

# Lower Sand Creek Corridor Restoration

## Public Meeting

Coon Creek Watershed District

City of Coon Rapids

May 22<sup>nd</sup>, 2018

Please sign in

# Agenda

*Please sign in*

Introductions

Project Presentation

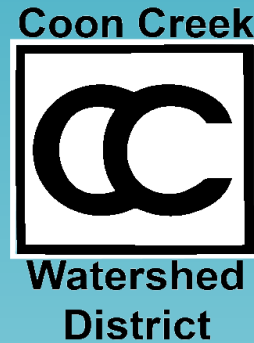
Background

Proposed project details

Discussion

Questions, Concerns, Suggestions

# Introductions



## Coon Creek WD

**Justine Dauphinais**

Water Quality

**Jon Janke**

Operations & Maintenance

**Dawn Doering**

Information & Education

**Ed Matthiesen**

Engineer (Wenck)

## City of Coon Rapids

**Tim Himmer**

Public Works Director

**Mark Hansen**

Assistant City Engineer

**Gregg Engle**

Parks Supervisor

**Tom Schibilla**

City Forester

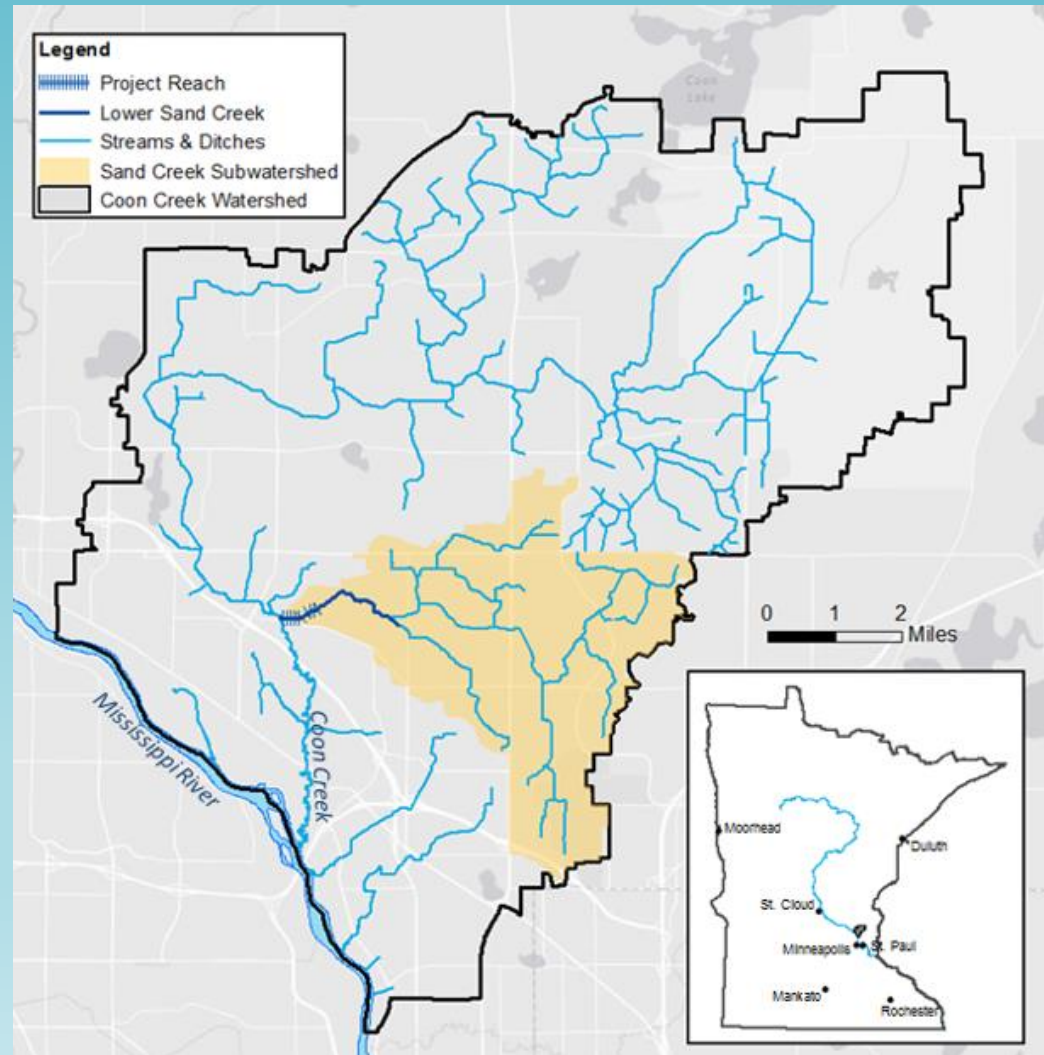
# Background

## Sand Creek Drainage Area

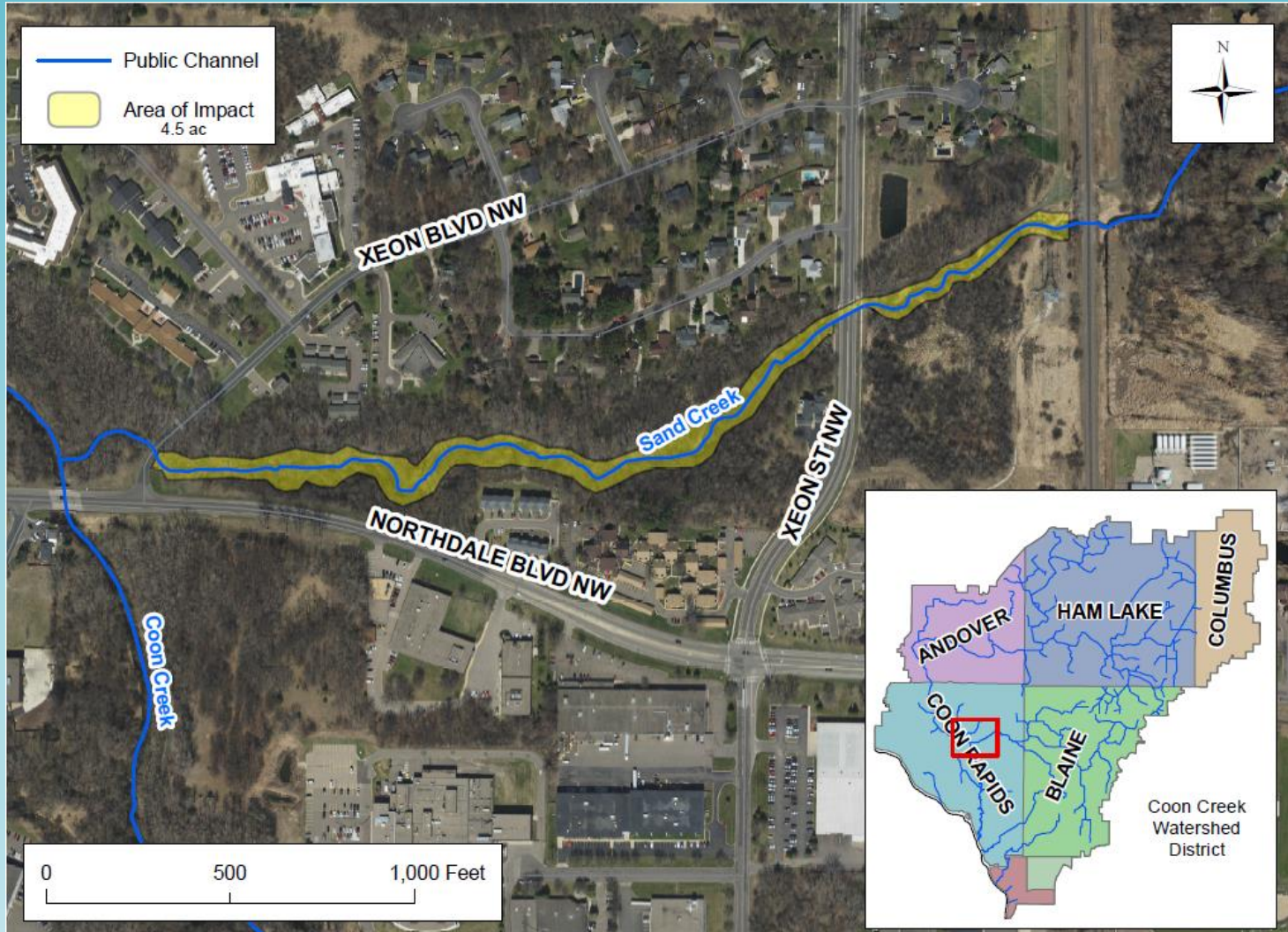
Size: ~16 mi<sup>2</sup>

Suburban land use

Upstream area ditched  
for agriculture & now  
serves as stormwater  
conveyance system.



# Location: Xeon Blvd to Railroad



# Current Status of Sand Creek

Sand Creek does not meet State standards for recreation or aquatic life (impaired)

## Stressors:

Excess Sediment

Excess Phosphorus

Poor Habitat

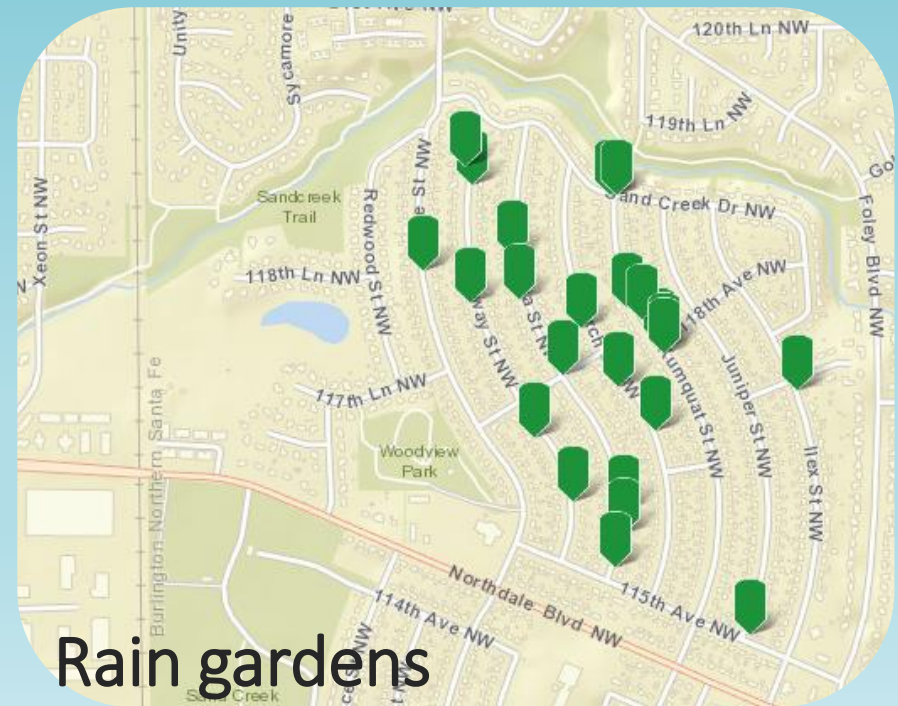
Altered Hydrology



# Past Projects to address stormwater

2010-2015:

- ❖ Constructed new stormwater pond at Xeon St.
- ❖ Modified 2 pond outlets to hold more water
- ❖ Installed 25 Rain Gardens
- ❖ Installed 2 “SAFL Baffles”



# Proposed Project

## Purpose:

Reduce erosion (sediment & nutrients)

Enhance habitat for native species

Provide long-term channel stability/ reduce maintenance needs

**Approach:** ½-mile Stream Corridor Restoration

**Cost:** \$464,721

**NO COST** to local taxpayers

*Federal 319 grant: \$269,563*

*MN Clean Water Fund grant: \$195,158*





# Project Components

3 methods to stabilize eroding banks:

Vegetated Rock Riprap (~1100 LF)



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3 methods to stabilize eroding banks:

Vegetated Rock Riprap (~1100 LF)

Re-grading & seeding (~1500 LF)



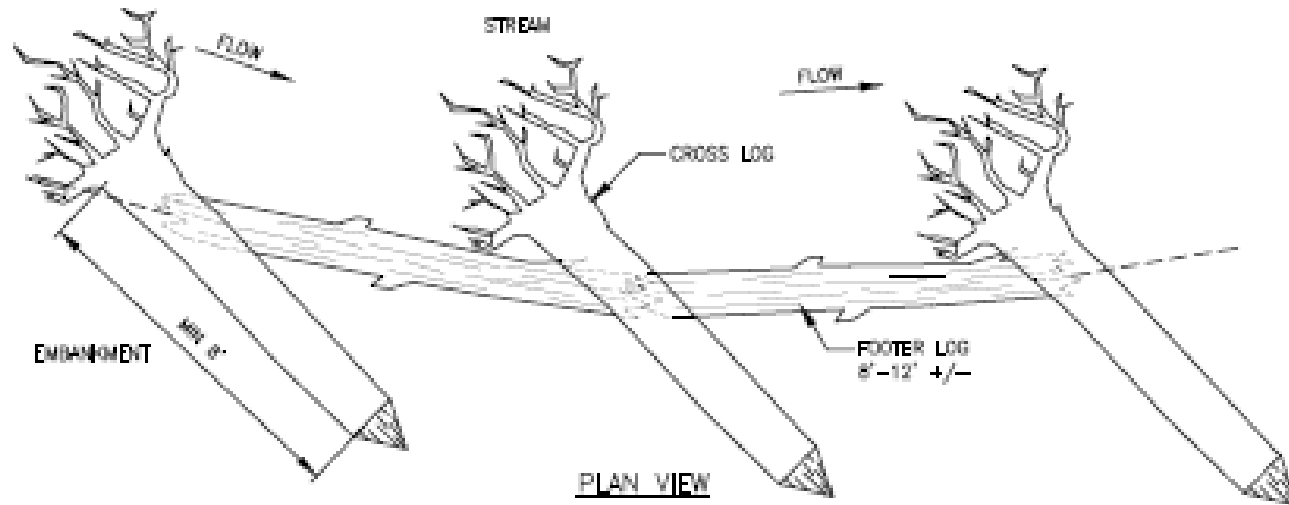
# Project Components

3 methods to stabilize eroding banks:

Vegetated Rock Riprap (~1100 LF)

Re-grading & seeding (~1500 LF)

Woody materials: log toes, root wads, revetments (~1600 LF)



# Project Components

Habitat features:

Incorporating wood in stream stabilization practices

6 cross vanes to create riffles & pools



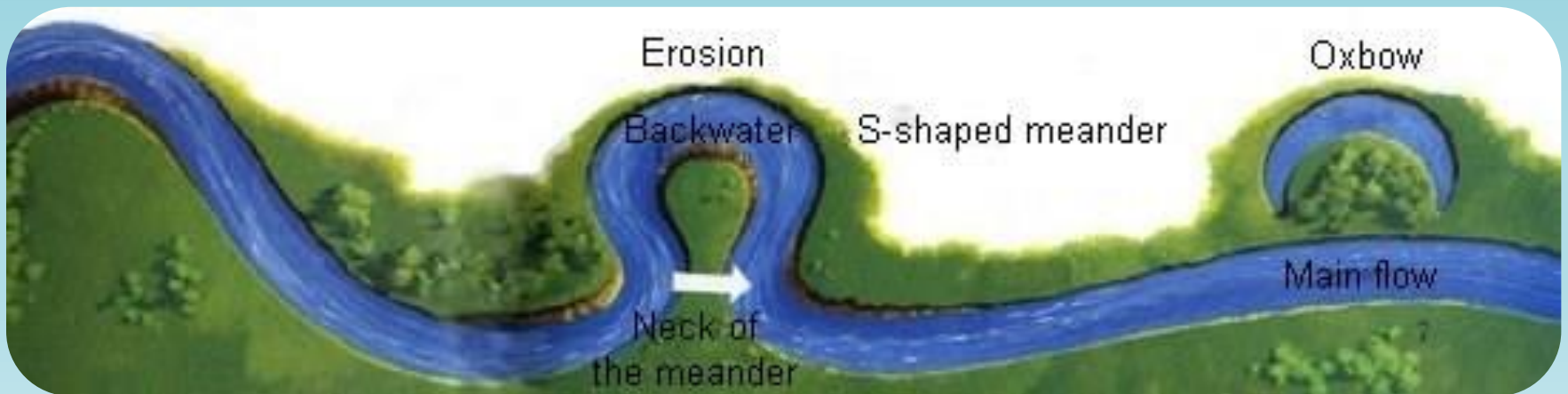
# Project Components

Habitat features:

Incorporating wood in stream stabilization practices

6 cross vanes to create riffles & pools

Excavating 3 backwater pools



# Project Components

Habitat features:

Incorporating wood in stream stabilization practices

6 cross vanes to create riffles & pools

Excavating 3 backwater pools

Buckthorn removal & tree-thinning (~50%)

Planting native species



# Project Components

Citizen engagement:

Newsletter & webpage updates: [www.cooncreekwd.org/LowerSandCreekResto](http://www.cooncreekwd.org/LowerSandCreekResto)

Install interpretive signage

Host “Watershed walks”

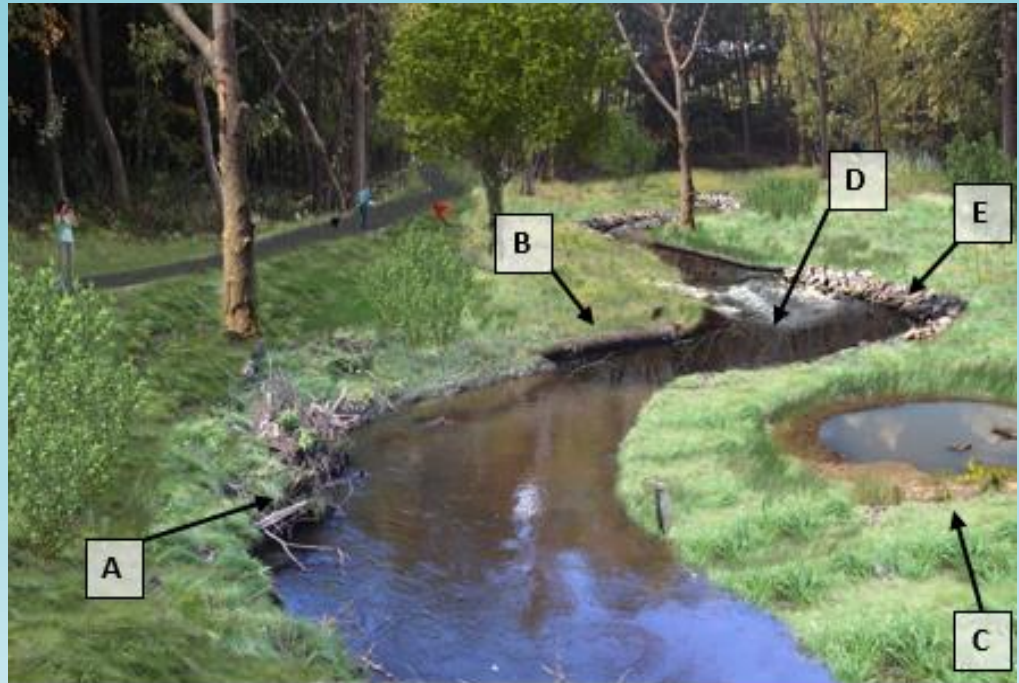


# Design Rendering

By Wenck



- A: Root wads
- B: Log Toe
- C: Backwater pool
- D: Cross Vane
- E: Vegetated riprap





# Project Timeline

Spring 2018: Planning

Summer 2018: Bid & Award Contractor

Fall-Winter 2018-19: Construction

Spring-Summer 2019: Site restoration/ vegetation establishment

2019-20: Phase II: Railroad to Pedestrian Bridge upstream of Olive St.

# Issues & Concerns

- ❖ Maintain wild & natural character of area
  - Use pollinator-friendly plant species
  - Enhance with nesting boxes?
- ❖ Heavily-used trail corridor
  - Safety
  - Temporary closures
  - Lack of dog waste disposal stations
- ❖ Storm damage/ resiliency
- ❖ Construction disturbance/ noise
- ❖ Long-term maintenance

# Questions, Concerns, Suggestions?

Thank you!



## Contact:

Justine Dauphinais & Jon Janke

763-755-0975

[www.cooncreekwd.org/LowerSandCreekResto](http://www.cooncreekwd.org/LowerSandCreekResto)

# 1960 vs 2016



# 2015 Streambank Erosion Assessment

Sand Creek  
Subwatershed:

83 sites

931 tons/yr

Project Reach:

16 sites

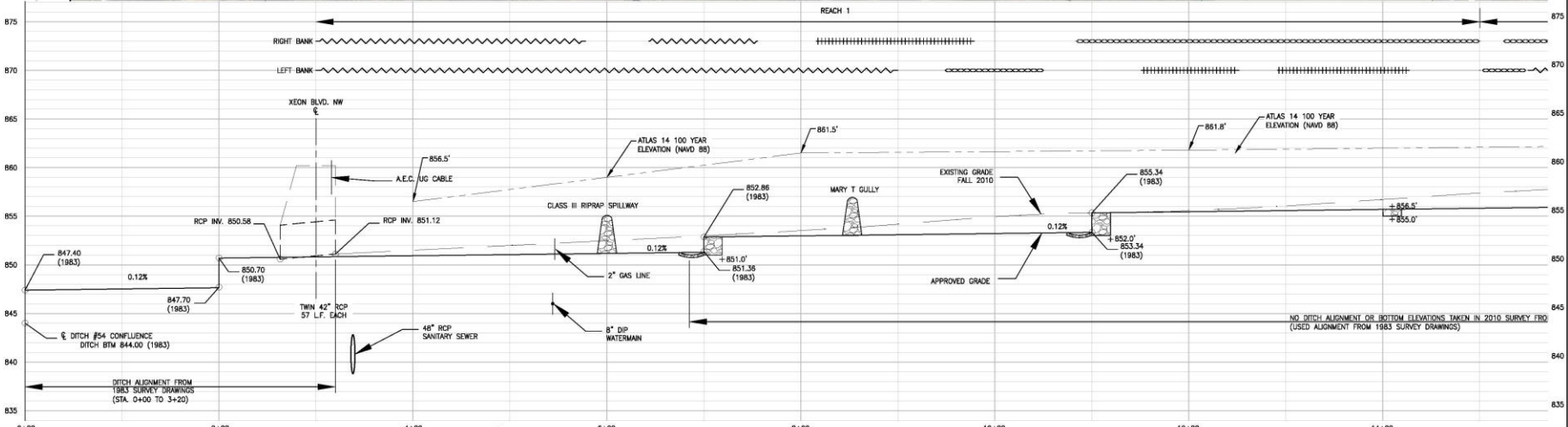
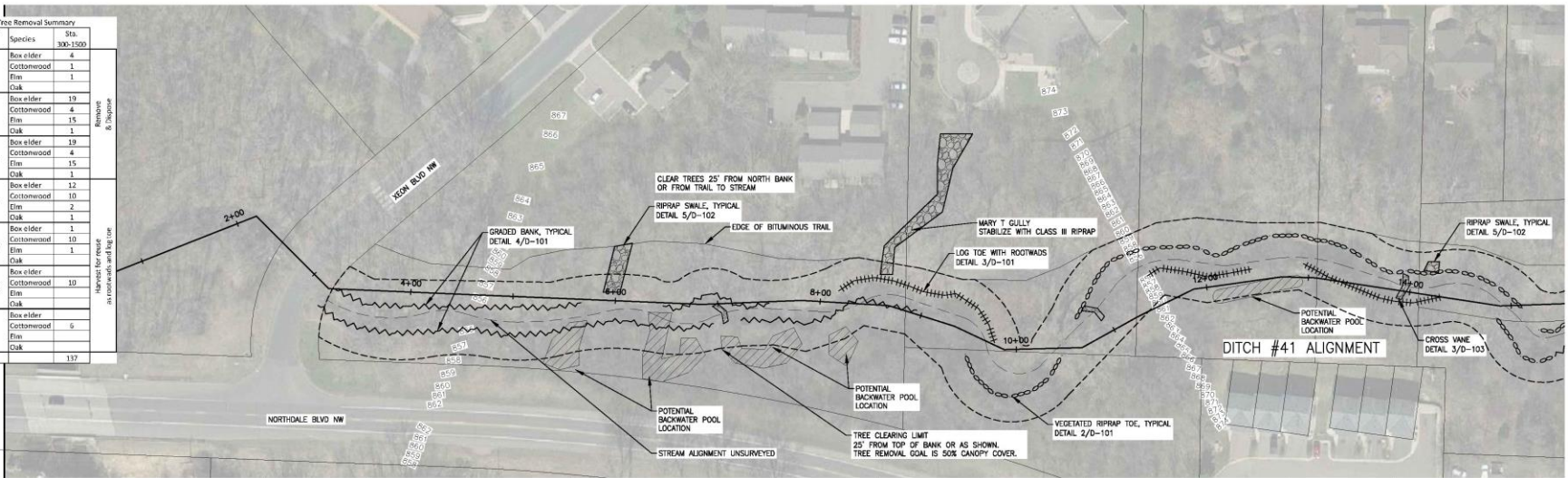
372 tons/yr

Erosion hotspot!



Tree Removal Summary		
Diameter (inches)	Species	Sta. 300-1500
0-3.8	Box elder	4
	Cottonwood	1
	elm	1
	Oak	1
3.8- 7.6	Box elder	19
	Cottonwood	4
	elm	15
	Oak	1
7.6- 11.5	Box elder	19
	Cottonwood	4
	elm	15
	Oak	1
11.5- 15.3	Box elder	12
	Cottonwood	10
	elm	2
	Oak	1
15.3- 19.0	Box elder	1
	Cottonwood	10
	elm	1
	Oak	1
19.0- 22.9	Box elder	1
	Cottonwood	10
	elm	1
	Oak	1
>22.9	Box elder	0
	Cottonwood	0
	elm	0
	Oak	0
<b>Total</b>		<b>137</b>

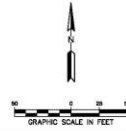
Removal of trees in areas to be removed and located



**LEGEND**

- ACCESS ROUTE BOUNDARY
- - - PROPERTY LINE
- ~ GRADED BANK
- ||||| LOG TOE WITH ROOT WADS
- VEGETATED RIPRAP TOE
- W WETLAND

**NOTES:**  
1. BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX.



REV	REVISION DESCRIPTION	DRN	APP	REV DATE
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

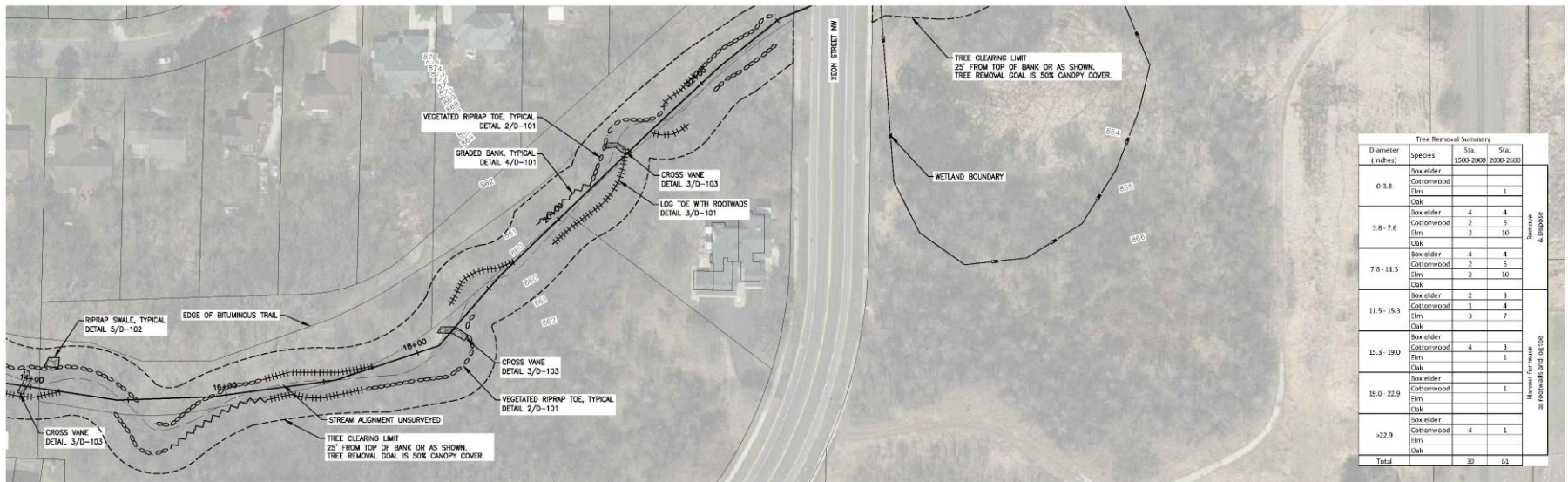
PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

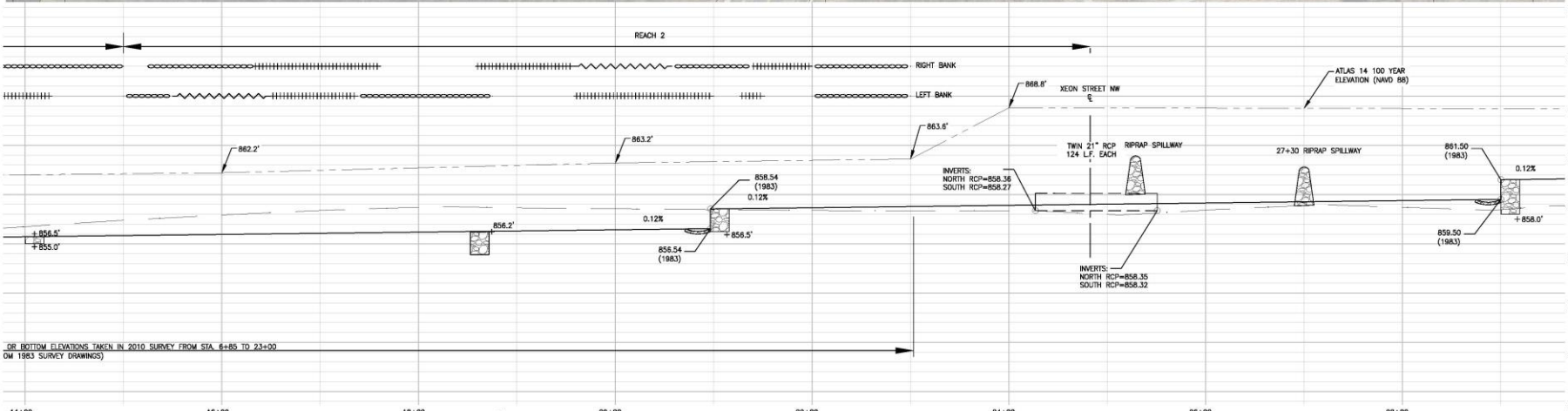
PROJECT TITLE  
**SAND CREEK STABILIZATION**

PROJECT NO. SHEET NO.  
**12301-CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434**

SHEET TITLE		PROPOSED PLAN AND PROFILE STREAM TREATMENTS	
DATE	SCALE	DATE	SCALE
FEB 2017	AS SHOWN	FEB 2017	AS SHOWN
PROJECT NO.	SHEET NO.	PROJECT NO.	SHEET NO.
1239-0087	C-101	1239-0087	C-101
REV NO.		REV NO.	
1		1	



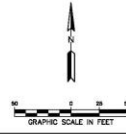
Tree Removal Summary					
Diameter (inches)	Species	1500-2000	2000-2500	2500-3000	3000-3500
0-3.8	box elder				
	Cottonwood				
	elm		1		
3.8-7.6	box elder	4	4		
	Cottonwood	2	6		
	elm	2	30		
7.6-11.5	box elder	4	4		
	Cottonwood	2	6		
	elm	2	30		
11.5-15.3	box elder	2	3		
	Cottonwood	1	4		
	elm	3	7		
15.3-19.0	box elder				
	Cottonwood	4	3		
	elm		1		
19.0-22.9	box elder				
	Cottonwood				
	elm				
>22.9	box elder				
	Cottonwood	4	1		
	elm				
	Oak				
Total		30	61		



OR BOTTOM ELEVATIONS TAKEN IN 2010 SURVEY FROM STA. 6+85 TO 23+00 ON 1983 SURVEY DRAWINGS

LEGEND	
---	ACCESS ROUTE BOUNDARY
---	PROPERTY LINE
---	GRADED BANK
	LOG TOE WITH ROOT WADS
o-o-o-o	VEGETATED RIPRAP TOE
---	WETLAND

NOTES:  
1. BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX.



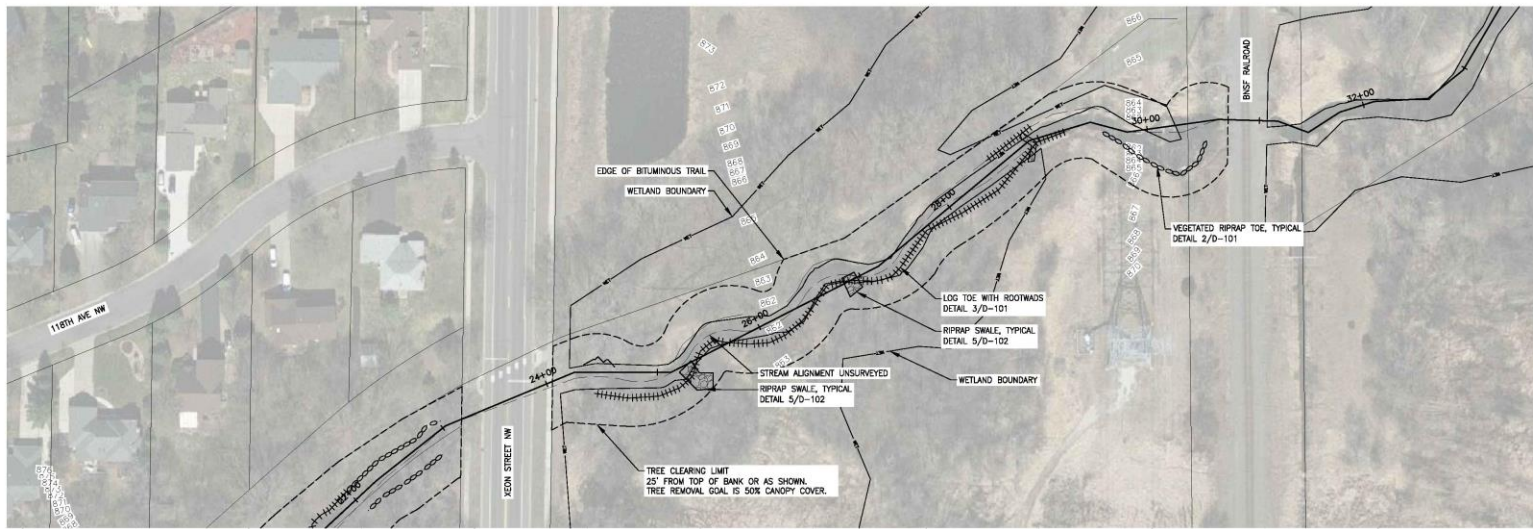
REV	REVISION DESCRIPTION	DATE	APP	REV DATE
1	60% DESIGN	12/20/17	LNJ	EAM
0	CONCEPT DESIGN	02/02/17	SJB	EAM

PRIME CONSULTANT

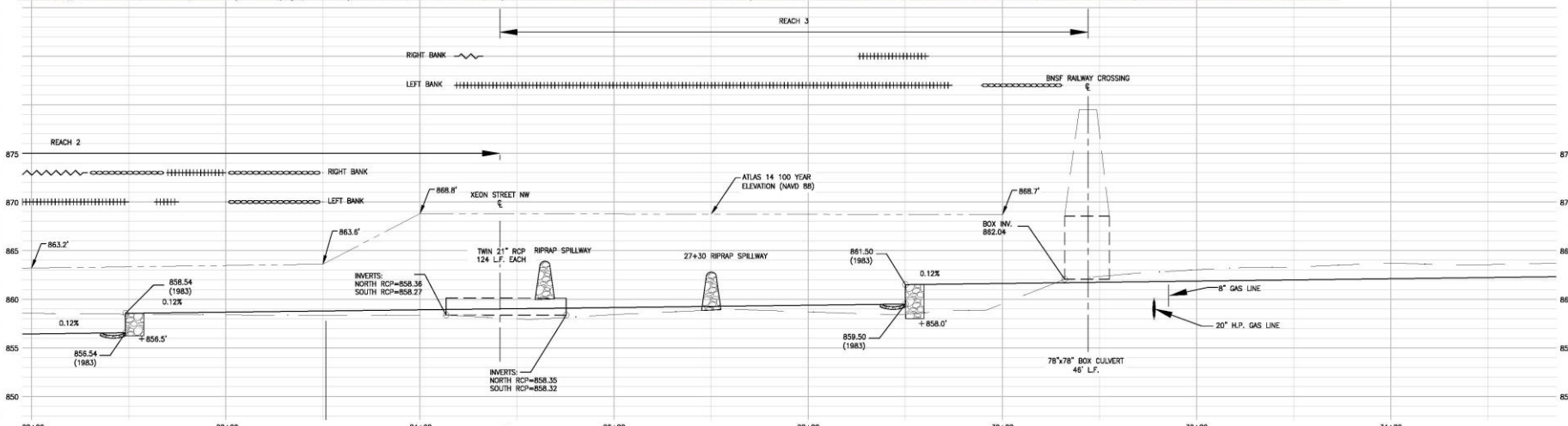
Responsive partner. Exceptional outcomes.

PROJECT TITLE: SAND CREEK STABILIZATION  
COON CREEK WATERSHED DISTRICT  
12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

SHEET TITLE: PROPOSED PLAN AND PROFILE STREAM TREATMENTS			
DATE	DATE	DATE	DATE
12/20/17	02/02/17	12/20/17	FEB 2017
LNJ	EAM	LNJ	EAM
PROJECT NO. 1239-0087	SHEET NO. C-102	SCALE AS SHOWN	REV NO. 1



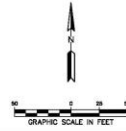
Diameter (inches)	Species	2000-2009	2010-2019	Total
0-3.8	Box elder	1	0	1
	Cottonwood	2	0	2
	Elm	2	0	2
3.8-7.5	Box elder	5	0	5
	Cottonwood	6	0	6
	Elm	5	0	5
7.5-11.5	Box elder	5	0	5
	Cottonwood	5	0	5
	Elm	2	0	2
11.5-15.3	Box elder	3	0	3
	Cottonwood	3	0	3
	Elm	1	0	1
15.3-19.0	Box elder	5	0	5
	Cottonwood	2	0	2
	Elm	2	0	2
19.0-22.9	Box elder	1	0	1
	Cottonwood	2	0	2
	Elm	2	0	2
>22.9	Box elder	1	0	1
	Cottonwood	3	0	3
	Elm	3	0	3
<b>Total</b>		<b>52</b>	<b>0</b>	<b>52</b>



**LEGEND**

- ACCESS ROUTE BOUNDARY
- PROPERTY LINE
- GRADED BANK
- ||||| LOG TOE WITH ROOT WADS
- VEGETATED RIPRAP TOE
- WETLAND

**NOTES:**  
 1. BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX.



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0	CONCEPT DESIGN	02/02/17	SJB	EAM

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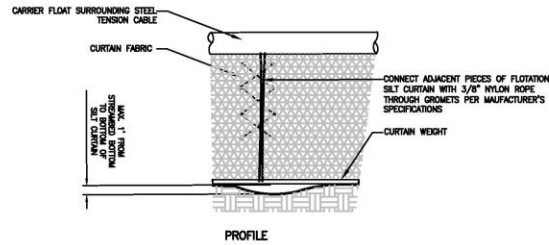
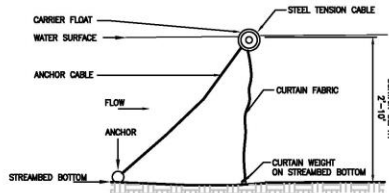
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 12301 CENTRAL AVE NE, SUITE 100  
 BLAINE, MN 55434

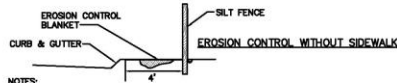
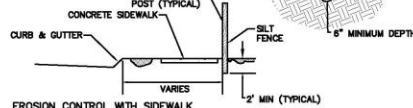
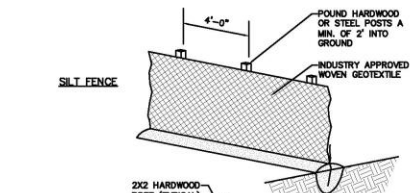
SHEET TITLE			
<b>PROPOSED PLAN AND PROFILE STREAM TREATMENTS</b>			
DATE BY	DATE BY	DATE BY	DATE BY
SJB	LNU	EAM	AS SHOWN
PROJECT NO.	SHEET NO.	SCALE	REV NO.
1239-0087	C-103		1





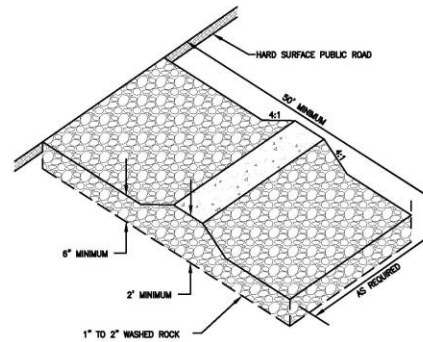


**FLOTATION SILT CURTAIN**  
NOT TO SCALE



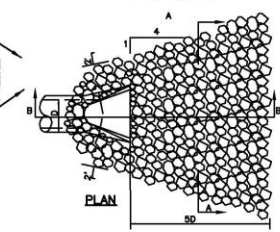
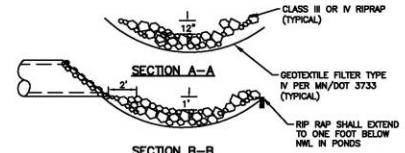
- NOTES:**
1. INSTALL SILT FENCE PER PLAN SET BEFORE BEGINNING CONSTRUCTION
  2. INSTALL SILT FENCE AND EROSION CONTROL BLANKET BEHIND CURB & GUTTER AS SHOWN
  3. REPLACE TORN, OVERBURDENED, OR DECOMPOSING SILT FENCE WITHIN 24 HOURS
  4. TO JOIN SECTIONS OF SILT FENCE, POSITION POSTS TO OVERLAP. FABRIC SHOULD FOLD AROUND EACH POST ONE FULL TURN

**SILT FENCE**  
NOT TO SCALE



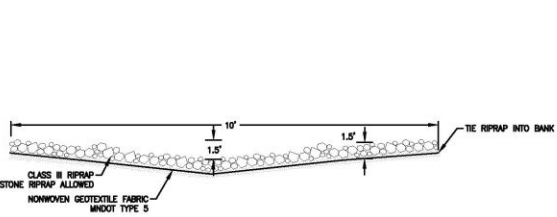
- NOTES:**
- ROCK SIZE SHOULD BE 1" TO 2" IN SIZE SUCH AS MN/DOT CA-1 OR CA-2 COURSE AGGREGATE. (WASHED)
- A GEOTEXTILE FABRIC MAY BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.

**ROCK ENTRANCE TO CONSTRUCTION SITE**  
NOT TO SCALE

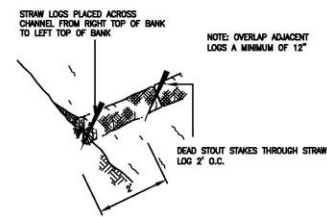


- PIPE DIAMETER RIPRAP**
- |            |                    |
|------------|--------------------|
| 12"-24"    | 8-12 CY CLASS III  |
| 27"-33"    | 12-20 CY CLASS III |
| 36"-48"    | 23-38 CY CLASS III |
| 54" AND UP | 62 CY CLASS IV     |

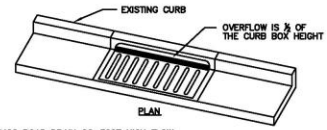
**RIPRAP AT FLARED END SECTIONS DETAIL**  
NOT TO SCALE



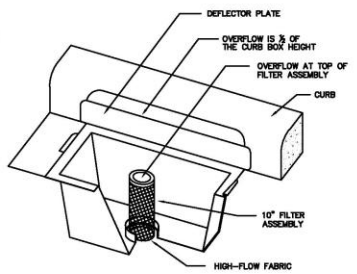
**RIPRAP SWALE**  
NOT TO SCALE



**BIROLL DETAIL**  
NOT TO SCALE



**INLET PROTECTION DETAIL**  
NOT TO SCALE



REV	REVISION DESCRIPTION	DATE	APP	REV DATE
1	BOOK DESIGN	LNU	EM	12/20/17
0	CONCEPT DESIGN	SJB	EM	02/02/17

DATE	SCALE

PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

PROJECT TITLE  
**SAND CREEK STABILIZATION**

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

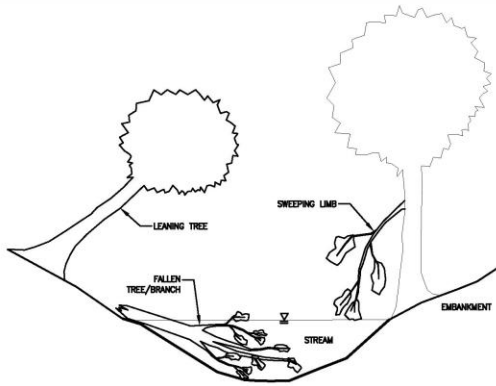
OWN BY	CHK'D	APP'D	DATE
SJB	LNU	EM	FEB 2017

PROJECT NO. 1239-0087

SHEET NO. D-102

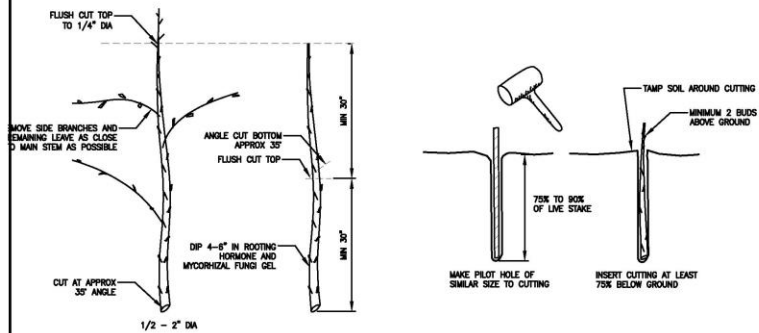
SCALE AS SHOWN

REV NO. 1



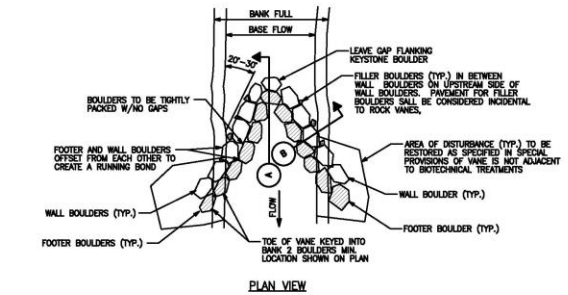
NOTE: REMOVE ALL LEANING, SWEEPING LIMBS, AND FALLEN TREE BRANCHES AS DEPICTED ABOVE. ALL CUTTINGS SHOULD BE REUSED ON-SITE.

FALLEN, LEANING, AND SWEEPING TREES/LIMBS 1 D-103 NOT TO SCALE

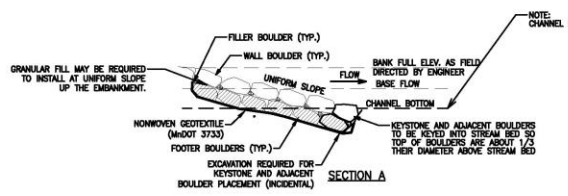


- NOTES:
- HARVEST AND PLANT STAKES DURING THE DORMANT SEASON
  - USE HEALTHY, STRAIGHT, LIVE WOOD AT LEAST 1 YEAR OLD
  - MAKE CLEAN CUTS AND DO NOT DAMAGE STAVES OR SPLIT THE ENDS DURING INSTALLATION. USE A PILOT AIR IN FIRM SOILS
  - SOAK CUTTING FOR 24 HOURS (MINIMUM) PRIOR TO INSTALLATION
  - DIP BOTTOM 4-6 INCHES IN ROOTING HORMONE
  - INSTALL THE CUTTING AND TAMP THE SOIL AROUND THE STAKE

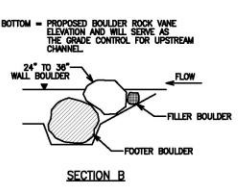
LIVE STAKE HARVEST AND INSTALLATION 2 D-103 NOT TO SCALE



PLAN VIEW



SECTION A



SECTION B

LEGEND

- SUBMERGED OR FOOTER 24" TO 30" FIELDSTONE BOULDER MEETING MIGHT 3801.2A. AT LEAST 20% OF THE BOULDERS SHALL HAVE A DIAMETER OF 24" OR LARGER.
- PROTRUDING OR WALL 30" TO 34" BOULDERS MEETING MIGHT 3801.2A. AT LEAST 20% OF THE BOULDERS SHALL HAVE A DIAMETER OF 30" OR LARGER.
- FILLER BOULDER 6" TO 12" DIA.

- NOTE:
- FIELD STONE BOULDERS SHALL HAVE NO CUT, BLAST OR SHEAR MARKS.
  - ENOUGH WALL BOULDERS TO BE FLAT TOPPED AND SET TO CREATE A DRY CROSSING/WALKWAY ACROSS THE CREEK.
  - FINAL PLACEMENT OF ROCK VANE AND BOULDERS TO BE FIELD VERIFIED BY ENGINEER.
  - ALL VANES EXTEND UPSTREAM INTO FLOW OF CREEK.
  - CLASS V R/R/WP ACCEPTABLE ROCK ALTERNATIVE

CROSS VANE DETAIL 3 D-103 NOT TO SCALE

REV	REVISION DESCRIPTION	OWN	APP	REV DATE
1	BOOK DESIGN	LNU	EM	12/20/17
0	CONCEPT DESIGN	SUB	EM	02/02/17

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PROJECT TITLE	SAND CREEK STABILIZATION
PROJECT NO.	12301 CENTRAL AVE NE, SUITE 100 BLAINE, MN 55434

SHEET TITLE				DETAILS			
OWN BY	CHK'D	APP'D	DATE	SCALE	DATE	REV NO.	REV DATE
LNU	LNU	EM	FEB 2017	AS SHOWN			
PROJECT NO.	12301-0087	SHEET NO.	D-103	REV NO.	1		