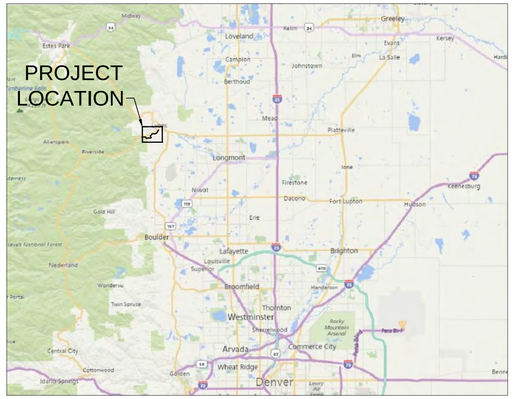
Know what's below. Call before you dig.

BOULDER COUNTY PARKS AND OPEN SPACE

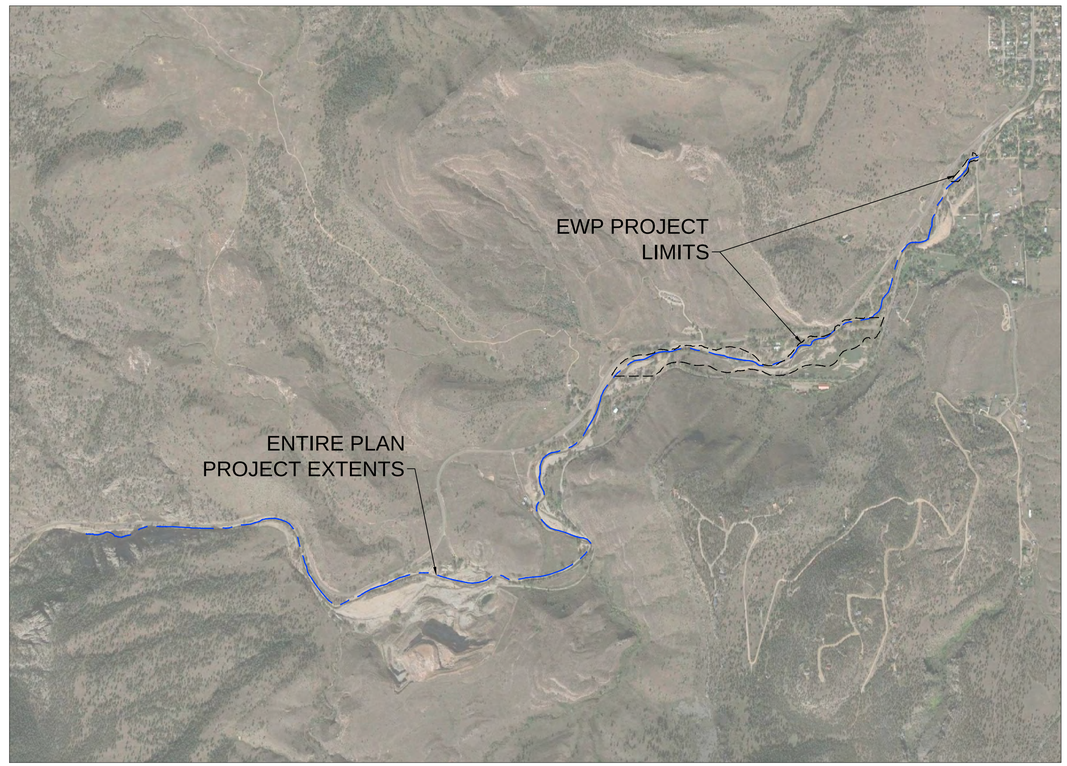
FLOOD-PLANNING & PRELIMINARY DESIGN SERVICES
SOUTH ST. VRAIN CREEK RESTORATION AT HALL RANCH



VICINITY MAP

TABLE OF CONTENTS
(TO BE ADDED)

DESIGN APPROVAL SIGNATURES
(TO BE ADDED)



LOCATION MAP
1" = 1000'

REFERENCE DRAWINGS	No.	DATE	DESCRIPTION	BY
812-TITLEBLOCK-22x34				
AERIALS				

REVISIONS

COMPUTER FILE MANAGEMENT

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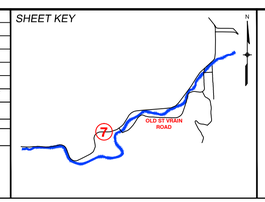

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PREPARED BY: Matrix Design Group — An Employee-Owned Company

SEAL

PRELIMINARY
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

COVER SHEET

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ N/A		
CHECKED BY: RDK	VERT. N/A	SHEET X OF XX	C1

Know what's **below.**
Call before you dig.

NOTES AND LEGEND SHEET

- TO BE DEVELOPED FOR FINAL SUBMITTAL
- TO INCLUDE QUANTITIES AND CUT FILL AMOUNTS

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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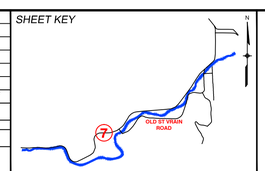

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PREPARED BY:

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PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

NOTES AND LEGEND

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. N/A		
CHECKED BY: RDK	VERT. N/A	SHEET X OF XX	N1

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Proposed Linework

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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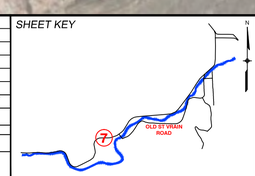

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SEAL

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

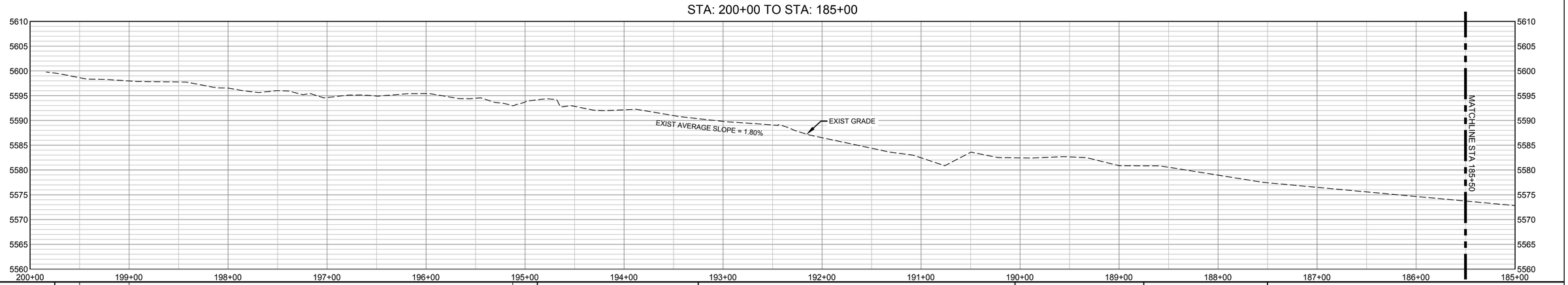
OVERALL PLAN VIEW

DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 200'			01
CHECKED BY:	RDK	VERT. N/A	SHEET	X OF XX	

LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 200+00 TO STA: 185+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2015BAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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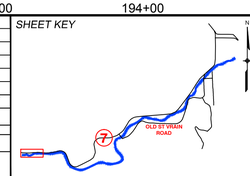

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PROJECT No. 16.812.003

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SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN & PROFILE
STA: 200+00 TO STA: 185+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
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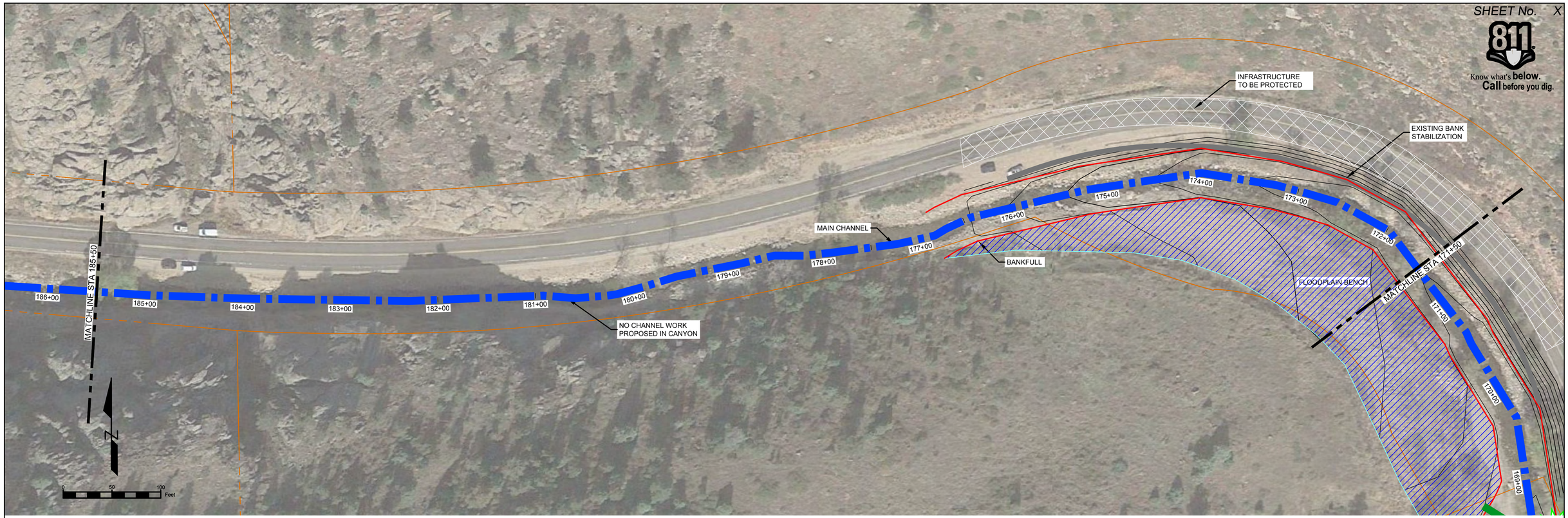
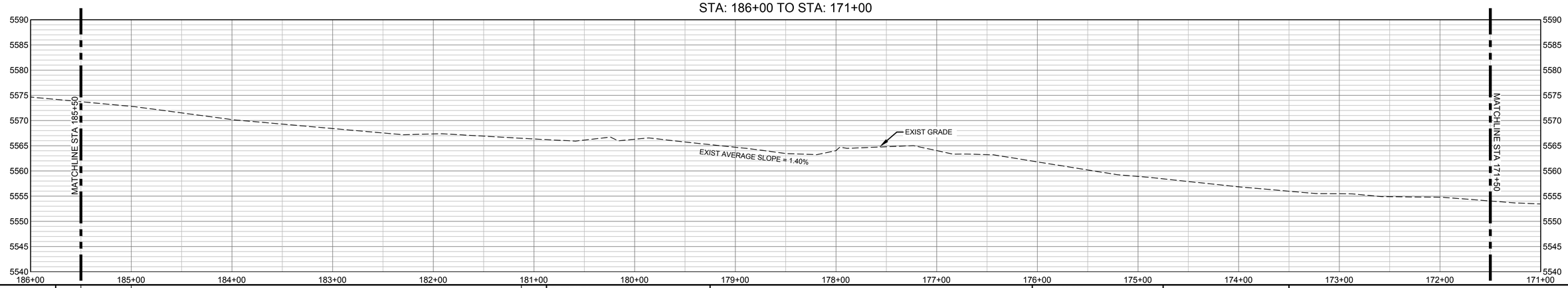
CHECKED BY:	RDK	VERT.	1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 186+00 TO STA: 171+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CONTAPAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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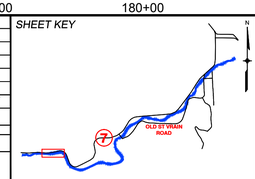

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Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
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PROJECT No. 16.812.003

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SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN AND PROFILE
STA: 185+50 TO STA: 171+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET	X OF XX
CHECKED BY:	RDK	VERT.	1" = 10"		

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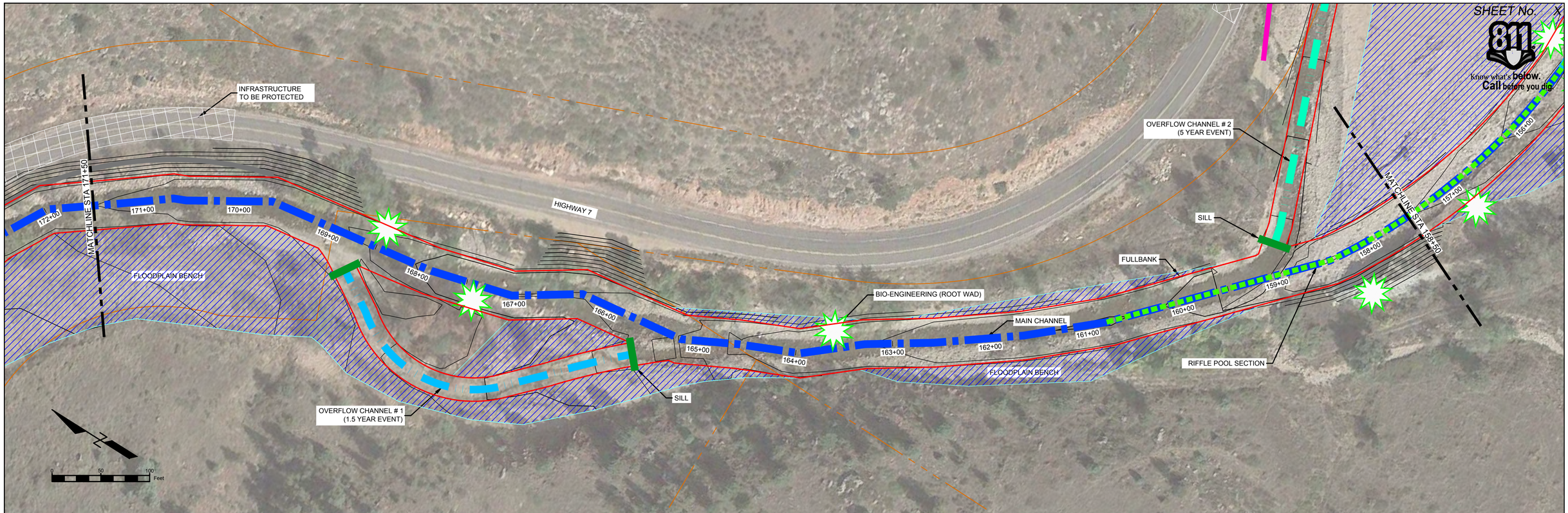
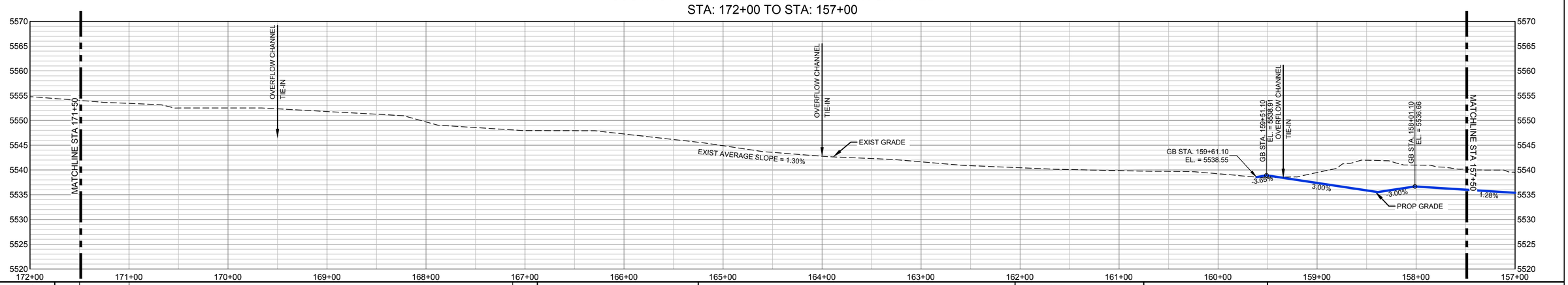


LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 172+00 TO STA: 157+00



REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2016BAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY
		REVISIONS	

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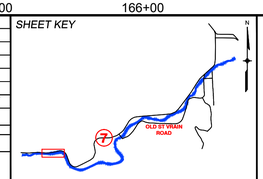

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PREPARED BY:
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

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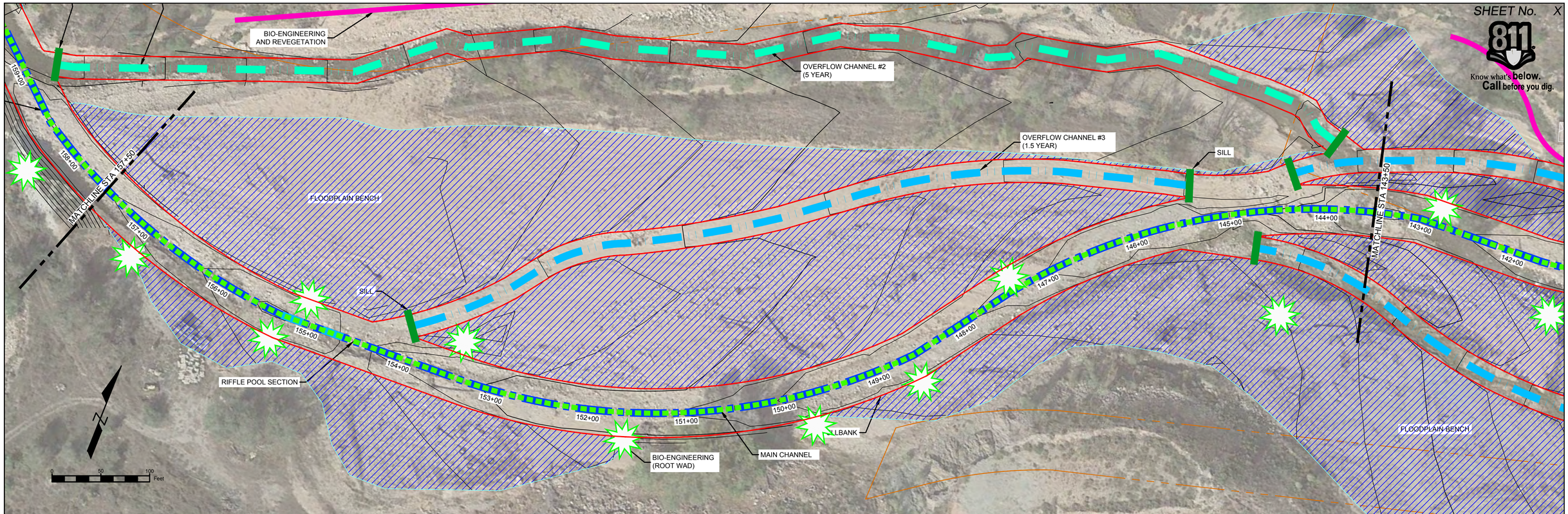
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN & PROFILE
STA: 171+50 TO STA: 157+50

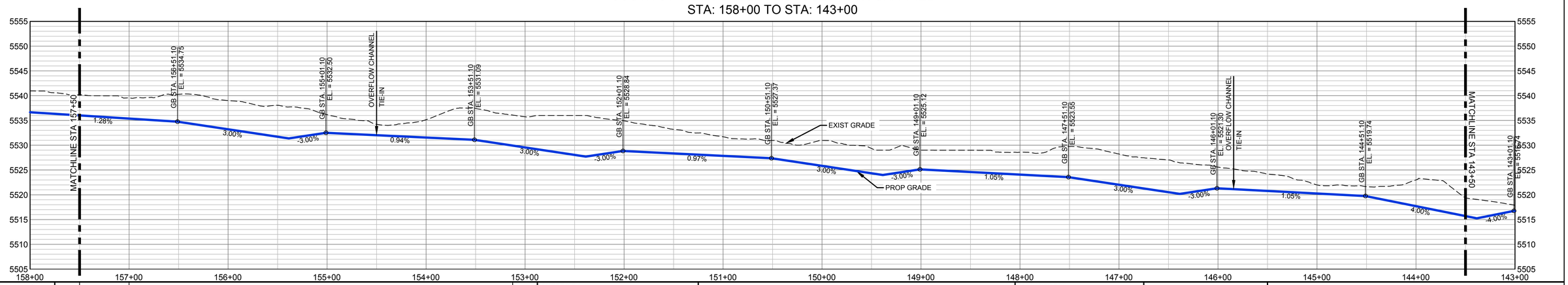
DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"		
CHECKED BY:	RDK	VERT.	1" = 10"	SHEET X OF XX	MCPP 3



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 158+00 TO STA: 143+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CH2MHILL
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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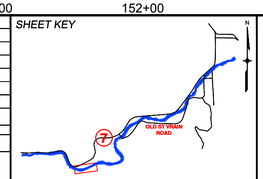

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PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN & PROFILE
STA:157+50 TO STA:143+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16
DRAWN BY:	JDL	HORIZ	1" = 50"	SHEET	X OF XX
CHECKED BY:	RDK	VERT.	1" = 10"		

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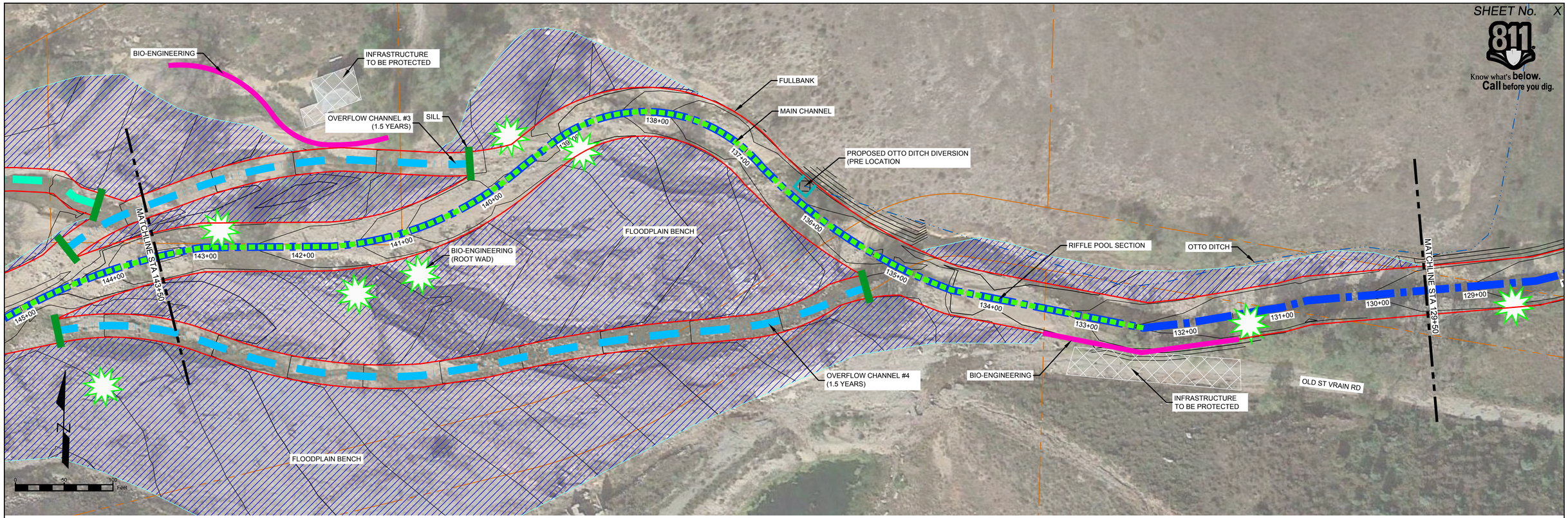
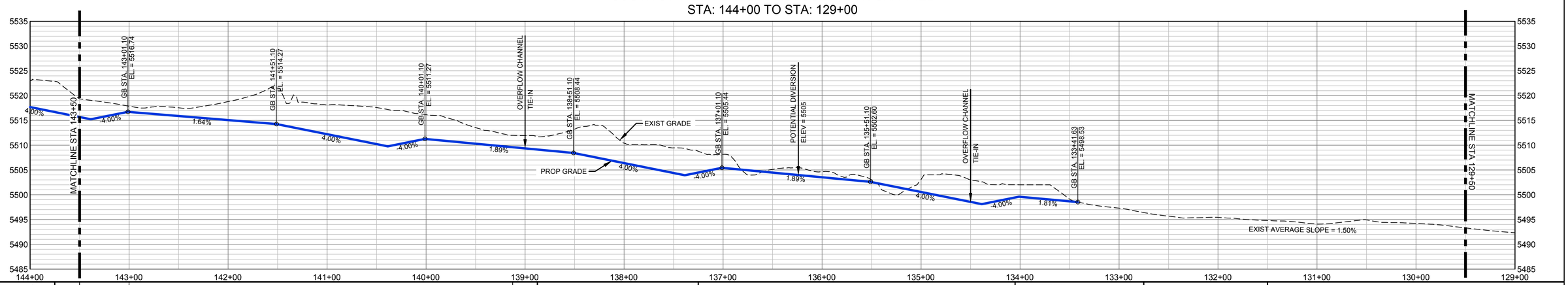


LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 144+00 TO STA: 129+00



REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2015BAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
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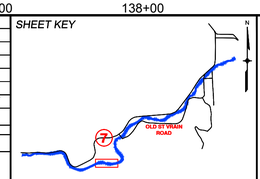

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PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN & PROFILE
STA:143+50 TO STA:129+50

		SCALE (22" X 34")		DATE ISSUED:	08/11/16	DRAWING No.
DESIGNED BY:	SDS	HORIZ.	1" = 50"	SHEET	X OF XX	MCPP 5
DRAWN BY:	JDL	VERT.	1" = 10"			
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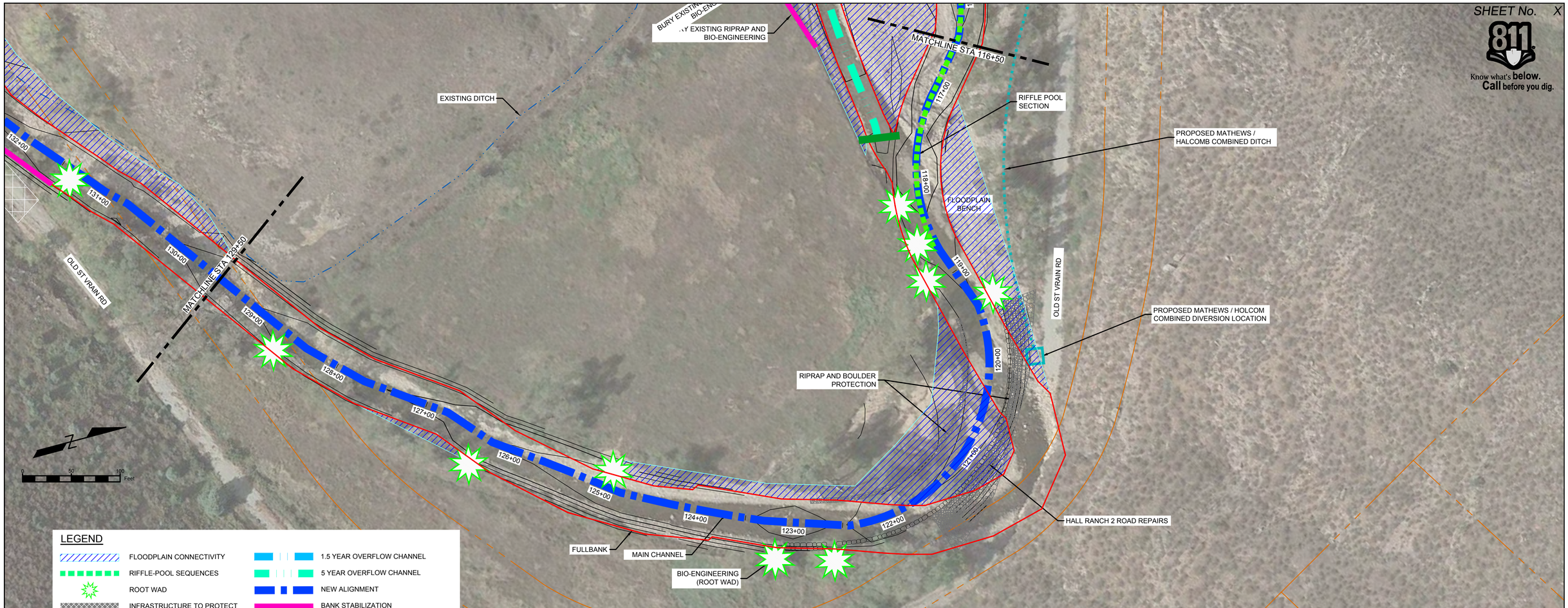
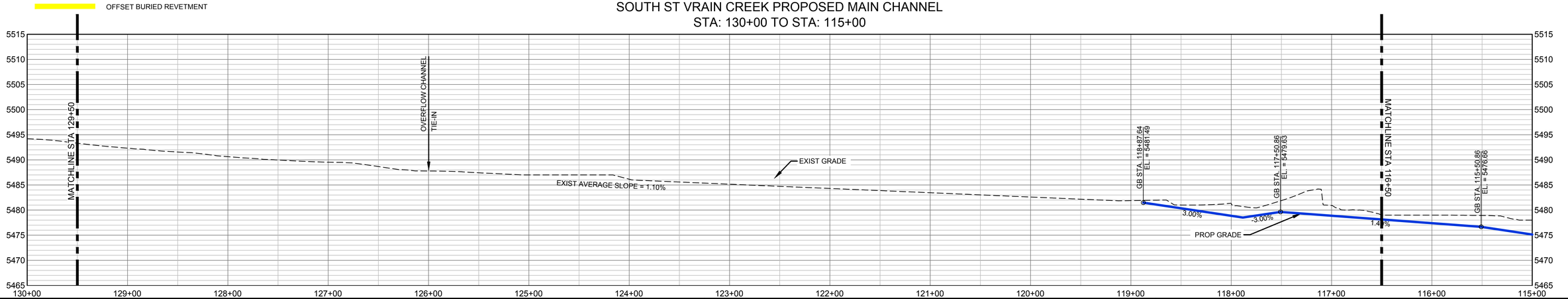


SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 130+00 TO STA: 115+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDBPAS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
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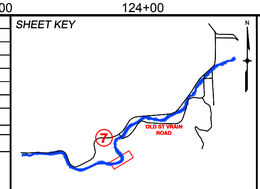

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Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN & PROFILE
STA:129+50 TO STA:116+50

DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
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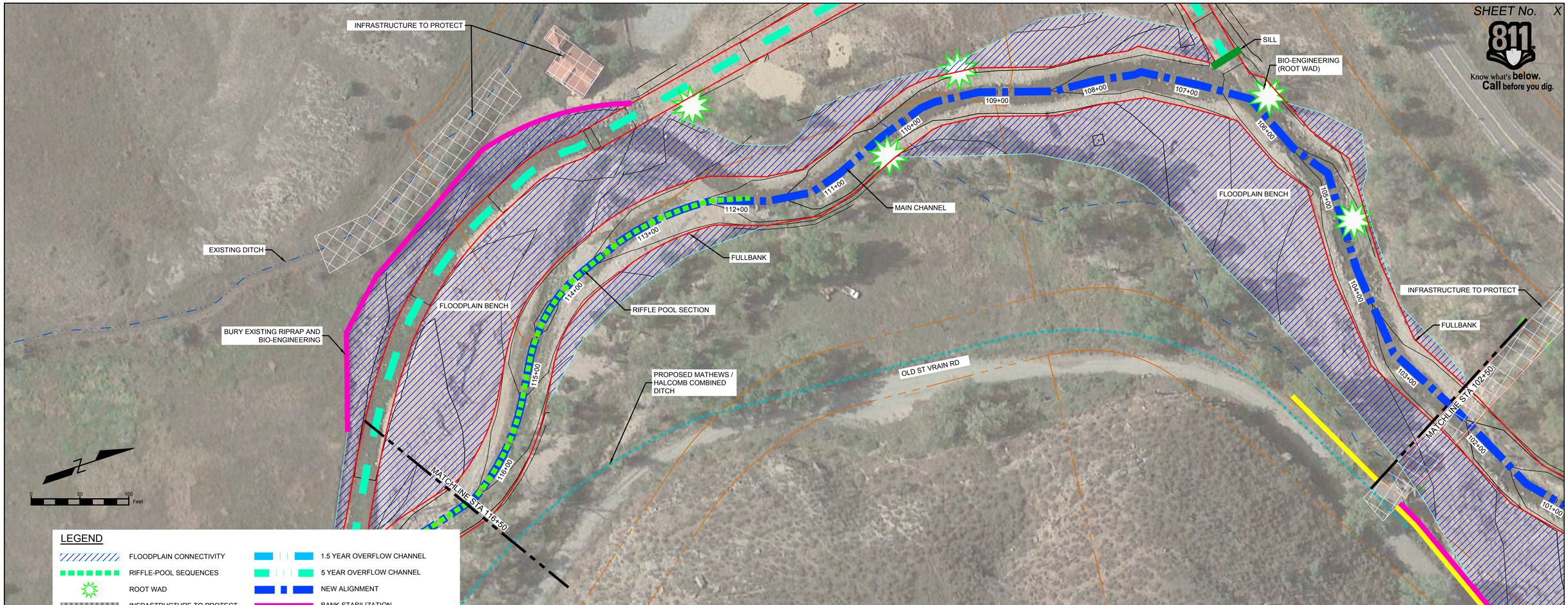
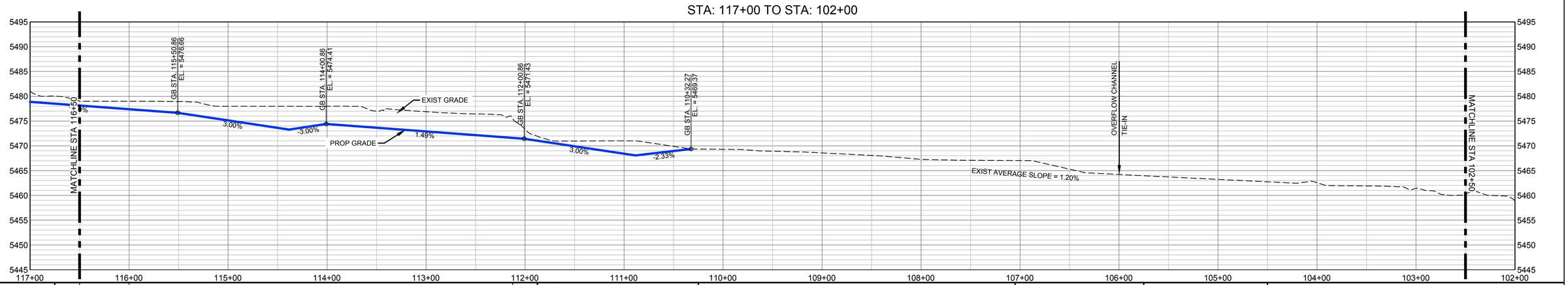
CHECKED BY:	RDK	VERT. 1" = 10"			



SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 117+00 TO STA: 102+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2016BAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
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PLOT DATE: 8/16/2016 3:01 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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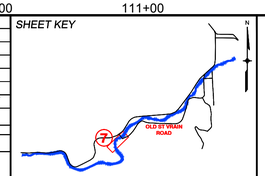


PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

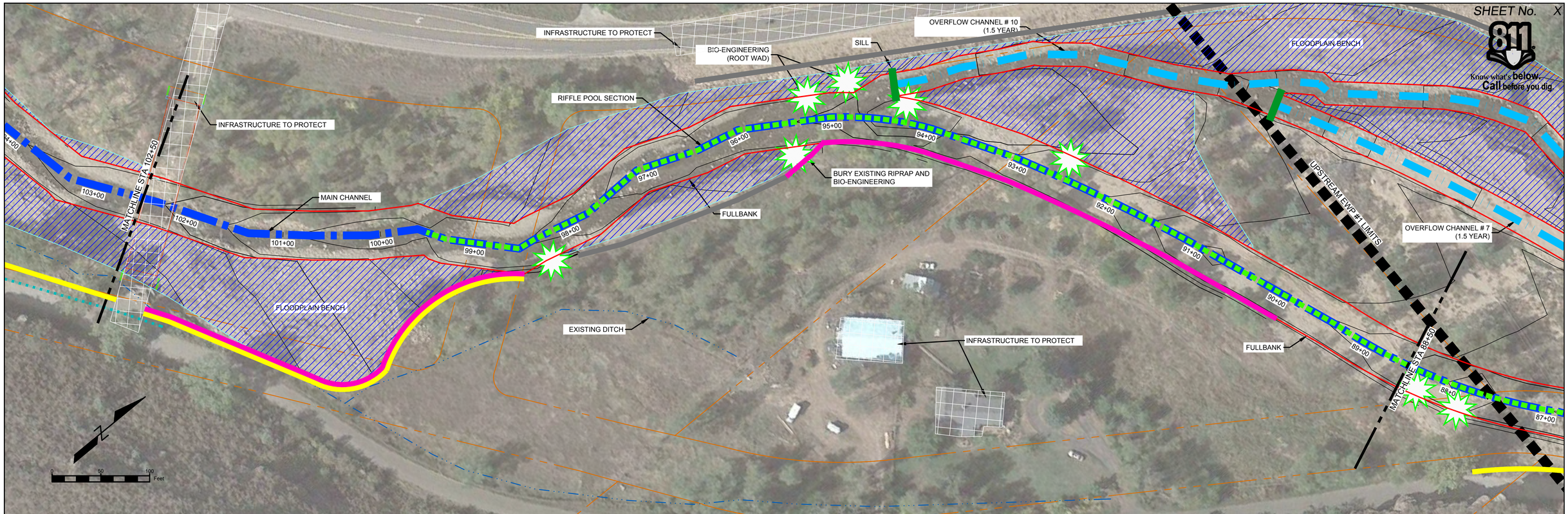
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN AND PROFILE
STA:116+50 TO STA:102+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET	X OF XX
CHECKED BY:	RDK	VERT.	1" = 10"		

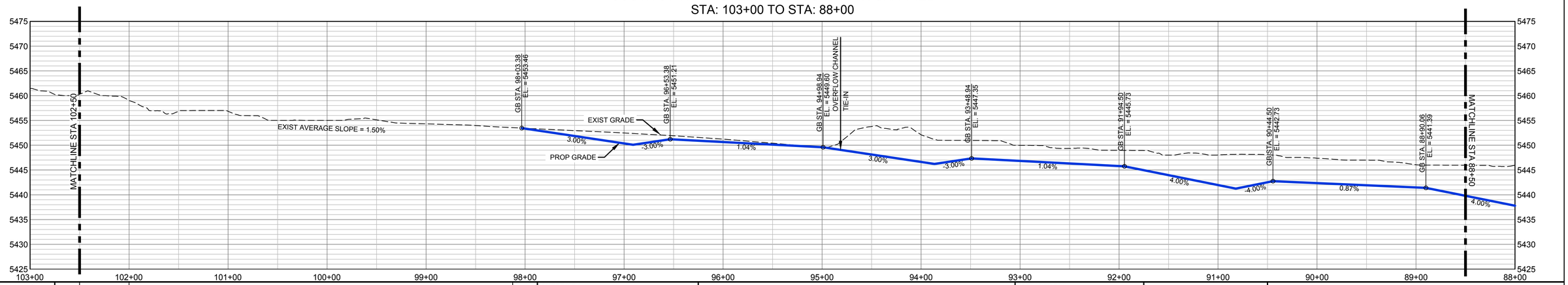
DRAWING No. MCPP 7



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 103+00 TO STA: 88+00



REFERENCE DRAWINGS

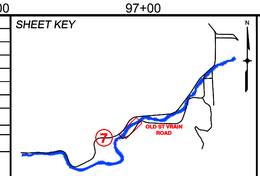
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CH2MHILL
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY
		REVISIONS	

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 3:02 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

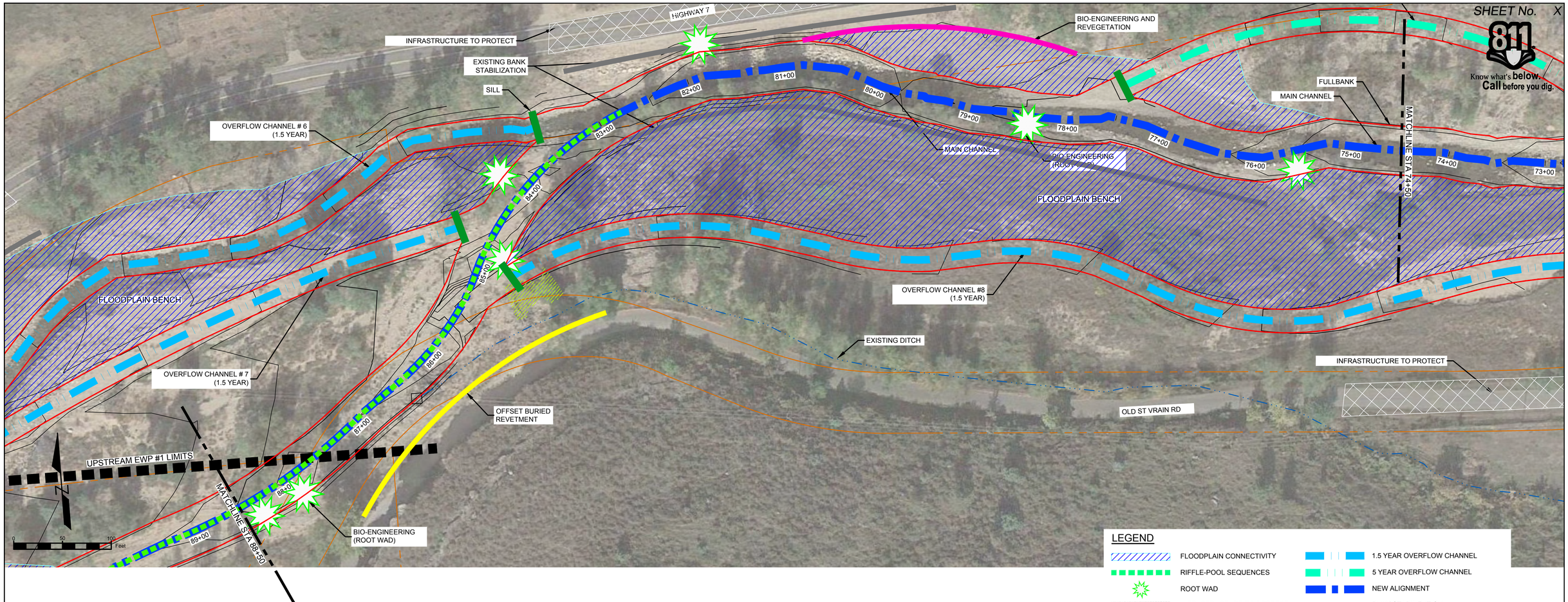
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

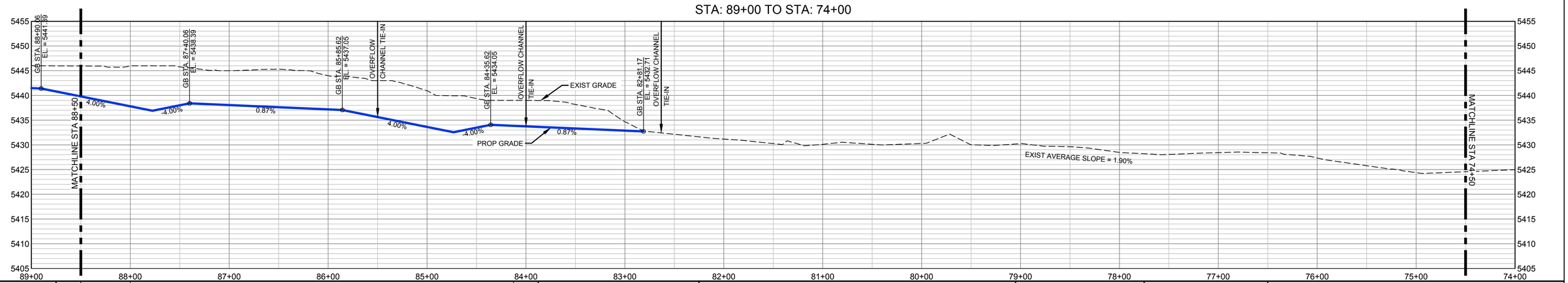
BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN AND PROFILE
STA:102+50 TO STA:88+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET X OF XX	MCPP 8
CHECKED BY:	RDK	VERT.	1" = 10"		



SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 89+00 TO STA: 74+00



REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_AECOM
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY
		REVISIONS	

COMPUTER FILE MANAGEMENT
FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
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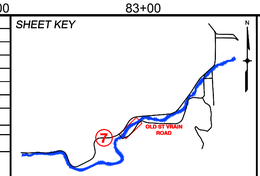
PLOT DATE: 8/16/2016 3:02 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space
PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

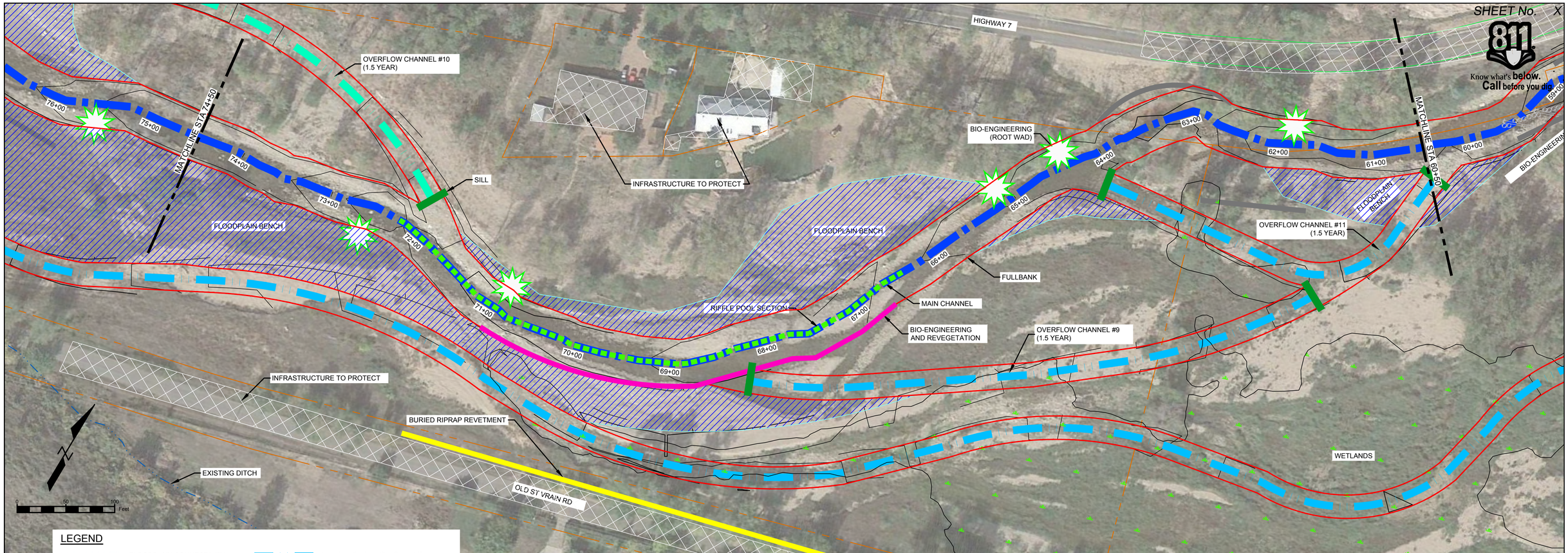
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

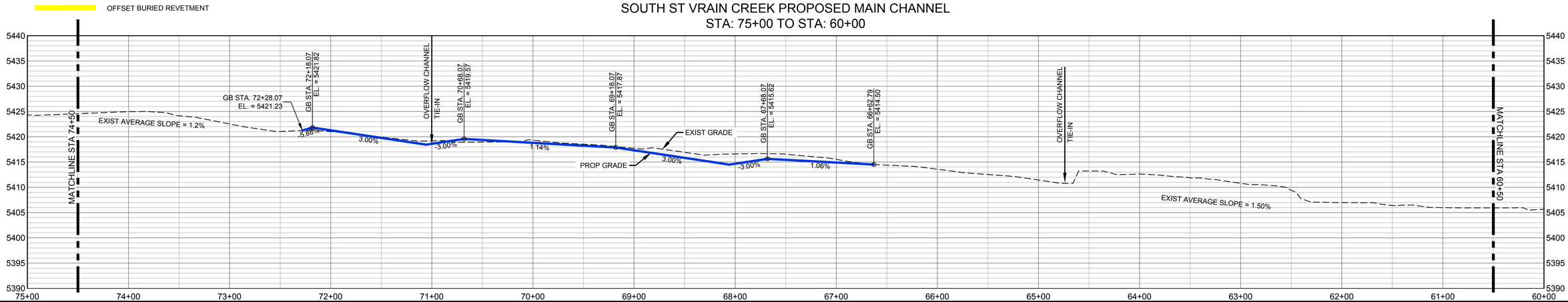
MAIN CHANNEL PLAN & PROFILE
STA:88+50 TO STA:74+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET	X OF XX
CHECKED BY:	RDK	VERT.	1" = 10"		

DRAWING No. MCPP 9



SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 75+00 TO STA: 60+00



REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_ASPEN
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 3:02 PM
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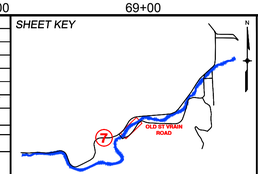
SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

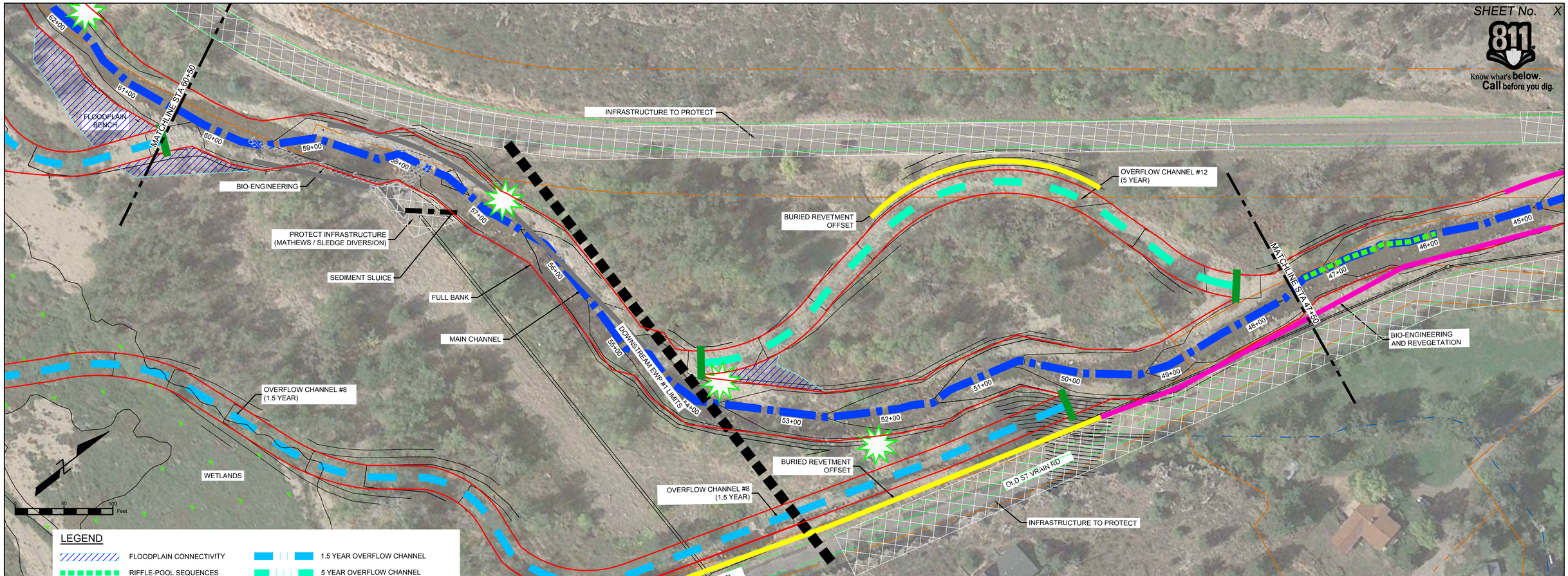
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

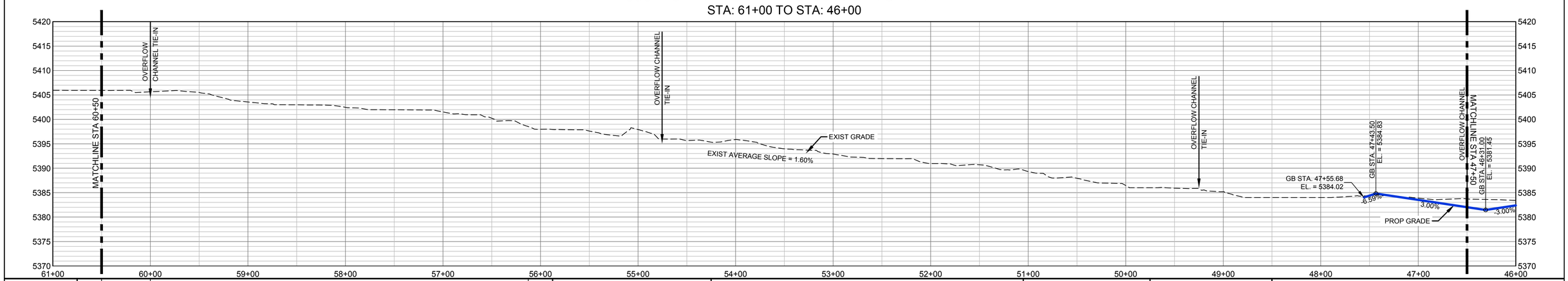
BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

MAIN CHANNEL PLAN & PROFILE
STA:74+50 TO STA:60+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDS	HORIZ.	1" = 50"	SHEET X OF XX	MCPP 10
CHECKED BY:	RDK	VERT.	1" = 10"		



SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 61+00 TO STA: 46+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_AECOM
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 3:03 PM
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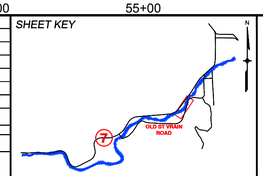
SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

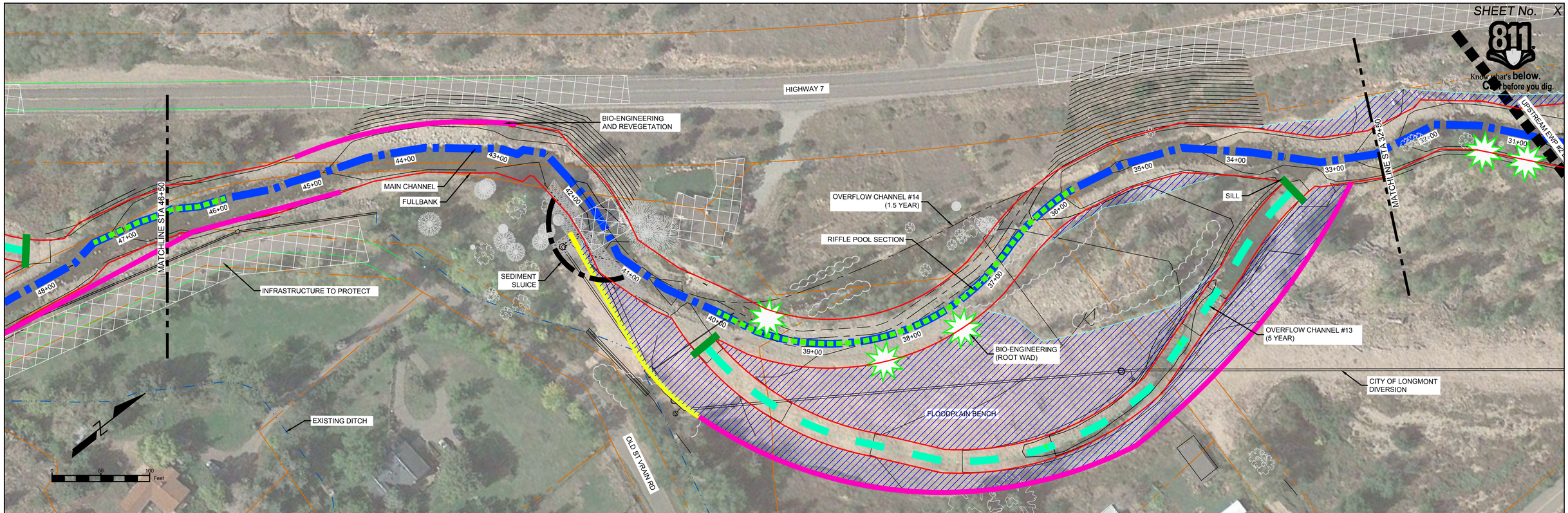
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN & PROFILE
STA:60+50 TO STA:46+50

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16
DRAWN BY:	JDL	HORIZ.	1" = 50"		
CHECKED BY:	RDK	VERT.	1" = 10"	SHEET	X OF XX

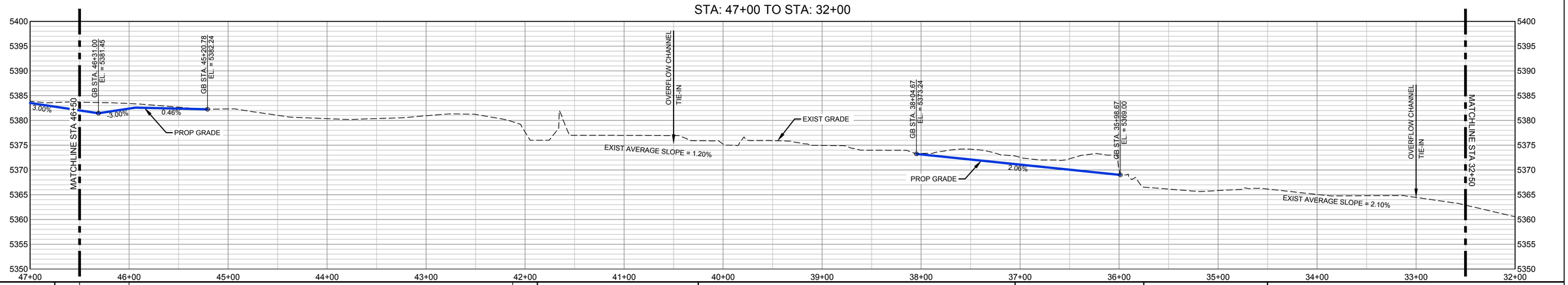
DRAWING No. MCPP 11



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 47+00 TO STA: 32+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CONSTRUCTION
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 3:03 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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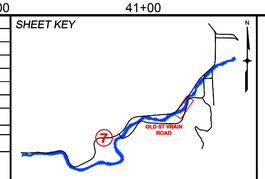

PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

PRELIMINARY
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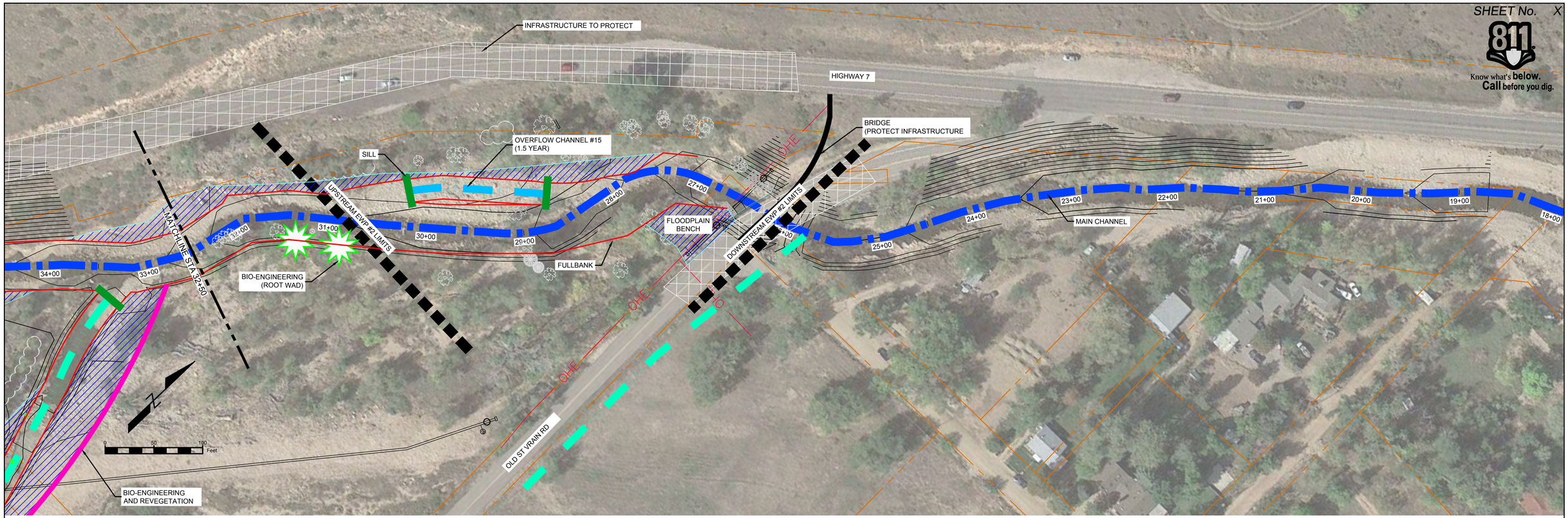
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN & PROFILE
STA:46+50 TO STA:32+50

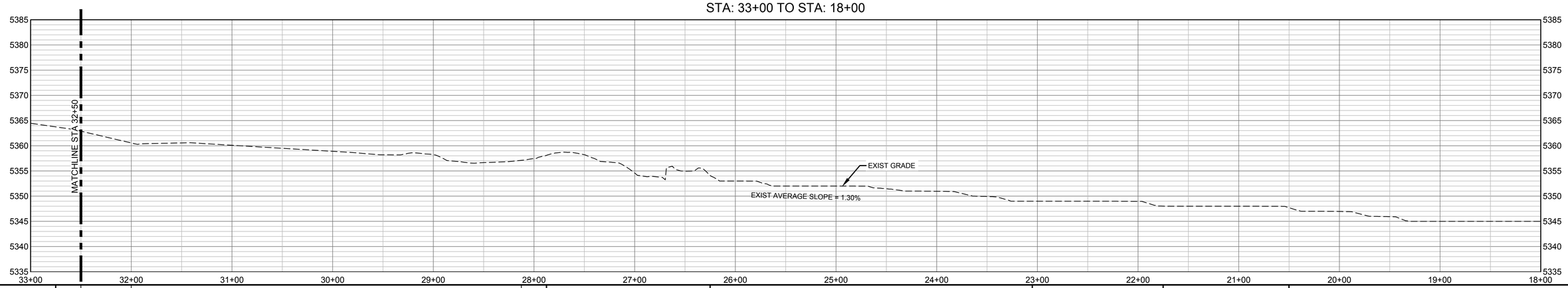
DESIGNED BY: SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"			
CHECKED BY: RDK	VERT. 1" = 10"		SHEET X OF XX	MCPP 12



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED MAIN CHANNEL
STA: 33+00 TO STA: 18+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CH2MHILL
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPMC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 3:04 PM
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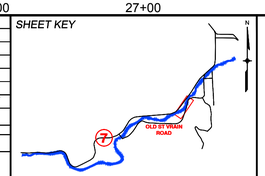

PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
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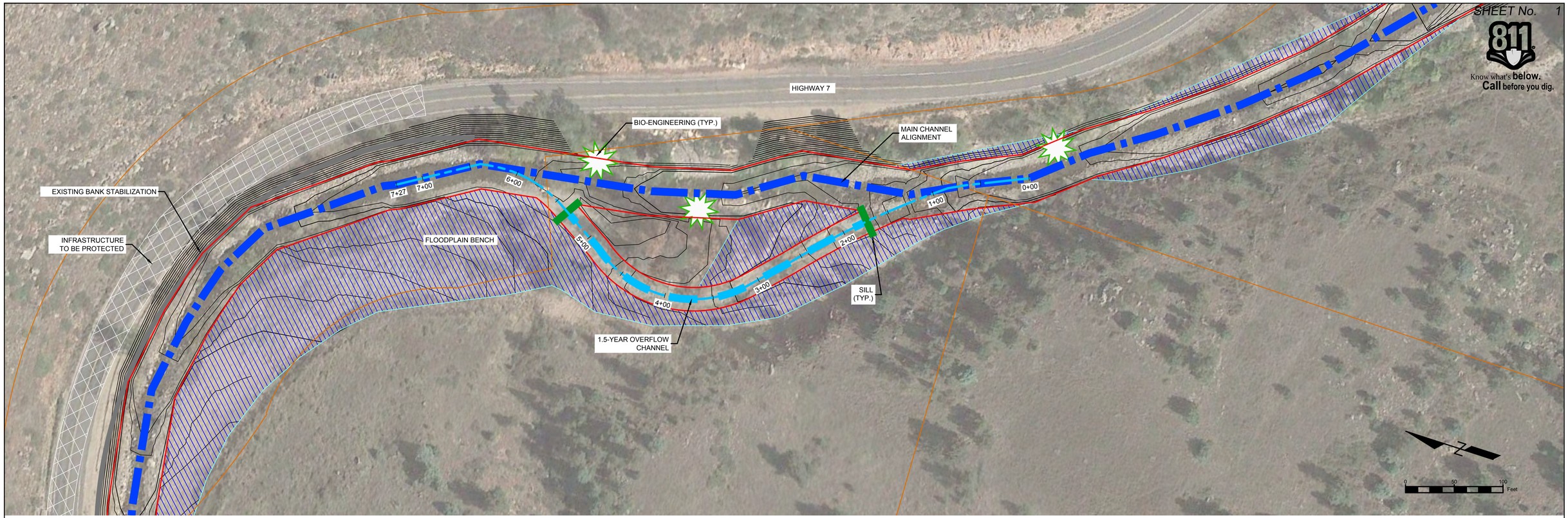
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL PLAN & PROFILE
STA:32+50 TO STA:18+50

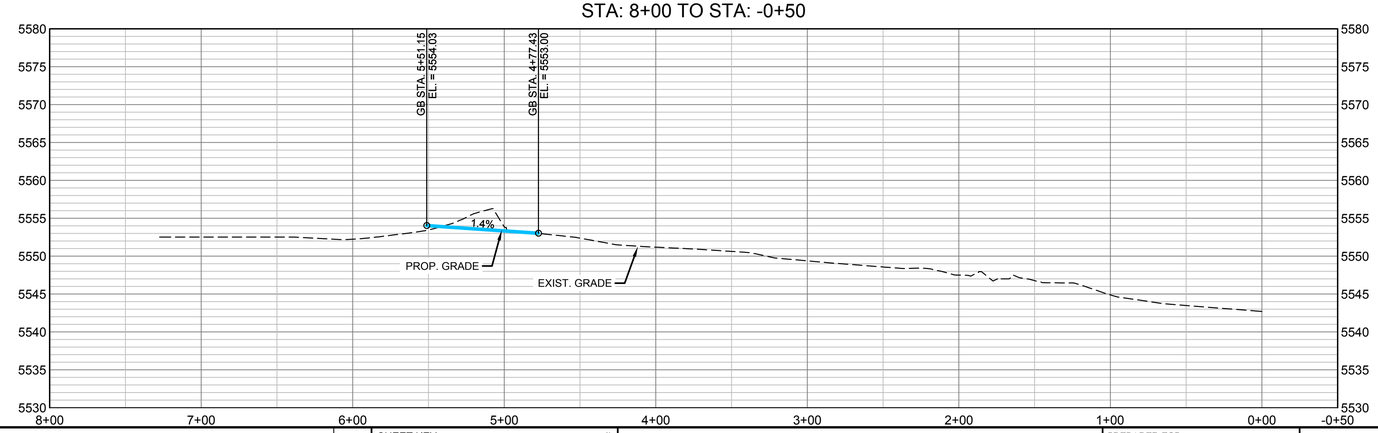
DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET X OF XX	MCPP 13
CHECKED BY:	RDK	VERT.	1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 8+00 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2015APS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

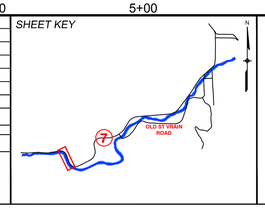
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:55 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
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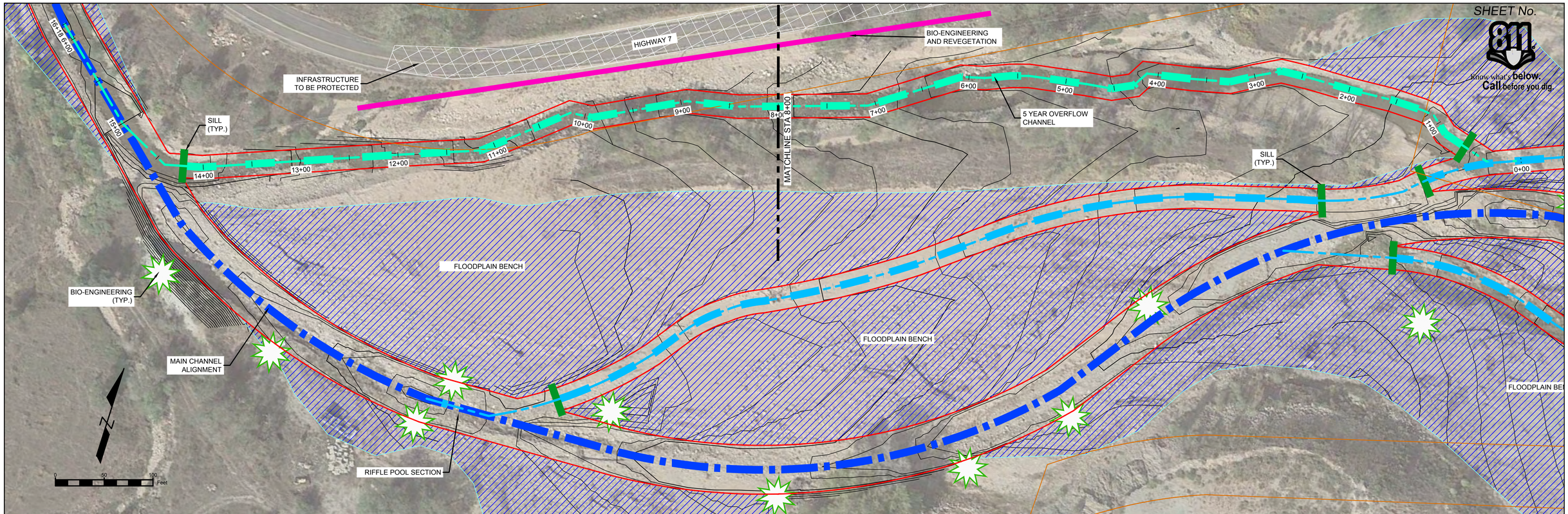
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #1 PLAN & PROFILE

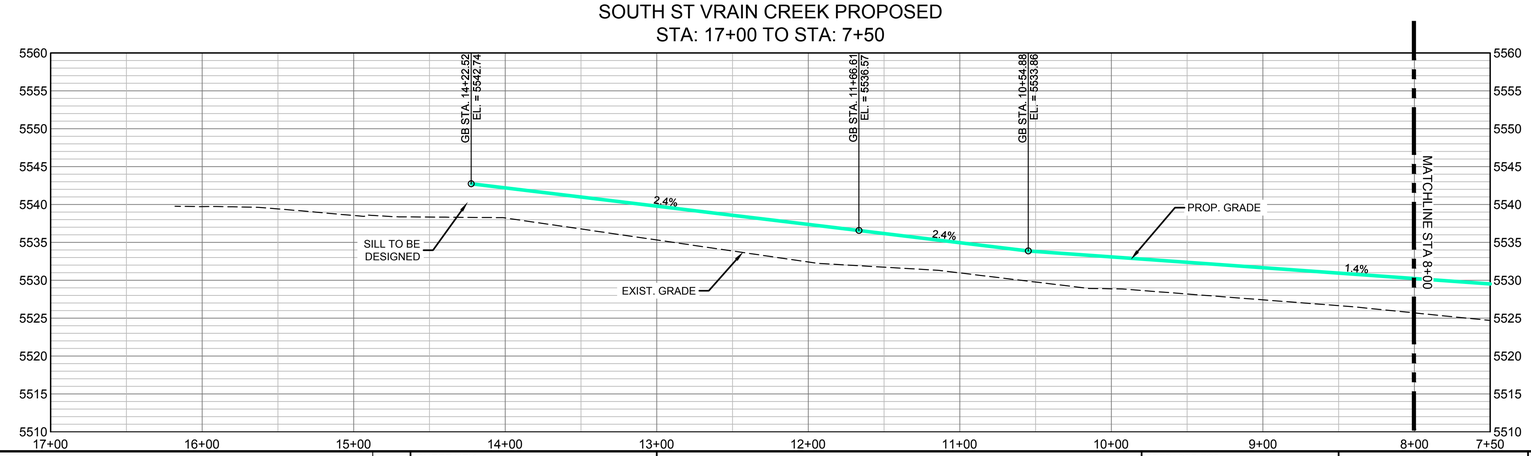
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"	SHEET 1 OF 19	OCPP 1
CHECKED BY: RDK	VERT. 1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED
STA: 17+00 TO STA: 7+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM/BHA
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

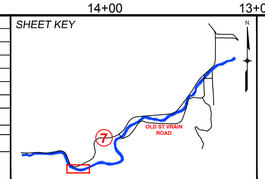
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:55 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
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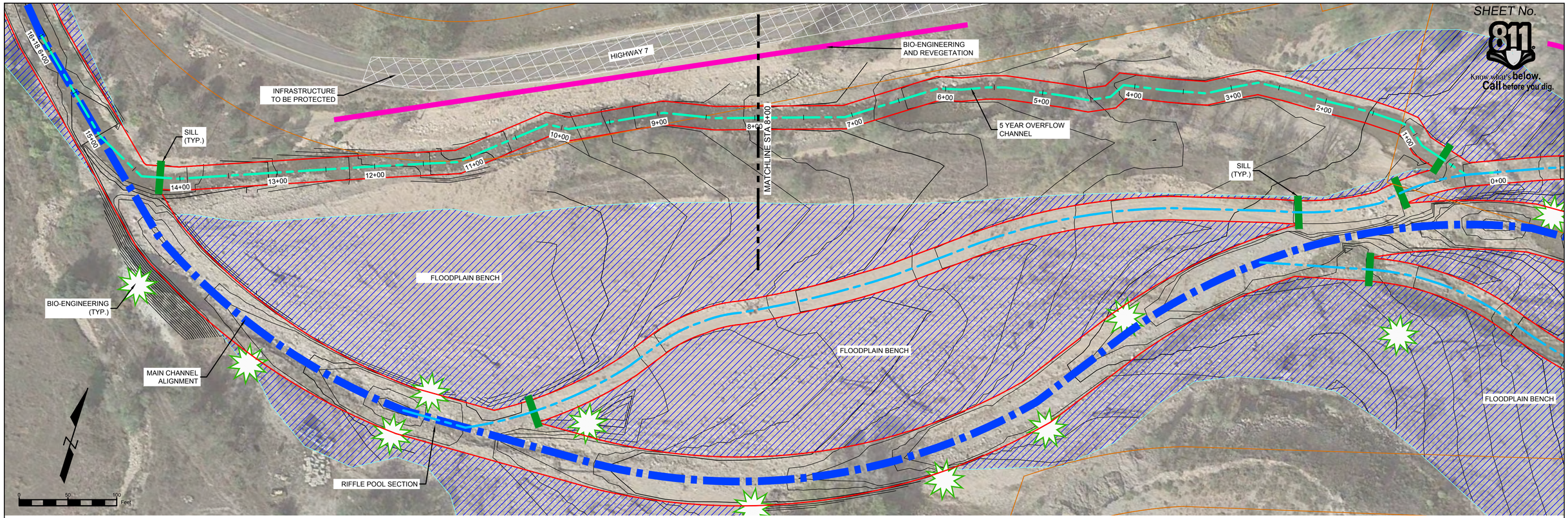
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

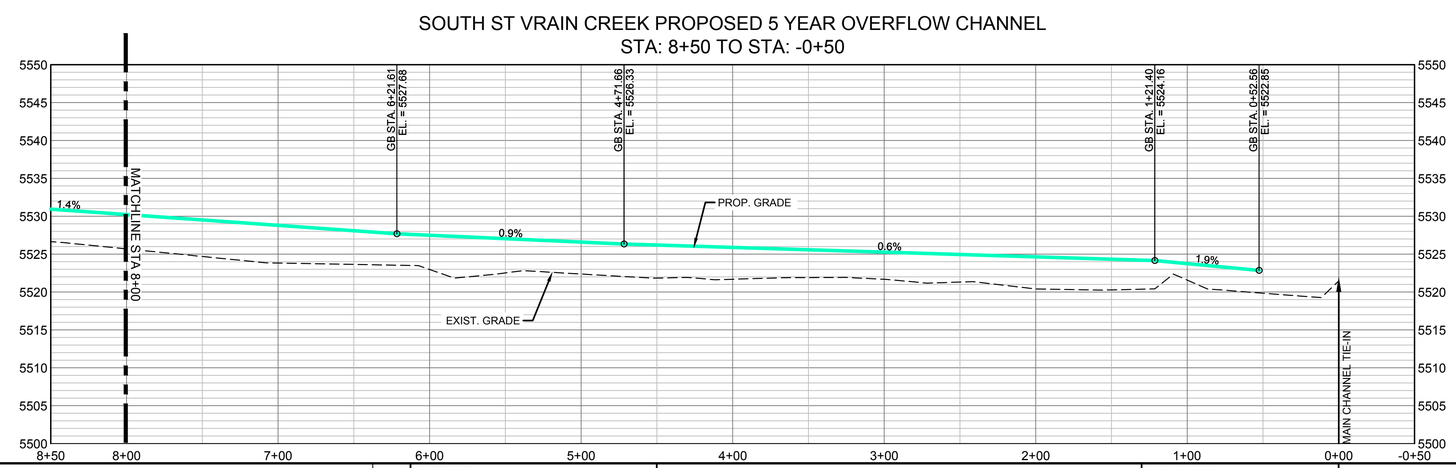
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #2 PLAN & PROFILE
STA: 16+18 TO STA: 8+00

DESIGNED BY: SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"			
CHECKED BY: RDK	VERT. 1" = 10"		SHEET 2 OF 19	OCPP2





REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM&SPS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

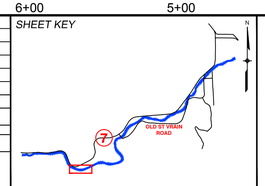
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:56 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

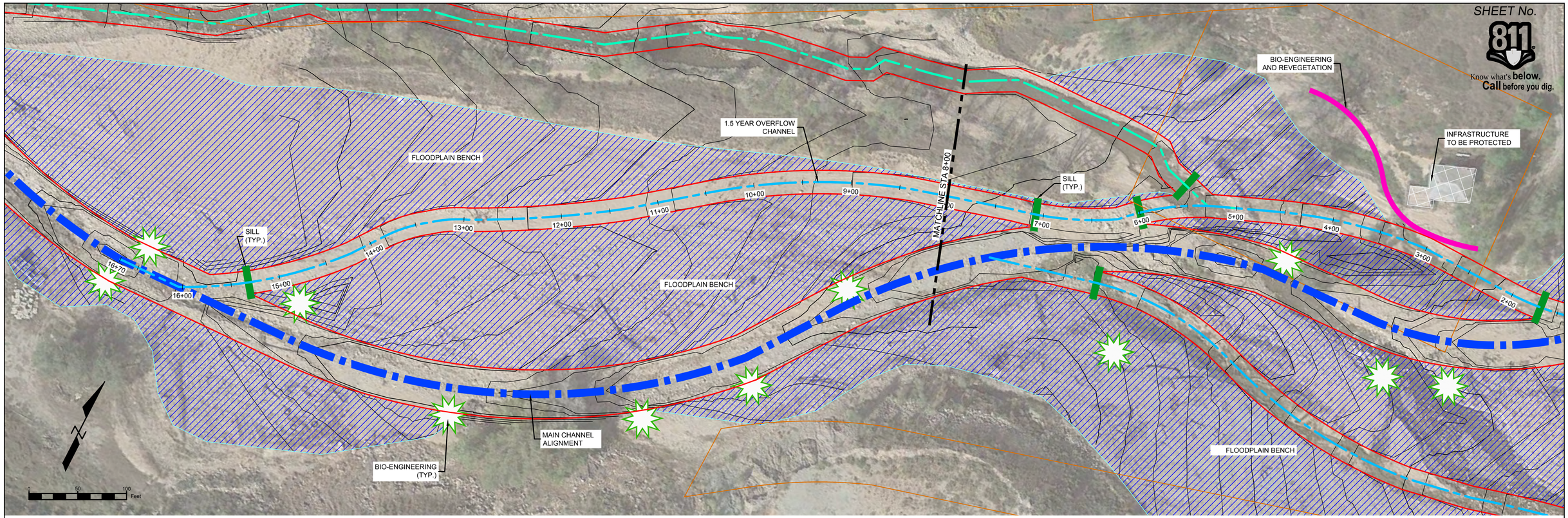
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

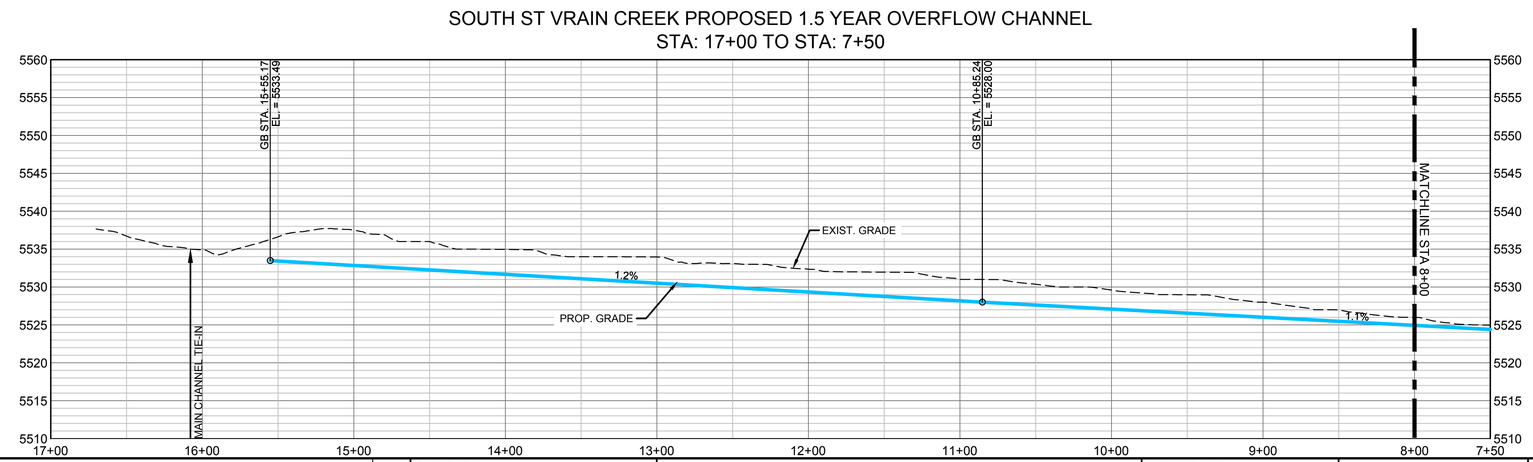
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #2 PLAN & PROFILE
STA: 8+00 TO STA: 0+00

DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 50"			
CHECKED BY:	RDK	VERT. 1" = 10"	SHEET	3 OF 19	OCPP3





REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM/BHA
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

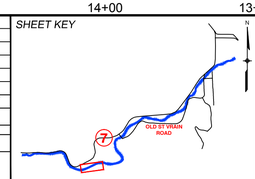
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:56 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

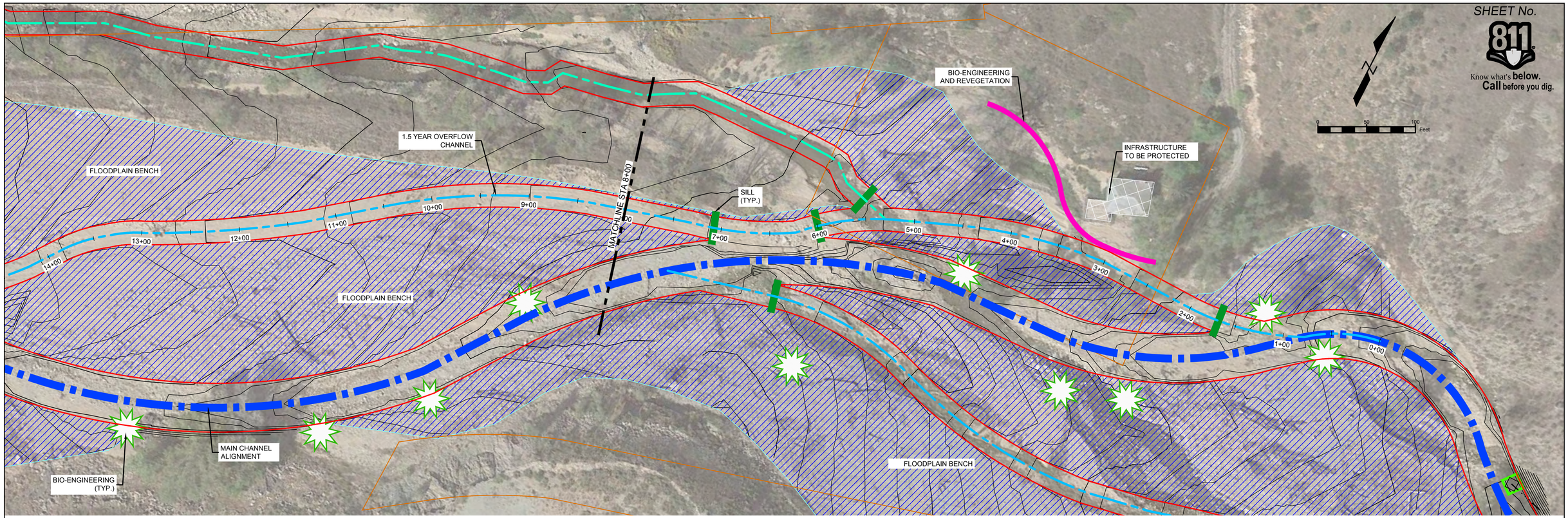
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

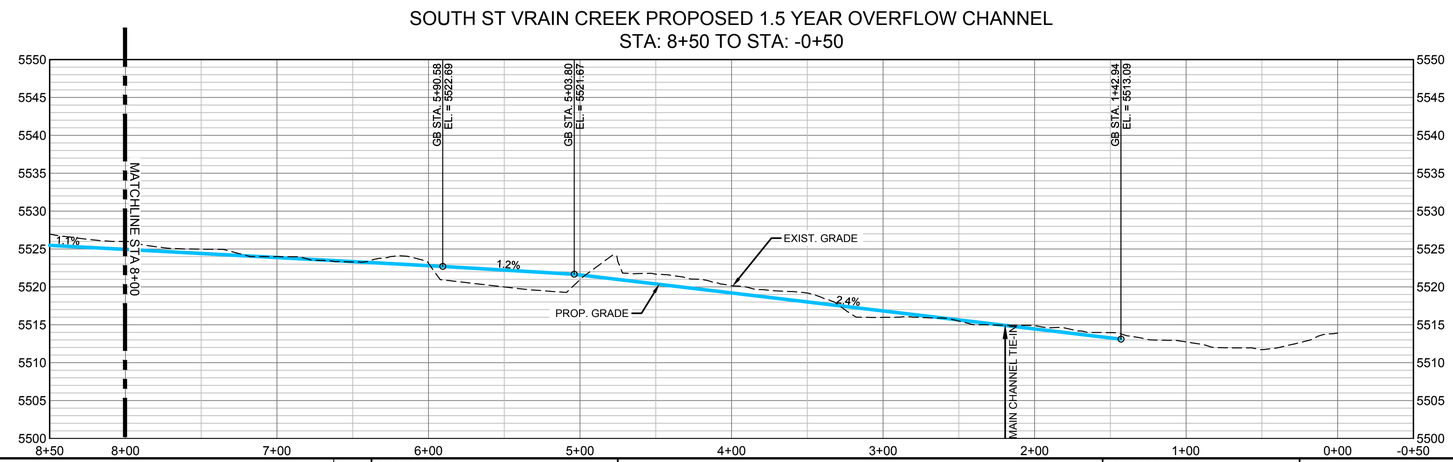
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #3 PLAN AND PROFILE
STA: 16+10 TO STA: 8+00

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET 4 OF 19	OCPP 4
CHECKED BY:	RDK	VERT.	1" = 10"		





REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2016APS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

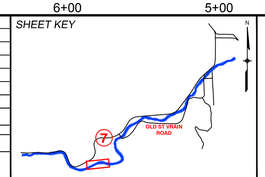
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:57 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
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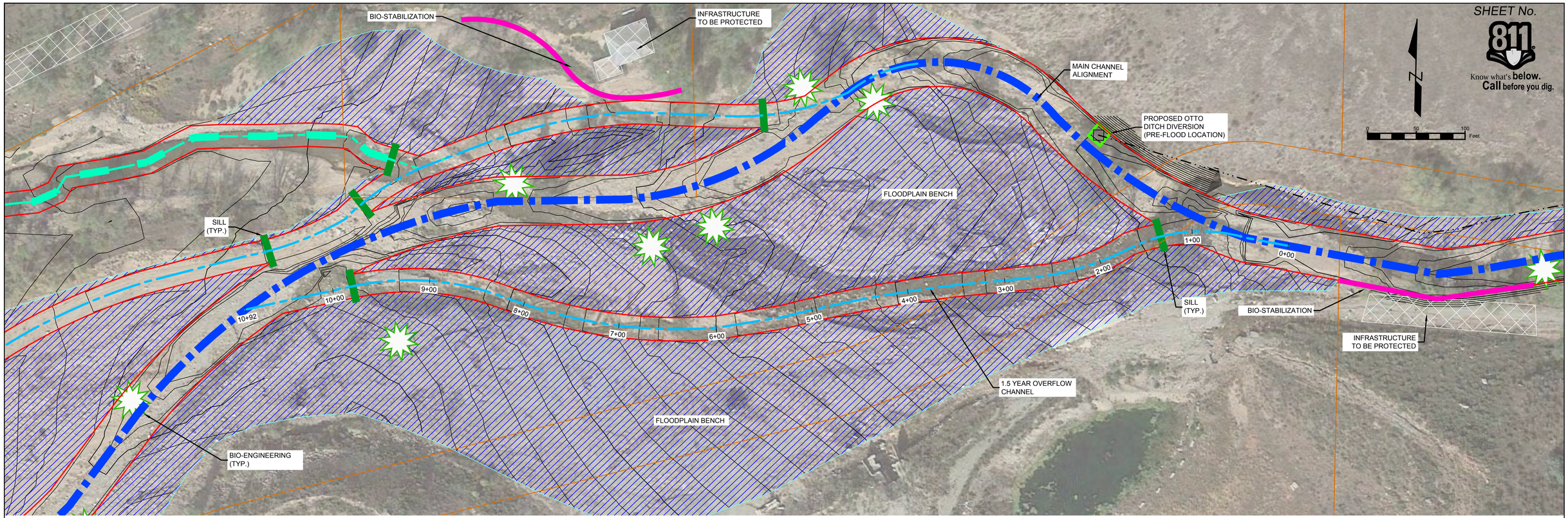
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL # 3 PLAN AND ROFILE
STA: 8+00 TO STA: 0+00

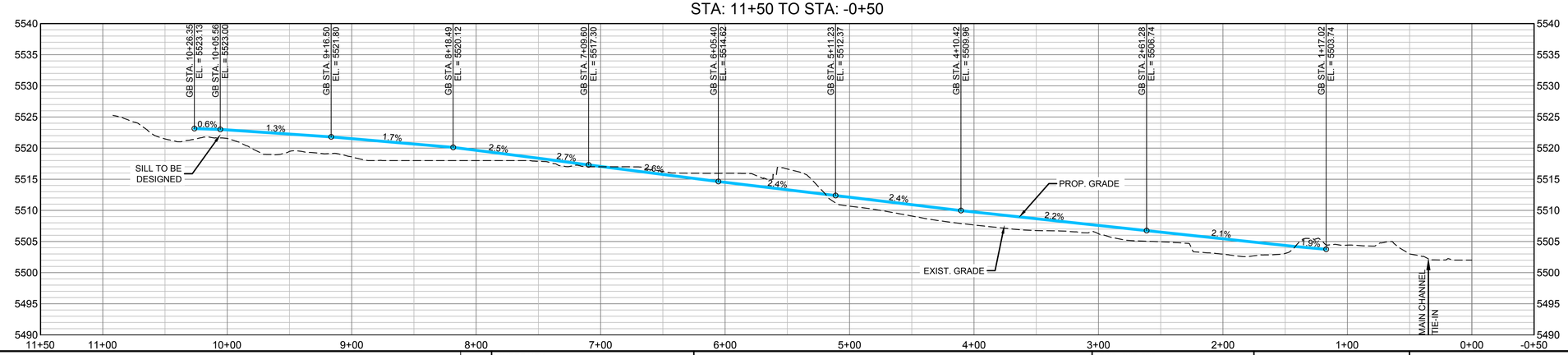
DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"		
CHECKED BY:	RDK	VERT.	1" = 10"	SHEET 5 OF 19	OCPP 5



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 11+50 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM/BPS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

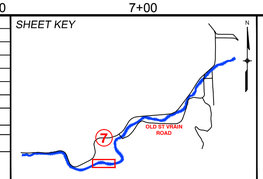
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:57 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

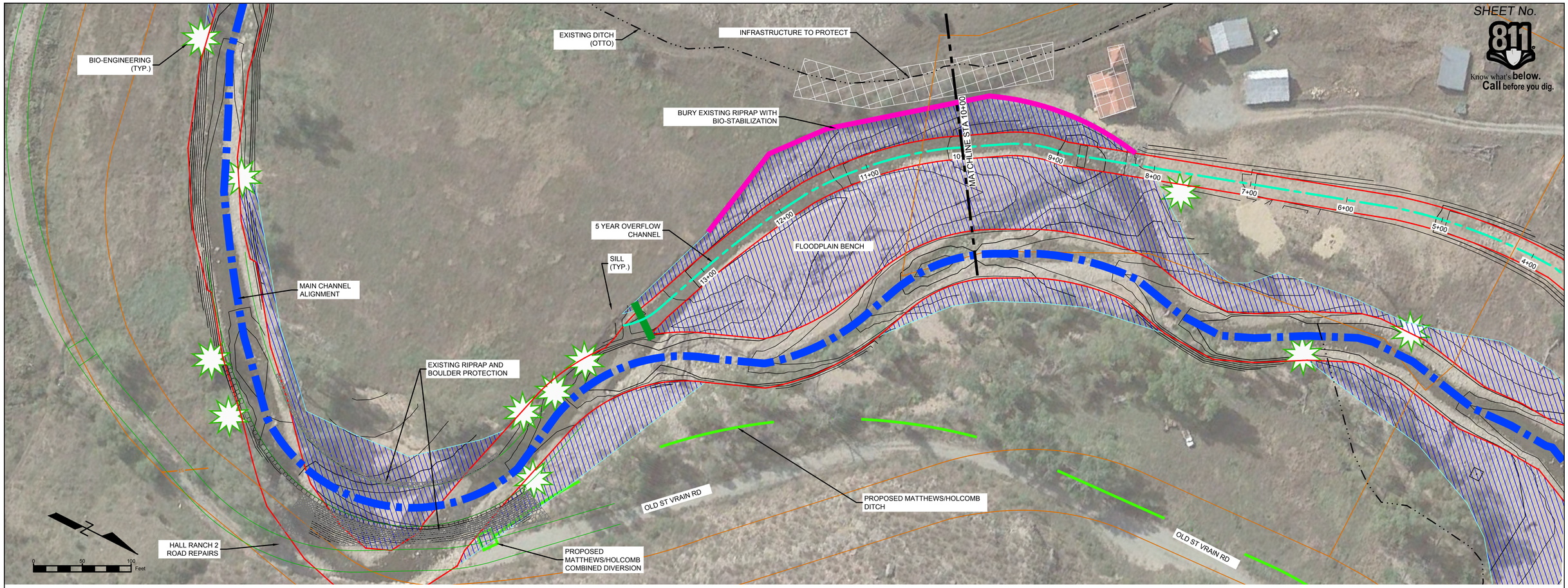
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #4 PLAN AND PROFILE

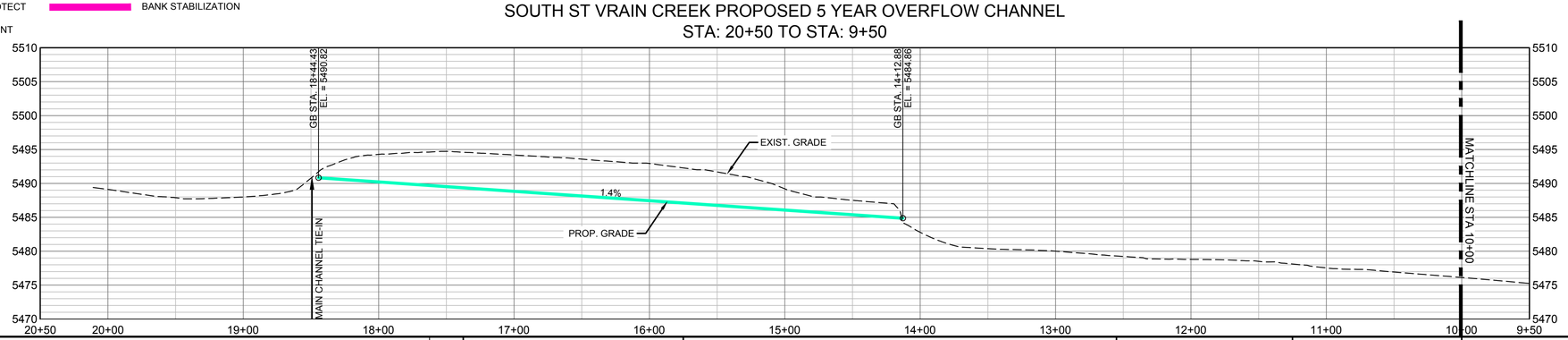
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ 1" = 50"	SHEET 6 OF 19	OCPP 6
CHECKED BY: RDK	VERT. 1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 20+50 TO STA: 9+50



REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CARPAS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT
FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:57 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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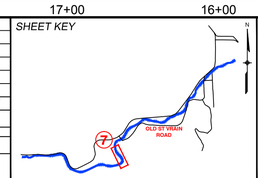


PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

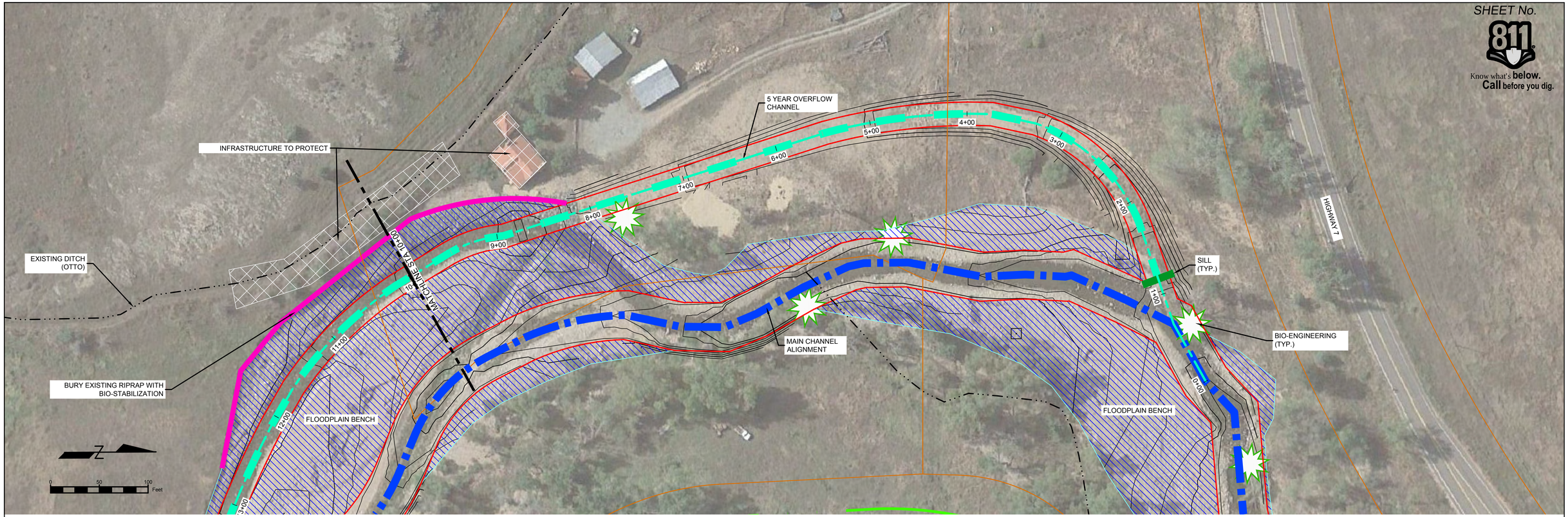
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #5 PLAN AND PROFILE
STA: 20+11 TO STA: 10+00

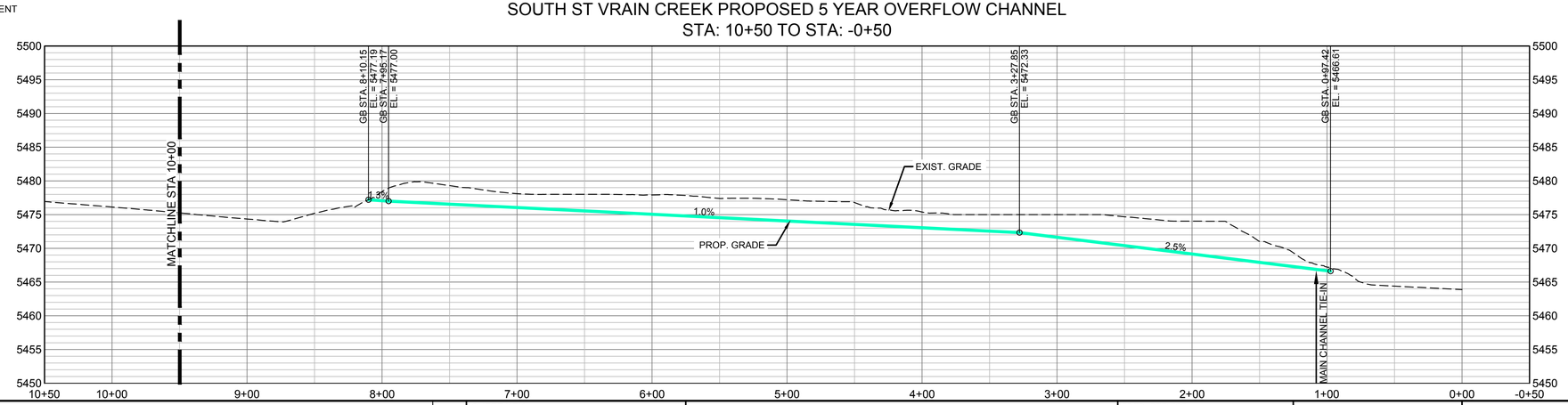
DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 50"	SHEET	7 OF 19	OCPP 7
CHECKED BY:	RDK	VERT. 1" = 10"			



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 10+50 TO STA: -0+50



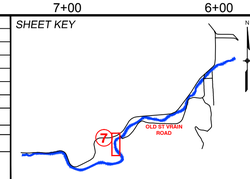
REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM/BPAS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT
FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:58 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

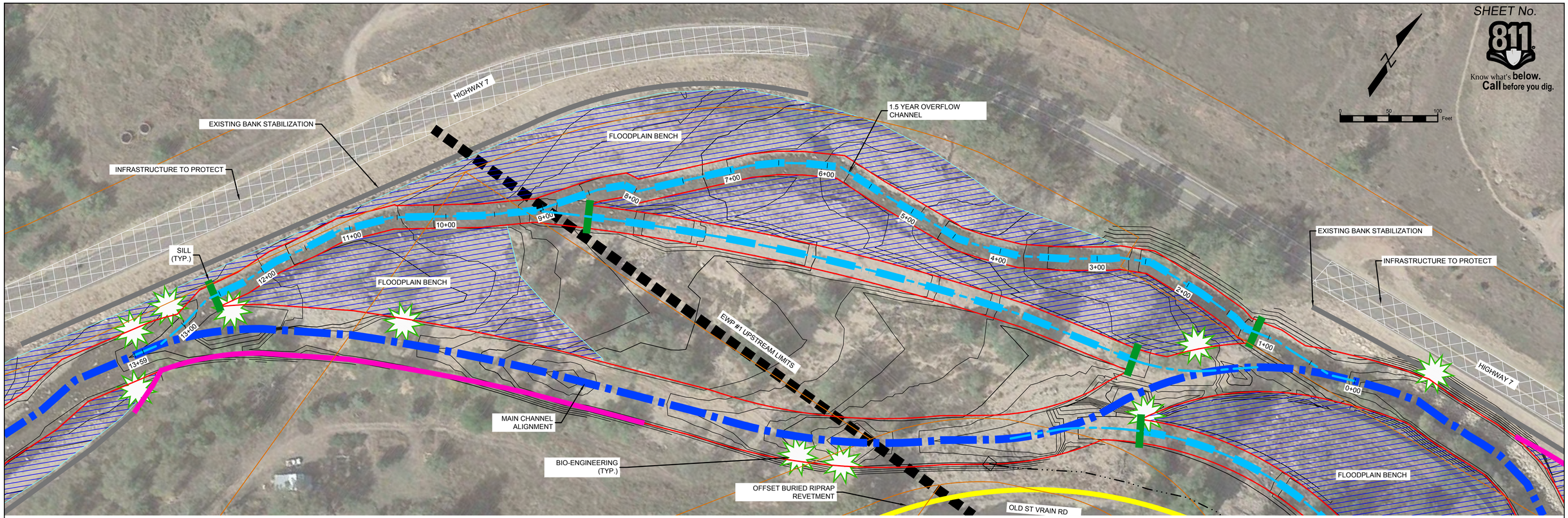
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL # 5 PLAN AND PROFILE
STA: 10+00 TO STA: 0+00

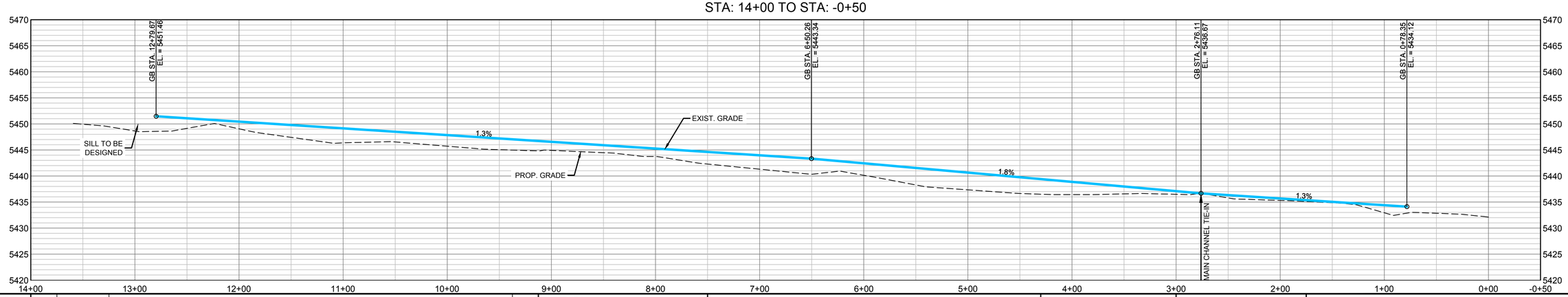
DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ	1" = 50"		
CHECKED BY:	RDK	VERT.	1" = 10"	SHEET 8 OF 19	OCPP 8



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 14+00 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2013BAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

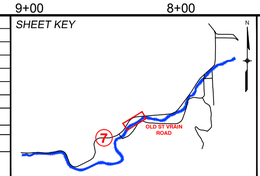
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:58 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

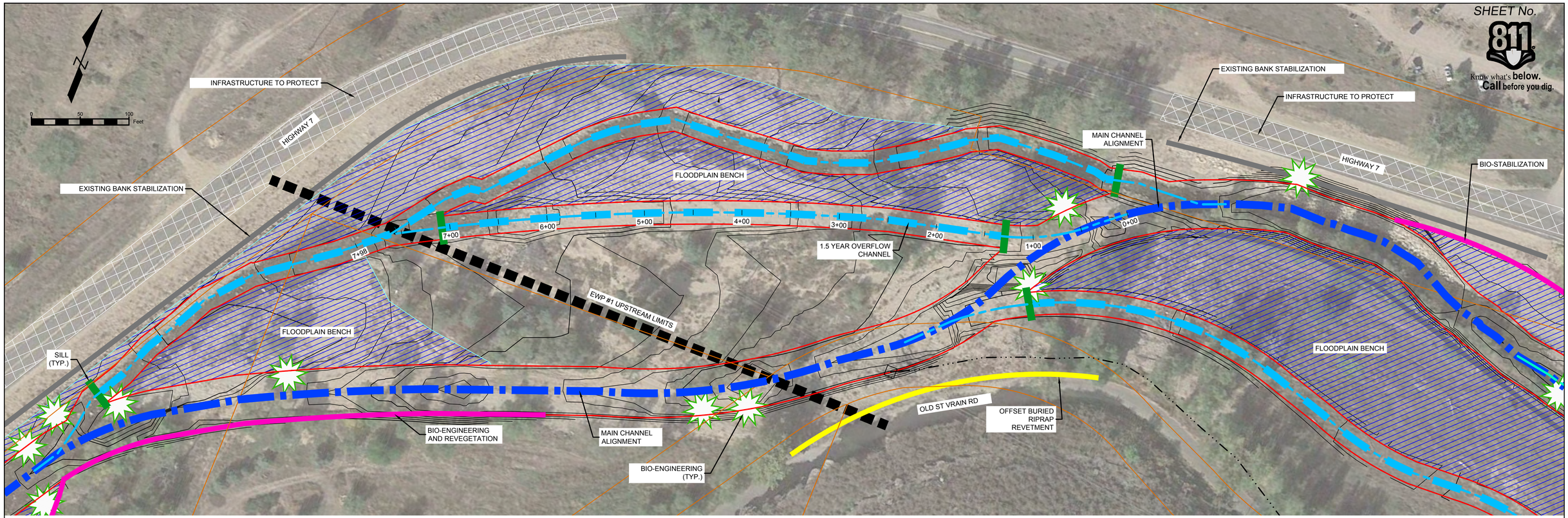
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #6 PLAN AND PROFILE

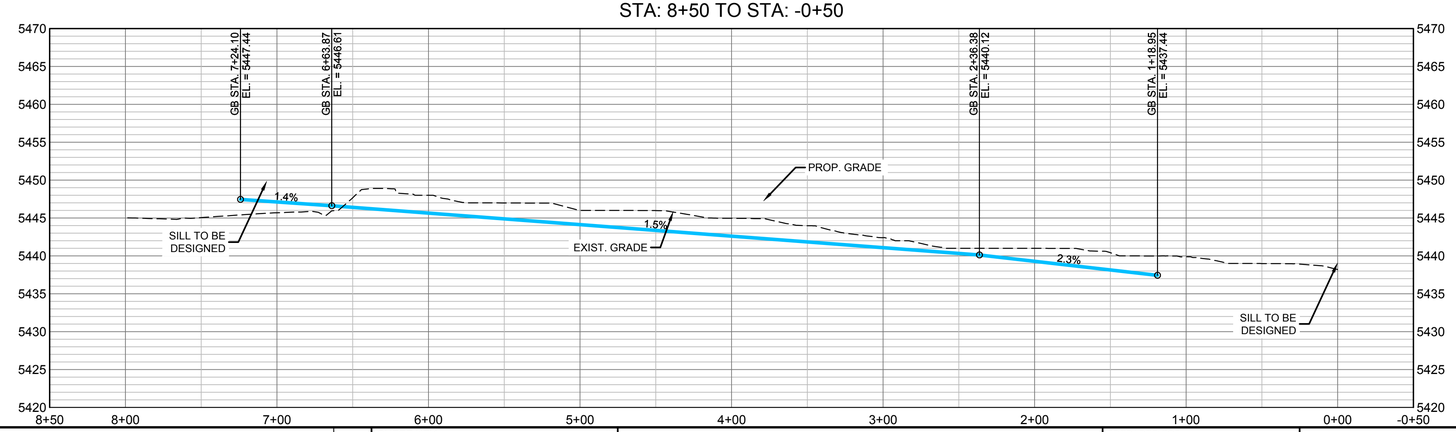
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"	SHEET 9 OF 19	OCPP 9
CHECKED BY: RDK	VERT. 1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 8+50 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM&MS
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

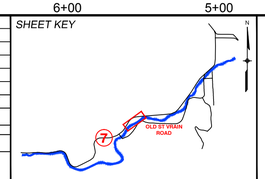
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:58 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

PRELIMINARY
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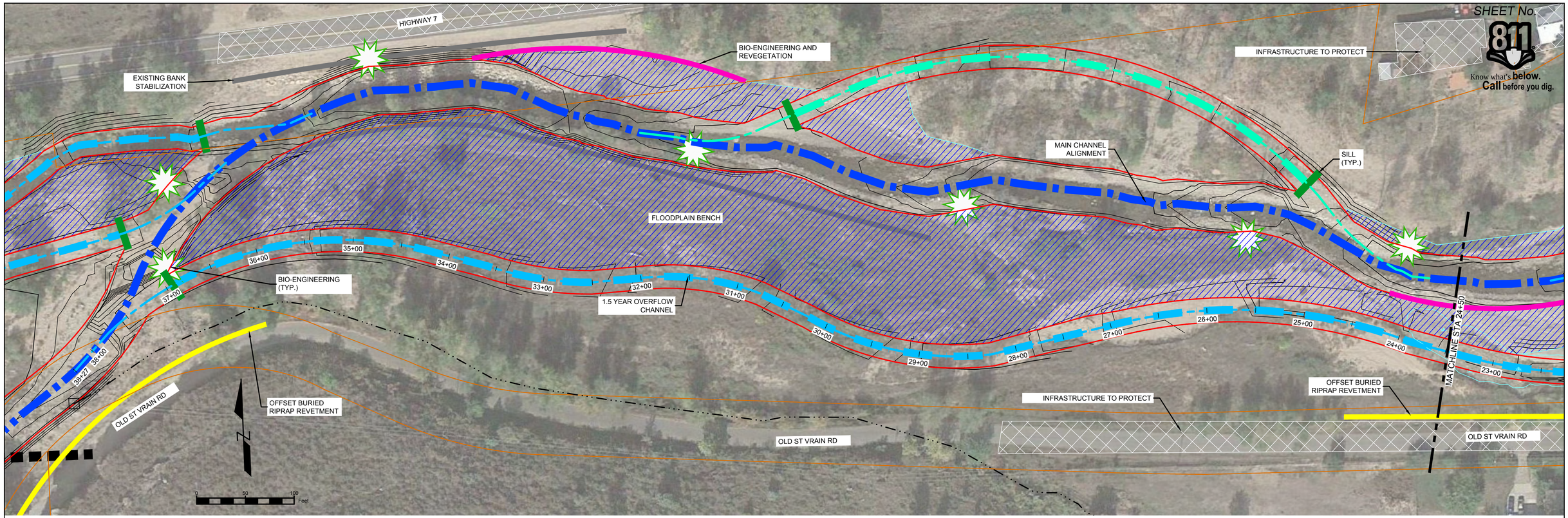
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #7 PLAN AND PROFILE

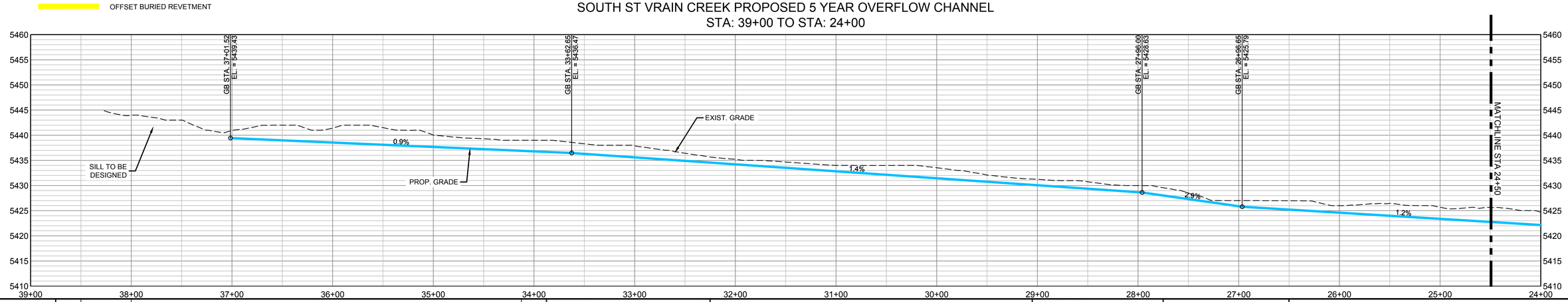
DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 50"	SHEET	10 OF 19	OCPP 10
CHECKED BY:	RDK	VERT. 1" = 10"			



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 39+00 TO STA: 24+00



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2016APA1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

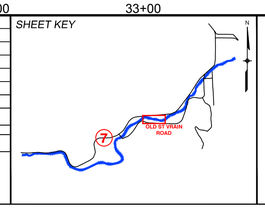
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:59 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

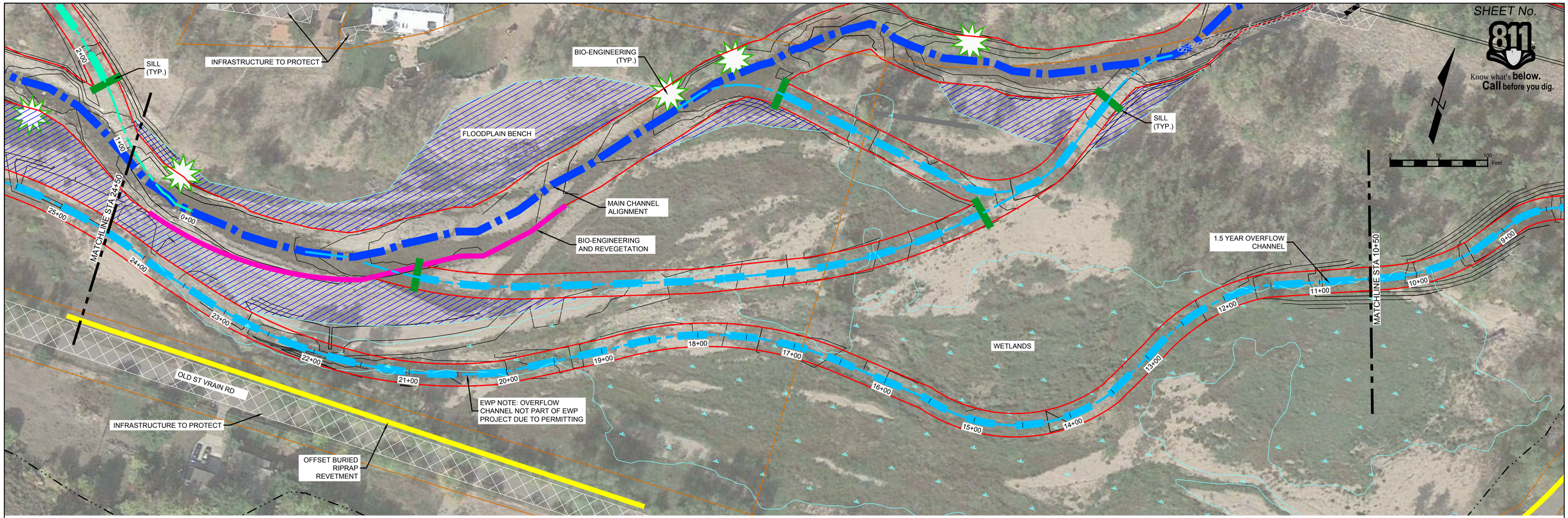
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #8 PLAN AND PROFILE
STA: 38+33 TO STA: 24+50

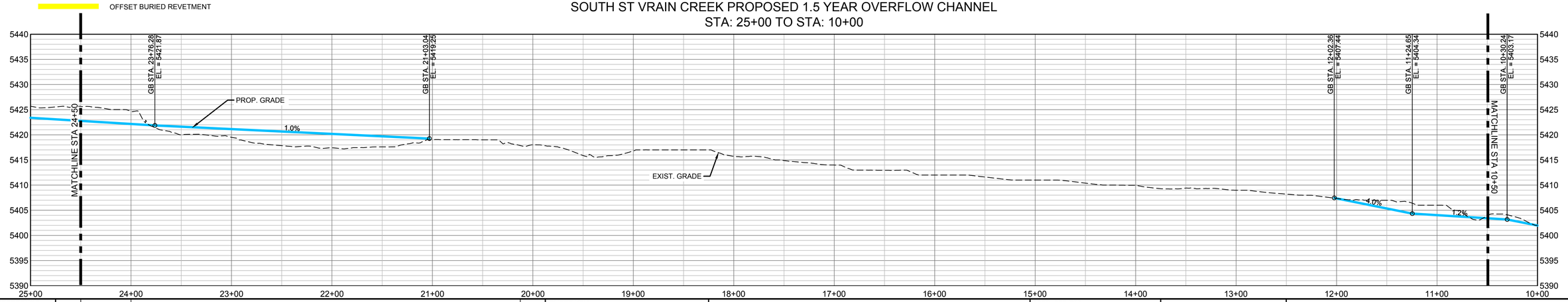
DESIGNED BY: SDS	SCALE (22" X 34")		DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ.	1" = 50"	SHEET	11 OF 19	OCPP 11
CHECKED BY: RDK	VERT.	1" = 10"			



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 25+00 TO STA: 10+00



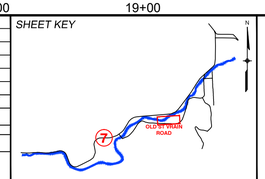
REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CH2MHILL
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY
		REVISIONS	

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 4:59 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

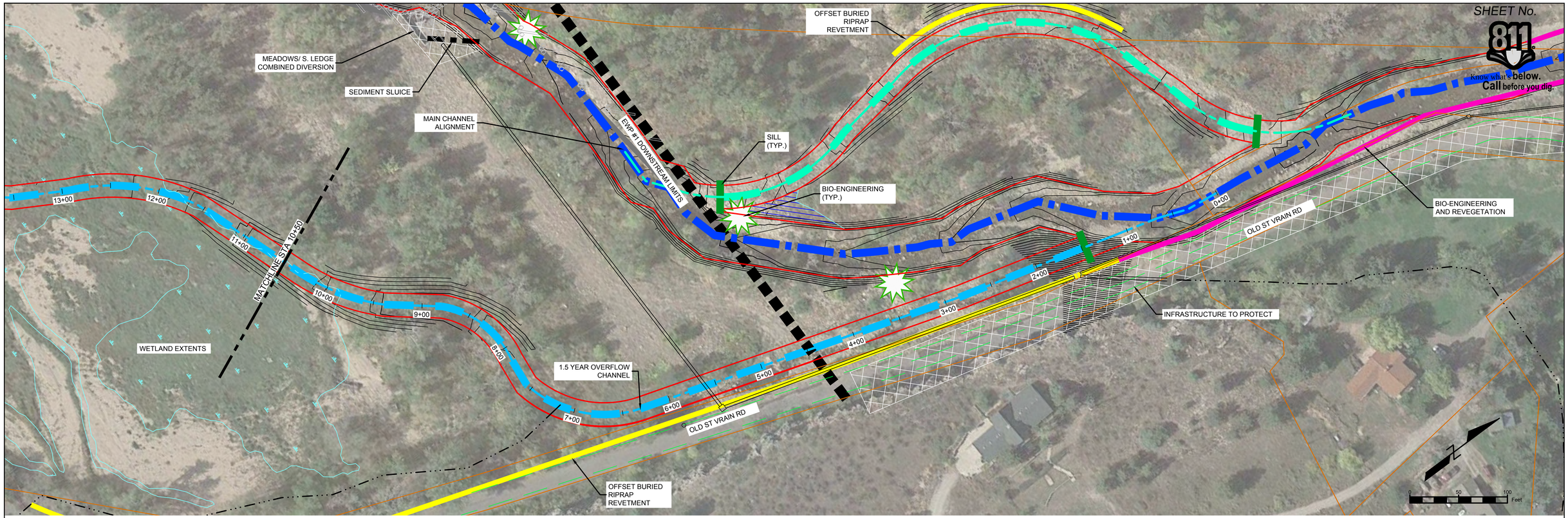
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #8 PLAN AND PROFILE
STA: 24+40 TO STA: 10+50

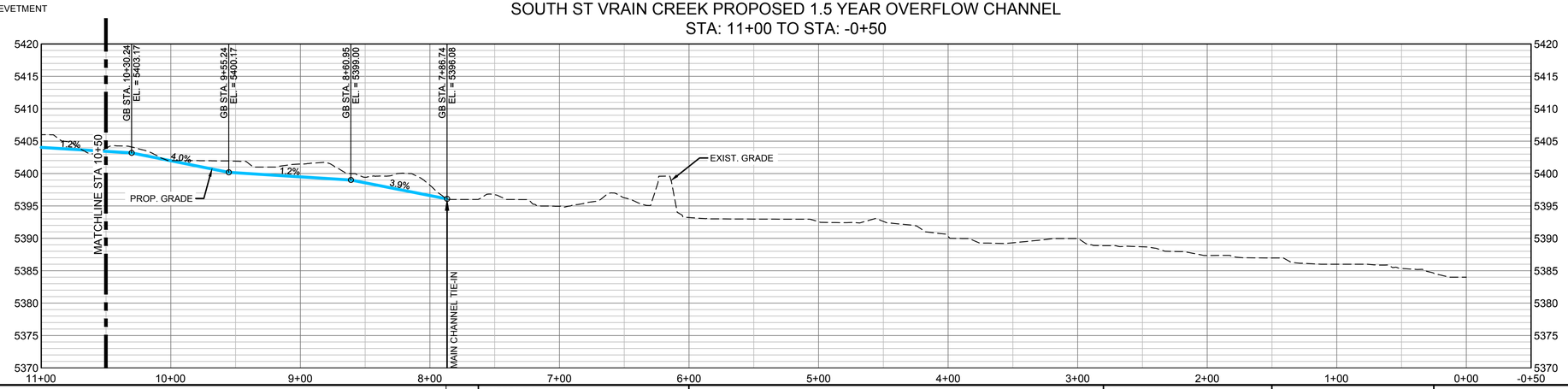
DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET 12 OF 19	OCPP 12
CHECKED BY:	RDK	VERT.	1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 11+00 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CH2MHILL
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

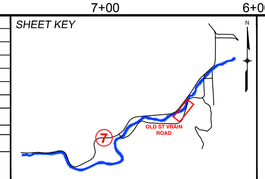
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:00 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

PRELIMINARY
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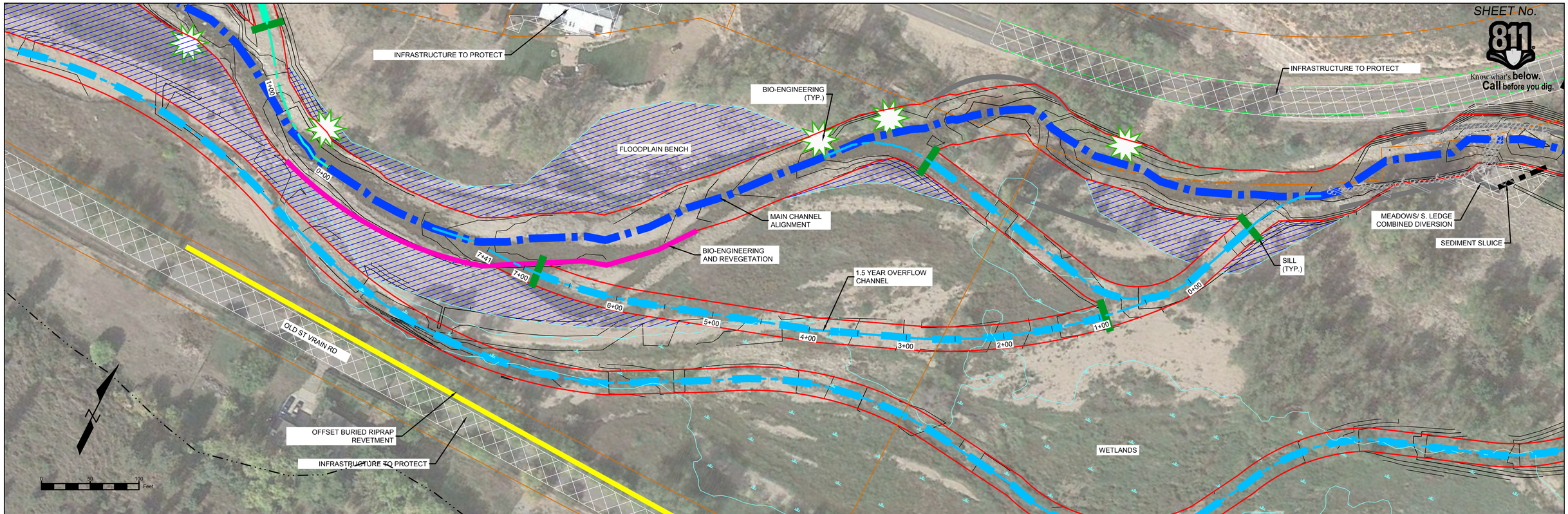
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #8 PLAN AND PROFILE
STA: 10+50 TO STA: 0+00

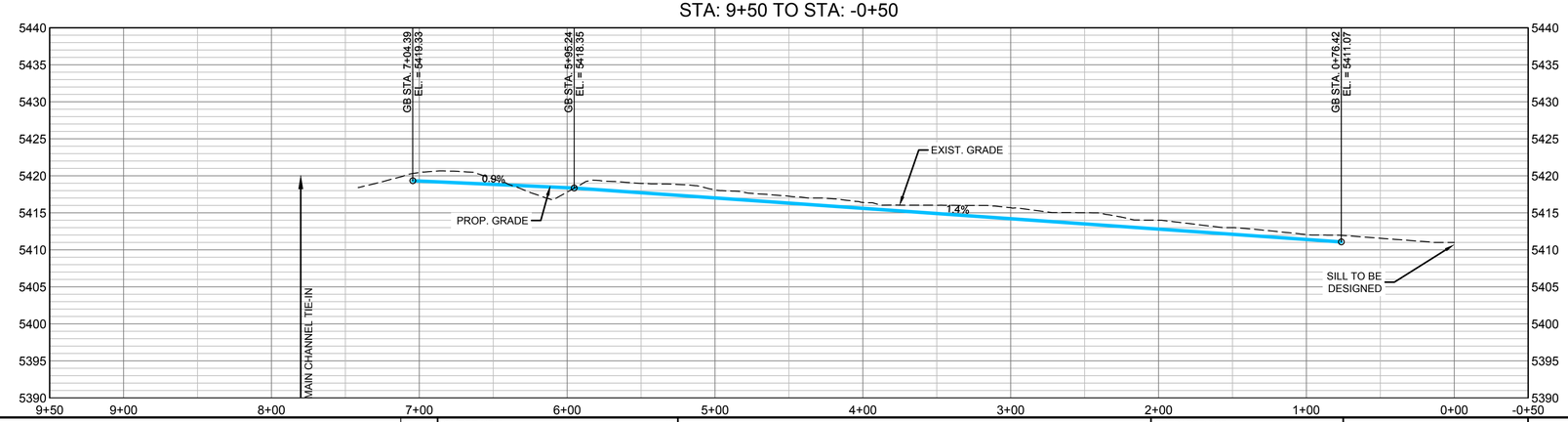
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ 1" = 50"	SHEET 13 OF 19	OCPP 13
CHECKED BY: RDK	VERT. 1" = 10"		



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 9+50 TO STA: -0+50



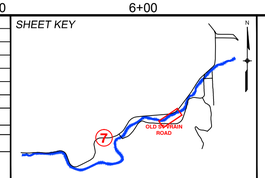
REFERENCE DRAWINGS
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CDM/HDR
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT
FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:00 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

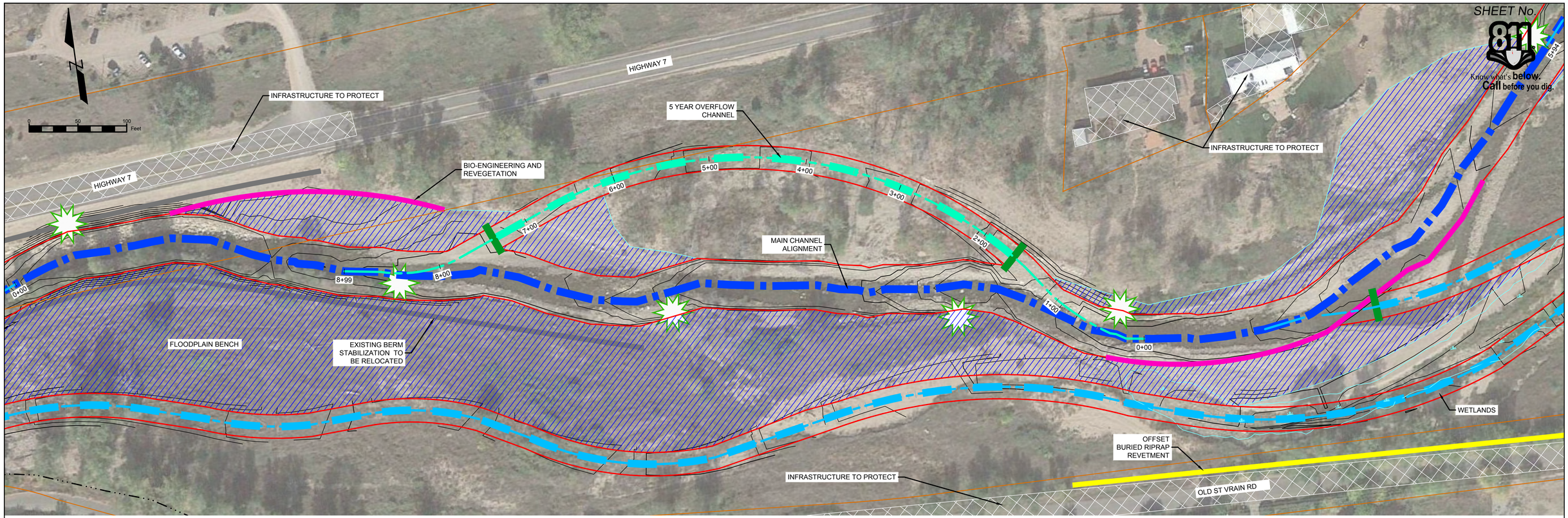
PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #9 PLAN AND PROFILE

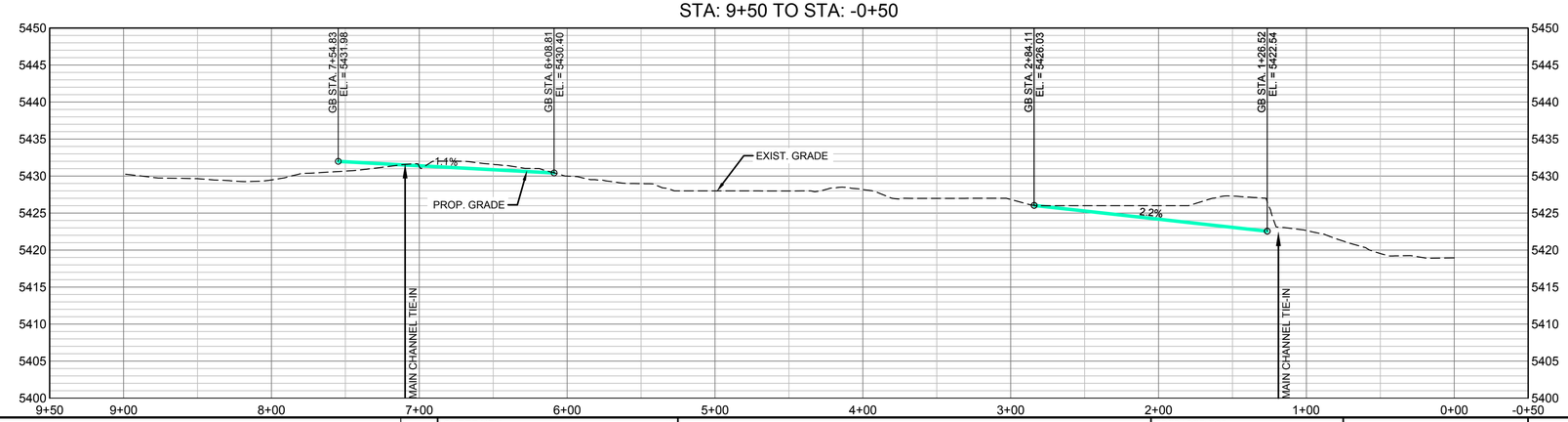
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"		
CHECKED BY: RDK	VERT. 1" = 10"	SHEET 14 OF 19	OCPP 14



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 9+50 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_OHLEBAS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

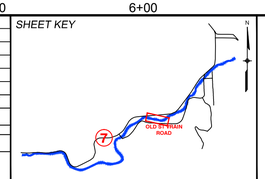
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:01 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

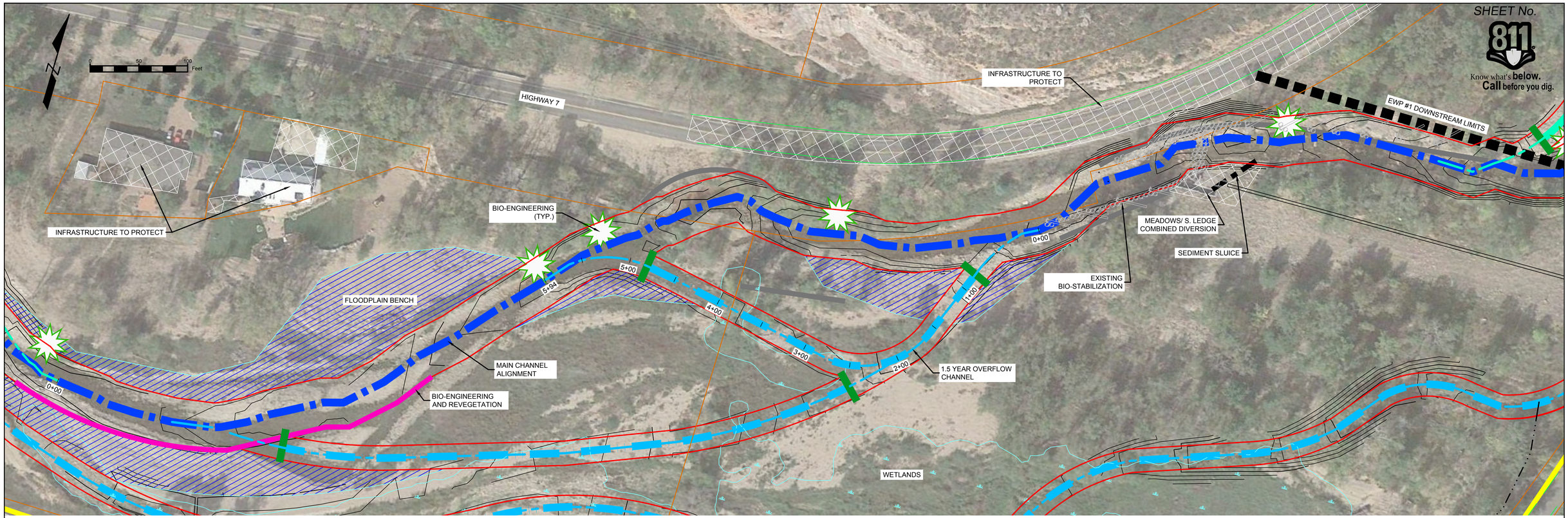
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #10 PLAN AND PROFILE

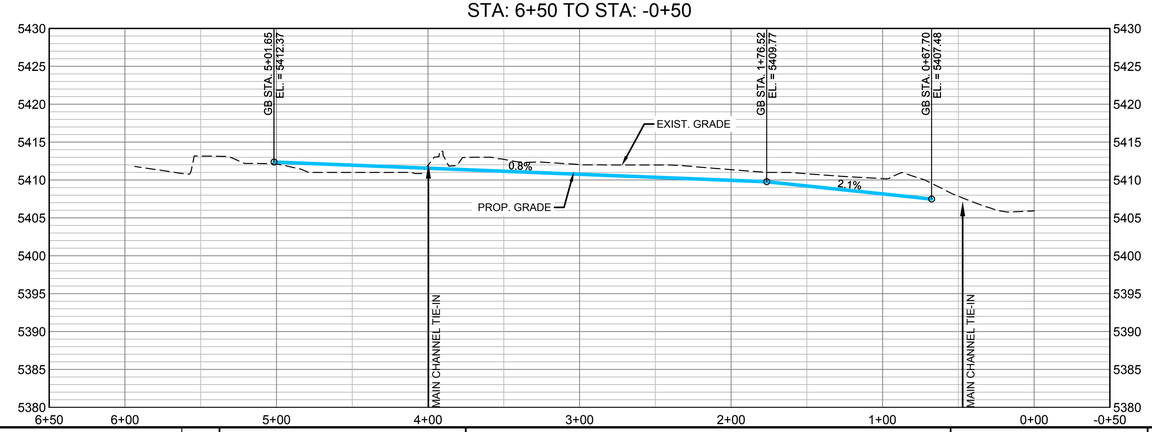
DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 50"	SHEET	15 OF 19	OCPP 15
CHECKED BY:	RDK	VERT. 1" = 10"			



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 1.5 YEAR OVERFLOW CHANNEL
STA: 6+50 TO STA: -0+50



REFERENCE DRAWINGS

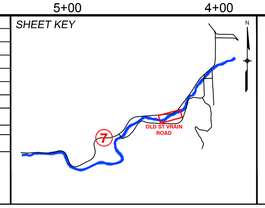
812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_0318APS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

No.	DATE	DESCRIPTION	BY
		REVISIONS	

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:01 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
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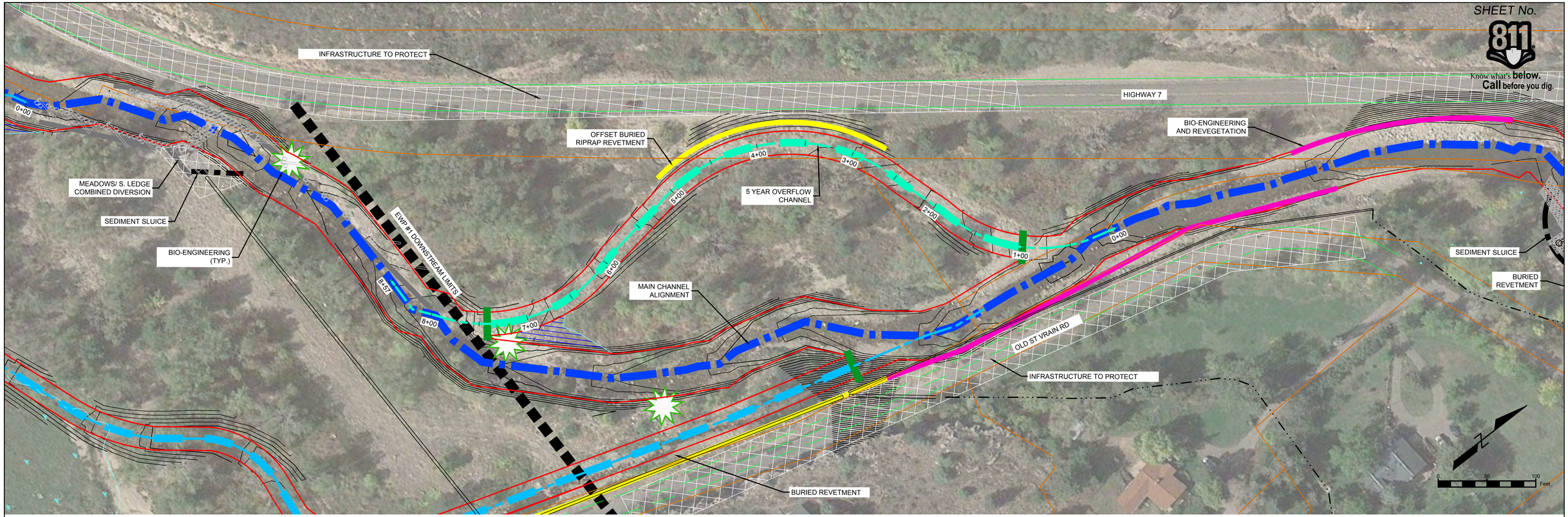
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #1 PLAN AND PROFILE

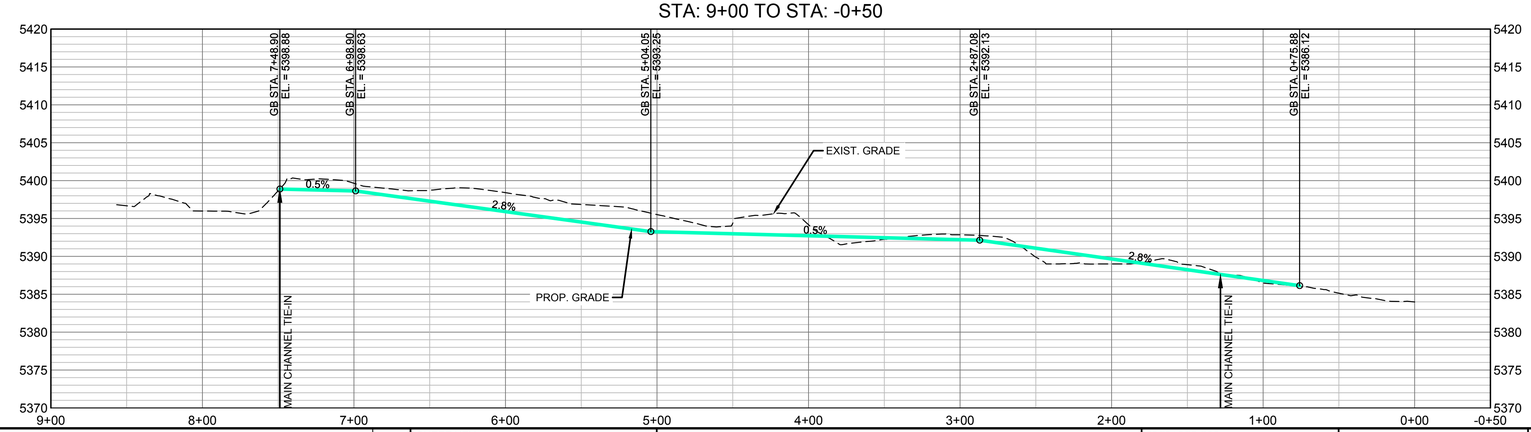
DESIGNED BY:	SDS	SCALE (22" X 34")	DATE ISSUED:	08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ. 1" = 50"	SHEET	17 OF 19	OCPP 17
CHECKED BY:	RDK	VERT. 1" = 10"			



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 9+00 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_2016APS1
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

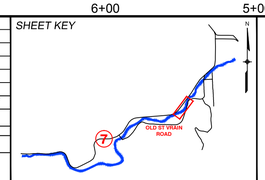
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:02 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

PRELIMINARY
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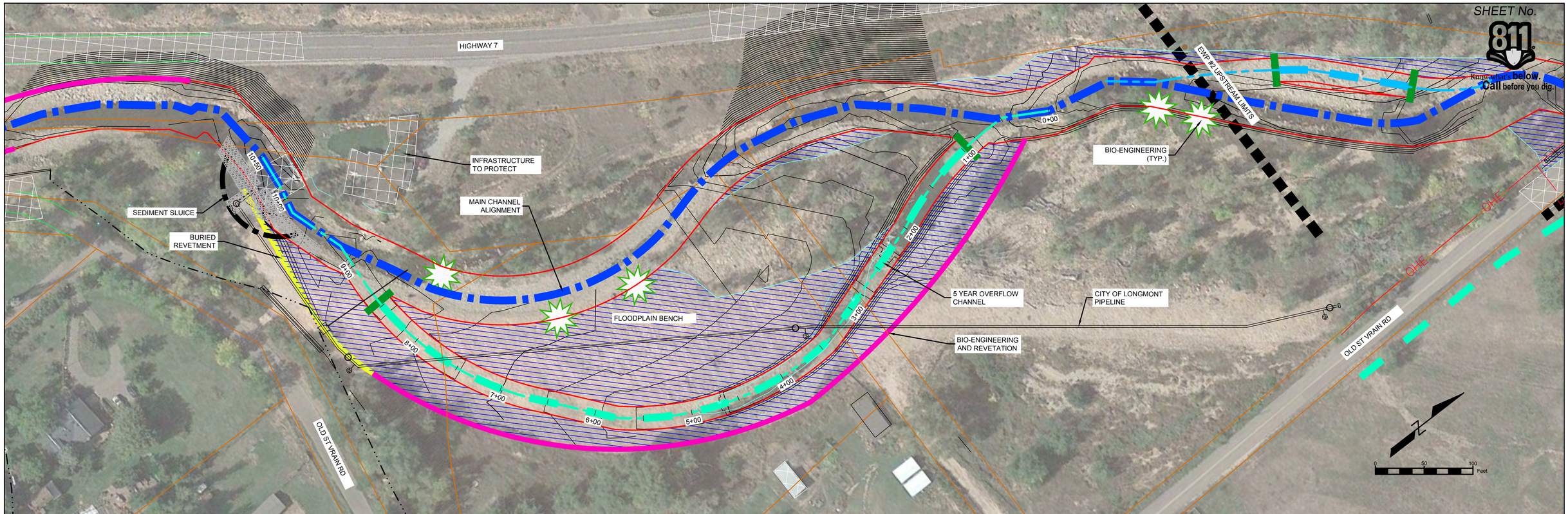
SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #12 PLAN AND PROFILE

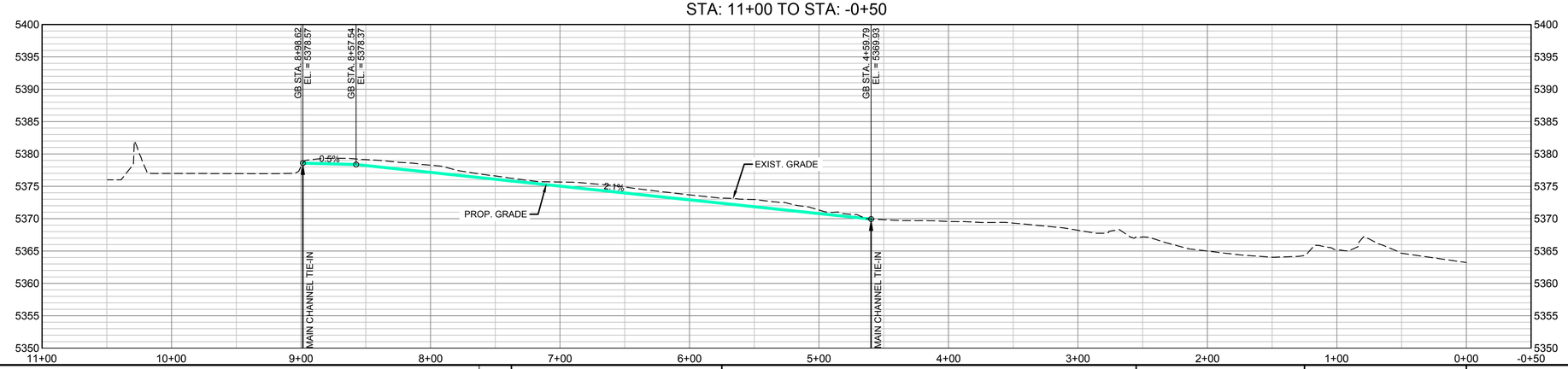
DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 50"		
CHECKED BY: RDK	VERT. 1" = 10"	SHEET 17 OF 19	OCPP 17



LEGEND

- FLOODPLAIN CONNECTIVITY
- RIFFLE-POOL SEQUENCES
- ROOT WAD
- INFRASTRUCTURE TO PROTECT
- OFFSET BURIED REVETMENT
- 1.5 YEAR OVERFLOW CHANNEL
- 5 YEAR OVERFLOW CHANNEL
- NEW ALIGNMENT
- BANK STABILIZATION

SOUTH ST VRAIN CREEK PROPOSED 5 YEAR OVERFLOW CHANNEL
STA: 11+00 TO STA: -0+50



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS
Parcels
Proposed Linework
CONCURRENT PROJECTS
Old St Vrain Road Bridge_JUB
City of Longmont Diversion Pipeline_CONSTRUCTION
Crane Associates Diversion Structure
Old South St Vrain Road
Ditch_Irrigation_Features

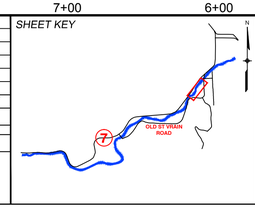
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\PPOC01.dwg
CTB FILE: ----
PLOT DATE: 8/16/2016 5:02 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN OVERFLOW

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

OVERFLOW CHANNEL #13 PLAN AND PROFILE

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET 18 OF 19	OCPP 18
CHECKED BY:	RDK	VERT.	1" = 10"		

EWP PLAN SHEETS:
ADDITIONAL SHEETS WILL BE MADE FOR THE EWP
PLAN ARESA TO REMOVE ASPECTS NOT ELEIGIBLE
FOR FUNDING AND SHOW DETAIL AT A LARGER SCALE

SHEET No. X

Know what's **below.**
Call before you dig.

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS

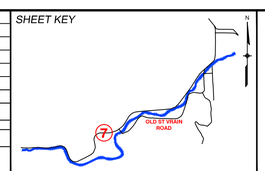
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: r:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\EWP PLAN SHEETS.dwg
CTB FILE: ----
PLOT DATE: 8/11/2016 1:44 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:
Boulder County Parks & Open Space

PREPARED BY:
Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

SEAL

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

EWP PLAN & PROFILE
STA: XX+XX TO STA XX+XX

DESIGNED BY:	SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY:	JDL	HORIZ.	1" = 50"	SHEET X OF XX	EWP 1
CHECKED BY:	RDK	VERT.	1" = 10"		

Know what's **below.**
Call before you dig.

ACTUAL CROSS SECTIONS

ACTUAL CROSS SCTIONS TO BE DEVELOPED AT CRITICAL POINTS ALONG THE REACH FOR FINAL SUBMITTAL

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34
AERIALS

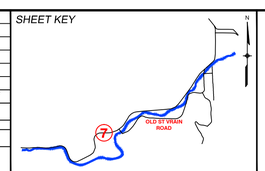
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME: R:\16.812.003 (south st vrain stream restoration)\Dwg\Construction Plans\CROSS SECTIONS.dwg
CTB FILE: ----
PLOT DATE: 8/11/2016 1:47 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED FOR:

Boulder County Parks & Open Space

PREPARED BY:

Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

SEAL

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

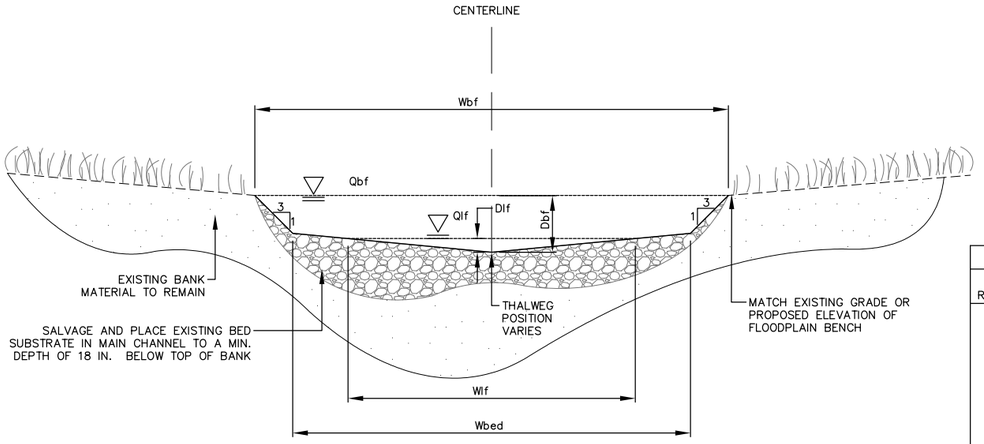
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

ACTUAL CROSS SECTIONS
STA: XX+XX TO STA XX+XX

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ 1" = 50"		
CHECKED BY: RDK	VERT. 1" = 10"	SHEET X OF XX	CS1

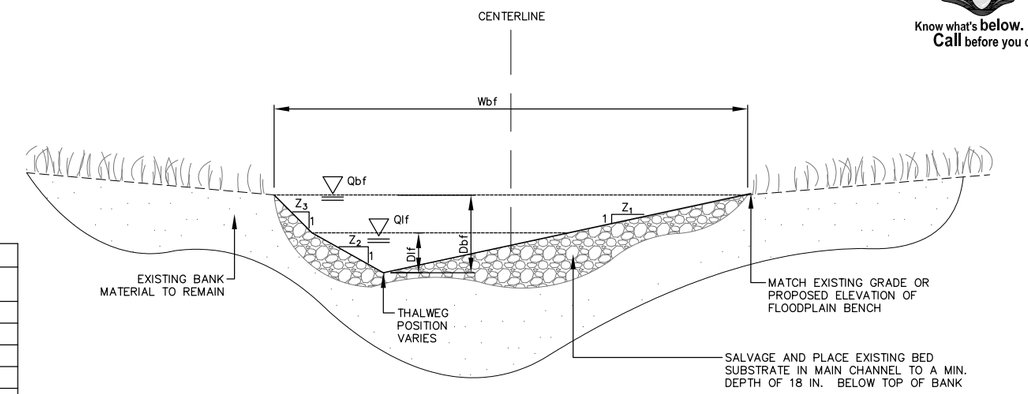
Know what's below. Call before you dig.



TYPICAL MAIN CHANNEL GRADING SECTION FOR STRAIGHT REACHES

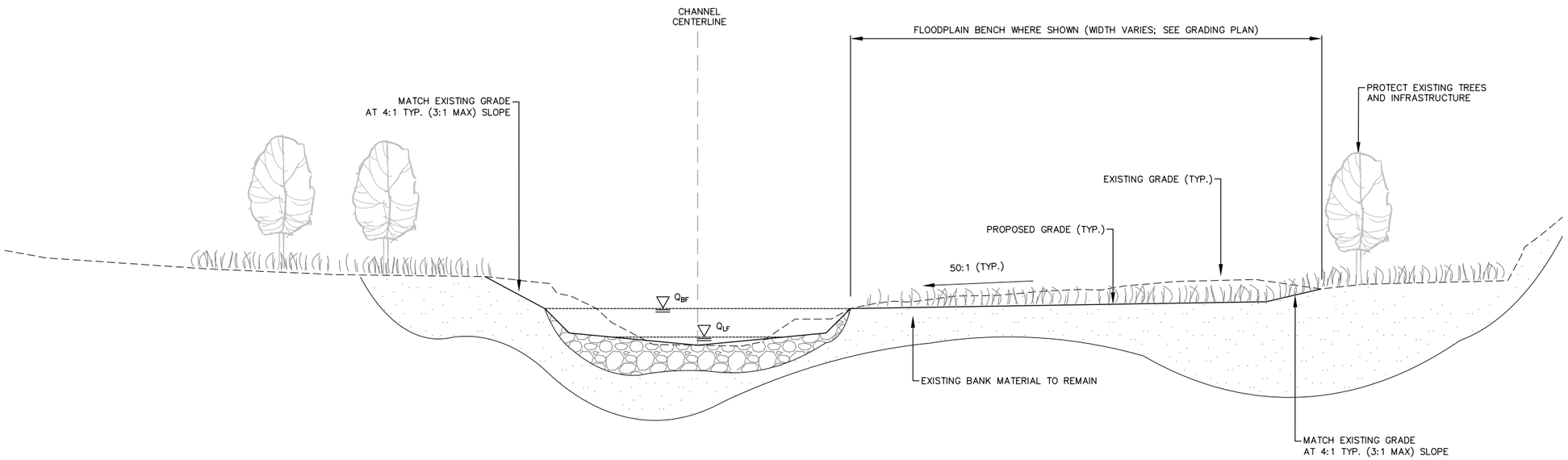
NOT TO SCALE

TYPICAL MAIN CHANNEL GEOMETRY (ft)				
REACH TYPE	DIMENSION	NARROW	TYP	WIDE
STRAIGHT REACH	Wbf	40	48	55
	Wbed	31	38	44
	Wlf	26	29	32
	Dbf	2.5	2.25	2.1
	Dlf	0.84	0.76	0.73
	Z1	15.5	19	22
	Z2	3	4	5
MEANDER REACH	Wbf	40	48	55
	Dbf	4.4	4.0	3.6
	Dlf,pool	2.75	2.5	2.25
	Z1	6.2	8.3	10.8
	Z2	3	4	5
	Z3	2.5	3	3



TYPICAL MAIN CHANNEL GRADING SECTION FOR MEANDER REACHES

NOT TO SCALE



TYPICAL FLOODPLAIN GRADING SECTION

NOT TO SCALE

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	No.	DATE	DESCRIPTION	BY

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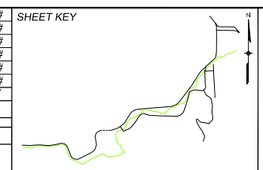

PREPARED BY:

Matrix DESIGN GROUP

otak

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

MAIN CHANNEL TYPICAL DETAILS

DESIGNED BY: MGR	SCALE		DATE ISSUED: 8/11/16	DRAWING No.
DRAWN BY: RB	HORIZ. NTS		SHEET X OF X	D1
CHECKED BY:	VERT. NTS			

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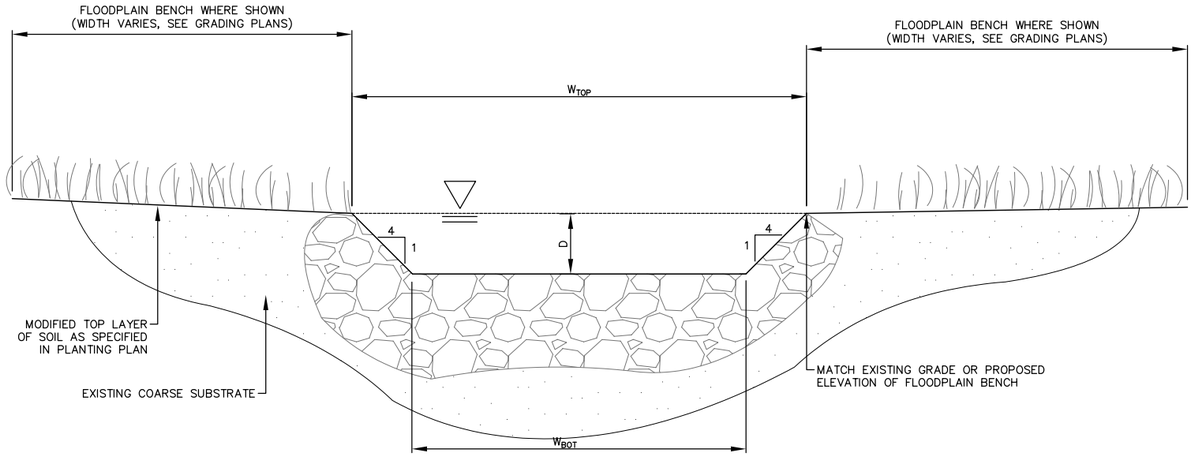
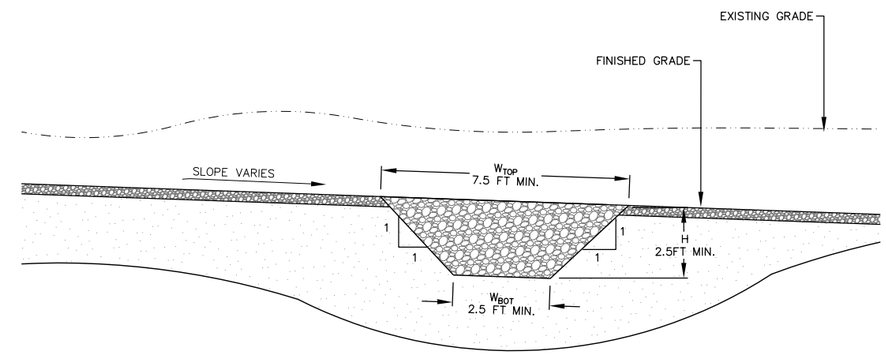


TYPICAL OVERFLOW CHANNEL SECTION

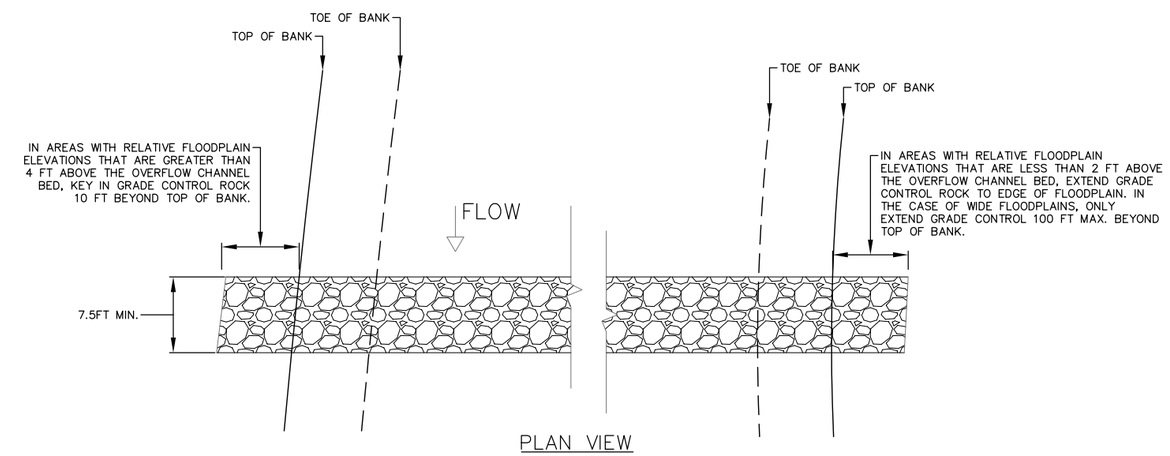
NOT TO SCALE

OVERFLOW CHANNEL GEOMETRY (ft)			
DIMENSION	NARROW	TYP	WIDE
Wtop	20	30	40+
Wbot	12	18	24
D	1	1.5	2+

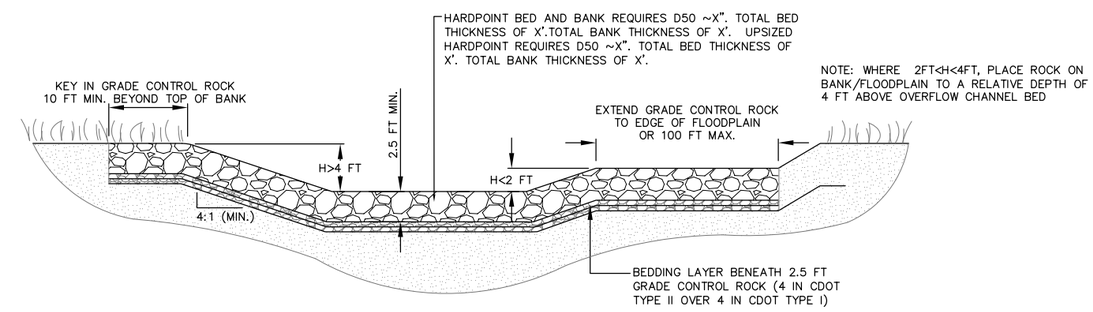
ROCK GRADE CONTROLS IN OVERFLOW CHANNELS			
CHANNEL ID	STATION	CREST ELEV. (FT)	CREST LENGTH (FT)



PROFILE VIEW



PLAN VIEW



CROSS SECTION VIEW

TYPICAL OVERFLOW CHANNEL GRADE CONTROL DETAILS

NOT TO SCALE

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34

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REVISIONS

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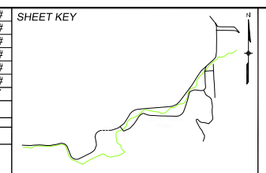

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PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

OVERFLOW CHANNEL DETAILS

DESIGNED BY: MGR	SCALE	DATE ISSUED: 8/11/16	DRAWING No.
DRAWN BY: RB	HORIZ. NTS	SHEET X OF X	D2
CHECKED BY:	VERT. NTS		

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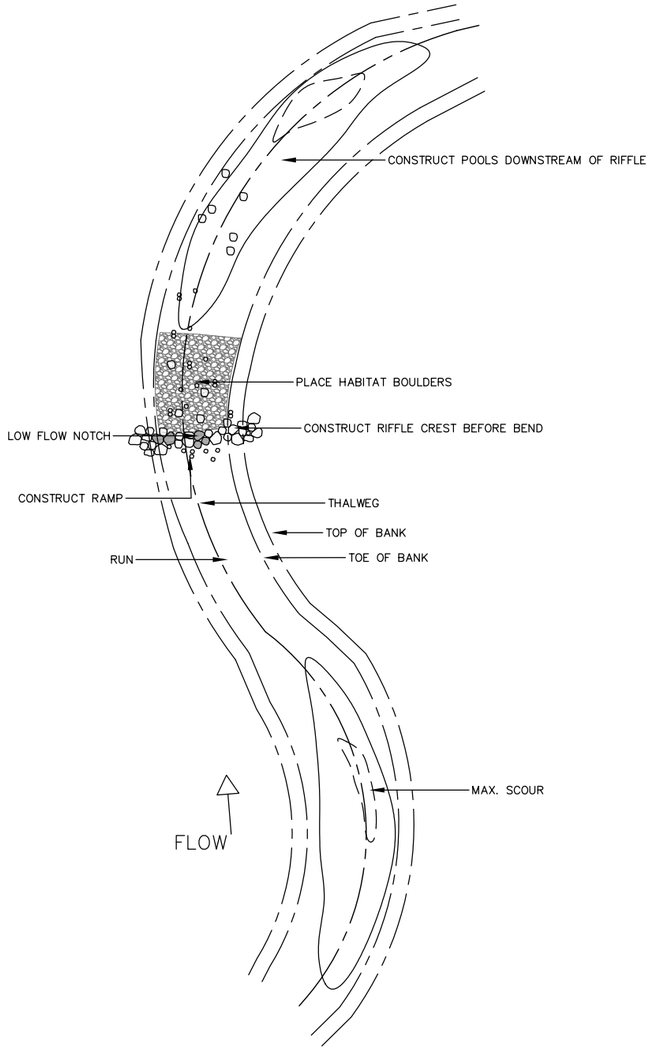
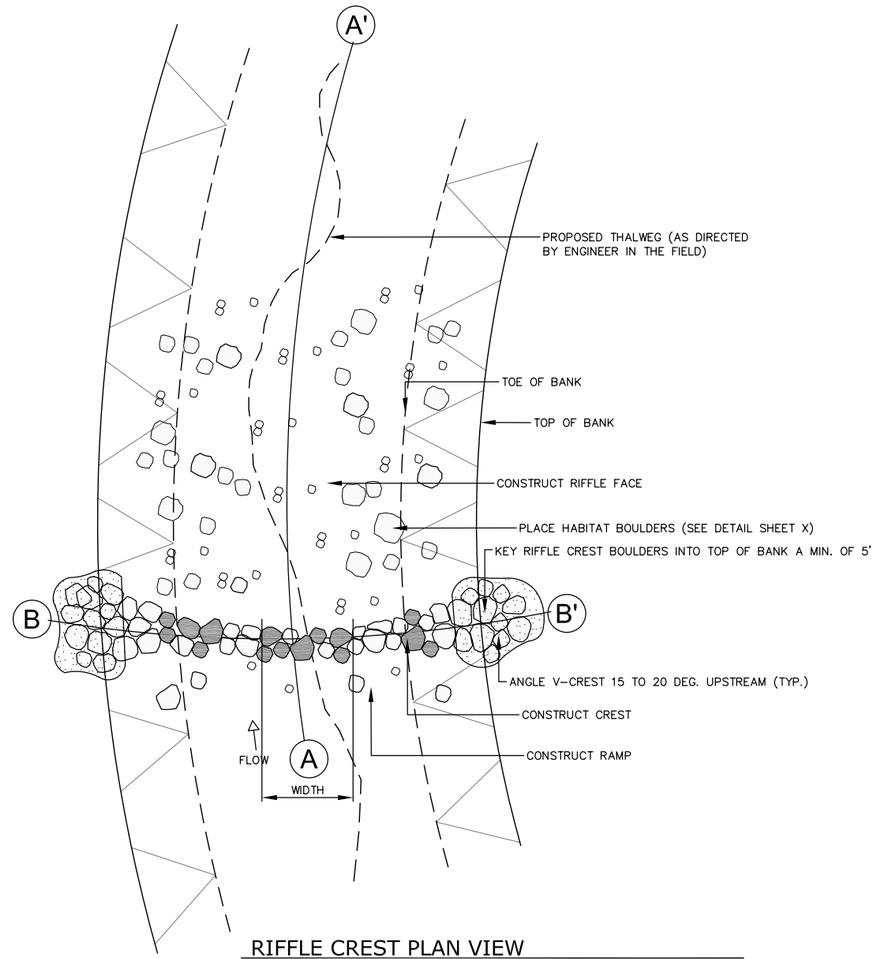
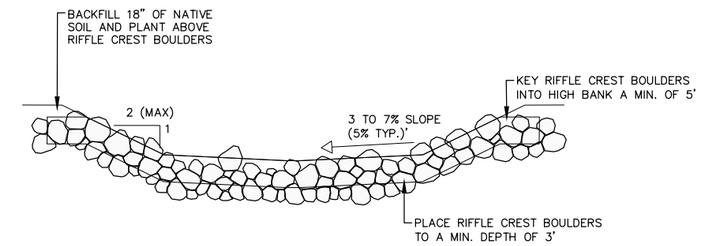


TYPICAL RIFFLE-POOL SEQUENCE PLAN VIEW
NOT TO SCALE



RIFFLE CREST PLAN VIEW
NOT TO SCALE

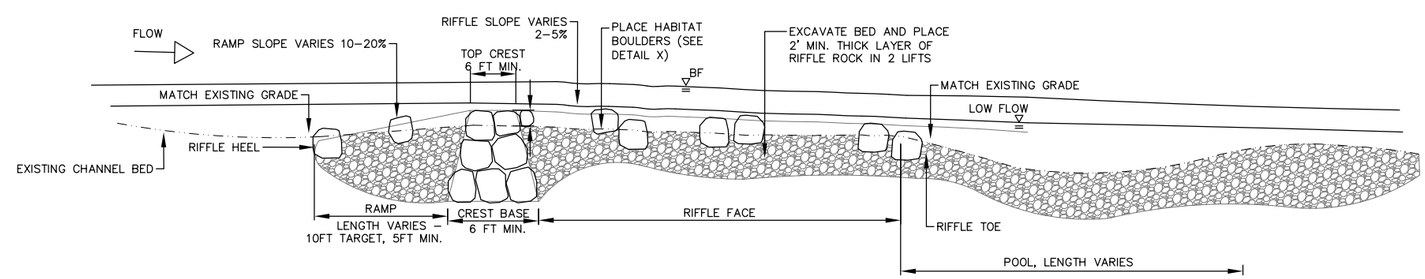


RIFFLE CREST PROFILE VIEW (B-B')
NOT TO SCALE

RIFFLE CREST ROCK GRADATION			
STATION	D,MIN	D50	D,MAX

RIFFLE FACE ROCK GRADATION*					
STATION	D,MIN	D16	D50	D84	D,MAX

*POOL AND RUN CONSIST OF SALVAGED NATIVE BED MATERIAL.



RIFFLE CREST PROFILE VIEW (A-A')
NOT TO SCALE

POOL–RIFFLE			
CREST STA.	CREST ELEV. (FT)	TOE STA.	TOE ELEV. (FT)

REFERENCE DRAWINGS
812-TITLEBLOCK-22x34

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REVISIONS

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CTB FILE: ----
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

RIFFLE DETAILS

DESIGNED BY: MGR
DRAWN BY: RB
CHECKED BY:
SCALE HORIZ. NTS VERT. NTS
DATE ISSUED: 8/11/16
SHEET X OF X
DRAWING No. D3

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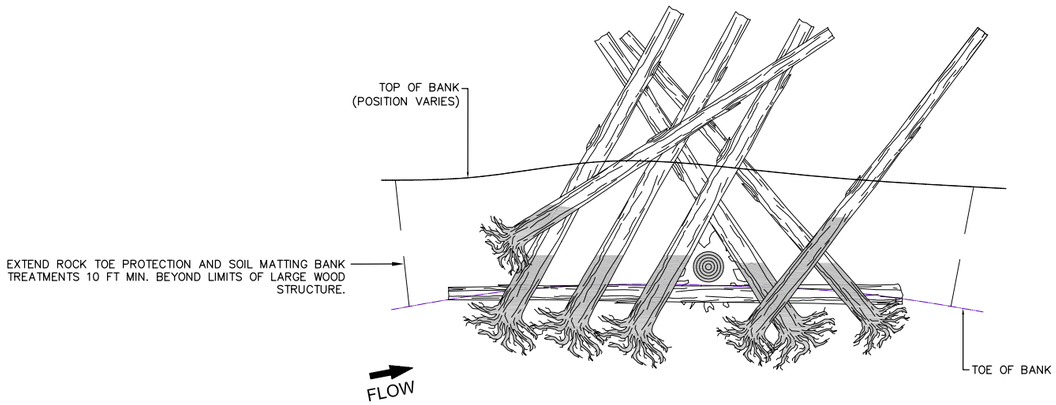
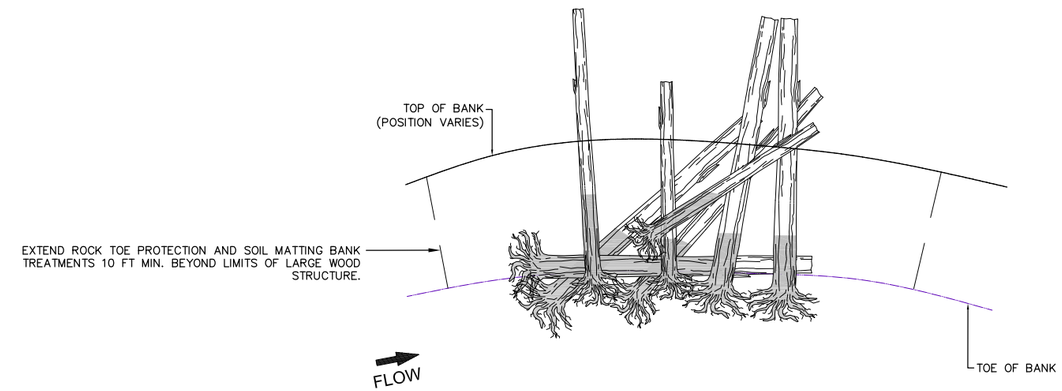


TYPE A LARGE WOOD STRUCTURE PLAN VIEW
NOT TO SCALE



TYPE B LARGE WOOD STRUCTURE PLAN VIEW
NOT TO SCALE

NOTE: ADDITIONAL LARGE WOOD STRUCTURE TYPES AND DETAILS WILL BE PROVIDED IN FINAL DESIGN SUBMITTAL.

REFERENCE DRAWINGS
812-TITLEBLOCK-22x34

No.	DATE	DESCRIPTION	BY
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REVISIONS

COMPUTER FILE MANAGEMENT
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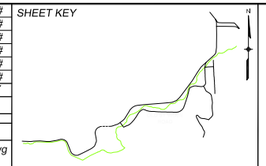

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PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

LARGE WOOD STRUCTURE DETAILS

DESIGNED BY:	MGR	SCALE		DATE ISSUED: 8/11/16	DRAWING No.
DRAWN BY:	MGR	HORIZ.	NTS	SHEET X OF X	D4
CHECKED BY:		VERT.	NTS		

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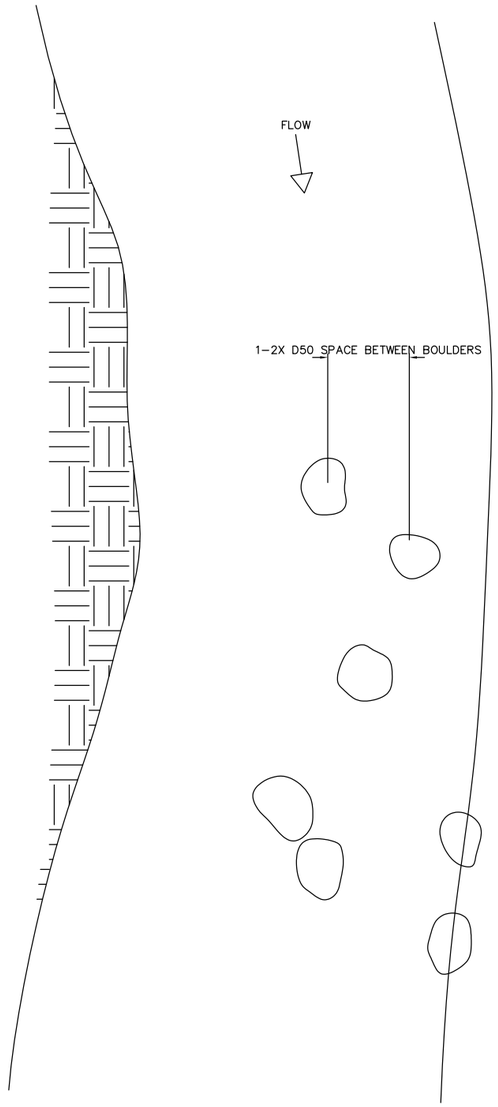
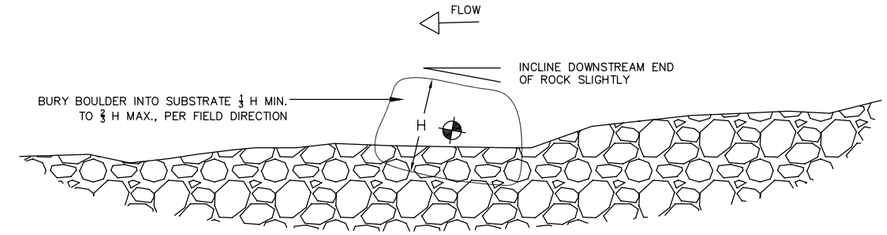
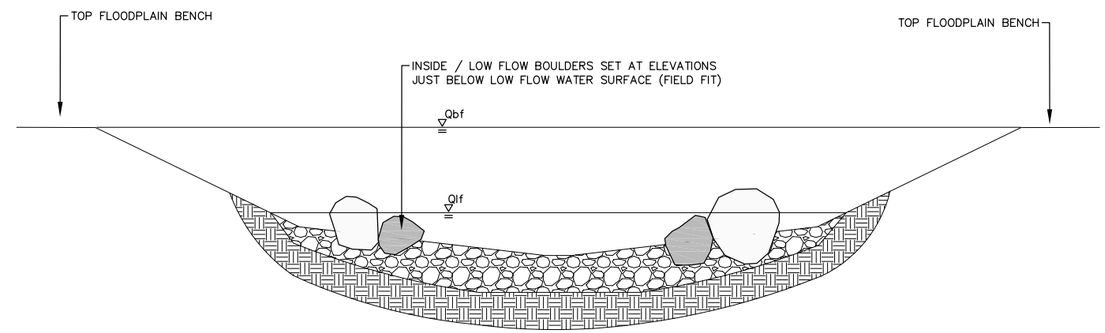


TYPICAL HABITAT BOULDER PLAN LAYOUT
NOT TO SCALE



TYPICAL HABITAT BOULDER PROFILE
NOT TO SCALE



TYPICAL HABITAT BOULDER CROSS SECTION
NOT TO SCALE

GENERAL NOTES:
1. PLACE HABITAT BOULDERS AS DIRECTED BY ENGINEER IN THE FIELD.
2. BOULDERS USED FOR HABITAT SHALL BE PREFERENTIALLY SELECTED FROM BOHN PARK STOCK, IMPORT OR SALVAGE FOR NATIVE APPEARANCE AND ROUNDNESS (I.E., DEVOID OF SHARP EDGES).
3. BOULDERS TO BE PLACED AT VARYING ELEVATIONS CORRESPONDING TO LOW-FLOW WATER SURFACE AND BANKFULL WATER SURFACE.
4. BOULDERS PLACED AT LOW FLOW ELEVATION SHALL BE PLACED SO CREST (HIGHEST PART) IS WITHIN 2-4" INCHES OF THE WATER SURFACE.
5. TYPICAL HABITAT BOULDER GRADATION:

D,MIN = 24 IN.
D50 = 36 IN.
D,MAX = 48 IN.

REFERENCE DRAWINGS
812-TITLEBLOCK-22x34

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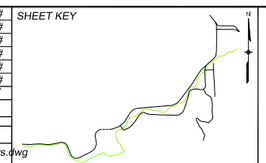

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PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION
BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGN

HABITAT BOULDER CLUSTER DETAILS

DESIGNED BY: MGR	SCALE	DATE ISSUED: 8/11/16	DRAWING No.
DRAWN BY: RB	HORIZ. NTS	SHEET X OF X	D5
CHECKED BY:	VERT. NTS		

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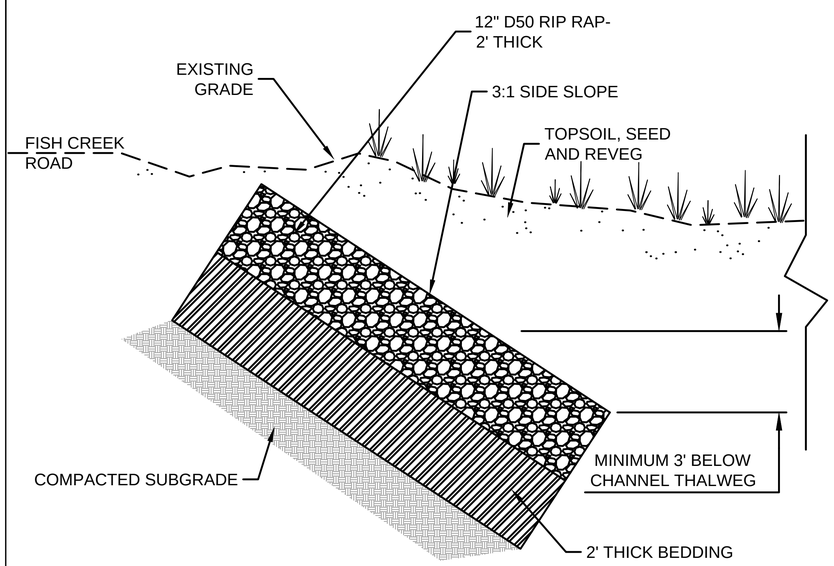
BURIED RIPRAP REVETMENT



REFERENCE DRAWINGS

812-TITLEBLOCK-22x34

No.	DATE	DESCRIPTION	BY

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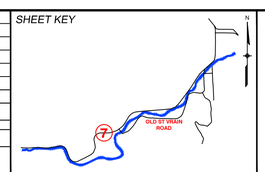

PREPARED FOR:

Boulder County Parks & Open Space

PREPARED BY:

Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

DETAILS

DESIGNED BY: SDS	SCALE (22" X 34")		DATE ISSUED: 08/11/16		DRAWING No.
DRAWN BY: JDL	HORIZ.	NA			
CHECKED BY: RDK	VERT.	NA	SHEET X OF XX		X

GENERAL NOTES:

1. ALL REVEGETATION PLANS ARE CONCEPTUAL IN NATURE. EXTENTS OF REVEGETATION MEASURES REPRESENT APPROXIMATE AREAS FOR REVEGETATION AND EXACT LOCATIONS FOR IMPROVEMENTS WILL BE PROVIDED AT A LATER STAGE IN THE DESIGN PROCESS.
2. EXACT REVEGETATION STRATEGIES ARE DEPENDENT ON PROXIMITY TO THE WATER TABLE AND COULD NO BE SHOWN AT THIS TIME BECAUSE PROPOSED GRADING HAS NOT YET BEEN PROVIDED.
3. THE FINAL 30% DESIGN SUBMITTAL WILL SHOW THE LOCATIONS AND EXTENT OF UPLAND AND RIPARIAN SEED, WILLOW PLANTINGS, TREE AND SHRUB PLANTINGS, PERENNIAL PLANTINGS AND INSTALLATION OF WETLAND/RIPARIAN SOD.
4. CONTRACTOR TO VERIFY FIELD CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
5. NO WORK SHALL OCCUR UNTIL ALL EXISTING UNDERGROUND UTILITIES HAVE BEEN LOCATED AND MARKED. CALL LOCAL UTILITY LOCATING SERVICE AT 1-800-922-1987 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
6. TREES SHALL NOT BE PLANTED WITHIN 10 FEET OF WATER AND 5 FEET OF SANITARY SEWER LINES. TREES AND SHRUBS SHALL NOT BE PLANTED WITHIN 5 FEET OF BURIED ELECTRICAL, GAS AND TELECOMMUNICATION LINES.
7. THE NATIVE SEED MIX SHALL ONLY BE USED IN AREAS THAT HAVE BEEN DISTURBED BY CONSTRUCTION ACTIVITIES, OR ON NON-WILLOW BENCH AREAS THAT EXCEED 24" ABOVE THE WATER SURFACE ELEVATION.
8. ALL WILLOW STAKING, REGARDLESS OF STAKE LENGTH, SHALL BE INSTALLED WHEN THE WILLOW STAKES ARE DORMANT.
9. PERENNIAL TUBELINGS SHALL BE INSTALLED AFTER HIGH FLOWS HAVE RECEDED.
10. 3-5' LONG WILLOW STAKES SHALL BE USED IN AREAS WHERE BENCH HEIGHT IS NO MORE THAN 3.5' ABOVE THE WATER SURFACE ELEVATION.
11. WILLOW STAKES, REGARDLESS OF LENGTH MUST HIT WATER TABLE AT TIME OF PLANTING.
12. AREAS WITH A BENCH HEIGHT GREATER THAN 3.5' ABOVE WATER SURFACE ELEVATION SHALL NOT BE PLANTED WITH WILLOW CUTTINGS, PERENNIALS OR SEEDING (RIPARIAN). THESE AREAS SHALL RECEIVE THE SEEDING (NATIVE) AS SPECIFIED.
13. DECIDUOUS TREES SHALL BE PLACED IN GROUPINGS OF 1, 3 OR 5 PLANTS PER SPECIES. GROUPINGS SHALL BE RANDOM.
14. EVERGREEN TREE SPECIES SHALL BE PLACED RANDOMLY IN LOCATIONS AS SHOWN ON THE PLANS. NO MORE THAN THREE OF THE SAME SPECIES SHALL BE PLANTED IN A GROUP.
15. AREAS WITH A BENCH HEIGHT OF LESS THAN OR EQUAL TO 24" ABOVE WATER SURFACE ELEVATION SHALL RECEIVE SEEDING (RIPARIAN) AS SPECIFIED.
16. ALL AREAS TO BE PLANTED WITH PERENNIAL TUBELINGS OR WILLOWS CUTTINGS SHALL ALSO BE SEEDED WITH SEEDING (RIPARIAN).
17. ALL AREAS OF REVEGETATION SHALL BE AMENDED WITH 3 CY OF ORGANIC COMPOST PER 1000 SQ. FT.
18. PLANTING AREAS AND DEPTH TO WATER TABLE ARE PRELIMINARY. PLANTING AREAS AND WATER TABLE DEPTH SHOULD BE VERIFIED BEFORE COMMENCING WORK.
19. CONSULT PLANT SCHEDULE FOR APPROPRIATE PLANTING ELEVATION ABOVE WATER SURFACE ELEVATION.
20. ALL PERENNIALS (TUBELINGS) SHALL BE PLANTED AT 2' O.C. IN TRIANGULAR SPACING.

BOULDER COUNTY FLOOD RECOVERY PLANT MATERIALS LIST NOTES:

1. THE PLANT MATERIAL TO BE USED FOR REVEGETATION ON THIS PROJECT SHALL ADHERE TO THE CRITERIA OUTLINED IN THE RFP FOR PLANT MATERIAL SERVICES ISSUED BY BOULDER COUNTY.
2. THE PLANTS IDENTIFIED IN THE SOUTH ST. VRAIN CREEK PLANT SCHEDULE WERE PROVIDED BY BOULDER COUNTY.
3. THE SOUTH ST. VRAIN CREEK PLANT SCHEDULE INDICATES ALL THE PLANT SPECIES AND SIZES THAT CAN BE USED FOR REVEGETATION.
4. NOT ALL OF THESE PLANTS SHALL BE USED FOR REVEGETATION AS PART OF THE FINAL DESIGN.

SOUT ST. VRAIN CREEK PLANT SCHEDULE:

RIPARIAN SHRUBS AND TREES

COMMON NAME	BOTANICAL*	SIZE / FORM
Mountain Maple	Acer glabrum	40 Cl
Box Elder	Acer negundo	40 Cl
Thinleaf Alder	Alnus incana ssp. tenuifolia	40 Cl
Serviceberry	Amelanchier alnifolia	40 Cl
Leadplant	Amorpha fruiticosa	40 Cl
Water Birch	Betula occidentalis	40 Cl
Hackberry	Celtis reticulata	40 Cl
Rubber Rabbitbrush	Chrysothamnus nauseosus	40 Cl
Red-osier Dogwood	Cornus sericea ssp. sericea	40 Cl
Hawthorn	Crataegus erythropoda	40 Cl
Fleshy Hawthorn	Crataegus macracantha var. occidentalis	40 Cl
Hops	Humulus lupulus var. neomexicanus	40 Cl
Ponderosa Pine	Pinus ponderosa	40 Cl
Narrowleaf Cottonwood	Populus angustifolia	40 Cl
Narrowleaf Cottonwood	Populus angustifolia	14 inch
Plains Cottonwood	Populus deltoides var. monilifera	14 inch
Wild Plum	Prunus americana	40 Cl
Chokecherry	Prunus virginiana var. melanocarpa	40 Cl
Golden Currant	Ribes aureum	40 Cl
Wax Currant	Ribes cereum	40 Cl
White-stem Gooseberry	Ribes inerme	40 Cl
Wood's Rose	Rosa woodsii	40 Cl
Peachleaf Willow	Salix amygdaloides	40 Cl
Peachleaf Willow	Salix amygdaloides	14 inch
Bebb's Willow	Salix bebbiana	40 Cl
Coyote Willow	Salix exigua	40 Cl
Bluestream Willow	Salix irrorata	40 Cl
Common Snowberry	Symphoricarpos albus	40 Cl
Western Snowberry	Symphoricarpos occidentalis	40 Cl

WETLAND

COMMON NAME	BOTANICAL*	SIZE / FORM
Marsh Milkweed	Asclepias incarnata	10 Cl
Showy Milkweed	Asclepias speciosa	10 Cl
Bluejoint Reedgrass	Calamagrostis canadensis	10 Cl
Emory's Sedge	Carex emoryii	10 Cl
Nebraska Sedge	Carex nebrascensis	10 Cl
Woolly Sedge	Carex pellita	10 Cl
Clustered Field Sedge	Carex praegracilis	10 Cl
Creeping Spikerush	Eleocharis palustris	10 Cl
American Mannagrass	Glyceria grandis	10 Cl
Nuttall's Sunflower	Helianthus nattalii	10 Cl
Baltic Rush	Juncus balticus	10 Cl
Torrey's Rush	Juncus torreyi	10 Cl
Switchgrass	Panicum virgatum	10 Cl
Small Fruited Bulrush	Scirpus microcarpus	10 Cl
Prairie Cordgrass	Spartina pectinata	10 Cl
Blue Vervain	Verbena hastata	10 Cl

SOUTH ST. VRAIN CREEK SEEDING LEGEND:

SEEDING (NATIVE)

COMMON NAME	BOTANICAL*	VARIETY	% OF MIX	PLS/Acre
Fringed sage	Artemisia frigida	VNS	2	0.02
Showy milkweed	Asclepias speciosa	VNS	2	1.65
Sideoats grama	Bouteloua curtipendula	Vaughn	7	1.92
Blue grama	Bouteloua gracilis	Native	15	0.95
Rabbitbrush	Chrysothamnus nauseosus	VNS	4	0.52
Rocky Mountain beeplant	Cleome serrulata	VNS	–	–
Canada Wildrye	Elymus canadensis	VNS – Native	12	5.45
Squirreltail	Elymus elymoides	BCPOS provided	10	2.72
Slender wheatgrass	Elymus trachycaulus	San Luis	12	3.95
Thickspike wheatgrass	Elymus lanceolatus	Critana	8	2.72
Pursh blanketflower	Gaillardia aristata	VNS	–	–
Hairy golden aster	Heterotheca villosa	VNS	5	0.30
Western wheatgrass	Pascopyrum smithii	Arriba	8	3.80
Switchgrass	Panicum virgatum	Nebraska 28 or Trailblazer	10	1.34
–	Penstemon species	VNS	–	–
Upright prairie coneflower	Ratibida columnifera	VNS	–	–
Little bluestem	Schizachyrium scoparium	Cimarron or Pastura	5	1.01
		TOTAL	100	26.35

**RATE GIVEN IS FOR BROADCAST SEED. DRILL SEEDING SHALL BE 1/2 OF GIVEN RATE.
VNS = VARIETY NOT STATED
PLS = PURE LIVE SEED

SEEDING (RIPARIAN)

COMMON NAME	BOTANICAL*	LBS. PLS. PER ACRE**
Swamp milkweed	Asclepias incarnata	0.4
Showy milkweed	Asclepias speciosa	0.4
Sideoats grama	Bouteloua curtipendula	3.0
Blue grama	Bouteloua gracilis	4.0
Buffalograss	Buchloe dactyloides	4.0
Clustered field sedge	Carex praegracilis	4.0
Golden tickseed	Coreopsis tinctoria	0.4
Slender wheatgrass	Elymus trachycaulus	5.0
Common gaillardia	Gaillardia aristata	0.4
Fowl mannagrass	Glyceria striata	2.0
Junegrass	Helianthus nuttallii	0.4
Nuttall's sunflower	Koeleria macrantha	4.0
Arctic rush	Juncus arcticus	0.2
Torrey's rush	Juncus torreyi	0.2
Fowl bluegrass	Poa palustris	0.4
American blue vervain	Verbena hastata	0.4
	TOTAL	29.2

**RATES HAVE BEEN DOUBLED FOR HAND-BROADCASTING
*NOMENCLATURE FOLLOWS PLANTS DATABASE

WETLAND/RIPARIAN SOD LEGEND

SUBMERGED AQUATIC SOD MIX		
COMMON NAME, VARIETY	SCIENTIFIC NAME	TOTAL AREA
NEBRASKA SEDGE	CAREX NEBRASCENSIS	TBD
WOOLY SEDGE	CAREX PELLITA	TBD
ARCTIC RUSH	JUNCUS ARCTICUS	TBD

RIPARIAN SOD MIX		
COMMON NAME, VARIETY	SCIENTIFIC NAME	TOTAL AREA
PRAIRIE CORDGRASS	SPARTINA PECTINATA	TBD

WETLAND/RIPARIAN SOD NOTES:

1. SEED FOR WETLAND SOD IS TO BE COLLECTED ONSITE OR PROVIDED FROM BOULDER COUNTY SEED RESERVES.
2. VARIETIES INCLUDED IN THE WETLAND/RIPARIAN SOD ARE SUBJECT TO CHANGE BASED ON BOULDER COUNTY RECOMMENDATIONS.
3. SOD SHALL BE GROWN FROM LOCAL SEED AND SUPPLIED TO THIS THIS PROJECT.
4. ALL SOD SHALL BE ORDERED AT A MIN. OF ONE YEAR IN ADVANCE PRIOR TO INSTALLATION.

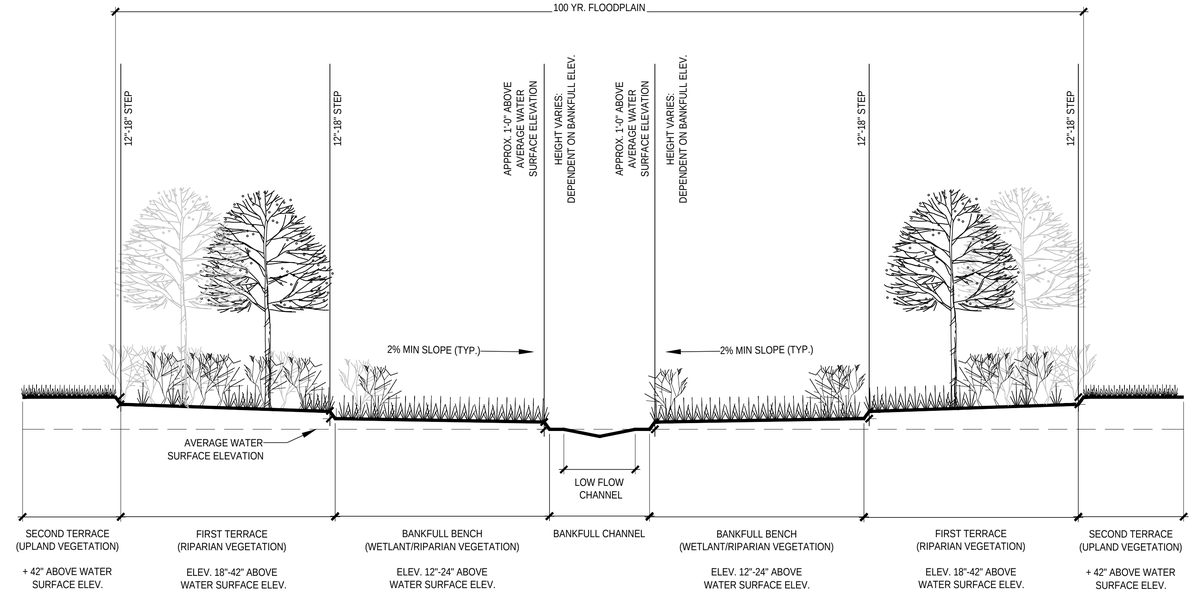
REVEGETATION LEGEND:

AREAS TO REVEGETATE – 41.86 AC

AREAS TO PROTECT – 43.74 AC

REVEGETATION TIMELINE:

1. ALL WILLOWS, DECIDUOUS TREES AND EVERGREEN TREES SHALL BE PLANTED BETWEEN THE MONTHS OF SEPTEMBER – NOVEMBER OR MARCH – APRIL.
2. ALL PERENNIAL TUBELINGS (10 CL) SHALL BE PLANTED BETWEEN THE MONTHS OF MAY – JUNE.
3. ALL SEEDING SHALL OCCUR BETWEEN THE MONTHS OF SEPTEMBER – NOVEMBER OR MARCH – MAY.



TYPICAL CREEK ECOSYSTEM SECTION

SCALE: 1/8"=1'-0"

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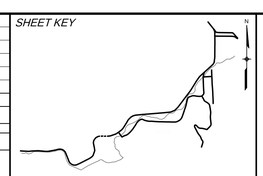

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SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPENSPACE
30% DESIGN

REVEGETATION PLANS

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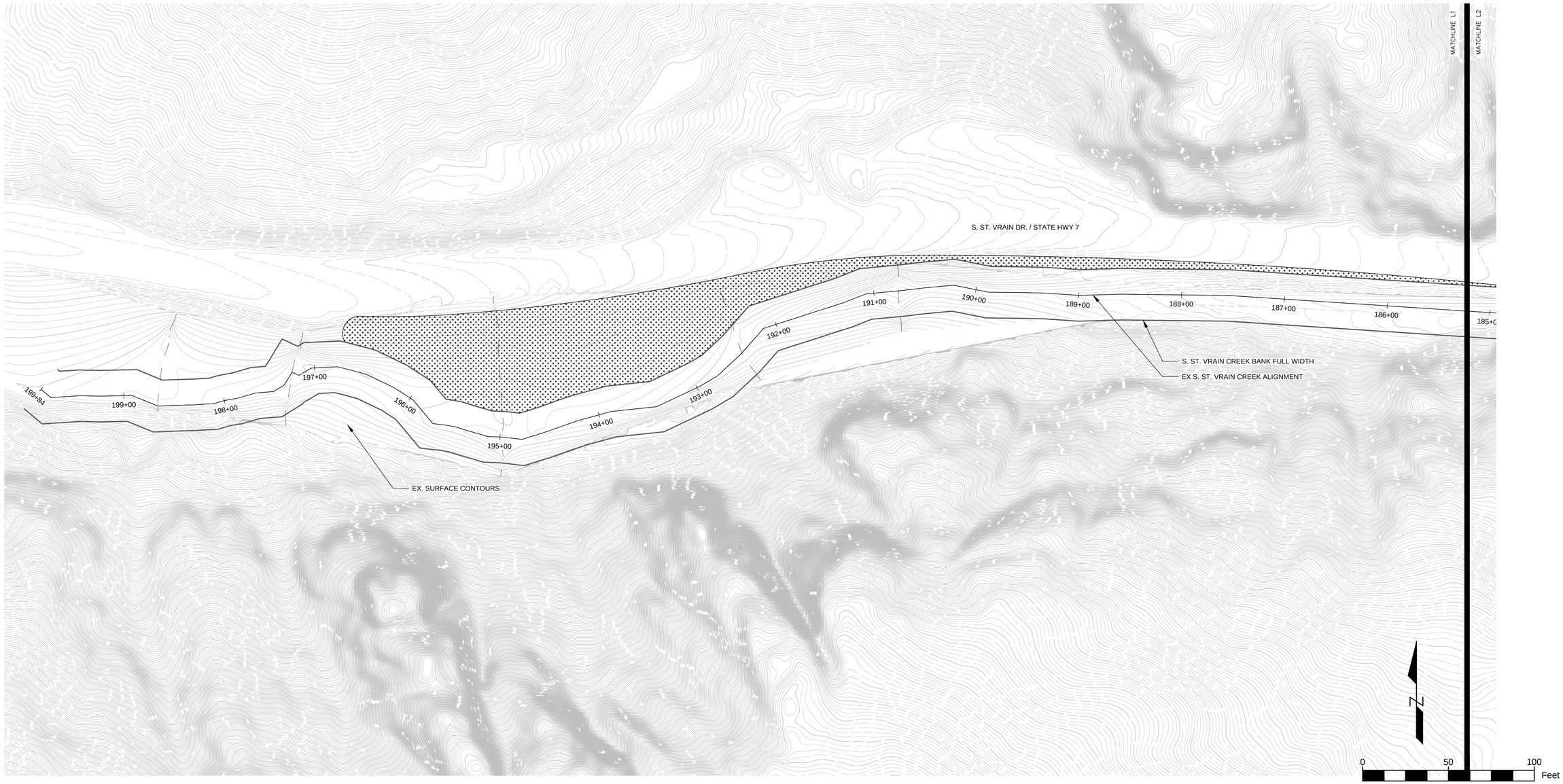

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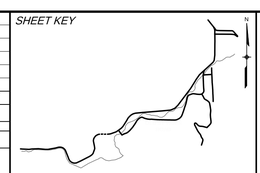

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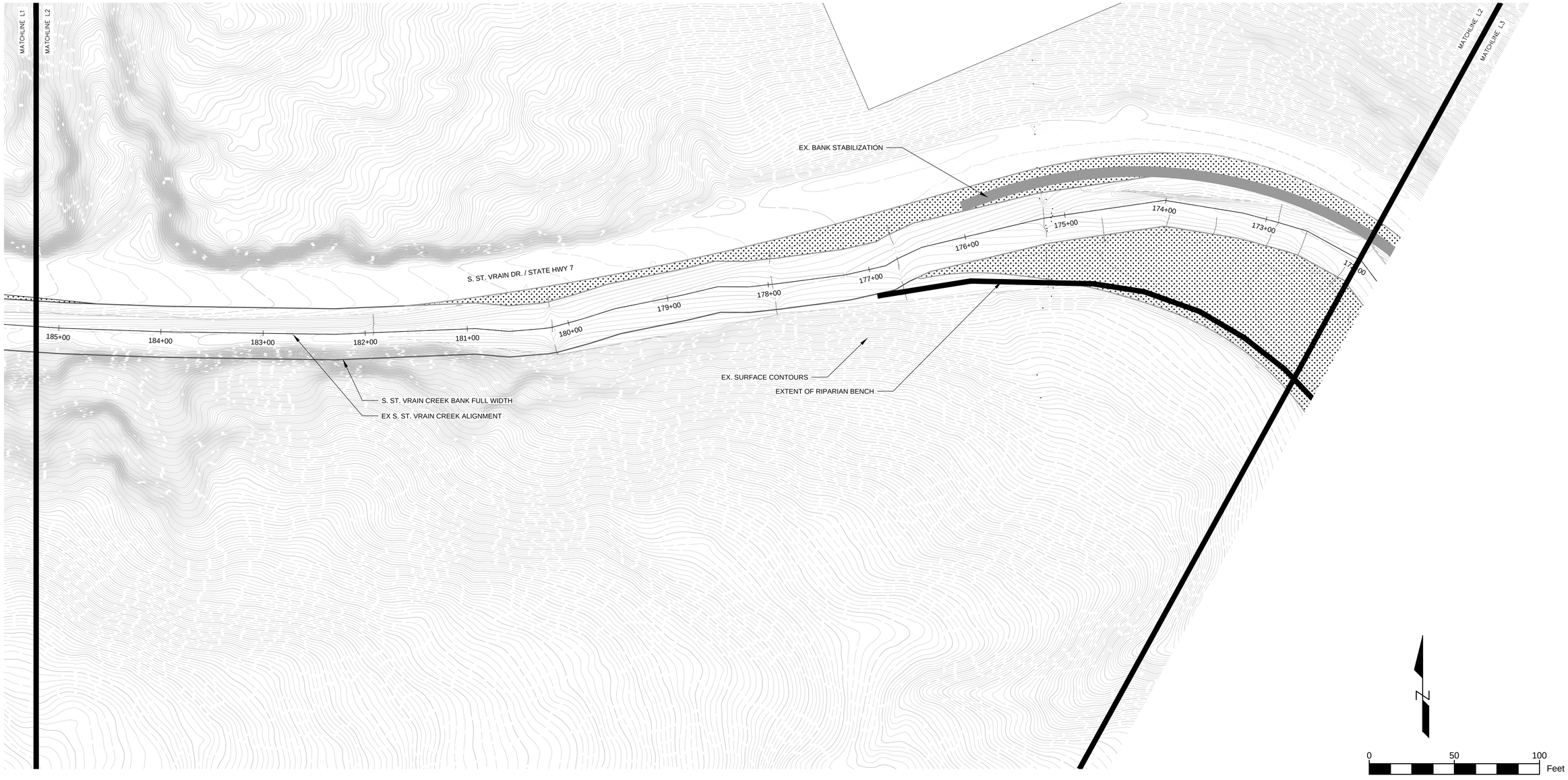

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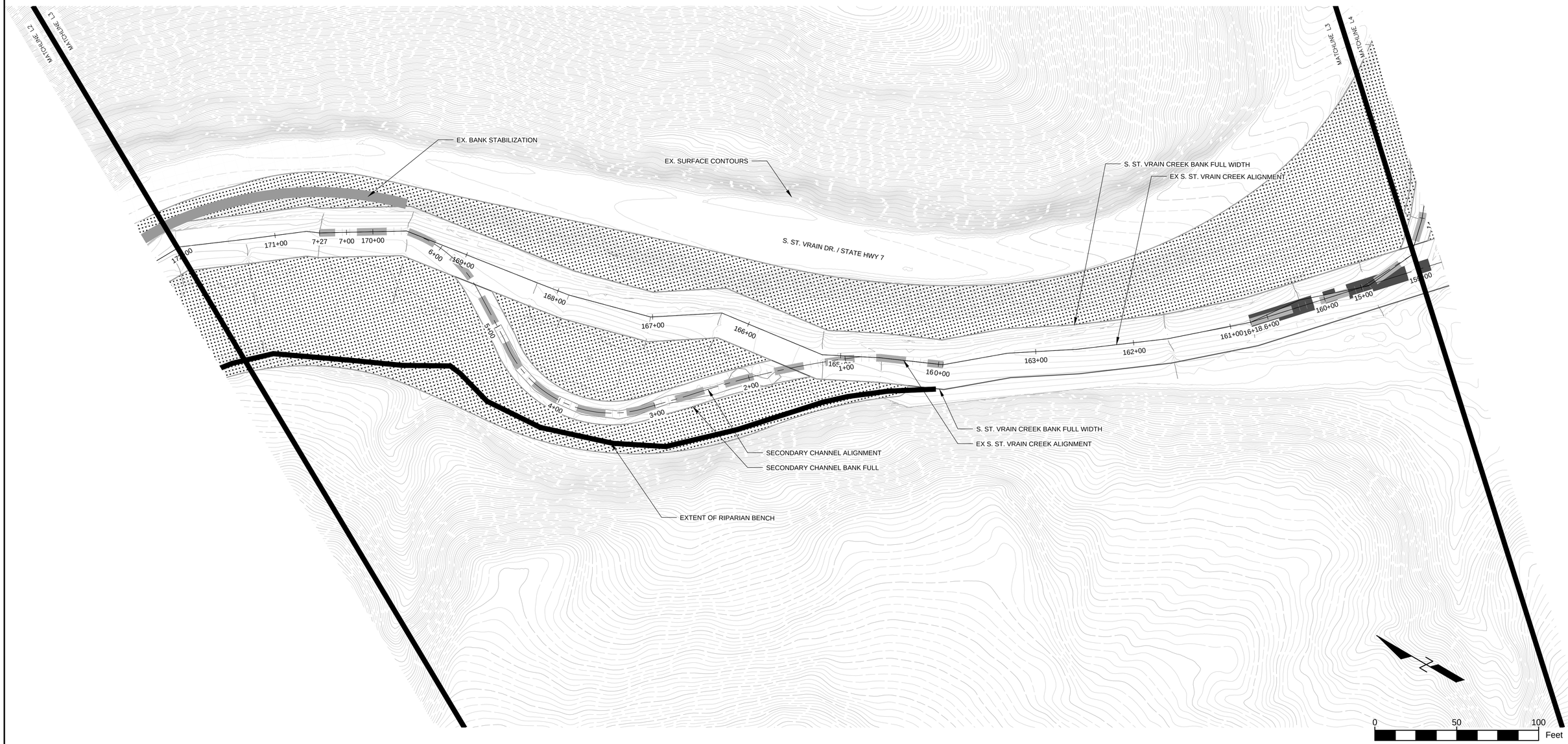

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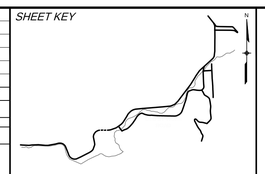

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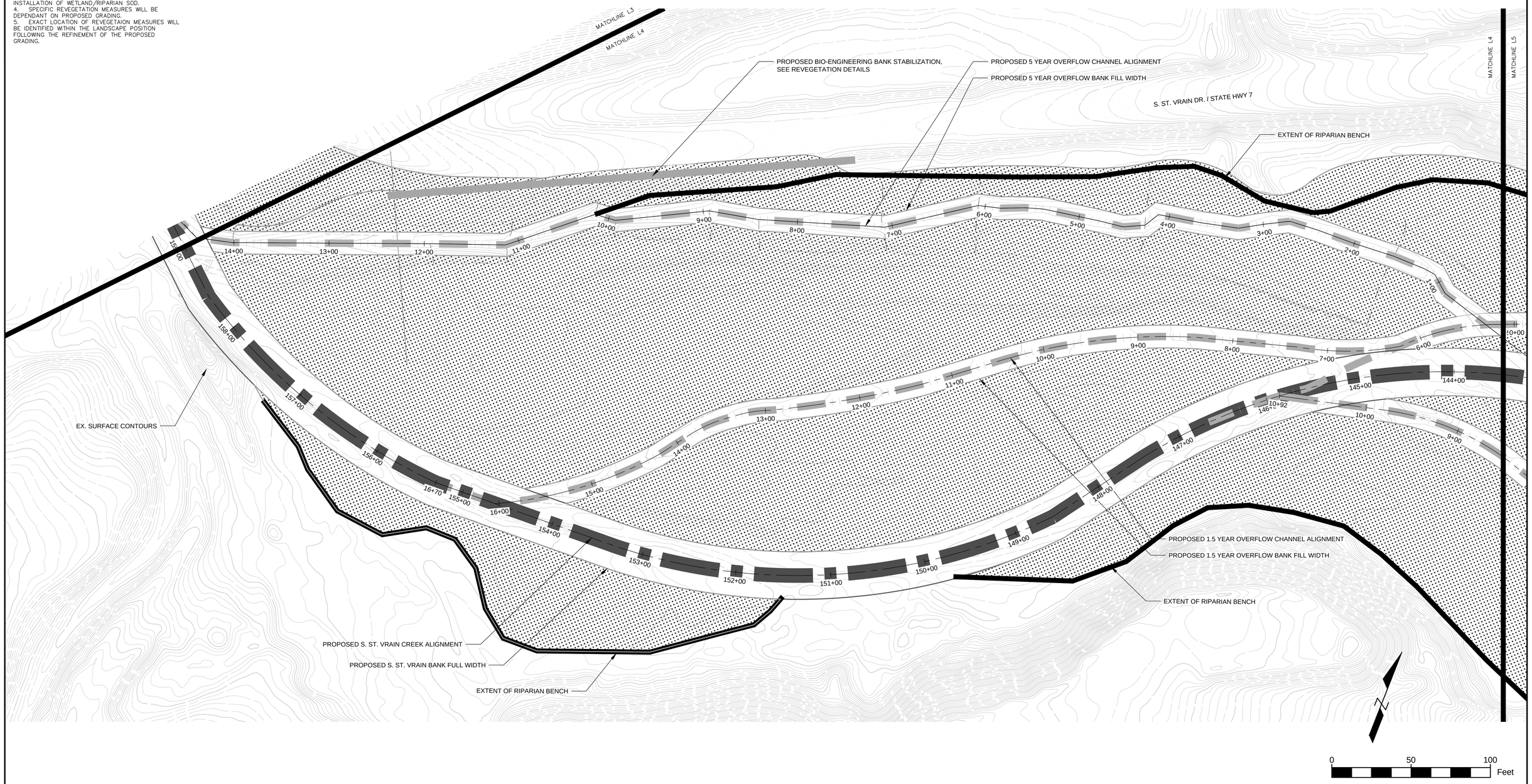

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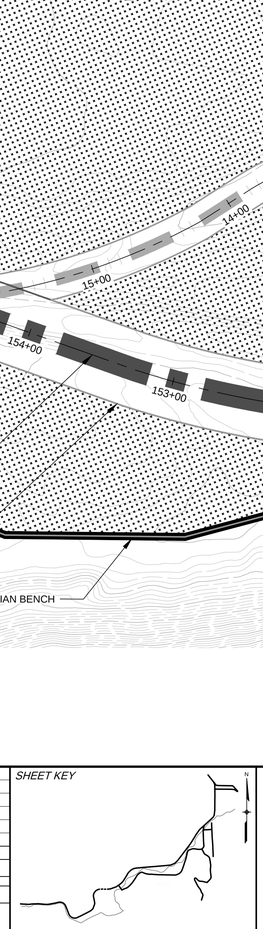

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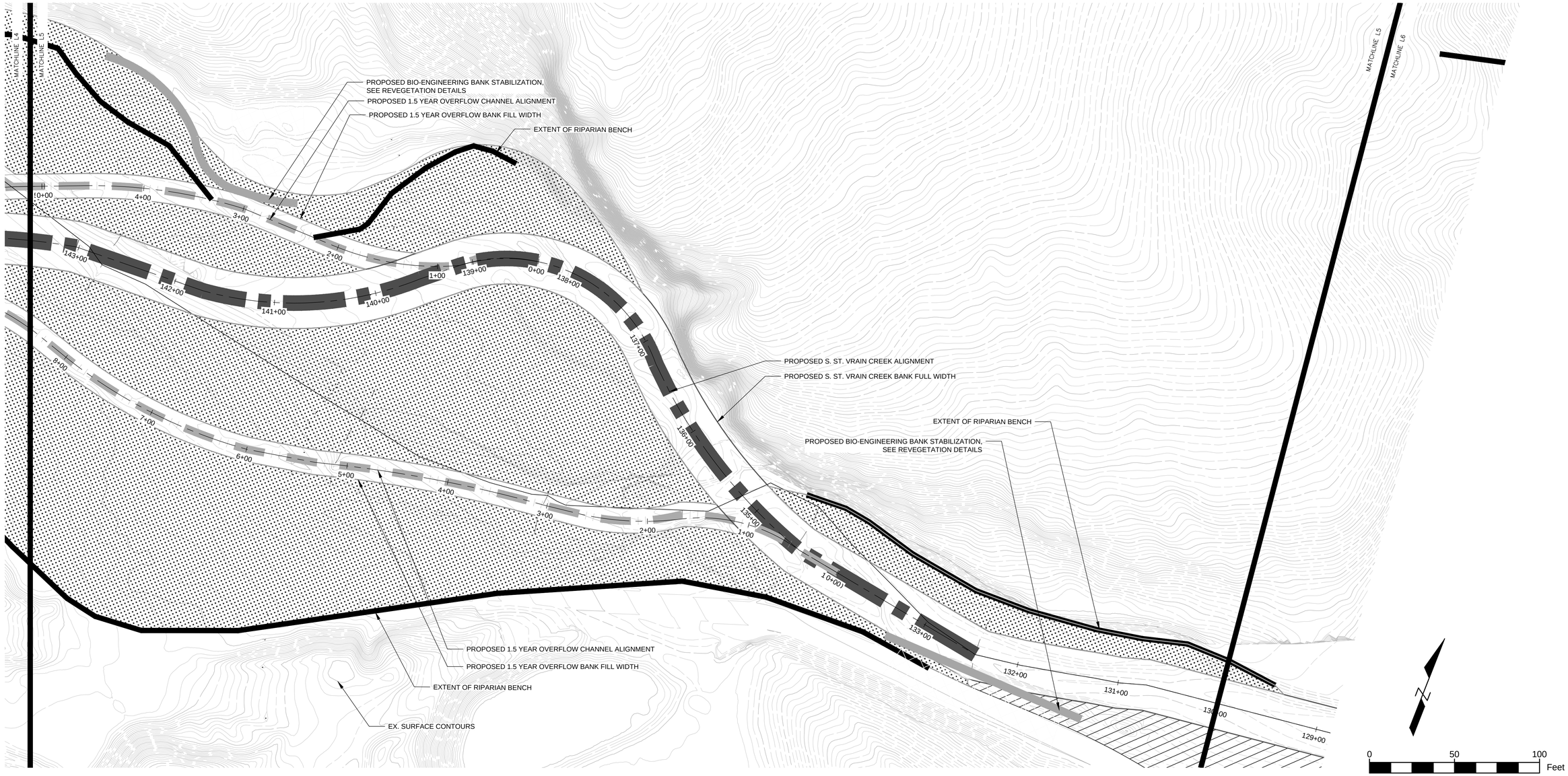

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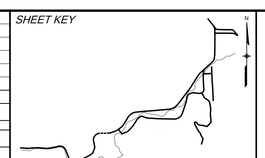

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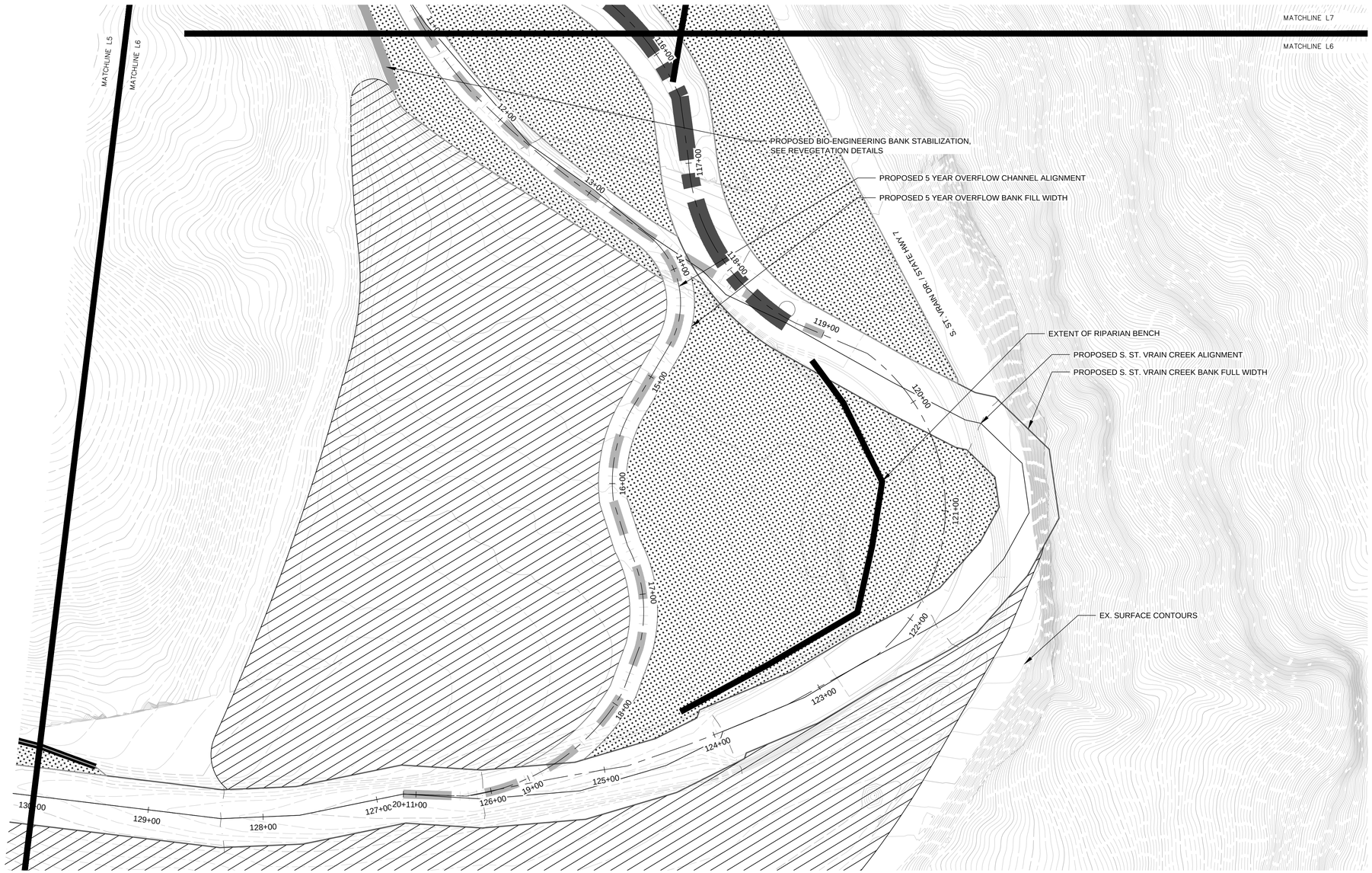

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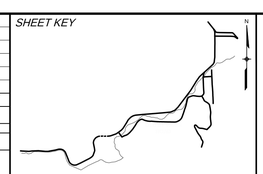

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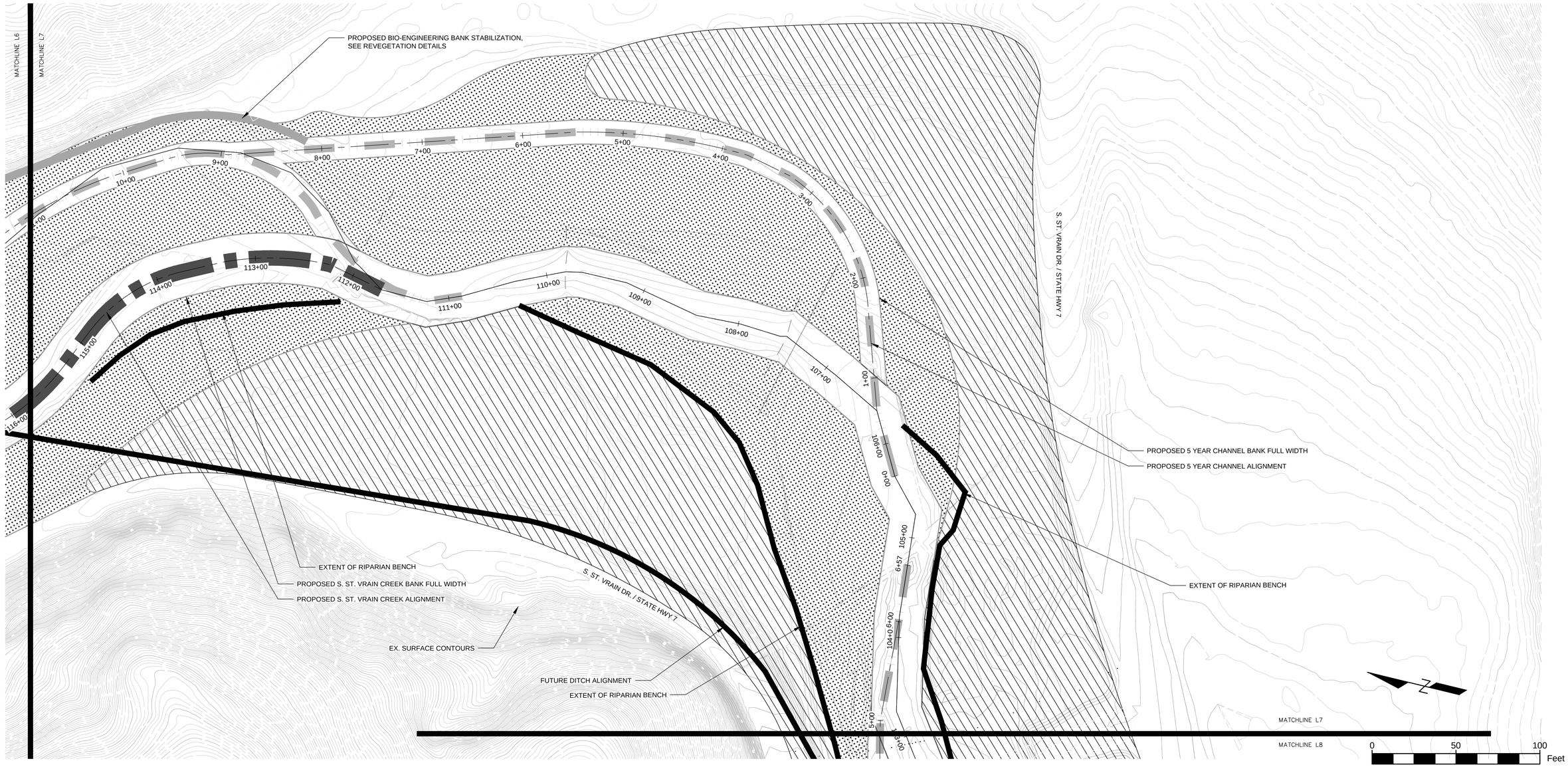

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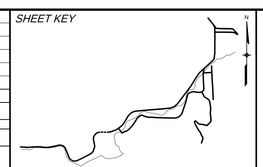

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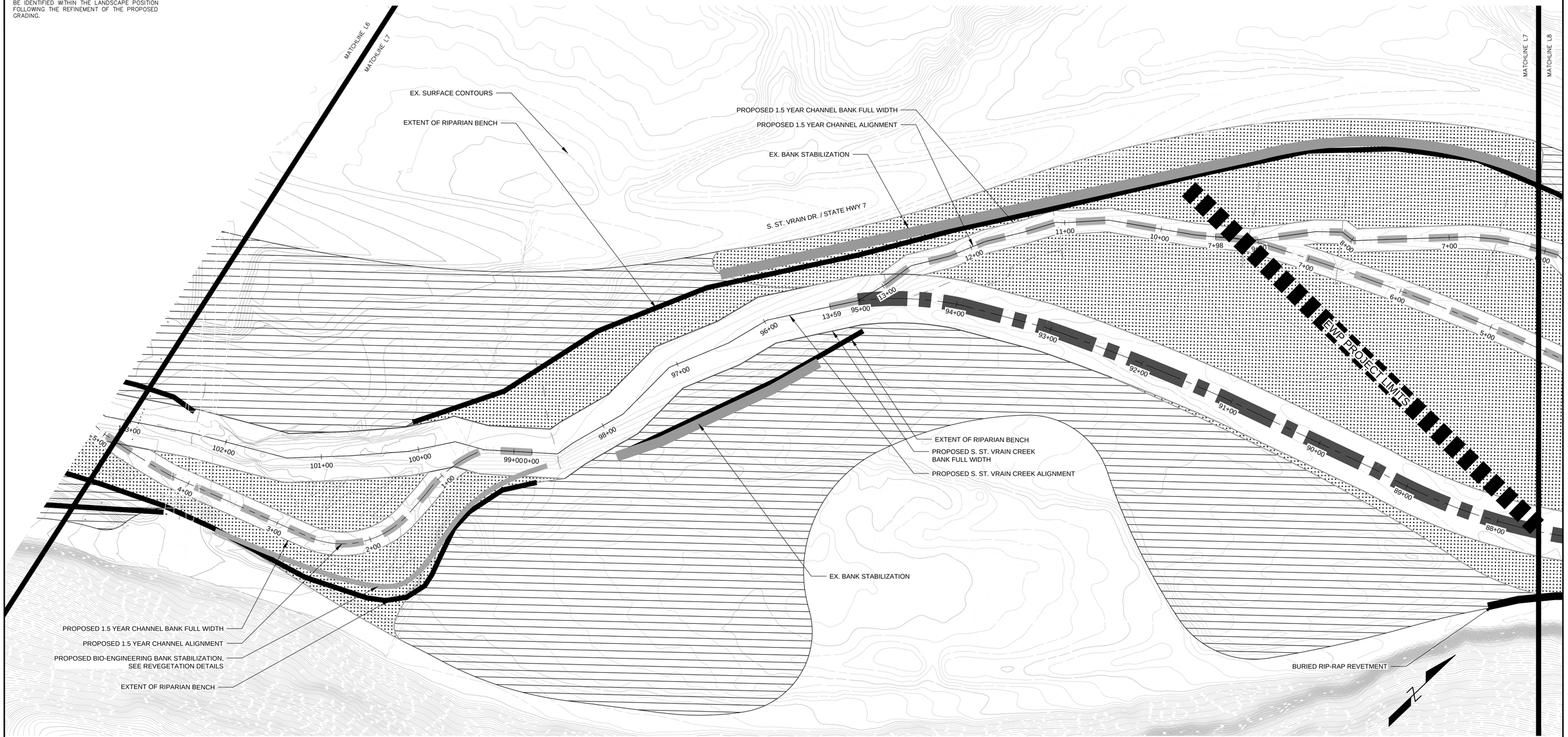

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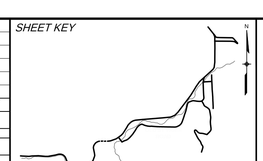

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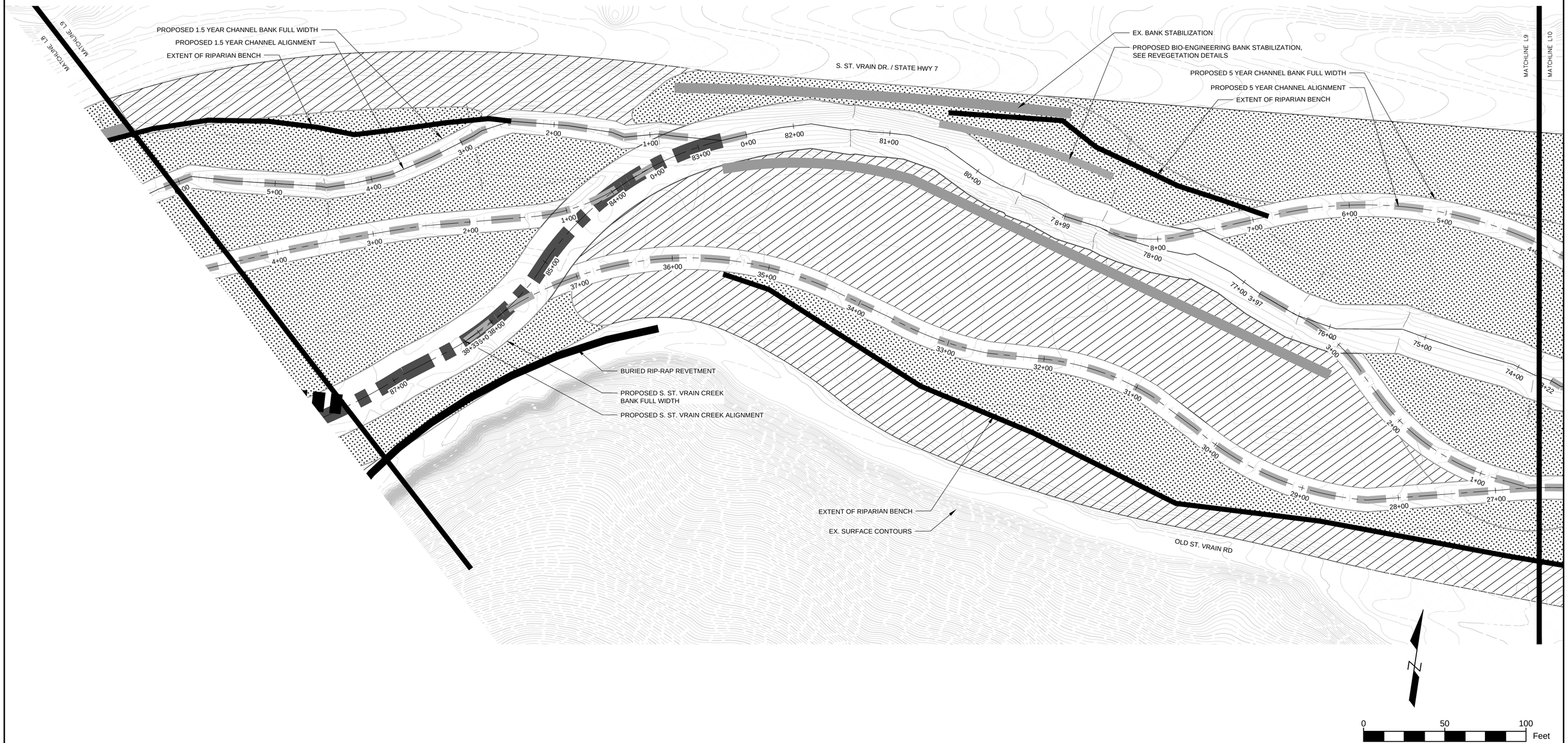

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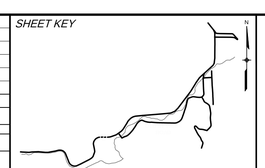

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SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPENSPACE
30% DESIGN

REVEGETATION PLANS

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08/10/2016

L-10

7774-000

NOTES:
1. PLANTING AREAS AND DEPTH TO WATER TABLE ARE PRELIMINARY. PLANTING AREAS AND WATER TABLE DEPTH SHOULD BE VERIFIED BEFORE COMMENCING WORK.
2. AREAS TO PROTECT AND AREAS TO REVEGETATE REPRESENT APPROXIMATE LOCATIONS AND EXTENTS OF REVEGETATION BASED ON AERIAL DATA, ONSITE, OBSERVATION REVISED CHANNEL ALIGNMENT AND TYPICAL CHANNEL CROSS SECTIONS.
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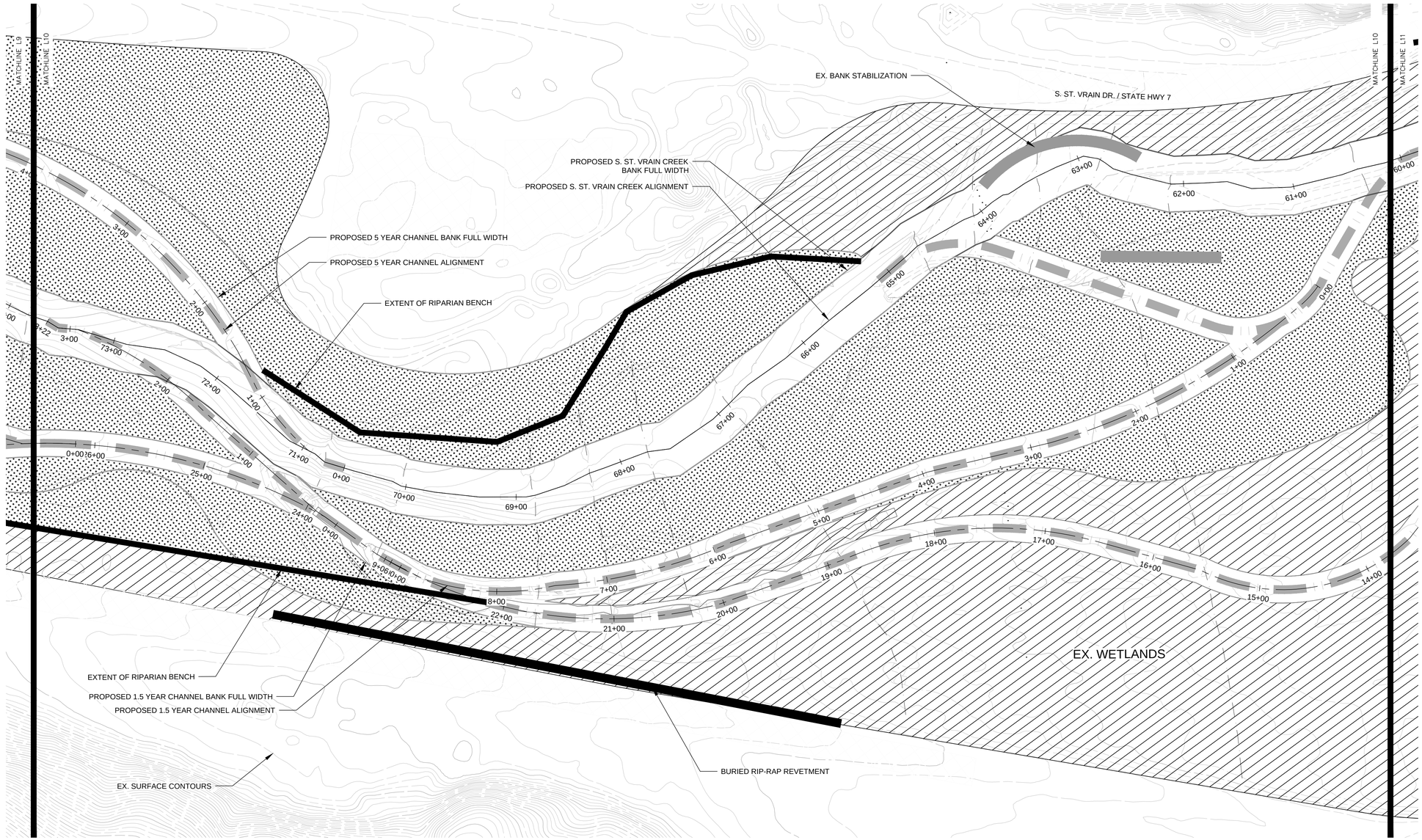
LEGEND:
- AREAS TO REVEGETATE
- AREAS TO PROTECT



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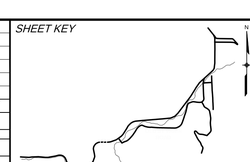

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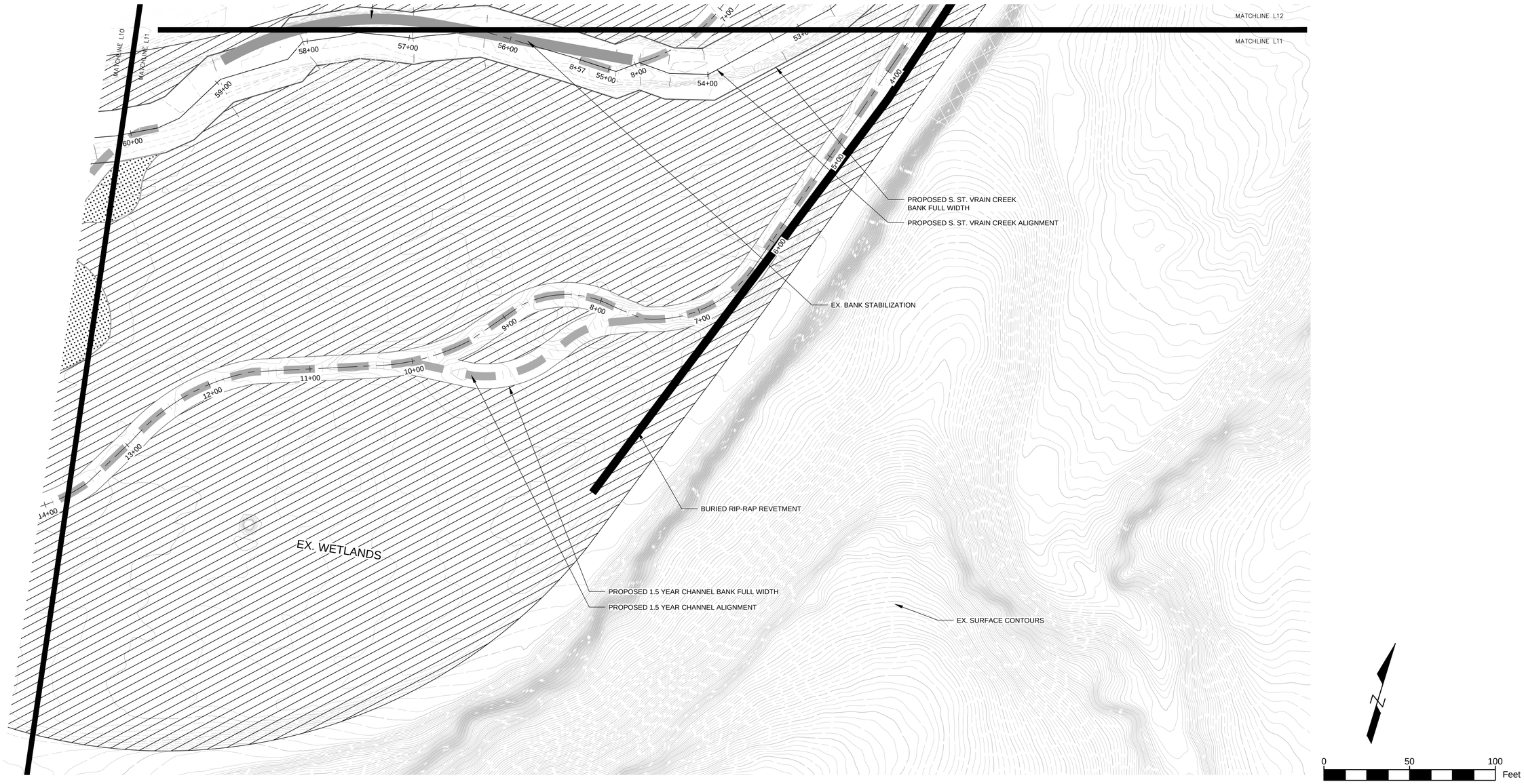

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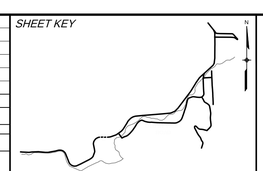

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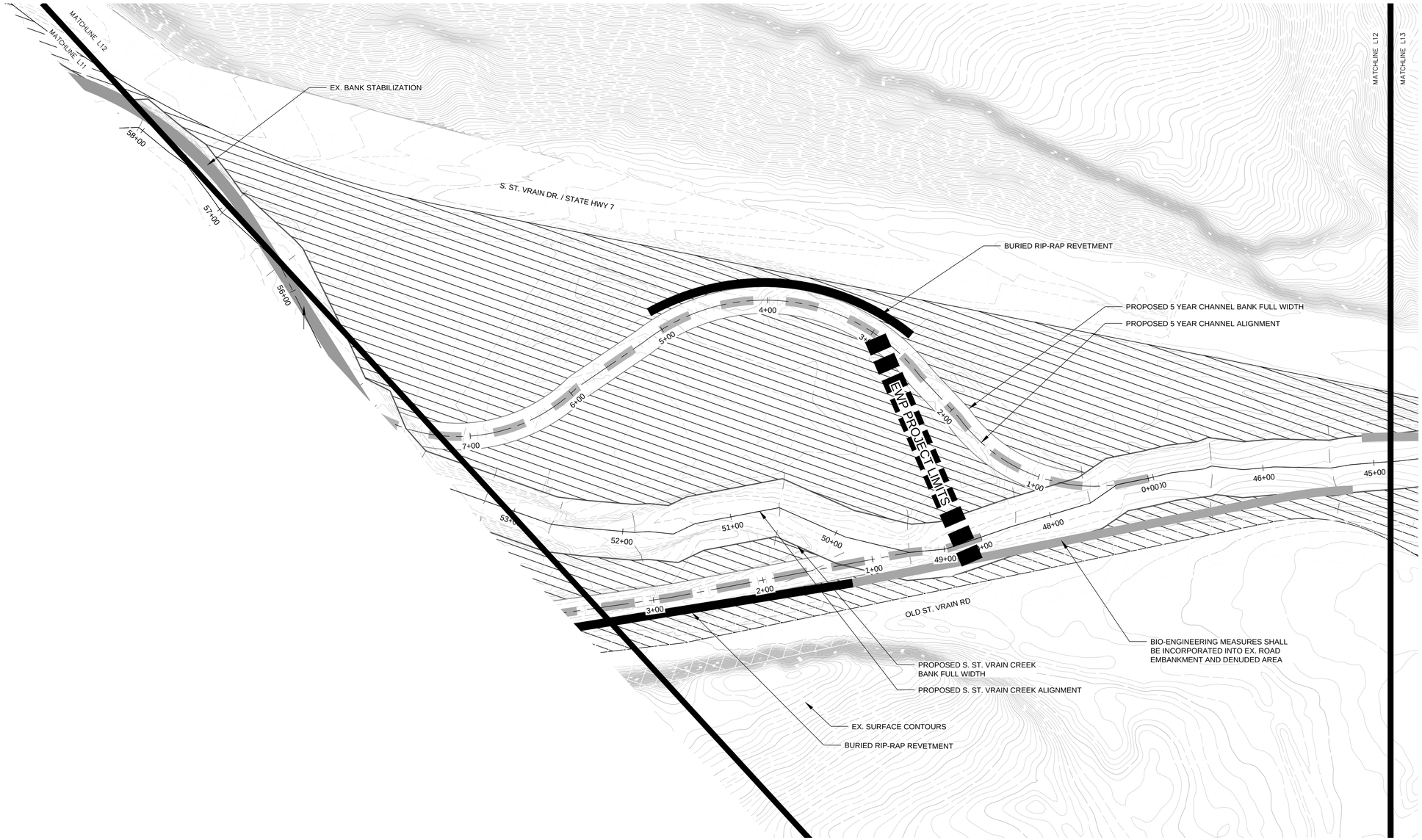

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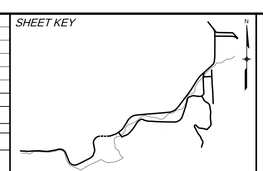

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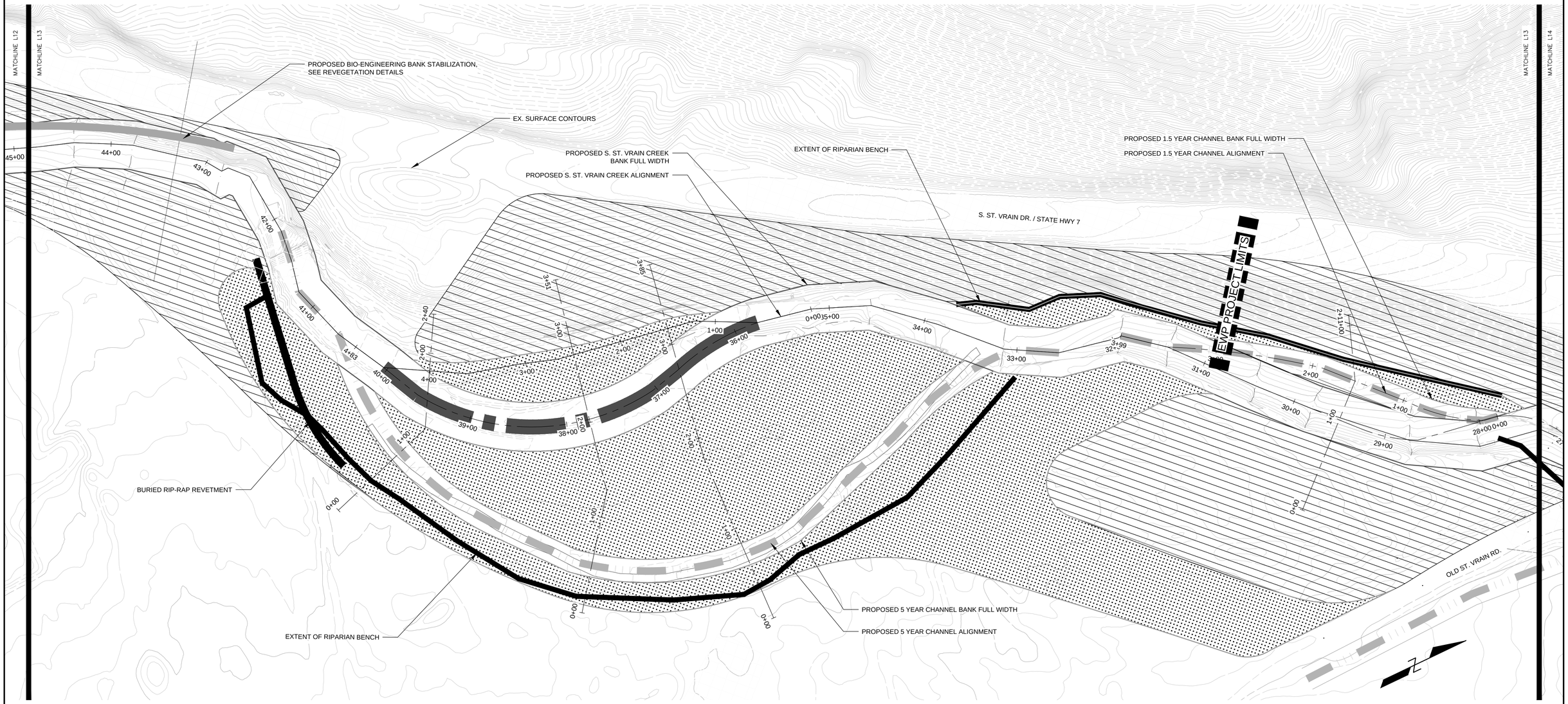

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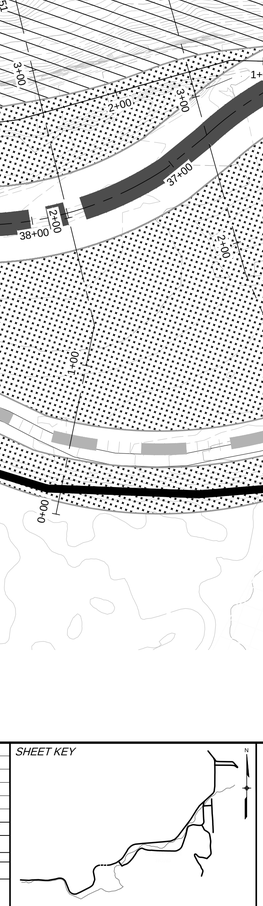

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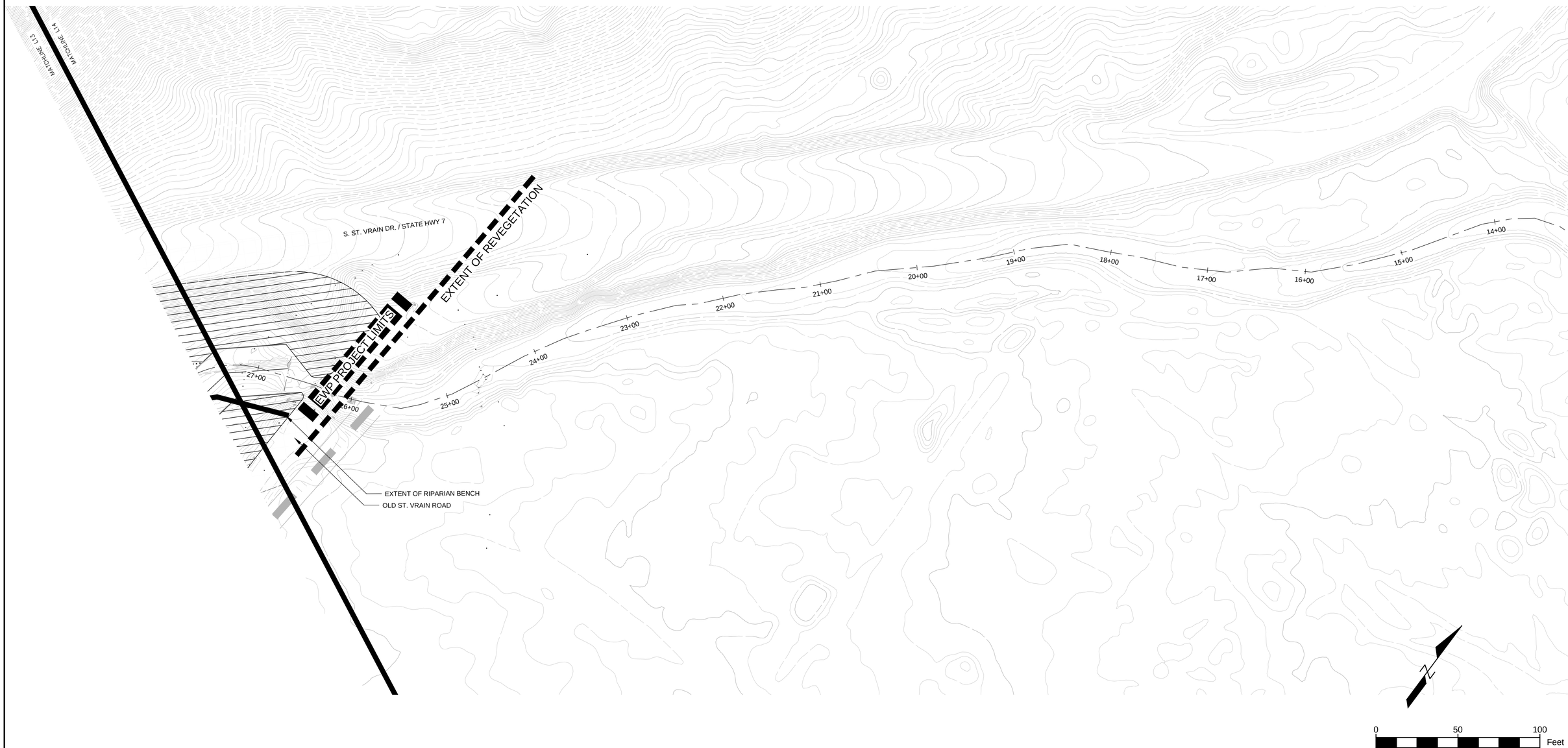

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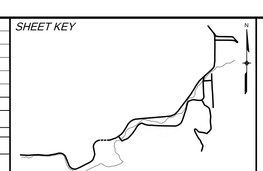

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BOULDER COUNTY PARKS AND OPENSPACE
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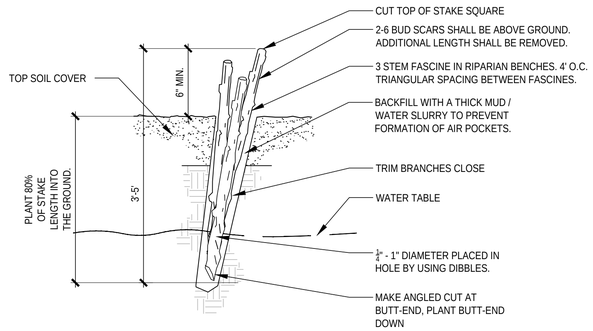
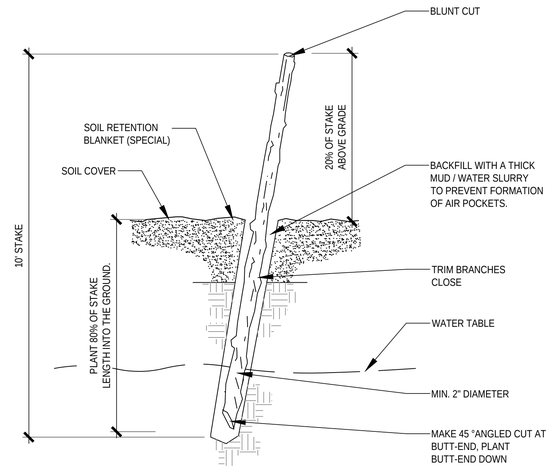


NOTES:
1. HARVEST AND PLANT STAKES/POLES DURING THE DORMANT SEASON.
2. USE HEALTHY, STRAIGHT AND LIVE WOOD AT LEAST ONE YEAR OLD.
3. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE A PILOT BAR IN FIRM SOILS.
4. SOAK CUTTINGS FOR 24 HOURS (MIN.) PRIOR TO INSTALLATION.
5. TAMP THE SOIL AROUND THE STAKE OR BACKFILL WITH MUD SLURRY.
6. ALL WILLOWS SHALL BE PLANTED 4' O.C. IN TRIANGULAR SPACING.

WILLOW STAKES

SCALE: 3/4"=1'-0"



WILLOW POLE

SCALE: 1/2"=1'-0"

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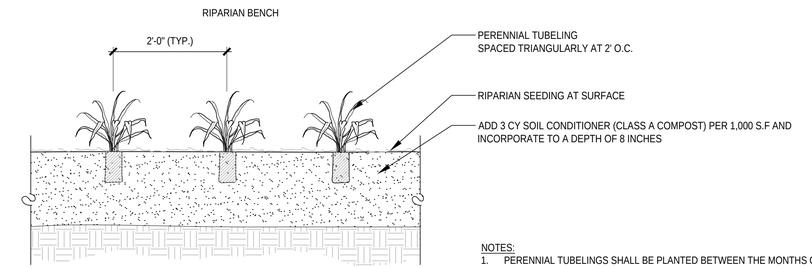
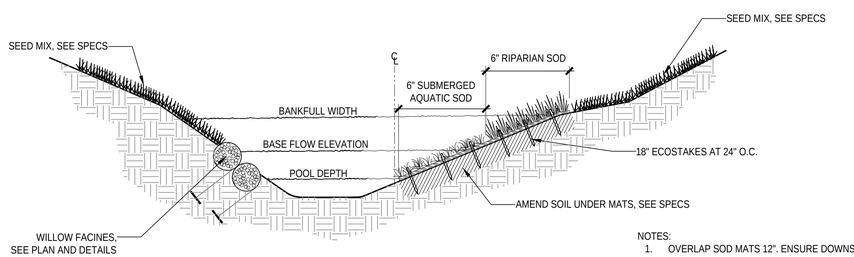


NOTES:
1. PERENNIAL TUBELINGS SHALL BE PLANTED BETWEEN THE MONTHS OF MAY - JUNE. TUBELINGS SHALL NOT BE PLANTED AT TIMES OF HIGH FLOW.
2. SEE REVEGETATION PLANS FOR PLANTING LOCATIONS.

RIPARIAN SEEDING AND PERENNIAL TUBELING

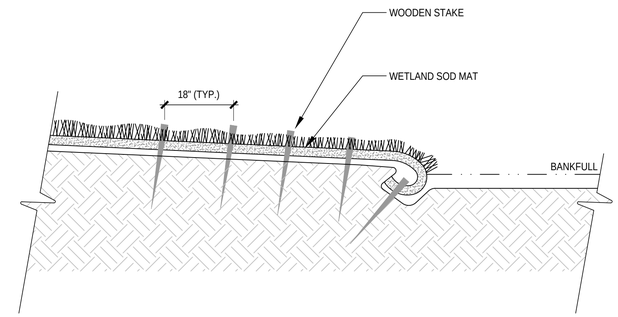
SCALE: 3/4"=1'-0"



NOTES:
1. OVERLAP SOD MATS 12". ENSURE DOWNSTREAM MATS ARE OVERLAYED WITH UPSTREAM MATS.
2. DOUBLE STAKE EACH END OF WETLAND SOD MATS.
3. DRIVE ECOSTAKES AT A 45 DEGREE ANGLE TOWARDS UPSTREAM FLOWS.

SUBMERGED AQUATIC SOD / RIPARIAN SOD

SCALE: 1/4"=1'-0"



NOTES:
1. KEEP ALL WETLAND SOD MOIST AND SHADED UNTIL INSTALLED.
2. FOLLOW FINAL GRADING AND TOPSOIL PLACEMENT.
3. INSTALL FABRIC (4M COIR MAT) AND ANY WILLOW LIVE STAKES PER PLAN.
4. APPLY WETLAND SOD AS SOON AS IT IS AVAILABLE FROM SUPPLIER.
5. ABUT EDGES OF SOD SECTIONS AND SECURELY PIN IN PLACE WITH 8" STEEL LANDSCAPE STAPLES IF NEEDED TO SECURE UNTIL STAKED.
6. STAKE SOD 18" O.C. ON ALL EDGES AND THROUGHOUT THE BODY OF SOD WITH WOODEN STAKES. LEAVE 2-3" OF THE STAKE SHOWING ABOVE THE MAT.
7. ANY PREVIOUS STAKES IN SOD AREA TO BE POUNDED DOWN TO SURFACE PRIOR TO SOD PLACEMENT AND STAKING.
8. IN BACKWATER AREAS AND OTHER AREAS (NOTED ON PLAN) WHERE VELOCITIES APPROACH ZERO, STAKES MAY NOT BE NECESSARY.

SOD MAT PLANTING

SCALE: 3/4"=1'-0"

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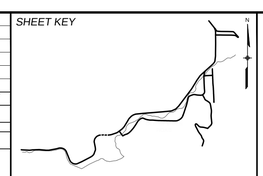

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BOULDER COUNTY PARKS AND OPENSPACE
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DRAWN BY:
CHECKED BY:

SCALE
HORIZ.
VERT.

DATE ISSUED:

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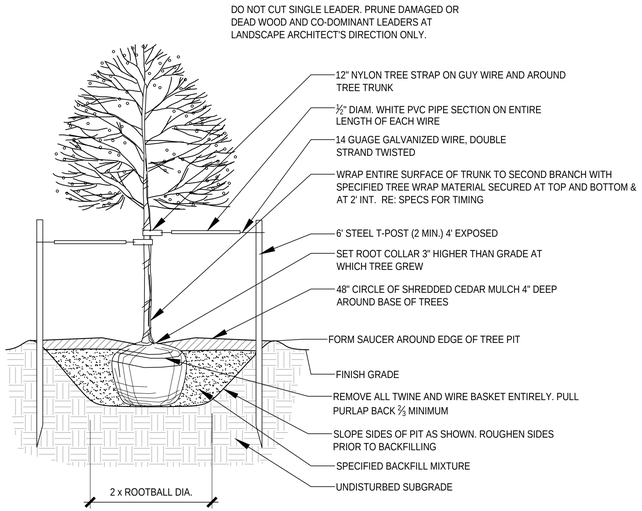
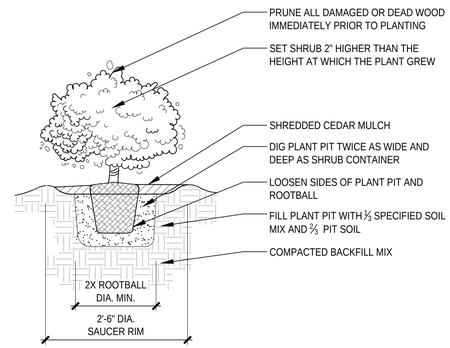


DECIDUOUS TREE PLANTING

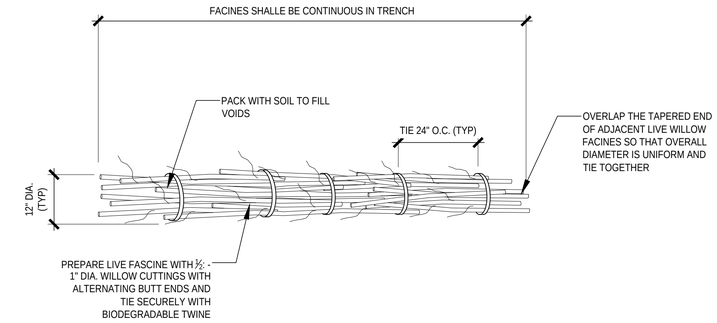
SCALE: 1/2"=1'-0"

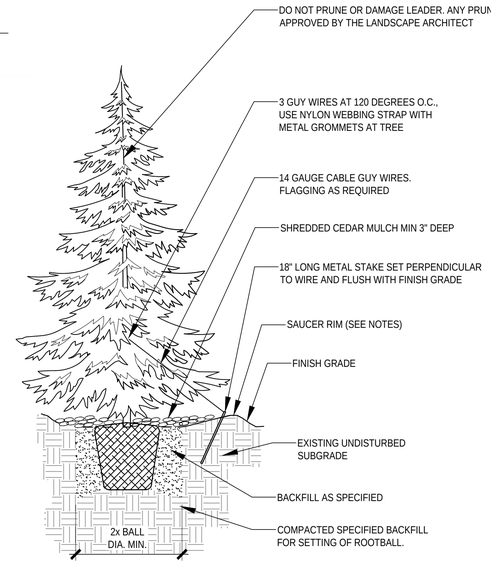


ANY BROKEN OR CRUMBLING ROOTBALL WILL BE REJECTED. REMOVING THE WIRE WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.

DECIDUOUS SHRUB PLANTING

SCALE: 3/4"=1'-0"

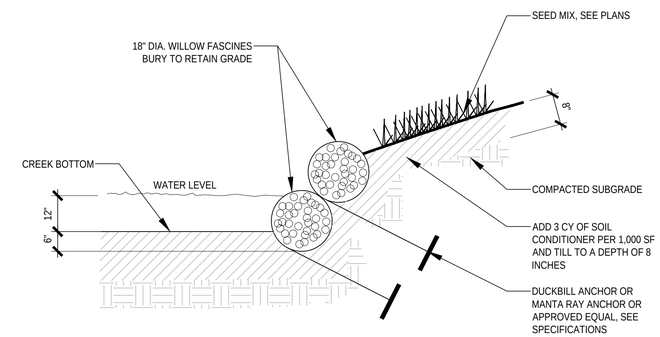


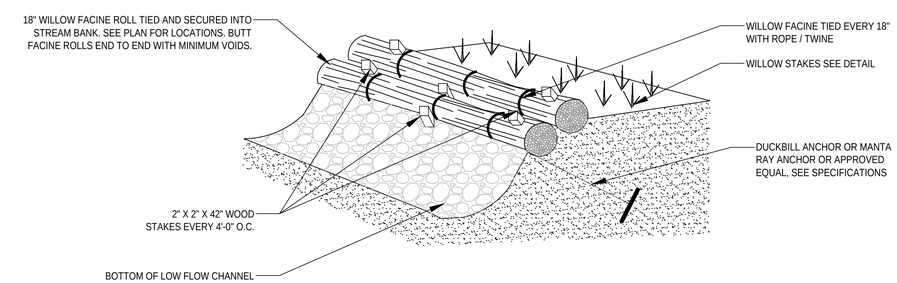


NOTES:
1. TREE WILL BE PLANTED TO HAVE SAME RELATIONSHIP TO FINISH GRADE AS ITS PREVIOUS RELATIONSHIP TO FINISH GRADE.
2. WATER THOROUGHLY AT THE TIME OF PLANTING. DO NOT FERTILIZE AT THE TIME OF PLANTING.
3. SAUCER RIM IS TO BE ON DOWNHILL SIDE ONLY WHEN TREES ARE PLANTED ON SLOPES, BUT SHALL COMPLETELY SURROUND TREE WHEN ON LEVEL GROUND.

EVERGREEN TREE PLANTING

SCALE: 1/2"=1'-0"





NOTES:
1. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS
2. DURING INSTALLATION USE A PILOT BAR IN FIRM SOILS.
3. TAMP THE SOIL AROUND THE STAKE / OR BACK FILL WITH MUD SLURRY.
4. COLLECT WILLOWS FROM ONSITE TO CONSTRUCT WILLOW FACINES.

WILLOW FACINE

SCALE: 1/2"=1'-0"

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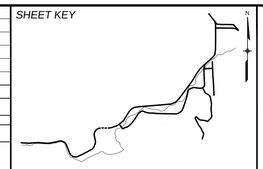

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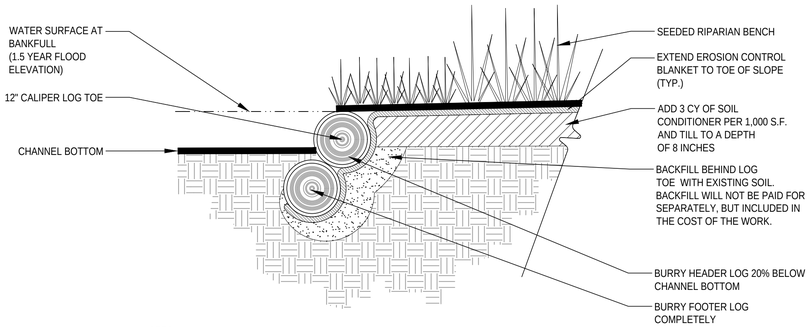
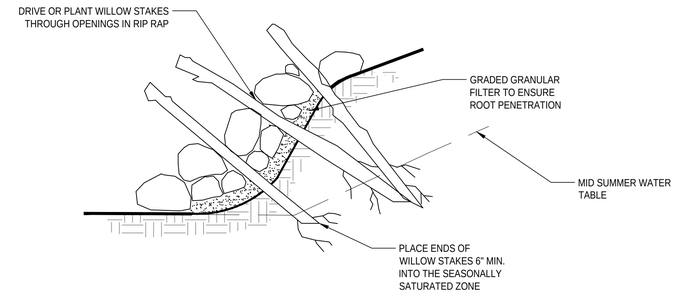
DRAWN BY:	HORIZ.		7774-000
CHECKED BY:	VERT.	SHEET L-17	



NOTES:
1. LOG TOES SHALL ONLY BE USED IN LOW VELOCITY AREAS. SEE PLANS FOR LOCATIONS.
2. SOIL CONDITIONER SHALL BE PLACED PRIOR TO EROSION CONTROL BLANKET.

LOG TOE ELEVATION

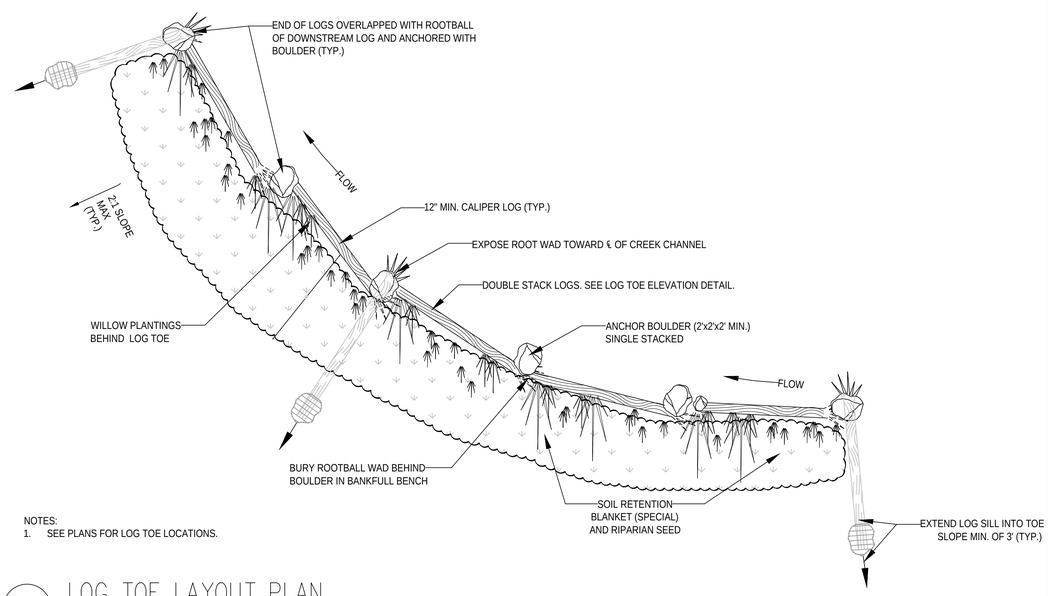
SCALE: 3/4"=1'-0"



NOTES:
1. INTEGRATE STAKE PLANTING TECHNIQUES DURING ROCK PLACEMENT TO ENSURE CONTACT WITH NATIVE GROUND.
2. PLACE SOIL FILL AROUND CUTTINGS AND 'WATER IN' IF NEEDED.

WILLOW STAKE IN RIPRAP

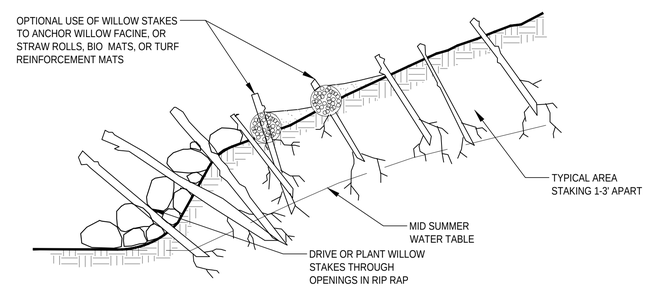
SCALE: 1"= 1'-0"



NOTES:
1. SEE PLANS FOR LOG TOE LOCATIONS.

LOG TOE LAYOUT PLAN

SCALE: 1/8"=1'-0"



VEGETATED RIPRAP

SCALE: 3/4"=1'-0"

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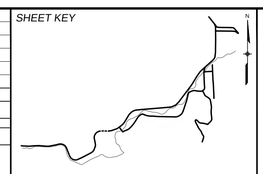

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THK associates, inc.

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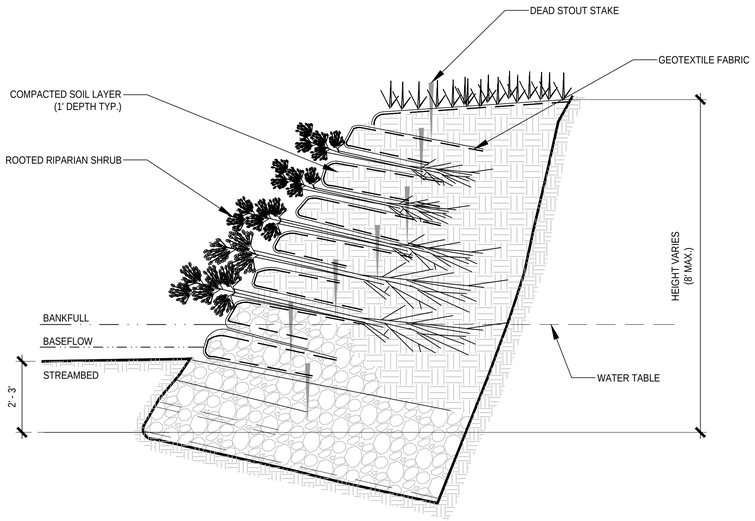
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPENSPACE
30% DESIGN

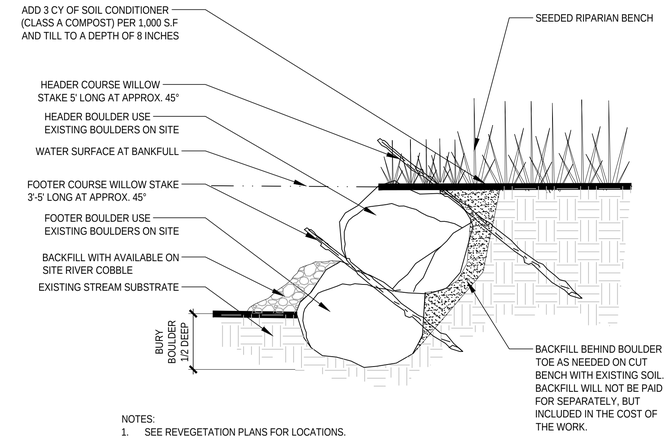
REVEGETATION DETAILS

DESIGNED BY:	SCALE	DATE ISSUED:	DRAWING No.
DRAWN BY:	HORIZ.	SHEET L-18	7774-000
CHECKED BY:	VERT.		



BANK STABILIZATION – VEGETATED GEOGRID

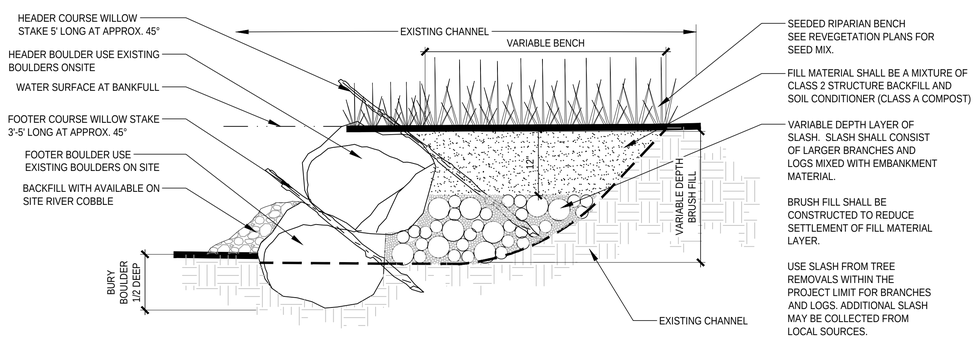
SCALE: 1/2"=1'-0"



NOTES:
1. SEE REVEGETATION PLANS FOR LOCATIONS.

BOULDER TOE WILLOW PLANTING WITH RIPARIAN BENCH – CUT

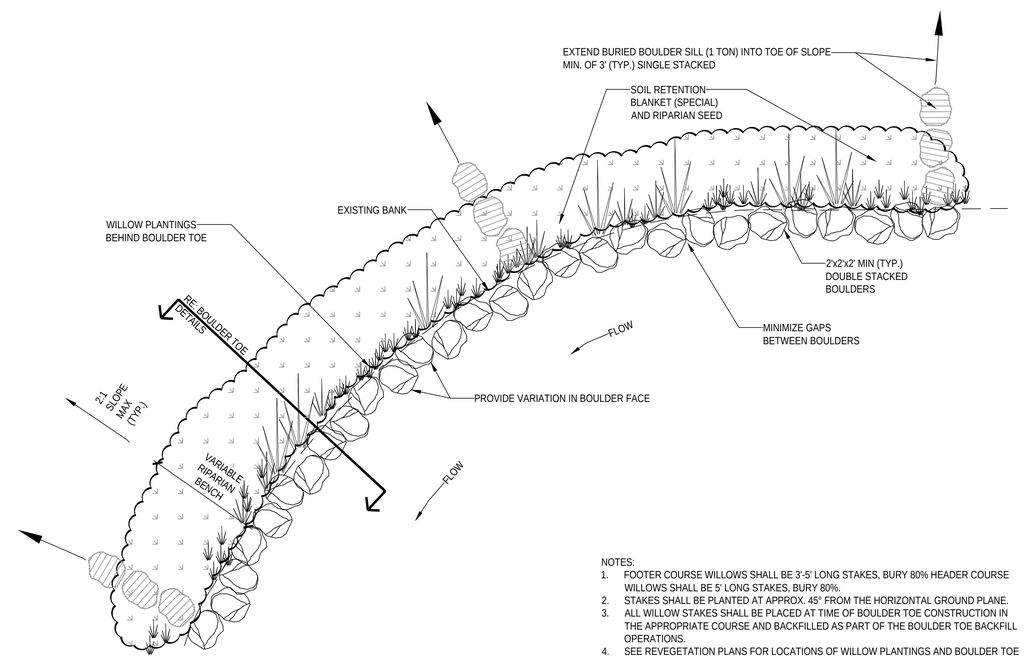
SCALE: 3/4"=1'-0"



NOTES:
1. SEE REVEGETATION PLANS FOR LOCATIONS.

BOULDER TOE WILLOW PLANTING WITH RIPARIAN BENCH – FILL

SCALE: 3/4"=1'-0"



NOTES:
1. FOOTER COURSE WILLOWS SHALL BE 3'-5' LONG STAKES, BURY 80% HEADER COURSE WILLOWS SHALL BE 5' LONG STAKES, BURY 80%.
2. STAKES SHALL BE PLANTED AT APPROX. 45° FROM THE HORIZONTAL GROUND PLANE.
3. ALL WILLOW STAKES SHALL BE PLACED AT TIME OF BOULDER TOE CONSTRUCTION IN THE APPROPRIATE COURSE AND BACKFILLED AS PART OF THE BOULDER TOE BACKFILL OPERATIONS.
4. SEE REVEGETATION PLANS FOR LOCATIONS OF WILLOW PLANTINGS AND BOULDER TOE LOCATIONS.

BOULDER TOE WILLOW PLANTING LAYOUT PLAN

SCALE: 1/4"=1'-0"

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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8/11/2016 1:12 PM

THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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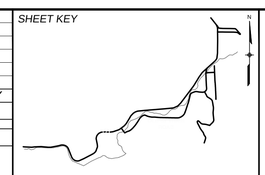

PREPARED BY:

THK associates, inc.

PRELIMINARY
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SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPENSPACE
30% DESIGN

REVEGETATION DETAILS

DESIGNED BY:	SCALE	DATE ISSUED:	DRAWING No.
DRAWN BY:	HORIZ.		7774-000
CHECKED BY:	VERT.	SHEET L-19	

Know what's **below.**
Call before you dig.

EROSION CONTROL PLAN NOTES:

EROSION CONTROL PLAN TO BE MODIFIED AFTER DEVELOPMENT OF FINAL DESIGN PLANS AND DISCUSSIONS WITH BCPOS

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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PLOT DATE: 8/11/2016 1:42 PM
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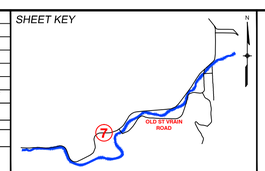

PREPARED FOR:

Boulder County Parks & Open Space

PREPARED BY:

Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

PRELIMINARY
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

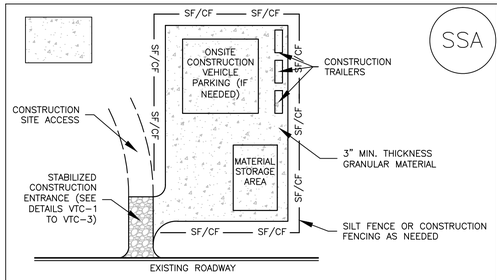
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

EROSION CONTROL PLAN

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ 1" = 200'		
CHECKED BY: RDK	VERT. N/A	SHEET X OF XX	ECP 1

Know what's **below.** **Call** before you dig.



STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.

4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.

5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

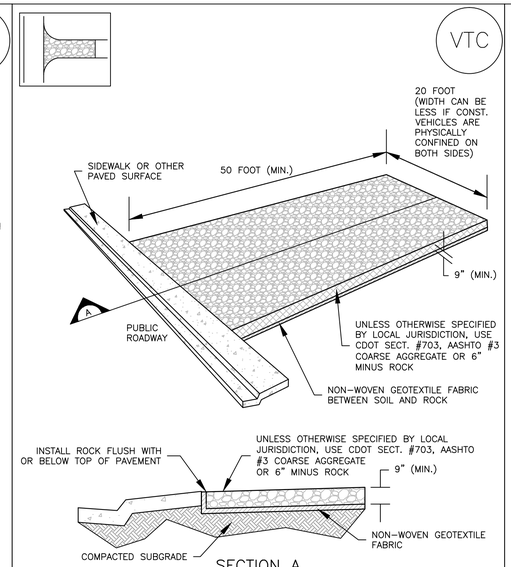
6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

SSA-1. STABILIZED STAGING AREA



STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   -TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

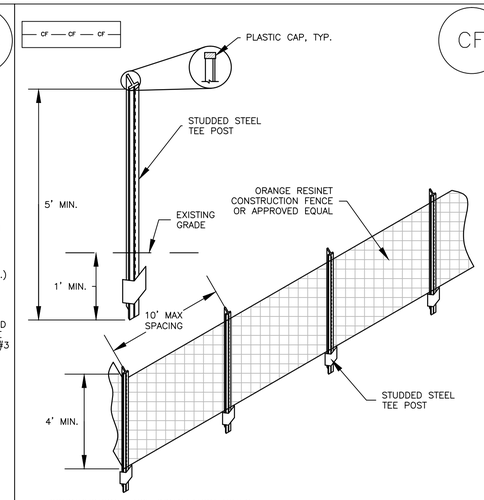
5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

6. FOR REMOVAL OF VTC FOLLOW CITY OF LONGMONT STANDARDS AND SPECIFICATIONS

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

VTC-1. AGGREGATE VEHICLE TRACKING CONTROL



CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.

2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.

4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.

5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

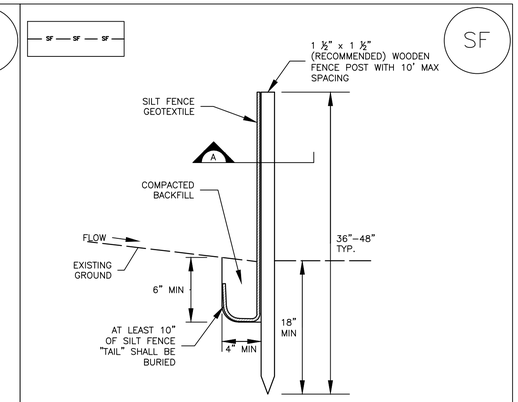
4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

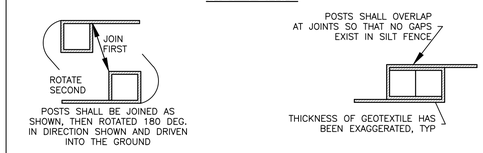
6. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

CF-1. PLASTIC MESH CONSTRUCTION FENCE





SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SF-1. SILT FENCE

EROSION CONTROL DETAIL NOTES:
EROSION CONTROL DETAILS TO BE MODIFIED AFTER DEVELOPMENT OF EROSION CONTROL PLAN AND DISCUSSIONS WITH BCPOS

REFERENCE DRAWINGS
812-TITLEBLOCK-22x34

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT
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THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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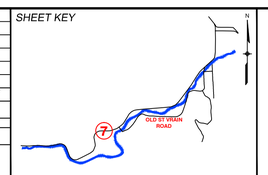

PREPARED FOR: Boulder County Parks & Open Space
PREPARED BY: Matrix DESIGN GROUP — AN EMPLOYEE-OWNED COMPANY

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

EROSION CONTROL DETAILS

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. 1" = 200'	SHEET X OF XX	ECD 1
CHECKED BY: RDK	VERT. N/A		

SHEET No. X

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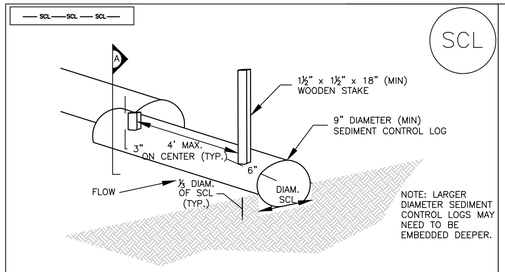
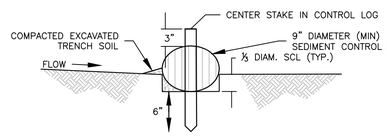
SCL



SEDIMENT CONTROL LOG



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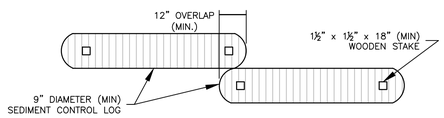
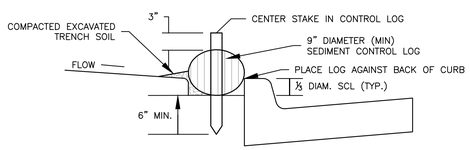
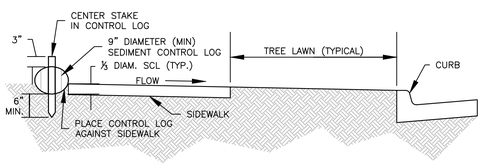


SEDIMENT CONTROL LOG JOINTS

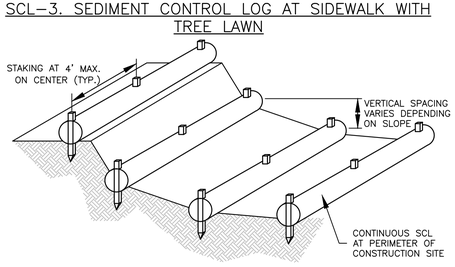
SCL–1. SEDIMENT CONTROL LOG



SCL–2. SEDIMENT CONTROL LOG AT BACK OF CURB



SCL–3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN



SCL–4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND–DISTURBING ACTIVITIES.

3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.

4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.

5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ⅓ OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING

6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.

7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

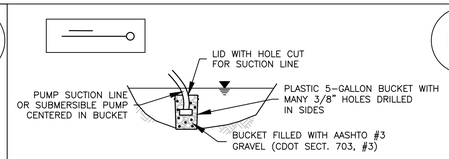
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.

5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

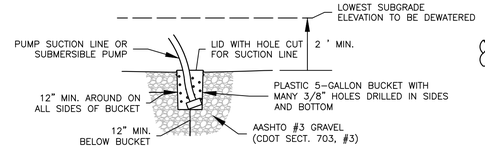
(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, JEFFERSON COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

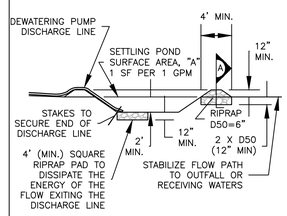
DW



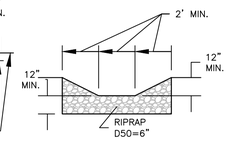
DW–1. DEWATERING POND ALREADY FILLED WITH WATER



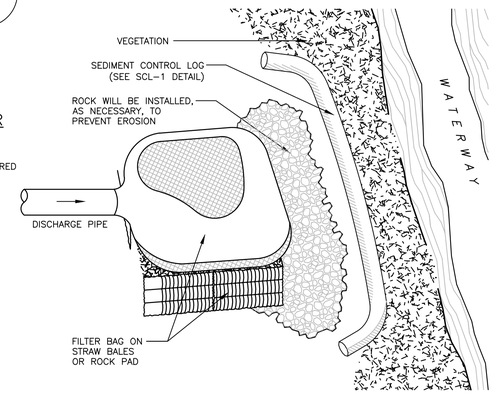
DW–2. DEWATERING SUMP FOR SUBMERSED PUMP



DW–3. SUMP DISCHARGE SETTLING BASIN



SETTLING BASIN SECTION A



DEWATERING INSTALLATION NOTES

1. SEE PLAN VIEW FOR;
   –LOCATION OF DEWATERING EQUIPMENT.
   –TYPE OF DEWATERING OPERATION (DW–1 TO DW–4).

2. THE OWNER OR CONTRACTOR SHALL OBTAIN A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT FROM THE STATE PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT.

3. THE OWNER OR OPERATOR SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2–FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACK–FILLED TO FINAL GRADE.

DEWATERING INSTALLATION NOTES

4. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE, WELL POINTS, OR OTHER MEANS APPROVED BY THE LOCAL JURISDICTION TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL PROVIDE A TEMPORARY SEDIMENT BASIN OR FILTRATION BMP TO REDUCE SEDIMENT TO ALLOWABLE LEVELS PRIOR TO RELEASE OFF SITE OR TO A RECEIVING WATER. A SEDIMENT BASIN MAY BE USED IN LIEU OF SUMP DISCHARGE SETTLING BASIN SHOWN ABOVE IF A 4–FOOT–SQUARE RIPRAP PAD IS PLACED AT THE DISCHARGE POINT AND THE DISCHARGE END OF THE LINE IS STAKED IN PLACE TO PREVENT MOVEMENT OF THE LINE.

5. DEWATERING OPERATIONS MAY REQUIRE A LOCAL PERMIT IN ADDITION TO STATE REQUIREMENTS.

DEWATERING MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. DEWATERING BMPs ARE REQUIRED IN ADDITION TO ALL OTHER PERMIT REQUIREMENTS.

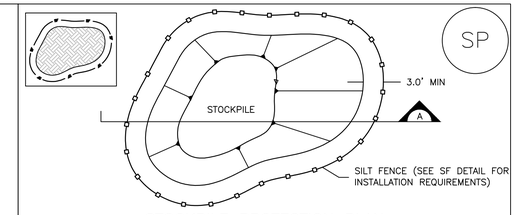
5. TEMPORARY SETTLING BASINS SHALL BE REMOVED WHEN NO LONGER NEEDED FOR DEWATERING OPERATIONS. ANY DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

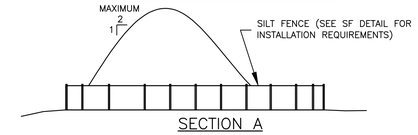
(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

DW–4. DEWATERING FILTER BAG

SP



STOCKPILE PROTECTION PLAN



SECTION A

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF STOCKPILES.
   –TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30–60 DAYS).

4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

STOCKPILE PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

STOCKPILE PROTECTION MAINTENANCE NOTES

4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

(DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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SP–1. STOCKPILE PROTECTION

REFERENCE DRAWINGS

812-TITLEBLOCK-22x34

No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

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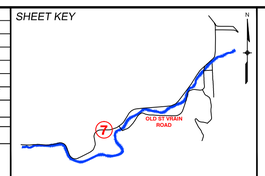

PREPARED FOR: Boulder County Parks & Open Space

PREPARED BY: Matrix Design Group — An Employee-Owned Company

PRELIMINARY
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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No. 16.812.003

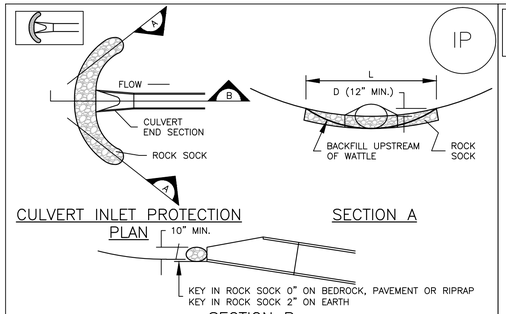
SOUTH ST. VRAIN CREEK RESTORATION

BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

EROSION CONTROL DETAILS

DESIGNED BY: SDS	SCALE (22" X 34")	DATE ISSUED: 08/11/16	DRAWING No.
DRAWN BY: JDL	HORIZ. N/A	SHEET X OF XX	ECD 2
CHECKED BY: RDK	VERT. N/A		

Know what's **below.** **Call** before you dig.



CULVERT INLET PROTECTION PLAN

SECTION A

SECTION B

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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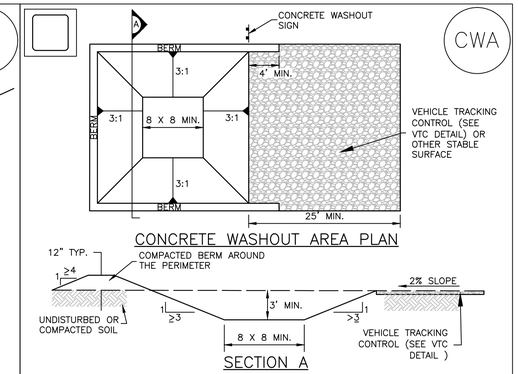
CIP–1. CULVERT INLET PROTECTION



CONCRETE WASHOUT AREA PLAN

SECTION A

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –CWA INSTALLATION LOCATION.

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.

5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER–TIGHT CONTAINER AND DISPOSED OF PROPERLY.

6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.

7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD).

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CWA–1. CONCRETE WASHOUT AREA

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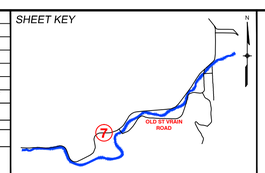

PREPARED FOR:

Boulder County Parks & Open Space

PREPARED BY:

Matrix DESIGN GROUP
AN EMPLOYEE-OWNED COMPANY

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BOULDER COUNTY PARKS AND OPEN SPACE
30% DESIGNS

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