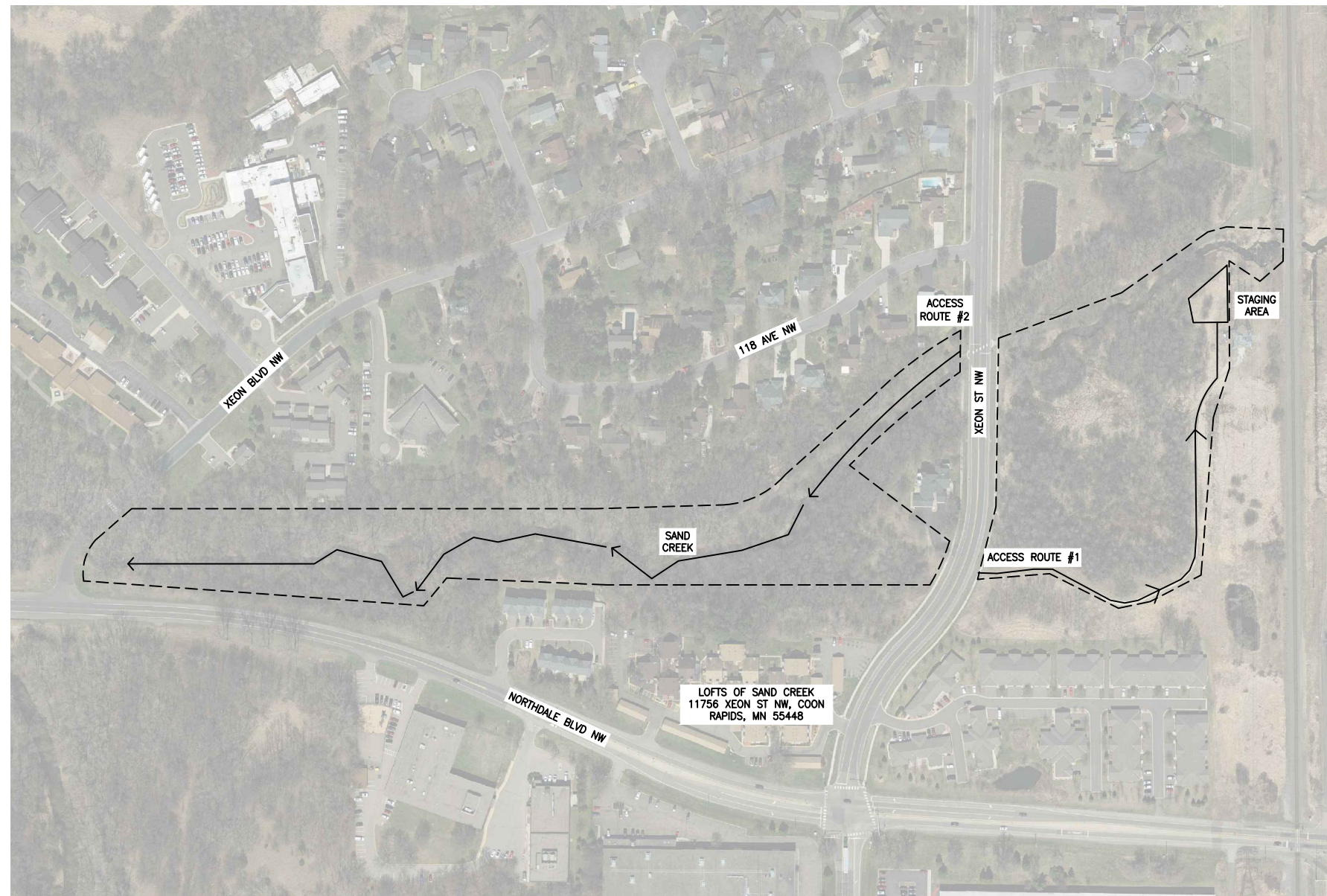


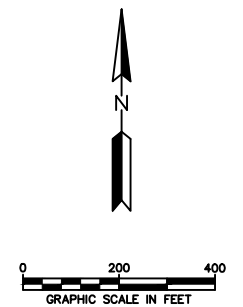
# CONSTRUCTION PLANS FOR LOWER SAND CREEK CORRIDOR RESTORATION PROJECT

PREPARED FOR  
COON CREEK WATERSHED DISTRICT  
JULY 2018



SHEET INDEX	
SHEET	TITLE
G-101	TITLE AND INDEX SHEET
G-102	LEGEND AND GENERAL NOTES
C-101	REMOVALS PLAN
C-102	REMOVALS PLAN
C-103	PROPOSED PLAN & PROFILE STREAM TREATMENTS
C-104	PROPOSED PLAN & PROFILE STREAM TREATMENTS
C-105	PROPOSED PLAN & PROFILE STREAM TREATMENTS
EC-101	SWPPP
D-101	DETAILS
D-102	DETAILS
D-103	DETAILS
THIS PLAN CONTAINS 11 SHEETS	

PROJECT VICINITY MAP



**WARNING:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG  
**GOPHER STATE ONE CALL**  
TWIN CITY AREA: 651-454-0002  
TOLL FREE 1-800-252-1166

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL

PRIME CONSULTANT



Responsive partner. Exceptional outcomes.

PROJECT TITLE	LOWER SAND CREEK CORRIDOR RESTORATION
PROJECT NO.	1239-0093
PROJECT NO.	1239-0093
SHEET NO.	G-101
REV NO.	3

SHEET TITLE			
TITLE AND INDEX SHEET			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	FEB 2017
SCALE		AS SHOWN	

**GENERAL NOTES:**

- EXISTING CONDITIONS HAVE BEEN PROVIDED BY A COMBINATION OF HISTORIC PLANS FROM SURVEY INFORMATION FROM A SITE VISIT BY WATERSHED DISTRICT STAFF AND LIDAR. EXISTING FEATURES MAY NOT BE EXACT TO THEIR LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE CONDITIONS OF THE SITE AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE DRAWINGS.
- ALL QUANTITIES ARE APPROXIMATE AND MAY VARY TO ALLOW COMPLETION OF WORK.
- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-2 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
- EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, PIPELINES, ELECTRICAL, AND CABLE TV ARE UNKNOWN. CONTRACTOR RESPONSIBLE FOR LOCATING PRIOR TO STARTING WORK.
- CONTRACTOR SHOULD ANTICIPATE PRIVATE UTILITY CONFLICTS THROUGHOUT THE PROJECT SUB CUT AND TRENCH AREAS AND SHALL COORDINATE WITH PRIVATE UTILITY OWNERS.
- THE RELOCATION AND OR PROTECTION OF ALL EXISTING UTILITIES MUST BE COORDINATED BY THE CONTRACTOR AND ANY COSTS FOR SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR EXTRA TIME AND EFFORT OF PROVISIONS NECESSARY TO WORK AROUND OR UNDER ANY UTILITIES.
- INSTALL AND MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS DIRECTED BY ENGINEER.
- CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY, AND CITY PERMITS.
- MAINTAIN MAIL, GARBAGE, AND RECYCLING SERVICES TO PROPERTIES.
- PROTECT EXISTING PAVEMENT AND SITE FEATURES, EXCEPT AS NOTED.
- CONTRACTOR TO COORDINATE AND MAINTAIN ACCESS TO PROPERTIES.
- MAINTAIN DRAINAGE CONVEYANCE DURING CONSTRUCTION (BOTH PIPED AND OVERLAND).
- THE EXISTING PAVEMENT CONDITIONS HAVE BEEN DOCUMENTED, AND ANY DAMAGE TO THE EXISTING PAVEMENT, CURBING, AND STRIPING SHALL BE REPLACED BY THE CONTRACTOR, TO THE OWNERS SATISFACTION, AT NO ADDITIONAL COST TO THE OWNER.

**REMOVAL NOTES:**

- FEATURES NOT SPECIFICALLY IDENTIFIED ON PLAN FOR SALVAGE OR REMOVAL THAT CONFLICT WITH CONSTRUCTION ARE TO BE REVIEWED WITH ENGINEER.

**DEWATERING NOTES:**

- NO BID ITEM HAS BEEN PROVIDED FOR DEWATERING AS ALL DEWATERING WORK NECESSARY FOR CONSTRUCTION WILL BE CONSIDERED INCIDENTAL.
- ENERGY DISSIPATION SHALL BE PROVIDED AT ALL DISCHARGE POINTS TO PREVENT SCOUR.
- PROVIDE SILT BAGS FOR DEWATERING.
- CONTRACTOR RESPONSIBLE TO SUBMIT DEWATERING PLAN TO ENGINEER FOR REVIEW. DEWATERING SHALL MEET ALL PERMIT REQUIREMENTS AND BE APPROVED PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATER RELATED TO DEWATERING OR BASIN DRAINING (E.G. PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. THE CONTRACTOR MAY DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASINS TO THE SURFACE WATERS IF THE BASIN WATER HAS BEEN VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. RULES 7050.0210, SUBPART 2) WILL NOT RESULT FROM THE DISCHARGE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPs, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM PROPERTIES. IF THE CONTRACTOR MUST DISCHARGE WATER THAT CONTAINS OIL OR GREASE, THE CONTRACTOR MUST USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G. CARTRIDGE FILTERS, ABSORBENTS PADS) PRIOR TO DISCHARGING THE WATER. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES.
- ALL WATER FROM DEWATERING OR BASIN-DRAINING ACTIVITIES MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.
- IF THE CONTRACTOR IS USING FILTERS WITH BACKWASH WATER, THE CONTRACTOR MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR MAY DISCHARGE BACKWASH WATER TO THE SANITARY SEWER IF PERMISSION IS GRANTED BY THE SANITARY SEWER AUTHORITY. THE CONTRACTOR MUST REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN REQUIRED TO RETAIN ADEQUATE FUNCTION.

**WARNING:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG  
**GOPHER STATE ONE CALL**  
TWIN CITY AREA: 651-454-0002  
TOLL FREE 1-800-252-1166

**GOVERNING SPECIFICATIONS:**

- THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2016 EDITION & LATEST SUPPLEMENTS.
- CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES SPECIFICATIONS (LATEST EDITION)
- CITY OF COON RAPIDS CONSTRUCTION SPECIFICATIONS
- ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLETED WITH IN THE CONSTRUCTION OF THIS PROJECT.

**TRAFFIC CONTROL NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION STAGING, ON OR OFFSITE, AS NECESSARY TO COMPLETE THE WORK AS SPECIFIED IN THE PROJECT DOCUMENTS. A STAGING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL. ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST EDITION OF THE MMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER, CITY, AND COUNTY FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES. PLANS SHALL COMPLY WITH ALL APPLICABLE PERMIT REQUIREMENTS.
- TRAFFIC CONTROL SHALL ALSO INCLUDE ALL NECESSARY SIGNAGE AND MARKINGS REQUIRED FOR THE BOARDWALK CLOSURE (SIMILAR TO SIDEWALK CLOSURE). THIS SHALL INCLUDE ADVANCED WARNING SIGNS AND NECESSARY FENCING AND SIGNAGE TO PREVENT PEDESTRIANS FROM ACCESSING THE PROPOSED BOARDWALK CONNECTION AREA.

**EROSION CONTROL NOTES:**

- SEE SHEETS EC-101 FOR EROSION AND SEDIMENT CONTROL MEASURES.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON SITE CONDITIONS DURING CONSTRUCTION. COORDINATE WITH ENGINEER.
- CONCRETE WASH-OUT SHALL COMPLETED OFF-SITE OR CONCRETE READY MIX TRUCKS SHALL BE SELF-CONTAINED.
- ALL EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORK, MAINTAINED IN ACCORDANCE WITH THE SWPPP, NPDES, AND SPECIFICATIONS THROUGHOUT DURATION OF PROJECT, AND REMOVED UPON ESTABLISHMENT OF FINAL STABILIZATION AS DIRECTED BY ENGINEER. EROSION CONTROL MEASURES USED FOR CONSTRUCTION SHALL NOT BE REMOVED UNTIL AUTHORIZED BY OWNER OR ENGINEER.
- REMOVE TRACKED SEDIMENT FROM ALL PAVED SURFACES BOTH ON AND OFFSITE ON A DAILY BASIS (INCIDENTAL).
- MINIMIZE DUST FROM CONSTRUCTION OPERATIONS BY PROVIDING WATER OR OTHER APPROVED METHOD ON A DAILY BASIS (INCIDENTAL).

**HORIZONTAL AND VERTICAL CONTROL:**

- THE HORIZONTAL CONTROL FOR THIS PLAN IS ANOKA COUNTY COORDINATE RELATIVE TO SYSTEM NAD83(11).
- THE VERTICAL CONTROL FOR THIS PLAN IS NAVD88.

**ABBREVIATIONS**

BV	BUTTERFLY VALVE
CL	CLASS
CMP	CORRUGATE METAL PIPE
CY	CUBIC YARD
DIP	DUCTILE IRON PIPE
EL./ELEV	ELEVATION
EX	EXISTING
FES	FLARED END SECTION
F/F	FACE TO FACE
FM	FORCEMAIN
GV	GATE VALVE
HDPE	HIGH-DENSITY POLYETHYLENE
HP	HIGH POINT
HWL	HIGH WATER LEVEL
HYD	HYDRANT
INV	INVERT
LF	LINEAL FEET
LP	LOW POINT
MH	MANHOLE
NWL	NORMAL WATER LEVEL
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
STA	STATION
SY	SQUARE YARD
TNH	TOP NUT HYDRANT
TYP	TYPICAL
WM	WATERMAIN

**EXISTING SYMBOLS/LINES LEGEND**

	STORM SEWER FLARED END SECTION
	STORM SEWER CATCH BASIN/MANHOLE
	STORM SEWER
	HYDRANT
	WATER MAIN
	CONTOUR MINOR
	CONTOUR MAJOR
	PROPERTY LINE
	PROJECT AREA LIMITS
	ACCESS ROUTE BOUNDARY
	RETAINING WALL
	EXISTING FENCE
	EXISTING CHANNEL
	APPROXIMATE TREE LINE
	WETLAND BOUNDARY
	DECIDUOUS TREE
	UTILITY POLE
	LIGHT POLE
	EDGE OF PAVEMENT
	SIGN
	MAILBOX
	GUARD POST
	PROPERTY IRON

**PROPOSED SYMBOLS/LINES LEGEND**

	STORM SEWER FLARED END SECTION
	RIP RAP
	STORM SEWER CATCH BASIN/MANHOLE
	STORM SEWER
	DRAIN TILE
	VEGETATED RIPRAP
	GRADED BANKS
	LOG TOE WITH ROOT WADS
	BACKWATER POOL
	CONTOUR MINOR
	CONTOUR MAJOR
	SPOT ELEVATION
	BITUMINOUS
	CONCRETE
	DECIDUOUS TREE
	ACCESS ROUTE BOUNDARY
	EXISTING FENCE
	PROPERTY LINE
	WATER EDGE
	RETAINING WALL
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS

**REMOVAL SYMBOLS/LINES LEGEND**

	TREE REMOVAL
--	--------------

**EROSION CONTROL SYMBOLS/LINES LEGEND**

	EROSION CONTROL BLANKET AND MN SEED MIX 34-262
	HYDROMULCH AND MN SEED MIX 34-262
	TEMPORARY SEED & EROSION CONTROL BLANKET
	SILT FENCE
	FLOTATION SILT CURTAIN
	INLET PROTECTION
	BIOROLL

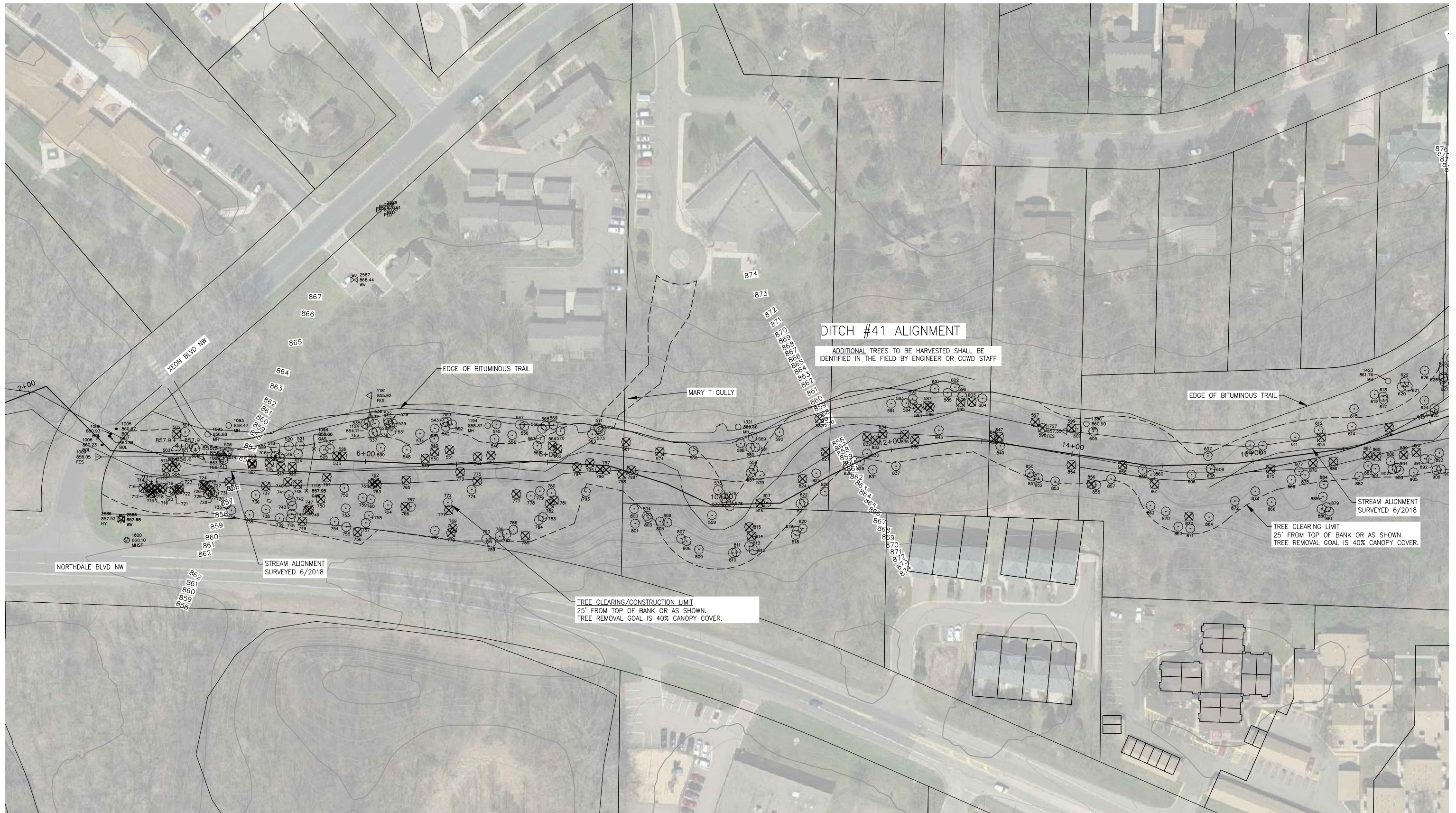
SEAL				
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17
REV	REVISION DESCRIPTION	DWN	APP	REV DATE

PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

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

SHEET TITLE	LEGEND AND GENERAL NOTES			
DWN BY	CHK'D	APP'D	DWG DATE	FEB 2017
SJB	LNJ	EAM	SCALE	AS SHOWN
SHEET NO.	1239-0093	G-102	REV NO.	3



**DITCH #41 ALIGNMENT**

ADDITIONAL TREES TO BE HARVESTED SHALL BE IDENTIFIED IN THE FIELD BY ENGINEER OR CCWD STAFF

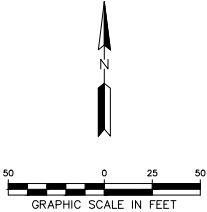
TREE CLEARING LIMIT  
25' FROM TOP OF BANK OR AS SHOWN.  
TREE REMOVAL GOAL IS 40% CANOPY COVER.

TREE CLEARING/CONSTRUCTION LIMIT  
25' FROM TOP OF BANK OR AS SHOWN.  
TREE REMOVAL GOAL IS 40% CANOPY COVER.

**LEGEND**

---	ACCESS ROUTE BOUNDARY
---	PROPERTY LINE
---	WETLAND
X	TREE REMOVAL

NOTES:



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

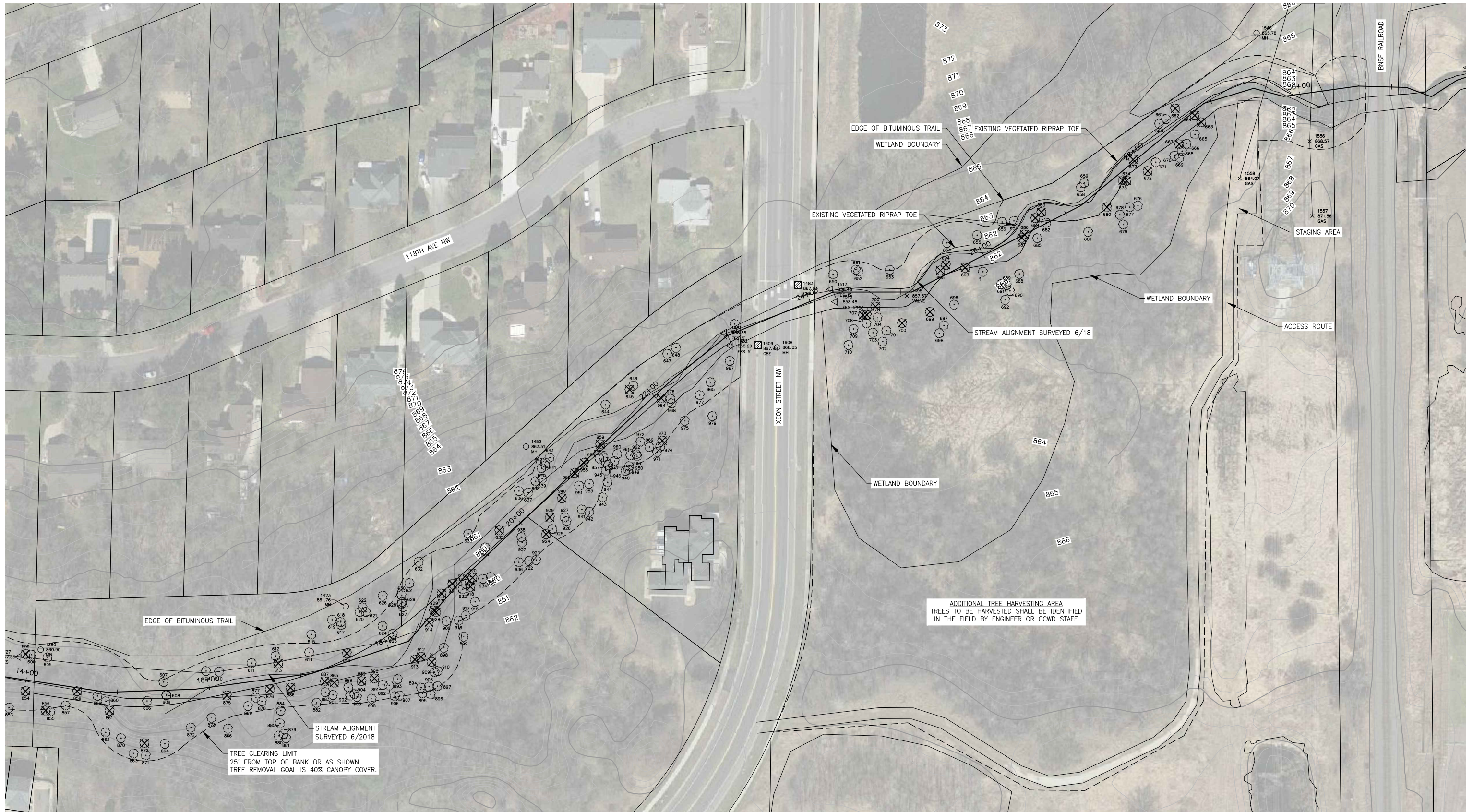
SEAL			

PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

PROJECT TITLE	
LOWER SAND CREEK CORRIDOR RESTORATION	
COON CREEK WATERSHED DISTRICT	
12301 CENTRAL AVE NE, SUITE 100 BLAINE, MN 55434	

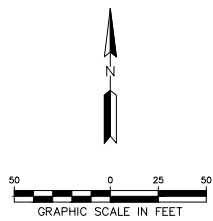
SHEET TITLE			
REMOVALS PLAN			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	FEB 2017
PROJECT NO.		SCALE	
1239-0093		AS SHOWN	
SHEET NO.		REV NO.	
C-101		3	



**LEGEND**

---	ACCESS ROUTE BOUNDARY
---	PROPERTY LINE
---	WETLAND
⊗	TREE REMOVAL

NOTES:



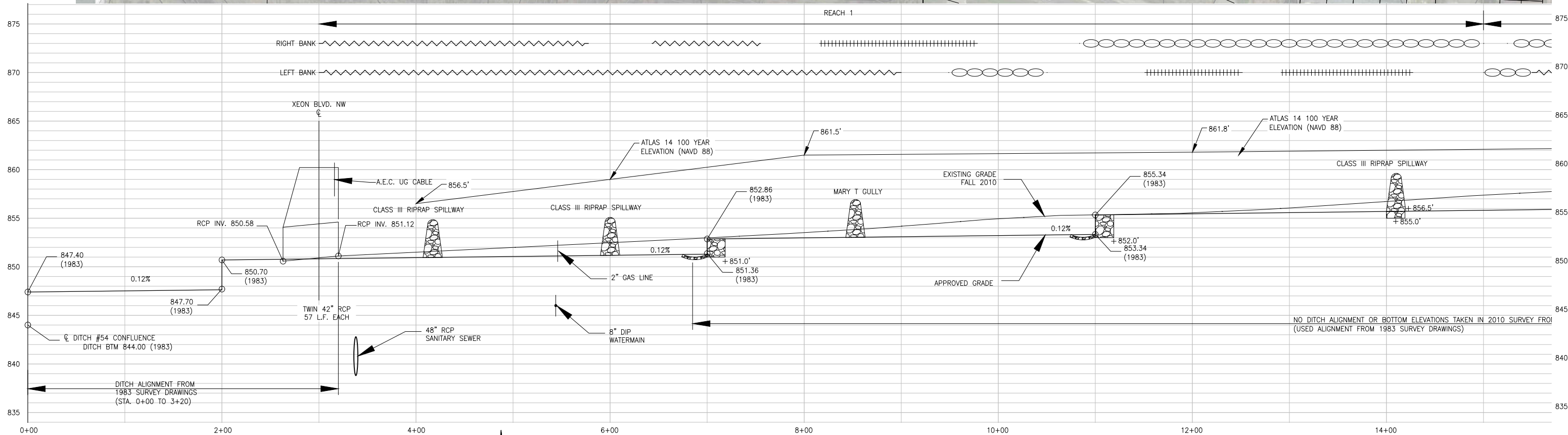
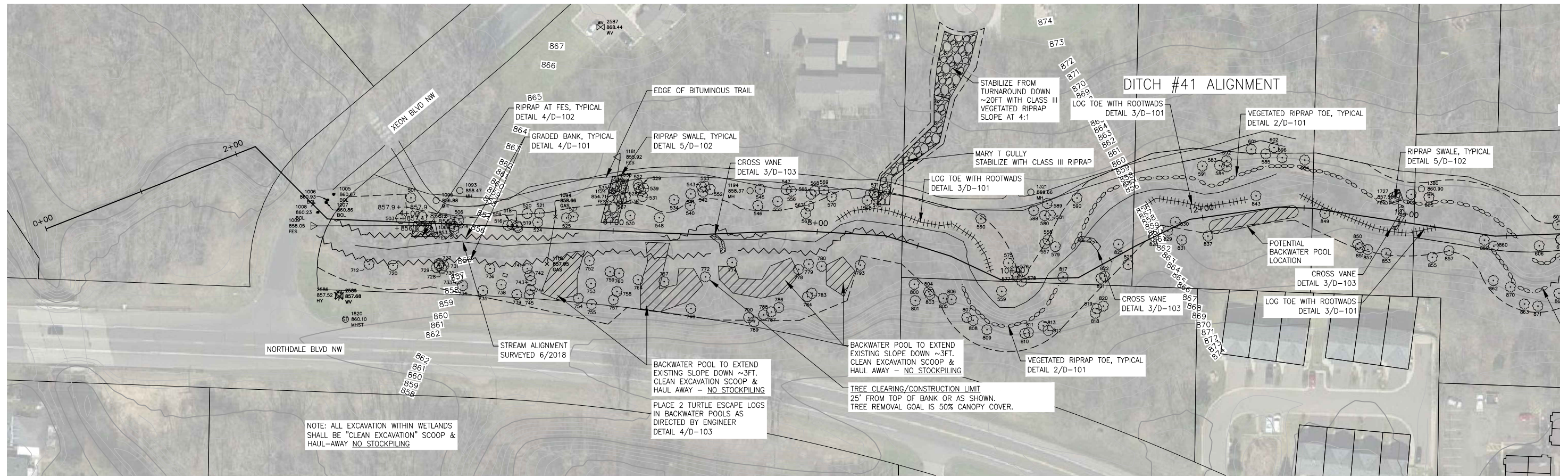
REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL

PRIME CONSULTANT



PROJECT TITLE		SHEET TITLE	
LOWER SAND CREEK CORRIDOR RESTORATION		REMOVALS PLAN	
COON CREEK WATERSHED DISTRICT		DWN BY	CHK'D
12301 CENTRAL AVE NE, SUITE 100 BLAINE, MN 55434		SJB	LNJ
		APP'D	DWG DATE
		EAM	FEB 2017
		SCALE AS SHOWN	
PROJECT NO.	SHEET NO.	REV NO.	
1239-0093	C-102	3	

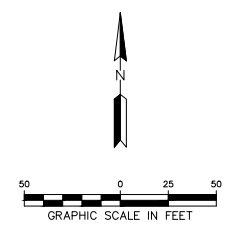


**LEGEND**

- ACCESS ROUTE BOUNDARY
- - - - - PROPERTY LINE
- ~~~~~ GRADED BANK
- ||||| LOG TOE WITH ROOT WADS
- VEGETATED RIPRAP TOE
- WETLAND
- ⊙ TREES TO REMAIN

**NOTES:**

- BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX MN 34-261 RIPARIAN SOUTH & WEST.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL	
------	--

PRIME CONSULTANT

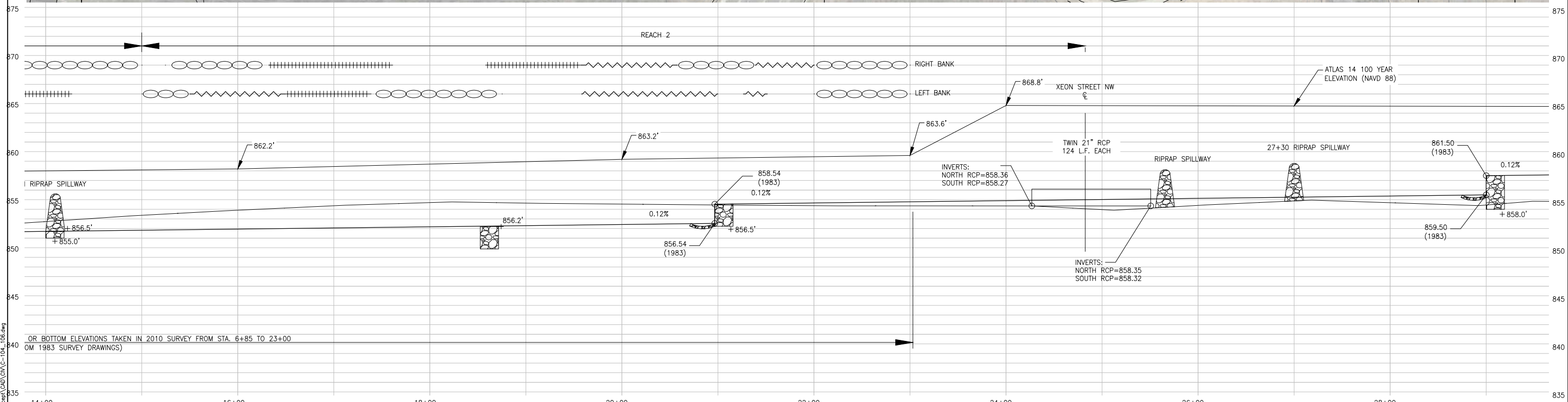
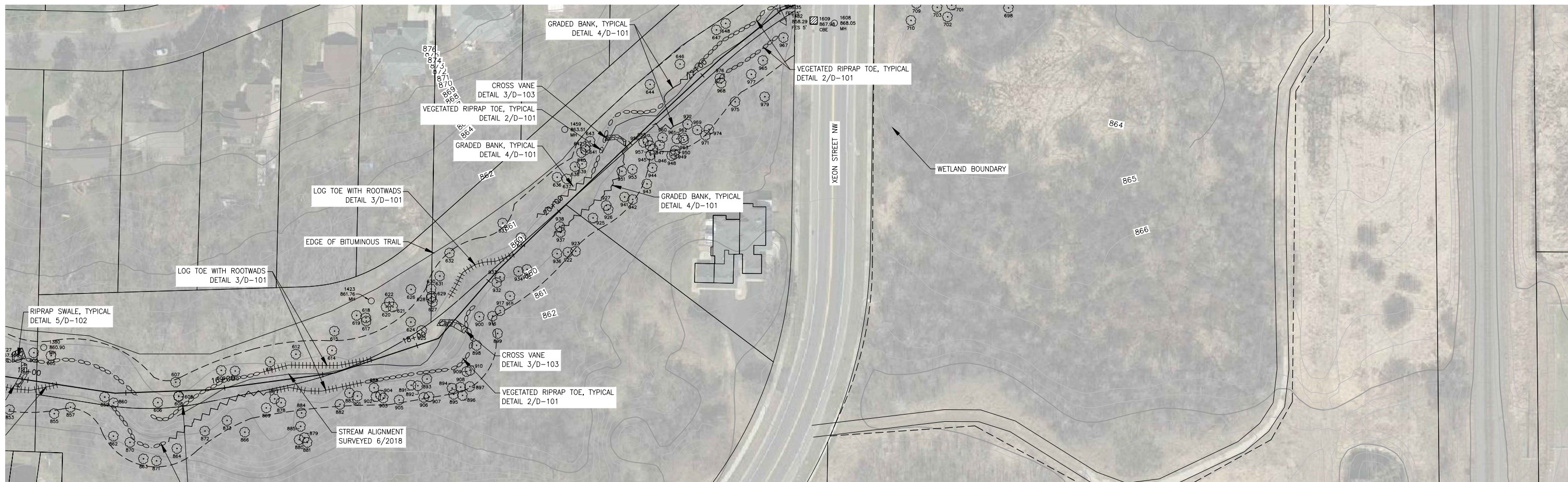
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
LOWER SAND CREEK CORRIDOR RESTORATION

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

SHEET TITLE <b>PROPOSED PLAN AND PROFILE STREAM TREATMENTS</b>			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE FEB 2017
PROJECT NO. 1239-0093	SHEET NO. C-103	SCALE AS SHOWN	REV NO. 3



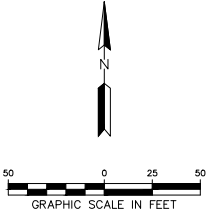
M:\229\XX Sand Creek Stabilization Concept\CAD\CAD-104-106.dwg

**LEGEND**

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

**NOTES:**

- BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX MN 34-261 RIPARIAN SOUTH & WEST.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL	
------	--

PRIME CONSULTANT

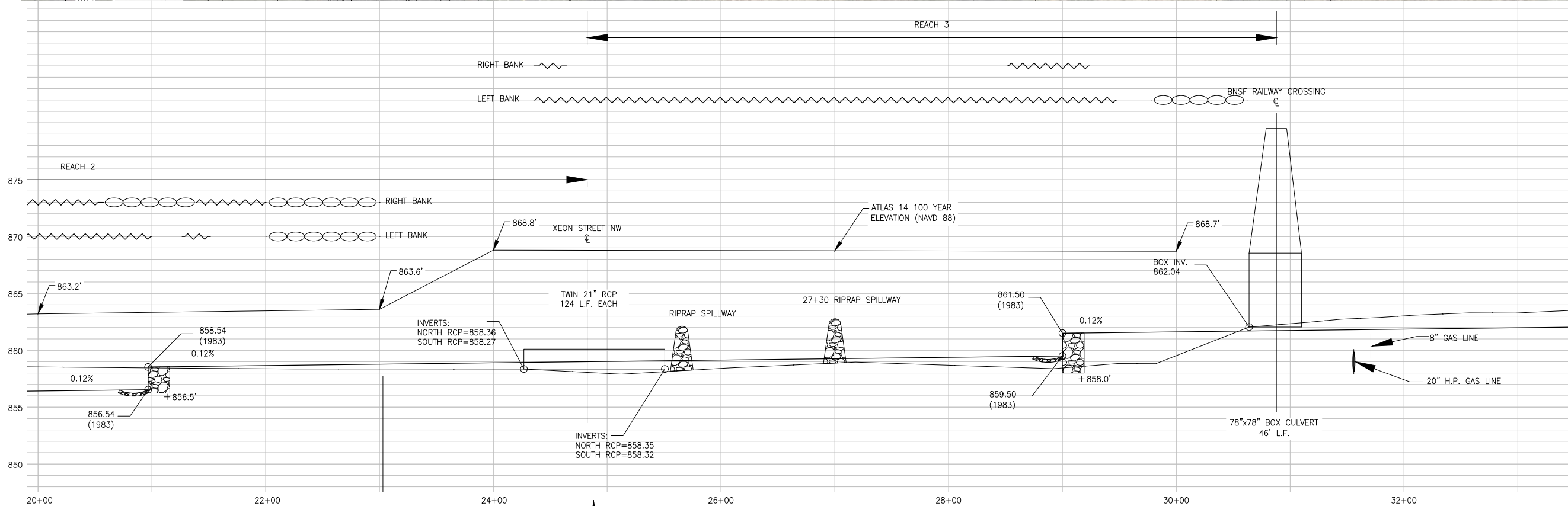
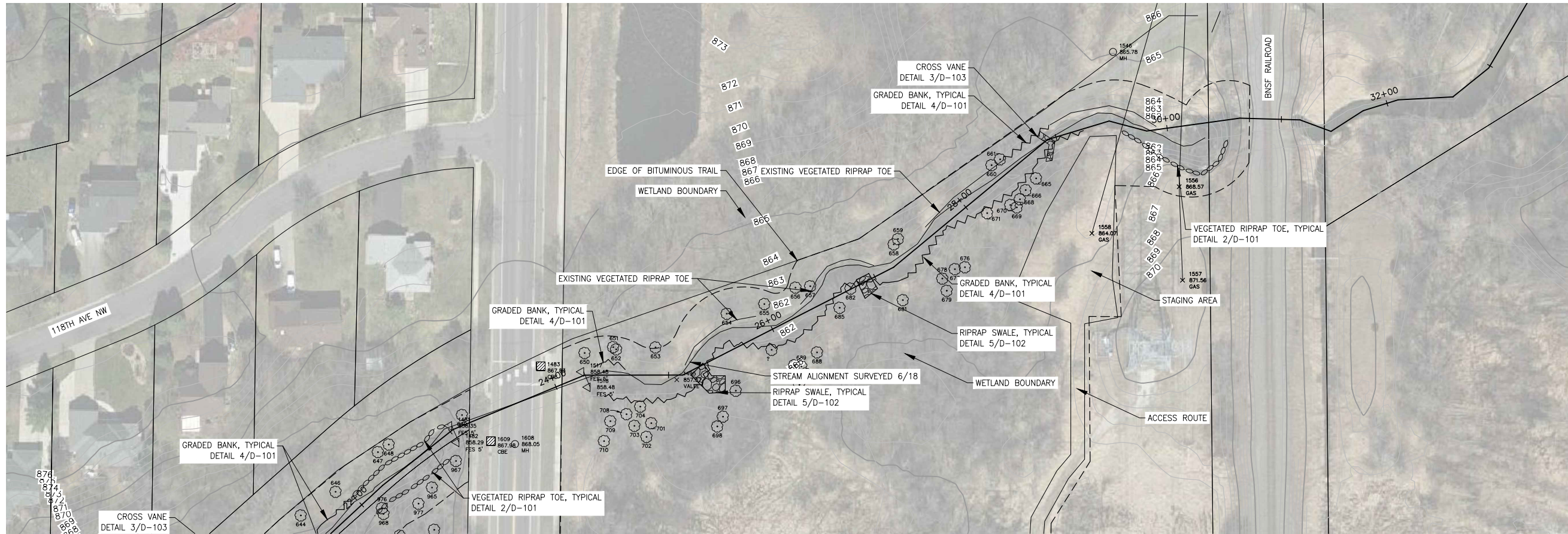
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
LOWER SAND CREEK CORRIDOR RESTORATION

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

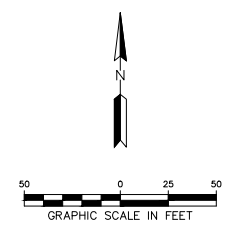
SHEET TITLE PROPOSED PLAN AND PROFILE STREAM TREATMENTS			
DWN BY SJB	CHK'D LNJ	APP'D EAM	DWG DATE FEB 2017
PROJECT NO. 1239-0093	SHEET NO. C-104	SCALE AS SHOWN	REV NO. 3



**LEGEND**

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

**NOTES:**  
 1. BANKS AND DISTURBED AREAS TO BE STABILIZED AND REVEGETATED WITH NATIVE SEED MIX MN 34-261 RIPARIAN SOUTH & WEST.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL

PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

PROJECT TITLE  
 LOWER SAND CREEK CORRIDOR RESTORATION

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
 BLAINE, MN 55434

SHEET TITLE			
PROPOSED PLAN AND PROFILE STREAM TREATMENTS			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	FEB 2017
PROJECT NO.		SCALE	
1239-0093		AS SHOWN	
SHEET NO.		REV NO.	
C-105		3	

**Party Responsible for Long Term Operation and Maintenance of the Site - OWNER**

Coon Creek Watershed District  
12301 Central Ave NE, Suite 100  
Blaine, MN 55434

Jon Janke, Operations and Maint. Coordinator  
763-755-0975  
jjanke@cooncreekwd.org

**Party Responsible for Implementation of the SWPPP - CONTRACTOR (TBD)**

Contractor	
Contact Name	
Phone	
Email	

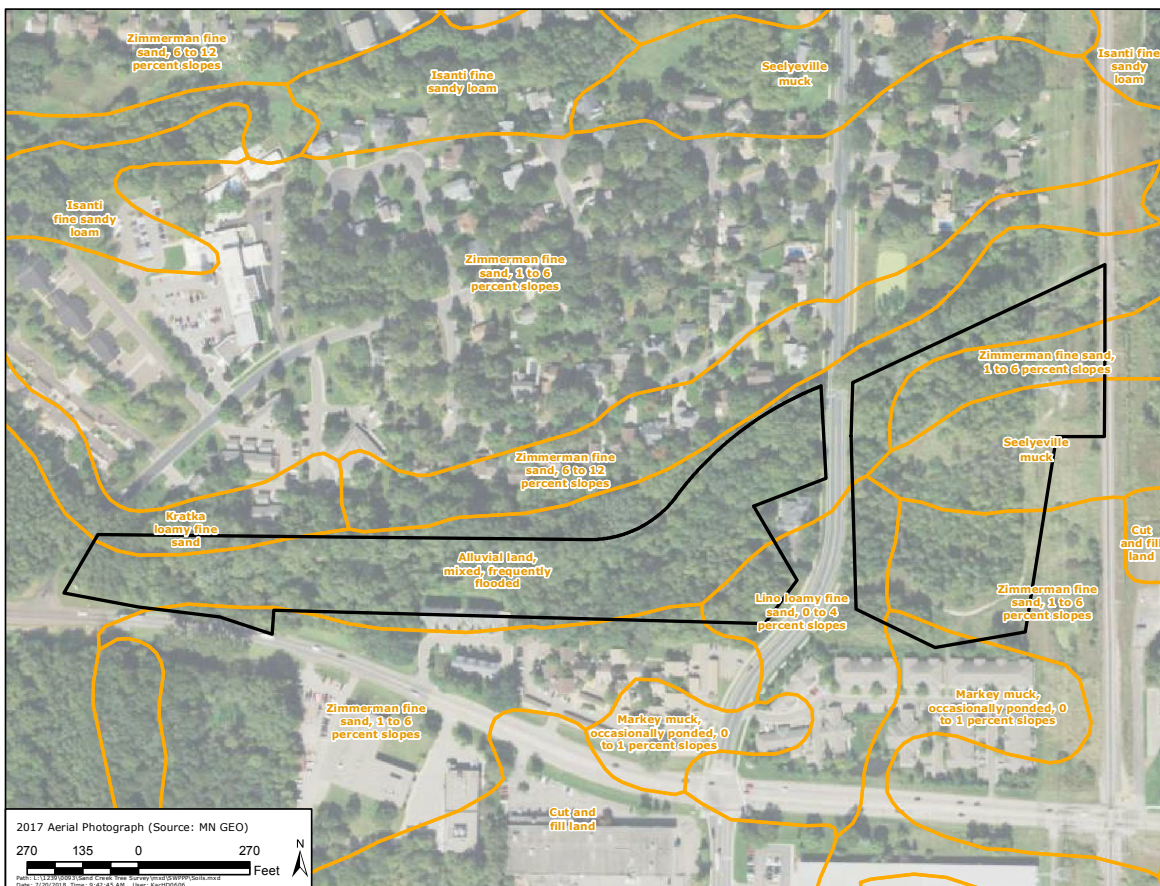
**Construction Dates:** Fall 2018/Winter 2019

**Project Description**

The project work consists restoring a degraded section of lower Sand Creek. The project site stretches from Xeon Boulevard on the west to the Burlington Northern Santa Fe railroad on the east. Ground disturbing activities include clearing and harvesting of trees and brush, and stabilization of the stream banks and bottom with bioengineered materials including vegetated riprap toes, log toes with root wads, rock grade control structures, and riprap swales.

**SURFACE AREA TABULATION**

Total Disturbed Area	±1.0 acres
Existing Impervious Area	±0.0 acres
Proposed Impervious Area	±0.0 acres
Net Impervious Area Increase	±0.0 acres



2017 Aerial Photograph (Source: MN GEO)  
270 135 0 270 Feet  
Date: 7/27/2018 Time: 9:41:45 AM User: KachD606

**EROSION AND SEDIMENT CONTROL PRACTICES**

All exposed soil areas must have temporary erosion protection (erosion control blanket, mulch, seed) as soon as possible or within 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

CONTRACTOR shall implement appropriate construction phasing, vegetative buffer strips, and other construction practices that minimize erosion when practical. **The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from the construction site, or diverts water around the site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water.** Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:

1. Installation of floating silt curtain around the banks at the downgradient extents of construction activity prior to disturbance. Floating silt curtain shall be installed as shown on Sheet D-102 and as directed by Engineer.
2. Installation of perimeter control in locations and quantities deemed adequate by the Engineer to protect sediment washing from restoration work activities.
3. Installation of a rock construction pad as shown on D-102. Install rock pad at the entrance to the access route to prevent sediment tracking onto paved public roads.
4. Haul offsite all excess soils as they are excavated. **No stockpiling of soils onsite will be allowed.**

**Temporary Sediment Basin**

Because this project will not disturb greater than 5 acres, a sedimentation basin is not required.

**Dewatering**

No dewatering is anticipated as part of this Project.

**Final Stabilization**

All areas disturbed by construction will be stabilized by installing erosion control blanket and receive seed according to the plans and specifications and within the specified vegetative time schedule.

Final stabilization will occur when the site has a uniform vegetative cover with a density of 70% over the entire disturbed area. All temporary synthetic erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization. All sediment must be cleaned out of conveyances and temporary sedimentation basins if applicable.

Notice of Termination (NOT) must be submitted within 30 days of final stabilization. Before Termination, revegetation establishment and coverage must meet the permit requirements.

**Pollution Prevention Measures**

**Solid Waste**

Solid waste, including but not limited to, collected asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other waste must be disposed of properly and must comply with MPCA disposal requirements.

**Hazardous Materials**

Hazardous materials, including but not limited to oil, gasoline, paint and any hazardous substance must be properly stored including secondary containments, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.

**Washing of Construction Vehicles**

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

**Amendments**

Amend the SWPPP as necessary to address any changes in design, construction, operation, maintenance, weather or seasonal conditions that have a significant effect on discharge of pollutants to surface or underground waters; or to address concerns identified during inspections or investigations by OWNER or MPCA.

**Record Retention**

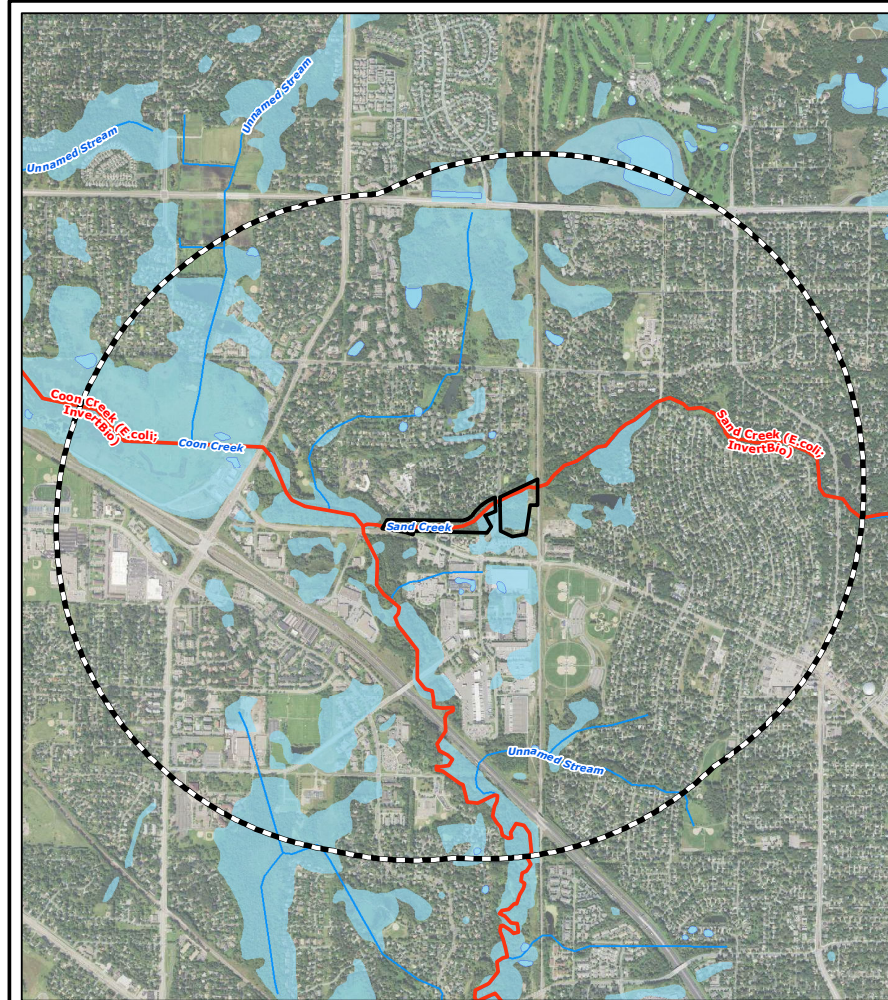
The SWPPP, all changes to it, and inspection and maintenance records must be kept on-site during construction. The OWNER must retain a copy of the SWPPP along with the following records for three (3) years after submittal of the Notice of Termination.

1. Any other permits required for the project;
2. Records of all inspection and maintenance conducted during construction;
3. All permanent operations and maintenance agreements that have been implemented, including all right of way, contract, covenants and other binding requirements regarding perpetual maintenance; and
4. All required calculations for design of the temporary and permanent stormwater management systems.

**Inspections**

The inspection log will be completed by the CONTRACTOR for the construction site. Inspections at the site will be completed as follows:  
Once every seven (7) days during active construction and,  
Within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.

The individual performing inspections must be trained as required by part IV.E of the Permit. CONTRACTOR to provide OWNER with proof of training. Inspections must include stabilized areas, erosion prevention and sediment control BMPs, and infiltration areas. Corrective actions must be identified and date of correction must be noted as identified in Section IV.E. of the Permit.



Path: L:\1239\0093\Sand Creek Tree Survey\mxd\SWPPP\Impaired Waters and Wetlands.mxd  
Date: 7/20/2018 Time: 9:43:50 AM User: KachD606

**Legend**

- Property Location
- 1 Mile Radius
- 2018 MPCA Impaired Streams (Draft)
- 2018 MPCA Impaired Lakes (Draft)
- Lake, Pond or Reservoir
- River or Stream (polygon)
- Trout Lakes
- Trout Stream
- Rivers and Streams
- National Wetland Inventory

2,000 1,000 0 2,000 Feet

**IMPAIRED WATERS, SPECIAL WATERS, AND WETLANDS**

This Project is not located within 1 mile of a special water.

This Project is located directly on an impaired water (see figure above):  
Sand Creek is impaired for *E. coli*, aquatic macroinvertebrate bioassessments. An EPA-approved TMDL has been completed for this water.

Because of the proximity of the project to an impaired water during construction, all exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than **7 days** after the construction activity in that portion of the site has temporarily or permanently ceased.

This Project will temporarily impact wetlands. Adverse impacts will be mitigated onsite.

UNIVERSITY OF MINNESOTA

**Louis H Sigtermans**  
Minneapolis, MN

Design of Construction SWPPP  
(May 31, 2020)

**CERTIFICATION**

In accordance with Part III.A.2 of the General Permit Authorization to Discharge Stormwater Associated with Construction Activity under the NPDES, the preparer of this document was trained under the University of Minnesota Erosion and Sediment Control Certification Program. Mr. Louis Sigtermans' certification in Design of SWPPP is valid through May 31, 2020.

					SEAL
3	FOR BIDDING	SJB	EAM	07/25/18	
2	90% DESIGN	SJB	EAM	06/12/18	
1	60% DESIGN	LNJ	EAM	12/20/17	
0	CONCEPT DESIGN	SJB	EAM	02/02/17	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	

PRIME CONSULTANT



Responsive partner. Exceptional outcomes.

PROJECT TITLE

SAND CREEK STABILIZATION

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

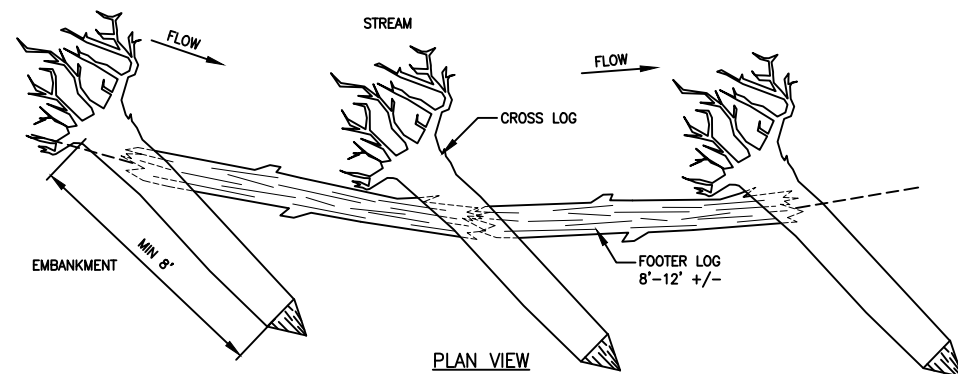
SHEET TITLE

SWPPP

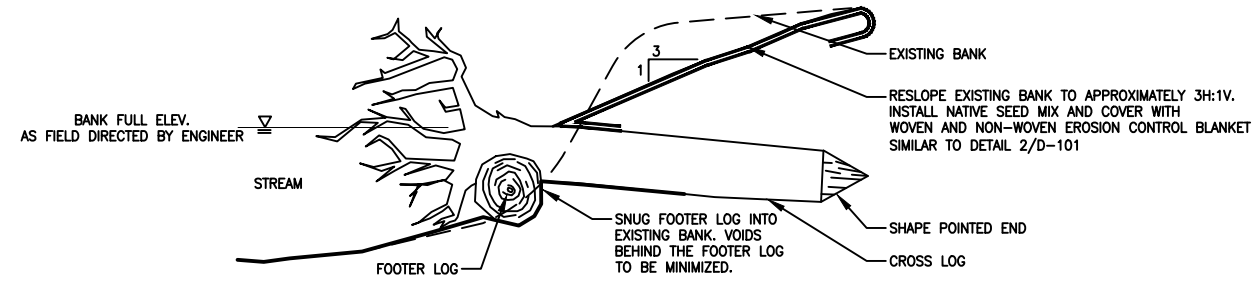
DWN BY: SJB | CHK'D: LNJ | APP'D: EAM | DWG DATE: FEB 2017 | SCALE: AS SHOWN

PROJECT NO.: 1239-0093 | SHEET NO.: EC-101 | REV NO.: 3





PLAN VIEW

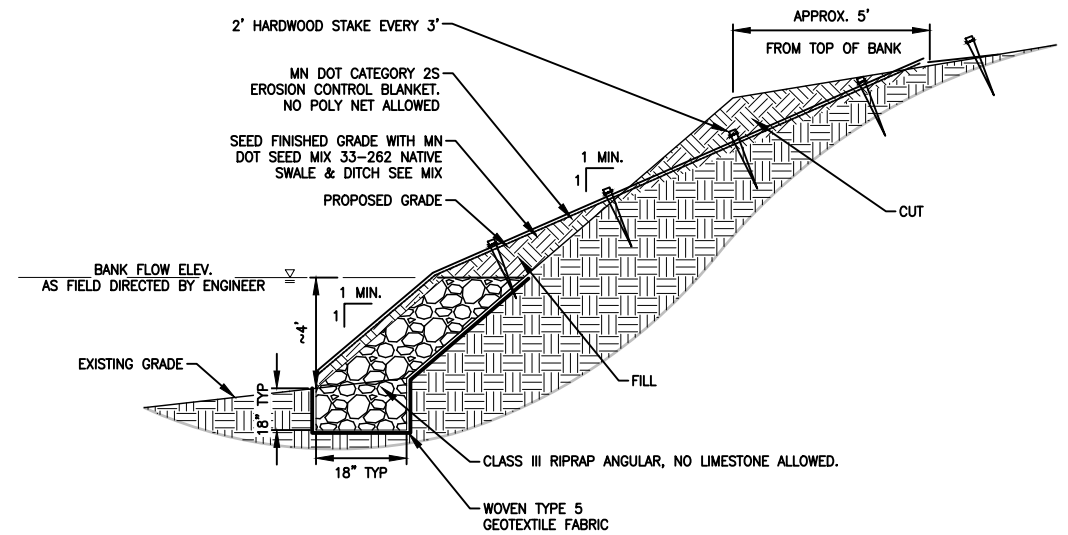


SECTION VIEW

- NOTE:
1. A MINIMUM OF TWO CROSS LOGS PER FOOTER LOG IS REQUIRED TO ANCHOR FOOTER LOG.
  2. MINIMUM LOG DIAMETER IS 12" +/-

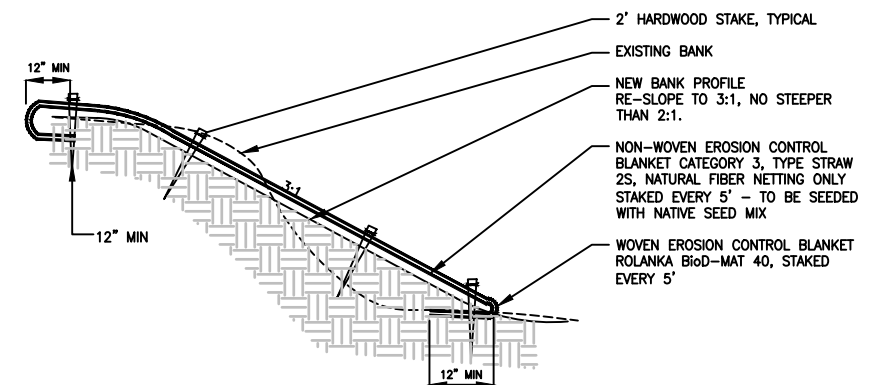
LOG TOE WITH ROOTWADS

NOT TO SCALE



VEGETATED RIPRAP TOE

NOT TO SCALE



NOTE: PROVIDE FLOTATION SILT CURTAIN TO CONTAIN SOIL MATERIAL DURING BANK RESLOPING OPERATIONS. FLOTATION SILT CURTAIN SHALL BE MAINTAINED AND RELOCATED AS OPERATIONS OF BANK RESLOPING PROGRESS. FLOTATION SILT CURTAIN SHALL NOT BE RELOCATED UNTIL CURRENT SITE IS STABILIZED.

GRADED BANK

NOT TO SCALE



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL

PRIME CONSULTANT



Responsive partner. Exceptional outcomes.

PROJECT TITLE

LOWER SAND CREEK CORRIDOR RESTORATION

COON CREEK WATERSHED DISTRICT

12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

SHEET TITLE

DETAILS

DWN BY SJB

CHK'D LNJ

APP'D EAM

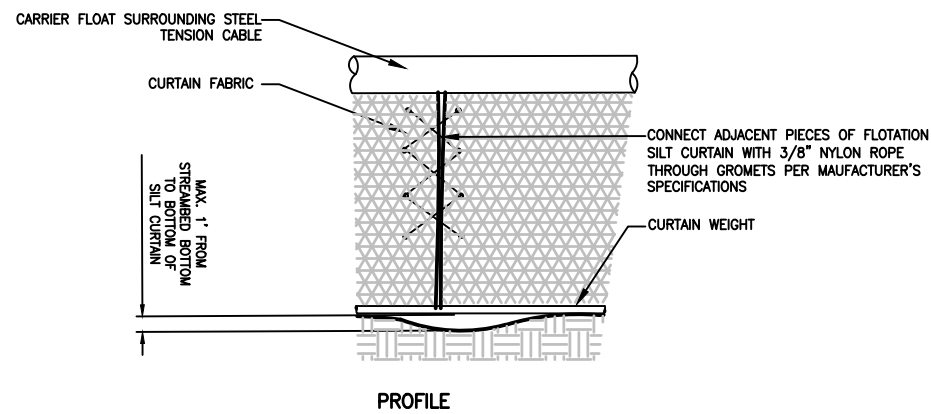
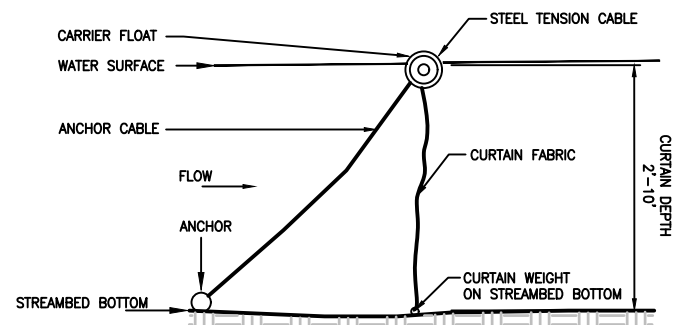
DWG DATE FEB 2017

SCALE AS SHOWN

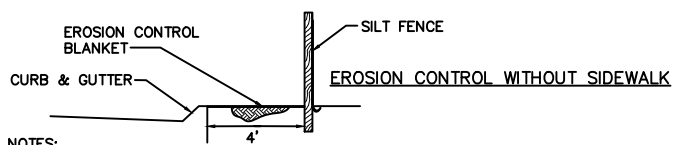
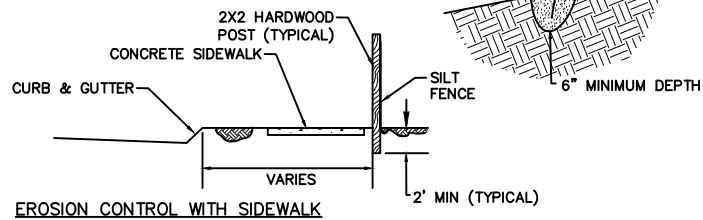
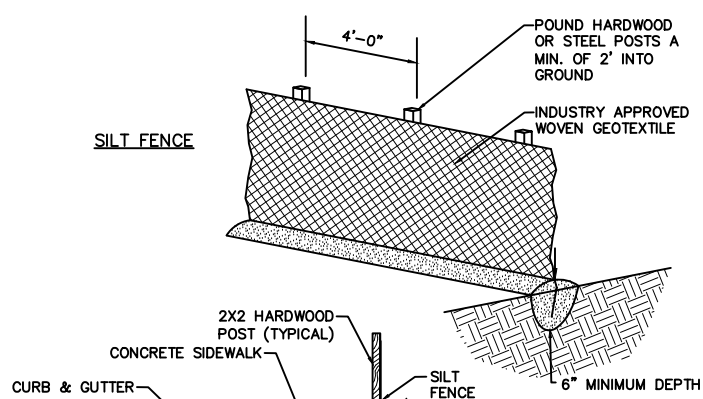
PROJECT NO. 1239-0093

SHEET NO. D-101

REV NO. 3

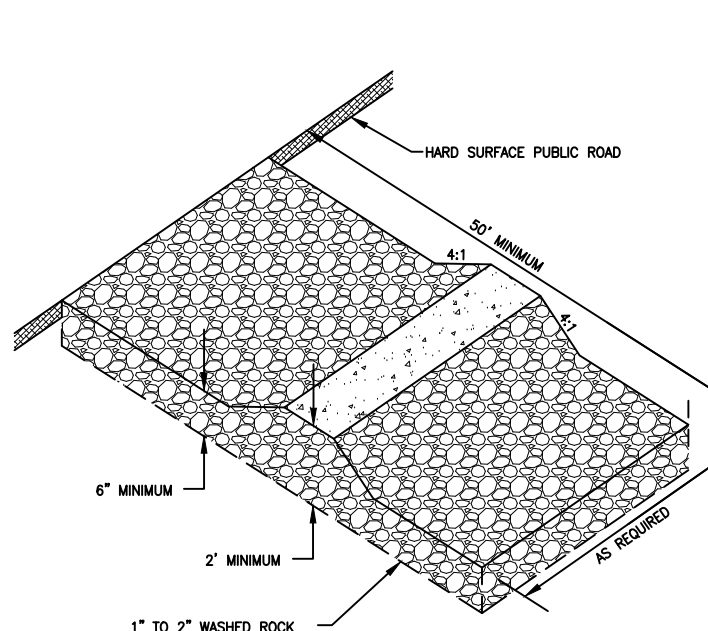


**FLOTATION SILT CURTAIN**  
NOT TO SCALE



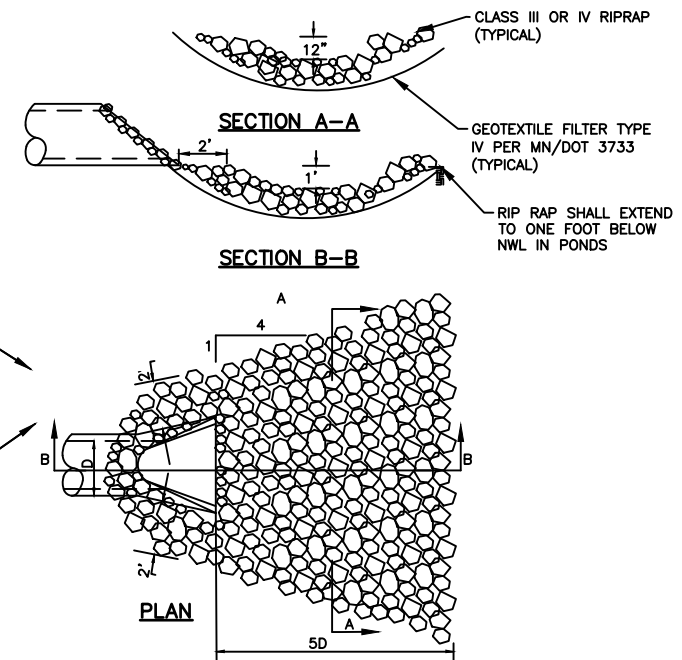
- NOTES:**
1. INSTALL SILT FENCE PER PLAN SET BEFORE BEGINNING CONSTRUCTION
  2. INSTALL SILT FENCE AND EROSION CONTROL BLANKET BEHIND CURB & GUTTER AS SHOWN
  3. REPLACE TORN, OVERBURDENED, OR DECOMPOSING SILT FENCE WITHIN 24 HOURS
  4. TO JOIN SECTIONS OF SILT FENCE, POSITION POSTS TO OVERLAP. FABRIC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

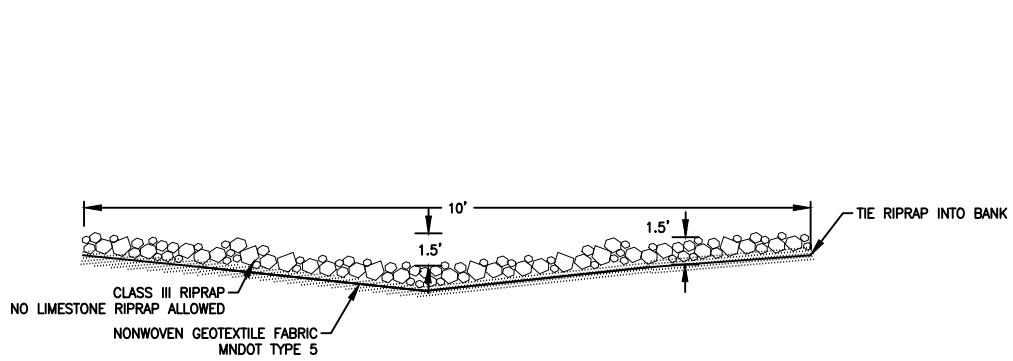
**ROCK ENTRANCE TO CONSTRUCTION SITE**  
NOT TO SCALE



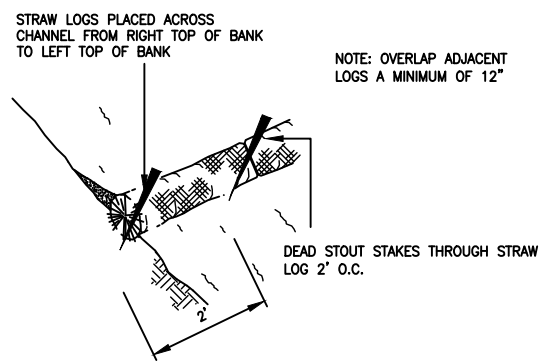
**PIPE DIAMETER RIPRAP**

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

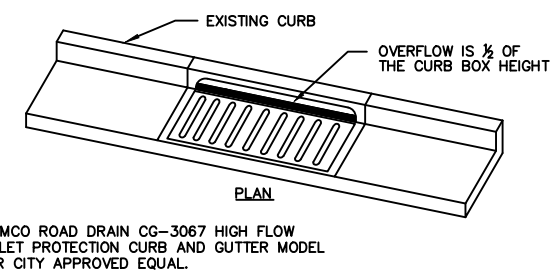
**RIPRAP AT FLARED END SECTIONS DETAIL**  
NOT TO SCALE



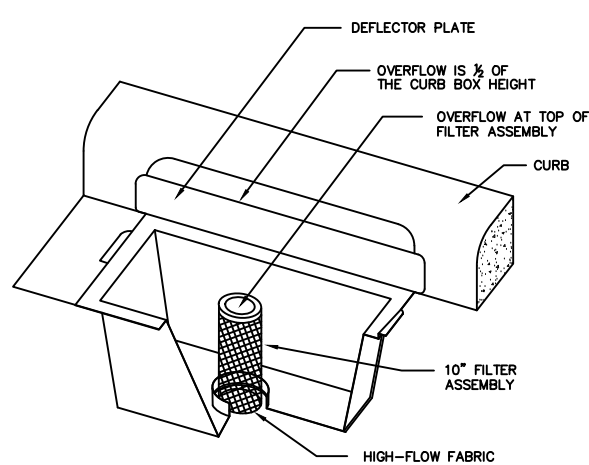
**RIPRAP SWALE**  
NOT TO SCALE



**BIOROLL DETAIL**  
NOT TO SCALE



**INLET PROTECTION DETAIL**  
NOT TO SCALE



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

PRIME CONSULTANT

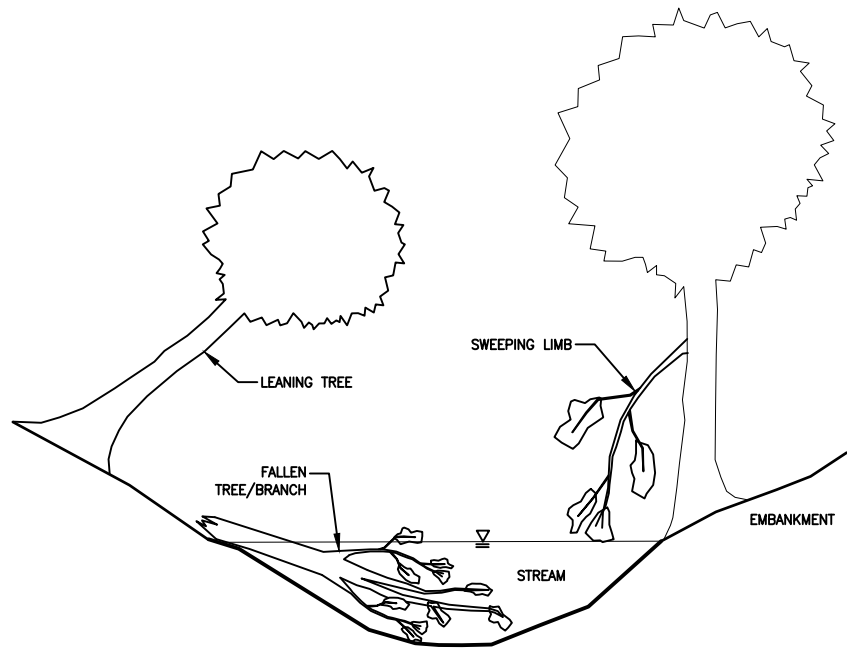
Responsive partner. Exceptional outcomes.

PROJECT TITLE  
**LOWER SAND CREEK CORRIDOR RESTORATION**

COON CREEK WATERSHED DISTRICT

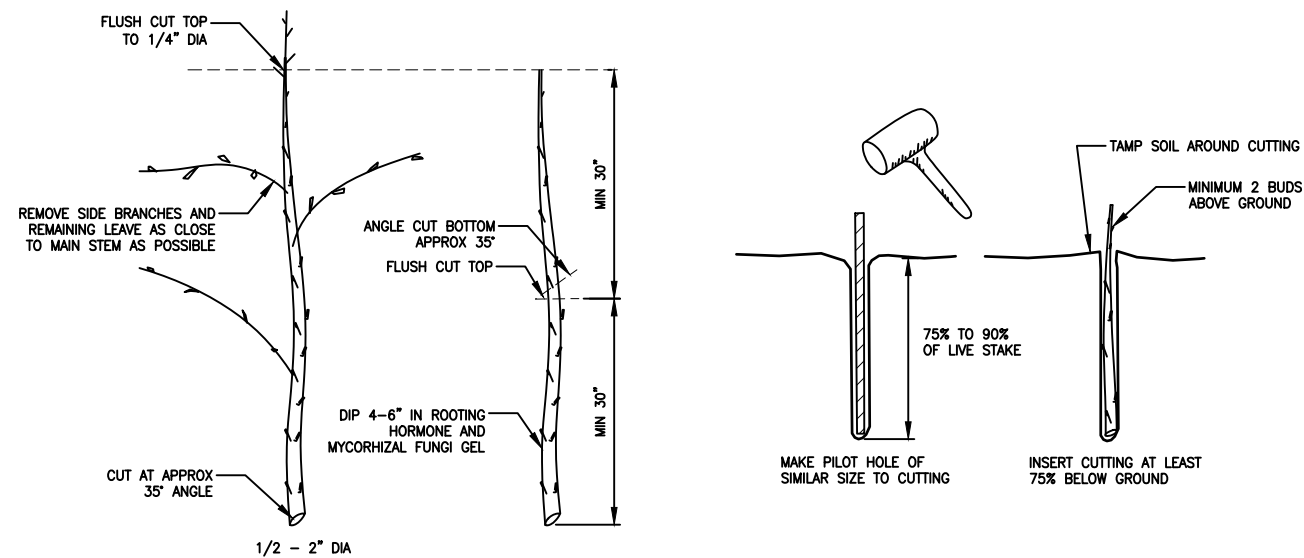
12301 CENTRAL AVE NE, SUITE 100  
BLAINE, MN 55434

SHEET TITLE			
<b>DETAILS</b>			
DWN BY	CHK'D	APP'D	DWG DATE
SJB	LNJ	EAM	FEB 2017
PROJECT NO.		SCALE	AS SHOWN
1239-0093		D-102	3



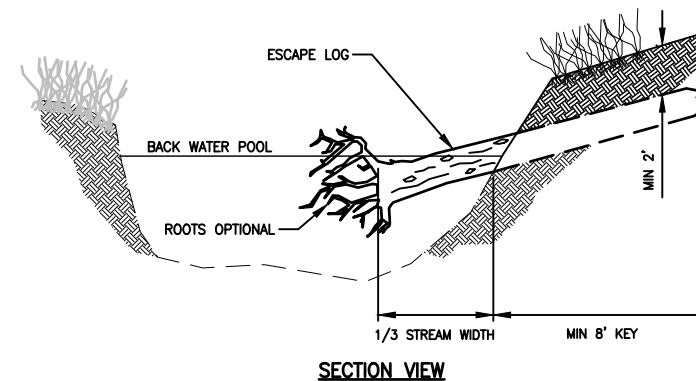
NOTE:  
REMOVE ALL LEANING, SWEEPING LIMBS, AND FALLEN TREE/BRANCHES AS DEPICTED ABOVE. ALL CUTTINGS SHOULD BE REUSED ON-SITE.

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



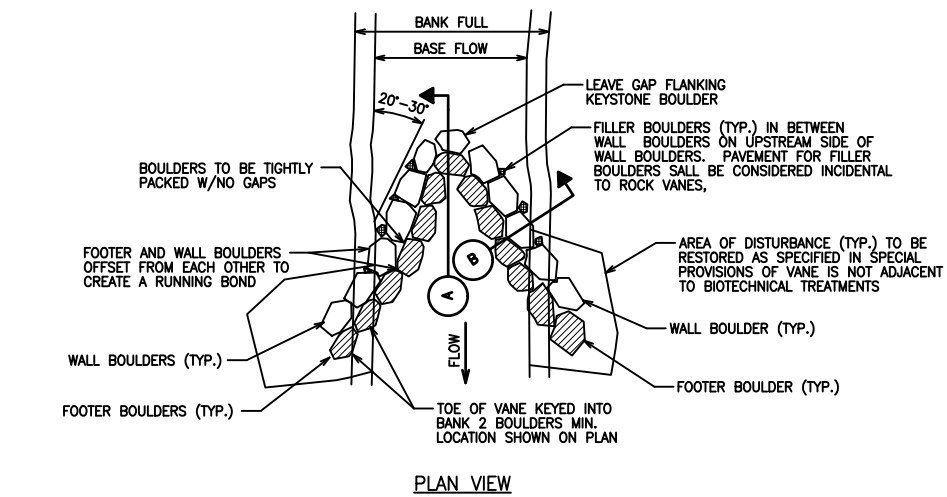
- NOTES:
- HARVEST AND PLANT STAKES DURING THE DORMANT SEASON
  - USE HEALTHY, STRAIGHT, LIVE WOOD AT LEAST 1 YEAR OLD
  - MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT THE ENDS DURING INSTALLATION. USE A PILOT AR IN FOIRM SOILS
  - SOAK CUTTING FOR 24 HOURS (MINIMUM) PRIOR TO INSTALLATION
  - DIP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

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



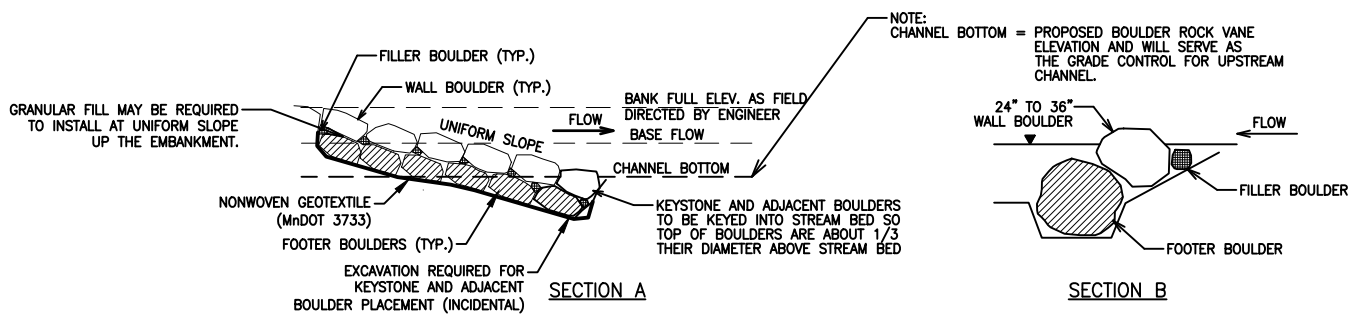
- NOTE:  
1. ROOT WADS CAN DOUBLE AS ESCAPE LOGS  
2. ROOT WAD TO BE PLACED AS DIRECTED SO THAT ROOT END IS SUBMERGED BELOW THE NORMAL WATER LEVEL

**ESCAPE LOG (AMPHIBIOUS HABITAT STRUCTURE) - DETAIL** 4  
NOT TO SCALE D-103



- LEGEND
- SUBMERGED OR FOOTER 24" TO 30" FIELDSTONE BOULDER MEETING MnDOT 3601.2A. AT LEAST 20% OF THE BOULDERS SHALL HAVE A DIAMETER OF 24" OR LARGER.
  - PROTRUDING OR WALL 30" TO 36" BOULDERS MEETING MnDOT 3601.2A. 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 RIPRAP ACCEPTABLE ROCK ALTERNATIVE



**CROSS VANE DETAIL** 3  
NOT TO SCALE D-103

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
3	FOR BIDDING	SJB	EAM	07/25/18
2	90% DESIGN	SJB	EAM	06/12/18
1	60% DESIGN	LNJ	EAM	12/20/17
0	CONCEPT DESIGN	SJB	EAM	02/02/17

SEAL	
------	--

PRIME CONSULTANT

Responsive partner. Exceptional outcomes.

PROJECT TITLE	LOWER SAND CREEK CORRIDOR RESTORATION
PROJECT NO.	1239-0093
COON CREEK WATERSHED DISTRICT	12301 CENTRAL AVE NE, SUITE 100 BLAINE, MN 55434

SHEET TITLE				DETAILS			
DWN BY	CHK'D	APP'D	DWG DATE	FEB 2017			
SJB	LNJ	EAM	SCALE	AS SHOWN			
SHEET NO.		D-103		REV NO.		3	