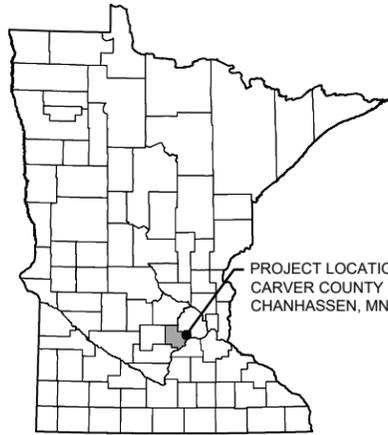


# UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN

## RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT



### MINNESOTA COUNTY MAP

#### CONTACTS:

##### ENGINEER CONTACT:

Jessica Olson  
Barr Engineering Co.  
325 South Lake Avenue  
Duluth, MN 55802  
218-259-7118  
jolson@barr.com

##### OWNER'S REPRESENTATIVE CONTACT:

Terry Jeffery  
Interim District Administrator  
Riley Purgatory Watershed District  
18681 Lake Drive East  
Chanhassen, MN 55317  
952-807-8885  
tjeffery@rbpcwd.org

##### PROPERTY OWNER'S REPRESENTATIVE:

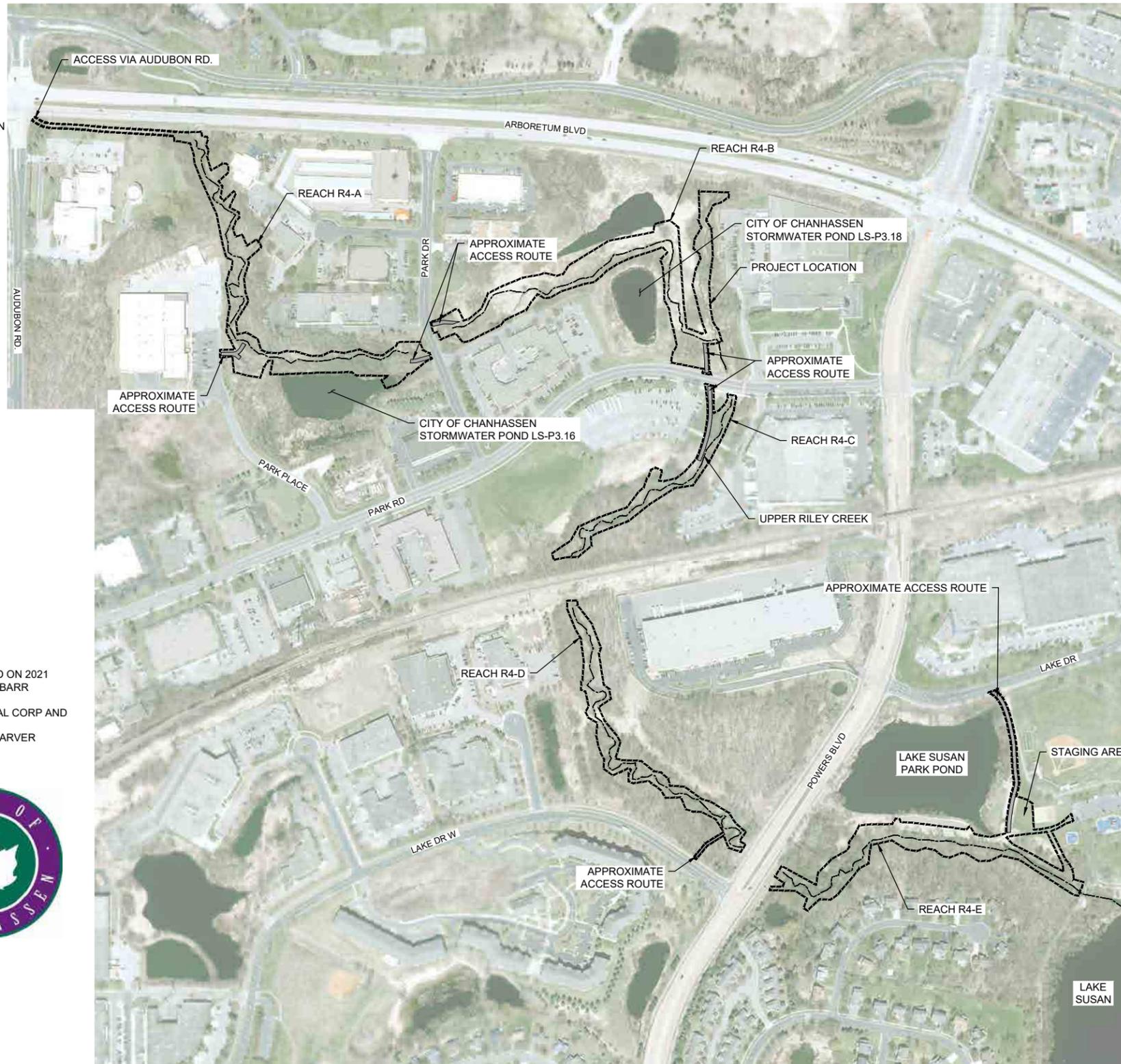
Joe Seidl  
Water Resources Engineer  
City of Chanhassen  
jseidl@chanhassenmn.gov  
PH. 952-227-1168  
FX. 952-227-1170  
www.chanhassenmn.gov

#### GENERAL NOTES:

- CONTOUR DATA SHOWN IN THIS PLAN SET IS BASED ON 2021 LIDAR TOPOGRAPHY AND SURVEY PERFORMED BY BARR ENGINEERING IN MARCH 2021.
- IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
- HORIZONTAL DATUM AND COORDINATE SYSTEM: CARVER COUNTY COORDINATES, NAD83, US SURVEY FEET.
- VERTICAL DATUM: NAVD88.



GOPHER STATE ONE CALL:  
CALL BEFORE YOU DIG.  
1-800-252-1166



### INDEX OF SHEETS

G-01	TITLE SHEET, PROJECT LOCATION, AND SHEET INDEX
G-02	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
G-03	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
G-04	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-A
G-05	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4A
G-06	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, POND LS-P3.16
G-07	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-B
G-08	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-B
G-09	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-C
G-10	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-C
G-11	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-C & R4-D
G-12	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-D
G-13	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-D & R4-E
G-14	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-E
G-15	REMOVALS, EROSION CONTROL AND TREE PROTECTION PLAN, R4-E
G-16	EROSION CONTROL DETAILS
G-17	FLOODPLAIN AND WETLAND BOUNDARIES - HWY 5 TO PARK DR.
G-18	FLOODPLAIN AND WETLAND BOUNDARIES - PARK DR. TO PARK RD.
G-19	FLOODPLAIN AND WETLAND BOUNDARIES - RAILROAD CROSSING
G-20	FLOODPLAIN AND WETLAND BOUNDARIES - RAILROAD CROSSING TO POWERS BLVD.
G-21	FLOODPLAIN AND WETLAND BOUNDARIES - POWERS BLVD. TO LAKE SUSAN

C-01	SITE LAYOUT
C-02	TYPICAL STREAM SECTIONS
C-03	STREAM STABILIZATION PLAN, R4-A (STA. 0+00 - 9+00)
C-04	STREAM STABILIZATION PROFILE & SECTIONS, R4-A (STA. 0+00 - 9+00)
C-05	STREAM STABILIZATION PLAN, R4-A (STA. 9+00 - 18+00)
C-06	STREAM STABILIZATION PROFILE & SECTIONS, R4-A (STA. 9+00 - 18+00)
C-07	STREAM STABILIZATION PLAN, R4-B (STA. 18+00 - 27+00)
C-08	STREAM STABILIZATION PROFILE & SECTIONS, R4-B (STA. 18+00 - 27+00)
C-09	STREAM STABILIZATION PLAN, R4-B (STA. 27+00 - 36+00)
C-10	STREAM STABILIZATION PROFILE & SECTIONS, R4-B (STA. 27+00 - 36+00)
C-11	TRIBUTARY STABILIZATION PLAN, R4-B
C-12	TRIBUTARY STABILIZATION PROFILE & SECTIONS, R4-B
C-13	STREAM STABILIZATION PLAN, R4-C (STA. 36+00 - 45+00)
C-14	STREAM STABILIZATION PROFILE & SECTIONS, R4-C (STA. 36+00 - 45+00)
C-15	STREAM STABILIZATION PLAN, R4-C & R4-D (STA. 45+00 - 54+00)
C-16	STREAM STABILIZATION PROFILE & SECTIONS, R4-C & R4-D (STA. 45+00 - 54+00)
C-17	STREAM STABILIZATION PLAN, R4-D (STA. 54+00 - 63+00)
C-18	STREAM STABILIZATION PROFILE & SECTIONS, R4-D (STA. 54+00 - 63+00)
C-19	STREAM STABILIZATION PLAN, R4-D & R4-E (STA. 63+00 - 72+00)
C-20	STREAM STABILIZATION PROFILE & SECTIONS, R4-D & R4-E (STA. 63+00 - 72+00)
C-21	STREAM STABILIZATION PLAN, R4-E (STA. 72+00 - 81+00)
C-22	STREAM STABILIZATION PROFILE & SECTIONS, R4-E (STA. 72+00 - 81+00)
C-23	STREAM STABILIZATION PLAN, R4-E (STA. 81+00 - 86+56)
C-24	STREAM STABILIZATION PROFILE & SECTIONS, R4-E (STA. 81+00 - 87+00)
C-25	POND MAINTENANCE PLAN, POND LS-P3.16

D-01	STREAM STABILIZATION DETAILS
D-02	STREAM STABILIZATION DETAILS
D-03	STREAM STABILIZATION DETAILS
D-04	STREAM STABILIZATION DETAILS
D-05	STREAM STABILIZATION DETAILS
D-06	STREAM STABILIZATION DETAILS
D-07	STREAM STABILIZATION DETAILS
D-08	STREAM STABILIZATION DETAILS
D-09	CITY OF CHANHASSEN STANDARD PLATES

R-01	RESTORATION PLAN
R-02	RESTORATION PLAN
R-03	RESTORATION PLAN
R-04	RESTORATION PLAN
R-05	RESTORATION PLAN
R-06	RESTORATION PLAN
R-07	RESTORATION PLAN
R-08	RESTORATION PLAN
R-09	RESTORATION PLAN
R-10	RESTORATION PLAN
R-11	RESTORATION PLAN
R-12	RESTORATION PLAN
R-13	RESTORATION PLAN
R-14	PLANTING DETAILS
R-15	PLANTING DETAILS



100% DESIGN  
ISSUED FOR BID

<p>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</p>				<p>CLIENT BID CONSTRUCTION RECORD</p>				<p>08/31/22 08/17/23 08/23/23</p>				<p>Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435</p>				<p>Scale AS SHOWN Date 08/23/2023 Drawn EPF Checked JCO Designed BARR Approved SAS</p>				<p>RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.</p>				<p>UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN</p>				<p>BARR PROJECT No. 23/27-0053.14</p>			
<p>PRINTED NAME JESSICA OLSON</p>				<p>RELEASED TO/FOR</p>				<p>A B C 0 1 2 3</p>				<p>Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com</p>				<p>TITLE SHEET, PROJECT LOCATION &amp; SHEET INDEX</p>				<p>CLIENT PROJECT No.</p>											
<p>SIGNATURE [Signature] DATE 08/23/2023 LICENSE # 43102</p>				<p>DATE RELEASED</p>				<p>DATE</p>				<p>DWG. No. G-01</p>				<p>REV. No. 0</p>															
<p>NO. BY CHK. APP. DATE REVISION DESCRIPTION</p>				<p>0 EPF JCO SAS 08/23/2023 ISSUED FOR BID</p>				<p>0</p>				<p>0</p>				<p>0</p>															

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\27\0053.14\UPPER RILEY CREEK\23\27\0053\_G-01\_TITLE SHEET.DWG PLOT SCALE: 1/2"=100' DATE: 8/23/2023 11:47 AM

**1.0 GENERAL CONSTRUCTION ACTIVITY INFORMATION:**

THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED IN COMPLIANCE WITH THE MINNESOTA GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY NO. MNR100001 (GENERAL PERMIT), AS REQUIRED BY THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) PROGRAM.

THE PROJECT IS LOCATED IN THE CITY OF CHANHASSEN, CARVER COUNTY, MINNESOTA. PROPOSED CONSTRUCTION ACTIVITIES WILL TAKE PLACE WITHIN SECTION 14 TOWNSHIP 116 NORTH RANGE 23 WEST. THE APPROXIMATE CENTROID OF THE PROJECT HAS A LATITUDE OF 44.8563639 AND A LONGITUDE OF -93.5550000.

THIS PROJECT INVOLVES THE REPAIR OF EROSION ON THE EXISTING BANKS OF RILEY CREEK TO REDUCE THE TRANSPORT OF EXCESS SEDIMENT DOWNSTREAM TO LAKE SUSAN. CONSTRUCTION WILL CONSIST OF CLEARING AND GRUBBING, CONSTRUCTION OF ACCESS AND STAGING AREAS, EARTHWORK REPAIRING ERODED BANKS, CONSTRUCTING ROCK RIFFLES, REGRADING THE CHANNEL, PLACEMENT OF RIPRAP, INSTALLATION OF ROCK VANES, CONSTRUCTION OF VEGETATED REINFORCEMENT SOIL SLOPES (VRSS) AND TOE WOOD, DREDGING OF A CONNECTED POND AND RESTORATION THROUGH SEEDING AND EROSION CONTROL BLANKET. THE PROJECT IS NOT A PART OF A LARGER COMMON PLAN OF DEVELOPMENT. THE PROJECT AS PROPOSED HAS A TOTAL DISTURBANCE AREA OF 14.75 ACRES. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE REQUIRED TO MINIMIZE SEDIMENT FROM BEING TRANSPORTED INTO LAKE SUSAN, REFER TO PROJECT DRAWINGS FOR FURTHER DETAILS. (CSW PERMIT PART III.A.1)

**1.1 PROJECT SIZE AND CUMULATIVE IMPERVIOUS SURFACE:**

- THE ANTICIPATED AREA OF DISTURBANCE IS APPROXIMATELY 14.41.
- THE TOTAL AREA OF PRE-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0.27 ACRES.
- THE TOTAL AREA OF POST-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0.20 ACRES.
- THE TOTAL NEW IMPERVIOUS AREA IS APPROXIMATELY -0.07 ACRES.

**1.2 DATES OF CONSTRUCTION:**

- ANTICIPATED START DATE: FALL 2023 ANTICIPATED END DATE: SPRING 2024

**1.3 CONTACT INFORMATION:**

OWNER: RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT  
 MAILING ADDRESS: 18681 LAKE DRIVE EAST, CHANHASSEN, MN. 55317  
 CONTACT PERSON: TERRY JEFFERY TITLE: DISTRICT ADMINISTRATOR  
 PHONE NUMBER: 952-807-6885 EMAIL ADDRESS: tjeffery@RPBCWD.ORG  
 ALTERNATE CONTACT PERSON: SCOTT SOBIECH TITLE: DISTRICT ENGINEER  
 PHONE NUMBER: 952-832-2755 EMAIL ADDRESS: ssobiech@BARR.COM

OPERATOR / GENERAL CONTRACTOR (WILL OVERSEE IMPLEMENTATION OF THE SWPPP): TBD  
 MAILING ADDRESS: TBD TITLE: TBD  
 CONTACT PERSON: TBD EMAIL ADDRESS: TBD  
 PHONE NUMBER: TBD

PARTY RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM:  
 CITY OF CHANHASSEN  
 MAILING ADDRESS: 7700 MARKET BLVD., CHANHASSEN, MN. 55317  
 CONTACT PERSON: JOE SEIDL  
 PHONE NUMBER: 920-227-1168  
 EMAIL ADDRESS: JSEIDL@CHANHASSENMN.GOV

**2.0 RECEIVING WATERS:**

WATERS WITHIN ONE MILE (NEAREST STRAIGHT LINE DISTANCE) THAT ARE LIKELY TO RECEIVE STORMWATER RUNOFF FROM THE PROJECT SITE (CSW PERMIT ITEM 5.10) INCLUDE:

NAME OF WATER BODY	TYPE <sup>(1)</sup>	WATER BODY ID <sup>(2)</sup>	SPECIAL WATER? <sup>(3)</sup>	IMPAIRED WATER? <sup>(3)</sup>	PUBLIC WATER WITH WORK IN WATER RESTRICTIONS?
LAKE SUSAN	LAKE	10-0013-00	NO	YES	NO
RILEY CREEK	CREEK	07020012-855	NO	NO	YES

- TYPE EXAMPLES: DITCH, POND, WETLAND, CALCAREOUS FEN, LAKE, STREAM, RIVER
- WATER BODY IDENTIFICATION (ID) MIGHT NOT BE AVAILABLE FOR ALL WATER BODIES. USE THE SPECIAL AND IMPAIRED WATERS SEARCH TOOL AT: [HTTPS://WWW.PCA.STATE.MN.US/WATER/STORMWATER-SPECIAL-AND-IMPAIRED-WATERS-SEARCH](https://www.pca.state.mn.us/water/stormwater-special-and-impaired-waters-search)
- REFER TO CSW PERMIT SECTION 23. IMPAIRED WATER FOR THE FOLLOWING POLLUTANT(S) OR STRESSOR(S): PHOSPHORUS (NUTRIENT EUTROPHICATION BIOLOGICAL INDICATORS), TURBIDITY, TOTAL SUSPENDED SOLIDS (TSS), DISSOLVED OXYGEN, OR AQUATIC BIOTA (FISH BIOASSESSMENT, AQUATIC PLANT BIOASSESSMENT, AND AQUATIC MACROINVERTEBRATE BIOASSESSMENT)

**2.1 SPECIAL AND IMPAIRED WATERS:** THE MPCA'S SPECIAL AND IMPAIRED WATERS SEARCH TOOL WAS USED TO LOCATE SPECIAL AND IMPAIRED WATERS WITHIN ONE MILE (AERIAL RADIUS MEASUREMENT) OF THE PROJECT SITE. LAKE SUSAN HAS EPA-APPROVED IMPAIRMENTS FOR NUTRIENTS AND MERCURY IN FISH TISSUE. THESE IMPAIRMENTS ARE CONSIDERED CONSTRUCTION RELATED AND DO REQUIRE ADDITIONAL BEST MANAGEMENT PRACTICES (BMPs) OR PLAN REVIEW FOR COMPLIANCE WITH THE GENERAL PERMIT. (CSW PERMIT ITEM 2.7 AND SECTION 23)

ADDITIONAL BMPs OR OTHER SPECIFIC CONSTRUCTION RELATED IMPLEMENTATION ACTIVITIES IDENTIFIED IN AN APPROVED TOTAL MAXIMUM DAILY LOAD (TMDL) INCLUDE NEED TO UPDATE BASED ON TMDL - MIGHT INCLUDE THINGS LIKE IMMEDIATE STABILIZATION OF EXPOSED SOIL AREAS. (CSW PERMIT ITEM 5.19)

**2.2 PUBLIC WATERS WITH WORK IN WATER RESTRICTIONS:** RILEY CREEK IS IDENTIFIED BY THE DNR AS A PUBLIC WATER. WORK IS RESTRICTED FOR PUBLIC WATERS IN CHANHASSEN, MINNESOTA BETWEEN MARCH 15TH AND JUNE 15TH. DURING THE RESPECTIVE RESTRICTION PERIODS, ALL EXPOSED SOILS WITHIN 200 FEET OF THE WATER'S EDGE WILL HAVE EROSION PREVENTION STABILIZATION ACTIVITIES INITIATED IMMEDIATELY AFTER CONSTRUCTION ACTIVITY HAS CEASED (AND COMPLETED WITHIN 24 HOURS). (CSW PERMIT ITEM 5.11)

**2.3 WETLAND IMPACTS:** THIS PROJECT MAY RESULT IN ADVERSE IMPACTS TO WETLANDS, INCLUDING EXCAVATION, DEGRADATION OF WATER QUALITY, AND FILLING THEREFORE [DESCRIBE MITIGATION MEASURES] TO ADDRESS THE IMPACTS. PERMITS OR APPROVALS FROM AN OFFICIAL STATE WIDE WETLAND PROGRAM ISSUED SPECIFICALLY FOR THIS PROJECT ARE ATTACHED FOR REFERENCE. (CSW PERMIT ITEMS 2.4 AND 2.10, AND SECTION 22)

**2.4 ENVIRONMENTAL REVIEW AND OTHER REQUIRED REVIEWS:** STORMWATER MITIGATION MEASURES ARE NOT REQUIRED AS A RESULT OF AN ENVIRONMENTAL REVIEW (E.G., EAW OR EIS), ENDANGERED OR THREATENED SPECIES REVIEW, ARCHEOLOGICAL SITE REVIEW, OR OTHER LOCAL, STATE, OR FEDERAL REVIEW CONDUCTED FOR THE PROJECT. (CSW PERMIT ITEMS 2.8, 2.9, AND 5.16)

**2.5 KARST AREAS OR DRINKING WATER SUPPLY MANAGEMENT AREAS:** THIS PROJECT DOES NOT INCLUDE ANY KARST OR DRINKING WATER SUPPLY MANAGEMENT AREAS. (CSW PERMIT ITEMS 16.19, 16.20, AND 18.10)

**3.0 PROJECT PLANS AND SPECIFICATIONS:**

**REQUIRED FEATURE**

- PROJECT LOCATION AND CONSTRUCTION LIMITS
- EXISTING AND FINAL GRADES, INCLUDING DRAINAGE AREA BOUNDARIES, DIRECTIONS OF FLOW AND ALL DISCHARGE POINTS WHERE STORMWATER IS LEAVING THE SITE OR ENTERING A SURFACE WATER
- SOIL TYPES AT THE SITE
- LOCATIONS OF IMPERVIOUS SURFACES
- LOCATIONS OF AREAS NOT TO BE DISTURBED (E.G., BUFFER ZONES, WETLANDS, ETC.)
- LOCATIONS OF AREAS OF STEEP SLOPES
- LOCATIONS OF AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE DURATION OF EXPOSED SOILS
- PORTIONS OF THE SITE THAT DRAIN TO A PUBLIC WATER WITH DNR WORK IN WATER RESTRICTIONS FOR FISH SPAWNING TIME FRAMES
- LOCATIONS OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs AS REQUIRED IN PERMIT SECTIONS 8 THROUGH 10 AND 14 THROUGH 19
- BUFFER ZONES AS REQUIRED IN PERMIT ITEMS 9.17 AND 23.11
- LOCATIONS OF POTENTIAL POLLUTION-GENERATING ACTIVITIES IDENTIFIED IN PERMIT SECTION 12
- STANDARD DETAILS FOR EROSION AND SEDIMENT CONTROL BMPs TO BE INSTALLED AT THE SITE

**SHEET NUMBER**

- G-01
- C-03 TO C-25
- G-03
- C-03 TO C-25
- C-03 TO C-25
- C-03 TO C-25
- NA
- C-03 TO C-25
- G-04 TO G-13
- NA
- C-03 TO C-25
- G-14

**4.0 BEST MANAGEMENT PRACTICES (BMPs):**

**4.1 EROSION PREVENTION PRACTICES:**

- BEFORE LAND DISTURBING ACTIVITIES BEGIN, THE LIMITS OF THE AREAS TO BE DISTURBED DURING CONSTRUCTION WILL BE DELINEATED WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.
- TEMPORARY STABILIZATION OF SOILS AND SOIL STOCKPILES: (CSW PERMIT ITEMS 8.4, 8.5, AND 23.9)
  - AREAS OF EXPOSED SOIL WILL BE STABILIZED WITH EROSION CONTROL BLANKET OR EQUIVALENT MEASURES.
  - IF PRESENT, SOIL STOCKPILES WILL BE STABILIZED WITH FAST GROWING COVER CORP, MULCH SUCH AS STRAW MULCH OR EQUIVALENT MEASURES.
  - TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY, OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS, AND SIMILAR SURFACES ARE EXEMPT FROM THESE STABILIZATION REQUIREMENTS.
- STABILIZATION OF DITCH AND SWALE WETTED PERIMETERS: (CSW PERMIT ITEMS 8.6 THROUGH 8.8)
  - IF SOILS WITHIN EXISTING STORMWATER DITCHES OR SWALES ARE DISTURBED, THEY WILL BE STABILIZED WITH [CHANNEL EROSION CONTROL BLANKET, RIPRAP, TURF REINFORCEMENT MAT] OR EQUIVALENT MEASURES.
  - MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE, OR SIMILAR EROSION PREVENTION PRACTICES WILL NOT BE USED TO STABILIZE ANY PART OF AN EXISTING STORMWATER DITCH OR SWALE WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.
  - THE LAST 200 LINEAL FEET OF LENGTH OF THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DITCH OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER WILL BE STABILIZED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.
  - STABILIZATION OF THE REMAINING PORTIONS OF ANY TEMPORARY OR PERMANENT DITCHES OR SWALES WILL BE COMPLETED WITHIN 14 CALENDAR DAYS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE AND CONSTRUCTION IN THAT PORTION OF THE DITCH HAS TEMPORARILY OR PERMANENTLY CEASED.
- ENERGY DISSIPATION AT PIPE OUTLETS: ENERGY DISSIPATION AT PIPE OUTLETS WILL BE PROVIDED WITH ONE OR MORE OF THE FOLLOW METHODS: RIP RAP, SPLASH PADS, GABIONS, OR EQUIVALENT MEASURES. (CSW PERMIT ITEM 8.9)
- EROSION PREVENTION IMPLEMENTATION TIMELINES: (CSW PERMIT ITEMS 5.4, 8.4 THROUGH 8.6, AND 23.9)
  - STABILIZATION OF EXPOSED SOIL AREAS (INCLUDING STOCKPILES) WILL BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION WHENEVER ANY CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
  - IF THE EXPOSED SOIL AREAS DRAIN TO A DISCHARGE POINT THAT IS WITHIN ONE MILE (AERIAL RADIUS MEASUREMENT) OF A SPECIAL OR IMPAIRED WATER (SEE SECTION 2.0), STABILIZATION OF EXPOSED SOIL AREAS (INCLUDING STOCKPILES) WILL BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION WHENEVER ANY CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 7 CALENDAR DAYS.
  - THE FOLLOWING ACTIVITIES CAN BE TAKEN TO INITIATE STABILIZATION: PREPPING THE SOIL FOR VEGETATIVE OR NON-VEGETATIVE STABILIZATION, APPLYING MULCH OR OTHER NON-VEGETATIVE PRODUCT TO THE EXPOSED SOIL AREA, OR SEEDING OR PLANTING THE EXPOSED AREA.
- ADDITIONAL EROSION PREVENTION MEASURES: THE FOLLOWING ADDITIONAL EROSION PREVENTION METHODS WILL BE IMPLEMENTED AT THE SITE DURING CONSTRUCTION: (CSW PERMIT ITEMS 8.2, 8.3, AND 8.10)
  - CONSTRUCTION PHASING WILL BE UTILIZED TO MINIMIZE THE AREA OF SOIL EXPOSED AT ANY ONE TIME.
  - SOIL DISTURBANCE WILL BE MINIMIZED WHEREVER POSSIBLE TO AID IN EROSION PREVENTION.
  - EXISTING VEGETATION WILL BE PRESERVED WHEREVER POSSIBLE TO LIMIT EXPOSED SOIL AND THUS WILL SERVE AS NATURAL VEGETATIVE BUFFERS.
  - EXPOSED SOIL ON STEEP SLOPES (≤3H:1V) WILL BE STABILIZED USING EROSION CONTROL BLANKETS AND SEEDING.
  - HORIZONTAL SLOPE GRADING WILL BE UTILIZED TO MINIMIZE EROSION POTENTIAL.
  - TERRACING WILL BE USED TO MINIMIZED EROSION POTENTIAL.

**4.2 SEDIMENT CONTROL PRACTICES:**

- DOWNGRADIENT PERIMETER CONTROLS: (CSW PERMIT ITEMS 9.2 THROUGH 9.6)
  - SEDIMENT CONTROL PRACTICES WILL BE ESTABLISHED ON ALL DOWNGRADIENT PERIMETERS AND LOCATED UPGRADIENT OF ANY BUFFER ZONES. PERIMETER SEDIMENT CONTROLS WILL INCLUDE: [SILT FENCE, SEDIMENT CONTROL LOGS / BIOROLLS (FILLED WITH COMPOST, WOOD CHIPS, ROCK, ETC.), VEGETATIVE BUFFERS (RETAIN EXISTING VEGETATION WHERE POSSIBLE) OR EQUIVALENT MEASURES.
  - PERIMETER SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE ANY UPGRADIENT LAND-DISTURBING ACTIVITIES BEGIN AND REMAIN IN PLACE UNTIL PERMANENT COVER HAS BEEN ESTABLISHED.
  - IF SEDIMENT CONTROL PRACTICES HAVE BEEN ADJUSTED OR REMOVED TO ACCOMMODATE SHORT-TERM ACTIVITIES (SUCH AS CLEARING, GRUBBING, OR PASSAGE OF VEHICLES), THE CONTROLS MUST BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE RE-INSTALLED BEFORE THE NEXT PRECIPITATION EVENT, EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.
  - IF THE DOWNGRADIENT SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENT), INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPs TO ELIMINATE THE OVERLOADING AND AMEND THE SWPPP TO IDENTIFY THESE ADDITIONAL PRACTICES.
- SOIL STOCKPILE PERIMETER CONTROLS: TEMPORARY SOIL STOCKPILES WILL BE SURROUNDED BY: SEDIMENT CONTROL LOGS / BIOROLLS (FILLED WITH COMPOST, WOOD CHIPS, ROCK, ETC.) OR EQUIVALENT MEASURES, AND SHALL NOT BE PLACED IN ANY NATURAL BUFFERS OR SURFACE WATERS. (CSW PERMIT ITEMS 9.9 AND 9.10)
- STORM DRAIN INLET PROTECTION: (CSW PERMIT ITEMS 9.7 AND 9.8)
  - INLET PROTECTION BMPs WILL BE INSTALLED AROUND ALL STORM DRAIN INLETS DOWNGRADIENT OF CONSTRUCTION ACTIVITIES.
  - STORM DRAIN INLETS WILL BE PROTECTED UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.
  - INLET PROTECTION BMPs WILL BE: [SEDIMENT CONTROL LOG, FILTER SACK, ROCK WITH FILTER FABRIC, FILTER FENCE BOX] OR EQUIVALENT MEASURES.
- VEHICLE TRACKING BMPs: (CSW PERMIT ITEMS 9.11 AND 9.12)
  - VEHICLE TRACKING BMPs WILL BE INSTALLED TO MINIMIZE THE TRACKING OUT OF SEDIMENT FROM THE CONSTRUCTION AREA AND WILL INCLUDE: ROCK PADS OR AN EQUIVALENT SYSTEM.
  - IF SUCH VEHICLE TRACKING BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE PAVED ROAD, STREET SWEEPING WILL ALSO BE EMPLOYED. SEDIMENT WILL BE REMOVED BY SWEEPING WITHIN 24 HOURS.
- PROTECTION OF INFILTRATION AREAS: IF NECESSARY, ADDITIONAL SEDIMENT CONTROLS (E.G., DIVERSION BERMS) WILL BE INSTALLED TO KEEP RUNOFF AWAY FROM PLANNED INFILTRATION AREAS WHEN EXCAVATED PRIOR TO ESTABLISHING PERMANENT COVER WITHIN THE CONTRIBUTING DRAINAGE AREA. (CSW PERMIT ITEMS 16.4 AND 16.5)
- MINIMIZATION OF SOIL COMPACTION AND PRESERVATION OF TOPSOIL: SOIL COMPACTION WILL BE MINIMIZED AND TOPSOIL WILL BE PRESERVED WHERE POSSIBLE. (CSW PERMIT ITEMS 5.24, 9.14, AND 9.15)
- PRIORITIZATION OF ONSITE INFILTRATION AND SEDIMENT REMOVAL: (CSW PERMIT ITEM 9.16)
  - PRIOR TO OFFSITE DISCHARGE, INFILTRATION AND SEDIMENT REMOVAL WILL BE IMPLEMENTED ONSITE WHERE POSSIBLE.
  - DISCHARGES FROM BMPs WILL BE DIRECTED TO VEGETATED AREAS OF THE SITE (INCLUDING ANY NATURAL BUFFERS) IN ORDER TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. IF EROSION IS NOTED TO OCCUR AS THE RESULT OF SUCH A DISCHARGE, VELOCITY DISSIPATION BMPs WILL BE CONSIDERED AND INSTALLED AS NECESSARY TO PREVENT EROSION.
- BUFFER ZONE OR REDUNDANT SEDIMENT CONTROLS TO PROTECT SURFACE WATERS: (CSW PERMIT ITEM 9.17)
  - A 50-FOOT NATURAL BUFFER WILL BE PRESERVED IN CONSTRUCTION AREAS DISCHARGING TO A NON-SPECIAL/NON-IMPAIRED SURFACE WATER OR WETLAND. IF A NON-SPECIAL/NON-IMPAIRED SURFACE WATER OR WETLAND IS LOCATED WITHIN 50 FEET OF THE PROJECT'S EARTH DISTURBANCES AND STORMWATER FLOWS TO THE SURFACE WATER, OR WHEN A BUFFER IS INFEASIBLE, REDUNDANT SEDIMENT CONTROLS WILL BE PROVIDED.
  - A 100-FOOT NATURAL BUFFER WILL BE PRESERVED IN CONSTRUCTION AREAS DISCHARGING TO A SPECIAL OR IMPAIRED SURFACE WATER. IF A SPECIAL OR IMPAIRED SURFACE WATER IS LOCATED WITHIN 100 FEET OF THE PROJECT'S EARTH DISTURBANCES AND STORMWATER FLOWS TO THE SURFACE WATER, OR WHEN A BUFFER IS INFEASIBLE, REDUNDANT SEDIMENT CONTROLS WILL BE PROVIDED.
  - REDUNDANT PERIMETER CONTROLS WILL BE INSTALLED AT LEAST 5 FEET APART UNLESS LIMITED BY LACK OF AVAILABLE SPACE.
- SEDIMENTATION TREATMENT CHEMICALS: NOT APPLICABLE; USE OF SEDIMENTATION TREATMENT CHEMICALS (E.G., POLYMERS, FLOCCULANTS, ETC.) IS NOT ANTICIPATED AS PART OF THE PROJECT. (CSW PERMIT ITEMS 5.22 AND 9.18)
- TEMPORARY SEDIMENT BASIN(S): THE PROJECT WILL NOT INCLUDE 10 OR MORE ACRES OF DISTURBED SOIL DRAINING TO A COMMON LOCATION OR 5 OR MORE ACRES DRAINING TO A COMMON LOCATION WITHIN 1 MILE OR A SPECIAL OR IMPAIRED WATER THEREFORE TEMPORARY SEDIMENT BASINS ARE NOT REQUIRED. (CSW PERMIT ITEMS 5.6, 9.13, AND 23.10 AND SECTION 14)

**4.3 DEWATERING AND BASIN DRAINING:** DEWATERING MAY BE CONDUCTED AS PART OF THE PROJECT TO ALLOW ENHANCEMENT OF STREAM SEGMENTS. DEWATERING WOULD CONSIST OF ROUTING STREAM FLOW FROM UPSTREAM OF THE CONSTRUCTION BOUNDARY PAST A STREAM ENHANCEMENT SEGMENT AND DISCHARGING THE CLEAN STREAM FLOW DOWNSTREAM OF THE STREAM ENHANCEMENT SEGMENT. STREAM DEWATERING WILL BE VISUALLY INSPECTED TO AVOID CREATION OF ANY NUISANCE CONDITIONS FROM THE DISCHARGE. (CSW PERMIT SECTION 10 AND ITEM 10.5)

**4.4 BMP DESIGN FACTORS:** THE FOLLOWING BMP DESIGN FACTORS HAVE BEEN CONSIDERED IN DESIGNING THE TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL BMPs:

- EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION:
- NATURE OF STORMWATER RUNOFF AND RUN-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES:
- STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS:
- RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT:

**4.5 BMP QUANTITIES:** ANTICIPATED EROSION PREVENTION AND SEDIMENT CONTROL BMP QUANTITIES NEEDED FOR THE LIFE OF THE PROJECT: ARE INCLUDED IN THE BID DOCUMENTS

**4.6 INVASIVE SPECIES:** THE FOLLOW PROCEDURES MUST BE FOLLOW SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.

- CONTRACTOR MUST INSPECT ALL EQUIPMENT FOR AQUATIC VEGETATION AND REMOVE IT BEFORE TRANSPORTING EQUIPMENT ON A PUBLIC ROAD OR ENTERING ANOTHER WATERBODY. ALL EQUIPMENT FROM DESIGNATED INFESTED WATERS MUST BE DRAINED AND DRIED FOR A MINIMUM OF FIVE (5) DAYS BEFORE ENTERING ANOTHER WATERBODY OR DECONTAMINATED WITH 120°F WATER FOR 2 MINUTES.
- THE DNR IS AVAILABLE TO TRAIN INSPECTORS AND/OR ASSIST IN THESE INSPECTIONS. FOR MORE INFORMATION REFER TO 'BEST PRACTICES FOR PREVENTING THE SPREAD OF AQUATIC INVASIVE SPECIES' AT: [HTTP://FILES.DNR.STATE.MN.US/PUBLICATIONS/EWR/INVASIVES/AIS/BEST\\_PRACTICES\\_FOR\\_PREVENTION\\_AIS.PDF](http://files.dnr.state.mn.us/publications/ewr/invasives/ais/best_practices_for_prevention_ais.pdf).
- A LIST OF DESIGNATED INFESTED WATERS IS AVAILABLE AT: [WWW.MNDNR.GOV/INVASIVES/AIS/INFESTED.HTML](http://www.mndnr.gov/invasives/ais/infested.html).
- A LIST OF PROHIBITED INVASIVE SPECIES IS AVAILABLE AT: [WWW.MNDNR.GOV/INVASIVES/LAWS.HTML#PROHIBITED](http://www.mndnr.gov/invasives/laws.html#prohibited).
- CONTACT YOUR REGIONAL INVASIVE SPECIES SPECIALIST FOR ASSISTANCE AT: [WWW.MNDNR.GOV/INVASIVES/CONTACTS.HTML](http://www.mndnr.gov/invasives/contacts.html).

(SEE PAGE 2 OF 2)

100% DESIGN  
ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370683\_14\UPPER RILEY CREEK\2370683\_G-02\_SWPPP.DWG PLOT SCALE: 1"=20' PLOT DATE: 08/23/2023 10:24 AM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD	08/31/23 09/17/23 08/23/23	 Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STORM WATER POLLUTION PREVENTION PLAN (SWPPP)	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	DWG. No. G-02	REV. No. 0
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID				
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION				
PRINTED NAME: JESSICA OLSON		SIGNATURE: <i>J. Olson</i>		DATE: 08/23/2023		LICENSE # 43102			
RELEASED TO/FOR		A B C 0 1 2 3		DATE RELEASED					

**5.0 PERMANENT STORMWATER MANAGEMENT SYSTEM:**

A PERMANENT STORMWATER MANAGEMENT SYSTEM IS REQUIRED IF THE PROJECT RESULTS IN ONE ACRE OR MORE OF NEW IMPERVIOUS SURFACES OR RESULTS IN A NET INCREASE OF ONE OR MORE ACRES OF CUMMULATIVE NEW IMPERVIOUS SURFACES IN TOTAL OR IF THE PROJECT IS PART OF A LARGER PLAN OF DEVELOPMENT. (CSW PERMIT ITEM 15.3)

5.1 A PERMANENT STORMWATER TREATMENT SYSTEM IS NOT REQUIRED. (CSW PERMIT ITEMS 5.15, 15.4-15.9, AND 23.14)

5.2 THIS IS NOT A LINEAR PROJECT WITH LACK OF RIGHT OR WAY. (CSW PERMIT ITEM 15.9)

5.3 THIS PROJECT DOES NOT DISCHARGE TO A TROUT STREAM (OR A TRIBUTARY TO A TROUT STREAM). (CSW PERMIT ITEM 23.12)

**6.0 INSPECTION AND MAINTENANCE ACTIVITIES:**

6.1 PERSONS WITH REQUIRED TRAINING: TRAINED INDIVIDUALS INCLUDE THOSE PARTIES RESPONSIBLE FOR INSTALLING, SUPERVISING, REPAIRING, INSPECTING, AND MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL BMPS AT THE SITE. TRAINED INDIVIDUALS ARE ALSO RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND COMPLIANCE WITH THE GENERAL PERMIT UNTIL THE CONSTRUCTION ACTIVITIES ARE COMPLETE, PERMANENT COVER HAS BEEN ESTABLISHED, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED. (CSW PERMIT ITEMS 5.20, 5.21, AND 11.9 AND SECTION 21)

THESE INDIVIDUALS WILL BE TRAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL PERMIT, INCLUDING THE REQUIREMENT THAT THE CONTENT AND EXTENT OF TRAINING WILL BE COMMENSURATE WITH THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES.

BELOW IS A LIST OF PEOPLE RESPONSIBLE FOR THIS PROJECT WHO ARE KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS.

TRAINED INDIVIDUAL	RESPONSIBILITY	TRAINING ENTITY*	TRAINING DATE
ERIC FITZGERALD	PREPARATION OF THE SWPPP	UNIVERSITY OF MINNESOTA	MAY 2023
TBD	OVERSIGHT OF SWPPP IMPLEMENTATION, REVISION, AND AMMENDMENT	TBD	TBD
TBD	PERFORMANCE OF SWPPP INSPECTIONS	TBD	TBD
TBD	PERFORMANCE OR SUPERVISION OF INSTALLATION, MAINTENANCE, AND REPAIR OF BMPS	TBD	TBD

\*TRAINING DOCUMENTATION AVAILABLE UPON REQUEST.

6.2 FREQUENCY OF INSPECTIONS: A TRAINED PERSON WILL ROUTINELY INSPECT THE ENTIRE CONSTRUCTION SITE. (CSW PERMIT ITEMS 11.2, 11.10, AND 23.13)

- AT LEAST ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION
- WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS

INSPECTION FREQUENCY MAY BE ADJUSTED UNDER THE FOLLOWING CIRCUMSTANCES:

- WHERE PARTS OF THE CONSTRUCTION AREAS HAVE PERMANENT COVER, BUT WORK REMAINS ON OTHER PARTS OF THE SITE, INSPECTIONS OF THE AREAS WITH PERMANENT COVER MAY BE REDUCED TO ONCE PER MONTH.
- WHERE CONSTRUCTION AREAS HAVE PERMANENT COVER AND NO CONSTRUCTION ACTIVITY IS OCCURRING ON THE SITE, INSPECTIONS CAN BE REDUCED TO ONCE PER MONTH AND, AFTER 12 MONTHS, MAY BE SUSPENDED COMPLETELY UNTIL CONSTRUCTION ACTIVITY RESUMES.
- WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE INSPECTIONS MAY BE SUSPENDED. THE REQUIRED INSPECTIONS AND MAINTENANCE SCHEDULE MUST BEGIN WITHIN 24 HOURS AFTER RUNOFF OCCURS AT THE SITE OR UPON RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

6.3 INSPECTION REQUIREMENTS: EACH CONSTRUCTION STORMWATER SITE INSPECTION WILL INCLUDE INSPECTION OF THE FOLLOWING AREAS: (CSW PERMIT ITEMS 11.3 THROUGH 11.8)

- ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS AND POLLUTION PREVENTION MANAGEMENT MEASURES
- SURFACE WATERS FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION
- CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING
- STREETS AND OTHER AREAS ADJACENT TO THE PROJECT FOR EVIDENCE OF OFF SITE ACCUMULATIONS OF SEDIMENT

6.4 MAINTENANCE REQUIREMENTS: MAINTENANCE OF THE FOLLOWING AREAS AND BMPS WILL BE PERFORMED AS FOLLOWS: (CSW PERMIT ITEMS 11.3 THROUGH 11.8)

- NONFUNCTIONAL BMPS WILL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
- PERIMETER CONTROL DEVICES WILL BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICE.
- TEMPORARY AND PERMANENT SEDIMENTATION BASINS WILL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME.
- DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS WILL BE REMOVED, AND THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL WILL BE RE-STABILIZED. THE REMOVAL AND STABILIZATION WILL BE COMPLETED WITHIN 7 CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED DUE TO ACCESS CONSTRAINTS, REASONABLE EFFORTS TO OBTAIN ACCESS WILL BE USED. REMOVAL AND STABILIZATION WILL TAKE PLACE WITHIN 7 CALENDAR DAYS OF OBTAINING ACCESS.
- TRACKED SEDIMENT ON PAVED SURFACES WILL BE REMOVED WITHIN 1 CALENDAR DAY OF DISCOVERY.
- AREAS UNDERGOING STABILIZATION WILL BE RESTABILIZED AS NECESSARY TO ACHIEVE REQUIRED COVER.

**6.5 RECORDKEEPING REQUIREMENTS: (CSW PERMIT ITEMS 11.11 AND 24.5 AND SECTIONS 6 AND 20)**

1. ALL INSPECTIONS AND MAINTENANCE ACTIVITIES WILL BE RECORDED IN WRITING WITHIN 24 HOURS OF BEING CONDUCTED AND THESE RECORDS WILL BE RETAINED WITH THE SWPPP AND SENT VIA EMAIL TO TERRY JEFFERY AT RPBVCWD (TJEFFERY@RPBVCWD.ORG). RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY WILL INCLUDE THE DATE AND TIME; NAME OF INSPECTOR(S); FINDINGS OF INSPECTIONS; CORRECTIVE ACTIONS (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); AND DATE OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS AND THE AMOUNT OF RAINFALL FOR EACH EVENT.
  - a. IF ANY DISCHARGE IS OBSERVED DURING THE INSPECTION, THE LOCATION AND APPEARANCE OF THE DISCHARGE (I.E., COLOR, ODOR, SETTLED OR SUSPENDED SOLIDS, OIL SHEEN, AND OTHER OBVIOUS INDICATORS OF POLLUTANTS) WILL BE DOCUMENTED AND A PHOTOGRAPH WILL BE TAKEN.
2. THE SWPPP WILL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMPS TO CORRECT PROBLEMS OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER, OR SEASONAL CONDITIONS THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.
  - a. THE SWPPP WILL BE AMENDED WHEN INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER, OPERATOR, OR CONTRACTORS OR BY USEPAM/PCA OFFICIALS INDICATE THAT THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER; THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES; OR THE SWPPP IS NOT CONSISTENT WITH A USEPA APPROVED TMDL.
  - b. ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION WILL BE DOCUMENTED AS REQUIRED WITHIN 7 CALENDAR DAYS.
  - c. AMENDMENTS WILL BE COMPLETED BY AN APPROPRIATELY TRAINED INDIVIDUAL. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP WILL INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.
3. RECORDS RETENTION: THE SWPPP, INCLUDING ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS WILL BE KEPT AT THE SITE DURING CONSTRUCTION BY THE PERMITTEE WHO HAS OPERATIONAL CONTROL OF THE SITE. THE SWPPP CAN BE KEPT IN EITHER A FIELD OFFICE OR IN AN ON SITE VEHICLE DURING NORMAL WORKING HOURS.
4. RECORD AVAILABILITY: THE PERMITTEES WILL MAKE THE SWPPP, INCLUDING INSPECTION REPORTS, MAINTENANCE RECORDS, AND TRAINING RECORDS, AVAILABLE TO FEDERAL, STATE, AND LOCAL OFFICIALS WITHIN THREE DAYS UPON REQUEST FOR THE DURATION OF THE PERMIT COVERAGE AND FOR THREE YEARS FOLLOWING THE NOTICE OF TERMINATION.

**7.0 POLLUTION PREVENTION MEASURES:**

1. ANY CONSTRUCTION PRODUCTS AND LANDSCAPE MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS WILL BE STORED UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) TO PREVENT DISCHARGE OF POLLUTANTS THROUGH MINIMIZATION OF CONTACT WITH STORMWATER. STORAGE OF SUCH MATERIALS WITHIN THE PROJECT AREA WILL BE MINIMIZED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEM 12.2)
2. PESTICIDES, FERTILIZERS, AND TREATMENT CHEMICALS WILL BE STORED UNDER COVER (E.G., PLASTIC SHEETING, TEMPORARY ROOFS, WITHIN A BUILDING, OR IN WEATHER-PROOF CONTAINERS) TO PREVENT DISCHARGE OF POLLUTANTS THROUGH MINIMIZATION OF CONTACT WITH STORMWATER. STORAGE OF SUCH MATERIALS WITHIN THE PROJECT AREA WILL BE MINIMIZED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEM 12.3)
3. HAZARDOUS MATERIALS AND TOXIC WASTE (E.G., OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) WILL BE STORED AND DISPOSED OF IN COMPLIANCE WITH MINNESOTA RULES CHAPTER 7045, INCLUDING SECONDARY CONTAINMENT (AS APPLICABLE). HAZARDOUS MATERIALS WILL BE PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGES AND PREVENT PRECIPITATION FROM FALLING ONTO THE CONTAINERS OR STORED HAZARDOUS MATERIALS. (CSW PERMIT ITEMS 2.3 AND 12.4)
4. SOLID WASTE WILL BE COLLECTED, STORED, AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINNESOTA RULES CHAPTER 7035. THIS INCLUDES STORAGE WITHIN COVERED TRASH CONTAINERS AND DAILY REMOVAL OF LITTER AND DEBRIS. STORAGE OF SOLID WASTE WITHIN THE PROJECT AREA WILL BE MINIMIZED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEM 12.5)
5. PORTABLE TOILETS WILL BE LOCATED AWAY FROM SURFACE WATERS AND POSITIONED AND SECURED TO THE GROUND SO THEY WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE WILL BE DISPOSED OF IN ACCORDANCE WITH MINNESOTA RULES, CHAPTER 7041. PORTABLE TOILETS WILL BE PERIODICALLY EMPTIED AND THE WASTE HAULED OFF-SITE BY A LICENSED HAULER. (CSW PERMIT ITEM 12.6)
6. VEHICLE FUELING WILL ONLY OCCUR IN DESIGNATED AREAS. SPILL KITS SIZED APPROPRIATELY FOR THE AMOUNT OF REFUELING TAKING PLACE WILL BE LOCATED. SPILL KITS WILL BE CLEARLY LABELED AND CONTAIN MATERIALS TO ASSIST IN SPILL CLEANUP INCLUDING ABSORBENT PADS, BOOMS FOR CONTAINING SPILLS, AND HEAVY-DUTY PROTECTIVE GLOVES. SPILLS WILL BE REPORTED TO THE MINNESOTA DUTY OFFICER AS REQUIRED BY MINNESOTA STATUTES, SECTION 115.061. (CSW PERMIT ITEMS 2.3 AND 12.7)
  - a. ANY FUEL TANKS BROUGHT ON-SITE WILL HAVE PROPERLY SIZED CONTAINMENT AND WILL NOT BE TOPPED OFF TO AVOID SPILLS FROM OVERFILLING. FUEL TANKS WILL MEET INDUSTRY STANDARDS (DESIGNED TO HOLD FUEL TYPE, PROPERLY MAINTAINED, NOT ILLEGALLY MODIFIED, NOT MISSING LEAK INDICATOR FLOATS FOR DOUBLE WALLED TANKS, SIGHT GAUGES NOT USED, ETC.) OR BE REMOVED FROM THE WORK AREA.
  - b. GUIDELINES FOR SPILL PREVENTION AND RESPONSE INCLUDE:
    - TAKE REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED, INCLUDING THE USE OF DRIP PANS OR ABSORBENTS UNLESS INFEASIBLE;
    - PERFORM REGULAR PREVENTATIVE MAINTENANCE ON TANKS AND FUEL LINES;
    - INSPECT PUMPS, CYLINDERS, HOSES, VALVES, AND OTHER MECHANICAL EQUIPMENT ON-SITE FOR DAMAGE OR DETERIORATION;
    - DO NOT WASH OR RINSE FUELING AREAS WITH WATER;
    - MAINTAIN ADEQUATE SUPPLIES TO CLEAN UP DISCHARGED MATERIALS AND PROVIDE AN APPROPRIATE DISPOSAL METHOD FOR RECOVERED SPILLED MATERIALS;
    - REPORT AND CLEAN UP SPILLS IMMEDIATELY AS REQUIRED BY MINNESOTA STATUTES, SECTION 115.061, USING DRY CLEAN UP MEASURES WHERE POSSIBLE; AND
    - MAINTAIN COPIES OF SAFETY DATA SHEETS (SDSS) FOR HAZARDOUS MATERIALS ON-SITE IN LOCATIONS READILY AVAILABLE TO EMERGENCY RESPONDERS.
7. IF VEHICLE AND EQUIPMENT WASHING IS NECESSARY, A VEHICLE WASH STATION WILL BE LOCATED IN A DESIGNATED AREA. RUNOFF FROM THE WASHING AREA WILL BE CONTAINED IN A SEDIMENT BASIN AND WASTE FROM THE WASHING ACTIVITY WILL BE PROPERLY DISPOSED OF. ANY SOAPS, DETERGENTS, OR SOLVENTS WILL BE PROPERLY USED AND STORED. ANY DETERGENTS AND OTHER CLEANERS NOT PERMITTED FOR DISCHARGE WILL NOT BE USED. (CSW PERMIT ITEMS 2.3 AND 12.8)
8. THE PROJECT WILL NOT RESULT IN CONCRETE OR OTHER WASHOUT ACTIVITIES. IF NECESSARY, A DESCRIPTION OF THE STORAGE AND DISPOSAL OF CONCRETE AND OTHER WASHOUT WASTES SO THAT WASTES DO NOT CONTACT THE GROUND WILL BE ADDED. (CSW PERMIT ITEMS 2.3 AND 12.9)

**8.0 PERMANENT COVER AND PERMIT TERMINATION CONDITIONS:**

1. THE AREAS DISTURBED DURING CONSTRUCTION WILL BE STABILIZED WITH PERMANENT COVER UPON COMPLETION OF WORK. PERMANENT COVER MAY BE VEGETATIVE OR NON-VEGETATIVE, AS APPROPRIATE. ESTABLISHMENT OF PERMANENT COVER MAY INCLUDE THE FOLLOWING ACTIVITIES: SEEDING, MULCHING, EROSION CONTROL BLANKETS. (CSW PERMIT ITEM 5.17)
  2. FOR A CONSTRUCTION-SITE TO ACHIEVE "PERMANENT COVER", THE FOLLOWING REQUIREMENTS MUST BE COMPLETED PRIOR TO TERMINATION OF PERMIT COVERAGE: (CSW PERMIT SECTIONS 4 AND 13)
    - a. ALL SOIL DISTURBING CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND PERMANENT COVER HAS BEEN INSTALLED OVER ALL AREAS. VEGETATIVE COVER CONSISTS OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70% OF ITS EXPECTED FINAL GROWTH. VEGETATION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA DICTATES NO VEGETATION (SUCH AS IMPERVIOUS SURFACES OR THE BASE OF A SAND FILTER).
    - b. ALL SEDIMENT HAS BEEN REMOVED FROM CONVEYANCE SYSTEMS, INCLUDING CULVERTS.
    - c. ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS HAVE BEEN REMOVED. BMPS DESIGNED TO DECOMPOSE ON-SITE MAY BE LEFT IN PLACE.
- WITHIN 30 DAYS AFTER THE TERMINATION CONDITIONS ARE COMPLETE, A NOTICE OF TERMINATION (NOT) FORM WILL BE SUBMITTED TO THE MPCA.



Figure 1  
TOPOGRAPHIC MAP WITH SURFACE WATERS AND SOIL TYPES  
Stormwater Pollution Prevention Plan  
Hennepin County, Minnesota

100% DESIGN  
ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053\_14\UPPER RILEY CREEK\DWG\12.PLOT DATE: 8/15/2023 1:48 AM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: *J. Olson*  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
08/31/22	08/17/23	08/23/23	A B C 0 1 2 3	

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

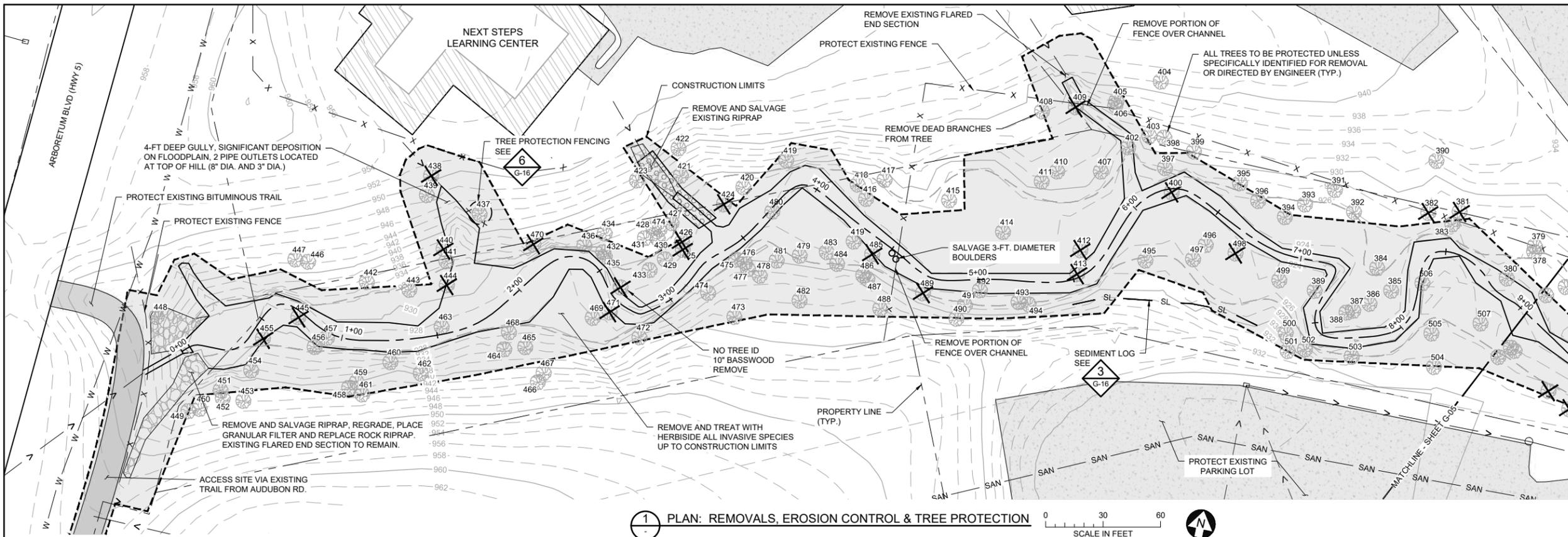
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
STORM WATER POLLUTION PREVENTION PLAN  
(SWPPP)

BARR PROJECT No. 23/27-0053.14	CLIENT PROJECT No.
DWG. No. G-03	REV. No. 0



**SYMBOL AND PATTERN LEGEND**

- 960 EXISTING 10' CONTOUR
- 962 EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- GAS EXISTING GAS LINE
- W EXISTING WATERMAIN
- X-X EXISTING FENCE
- WT EXISTING WETLAND DELINEATION
- EXISTING PARKING LOT/PAVEMENT
- CONSTRUCTION LIMITS
- SILT FENCE
- SEDIMENT CONTROL LOGS
- CONSTRUCTION ACCESS
- ROCK CONSTRUCTION ENTRANCE
- INVASIVE SPECIES REMOVAL AREA
- EXISTING TREE TO REMAIN, PROTECT IN PLACE
- REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
- TREE PROTECTION FENCE
- 101 TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
378	Maple/Sugar	11	Healthy	
379	Box Elder	19	Healthy	
380	Elm/American	11	Healthy	
381	Box Elder	11	Healthy	X
382	Box Elder	10	Healthy	X
383	Box Elder	12	Healthy	
384	Oak/Bur	28	Healthy	
385	Ash/Green	10	Healthy	
386	Ash/Green	10	Healthy	
387	Ash/Green	11	Healthy	
388	Ash/Green	11	Healthy	
389	Ash/Green	15	Healthy	
390	Box Elder	25	Healthy	
391	Ash/Green	16	Healthy	
392	Box Elder	13	Healthy	
393	Ash/Green	14	Healthy	
394	Elm/American	19	Healthy	
395	Box Elder	14	Healthy	
396	Oak/Red	32	Healthy	
397	Maple/Sugar	13	Healthy	
398	Box Elder	10	Healthy	
399	Box Elder	12	Healthy	
400	Maple/Sugar	10	Healthy	X
402	Box Elder	10	Healthy	
403	Box Elder	15	Healthy	
404	Box Elder	15	Healthy	
405	Box Elder	15	Healthy	
406	Maple/Sugar	13	Healthy	
407	Oak/Bur	36	Healthy	
408	Maple/Sugar	12	Healthy	
409	Oak/Bur	35	Structural Issue	X
410	Maple/Sugar	14	Healthy	
411	Maple/Sugar	10	Healthy	
412	Ash/Green	17	Healthy	X
413	Ash/Green	10	Healthy	X
414	Ash/Green	16	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
415	Maple/Sugar	11	Healthy	
416	Ash/Green	18	Healthy	
417	Ash/Green	18	Healthy	
418	Ash/Green	12	Healthy	
419	Ash/Green	21	Healthy	
420	Ash/Green	11	Healthy	
421	Maple/Sugar	13	Healthy	
422	Ash/White	10	Dead	
423	Ash/Box Elder	15	Healthy	
424	Ash/Green	14	Healthy	X
425	Ash/Green	10	Healthy	X
426	Ash/Green	10	Healthy	X
427	Box Elder	18	Healthy	
428	Ash/Green	10	Healthy	
429	Basswood/American	16	Healthy	
430	Basswood/American	14	Healthy	
431	Basswood/American	17	Healthy	
432	Basswood/American	20	Healthy	
433	Oak/Red	13	Healthy	
434	Oak/Red	20	Healthy	
435	Oak/Red	26	Healthy	
436	Oak/Red	10	Healthy	
437	Oak/Red	28	Healthy	
438	Basswood/American	13	Healthy	X
439	Maple/Sugar	11	Healthy	
440	Maple/Sugar	13	Healthy	X
441	Ironwood	14	Healthy	
442	Elm/American	13	Healthy	
443	Ash/Green	10	Healthy	
444	Ash/Green	13	Healthy	X
445	Ash/Green	10	Healthy	X
446	Basswood/American	20	Healthy	
447	Oak/Red	30	Healthy	
448	Elm/American	13	Healthy	
449	Basswood/American	16	Healthy	
450	Oak/Red	15	Healthy	
451	Elm/American	12	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
452	Oak/Red	15	Healthy	
453	Oak/Red	13	Healthy	
454	Elm/American	16	Healthy	
455	Basswood/American	12	Healthy	X
456	Oak/Red	15	Healthy	
457	Basswood/American	13	Healthy	
458	Oak/Red	18	Healthy	
459	Basswood/American	11	Healthy	
460	Basswood/American	15	Healthy	
461	Basswood/American	12	Healthy	
462	Basswood/American	16	Healthy	
463	Maple/Sugar	10	Healthy	
464	Basswood/American	11	Healthy	
465	Oak/Red	18	Healthy	
466	Basswood/American	12	Healthy	
467	Oak/Red	10	Healthy	
468	Oak/Bur	36	Healthy	
469	Basswood/American	19	Healthy	
470	Oak/Bur	28	Dead	X
471	Ash/Green	10	Healthy	X
472	Maple/Sugar	14	Healthy	
473	Oak/Red	18	Healthy	
474	Oak/Red	15	Healthy	
475	Basswood/American	16	Healthy	
476	Basswood/American	26	Healthy	
477	Basswood/American	15	Healthy	
478	Basswood/American	17	Healthy	
479	Basswood/American	15	Healthy	
480	Basswood/American	12	Healthy	
481	Basswood/American	13	Healthy	
482	Basswood/American	16	Healthy	
483	Ash/Green	17	Healthy	
484	Ash/Green	12	Healthy	
486	Basswood/American	15	Healthy	
487	Basswood/American	16	Healthy	
488	Basswood/American	10	Healthy	
489	Ash/Green	14	Healthy	X

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
490	Box Elder	21	Healthy	
491	Ash/Green	16	Healthy	
492	Ash/Green	14	Healthy	
493	Maple/Sugar	16	Healthy	
494	Maple/Sugar	18	Healthy	
495	Ash/Green	10	Healthy	
496	Ash/Green	10	Healthy	
497	Ash/Green	10	Healthy	
498	Ash/Green	12	Healthy	X
499	Ash/Green	13	Healthy	
500	Ash/Green	10	Healthy	
501	Basswood/American	15	Healthy	
502	Oak/Pin	12	Healthy	
503	Elm/American	10	Healthy	
504	Oak/White	33	Healthy	
505	Oak/White	33	Healthy	
506	Ash/Green	10	Healthy	
507	Box Elder	10	Healthy	

- TREE REMOVAL/PROTECTION NOTES:**
- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  - ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA. CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  - LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  - REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  - CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  - ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED. CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
  - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.
  - PRUNING OR CUTTING OF OAK TREES MUST BE COMPLETED BETWEEN NOVEMBER 1 - APRIL 1 (TO REDUCE RISK OF OAK WILT)

- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
  - BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
  - INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
  - LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
  - NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  - ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  - CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
  - ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
  - THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
  - CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
  - FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
  - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
  - ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
  - WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

CADD USER: ERIC P. FITZGERALD FILE: MDESIGN\2370053\_1\UPPER RILEY CREEK\2370053\_G-04\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 2:58 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE: *J. Olson*  
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.	08/31/23	08/23/23	A B C 0 1 2 3	

Project Office:  
**BARR ENGINEERING CO.**  
 4300 MARKETPOINTE DRIVE  
 SUITE 200  
 MINNEAPOLIS, MN 55435

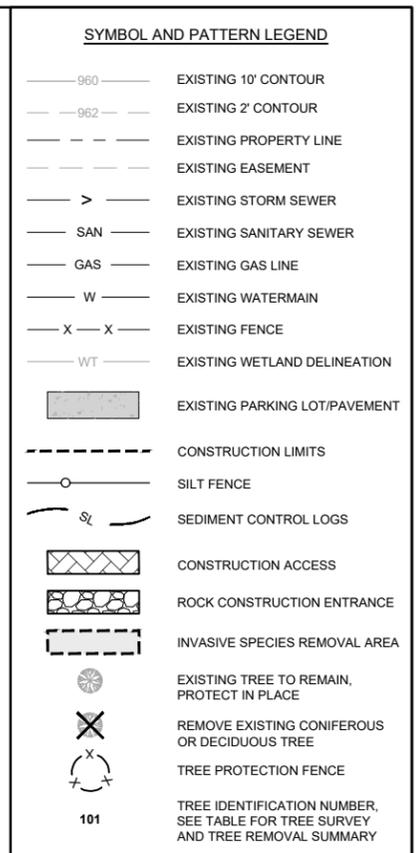
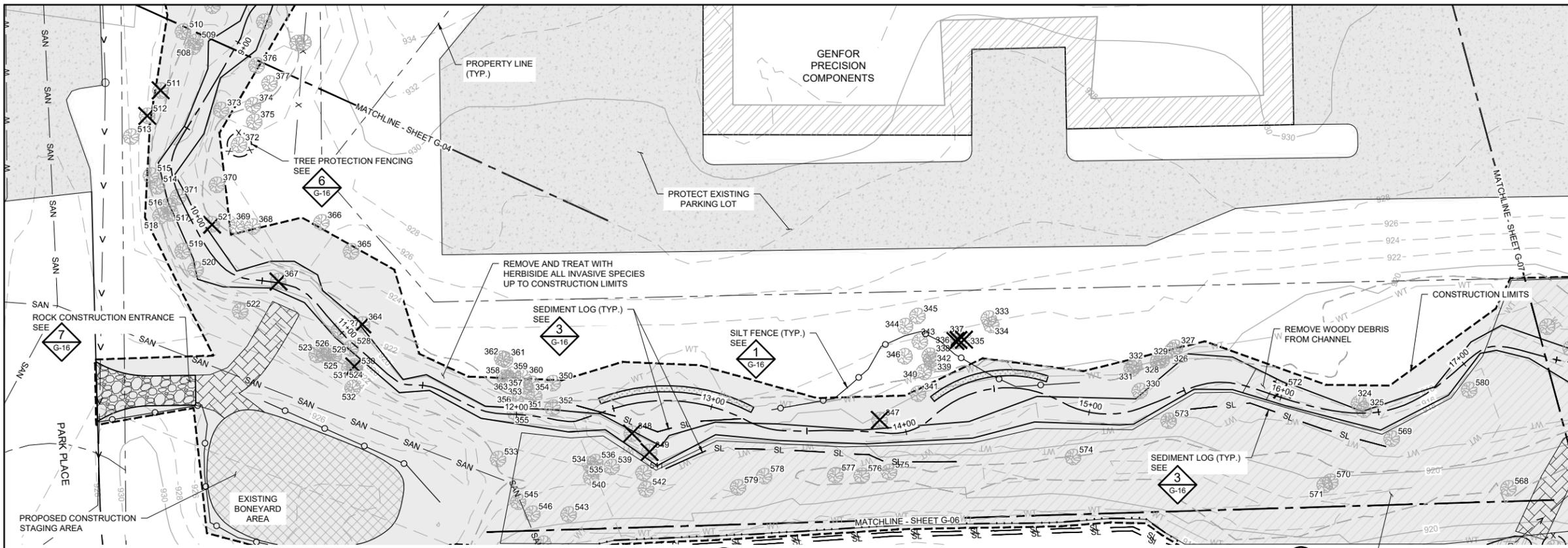
Scale: AS SHOWN  
 Date: 08/23/2023  
 Drawn: EPF  
 Checked: JCO  
 Designed: BARR  
 Approved: SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
 REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN

BARR PROJECT No. 23/27-0053.14	REV. No. 0
CLIENT PROJECT No.	DWG. No. G-04

100% DESIGN  
 ISSUED FOR BID



1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION

**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
- CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
324	Willow/Black	40	Healthy	
325	Box Elder	13	Healthy	
326	Box Elder	13	Healthy	
327	Box Elder	13	Healthy	
328	Box Elder	15	Healthy	
329	Box Elder	15	Dying	
330	Box Elder	13	Healthy	
331	Box Elder	12	Healthy	
332	Box Elder	15	Healthy	
333	Box Elder	10	Healthy	
334	Box Elder	10	Healthy	
335	Box Elder	14	Healthy	X
336	Box Elder	15	Dead	X
337	Box Elder	12	Healthy	X
338	Box Elder	14	Healthy	
339	Box Elder	15	Healthy	
340	Box Elder	17	Healthy	
341	Box Elder	13	Healthy	
342	Box Elder	16	Healthy	
343	Box Elder	11	Healthy	
344	Box Elder	10	Healthy	
345	Box Elder	13	Healthy	
346	Box Elder	16	Healthy	
347	Willow/Black	30	Dying	X
348	Willow/Black	13	Dying	X
349	Willow/Black	16	Dead	X
350	Cottonwood	27	Healthy	
351	Box Elder	13	Healthy	
352	Elm/American	10	Healthy	
353	Cottonwood	28	Healthy	
354	Cottonwood	27	Healthy	
355	Cottonwood	15	Healthy	
356	Cottonwood	16	Healthy	
357	Cottonwood	21	Healthy	
358	Cottonwood	22	Healthy	
359	Cottonwood	22	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
360	Cottonwood	12	Healthy	
361	Elm/American	30	Healthy	
362	Willow/Black	13	Healthy	
363	Cottonwood	26	Healthy	
364	Elm/American	12	Healthy	X
365	Elm/American	13	Healthy	
366	Box Elder	10	Healthy	
367	Box Elder	10	Healthy	X
368	Elm/American	15	Healthy	
369	Box Elder	10	Healthy	
370	Maple/Sugar	12	Healthy	
371	Elm/American	11	Healthy	
372	Maple/Sugar	11	Healthy	
373	Box Elder	10	Healthy	
374	Ash/Green	13	Healthy	
375	Maple/Sugar	15	Healthy	
376	Ash/Green	10	Healthy	
377	Ash/Green	12	Healthy	
508	Ash/Green	12	Healthy	
509	Ash/Green	13	Healthy	
510	Maple/Red	13	Healthy	
511	Ash/Green	11	Dying	X
512	Ash/Green	16	Dying	X
513	Box Elder	17	Healthy	
514	Elm/American	13	Healthy	
515	Maple/Sugar	15	Healthy	
516	Maple/Sugar	14	Healthy	
517	Maple/Sugar	11	Healthy	
518	Ash/Green	14	Dying	
519	Box Elder	10	Healthy	
520	Maple/Sugar	15	Healthy	
521	Box Elder	13	Dying	X
522	Box Elder	23	Healthy	
523	Ash/Green	11	Healthy	
524	Ash/Green	10	Healthy	
525	Ash/Green	11	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
526	Ash/Green	11	Healthy	
527	Ash/Green	11	Healthy	
528	Elm/American	12	Healthy	
529	Ash/Green	11	Healthy	
530	Ash/Green	11	Healthy	X
531	Ash/Green	10	Healthy	
532	Ash/Green	11	Healthy	
533	Box Elder	14	Healthy	
534	Willow/Black	25	Dead	
535	Willow/Black	23	Dead	
536	Willow/Black	25	Healthy	
539	Willow/Black	28	Dead	
540	Box Elder	15	Healthy	
541	Box Elder	16	Healthy	
542	Box Elder	16	Healthy	
543	Box Elder	10	Healthy	
545	Box Elder	18	Healthy	
546	Box Elder	20	Healthy	
547	Willow/Black	13	Dying	
548	Willow/Black	10	Dying	
549	Willow/Black	10	Dying	
568	Cottonwood	38	Healthy	
569	Elm/American	12	Dead	
570	Willow/Black	14	Healthy	
571	Willow/Black	15	Dead	
572	Ash/Green	16	Healthy	X
573	Box Elder	16	Healthy	
574	Box Elder	10	Healthy	
575	Box Elder	10	Healthy	
576	Box Elder	15	Healthy	
577	Box Elder	12	Healthy	
578	Box Elder	15	Healthy	
579	Box Elder	14	Healthy	
580	Elm/American	10	Healthy	

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_1\UPPER RILEY CREEK\DWG\G-05\_G-06.dwg PLOT DATE: 08/23/2023 3:00 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE: [Signature]  
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	DATE	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR	08/31/23	08/23/23	A B C 0 1 2 3	

Project Office:  
**BARR ENGINEERING CO.**  
 4300 MARKETPOINTE DRIVE  
 SUITE 200  
 MINNEAPOLIS, MN 55435

Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

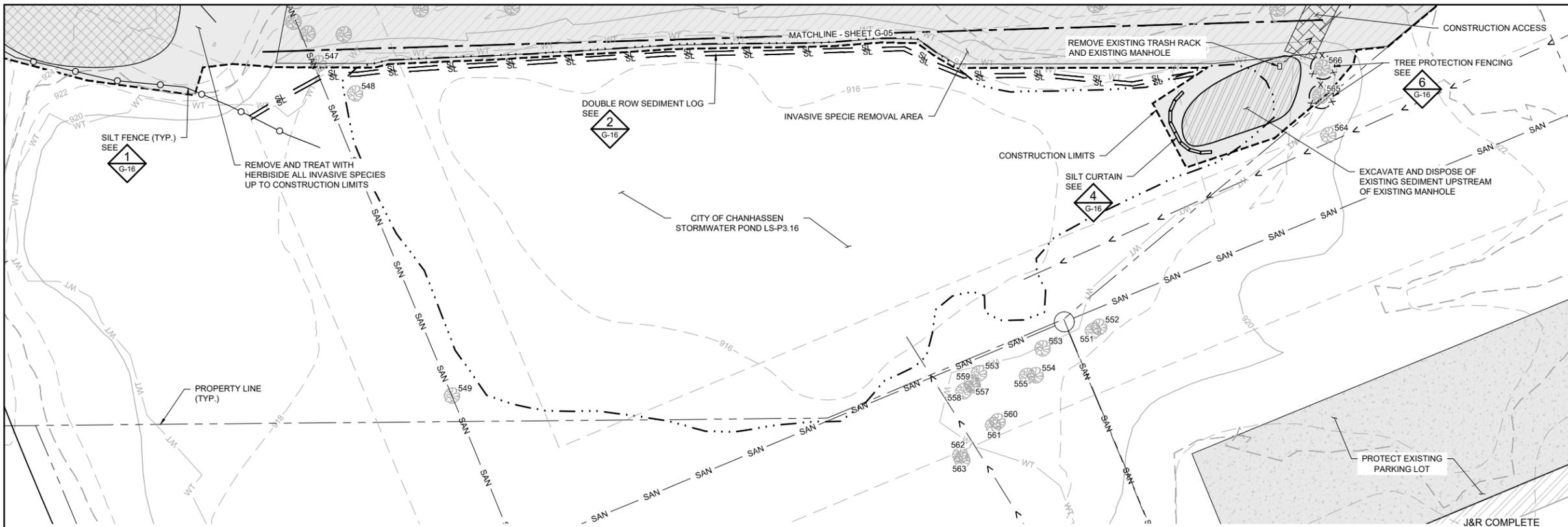
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK**  
 CORRIDOR ENHANCEMENT PLAN

REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN

BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
23/27-0053.14		G-05	0

100% DESIGN  
 ISSUED FOR BID



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION



TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
547	Willow/Black	13	Healthy	
548	Willow/Black	10	Healthy	
549	Willow/Black	10	Healthy	
551	Cottonwood	22	Healthy	
552	Cottonwood	24	Healthy	
553	Cottonwood	10	Healthy	
554	Cottonwood	25	Healthy	
555	Cottonwood	23	Healthy	
553	Cottonwood	14	Healthy	
557	Cottonwood	10	Healthy	
558	Cottonwood	13	Healthy	
559	Cottonwood	14	Healthy	
560	Cottonwood	10	Healthy	
561	Cottonwood	15	Healthy	
562	Willow/Black	13	Healthy	
563	Willow/Black	12	Healthy	
564	Willow/Black	25	Healthy	
565	Willow/Black	12	Healthy	
566	Willow/Black	22	Healthy	

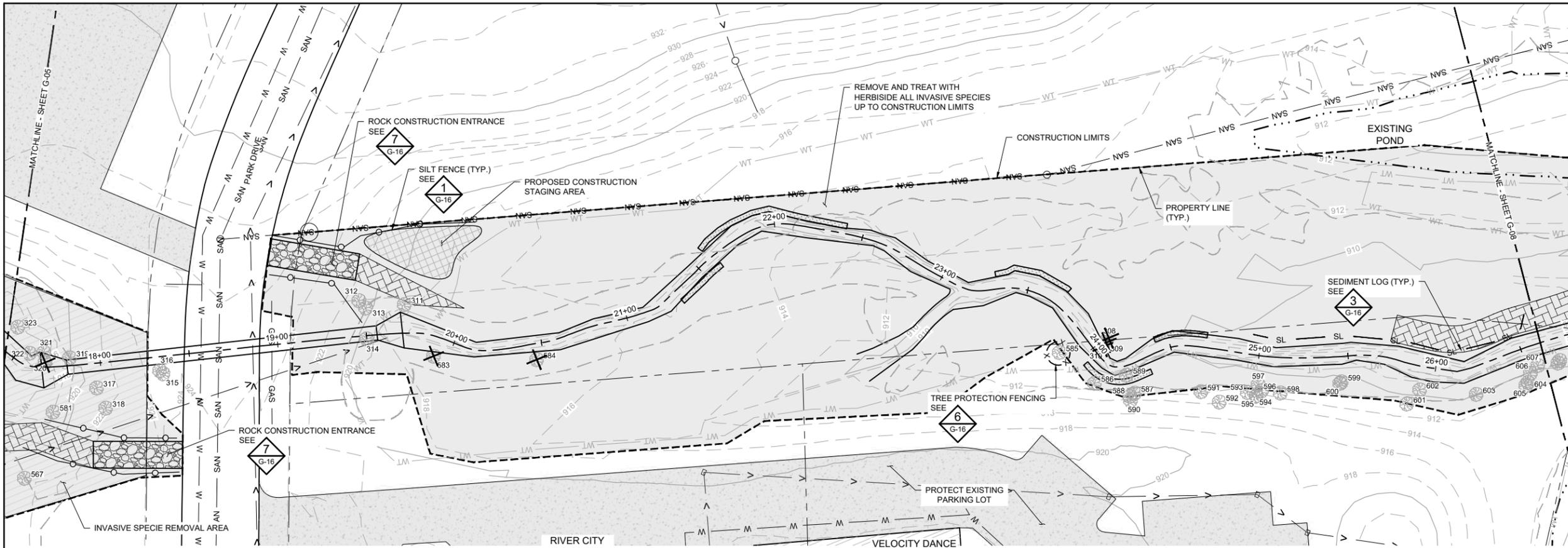
- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
  - BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
  - INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
  - LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
  - NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  - ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  - CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
  - ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
  - THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
  - CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
  - FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
  - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
  - ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
  - WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

- TREE REMOVAL/PROTECTION NOTES:**
- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  - ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
  - CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  - LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  - REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  - CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  - ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
  - CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
  - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.				<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN				BARR PROJECT No. 23/27-0053.14			
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN				CLIENT PROJECT No.											
NO. BY CHK APP. DATE REVISION DESCRIPTION				DWG. No. G-06				REV. No. 0				DWG. No. G-06				REV. No. 0											

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.1\UPPER RILEY CREEK\G-06.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:00 PM



### SYMBOL AND PATTERN LEGEND

- 960 — EXISTING 10' CONTOUR
- 962 — EXISTING 2' CONTOUR
- - - - EXISTING PROPERTY LINE
- - - - EXISTING EASEMENT
- > - EXISTING STORM SEWER
- SAN - EXISTING SANITARY SEWER
- GAS - EXISTING GAS LINE
- W - EXISTING WATERMAIN
- X - X - EXISTING FENCE
- WT - EXISTING WETLAND DELINEATION
- [Hatched Box] EXISTING PARKING LOT/PAVEMENT
- - - - CONSTRUCTION LIMITS
- SILT FENCE
- ⊗ SEDIMENT CONTROL LOGS
- [Cross-hatched Box] CONSTRUCTION ACCESS
- [Stippled Box] ROCK CONSTRUCTION ENTRANCE
- [Dashed Box] INVASIVE SPECIES REMOVAL AREA
- ⊗ EXISTING TREE TO REMAIN, PROTECT IN PLACE
- ⊗ X EXISTING CONIFEROUS OR DECIDUOUS TREE
- ⊗ TREE PROTECTION FENCE
- 101 TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**

0 30 60  
SCALE IN FEET

**EROSION & SEDIMENT CONTROL NOTES:**

1. INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
2. BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
3. INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
4. LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
5. NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
6. ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
7. CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
9. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
10. THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
11. CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
12. FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
13. IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
14. ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
15. WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
308	Willow/Black	15	Healthy	X
309	Willow/Black	15	Healthy	X
310	Willow/Black	16	Healthy	X
311	Box Elder	11	Healthy	
312	Box Elder	16	Healthy	
313	Box Elder	14	Healthy	
314	Ash/Green	15	Healthy	
315	Ash/Green	15	Healthy	
316	Ash/Green	12	Healthy	
317	Ash/Green	13	Healthy	
318	Ash/Green	10	Healthy	
319	Box Elder	13	Healthy	
320	Box Elder	11	Healthy	X
321	Ash/Green	15	Dead	
322	Ash/Green	10	Healthy	
323	Ash/Green	10	Healthy	
567	Cottonwood	34	Healthy	
581	Buckthorn	10	Healthy	
583	Willow/Black	18	Healthy	X
584	Willow/Black	35	Healthy	X
585	Willow/Black	18	Healthy	
586	Willow/Black	30	Healthy	
587	Willow/Black	18	Healthy	
588	Willow/Black	16	Healthy	
589	Willow/Black	22	Healthy	
590	Willow/Black	20	Healthy	
591	Cottonwood	20	Healthy	
592	Cottonwood	22	Healthy	
593	Cottonwood	24	Healthy	
594	Willow/Black	15	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
595	Willow/Black	14	Healthy	
596	Willow/Black	15	Healthy	
597	Willow/Black	23	Healthy	
598	Cottonwood	23	Healthy	
599	Willow/Black	27	Healthy	
600	Willow/Black	21	Healthy	
601	Willow/Black	25	Healthy	
602	Willow/Black	26	Healthy	
603	Willow/Black	32	Healthy	
604	Willow/Black	25	Healthy	
605	Willow/Black	17	Healthy	
606	Willow/Black	10	Healthy	
607	Willow/Black	16	Healthy	

- TREE REMOVAL/PROTECTION NOTES:**
1. ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  2. ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
  3. CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  4. LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  5. REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  6. CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  7. ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIFLINE SHALL BE MINIMIZED.
  8. CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIFLINE).
  9. ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  10. ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

CADD USER: ERIC P. FITZGERALD FILE: MDESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_G-04\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:01 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: *J. Olson*  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.	08/31/23	08/23/23	A B C 0 1 2 3	

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

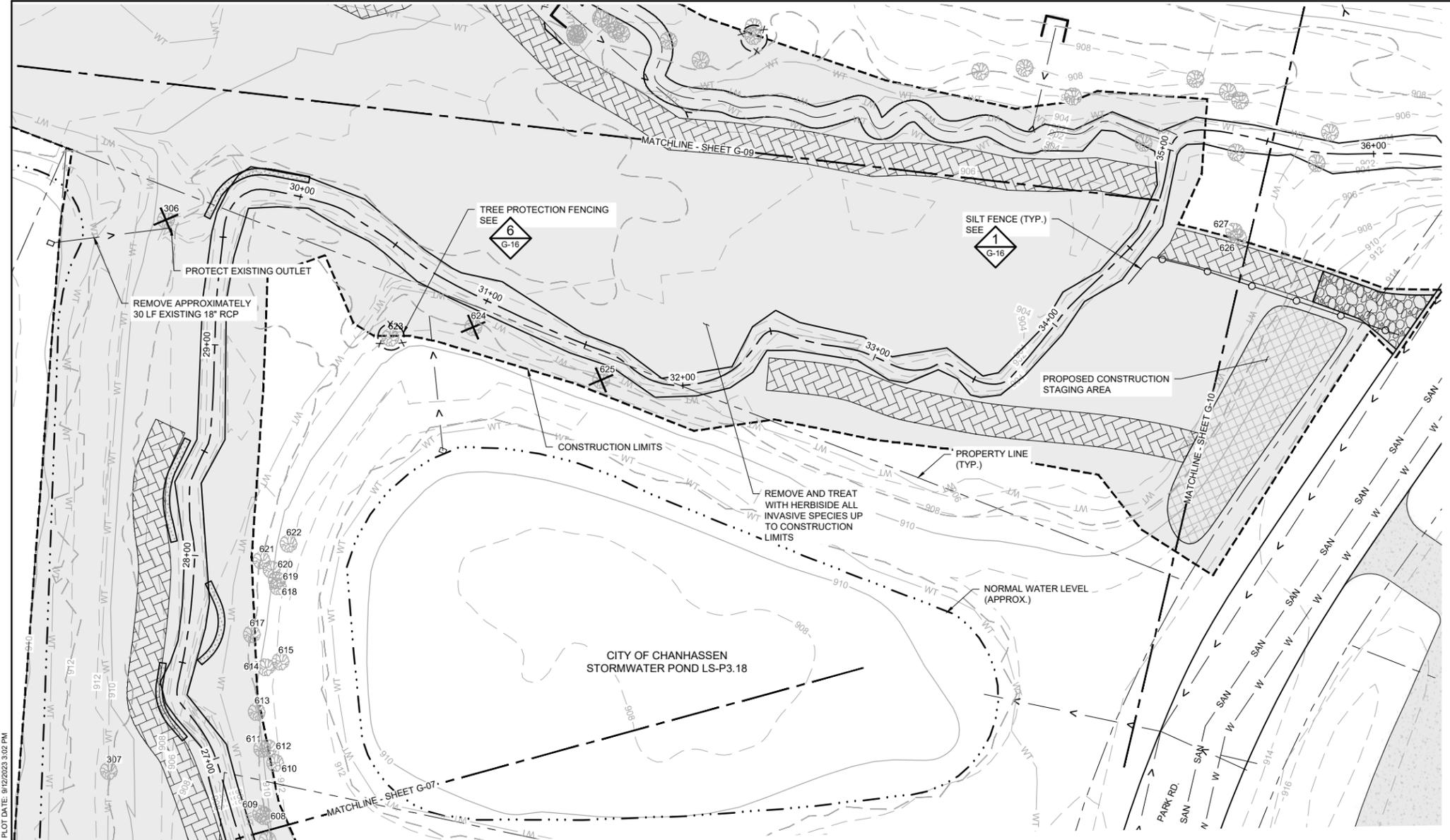
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
REMOVALS, EROSION & SEDIMENT CONTROL AND  
TREE PROTECTION PLAN

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	G-07
REV. No.	0

100% DESIGN  
ISSUED FOR BID



**SYMBOL AND PATTERN LEGEND**

— 960 —	EXISTING 10' CONTOUR
— 962 —	EXISTING 2' CONTOUR
- - - - -	EXISTING PROPERTY LINE
- - - - -	EXISTING EASEMENT
- > -	EXISTING STORM SEWER
- SAN -	EXISTING SANITARY SEWER
- GAS -	EXISTING GAS LINE
- W -	EXISTING WATERMAIN
- X - X -	EXISTING FENCE
- WT -	EXISTING WETLAND DELINEATION
[Hatched Box]	EXISTING PARKING LOT/PAVEMENT
- - - - -	CONSTRUCTION LIMITS
[Circle with Dashed Line]	SILT FENCE
[S-shaped Symbol]	SEDIMENT CONTROL LOGS
[Cross-hatched Box]	CONSTRUCTION ACCESS
[Rock Pattern Box]	ROCK CONSTRUCTION ENTRANCE
[Dashed Box]	INVASIVE SPECIES REMOVAL AREA
[Tree Symbol]	EXISTING TREE TO REMAIN, PROTECT IN PLACE
[Tree with X Symbol]	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
[Tree with Circle Symbol]	TREE PROTECTION FENCE
101	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
  - BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
  - INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
  - LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
  - NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  - ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  - CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
  - ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
  - THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
  - CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
  - FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
  - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
  - ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
  - WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**



TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
306	Willow/Black	28	Dead	X
307	Box Elder	19	Healthy	
608	Willow/Black	18	Healthy	
609	Willow/Black	10	Healthy	
610	Elm/American	15	Healthy	
611	Willow/Black	22	Healthy	
612	Willow/Black	23	Healthy	
613	Willow/Black	18	Healthy	
614	Box Elder	12	Healthy	
615	Willow/Black	16	Healthy	
617	Willow/Weeping	11	Healthy	
618	Elm/American	12	Healthy	
619	Elm/American	12	Healthy	
620	Willow/Black	28	Healthy	
621	Willow/Black	25	Healthy	
622	Elm/American	12	Healthy	
623	Willow/Black	25	Healthy	
624	Willow/Black	32	Healthy	X
625	Ash/Green	18	Healthy	X
626	Willow/Black	13	Healthy	
627	Willow/Black	10	Healthy	

- TREE REMOVAL/PROTECTION NOTES:**
- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  - ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA. CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  - LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  - REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  - CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  - ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED. CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
  - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053\1\UPPER RILEY CREEK\DWG\G-01 TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:02 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: [Signature]  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/23	08/17/23					
BID			08/23/23				
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

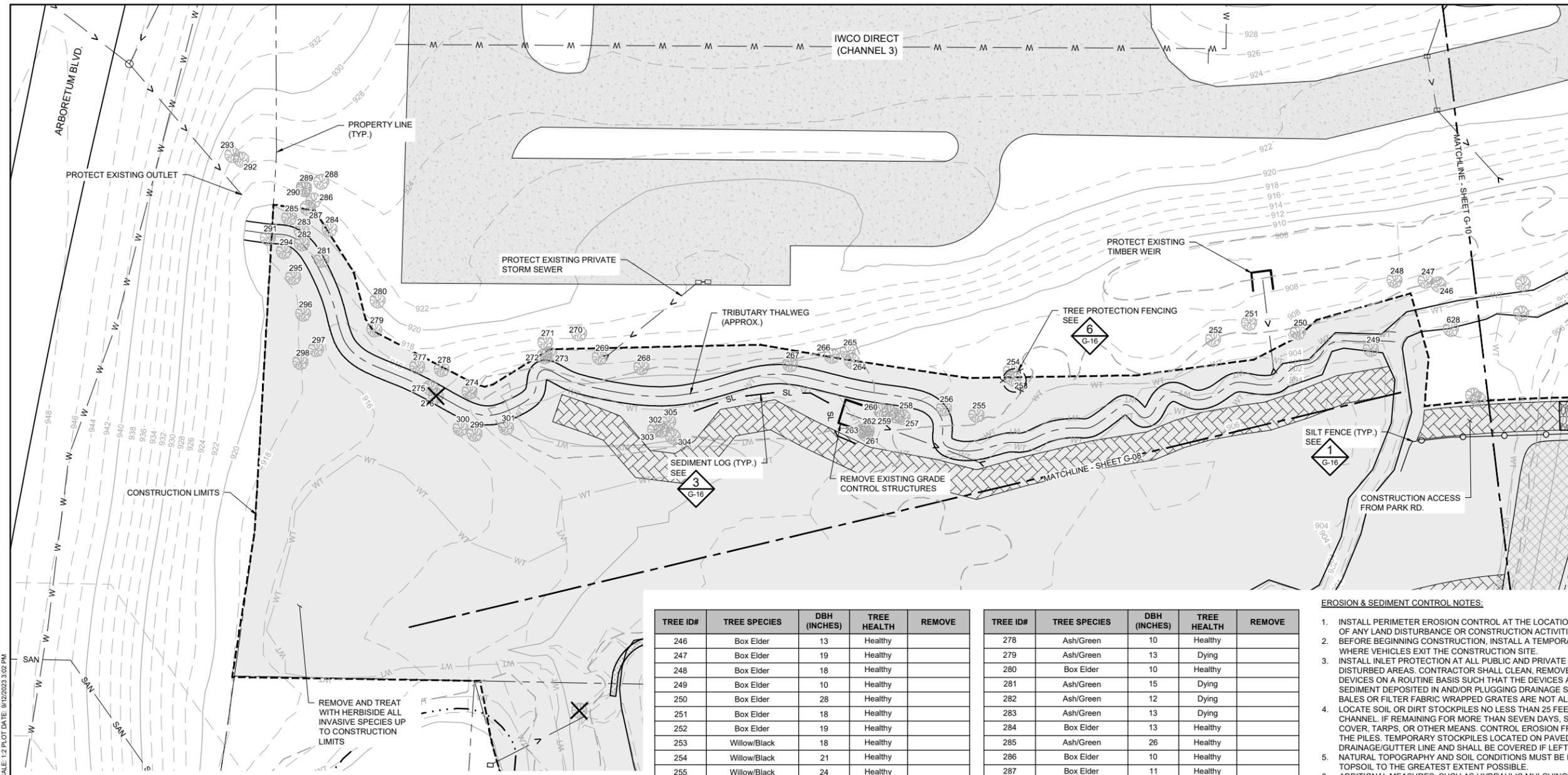
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	G-08
REV. No.	0

**100% DESIGN  
ISSUED FOR BID**



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION



**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
- CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
246	Box Elder	13	Healthy	
247	Box Elder	19	Healthy	
248	Box Elder	18	Healthy	
249	Box Elder	10	Healthy	
250	Box Elder	28	Healthy	
251	Box Elder	18	Healthy	
252	Box Elder	19	Healthy	
253	Willow/Black	18	Healthy	
254	Willow/Black	21	Healthy	
255	Willow/Black	24	Healthy	
256	Willow/Weeping	29	Healthy	
257	Willow/Black	18	Healthy	
258	Willow/Black	19	Healthy	
259	Willow/Black	11	Healthy	
260	Box Elder	10	Healthy	
261	Willow/Black	13	Healthy	
262	Willow/Black	12	Healthy	
263	Willow/Black	12	Healthy	
264	Willow/Black	25	Healthy	
265	Box Elder	25	Healthy	
266	Willow/Black	23	Healthy	
267	Box Elder	13	Healthy	
268	Willow/Black	13	Healthy	
269	Ash/Green	16	Healthy	
270	Ash/Green	13	Healthy	
271	Ash/Green	11	Healthy	
272	Ash/Green	11	Healthy	
273	Willow/Black	10	Healthy	
274	Cottonwood	16	Healthy	
275	Box Elder	12	Healthy	
276	Box Elder	11	Healthy	X
277	Ash/Green	13	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
278	Ash/Green	10	Healthy	
279	Ash/Green	13	Dying	
280	Box Elder	10	Healthy	
281	Ash/Green	15	Dying	
282	Ash/Green	12	Dying	
283	Ash/Green	13	Dying	
284	Box Elder	13	Healthy	
285	Ash/Green	26	Healthy	
286	Box Elder	10	Healthy	
287	Box Elder	11	Healthy	
288	Box Elder	13	Healthy	
289	Box Elder	13	Healthy	
290	Box Elder	13	Healthy	
291	Ash/Green	14	Dying	
292	Ash/Green	15	Healthy	
293	Ash/Green	15	Healthy	
294	Ash/Green	12	Healthy	
295	Ash/Green	12	Healthy	
296	Ash/Green	22	Dead	
297	Ash/Green	10	Dying	
298	Ash/Green	16	Healthy	
299	Ash/Green	10	Healthy	
300	Ash/Green	11	Healthy	
301	Cottonwood	19	Healthy	
302	Willow/Black	16	Healthy	
303	Willow/Black	10	Healthy	
304	Willow/Black	14	Healthy	
305	Willow/Black	13	Healthy	
628	Box Elder	11	Healthy	

**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOLL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

100% DESIGN  
ISSUED FOR BID

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE:   
DATE: 08/23/2023 LICENSE # 43120

CLIENT	DATE	REVISION	DATE
BARR	08/31/22	03/17/23	
		08/23/23	

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

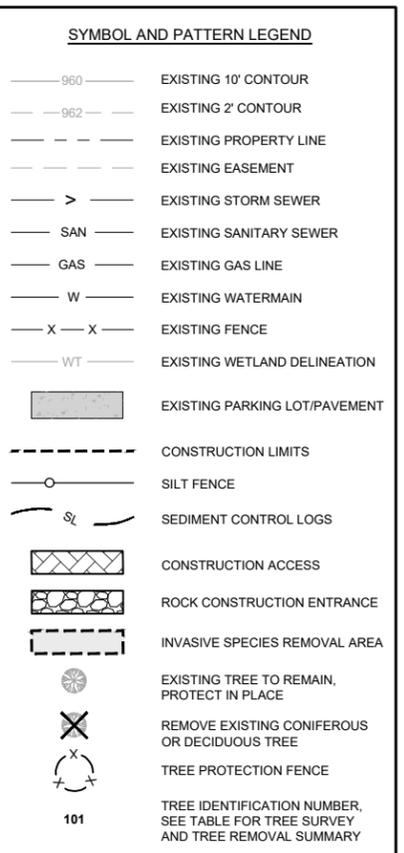
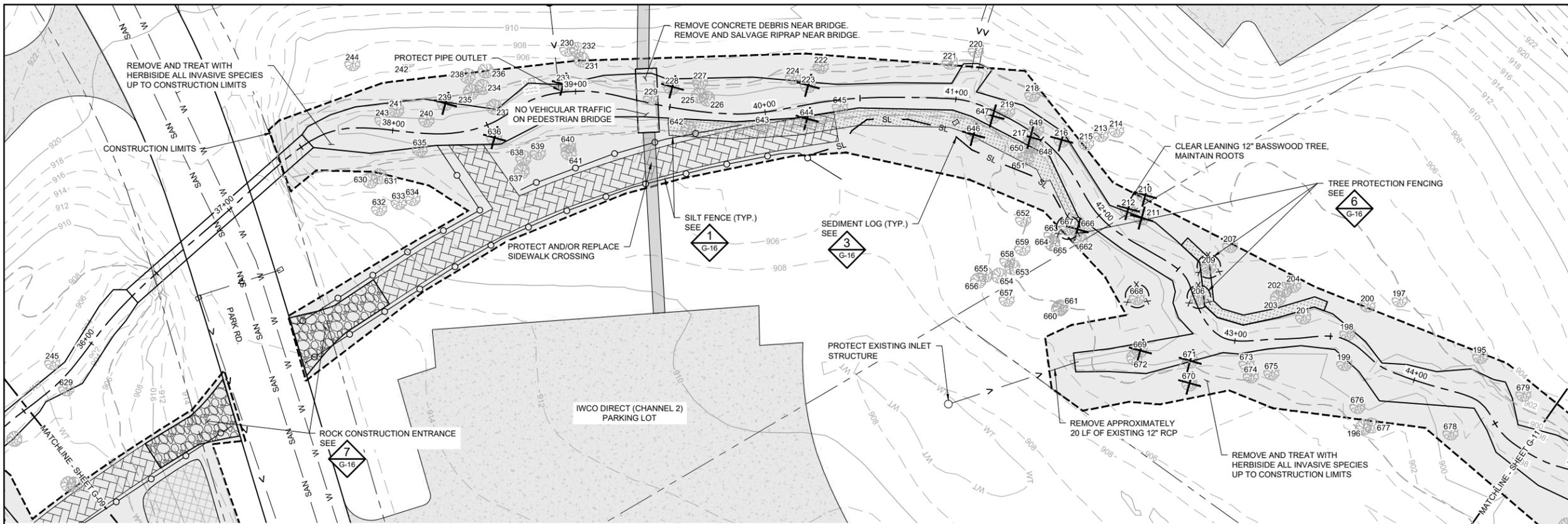
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
REMOVALS, EROSION & SEDIMENT CONTROL AND  
TREE PROTECTION PLAN

BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
23/27-0053.14		G-09	0

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.14\UPPER RILEY CREEK\23270053\_G-04\_TREE REMOVAL.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:02 PM



**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**



TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
193	Basswood/American	20	Healthy	
195	Maple/Sugar	11	Healthy	
196	Maple/Sugar	14	Healthy	
197	Maple/Sugar	21	Healthy	
198	Basswood/American	23	Healthy	
199	Maple/Sugar	23	Healthy	
200	Basswood/American	22	Dead	
201	Maple/Sugar	10	Healthy	
202	Basswood/American	10	Healthy	
203	Maple/Sugar	22	Healthy	
204	Maple/Sugar	22	Healthy	
206	Oak/Red	33	Healthy	
207	Basswood/American	25	Healthy	
209	Oak/Bur	30	Healthy	
210	Box Elder	10	Dead	X
211	Basswood/American	12	Healthy	X
212	Basswood/American	12	Healthy	X
213	Basswood/American	12	Healthy	
214	Basswood/American	10	Healthy	
215	Basswood/American	13	Healthy	
216	Basswood/American	13	Healthy	X
217	Box Elder	11	Healthy	X
218	Box Elder	13	Healthy	
219	Box Elder	13	Healthy	
220	Box Elder	12	Healthy	
221	Box Elder	12	Healthy	
222	Box Elder	15	Healthy	
223	Box Elder	11	Healthy	X
224	Box Elder	19	Healthy	
225	Box Elder	14	Healthy	
226	Box Elder	10	Healthy	
227	Box Elder	15	Healthy	
228	Box Elder	16	Healthy	X
229	Box Elder	11	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
230	Box Elder	18	Healthy	
231	Box Elder	13	Healthy	
232	Box Elder	13	Healthy	
233	Box Elder	10	Healthy	X
234	Box Elder	17	Healthy	
235	Box Elder	10	Healthy	
236	Box Elder	14	Healthy	
237	Box Elder	10	Dead	
238	Box Elder	13	Healthy	
239	Maple/American	15	Healthy	X
240	Box Elder	12	Healthy	
241	Box Elder	12	Healthy	
242	Box Elder	13	Healthy	
243	Oak/Bur	16	Healthy	
244	Box Elder	17	Healthy	
245	Box Elder	13	Healthy	
629	Box Elder	11	Dead	
630	Basswood/American	16	Healthy	
631	Box Elder	10	Healthy	
632	Box Elder	13	Healthy	
633	Box Elder	16	Healthy	
634	Box Elder	13	Healthy	
635	Ash/Green	11	Healthy	
636	Box Elder	12	Dying	X
637	Box Elder	18	Healthy	
638	Box Elder	12	Healthy	
639	Box Elder	10	Healthy	
640	Box Elder	10	Healthy	
641	Box Elder	10	Healthy	
642	Ash/Green	23	Healthy	
643	Box Elder	10	Healthy	
644	Box Elder	10	Healthy	X
645	Ash/Green	14	Healthy	
646	Elm/American	10	Healthy	X

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
647	Box Elder	10	Healthy	X
648	Basswood/American	13	Healthy	
649	Basswood/American	11	Healthy	
650	Basswood/American	15	Healthy	
651	Basswood/American	13	Healthy	
652	Basswood/American	13	Healthy	
653	Basswood/American	10	Healthy	
654	Basswood/American	15	Healthy	
655	Basswood/American	15	Healthy	
656	Basswood/American	11	Healthy	
657	Basswood/American	11	Healthy	
658	Basswood/American	10	Healthy	
659	Basswood/American	10	Healthy	
660	Ash/Green	10	Healthy	
661	Elm/American	13	Healthy	
662	Box Elder	15	Healthy	
663	Basswood/American	13	Healthy	
664	Basswood/American	10	Healthy	
665	Basswood/American	15	Healthy	
666	Basswood/American	10	Healthy	X
667	Oak/Bur	41	Healthy	
668	Oak/Bur	15	Healthy	
669	Box Elder	10	Healthy	X
670	Elm/American	10	Healthy	X
671	Ash/Green	15	Dead	X
672	Box Elder	10	Healthy	
673	Elm/American	15	Healthy	
674	Oak/Bur	25	Healthy	
675	Basswood/American	23	Healthy	
676	Maple/Sugar	13	Healthy	
677	Basswood/American	13	Healthy	
678	Ash/Green	36	Healthy	
679	Maple/Sugar	10	Healthy	

**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
- CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

**100% DESIGN  
ISSUED FOR BID**

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\1\UPPER RILEY CREEK\23270053\_G-01\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:03 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

CLIENT: 08/31/23 08/17/23  
 CONSTRUCTION RECORD: 08/23/23  
 PRINTED NAME: JESSICA OLSON  
 SIGNATURE: *J. Olson*  
 DATE: 08/23/2023 LICENSE # 43120

RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

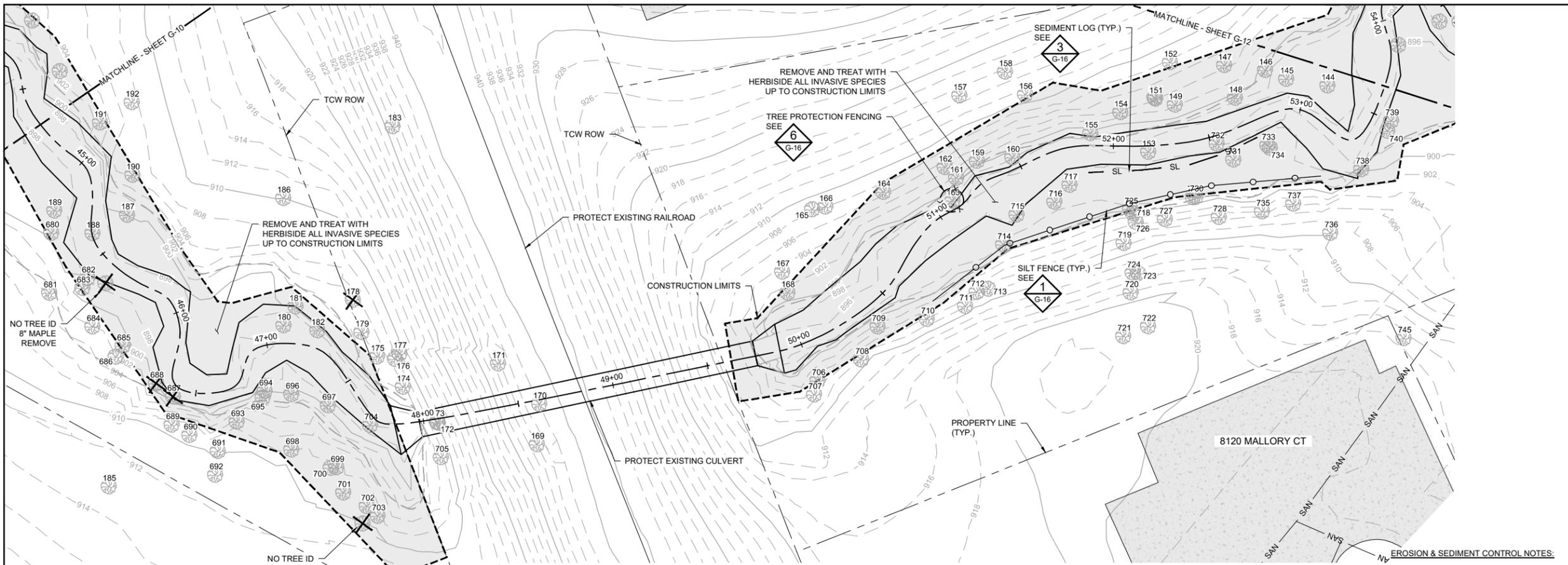
Project Office:  
**BARR** ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
**REMOVALS, EROSION CONTROL AND  
TREE PROTECTION PLAN**

BARR PROJECT No. <b>23/27-0053.14</b>	REV. No. <b>0</b>
CLIENT PROJECT No.	DWG. No. <b>G-10</b>



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**

0 30 60  
SCALE IN FEET

**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
144	Maple/Sugar	10	Healthy	
145	Maple/Sugar	13	Healthy	
146	Pine/Red	30	Healthy	
147	Oak/Red	12	Healthy	
148	Oak/Red	13	Healthy	
149	Oak/Red	13	Healthy	
150	Maple/Sugar	14	Healthy	
151	Oak/Red	23	Healthy	
152	Maple/Sugar	10	Healthy	
153	Basswood/American	13	Healthy	
154	Maple/Sugar	13	Healthy	
155	Basswood/American	15	Healthy	
156	Maple/Sugar	17	Healthy	
157	Basswood/American	13	Healthy	
158	Maple/Red	12	Healthy	
159	Maple/Sugar	17	Healthy	
160	Maple/Sugar	10	Healthy	
161	Basswood/American	16	Healthy	
162	Maple/Sugar	17	Healthy	
163	Oak/Red	17	Healthy	
164	Basswood/American	20	Healthy	
165	Basswood/American	20	Healthy	
166	Basswood/American	21	Healthy	
167	Oak/Red	20	Healthy	
168	Oak/Red	21	Healthy	
169	Box Elder	10	Healthy	
170	Box Elder	10	Healthy	
171	Elm/American	11	Healthy	
172	Box Elder	11	Healthy	
173	Box Elder	13	Healthy	
174	Box Elder	11	Healthy	
175	Box Elder	15	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
176	Maple/Sugar	10	Healthy	
177	Maple/Sugar	22	Healthy	
178	Box Elder	11	Healthy	X
179	Oak/Sugar	10	Healthy	
180	Oak/Red	27	Healthy	
181	Maple/Sugar	14	Healthy	
182	Oak/Red	26	Healthy	
183	Oak/Red	26	Healthy	
185	Ash/Green	23	Healthy	
186	Maple/Sugar	28	Healthy	
188	Oak/Red	16	Healthy	
187	Oak/Red	27	Healthy	
189	Maple/Sugar	18	Healthy	
190	Oak/Red	23	Healthy	
191	Basswood/American	18	Healthy	
192	Basswood/American	18	Healthy	
194	Elm/American	13	Healthy	
680	Ash/Green	30	Healthy	
681	Basswood/American	36	Healthy	
682	Basswood/American	15	Healthy	
683	Basswood/American	14	Healthy	
684	Maple/Sugar	10	Healthy	
685	Ash/Green	14	Healthy	
686	Basswood/American	11	Healthy	
687	Basswood/American	13	Healthy	X
688	Basswood/American	15	Healthy	X
689	Maple/Sugar	12	Healthy	
690	Ash/Green	32	Healthy	
691	Maple/Sugar	10	Healthy	
692	Box Elder	12	Healthy	
693	Oak/Bur	35	Healthy	
694	Elm/American	10	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
695	Maple/Sugar	33	Healthy	
696	Maple/Sugar	11	Healthy	
697	Maple/Sugar	13	Healthy	
698	Elm/American	13	Healthy	
699	Box Elder	15	Healthy	
700	Ash/Green	13	Healthy	
701	Box Elder	15	Healthy	
702	Ash/Green	24	Healthy	
703	Box Elder	11	Healthy	
704	Ash/Green	12	Healthy	
705	Ash/Green	14	Healthy	
706	Maple/Sugar	10	Healthy	
707	Maple/Sugar	32	Healthy	
708	Maple/Sugar	27	Healthy	
709	Maple/Sugar	18	Healthy	
710	Maple/Sugar	18	Healthy	
711	Maple/Sugar	16	Healthy	
712	Maple/Sugar	15	Healthy	
713	Maple/Sugar	18	Healthy	
714	Maple/Sugar	11	Healthy	
715	Maple/Sugar	11	Healthy	
716	Basswood/American	11	Healthy	
717	Ash/Green	33	Healthy	
718	Basswood/American	22	Healthy	
719	Basswood/American	20	Healthy	
720	Elm/American	14	Healthy	
721	Oak/Red	15	Healthy	
722	Oak/Red	15	Healthy	
723	Oak/Red	14	Healthy	
724	Oak/Red	14	Healthy	
725	Basswood/American	20	Healthy	
726	Basswood/American	20	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
727	Oak/Red	15	Healthy	
728	Oak/Red	26	Healthy	
729	Basswood/American	19	Healthy	
730	Basswood/American	19	Healthy	
731	Basswood/American	16	Healthy	
732	Ash/Green	23	Healthy	
733	Ash/Green	23	Healthy	
734	Basswood/American	18	Dead	
735	Maple/Sugar	18	Healthy	
736	Basswood/American	15	Healthy	
737	Basswood/American	25	Healthy	
738	Oak/Red	25	Healthy	
739	Maple/Sugar	11	Healthy	
740	Oak/Bur	28	Healthy	
745	Maple/Red	20	Healthy	

**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA. CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIFLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIFLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

CADD USER: ERIC P. FITZGERALD FILE: MDESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_G-01\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:04 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE:   
DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR	08/31/23	08/23/23	A B C 0 1 2 3	

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: 1-800-632-2277

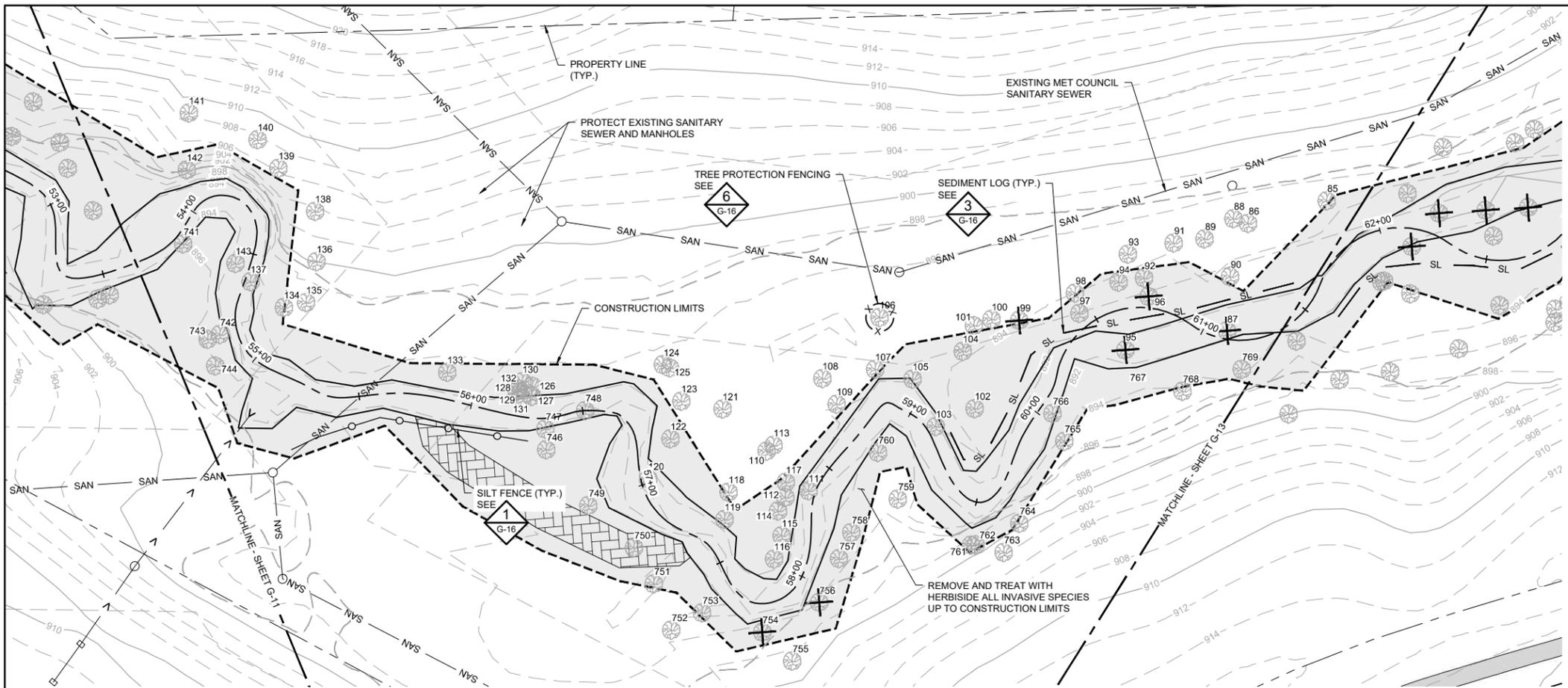
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN

BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
23/27-0053.14		G-11	B

100% DESIGN  
ISSUED FOR BID



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
<b>101</b>	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**



**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
85	Elm/American	14	Healthy	
86	Basswood/American	10	Healthy	
87	Walnut/Black	17	Healthy	X
88	Basswood/American	15	Healthy	
89	Basswood/American	11	Healthy	
90	Basswood/American	12	Healthy	
91	Basswood/American	13	Healthy	
92	Basswood/American	11	Healthy	
93	Walnut/Black	10	Healthy	
94	Walnut/Black	13	Healthy	
95	Cottonwood	13	Healthy	X
96	Ash/Green	12	Healthy	X
97	Oak/White	18	Healthy	
98	Ash/Green	16	Healthy	
99	Ash/Green	23	Healthy	X
100	Basswood/American	14	Healthy	
101	Basswood/American	14	Healthy	
102	Ash/Green	13	Healthy	
103	Ash/Green	10	Healthy	
104	Walnut/Black	10	Healthy	
105	Ash/Green	11	Healthy	
106	Basswood/American	10	Healthy	
107	Basswood/American	10	Healthy	
108	Walnut/Black	13	Healthy	
109	Basswood/American	16	Healthy	
110	Ash/Green	10	Healthy	
111	Basswood/American	15	Healthy	
112	Maple/Sugar	12	Healthy	
113	Maple/Sugar	12	Healthy	
114	Basswood/American	15	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
115	Basswood/American	16	Healthy	
116	Walnut/Black	16	Healthy	
117	Walnut/Black	10	Healthy	
118	Maple/Sugar	14	Healthy	
119	Maple/Sugar	16	Healthy	
120	Ash/Green	33	Healthy	
121	Oak/Red	30	Healthy	
122	Basswood/American	14	Healthy	
123	Basswood/American	23	Healthy	
124	Basswood/American	10	Healthy	
125	Basswood/American	11	Healthy	
126	Ash/Green	14	Healthy	
127	Oak/American	14	Healthy	
128	Ash/Green	13	Healthy	
129	Ash/Green	12	Healthy	
130	Ash/Green	11	Healthy	
131	Ash/Green	12	Healthy	
132	Elm/American	13	Healthy	
133	Ash/Green	11	Healthy	
134	Basswood/American	10	Healthy	
135	Elm/American	14	Healthy	
136	Basswood/American	11	Healthy	
137	Basswood/American	10	Healthy	
138	Bitternut Hickory	10	Healthy	
139	Oak/Red	23	Healthy	
140	Maple/Sugar	18	Healthy	
141	Maple/Sugar	22	Healthy	
142	Oak/Red	21	Healthy	
143	Maple/Sugar	13	Dying	
144	Oak/Bur	24	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
742	Ash/Green	30	Healthy	
743	Basswood/American	11	Healthy	
744	Ash/Green	11	Healthy	
746	Oak/Bur	23	Healthy	
747	Elm/American	15	Healthy	
748	Ash/Green	28	Healthy	
749	Basswood/American	15	Healthy	
750	Oak/Bur	23	Healthy	
751	Ash/Green	28	Healthy	
752	Basswood/American	15	Healthy	
753	Basswood/American	10	Healthy	
754	Basswood/American	15	Healthy	X
755	Basswood/American	16	Healthy	
756	Elm/American	13	Healthy	X
757	Oak/Bur	15	Healthy	
758	Maple/Sugar	15	Healthy	
759	Oak/Bur	16	Healthy	
760	Ash/Green	14	Healthy	
761	Oak/Bur	16	Healthy	
762	Oak/Bur	22	Healthy	
763	Oak/Bur	25	Healthy	
764	Basswood/American	11	Healthy	
765	Oak/Red	30	Healthy	
766	Maple/Sugar	12	Dead	
767	Basswood/American	14	Healthy	
768	Maple/Sugar	11	Healthy	
769	Oak/Bur	30	Healthy	

**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
- CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_G-01\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:05 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE:   
DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.	08/31/23	08/23/23	A B C 0 1 2 3	

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

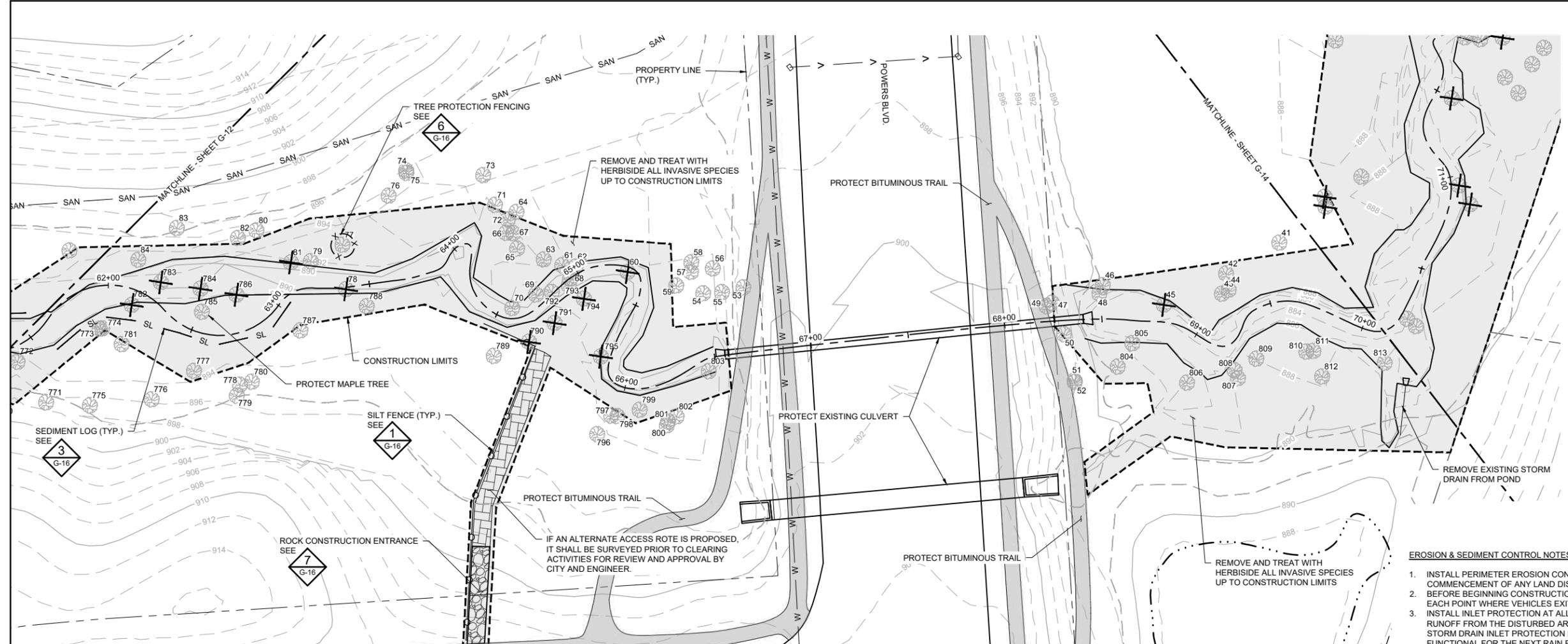
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
**REMOVALS, EROSION CONTROL AND**  
**TREE PROTECTION PLAN**

BARR PROJECT No.	
23/27-0053.14	
CLIENT PROJECT No.	
DWG. No.	REV. No.
G-12	0

**100% DESIGN**  
**ISSUED FOR BID**

CADD USER: ERIC P. FITZGERALD FILE: MDESIGN23270053.1 UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN DWG: G-13 DATE: 08/23/2023 3:08 PM



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
<b>101</b>	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
  - BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
  - INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
  - LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
  - NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  - ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  - CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
  - ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
  - THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
  - CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
  - FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
  - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
  - ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
  - WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**



TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
41	Ash/Green	13	Healthy	
42	Box Elder	15	Healthy	
43	Elm/American	12	Healthy	
44	Box Elder	10	Healthy	
45	Walnut/Black	13	Healthy	X
46	Elm/American	19	Healthy	
47	Elm/American	17	Healthy	
48	Cottonwood	33	Healthy	
49	Apple	10	Healthy	
50	Apple	10	Healthy	
51	Apple	10	Healthy	
52	Apple	10	Healthy	
53	Hackberry	15	Healthy	
54	Ash/Green	10	Healthy	
55	Box Elder	16	Healthy	
56	Ash/Green	10	Healthy	
57	Ash/Green	13	Healthy	
58	Ash/Green	13	Healthy	
59	Ash/Green	15	Healthy	
60	Ash/Green	15	Healthy	X
61	Elm/American	14	Healthy	
62	Elm/American	10	Healthy	
63	Ash/Green	12	Healthy	
64	Cottonwood	16	Healthy	
65	Cottonwood	22	Healthy	
66	Cottonwood	11	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
67	Cottonwood	14	Healthy	
68	Box Elder	28	Healthy	
69	Willow/Black	12	Healthy	
70	Willow/Black	13	Healthy	
71	Cottonwood	16	Healthy	
72	Cottonwood	15	Healthy	
73	Cottonwood	16	Healthy	
74	Maple/Red	10	Healthy	
75	Maple/Red	12	Healthy	
76	Elm/American	13	Healthy	
77	Ash/Green	10	Healthy	
78	Ash/Green	16	Healthy	X
79	Ash/Green	12	Healthy	
80	Ash/Green	12	Healthy	
81	Ash/Green	12	Healthy	X
82	Basswood/American	10	Healthy	
83	Ash/Green	15	Healthy	
84	Elm/American	11	Healthy	
770	Oak/Red	30	Healthy	
771	Oak/Red	39	Healthy	
772	Basswood/American	16	Healthy	X
773	Ash/Green	14	Healthy	
774	Ash/Green	11	Healthy	
775	Cottonwood	13	Healthy	
776	Oak/Red	16	Healthy	
777	Basswood/American	26	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
778	Maple/Red	14	Healthy	
779	Maple/Red	13	Healthy	
780	Maple/Red	13	Healthy	
781	Ash/Green	13	Healthy	
782	Elm/American	17	Healthy	X
783	Ash/Green	13	Healthy	X
784	Oak/Red	22	Dead	X
785	Maple/Sugar	12	Healthy	
786	Ash/Green	12	Healthy	X
787	Basswood/American	10	Healthy	
788	Box Elder	40	Healthy	
789	Basswood/American	13	Healthy	
790	Ash/Green	12	Healthy	X
791	Box Elder	10	Healthy	X
792	Box Elder	12	Healthy	
793	Ash/Green	10	Healthy	
794	Ash/Green	11	Healthy	X
795	Ash/Green	12	Healthy	X
796	Elm/American	12	Healthy	
797	Cottonwood	18	Healthy	
798	Cottonwood	25	Healthy	
799	Elm/American	13	Healthy	
800	Cottonwood	26	Healthy	
801	Elm/American	10	Healthy	
802	Elm/American	16	Healthy	
803	Hackberry	13	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
804	Box Elder	10	Healthy	
805	Ash/Green	13	Healthy	
806	Willow/Black	25	Dying	
807	Elm/American	13	Healthy	
808	Willow/Black	35	Healthy	
809	Elm/American	10	Healthy	
810	Willow/Black	25	Dead	
811	Ash/Green	20	Healthy	
812	Box Elder	22	Healthy	
813	Elm/American	16	Healthy	

- TREE REMOVAL/PROTECTION NOTES:**
- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  - ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA. CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  - LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  - REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  - CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  - ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
  - CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
  - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE:   
 DATE: 08/23/2023 LICENSE # 43120

Project Office:  
**BARR ENGINEERING CO.**  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435

Scale: AS SHOWN  
 Date: 08/23/2023  
 Drawn: EPF  
 Checked: JCO  
 Designed: BARR  
 Approved: SAS

Client: 08/31/23  
 Construction Record: 08/23/23

Released To/For: A B C 0 1 2 3  
 Date Released:

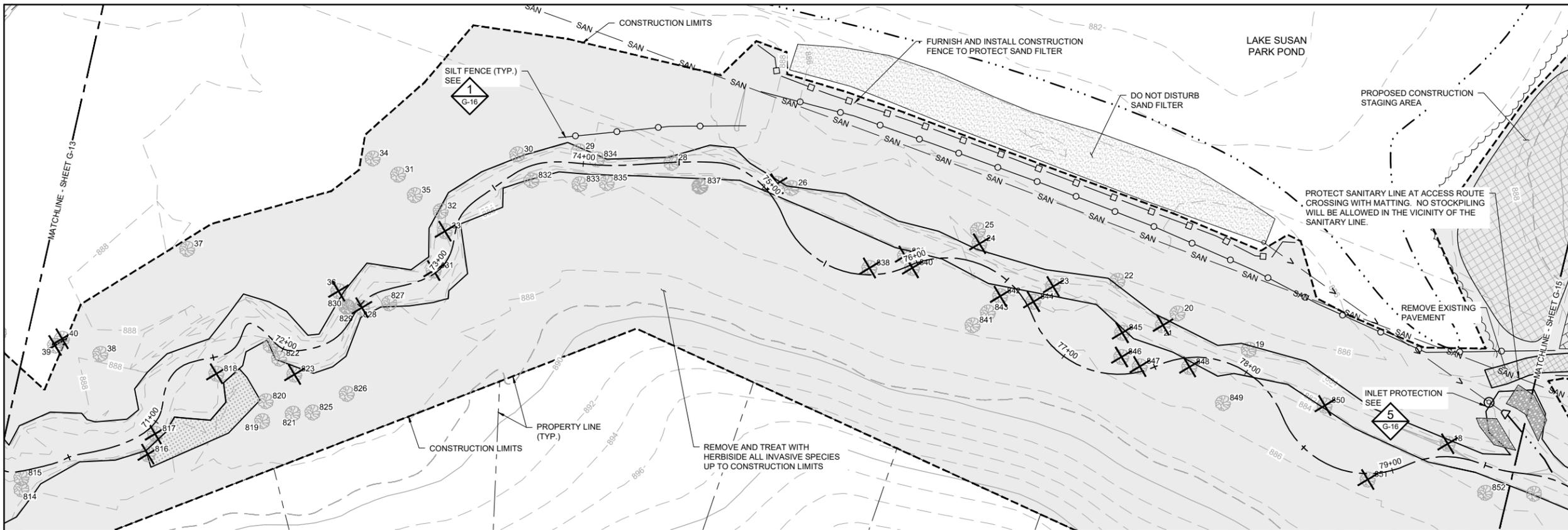
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK**  
 CORRIDOR ENHANCEMENT PLAN

**REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN**

BARR PROJECT No. 23/27-0053.14	REV. No. 0
CLIENT PROJECT No.	DWG. No. G-13

**100% DESIGN**  
**ISSUED FOR BID**



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	EXISTING SAND FILTER
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**



**EROSION & SEDIMENT CONTROL NOTES:**

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
- ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
- CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
- THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
- CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
- IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**TREE REMOVAL/PROTECTION NOTES:**

- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
- CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
- LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
- REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
- CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
- ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIPLINE).
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
18	Box Elder	14	Healthy	X
19	Ash/Green	16	Healthy	
20	Box Elder	13	Healthy	
21	Willow/Black	14	Healthy	X
22	Walnut/Black	12	Healthy	
23	Box Elder	10	Healthy	X
24	Box Elder	13	Healthy	X
25	Box Elder	12	Healthy	
26	Ash/Green	17	Healthy	
27	Ash/Green	12	Healthy	X
28	Ash/Green	14	Healthy	
29	Cottonwood	33	Healthy	
30	Ash/Green	33	Healthy	
31	Elm/American	16	Healthy	
32	Ash/Green	15	Healthy	
33	Elm/American	13	Healthy	X
34	Elm/American	22	Healthy	
35	Elm/American	13	Healthy	
36	Elm/American	11	Healthy	X
37	Cottonwood	33	Healthy	
38	Basswood/American	19	Healthy	
39	Ash/Green	20	Healthy	X
40	Ash/Green	20	Healthy	X
814	Ash/Green	18	Healthy	
815	Ash/Green	25	Healthy	
816	Basswood/American	12	Healthy	X
817	Ash/Green	14	Healthy	X
818	Box Elder	12	Healthy	X
819	Basswood/American	14	Healthy	
820	Basswood/American	15	Healthy	
821	Ash/Green	11	Healthy	
822	Box Elder	12	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
823	Basswood/American	14	Healthy	X
824	Basswood/American	10	Healthy	
825	Ash/Green	14	Healthy	
826	Ash/Green	15	Healthy	
827	Basswood/American	30	Healthy	
828	Basswood/American	14	Dying	X
829	Basswood/American	15	Dying	
830	Basswood/American	13	Dying	
831	Cottonwood	19	Healthy	X
832	Willow/Black	23	Healthy	
833	Ash/Green	12	Healthy	
834	Elm/American	12	Healthy	
835	Ash/Green	13	Healthy	
836	Cottonwood	38	Healthy	
837	Cottonwood	36	Healthy	
838	Cottonwood	35	Healthy	X
839	Elm/American	10	Healthy	X
840	Basswood/American	10	Healthy	X
841	Oak/Red	12	Healthy	
842	Oak/Red	12	Healthy	X
843	Cottonwood	15	Healthy	
844	Cottonwood	40	Healthy	X
845	Cottonwood	28	Dead	X
846	Oak/Red	13	Healthy	X
847	Maple/Sugar	13	Healthy	X
848	Oak/Red	14	Healthy	X
849	Oak/Red	17	Healthy	
850	Cottonwood	45	Healthy	X
851	Oak/Red	17	Healthy	X
852	Oak/Red	10	Healthy	

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\1\UPPER RILEY CREEK\23270053\_G-01\_TREE INVENTORY.DWG PLOT SCALE: 1/2"=1'-0" DATE: 08/23/2023 3:08 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT	08/31/23	09/17/23					
PRINTED NAME: JESSICA OLSON		BID							
SIGNATURE:		CONSTRUCTION RECORD							
DATE: 08/23/2023 LICENSE # 43120		RELEASED TO/FOR	A	B	C	0	1	2	3
		DATE RELEASED							

Project Office:  
**BARR** ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

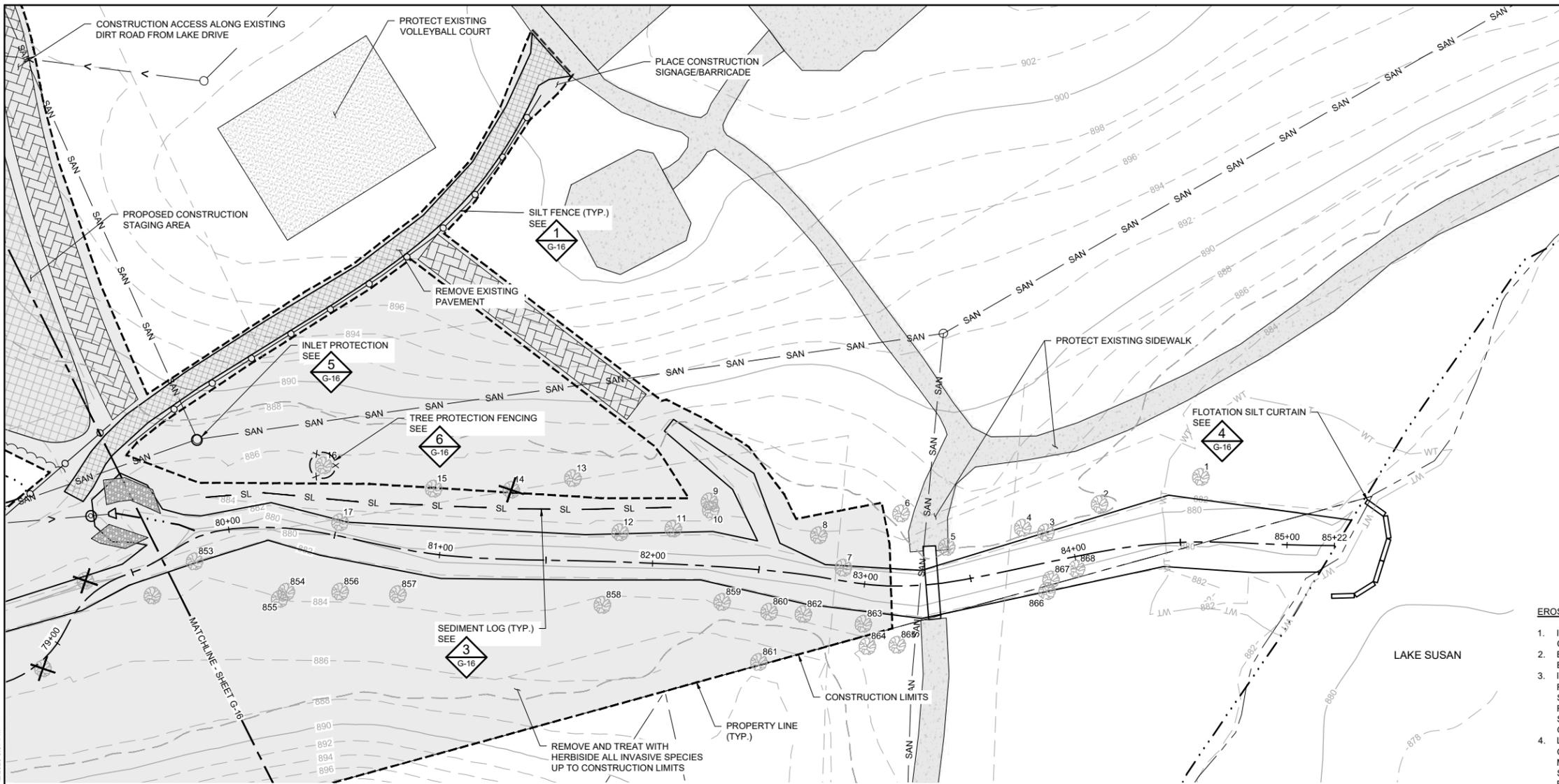
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
 REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	G-14
REV. No.	0

100% DESIGN  
 ISSUED FOR BID



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS
	ROCK CONSTRUCTION ENTRANCE
	INVASIVE SPECIES REMOVAL AREA
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE
	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
  - BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
  - INSTALL INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTOR SHALL CLEAN, REMOVE SEDIMENT, OR REPLACE STORM DRAIN INLET PROTECTION DEVICES ON A ROUTINE BASIS SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLUGGING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
  - LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
  - NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ONSITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  - ADDITIONAL MEASURES, SUCH AS HYDRAULIC MULCHING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  - CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
  - ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 7 CALENDAR DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY THAT DRAINS TO AN IMPAIRED WATER, WITHIN 14 DAYS ELSEWHERE.
  - THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS SECTION FOR INSPECTION BY THE DISTRICT ON REQUEST.
  - CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
  - FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY, REFER TO SPECIFICATIONS.
  - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER FROM THE SITE. IF THE DISCHARGE FROM THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS, VEGETATIVE FILTER STRIPS, OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE IS NOT VISIBLY DIFFERENT FROM THE RECEIVING WATER. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AT THE DISCHARGE POINT TO PREVENT SCOUR EROSION.
  - ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSELS, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE. SEE SECTION 4.6 OF THE SWPPP (SHEET G-02) FOR FURTHER DETAIL.
  - WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

**1 PLAN: REMOVALS, EROSION CONTROL & TREE PROTECTION**

0 30 60  
SCALE IN FEET

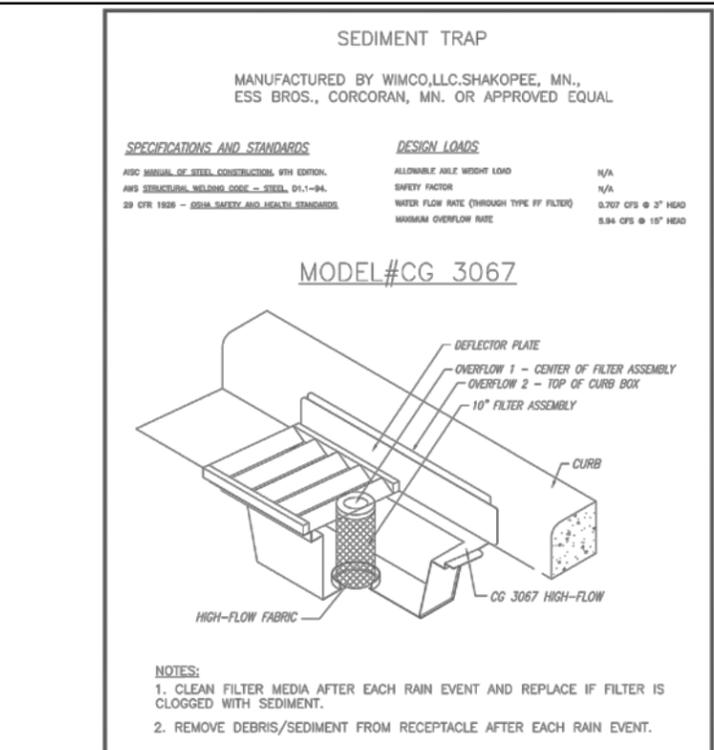
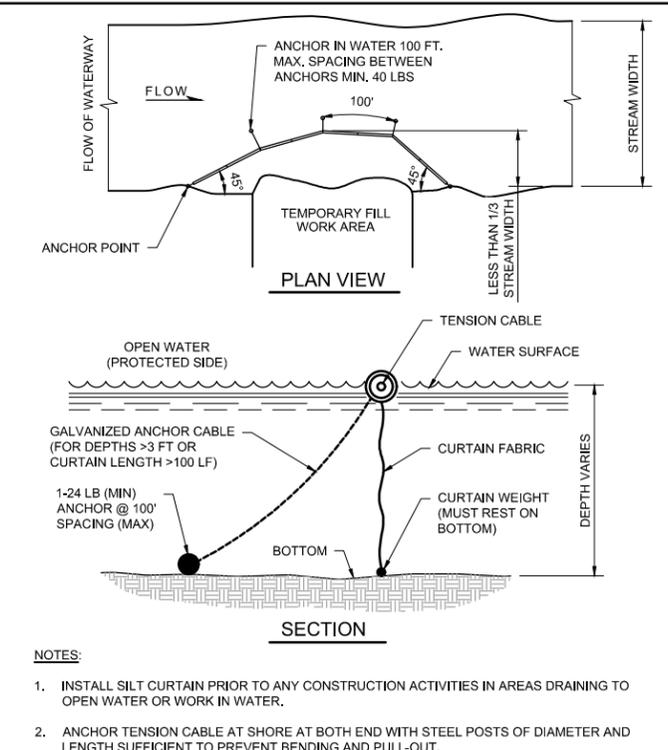
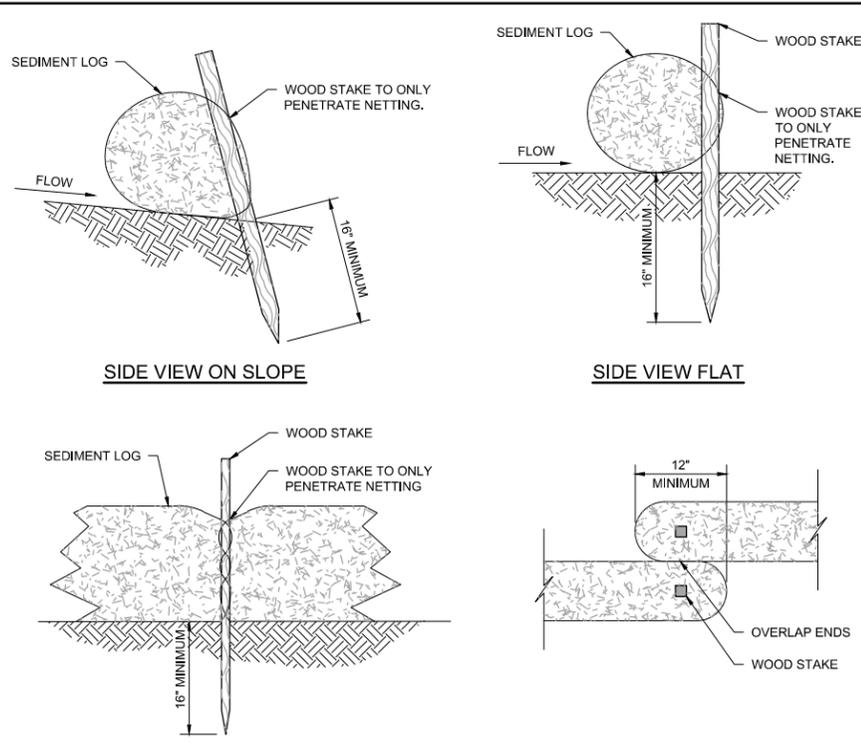
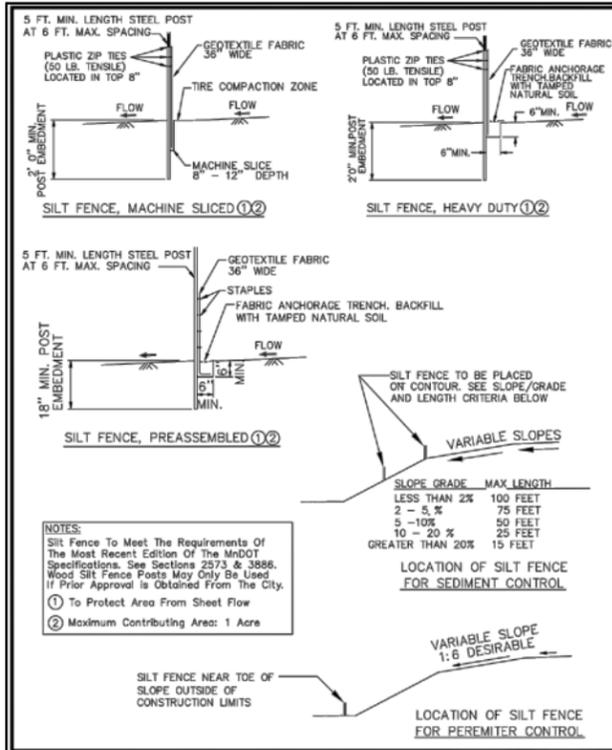
TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
1	Box Elder	12	Healthy	
2	Box Elder	29	Healthy	
3	Box Elder	10	Healthy	
4	Box Elder	10	Healthy	
5	Box Elder	18	Healthy	
6	Box Elder	21	Healthy	
7	Willow/Black	30	Healthy	
8	Box Elder	10	Healthy	
9	Box Elder	13	Healthy	
10	Box Elder	12	Healthy	
11	Box Elder	25	Healthy	
12	Box Elder	11	Healthy	
13	Box Elder	12	Healthy	
14	Ash/Green	12	Dead	X
15	Elm/American	22	Healthy	
16	Elm/American	10	Healthy	
17	Box Elder	11	Healthy	
853	Cherry/Black	16	Healthy	

TREE ID#	TREE SPECIES	DBH (INCHES)	TREE HEALTH	REMOVE
854	Basswood/American	17	Healthy	
855	Basswood/American	13	Healthy	
856	Box Elder	10	Healthy	
857	Maple/Sugar	12	Healthy	
858	Buckthorn	10	Healthy	
859	Oak/Bur	25	Healthy	
860	Oak/Bur	35	Healthy	
861	Oak/Bur	17	Healthy	
862	Box Elder	10	Dead	
863	Elm/American	10	Healthy	
864	Basswood/American	13	Healthy	
865	Box Elder	10	Healthy	
866	Box Elder	10	Healthy	
867	Box Elder	10	Healthy	
868	Box Elder	11	Healthy	

- TREE REMOVAL/PROTECTION NOTES:**
- ADDITIONAL TREE REMOVALS MAY BE REQUESTED AND APPROVED AT TIME OF CONSTRUCTION.
  - ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.
  - CONTRACTOR SHALL FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
  - LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
  - REMOVE AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
  - CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 6".
  - ALL TREES NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIFLINE SHALL BE MINIMIZED.
  - CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE (EQUAL TO DRIFLINE).
  - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
  - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

CADD USER: ERIC P. FITZGERALD FILE: MDESIGN\23270053\_14\UPPER RILEY CREEK\DWG PLOT SCALE: 1/2 PLOT DATE: 08/23/2023 3:07 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: DATE: 08/23/2023 LICENSE # 43120		CLIENT: BARR ENGINEERING CO. BID: 23/23 CONSTRUCTION RECORD: 23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:		Project Office: <b>BARR</b> ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.		<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN REMOVALS, EROSION & SEDIMENT CONTROL AND TREE PROTECTION PLAN		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. G-15 REV. No. 0	
--	--	--	--	---	--	--	--	--	--	--	--	--	--



**CITY OF CHANHASSEN**

**SILT FENCE**

REVISED: 1-21  
 FILE NAME: G:\ENG\SPCS\5300

ENGINEERING DEPARTMENT  
 PLATE NO.: 5300

**CITY OF CHANHASSEN**

**CATCH BASIN SEDIMENT TRAP**

REVISED: 1-22  
 FILE NAME: G:\ENG\SPCS\5302A

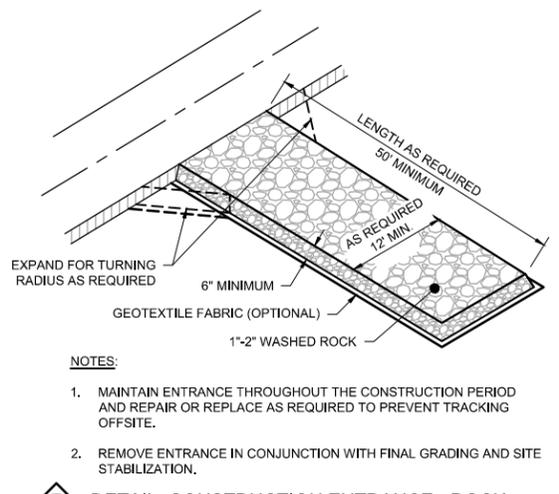
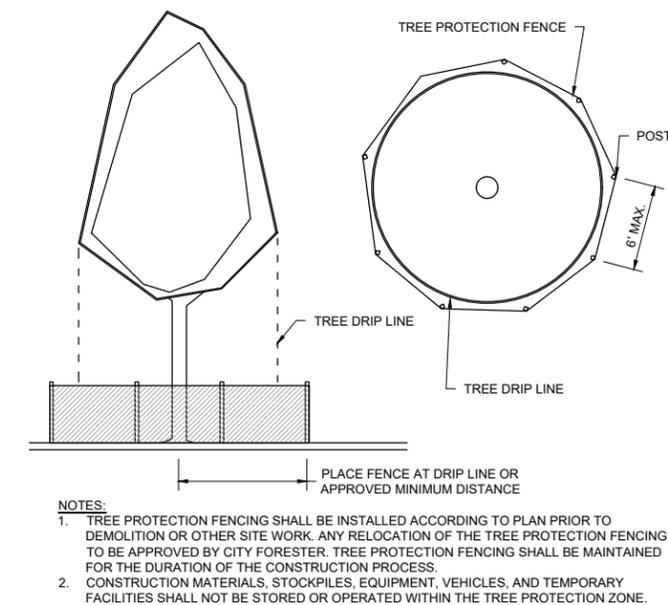
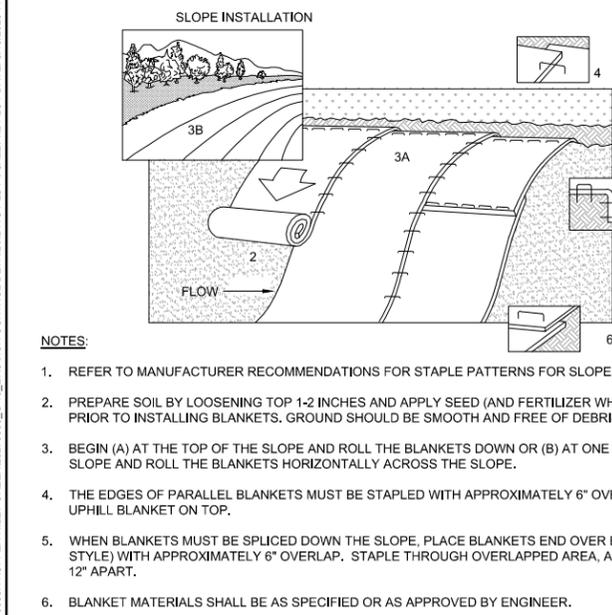
ENGINEERING DEPARTMENT  
 PLATE NO.: 5302A

**1** **DETAIL: SILT FENCE**  
 NOT TO SCALE

**3** **DETAIL: SEDIMENT LOG - STAKING**  
 NOT TO SCALE

**4** **DETAIL: FLOTATION SILT CURTAIN**  
 NOT TO SCALE

**5** **DETAIL: INLET PROTECTION (SEDIMENT TRAP)**  
 NOT TO SCALE



**2** **DETAIL: EROSION CONTROL BLANKET - INSTALLATION**  
 NOT TO SCALE

**6** **DETAIL: TREE PROTECTION FENCING**  
 NOT TO SCALE

**7** **DETAIL: CONSTRUCTION ENTRANCE - ROCK**  
 NOT TO SCALE

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE: \_\_\_\_\_  
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR	08/31/23	08/23/23	A B C 0 1 2 3	

**BARR**

Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435

Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

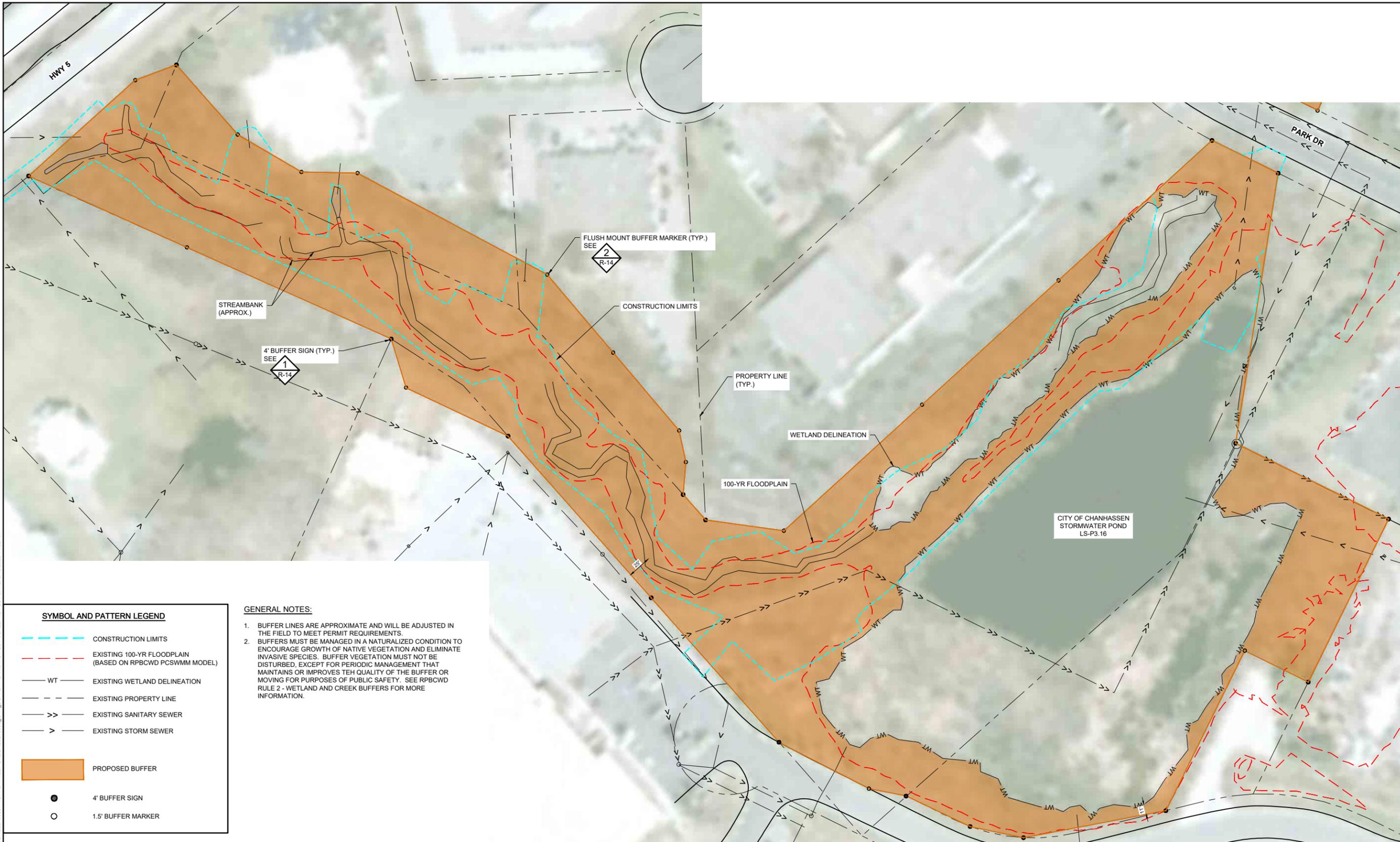
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
**EROSION CONTROL DETAILS**

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	G-16
REV. No.	0

100% DESIGN  
 ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.14\UPPER RILEY CREEK\EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:12 PLOT DATE: 8/19/2023 11:46 AM



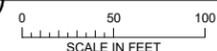
**SYMBOL AND PATTERN LEGEND**

- CONSTRUCTION LIMITS
- EXISTING 100-YR FLOODPLAIN (BASED ON RPBCWD PCSWMM MODEL)
- WT --- EXISTING WETLAND DELINEATION
- EXISTING PROPERTY LINE
- >> EXISTING SANITARY SEWER
- > EXISTING STORM SEWER
- PROPOSED BUFFER
- 4' BUFFER SIGN
- 1.5' BUFFER MARKER

**GENERAL NOTES:**

1. BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT REQUIREMENTS.
2. BUFFERS MUST BE MANAGED IN A NATURALIZED CONDITION TO ENCOURAGE GROWTH OF NATIVE VEGETATION AND ELIMINATE INVASIVE SPECIES. BUFFER VEGETATION MUST NOT BE DISTURBED, EXCEPT FOR PERIODIC MANAGEMENT THAT MAINTAINS OR IMPROVES THE QUALITY OF THE BUFFER OR MOVING FOR PURPOSES OF PUBLIC SAFETY. SEE RPBCWD RULE 2 - WETLAND AND CREEK BUFFERS FOR MORE INFORMATION.

1 PLAN: FLOODPLAIN AND WETLAND BOUNDARIES



100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				
PRINTED NAME	JESSICA OLSON			
SIGNATURE	<i>J. Olson</i>			
DATE	08/23/2023	LICENSE #	43120	

CLIENT	08/31/23	08/17/23				
BID						
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR**  
 Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 Ph: 1-800-632-2277  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK  
 CORRIDOR ENHANCEMENT PLAN**  
 FLOODPLAIN AND WETLAND BOUNDARIES  
 HWY 5 TO PARK DR.

BARR PROJECT No.	23/27-0053.14	
CLIENT PROJECT No.		
DWG. No.	G-17	REV. No.
		0

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\270053.14\UPPER RILEY CREEK\G-17 BUFFER PLANNING PLOT SCALE: 1/2" = 1' PLOT DATE: 8/15/2023 11:52 AM



**SYMBOL AND PATTERN LEGEND**

	CONSTRUCTION LIMITS
	EXISTING 100-YR FLOODPLAIN (BASED ON RPB/CWD PCSWMM MODEL)
	EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED BUFFER
	4' BUFFER SIGN
	1.5' BUFFER MARKER

- GENERAL NOTES:**
1. BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT REQUIREMENTS.
  2. BUFFERS MUST BE MANAGED IN A NATURALIZED CONDITION TO ENCOURAGE GROWTH OF NATIVE VEGETATION AND ELIMINATE INVASIVE SPECIES. BUFFER VEGETATION MUST NOT BE DISTURBED, EXCEPT FOR PERIODIC MANAGEMENT THAT MAINTAINS OR IMPROVES THE QUALITY OF THE BUFFER OR MOVING FOR PURPOSES OF PUBLIC SAFETY. SEE RPB/CWD RULE 2 - WETLAND AND CREEK BUFFERS FOR MORE INFORMATION.

**1 PLAN: FLOODPLAIN AND WETLAND BOUNDARIES**

0 50 100  
SCALE IN FEET

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.1\UPPER RILEY CREEK\23270053.1\4UPPER RILEY CREEK\23270053.1\21 BUFFER PLANNING PLOT SCALE 1:2 PLOT DATE: 8/15/2023 11:53 AM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				
PRINTED NAME	JESSICA OLSON			
SIGNATURE				
DATE	08/23/2023	LICENSE #	43120	

CLIENT	08/31/22	08/17/23				
BID			08/23/23			
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: 1-800-632-2601  
www.barr.com

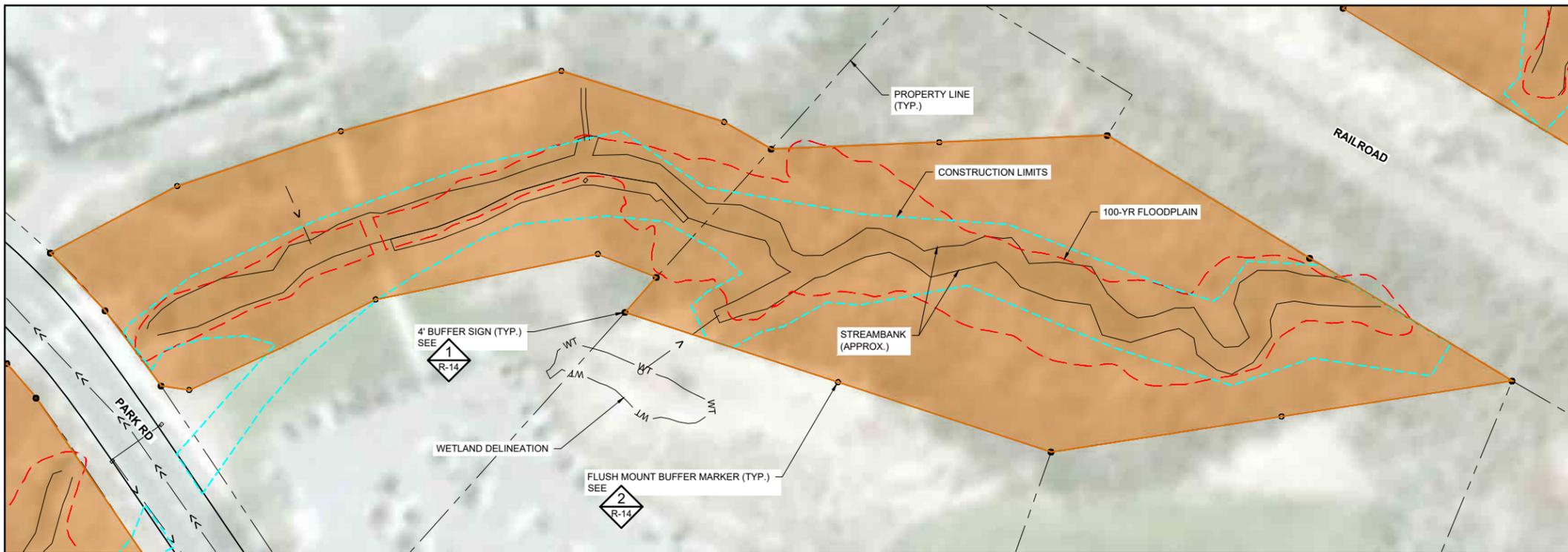
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
FLOODPLAIN AND WETLAND BOUNDARIES  
PARK DR. TO PARK RD.

BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. G-18	REV. No. 0

100% DESIGN  
ISSUED FOR BID



SYMBOL AND PATTERN LEGEND	
	CONSTRUCTION LIMITS
	EXISTING 100-YR FLOODPLAIN (BASED ON RPB/CWD PCSWMM MODEL)
	WT EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED BUFFER
	4' BUFFER SIGN
	1.5' BUFFER MARKER

**GENERAL NOTES:**

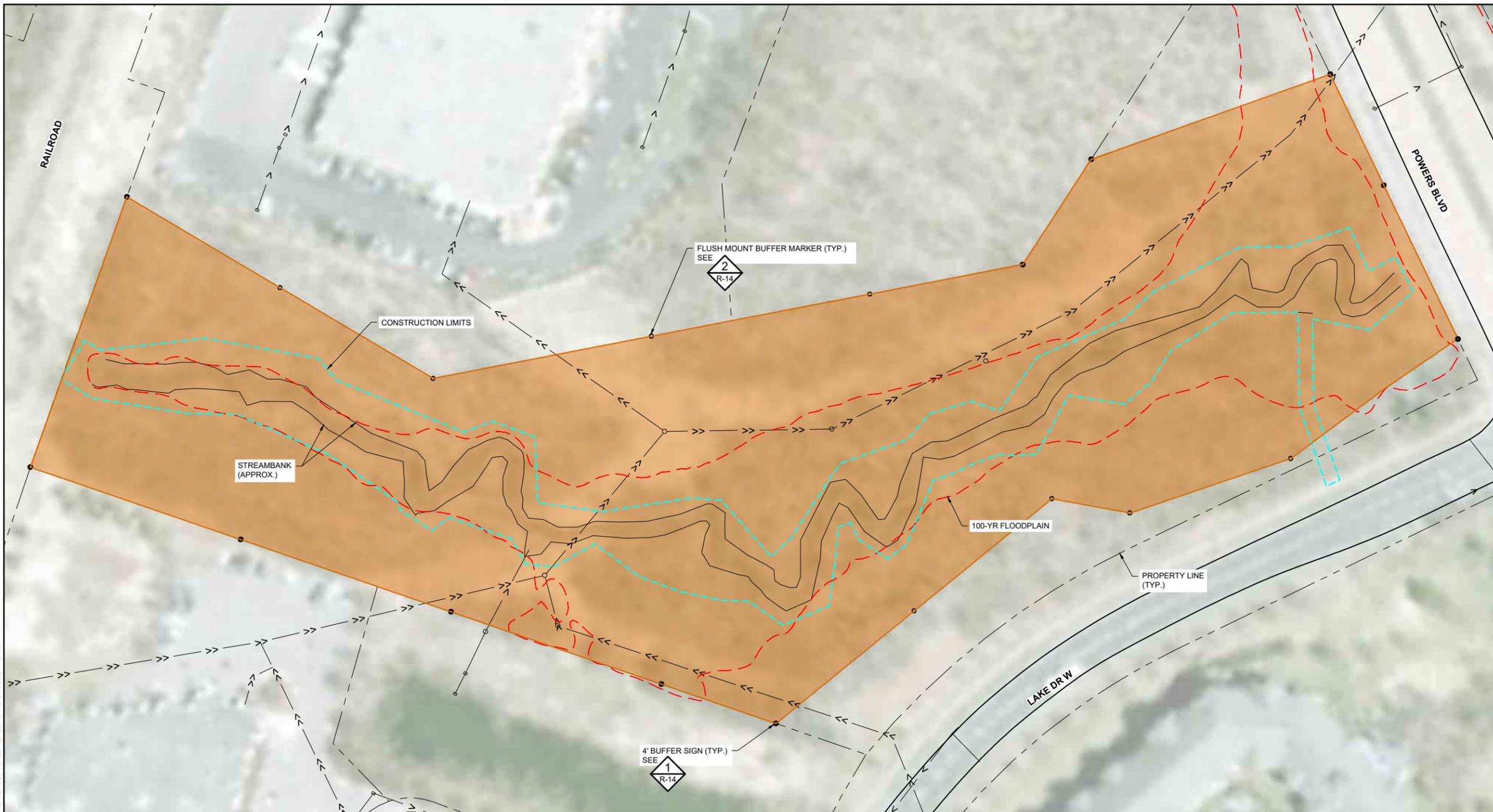
1. BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT REQUIREMENTS.
2. BUFFERS MUST BE MANAGED IN A NATURALIZED CONDITION TO ENCOURAGE GROWTH OF NATIVE VEGETATION AND ELIMINATE INVASIVE SPECIES. BUFFER VEGETATION MUST NOT BE DISTURBED, EXCEPT FOR PERIODIC MANAGEMENT THAT MAINTAINS OR IMPROVES THE QUALITY OF THE BUFFER OR MOVING FOR PURPOSES OF PUBLIC SAFETY. SEE RPB/CWD RULE 2 - WETLAND AND CREEK BUFFERS FOR MORE INFORMATION.



CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\27\0053.14\UPPER RILEY CREEK\23270053\_G-17\_BUFFER PLANNING PLOT SCALE 1:2 PLOT DATE: 8/15/2023 11:54 AM

100% DESIGN  
ISSUED FOR BID

				I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT BID CONSTRUCTION RECORD				<table border="1"> <tr> <td>08/31/22</td> <td>08/17/23</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				08/31/22	08/17/23																																							Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN FLOODPLAIN AND WETLAND BOUNDARIES PARK RD. TO RAILROAD CROSSING				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.				DWG. No. G-19		REV. No. 0	
08/31/22	08/17/23																																																																														
PRINTED NAME: JESSICA OLSON SIGNATURE: DATE: 08/23/2023 LICENSE # 43120				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED																																																																											
NO. BY CHK APP DATE REVISION DESCRIPTION																																																																															



SYMBOL AND PATTERN LEGEND	
	CONSTRUCTION LIMITS
	EXISTING 100-YR FLOODPLAIN (BASED ON RPBCWD PCSWMM MODEL)
	WT EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED BUFFER
	4' BUFFER SIGN
	1.5' BUFFER MARKER

- GENERAL NOTES:**
1. BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT REQUIREMENTS.
  2. BUFFERS MUST BE MANAGED IN A NATURALIZED CONDITION TO ENCOURAGE GROWTH OF NATIVE VEGETATION AND ELIMINATE INVASIVE SPECIES. BUFFER VEGETATION MUST NOT BE DISTURBED, EXCEPT FOR PERIODIC MANAGEMENT THAT MAINTAINS OR IMPROVES THE QUALITY OF THE BUFFER OR MOVING FOR PURPOSES OF PUBLIC SAFETY. SEE RPBCWD RULE 2 - WETLAND AND CREEK BUFFERS FOR MORE INFORMATION.

**1 PLAN: FLOODPLAIN AND WETLAND BOUNDARIES**

0 50 100  
SCALE IN FEET

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.14\UPPER RILEY CREEK\23270053\_G-71\_BUFFER PLANNING PLOT SCALE 1:2 PLOT DATE: 8/15/2023 11:54 AM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				
PRINTED NAME	JESSICA OLSON			
SIGNATURE				
DATE	08/23/2023	LICENSE #	43120	

CLIENT	08/31/23	08/17/23				
BID						
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: (952) 832-2601  
www.barr.com

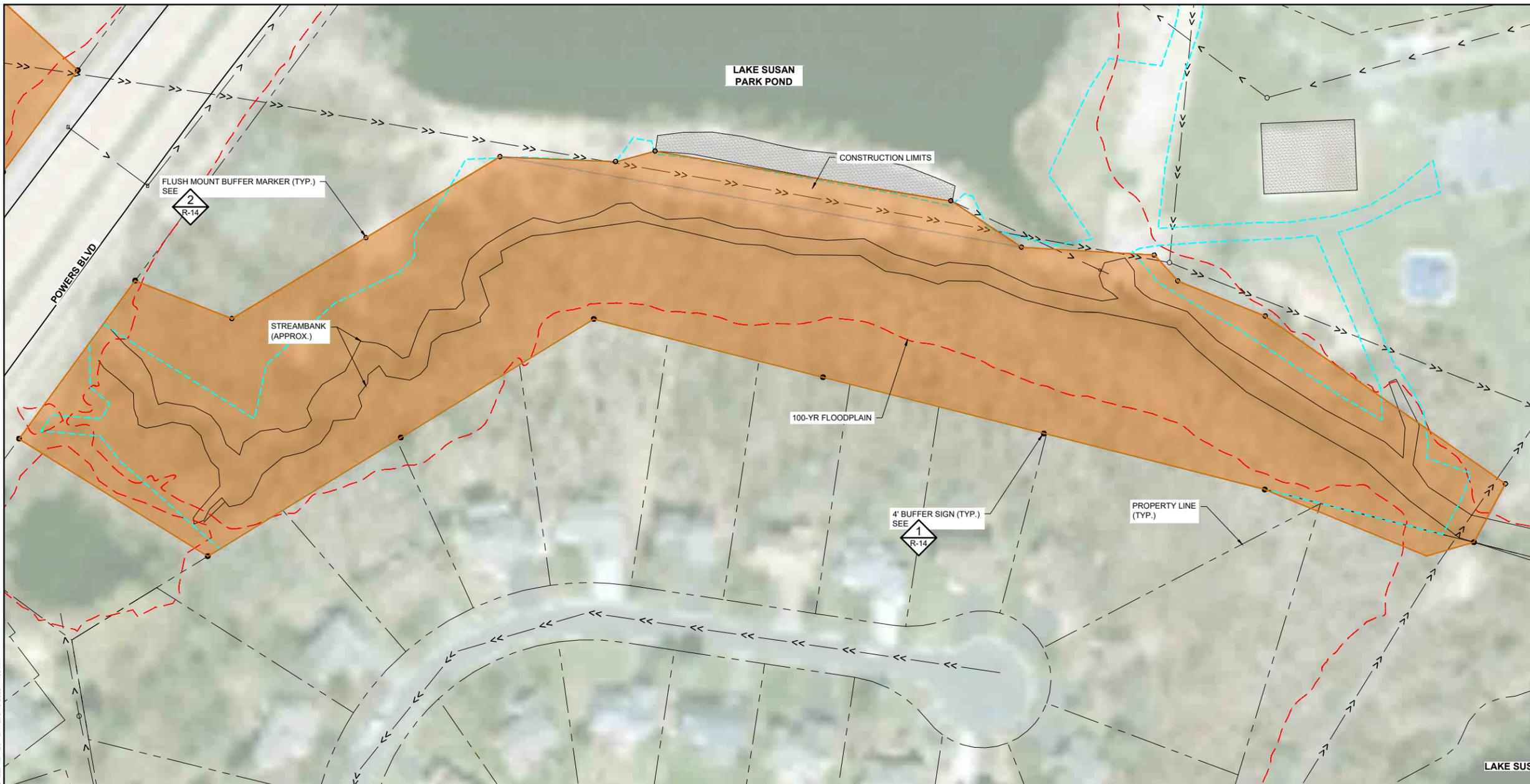
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
FLOODPLAIN AND WETLAND BOUNDARIES  
RAILROAD CROSSING TO POWERS BLVD

BARR PROJECT No.		23/27-0053.14	
CLIENT PROJECT No.			
DWG. No.	G-20	REV. No.	0

100% DESIGN  
ISSUED FOR BID



**SYMBOL AND PATTERN LEGEND**

	CONSTRUCTION LIMITS
	EXISTING 100-YR FLOODPLAIN (BASED ON RPBCWD PCSWMM MODEL)
	EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED BUFFER
	4' BUFFER SIGN
	1.5' BUFFER MARKER

- GENERAL NOTES:**
1. BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT REQUIREMENTS.
  2. BUFFERS MUST BE MANAGED IN A NATURALIZED CONDITION TO ENCOURAGE GROWTH OF NATIVE VEGETATION AND ELIMINATE INVASIVE SPECIES. BUFFER VEGETATION MUST NOT BE DISTURBED, EXCEPT FOR PERIODIC MANAGEMENT THAT MAINTAINS OR IMPROVES THE QUALITY OF THE BUFFER OR MOVING FOR PURPOSES OF PUBLIC SAFETY. SEE RPBCWD RULE 2 - WETLAND AND CREEK BUFFERS FOR MORE INFORMATION.

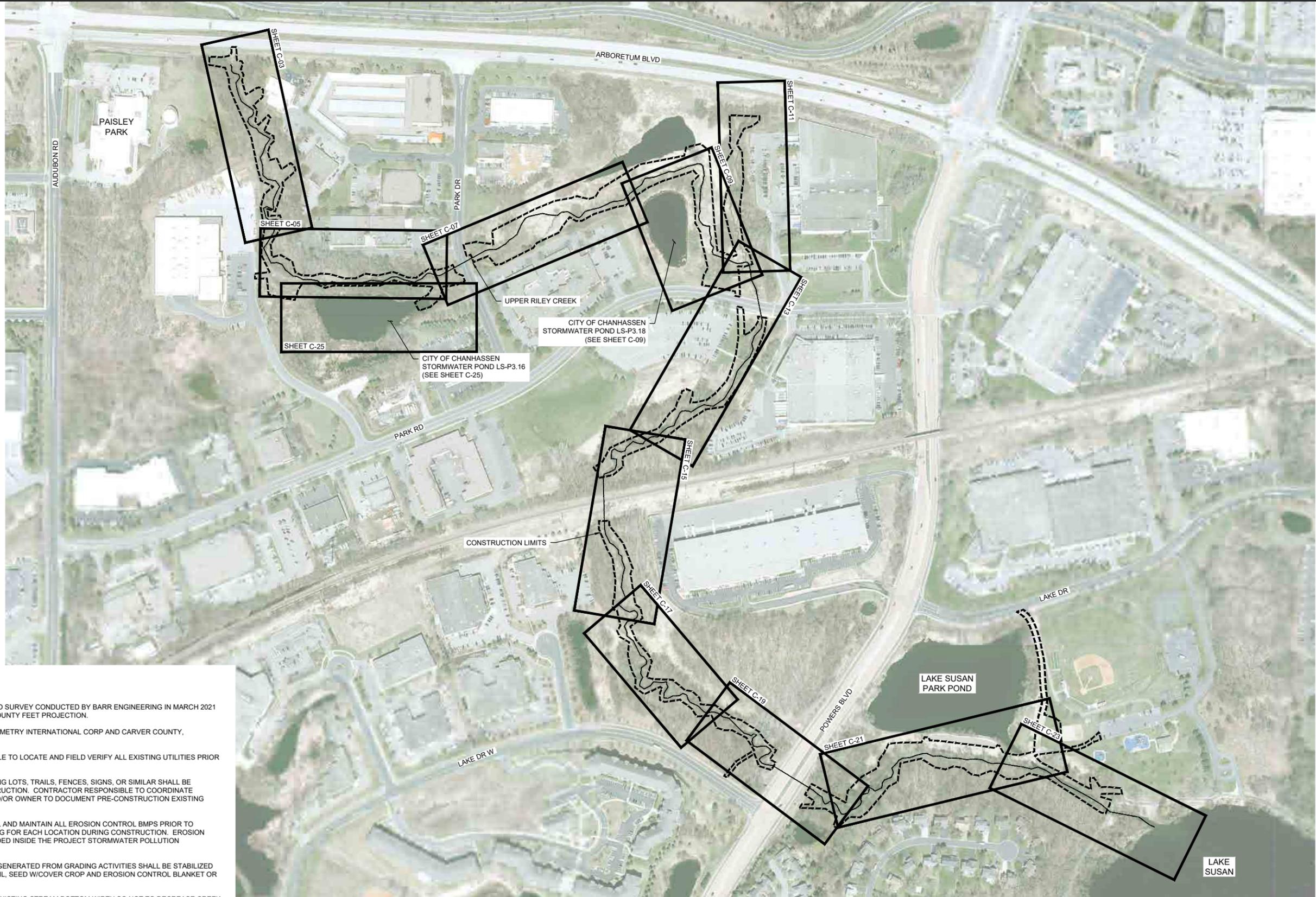
**1 PLAN: FLOODPLAIN AND WETLAND BOUNDARIES**

0 50 100  
SCALE IN FEET

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\27\0053.14\UPPER RILEY CREEK\23270053\_G-7\_1\_BUFFER PLAN.DWG PLOT SCALE: 1/2" = 1' PLOT DATE: 8/15/2023 11:55 AM

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 4300 MARKETPOINTE DRIVE SUITE 200 CONSTRUCTION RECORD: MINNEAPOLIS, MN 55435 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.				<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN FLOODPLAIN AND WETLAND BOUNDARIES POWERS BLVD TO LAKE SUSAN				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. G-21 REV. No. 0			
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---	--	--	--	---	--	--	--



**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 AND JULY 2022 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY THE ENGINEER.

1 PLAN: SITE LAYOUT



NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE: *J. Olson*  
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/22	08/17/23					
BID							
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

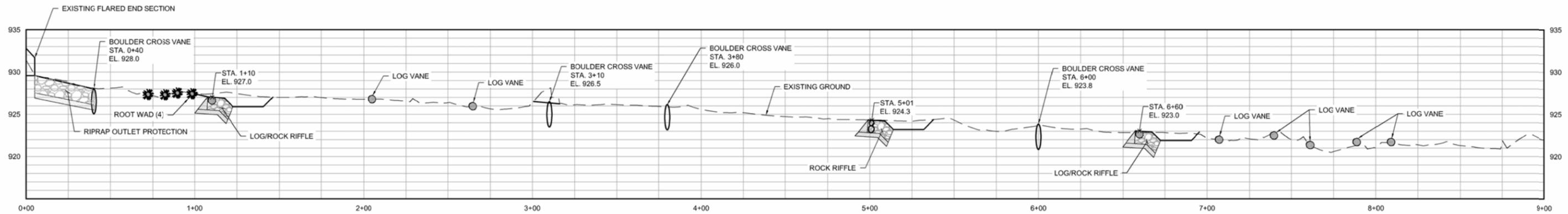
**UPPER RILEY CREEK**  
 CORRIDOR ENHANCEMENT PLAN  
 SITE LAYOUT

100% DESIGN ISSUED FOR BID	
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-01
REV. No.	0

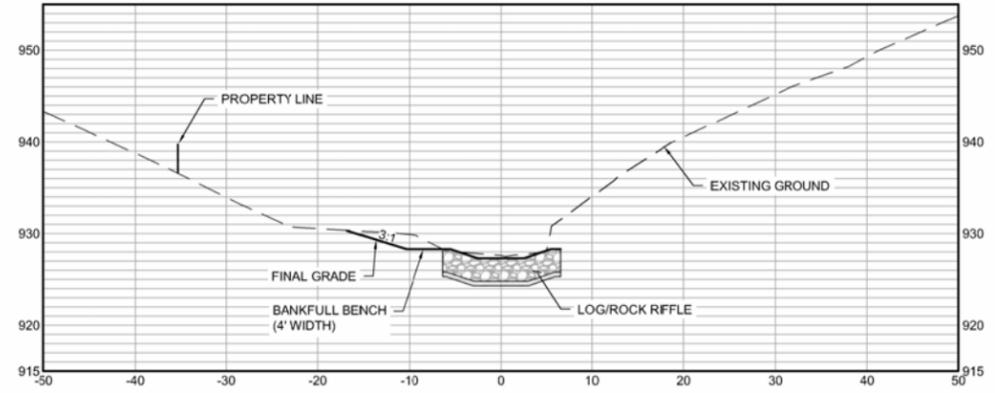
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.14\UPPER RILEY CREEK\23270053\_C-01\_SITE LAYOUT.DWG PLOT SCALE: 1/2 PLOT DATE: 8/16/2023 12:27 PM



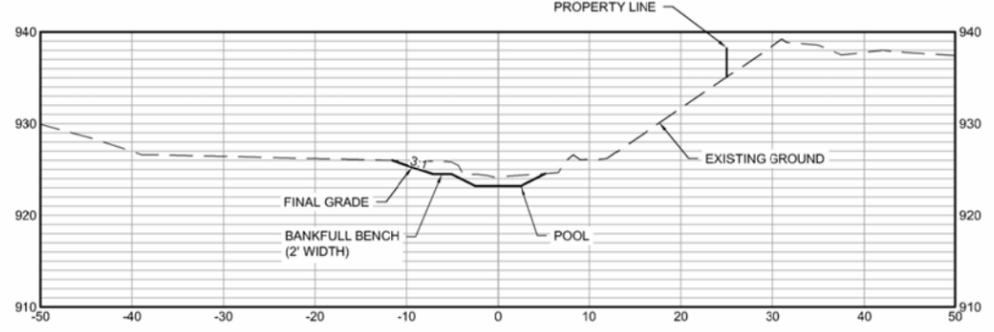




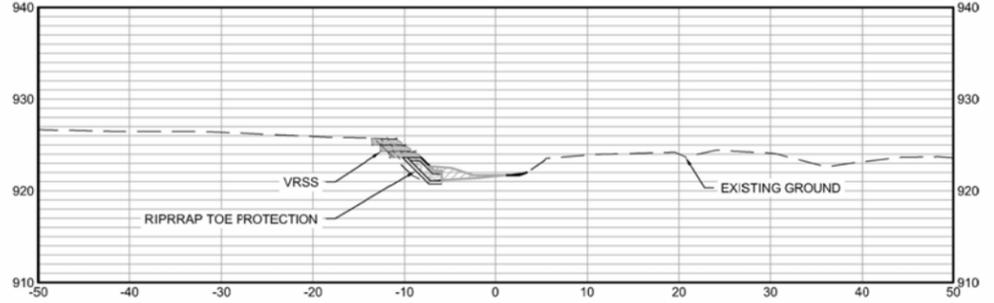
**1 PROFILE: STREAM STABILIZATION (STA. 0+00 - 9+00)**  
 0 30 60  
 HORIZONTAL SCALE IN FEET  
 0 6 12  
 VERTICAL SCALE IN FEET



**2 SECTION: STREAM STABILIZATION (STA. 1+20)**  
 0 10 20  
 SCALE IN FEET



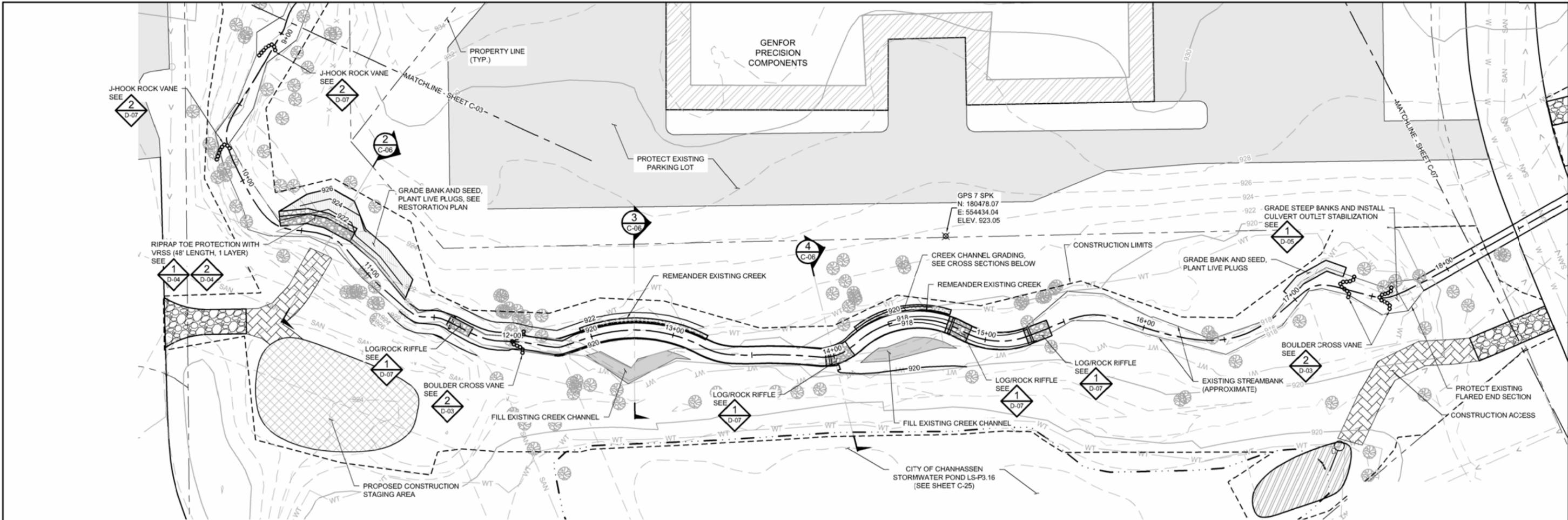
**3 SECTION: STREAM STABILIZATION (STA. 5+20)**  
 0 10 20  
 SCALE IN FEET



**4 SECTION: STREAM STABILIZATION (STA. 8+40)**  
 0 10 20  
 SCALE IN FEET

100% DESIGN  
 ISSUED FOR BID

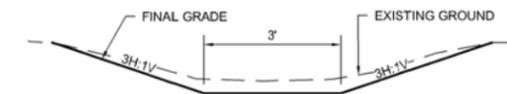
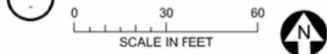
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/23/23 CONSTRUCTION RECORD:				Project Office: <b>BARR</b> BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.				<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 0+00 - 9+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-04 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION	RELEASED TO/FOR	A	B	C	0	1	2	3	DATE RELEASED													



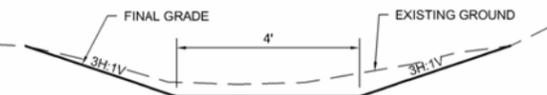
**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

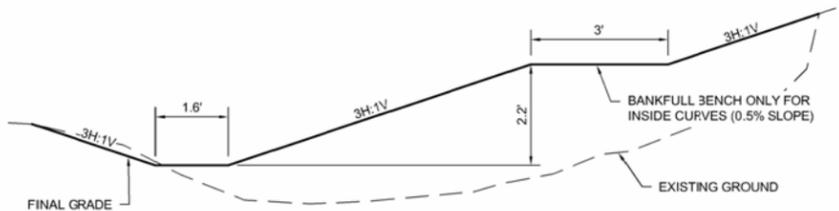
**1 PLAN: STREAM STABILIZATION (STA. 9+00 - 18+00)**



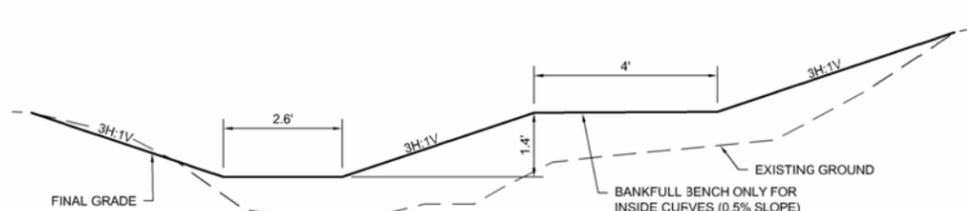
**2 SECTION: CREEK GRADING (STA. 11+30 TO 11+62)**  
NOT TO SCALE



**3 SECTION: CREEK GRADING (11+62 TO 12+00)**  
NOT TO SCALE



**4 SECTION: CREEK GRADING (12+00 TO 14+00)**  
NOT TO SCALE



**5 SECTION: CREEK GRADING (STA. 14+00 TO 15+30)**  
NOT TO SCALE

SYMBOL AND PATTERN LEGEND			
— 960 —	EXISTING 10' CONTOUR	[Pattern]	CONSTRUCTION ACCESS
— 962 —	EXISTING 2' CONTOUR	[Pattern]	RIPRAP
- - -	EXISTING PROPERTY LINE	[Pattern]	TOE WOOD
- - -	EXISTING EASEMENT	[Pattern]	VRSS
- > -	EXISTING STORM SEWER	[Pattern]	GRADING AREA
- SAN -	EXISTING SANITARY SEWER	[Symbol]	ROCK VANE
- GAS -	EXISTING GAS LINE	[Symbol]	ROOT WAD
- W -	EXISTING WATERMAIN	[Symbol]	BOULDER CROSS VANE
- X - X -	EXISTING FENCE	[Symbol]	J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND DELINEATION	[Symbol]	
- . . . -	NORMAL WATER LEVEL (APPROXIMATE)		
[Shaded Box]	EXISTING PARKING LOT/PAVEMENT		
- - - - -	CONSTRUCTION LIMITS		
— 960 —	PROPOSED 10' CONTOUR		
— 962 —	PROPOSED 2' CONTOUR		

100% DESIGN  
ISSUED FOR BID

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: [Signature]  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/22	09/17/22				
BID						
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR**  
Corporate Headquarters: Minneapolis, Minnesota  
Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

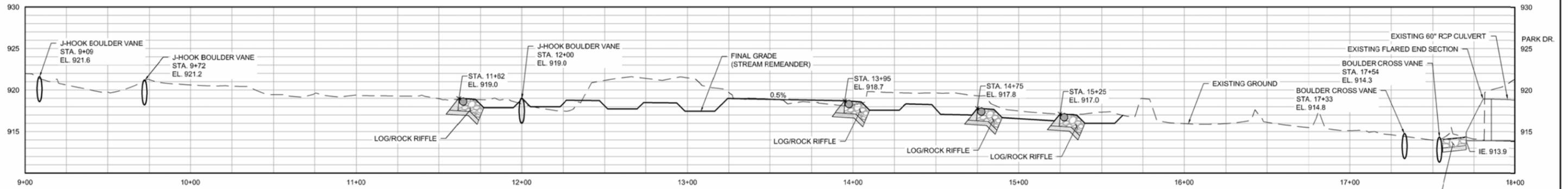
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**

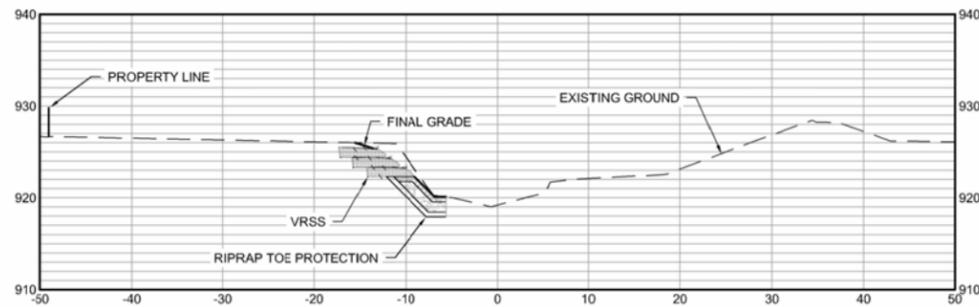
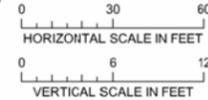
**STREAM STABILIZATION PLAN  
(STA. 9+00 - 18+00)**

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-05
REV. No.	0

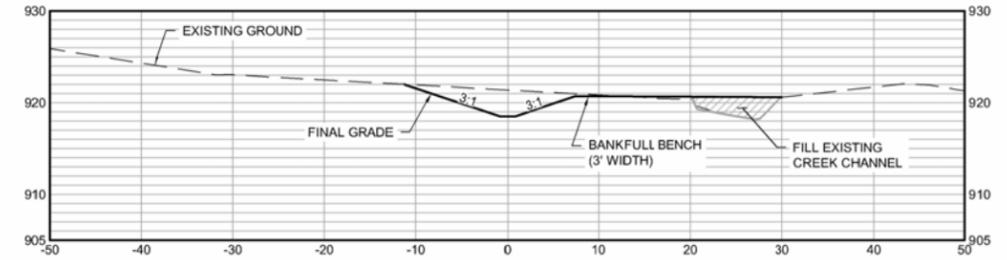
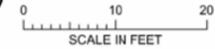
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053-14 UPPER RILEY CREEK\23270053\_C-05\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:40 PM



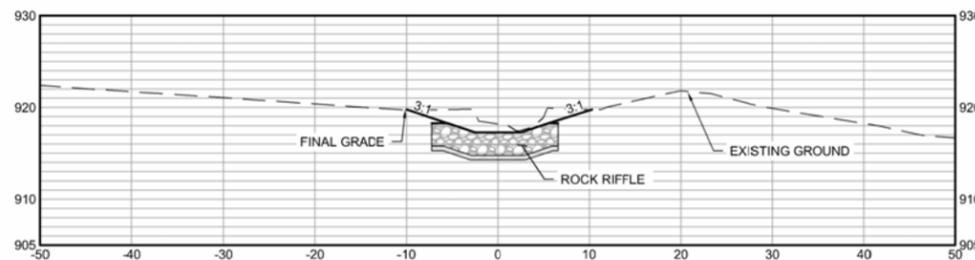
1 PROFILE: STREAM STABILIZATION (STA. 0+00 - 9+00)



2 SECTION: STREAM STABILIZATION (STA. 10+70)



3 SECTION: STREAM STABILIZATION (STA. 12+75)



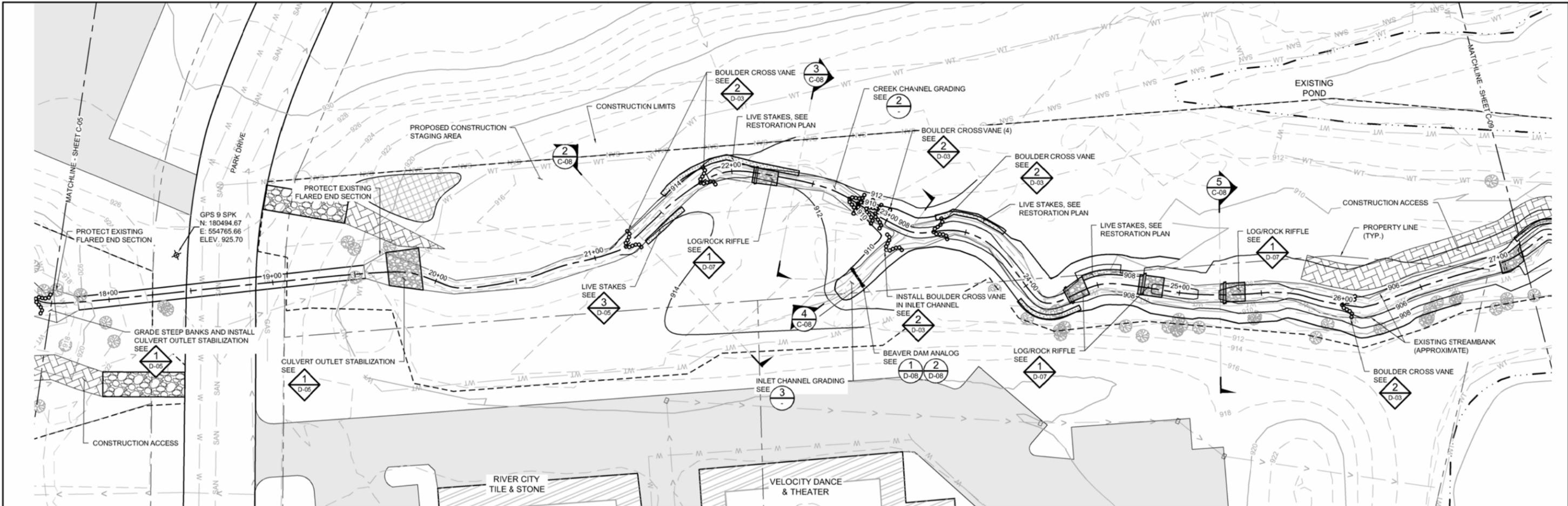
4 SECTION: STREAM STABILIZATION (STA. 14+00)



100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/31/22 09/17/23 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: <b>BARR</b> ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 9+00 - 18+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-06 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.



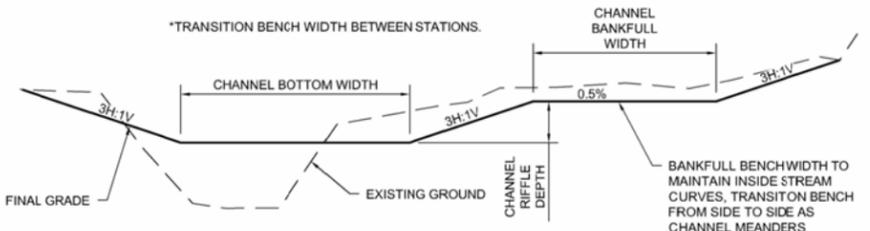
**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

**1 PLAN: STREAM STABILIZATION (STA. 18+00 - 27+00)**

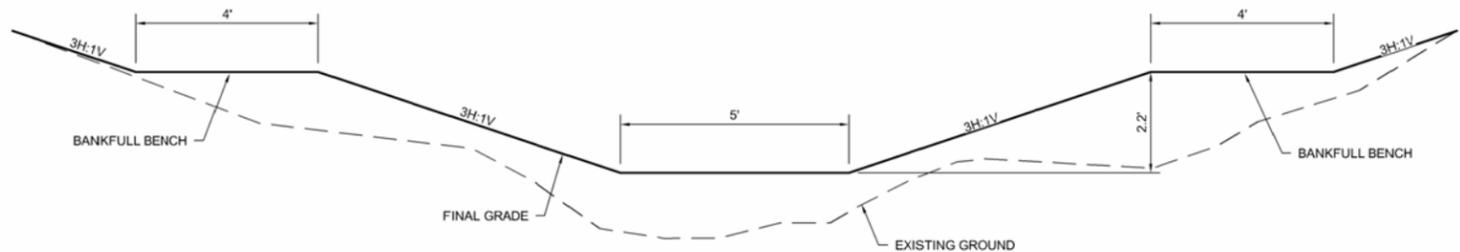


**NOTE:**  
INSTALL EROSION CONTROL BLANKET ON ALL NEWLY GRADED BANKS AND FLOODPLAINS.



**2 SECTION: CREEK GRADING**  
NOT TO SCALE

STATION (START)	STATION (END)	CHANNEL BOTTOM WIDTH (FT.)	CHANNEL RIFFLE DEPTH (FT.)	BANKFULL BENCH WIDTH (FT.)
21+20	22+80	5	1.4	0
22+80	24+30	5	1.4	5
24+30	25+25	5	1.4	8
25+25	26+00	5	1.4	12
26+00	27+00	5	1.4	5



**3 SECTION: INLET CHANNEL GRADING**  
NOT TO SCALE

**SYMBOL AND PATTERN LEGEND**

— 960 —	EXISTING 10' CONTOUR	[Pattern]	CONSTRUCTION ACCESS
— 962 —	EXISTING 2' CONTOUR	[Pattern]	RIPRAP
- - - - -	EXISTING PROPERTY LINE	[Pattern]	TOE WOOD
- - - - -	EXISTING EASEMENT	[Pattern]	VRSS
> > >	EXISTING STORM SEWER	[Pattern]	GRADING AREA
- SAN -	EXISTING SANITARY SEWER	[Pattern]	ROCK VANE
- GAS -	EXISTING GAS LINE	[Pattern]	ROOT WAD
- W -	EXISTING WATERMAIN	[Pattern]	BOULDER CROSS VANE
- X - X -	EXISTING FENCE	[Pattern]	J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND DELINEATION	[Pattern]	
- - - - -	NORMAL WATER LEVEL (APPROXIMATE)	[Pattern]	
[Pattern]	EXISTING PARKING LOT/PAVEMENT	[Pattern]	
- - - - -	CONSTRUCTION LIMITS	[Pattern]	
— 960 —	PROPOSED 10' CONTOUR	[Pattern]	
— 962 —	PROPOSED 2' CONTOUR	[Pattern]	

100% DESIGN  
ISSUED FOR BID

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT	08/31/22	03/17/23
PRINTED NAME	JESSICA OLSON	BID		08/23/23
SIGNATURE	[Signature]	CONSTRUCTION RECORD		
DATE	08/23/2023	RELEASED TO/FOR	A	B
LICENSE #	43120	DATE RELEASED	C	0
			1	2
			3	

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

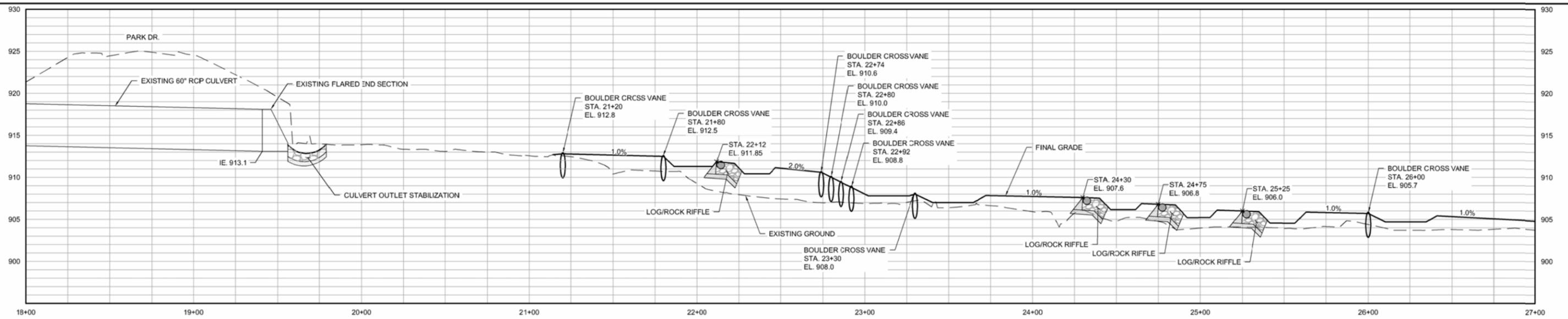
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
**STREAM STABILIZATION PLAN**  
(STA. 9+00 - 18+00)

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-07
REV. No.	0

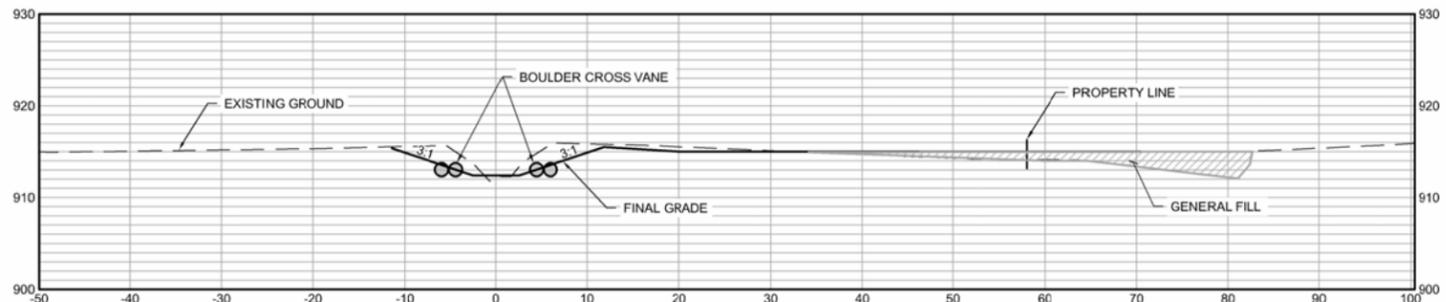
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_C-07\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:42 PM



**1** PROFILE: STREAM STABILIZATION (STA. 18+00 - 27+00)

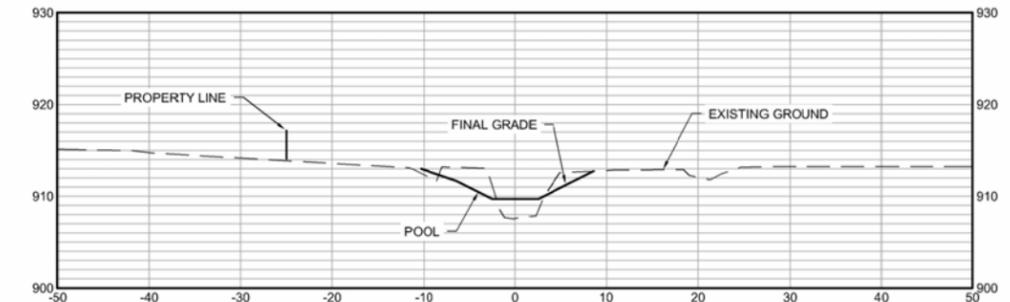
0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



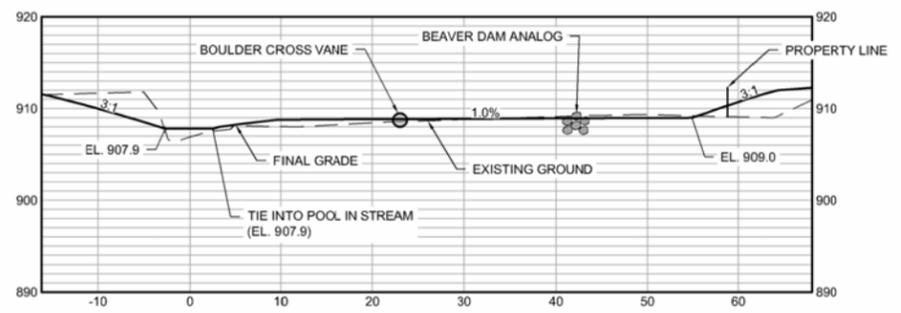
**2** SECTION: STREAM STABILIZATION (STA. 21+30)

0 10 20  
SCALE IN FEET



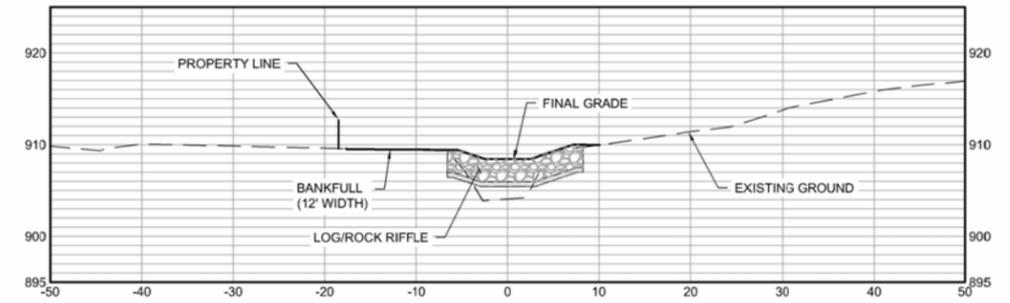
**3** SECTION: STREAM STABILIZATION (STA. 22+40)

0 10 20  
SCALE IN FEET



**4** PROFILE: INLET CHANNEL (STREAM STA. 23+15)

0 10 20  
SCALE IN FEET



**5** SECTION: STREAM STABILIZATION (STA. 25+25)

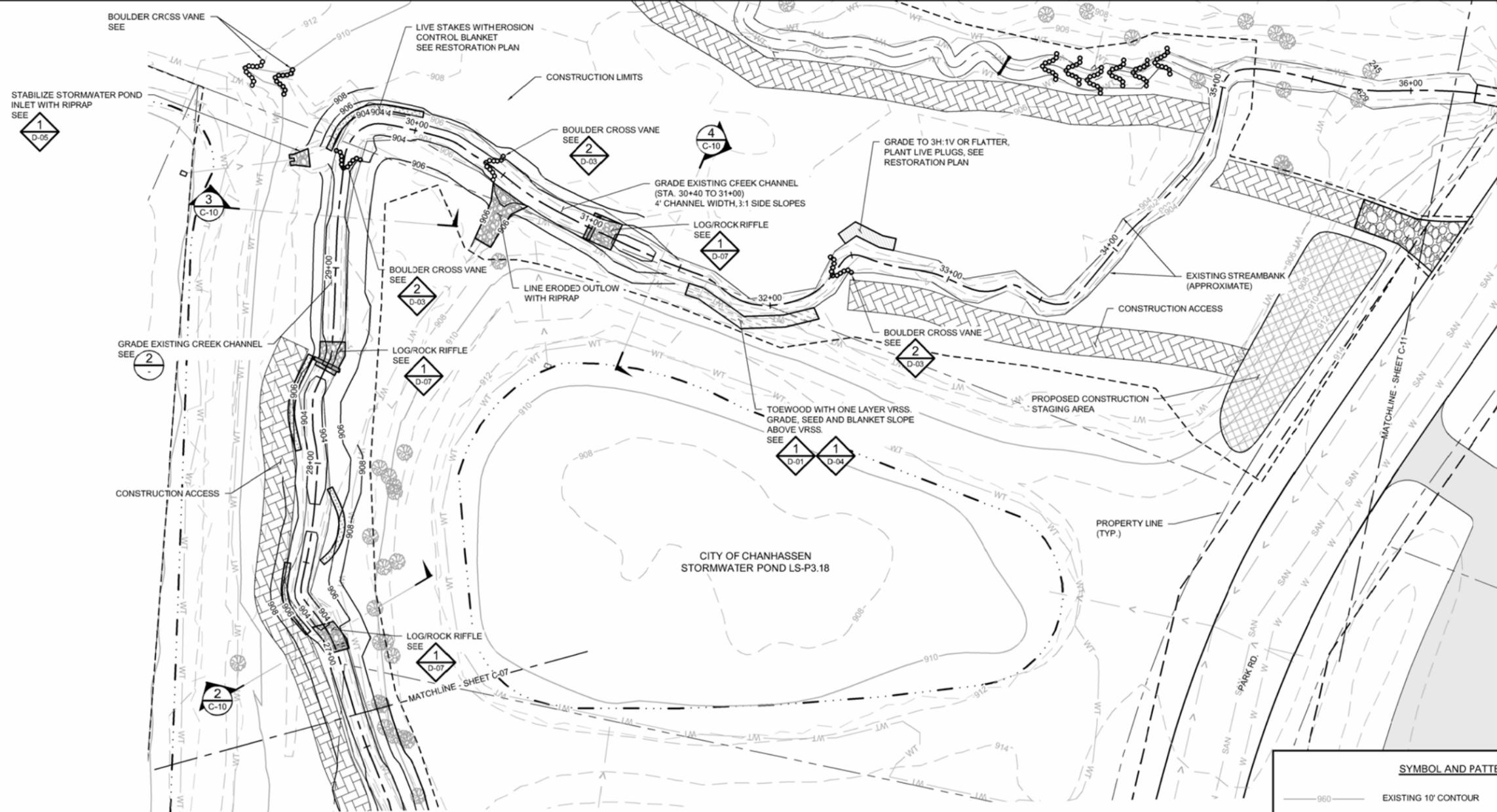
0 10 20  
SCALE IN FEET

100% DESIGN  
ISSUED FOR BID AND CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/31/22 09/17/22 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: <b>BARR</b> BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 9+00 - 18+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-08 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053-14\UPPER RILEY CREEK\23270053\_C-09\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:45 PM

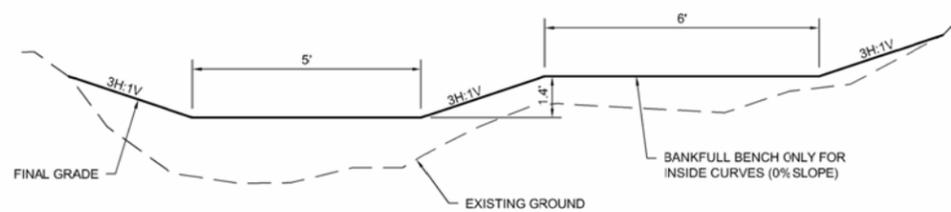
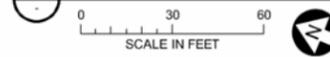


**GENERAL NOTES:**

1. TOPO AND CONTRL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

NOTE:  
INSTALL EROSION CONTRL BLANKET ON ALL NEWLY GRADED BANKS AND FLOODPLAINS.

1 PLAN: STREAM STABILIZATION (STA. 27+00 - 36+00)



2 SECTION: CREEK GRADING

NOT TO SCALE

**SYMBOL AND PATTERN LEGEND**

— 960 —	EXISTING 10' CONTOUR	[Cross-hatch pattern]	CONSTRUCTION ACCESS
— 962 —	EXISTING 2' CONTOUR	[Circular pattern]	RIPRAP
- - - - -	EXISTING PROPERTY LINE	[Horizontal line pattern]	TOE WOOD
- - - - -	EXISTING EASEMENT	[Vertical line pattern]	VRSS
- > -	EXISTING STORM SEWER	[Diagonal line pattern]	GRADING AREA
- SAN -	EXISTING SANITARY SEWER	[Stippled pattern]	ROCK VANE
- GAS -	EXISTING GAS LINE	[Dotted pattern]	ROOT WAD
- W -	EXISTING WATERMAIN	[Wavy line pattern]	BOULDER CROSSVANE
- X - X -	EXISTING FENCE	[Zig-zag pattern]	J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND CELINEATION	[Dashed line pattern]	
- - - - -	NORMAL WATER LEVEL (APPROXIMATE)		
[Grey box]	EXISTING PARKING LOT/PAVEMENT		
- - - - -	CONSTRUCTION LIMITS		
— 960 —	PROPOSED 10' CONTOUR		
— 962 —	PROPOSED 2' CONTOUR		

100% DESIGN  
ISSUED FOR BID

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: [Signature]  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/22	09/17/22				
BID						
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR**  
Corporate Headquarters: Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

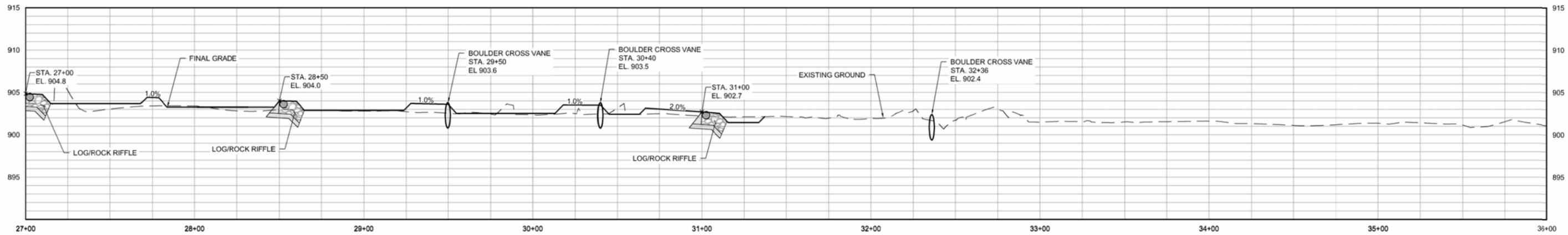
Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN

STREAM STABILIZATION PLAN  
(STA. 27+00 - 36+00)

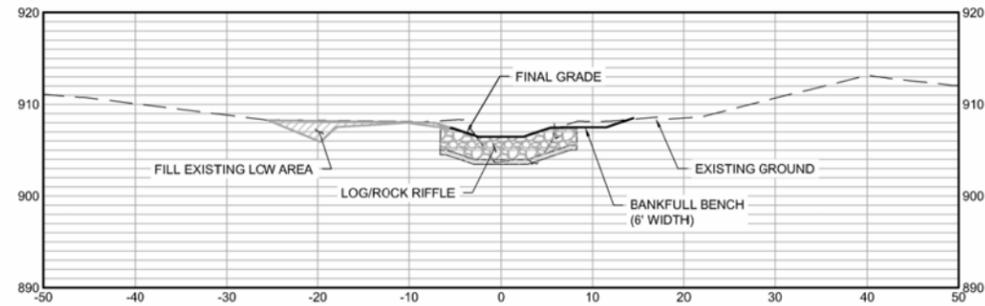
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-09
REV. No.	0



1 PROFILE: STREAM STABILIZATION (STA. 27+00 - 36+00)

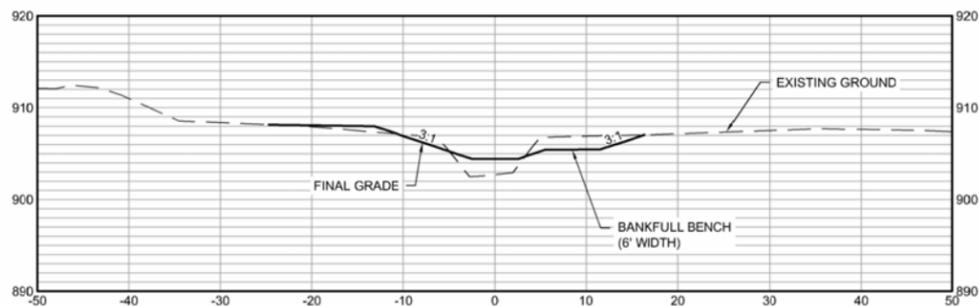
0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



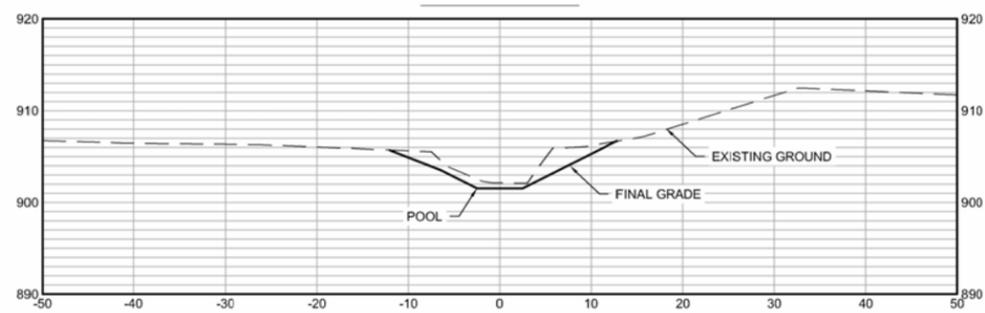
2 SECTION: STREAM STABILIZATION (STA. 27+10)

0 10 20  
SCALE IN FEET



3 SECTION: STREAM STABILIZATION (STA. 29+25)

0 10 20  
SCALE IN FEET



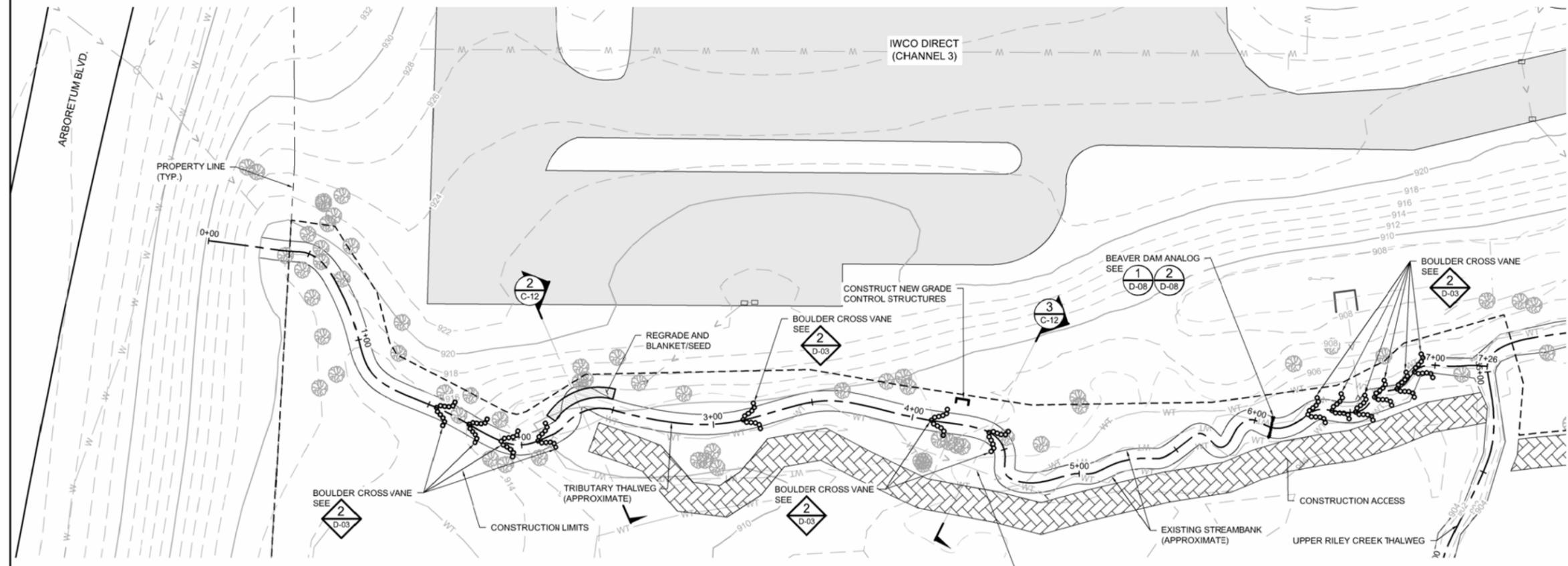
4 SECTION: STREAM STABILIZATION (STA. 31+30)

0 10 20  
SCALE IN FEET

100% DESIGN  
ISSUED FOR BID

				I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT: BARR ENGINEERING CO. BID: 08/23/2023 CONSTRUCTION RECORD:				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 27+00 - 36+00)		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.		DWG. No. C-10 REV. No. 0	
PRINTED NAME: _____ SIGNATURE: <i>J. COOPER</i> DATE: _____ LICENSE #: _____				RELEASED TO/FOR: _____ DATE RELEASED: _____				A B C 0 1 2 3				RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.											
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270653\1-UPPER RILEY CREEK\23270653\_C-11\_TRIBUTARY STABILIZATION.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:37 PM



1 PLAN: RILEY CREEK TRIBUTARY STABILIZATION  
 SCALE IN FEET  
 0 30 60

**GENERAL NOTES:**

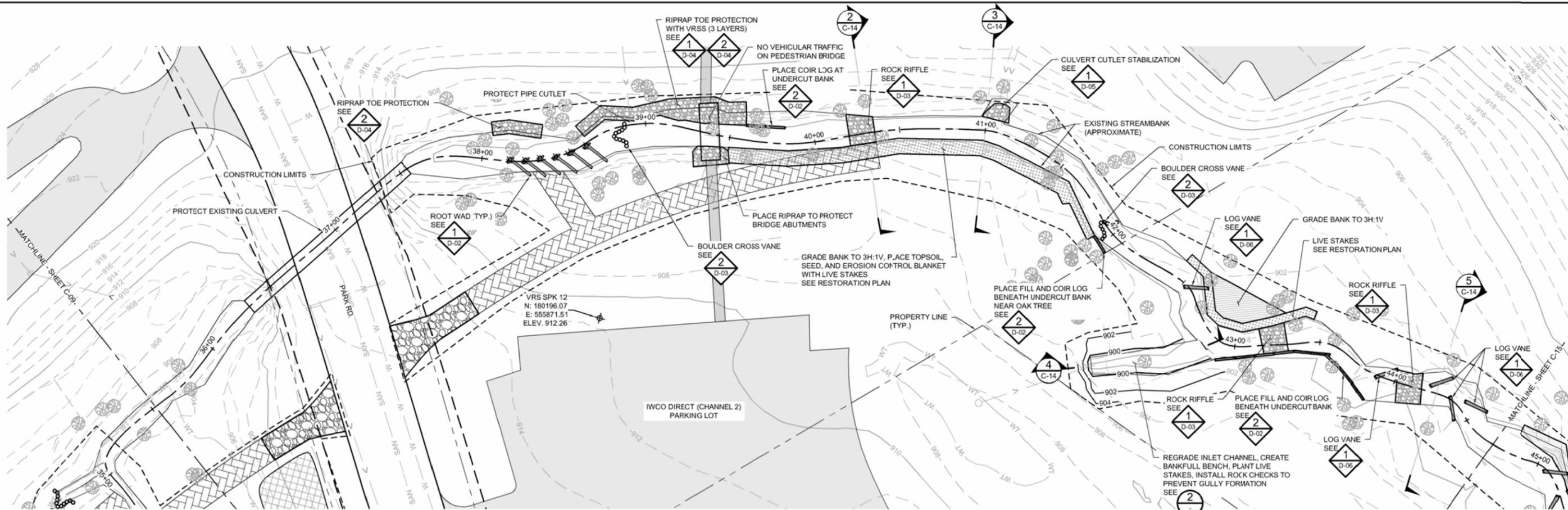
1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELDVERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

SYMBOL AND PATTERN LEGEND			
	960	EXISTING 10' CONTOUR	
	962	EXISTING 2' CONTOUR	
		EXISTING PROPERTY LINE	
		EXISTING EASEMENT	
		EXISTING STORM SEWER	
		EXISTING SANITARY SEWER	
		EXISTING GAS LINE	
		EXISTING WATERMAIN	
		EXISTING FENCE	
		EXISTING WETLAND CELINEATION	
		NORMAL WATER LEVEL (APPROXIMATE)	
		EXISTING PARKING LOT/PAVEMENT	
		CONSTRUCTION LIMITS	
	960	PROPOSED 10' CONTOUR	
	962	PROPOSED 2' CONTOUR	
		CONSTRUCTION ACCESS	
		RIPRAP	
		TOE WOOD	
		VRSS	
		GRADING AREA	
		ROCK VANE	
		ROOT WAD	
		BOULDER CROSS VANE	
		J-HOOK BOULDER VANE	

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435	Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PLAN (STA. 27+00 - 36+00)	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120	RELEASED TO/ FOR: A B C 0 1 2 3 DATE RELEASED:	Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.	DWG. No. C-11	REV. No. 0	





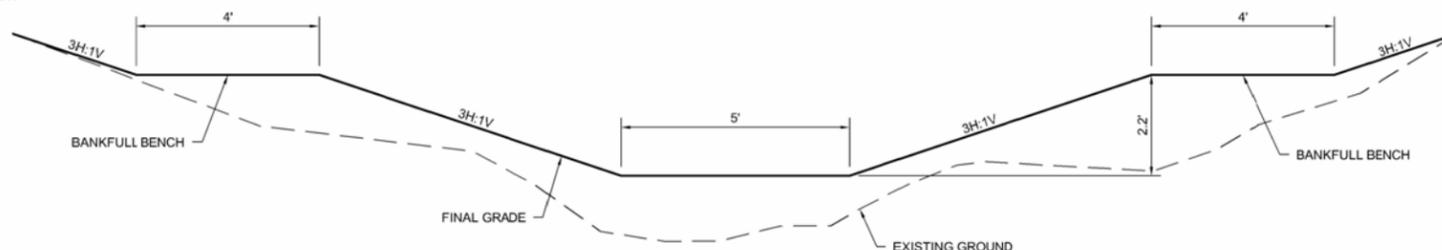
**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

**1 PLAN: STREAM STABILIZATION (STA. 36+00 - 45+00)**  
 0 30 60  
 SCALE IN FEET

**NOTE:**  
 INSTALL EROSION CONTROL BLANKET ON ALL NEWLY GRADED BANKS AND FLOODPLAINS.

SYMBOL AND PATTERN LEGEND			
—960—	EXISTING 10' CONTOUR		CONSTRUCTION ACCESS
—962—	EXISTING 2' CONTOUR		RIPRAP
- - - -	EXISTING PROPERTY LINE		TOE WOOD
- - - -	EXISTING EASEMENT		VRSS
- > -	EXISTING STORM SEWER		GRADING AREA
- SAN -	EXISTING SANITARY SEWER		ROCK VANE
- GAS -	EXISTING GAS LINE		ROOT WAD
- W -	EXISTING WATERMAIN		BOULDER CROSSVANE
- X - X -	EXISTING FENCE		J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND DELINEATION		
- . . . -	NORMAL WATER LEVEL (APPROXIMATE)		
	EXISTING PARKING LOT/PAVEMENT		
- - - -	CONSTRUCTION LIMITS		
—960—	PROPOSED 10' CONTOUR		
—962—	PROPOSED 2' CONTOUR		

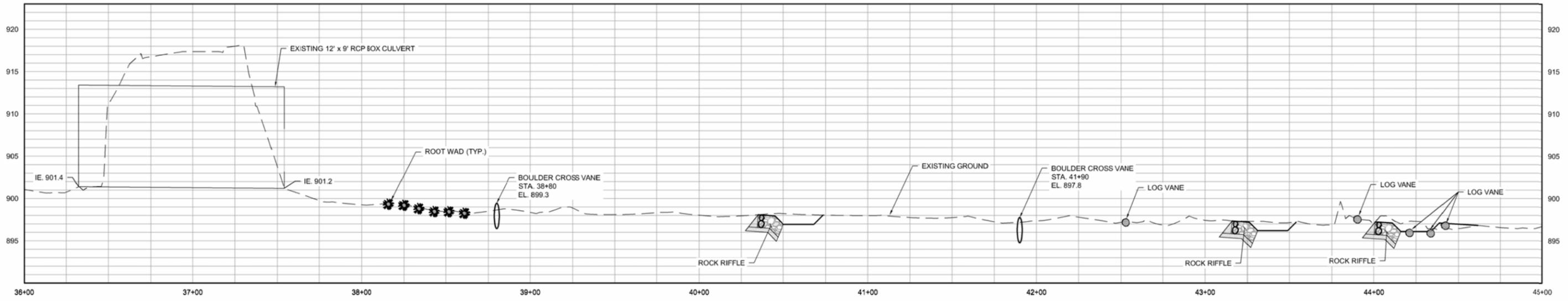


**2 SECTION: INLET CHANNEL GRADING**  
 NOT TO SCALE

100% DESIGN  
 ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435	Scale AS SHOWN	RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PLAN (STA. 36+00 - 45+00)	BARR PROJECT No. 23/27-0053.14
PRINTED NAME JESSICA OLSON	DATE 08/23/2023	DATE RELEASED 08/23/2023	DATE 08/23/2023			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION	DWG. No. C-13
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID	REV. No. 0

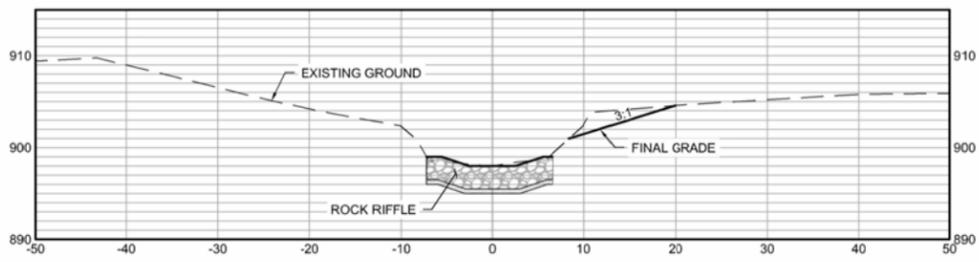
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_C-13\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:52 PM



**1** PROFILE: STREAM STABILIZATION (STA. 36+00 - 45+00)

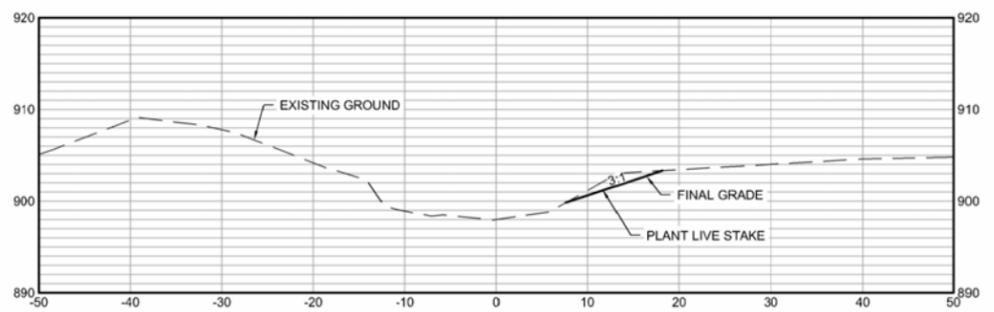
0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



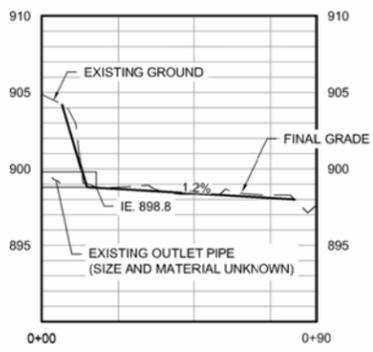
**2** SECTION: STREAM STABILIZATION (STA. 40+30)

0 10 20  
SCALE IN FEET



**3** SECTION: STREAM STABILIZATION (STA. 41+00)

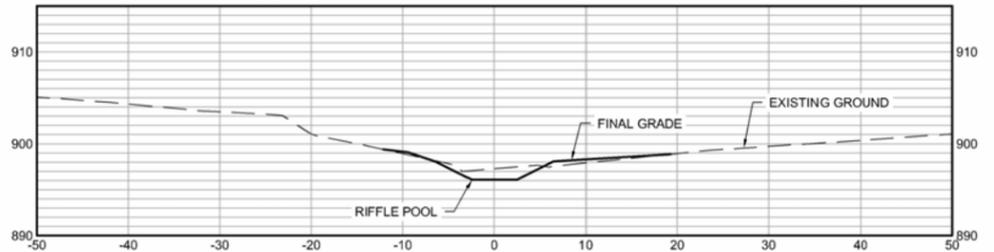
0 10 20  
SCALE IN FEET



**4** PROFILE: INLET CHANNEL

0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



**5** SECTION: STREAM STABILIZATION (STA. 44+25)

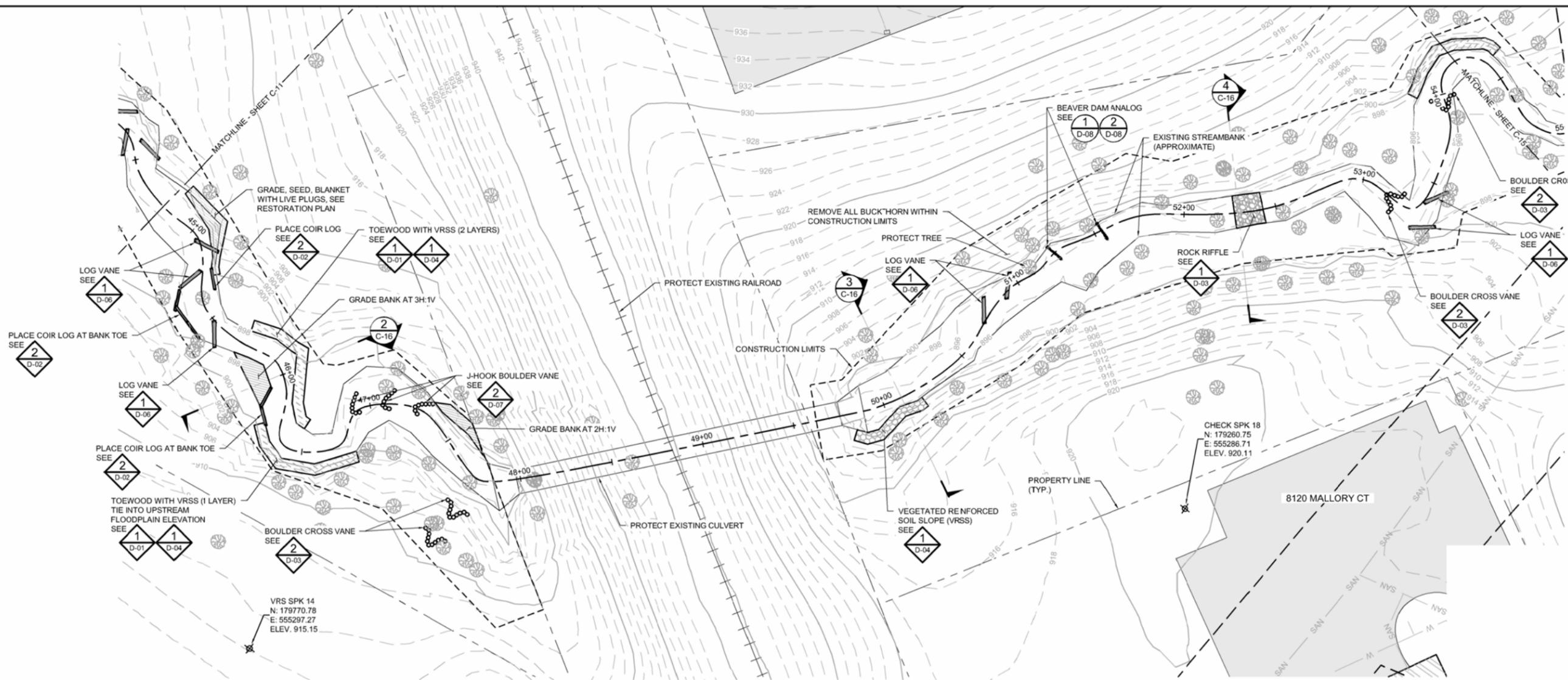
0 10 20  
SCALE IN FEET

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 23/27-0053.14 CONSTRUCTION RECORD: _____ RELEASED TO/FOR: _____ DATE RELEASED: _____				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 36+00 - 45+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-14 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION	A	B	C	0	1	2	3											
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053-14 UPPER RILEY CREEK\23270053\_C-15\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:46 PM



**1 PLAN: STREAM STABILIZATION (STA. 45+00 - 54+00)**  
 0 30 60  
 SCALE IN FEET

- GENERAL NOTES:**
1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEE" PROJECTION.
  2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
  3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
  4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
  5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
  6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
  7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
  8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
  9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

SYMBOL AND PATTERN LEGEND			
	EXISTING 10' CONTOUR		CONSTRUCTION ACCESS
	EXISTING 2' CONTOUR		RIPRAP
	EXISTING PROPERTY LINE		TOE WOOD
	EXISTING EASEMENT		VRSS
	EXISTING STORM SEWER		GRADING AREA
	EXISTING SANITARY SEWER		ROCK VANE
	EXISTING GAS LINE		ROOT WAD
	EXISTING WATERMAIN		BOULDER CROSSVANE
	EXISTING FENCE		J-HOOK BOULDER VANE
	EXISTING WETLAND DELINEATION		
	NORMAL WATER LEVEL (APPROXIMATE)		
	EXISTING PARKING LOT/PAVEMENT		
	CONSTRUCTION LIMITS		
	PROPOSED 10' CONTOUR		
	PROPOSED 2' CONTOUR		

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT	08/31/22	09/17/23					
PRINTED NAME	JESSICA OLSON	CONSTRUCTION RECORD							
SIGNATURE	<i>J. Olson</i>	RELEASED TO/FOR	A	B	C	0	1	2	3
DATE	08/23/2023	DATE RELEASED							
LICENSE #	43120								

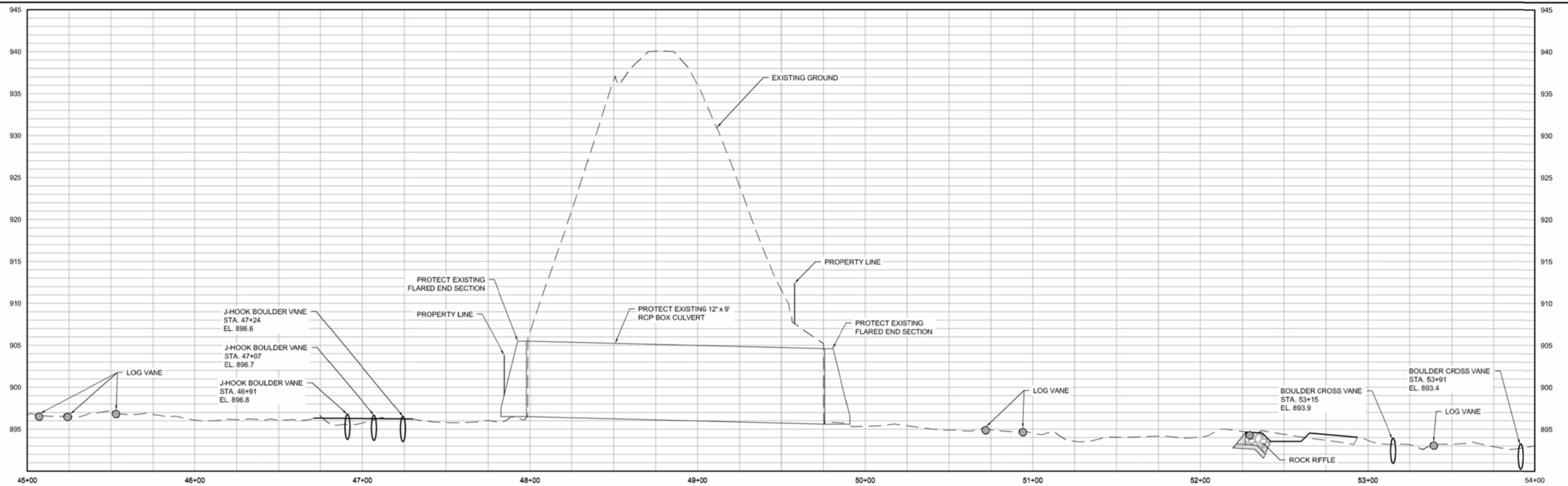
PROJECT OFFICE:	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435
CORPORATE HEADQUARTERS:	MINNEAPOLIS, MINNESOTA PH: 1-800-632-2277 FAX: (952) 832-2601 WWW.BARR.COM

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

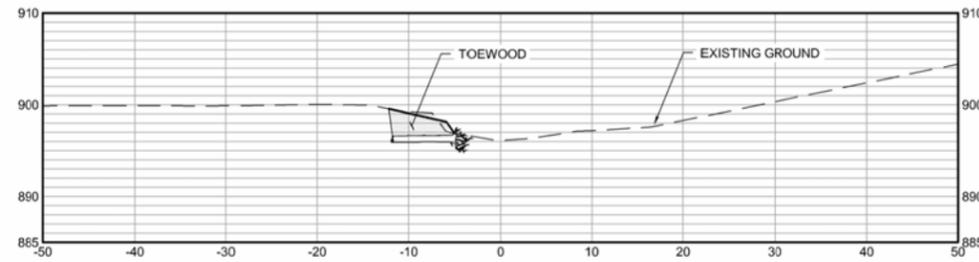
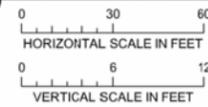
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
**STREAM STABILIZATION PLAN (STA. 45+00 - 54+00)**

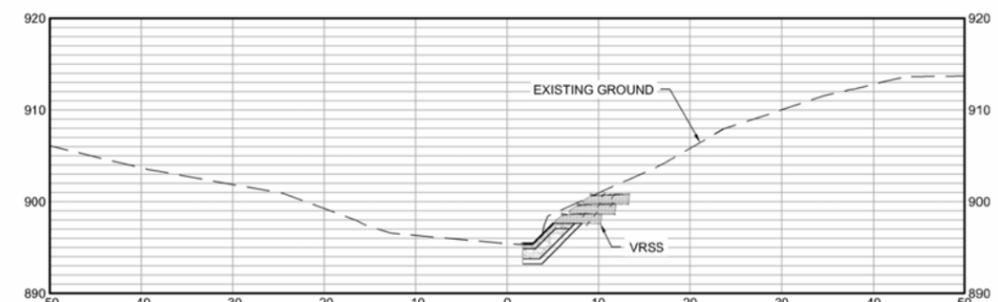
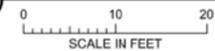
100% DESIGN ISSUED FOR BID	
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-15
REV. No.	0



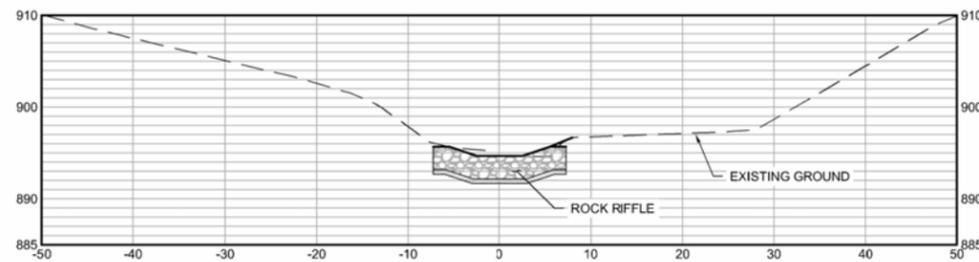
1 PROFILE: STREAM STABILIZATION (STA. 45+00 - 54+00)



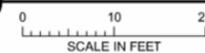
2 SECTION: STREAM STABILIZATION (STA. 46+00)



3 SECTION: STREAM STABILIZATION (STA. 50+10)



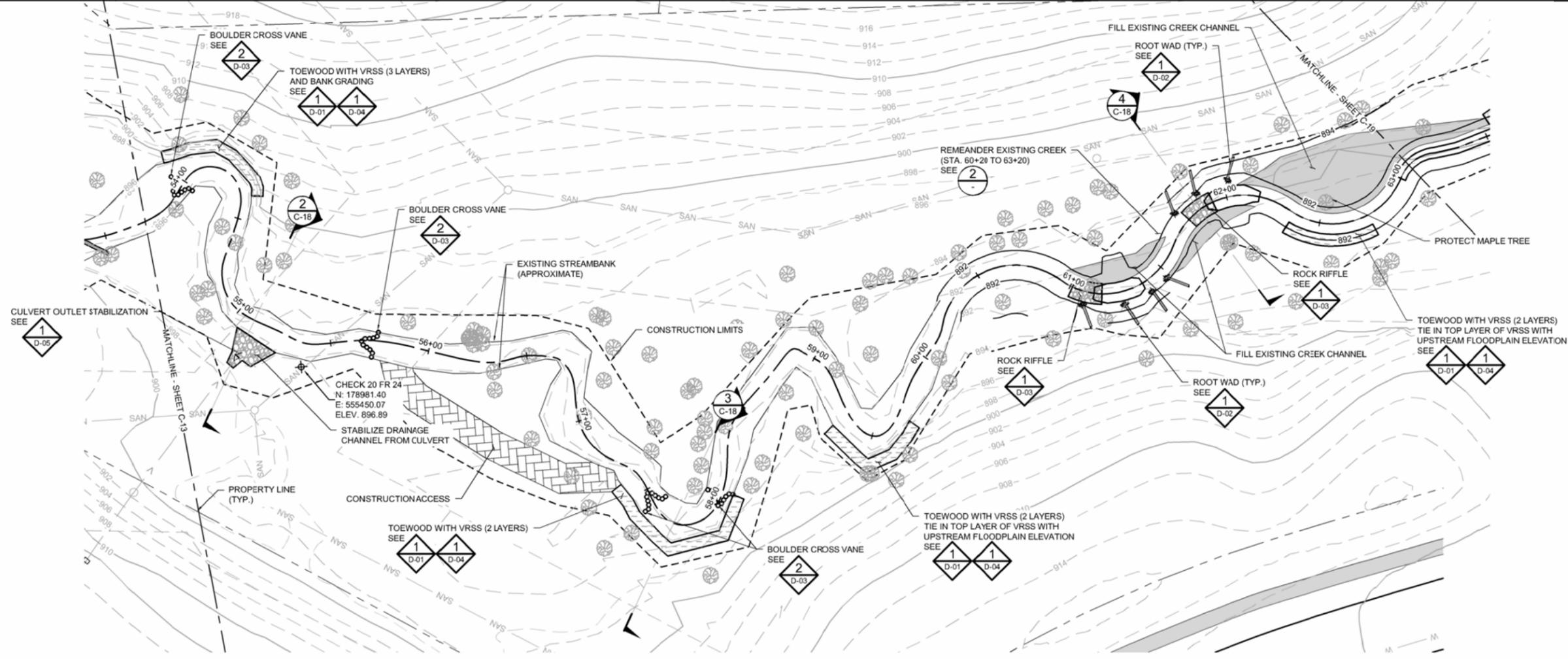
4 SECTION: STREAM STABILIZATION (STA. 52+40)



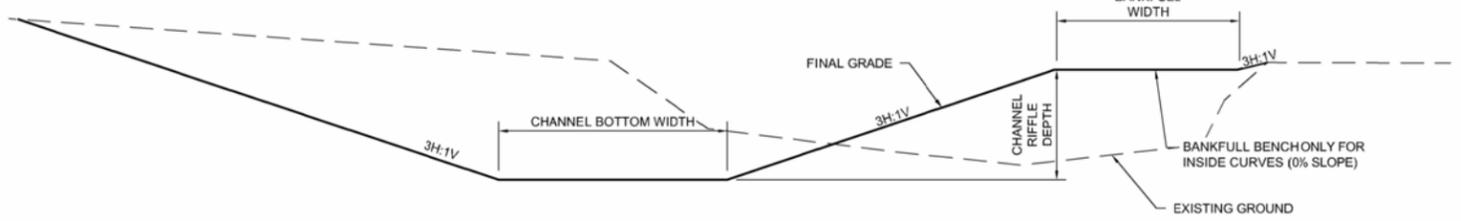
100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/31/22 03/17/23 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: <b>BARR</b> BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 45+00 - 54+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-16 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.



1 PLAN: STREAM STABILIZATION (STA. 54+00 - 63+00)



STATION (START)	STATION (END)	CHANNEL BOTTOM WIDTH (FT.)	CHANNEL RIFFLE DEPTH (FT.)	BANKFULL BENCH WIDTH (FT.)
60+20	61+60	6	2.4	8
61+60	63+00	5	2.4	4

2 SECTION: CREEK GRADING  
NOT TO SCALE

GENERAL NOTES:

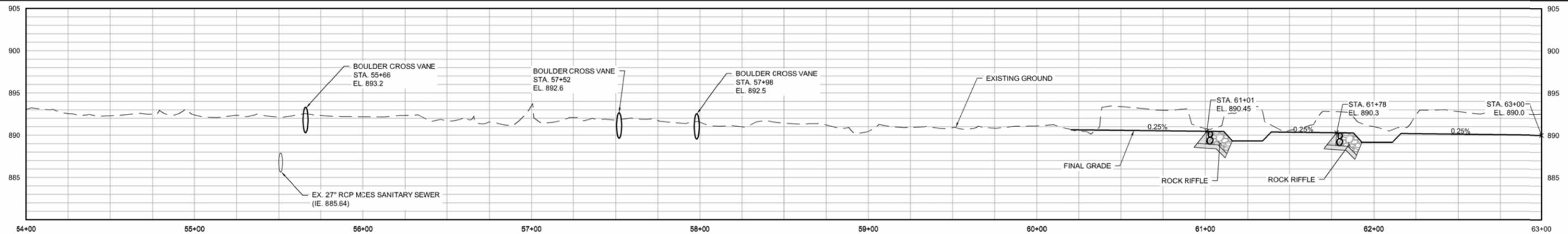
- TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
- IMAGERY: COPYRIGHT © ICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
- CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
- ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
- CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
- ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
- CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
- CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
- STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	NORMAL WATER LEVEL (APPROXIMATE)
	EXISTING PARKING LOT/PAVEMENT
	CONSTRUCTION LIMITS
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	CONSTRUCTION ACCESS
	RIPRAP
	TOE WOOD
	VRSS
	GRADING AREA
	ROCK VANE
	ROOT WAD
	BOULDER CROSS VANE
	J-HOOK BOULDER VANE

100% DESIGN  
ISSUED FOR BID AND CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT: 08/31/22 03/17/23 BID: 08/23/23 CONSTRUCTION RECORD: 08/23/23		Project Office: <b>BARR ENGINEERING CO.</b> 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: 01/20/2023 Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PLAN (STA. 54+00 - 63+00)		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.		DWG. No. C-17 REV. No. 0	
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120		RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED		NO. BY CHK APP DATE REVISION DESCRIPTION											

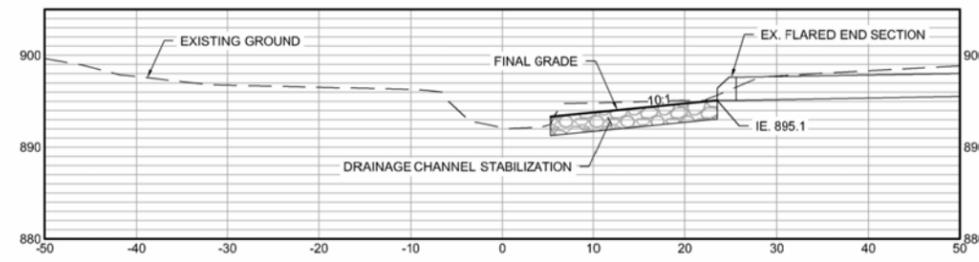
CAD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_C-17\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/23/2023 12:40 PM



**1** PROFILE: STREAM STABILIZATION (STA. 54+00 - 63+00)

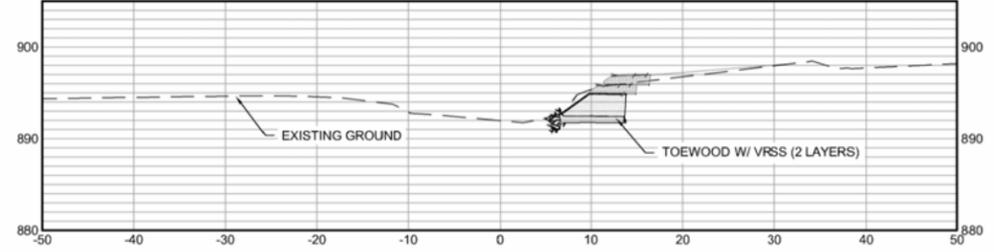
0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



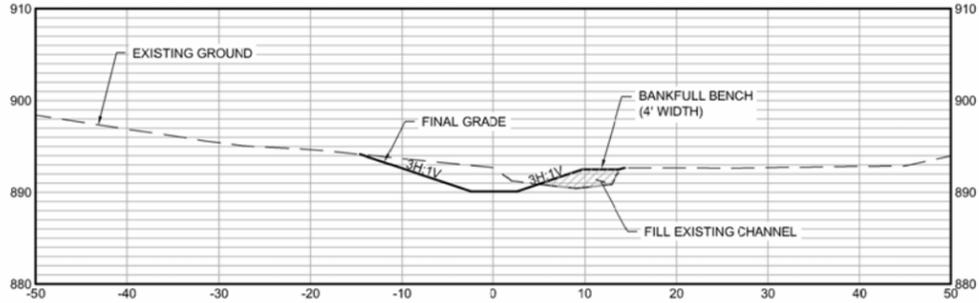
**2** SECTION: STREAM STABILIZATION (STA. 55+10)

0 10 20  
SCALE IN FEET



**3** SECTION: STREAM STABILIZATION (STA. 57+70)

0 10 20  
SCALE IN FEET

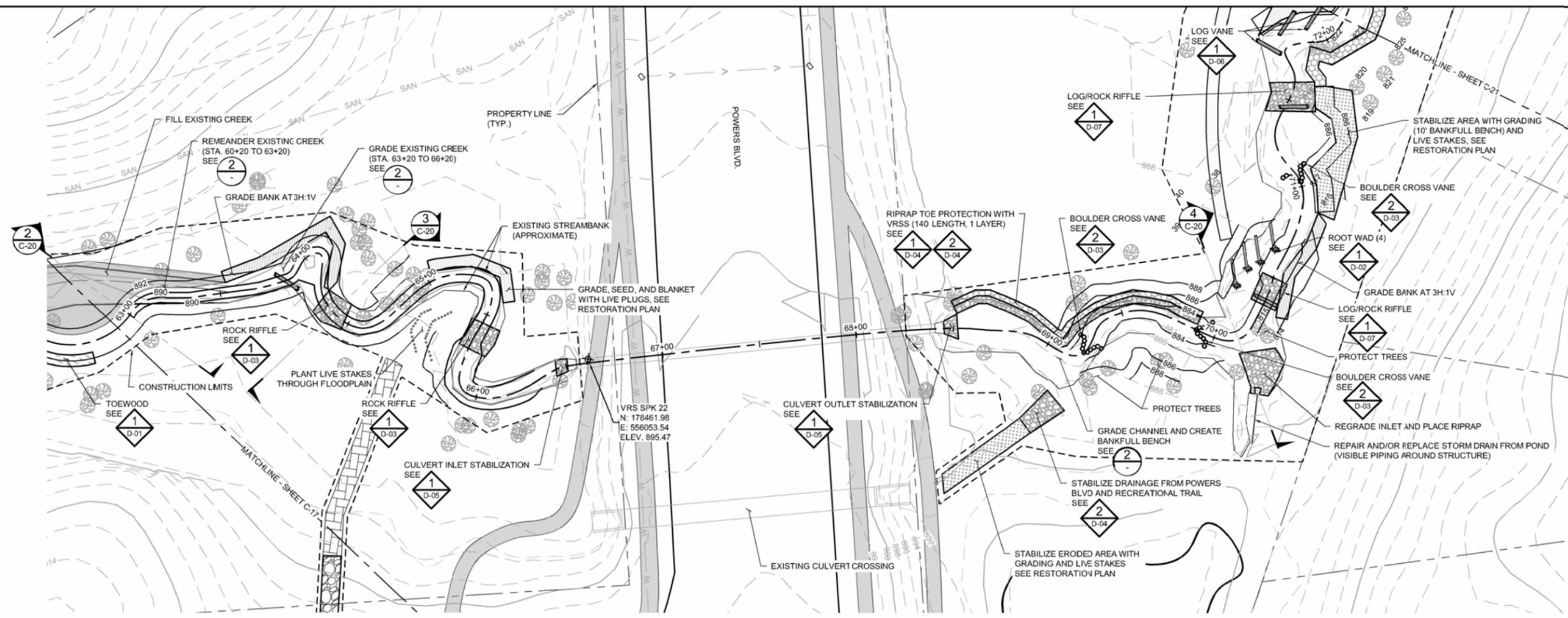


**4** SECTION: STREAM STABILIZATION (STA. 61+85)

0 10 20  
SCALE IN FEET

100% DESIGN  
ISSUED FOR BID

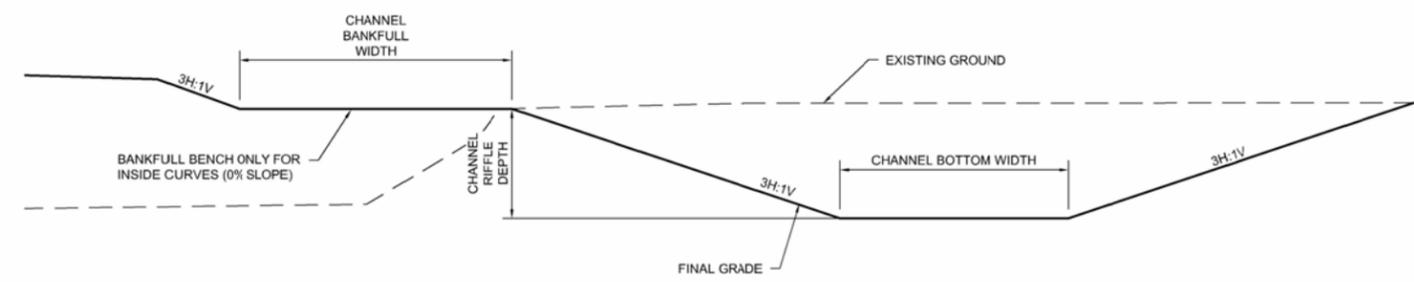
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT: BARR ENGINEERING CO., 4300 MARKETPOINTE DRIVE, SUITE 200, MINNEAPOLIS, MN 55435 PROJECT: RILEY PURGATORY BLUFF CREEK W.D.				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 54+00 - 63+00)		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		DWG. No. C-18 REV. No. 0		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION								
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID								



1 PLAN: STREAM STABILIZATION (STA. 63+00 - 72+00)

**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED WITH COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.



STATION (START)	STATION (END)	CHANNEL BOTTOM WIDTH (FT.)	CHANNEL RIFFLE DEPTH (FT.)	BANKFULL BENCH WIDTH (FT.)
63+00	66+20	5	2.4	6
69+20	70+60	6	2	9

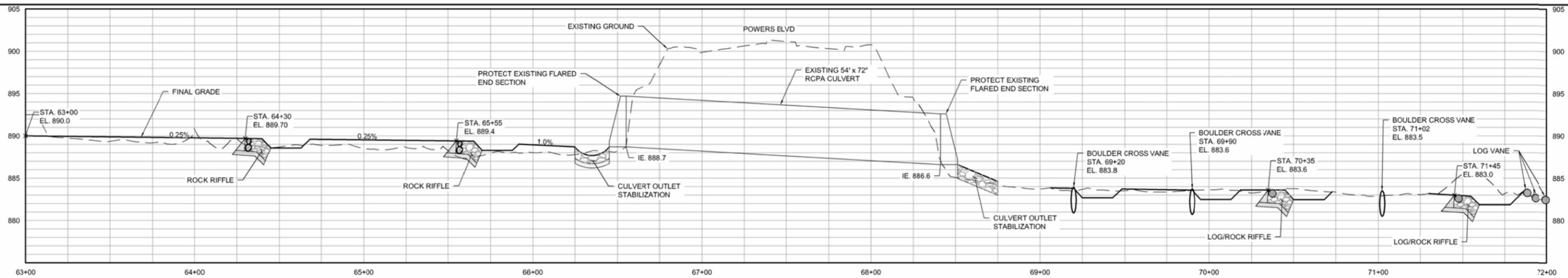
2 SECTION: CREEK GRADING  
NOT TO SCALE

SYMBOL AND PATTERN LEGEND			
— 960 —	EXISTING 10' CONTOUR		CONSTRUCTION ACCESS
— 962 —	EXISTING 2' CONTOUR		RIPRAP
- - - - -	EXISTING PROPERTY LINE		TOE WOOD
- - - - -	EXISTING EASEMENT		VRSS
- > -	EXISTING STORM SEWER		GRADING AREA
- SAN -	EXISTING SANITARY SEWER		ROCK VANE
- GAS -	EXISTING GAS LINE		ROOT WAD
- W -	EXISTING WATERMAIN		BOULDER CROSS VANE
- X - X -	EXISTING FENCE		J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND DELINEATION		EXISTING PARKING LOT/PAVEMENT
- . . . -	NORMAL WATER LEVEL (APPROXIMATE)		
	CONSTRUCTION LIMITS		
— 960 —	PROPOSED 10' CONTOUR		
— 962 —	PROPOSED 2' CONTOUR		

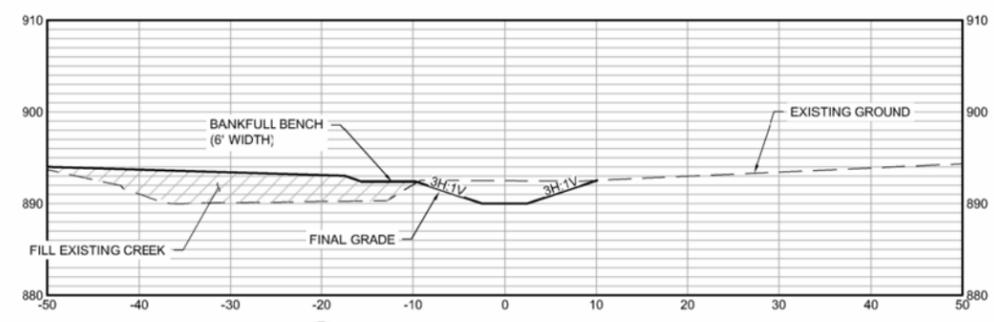
100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120		CLIENT: 08/31/22 09/17/23 BID: 08/23/23 CONSTRUCTION RECORD:		Project Office: <b>BARR ENGINEERING CO.</b> 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.		<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PLAN (STA. 63+00 - 72+00)		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.		DWG. No. C-19 REV. No. 0	
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION										

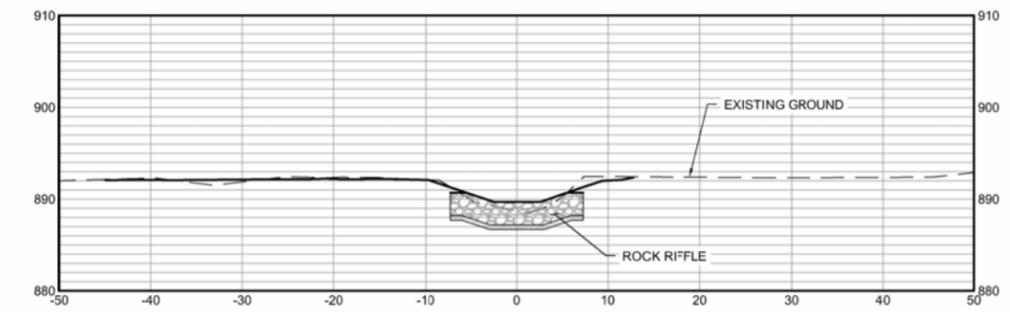
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\23270053\_C-19\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 12:58 PM



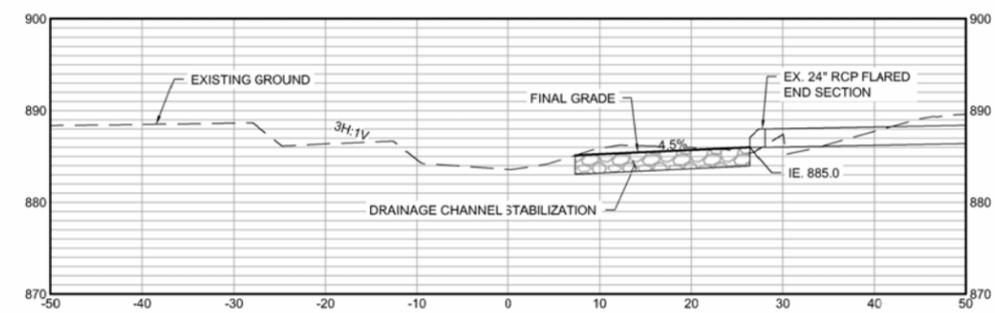
**1 PROFILE: STREAM STABILIZATION (STA. 63+00 - 72+00)**  
 0 30 60  
 HORIZONTAL SCALE IN FEET  
 0 6 12  
 VERTICAL SCALE IN FEET



**2 SECTION: STREAM STABILIZATION (STA. 63+00)**  
 0 10 20  
 SCALE IN FEET



**3 SECTION: STREAM STABILIZATION (STA. 64+40)**  
 0 10 20  
 SCALE IN FEET



**4 SECTION: STREAM STABILIZATION (STA. 70+15)**  
 0 10 20  
 SCALE IN FEET

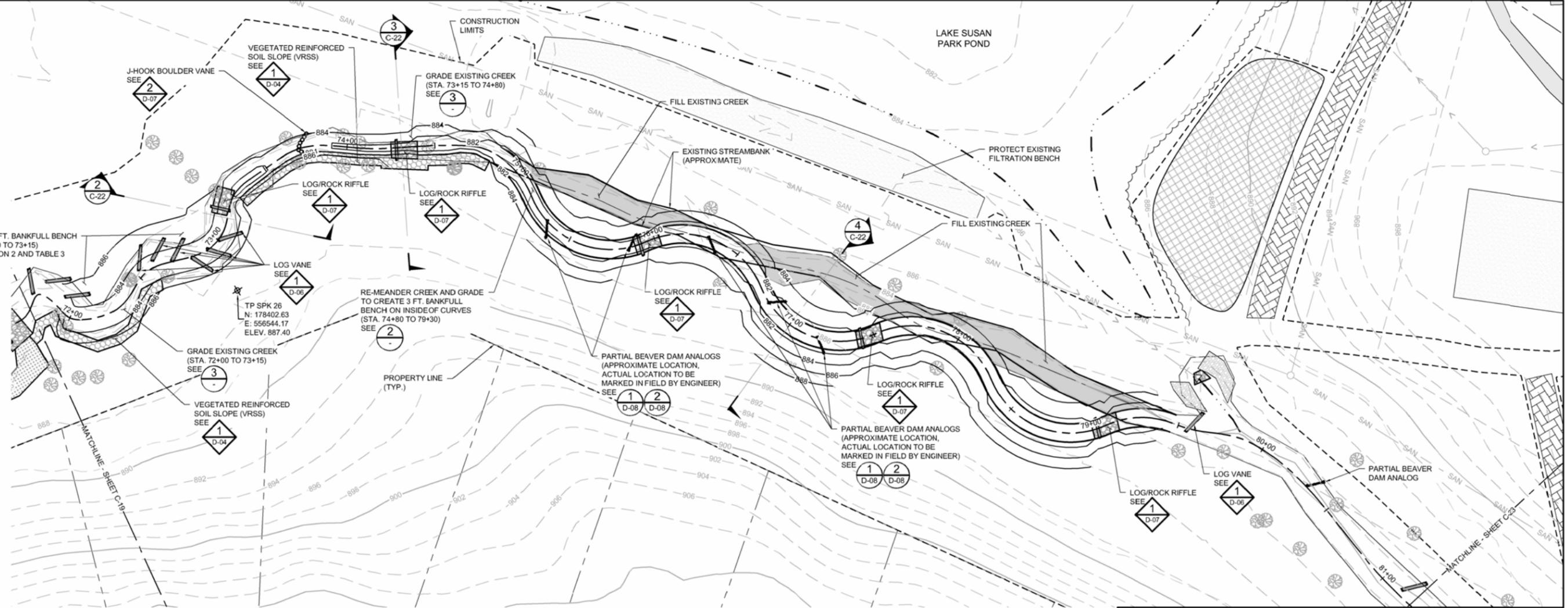
100% DESIGN  
 ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 23/27-0053.14 CONSTRUCTION RECORD: A B C 0 1 2 3 RELEASED TO/FOR: DATE RELEASED				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 63+00 - 72+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-20 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
 CHANHASSEN, MN.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\1-UPPER RILEY CREEK\23270053\_C-21\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1/2"=1'-0" PLOT DATE: 8/15/2023 1:08 PM

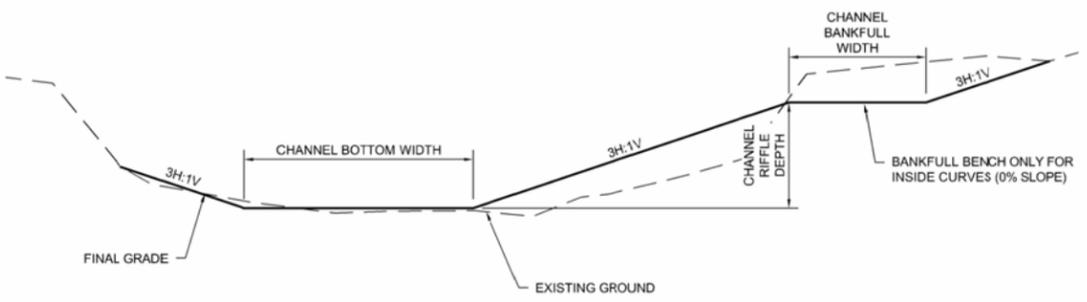
GRADE 10 FT. BANKFULL BENCH  
(STA. 72+00 TO 73+15)  
SEE SECTION 2 AND TABLE 3



**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR S SHALL BE PROTECTED DURING CONSTRUCTION, EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

1 PLAN: STREAM STABILIZATION (STA. 72+00 - 81+00)



2 SECTION: CREEK GRADING (RE-MEANDER STA. 75+00 TO 79+50)  
NOT TO SCALE

STATION (START)	STATION (END)	CHANNEL BOTTOM WIDTH (FT.)	CHANNEL RFFLE DEPTH (FT.)	BANKFULL BENCH WIDTH (FT.)	NOTES
72+00	73+15	6	2	10	BENCH ONLY ON NORTH SLOPE
73+15	74+80	3	2	NA	SIDE SLOPES 3H:1V ON NCRTH SLOPE SIDE SLOPES 1H:1V ON SOUTH WITH VRSS

3 TABLE: CREEK GRADING (EXISTING CHANNEL)  
NOT TO SCALE

SYMBOL AND PATTERN LEGEND			
	EXISTING 10' CONTOUR		CONSTRUCTION ACCESS
	EXISTING 2' CONTOUR		RIPRAP
	EXISTING PROPERTY LINE		TOE WOOD
	EXISTING EASEMENT		VRSS
	EXISTING STORM SEWER		GRADING AREA
	EXISTING SANITARY SEWER		ROCK VANE
	EXISTING GAS LINE		ROOT WAD
	EXISTING WATERMAIN		BOULDER CROSSVANE
	EXISTING FENCE		J-HOOK BOULDER VANE
	EXISTING WETLAND CELINEATION		
	NORMAL WATER LEVEL (APPROXIMATE)		
	EXISTING PARKING LOT/PAVEMENT		
	CONSTRUCTION LIMITS		
	PROPOSED 10' CONTOUR		
	PROPOSED 2' CONTOUR		

100% DESIGN  
ISSUED FOR BID

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

CLIENT	08/31/23	09/17/23			
BID					
CONSTRUCTION RECORD					
RELEASED TO/FOR	A	B	C	0	1 2 3
DATE RELEASED					

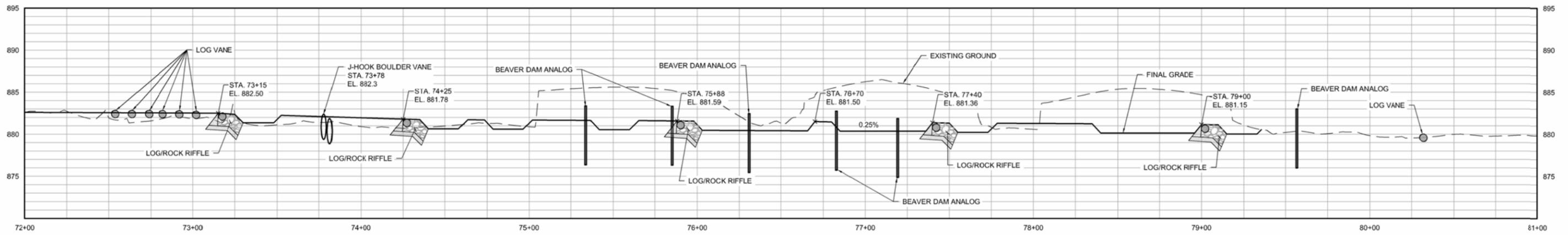
**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

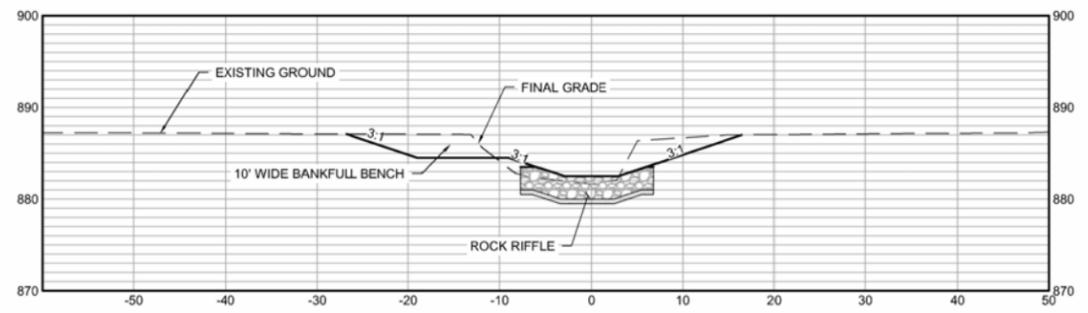
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN**  
**STREAM STABILIZATION PLAN**  
(STA. 72+00 - 81+00)

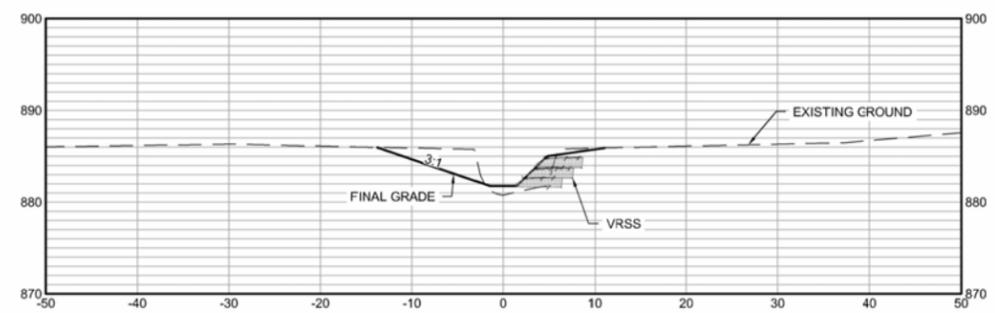
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-21
REV. No.	0



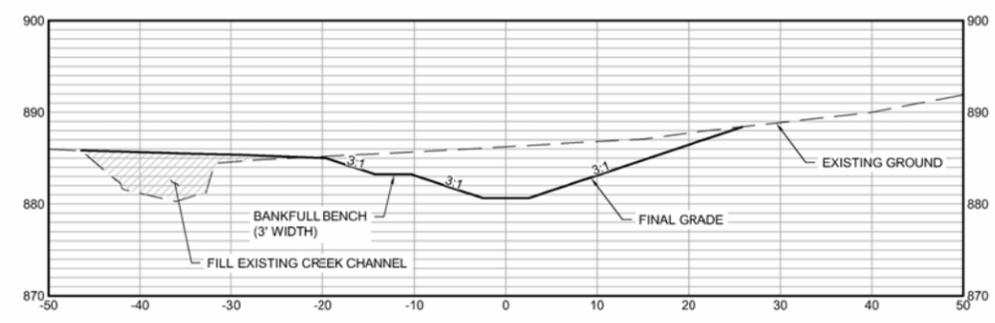
**1 PROFILE: STREAM STABILIZATION (STA. 72+00 - 81+00)**  
 0 30 60  
 HORIZONTAL SCALE IN FEET  
 0 6 12  
 VERTICAL SCALE IN FEET



**2 SECTION: STREAM STABILIZATION (STA. 73+15)**  
 0 10 20  
 SCALE IN FEET



**3 SECTION: STREAM STABILIZATION (STA. 74+30)**  
 0 10 20  
 SCALE IN FEET

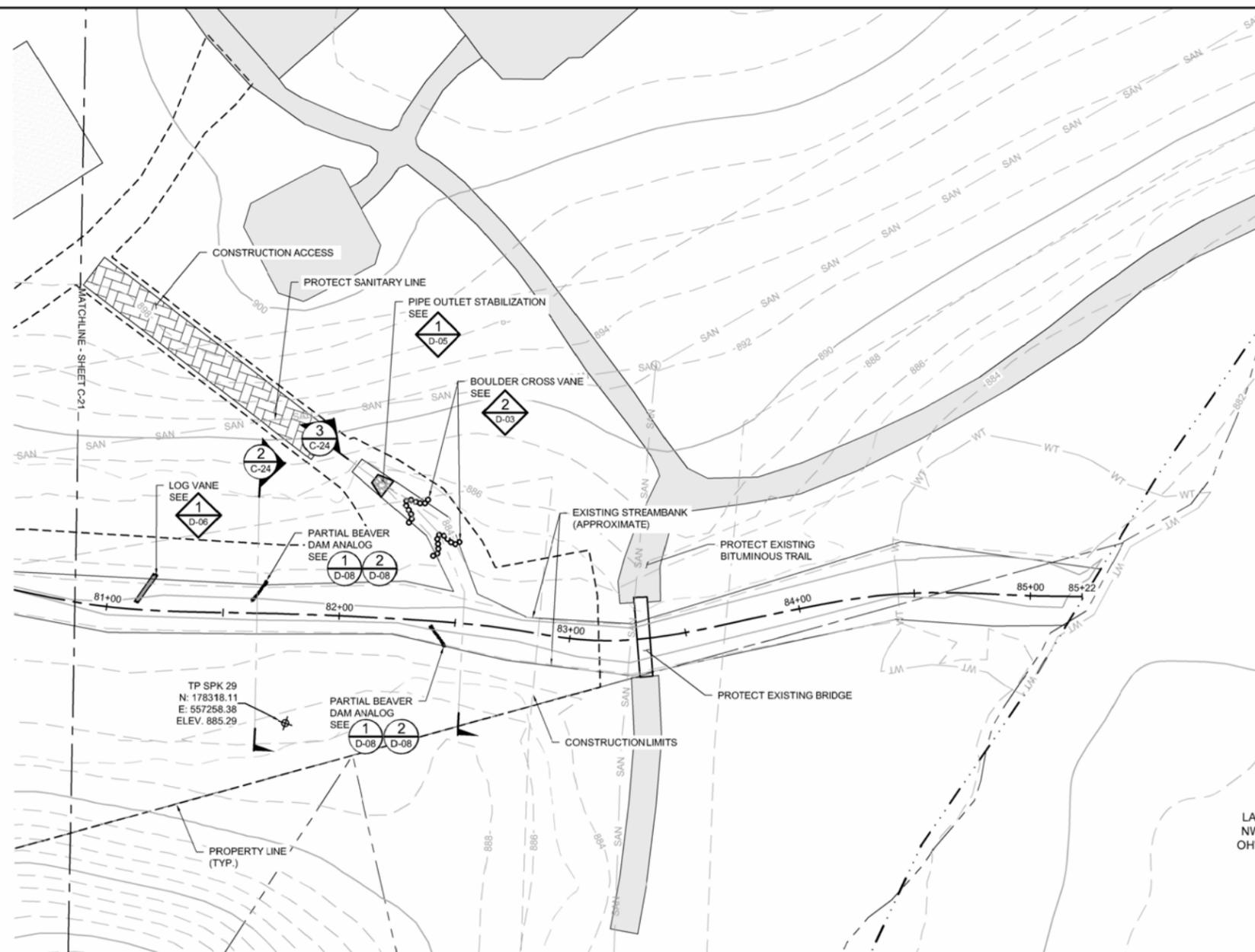


**4 SECTION: STREAM STABILIZATION (STA. 77+00)**  
 0 10 20  
 SCALE IN FEET

100% DESIGN  
 ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/23/23 CONSTRUCTION RECORD: A B C 0 1 2 3 RELEASED TO/FOR: DATE RELEASED				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 72+00 - 81+00)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-22 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
 CHANHASSEN, MN.



SYMBOL AND PATTERN LEGEND			
— 960 —	EXISTING 10' CONTOUR		CONSTRUCTION ACCESS
— 962 —	EXISTING 2' CONTOUR		RIPRAP
- - - -	EXISTING PROPERTY LINE		TOE WOOD
- - - -	EXISTING EASEMENT		VRSS
- > -	EXISTING STORM SEWER		GRADING AREA
- SAN -	EXISTING SANITARY SEWER		ROCK VANE
- GAS -	EXISTING GAS LINE		ROOT WAD
- W -	EXISTING WATERMAIN		BOULDER CROSSVANE
- X - X -	EXISTING FENCE		J-HOOK BOULDER VANE
- WT -	EXISTING WETLAND DELINEATION		
- - - -	NORMAL WATER LEVEL (APPROXIMATE)		
	EXISTING PARKING LOT/PAVEMENT		
- - - -	CONSTRUCTION LIMITS		
- - - -	PROPOSED 10' CONTOUR		
- - - -	PROPOSED 2' CONTOUR		

LAKE SUSAN  
 NWL = 880.23  
 OHWL = 881.80

**GENERAL NOTES:**

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN MARCH 2021 IN CARVER COUNTY FEET PROJECTION.
2. IMAGERY: COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND CARVER COUNTY, MINNESOTA, 2021.
3. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
4. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. EXCEPT WHERE SHOWN ON PLANS FOR REMOVAL. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH THE CITY AND/OR OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
5. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING FOR EACH LOCATION DURING CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED INSIDE THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
6. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET OR STRAW MULCH.
7. CONTRACTOR TO MAINTAIN EXISTING STREAM BOTTOM WIDTH SO NOT TO DECREASE CREEK CROSS SECTIONAL AREA DURING RIPRAP INSTALLATION.
8. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND/OR ENGINEER AND STAKED IN THE FIELD.
9. STREAM FEATURE LOCATIONS MAY BE FIELD FIT AS DIRECTED BY ENGINEER.

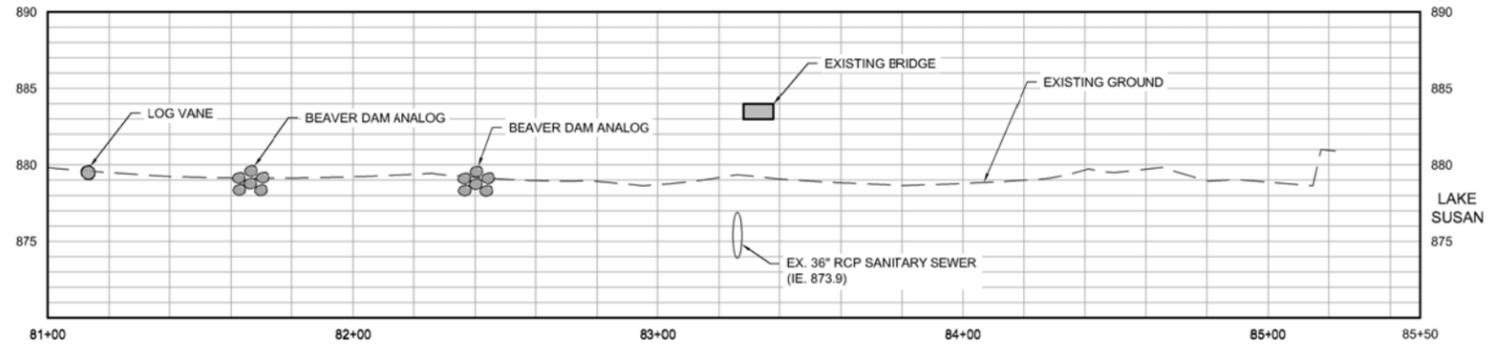
1 PLAN: STREAM STABILIZATION (STA. 81+00 - 85+50)



CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053-1\UPPER RILEY CREEK\23270053\_C-23\_STREAM STABILIZATION P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 8/15/2023 1:00 PM

100% DESIGN  
 ISSUED FOR BID

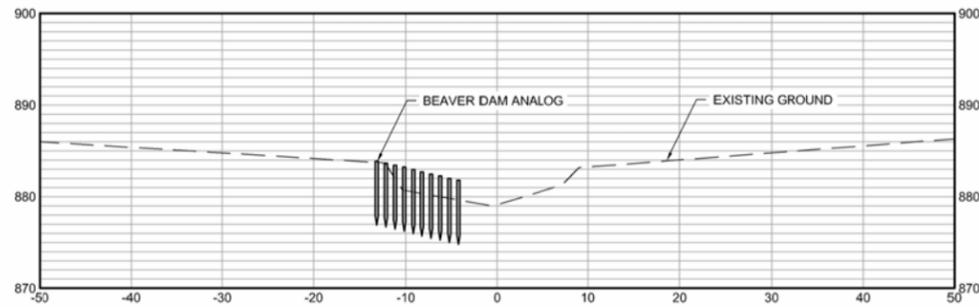
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT: 08/31/23 09/17/23 CONSTRUCTION RECORD: 08/23/23				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN BARR PROJECT No. 23/27-0053.14			
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE #: 43120				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.				CLIENT PROJECT No.							
NO. BY CHK APP DATE REVISION DESCRIPTION				0 EPF JCO SAS 08/23/2023 ISSUED FOR BID				STREAM STABILIZATION PLAN (STA. 81+00 - 85+50)				DWG. No. C-23		REV. No. 0					



1 PROFILE: STREAM STABILIZATION (STA. 81+00 - 85+50)

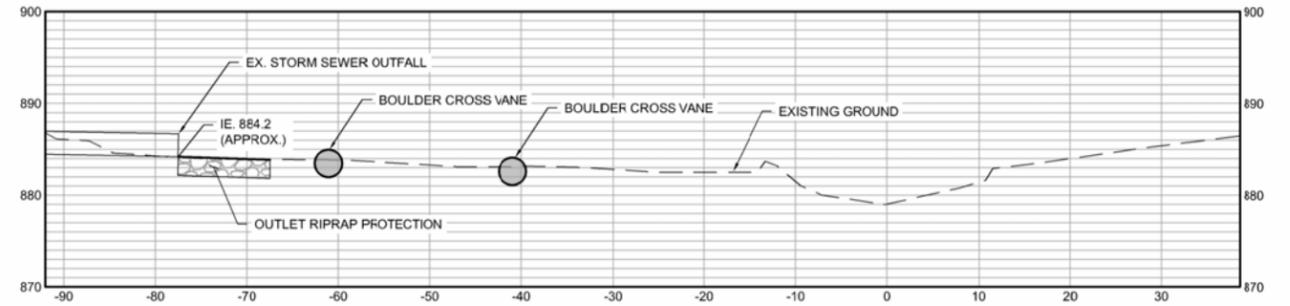
0 30 60  
HORIZONTAL SCALE IN FEET

0 6 12  
VERTICAL SCALE IN FEET



2 SECTION: STREAM STABILIZATION (STA. 81+50)

0 10 20  
SCALE IN FEET



3 SECTION: STREAM STABILIZATION (STA. 82+81)

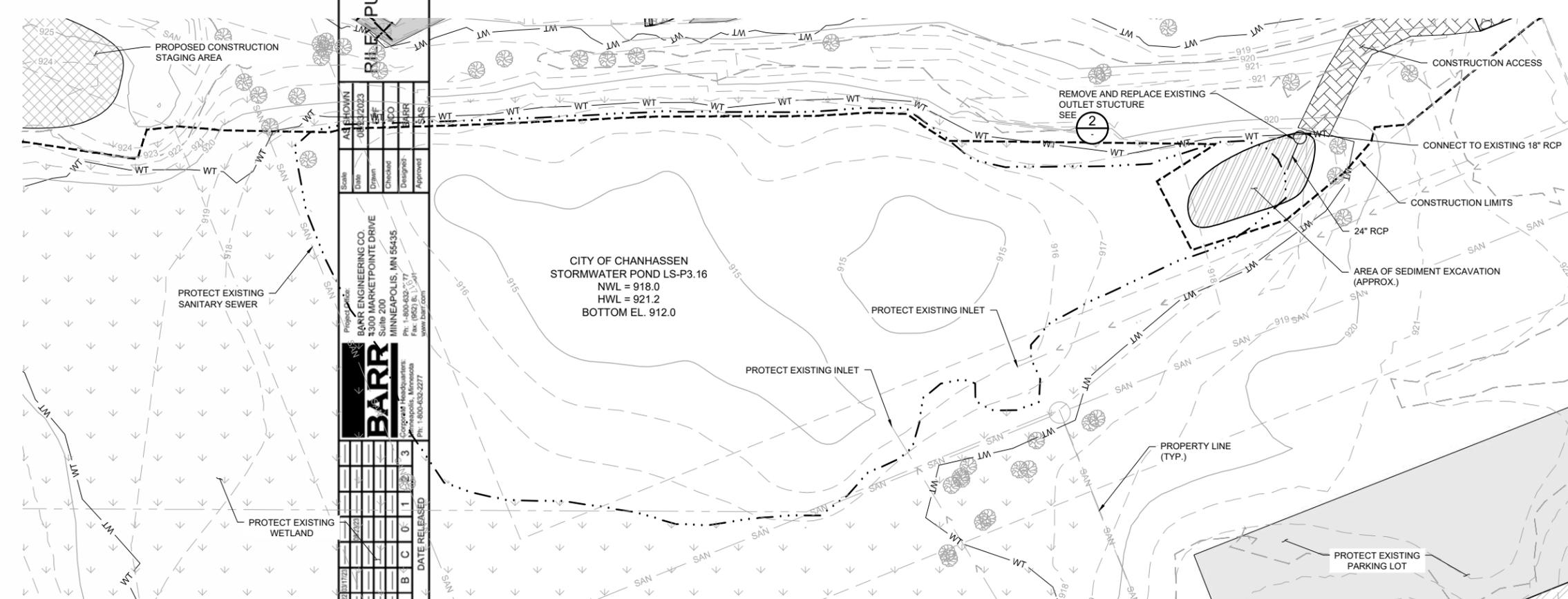
0 10 20  
SCALE IN FEET

100% DESIGN  
ISSUED FOR BID

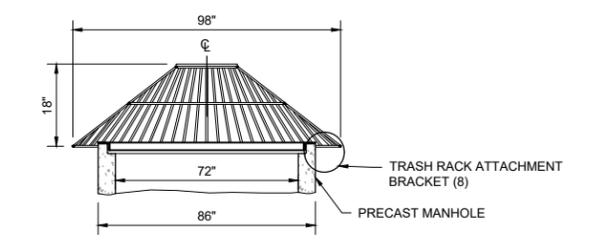
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 08/31/22 09/17/23 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 Ph: 1-800-632-2277 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION PROFILE & SECTIONS (STA. 81+00 - 85+50)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-24 REV. No. 0			
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION																		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																		

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.

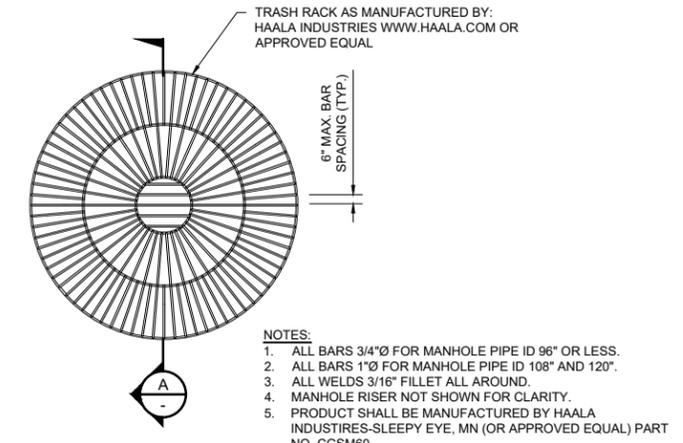
SYMBOL AND PATTERN LEGEND	
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING GAS LINE
	EXISTING WATERMAIN
	EXISTING FENCE
	EXISTING WETLAND DELINEATION
	EXISTING WETLAND AREA
	EXISTING PARKING LOT
	CONSTRUCTION LIMITS
	PROPOSED 5' CONTOUR
	PROPOSED 1' CONTOUR



1 PLAN: POND MAINTENANCE  
SCALE IN FEET



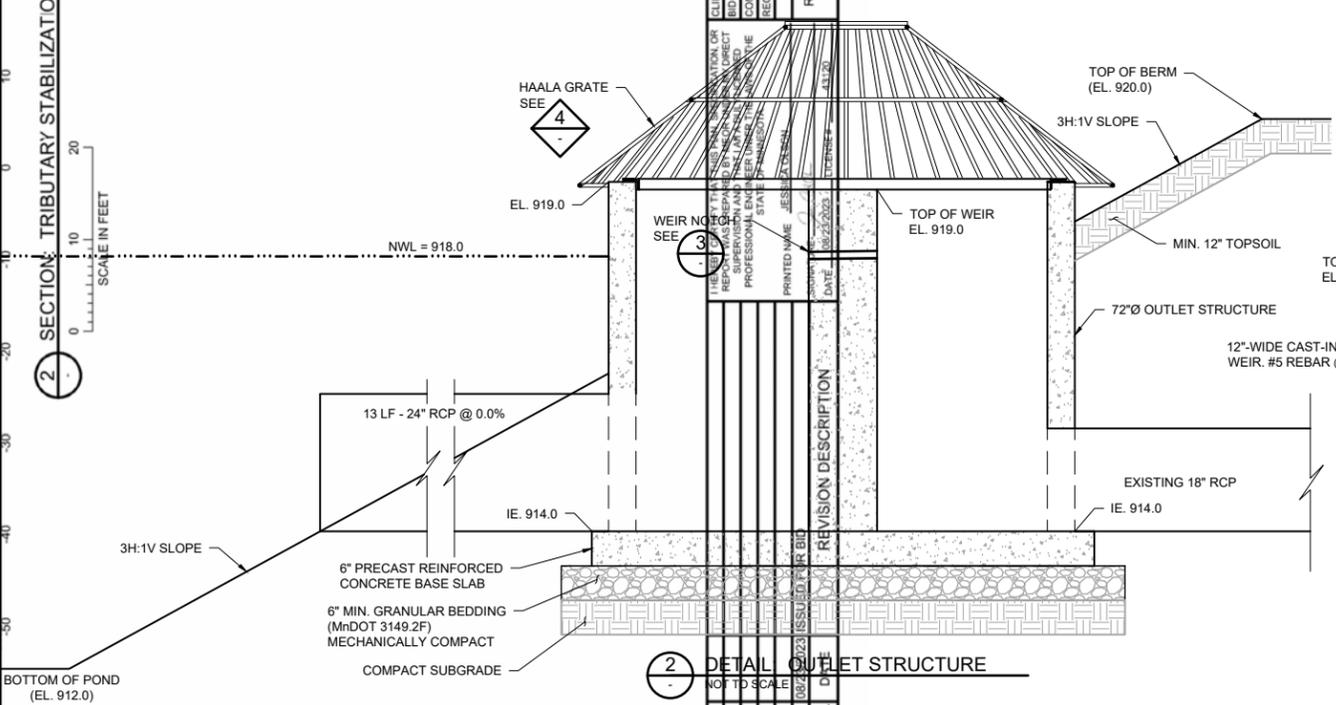
A SECTION: SPECIAL INLET TRASH RACK  
NOT TO SCALE



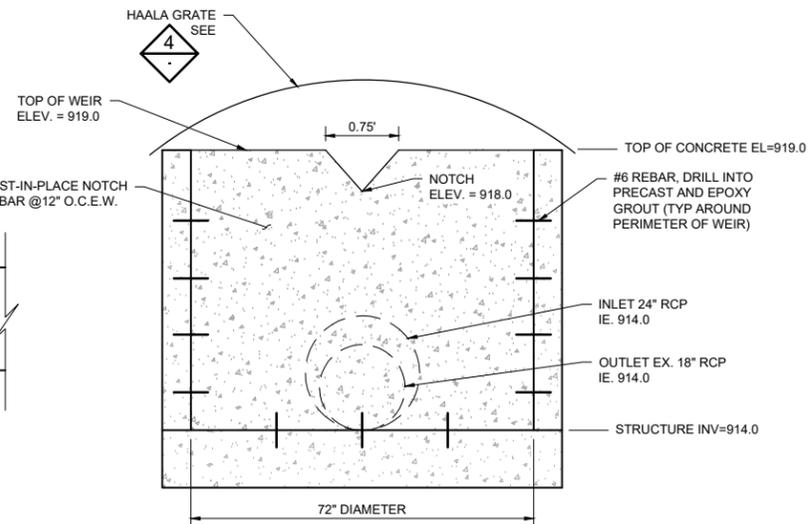
PLAN VIEW

- NOTES:
- ALL BARS 3/4"Ø FOR MANHOLE PIPE ID 96" OR LESS.
  - ALL BARS 1"Ø FOR MANHOLE PIPE ID 108" AND 120".
  - ALL WELDS 3/16" FILLET ALL AROUND.
  - MANHOLE RISER NOT SHOWN FOR CLARITY.
  - PRODUCT SHALL BE MANUFACTURED BY HAALA INDUSTRIES-SLEEPY EYE, MN (OR APPROVED EQUAL) PART NO. CGSM60.

2 SECTION: TRIBUTARY STABILIZATION (STA. 2+35)  
SCALE IN FEET



2 DETAIL: OUTLET STRUCTURE  
NOT TO SCALE



3 DETAIL: WEIR NOTCH  
NOT TO SCALE

4 DETAIL: SPECIAL INLET TRASH RACK  
NOT TO SCALE

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

PRINTED NAME: JESSICA OLSON  
SIGNATURE: [Signature]  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	DATE	DESIGNED	CHECKED	DESIGNED	APPROVED
BARR ENGINEERING CO.	08/23/2023	EPF	JCO	BARR	SAS

RELEASED TO/FOR	DATE RELEASED
A	
B	
C	
0	
1	
2	
3	

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN.

UPPER RILEY CREEK  
CORRIDOR ENHANCEMENT PLAN  
POND MAINTENANCE PLAN

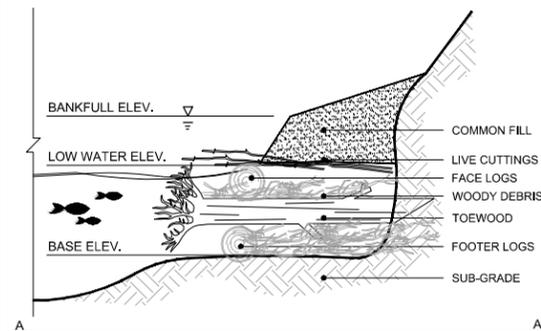
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-25
REV. No.	0

100% DESIGN  
ISSUED FOR BID

**1. INSTALLATION SUMMARY**

ENGINEER OR OWNER'S REPRESENTATIVE MUST BE PRESENT FOR INSTALLATION OF TOEWOOD BENCH.

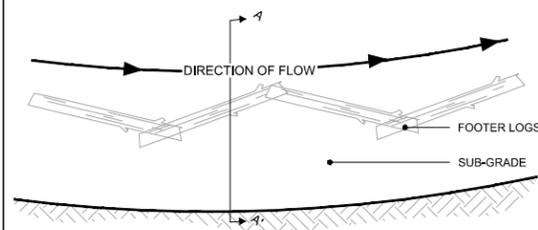
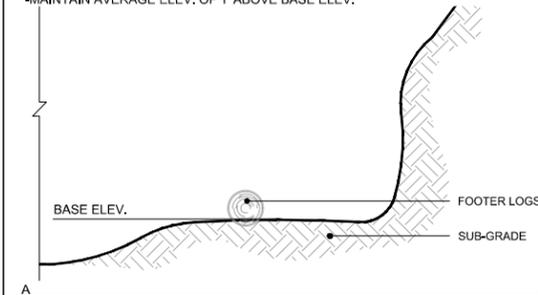
THE DRAWINGS ON THIS PAGE ARE NOT TO SCALE.



**2. SUBGRADE AND FOOTER LOGS**

**SPECIFICATION:**  
 -8" TO 1" DIAMETER  
 -LIMBS REMOVED  
 -APPROX 10' LENGTH

**PLACEMENT:**  
 -EXCAVATE TO BASE ELEVATION - CONTRACTOR SHALL MAKE EFFORT TO SEPARATE GRANULAR AND FINE FILL NATIVE MATERIAL FOR USE IN STEPS 4 AND 6.  
 -PLACE FOOTER LOGS 30 DEGREES FROM PARALLEL TO STREAM FLOW WITH ENDS STACKED CREATING A ZIG ZAG PATTERN (PLAN VIEW BELOW)  
 -MAINTAIN AVERAGE ELEV. OF 1' ABOVE BASE ELEV.

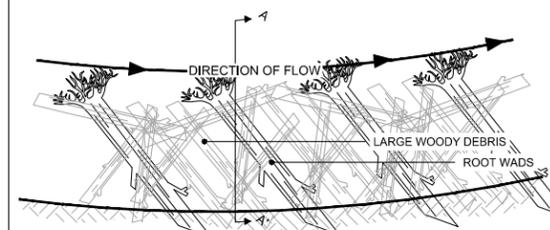
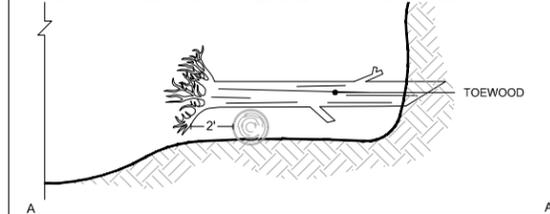


**3. ROOT WADS & LRG WOODY DEBRIS**

**ROOT WAD SPECIFICATION:**  
 -10" MIN DIAMETER  
 -LENGTH INDICATED IN DESIGN CROSS SECTION OR 10' MIN.  
 -LIMBS REMOVED  
 -ROOT WADS LEFT INTACT  
 -ENDS SHARPENED TO A POINT

**LARGE WOODY DEBRIS SPECIFICATION:**  
 -8" MIN DIAMETER

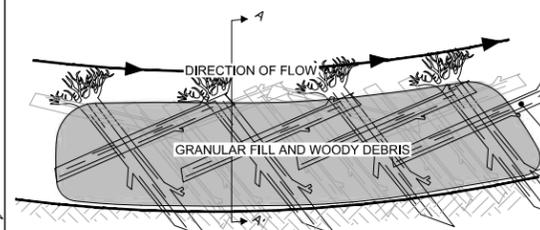
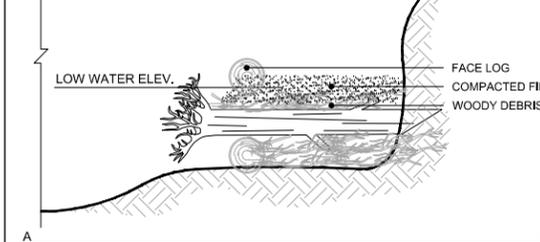
**PLACEMENT:**  
 -PLACE ROOT WADS HORIZONTALLY ON TOP OF FOOTER LOGS, OVERHANG ROOT WAD LOGS 2'  
 -ANGLE ROOTWADS UPSTREAM  
 -DRIVE SHARPENED TRUNKS MIN. 3' INTO BANK OR DIG IN.  
 -PLACE 1 ROOT WAD PER FOOTER LOG  
 -PLACE 5 TO 7 LARGE WOODY DEBRIS LOGS BETWEEN ROOT WADS



**4. WOODY DEBRIS, FACE LOGS & GRANULAR FILL**

**SPECIFICATION:**  
 -WOODY MATERIAL (COMPOSED OF SMALL LIMBS AND BRANCHES, APPROX. 4" MAX DIAMETER AND SMALLER)  
 -DO NOT USE ROTTEN WOODY MATERIAL  
 -NATIVE GRANULAR FILL  
 -FACE LOGS 8" TO 1" DIAMETER, MIN. 25' LENGTH BURIED > 1/2 OF LENGTH.

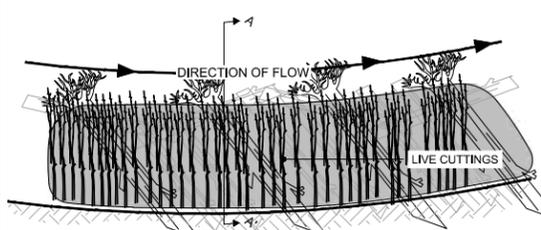
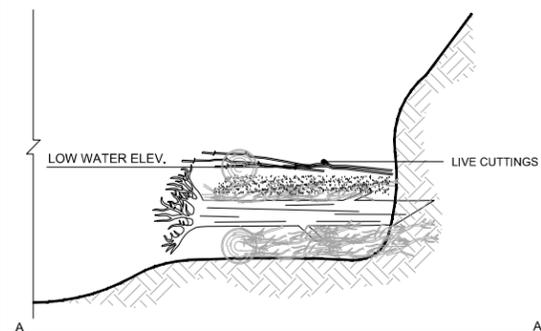
**PLACEMENT:**  
 -FILL BETWEEN FOOTER LOGS AND TOEWOOD WITH WOODY DEBRIS  
 -STACK WOODY DEBRIS TO LOW WATER ELEVATION  
 -PLACE FACE LOGS OVER DEBRIS AND BEHIND ROOT WAD  
 -LAYER NATIVE GRANULAR FILL ON TOP OF WOODY DEBRIS  
 -COMPACT SO THAT SETTLING OF FILL IS MINIMIZED BUT DEBRIS IS NOT DISPLACED  
 -COMPACTED FILL WILL EXTEND 2"-5" ABOVE LOW WATER ELEVATION



**5. LIVE CUTTINGS**

**SPECIFICATION:**  
 -SEE LIVE CUTTING DETAIL D-03 ON SHEET R-02

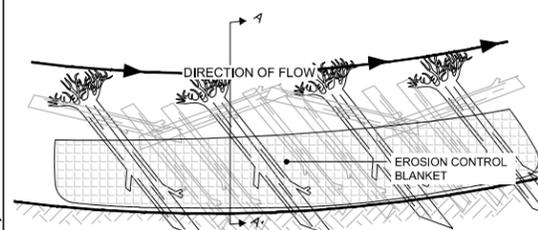
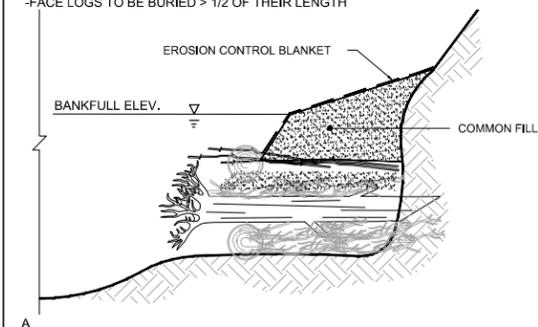
**PLACEMENT:**  
 -LAY CUTTINGS WITH A DENSITY OF 3 CUTTINGS PER LINEAL FOOT  
 -TOPS OF CUTTING WILL POINT TOWARD CHANNEL  
 -TRIM EXPOSED ENDS OF CUTTINGS, LEAVE NO MORE THAN 6" EXPOSED  
 -DEPOSIT NATIVE FILL OVER CUTTINGS AND WATER LIBERALLY, COMPRESS FILL TO 2"-4" THICK OVER CUTTINGS



**6. COMMON FILL**

**SPECIFICATION:**  
 -NATIVE FILL (FINE)

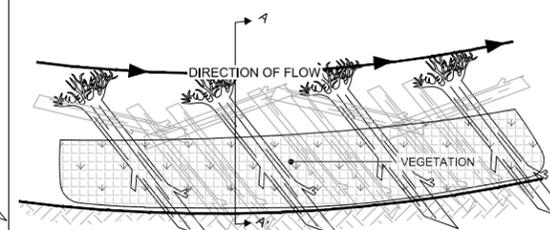
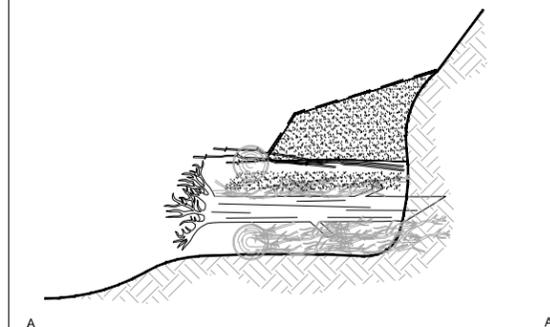
**PLACEMENT:**  
 -PLACE FILL IN MAX. 1' LIFTS, COMPACT TO 90% OF STANDARD PROCTOR -GRADE BANK AT MAX. 3H:1V SLOPE FROM FACE LOG TO BANKFULL ELEVATION  
 -INSTALL EROSION CONTROL BLANKET ON FACE AND TOP OF FILL, ANCHOR ON UNDISTURBED SLOPE  
 -FACE LOGS TO BE BURIED > 1/2 OF THEIR LENGTH



**7. VEGETATION**

SEE VEGETATION PLAN FOR DETAIL.

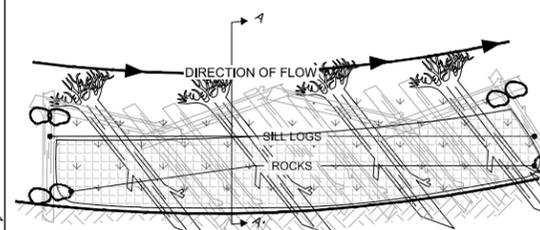
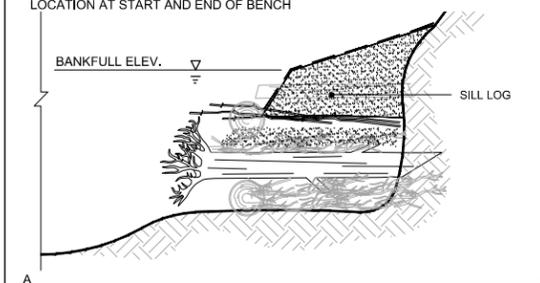
IF SEED IS CALLED FOR:  
 -PLANT SEED ON THE FACE AS WELL AS ACROSS THE TOP OF FILL



**8. SILL LOGS & TERMINATION**

**SPECIFICATION:**  
 -10" MIN DIAMETER  
 -LIMBS REMOVED  
 -LENGTH DETERMINED BY WIDTH OF TOEWOOD BENCH

**PLACEMENT:**  
 -PLACE ONE SILL LOG AT THE START AND END OF THE TOEWOOD BENCH PERPENDICULAR TO THE DIRECTION OF FLOW.  
 -PLACE LARGE ROCKS ON TOP OF SILL LOG, TOP OF ROCK WILL MEET BANKFULL ELEVATION  
 -TUCK EROSION CONTROL BLANKET DOWN AND BACK TOWARDS EXISTING BANK  
 -TRANSITION BANKFULL ELEVATION TO EXISTING GRADE AT DETERMINED LOCATION AT START AND END OF BENCH



**1** DETAIL: TOE WOOD  
 NOT TO SCALE

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\DWG\23270053\_14\_01\_DETAILS.DWG PLOT SCALE: 1/2" = 1'-0" PLOT DATE: 8/15/2023 11:14 AM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE: *J. Olson*  
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/22	08/17/23					
BID			08/23/23				
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

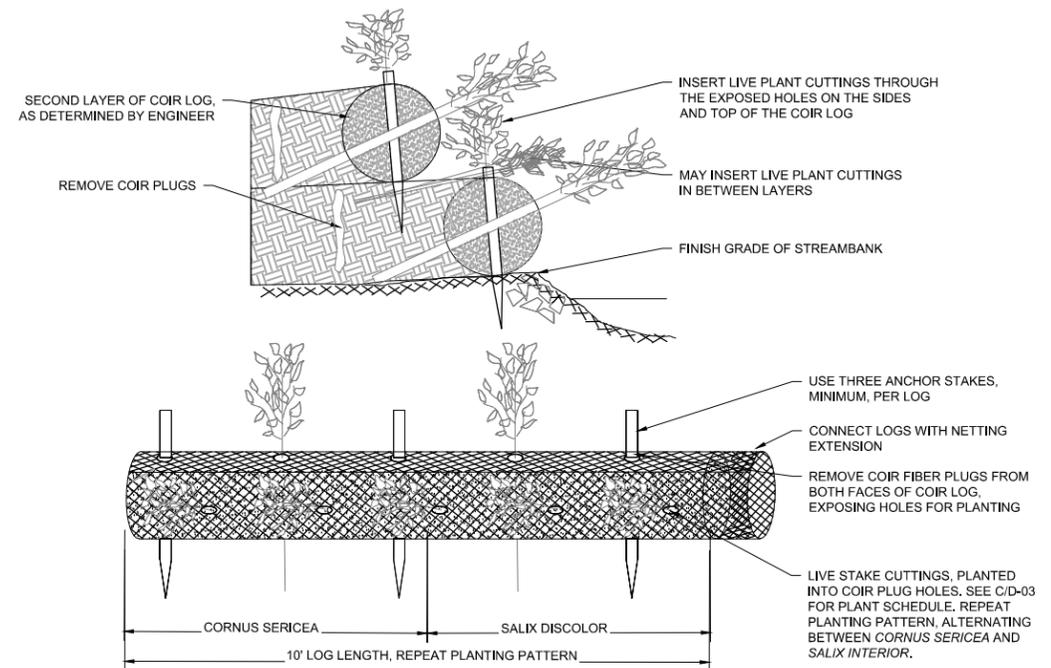
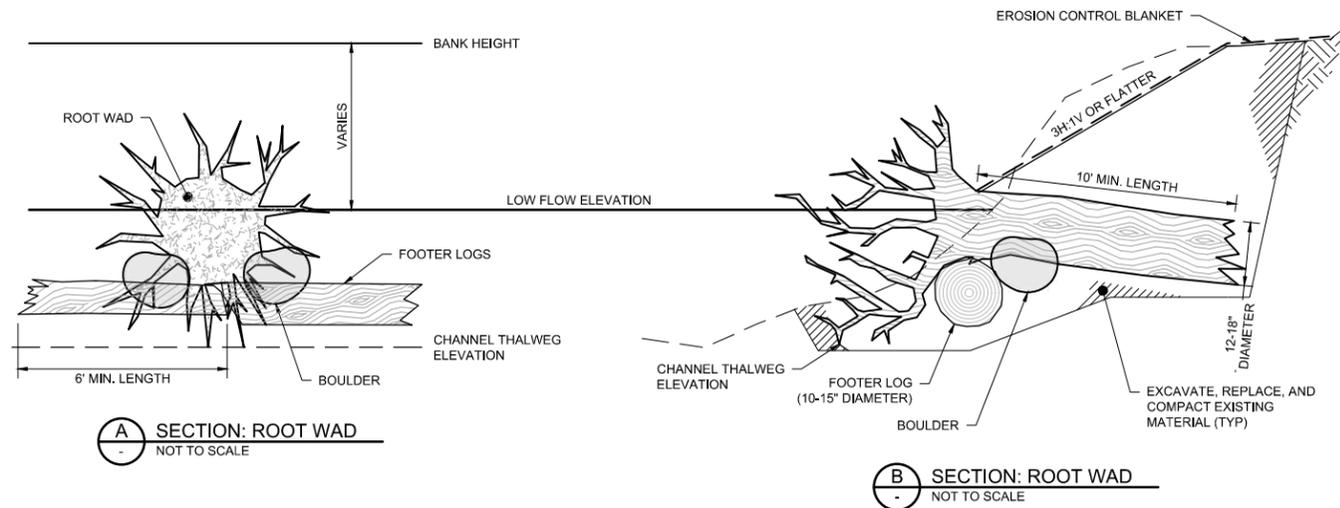
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK**  
 CORRIDOR ENHANCEMENT PLAN  
 STREAM STABILIZATION DETAILS

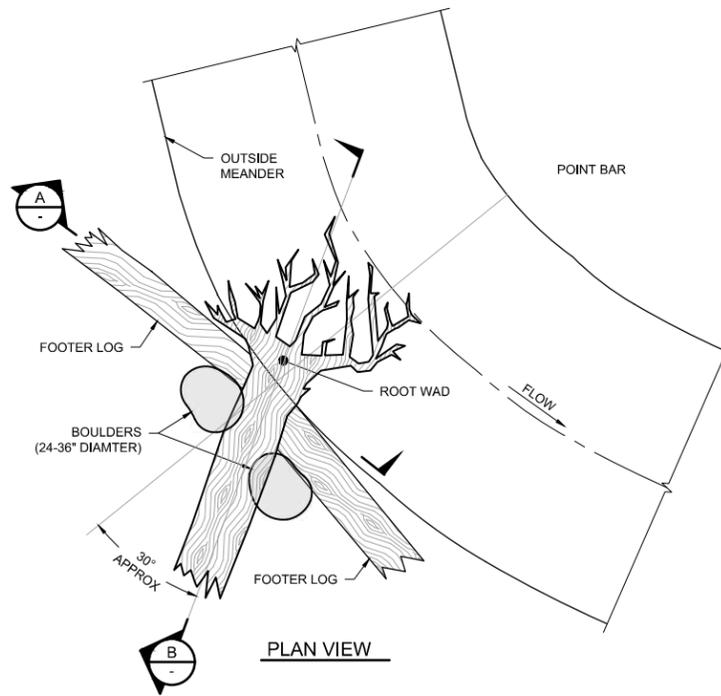
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	D-01
REV. No.	0

100% DESIGN  
 ISSUED FOR BID



NOTES:  
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

**2** DETAIL: COIR LOG WITH PLANTING HOLES  
NOT TO SCALE



**1** DETAIL: ROOT WAD  
NOT TO SCALE

**GENERAL NOTES:**

1. THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO ROOT WAD INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
2. TO THE EXTENT POSSIBLE, ROOT WADS SHOULD BE CREATED FROM TREES THAT WILL BE REMOVED FROM THE SITES WITHIN THE PROJECT AREA.
3. CONSTRUCTION SHOULD PROCEED FROM DOWNSTREAM TO UPSTREAM IN AREAS WHERE MORE THAN ONE ROOT WAD WILL BE INSTALLED AS SHOWN ON THE DRAWINGS.
4. EXCAVATE A TRENCH ALONG THE STREAMBANK TOE FOR THE FOOTER LOGS.
5. PLACE THE FOOTER LOGS INTO THE TRENCH, WITH THE TOPS OF THE LOGS AT SPECIFIED ELEVATIONS FOR EACH SITE.
6. EXCAVATE A TRENCH IN WHICH TO PLACE THE ROOT WAD. IN SOFT SOILS IT MAY BE POSSIBLE TO DRIVE THE ROOT WAD INTO THE BANK WITH EQUIPMENT AFTER SHARPENING THE END TO A POINT. CARE SHALL BE TAKEN NOT TO DAMAGE THE ROOT WAD.
7. THE ROOT WAD MUST BE PLACED IN THE BANK SO THAT THE BACK OF THE ROOT FAN RESTS AGAINST THE FRONT OF THE FOOTER LOG.
8. THE ROOT FAN MUST BE PLACED SUCH THAT THE FAN IS ANGLED UPSTREAM AS SHOWN AND AS DIRECTED BY THE ENGINEER.
9. MOVING UPSTREAM, THE PROCESS IS REPEATED FOR EACH ADDITIONAL ROOT WAD AS SHOWN ON THE DRAWINGS.
10. LARGE BOULDERS ARE PLACED ON EITHER SIDE OF THE TRUNK OF EACH ROOTWAD.
11. PLACE BACK FILL OVER THE BOULDERS AS NECESSARY WITH A COARSE FILTER AGGREGATE (MN/DOT STANDARD SPECIFICATION 3142.2H) AND MATCH EXISTING GRADE WITH 6\"/>

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\27\0053\_14\UPPER RILEY CREEK\DWG\23270053\_14\_01\_DETAILS.DWG PLOT SCALE: 1/2\"/>

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				
PRINTED NAME	JESSICA OLSON			
SIGNATURE				
DATE	08/23/2023 LICENSE # 43120			

CLIENT	08/31/23	08/17/23				
BID			08/23/23			
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

Project Office:  
**BARR ENGINEERING CO.**  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

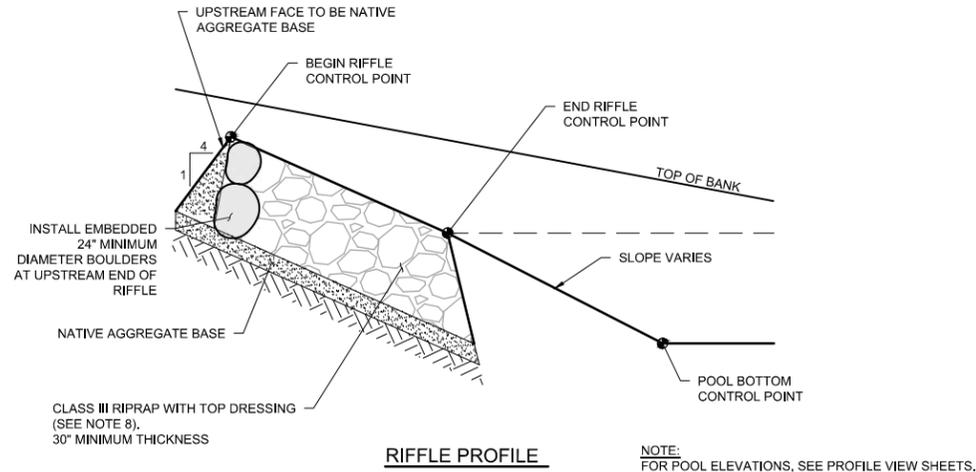
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
STREAM STABILIZATION DETAILS

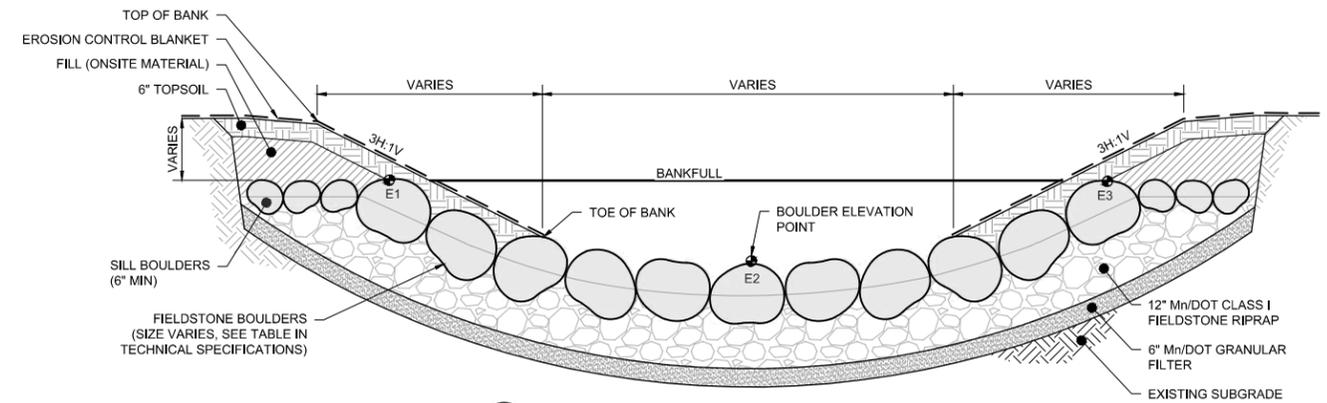
BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. D-08	REV. No. 0

100% DESIGN  
ISSUED FOR BID

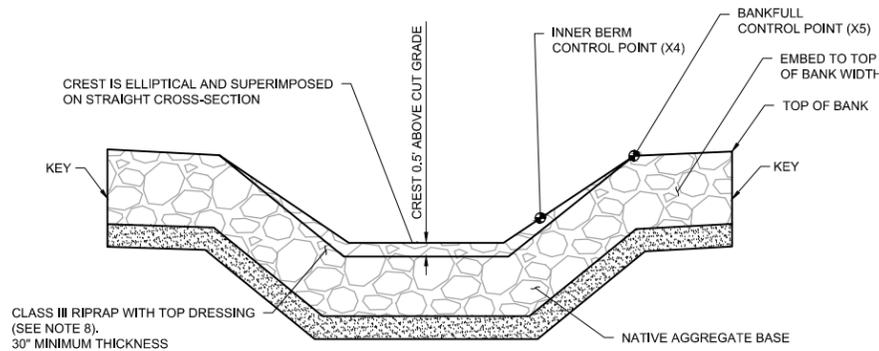


**RIFLE PROFILE**

NOTE: FOR POOL ELEVATIONS, SEE PROFILE VIEW SHEETS.

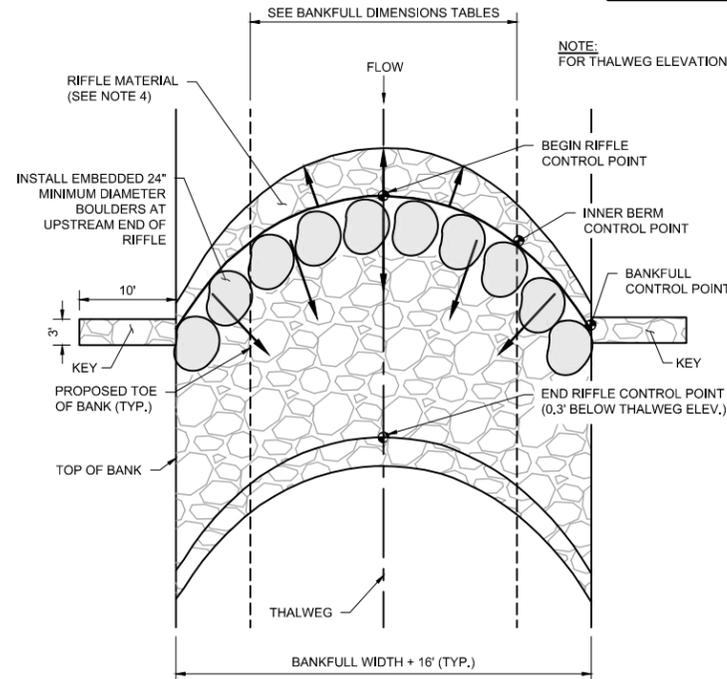


**B SECTION: CROSS VANE - SINGLE BOULDER**  
NOT TO SCALE



**RIFLE CROSS SECTION**

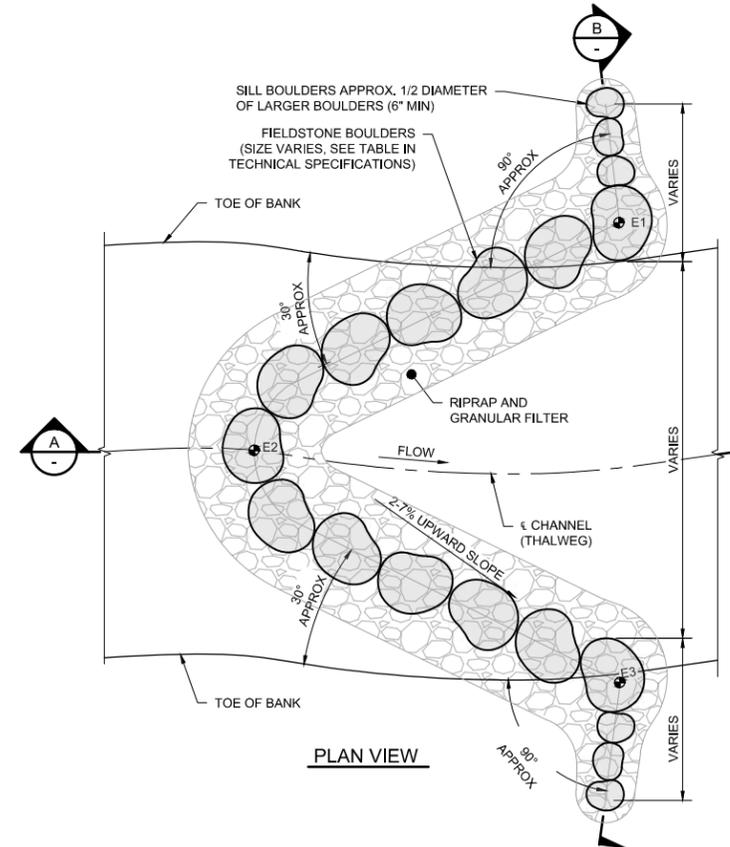
NOTE: FOR THALWEG ELEVATIONS, SEE PROFILE VIEW SHEETS.



**1 DETAIL: ROCK RIFFLE**  
NOT TO SCALE

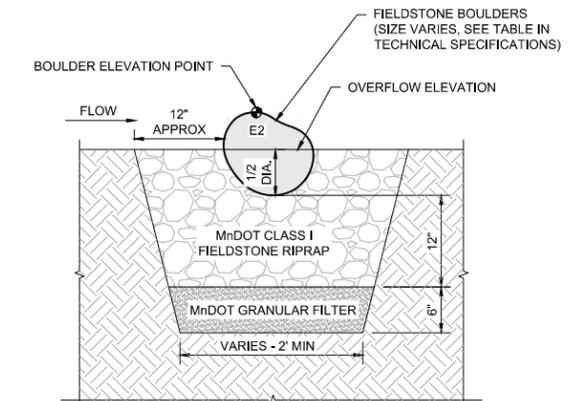
**NOTES:**

- ROCK RIFFLES SHALL BE INSTALLED WITHIN THE EXISTING RIVER CHANNEL AS SPECIFIED.
- ELEVATION CONTROL POINTS SHALL BE DESIGNATED AT THE BEGINNING AND END OF RIFFLE POINTS TO ESTABLISH PART OF THE PROFILE OF THE CHANNEL. SURVEY OF CONTROL POINTS SHALL BE REQUIRED TO ESTABLISH ACCURATE RIFFLE INSTALLATION.
- RIFPLE MATERIAL SHALL BE SALVAGED CLASS III RIPRAP FROM THE SITE AND/OR IMPORTED, INSTALLED WITH A MINIMUM THICKNESS OF 30"
- THE FACE OF THE RIFFLE UPSTREAM OF THE BEGIN RIFFLE CONTROL POINT SHALL BE NATIVE AGGREGATE BASE. 24" MINIMUM DIAMETER BOULDERS EMBEDDED IN RIFFLE IMMEDIATELY DOWNSTREAM OF THE NATIVE AGGREGATE BASE.
- THE PLACEMENT OF BACKFILL AND/OR RIFFLE MATERIAL SHALL BE DONE IN A MANNER TO CREATE A SMOOTH PROFILE, WITH NO ABRUPT 'JUMP' (TRANSITION) BETWEEN THE UPSTREAM POOL-GLIDE AND THE RIFFLE, AND LIKEWISE NO ABRUPT 'DROP' (TRANSITION) BETWEEN THE RIFFLE AND THE DOWNSTREAM RUN-POOL. ALSO A THALWEG SHALL BE FASHIONED WITHIN THE RIFFLE WIDTH SO THAT THE FINISHED CROSS SECTION OF THE RIFFLE MATERIAL MATCHES THE SHAPE AND DIMENSIONS SHOWN ON THE RIFFLE TYPICAL SECTION.
- SEE THE STREAM RESTORATION STRUCTURES TABLE FOR STATIONING AND ELEVATIONS.
- SEE TYPICAL RIFFLE SECTION (D-01) FOR CHANNEL DIMENSIONS.
- RIFPLE SURFACE TO BE TOP-DRESSED WITH 6" OF 2-INCH MINUS ROCK TO REDUCE VOID SPACE.



**PLAN VIEW**

**2 DETAIL: CROSS VANE - SINGLE BOULDER**  
NOT TO SCALE



**A SECTION: CROSS VANE - SINGLE BOULDER**  
NOT TO SCALE

**NOTES:**

- CROSS VANE LOCATIONS AND ELEVATIONS ARE APPROXIMATE AND MAY BE MODIFIED IN THE FIELD BY THE ENGINEER.
- FINAL BOULDER PLACEMENT TO BE APPROVED BY THE ENGINEER IN THE FIELD. CONTRACTOR MAY BE REQUIRED TO ADJUST BOULDER ELEVATIONS AND ROTATION.
- THERE SHALL BE NO SIGNIFICANT GAPS BETWEEN BOULDERS. RIPRAP BEDDING SHALL BE PLACED ON THE UPSTREAM SIDE OF THE BOULDERS TO PLUG SMALL GAPS (MAY REQUIRE HAND PLACEMENT).
- BOULDERS OF AN UNSUITABLE SHAPE MAY BE RE-LOCATED OR REJECTED.
- INSTALL EROSION CONTROL BLANKET ON DISTURBED BANKS.

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053.1\UPPER RILEY CREEK\DWG PLOT SCALE: 1:2 PLOT DATE: 08/15/2023 11:13 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: *J. Olson*  
DATE: 08/23/2023 LICENSE # 43120

CLIENT	08/31/22	08/17/23				
BID						
CONSTRUCTION RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: (952) 832-2601  
Ph: 1-800-632-2277  
www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

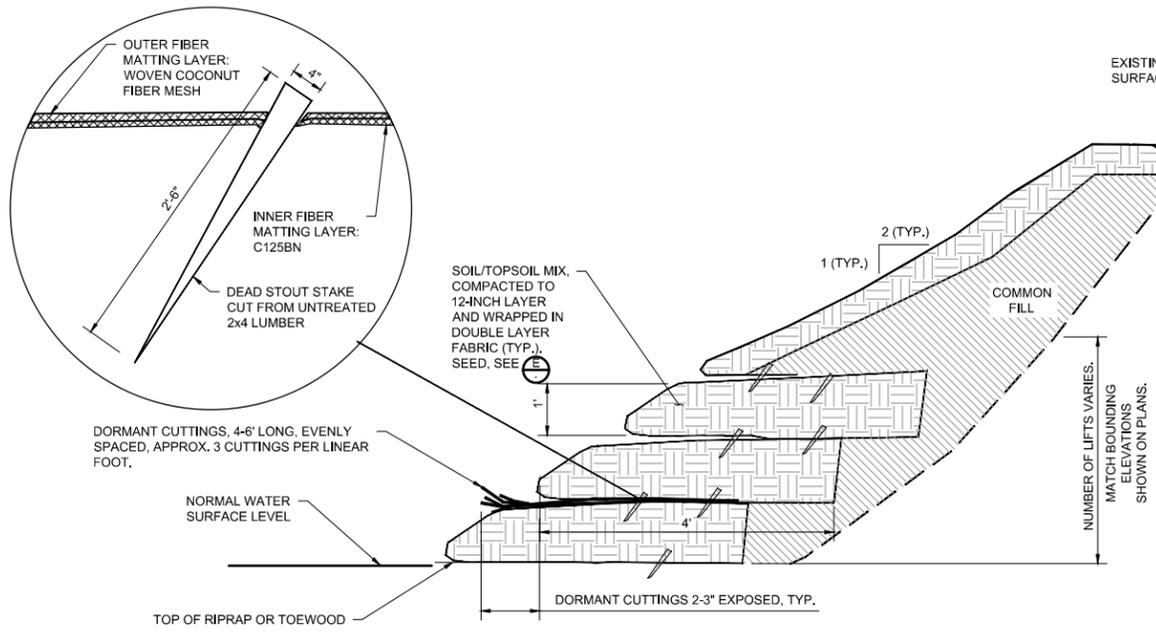
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
STREAM STABILIZATION DETAILS

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	D-03
REV. No.	0

100% DESIGN  
ISSUED FOR BID

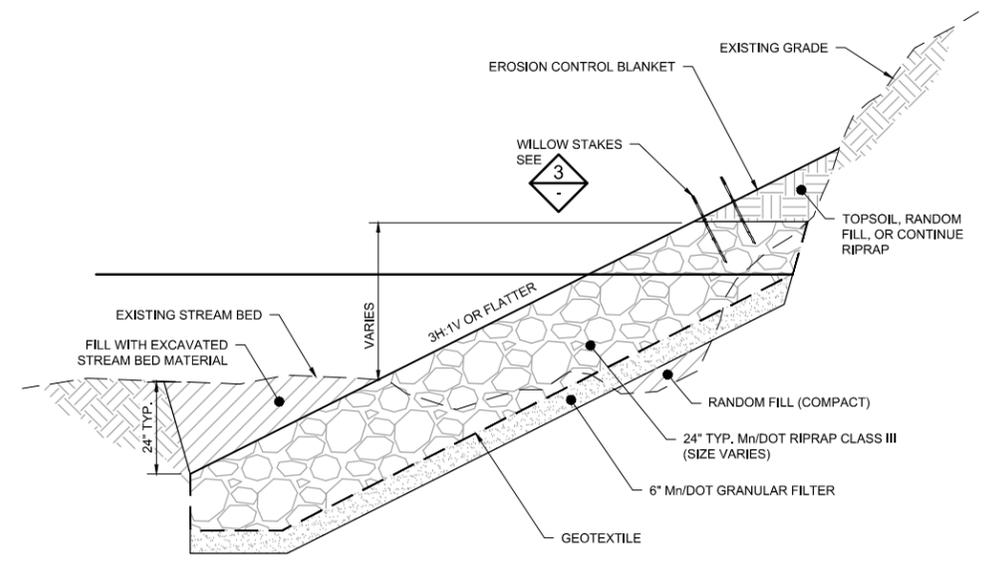
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270863\_1\UPPER RILEY CREEK\DWG\23270863\_1.DWG DETAILS DWG PLOT SCALE: 1/2" = 1' DATE: 08/23/2023 2:46 PM



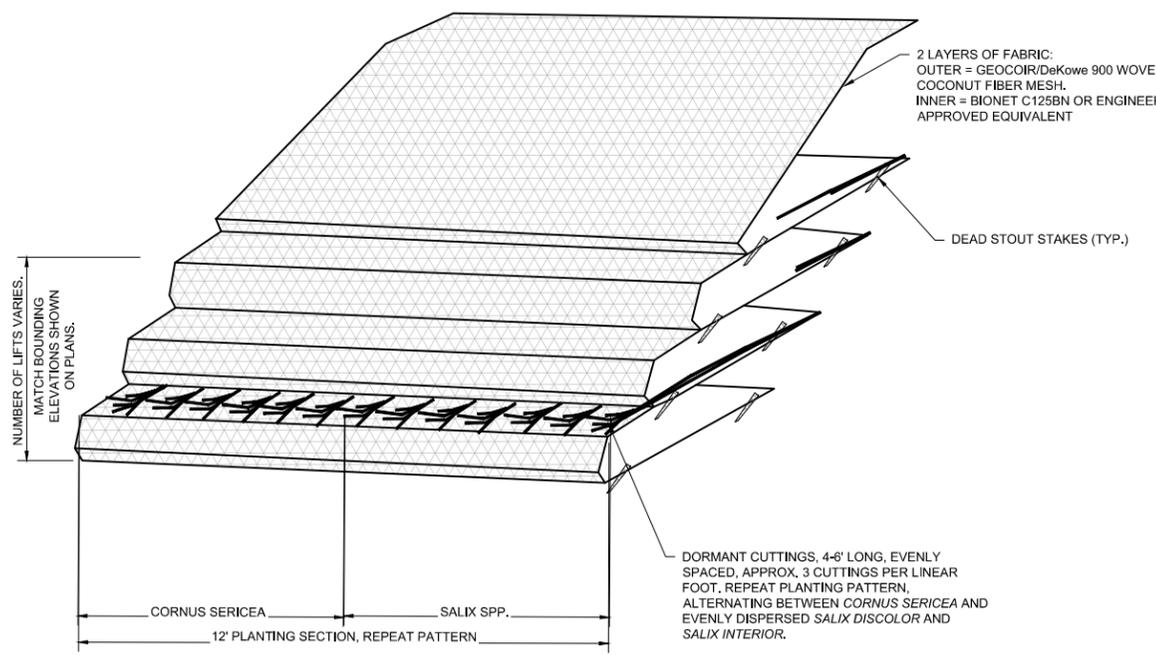
**A SECTION: LIVE PLANT VEGETATED REINFORCED SOIL SLOPE (V.R.S.S.)**  
NOT TO SCALE

**NOTES:**

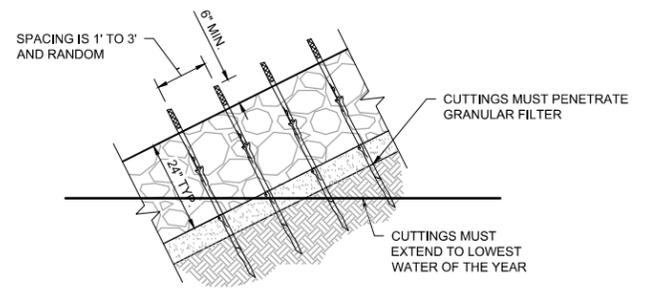
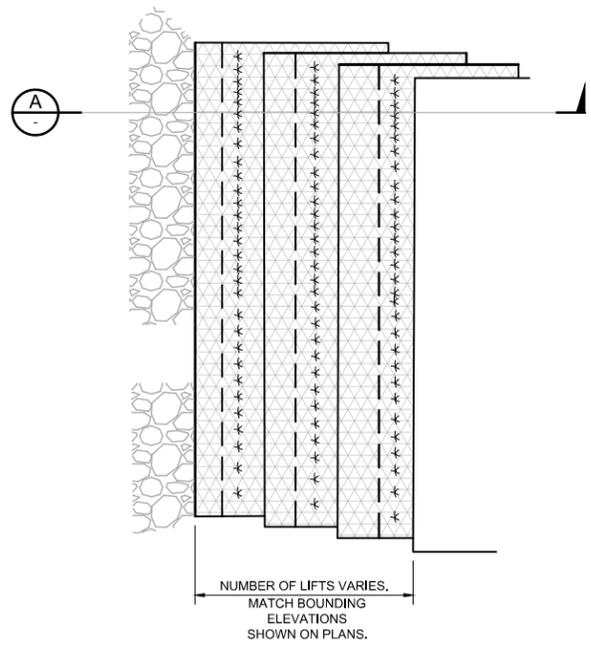
1. THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO ROOT WAD INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
2. SOAK DORMANT CUTTINGS FOR A MINIMUM OF 24 HOURS IN FLOWING WATER BEFORE PLANTING. SOAKING FOR 5-7 DAYS IS CONSIDERED IDEAL. THE DORMANT CUTTINGS SHOULD ONLY BE INSTALLED DURING THE DORMANT SEASON, AFTER LEAF DROP IN THE FALL AND BEFORE BUD BREAK IN THE SPRING. DORMANT CUTTINGS STORED IN COLD STORAGE WITH NO VISIBLE SIGN OF BUD BREAK MAY BE USED INTO LATE SPRING.
3. INSTALL RIPRAP AND GRANULAR FILTER AGGREGATE AS SPECIFIED IN SECTION 02375 AND AS SHOWN ON THE DRAWINGS.
4. EXCAVATE THE EXISTING STREAMBANK SLOPE SHOREWARD FROM AND LEVEL WITH THE TOP OF THE RIPRAP TO FORM A STABLE, UNDISTURBED SURFACE. A FLAT BENCH SHOULD BE CREATED FROM THE TOE OF THE STABLE CUT SLOPE TO THE TOE OF THE PROPOSED STREAM BANK RIPRAP.
5. DORMANT CUTTINGS ARE TO BE PLACED ON TOP OF THE RIPRAP EXCAVATED BENCH AT 3 BRANCHES PER LINEAR FOOT. THE BASAL END OF THE CUTTINGS SHOULD EXTEND AT LEAST 2 FOOT PAST THE BACK OF THE RIPRAP. NO MORE THAN 6 INCHES OF THE BUDDING END OF THE LIVE BRANCH SHOULD EXTEND PAST THE FRONT OF THE RIPRAP. COVER THE DORMANT CUTTINGS WITH TOPSOIL TO CREATE AN EVEN SURFACE FOR THE CONSTRUCTION OF THE FIRST SOIL LIFT.
6. LAY NATURAL FIBER MATTING ON BOTTOM OF THE BENCH, OVERLAPPING ADJACENT MATTING BY 1 FOOT. THE OUTER EXPOSED FIBER MATTING LAYER OF EACH SOIL LIFT SHALL BE GEOCOIR/DEKOWE 900 WOVEN COCONUT FIBER MESH, BIOD-MATM 90, OR AN ENGINEER APPROVED EQUIVALENT.
7. THE INNER LAYER OF EACH SOIL LIFT SHALL BE BIONET C125BN OR AN ENGINEER APPROVED EQUIVALENT. LAY THE INNER LAYER OF BIONET ON TOP OF NATURAL FIBER MATTING OF EACH SOIL LIFT. FABRIC SHOULD BE INSTALLED SMOOTH WITH NO UNNECESSARY FOLDS OR WRINKLES. STAKE THE SHOREWARD END OF THE FIBER MATTING IN PLACE WITH WOODEN STAKES SPACED EVERY THREE FEET AS SHOWN ON THE DRAWINGS.
8. THE FIRST 6 TO 8 INCHES OF THE BOTTOM SOIL LIFT SHALL BE FILLED WITH GRAVEL AND SAND MATERIAL EXCAVATED FROM THE STREAM BED. THE TOP 6 TO 8 INCHES ON THE FRONT OF SURFACE LAYER SHOULD BE COMPRISED OF TOPSOIL MIX AS SHOWN ON THE DRAWINGS.
9. THE TOPSOIL LAYER SHALL BE SEEDED WITH THE VRSS SEED MIX AT 0.7 POUNDS PER 1,000 SQUARE FEET OF LIFT SURFACE AREA AS SHOWN ON THE DRAWINGS.
10. FOLD THE FIBER MATTING OVER THE FILL MATERIAL AND STAKE IN PLACE SO THE FABRIC IS TAUT AND SMOOTH WITH NO UNNECESSARY FOLDS OR WRINKLES. BACKFILL BEHIND THE BOTTOM SOIL LIFT WITH GRANULAR FILTER MATERIAL TO MEET THE EXISTING SLOPE AS SHOWN ON THE DRAWINGS.
11. GRADE CHANNEL AND FLOODPLAIN AT VRSS LOCATIONS TO MAINTAIN CROSS-SECTIONAL AREA.



**2 DETAIL: RIPRAP TOE PROTECTION**  
NOT TO SCALE



**1 DETAIL: LIVE PLANT VEGETATED REINFORCED SOIL SLOPE (V.R.S.S.)**  
NOT TO SCALE



**3 DETAIL: WILLOW STAKES**  
NOT TO SCALE

**GENERAL NOTES:**

1. USE WILLOW OR WILLOW TYPE ADVENTITIOUSLY ROOTABLE STOCK.
2. MATERIAL SHOULD BE FROM AN AREA WITH SIMILAR SOIL, CLIMATE, AND LOCATION RELATIVE TO THE STREAM.
3. THE MATERIAL SHALL BE AT LEAST TWO YEARS OLD AND FREE OF DISEASE, ROT, OR INSECT INFESTATION.
4. MATERIAL SHALL BE HARVESTED WHILE DORMANT AND SOAKED (1 TO 14 DAYS) BEFORE INSTALLATION.

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
SIGNATURE: *J. Olson*  
DATE: 08/23/2023 LICENSE # 43120

CLIENT BID	08/31/22	08/17/23					
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435

Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: 1-800-632-2277

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

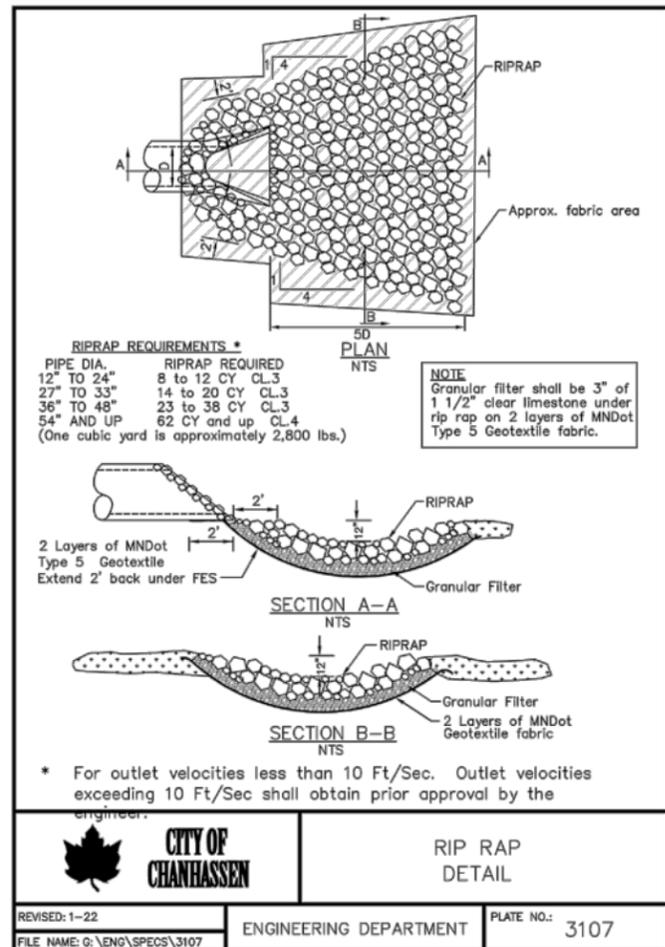
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

**UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN**  
STREAM STABILIZATION DETAILS

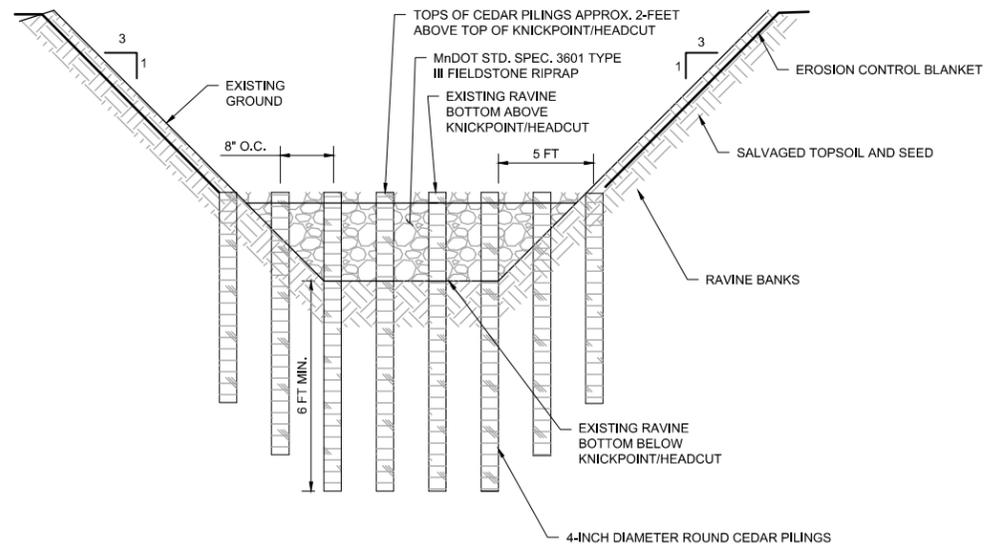
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	D-04
REV. No.	0

100% DESIGN  
ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053.14\UPPER RILEY CREEK\DWG\PLT SCALE: 1/2"=1'-0" DATE: 8/15/2023 11:17 AM



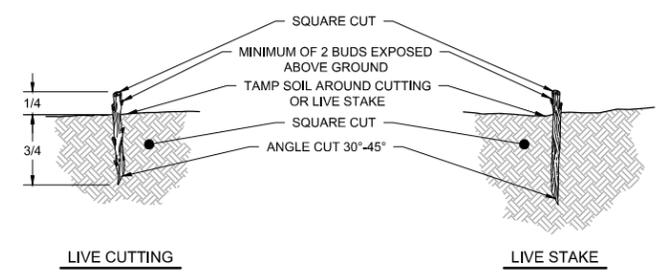
**1** DETAIL: RIPRAP OUTLET  
NOT TO SCALE



**2** DETAIL: CEDAR PILINGS  
NOT TO SCALE

**CEDAR PILINGS SPECIFICATIONS:**

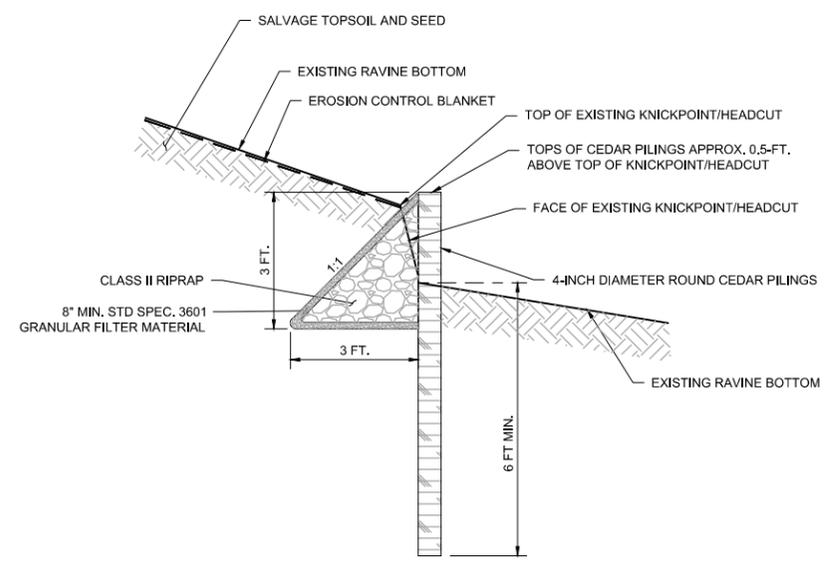
- CONSTRUCT CEDAR PILINGS AT EXISTING KNICKPOINT/HEADCUT LOCATION IN THE FIELD (LOCATION SHOWN ON DRAWINGS IS APPROXIMATE)
- CEDAR PILING MATERIAL: 4-INCH DIAMETER ROUND NORTHERN WHITE CEDAR; CUT FROM LIVE, GROWING TREES; MANUFACTURED IN ACCORDANCE WITH MNDOT STD. SPEC. 3413C
- DRIVE POSTS AT THE SPACING AND TO THE PENETRATION DEPTHS SHOWN ON THE DRAWINGS
- TOP OF POSTS APPROXIMATELY 0.5-FT. ABOVE TOP OF EXISTING KNICKPOINT/HEADCUT.
- IN THE EVENT THAT POSTS CANNOT BE DRIVEN, EXCAVATE A NARROW TRENCH, BACKFILL WITH GRANULAR FILL AT LEAST 4 FEET IN DEPTH, AND THEN DRIVE POSTS TO THE ELEVATIONS SHOWN ON THE DRAWINGS. BACKFILL TO EXISTING GRADE WITH GRANULAR FILL.
- EXCAVATE 2 FEET BEHIND PILINGS AND BACKFILL WITH 8" MNDOT STD. SPEC 3601 GRANULAR FILTER MATERIAL AND TYPE III FIELDSTONE RIPRAP AS SHOWN ON DRAWING.
- BACKFILL WITH EXISTING MATERIAL TO EXISTING GRADE.
- ON ALL DISTURBED BANKS AND AREAS REPLACE SALVAGED TOPSOIL, RE-VEGETATE AND STABILIZE WITH EROSION CONTROL BLANKET AS SPECIFIED IN THE CONTRACT DOCUMENTS.



**GENERAL NOTES:**

- LIVE STAKE OR CUTTING PLANTED PERPENDICULAR TO GROUND SURFACE.
- SEE PLANT MATERIAL LIST FOR SPECIES LENGTH AND SPACING.
- LIVE STAKES SHALL BE 2" DIAMETER MINIMUM.

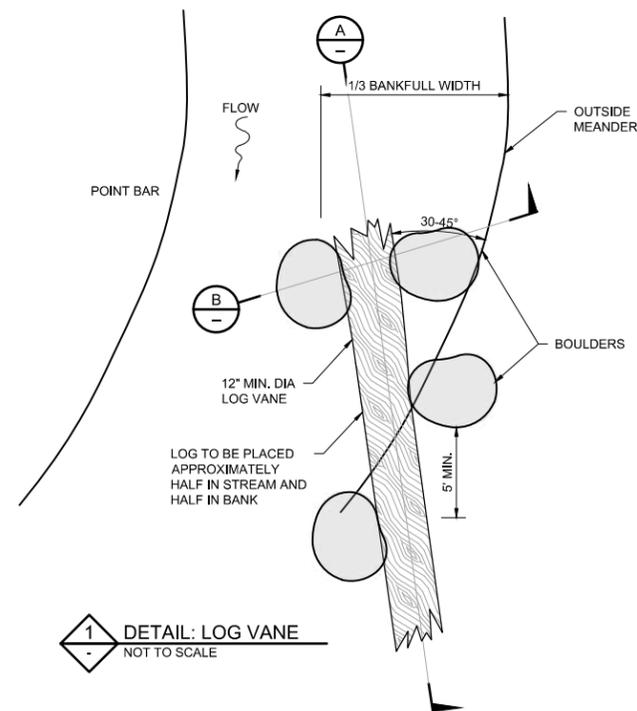
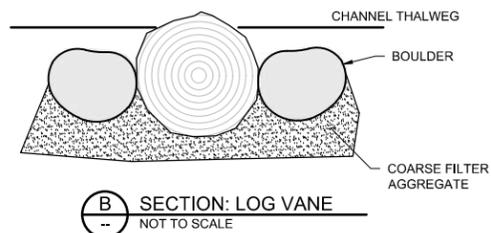
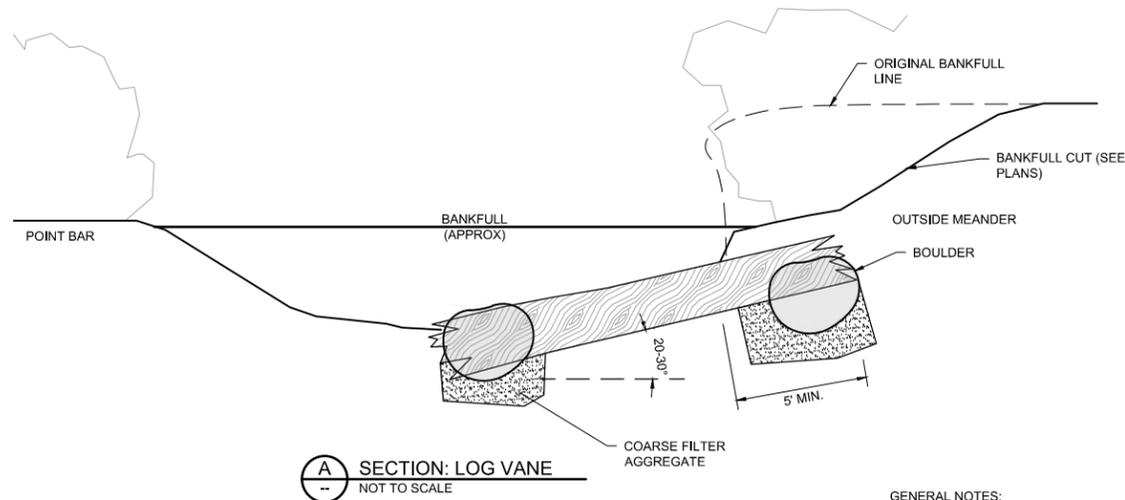
**3** DETAIL: LIVE CUTTINGS OR LIVE STAKES  
NOT TO SCALE



**3** SECTION: CEDAR PILINGS  
NOT TO SCALE

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT: BARR ENGINEERING CO. BID: 23/27-0053.14 CONSTRUCTION RECORD:	Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	<b>RILEY PURGATORY BLUFF CREEK WD</b> <b>CHANHASSEN, MN.</b>	<b>UPPER RILEY CREEK</b> <b>CORRIDOR ENHANCEMENT PLAN</b> <b>STREAM STABILIZATION DETAILS</b>	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. D-05 REV. No. 0												
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120	RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:	<table border="1"> <tr> <th>NO.</th> <th>BY</th> <th>CHK</th> <th>APP.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> <tr> <td>0</td> <td>EPF</td> <td>JCO</td> <td>SAS</td> <td>08/23/2023</td> <td>ISSUED FOR BID</td> </tr> </table>						NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION														
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID														



**GENERAL NOTES:**

1. THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO LOG VANE INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
2. TO THE EXTENT POSSIBLE, LOG VANES SHOULD BE CREATED FROM TREES THAT WILL BE REMOVED FROM THE SITES WITHIN THE PROJECT AREA.
3. EITHER DRIVE THE LOG VANE INTO THE BANK, OR EXCAVATE A TRENCH IN WHICH TO PLACE THE LOG VANE. IF THE LOG VANE IS DRIVEN INTO THE BANK, SHARPEN THE END OF THE LOG VANE TO A POINT.
4. THE LOG VANE MUST BE PLACED AT APPROXIMATELY A 20-30 DEGREE ANGLE, OR AS DIRECTED BY THE ENGINEER.
5. THE LOG VANE MUST BE PLACED IN THE BANK SO THAT AT LEAST 2/3 OF THE LOG VANE IS EMBEDDED INTO THE BANK.
6. LARGE BOULDERS ARE PLACED ON BOTH SIDES OF THE LOG VANE AT THE INTERFACE WITH THE BANK.
7. LARGE BOULDERS ARE ALSO PLACED AT THE END OF THE LOG VANE IN THE CHANNEL AS DIRECTED BY THE ENGINEER.
8. PLACE COARSE FILTER AGGREGATE (MN/DOT STANDARD SPECIFICATION 3149.2H) AS BEDDING FOR BOULDERS IF NECESSARY.
9. MATCH EXISTING GRADE OR PLANNED GRADE AS APPROPRIATE WITH BACKFILL.
10. REVEGETATE AND STABILIZE WITH SEED AND MULCH AS SPECIFIED FOR EACH SITE AS SHOWN IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.
11. EXCAVATE SCOUR HOLE IN STREAM BED ADJACENT TO LOG VANE AS DIRECTED BY THE ENGINEER.

100% DESIGN  
ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\237\0053.14\UPPER RILEY CREEK\237\0053.DWG DETAILS DWG PLOT SCALE: 1/2" = 1' PLOT DATE: 8/15/2023 1:18 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				
PRINTED NAME	JESSICA OLSON			
SIGNATURE	<i>J. Olson</i>			
DATE	08/23/2023	LICENSE #	43120	

CLIENT	08/31/22	08/17/23				
BID			08/23/23			
CONSTRUCTION						
RECORD						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR**  
Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: 1-800-632-2277  
www.barr.com

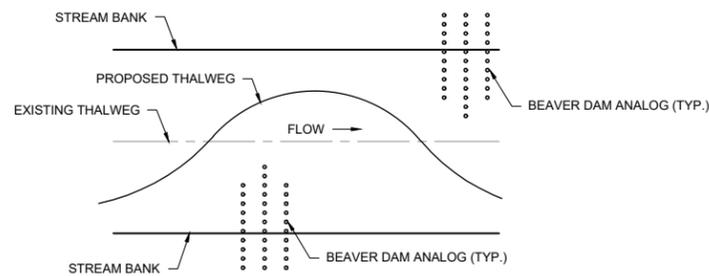
Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN.

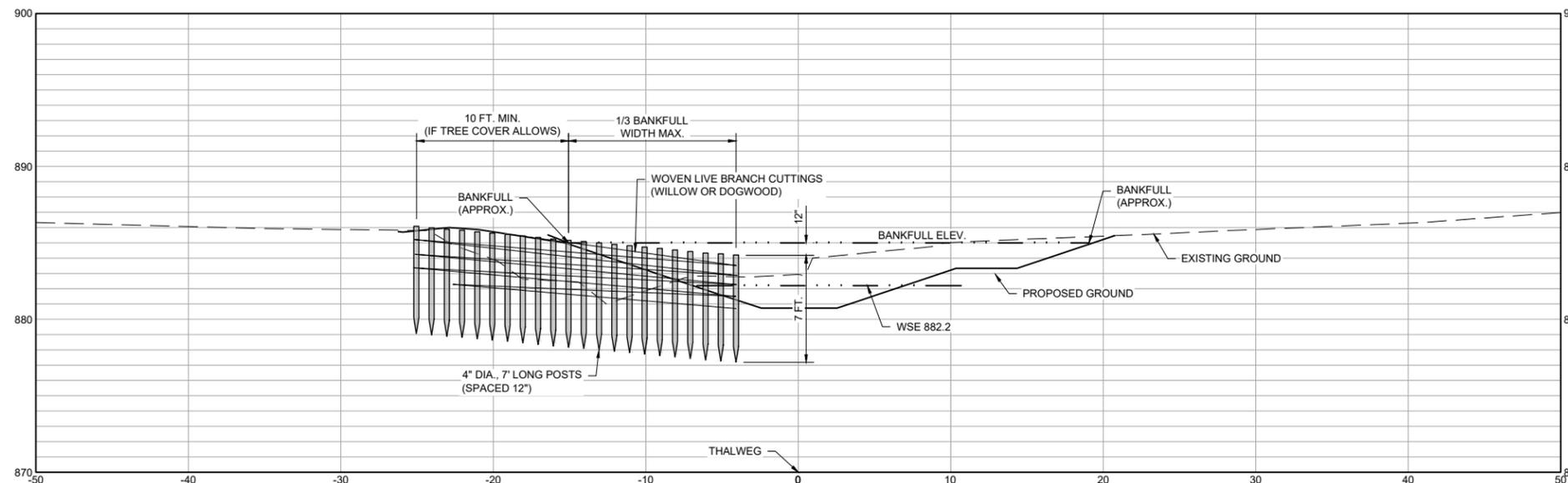
**UPPER RILEY CREEK**  
CORRIDOR ENHANCEMENT PLAN  
**STREAM STABILIZATION DETAILS**

BARR PROJECT No.	
23/27-0053.14	
CLIENT PROJECT No.	
DWG. No.	REV. No.
D-06	0





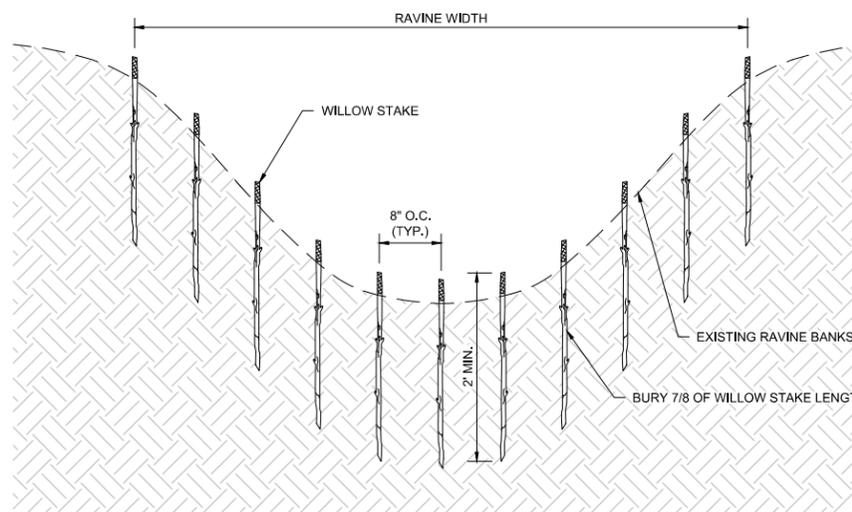
1 PLAN: BEAVER DAM ANALOG (BDA) (TYPICAL)  
SCALE IN FEET



2 SECTION: BEAVER DAM ANALOG (BDA) (TYPICAL)  
SCALE IN FEET

GENERAL NOTES:

1. POINTED ROUND WOOD POSTS (4 INCH DIAMETER, MINIMUM 7 FEET IN LENGTH).
2. POSTS ARE SPACED APPROXIMATELY 12 INCHES TO MEET SPECIFIED EXTENSION, PERPENDICULAR FROM CHANNEL BANK.



GENERAL NOTES:

1. USE WILLOW OR WILLOW TYPE ADVENTITIOUSLY ROOTABLE STOCK.
2. MATERIAL SHOULD BE FROM AN AREA WITH SIMILAR SOIL, CLIMATE, AND LOCATION RELATIVE TO THE STREAM.
3. THE MATERIAL SHALL BE AT LEAST TWO YEARS OLD AND FREE OF DISEASE, ROT, OR INSECT INFESTATION.
4. MATERIAL SHALL BE HARVESTED WHILE DORMANT AND SOAKED (1 TO 14 DAYS) BEFORE INSTALLATION.

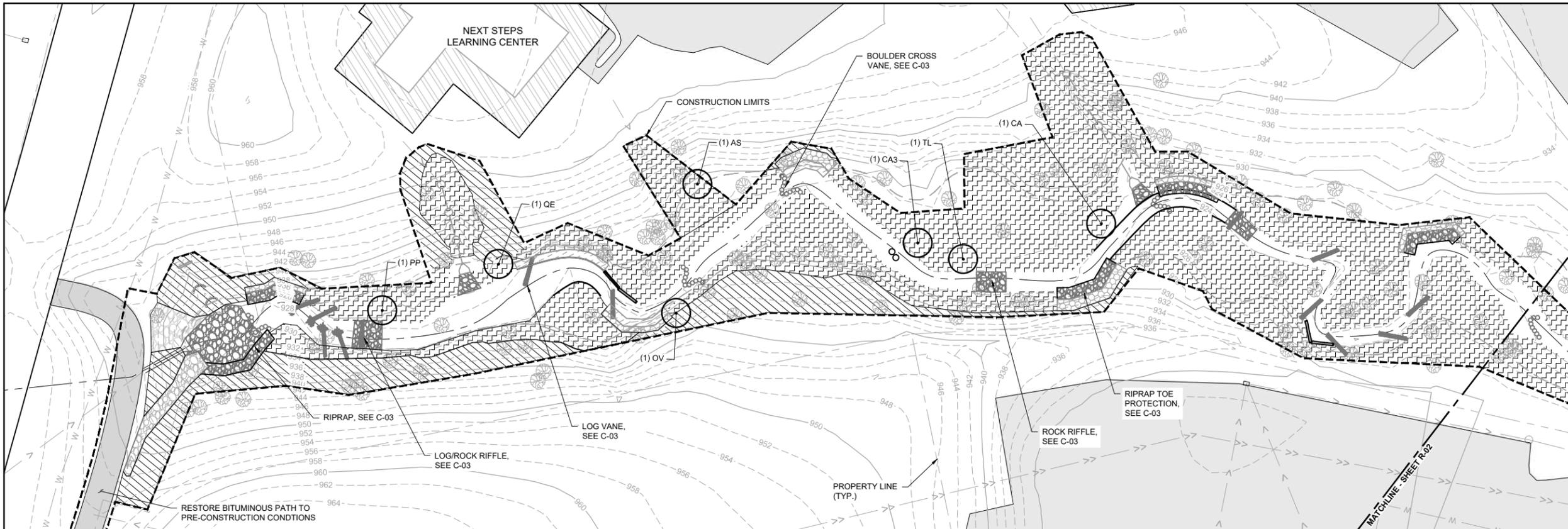
3 DETAIL: LIVE SILT FENCE  
NOT TO SCALE

100% DESIGN  
ISSUED FOR BID

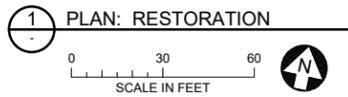
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\237053.14\UPPER RILEY CREEK\237053.14\DETAILS.DWG PLOT SCALE: 1/2"=1' PLOT DATE: 8/15/2023 1:20 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: BARR ENGINEERING CO. BID: 4300 MARKETPOINTE DRIVE SUITE 200 CONSTRUCTION RECORD: MINNEAPOLIS, MN 55435 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: <b>BARR</b> ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.				<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN STREAM STABILIZATION DETAILS				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. D-08 REV. No. 0			
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION																						





SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS

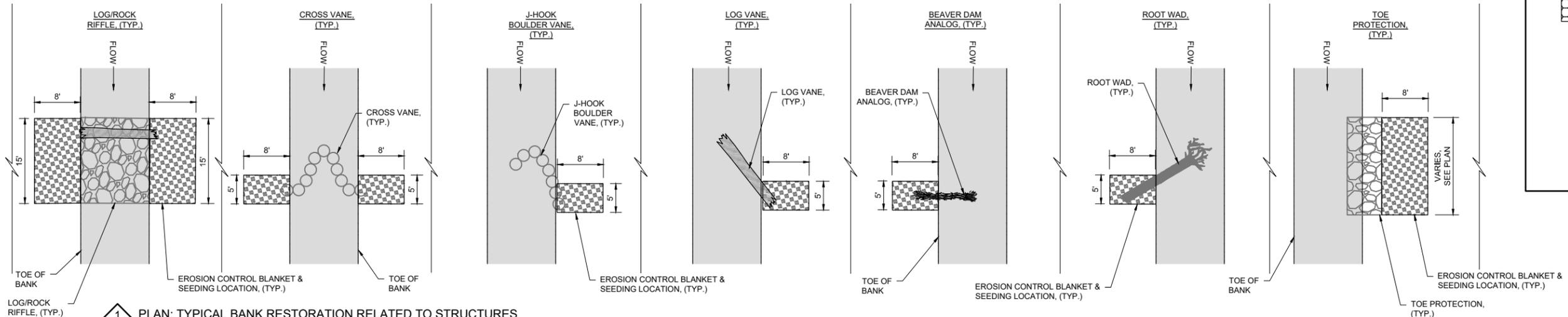


**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
AS	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL.	B&B	1
CA	CARPINUS CAROLINIANA	BLUE BEECH	2.5" CAL.	B&B	1
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	1
OV	OSTRYA VIRGINIANA	IRONWOOD	2.5" CAL.	B&B	1
PP	PRUNUS PENNSYLVANICA	PIN CHERRY	2.5" CAL.	B&B	1
QE	QUERCUS ELLIPSOIDALIS	NORTHERN PIN OAK	2.5" CAL.	B&B	1
TL	TILIA AMERICANA	BASSWOOD	2.5" CAL.	B&B	1

**PLANTING NOTES:**

- CONTRACTOR SHALL HAVE UTILITIES LOCATED PRIOR TO BEGINNING WORK, AND IS RESPONSIBLE FOR PROTECTING UTILITIES FROM DAMAGE DURING PLANTING INSTALLATION.
- PROTECT EXISTING AND PROPOSED CURBS, PAVEMENT, SIDEWALKS, AND OTHER SITE ELEMENTS FROM IMPACT BY SOIL PREPARATION AND PLANTING OPERATIONS. AVOID COMPACTING SOIL WITH HEAVY EQUIPMENT. ANY DAMAGE TO SITE TO BE REPAIRED AT CONTRACTOR'S EXPENSE.
- PROTECT PLANTS AT SITE FROM STRESS PRIOR TO INSTALLATION BY PLACING IN SHADE, HEELING IN TO MULCH, WATERING, AND OTHER APPROPRIATE MEASURES.
- FINAL SITE STABILIZATION MEASURES MUST SPECIFY THAT AT LEAST SIX INCHES OF TOPSOIL WITH A MINIMUM OF 5% ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT WHEREVER TOPSOIL HAS BEEN REMOVED. EXISTING TOPSOIL ON SITE MAY BE STOCKPILED AND AMENDED TO REACH THIS REQUIREMENT.
- CONTRACTOR TO TEST EXISTING TOPSOIL PRIOR TO PLANTING (MINIMUM THREE (3) TESTS AT LEAST 2,000 FEET APART). IF EXISTING TOP 6" OF SOIL DOES NOT HAVE AT LEAST 5% SOIL ORGANIC CONTENT CONTRACTOR IS TO AMEND WITH MNDOT 3890 GRADE 2 COMPOST TO MEET REQUIREMENT. IMPLEMENTATION DOCUMENTATION SHALL BE PROVIDED TO ENGINEER TO VERIFY EXISTING ORGANIC CONTENT IN SOIL AND PROPOSED AMENDMENTS.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE REMOVED UPON FINAL STABILIZATION. STAKE OR OTHERWISE LAYOUT ALL PLANT LOCATIONS AS SHOWN ON PLAN, DETAILS, AND PLANT SCHEDULE. SOME FIELD ADJUSTMENT MAY BE NECESSARY. LANDSCAPE ARCHITECT TO REVIEW PLANT LAYOUT PRIOR TO PLANTING. INFORM THE LANDSCAPE ARCHITECT OF PLANTING TWO DAYS PRIOR TO PLANT DELIVERY.
- ALL NATIVE PLANTING AREAS SHALL BE SEEDED AND COVERED BY HYDROMULCH IN ACCORDANCE WITH SPECIFICATIONS.
- ALL TURF GRASS SHALL BE SEEDED AND COVERED BY STRAW MULCH IN ACCORDANCE WITH SPECIFICATIONS.
- FINAL LOCATIONS OF PLUG PLANTINGS SHALL BE COORDINATED IN THE FIELD PRIOR TO INSTALL WITH LANDSCAPE ARCHITECT IN THE FIELD.
- A SEEDING METHODS PLAN IS REQUIRED FOR APPROVAL BY LANDSCAPE ARCHITECT BEFORE STARTING WORK. SEE SPECIFICATIONS FOR SEEDING PLAN REQUIREMENTS.
- PLUGS SHALL BE PLANTED IN CLUSTERS OF 5-7 PLANTS PER SPECIES AND STAGGERED THROUGHOUT NATIVE PLANTING AREA.
- PLACE SHREDDED HARDWOOD MULCH AS DETAILED FOR ALL TREES.
- THOROUGHLY WATER ALL PLANTINGS AFTER INSTALLATION.
- NO RUBBER TIRE EQUIPMENT IN BASIN AFTER LOOSENING. LOW GROUND PRESSURE TRACKED EQUIPMENT ONLY.
- SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE A SOIL COMPACTION TESTING PRESSURE OF LESS THAN 1,400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 12 INCHES OF THE SOIL PROFILE WHILE TAKING CARE TO PROTECT UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGETATION.
- ALL TURF AREAS DISTURBED DURING CONSTRUCTION MUST BE RESTORED TO SATISFACTION OF THE ENGINEER, INCLUDING BUT NOT LIMITED TO DECOMPACTION, TOPSOIL, AND SEEDING.
- ANY DISTURBANCE OUTSIDE OF 10' BUFFER TO BE INSTALLED WITH SOD.
- DISTURBED AREAS ADJACENT TO STRUCTURES ALONG CHANNEL BANKS SHALL BE SEEDED AND BLANKETED. APPROXIMATE TYPICAL DIMENSIONS OF RESTORATION AREAS FOR STRUCTURES ARE NOTED IN DETAIL 1, ON SHEET R-01. SEEDING AND BLANKET AREAS MAY BE ADJUSTED IN THE FIELD, AS DIRECTED BY PROJECT OWNER OR ENGINEER. SEED MIXES ARE INCLUDED ON SHEET R-15.



**PLAN: TYPICAL BANK RESTORATION RELATED TO STRUCTURES**  
NTS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				CLIENT: 08/31/23 08/17/23 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				Project Office: <b>BARR</b> ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.				<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-01 REV. No. 0			
NO. BY CHK. APP. DATE REVISION DESCRIPTION				0 EPF JCO SAS 08/23/2023 ISSUED FOR BID																							

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.1\UPPER RILEY CREEK\23270053.1-R-01 RESTORATION\PLANTING PLOT SCALE: 1/2"=10' DATE: 8/12/2023 2:52 PM

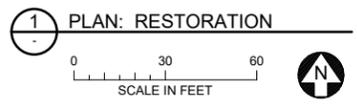


CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23770553\_1\UPPER RILEY CREEK\23770553\_1\RESTORATION\LANDING PLOT SCALE: 1:2 PLOT DATE: 01/12/2023 2:53 PM



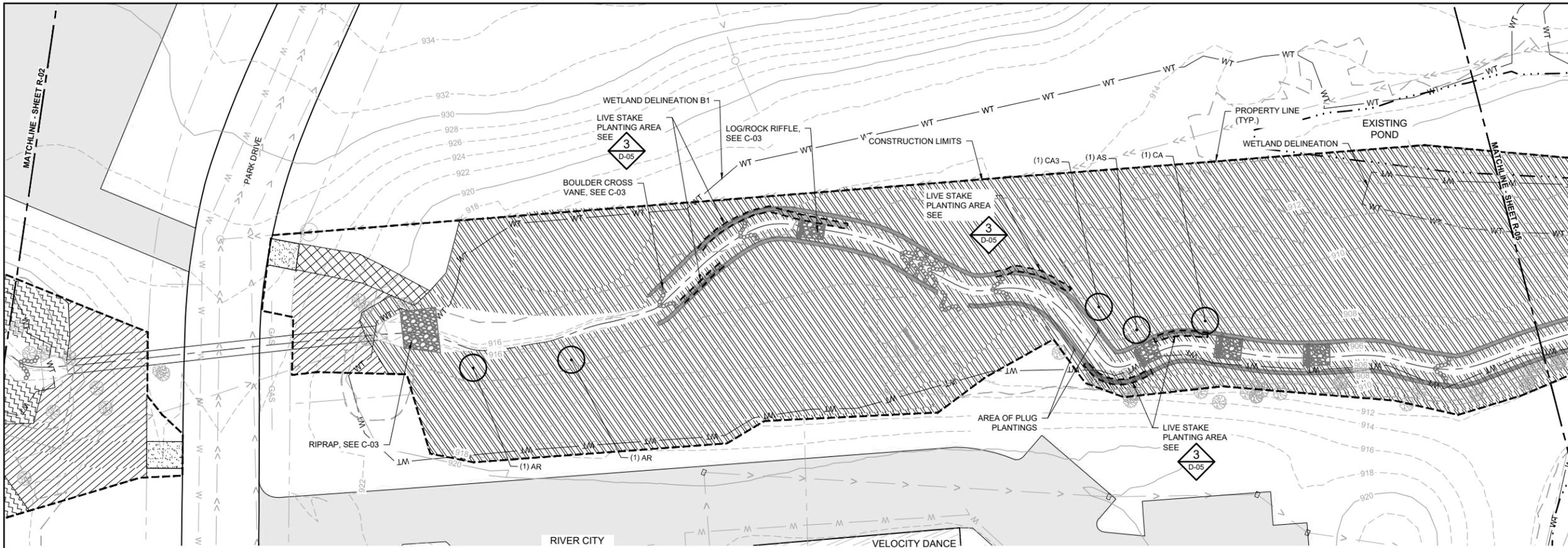
SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	LIVE STAKE PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES



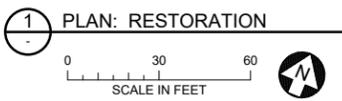
100% DESIGN  
 ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN		BARR PROJECT No. 23/27-0053.14	
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120				PROJECT OFFICE: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.		RESTORATION PLAN		CLIENT PROJECT No. DWG. No. R-03 REV. No. 0	
REVISION DESCRIPTION				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED									



### SYMBOL AND PATTERN LEGEND

- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- WT EXISTING WETLAND DELINEATION
- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS



**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
AR	ACER RUBRUM	RED MAPLE (B.R.)	2.5" CAL.	B&B	2	
AS	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL.	B&B	1	
CA	CARPINUS CAROLINIANA	BLUE BEECH	2.5" CAL.	B&B	1	
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	1	

LIVE STAKE PLANTINGS						
Common Name	Scientific Name	Quantity	Units	Size	Spacing	Comments
Dogwood Species	<i>Cornus spp.</i>	16	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Viburnum Species	<i>Viburnum spp.</i>	16	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Willow Species	<i>Salix spp.</i>	15	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
<b>Total Live Stakes</b>		<b>47</b>				

NOTES:  
LIVE STAKES SHALL BE SPACED 5-FEET APART, ON CENTER, IN LOCATIONS SHOWN ON PLANS.

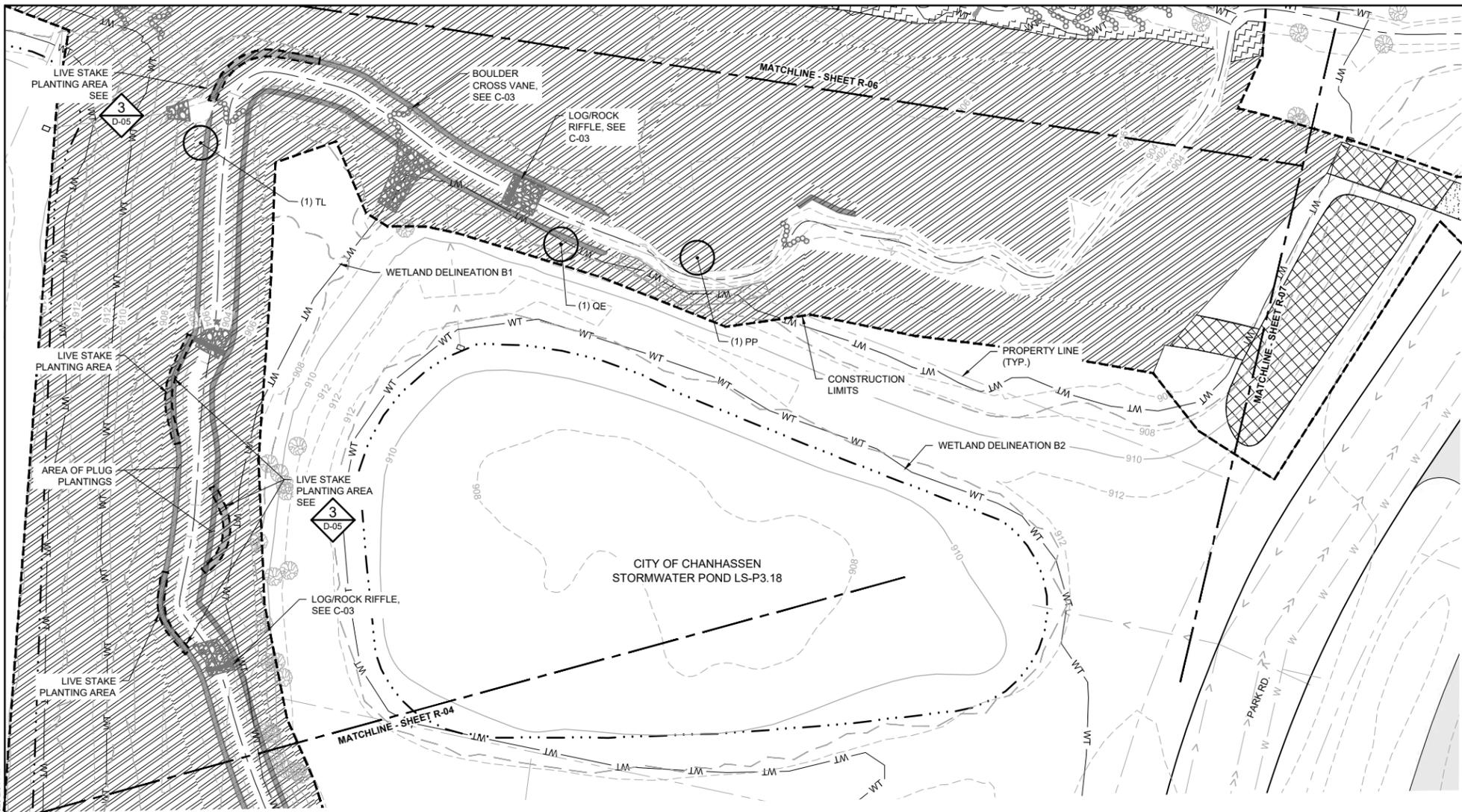
PLUG PLANTINGS		
Common Name	Scientific Name	Quantity
Fringed brome	<i>Bromus ciliatus</i>	40
Bluejoint	<i>Calamagrostis canadensis</i>	40
Virginia wild rye	<i>Elymus virginicus</i>	40
Rice cut grass	<i>Leersia oryzoides</i>	40
Tall manna grass	<i>Glyceria grandis</i>	40
Fowl manna grass	<i>Glyceria striata</i>	40
Fowl bluegrass	<i>Poa palustris</i>	40
<b>Total Grasses</b>		<b>280</b>
Bristly sedge	<i>Carex comosa</i>	25
Pointed broom sedge	<i>Carex scoparia</i>	30
Awl-fruited sedge	<i>Carex stipata</i>	30
Tussock sedge	<i>Carex stricta</i>	30
Fox sedge	<i>Carex vulpinoidea</i>	30
<b>Total Sedges and Rushes</b>		<b>145</b>
Marsh milkweed	<i>Asclepias incarnata</i>	10
Common boneset	<i>Eupatorium perfoliatum</i>	10
Grass-leaved goldenrod	<i>Euthamia graminifolia</i>	10
Spotted Joe pye weed	<i>Eutrochium maculatum</i>	10
Autumn sneezeweed	<i>Helenium autumnale</i>	10
Sawtooth sunflower	<i>Helianthus grosseserratus</i>	10
Great lobelia	<i>Labellia siphilitica</i>	10
Blue monkey flower	<i>Mimulus ringens</i>	10
Virginia mountain mint	<i>Pycnanthemum virginianum</i>	10
Giant goldenrod	<i>Solidago gigantea</i>	10
Red-stemmed aster	<i>Symphyotrichum puniceum</i>	10
Tall meadow-rue	<i>Thalictrum dasycarpum</i>	10
Blue vervain	<i>Verbena hastata</i>	10
Bunched ironweed	<i>Vernonia fasciculata</i>	10
Culver's root	<i>Veronicastrum virginicum</i>	10
Golden alexanders	<i>Zizia aurea</i>	10
<b>Total Forbs</b>		<b>160</b>
<b>Total</b>		<b>585</b>

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435	PROJECT OFFICE BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-04 REV. No. 0
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120	RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:	<b>BARR</b> Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.	RESTORATION PLAN	DWG. No. R-04 REV. No. 0	

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.1\UPPER RILEY CREEK\RESTORATION\LANDING PLOT SCALE: 1/2"=1' PLOT DATE: 08/23/2023 2:43 PM



1 PLAN: RESTORATION  
 0 30 60  
 SCALE IN FEET

**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARK
PP	PRUNUS PENNSYLVANICA	PIN CHERRY	2.5" CAL.	B&B	1	
OE	QUERCUS ELLIPSOIDALIS	NORTHERN PIN OAK	2.5" CAL.	B&B	1	
TL	TILIA AMERICANA	BASSWOOD	2.5" CAL.	B&B	1	

LIVE STAKE PLANTINGS						
Common Name	Scientific Name	Quantity	Units	Size	Spacing	Comments
Dogwood Species	<i>Cornus spp.</i>	12	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Viburnum Species	<i>Viburnum spp.</i>	12	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Willow Species	<i>Salix spp.</i>	13	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
<b>Total Live Stakes</b>		<b>37</b>				

NOTES:  
 LIVE STAKES SHALL BE SPACED 5-FEET APART, ON CENTER, IN LOCATIONS SHOWN ON PLANS.

PLUG PLANTINGS		
Common Name	Scientific Name	Quantity
Fringed brome	<i>Bromus ciliatus</i>	35
Bluejoint	<i>Calamagrostis canadensis</i>	35
Virginia wild rye	<i>Elymus virginicus</i>	35
Rice cut grass	<i>Leersia oryzoides</i>	35
Tall manna grass	<i>Glyceria grandis</i>	32
Fowl manna grass	<i>Glyceria striata</i>	30
Fowl bluegrass	<i>Poa palustris</i>	30
<b>Total Grasses</b>		<b>232</b>
Bristly sedge	<i>Carex comosa</i>	20
Pointed broom sedge	<i>Carex scoparia</i>	20
Awl-fruited sedge	<i>Carex stipata</i>	20
Tussock sedge	<i>Carex stricta</i>	20
Fox sedge	<i>Carex vulpinoidea</i>	20
<b>Total Sedges and Rushes</b>		<b>100</b>
Marsh milkweed	<i>Asclepias incarnata</i>	10
Common boneset	<i>Eupatorium perfoliatum</i>	10
Grass-leaved goldenrod	<i>Euthamia graminifolia</i>	10
Spotted Joe pye weed	<i>Eutrochium maculatum</i>	10
Autumn sneezeweed	<i>Helenium autumnale</i>	10
Sawtooth sunflower	<i>Helianthus grosseserratus</i>	10
Great lobelia	<i>Lobelia siphilitica</i>	10
Blue monkey flower	<i>Mimulus ringens</i>	10
Virginia mountain mint	<i>Pycnanthemum virginianum</i>	10
Giant goldenrod	<i>Solidago gigantea</i>	10
Red-stemmed aster	<i>Symphotrichum puniceum</i>	10
Tall meadow-rue	<i>Thalictrum dasycarpum</i>	10
Blue vervain	<i>Verbena hastata</i>	10
Bunched ironweed	<i>Vernonia fasciculata</i>	10
Culver's root	<i>Veronicastrum virginicum</i>	10
Golden alexanders	<i>Zizia aurea</i>	10
<b>Total Forbs</b>		<b>160</b>
<b>Total</b>		<b>492</b>

**SYMBOL AND PATTERN LEGEND**

- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- WT EXISTING WETLAND DELINEATION
- PROPERTY LINE
- >> EXISTING SANITARY SEWER
- > EXISTING STORM SEWER
- W EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053\_14\UPPER RILEY CREEK\RESTORATION\LANDING PLOT SCALE: 1:2 PLOT DATE: 08/23/2023 2:44 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	<b>100% DESIGN          ISSUED FOR BID</b>	BARR PROJECT No. <b>23/27-0053.14</b>
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120		PROJECT OFFICE: <b>BARR</b> Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.	<b>UPPER RILEY CREEK          CORRIDOR ENHANCEMENT PLAN</b>	CLIENT PROJECT No. DWG. No. <b>R-05</b> REV. No. <b>0</b>
NO. BY CHK APP. DATE REVISION DESCRIPTION		RELEASED TO/FOR DATE RELEASED	A B C 0 1 2 3	<b>RESTORATION PLAN</b>	BARR PROJECT No. <b>23/27-0053.14</b>



SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	LIVE STAKE PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS



**TREE PLANTING SCHEDULE**

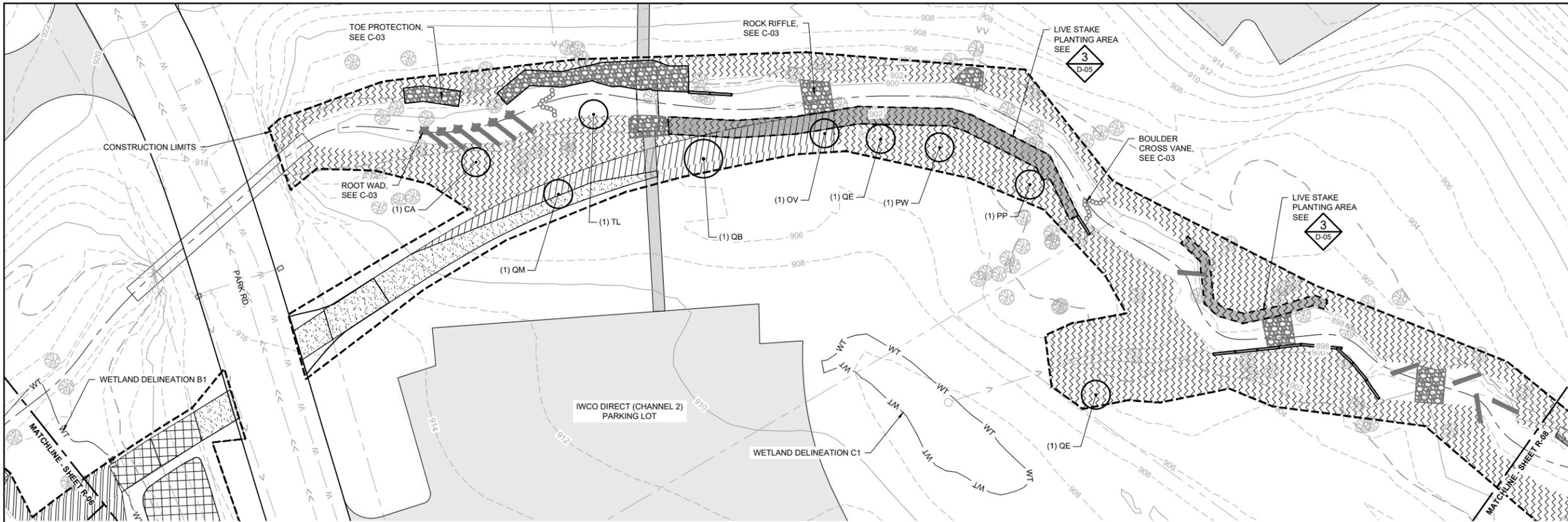
TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	1	

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

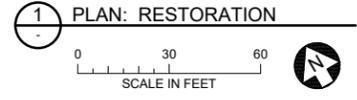
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD		08/31/23 08/17/23 08/23/23		<b>BARR</b> Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120		RELEASED TO/FOR: A B C 0 1 2 3		DATE RELEASED		RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.		DWG. No. R-06		REV. No. 0			

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\270053.14\UPPER RILEY CREEK\23R06.RVT PLOT DATE: 8/17/2023 2:54 PM



**SYMBOL AND PATTERN LEGEND**

- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- WT EXISTING WETLAND DELINEATION
- PROPERTY LINE
- >> EXISTING SANITARY SEWER
- > EXISTING STORM SEWER
- W EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS



**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
CA	CARPINUS CAROLINIANA	BLUE BEECH	2.5" CAL.	B&B	1	
OV	OSTRYA VIRGINIANA	IRONWOOD	2.5" CAL.	B&B	1	
PP	PRUNUS PENNSYLVANICA	PIN CHERRY	2.5" CAL.	B&B	1	
PW	PRUNUS SEROTINA	BLACK CHERRY (B.R.)	2.5" CAL.	B&B	1	
QB	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5" CAL.	B&B	1	
QE	QUERCUS ELLIPSOIDALIS	NORTHERN PIN OAK	2.5" CAL.	B&B	2	
QM	QUERCUS MACROCARPA	BUR OAK	2.5" CAL.	B&B	1	
TL	TILIA AMERICANA	BASSWOOD	2.5" CAL.	B&B	1	

**LIVE STAKE PLANTINGS**

Common Name	Scientific Name	Quantity	Units	Size	Spacing	Comments
Dogwood Species	<i>Cornus spp.</i>	22	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Viburnum Species	<i>Viburnum spp.</i>	22	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Willow Species	<i>Salix spp.</i>	23	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
<b>Total Live Stakes</b>		<b>67</b>				

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD	08/31/23 08/17/23 08/23/23	<b>BARR</b> Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.	<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	DWG. No. R-07 REV. No. 0												
PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120	RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED	<table border="1"> <tr> <th>NO.</th> <th>BY</th> <th>CHK</th> <th>APP.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> <tr> <td>0</td> <td>EPF</td> <td>JCO</td> <td>SAS</td> <td>08/23/2023</td> <td>ISSUED FOR BID</td> </tr> </table>								NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION																
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053.1\UPPER RILEY CREEK\23270053.1\_R01\_RESTORATION\PLANDWG PLOT SCALE: 1/2" PLOT DATE: 08/23/2023 2:55 PM



1 PLAN: RESTORATION  
 0 30 60  
 SCALE IN FEET

**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
AR	ACER RUBRUM	RED MAPLE (B.R.)	2.5" CAL.	B&B	1	
AS	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL.	B&B	1	

PLUG PLANTINGS		
Common Name	Scientific Name	Quantity
Tussock Sedge	<i>Carex stricta</i>	10
Prairie Cordgrass	<i>spartina pectinata</i>	10
Grass, Sedges & Rushes Subtotal		20
<b>Total</b>		<b>20</b>

**SYMBOL AND PATTERN LEGEND**

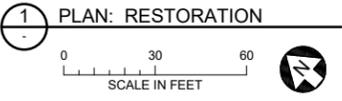
- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- WT EXISTING WETLAND DELINEATION
- PROPERTY LINE
- >> EXISTING SANITARY SEWER
- > EXISTING STORM SEWER
- W EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
 ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 08/23/2023 LICENSE # 43120		CLIENT: BARR ENGINEERING CO. BID: 08/31/23 CONSTRUCTION RECORD: 08/23/23 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:		Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Ph: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-08 REV. No. 0	
NO. BY CHK. APP. DATE REVISION DESCRIPTION		RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.		100% DESIGN ISSUED FOR BID		UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-08 REV. No. 0	

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23\27\0053.14\UPPER RILEY CREEK\3270053.14\RESTORATION\LANDING PLOT SCALE: 1/2 PLOT DATE: 08/12/2023 2:55 PM



**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMAR
CA	CARPINUS CAROLINIANA	BLUE BEECH	2.5" CAL.	B&B	1	
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	1	
OV	Ostrya virginiana	IRONWOOD	2.5" CAL.	B&B	1	
PP	PRUNUS PENNSYLVANICA	PIN CHERRY	2.5" CAL.	B&B	1	
QE	QUERCUS ELLIPSOIDALIS	NORTHERN PIN OAK	2.5" CAL.	B&B	1	

PLUG PLANTINGS		
Common Name	Scientific Name	Quantity
Sweet Flag	<i>Acorus calamus</i>	5
Red Baneberry	<i>Actaea rubra</i>	5
Canada Anemone	<i>Anemone canadensis</i>	5
Dogbane	<i>Apocynum cannabinum</i>	5
Red Columbine	<i>Aquilegia canadensis</i>	5
Marsh Marigold	<i>Caltha palustris</i>	5
Big Leaf Aster	<i>Eurybia macrophylla</i>	5
Bottle Gentian	<i>Gentiana andrewsii</i>	5
Virginia Waterleaf	<i>Hydrophyllum virginianum</i>	5
Canada Mayflower	<i>Maianthemum canadense</i>	5
False Solomon's-seal	<i>Maianthemum racemosum</i>	5
Virginia Bluebells	<i>Mertensia virginica</i>	5
Sensitive Fern	<i>Onoclea sensibilis</i>	5
Solomon's Seal	<i>Polygonatum biflorum</i>	5
Wild Blue Phlox	<i>Phlox divaricata</i>	5
Cutleaf Coneflower	<i>Rudbeckia laciniata</i>	5
Common Violet	<i>Viola sororia</i>	5
Common Violet - Bicolor	<i>Viola sororia f. priceana</i>	5
Culver's Root	<i>Veronicastrum virginicum</i>	5
<b>Forbs Subtotal</b>		<b>95</b>
Plains Oval Sedge	<i>Carex brevior</i>	5
Slender Wood Sedge	<i>Carex gracilescens</i>	5
Lake Sedge	<i>Carex lacustris</i>	10
Pennsylvania Sedge	<i>Carex pennsylvanica</i>	7
Tussock Sedge	<i>Carex stricta</i>	5
Prairie Cordgrass	<i>Spartina pectinata</i>	5
<b>Grass, Sedges &amp; Rushes Subtotal</b>		<b>37</b>
<b>Total</b>		<b>132</b>

**SYMBOL AND PATTERN LEGEND**

- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- EXISTING WETLAND DELINEATION
- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

<p>CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053_14\UPPER RILEY CREEK\RESTORATION\LANDING PLOT SCALE: 1/2" = 10' DATE: 08/23/2023 2:56 PM</p>	<p>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</p> <p>PRINTED NAME: JESSICA OLSON SIGNATURE: </p>	<p>CLIENT: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435</p> <p>DATE: 08/31/23 08/17/23</p>	<p>Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS</p>	<p><b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.</p>	<p><b>UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN</b> RESTORATION PLAN</p>	<p>BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.</p>	<p>DWG. No. R-09 REV. No. 0</p>																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>BY</th> <th>CHK</th> <th>APP.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>EPF</td> <td>JCO</td> <td>SAS</td> <td>08/23/2023</td> <td>ISSUED FOR BID</td> </tr> </tbody> </table>		NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>RELEASED TO/FOR</th> <th>A</th> <th>B</th> <th>C</th> <th>0</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		RELEASED TO/FOR	A	B	C	0	1	2	3									<p>Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Ph: (952) 832-2601 www.barr.com</p>		<p>RESTORATION PLAN</p>	
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION																														
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																														
RELEASED TO/FOR	A	B	C	0	1	2	3																												

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\RESTORATION\PLANDWG PLOT SCALE: 1/2" PLOT DATE: 01/12/2023 2:56 PM



SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	LIVE STAKE PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS

**TREE PLANTING SCHEDULE**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMARKS
AR	ACER RUBRUM	RED MAPLE (B.R.)	2.5" CAL.	B&B	1	
AS	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL.	B&B	2	
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	1	
OV	OSTRYA VIRGINIANA	IRONWOOD	2.5" CAL.	B&B	1	
PW	PRUNUS SEROTINA	BLACK CHERRY (B.R.)	2.5" CAL.	B&B	2	
TL	TILIA AMERICANA	BASSWOOD	2.5" CAL.	B&B	1	



**LIVE STAKE PLANTINGS**

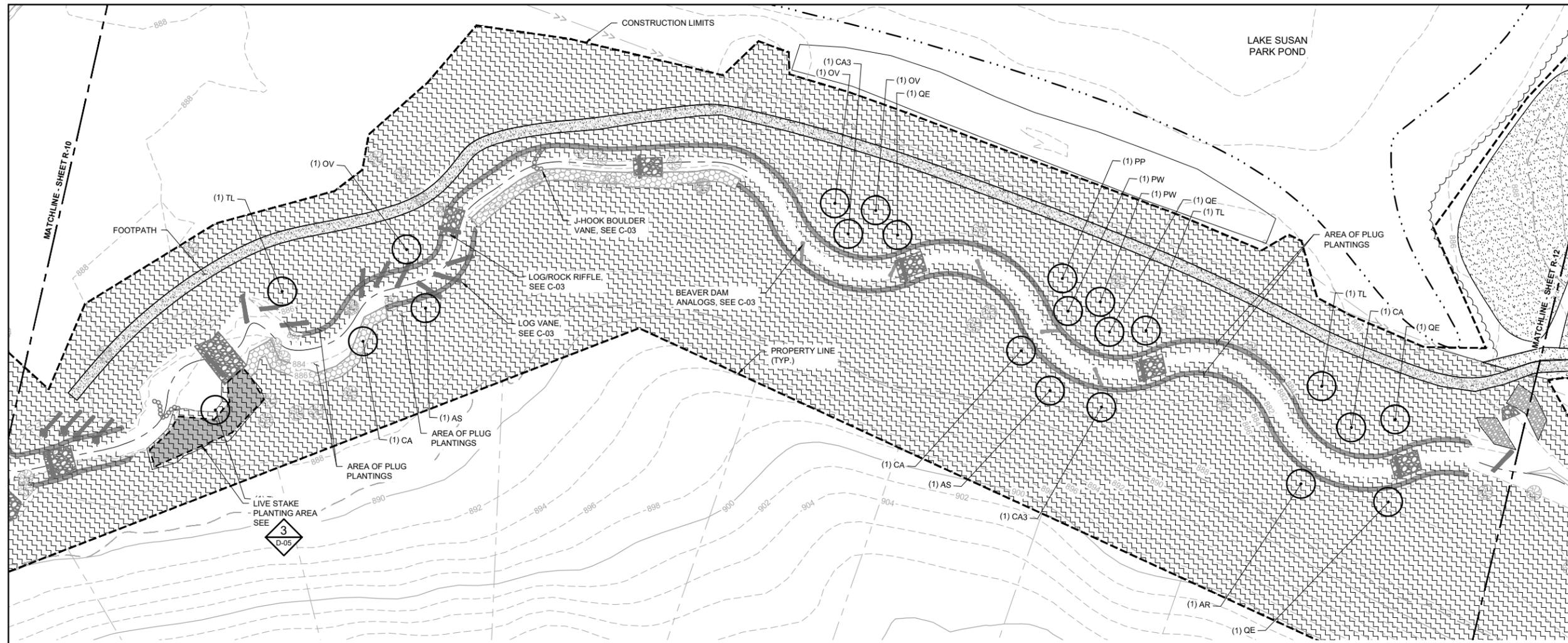
Common Name	Scientific Name	Quantity	Units	Size	Spacing	Comments
Dogwood Species	<i>Cornus spp.</i>	3	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Viburnum Species	<i>Viburnum spp.</i>	4	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Willow Species	<i>Salix spp.</i>	4	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
<b>Total Live Stakes</b>		<b>11</b>				

PLUG PLANTINGS		
Common Name	Scientific Name	Quantity
Sweet Flag	<i>Acorus calamus</i>	15
Red Baneberry	<i>Actaea rubra</i>	15
Canada Anemone	<i>Anemone canadensis</i>	15
Dogbane	<i>Apocynum cannabinum</i>	15
Red Columbine	<i>Aquilegia canadensis</i>	15
Marsh Marigold	<i>Caltha palustris</i>	15
Big Leaf Aster	<i>Eurybia macrophylla</i>	15
Bottle Gentian	<i>Gentiana andrewsii</i>	15
Virginia Waterleaf	<i>Hydrophyllum virginianum</i>	15
Canada Mayflower	<i>Maianthemum canadense</i>	15
False Solomon's-seal	<i>Maianthemum racemosum</i>	15
Virginia Bluebells	<i>Mertensia virginica</i>	15
Sensitive Fern	<i>Onoclea sensibilis</i>	12
Solomon's Seal	<i>Polygonatum biflorum</i>	10
Wild Blue Phlox	<i>Phlox divaricata</i>	10
Cutleaf Coneflower	<i>Rudbeckia laciniata</i>	10
Common Violet	<i>Viola sororia</i>	10
Common Violet - Bicolor	<i>Viola sororia f. priceana</i>	10
Culver's Root	<i>Veronicastrum virginicum</i>	10
<b>Forbs Subtotal</b>		<b>252</b>
Plains Oval Sedge	<i>Carex brevior</i>	40
Slender Wood Sedge	<i>Carex gracilescens</i>	40
Lake Sedge	<i>Carex lacustris</i>	40
Pennsylvania Sedge	<i>Carex pennsylvanica</i>	40
Tussock Sedge	<i>Carex stricta</i>	40
Prairie Cordgrass	<i>Spartina pectinata</i>	40
<b>Grass, Sedges &amp; Rushes Subtotal</b>		<b>240</b>
<b>Total</b>		<b>492</b>

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID	08/31/23	08/17/23	Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435		Scale AS SHOWN	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN	BARR PROJECT No. 23/27-0053.14
PRINTED NAME: JESSICA OLSON		CONSTRUCTION RECORD			Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Drawn EPF		RESTORATION PLAN
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	RELEASED TO/FOR	Designed BARR		
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID		Approved SAS		REV. No. 0

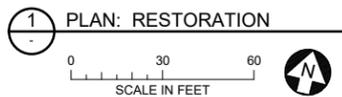


### SYMBOL AND PATTERN LEGEND

- FINAL 10' CONTOUR
- FINAL 2' CONTOUR
- WT EXISTING WETLAND DELINEATION
- PROPERTY LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING PAVEMENT
- EXISTING TREE
- DECIDUOUS TREE
- FLOODPLAIN FOREST SEED MIX
- FOREST SEED MIX
- UPLAND SEED MIX
- WETLAND SEED MIX
- WET MEADOW SEED MIX
- TURF GRASS
- PLUG PLANTING AREA
- LIVE STAKE PLANTING AREA
- CONSTRUCTION LIMITS
- ROCK RIFFLE, SEE CIVIL SHEETS
- TOE WOOD, SEE CIVIL SHEETS
- VRSS, SEE CIVIL SHEETS
- ROCK VANE, SEE CIVIL SHEETS
- ROOT WAD, SEE CIVIL SHEETS
- BOULDER CROSS VANE, SEE CIVIL SHEETS
- J-HOOK BOULDER VANE, SEE CIVIL SHEETS
- J-HOOK LOG VANE, SEE CIVIL SHEETS

#### TREE PLANTING SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	REMA
AR	ACER RUBRUM	RED MAPLE (B.R.)	2.5" CAL.	B&B	1	
AS	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL.	B&B	2	
CA	CARPINUS CAROLINIANA	BLUE BEECH	2.5" CAL.	B&B	3	
CA3	CELTIS AFRICANA	HACKBERRY	2.5" CAL.	B&B	2	
OV	OSTRYA VIRGINIANA	IRONWOOD	2.5" CAL.	B&B	3	
PP	PRUNUS PENNSYLVANICA	PIN CHERRY	2.5" CAL.	B&B	1	
PW	PRUNUS SEROTINA	BLACK CHERRY (B.R.)	2.5" CAL.	B&B	2	
QE	QUERCUS ELLIPSOIDALIS	NORTHERN PIN OAK	2.5" CAL.	B&B	4	
TL	TILIA AMERICANA	BASSWOOD	2.5" CAL.	B&B	4	



#### LIVE STAKE PLANTINGS

Common Name	Scientific Name	Quantity	Units	Size	Spacing	Comments
Dogwood Species	<i>Cornus spp.</i>	5	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Viburnum Species	<i>Viburnum spp.</i>	5	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
Willow Species	<i>Salix spp.</i>	6	EA	1" dia.	60" O.C.	Substitution only per approval by Engineer.
<b>Total Live Stakes</b>		<b>16</b>				

#### PLUG PLANTINGS

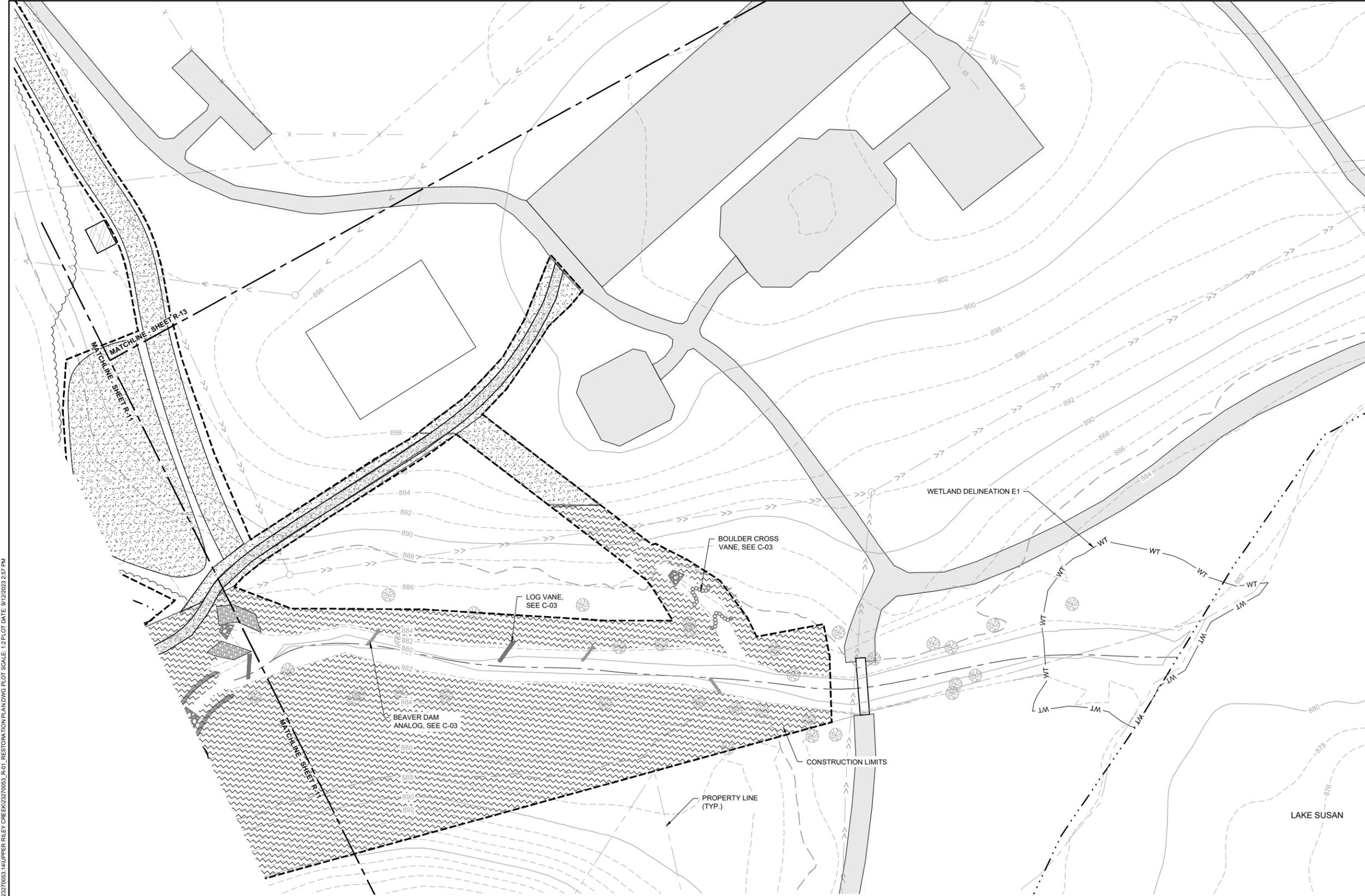
Common Name	Scientific Name	Quantity
Sweet Flag	<i>Acorus calamus</i>	30
Red Baneberry	<i>Actaea rubra</i>	30
Canada Anemone	<i>Anemone canadensis</i>	30
Dogbane	<i>Apocynum cannabinum</i>	30
Red Columbine	<i>Aquilegia canadensis</i>	30
Marsh Marigold	<i>Caltha palustris</i>	30
Big Leaf Aster	<i>Eurybia macrophylla</i>	30
Bottle Gentian	<i>Gentiana andrewsii</i>	20
Virginia Waterleaf	<i>hydrophyllum virginianum</i>	20
Canada Mayflower	<i>Maianthemum canadense</i>	30
False solomon's-seal	<i>Maianthemum racemosum</i>	30
Virginia Bluebells	<i>Mertensia virginica</i>	25
Sensitive Fern	<i>Onoclea sensibilis</i>	20
Solomon's Seal	<i>Polygonatum biflorum</i>	30
Wild Blue Phlox	<i>Phlox divaricata</i>	20
Cutleaf Coneflower	<i>Rudbeckia laciniata</i>	30
Common Violet	<i>Viola sororia</i>	30
Common Violet - Bicolor	<i>Viola sororia f. priceana</i>	30
Culver's Root	<i>Veronicastrum virginicum</i>	30
<b>Forbs Subtotal</b>		<b>525</b>
Plains Oval Sedge	<i>Carex brevior</i>	40
Slender Wood Sedge	<i>Carex gracilescens</i>	40
Lake Sedge	<i>Carex lacustris</i>	40
Pennsylvania Sedge	<i>Carex pennsylvanica</i>	40
Tussock Sedge	<i>Carex stricta</i>	40
Prairie Cordgrass	<i>spartina pectinata</i>	40
<b>Grass, Sedges &amp; Rushes Subtotal</b>		<b>240</b>
<b>Total</b>		<b>765</b>

\*SEE SHEET R-01 FOR PLANTING NOTES

100% DESIGN  
ISSUED FOR BID

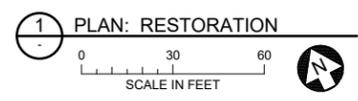
CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_14\UPPER RILEY CREEK\RESTORATION\PLANNING PLOT SCALE: 1/2"=100' DATE: 08/23/2023 2:57 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD	08/31/23 08/23/23			Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435	Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS	<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN.		<b>UPPER RILEY CREEK</b> CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	
PRINTED NAME: JESSICA OLSON	SIGNATURE:	RELEASED TO/FOR	A B C 0 1 2 3	Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Ph: (952) 832-2601 Ph: 1-800-632-2277						DWG. No. R-11	REV. No. 0		
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION								



SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES



CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053\_1\UPPER RILEY CREEK\2370053\_1\RD1 RESTORATION PLANNING PLOT SCALE: 1/2 PLOT DATE: 01/12/2023 2:57 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: JESSICA OLSON  
 SIGNATURE:   
 DATE: 08/23/2023 LICENSE # 43120

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.	08/31/23	08/23/23	A B C 0 1 2 3	08/23/23

**BARR** Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	08/23/2023
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	SAS

**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN.

**UPPER RILEY CREEK  
 CORRIDOR ENHANCEMENT PLAN**  
 RESTORATION PLAN

BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. R-12	REV. No. 0

100% DESIGN  
 ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370553\_14\UPPER RILEY CREEK RESTORATION PLAN.DWG PLOT SCALE: 1/2 PLOT DATE: 01/22/2023 2:58 PM



SYMBOL AND PATTERN LEGEND	
	FINAL 10' CONTOUR
	FINAL 2' CONTOUR
	EXISTING WETLAND DELINEATION
	PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATERMAIN
	EXISTING PAVEMENT
	EXISTING TREE
	DECIDUOUS TREE
	FLOODPLAIN FOREST SEED MIX
	FOREST SEED MIX
	UPLAND SEED MIX
	WETLAND SEED MIX
	WET MEADOW SEED MIX
	TURF GRASS
	PLUG PLANTING AREA
	CONSTRUCTION LIMITS
	ROCK RIFFLE, SEE CIVIL SHEETS
	TOE WOOD, SEE CIVIL SHEETS
	VRSS, SEE CIVIL SHEETS
	ROCK VANE, SEE CIVIL SHEETS
	ROOT WAD, SEE CIVIL SHEETS
	BOULDER CROSS VANE, SEE CIVIL SHEETS
	J-HOOK BOULDER VANE, SEE CIVIL SHEETS
	J-HOOK LOG VANE, SEE CIVIL SHEETS

\*SEE SHEET R-01 FOR PLANTING NOTES



100% DESIGN  
ISSUED FOR BID

				I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT BID CONSTRUCTION RECORD				 Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 08/23/2023 Drawn: EPF Checked: JCO Designed: BARR Approved: SAS				UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN RESTORATION PLAN				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-13 REV. No. 0			
PRINTED NAME: JESSICA OLSON SIGNATURE: DATE: 08/23/2023 LICENSE # 43120				RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:				RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN.																			
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION																						
0	EPF	JCO	SAS	08/23/2023	ISSUED FOR BID																						



CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\2370053\_R-14\_PLANTING DETAILS.DWG PLOT SCALE: 1/2"=1'-0" PLOT DATE: 8/12/2023 2:52 PM

Floodplain Forest (Custom Mix)			
Common Name	Botanic Name	Rate (lb/ac)	% of Mix by Weight
Beak Grass	<i>Diarrhena obovata</i>	0.5	2.1%
Canada Wild Rye	<i>Elymus canadensis</i>	1	4.2%
Riverbank Wild Rye	<i>Elymus riparius</i>	1.5	6.4%
Silky Wild Rye	<i>Elymus villosus</i>	0.25	1.1%
Virginia Wild Rye	<i>Elymus virginicus</i>	10	42.4%
Fowl Manna Grass	<i>Glyceria striata</i>	0.5	2.1%
Fowl Bluegrass	<i>Poa palustris</i>	3	12.7%
<b>Total Grasses</b>		<b>16.75</b>	<b>71.1%</b>
Common Wood Sedge	<i>Carex blanda</i>	0.063	0.3%
Slender Wood Sedge	<i>Carex gracilescens</i>	0.063	0.3%
Graceful Sedge	<i>Carex gracillima</i>	0.125	0.5%
Common Bur Sedge	<i>Carex grayi</i>	0.5	2.1%
Palm Sedge	<i>Carex muskingumensis</i>	0.125	0.5%
Awl-fruited Sedge	<i>Carex stipata</i>	0.125	0.5%
Cattail Sedge	<i>Carex typhina</i>	0.25	1.1%
<b>Total Sedges</b>		<b>1.25</b>	<b>5.3%</b>
Wild Garlic	<i>Allium canadense</i>	0.188	0.8%
Canada Anemone	<i>Anemone canadensis</i>	0.188	0.8%
Tall Thimbleweed	<i>Anemone virginiana</i>	0.063	0.3%
Columbine	<i>Aquilegia canadensis</i>	0.125	0.5%
Jack-in-the-Pulpit	<i>Arisaema triphyllum</i>	0.25	1.1%
Poke Milkweed	<i>Asclepias exaltata</i>	0.125	0.5%
Tall Bellflower	<i>Campanula americana</i>	0.125	0.5%
Big-leaved Aster	<i>Eurybia macrophylla</i>	0.063	0.3%
Virginia Waterleaf	<i>Hydrophyllum virginianum</i>	0.188	0.8%
Cardinal Flower	<i>Labellia cardinalis</i>	0.063	0.3%
Wild Golden Glow	<i>Rudbeckia laciniata</i>	0.063	0.3%
Solomon's Plume	<i>Smilacina racemosa</i>	1.375	5.8%
Zig Zag Goldenrod	<i>Solidago flexicaulis</i>	1.375	5.8%
Heart-leaved Aster	<i>Symphotrichum cordifolium</i>	1.375	5.8%
<b>Total Forbs</b>		<b>5.57</b>	<b>23.6%</b>
<b>Total</b>		<b>23.57</b>	<b>100%</b>

Upland Construction (Custom Mix)			
Common Name	Botanic Name	Rate (lb/ac)	% of Mix (% by Wt)
Big Bluestem	<i>Andropogon gerardii</i>	0.90	2.8%
Kalm's Brome	<i>Bromus kalmii</i>	0.75	2.3%
Canada Wild Rye	<i>Elymus canadensis</i>	0.75	2.3%
Virginia Wild Rye	<i>Elymus virginicus</i>	0.75	2.3%
Silky wild rye	<i>Elymus villosus</i>	1.50	4.6%
Little Bluestem	<i>Schizachyrium scoparium</i>	0.75	2.3%
Cordgrass, Prairie	<i>Spartina pectinata</i>	0.25	0.8%
<b>Total Grasses</b>		<b>5.65</b>	<b>17.4%</b>
Field Oval Sedge	<i>Carex molesta</i>	0.13	0.4%
Long-beaked Sedge	<i>Carex sprengeii</i>	0.13	0.4%
<b>Total Sedges</b>		<b>0.25</b>	<b>0.8%</b>
Purple Giant Hyssop	<i>Agastache scrophulariaefolia</i>	0.06	0.2%
Canada Anemone	<i>Anemone canadensis</i>	0.12	0.4%
Butterfly weed	<i>Asclepias tuberosa</i>	0.25	0.8%
Canada Milk Vetch	<i>Astragalus canadensis</i>	0.12	0.4%
Prairie coreopsis	<i>Coreopsis palmata</i>	0.02	0.1%
Joe pye weed	<i>Eutrochium purpureum</i>	0.10	0.3%
Common Ox-Eye	<i>Heliopsis helianthoides</i>	0.25	0.8%
Wild Bergamot	<i>Monarda fistulosa</i>	0.25	0.8%
Wild Blue Phlox	<i>Phlox divaricata</i>	0.06	0.2%
Black-eyed Susan	<i>Rudbeckia hirta</i>	0.06	0.2%
Sweet Black-Eyed Susan	<i>Rudbeckia subtomentosa</i>	0.06	0.2%
Zig Zag Goldenrod	<i>Solidago flexicaulis</i>	0.04	0.1%
Heart-leaved Aster	<i>Symphotrichum cordifolium</i>	0.06	0.2%
Heath Aster	<i>Symphotrichum ericoides</i>	0.04	0.1%
New-England aster	<i>Symphotrichum novae-angliae</i>	0.04	0.1%
Prairie spiderwort	<i>Tradescantia bracteata</i>	0.04	0.1%
<b>Total Forbs</b>		<b>1.58</b>	<b>4.9%</b>
Oats	<i>Avena sativa</i>	25.00	100.0%
<b>Total Cover Crop</b>		<b>25.00</b>	<b>77%</b>
<b>Total</b>		<b>32.48</b>	<b>23%</b>

Wet Meadow (34-271)			
Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)
fringed brome	<i>Bromus ciliatus</i>	1.23	9.4%
bluejoint	<i>Calamagrostis canadensis</i>	0.06	0.5%
Virginia wild rye	<i>Elymus virginicus</i>	1.12	8.6%
rice cut grass	<i>Leersia oryzoides</i>	0.28	2.1%
tall manna grass	<i>Glyceria grandis</i>	0.17	1.3%
fowl manna grass	<i>Glyceria striata</i>	0.11	0.8%
fowl bluegrass	<i>Poa palustris</i>	0.39	3.0%
<b>Total Grasses</b>		<b>3.36</b>	<b>25.7%</b>
bristly sedge	<i>Carex comosa</i>	0.24	1.8%
pointed broom sedge	<i>Carex scoparia</i>	0.06	0.5%
awl-fruited sedge	<i>Carex stipata</i>	0.19	1.5%
tussock sedge	<i>Carex stricta</i>	0.03	0.2%
fox sedge	<i>Carex vulpinoidea</i>	0.16	1.2%
<b>Total Sedges and Rushes</b>		<b>0.68</b>	<b>5.2%</b>
marsh milkweed	<i>Asclepias incarnata</i>	0.27	2.1%
common boneset	<i>Eupatorium perfoliatum</i>	0.02	0.2%
grass-leaved goldenrod	<i>Euthamia graminifolia</i>	0.01	0.1%
spotted Joe pye weed	<i>Eutrochium maculatum</i>	0.02	0.2%
autumn sneezeweed	<i>Helenium autumnale</i>	0.03	0.2%
sawtooth sunflower	<i>Helianthus grosseserratus</i>	0.04	0.3%
great lobelia	<i>Labellia siphilitica</i>	0.02	0.2%
blue monkey flower	<i>Mimulus ringens</i>	0.01	0.1%
Virginia mountain mint	<i>Pycnanthemum virginianum</i>	0.07	0.5%
giant goldenrod	<i>Solidago gigantea</i>	0.02	0.2%
red-stemmed aster	<i>Symphotrichum puniceum</i>	0.19	1.5%
tall meadow-rue	<i>Thalictrum dasycarpum</i>	0.01	0.1%
blue vervain	<i>Verbena hastata</i>	0.15	1.1%
bunched ironweed	<i>Vernonia fasciculata</i>	0.03	0.2%
Culver's root	<i>Veronicastrum virginicum</i>	0.01	0.1%
golden alexanders	<i>Zizia aurea</i>	0.28	2.1%
<b>Total Forbs</b>		<b>1.18</b>	<b>9.0%</b>
Oats	<i>Avena sativa</i>	7.85	60.1%
<b>Total Cover Crop</b>		<b>7.85</b>	<b>###</b>
<b>Totals:</b>		<b>13.07</b>	
<b>Purpose:</b>	Wet meadow / Sedge meadow reconstruction for wetland mitigation or ecological restoration projects		
<b>Planting Area:</b>	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.		

Forest Mix			
Common Name	Scientific Name	PLS Rate (lb/ac)	% of Mix (by weight)
Canada Blue Joint Grass	<i>Calamagrostis canadensis</i>	0.06	0.2%
Canada Wild Rye	<i>Elymus canadensis</i>	1.05	3.1%
Virginia Wild Rye	<i>Elymus virginicus</i>	1.10	3.2%
Switchgrass	<i>Panicum virgatum</i>	0.21	0.6%
Fowl Bluegrass	<i>Poa palustris</i>	0.50	1.5%
Little Bluestem	<i>Schizachyrium scoparium</i>	0.50	1.5%
Indian Grass	<i>Sorghastrum nutans</i>	1.00	2.9%
prairie cordgrass	<i>Spartina pectinata</i>	2.00	5.9%
<b>Grasses Subtotal</b>		<b>4.42</b>	<b>13%</b>
Porcupine Sedge	<i>Carex hystericina</i>	0.09	0.3%
Long-beaked Sedge	<i>Carex sprengeii</i>	0.06	0.2%
Path Rush	<i>Juncus tenuis</i>	0.06	0.2%
<b>Sedges &amp; Rushes Subtotal</b>		<b>0.21</b>	<b>1%</b>
Canada Anemone	<i>Anemone canadensis</i>	0.12	0.4%
Tall Thimbleweed	<i>Anemone virginiana</i>	0.03	0.1%
Columbine	<i>Aquilegia canadensis</i>	1.03	3.0%
Swamp Milkweed	<i>Asclepias incarnata</i>	0.25	0.7%
Tall Bellflower	<i>Campanula americana</i>	1.25	3.7%
Partridge Pea	<i>Chamaecrista fasciculata</i>	1.00	2.9%
Showy Tick Trefoil	<i>Desmodium canadense</i>	0.25	0.7%
Flat-Topped Aster	<i>Doellingeria umbellata</i>	0.04	0.1%
wild sarsaparilla	<i>Aralia nudicaulis</i>	0.20	0.6%
Clayton's sweet cicely	<i>Osmorhiza claytonia</i>	0.03	0.1%
zigzag goldenrod	<i>Solidago flexicaulis</i>	0.02	0.1%
Virginia creeper	<i>Parthenocissus spp</i>	0.03	0.1%
New England Aster	<i>Symphotrichum novae-angliae</i>	0.09	0.3%
Heart-leaf Golden Alexanders	<i>Zizia aptera</i>	0.12	0.4%
<b>Forbs Subtotal</b>		<b>4.46</b>	<b>13%</b>
Oats	<i>Avena sativa</i>	25.00	73.3%
<b>Total Cover Crop</b>		<b>25.00</b>	<b>73%</b>
<b>Total</b>		<b>34.09</b>	<b>100%</b>

Wetland Planting Zone			
Common Name	Scientific Name	PLS Rate (lb/ac)	% of Mix (by weight)
Canada Blue Joint Grass	<i>Calamagrostis canadensis</i>	0.06	2.8%
Riverbank Wild Rye	<i>Elymus riparius</i>	0.06	2.8%
American Manna Grass	<i>Glyceria grandis</i>	0.25	11.5%
Fowl Manna Grass	<i>Glyceria striata</i>	0.12	5.5%
Prairie cordgrass	<i>Spartina pectinata</i>	0.06	2.8%
Canada Blue Joint Grass	<i>Calamagrostis canadensis</i>	0.06	2.8%
Rice Cut Grass	<i>Leersia oryzoides</i>	0.25	11.5%
<b>Grasses Subtotal</b>		<b>0.86</b>	<b>40%</b>
Lake Sedge	<i>Carex lacustris</i>	0.12	5.5%
Tussock Sedge	<i>Carex stricta</i>	0.06	2.9%
Green Bulrush	<i>Scirpus atrovirens</i>	0.12	5.5%
Woolgrass	<i>Scirpus cyperinus</i>	0.06	2.8%
<b>Sedges &amp; Rushes Subtotal</b>		<b>0.36</b>	<b>17%</b>
Marsh milkweed	<i>Asclepias incarnata</i>	0.28	12.9%
Grass-leaved goldenrod	<i>Euthamia graminifolia</i>	0.28	12.9%
Blue Flag Iris	<i>Iris versicolor</i>	0.50	23.0%
Mountain mint	<i>Pycnanthemum virginianum</i>	0.12	5.5%
Swamp goldenrod	<i>Solidago patula</i>	0.03	1.4%
Swamp aster	<i>Symphotrichum puniceum</i>	0.02	0.9%
<b>Forbs Subtotal</b>		<b>0.95</b>	<b>44%</b>
<b>Total</b>		<b>2.17</b>	<b>100%</b>

25-131 Low Maintenance Turf					
Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
red fescue	<i>Festuca rubra</i>	64.00	71.73	29.09%	667.00
Chewing's Fescue	<i>Festuca rubra ssp. commutata</i>	44.00	49.32	20.00%	458.60
Low Maintenance Kentucky bluegrass	<i>Poa pratensis Low Maintenance</i>	36.00	40.35	16.36%	1148.70
Hard fescue	<i>Festuca trachyphylla</i>	30.00	33.63	13.64%	389.10
Sheep Fescue	<i>Festuca ovina</i>	25.00	28.02	11.37%	304.22
Perennial Ryegrass	<i>Lolium perenne</i>	21.00	23.54	9.54%	104.60
<b>Total</b>		<b>220.00</b>	<b>246.59</b>	<b>100.00%</b>	<b>3072.22</b>
<b>Purpose:</b>	Salt, shade and drought tolerant turfgrass. Requires less frequent mowing and less fertilization than conventional turfgrass.				
<b>Planting Area:</b>	Statewide				
<b>Combine all components when blending this mix.</b>					

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD	08/31/23 08/17/23 08/23/23	 Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	Scale Date Drawn Checked Designed Approved	AS SHOWN 08/23/2023 EPF JCO BARR SAS	UPPER RILEY CREEK CORRIDOR ENHANCEMENT PLAN PLANTING DETAILS	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No.	DWG. No. R-15 REV. No. 0
0	EPF	JCO	SAS		08/23/2023	ISSUED FOR BID		PRINTED NAME: JESSICA OLSON SIGNATURE:  DATE: 08/23/2023 LICENSE # 43120	RELEASED TO/FOR

100% DESIGN  
ISSUED FOR BID