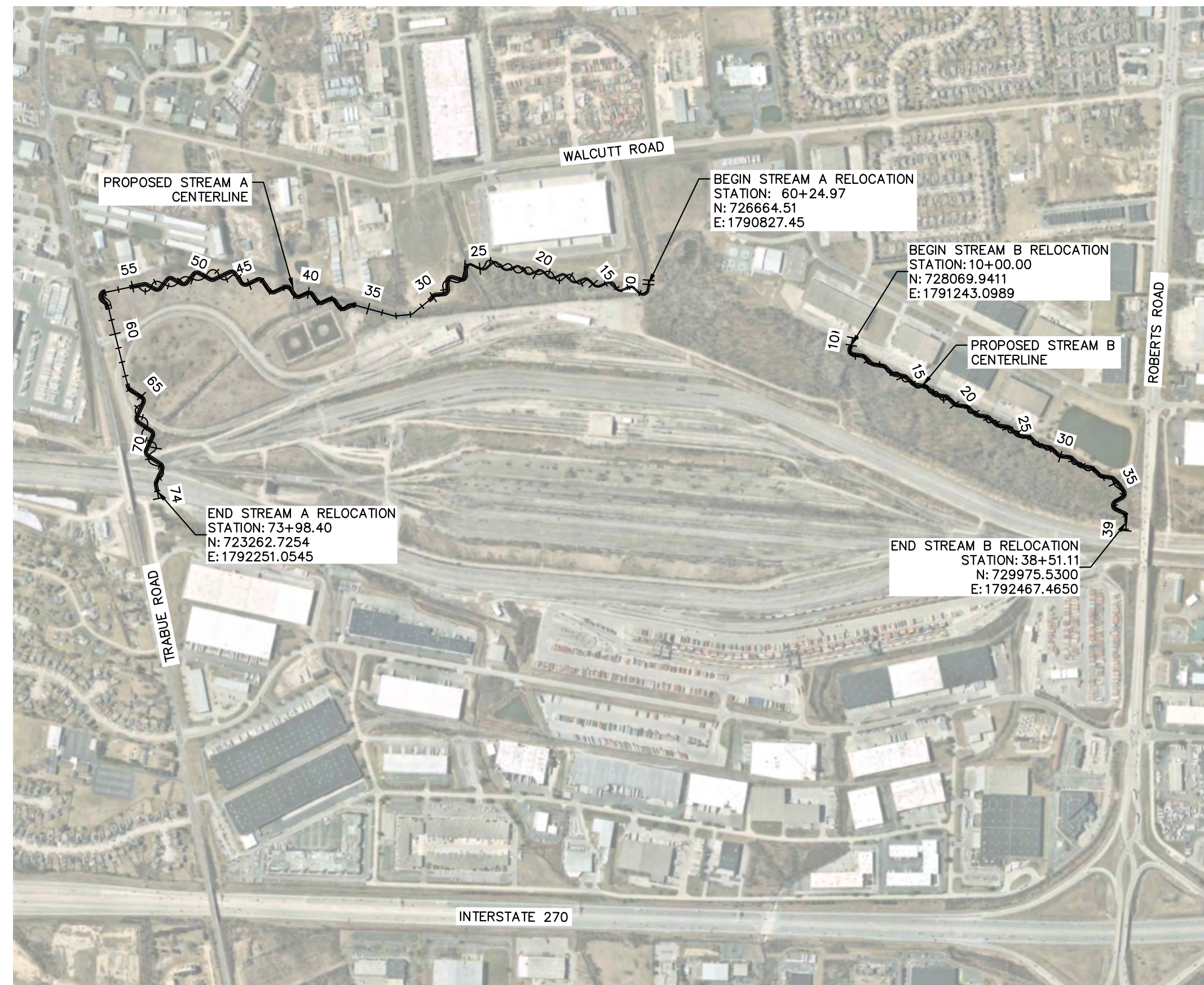


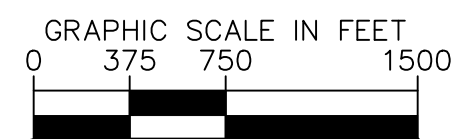
BUCKEYE XO, LLC BUCKEYE YARD STREAM RELOCATION

STATE OF OHIO, FRANKLIN COUNTY
CITY OF COLUMBUS
2022



SITE LOCATION MAP

IMAGE TEXT TAKEN FROM OGRIP. ACCESSED 03/05/2021

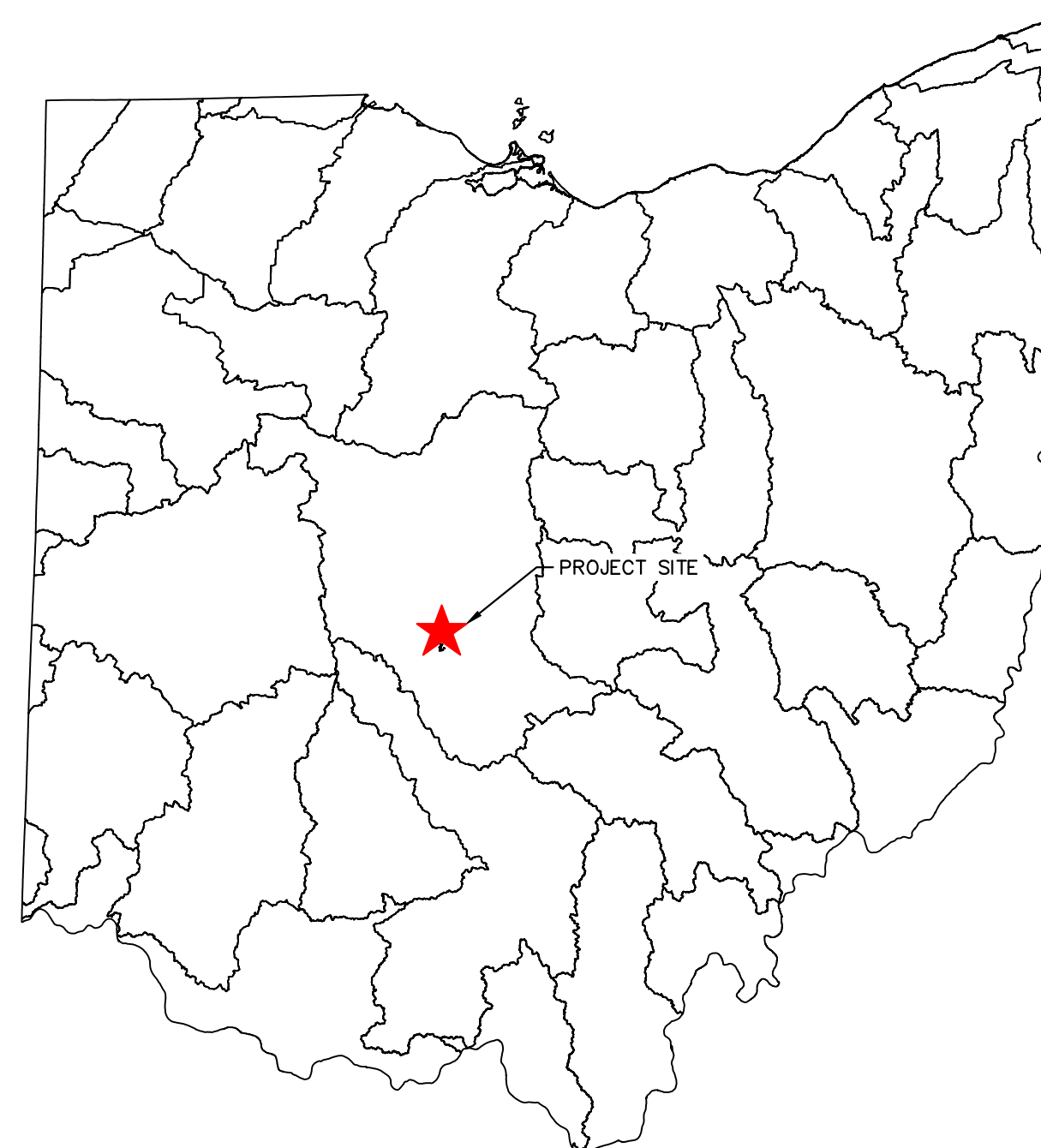


MITIGATION TABLE			
PROJECT LENGTH			
REACH	EXISTING	PROPOSED TOTAL	IMPACTED TOTAL
STREAM	7412 LF	7722 LF	7412 LF
CULVERTED STREAM	255 LF	1260 LF	255 LF
STREAM CORRIDOR PROTECTION ZONE	20.332 AC.	20.478 AC.	20.332 AC.
WETLANDS	0.78 AC.	0.82 AC.	0.78 AC.

VOLUME TABLE			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
CUT/FILL VOLUME	208,830	6,061	202,769 (CUT)

Sheet List Table	
Sheet Number	Sheet Title
EC1.0	COVER SHEET
EC2.0	EXISTING CONDITIONS
EC2.1	EXISTING CONDITIONS
EC3.0	EROSION AND SEDIMENT CONTROL PLAN - OVERVIEW A
EC3.1	EROSION AND SEDIMENT CONTROL PLAN - OVERVIEW B
EC3.2	EROSION AND SEDIMENT CONTROL PLAN
EC3.3	EROSION AND SEDIMENT CONTROL PLAN
EC3.4	EROSION AND SEDIMENT CONTROL PLAN
EC3.5	EROSION AND SEDIMENT CONTROL PLAN
EC4.0	OVERALL PLAN AND KEY SHEET
EC5.0	TYPICAL SECTIONS
EC5.1	TYPICAL SECTIONS
EC5.2	TYPICAL SECTIONS
EC6.0	STREAM PLAN AND PROFILE
EC6.1	STREAM PLAN AND PROFILE
EC6.2	STREAM PLAN AND PROFILE
EC6.3	STREAM PLAN AND PROFILE
EC6.4	STREAM PLAN AND PROFILE
EC6.5	STREAM PLAN AND PROFILE
EC6.6	STREAM PLAN AND PROFILE
EC6.7	STREAM PLAN AND PROFILE
EC6.8	STREAM PLAN AND PROFILE
EC6.9	STREAM PLAN AND PROFILE
EC6.10	STREAM PLAN AND PROFILE
EC6.11	STREAM PLAN AND PROFILE
EC7.0	STREAM DETAILS
EC7.1	STREAM DETAILS
EC7.2	STREAM DETAILS

STANDARD CONSTRUCTION DRAWINGS	
CITY OF COLUMBUS	
AA-S153	AA-S134B



USGS 8-DIGIT HUC BOUNDARY MAP

UPPER SCIOTO
HUC ID: 05060001
NOT TO SCALE



UPPER PORTION OF EXISTING STREAM 11



LOWER PORTION OF EXISTING STREAM 11



UPPER PORTION OF EXISTING STREAM 10



LOWER PORTION OF EXISTING STREAM 10

PROJECT TEAM

DEVELOPER/OWNER
BUCKEYE XO, LLC
2100 ROSS AVE., STE. 895
DALLAS, TX 75201
TEL: (469) 226-1269
EMAIL: WILLIAMS@XEBECREALTY.COM
CONTACT: WILLIAM SHANNON

CIVIL ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.
7965 NORTH HIGH STREET, SUITE 200
COLUMBUS, OH 43235
TEL: (614) 454-6696
CONTACT: JUSTIN MULLER, P.E.
EMAIL: JUSTIN.MULLER@KIMLEY-HORN.COM

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COLUMBUS, OH 43235
PHONE: 614-472-8646
WWW.KIMLEY-HORN.COM

DESIGNED BY: MCS
DRAWN BY: MCS
CHECKED BY: JMM

COVER SHEET

STREAM RELOCATION PLANS
BUCKEYE YARD
CITY OF COLUMBUS, FRANKLIN COUNTY, OH

ORIGINAL ISSUE:
10/17/2022

KHA PROJECT NO.
190118000

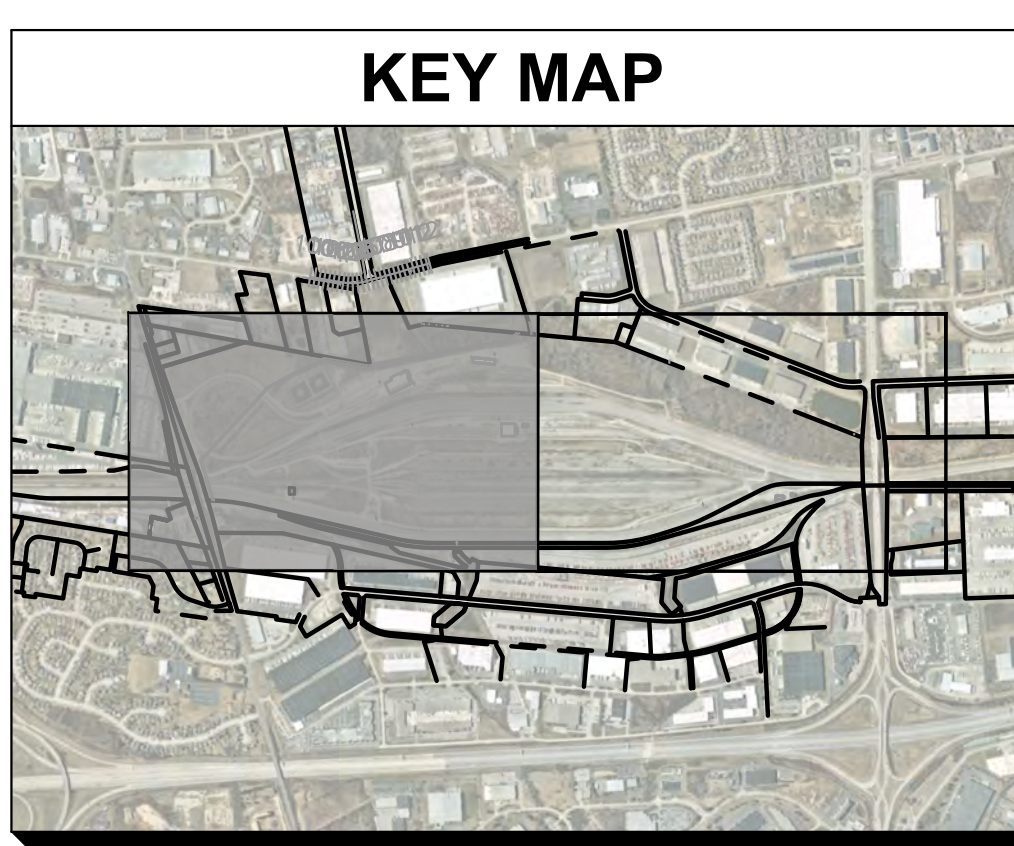
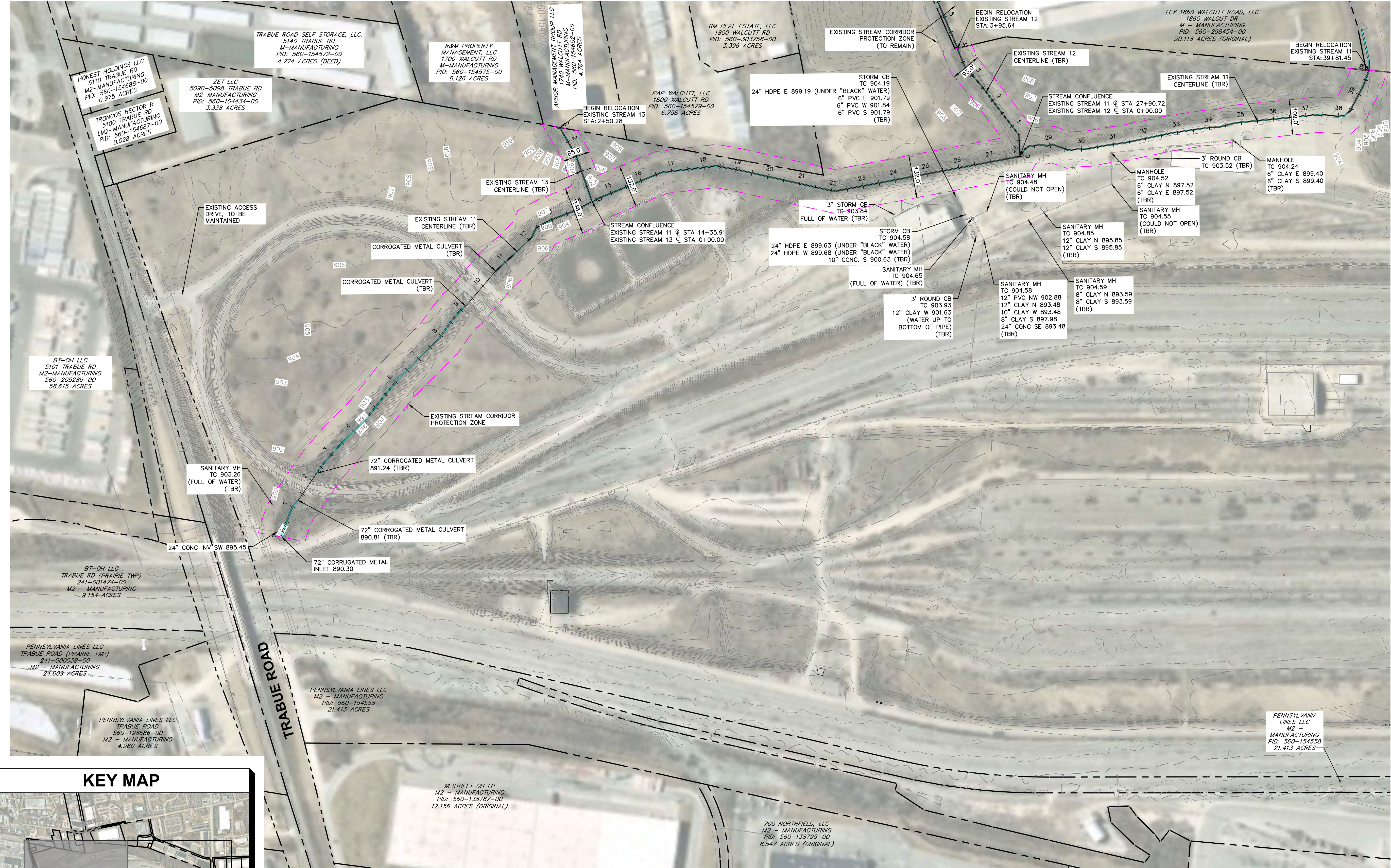
SHEET NUMBER

EC1.0

Drawing name: K:\CIBL\JDEA\190118000_3dloc\Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\COVER SHEET.dwg Layout1 Oct 17, 2022 5:00pm by: Gavin Rivers
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No.	REVISIONS	DATE	BY	APR DATE	APR BY

Drawing name: K:\CIBL\JDEA\190118000_34dec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlusSheets\8_StreamRelocation\EXISTING CONDITIONS.dwg
 OVERVIEW A Oct 17, 2022 5:00pm by: Colin Rivera
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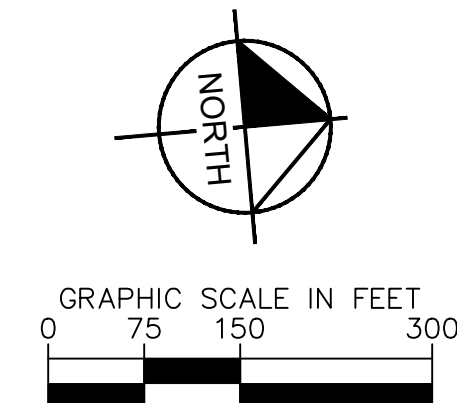
LEGEND

	EXISTING PROPERTY LINE		EXISTING PAVEMENT
	EXISTING RIGHT OF WAY		EXISTING WATER LINE
	EXISTING EASEMENT		EXISTING GAS LINE
	EXISTING PAVEMENT		EXISTING OVERHEAD LINE
	EXISTING CENTERLINE		EXISTING ELECTRIC
	EXISTING STORM		EXISTING STREAM CORRIDOR PROTECTION ZONE TO BE REPLACED (±20.332 AC.)
	EXISTING SANITARY		STREAM CHANNEL

EXISTING STREAM TABLE

STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
9	0.57	119	±320
10	0.40	104	±2552
11	0.45	109	±3921
12	0.30	93	±369
13	0.24	85	±250

NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.



No.	REVISIONS	DATE	BY	APR DATE	APR BY

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 COLUMBUS, OH 43235
 PHONE: 614-472-8646
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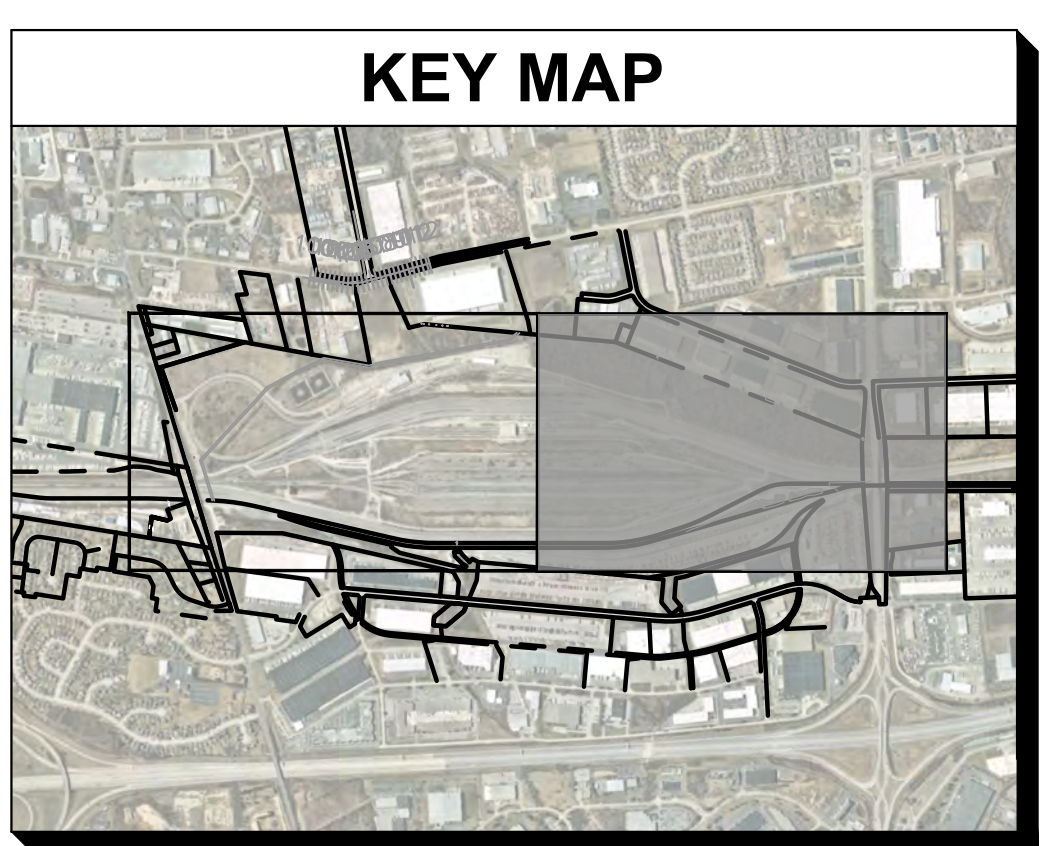
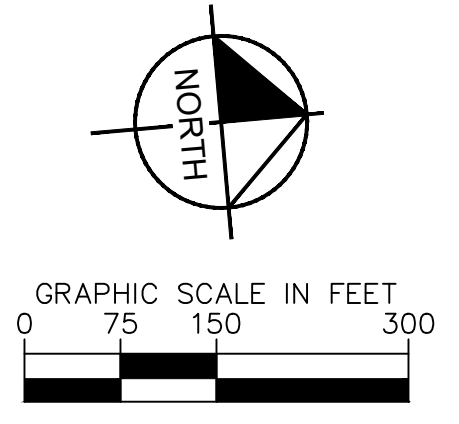
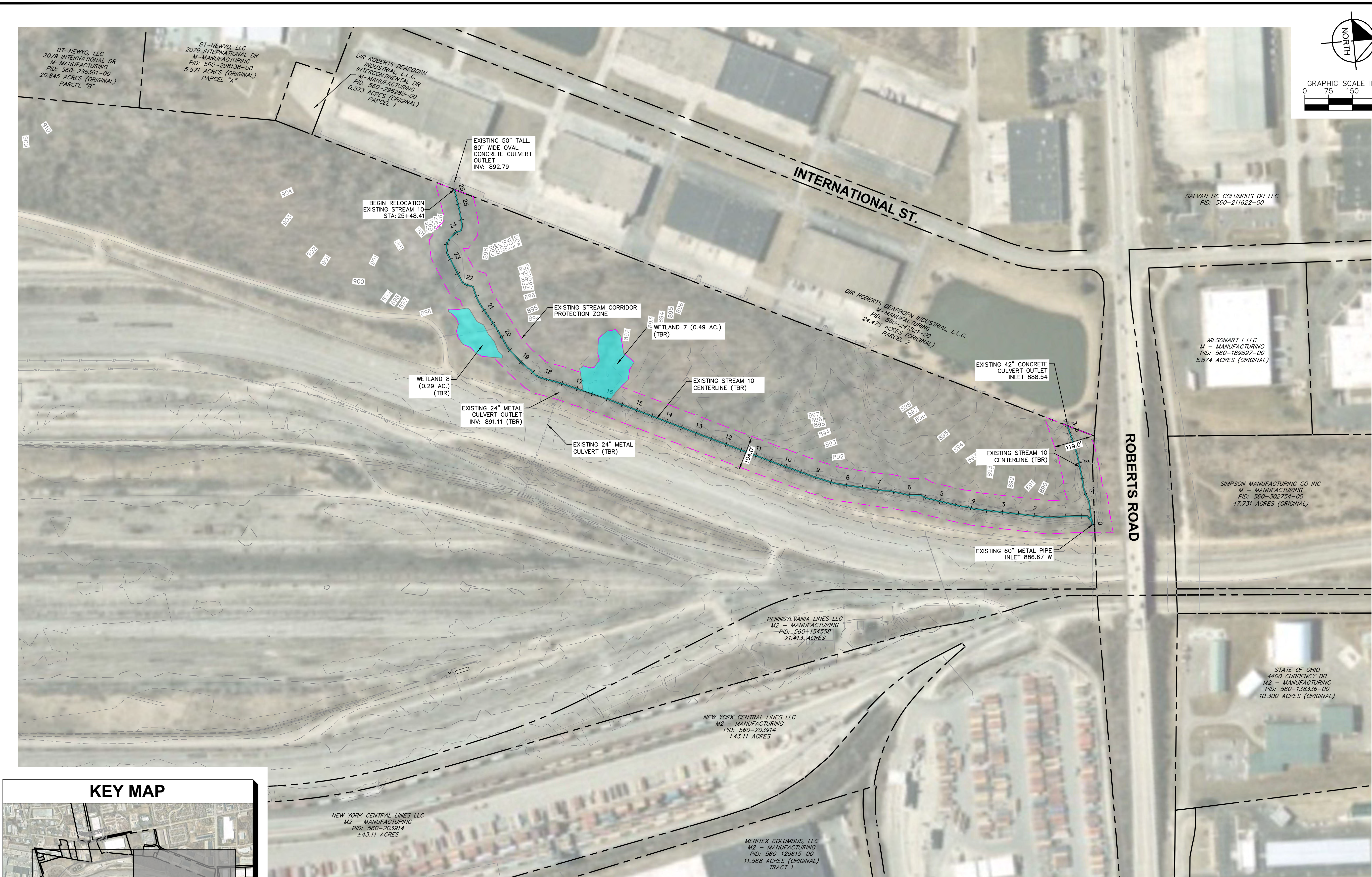
SCALE:
 DESIGNED BY: MCS
 DRAWN BY: MCS
 CHECKED BY: JMM

EXISTING CONDITIONS

**STREAM RELOCATION PLANS
 BUCKEYE YARD**
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

ORIGINAL ISSUE:
 10/17/2022
 KHA PROJECT NO.
 190118000
 SHEET NUMBER
EC2.0

Drawing name: K:\CIB\JDE\190118000_4dec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlotSheets\8_StreamRelocation\EXISTING CONDITIONS.dwg OVERVIEW B Oct 17, 2022 5:00pm by: Colin Rivera
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LEGEND

-----	EXISTING PROPERTY LINE	-----	EXISTING PAVEMENT
-----	EXISTING RIGHT OF WAY	-----	EXISTING WATER LINE
-----	EXISTING EASEMENT	-----	EXISTING GAS LINE
-----	EXISTING PAVEMENT	-----	EXISTING OVERHEAD LINE
-----	EXISTING CENTERLINE	-----	EXISTING ELECTRIC
-----	EXISTING STORM	-----	EXISTING STREAM CORRIDOR PROTECTION ZONE TO BE REPLACED (±20.332 AC.)
-----	EXISTING SANITARY	-----	STREAM CHANNEL

EXISTING STREAM TABLE

STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
9	0.57	119	±320
10	0.40	104	±2552
11	0.45	109	±3921
12	0.30	93	±369
13	0.24	85	±250

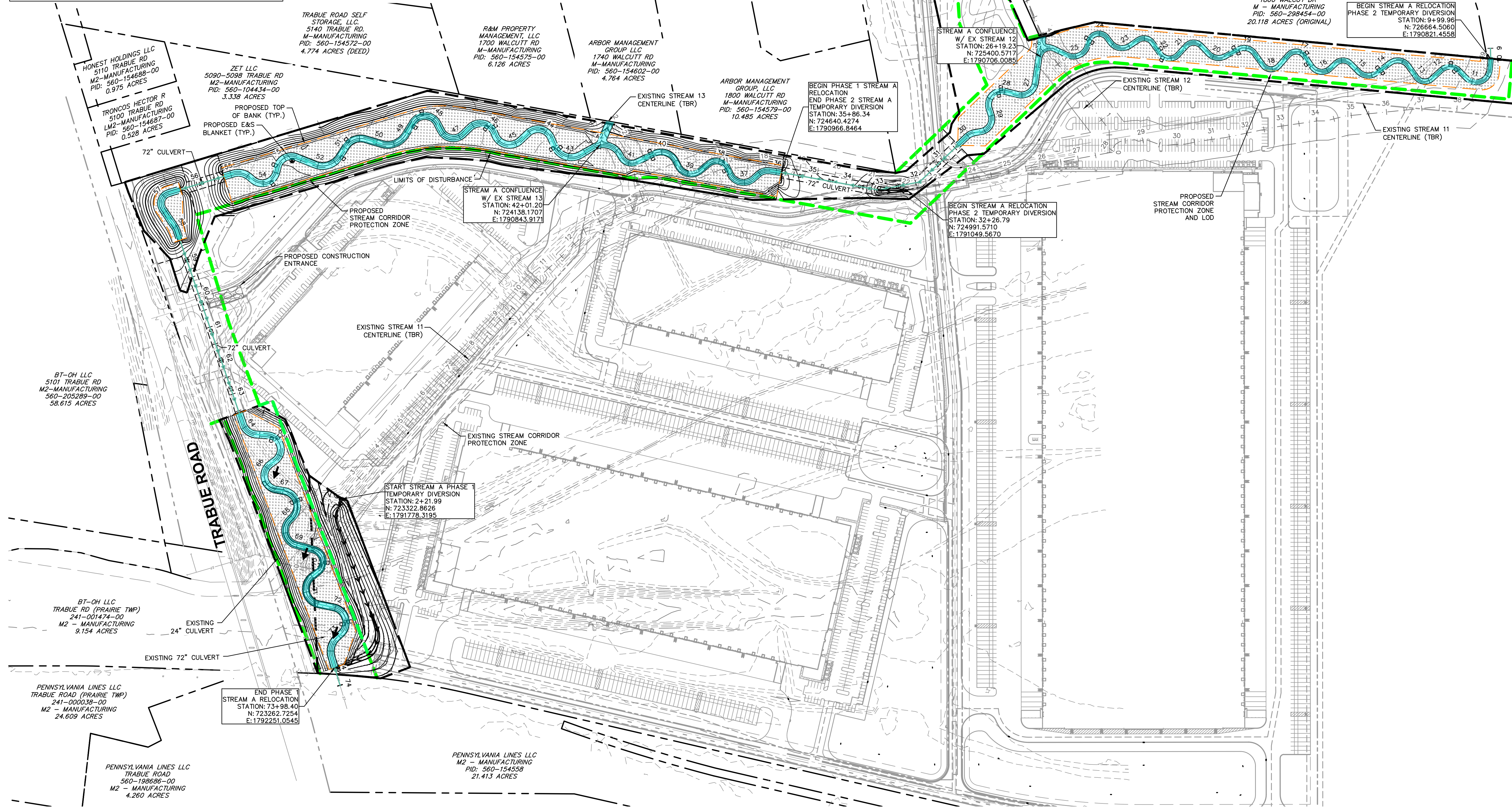
NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.

<p>© 2022 KIMLEY-HORN AND ASSOCIATES, INC. 7865 NORTH HIGH STREET, SUITE 200 COLUMBUS, OH 43235 PHONE: 614-472-8646 WWW.KIMLEY-HORN.COM</p>	<p>EXISTING CONDITIONS</p>
<p>DESIGNED BY: MCS DRAWN BY: MCS CHECKED BY: JMM</p>	<p>STREAM RELOCATION PLANS BUCKEYE YARD CITY OF COLUMBUS, FRANKLIN COUNTY, OH</p>
<p>SCALE:</p>	<p>ORIGINAL ISSUE: 10/17/2022 KHA PROJECT NO. 190118000 SHEET NUMBER EC2.1</p>
<p>DATE</p>	<p>BY</p>
<p>REVISIONS</p>	<p>APR DATE</p>
<p>No.</p>	<p>APR BY</p>

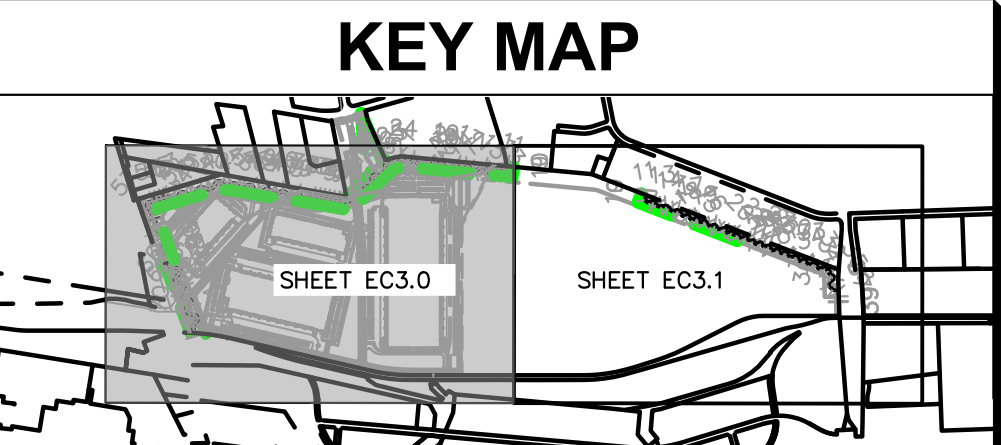
PROPOSED STREAM TABLE			
STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
A-11.1 (EX 11)	0.45	109	1,623
A-11.2 (EX 11 + EX 12)	0.75	132	1,053
A-11.3 (EX 11 + EX 12 + EX 13)	0.99	146	2,531
B-10.1 (EX 10)	0.40	104	2,523
B-10.2 (EX 10+ EX 9)	0.97	145	328

NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.

PROPOSED STREAM CORRIDOR PROTECTION AREA (±24.19 AC.)

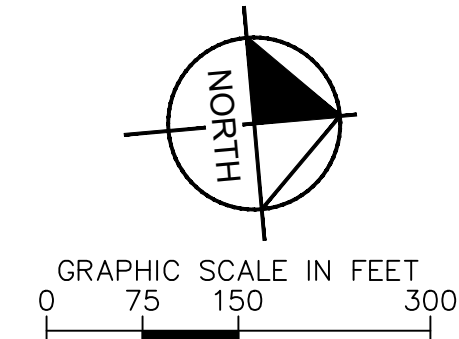


Drawing name: K:\CIBL\DEVA\190118000_3ddec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\EROSION AND SEDIMENT CONTROL PLAN.dwg OVERVIEW A Oct 17, 2022 5:00pm by: Gavin Rivera
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LEGEND

- | | | | | | |
|-------|----------------------------|-------------|--|--------|--|
| --- | EXISTING PROPERTY LINE | ST ST ST ST | PROPOSED STORM | 001 | PROPOSED MINOR CONTOUR |
| - - - | EXISTING RIGHT OF WAY | ----- | PROPOSED LIMITS OF DISTURBANCE (±24.09 AC) | ▬▬▬▬▬▬ | PROPOSED STREAM CHANNEL |
| --- | EXISTING PAVEMENT | ----- | PROPOSED STREAM CORRIDOR PROTECTION LIMITS | ▬▬▬▬▬▬ | PROPOSED E&S BLANKET |
| --- | EXISTING STORM | ----- | PROPOSED TOP OF BANK | ▬▬▬▬▬▬ | PROPOSED ROCK CONSTRUCTION ENTRANCE |
| --- | EXISTING STREAM CENTERLINE | ----- | PROPOSED STREAM CENTERLINE | ▬▬▬▬▬▬ | PROPOSED RIFFLE (SEE DETAILS) |
| --- | EXISTING GAS LINE | ----- | EXISTING MAJOR CONTOUR | ▬▬▬▬▬▬ | PROPOSED BOULDER VANE AND J-HOOK (SEE DETAILS) |
| --- | EXISTING OVERHEAD LINE | ----- | EXISTING MINOR CONTOUR | ▬▬▬▬▬▬ | PROPOSED TOE WOOD (SEE DETAILS) |
| --- | PROPOSED RIGHT-OF-WAY | ----- | PROPOSED MAJOR CONTOUR | ▬▬▬▬▬▬ | |



		DESIGNED BY: MCS	SCALE:
		DRAWN BY: MCS	EROSION AND SEDIMENT CONTROL PLAN - OVERVIEW A
CITY OF COLUMBUS, FRANKLIN COUNTY, OH STREAM RELOCATION PLANS BUCKEYE YARD		CHECKED BY: JMM	ORIGINAL ISSUE: 10/17/2022 KHA PROJECT NO. 190118000 SHEET NUMBER EC3.0
REVISIONS No. DATE BY APR DATE			

Drawing name: K:\CIB_LDEA\190118000_3dloc_Buckeye_Yard_Columbus_OH\2_Design\CAD\PlanSheets\8_StreamRelocation\EROSION AND SEDIMENT CONTROL PLAN.dwg OVERVIEW B Oct 17, 2022 5:00pm by: Govin Rivera
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BT-NEWYO, LLC
 2079 INTERNATIONAL DR
 M-MANUFACTURING
 PID: 560-298361-00
 20.845 ACRES (ORIGINAL)
 PARCEL "B"

BT-NEWYO, LLC
 2079 INTERNATIONAL DR
 M-MANUFACTURING
 PID: 560-298138-00
 5.571 ACRES (ORIGINAL)
 PARCEL "A"

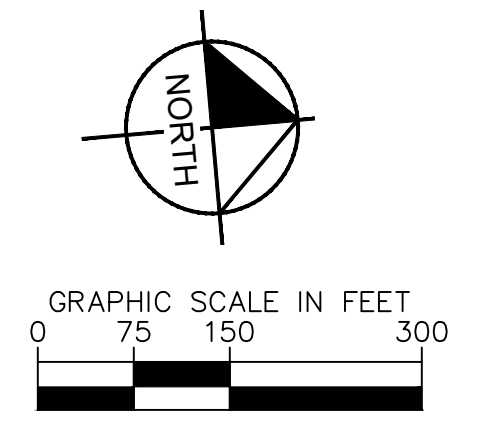
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 INDUSTRIAL, L.L.C.
 INTERCONTINENTAL DR
 M-MANUFACTURING
 PID: 560-296285-00
 0.573 ACRES (ORIGINAL)
 PARCEL 1

EXISTING 50" TALL, 80" WDE OVAL
 CONCRETE CULVERT OUTLET
 INVERT: 892.79

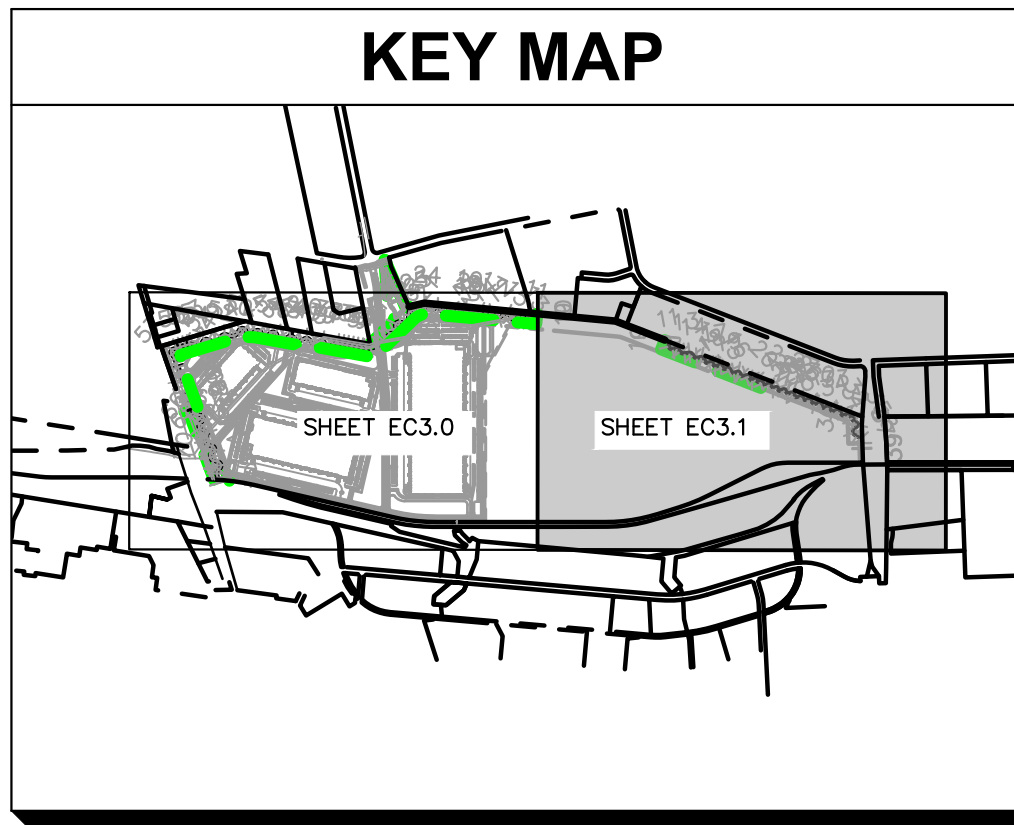
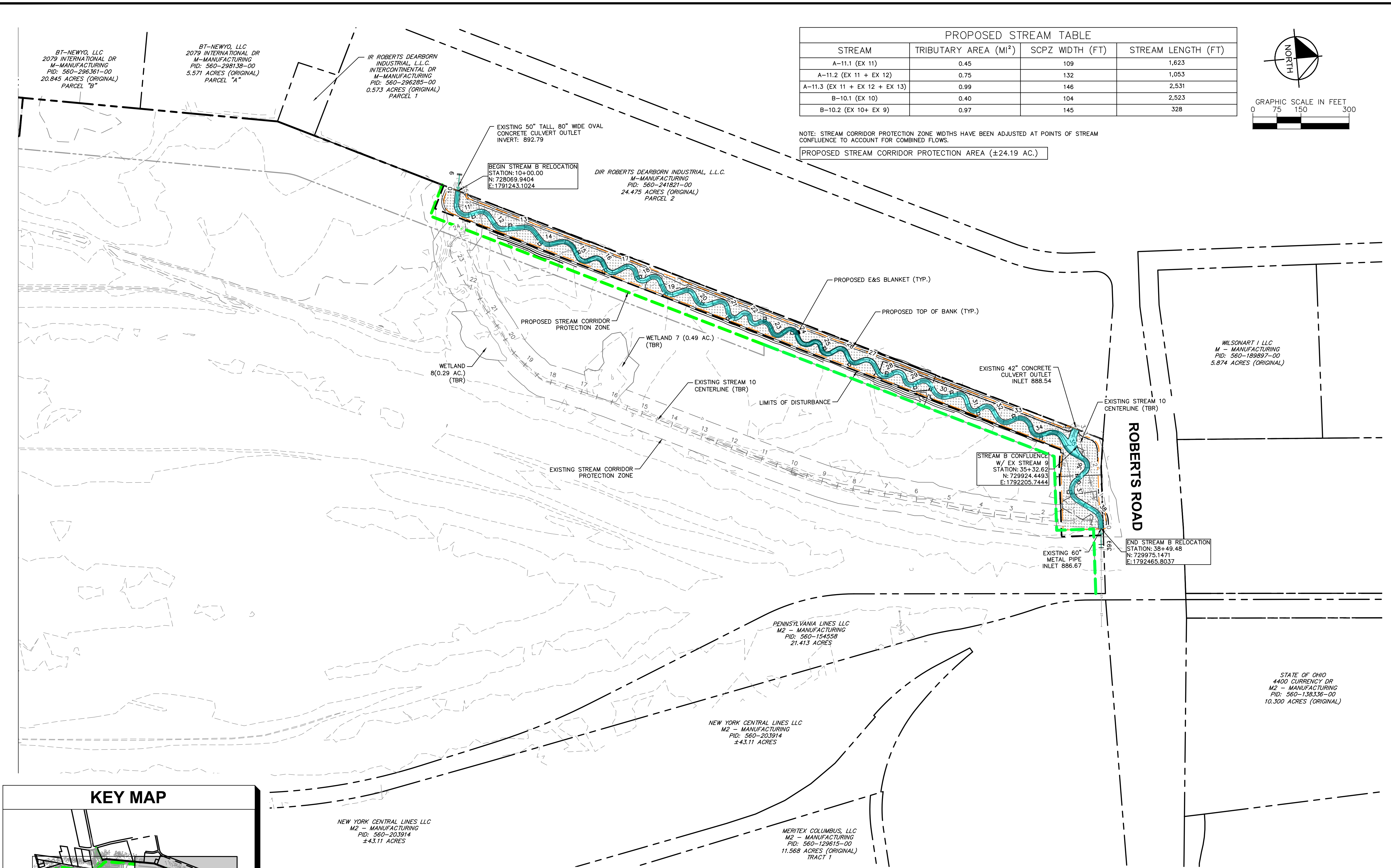
BEGIN STREAM B RELOCATION
 STATION: 10+00.00
 N: 728069.9404
 E: 1791243.1024

DIR ROBERTS DEARBORN INDUSTRIAL, L.L.C.
 M-MANUFACTURING
 PID: 560-241821-00
 24.475 ACRES (ORIGINAL)
 PARCEL 2

PROPOSED STREAM TABLE			
STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
A-11.1 (EX 11)	0.45	109	1,623
A-11.2 (EX 11 + EX 12)	0.75	132	1,053
A-11.3 (EX 11 + EX 12 + EX 13)	0.99	146	2,531
B-10.1 (EX 10)	0.40	104	2,523
B-10.2 (EX 10+ EX 9)	0.97	145	328



NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM
 CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.
 PROPOSED STREAM CORRIDOR PROTECTION AREA (±24.19 AC.)



LEGEND	
	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING PAVEMENT
	EXISTING STORM
	EXISTING STREAM CENTERLINE
	EXISTING GAS LINE
	EXISTING OVERHEAD LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED STORM
	PROPOSED LIMITS OF DISTURBANCE (±24.09 AC.)
	PROPOSED STREAM CORRIDOR PROTECTION LIMITS
	PROPOSED TOP OF BANK
	PROPOSED STREAM CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED STREAM CHANNEL
	PROPOSED E&S BLANKET
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	PROPOSED RIFFLE (SEE DETAILS)
	PROPOSED BOULDER VANE AND J-HOOK (SEE DETAILS)
	PROPOSED TOE WOOD (SEE DETAILS)

NEW YORK CENTRAL LINES LLC
 M2 - MANUFACTURING
 PID: 560-203914
 ±43.11 ACRES

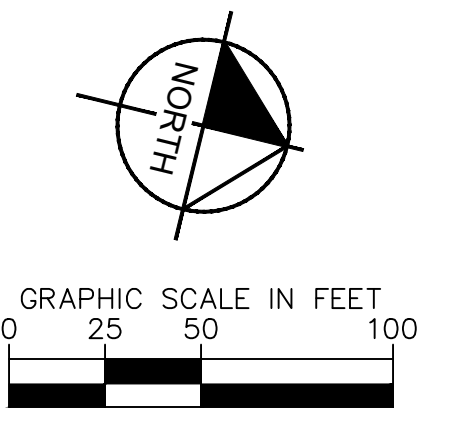
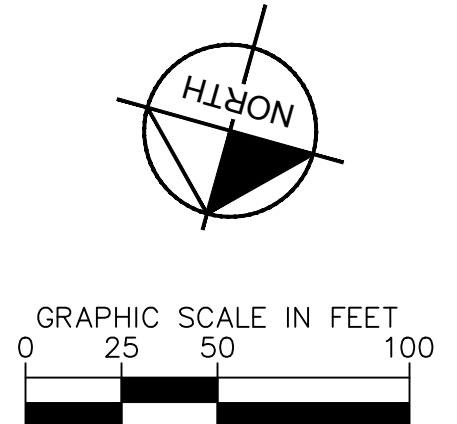
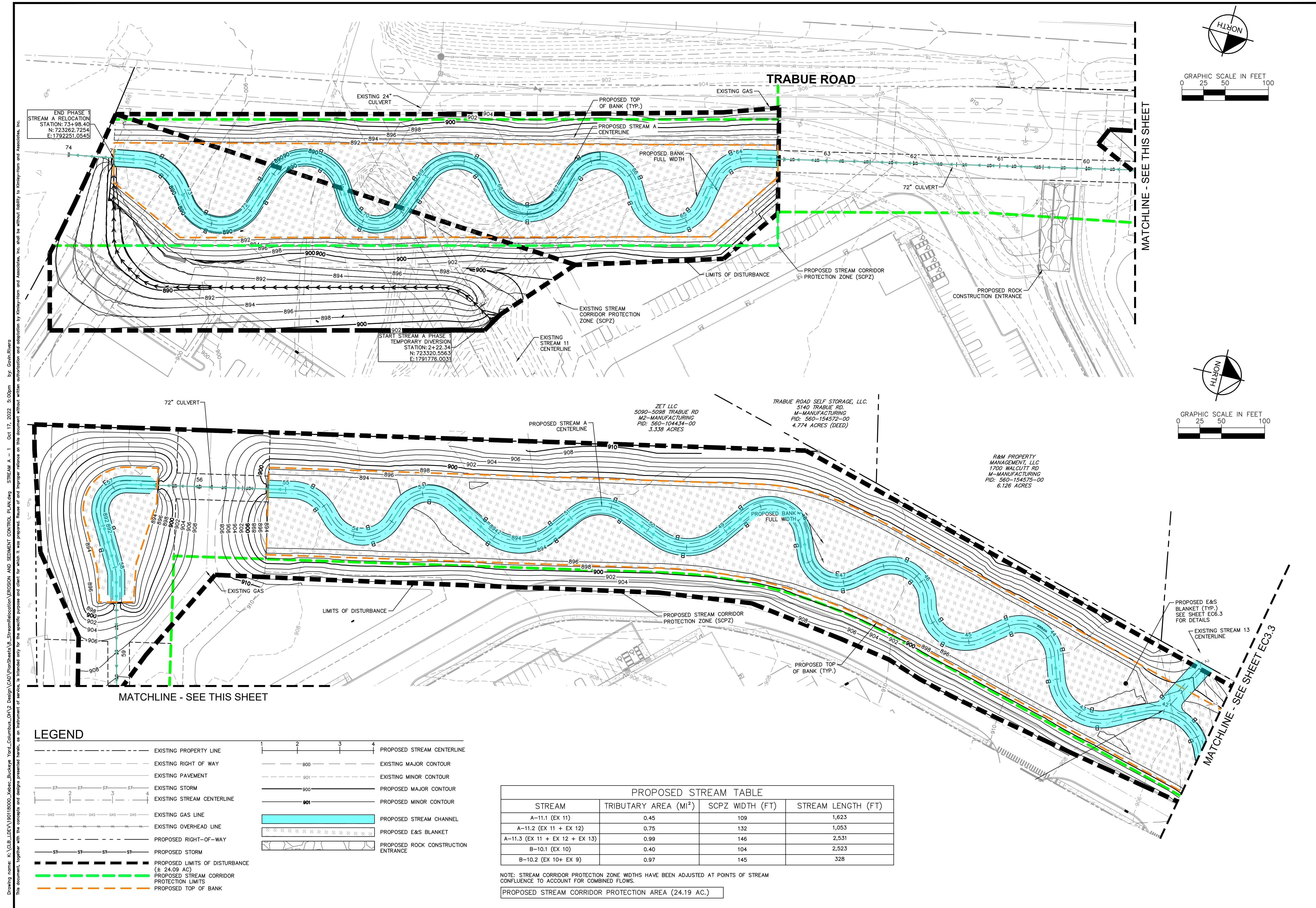
NEW YORK CENTRAL LINES LLC
 M2 - MANUFACTURING
 PID: 560-203914
 ±43.11 ACRES

PENNSYLVANIA LINES LLC
 M2 - MANUFACTURING
 PID: 560-154558
 21.413 ACRES

MERITEX COLUMBUS, LLC
 M2 - MANUFACTURING
 PID: 560-128615-00
 11.568 ACRES (ORIGINAL)
 TRACT 1

STATE OF OHIO
 4400 CURRENCY DR
 M2 - MANUFACTURING
 PID: 560-138336-00
 10.300 ACRES (ORIGINAL)

DESIGNED BY: MCS	DRAWN BY: MCS	CHECKED BY: JMM
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EROSION AND SEDIMENT CONTROL PLAN - OVERVIEW B		
STREAM RELOCATION PLANS BUCKEYE YARD <small>CITY OF COLUMBUS, FRANKLIN COUNTY, OH</small>		
ORIGINAL ISSUE: 10/17/2022 KHA PROJECT NO. 190118000 SHEET NUMBER EC3.1		
SCALE:	DATE:	BY:
NO.	REVISIONS:	APR. DATE:



END PHASE 1
STREAM A RELOCATION
STATION: 73+98.40
N: 723262.7254
E: 1792251.0545

START STREAM A PHASE
TEMPORARY DIVERSION
STATION: 2+22.34
N: 723320.5563
E: 1791776.0033

ZET LLC
5090-5098 TRABUE RD
M2-MANUFACTURING
PID: 560-104434-00
3.338 ACRES

TRABUE ROAD SELF STORAGE, LLC
5140 TRABUE RD.
M-MANUFACTURING
PID: 560-154572-00
4.774 ACRES (DEED)

R&M PROPERTY
MANAGEMENT, LLC
1700 WALCUTT RD
M-MANUFACTURING
PID: 560-134575-00
6.126 ACRES

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING PAVEMENT
	EXISTING STORM
	EXISTING STREAM CENTERLINE
	EXISTING GAS LINE
	EXISTING OVERHEAD LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED STORM
	PROPOSED LIMITS OF DISTURBANCE (± 24.09 AC)
	PROPOSED STREAM CORRIDOR PROTECTION LIMITS
	PROPOSED TOP OF BANK
	PROPOSED STREAM CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED STREAM CHANNEL
	PROPOSED E&S BLANKET
	PROPOSED ROCK CONSTRUCTION ENTRANCE

PROPOSED STREAM TABLE			
STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
A-11.1 (EX 11)	0.45	109	1,623
A-11.2 (EX 11 + EX 12)	0.75	132	1,053
A-11.3 (EX 11 + EX 12 + EX 13)	0.99	146	2,531
B-10.1 (EX 10)	0.40	104	2,523
B-10.2 (EX 10+ EX 9)	0.97	145	328

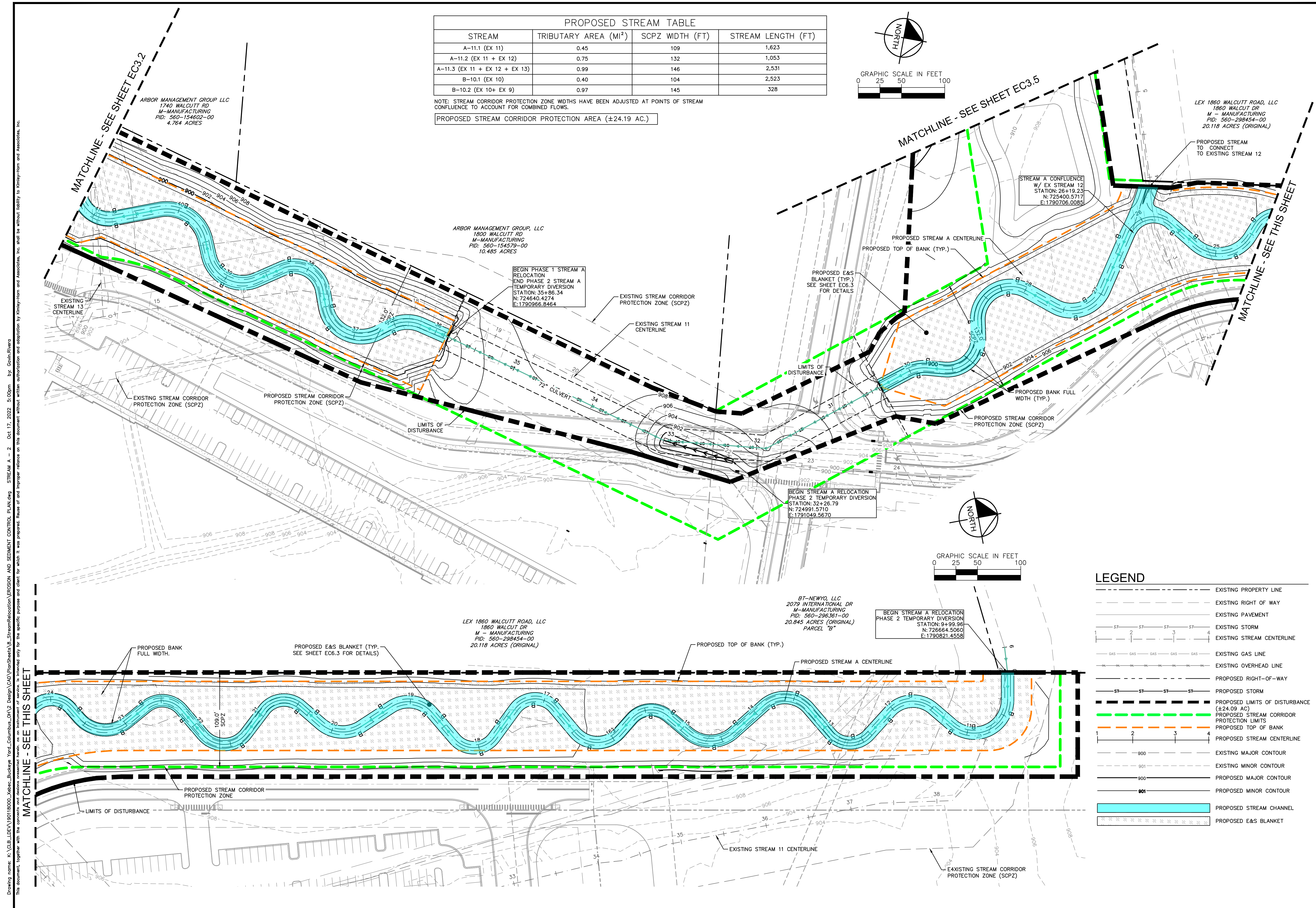
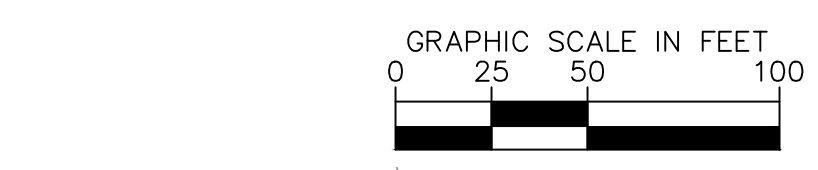
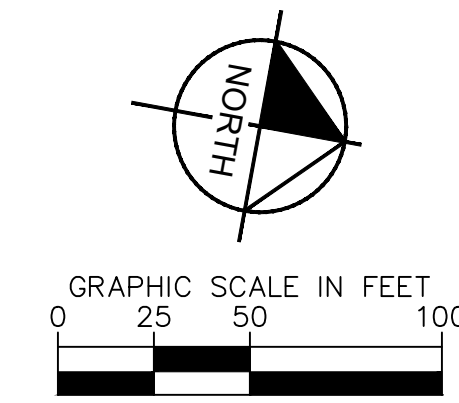
NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.
PROPOSED STREAM CORRIDOR PROTECTION AREA (24.19 AC.)

	DESIGNED BY: MCS	DATE	BY	APR	DATE	BY
	DRAWN BY: MCS	REVISIONS	DATE	BY	DATE	BY
SCALE: EROSION AND SEDIMENT CONTROL PLAN	CITY OF COLUMBUS, FRANKLIN COUNTY, OH BUCKEYE YARD STREAM RELOCATION PLANS	ORIGINAL ISSUE: 10/17/2022 KHA PROJECT NO. 190118000 SHEET NUMBER EC3.2	© 2022 KIMLEY-HORN AND ASSOCIATES, INC. 7865 NORTH HIGH STREET, SUITE 200 COLUMBUS, OH 43235 PHONE: 614-472-8546 WWW.KIMLEY-HORN.COM			

PROPOSED STREAM TABLE			
STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
A-11.1 (EX 11)	0.45	109	1,623
A-11.2 (EX 11 + EX 12)	0.75	132	1,053
A-11.3 (EX 11 + EX 12 + EX 13)	0.99	146	2,531
B-10.1 (EX 10)	0.40	104	2,523
B-10.2 (EX 10+ EX 9)	0.97	145	328

NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.

PROPOSED STREAM CORRIDOR PROTECTION AREA (±24.19 AC.)

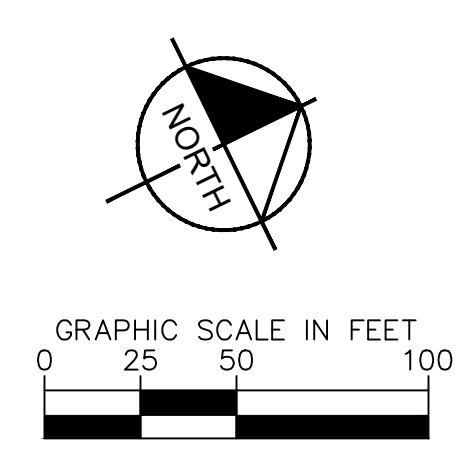
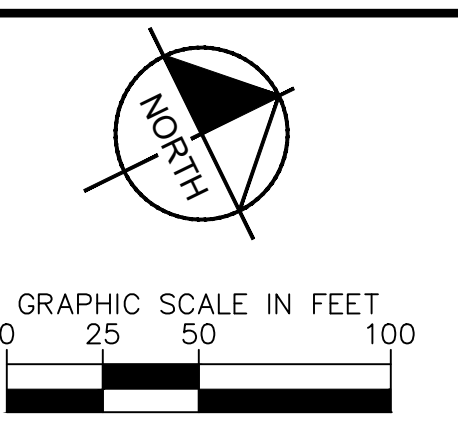
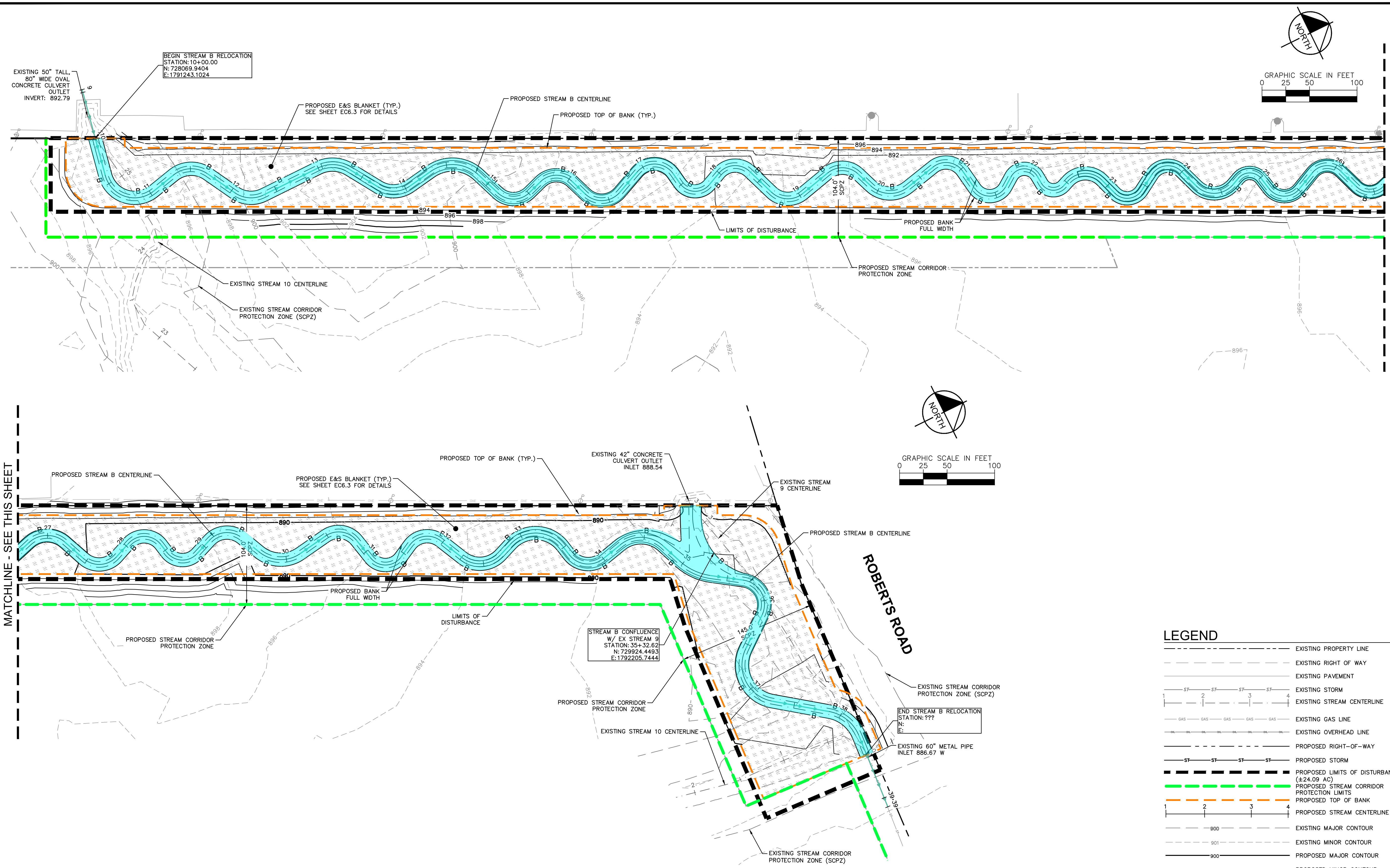


LEGEND	
	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING PAVEMENT
	EXISTING STORM
	EXISTING STREAM CENTERLINE
	EXISTING GAS LINE
	EXISTING OVERHEAD LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED STORM
	PROPOSED LIMITS OF DISTURBANCE (±24.09 AC)
	PROPOSED STREAM CORRIDOR PROTECTION LIMITS
	PROPOSED TOP OF BANK
	PROPOSED STREAM CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED STREAM CHANNEL
	PROPOSED E&S BLANKET

Drawing name: K:\CIB_LDEA\190118000_2\Design\CAD\PlanSheets\8_StreamRelocation\EROSION AND SEDIMENT CONTROL PLAN.dwg STREAM A - 2 Oct 17, 2022 5:00pm by: Colin Rivera
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SCALE:	DESIGNED BY: MCS
	DRAWN BY: MCS
	CHECKED BY: JMM
EROSION AND SEDIMENT CONTROL PLAN	
STREAM RELOCATION PLANS BUCKEYE YARD CITY OF COLUMBUS, FRANKLIN COUNTY, OH	
ORIGINAL ISSUE: 10/17/2022	
KHA PROJECT NO. 190118000	
SHEET NUMBER	
EC3.3	
NO.	REVISIONS
DATE	BY
APR	DATE

Drawing name: K:\CIB_LDEA\190118000_3dloc_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\EROSION AND SEDIMENT CONTROL PLAN.dwg STREAM B Oct 17, 2022, 5:00pm By: Gavin Rivera
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LEGEND

	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING PAVEMENT
	EXISTING STORM
	EXISTING STREAM CENTERLINE
	EXISTING GAS LINE
	EXISTING OVERHEAD LINE
	PROPOSED RIGHT-OF-WAY
	PROPOSED STORM
	PROPOSED LIMITS OF DISTURBANCE (±24.09 AC)
	PROPOSED STREAM CORRIDOR PROTECTION LIMITS
	PROPOSED TOP OF BANK
	PROPOSED STREAM CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED STREAM CHANNEL
	PROPOSED E&S BLANKET
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	PROPOSED BOULDER VANE AND J-HOOK (SEE DETAILS)
	PROPOSED TOE WOOD (SEE DETAILS)

PROPOSED STREAM TABLE

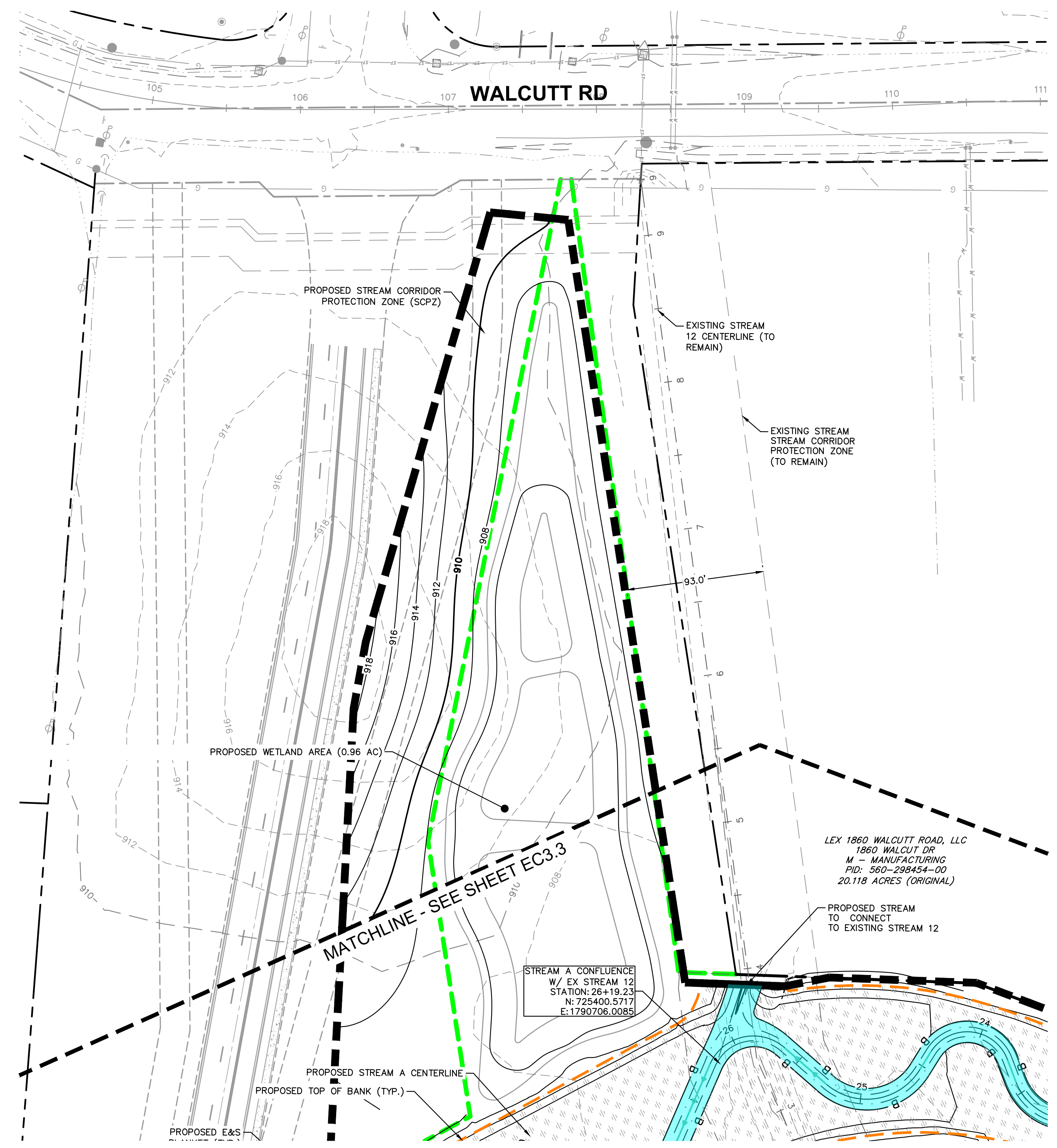
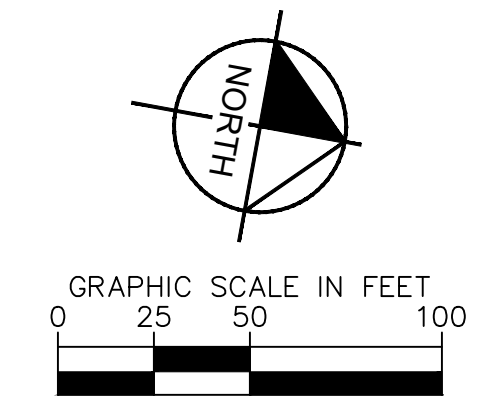
STREAM	TRIBUTARY AREA (MI ²)	SCPZ WIDTH (FT)	STREAM LENGTH (FT)
A-11.1 (EX 11)	0.45	109	1,623
A-11.2 (EX 11 + EX 12)	0.75	132	1,053
A-11.3 (EX 11 + EX 12 + EX 13)	0.99	146	2,531
B-10.1 (EX 10)	0.40	104	2,523
B-10.2 (EX 10+ EX 9)	0.97	145	328

NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.

PROPOSED STREAM CORRIDOR PROTECTION AREA (±24.19 AC.)

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EROSION AND SEDIMENT CONTROL PLAN								
STREAM RELOCATION PLANS BUCKEYE YARD								
CITY OF COLUMBUS, FRANKLIN COUNTY, OH								
ORIGINAL ISSUE: 10/17/2022								
KHA PROJECT NO. 190118000								
SHEET NUMBER								
EC3.4								

Drawing name: K:\CIBL\DEVA\190118000_3ddec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\EROSION AND SEDIMENT CONTROL PLAN.dwg EC3.5 EROSION AND SEDIMENT CONTROL PLAN Oct 17, 2022 5:00pm by: Gabe Rivera
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PROPOSED STREAM TABLE			
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NOTE: STREAM CORRIDOR PROTECTION ZONE WIDTHS HAVE BEEN ADJUSTED AT POINTS OF STREAM CONFLUENCE TO ACCOUNT FOR COMBINED FLOWS.

PROPOSED STREAM CORRIDOR PROTECTION AREA (±24.19 AC.)

LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING PAVEMENT
- EXISTING STORM
- EXISTING STREAM CENTERLINE
- EXISTING GAS LINE
- EXISTING OVERHEAD LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED STORM
- PROPOSED LIMITS OF DISTURBANCE (±24.09 AC)
- PROPOSED STREAM CORRIDOR PROTECTION LIMITS
- PROPOSED TOP OF BANK
- PROPOSED STREAM CENTERLINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED STREAM CHANNEL
- PROPOSED E&S BLANKET
- PROPOSED ROCK CONSTRUCTION ENTRANCE

No.	REVISIONS	DATE	BY	APR DATE	APR BY

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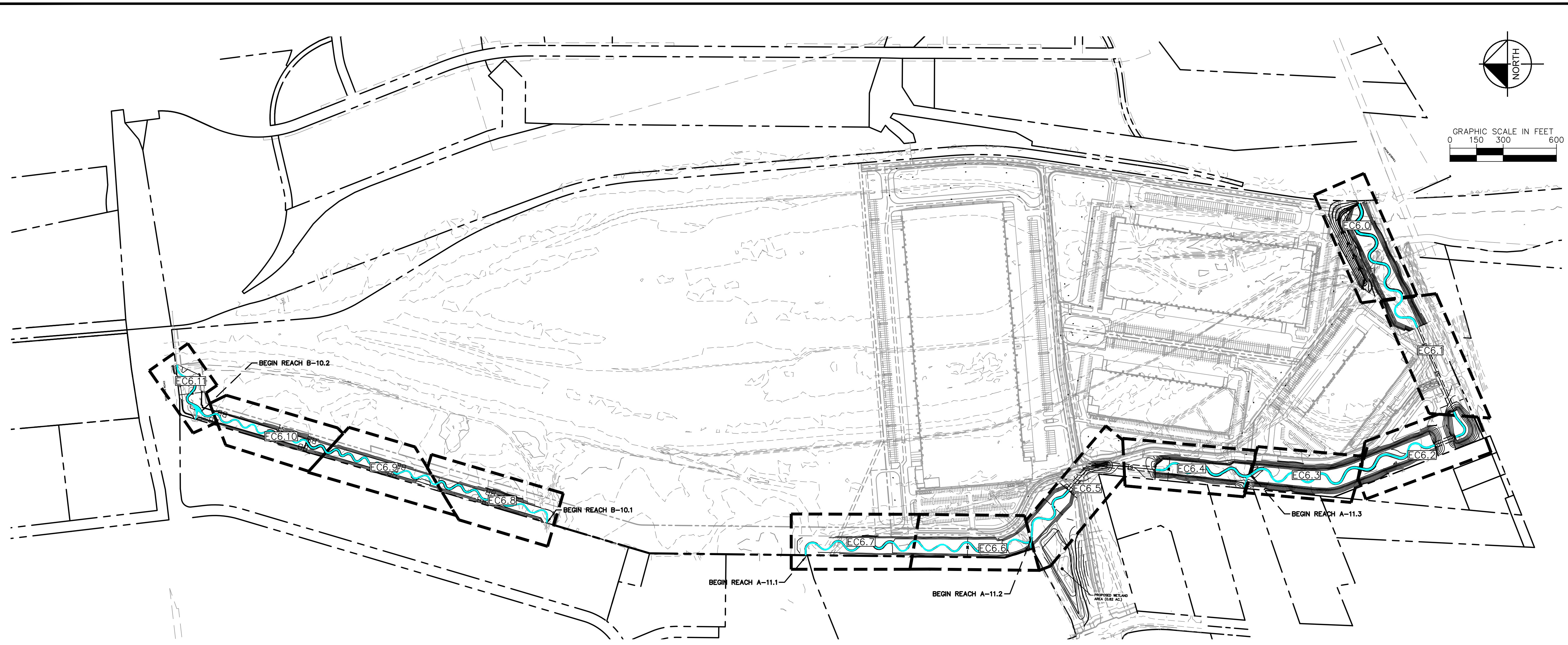
SCALE:
 DESIGNED BY: MCS
 DRAWN BY: MCS
 CHECKED BY: JMM

EROSION AND SEDIMENT CONTROL PLAN

STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

ORIGINAL ISSUE:
 10/17/2022
 KHA PROJECT NO.
 190118000
 SHEET NUMBER
EC3.5

Drawing name: K:\CIB_LDEA\190118000_04ec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\KEY_SHEET.dwg EC4.0 OVERALL PLAN AND KEY SHEET Oct 17, 2022 5:00pm by: Gavin Rivers
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LEGEND

- | | | | | | |
|-----|----------------------------|-------------|--|-----|-------------------------------------|
| --- | EXISTING PROPERTY LINE | ST ST ST ST | PROPOSED STORM | 901 | PROPOSED MINOR CONTOUR |
| --- | EXISTING RIGHT OF WAY | --- | PROPOSED LIMITS OF DISTURBANCE (±24.09 AC) | --- | PROPOSED STREAM CHANNEL |
| --- | EXISTING PAVEMENT | --- | PROPOSED STREAM CORRIDOR PROTECTION LIMITS | --- | PROPOSED E&S BLANKET |
| --- | EXISTING STORM | --- | PROPOSED TOP OF BANK | --- | PROPOSED ROCK CONSTRUCTION ENTRANCE |
| --- | EXISTING STREAM CENTERLINE | --- | PROPOSED STREAM CENTERLINE | --- | PROPOSED CONST RIFFLE (SEE DETAILS) |
| --- | EXISTING GAS LINE | --- | EXISTING MAJOR CONTOUR | --- | PROPOSED RIFFLE (SEE DETAILS) |
| --- | EXISTING OVERHEAD LINE | --- | EXISTING MINOR CONTOUR | --- | PROPOSED TOE WOOD (SEE DETAILS) |
| --- | PROPOSED RIGHT-OF-WAY | --- | PROPOSED MAJOR CONTOUR | --- | PROPOSED ROCK TOE (SEE DETAILS) |
| | | --- | PROPOSED STREAM BANKFULL | | |

VARIABLES (All units are in feet)	Reach A-11 DESIGN		Reach A-11.2 DESIGN		Reach A-11.3 DESIGN		Reach B-10.1 DESIGN		Reach B-10.2 DESIGN	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1 Stream Type (Rosgen)	C4		C4		C4		C4		C4	
2 Drainage Area (square miles)	0.45		0.75		0.99		0.36		0.40	
3 Bankfull Width (W_{bk})	14.5		17.1		19.7		14.0		14.3	
4 Bankfull Mean Depth (d_{bm})	0.7		0.9		1.0		0.7		0.7	
5 Width/Depth Ratio (W_{bk}/d_{bm})	20.1		19.9		19.7		19.7		19.9	
6 Bankfull Cross-Sectional Area (A_{bk})	10.5		14.8		19.7		14.0		14.3	
7 Bankfull Mean Velocity, ft/s (V_{bm})	1.3		1.6		1.4		1.1		1.2	
8 Bankfull Discharge, cfs (Q_{bk})	13.7		23.4		26.9		16.1		16.6	
9 Bankfull Maximum Depth (d_{bmx})	1.0		1.2		1.4		1.0		1.0	
10 Max d_{bmx}/d_{bm} ratio	1.4		1.4		1.4		1.4		1.4	
11 Low Bank Height to Max Bankfull d_{bmx} ratio	1.0		1.0		1.0		1.0		1.0	
12 Width of Flood Prone Area (W_{fpa})	75.0		80.0		120.0		75.0		120.0	
13 Entrenchment Ratio (W_{fpa}/W_{bk})	5.2		5.5		6.1		5.4		8.4	
14 Meander Length (L_m)	115.0		174.0		156.0		183.0		90.0	
15 Ratio of Meander Length to Bankfull Width (L_m/W_{bk})	7.9		12.0		9.1		11.2		3.0	
16 Radius of Curvature (R_c)	29.0		44.0		34.0		55.0		28.0	
17 Ratio of Radius of Curvature to Bankfull Width (R_c/W_{bk})	2.0		3.0		2.0		3.2		2.0	
18 Belt Width (W_b)	62.0		81.0		72.0		92.0		50.0	
19 Belt Width Ratio (W_b/W_{bk})	4.3		5.6		4.2		5.4		3.6	
20 Sinuosity (k) (Stream Length / Valley Length)	1.54		1.14		1.41		1.58		1.58	
21 Valley Slope (S_{vavg}) (ft/ft)	0.00370		0.00320		0.00240		0.00300		0.00300	
22 Average Stream Slope (S_{avg}) = (S_{vavg}/k)	0.00240		0.00280		0.00170		0.00190		0.00190	
23 Riffle Slope (S_{rif})	0.0071		0.0125		0.0118		0.0160		0.0051	
24 Ratio of Riffle Slope to Avg. Slope (S_{rif}/S_{avg})	4.2		5.7		4.2		5.7		3.0	
25 Pool Slope (S_{pool})	0.0000		0.0002		0.0000		0.0003		0.0000	
26 Ratio of Pool Slope to Avg. Slope (S_{pool}/S_{avg})	0.0		0.1		0.0		0.1		0.0	
27 Maximum Pool Depth (D_{pool})	1.5		1.7		1.9		1.5		1.5	
28 Ratio of Pool Depth to Bk Depth (D_{pool}/d_{bk})	2.1		2.0		1.9		2.1		2.1	
29 Pool Width (W_{pool})	17.2		20.4		23.6		16.7		17.0	
30 Ratio of Pool Width to Bankfull Width (W_{pool}/W_{bk})	1.2		1.2		1.2		1.2		1.2	
31 Pool Area (A_{pool})	13.4		18.9		25.3		12.7		13.1	
32 Ratio of Pool Area to Bankfull Area (A_{pool}/A_{bk})	1.3		1.3		1.3		0.9		0.9	
33 Pool to Pool Spacing ($p-p$)	72.5		101.5		85.5		119.7		98.5	
34 Ratio of Pool to Pool Spacing to Bankfull Width ($p-p/W_{bk}$)	5.0		7.0		5.0		7.0		5.0	

REVISIONS
 No. DATE BY APR DATE APR BY

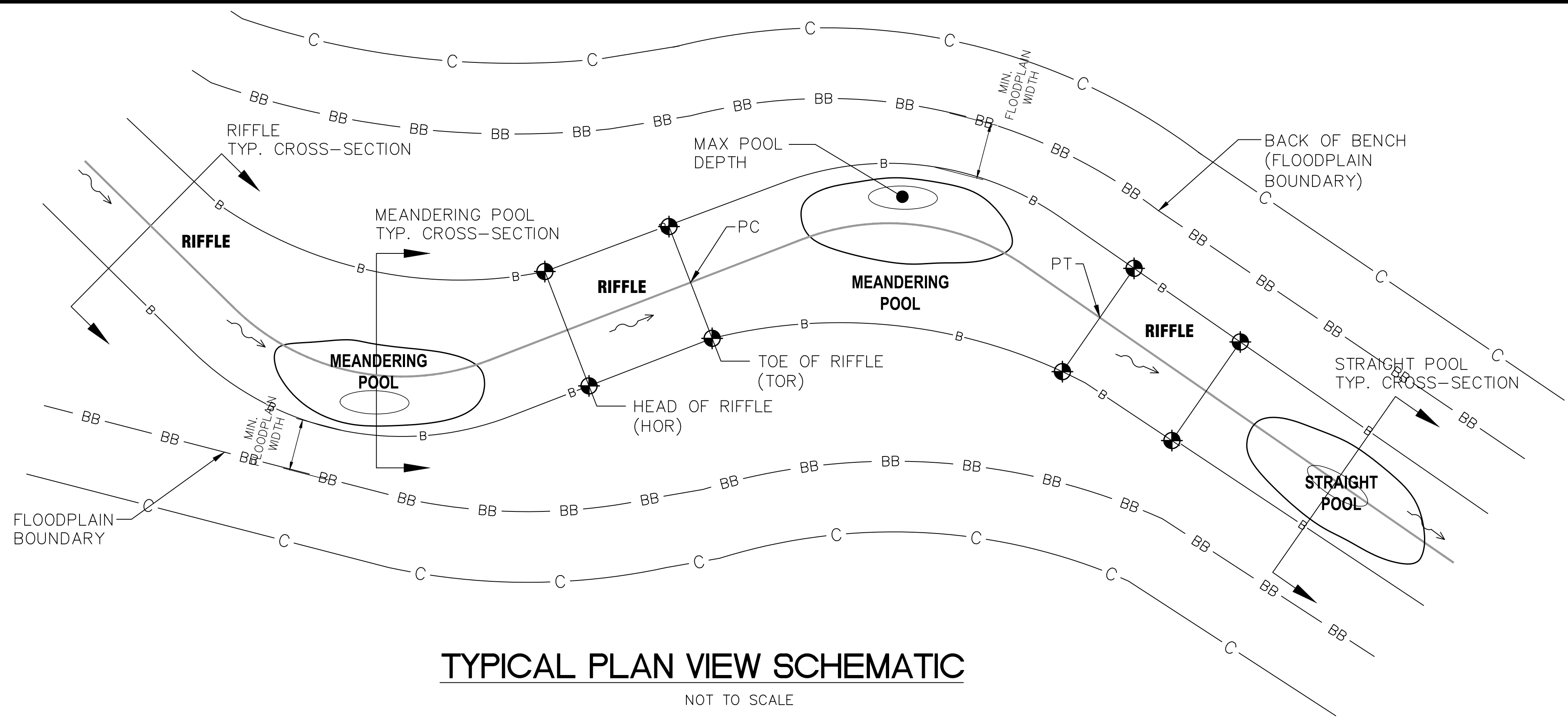
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DESIGNED BY: MCS
 DRAWN BY: MCS
 CHECKED BY: JMM

OVERALL PLAN AND KEY SHEET
STREAM RELOCATION PLANS BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

ORIGINAL ISSUE: 10/17/2022
 KHA PROJECT NO. 190118000
 SHEET NUMBER **EC4.0**

Drawing name: K:\CIB_LDEV\190118000_4dhec_Buckeye_Yard_Columbus_Oh\2_Design\CAD\PlanSheets\8_StreamRelocation\STREAM_30-TYPICAL SECTIONS.dwg EC5.0 TYPICAL SECTIONS - Oct 17, 2022, 5:00pm by: Colin Rivers
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TYPICAL PLAN VIEW SCHEMATIC

NOT TO SCALE

NOTES:

TYPICAL SECTIONS ARE PROVIDED TO GIVE THE GENERAL DIMENSIONS OF THE CHANNEL.

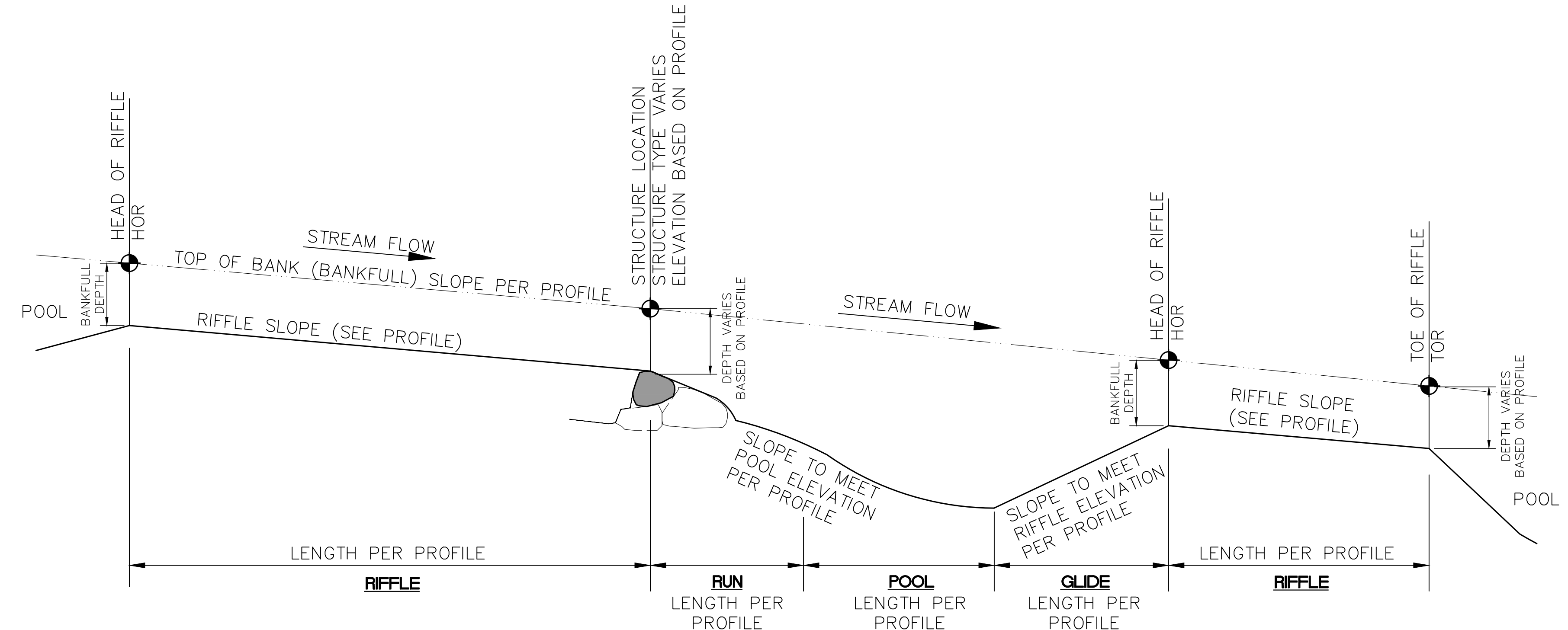
FINAL GRADING WILL GIVE THE CHANNEL A MORE "NATURAL" APPEARANCE AND ALLOW A SMOOTH TRANSITION FROM EXISTING CHANNEL TO NEW CHANNEL AND BETWEEN RIFFLE AND POOL SECTIONS.

RIFFLE FLOODPLAIN WIDTH VARIES BASED ON THE TYPICAL POOL DIMENSIONS AND THE VALLEY WIDTH SHOWN ON THE PLAN SHEETS.

THE CURVE BETWEEN THE PC AND PT SHOULD BE ROUNDED.

LEGEND:

- ⊕ VERIFY BASED ON TYPICAL BANKFULL
- ⊗ VERTICAL CONTROL FROM PROFILE



TYPICAL PROFILE OF RIFFLE/POOL SEQUENCE

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No.	REVISIONS	DATE	BY	APR DATE	APR BY

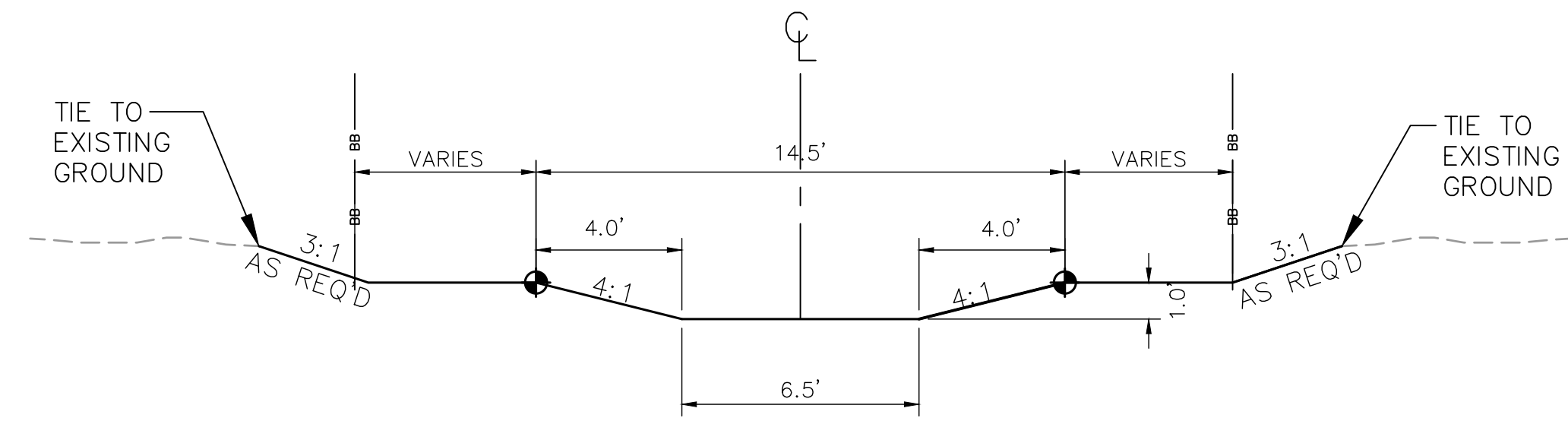
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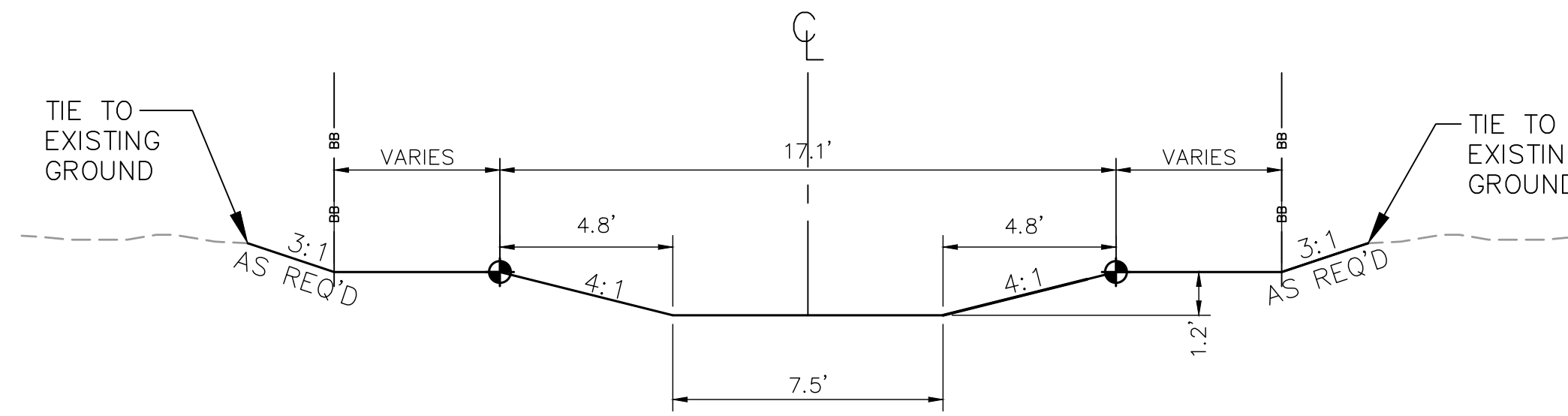
STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

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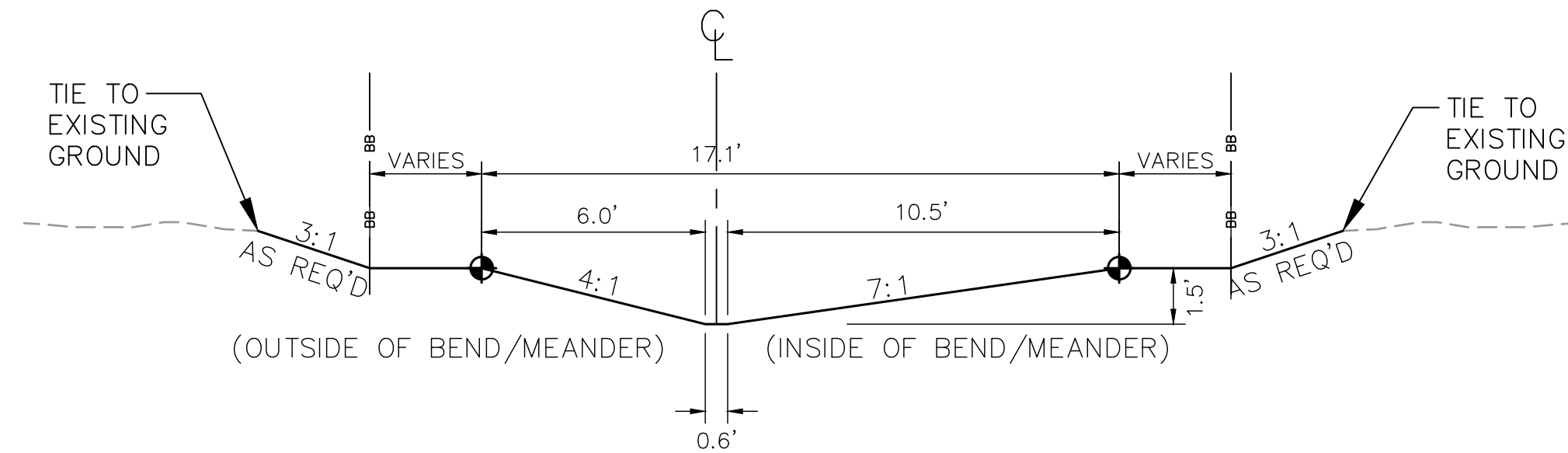
Drawing name: K:\CIB_LDEA\19018000_46ec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\STREAM_30-TYPICAL_SECTIONS.dwg EC5.1 TYPICAL SECTIONS Oct 17, 2022 5:00pm by: Gavin Rivers
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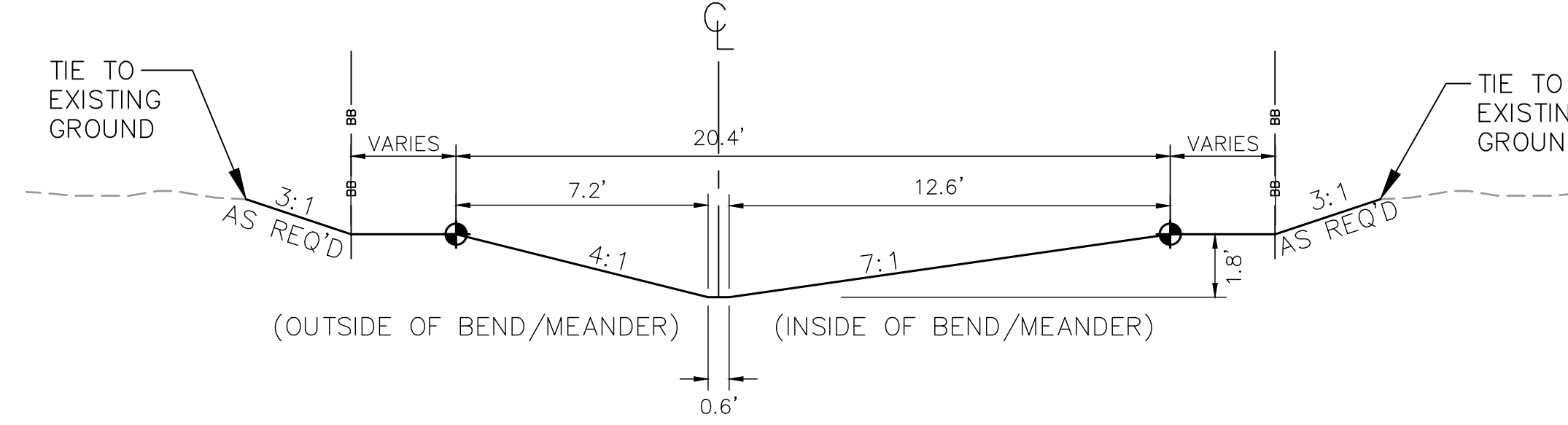
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 STA: 10+00 TO 26+23
 NOT TO SCALE



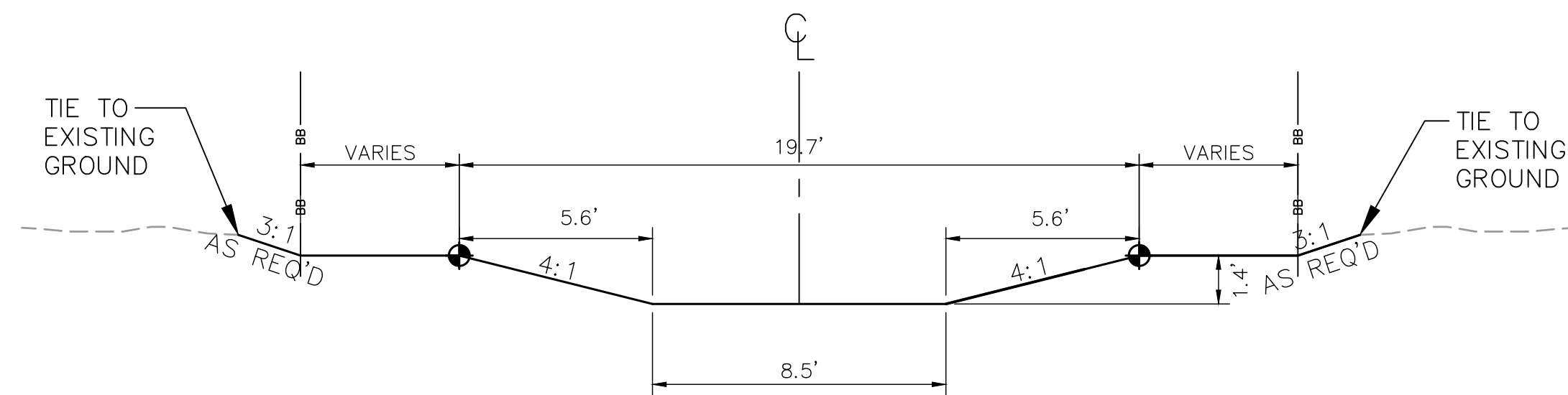
REACH A-12 - RIFFLE
 STA: 26+23 TO 42+23
 NOT TO SCALE



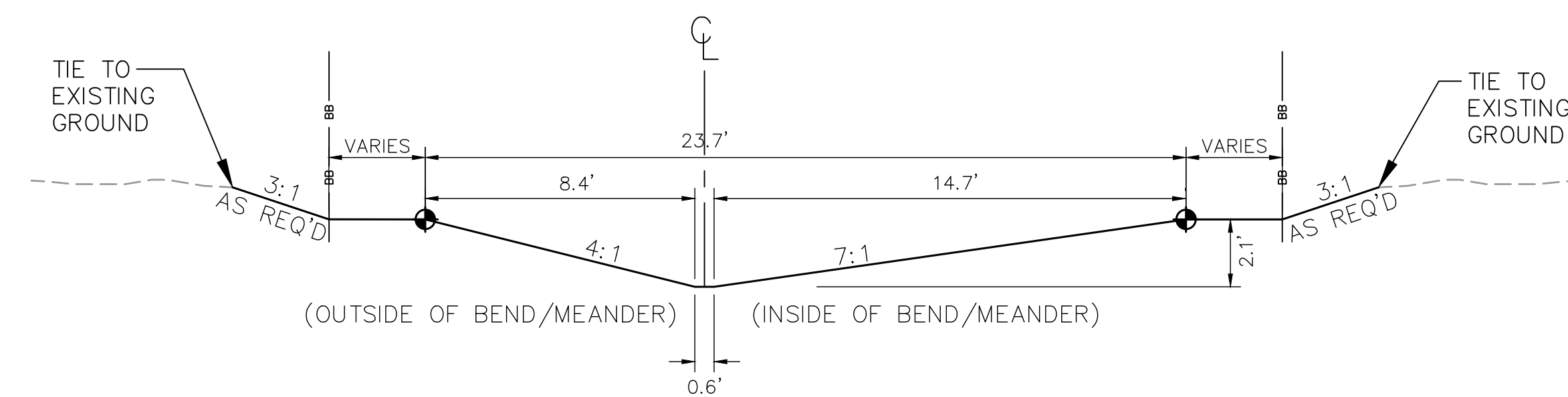
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 STA: 10+00 TO 26+23
 NOT TO SCALE



REACH A-12 - POOL ON BEND
 STA: 26+23 TO 42+23
 NOT TO SCALE



REACH A-13 - RIFFLE
 STA: 42+23 TO 73+98
 NOT TO SCALE



REACH A-13 - POOL ON BEND
 STA: 42+23 TO 73+98
 NOT TO SCALE

NOTE:
 POOL TYPICALS WILL BE FLIPPED WHEN INSIDE OF MEANDER IS ON THE LEFT SIDE.

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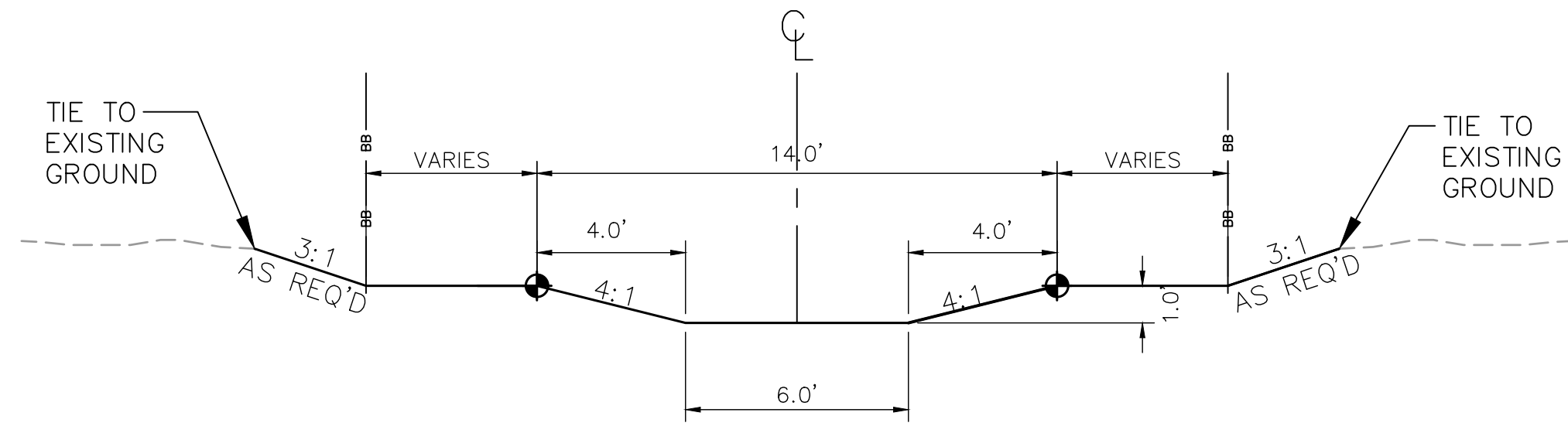
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BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

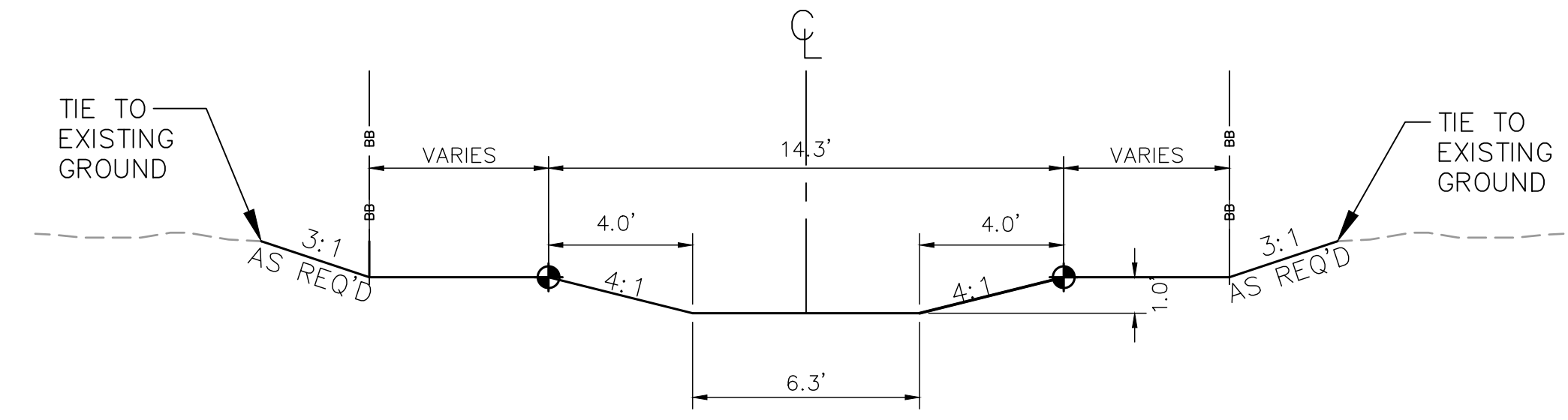
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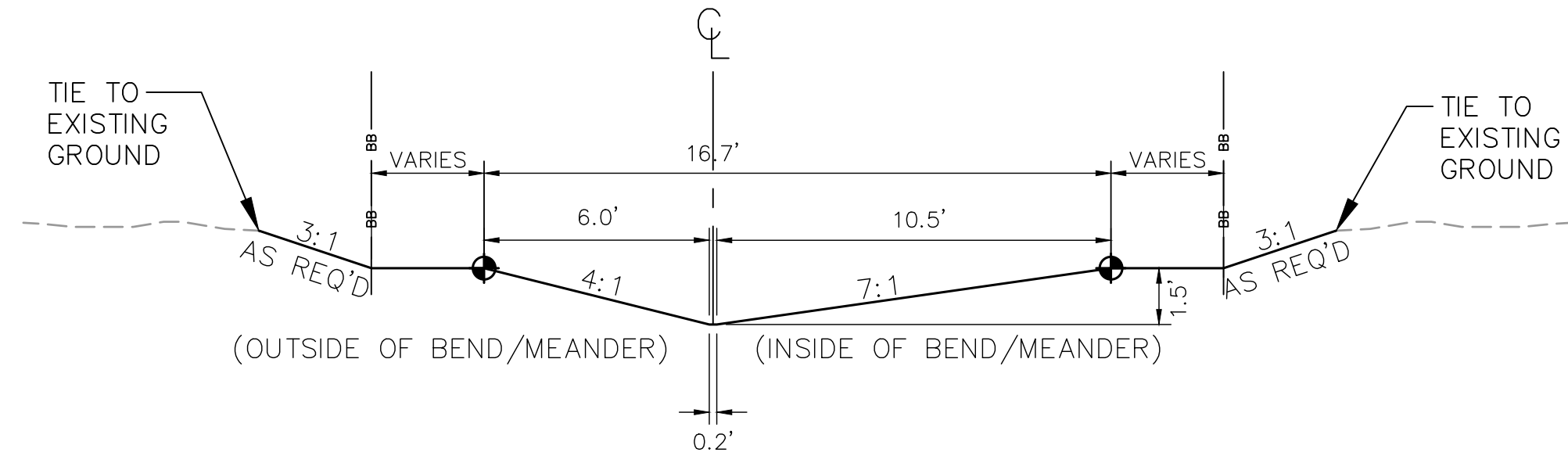
Drawing name: K:\CIB_LDEA\190118000_3dec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\STREAM_30-TYPICAL_SECTIONS.dwg EC5.2 TYPICAL SECTIONS Oct 17, 2022 5:00pm by: Gavin Rivera
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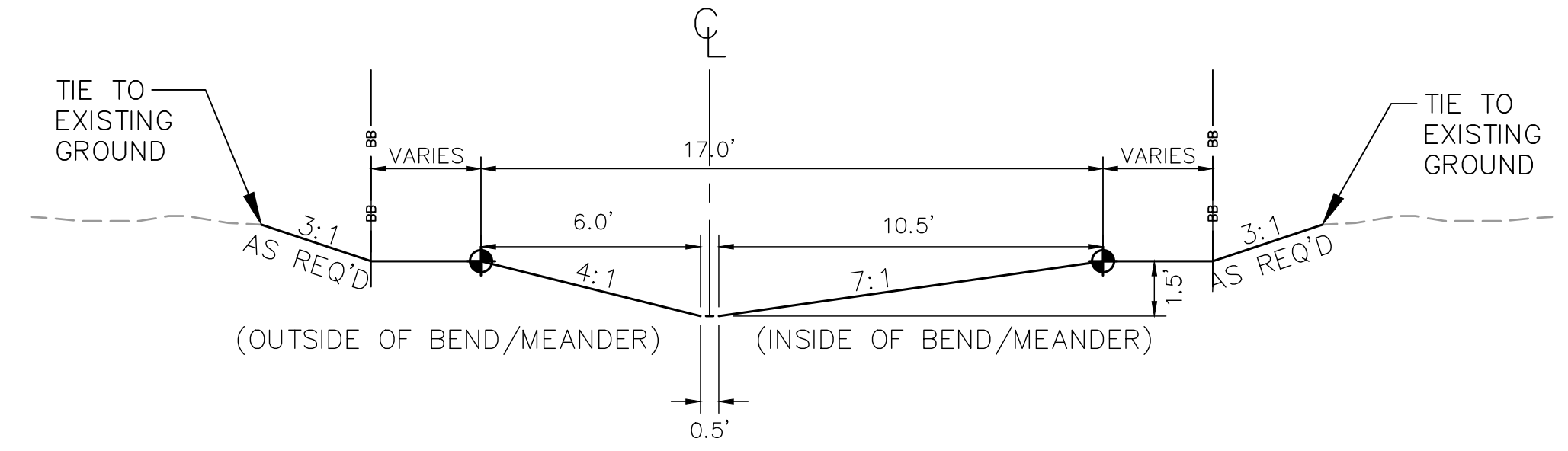
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 STA: 10+00 TO 35+33
 NOT TO SCALE



REACH B-10 - RIFFLE
 STA: 35+33 TO 38+51
 NOT TO SCALE




REACH B-9 - POOL ON BEND
 STA: 10+00 TO 35+33
 NOT TO SCALE



REACH B-10 - POOL ON BEND
 STA: 35+33 TO 38+51
 NOT TO SCALE

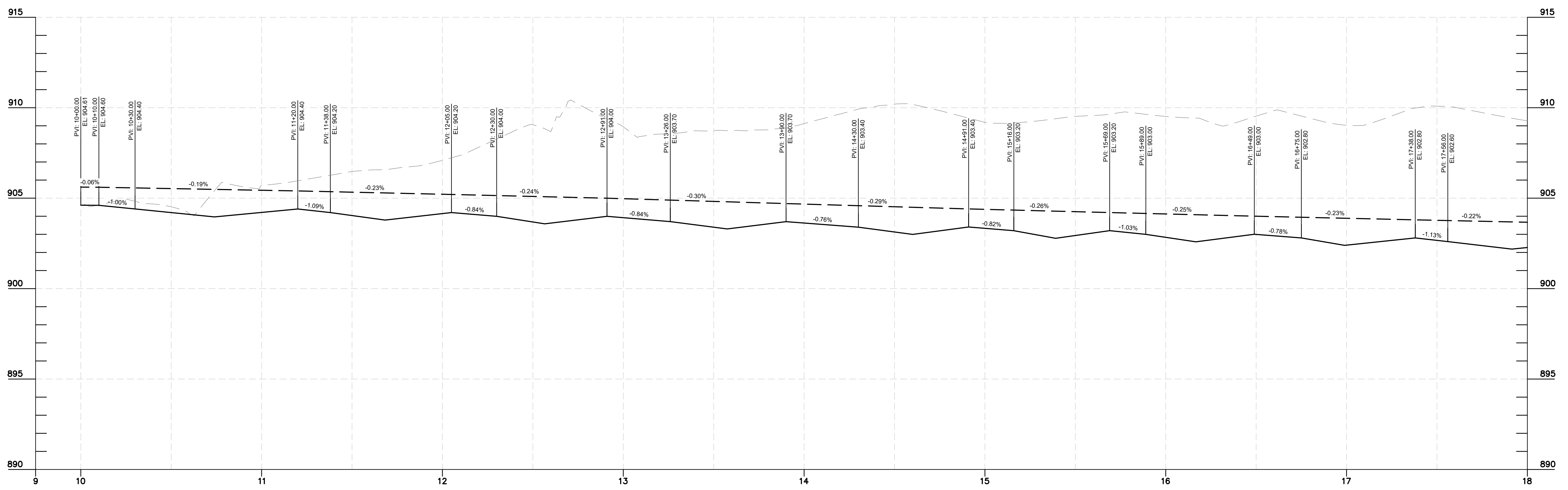
NOTE:
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 INSIDE OF MEANDER IS ON THE LEFT SIDE.

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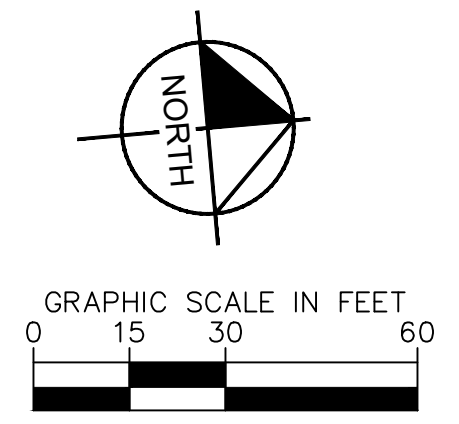
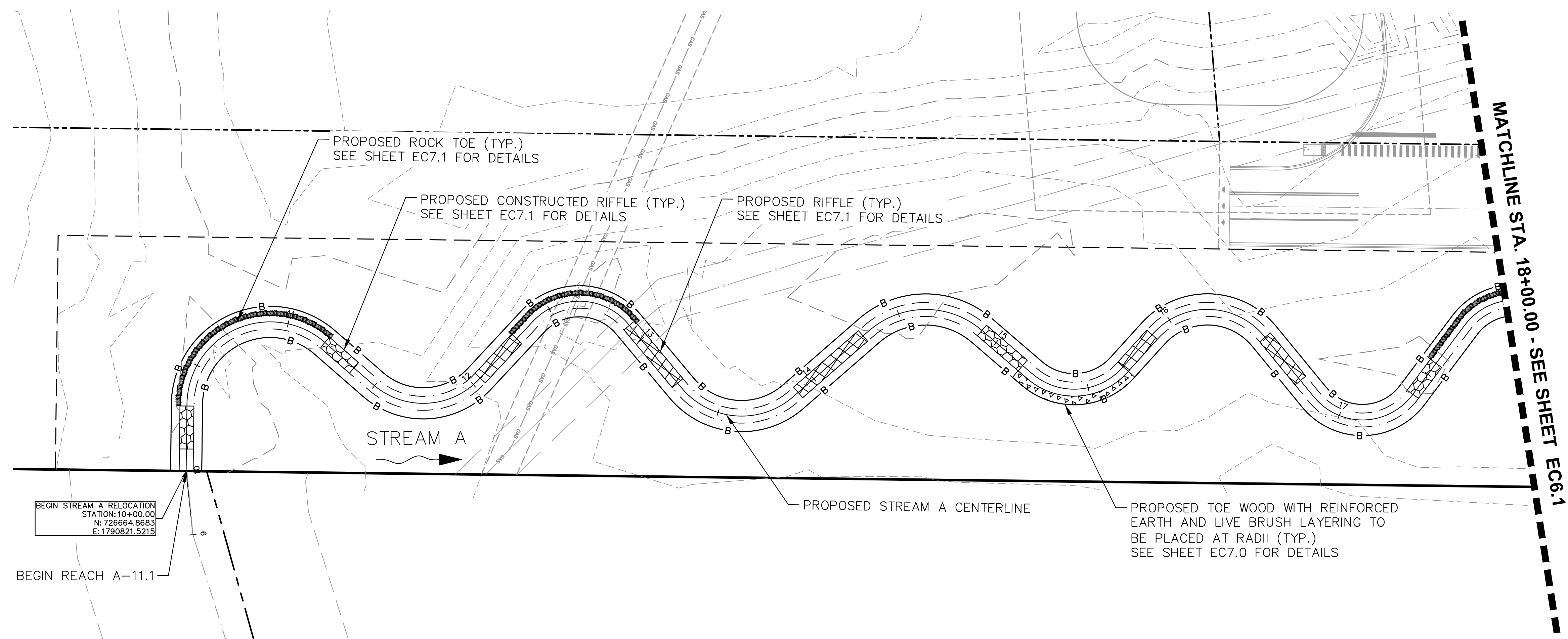
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EC5.2

Drawing name: K:\CIB\JDEVA\190118000_3dloc_Buckeye_Yard_Columbus_OH\2_Design\CAD\PlanSheets\8_StreamRelocation\STREAM PLAN AND PROFILE_A.dwg EC6.0 STREAM PLAN AND PROFILE Oct 17, 2022 5:00pm by: Gavin Rivers
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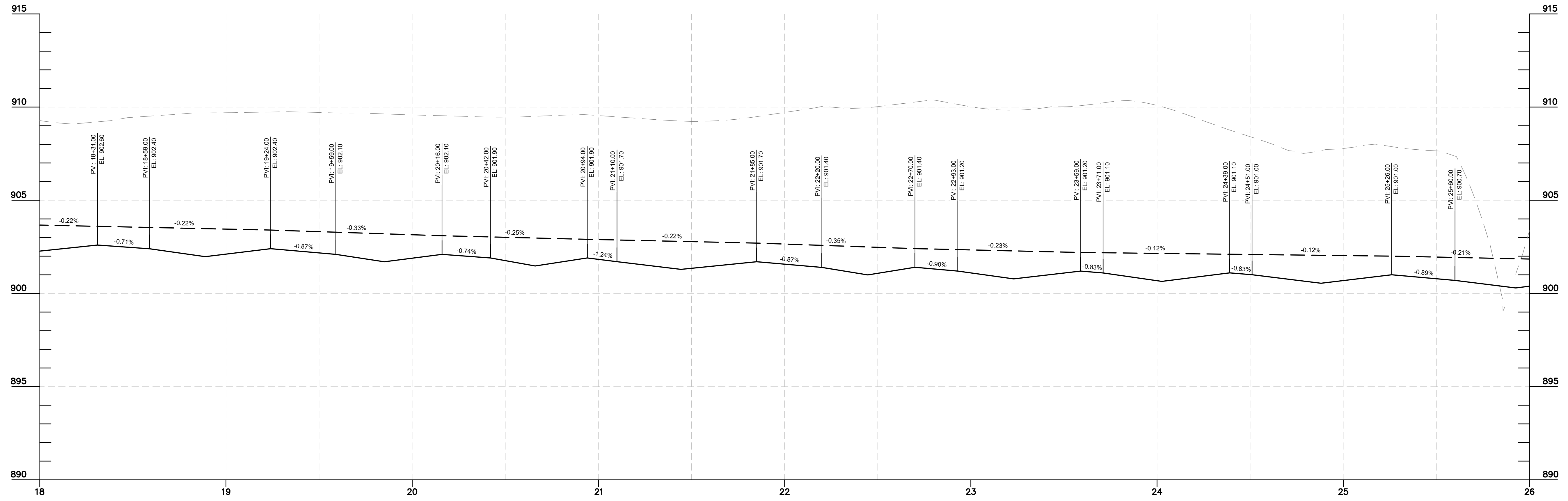


STREAM A
9+75.00-18+00.00

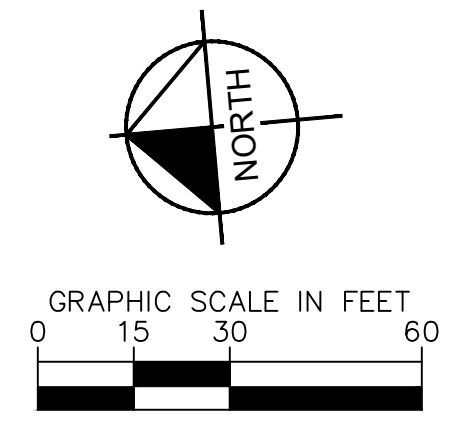
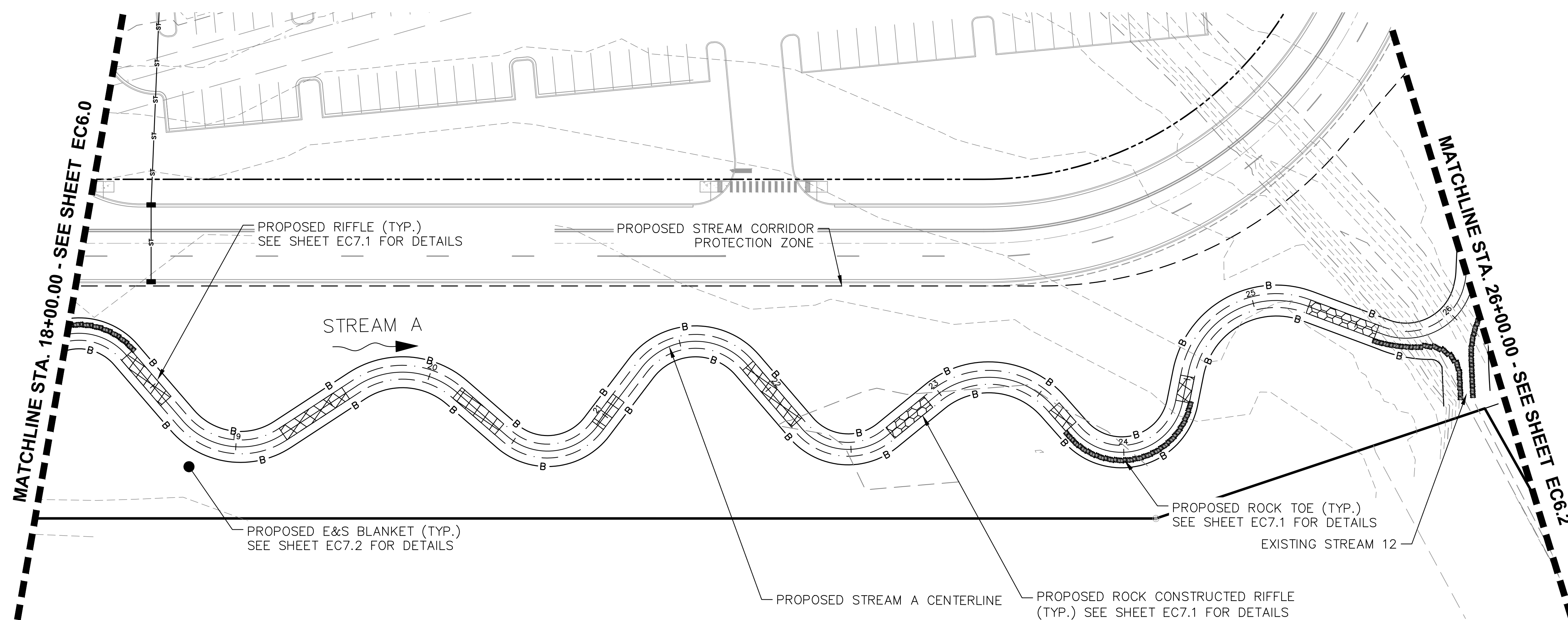


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	DRAWN BY: MCS	REVISIONS			
SCALE: CHECKED BY: JMM	No.				
STREAM RELOCATION PLANS BUCKEYE YARD CITY OF COLUMBUS, FRANKLIN COUNTY, OH					
ORIGINAL ISSUE: 10/17/2022 KHA PROJECT NO. 190118000 SHEET NUMBER EC6.0					

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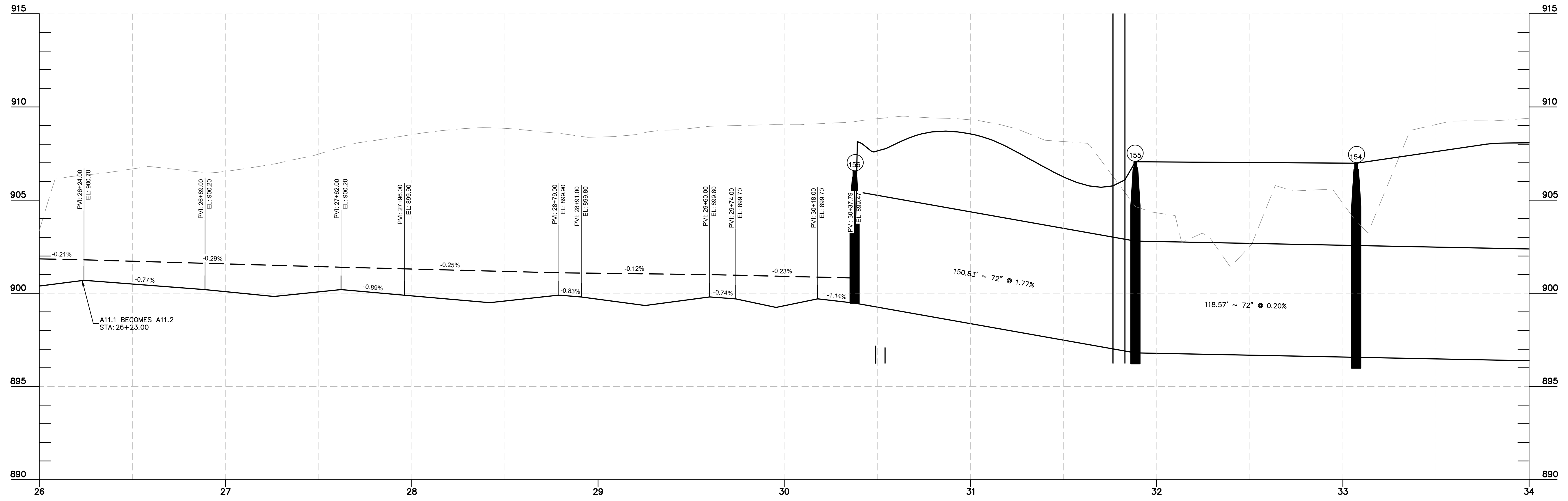


STREAM A
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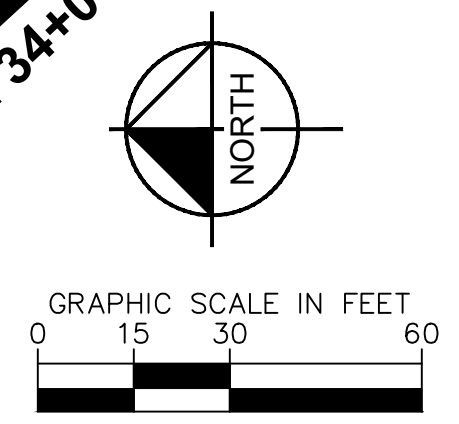
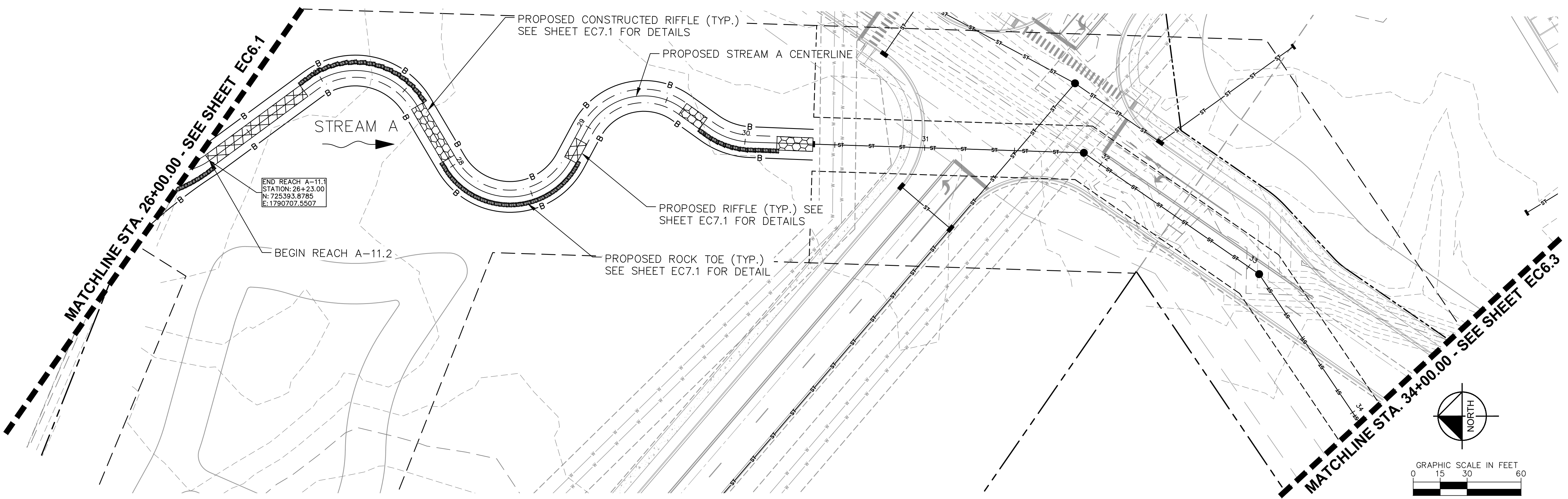


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ORIGINAL ISSUE: 10/17/2022	
KHA PROJECT NO. 190118000	
SHEET NUMBER	
EC6.1	
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26+00.00-34+00.00



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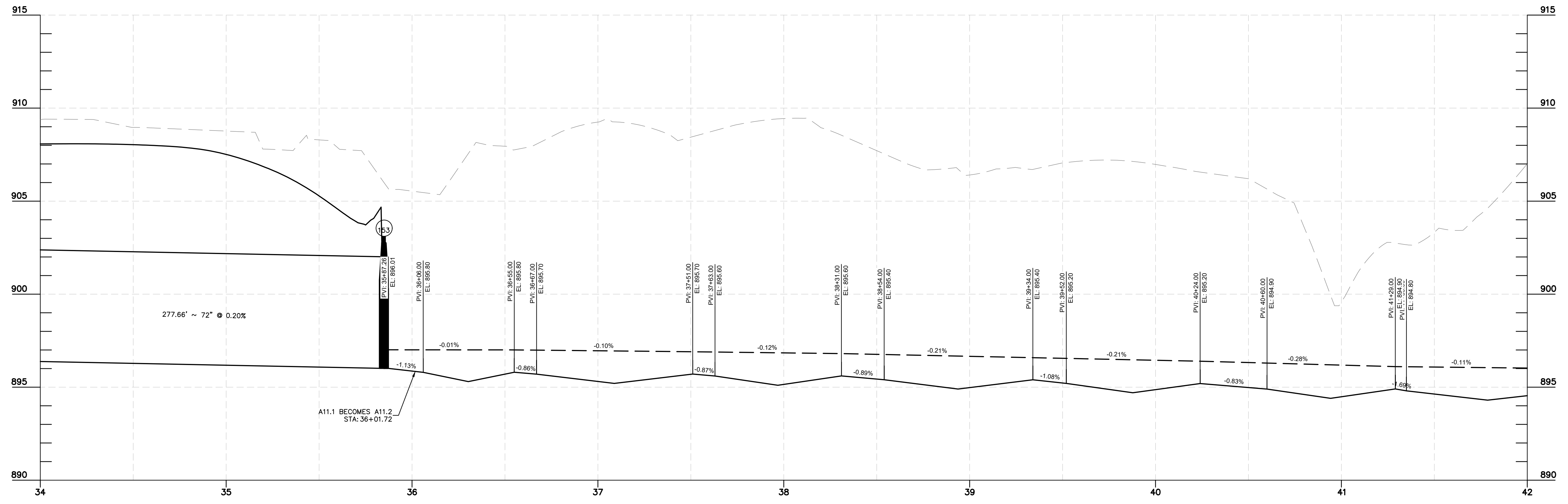
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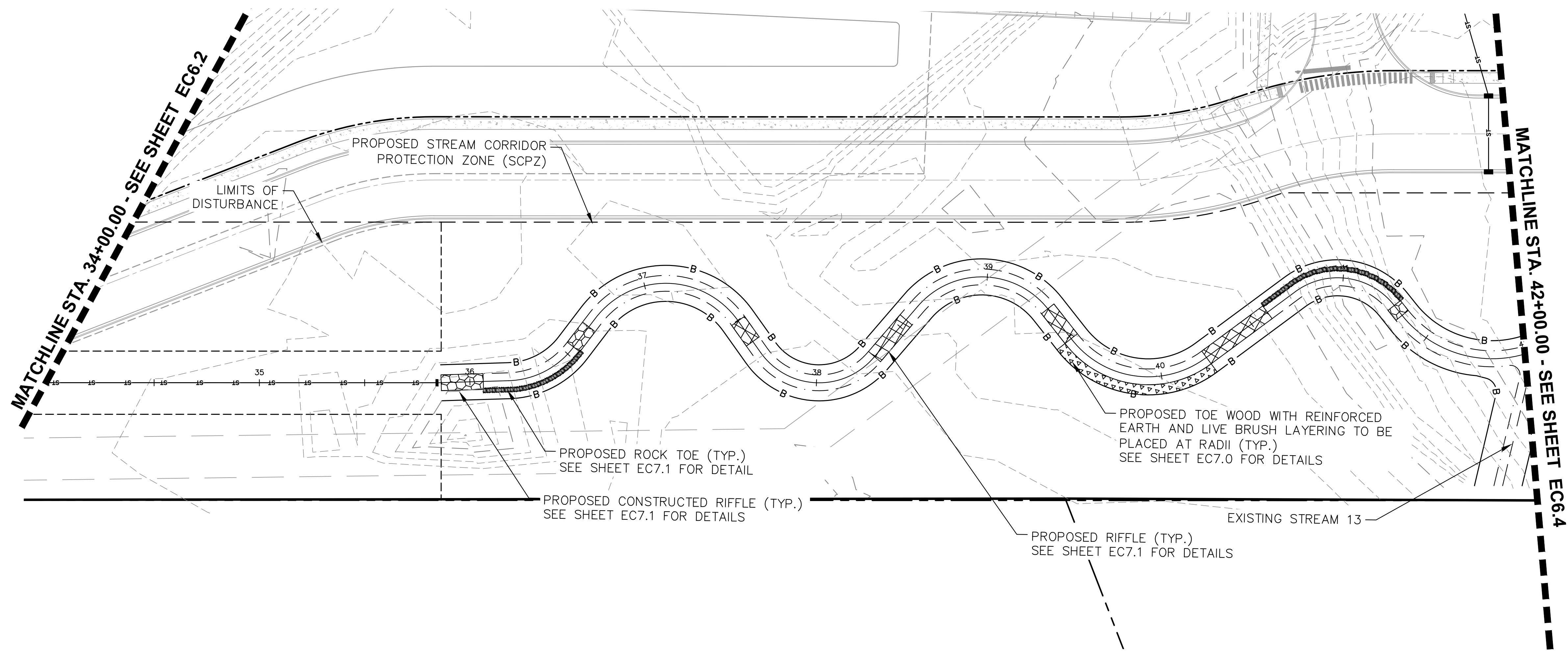
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BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

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STREAM A
34+00.00-42+00.00



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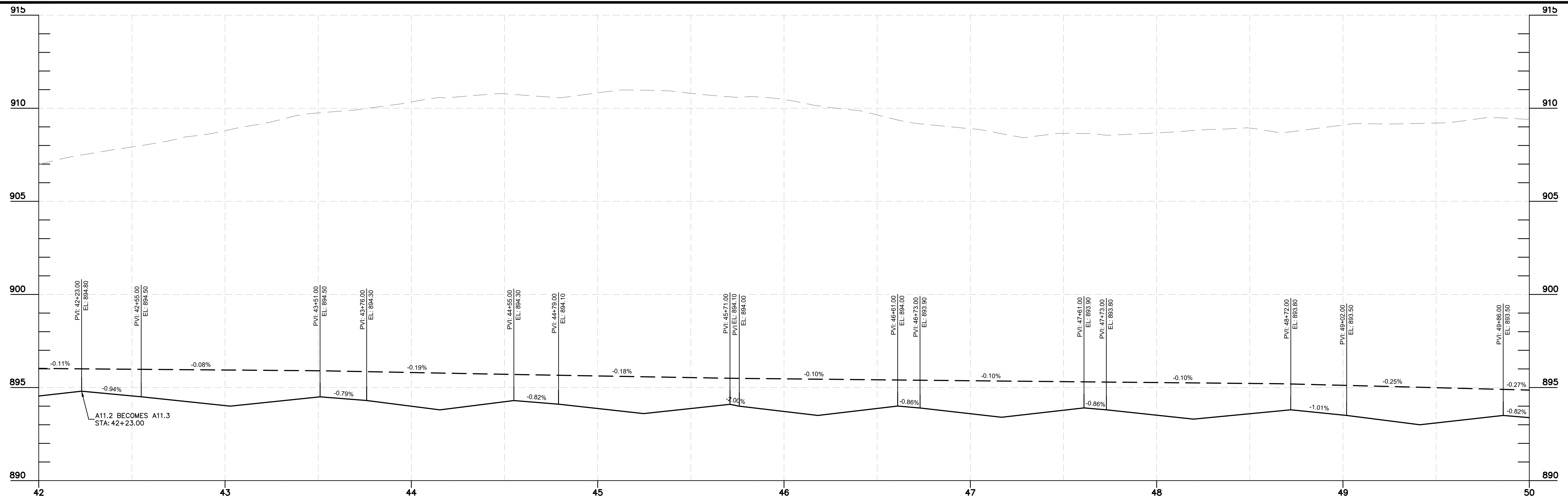
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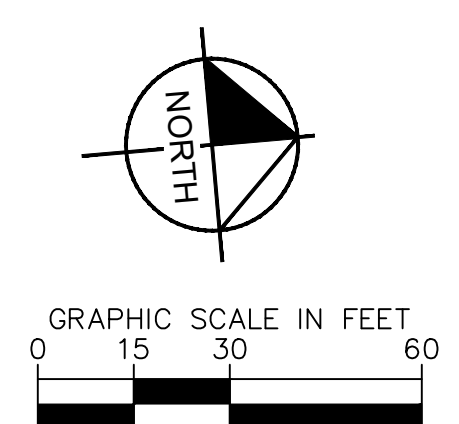
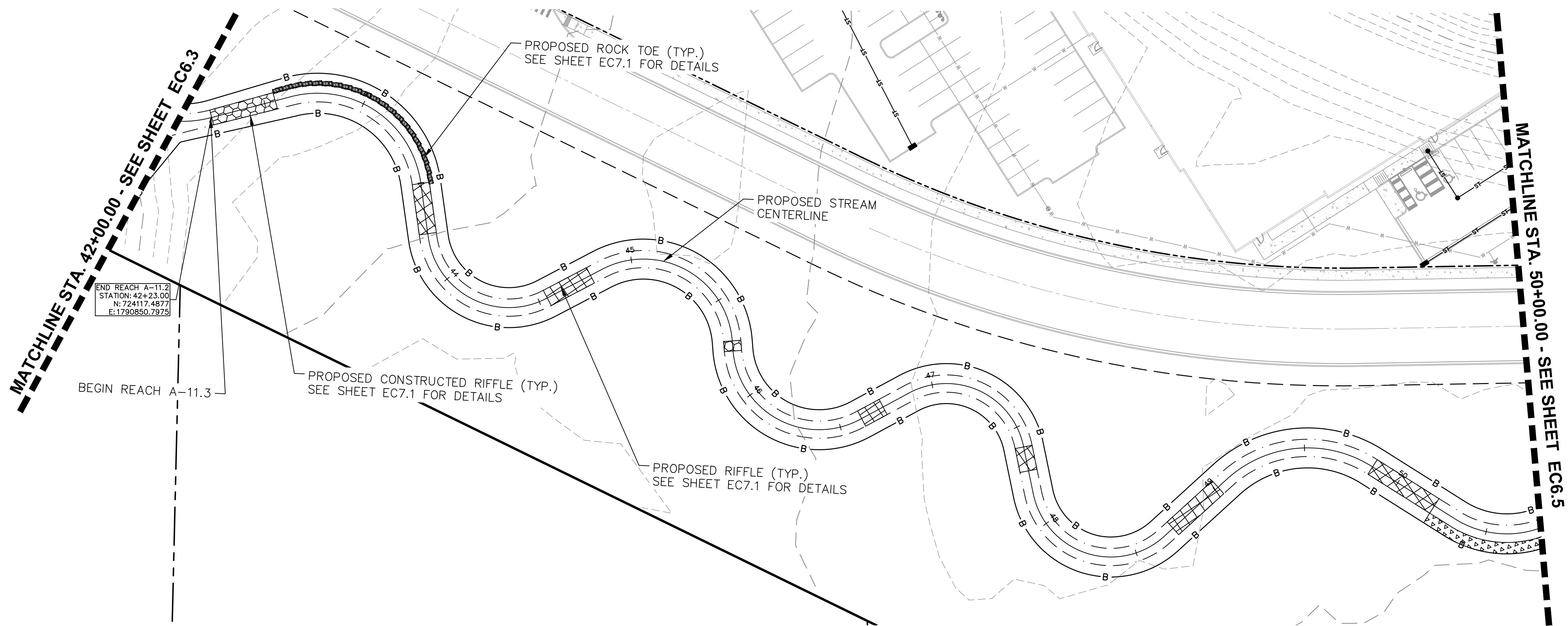
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42+00.00-50+00.00



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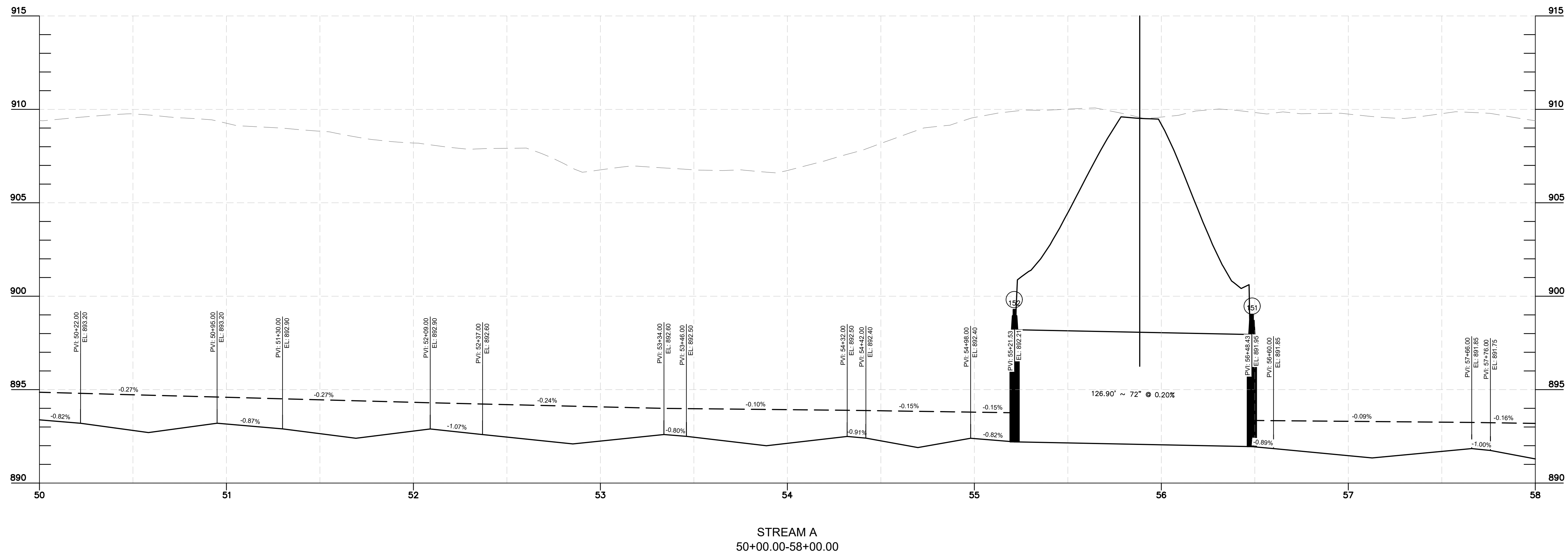
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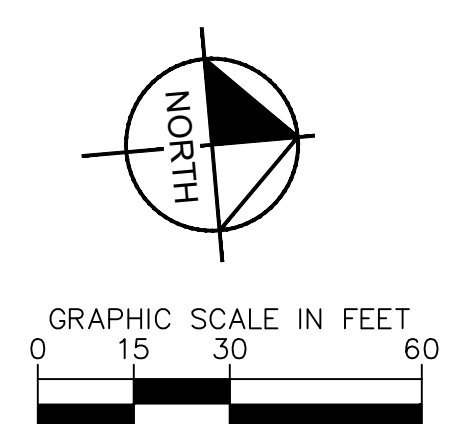
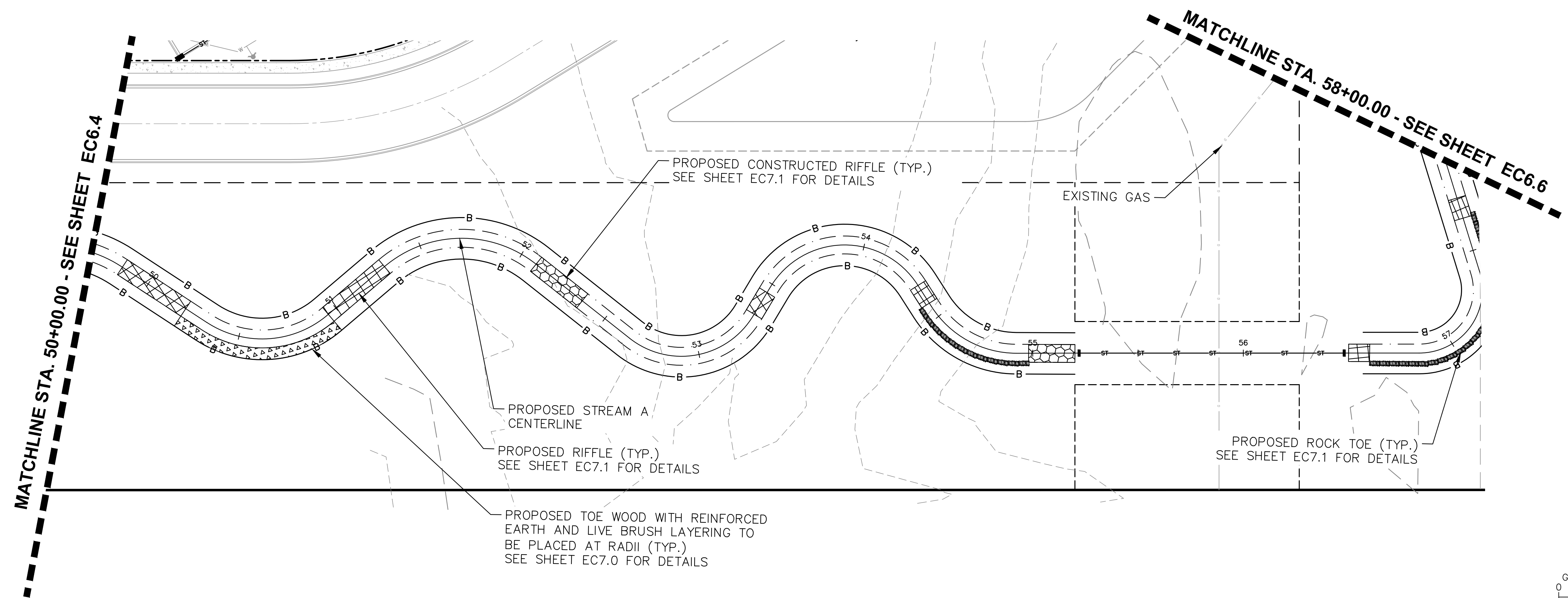
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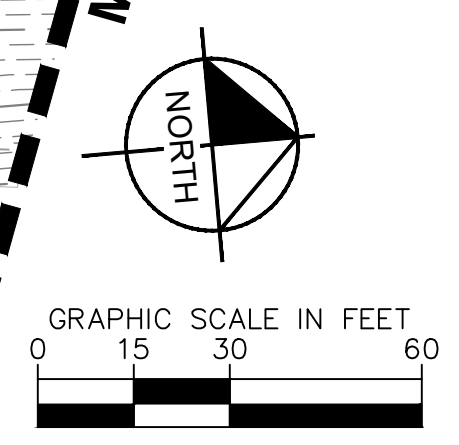
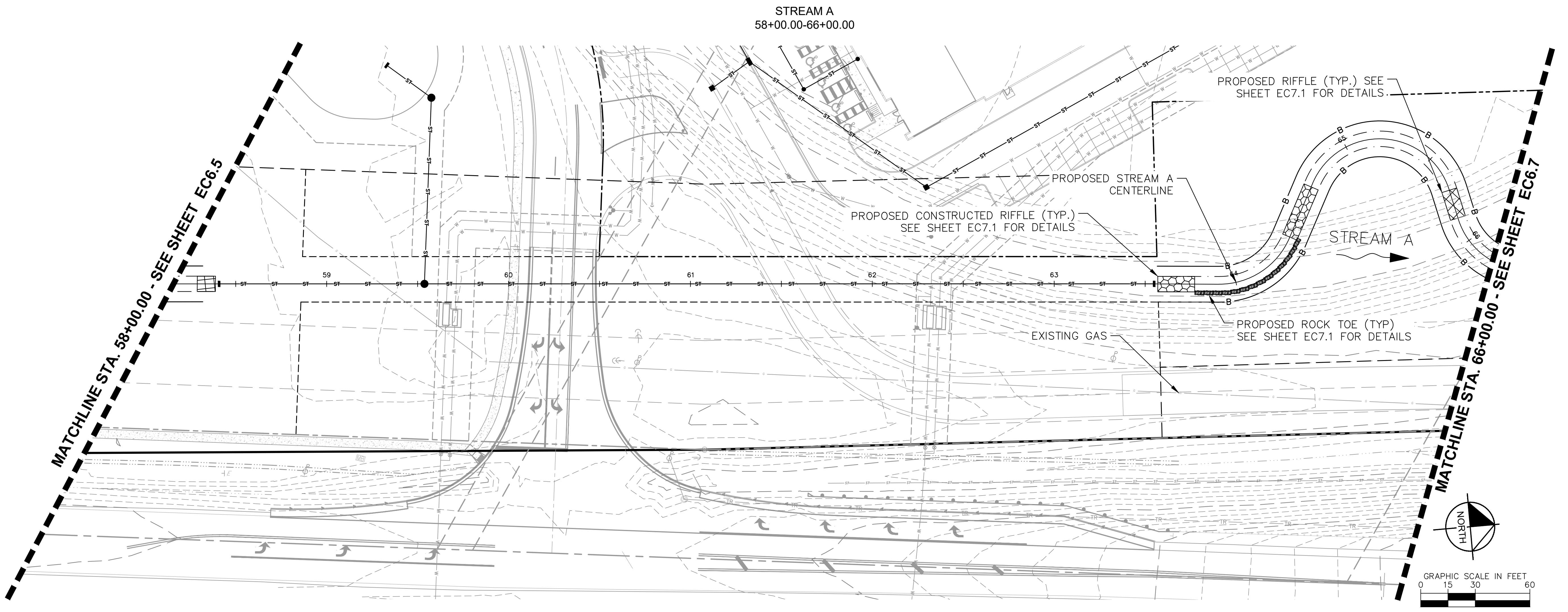
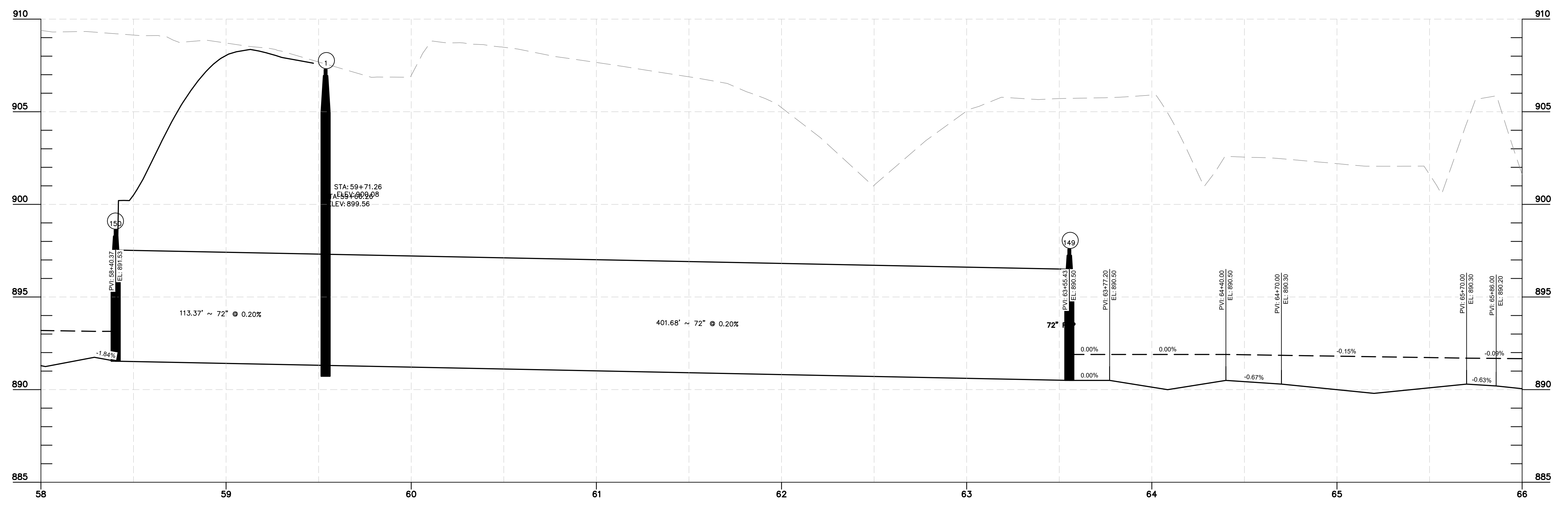


STREAM A
50+00.00-58+00.00



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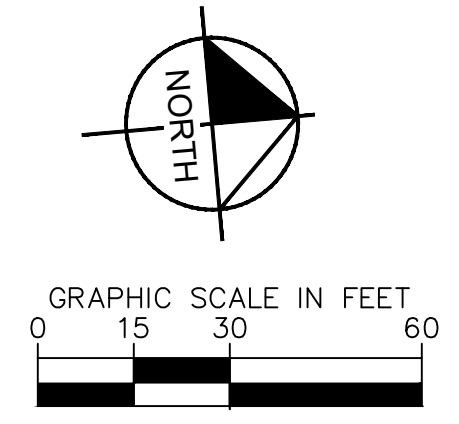
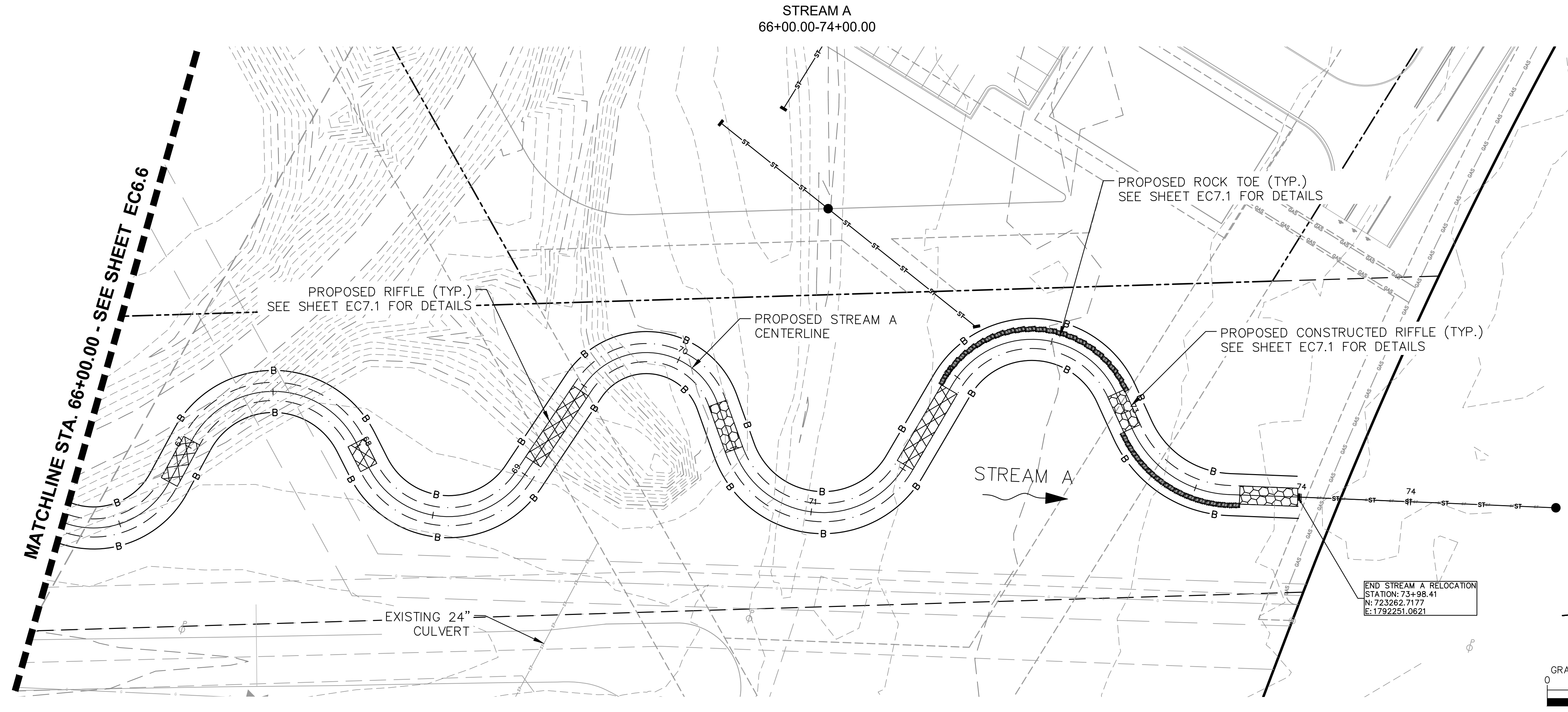
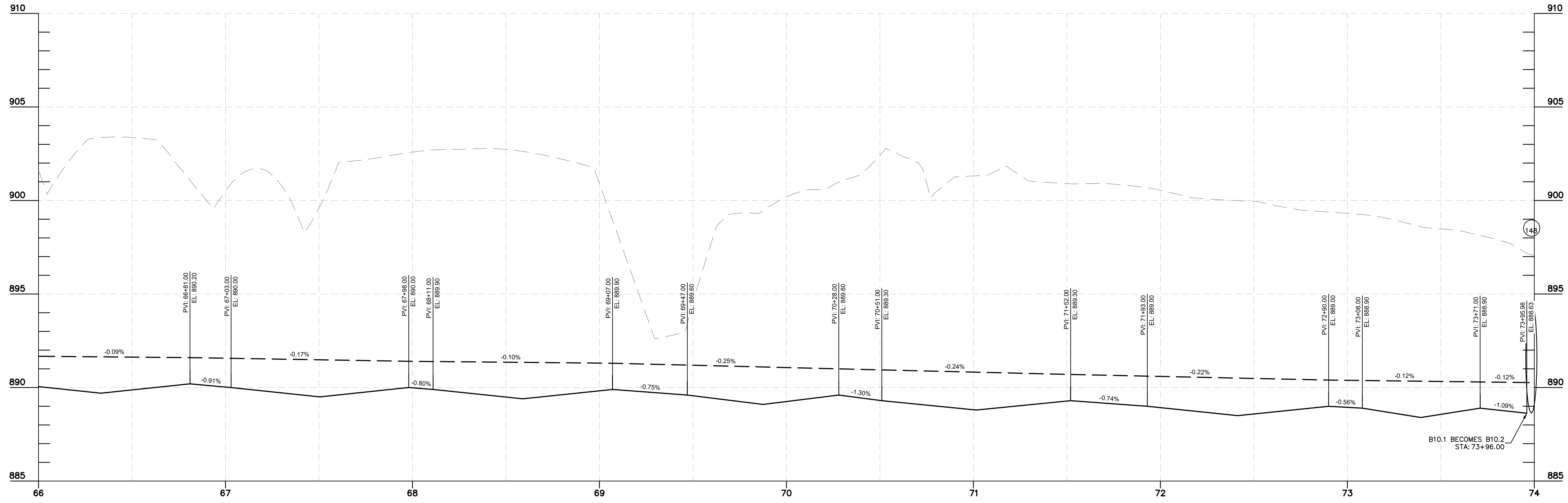
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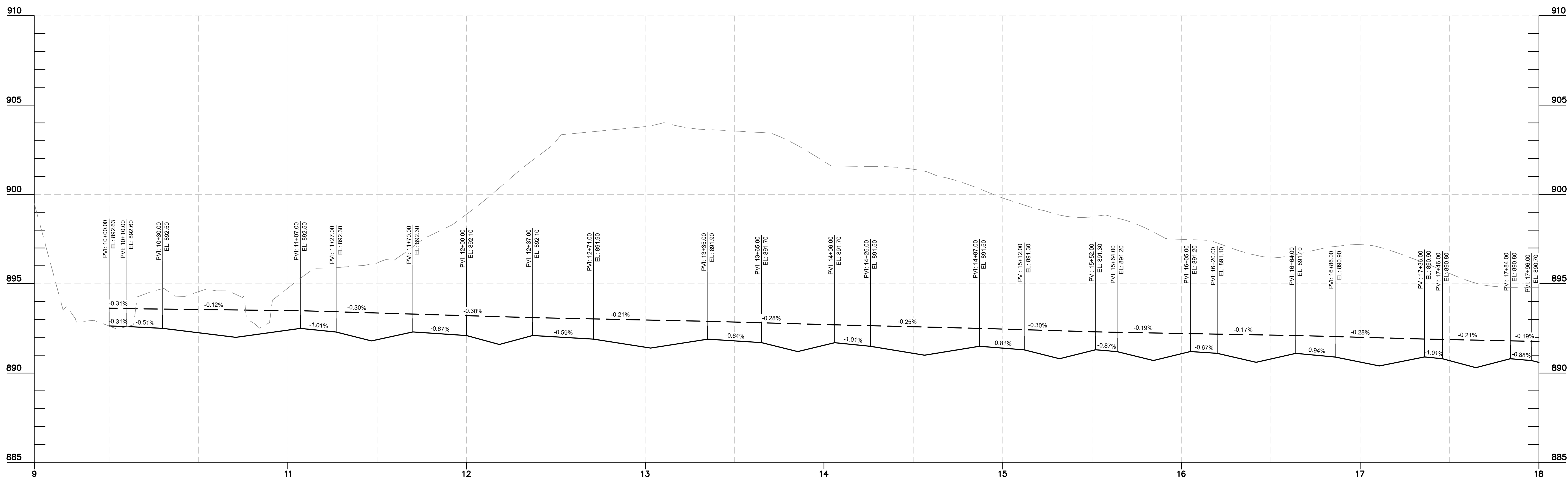
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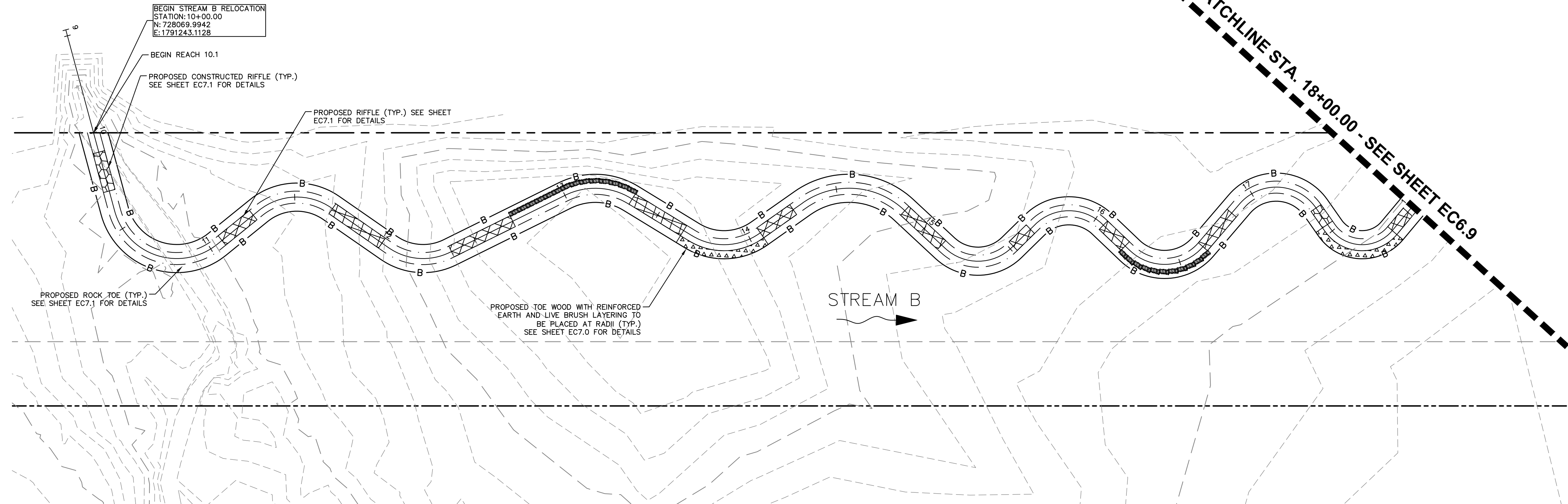


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SHEET NUMBER EC6.7	

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9+58.11-18+00.00



MATCHLINE STA. 18+00.00 - SEE SHEET EC6.9

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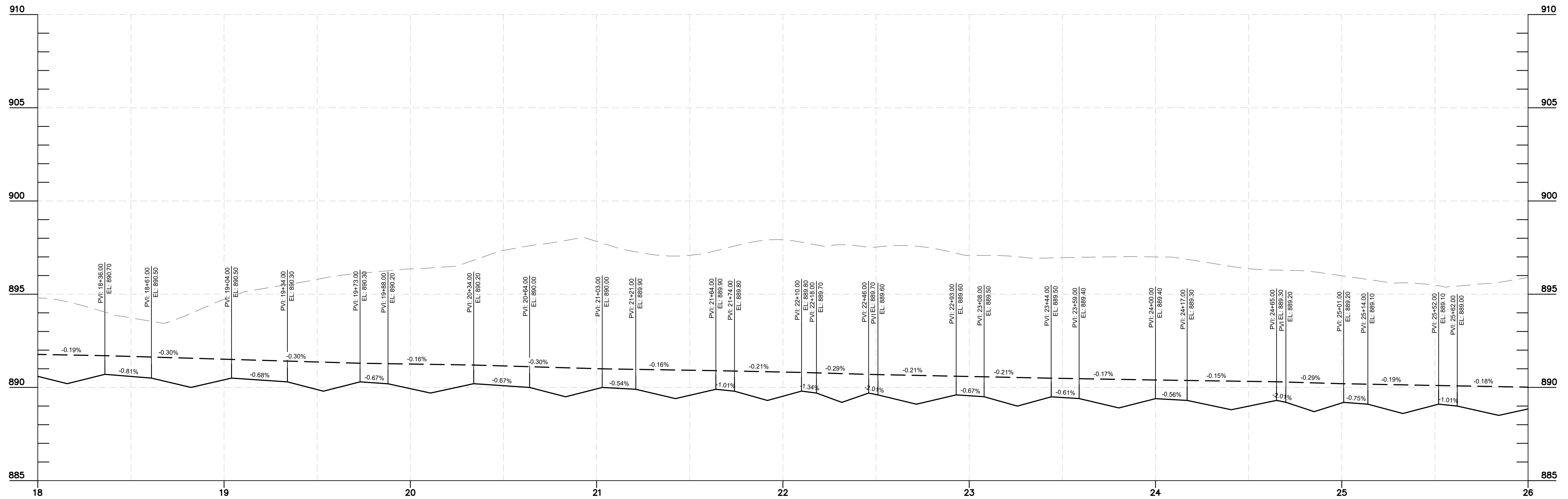
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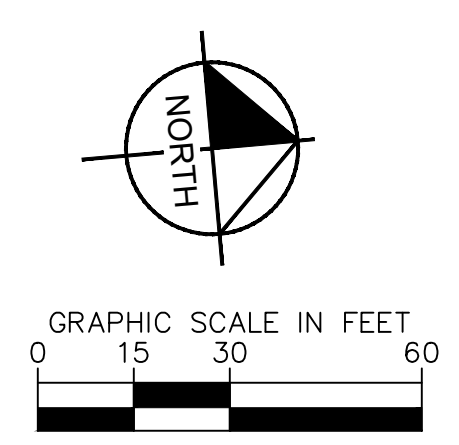
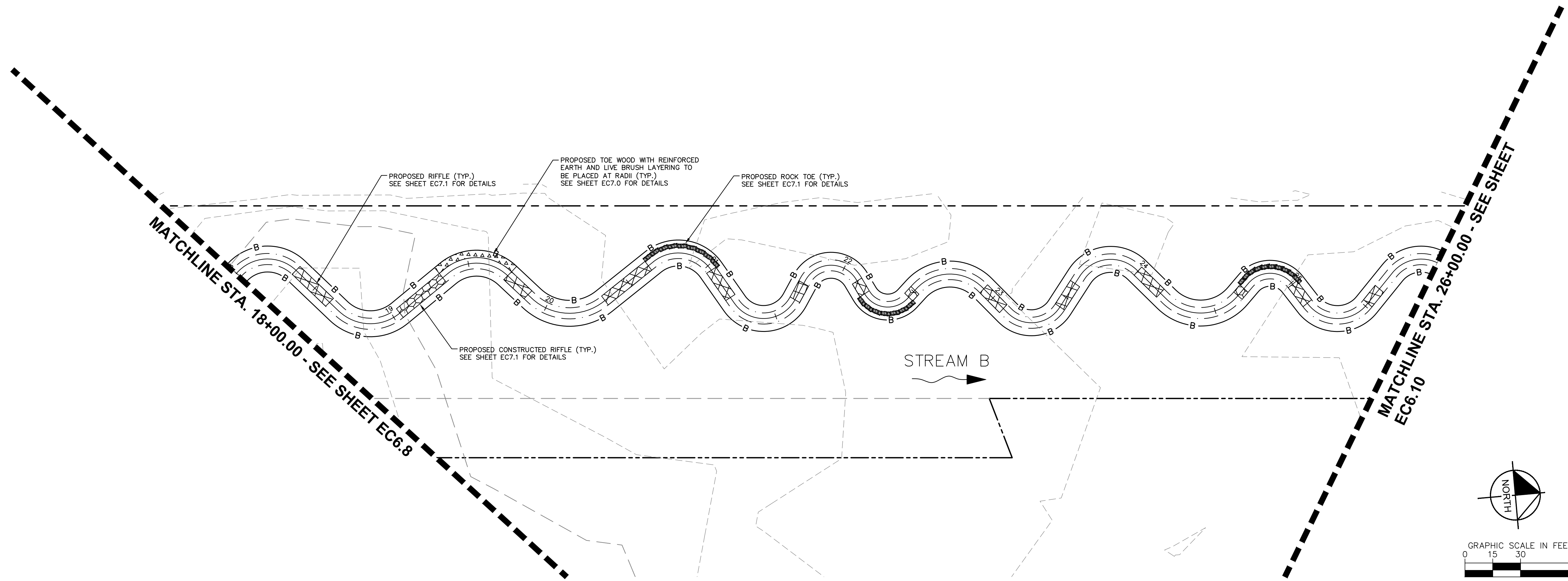
STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

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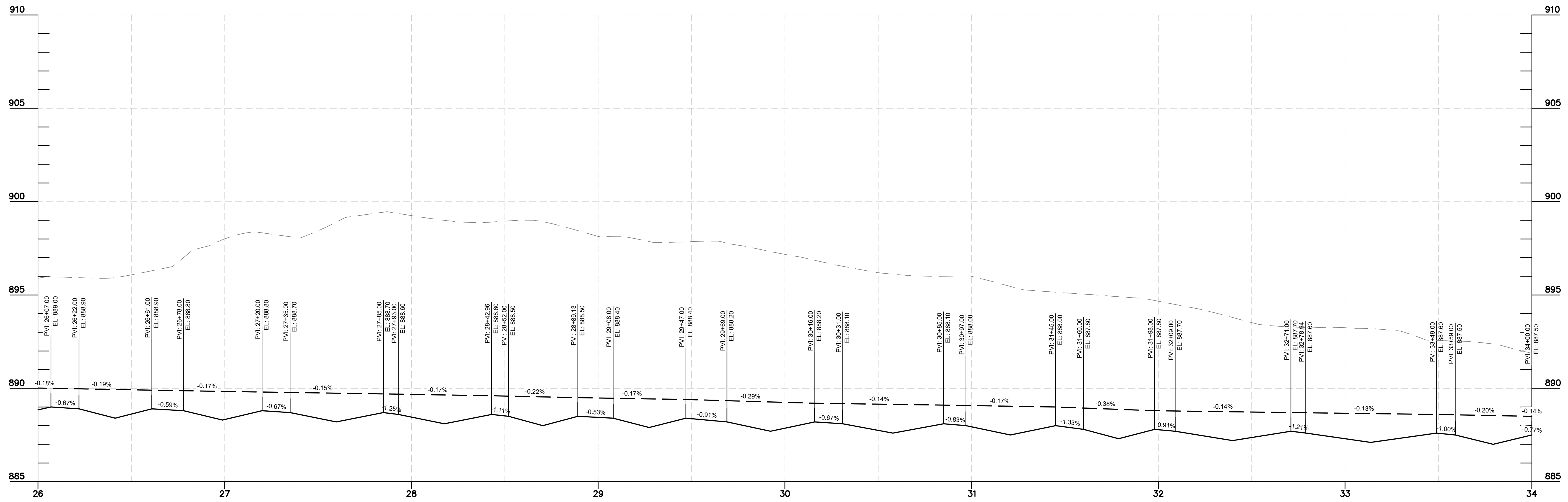


STREAM B
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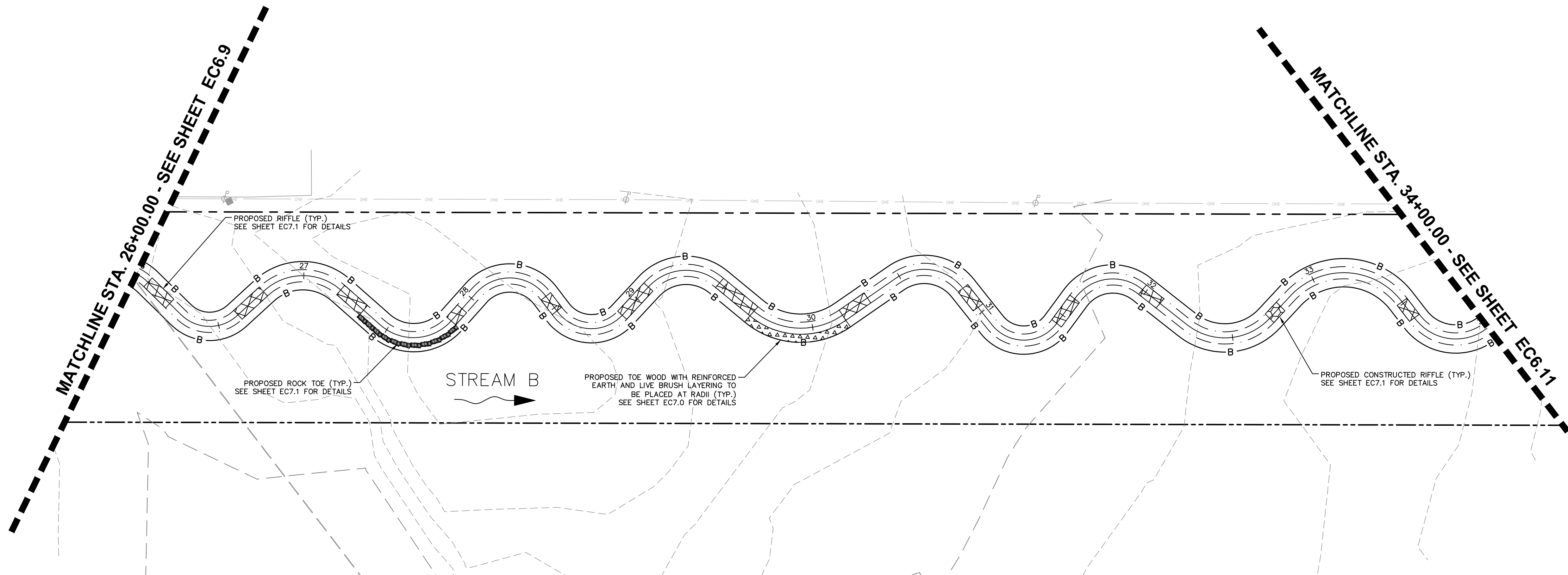


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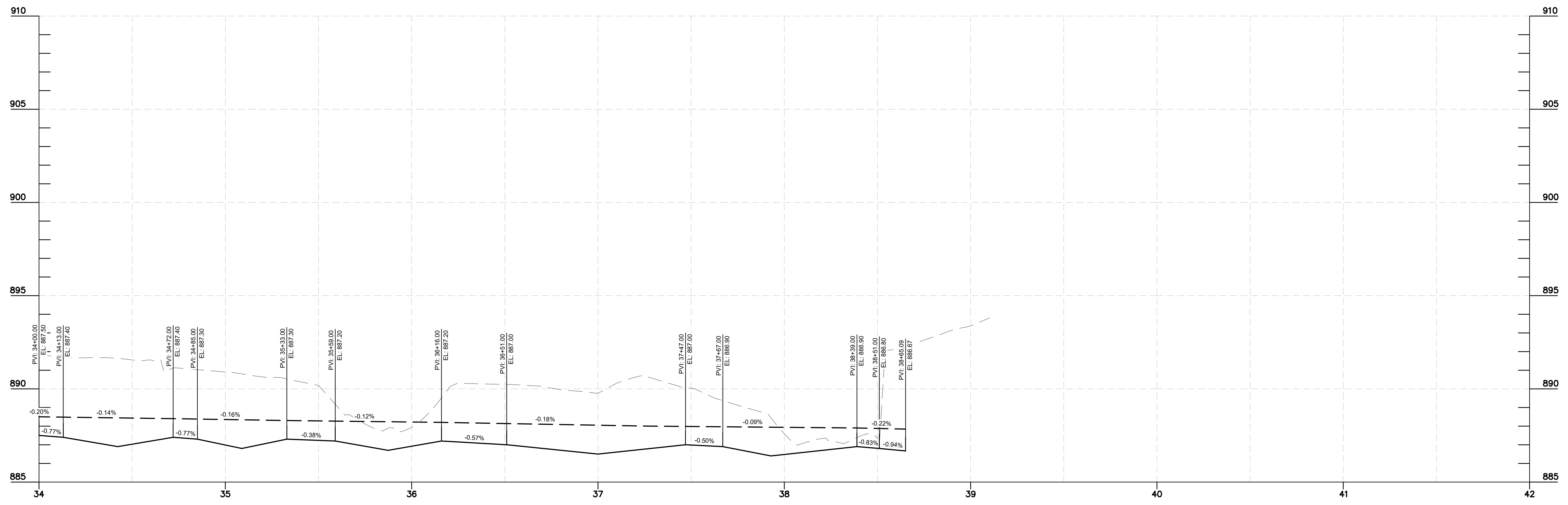
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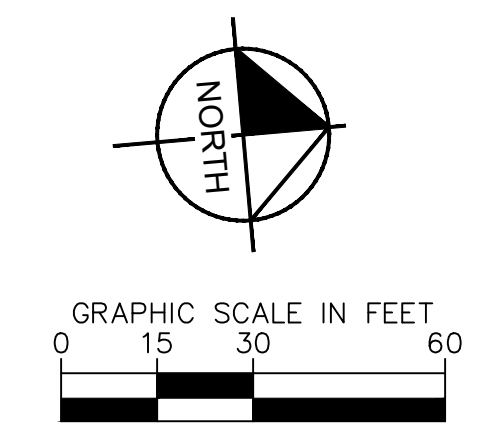
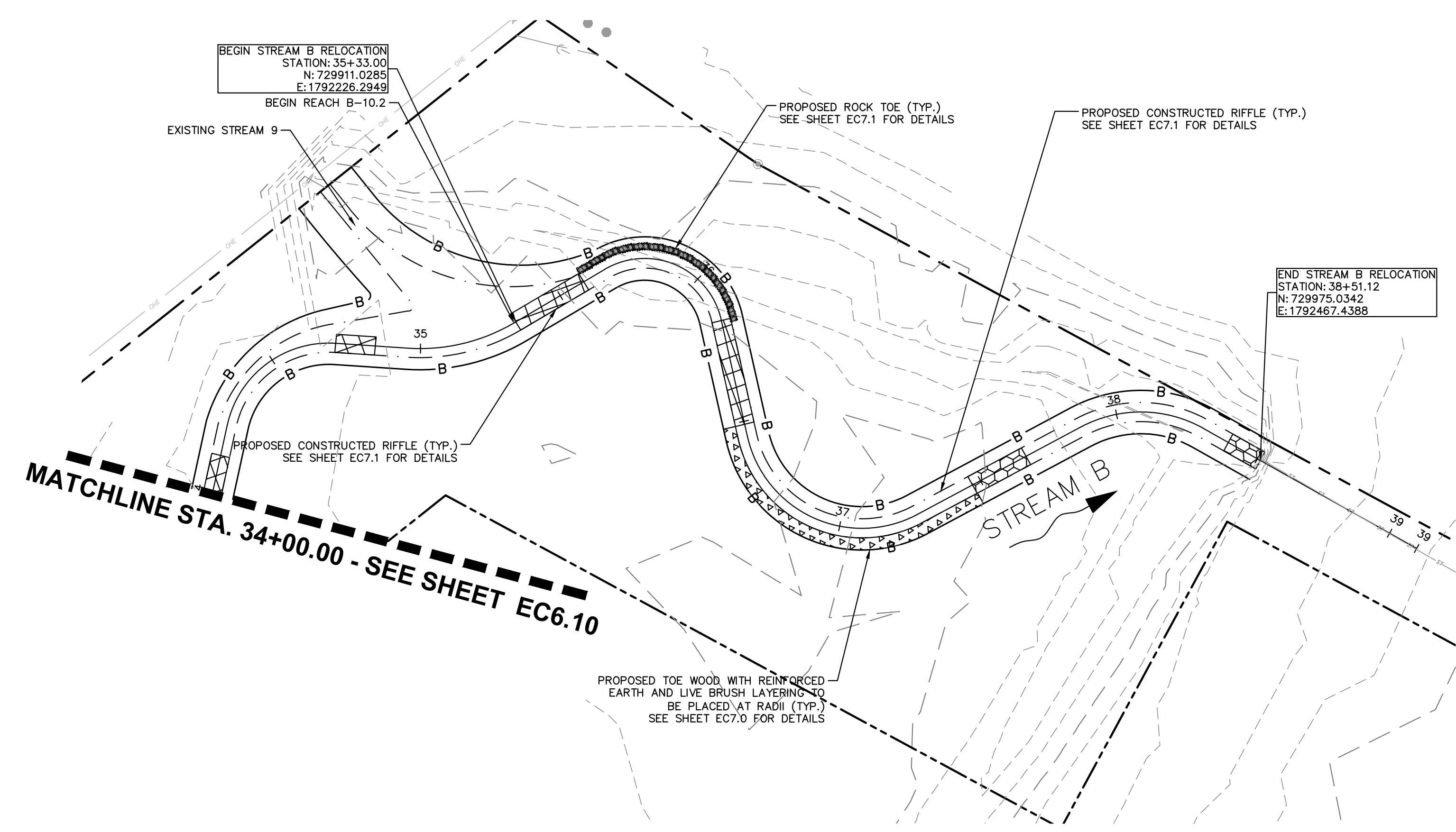
STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

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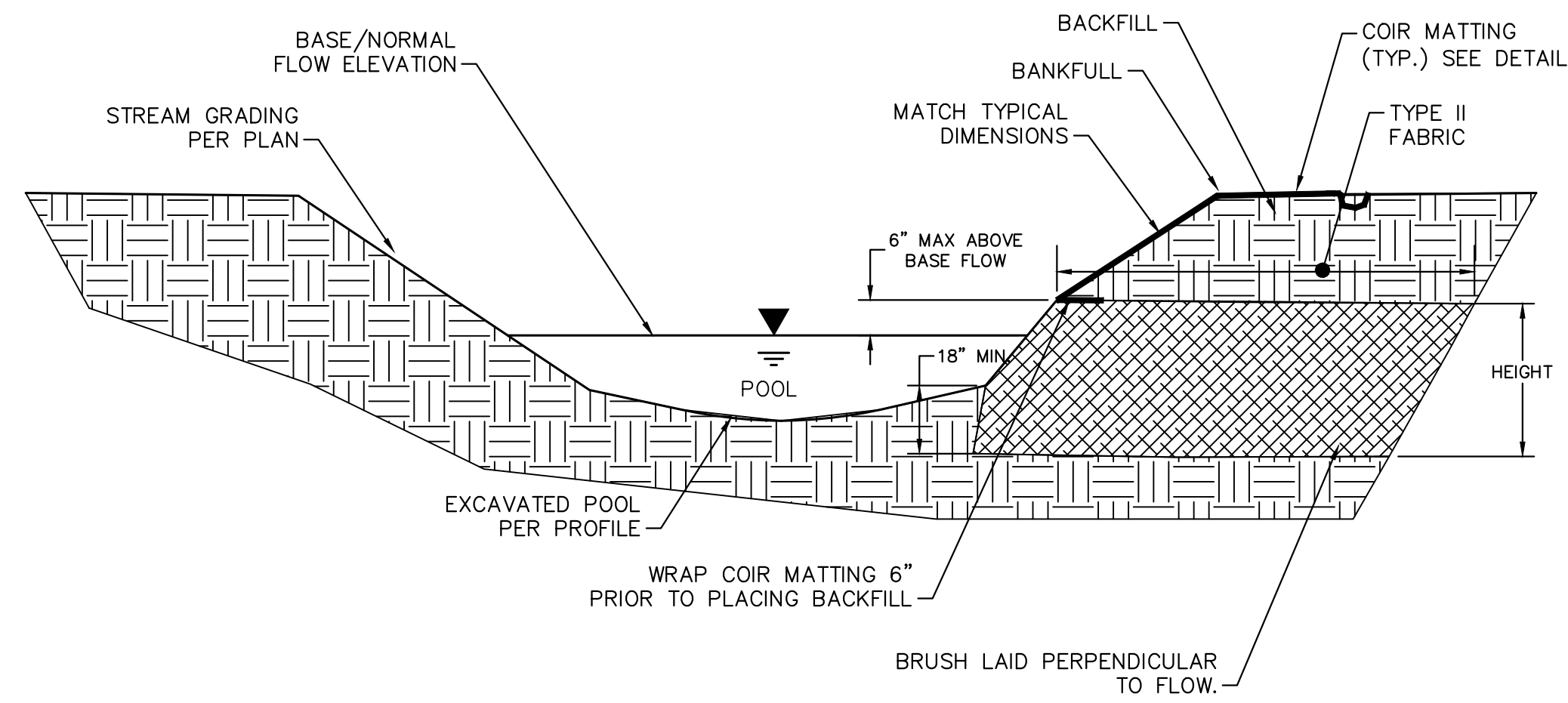


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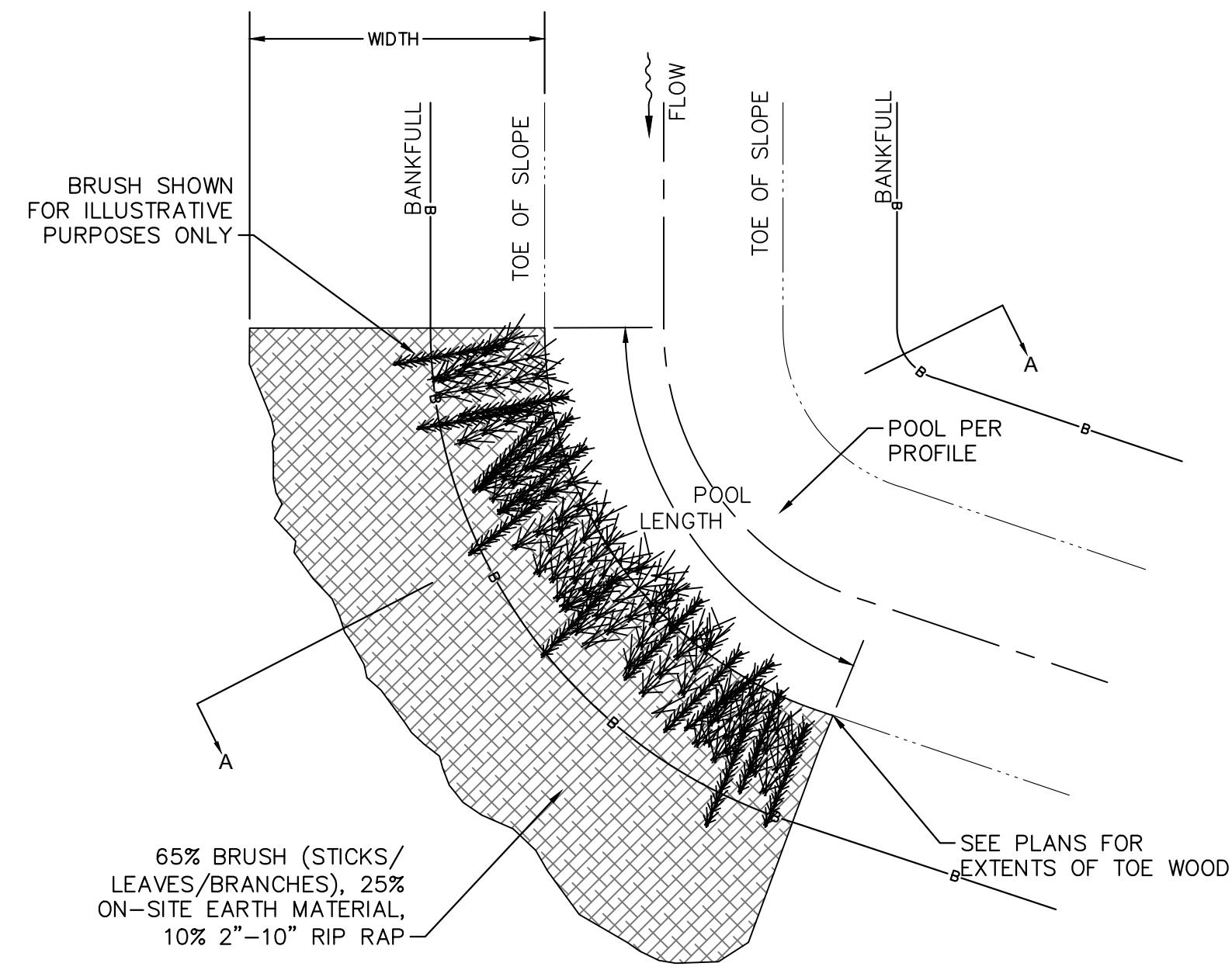


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SECTION A-A

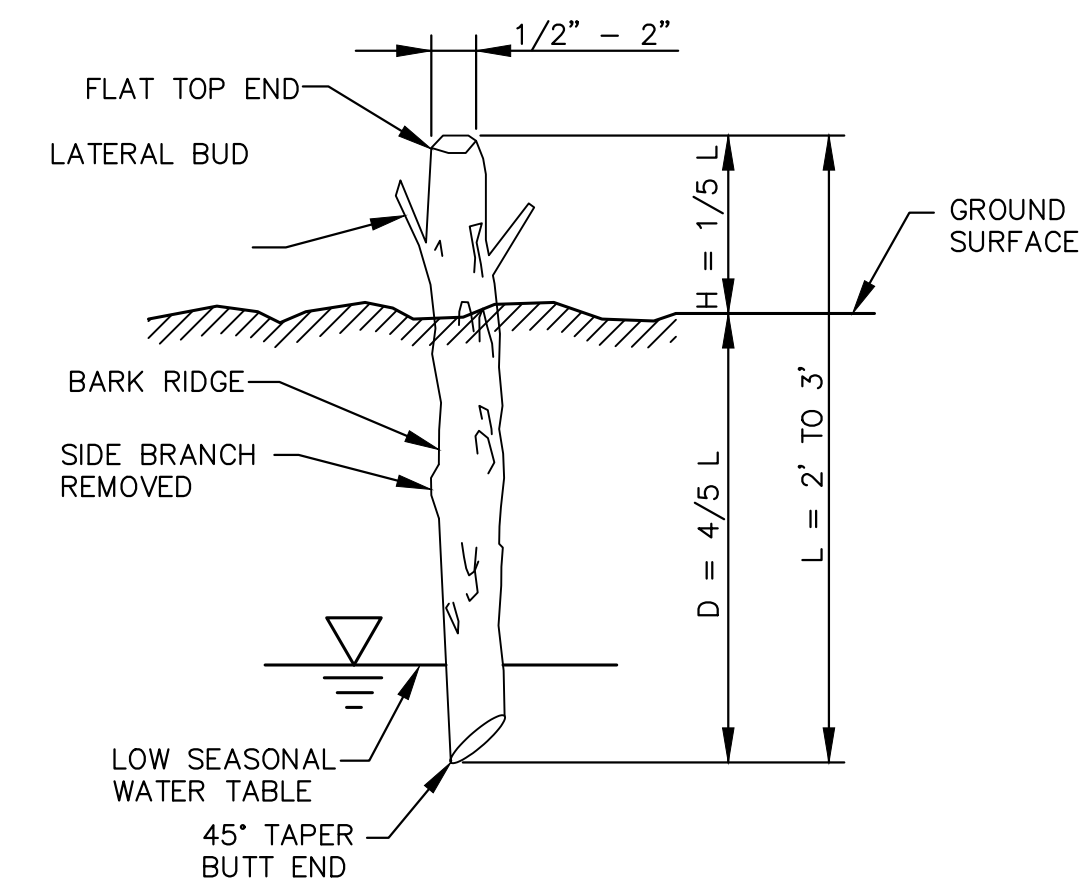


PLAN VIEW

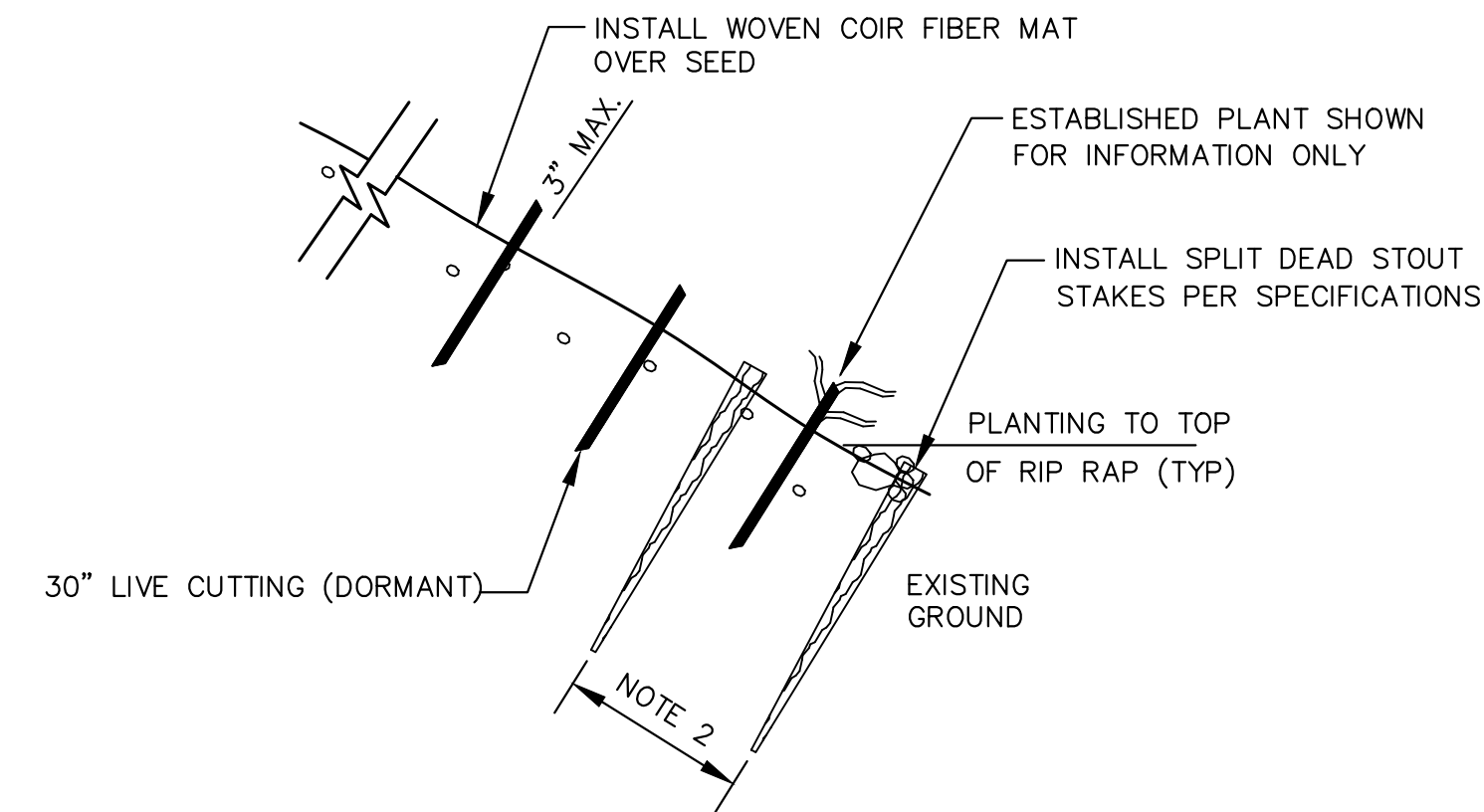
TOE WOOD
NOT TO SCALE

NOTES:

1. BRUSH SHALL BE A VARIETY OF DIAMETERS AND SHALL BE LAID GENERALLY PERPENDICULAR TO FLOW AND COMPACTED BY DIRT.
2. LAYERS SHALL BE 65% BRUSH OF A VARIETY OF SIZES WITH 25% ON SITE MATERIAL FILLING VOIDS AND 10% 2"-10" RIP RAP.
3. BRUSH SHOULD BE BROUGHT UP IN 6"-8" LIFTS.
4. GRADING ABOVE THE TOE WOOD IS PER THE TYPICAL SECTION AND/OR GRADING PLAN.



LIVE STAKE DETAIL
NOT TO SCALE



LIVE STAKE (IN EARTH)
NOT TO SCALE

LIVE STAKING
NOT TO SCALE

- NOTES:**
1. IF USING WOVEN COIR FIBER MAT, INSTALL LONG STRAW MULCH BENEATH MAT.
 2. 4' ON CENTERS

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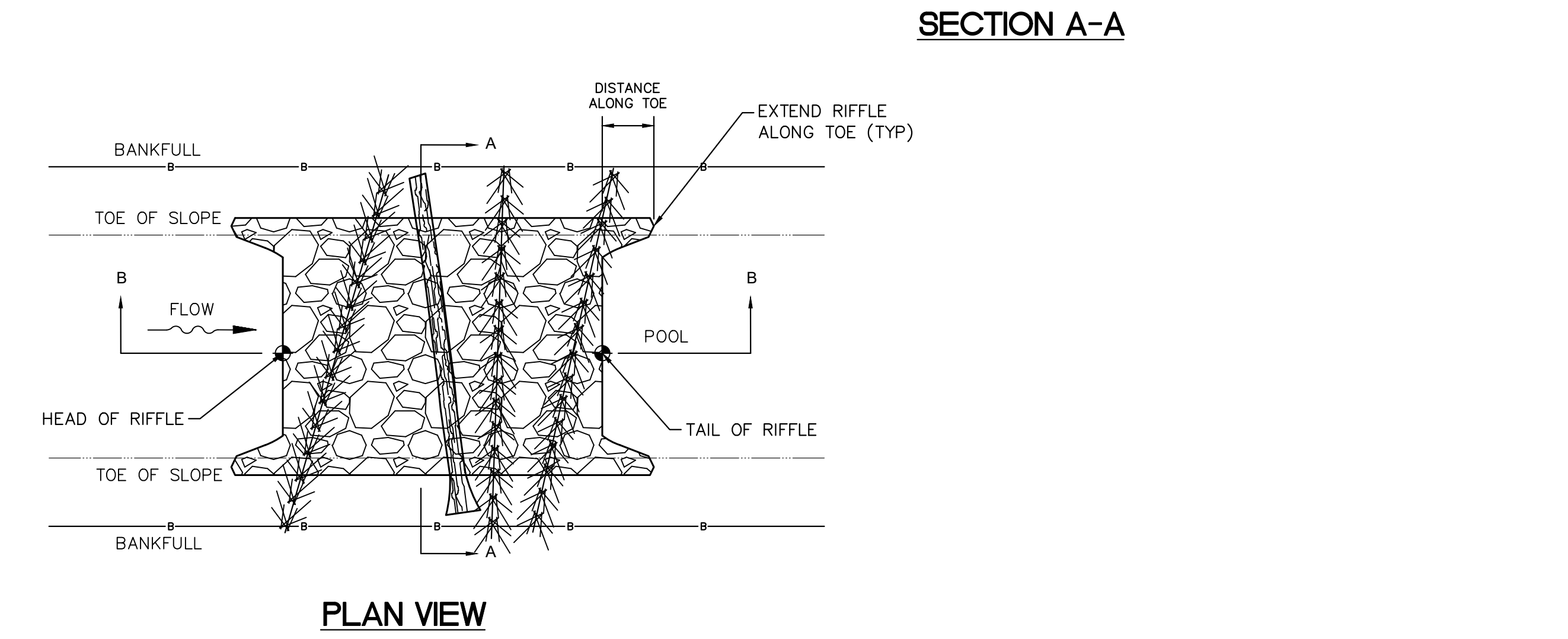
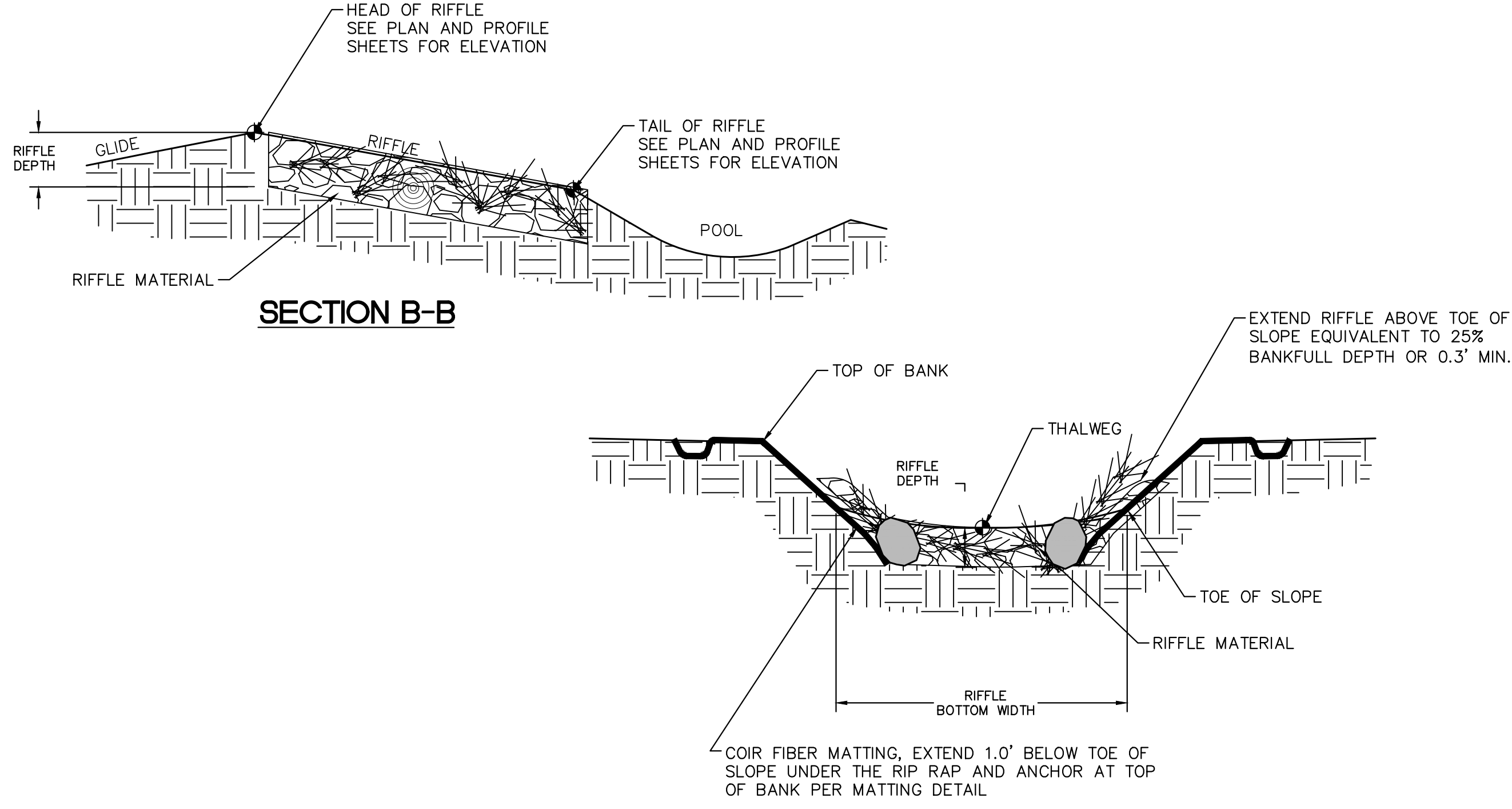
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DETAILS

STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

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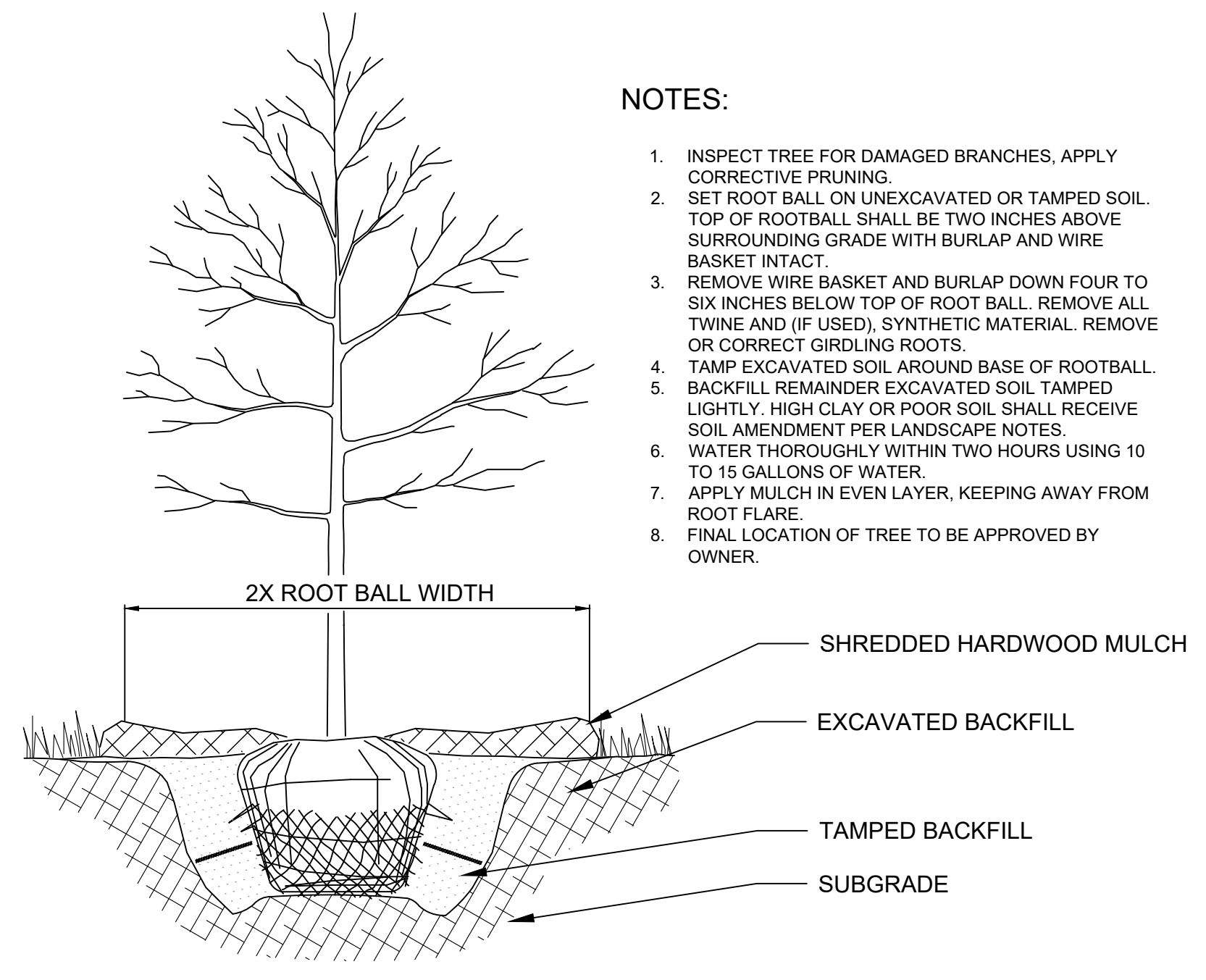
- NOTES:**
- MAJORITY OF BRUSH SHOULD BE 0.5"-2.0" IN DIAMETER AND NO LARGER THAN 6" AND EXTEND INTO THE BANK 2 FEET ON EACH SIDE. WOODY MATERIAL SHALL BE VARYING DIAMETER TO ALLOW MATERIAL TO BE COMPACTED.
 - PLACE LOGS AND WOOD DEBRIS WITH MINIMAL GAPS. A LAYER OF ON-SITE CHANNEL MATERIAL SHOULD BE APPLIED TO FILL VOIDS IN BRUSH AND LOGS PRIOR TO THE INSTALLATION OF ADDITIONAL LAYERS.
 - BOULDERS TO BE PLACED AS SPECIFIED ON PLANS

DESIGN VARIABLES	
	ALL REACHES
RIFFLE MATERIAL ¹	B, 57, E, W
RIFFLE DEPTH ²	12"
RIFFLE BOTTOM WIDTH	VARIES
DISTANCE ALONG TOE	18"
LOG DIAMETER	8" - 12"

¹ WELL MIXED GRADATION (APPROXIMATELY 70% STONE, 20% EARTH AND 10% WOOD/MULCH) STONE MIX TO BE COMPRISED OF THE SPECIFIED MATERIALS: A = CLASS A RIP-RAP, B = CLASS B RIP-RAP, 57 = #57 STONE E = EARTH, M = MULCH, W = WOODY DEBRIS, L = LOGS. #57 STONE NOT TO EXCEED 10% OF THE STONE MIX. THE REMAINDER OF THE MIX SHALL BE EQUAL PARTS CLASS A AND CLASS B RIP-RAP IF BOTH ARE SPECIFIED OR AS DIRECTED BY THE ENGINEER.

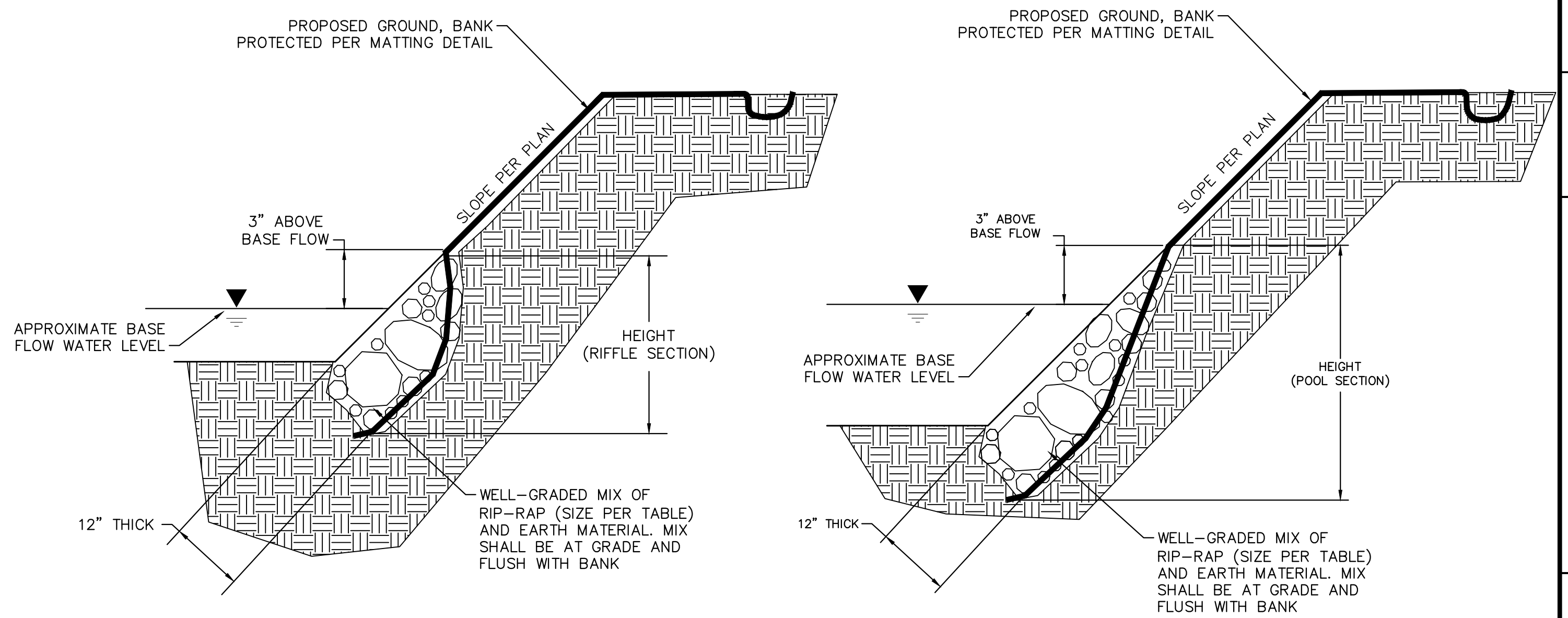
² DEPTH OF 12" TYPICAL

CONSTRUCTED RIFFLE
NOT TO SCALE



- NOTES:**
- INSPECT TREE FOR DAMAGED BRANCHES. APPLY CORRECTIVE PRUNING.
 - SET ROOT BALL ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL SHALL BE TWO INCHES ABOVE SURROUNDING GRADE WITH BURLAP AND WIRE BASKET INTACT.
 - REMOVE WIRE BASKET AND BURLAP DOWN FOUR TO SIX INCHES BELOW TOP OF ROOT BALL. REMOVE ALL TWINE AND (IF USED), SYNTHETIC MATERIAL. REMOVE OR CORRECT GIRDLING ROOTS.
 - TAMP EXCAVATED SOIL AROUND BASE OF ROOTBALL. BACKFILL REMAINDER EXCAVATED SOIL TAMPED LIGHTLY. HIGH CLAY OR POOR SOIL SHALL RECEIVE SOIL AMENDMENT PER LANDSCAPE NOTES.
 - WATER THOROUGHLY WITHIN TWO HOURS USING 10 TO 15 GALLONS OF WATER.
 - APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE.
 - FINAL LOCATION OF TREE TO BE APPROVED BY OWNER.

TREE PLANTING DETAIL
NOT TO SCALE

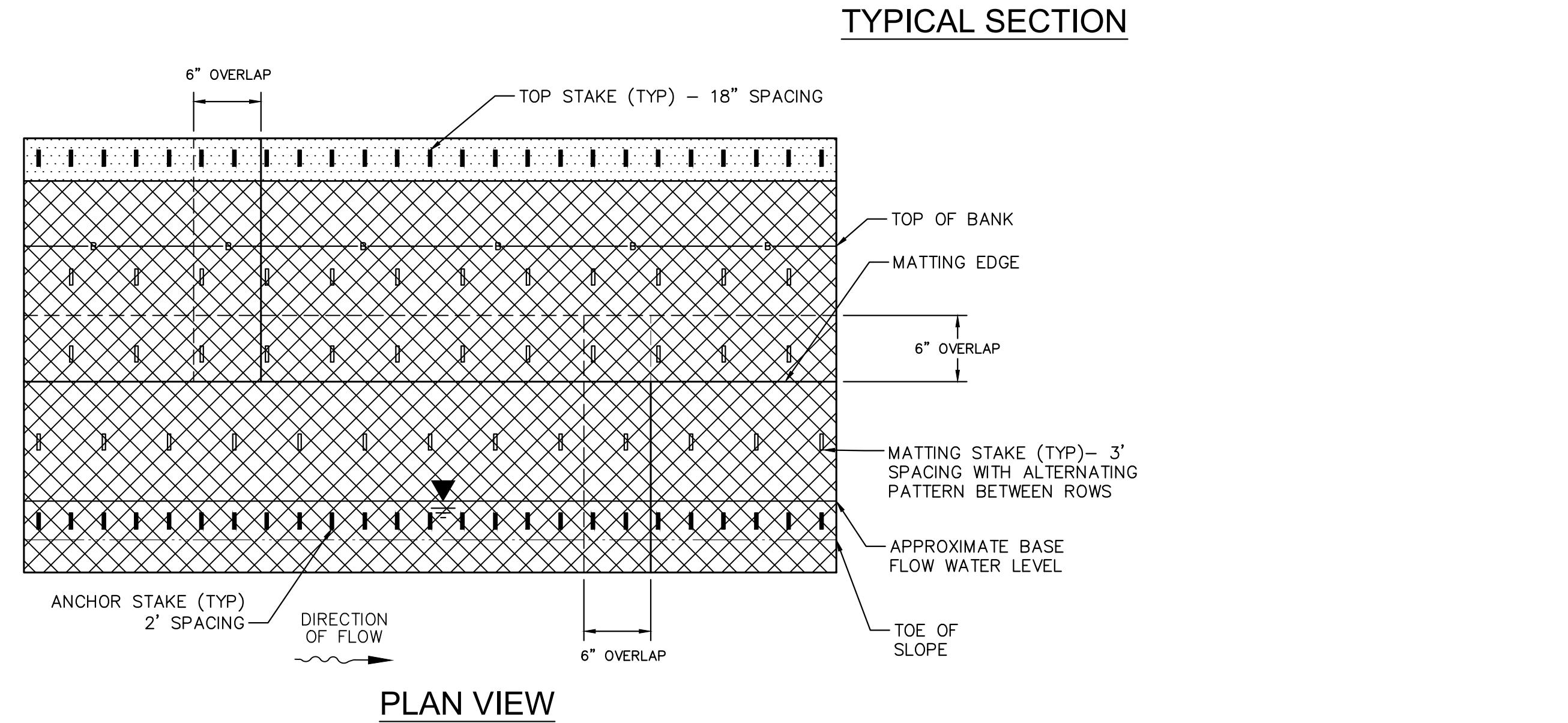
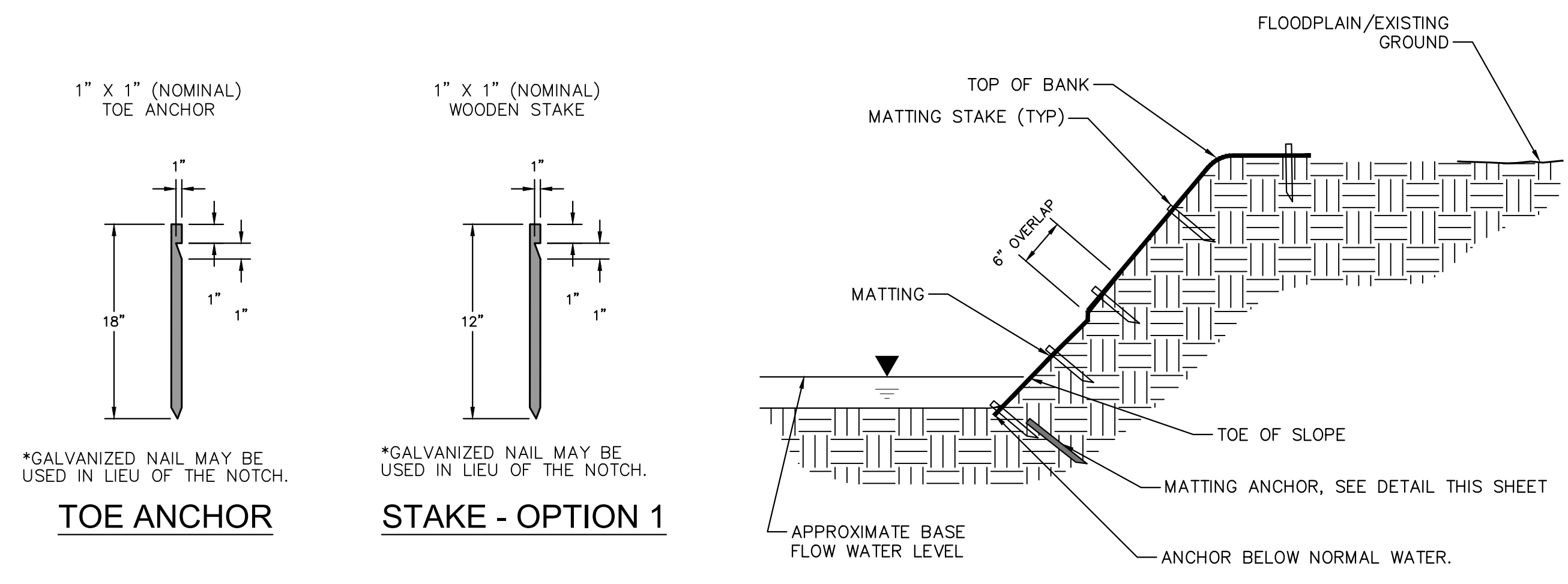


- NOTES:**
- ROCK TOE TO BE PLACED ON TOP OF COIR MATTING

ROCK TOE PROTECTION
NOT TO SCALE

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DESIGNED BY: MCS	DRAWN BY: MCS	CHECKED BY: JMM	SCALE:
DETAILS			
STREAM RELOCATION PLANS BUCKEYE YARD CITY OF COLUMBUS, FRANKLIN COUNTY, OH			
ORIGINAL ISSUE: 10/17/2022			
KHA PROJECT NO. 19018000			
SHEET NUMBER			
EC7.1		REVISIONS	APR DATE
No.	DATE	BY	APR BY

Drawing name: K:\CIB_LDEA\190118000_4dec_Buckeye_Yard_Columbus_OH_2_Design\CAD\PlanSheets\8_StreamRelocation\STREAM DETAILS.dwg EC7.2 STREAM DETAILS Oct 17, 2022 5:00pm by Corin Rivers
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- NOTES:**
1. THE SLOPE AND/OR STREAM BANK SHALL BE PREPARED (GRADED, TILLED, SMOOTHED, ETC.) AND SEEDED AND MULCHED AS SPECIFIED BY THE DESIGNER PRIOR TO THE PLACEMENT OF THE MATTING.
 2. THE MATTING SHALL BE INSTALLED SO AS TO NOT BE IN TENSION, BUT BE PLACED NEATLY, FLUSH AGAINST THE SOIL, AND WITH NO GAPS OR WRINKLES.
 3. MATTING SHALL BE NEATLY SECURED AROUND ANY PROJECT STRUCTURES, STRUCTURE ARMS, AND/OR SILLS TO PREVENT ANY LOOSE OR FRAYED EDGES.
 4. THERE SHALL BE NO LOOSE ENDS OR UNSECURED MATTING ON THE COMPLETED WORK.

EROSION CONTROL MATTING
NOT TO SCALE

STABILIZATION TYPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING			A			*	*	*				
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C			D						
SODDING			E									
MULCHING	F											

- A KENTUCKY BLUEGRASS 90 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 30 LBS/ACRE
 B KENTUCKY BLUEGRASS 135 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 45 LBS/ACRE + 2 TONS STRAW MULCH/ACRE
 C SPRING OATS 100 LBS/ACRE
 D WHEAT OR CEREAL RYE 150 LBS/ACRE
 E SOD
 F STRAW MULCH 2 TONS/ACRE
 * WATERING NEEDED DURING JUNE AND JULY
 ** WATERING NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD

SEEDING CHART
NOT TO SCALE

SPACE INTENTIONALLY LEFT BLANK

No.	REVISIONS	DATE	BY	APR DATE	APR BY

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 COLUMBUS, OH 43235
 PHONE: 614-472-8546
 WWW.KIMLEY-HORN.COM

SCALE:

DESIGNED BY: MCS	CHECKED BY: JMM
DRAWN BY: MCS	

DETAILS

STREAM RELOCATION PLANS
BUCKEYE YARD
 CITY OF COLUMBUS, FRANKLIN COUNTY, OH

ORIGINAL ISSUE:
 10/17/2022
 KHA PROJECT NO.
 190118000
 SHEET NUMBER
EC7.2