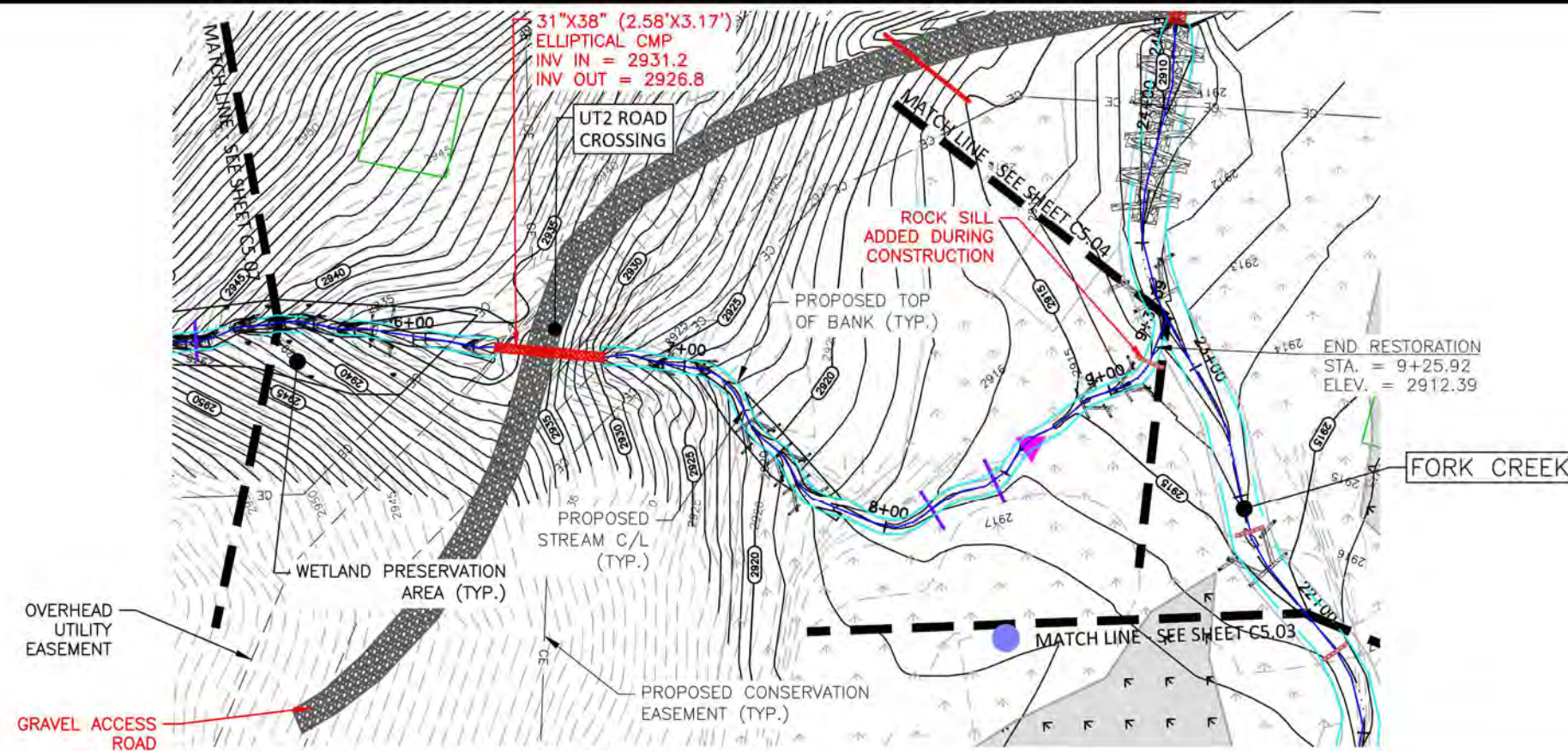
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LAUREL SPRINGS MITIGATION PLAN
AS-BUILT DRAWINGS
AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION
PROJECT NO. AXI-19000
FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=100'
DATE 07.18.2022

PLAN AND PROFILE
UT2
STA. 03+50 THRU STA. 05+50
C5.07




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

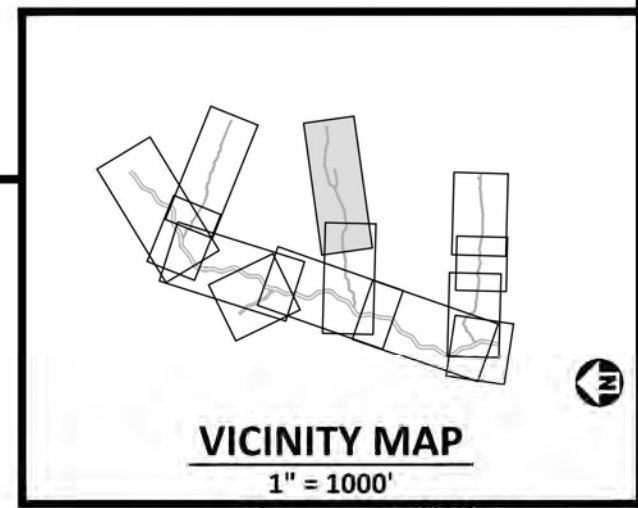
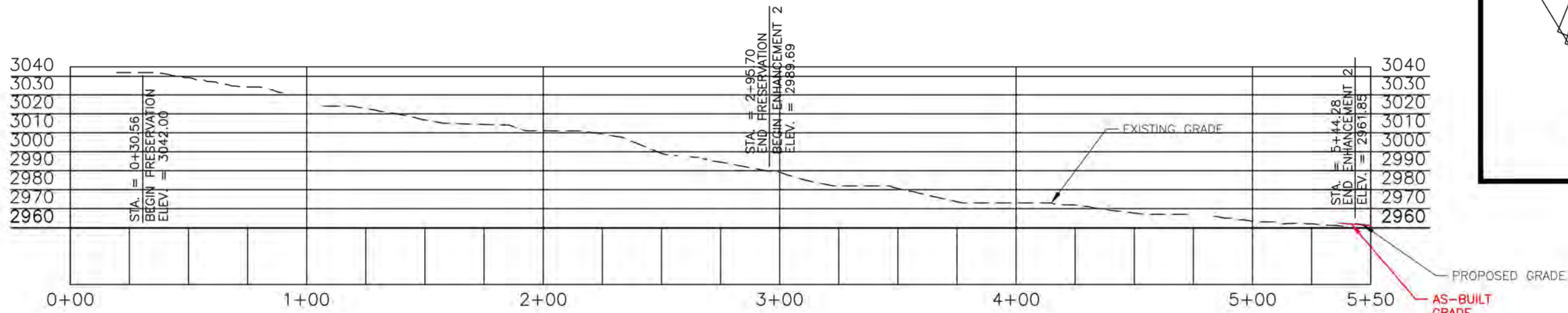
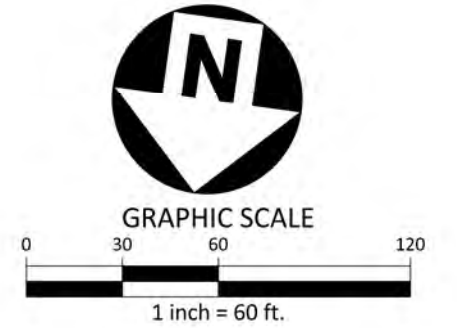
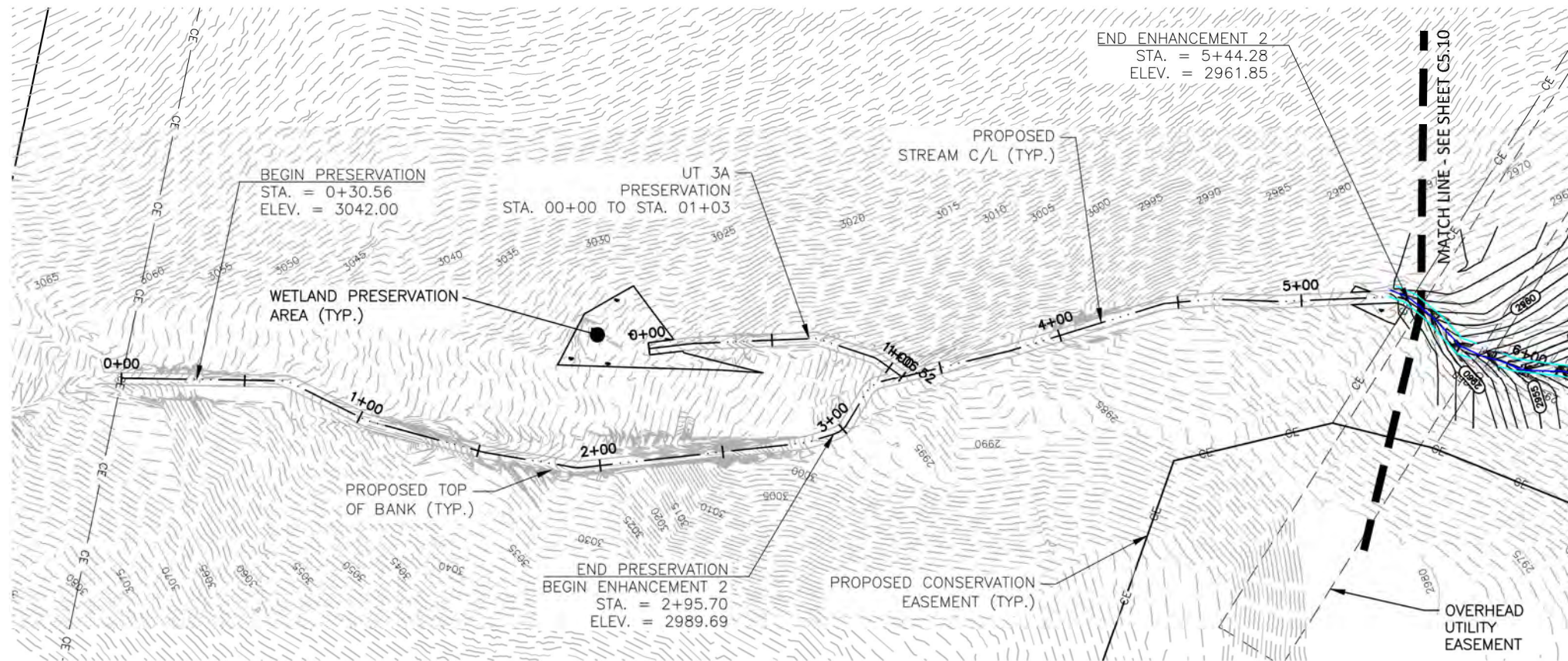


PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=100'
DATE	07.18.2022

PLAN AND PROFILE
UT2
STA. 05+50 THRU STA. 9+36.39

C5.08




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

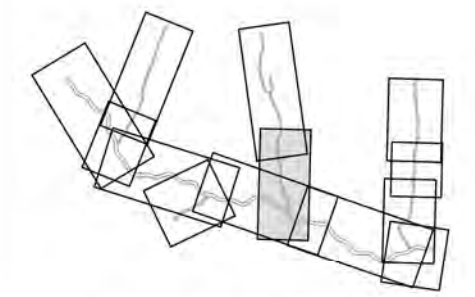
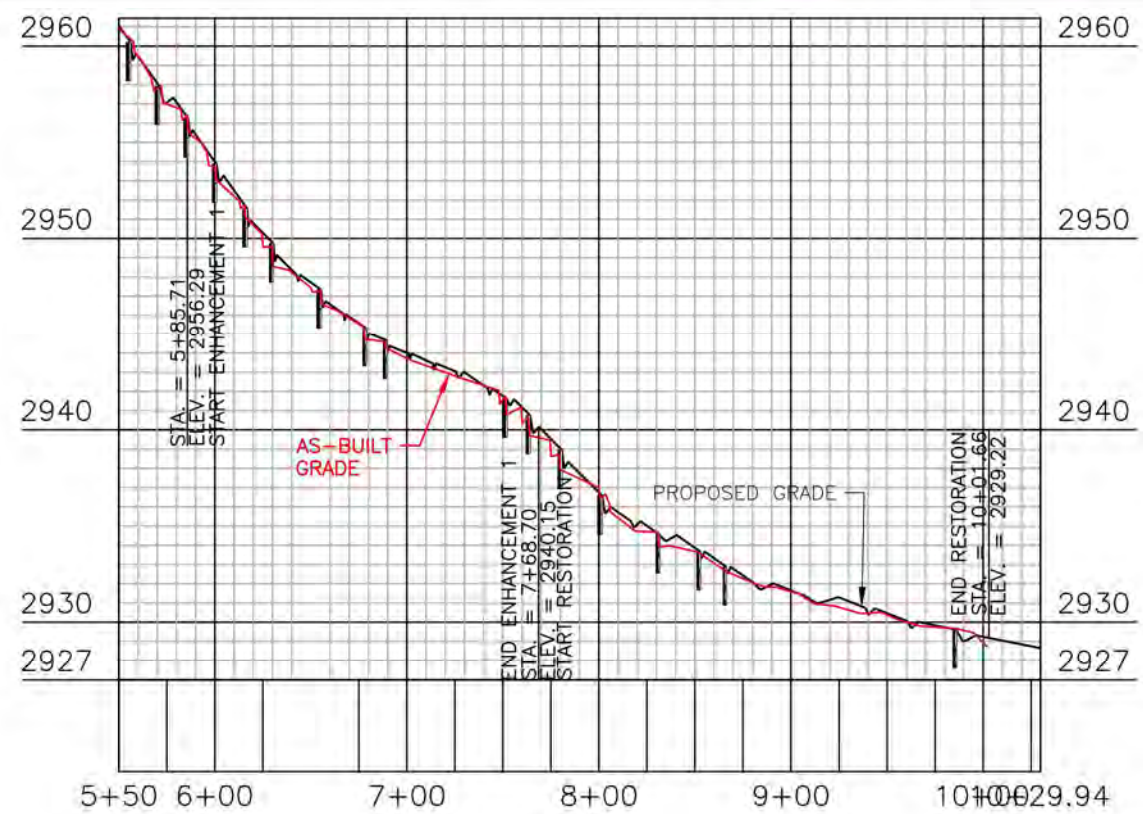
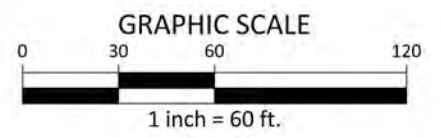
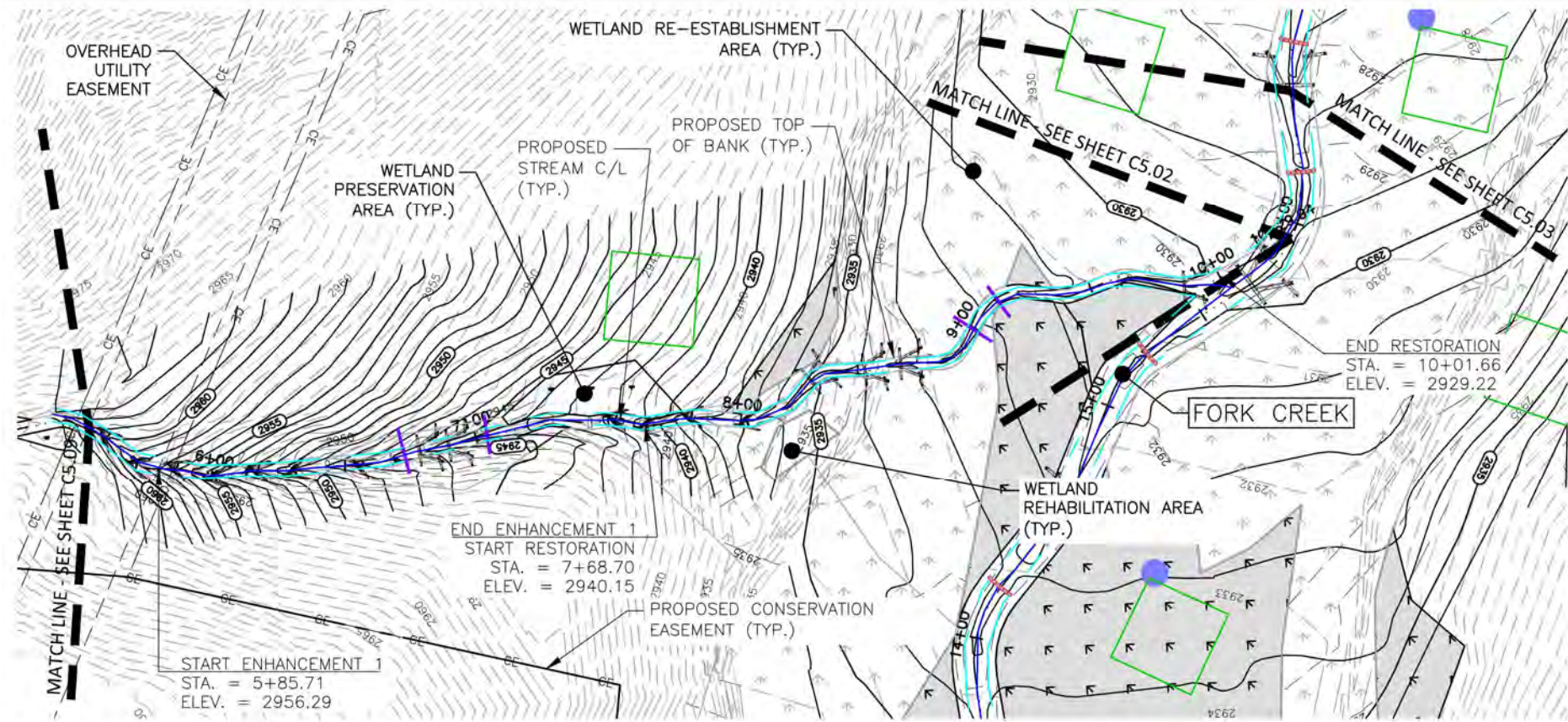


PLAN INFORMATION

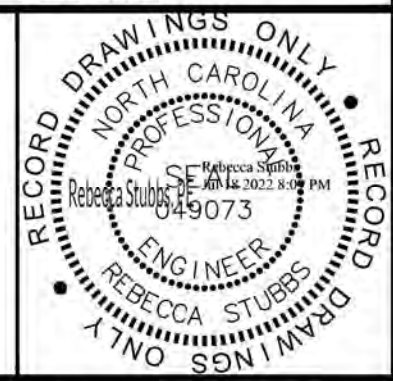
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FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=50'
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PLAN AND PROFILE
UT3
STA. 00+00 THRU STA. 05+50

C5.09



VICINITY MAP
1" = 1000'




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

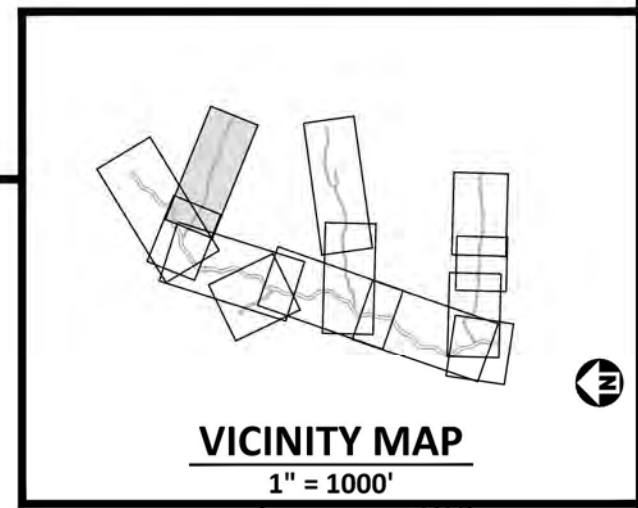
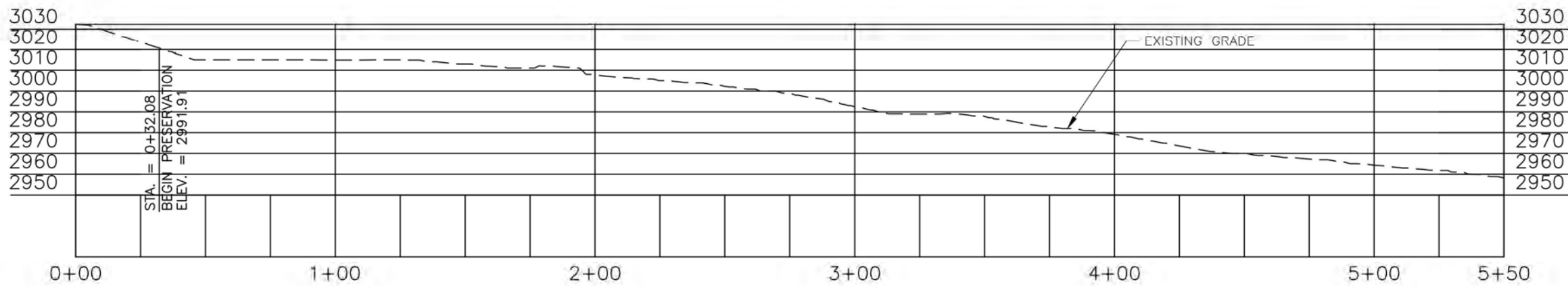
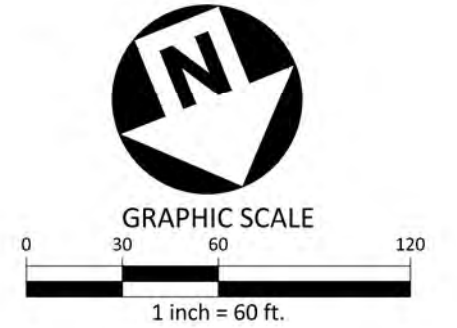
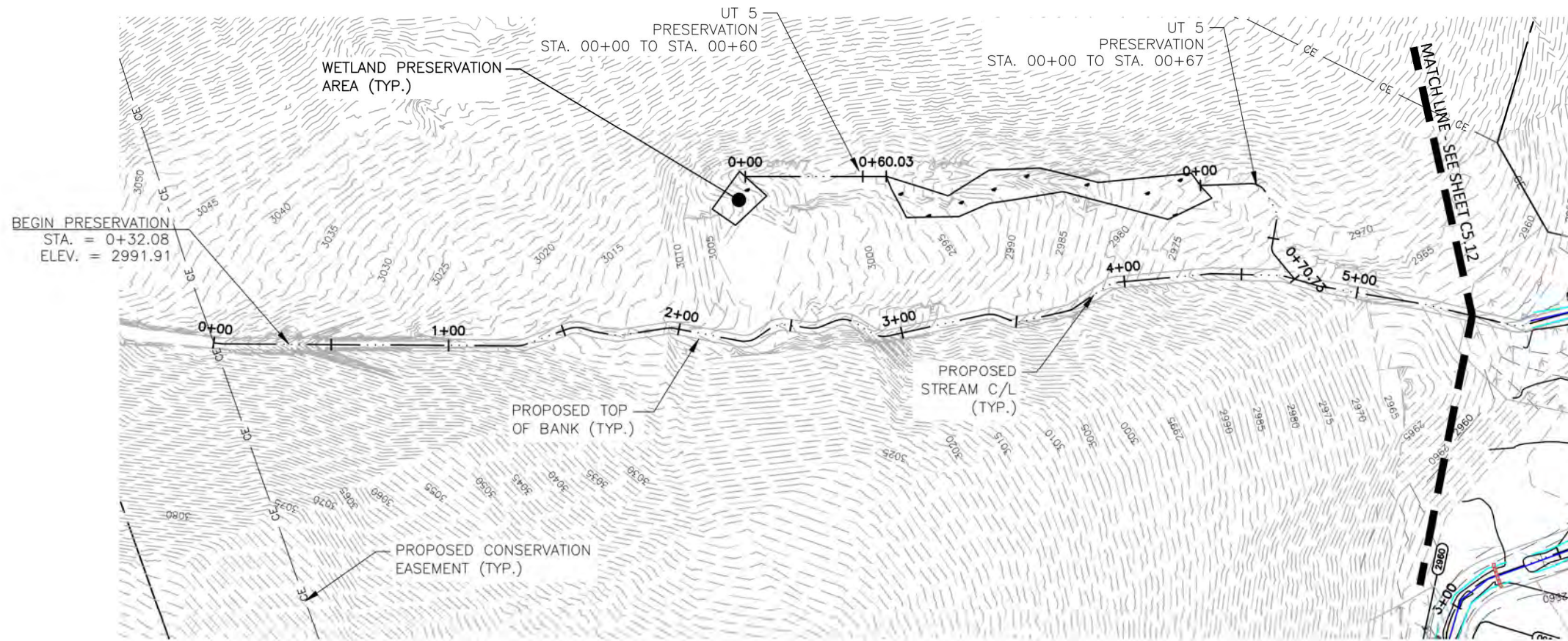


PLAN INFORMATION

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CHECKED BY	RAS
DRAWN BY	CHJ
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PLAN AND PROFILE
UT3
STA. 05+50 THRU STA. 10+29.24

C5.10




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

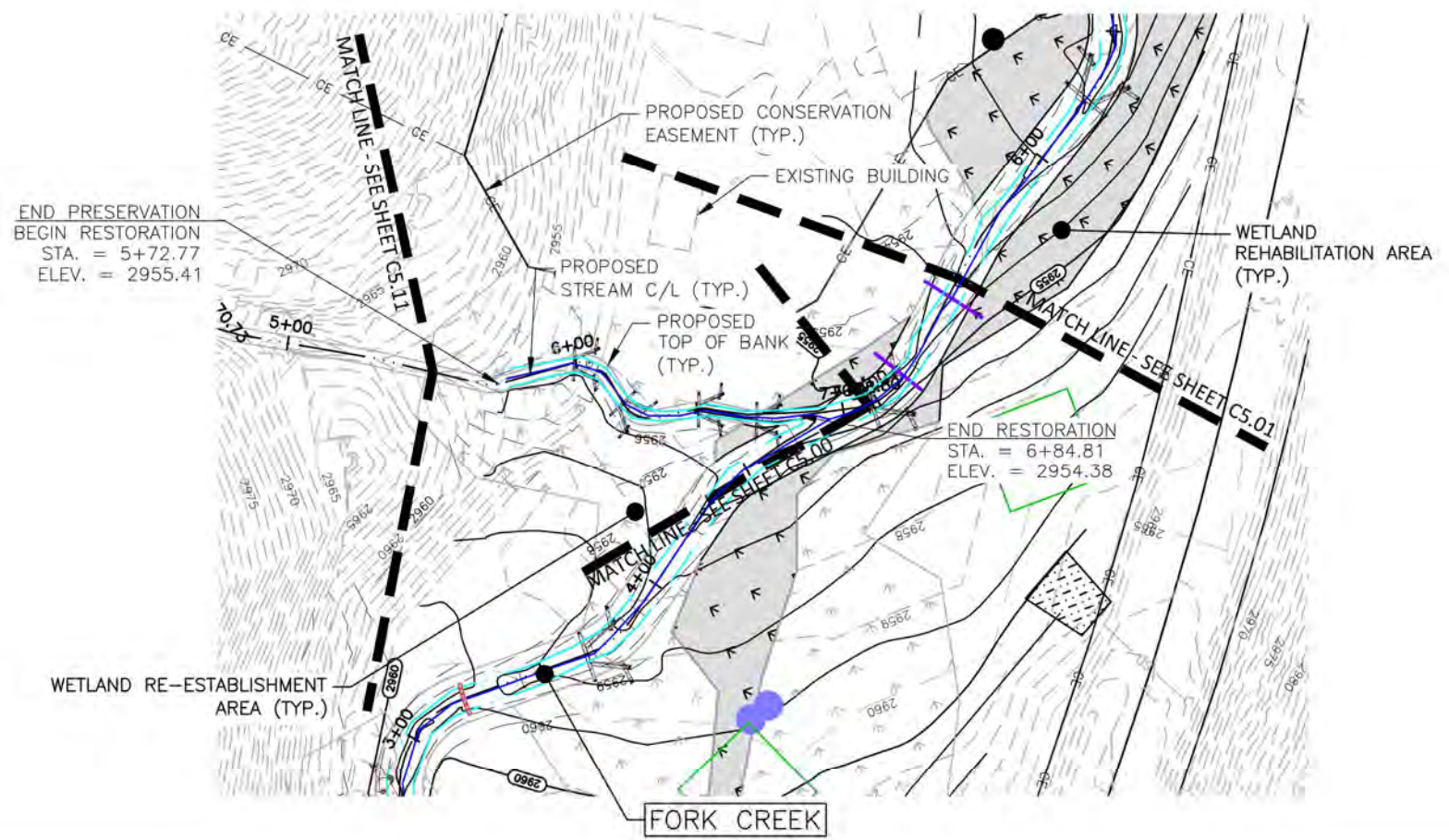


PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-P1
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=60' / 1"=50'
DATE	07.18.2022

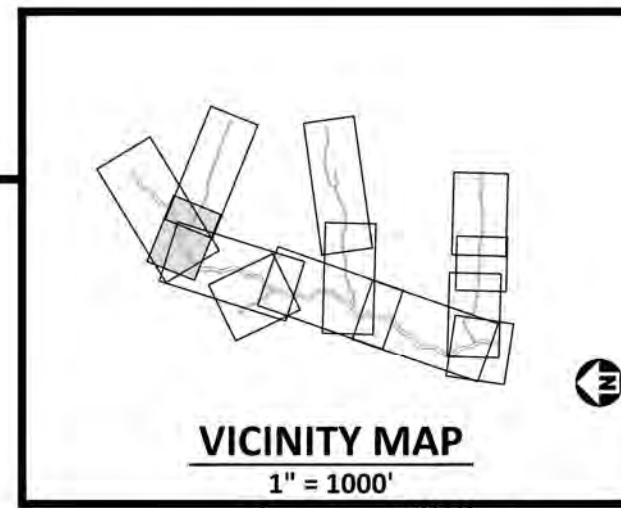
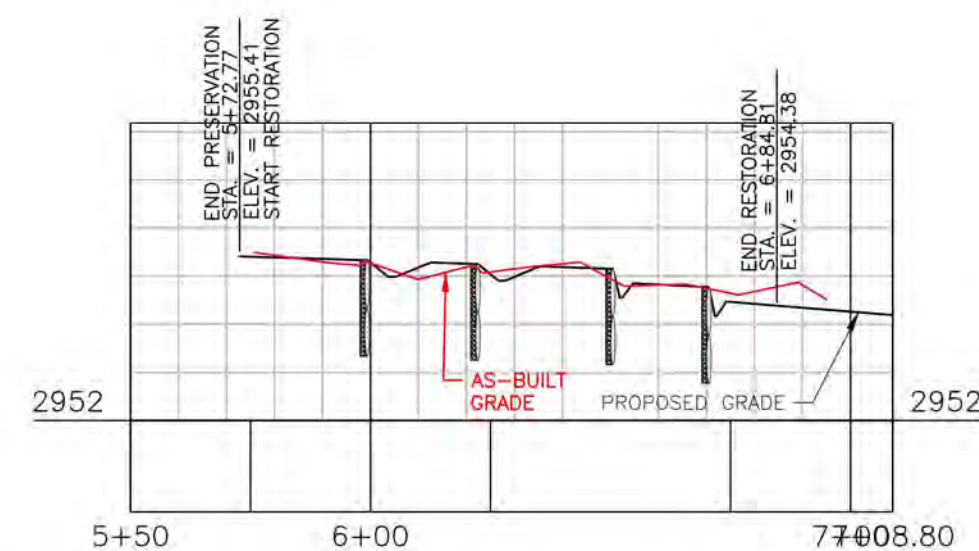
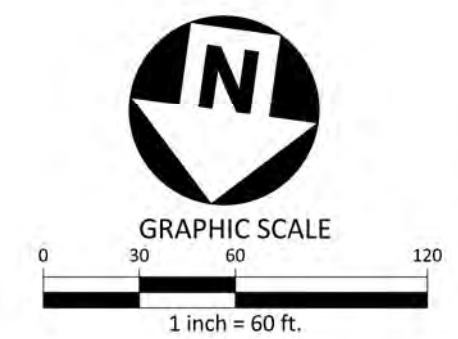
PLAN AND PROFILE
UT4
STA. 00+00 THRU STA. 05+50

C5.11



END PRESERVATION
BEGIN RESTORATION
STA. = 5+72.77
ELEV. = 2955.41

END RESTORATION
STA. = 6+84.81
ELEV. = 2954.38



VICINITY MAP
1" = 1000'



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LAUREL SPRINGS MITIGATION PLAN

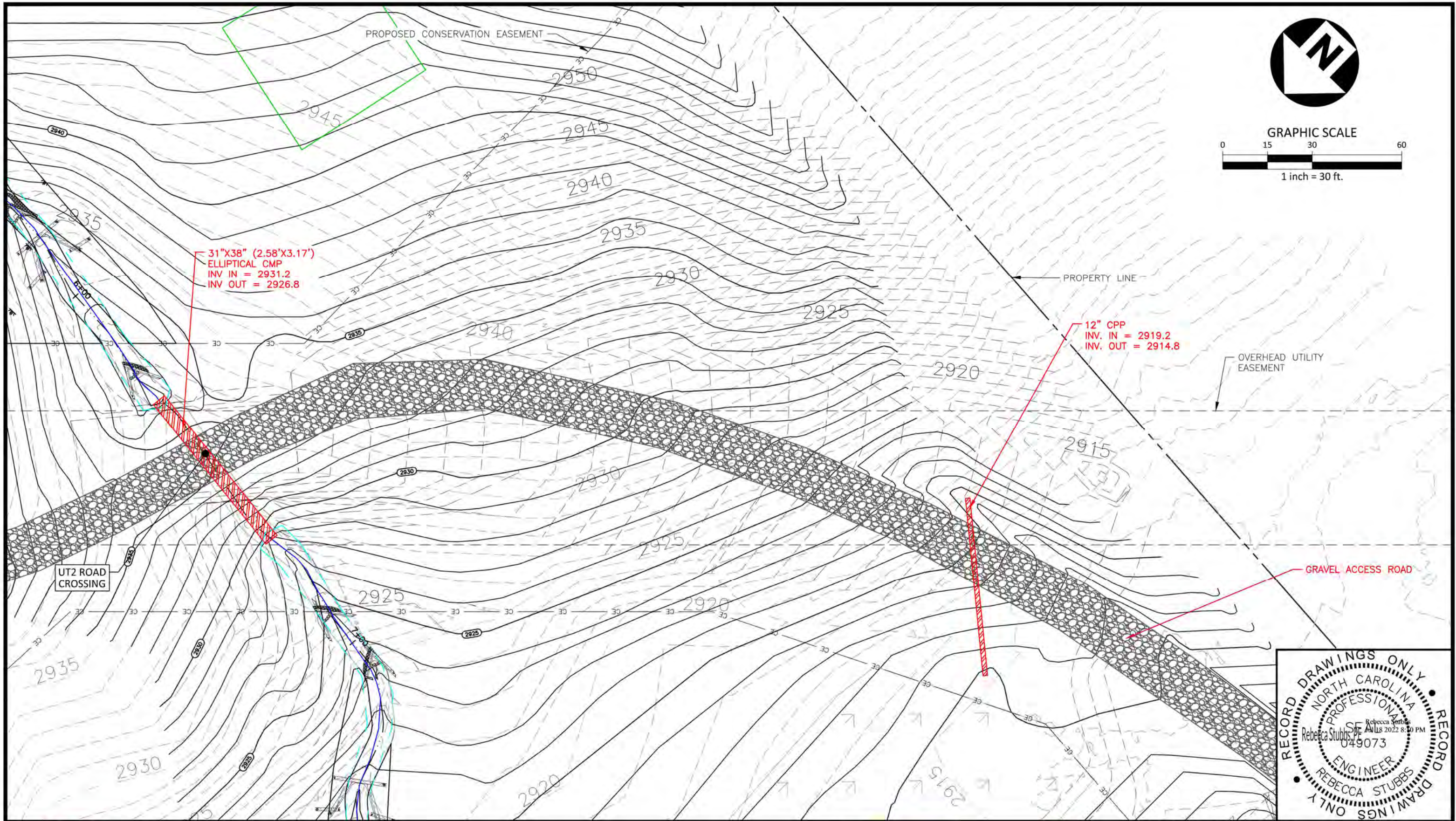
AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION
PROJECT NO. AXI-19000
FILENAME AXI19000-P1
CHECKED BY RAS
DRAWN BY CHJ
SCALE 1"=60' / 1"=40'
DATE 07.18.2022

PLAN AND PROFILE
UT4
STA. 05+50 THRU STA. 07+08.80
C5.12



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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA

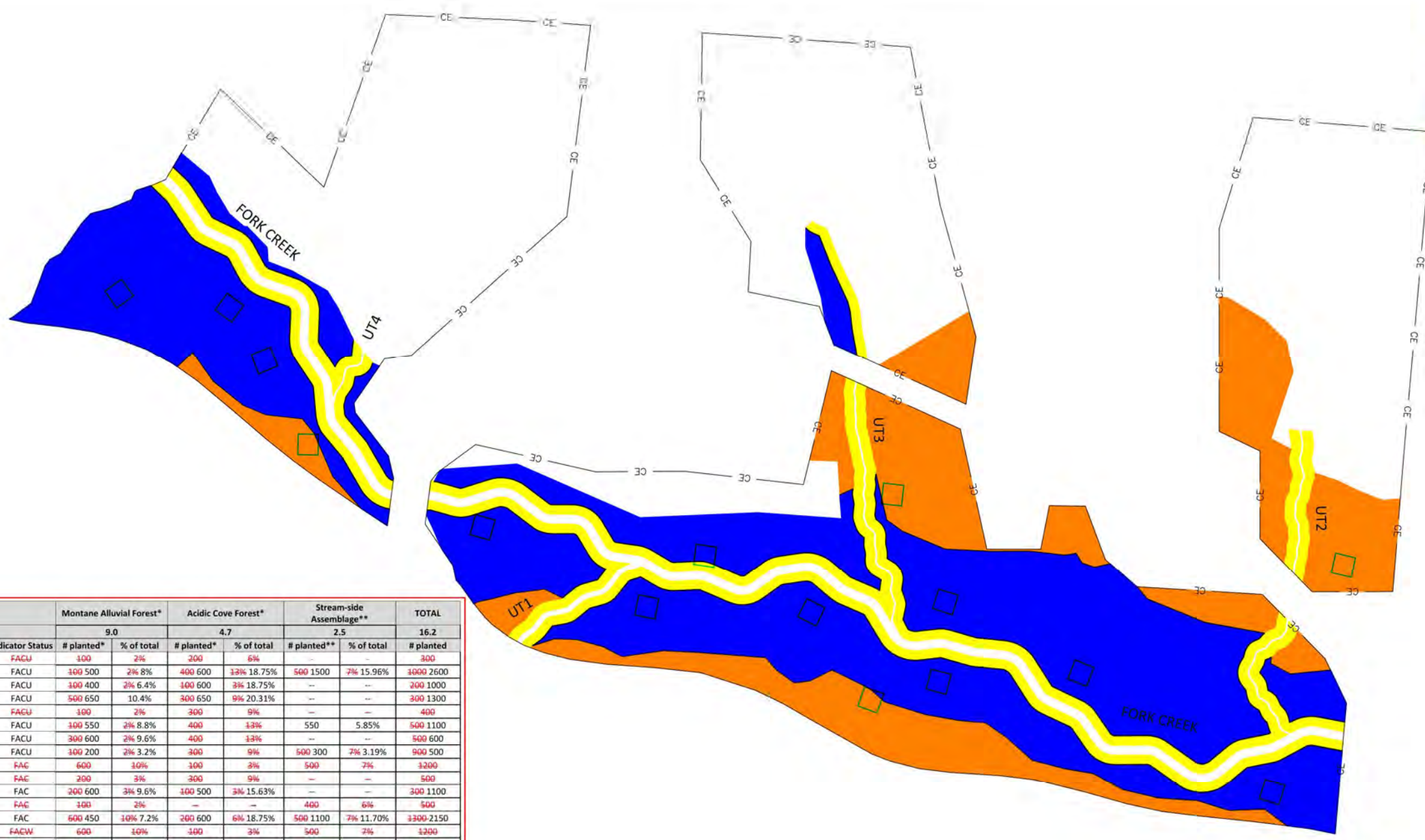


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**DRIVEWAY
GRADING**

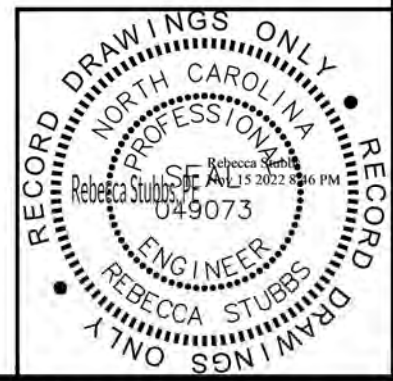
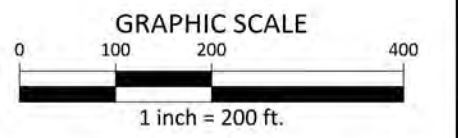
C5.13



- STREAMSIDE ASSEMBLAGE
- MONTANE ALLUVIAL FOREST
- ACIDIC COVE FOREST
- VEGETATION MONITORING PLOT

Vegetation Association		Montane Alluvial Forest*		Acidic Cove Forest*		Stream-side Assemblage**		TOTAL
Area (acres)		9.0		4.7		2.5		
Species	Indicator Status	# planted*	% of total	# planted*	% of total	# planted**	% of total	# planted
Basswood (<i>Tilia americana</i>)	FACU	100	2%	200	6%	-	-	300
Cherry birch (<i>Betula lenta</i>)	FACU	100 500	2% 8%	400 600	13% 18.75%	500 1500	7% 15.96%	1000 2600
Eastern hemlock (<i>Tsuga canadensis</i>)	FACU	100 400	2% 6.4%	100 600	3% 18.75%	-	-	200 1000
Red oak (<i>Quercus rubra</i>)	FACU	500 650	10.4%	300 650	9% 20.31%	-	-	300 1300
White Ash (<i>Fraxinus americana</i>)	FACU	100	2%	300	9%	-	-	400
White Oak (<i>Quercus alba</i>)	FACU	100 550	2% 8.8%	400	13%	550	5.85%	500 1100
White pine (<i>Pinus strobus</i>)	FACU	300 600	2% 9.6%	400	13%	-	-	500 600
Yellow birch (<i>Betula alleghaniensis</i>)	FACU	100 200	2% 3.2%	300	9%	500 300	7% 3.19%	900 500
Black Gum (<i>Nyssa sylvatica</i>)	FAC	600	10%	100	3%	500	7%	1200
Persimmon (<i>Diospyros virginiana</i>)	FAC	200	3%	200	9%	-	-	500
Scarlet Oak (<i>Quercus coccinea</i>)	FAC	200 600	3% 9.6%	100 500	3% 15.63%	-	-	300 1100
Shadbush (<i>Amelanchier arborea</i>)	FAC	100	2%	-	-	400	6%	500
Tulip poplar (<i>Liriodendron tulipifera</i>)	FAC	600 450	10% 7.2%	200 600	6% 18.75%	500 1100	7% 11.70%	1300 2150
American elm (<i>Ulmus americana</i>)	FACW	600	10%	100	3%	500	7%	1200
Hackberry (<i>Celtis laevigata</i>)	FACW	600	10%	-	-	500	7%	1100
River birch (<i>Betula nigra</i>)	FACW	600 500	10% 8%	-	-	500 950	7% 10.10%	1100 1450
Swamp Chestnut Oak (<i>Quercus michauxii</i>)	FACW	600	10%	-	-	400	6%	1000
Sycamore (<i>Platanus occidentalis</i>)	FACW	600	10% 9.6%	-	-	500 1500	7% 15.96%	1100 2100
Tag-alder (<i>Alnus serrulata</i>)	FACW	300	5%	-	-	400	6%	700
Silky Dogwood (<i>Cornus amomum</i>)	FACW	200	3%	-	-	400 600***	6% 6.38%	600
Black willow (<i>Salix nigra</i>)	OBL	300	5%	-	-	400 800***	6% 8.51%	800
Elderberry (<i>Sambucus nigra</i>)	OBL	-	-	-	-	400***	6% 4.26%	400
Buttonbush (<i>Cephalanthus occidentalis</i>)	OBL	-	-	-	-	400***	6% 4.26%	400
*Common Ninebark (<i>Physocarpus opulifolius</i>)	FACW	-	-	-	-	300***	3.19%	300
*Arrowwood viburnum (<i>Viburnum dentatum</i>)	FAC	400	6.4%	-	-	400	4.26%	800
*Bitternut hickory (<i>Carya cordiformis</i>)	FACU	800	12.8%	-	-	-	-	800
*American hazelnut (<i>Corylus americana</i>)	FACU	-	-	-	-	600	6.38%	600
*Red spruce (<i>Picea rubens</i>)	FACU	-	-	250	7.81%	-	-	250
TOTAL		6200	100%	3200	100%	6400	100%	16200

*Species Added
 * Planted at a density of 680 stems/acre.
 ** Planted at a density of 2720 stems/acre.
 *** These species were live staked and planted along the stream channels - Total of 2500 live stakes were planted in addition to the 6900 bare-root Stream-Side Assemblage planting.




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LAUREL SPRINGS MITIGATION PLAN

AS-BUILT DRAWINGS

AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-LS
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	1"=200'
DATE	11.15.2022

PLANTING PLAN

L5.00

TEMPORARY SEEDING SCHEDULE:

TEMPORARY SEEDING SHALL BE APPLIED AS NEEDED DURING CONSTRUCTION TO STABILIZE BARE OR DISTURBED AREAS OF SOIL AND AT THE COMPLETION OR ALL GRADING AND EARTHWORK ACTIVITIES WITHIN A PARTICULAR AREA OF THE SITE. PERMANENT SEED MAY BE DISTRIBUTED WITH TEMPORARY SEED UPON THE FINAL APPLICATION OF TEMPORARY SEED.

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AUG 15 - MAY 15	ANNUAL RYE (GRAIN)	30 LBS/AC
AUG 15 - MAY 15	WINTER WHEAT	30 LBS/AC
MAY 15 - AUG 15	GERMAN MILLET	10 LBS/AC
MAY 15 - AUG 15	BROWNTOP MILLET	10 LBS/AC

SEEDING METHODS

- EVENLY APPLY SEED USING A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. THIS MUST BE DONE WITHIN 48 HOURS OF LAND DISTURBING ACTIVITIES.
- MULCH WITH CLEAN WHEAT STRAW.
- AFTER SEEDING, APPLY MULCH TO AREAS UNDER HARSH CONDITIONS SUCH AS AREAS THAT HAVE BEEN GRADED, OR THOSE WHICH WILL RECEIVE CONCENTRATED FLOWS. AREAS CONSIDERED TO BE UNDER HARSH CONDITIONS WILL BE CONSIDERED THE AREAS GRADED FOR THE WETLAND VALLEY.
- RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS LESS THAN 80% COVERAGE, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

NOTES

- TEMPORARY ANNUAL SEED SELECTION SHOULD BE BASED ON SEASON OF PROJECT INSTALLATION.
- A SINGLE SPECIES FOR TEMPORARY COVER IS ACCEPTABLE
- IN SOME CASES WHERE SEASONS OVERLAP, A MIXTURE OF TWO OR MORE SPECIES MAY BE NECESSARY. HOWEVER, APPLICATION RATES SHOULD NOT EXCEED THE TOTAL RECOMMENDED RATE PER ACRE.
- TEMPORARY SEED SHOULD BE MIXED AND APPLIED SIMULTANEOUSLY WITH THE PERMANENT SEED MIX IF OPTIMAL PLANTING DATES ALLOW.

PERMANENT SEEDING SCHEDULE:

PLANT MATERIAL SELECTION

- REFER TO THE TABLES ON THIS SHEET FOR APPROPRIATE SELECTION OF NATIVE PERMANENT SEEDS.
- PERMANENT SEED MIXTURE SHOULD BE APPLIED USING AN APPLICATION RATE AND METHOD RECOMMENDED BY THE NURSERY.

SEEDBED PREPARATION

- DISTURBED SOILS WITHIN THE RIPARIAN AREAS MUST BE AMMENDED TO PROVIDE AN OPTIMUM ENVIRONMENT FOR SEE GERMINATION AND SEEDING GROWTH.
- THE pH OF THE SOIL MUST BE SUCH THAT IT IS NOT TOXIC AND NUTRIENTS ARE AVAILABLE.
- SOIL ANALYSIS SHOULD BE PERFORMED TO DETERMINE NUTRIENT AND LIME NEEDS OF EACH SITE.
- APROPRIATE pH LEVELS ARE BETWEEN 5.5 AND 7.0
- RIPARIAN BUFFERS REGULATED FOR NUTRIENT MANAGEMENT MAY BE LIMITED TO A SINGLE APPLICATION OF FERTILIZER.
- SUITABLE MECHANICAL MEANS SUCH AS DISKING, RAKING, AND HARROWING MUST BE EMPLOYED TO LOOSEN COMPACTED SOILS PRIOR TO SEEDING.

PLANTING

- APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DROP-TYPE SPREADER, DRILL, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED.
- IN FINE SOILS, SEEDS SHOULD BE DRILLED 0.25-0.5 INCHES. IN COURSE SAND SOILS, SEEDS SHOULD BE PLANTED NO MORE THAN 0.75 INCHES.

MULCH

- MULCH ALL PLANTING AREAS IMMEDIATELY AFTER SEEDING.
- IF PLANTING ON STREAMBANKS STEEPER THAN 10% OR OTHER AREAS SUBJEC TO FLOODING, A BIODEGRADABLE ROLLED EROSION CONTROL PRODUCT IS RECOMMENDED TO HOLD SEED AND SOIL IN PLACE.

MAINTENANCE

- THE RECOMMENDED PERMANENT GRASS SPECIES MAY REQUIRE TWO YEARS FOR ESTABLISHMENT DEPENDIG ON SITE CONDITIONS.
- INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS, SOIL AMENDMENTS, AND RE-SEEDINGS.
- IF WEEDY EXOTIC SPECIES HAVE TAKEN OVER AREAS AFTER THE FIRST GROING SEASON, THE INVASIVE SPECIES MUST BE ERADICATED TO ALLOW STAIIVE SPECIES TO GROW.
- MONITORING THE SITE UNTIL LONG-TERM STABILITY HAS BEEN ESTABLISHED.

PERMANENT SEEDING MIXTURE (2 LB/ACRE)	
Name	Percent of Seed Mix
Agrostis alba	20
Tridens flavus	20
Agrostis hyemalis	5
Agrostis stolonifera	5
Chrysanthemum leucanthemum	5
Coreopsis lanceolata	5
Coreopsis tinctoria	5
Elymus virginicus	5
Panicum clandestinum	5
Rudbeckia hirta	5
Echinacea purpurea	3
Eupatorium perfoliatum	3
Chamaecrista fasciculata	2
Chamaecrista nictitans	1
Cosmos bipinnatus	1
Desmodium canadense	1
Helianthus angustifolius	1
Heliopsis helianthoides	1
Hibiscus moscheutos	1
Lespedeza capitata	1
Lespedeza virginica	1
Liatris spicata	1
Silphium perfoliatum	1
Verbena hastata	1
Eupatorium coelestinum	0.5
Manarda fistulosa	0.25
Pycnanthemum tenuifolium	0.25

*ERNST SEEDS "ERNMX-305, NC FACW MIX"

PERMANENT STREAM BANK SEEDING MIXTURE (4 LB/ACRE)	
Name	Percent of Seed Mix
Panicum rigidulum	35
Panicum anceps	23
Elymus virginicus	20
Carex lurida	12
Juncus effusus	3
Helenium flexuosum	2
Hibiscus moscheutos	2
Scirpus cyperinus	2
Juncus tenuis	1

Planted Permanent Seed Mix			
Species	Percentage	Species	Percentage
Asclepias incarnata	0.3	Helianthus angustifolius	0.8
Agrostis gigantea	16	Heliopsis helianthoides	1.2
Agrostis hyemalis	4	Hibiscus moscheutos	0.8
Agrostis stolonifera	4	Juncus effusus	0.6
Carex lurida	3.22	Lespedeza capitata	0.8
Carex vulpinoidea	10	Lespedeza virginica	0.8
Chamaecrista fasciculata	1.6	Liatris spicata	0.8
Chamaecrista nictitans	0.8	Mimulus ringens	0.06
Chrysanthemum leucanthemum	4	Monarda fistulosa	0.2
Coreopsis lanceolata	4	Panicum virgatum	4
Coreopsis tinctoria	4	Pycnanthemum tenuifolium	0.2
Cosmos bipinnatus	0.8	Rhexia virginica	0.06
Desmodium canadense	0.8	Rudbeckia hirta	4
Echinacea purpurea	2.4	Scirpus cyperinus	0.06
Elymus virginicus	8.6	Silphium perfoliatum	0.8
Eupatorium coelestinum	0.4	Symphotrichum puniceum	0.1
Eupatorium perfoliatum	2.5	Tridens flavus	16
Glyceria striata	0.1	Vernonia noveboracensis	0.2
Helenium autumnale	0.2	Verbena hastata	0.8
		TOTAL	100




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LAUREL SPRINGS MITIGATION PLAN
AS-BUILT DRAWINGS
AVERY COUNTY, NORTH CAROLINA



PLAN INFORMATION

PROJECT NO.	AXI-19000
FILENAME	AXI19000-LS
CHECKED BY	RAS
DRAWN BY	CHJ
SCALE	N.T.S.
DATE	11.15.2022

PLANTING NOTES

L5.01