NC DMS PROJECT #100017

EW SOLUTIONS, LLC

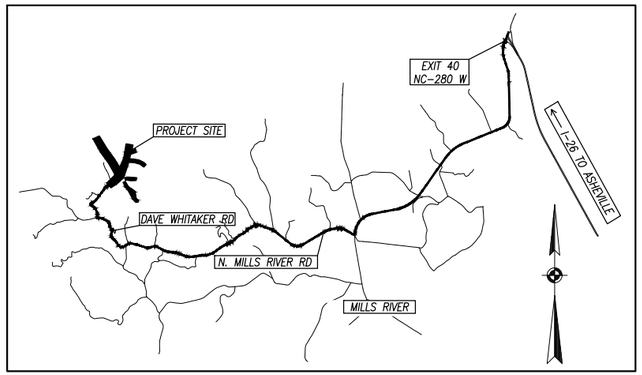
STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
NC	172621103	AB-1	17

	FINAL PLANS	5/22/20	CME
1	SHEETS 1, EC-1, EC-2A	5/29/20	CME
2	SHEETS 1, 2, 3, 4, 6-11, 14-16, P-1, P-2, EC-1, EC-2, EC-4	7/14/20	CME
3	SHEETS 1, EC-1, EC-4	8/10/20	CME
	AS - BUILT PLANS - RECORD SET	4/02/21	CME
1	SHEETS 1, 1A, 4-14, P-1, P-2	5/17/21	CME
SYM.	DESCRIPTION	DATE	APPROVED

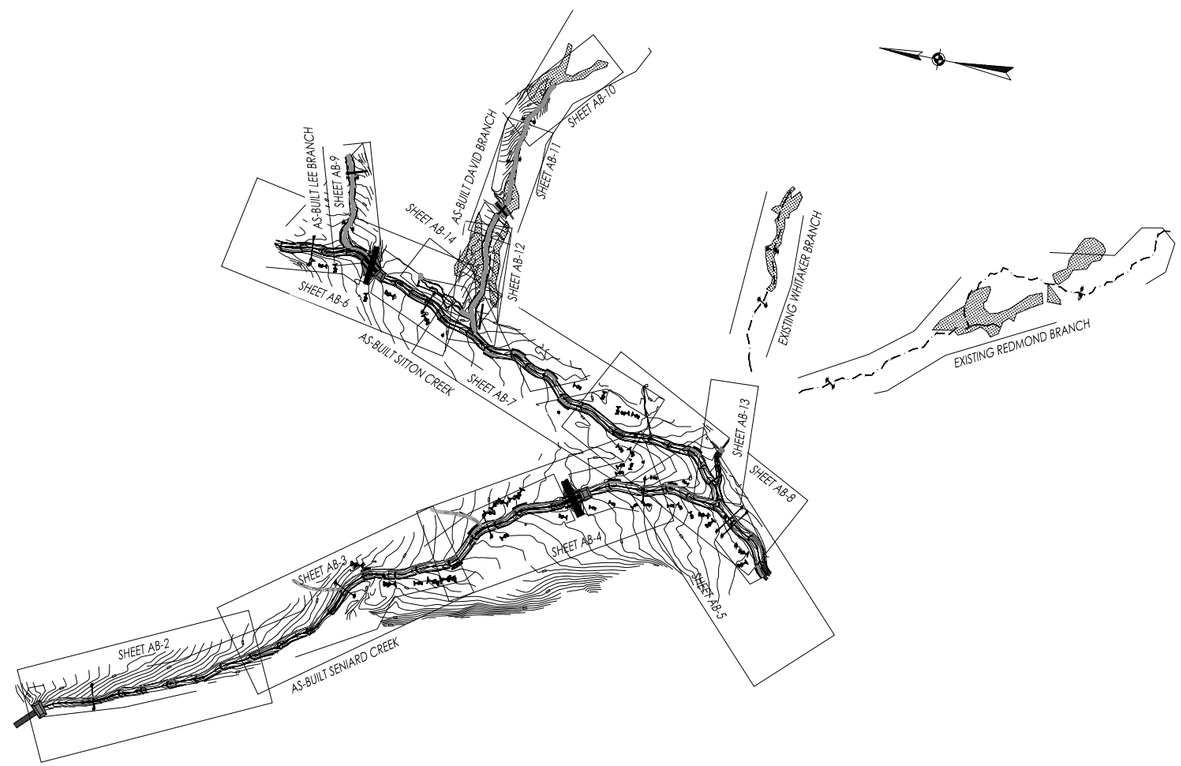
REVISIONS

SENIARD CREEK MITIGATION PROJECT

SENIARD CREEK
HENDERSON COUNTY, NORTH CAROLINA



VICINITY MAP
NOT TO SCALE



SHEET INDEX

SHEET NO.	DESCRIPTION
AB-1	TITLE SHEET
AB-1A	SITE PLAN
AB-2-AB-14	PLAN AND PROFILE
AB-P-1	PLANTING NOTES
AB-P-2	PLANTING PLAN

NO SIGNIFICANT DEVIATIONS FROM DESIGN
AS-BUILT PLANS

GRAPHIC SCALES (SCALE IN FEET)

20 0 20 60
PLAN & HORIZONTAL PROFILE - SHEETS 4-10

10 0 10 30
PLAN & HORIZONTAL PROFILE - SHEETS 11-16

2 0 2 6
VERTICAL PROFILE - SHEETS 4-10

1 0 1 3
VERTICAL PROFILE - SHEETS 11-16

30 0 100 300
PLAN - SHEET 1A AND P-2

PROJECT LENGTHS

AS-BUILT RESTORATION:	
SENIARD CREEK	= 1,783 FT
SITTON CREEK	= 1,079 FT
DAVID BRANCH	= 524 FT
LEE BRANCH	= 215 FT
REDMOND BRANCH	= 83 FT
AS-BUILT ENHANCEMENT:	
WHITAKER BRANCH	= 426 FT
REDMOND BRANCH	= 1,054 FT
AS-BUILT PRESERVATION:	
DAVID BRANCH	= 132 FT
TOTAL LENGTH	= 5,265 FT

Prepared by:

Stantec

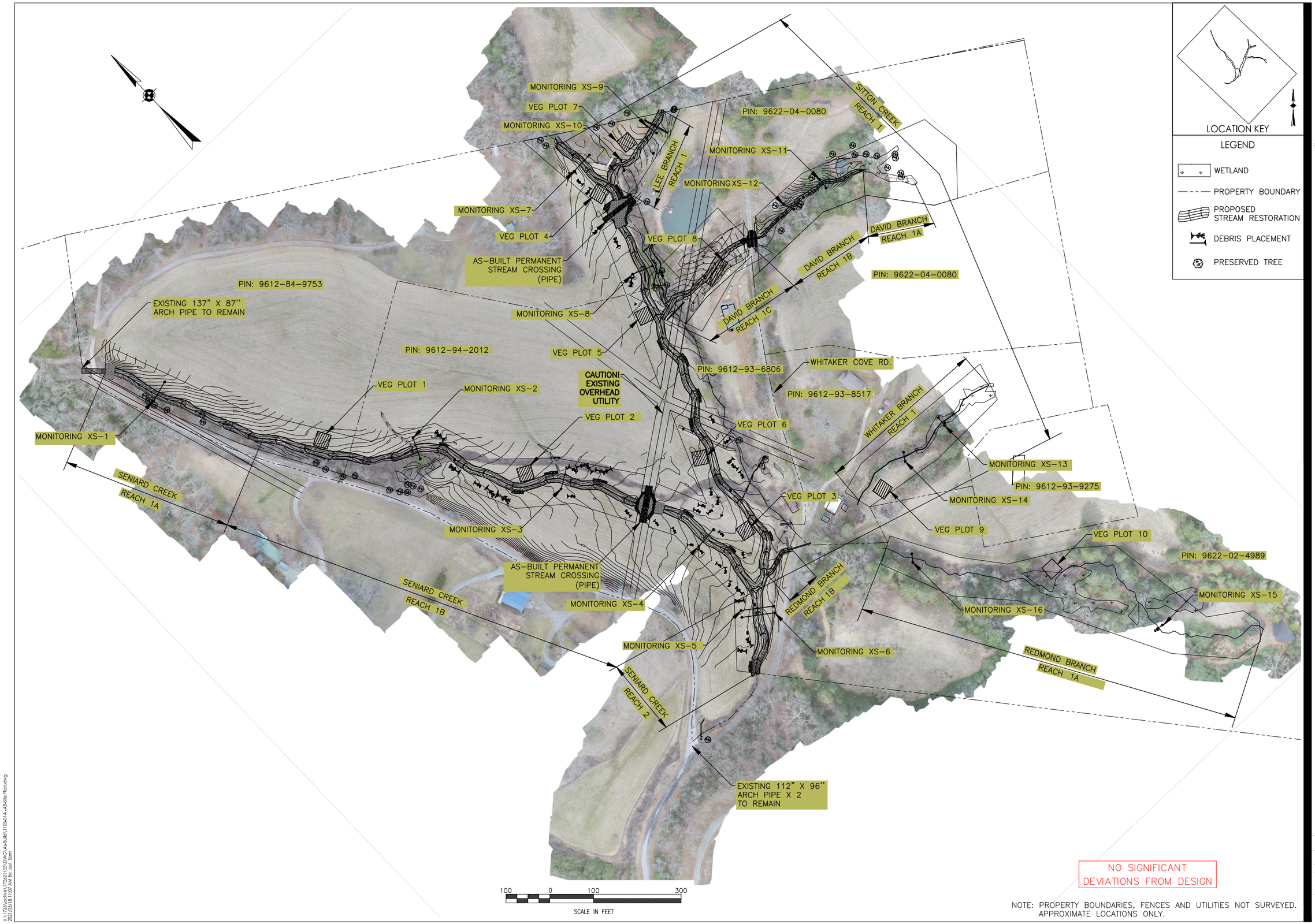
Stantec Consulting Services Inc.
56 College Street, Suite 201
Asheville, North Carolina 28801
www.stantec.com

NORTH CAROLINA PROFESSIONAL SEAL 036505 ENGINEER CHRISTOPHER M. SNOW
5/26/21
PROJECT ENGINEER

Prepared for:

NC DMS

HARRY TSOMIDES
PROJECT MANAGER



NO SIGNIFICANT DEVIATIONS FROM DESIGN

NOTE: PROPERTY BOUNDARIES, FENCES AND UTILITIES NOT SURVEYED. APPROXIMATE LOCATIONS ONLY.

LOCATION KEY

LEGEND

- WETLAND
- PROPERTY BOUNDARY
- PROPOSED STREAM RESTORATION
- DEBRIS PLACEMENT
- PRESERVED TREE

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Revision	By	Appd.	YY.MM.DD
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NORTH CAROLINA

Title
SITE PLAN - AS-BUILT

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 036595 ENGINEER CHRISTOPHER M. ENGEL
5/26/21

Project Number: 172621103

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Revision 0

Sheet AB-1A

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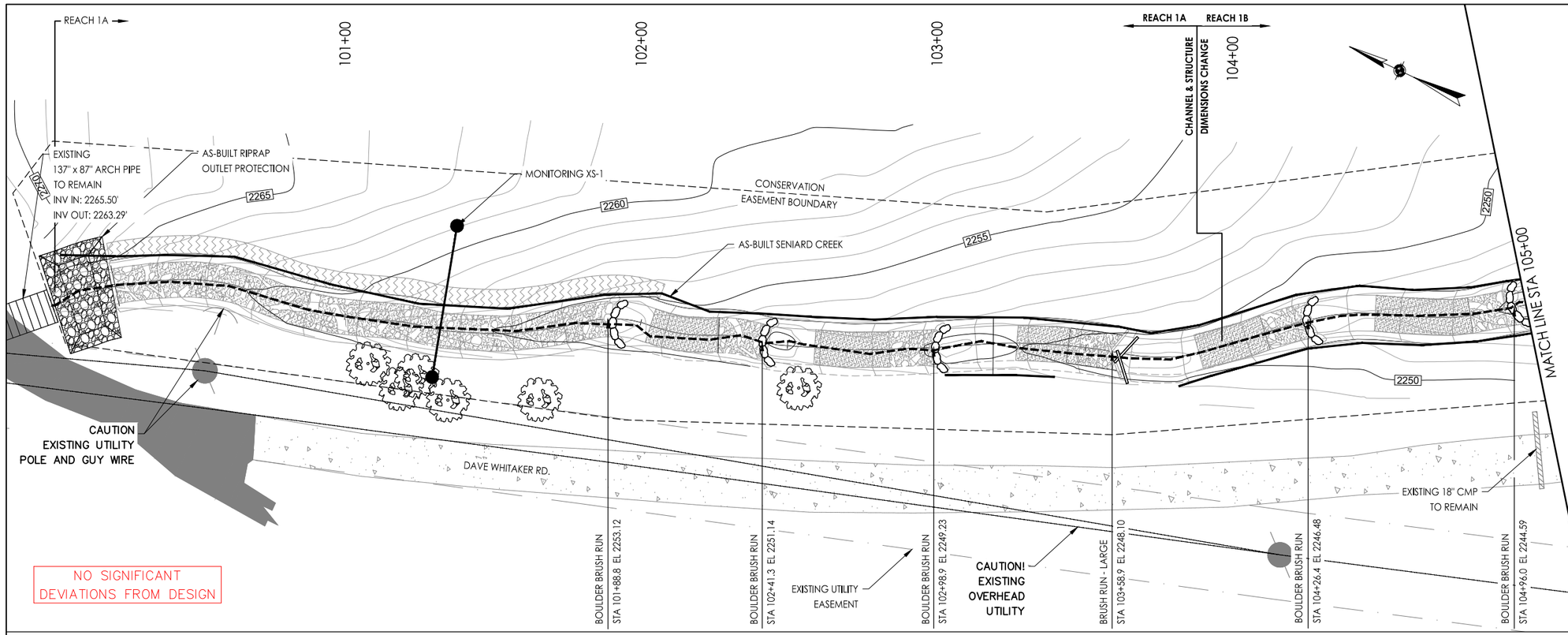
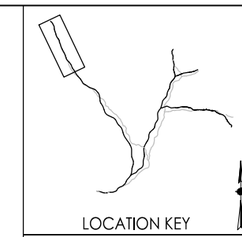




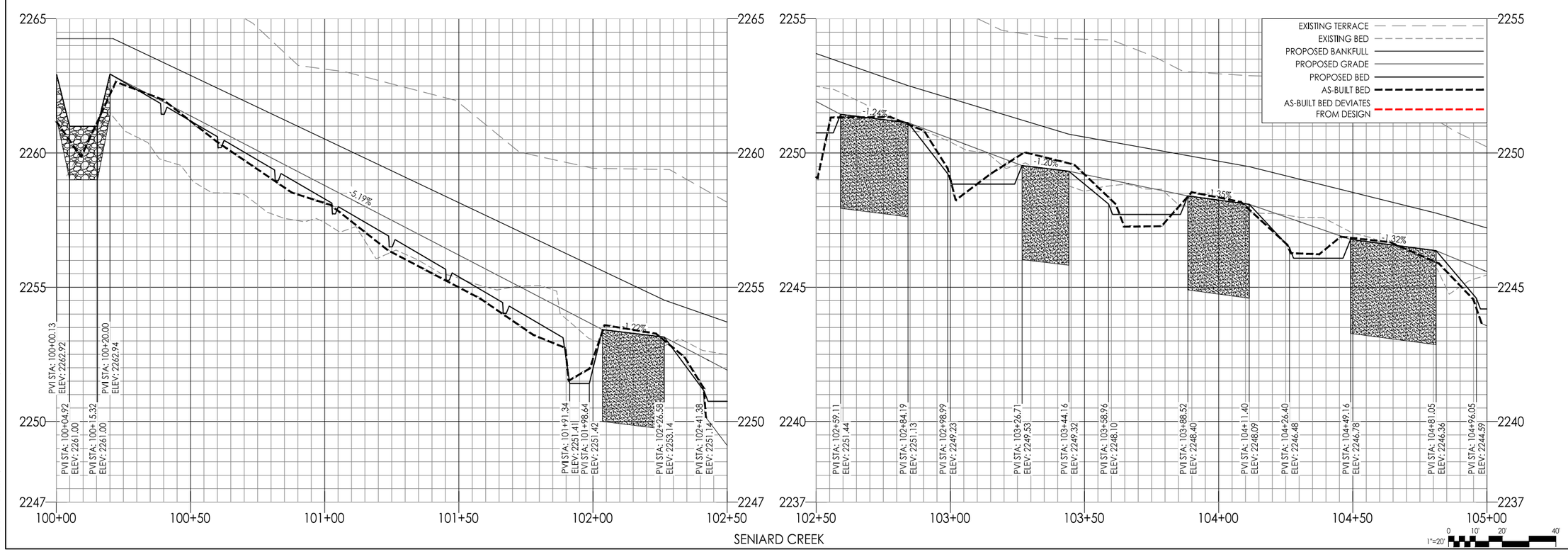
LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-2 - LINEWEIGHT	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.03.18

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SENIARD CREEK - PLAN & PROFILE - AS-BUILT
STA 100+00 - 105+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. CRIDER
5/26/21

Project Number: 172621103

File Name: 1103-04-AB-Seniard PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.

Revision	Sheet
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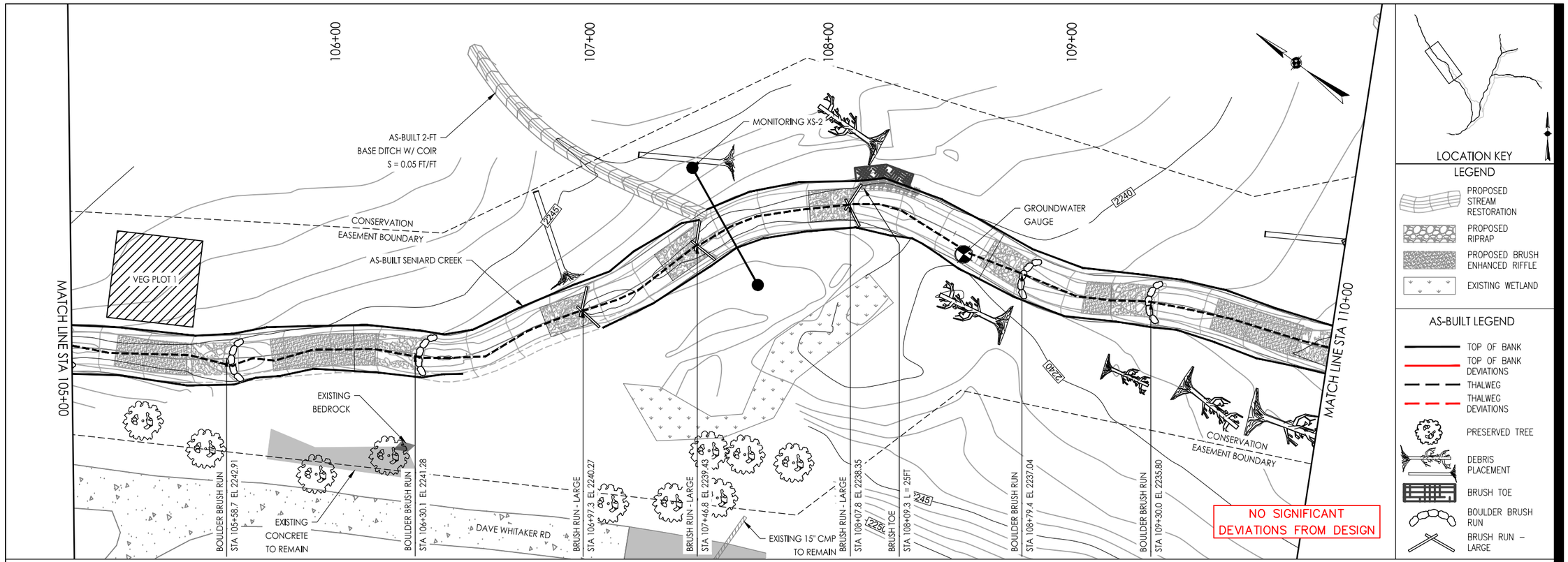

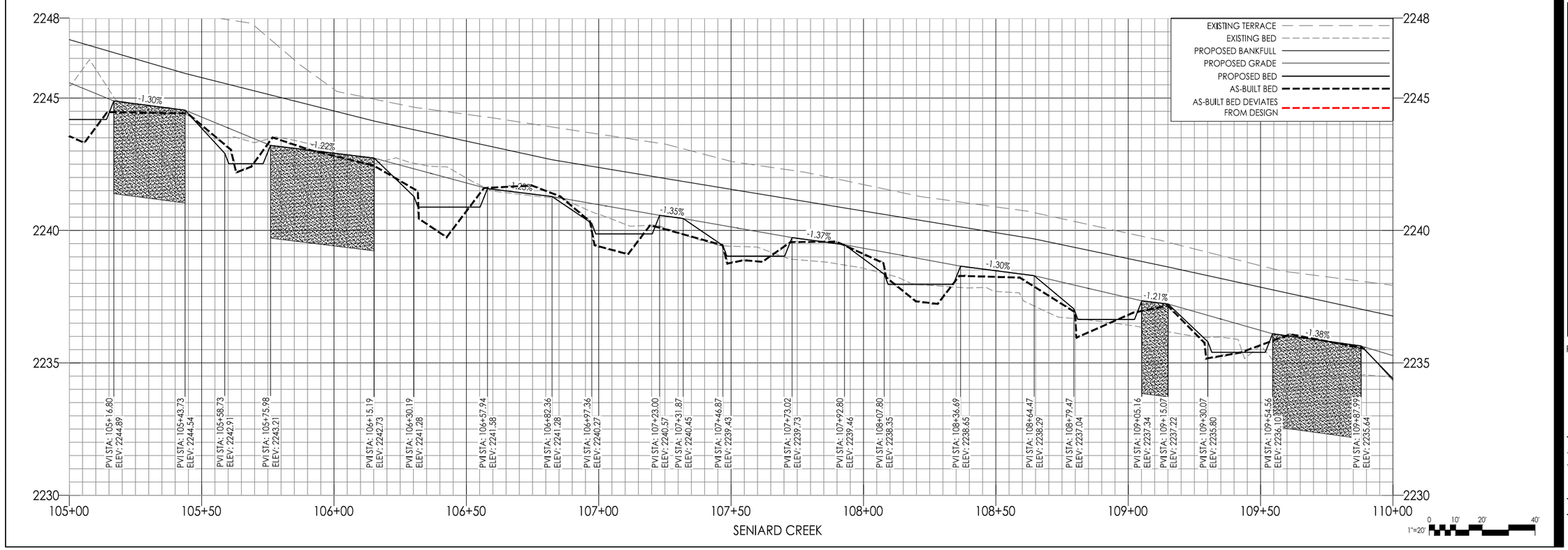

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Revision	By	Appd.	YY.MM.DD
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SENIARD CREEK - PLAN & PROFILE - AS-BUILT
STA 105+00 - 110+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. GAGE
5/26/21

Project Number: 172621103

File Name: 1103-04-AB-Seniard PLANPRO.dwg

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Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.

Revision	Sheet
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NO SIGNIFICANT DEVIATIONS FROM DESIGN

111+00 112+00 113+00 114+00

2235 2230

MONITORING XS-3

AS-BUILT 2-FT BASE DITCH W/ COIR S = 0.05 FT/FT

AS-BUILT SENIARD CREEK

VEG PLOT 2

AS-BUILT SITTON CREEK

MONITORING XS-4

MATCH LINE STA 110+00

MATCH LINE STA 115+00

CONSERVATION EASEMENT BOUNDARY

EXISTING UTILITY EASEMENT

AS-BUILT RIPRAP OUTLET PROTECTION

AS-BUILT PERMANENT STREAM CROSSING (PIPED) ROAD WIDTH = 16FT

CAUTION! EXISTING OVERHEAD UTILITY

BOULDER BRUSH RUN STA 110+02.9 EL 2234.09

BRUSH TOE STA 110+05.0 L = 21FT

BOULDER BRUSH RUN STA 110+82.3 EL 2232.52

BRUSH TOE STA 110+84.4 L = 24FT

BOULDER BRUSH RUN STA 111+40.4 EL 2231.39

BOULDER BRUSH RUN STA 111+91.2 EL 2229.85

BRUSH TOE STA 111+92.8 L = 24FT

BRUSH RUN - LARGE STA 112+70.7 EL 2228.23

BRUSH ENHANCED RIFFLE STA 113+63.4 L= 27

BOULDER BRUSH RUN STA 114+05.3 EL 2226.15

BRUSH TOE STA 114+07.0 L = 20FT

BOULDER BRUSH RUN STA 114+78.9 EL 2224.43

LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE

EXISTING TERRACE
EXISTING BED
PROPOSED BANKFULL
PROPOSED GRADE
PROPOSED BED
AS-BUILT BED
AS-BUILT BED DEVIATES FROM DESIGN

PROPOSED PERMANENT STREAM CROSSING (PIPED)
1 X 84" CMP @ 40 LF (MAIN)
INV IN 2226.53 INV OUT 2226.53
2 X 36" HDPE @ 40 LF (FP)
INV IN 2228.90 INV OUT 2228.90

-1.22% -1.20% -1.41% -1.40% -3.04% -1.24%

2238 2235 2230 2225 2220

PVI STA: 110+02.99 ELEV: 2234.09
PVI STA: 110+28.74 ELEV: 2234.39
PVI STA: 110+67.33 ELEV: 2233.92
PVI STA: 110+82.33 ELEV: 2232.52
PVI STA: 111+11.33 ELEV: 2232.82
PVI STA: 111+25.46 ELEV: 2232.65
PVI STA: 111+40.46 ELEV: 2231.39
PVI STA: 111+66.36 ELEV: 2231.69
PVI STA: 111+76.27 ELEV: 2231.55
PVI STA: 111+91.27 ELEV: 2229.85
PVI STA: 112+20.02 ELEV: 2230.15
PVI STA: 112+55.79 ELEV: 2229.65
PVI STA: 112+70.79 ELEV: 2228.23
PVI STA: 113+02.38 ELEV: 2228.53
PVI STA: 113+42.38 ELEV: 2228.53
PVI STA: 113+63.45 ELEV: 2228.53
PVI STA: 113+90.38 ELEV: 2227.72
PVI STA: 114+05.38 ELEV: 2226.15
PVI STA: 114+30.05 ELEV: 2226.45
PVI STA: 114+63.90 ELEV: 2226.03
PVI STA: 114+78.90 ELEV: 2224.43

110+00 110+50 111+00 111+50 112+00 112+50 113+00 113+50 114+00 114+50 115+00

SENIARD CREEK

1"=20' 0 10' 20' 40'

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Revision	By	Appd.	YY.MM.DD
REV-2 - PIPED CROSSING	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SENIARD CREEK - PLAN & PROFILE - AS-BUILT
STA 110+00 - 115+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. CME 5/26/21

Project Number: 172621103

File Name: 1103-04-AB-Seniard PLANPRO.dwg

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Drawing No.

Revision 2

Sheet AB-4

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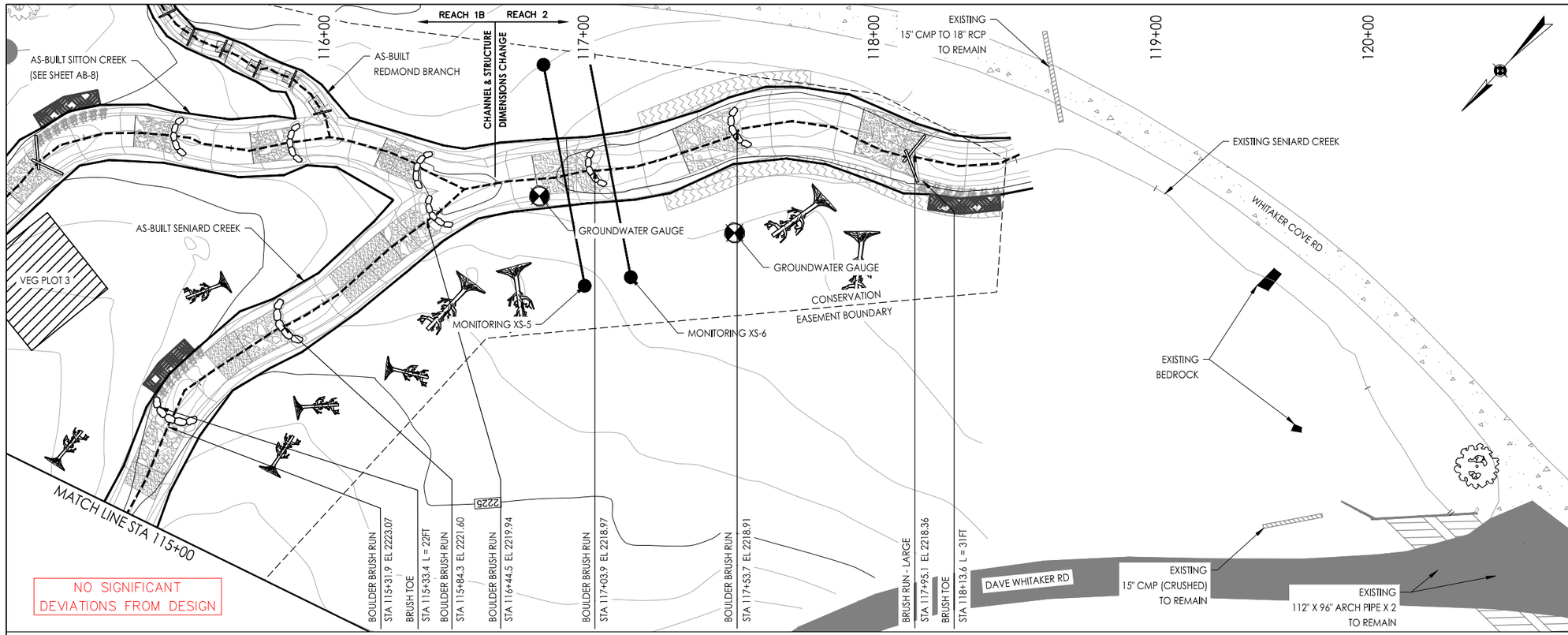


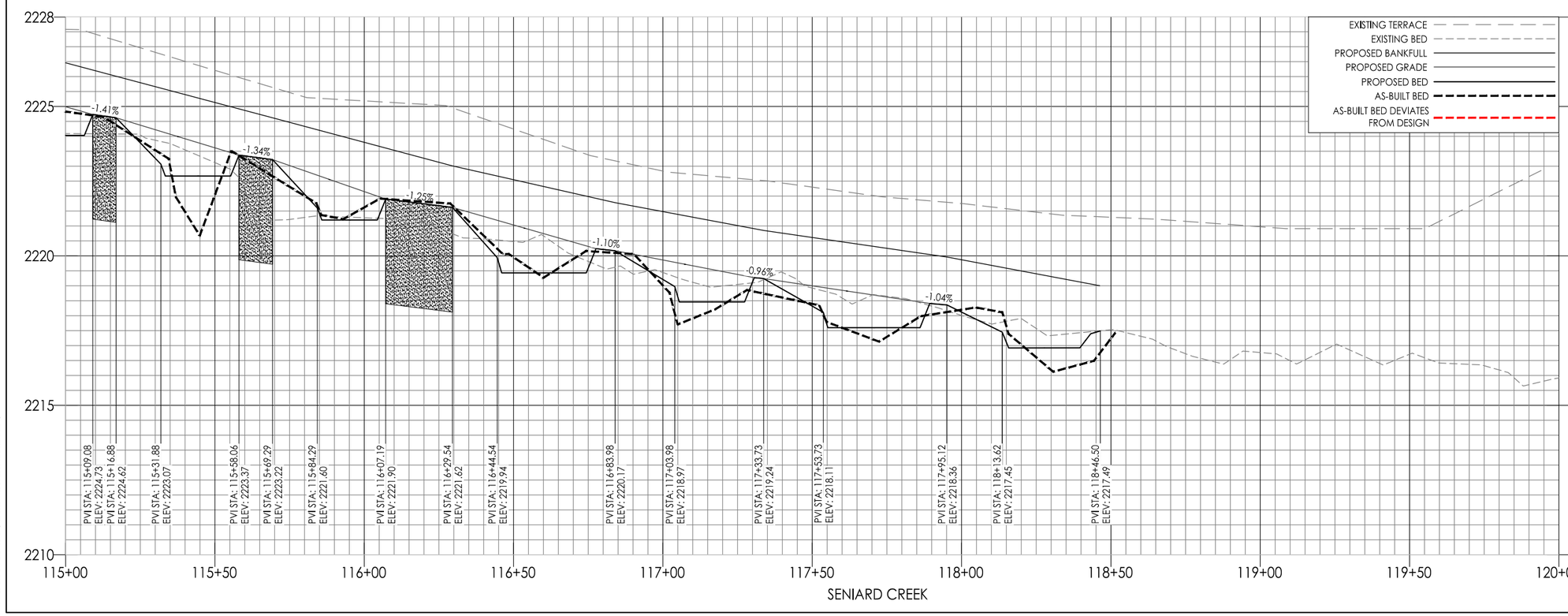
LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-2 - BRENCH PROTECTION	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SENIARD CREEK - PLAN & PROFILE - AS-BUILT
STA 115+00 - 120+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. CMIELE
5/26/21

Project Number: 172621103

File Name: 1103-04-AB-Seniard PLANPRO.dwg

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Drawing No.

Revision	Sheet
2	AB-5

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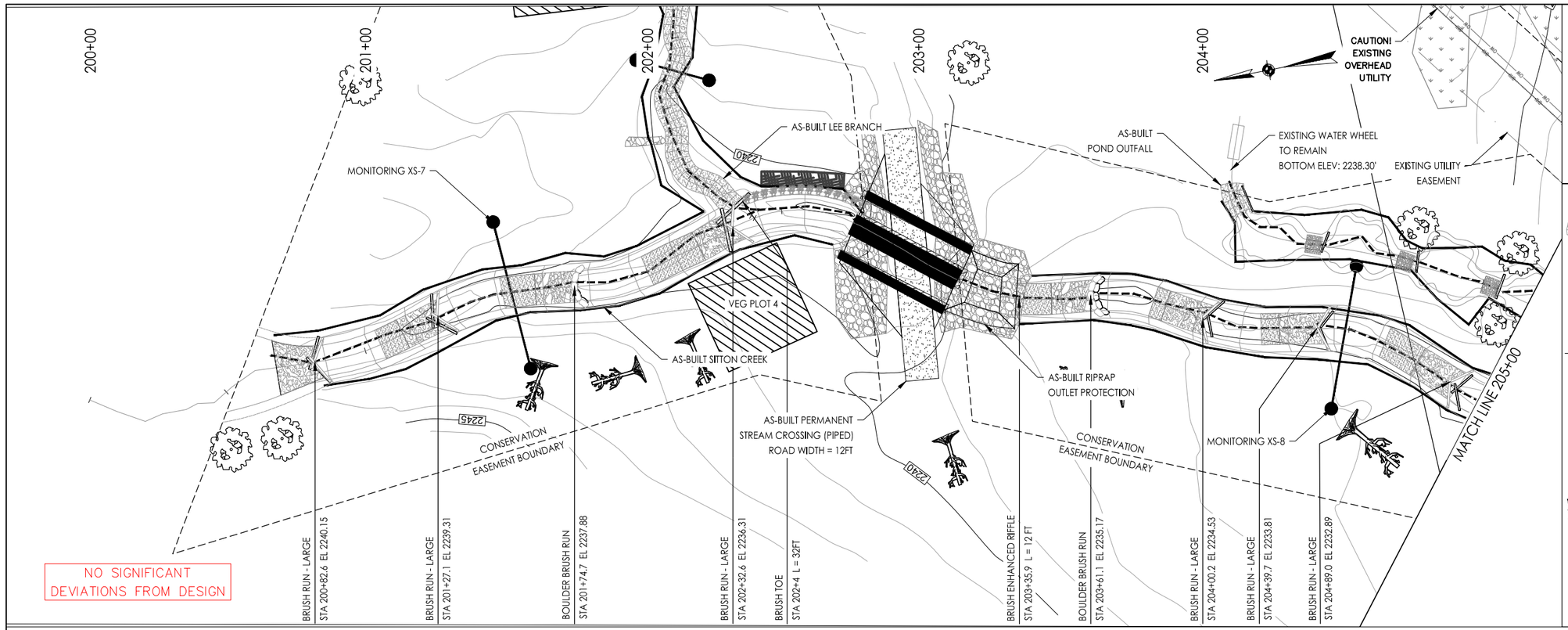


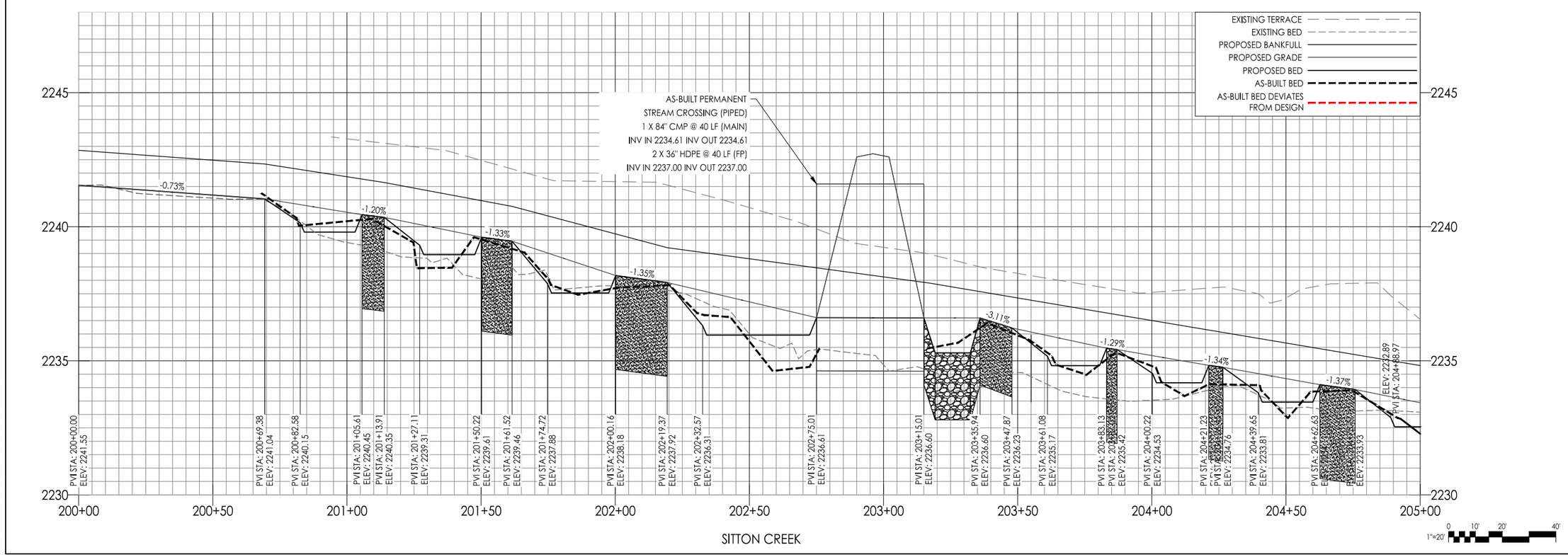
LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-2 - PIPED CROSSING	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SITTON CREEK - PLAN & PROFILE - AS-BUILT
STA 200+00 - 205+00

Permit-Seal
NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103
1103-05-AB-Sitton
File Name: PLANPRO-REV.dwg

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Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.
Revision 2
Sheet AB-6

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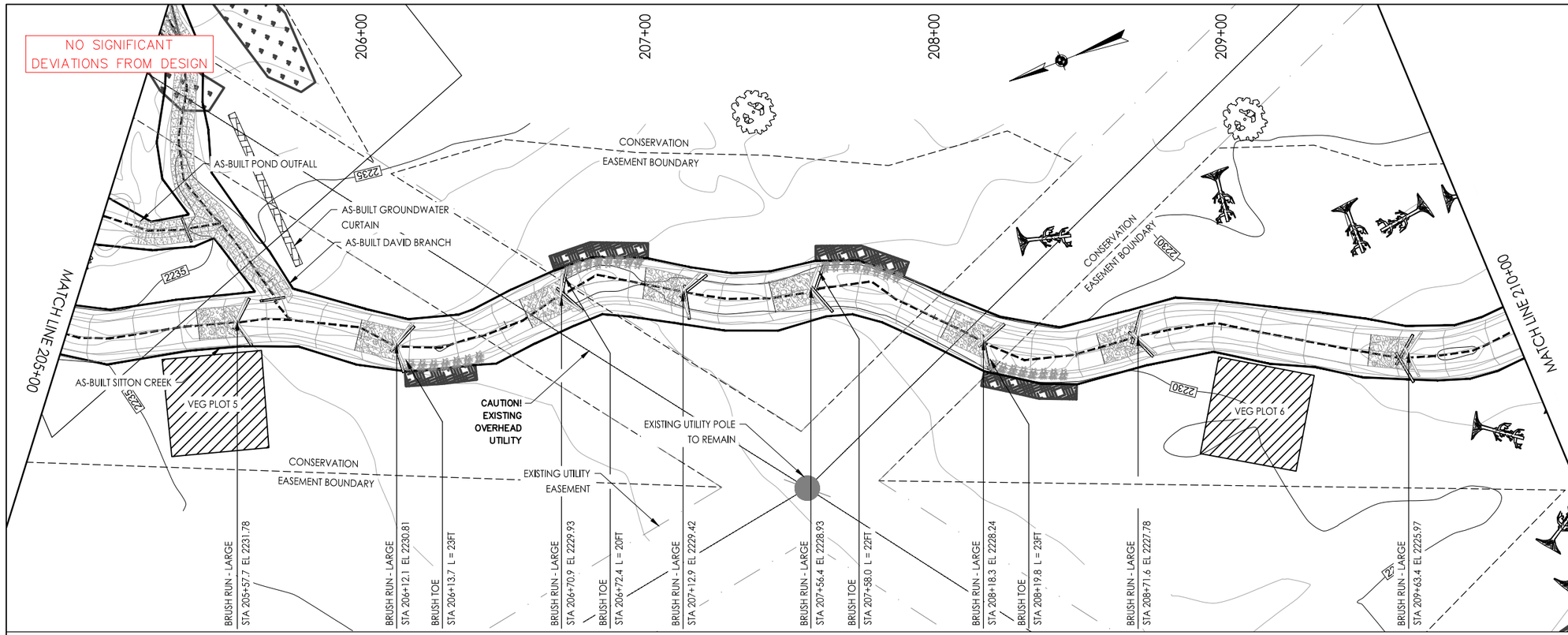


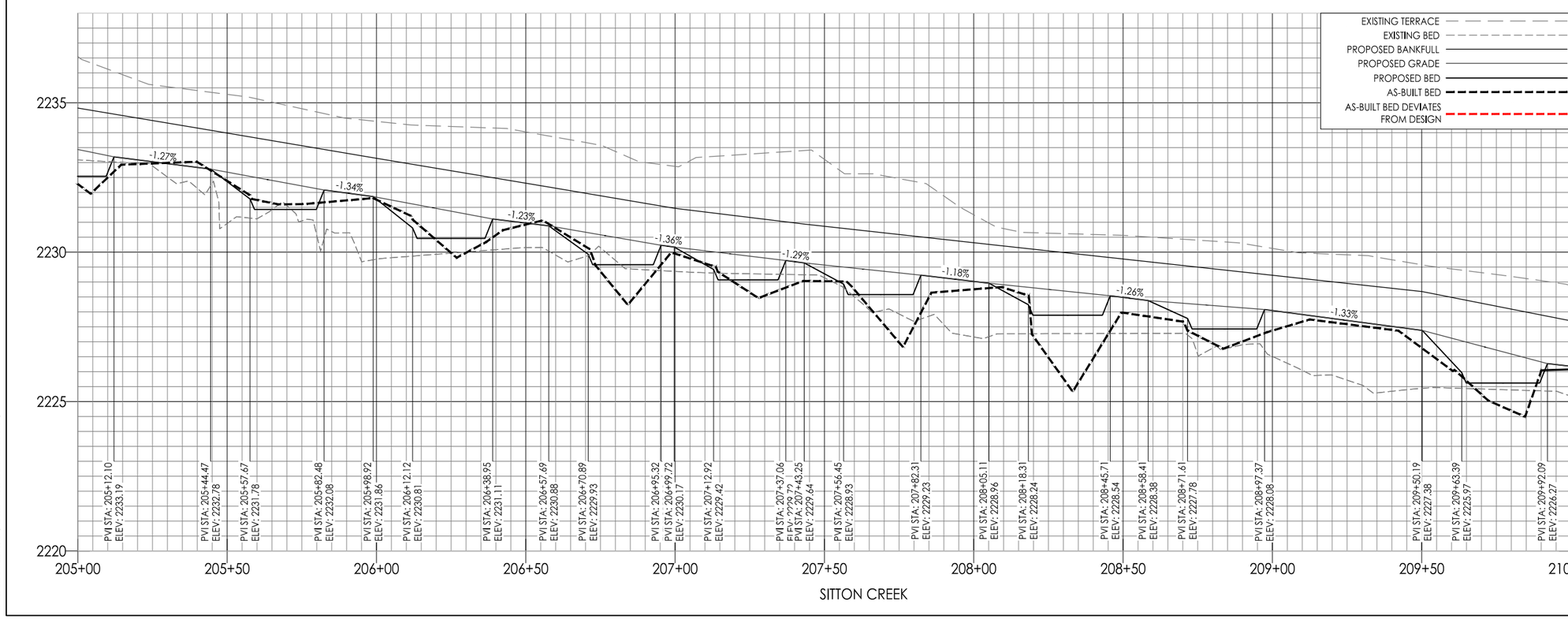
LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-2 - LEGEND	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SITTON CREEK - PLAN & PROFILE - AS-BUILT
205+00 - 210+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103
~~1103-05-AB-Sitton~~
File Name: PLANPROF-REV.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.
Revision 2
Sheet AB-7

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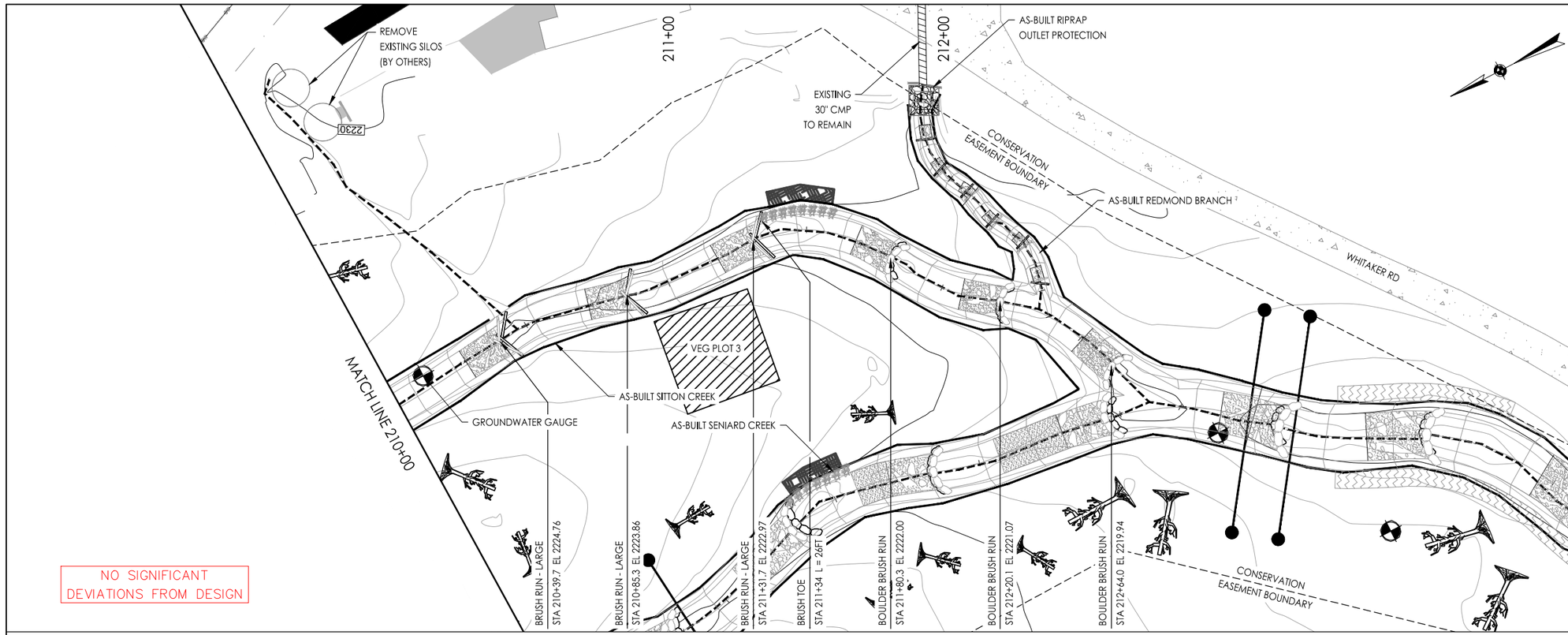

LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
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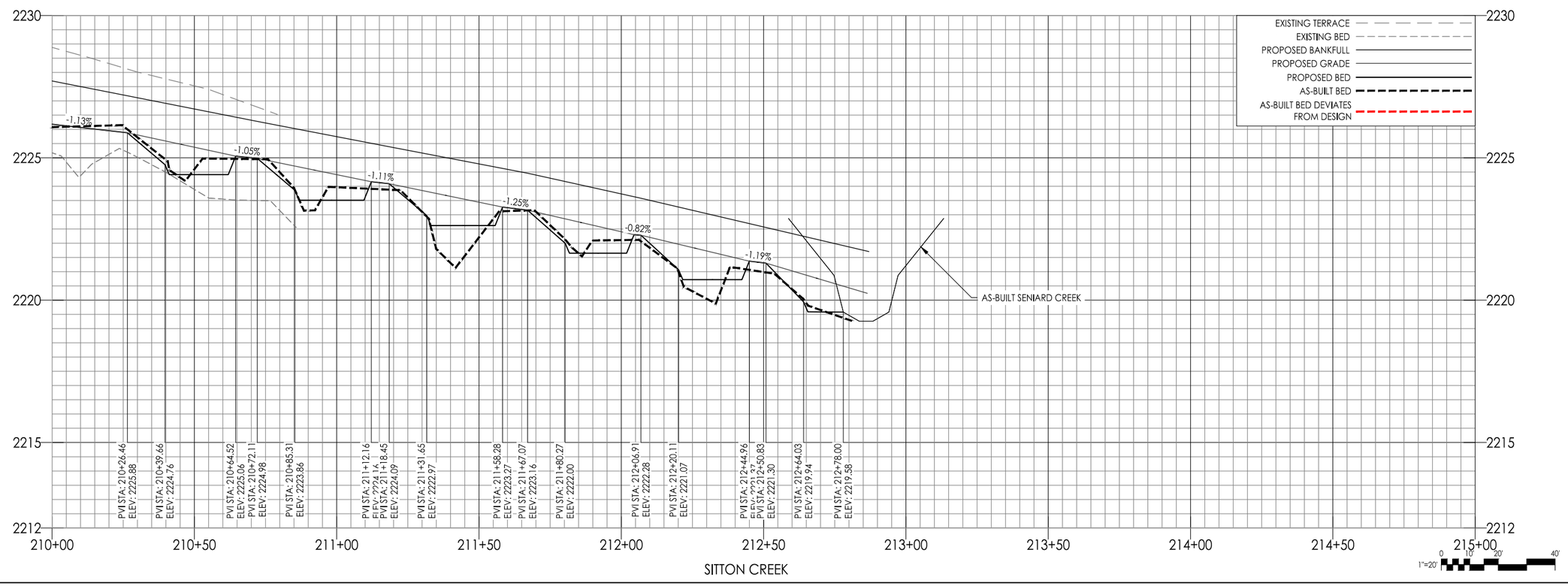
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-2 - LABELS	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
SITTON CREEK - PLAN & PROFILE - AS-BUILT
STA 210+00 - 215+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. GAGLIC
5/26/21

Project Number: 172621103
1103-05-AB-Sitton
File Name: PLANPRO-REV.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.

Revision	Sheet
2	AB-8

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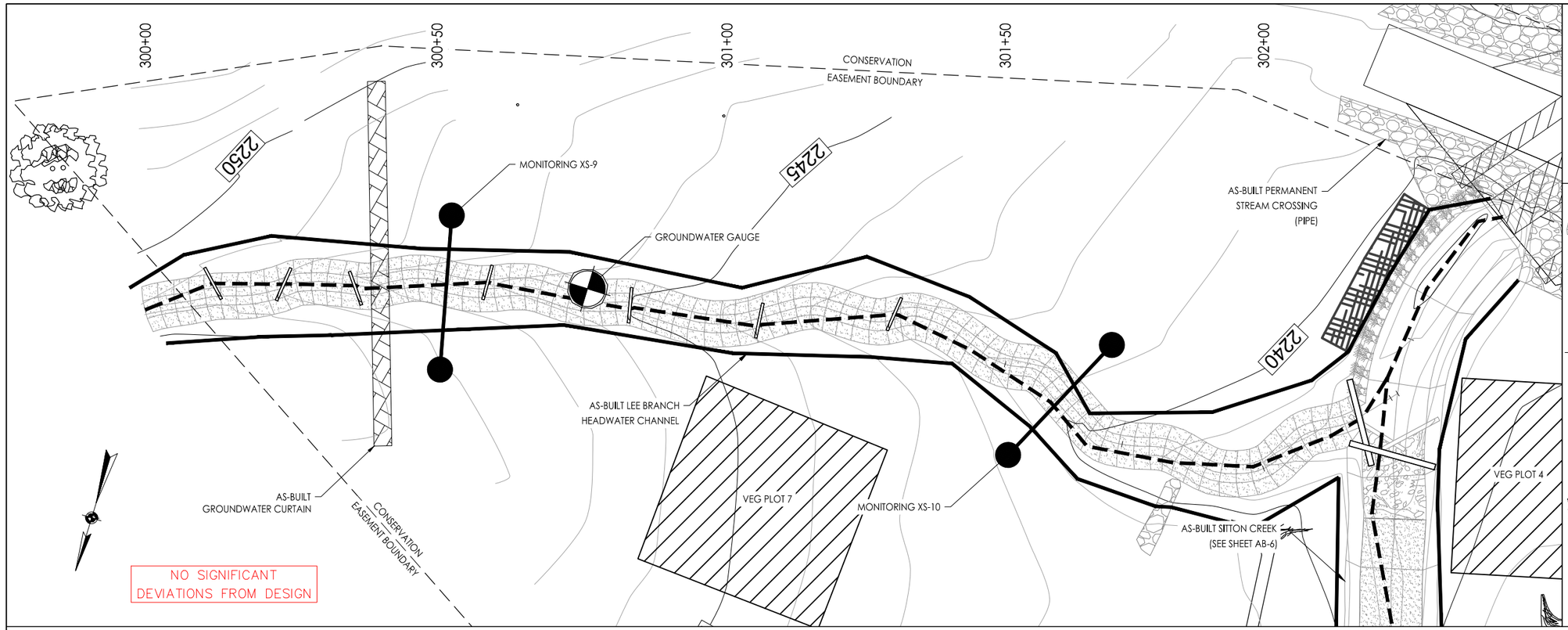


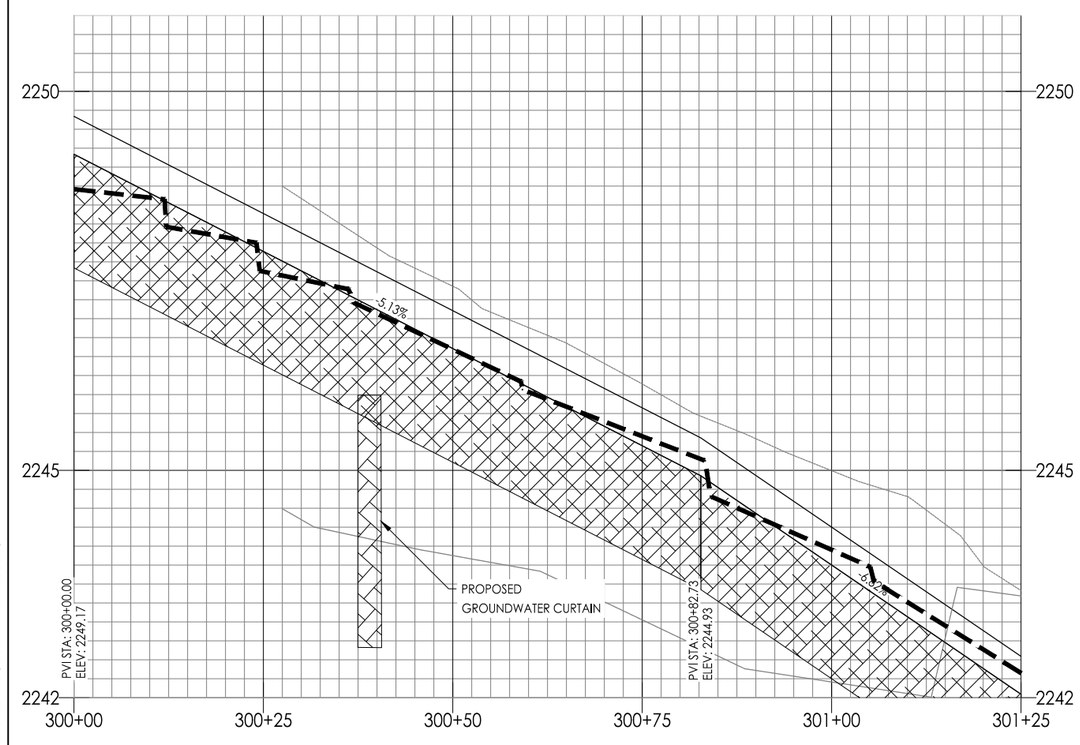
LOCATION KEY

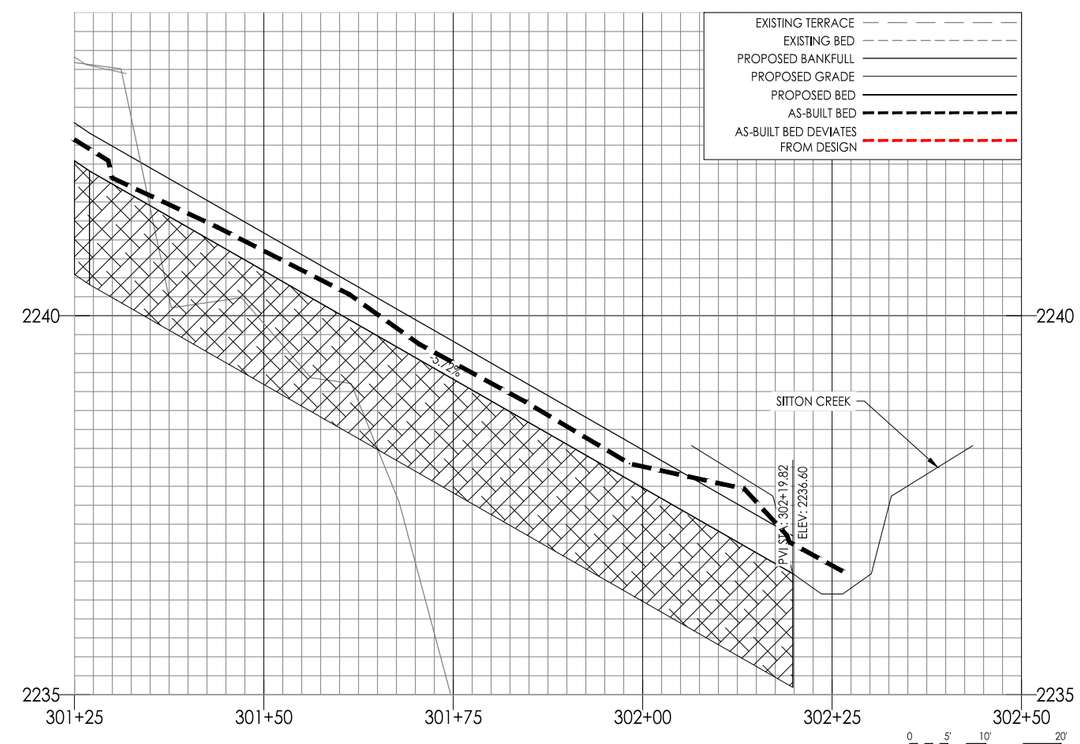
LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE





LEE BRANCH

1"=10' 0 5' 10' 20'

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Revision	By	Appd.	YY.MM.DD
REV-02 - LABELS	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
LEE BRANCH - PLAN & PROFILE - AS-BUILT
STA 300+00 -302+50

Permit-Seal
NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. SEGLE
5/26/21

Project Number: 172621103

File Name: 1103-06-AB-Lee PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. LEE - (1)

Revision 2

Sheet AB-9

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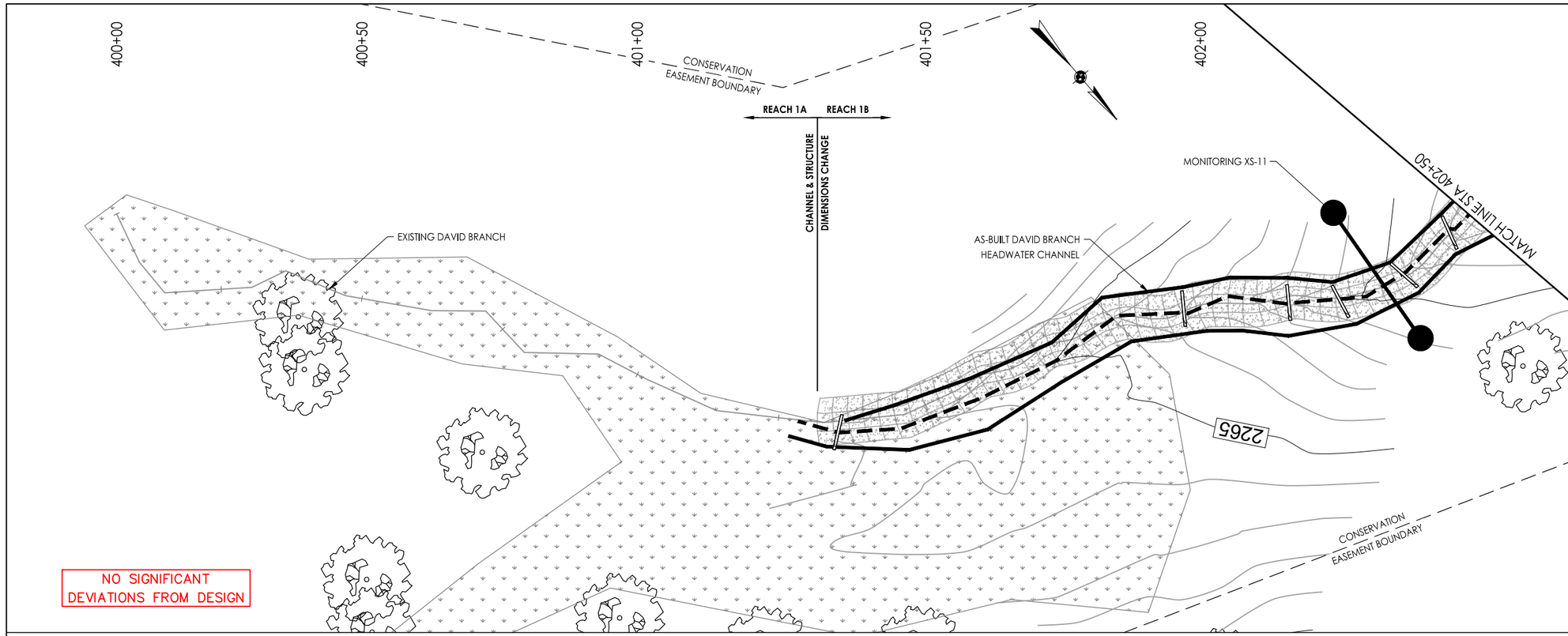

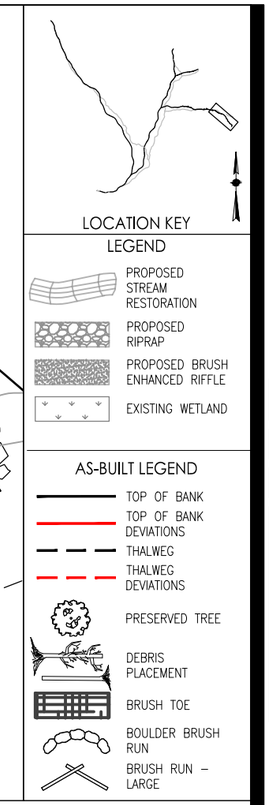

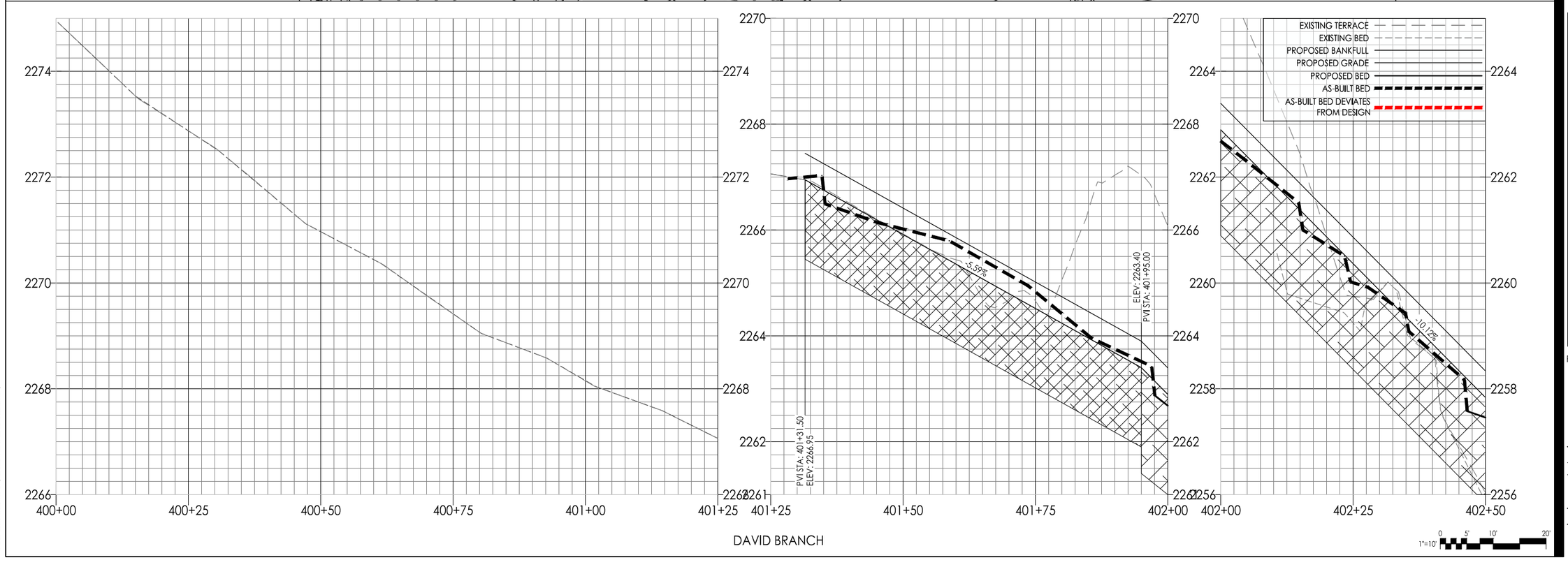

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Revision	By	Appd.	YY.MM.DD
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
DAVID BRANCH - PLAN & PROFILE - AS-BUILT
STA 400+00 - 402+50

Permit-Seal
NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103

File Name: 1103-07-AB-David PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. DAVID - (1)

Revision 0

Sheet AB-10

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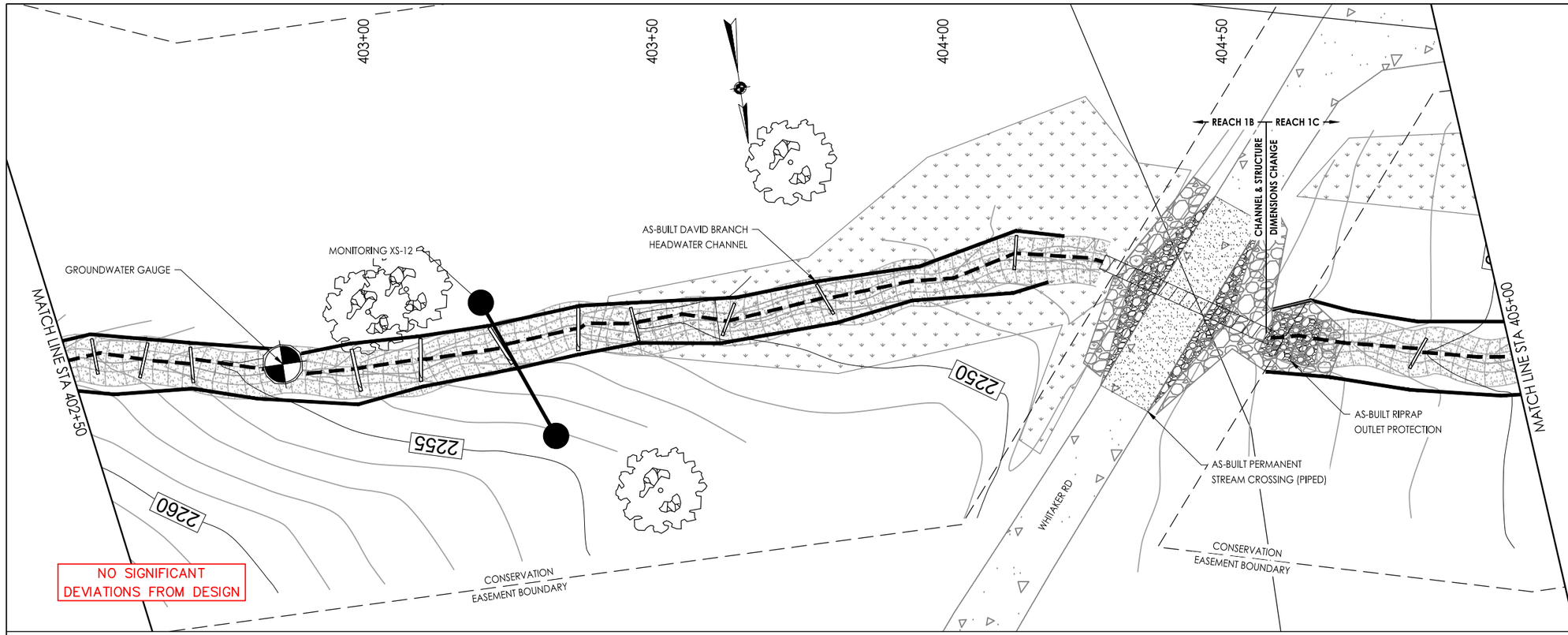


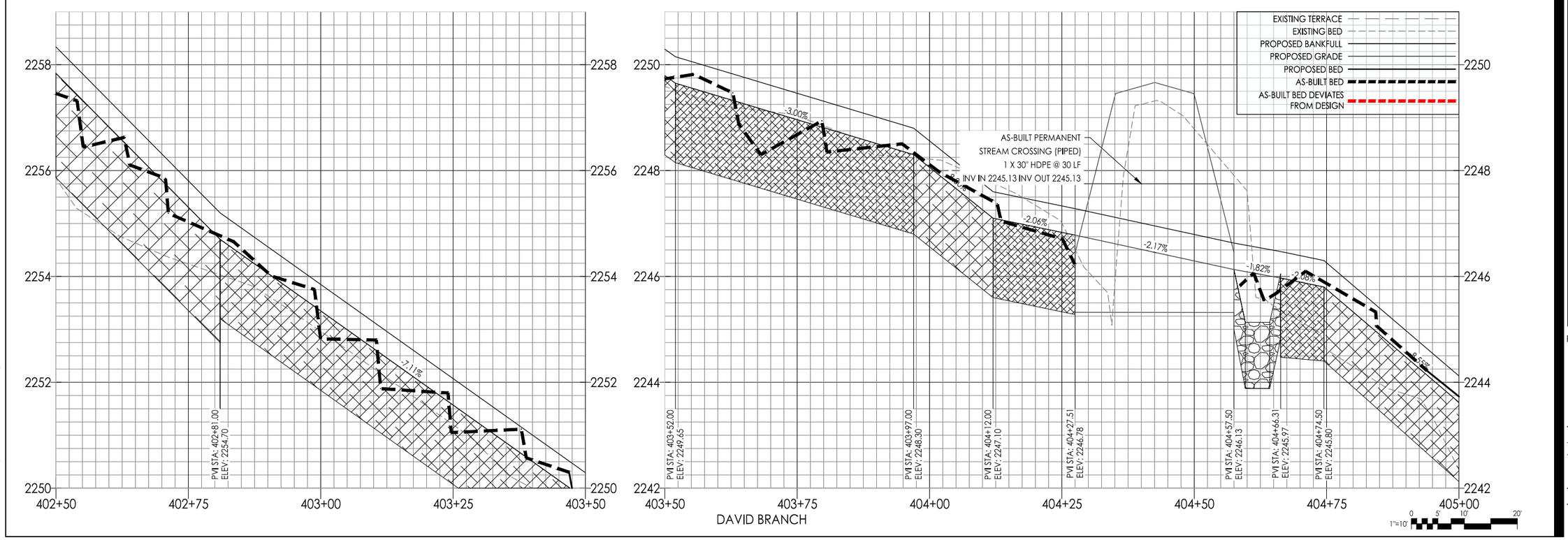
LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

- TOP OF BANK
- TOP OF BANK DEVIATIONS
- THALWEG
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC

SENIARD CREEK MITIGATION SITE

HENDERSON COUNTY, NC

Title
DAVID BRANCH - PLAN & PROFILE - AS-BUILT
STA 402+50 - 405+00

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103

File Name: 1103-07-AB-David PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. DAVID - (2)

Revision	Sheet
0	AB-11

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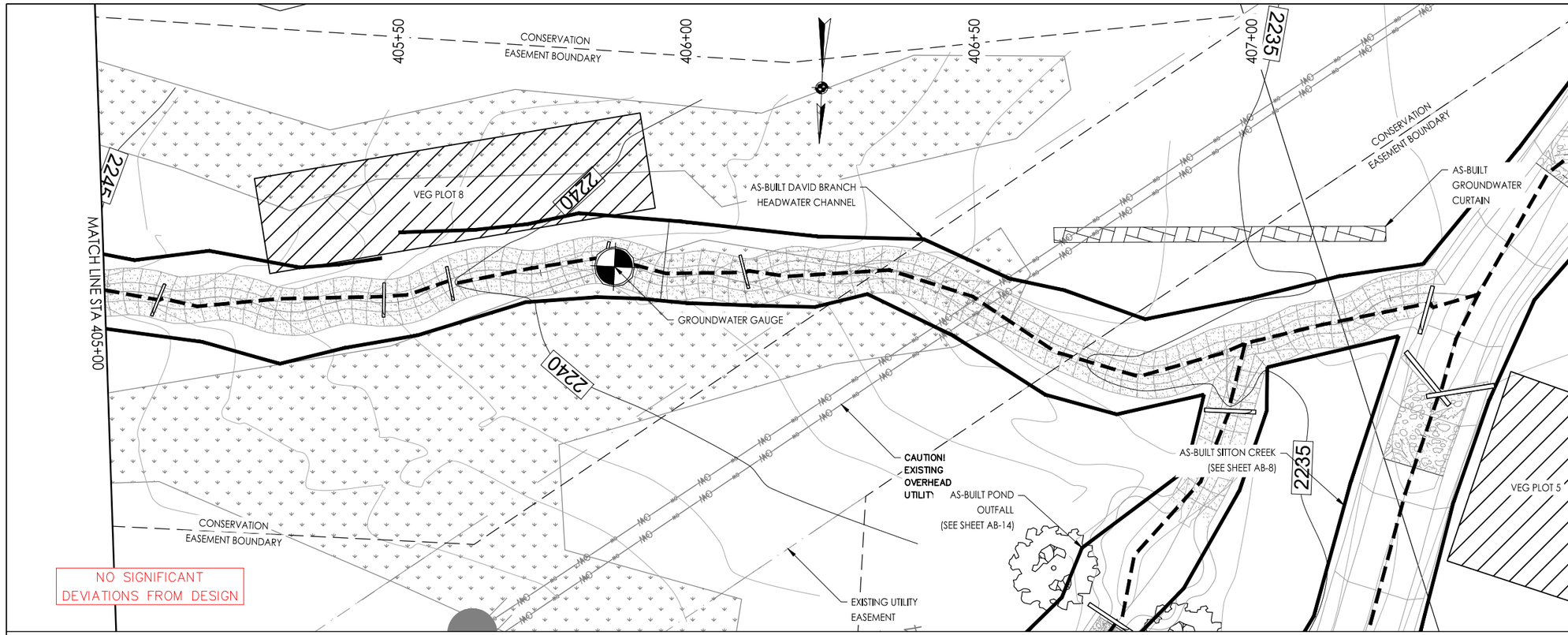

LOCATION KEY

LEGEND

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- PROPOSED RIPRAP
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- EXISTING WETLAND

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- THALWEG DEVIATIONS
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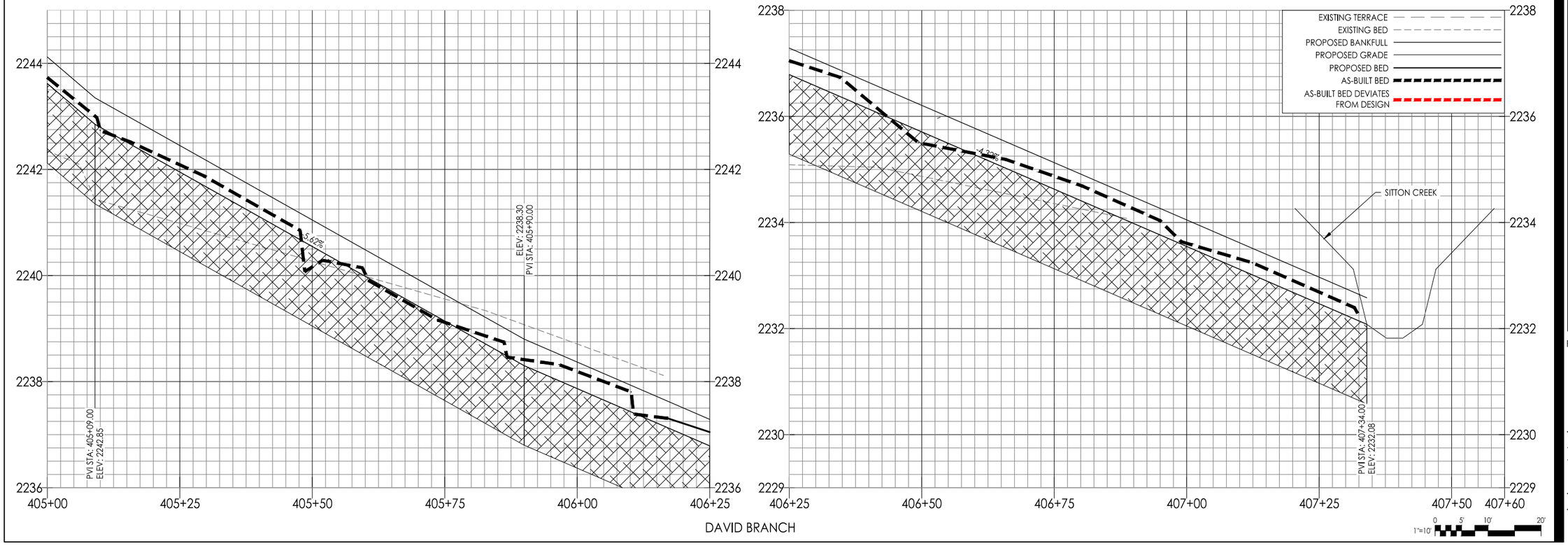
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



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Revision	By	Appd.	YY.MM.DD
REV-02 - LABELS	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
DAVID BRANCH - PLAN & PROFILE - AS-BUILT
STA 405+00 - 407+50

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103

File Name: 1103-07-AB-David PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. DAVID - (3)

Revision 2

Sheet AB-12

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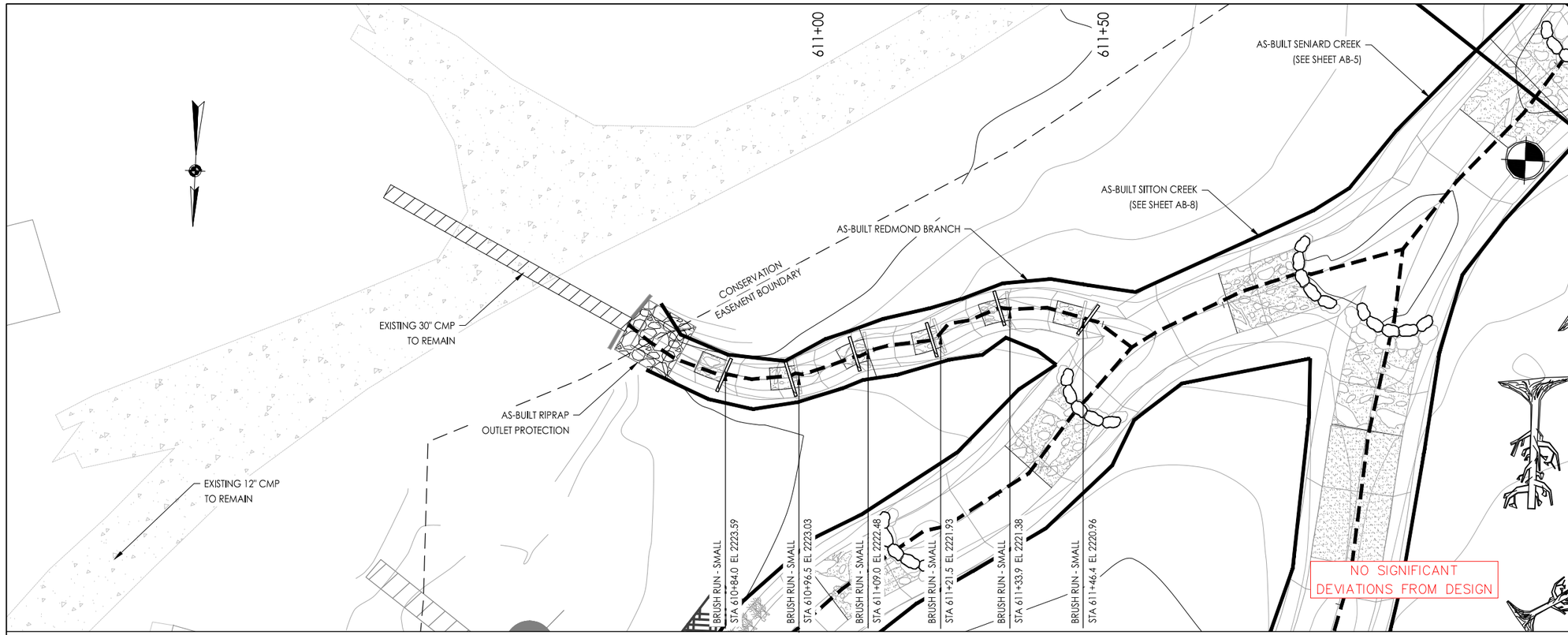

LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- PROPOSED RIPRAP
- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

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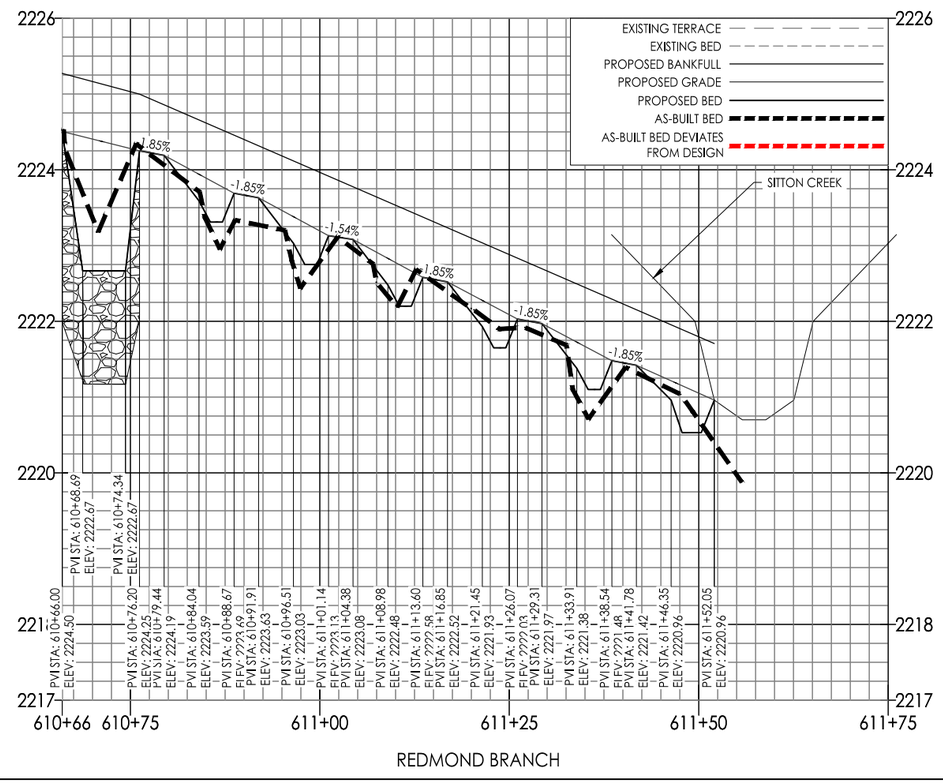
- THALWEG DEVIATIONS
- PRESERVED TREE
- DEBRIS PLACEMENT
- BRUSH TOE
- BOULDER BRUSH RUN
- BRUSH RUN – LARGE



1"=10' 0 5' 10' 20'

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Revision	By	Appd.	YY.MM.DD
REV-2 - OUTLET PROTECT AND LABELS	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
REDMOND BRANCH - PLAN & PROFILE - AS-BUILT
STA 405+00 - 407+50

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103

File Name: 1103-07-AB-David PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. REDMOND (1)

Revision 2

Sheet AB-13

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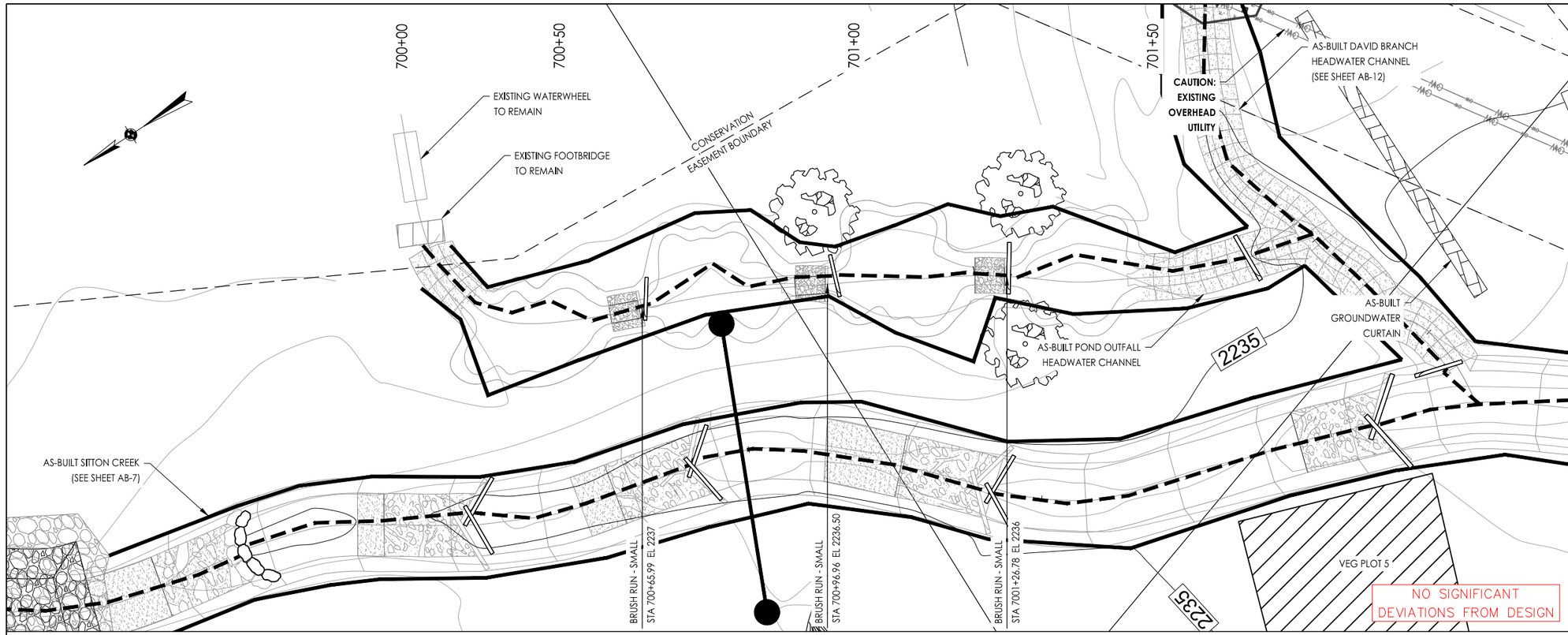

LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
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- PROPOSED BRUSH ENHANCED RIFFLE
- EXISTING WETLAND

AS-BUILT LEGEND

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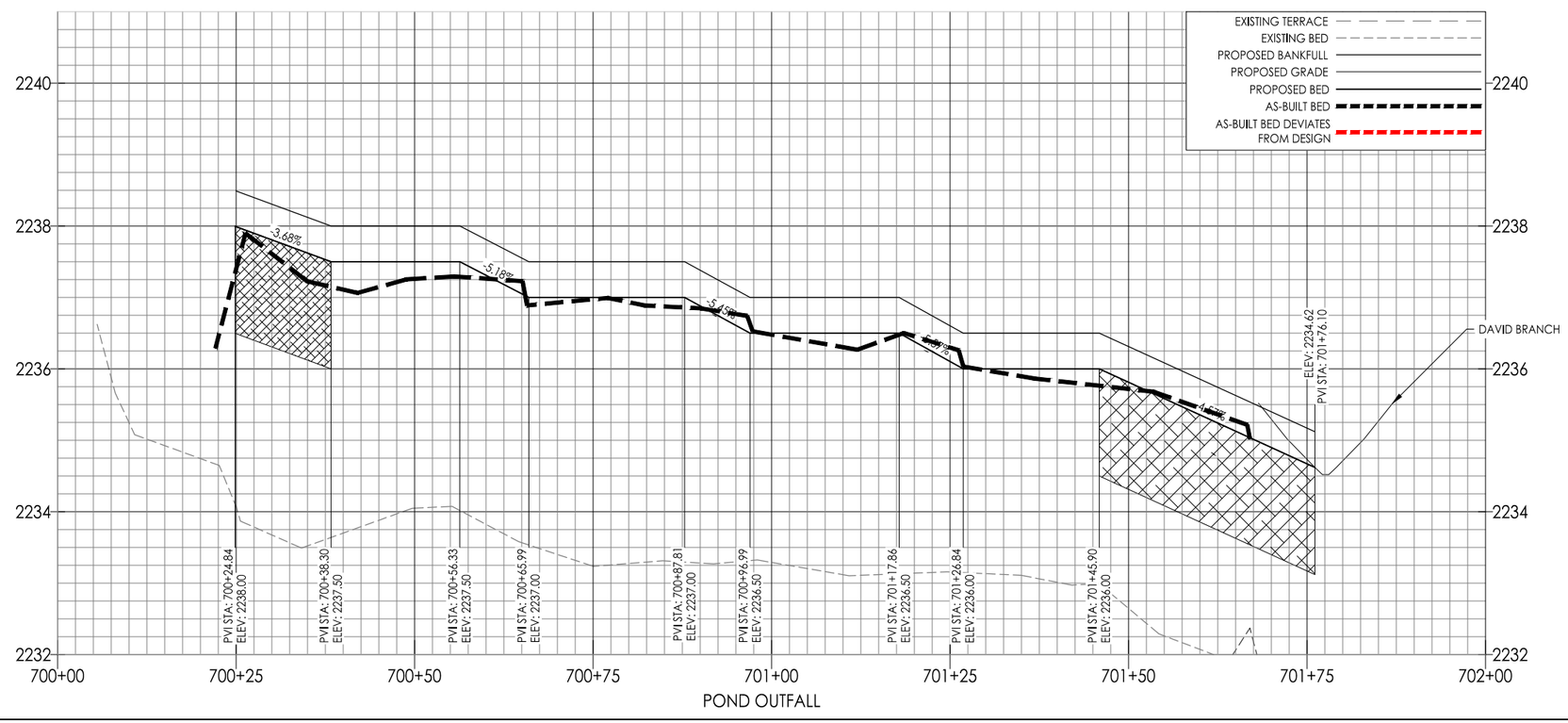
- BRUSH RUN – LARGE



1"=10' 0 5' 10' 20'

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Revision	By	Appd.	YY.MM.DD
REV-2 - LABELS	CME	CME	20.07.14
AS-BUILT REV-1 - NO DEVIATIONS NOTE	CME	CME	21.05.17

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
DAVID BRANCH - PLAN & PROFILE
STA 405+00 - 407+50

Permit-Seal
NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE
5/26/21

Project Number: 172621103

File Name: 1103-07-AB-David PLANPRO.dwg

CEG	SGG	CME	21.03.31
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. POND OUTFALL

Revision	Sheet
2	AB-14

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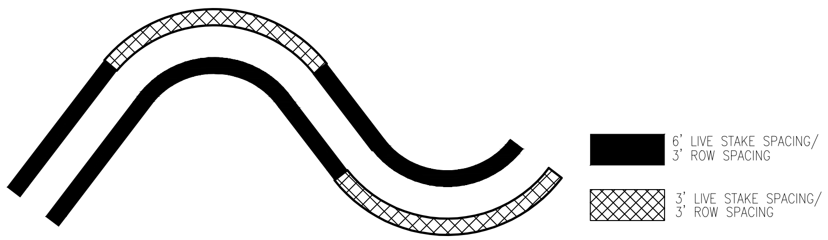
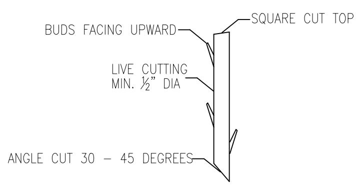
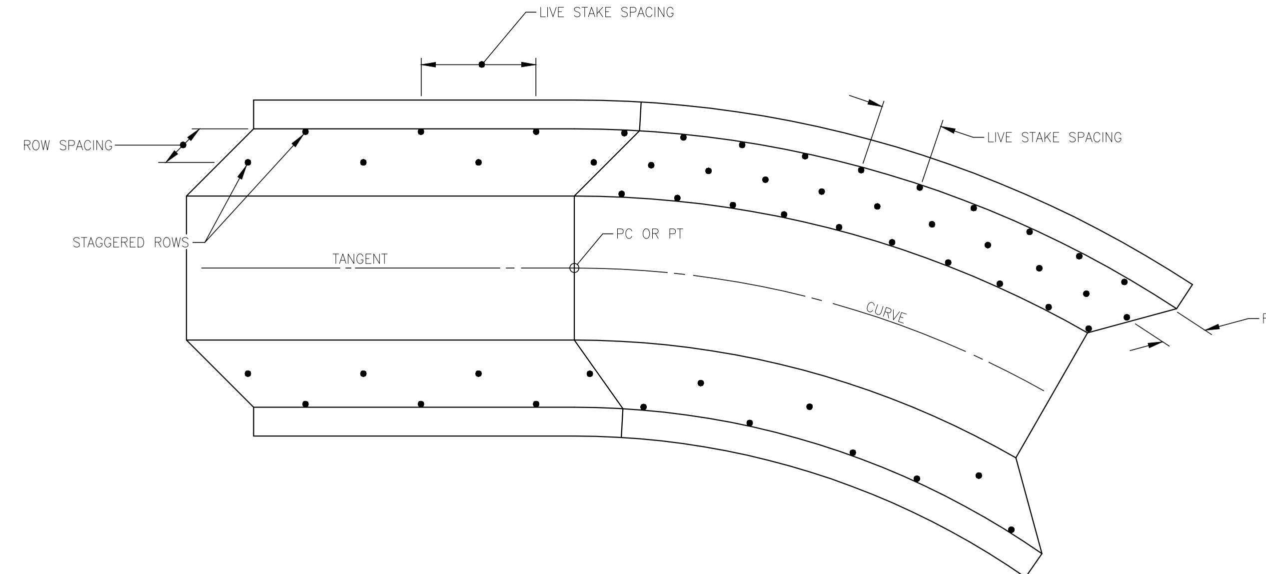


PLAN VIEW



LIVE STAKE DETAIL

NUMBER OF LIVE STAKE ROWS			
CHANNEL DEPTH (FT)	INSIDE OF BEND	TANGENT	OUTSIDE OF BEND
0 – 1.5	1	1	2
1.5 – 2.5	2	2	3
2.5 – 3.5	3	3	4



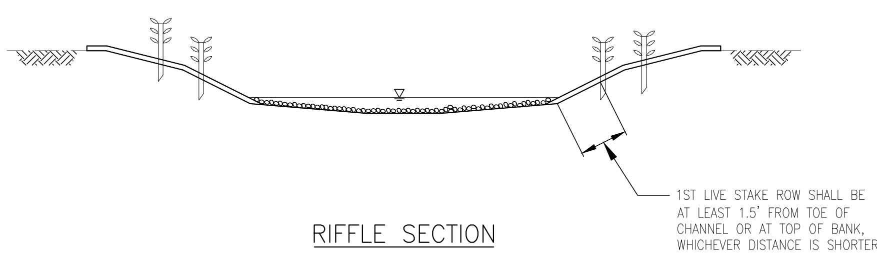
STAKING PATTERN
NOT TO SCALE

PLANTING NOTES:

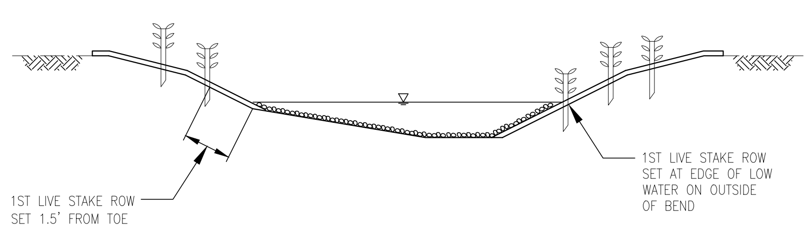
TEMPORARY AND PERMANENT SEED
1. ALL DISTURBED AREAS WILL BE STABILIZED USING MULCH AND TEMPORARY SEED TO PROVIDE ADEQUATE GROUND COVER AND CONDITION THE SOIL.
2. MULCH MUST BE ADDED TO ACHIEVE 95% COVERAGE (ROUGHLY 4 TONS/ACRE FOR WHEAT STRAW)
3. A FERTILITY SOIL TEST SHALL BE USED TO DETERMINE FERTILIZER AMOUNTS OR, IF NO SOIL TEST IS AVAILABLE, A STANDARD MIXTURE SHALL BE APPLIED OF 2 TONS OF LIME PER ACRE AND 700–1000 LBS OF 10–10–10 FERTILIZER PER ACRE.

BARE ROOT PLANTINGS
1. PLANT BARE ROOT SHRUBS AND TREES IN AREAS AS INDICATED ON THE PLANS.
2. PROVIDE 8 FT OF SPACING BETWEEN INSTALLED PLANTS YIELDING A DENSITY OF 680 STEMS/AC, DIVIDED EQUALLY BETWEEN AVAILABLE SPECIES.
3. LOOSEN COMPACTED SOIL AND PLANT IN HOLES FORMED WITH A MATTOCK, DIBBLE BAR OR EQUAL.
4. PROVIDE PLANTING HOLE SUFFICIENT IN SIZE AND DEPTH TO PREVENT CROWDING OF ROOTS.
5. ROOTS SHALL BE KEPT MOIST DURING TRANSPORTATION, DISTRIBUTION, AND INSTALLATION.
6. PLANTS SHALL BE HEELED–IN INTO MOIST SOIL IF NOT PROMPTLY PLANTED AFTER DELIVERY TO THE PROJECT SITE.

LIVE STAKES:
1. STAKES SHOULD BE SPACED ACCORDING TO PLAN VIEW DETAIL AND DIVIDED EQUALLY BETWEEN THE AVAILABLE SPECIES.
2. STAKES SHOULD BE CUT AND INSTALLED ON THE SAME DAY.
3. STAKES THAT ARE SPLIT SHALL NOT BE INSTALLED.
4. STAKES SHALL BE INSTALLED ORTHOGONAL TO THE BANK AND WITH BUDS POINTING UPWARDS.
5. STAKES SHALL BE ½ TO 2 INCHES IN DIAMETER AND 2 TO 3 FEET IN LENGTH.
6. AFTER INSTALLATION, THE TOP PORTION OF STAKES SHALL BE PRUNED WITH A SQUARE CUT LEAVING NO LESS THAN 3 INCHES AND NO MORE THAN 6 INCHES ABOVE THE GROUND.



RIFFLE SECTION
NOT TO SCALE



POOL SECTION
NOT TO SCALE

RIPARIAN & WETLAND PLANTINGS - BY STREAM

	Seniard Creek			Sitton Creek			Lee Branch		
	RIPARIAN AREA = 3.07 AC	WETLAND AREA = 0.04 AC	Setting RIP - RIPARIAN WET - WETLAND	RIPARIAN AREA = 0.79 AC	WETLAND AREA = 1.07 AC	Setting RIP - RIPARIAN WET - WETLAND	RIPARIAN AREA = 0.45 AC	WETLAND AREA = 0.0 AC	Setting RIP - RIPARIAN WET - WETLAND
	COMMON NAME	***SCIENTIFIC NAME***		**COMMON NAME**	***SCIENTIFIC NAME***		**COMMON NAME**	***SCIENTIFIC NAME***	
TREES	River Birch	*Betula nigra*	RIP	River Birch	*Betula nigra*	RIP	Serviceberry	*Amelanchier arborea*	RIP
	Tulip poplar	*Liriodendron tulipifera*	RIP	Tulip poplar	*Liriodendron tulipifera*	RIP	Northern Red Oak	*Quercus rubra*	RIP
	Black Tupelo	*Nyssa sylvatica*	RIP	Black Tupelo	*Nyssa sylvatica*	RIP	American Beech	*Fagus grandifolia*	RIP
	Black Willow	*Salix nigra*	RIP / WET	American Holly	*Ilex opaca*	RIP	Black Tupelo	*Nyssa sylvatica*	RIP
	Green Ash	*Fraxinus pennsylvanica*	RIP / WET	Black Willow	*Salix nigra*	RIP / WET	American Holly	*Ilex opaca*	RIP
	American Sycamore	*Platanus occidentalis*	RIP / WET	American Sycamore	*Platanus occidentalis*	RIP / WET	American Hornbeam	*Carpinus caroliniana*	RIP
SHRUBS	Smooth Alder	*Alnus serrulata*	WET	Smooth Alder	*Alnus serrulata*	WET	American Witch-Hazel	*Hamamelis virginiana*	RIP
	Red Chokeberry	*Aronia arbutifolia*	WET	Red Chokeberry	*Aronia arbutifolia*	WET	Highbush Blueberry	*Vaccinium corymbosum*	RIP
	Winterberry	*Ilex verticillata*	WET	Winterberry	*Ilex verticillata*	WET	Sweet Pepperbush	*Clethra alnifolia*	RIP
	Black Elderberry	*Sambucus canadensis*	WET	Black Elderberry	*Sambucus canadensis*	WET	Smooth Alder	*Alnus serrulata*	WET
							Winterberry	*Ilex verticillata*	WET
							Black Elderberry	*Sambucus canadensis*	WET
							Red Chokeberry	*Aronia arbutifolia*	WET
LIVE STAKES	Silky dogwood	*Cornus amomum*		Silky dogwood	*Cornus amomum*		Silky dogwood	*Cornus amomum*	
	Elderberry	*Sambucus canadensis*		Elderberry	*Sambucus canadensis*		Elderberry	*Sambucus canadensis*	
	Black Willow	*Salix nigra*		Black Willow	*Salix nigra*				

RIPARIAN & WETLAND PLANTINGS - BY STREAM

	David Branch			Whitaker Branch			Redmond Branch		
	RIPARIAN AREA = 1.42 AC	WETLAND AREA = 0.28 AC	Setting RIP - RIPARIAN WET - WETLAND	RIPARIAN AREA = 0.76 AC	WETLAND AREA = 0.11 AC	Setting RIP - RIPARIAN WET - WETLAND	RIPARIAN AREA = 2.16 AC	WETLAND AREA = 0.35 AC	Setting RIP - RIPARIAN WET - WETLAND
	COMMON NAME	***SCIENTIFIC NAME***		**COMMON NAME**	***SCIENTIFIC NAME***		**COMMON NAME**	***SCIENTIFIC NAME***	
TREES	Serviceberry	*Amelanchier arborea*	RIP	Serviceberry	*Amelanchier arborea*	RIP	Serviceberry	*Amelanchier arborea*	RIP
	Northern Red Oak	*Quercus rubra*	RIP	Northern Red Oak	*Quercus rubra*	RIP	Northern Red Oak	*Quercus rubra*	RIP
	Sassafras	*Sassafras albidum*	RIP	Sassafras	*Sassafras albidum*	RIP	Sassafras	*Sassafras albidum*	RIP
	Sourwood	*Oxydendrum arboreum*	RIP	Sourwood	*Oxydendrum arboreum*	RIP	Sourwood	*Oxydendrum arboreum*	RIP
	American Holly	*Ilex opaca*	RIP	American Holly	*Ilex opaca*	RIP	American Holly	*Ilex opaca*	RIP
	American Hornbeam	*Carpinus caroliniana*	RIP	American Hornbeam	*Carpinus caroliniana*	RIP	American Hornbeam	*Carpinus caroliniana*	RIP
SHRUBS	American Witch-Hazel	*Hamamelis virginiana*	RIP	American Witch-Hazel	*Hamamelis virginiana*	RIP	American Witch-Hazel	*Hamamelis virginiana*	RIP
	Highbush Blueberry	*Vaccinium corymbosum*	RIP	Highbush Blueberry	*Vaccinium corymbosum*	RIP	Highbush Blueberry	*Vaccinium corymbosum*	RIP
	Sweet Pepperbush	*Clethra alnifolia*	RIP	Sweet Pepperbush	*Clethra alnifolia*	RIP	Sweet Pepperbush	*Clethra alnifolia*	RIP
	Smooth Alder	*Alnus serrulata*	WET	Smooth Alder	*Alnus serrulata*	WET	Smooth Alder	*Alnus serrulata*	WET
	Winterberry	*Ilex verticillata*	WET	Winterberry	*Ilex verticillata*	WET	Winterberry	*Ilex verticillata*	WET
	Black Elderberry	*Sambucus canadensis*	WET	Black Elderberry	*Sambucus canadensis*	WET	Black Elderberry	*Sambucus canadensis*	WET
	Red Chokeberry	*Aronia arbutifolia*	WET	Red Chokeberry	*Aronia arbutifolia*	WET	Red Chokeberry	*Aronia arbutifolia*	WET
				Smooth Witherod	*Viburnum nudum*	WET	Smooth Witherod	*Viburnum nudum*	WET
LIVE STAKES	Silky dogwood	*Cornus amomum*		Silky dogwood	*Cornus amomum*		Silky dogwood	*Cornus amomum*	
	Elderberry	*Sambucus canadensis*		Elderberry	*Sambucus canadensis*		Elderberry	*Sambucus canadensis*	

NOTE: PLANT SPECIES TO BE INSTALLED SHALL BE DEPENDENT ON SPECIES AVAILABILITY. CONTRACTOR MAY MODIFY COMPOSITION AS APPROVED BY ENGINEER.

NO SIGNIFICANT DEVIATIONS FROM DESIGN

PERMANENT RIPARIAN MIX		
Riparian Buffer Mix (Mellow Marsh Farm)		
COMMON NAME	***SCIENTIFIC NAME***	% MIX
Autumn bentgrass	Agrostis perennans	15
Big bluestem	Andropogon gerardii	10
Lanceleaf coreopsis	Coreopsis lanceolata	10
Virginia wild rye	Elymus virginicus	20
Soft rush	Juncus effusus	5
Switchgrass	Panicum virgatum	15
Black-eyed susan	Rudbeckia hirta	10
Little bluestem	Schizachyrium scoparium	5
Indian grass	Sorghastrum nutans	5
Eastern gamagrass	Tripsacum dactyloides	5
Recommended application rate: 20-25 lbs. per acre		

PERMANENT WETLAND MIX		
Wetland Seed Mix (Mellow Marsh)		
COMMON NAME	***SCIENTIFIC NAME***	% MIX
Showy tickseed sunflower	Bidens aristosa	7
Fox sedge	Carex vulpinoidea	12
Deer tongue	Dichanthelium clandestinum	8
Riverbank wildrye	Elymus riparius	20
Soft rush	Juncus effusus, NC Ecotype	4
Smooth panicgrass	Panicum dichotomiflorum	14
Redtop panicgrass	Panicum rigidulum	8
Switchgrass	Panicum virgatum	23
Pennsylvania smartweed	Polygonum pensylvanicum	2
Eastern bur reed	Sparganium americanum	2
Recommended application rate: 20-25 lbs. per acre		

NOTE: PERMANENT WETLAND MIX SHALL BE APPLIED TO ALL EXISTING AND PROPOSED WETLAND AREAS. PERMANENT RIPARIAN MIX SHALL BE APPLIED TO ALL OTHER AREAS INSIDE CONSERVATION EASEMENT.

COMMON NAME	SCIENTIFIC NAME	SEEDING DENSITY (lbs/acre)	SEEDING DATES
Temporary Seeding			
Partridge Pea	Chamaecrista fasciculata	8	MAR 15 - OCT 15
Daikon Radish	*Paphanussativus var. longipinnatus*	8	MAR 15 - OCT 15
Browntop Millet	*Echinochloa esculenta*	8	MAR 15 - OCT 15
Buckwheat	Fagopyrum esculentum	10	MAR 15 - OCT 15
Cereal Rye	Secale cereal	26	OCT 15 - MAR 15

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Revision	By	Appd.	YY.MM.DD
REV 2 - PLANTING TABLES	CME	CME	20.07.14

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS, LLC
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NC

Title
PLANTING DETAILS - AS-BUILT

Permit-Seal

Project Number: 172621103

CEG	SGG	CME	21.05.17
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Revision 0
Sheet AB - P-1

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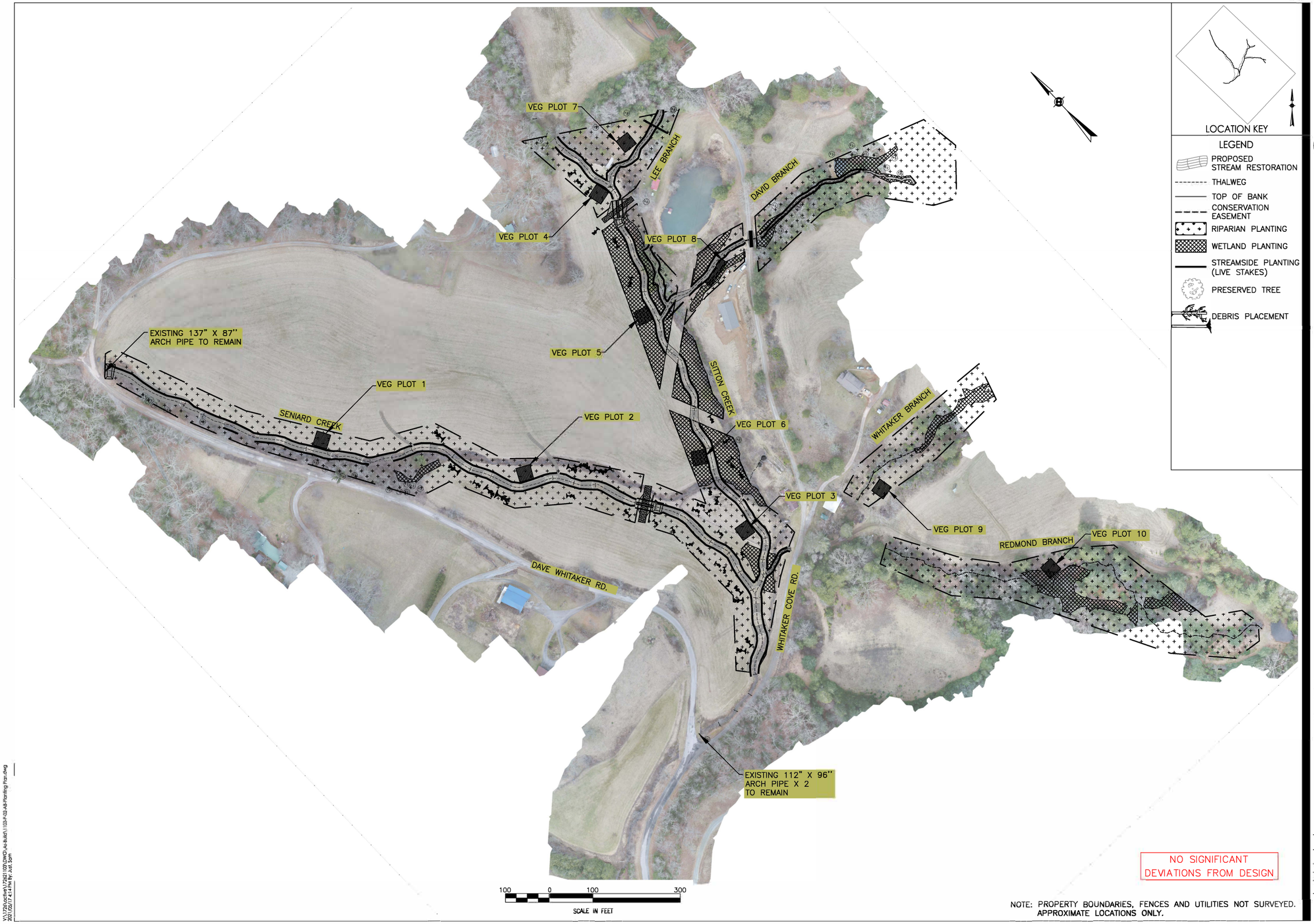

NOTE: PROPERTY BOUNDARIES, FENCES AND UTILITIES NOT SURVEYED.
APPROXIMATE LOCATIONS ONLY.

LOCATION KEY

LEGEND

- PROPOSED STREAM RESTORATION
- THALWEG
- TOP OF BANK
- CONSERVATION EASEMENT
- RIPARIAN PLANTING
- WETLAND PLANTING
- STREAMSIDE PLANTING (LIVE STAKES)
- PRESERVED TREE
- DEBRIS PLACEMENT

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Revision	By	Appd.	YY.MM.DD
REV 2 - LINE WEIGHTS	CME	CME	20.07.14

Issued	By	Appd.	YY.MM.DD

Client/Project
EW SOLUTIONS
SENIARD CREEK MITIGATION SITE
HENDERSON COUNTY, NORTH CAROLINA

Title
PLANTING PLAN - AS-BUILT

Permit-Seal

NORTH CAROLINA PROFESSIONAL SEAL 038595 ENGINEER CHRISTOPHER M. ENGLE

Project Number: 172621103

CEG	SGG	CME	21.05.17
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Revision 0

Sheet AB-P-2

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