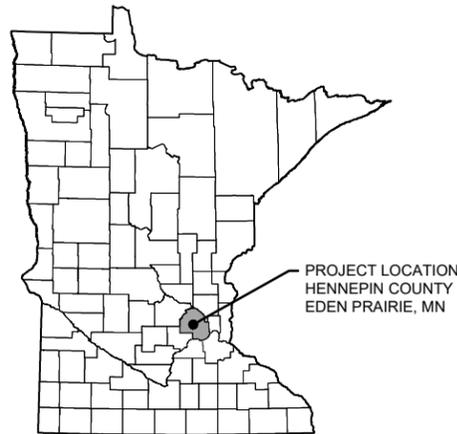


# MIDDLE RILEY CREEK STABILIZATION AND BEARPATH GOLF COURSE RENOVATION

## RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT



### MINNESOTA COUNTY MAP

#### CONTACTS:

##### ENGINEER CONTACT:

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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  
952-807-6885  
tjeffery@rpbcdwd.org

##### OWNER CONTACT:

Bearpath Golf & Country Club  
Attn: Kevin Cashman  
18100 Bearpath Trail  
Eden Prairie, MN 55347  
952-975-0123  
kcashman@bearpathgolf.com

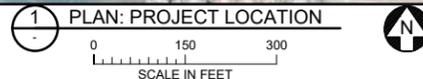
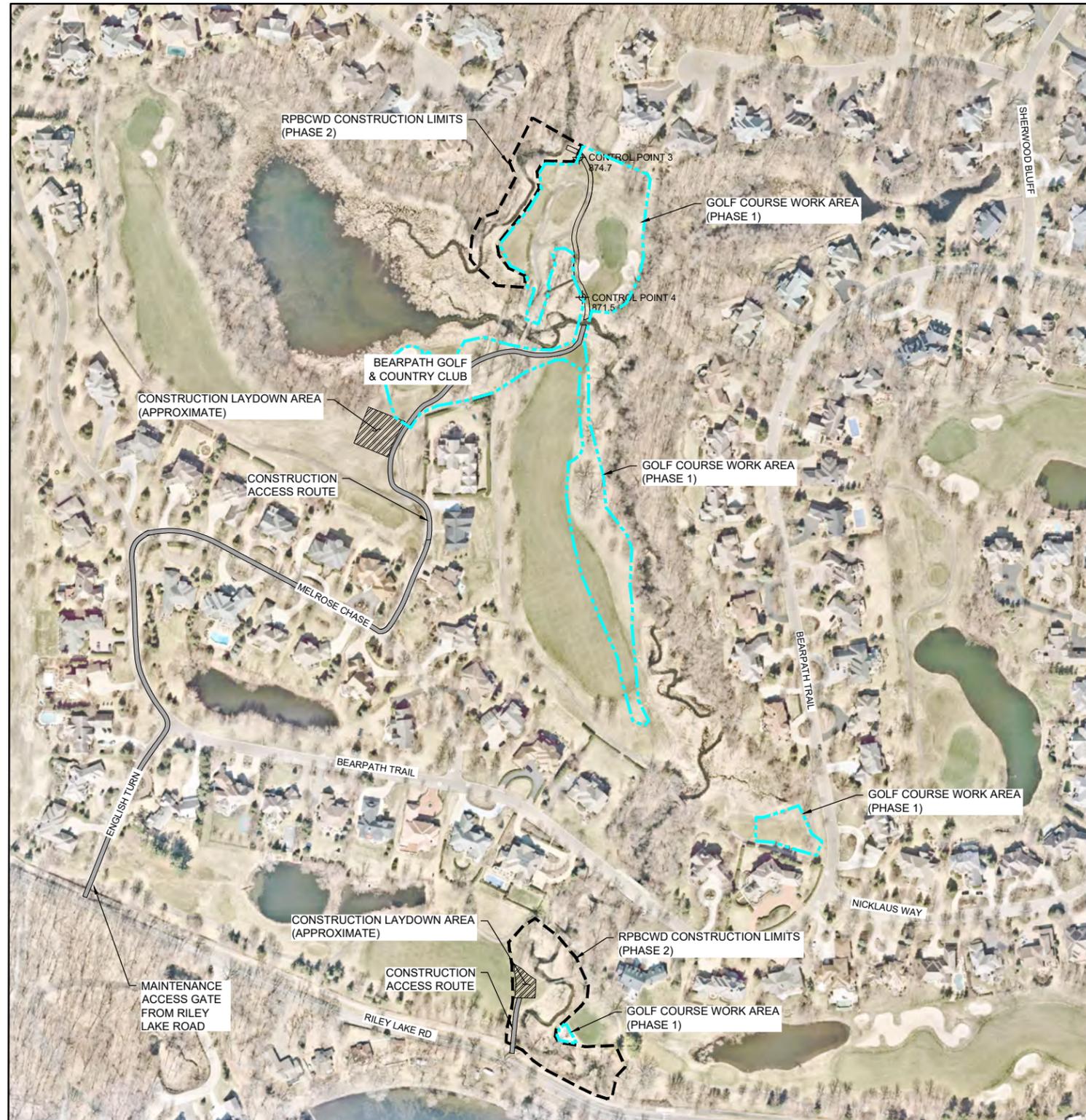
#### GENERAL NOTES:

- CONTOUR DATA SHOWN IN THIS PLAN SET IS BASED ON 2015 LIDAR TOPOGRAPHY AND SURVEYS PERFORMED BY RPB/CWD STAFF ON MAY 4 AND 18, 2020 AND SUPPLEMENTED BY SURVEY DATA FROM A SURVEY PERFORMED BY BARR ENGINEERING ON JUNE 11, 2020.
- IMAGERY; COPYRIGHT PICTOMETRY INTERNATIONAL CORP AND HENNEPIN COUNTY, MINNESOTA, 2017.
- HORIZONTAL DATUM AND COORDINATE SYSTEM: HENNEPIN COUNTY COORDINATES, NAD83, US SURVEY FEET.
- VERTICAL DATUM: NAVD88.

CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	117922.4829'	465761.5527'	875.23'	VRS SPIKE 1
2	117850.1325'	465717.6763'	880.15'	VRS SPIKE 2
3	119806.1150'	465879.4807'	874.71'	VRS SPIKE 3
4	119491.9292'	465886.5323'	871.54'	VRS SPIKE 4



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- D-06 . . . . OUTLET IMPROVEMENT DETAILS
- D-07 . . . . OUTLET IMPROVEMENT DETAILS

#### R-01 . . . . RESTORATION PLAN - SOUTH

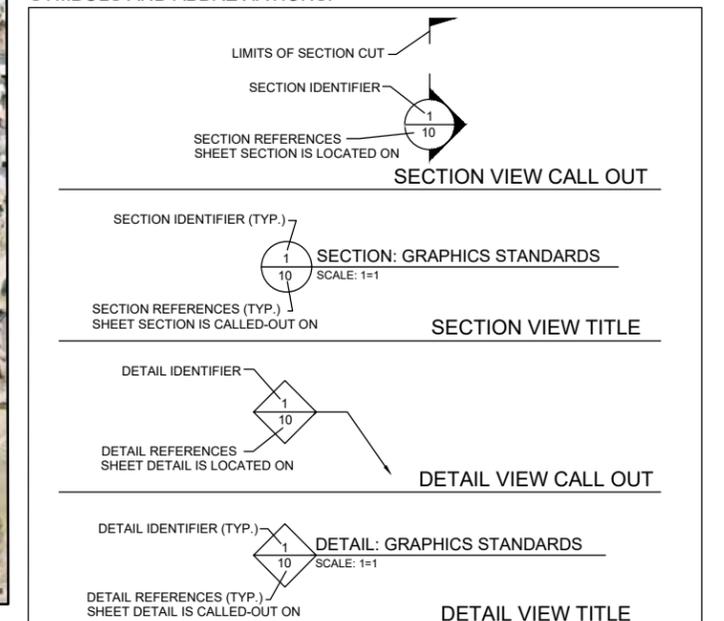
- R-02 . . . . RESTORATION PLAN - NORTH
- R-03 . . . . RESTORATION DETAILS

#### PHASE 1 - BEARPATH GOLF COURSE RENOVATION

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- C-12 . . . . EROSION CONTROL PLAN - #13 GREEN, #12 GREEN, #13 TEE BOX
- C-13 . . . . EROSION CONTROL DETAILS
- C-14 . . . . GRADING PLAN - #16 GREEN, #12 TEE BOX, #12 FAIRWAY
- C-15 . . . . GRADING PLAN - #13 GREEN, #12 GREEN, #13 TEE BOX

- R-04 . . . . RESTORATION PLAN - #16 GREEN, #12 TEE BOX, #12 FAIRWAY
- R-05 . . . . RESTORATION PLAN - #13 GREEN, #12 GREEN, #13 TEE BOX

#### SYMBOLS AND ABBREVIATIONS:



100% DESIGN  
NOT FOR CONSTRUCTION

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	03/12/21	05/07/21				
BID								
CONSTRUCTION								
PERMITTING			03/12/21					
RELEASED TO/FOR	A	B	C	D	0	1	2	
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

Scale: AS SHOWN  
Date: 05/07/2021  
Drawn: EPF  
Checked: SAB2  
Designed: BARR  
Approved: JCO

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

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

MIDDLE RILEY CREEK STABILIZATION  
& BEARPATH GOLF COURSE RENOVATION

TITLE SHEET, PROJECT LOCATION, AND  
SHEET INDEX

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

**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 EDEN PRAIRIE, HENNEPIN COUNTY, MINNESOTA. PROPOSED CONSTRUCTION ACTIVITIES WILL TAKE PLACE WITHIN SECTION 19 TOWNSHIP 116 NORTH RANGE 22 WEST. THE APPROXIMATE CENTROID OF THE PROJECT HAS A LATITUDE OF 44.8404389 AND A LONGITUDE OF -93.5107298.

THIS PROJECT INVOLVES THE REPAIR OF EROSION ON THE EXISTING BANKS OF RILEY CREEK TO REDUCE THE TRANSPORT OF EXCESS SEDIMENT DOWNSTREAM TO LAKE RILEY. CONSTRUCTION WILL CONSIST OF CLEARING AND GRUBBING, CONSTRUCTION OF ACCESS AND STAGING AREAS, EARTHWORK REPAIRING ERODED BANKS, CONSTRUCTING ROCK RIFFLES, J-HOOKS, REGRAVING THE CHANNEL, CONSTRUCTION OF A STORM SEWER EXTENSION, PLACEMENT OF RIPRAP, INSTALLATION OF ROCK VANES, CONSTRUCTION OF VEGETATED REINFORCEMENT SOIL SLOPES (VRSS) AND TOE WOOD, 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 4.282 ACRES. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE REQUIRED TO MINIMIZE SEDIMENT FROM BEING TRANSPORTED INTO THE LAKE RILEY, 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 5.01 ACRES (STAGE 1 = 3.06 ACRES, STAGE 2 = 1.95 ACRES).
- THE TOTAL AREA OF PRE-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0.13 ACRES.
- THE TOTAL AREA OF POST-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0.05 ACRES.
- THE TOTAL NEW IMPERVIOUS AREA IS APPROXIMATELY -0.08 ACRES.

**1.2 DATES OF CONSTRUCTION:**

- ANTICIPATED START DATE: SEPTEMBER 2021 ANTICIPATED END DATE: JUNE 2022

**1.3 CONTACT INFORMATION:**

OWNER: RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT  
 MAILING ADDRESS: 18681 LAKE DRIVE EAST, CHANNHASSEN, MN. 55317  
 CONTACT PERSON: TERRY JEFFERY TITLE: INTERIM 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:

BEARPATH GOLF & COUNTRY CLUB  
 MAILING ADDRESS: 18100 BEARPATH TRAIL, EDEN PRAIRE, MN. 55347  
 CONTACT PERSON: KEVIN CASHMAN  
 PHONE NUMBER: 952-975-0123  
 EMAIL ADDRESS: kcashman@BEARPATHGOLF.COM

**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 RILEY	LAKE	27-0132P	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 RILEY AND RILEY CREEK HAVE AN EPA-APPROVED IMPAIRMENT FOR NUTRIENTS, FISHES BIOSASSESSMENTS, MERCURY IN FISH TISSUE, MACROINVERTIBATE BIOSASSESSMENTS AND TURBIDITY. 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 TIMEFRAMES
- 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
- G-01
- G-03
- C-01, C-02, C-14, C-15
- C-04, C-05, C-06
- C-07, C-09, C-14, C-15
- NA
- C-01, C-02
- C-01, C-02, C-11, C-12
- C-04, C-05, C-06
- C-07, C-09
- C-03, C-13

**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:** NO DEWATERING OR BASIN DRAINING WILL OCCUR AS PART OF THIS PROJECT. (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

(SEE PAGE 2 OF 2)

100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY STREAM\23270053\_14\_G-02\_SWPPP.DWG PLOT SCALE: 1:2 PLOT DATE: 02/28/2021 9:38 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 PERMITTING				07/15/20 08/08/20 09/07/21				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435				Scale AS SHOWN		MIDDLE RILEY CREEK STABILIZATION & BEARPATH GOLF COURSE RENOVATION				BARR PROJECT No. 23/27-0053.14	
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW				PRINTED NAME: JESSICA OLSON				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Ph: 1-800-632-2277				Date 05/07/2021		STORMWATER POLLUTION PREVENTION PLAN (SWPPP)				CLIENT PROJECT No.				
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING				SIGNATURE				Ph: 1-800-632-2277 Ph: (952) 832-2601 www.barr.com		Drawn EPF		DWG. No. G-02						REV. No. D				
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW				RELEASED TO/FOR				A B C D 0 1 2				Checked SAB2										
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW				DATE RELEASED								Designed BARR										
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION												Approved JCO										

**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	MARCH 2021
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.
- DELTA 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)

- 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. 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.
  - 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.
- 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.
  - THE SWPPP WILL BE AMENDED WHEN INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER, OPERATOR, OR CONTRACTORS OR BY USEPAMP/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.
  - ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION WILL BE DOCUMENTED AS REQUIRED WITHIN 7 CALENDAR DAYS.
  - 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.
- 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.
- 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:**

- 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)
- 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)
- 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)
- 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)
- 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)
- 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)
  - 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.
  - 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 INFESIBLE;
    - 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.
- 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)
- 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:**

- 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)
  - 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)
    - 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).
    - ALL SEDIMENT HAS BEEN REMOVED FROM CONVEYANCE SYSTEMS, INCLUDING CULVERTS.
    - 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.

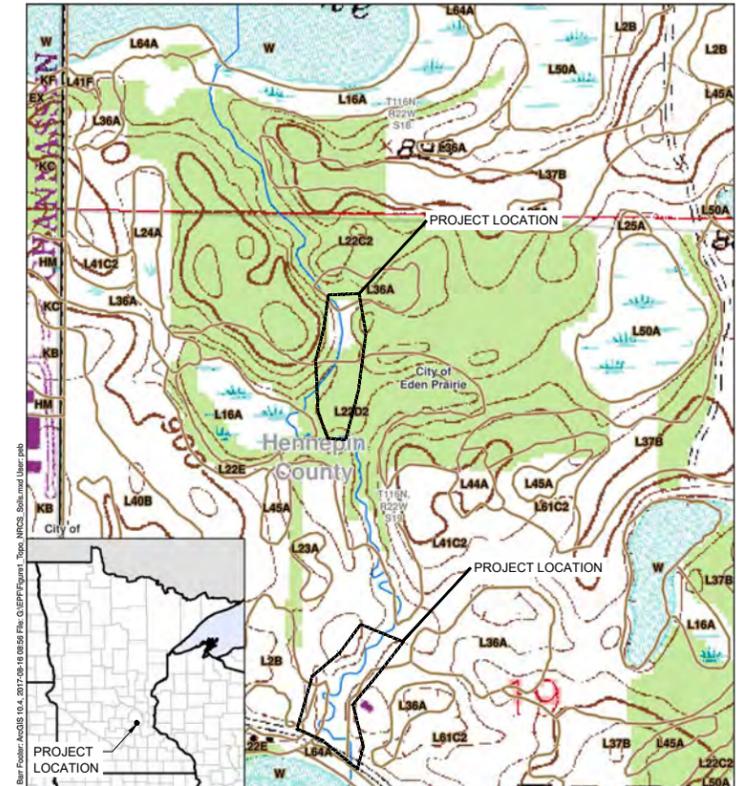


Figure 1  
TOPOGRAPHIC MAP WITH SURFACE WATERS AND SOIL TYPES  
Stormwater Pollution Prevention Plan  
Hennepin County, Minnesota

100% DESIGN  
NOT FOR CONSTRUCTION

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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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: 05/07/2021 LICENSE #: 43102

CLIENT	07/15/20	08/06/20	05/07/21				
BID							
CONSTRUCTION							
PERMITTING				03/12/21			
RELEASED TO/FOR	A	B	C	D	0	1	2
DATE RELEASED							

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

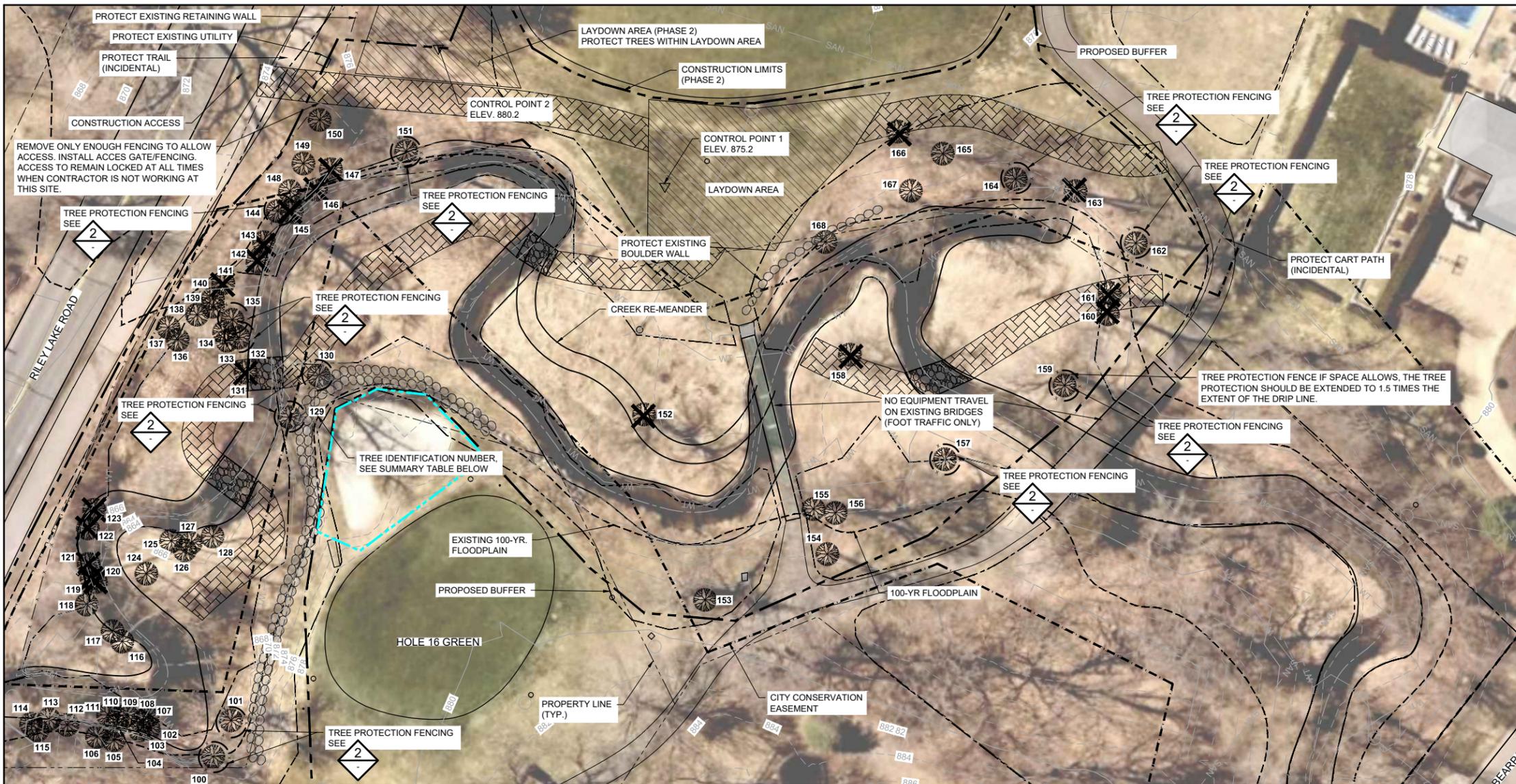
Scale: AS SHOWN  
Date: 05/07/2021  
Drawn: EPF  
Checked: SAB2  
Designed: BARR  
Approved: JCO

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www.barr.com

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

**MIDDLE RILEY CREEK STABILIZATION & BEARPATH GOLF COURSE RENOVATION**  
**STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**

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



**SYMBOL AND PATTERN LEGEND**

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SS EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WT EXISTING WETLAND DELINEATION
- EXISTING 100-YR FLOODPLAIN
- CITY CONSERVATION EASEMENT
- CONSTRUCTION LIMITS (PHASE 1)
- CONSTRUCTION LIMITS (PHASE 2)
- PROPOSED BUFFER
- EXISTING TREE TO REMAIN, PROTECT IN PLACE
- REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
- TREE PROTECTION FENCE, SEE SHEET G-09
- 101 TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**OAK WILT**

TO PROTECT AGAINST OAK WILT ALL PRUNING, ROOT CUTTING, OR DAMAGE TO THE OAK TREES SHALL BE AVOIDED BETWEEN APRIL 1ST AND JULY 31ST. ANY WOUNDING OR ROOT CUTTING WILL REQUIRE THE SEALING OF ALL WOUNDS WITH AN APPROVED PAINT OR SHELLAC AND AN INSPECTION BY THE CITY FORESTER. EXPOSED, CUT, OR DAMAGED ROOTS MUST BE IMMEDIATELY COVERED WITH SOIL OR SEALED AND INSPECTED BY THE CITY FORESTER.

CONTRACTOR SHALL CONTACT THE CITY FORESTER, PRIOR TO DEMOLITION OR OTHER LAND DISTURBANCE ASSOCIATED WITH SITE CONSTRUCTION, TO VERIFY TREE PROTECTION MEASURES.

**1 PLAN: TREE PROTECTION AND REMOVALS**



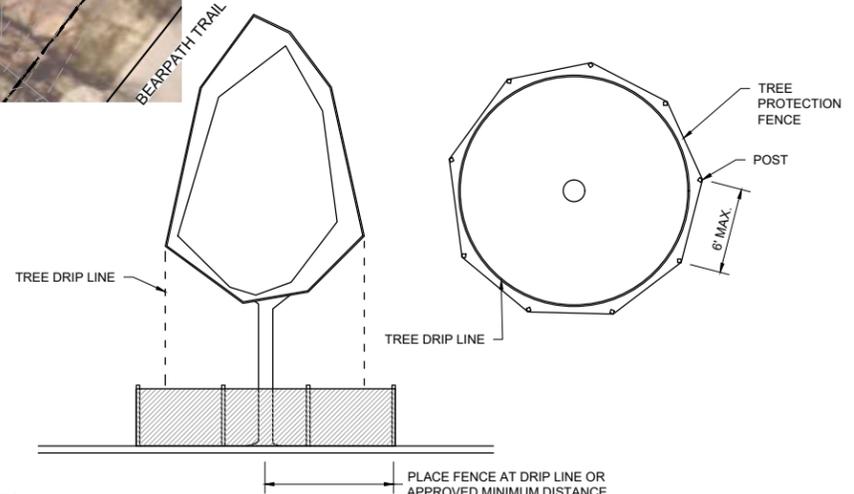
**TREE SURVEY AND REMOVAL TABLE - SOUTH**

TREE ID #	TREE SPECIES	DBH (INCHES)	SIGN.	TREE HEALTH	REMOVED
100	BASSWOOD	11		HEALTHY	NO
101	RED ASH	16	S	HEALTHY	NO
102	ASH	7		HEALTHY	NO
103	BASSWOOD	12	S	HEALTHY	NO
104	ASH	9		HEALTHY	NO
105	ASH	13	S	HEALTHY	NO
106	ASH	15	S	HEALTHY	NO
107	ASH	3		DEAD	YES
108	BASSWOOD	6		HEALTHY	NO
109	ASH	6		DEAD	NO
110	ASH	7		HEALTHY	NO
111	ASH	4		HEALTHY	NO
112	ASH	14	S	HEALTHY	NO
113	MAPLE	7		HEALTHY	NO
114	ASH	10		HEALTHY	NO
115	MAPLE	5		HEALTHY	NO
116	ASH	10		HEALTHY	NO
117	ASH	6		HEALTHY	NO
118	BASSWOOD	10		HEALTHY	NO
119	ASH	3		HEALTHY	YES
120	ASH	9		HEALTHY	YES
121	ASH	4		HEALTHY	YES
122	UNKNOWN	5		DEAD	YES

123	BUCKTHORN	9		DEAD	YES
124	ASH	10		HEALTHY	NO
125	ASH	15	S	HEALTHY	NO
126	ASH	8		HEALTHY	NO
127	ASH	9		HEALTHY	NO
128	ASH	12	S	UNHEALTHY	NO
129	OAK	13	S	HEALTHY	NO
130	ASH	27	S	HEALTHY	NO
131	ASH	9		HEALTHY	NO
132	ASH	11		HEALTHY	YES
133	ELM	6		HEALTHY	NO
134	ELM	5		HEALTHY	NO
135	BOX ELDER	15		HEALTHY	NO
136	BOX ELDER	6		HEALTHY	NO
137	BOX ELDER	7		HEALTHY	NO
138	ASH	9		HEALTHY	NO
139	MAPLE	3		HEALTHY	NO
140	ASH	8		HEALTHY	NO
141	ASH	4		HEALTHY	YES
142	ASH	4		HEALTHY	YES
143	ASH	6		HEALTHY	YES
144	BASSWOOD	28	S	UNHEALTHY	NO
145	MAPLE	4		HEALTHY	YES
146	ASH	4		HEALTHY	YES

147	OAK	6		HEALTHY	YES
148	ASH	9		HEALTHY	NO
149	ASH	14	S	HEALTHY	NO
150	OAK	6		HEALTHY	NO
151	MAPLE	27	S	HEALTHY	NO
152	ASH	25	S	HEALTHY	YES
153	RED OAK	30	S	HEALTHY	NO
154	SUGAR MAPLE	17	S	HEALTHY	NO
155	MAPLE	13	S	HEALTHY	NO
156	MAPLE	15	S	UNHEALTHY	NO
157	ASH	12	S	HEALTHY	NO
158	ASH	13	S	HEALTHY	YES
159	MAPLE	16	S	HEALTHY	NO
160	ELM	16		HEALTHY	YES
161	RED ASH	16	S	HEALTHY	YES
162	MAPLE	22	S	HEALTHY	NO
163	SYCAMORE	20	S	HEALTHY	YES
164	CHERRY	12	S	HEALTHY	NO
165	RED ASH	14	S	HEALTHY	NO
166	MAPLE	13	S	UNHEALTHY	YES
167	BOX ELDER	16		HEALTHY	NO
168	BASSWOOD	15	S	HEALTHY	NO

NOTE: SIGNIFICANT TREES DENOTED BY 'S'



**NOTES:**

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

100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Figler; FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY CREEK STABILIZATION\DWG\G-04\_TREE INVENTORY.DWG; PLOT SCALE: 1:2; PLOT DATE: 4/29/2021 9:37 AM; BAR: M:\AutoCAD\2011\AutoCAD 2011\Support\Temp\Barr\_2011\_Template.dwg; Plot at: 10/05/2010 14:09:50

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
C	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
B	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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: 05/07/2021 LICENSE # 43102

CLIENT	BID	PERMITTING	RELEASED TO/FOR	DATE RELEASED
08/02/20	05/07/21		A B C 0 1 2 3	

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

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

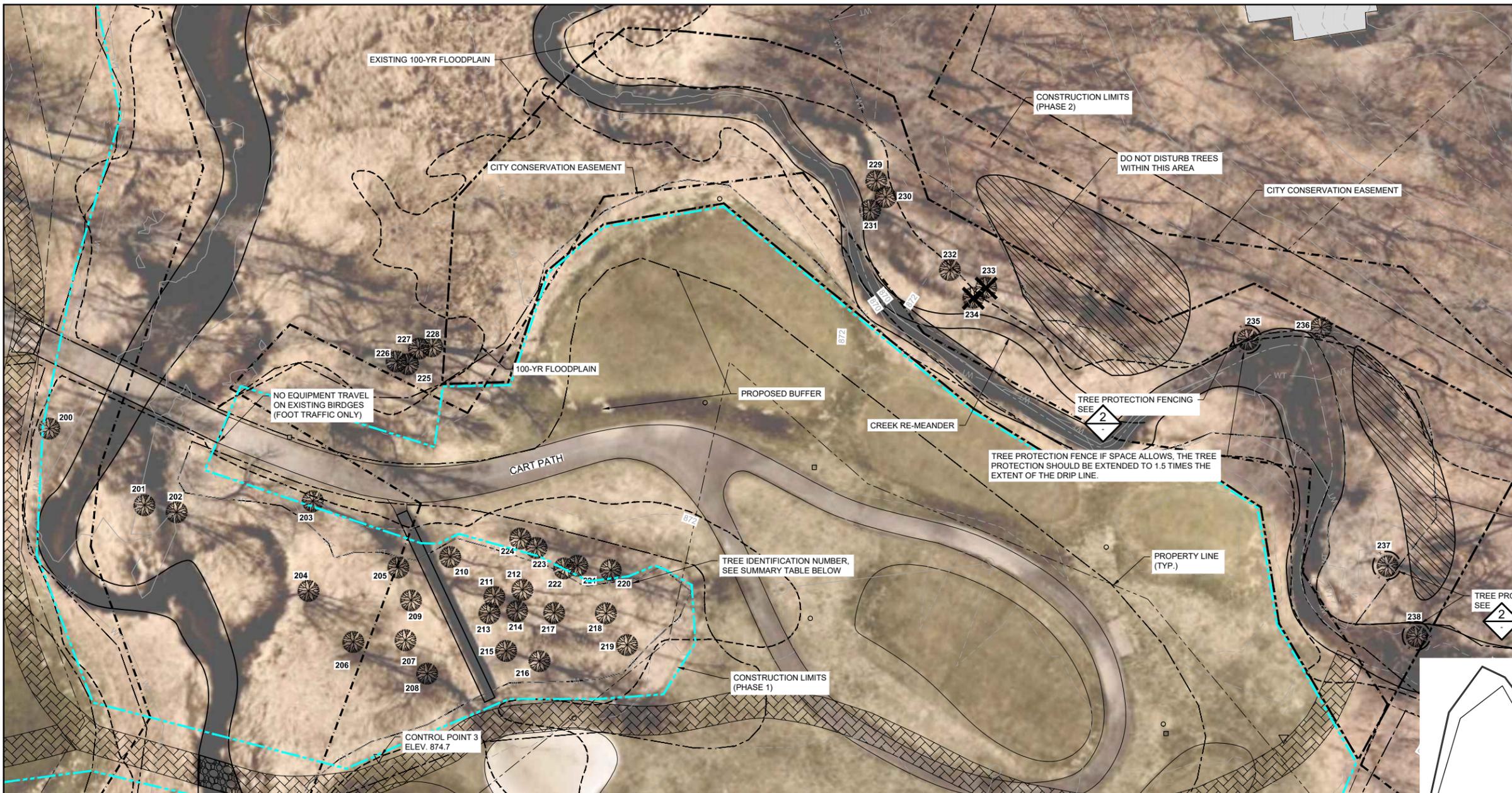
Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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

**MIDDLE RILEY CREEK STABILIZATION & BEARPATH GOLF COURSE RENOVATION**  
**TREE PROTECTION AND REMOVALS PLAN SOUTH**

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

CADD USER: Eric P. Figlerd FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION.DWG PLOT SCALE: 1:2 PLOT DATE: 4/28/2021 3:11 PM  
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**SYMBOL AND PATTERN LEGEND**

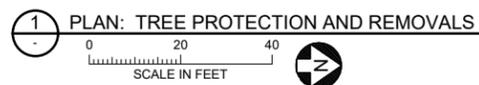
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WETLAND DELINEATION
	EXISTING 100-YR FLOODPLAIN
	CITY CONSERVATION EASEMENT
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	EXISTING TREE TO REMAIN, PROTECT IN PLACE
	REMOVE EXISTING CONIFEROUS OR DECIDUOUS TREE
	TREE PROTECTION FENCE, SEE SHEET G-09
101	TREE IDENTIFICATION NUMBER, SEE TABLE FOR TREE SURVEY AND TREE REMOVAL SUMMARY

**TREE SURVEY AND REMOVAL TABLE - NORTH**

TREE ID #	TREE SPECIES	DBH (INCHES)	SIGN.	TREE HEALTH	REMOVED
200	ASH	21	S	HEALTHY	NO
201	ASH	14	S	UNHEALTHY	NO
202	ELM	18		HEALTHY	NO
203	ASH	18	S	HEALTHY	NO
204	BASSWOOD	15	S	HEALTHY	NO
205	ASH	8		HEALTHY	NO
206	BASSWOOD	7 (4)		HEALTHY	NO
207	ASH	4		HEALTHY	NO
208	ELM	16		HEALTHY	NO
209	BOX ELDER	4		HEALTHY	NO
210	ASH	7		HEALTHY	NO
211	ASH	7		HEALTHY	NO
212	OAK	6		UNHEALTHY	NO
213	ASH	7 (2)		HEALTHY	NO
214	BASSWOOD	8		HEALTHY	NO
215	ASH	12	S	HEALTHY	NO
216	ASH	14	S	HEALTHY	NO
217	ASH	4		HEALTHY	NO
218	ASH	6		HEALTHY	NO

**NOTE: SIGNIFICANT TREES DENOTED BY 'S'**

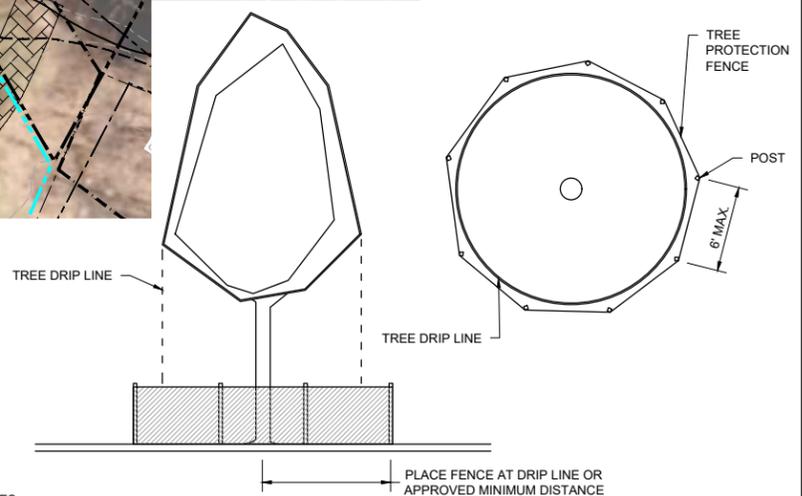
TREE ID	TREE SPECIES	DBH	SIGN.	HEALTH	REMOVED
219	WILLOW	5		HEALTHY	NO
220	OAK	9		HEALTHY	NO
221	WILLOW	9		HEALTHY	NO
222	WILLOW	8		HEALTHY	NO
223	BASSWOOD	11		HEALTHY	NO
224	ASH	8		HEALTHY	NO
225	ASH	6		DEAD	NO
226	ASH	8		DEAD	NO
227	ASH	10		HEALTHY	NO
228	ASH	10		HEALTHY	NO
229	ASH	10		HEALTHY	NO
230	RED OAK	10 (2)		HEALTHY	NO
231	ASH	14	S	HEALTHY	NO
232	BASSWOOD	14	S	HEALTHY	NO
233	ASH	11		HEALTHY	YES
234	BASSWOOD	12	S	HEALTHY	YES
235	BASSWOOD	8		HEALTHY	NO
236	BASSWOOD	8		HEALTHY	NO
237	OAK	24	S	HEALTHY	NO
238	ELM	16		HEALTHY	NO



**OAK WILT**

TO PROTECT AGAINST OAK WILT ALL PRUNING, ROOT CUTTING, OR DAMAGE TO THE OAK TREES SHALL BE AVOIDED BETWEEN APRIL 1ST AND JULY 31ST. ANY WOUNDING OR ROOT CUTTING WILL REQUIRE THE SEALING OF ALL WOUNDS WITH AN APPROVED PAINT OR SHELLAC AND AN INSPECTION BY THE CITY FORESTER. EXPOSED, CUT, OR DAMAGED ROOTS MUST BE IMMEDIATELY COVERED WITH SOIL OR SEALED AND INSPECTED BY THE CITY FORESTER.

CONTRACTOR SHALL CONTACT THE CITY FORESTER, PRIOR TO DEMOLITION OR OTHER LAND DISTURBANCE ASSOCIATED WITH SITE CONSTRUCTION, TO VERIFY TREE PROTECTION MEASURES.



**NOTES:**

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**2 DETAIL: TREE PROTECTION FENCING**  
 NOT TO SCALE 100% DESIGN  
NOT FOR CONSTRUCTION

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
C	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
B	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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PRINTED NAME: JESSICA OLSON  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/07/2021 LICENSE #: 43102

CLIENT	BID	DATE	STATUS
BARR ENGINEERING CO.	08/02/20	05/07/21	PERMITTING

**BARR** ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 SUITE 200  
 MINNEAPOLIS, MN 55435  
 Ph: 1-800-632-2277  
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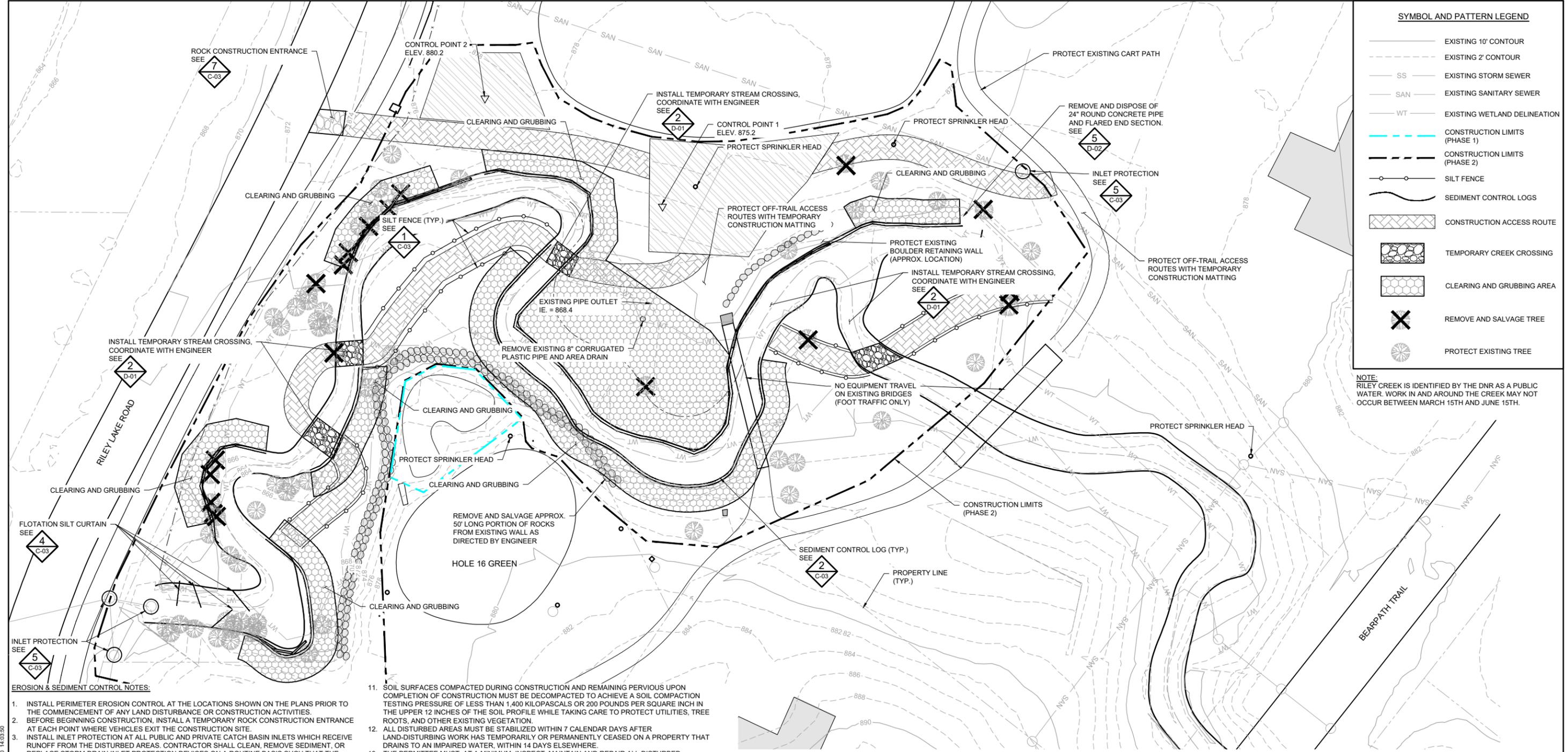
Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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

**MIDDLE RILEY CREEK STABILIZATION & GOLF COURSE RENOVATION**  
 TREE PROTECTION AND REMOVALS PLAN  
 NORTH

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION PHASE 1\_C-01\_EROSION CONTROL PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 9:42 AM  
 BARR M:\AutoCAD\2011\AutoCAD 2011 Support\Temp\TempTableBar\_2011\_Template.dwg Plot at: 10/06/2010 14:03:50



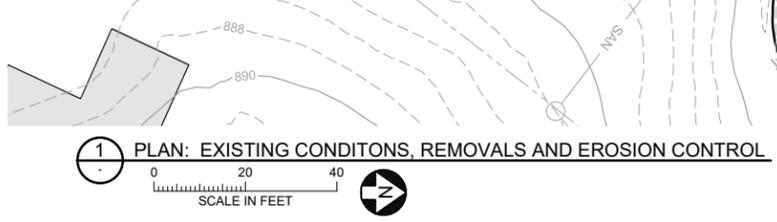
**SYMBOL AND PATTERN LEGEND**

- EXISTING 10' CONTOUR
- - - EXISTING 2' CONTOUR
- SS EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WT EXISTING WETLAND DELINEATION
- CONSTRUCTION LIMITS (PHASE 1)
- - - CONSTRUCTION LIMITS (PHASE 2)
- ○ ○ SILT FENCE
- ~ SEDIMENT CONTROL LOGS
- ▨ CONSTRUCTION ACCESS ROUTE
- ⊗ TEMPORARY CREEK CROSSING
- ⊘ CLEARING AND GRUBBING AREA
- ✕ REMOVE AND SALVAGE TREE
- ⊙ PROTECT EXISTING TREE

NOTE: RILEY CREEK IS IDENTIFIED BY THE DNR AS A PUBLIC WATER. WORK IN AND AROUND THE CREEK MAY NOT OCCUR BETWEEN MARCH 15TH AND JUNE 15TH.

- 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. 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. FINAL SITE STABILIZATION MEASURES MUST SPECIFY THAT AT LEAST SIX INCHES OF TOPSOIL OR ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT WHEREVER TOPSOIL HAS BEEN REMOVED.
  8. CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
  9. 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.
  10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE REMOVED UPON FINAL STABILIZATION.

11. SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PVIOUS 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.



1 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
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PRINTED NAME: JESSICA OLSON  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	03/07/21				
BID							
CONSTRUCTION							
PERMITTING			03/12/21				
RELEASED TO/FOR	A	B	C	D	0	1	2
DATE RELEASED							

**BARR**  
 Corporate Headquarters: Minneapolis, Minnesota  
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Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
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Designed	BARR
Approved	JCO

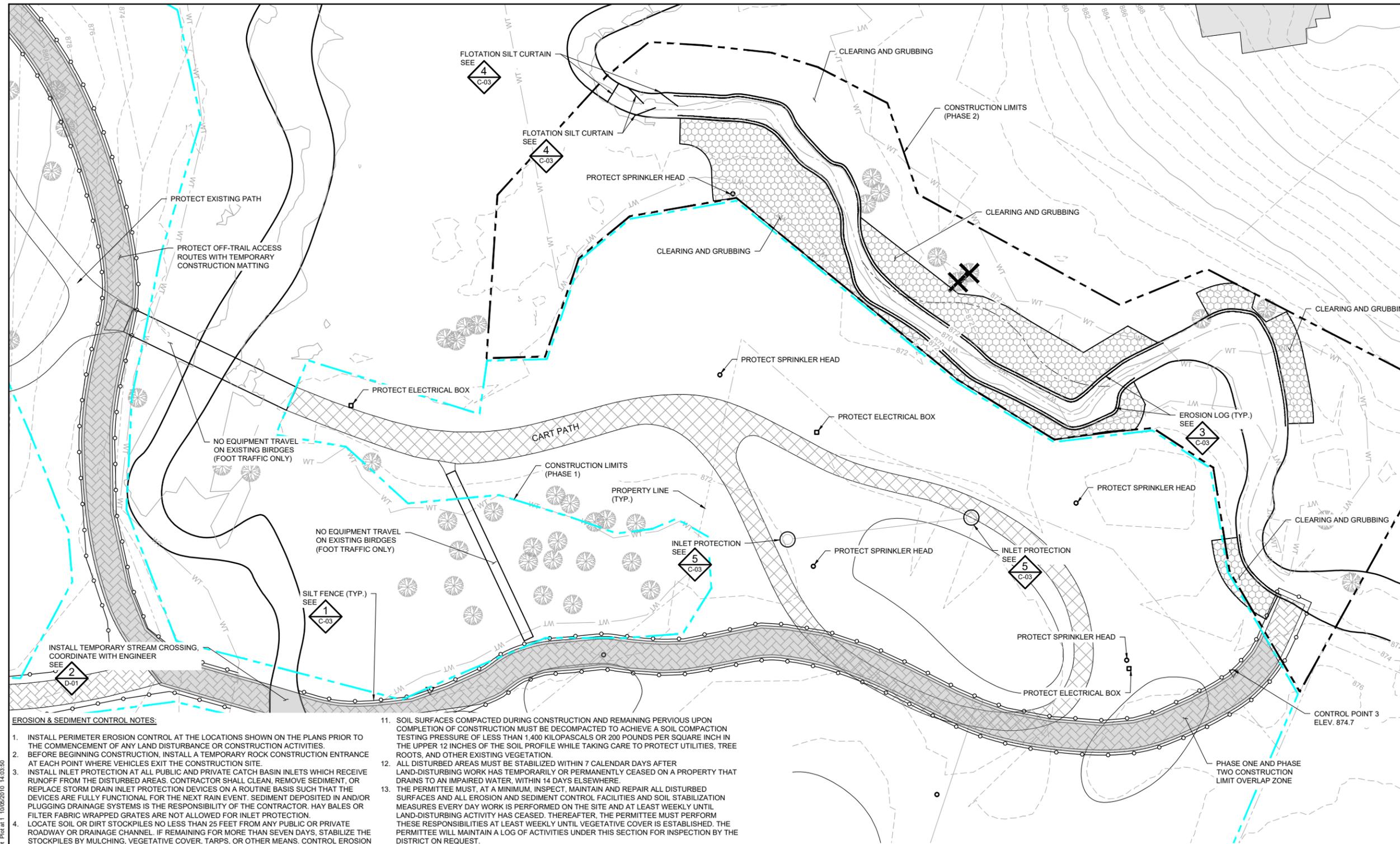
**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
 EDEN PRAIRIE, MN

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

EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN  
 SOUTH

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION\23270053\_1\_C-01\_EROSION CONTROL PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 9:44 AM



SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WETLAND DELINEATION
	CONSTRUCTION LIMITS (PHASE 2)
	CONSTRUCTION LIMITS (PHASE 1)
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS ROUTE
	TEMPORARY CREEK CROSSING
	CLEARING AND GRUBBING AREA
	REMOVE AND SALVAGE TREE
	PROTECT EXISTING TREE

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- 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 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.

1 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL



NOTE: PHASE ONE CONTRACTOR WILL PLACE TEMPORARY STREAM CROSSING. PHASE TWO CONTRACTOR WILL REMOVE CROSSING AT END OF PROJECT OR INCORPORATE AS RILEY INTO STREAM, AS DIRECTED IN FIELD BY ENGINEER.

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION

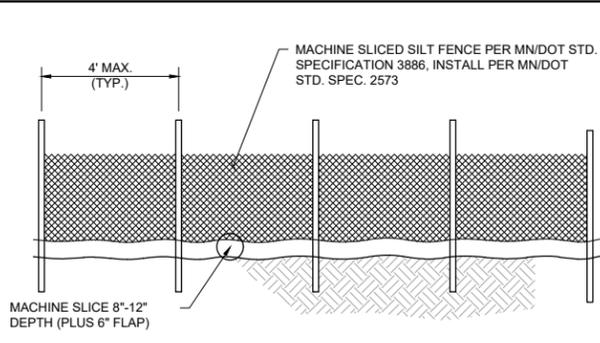
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
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A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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	07/15/20	08/06/20	03/12/21				
PRINTED NAME: JESSICA OLSON		CONSTRUCTION							
SIGNATURE: _____		PERMITTING							
DATE: 05/07/2021 LICENSE # 43102		RELEASED TO/FOR	A	B	C	D	0	1	2
		DATE RELEASED							

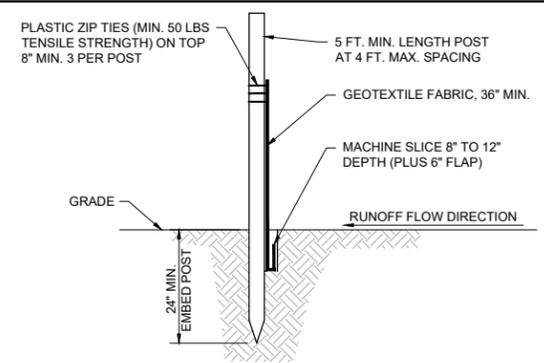
**BARR**  
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Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

MIDDLE RILEY CREEK STABILIZATION (PHASE 1 & 2)		BARR PROJECT No. 23/27-0053.14	
EDEN PRAIRIE, MN		CLIENT PROJECT No.	
EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN		DWG. No. C-02	REV. No. C
CHANHASSEN, MN			



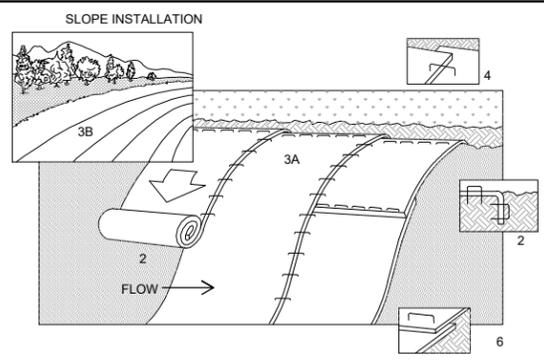
**DOWNSTREAM VIEW**



**SECTION VIEW**

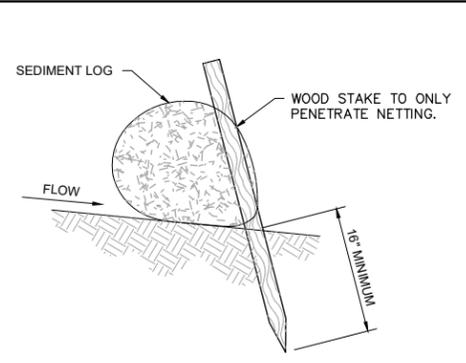
- NOTES:**
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. SILT FENCE AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
  - SILT FENCE INSTALLATION AND MATERIALS SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATIONS 2573 AND 3886.
  - NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SILT FENCE. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
  - WHEN SEDIMENT BUILD UP REACHES 1/3 OF FENCE HEIGHT, THE SILT FENCE SHOULD BE REMOVED OR A SECOND SILT FENCE INSTALLED UPSTREAM OF THE EXISTING FENCE AT A SUITABLE DISTANCE.
  - WHEN SPLICES ARE NECESSARY MAKE SPlice AT POST ACCORDING TO SPlice DETAIL. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS TOGETHER AT LEAST 180 DEGREES TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL. CUT THE FABRIC NEAR THE BOTTOM OF THE POSTS TO ACCOMMODATE THE 6 INCH FLAP. THEN DRIVE BOTH POSTS AND BURY THE FLAP. COMPACT BACKFILL.

**1** DETAIL: SILT FENCE - MACHINE SLICED  
NOT TO SCALE

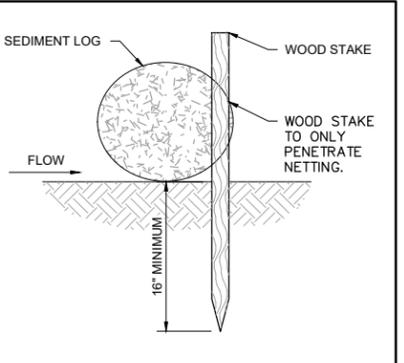


- NOTES:**
- REFER TO MANUFACTURER RECOMMENDATIONS FOR STAPLE PATTERNS FOR SLOPE INSTALLATIONS.
  - PREPARE SOIL BY LOOSENING TOP 1-2 INCHES AND APPLY SEED (AND FERTILIZER WHERE REQUIRED) PRIOR TO INSTALLING BLANKETS. GROUND SHOULD BE SMOOTH AND FREE OF DEBRIS.
  - BEGIN (A) AT THE TOP OF THE SLOPE AND ROLL THE BLANKETS DOWN OR (B) AT ONE END OF THE SLOPE AND ROLL THE BLANKETS HORIZONTALLY ACROSS THE SLOPE.
  - THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP, WITH THE UPHILL BLANKET ON TOP.
  - WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
  - BLANKET MATERIALS SHALL BE AS SPECIFIED OR AS APPROVED BY ENGINEER.

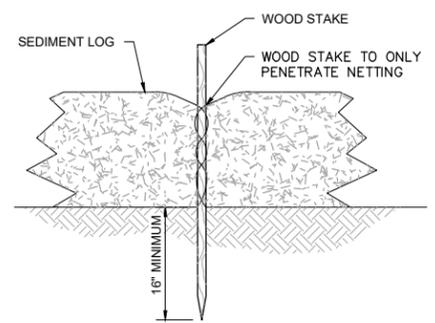
**2** DETAIL: EROSION CONTROL BLANKET - INSTALLATION  
NOT TO SCALE



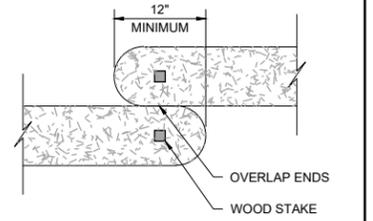
**SIDE VIEW ON SLOPE**



**SIDE VIEW FLAT**



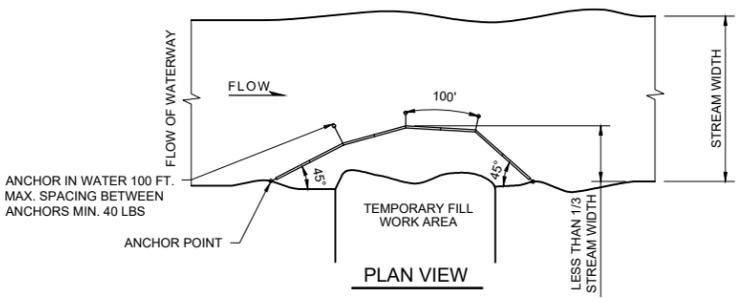
**FRONT VIEW**



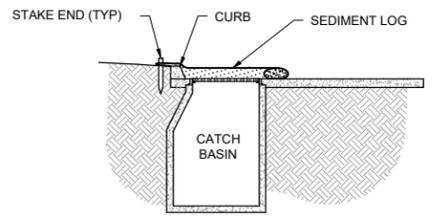
**TOP VIEW**

- NOTES:**
- INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION).
  - NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
  - REMOVE ACCUMULATED SEDIMENT WHEN REACHING 1/3 OF LOG HEIGHT.
  - MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACED AS REQUIRED.

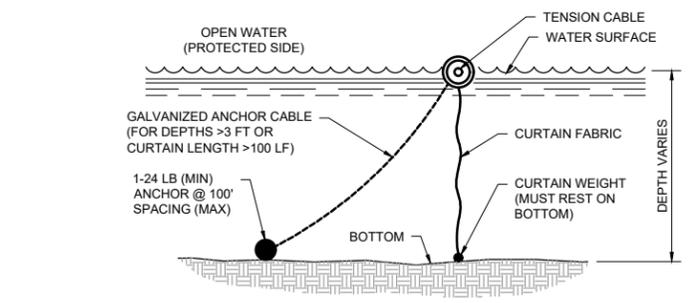
**3** DETAIL: EROSION LOG - STAKING  
NOT TO SCALE



**PLAN VIEW**



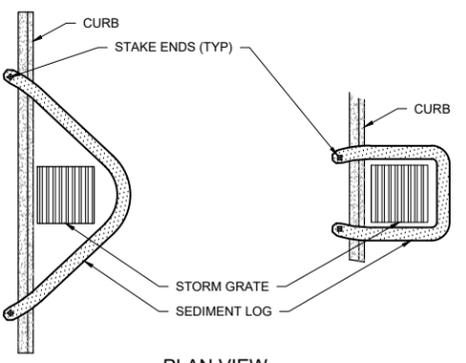
**SECTION VIEW**



**SECTION**

- NOTES:**
- INSTALL SILT CURTAIN PRIOR TO ANY CONSTRUCTION ACTIVITIES IN AREAS DRAINING TO OPEN WATER OR WORK IN WATER.
  - ANCHOR TENSION CABLE AT SHORE AT BOTH END WITH STEEL POSTS OF DIAMETER AND LENGTH SUFFICIENT TO PREVENT BENDING AND PULL-OUT.
  - ELIMINATE ANCHOR AND CABLE FOR WATER DEPTHS LESS THAN 3'-0" OR DISTANCE BETWEEN SHORE ANCHORS FOR TENSION CABLE OF LESS THAN 100'
  - CURTAIN WEIGHT SHALL BE HEAVY ENOUGH TO HOLD CURTAIN VERTICAL IN CURRENT AND WAVES TYPICAL FOR THE SITE.
  - SILT CURTAIN MATERIALS SHALL CONFORM TO MN/DOT SPECIFICATION 3887.
  - MAINTAIN SILT CURTAIN AND REPAIR OR REPLACE AS REQUIRED TO PREVENT DISCHARGE OF SEDIMENT TO PROTECTED WATER BODY.
  - REMOVE ANY ACCUMULATED SEDIMENT PRIOR TO REMOVAL OF SILT CURTAIN.
  - REMOVE SILT CURTAIN FOLLOWING SITE STABILIZATION OR AS DIRECTED BY ENGINEER.

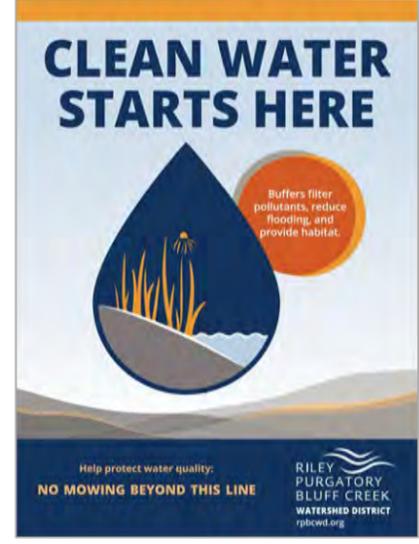
**4** DETAIL: FLOTATION SILT CURTAIN  
NOT TO SCALE



**PLAN VIEW**

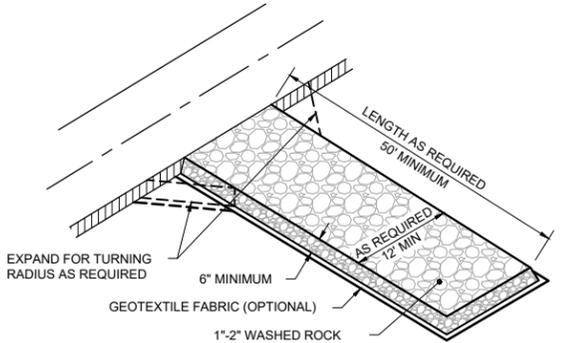
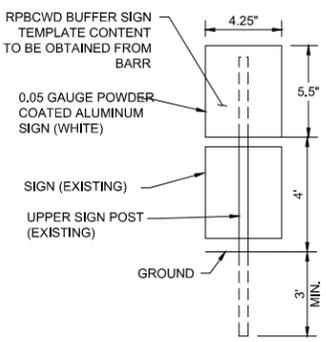
- NOTES:**
- INLET PROTECTION SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED OR IMMEDIATELY FOLLOWING CATCHBASIN INSTALLATION, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
  - MATERIALS SHALL BE SUFFICIENT TO ALLOW FLOW WHILE BLOCKING SEDIMENT. NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SEDIMENT LOG.
  - INLET PROTECTION SHALL BE CLEANED AS REQUIRED.
  - MATERIALS AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.

**5** DETAIL: INLET PROTECTION - SEDIMENT LOG  
NOT TO SCALE



- NOTES:**
- SIGNS TO BE INSTALLED AT LOCATIONS IN TABLE ON SHEET G-02.
  - SIGNS TO BE ADDED TO EXISTING POSTS. RELOCATE EXISTING SIGN ON POSTS AS NECESSARY TO FIT BOTH SIGNS.
  - CONTRACTOR TO OBTAIN SIGN DESIGN FROM ENGINEER PRIOR TO MAKING SIGNS.
  - LOCATIONS WITHOUT EXISTING SIGN/POST TO USE SURVEY MARKER (FLUSH WITH GROUND), SEE EXAMPLE. SURVEY MARKER CAP TO BE INSTALLED ON 3" STEEL REBAR (1/2" DIA.) DRIVEN INTO GROUND.
  - BOLTS SHALL BE TAMPER PROOF.
  - POSTS SHALL BE PAINTED GREEN, 3 LB/FT

**6** DETAIL: BUFFER SIGN INSTALLATION  
NOT TO SCALE



- NOTES:**
- MAINTAIN ENTRANCE THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACE AS REQUIRED TO PREVENT TRACKING OFFSITE.
  - REMOVE ENTRANCE IN CONJUNCTION WITH FINAL GRADING AND SITE STABILIZATION.

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY STREAM\23270053\_14\_C-03\_EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/26/2021 3:48 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
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PRINTED NAME: JESSICA OLSON  
SIGNATURE: \_\_\_\_\_  
DATE: 05/07/2021 LICENSE # 43102

CLIENT BID	07/15/20	08/06/20	05/07/21			
CONSTRUCTION						
PERMITTING			03/12/21			
RELEASED TO/FOR	A	B	C	D	0	1 2
DATE RELEASED						

**BARR**  
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Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com

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

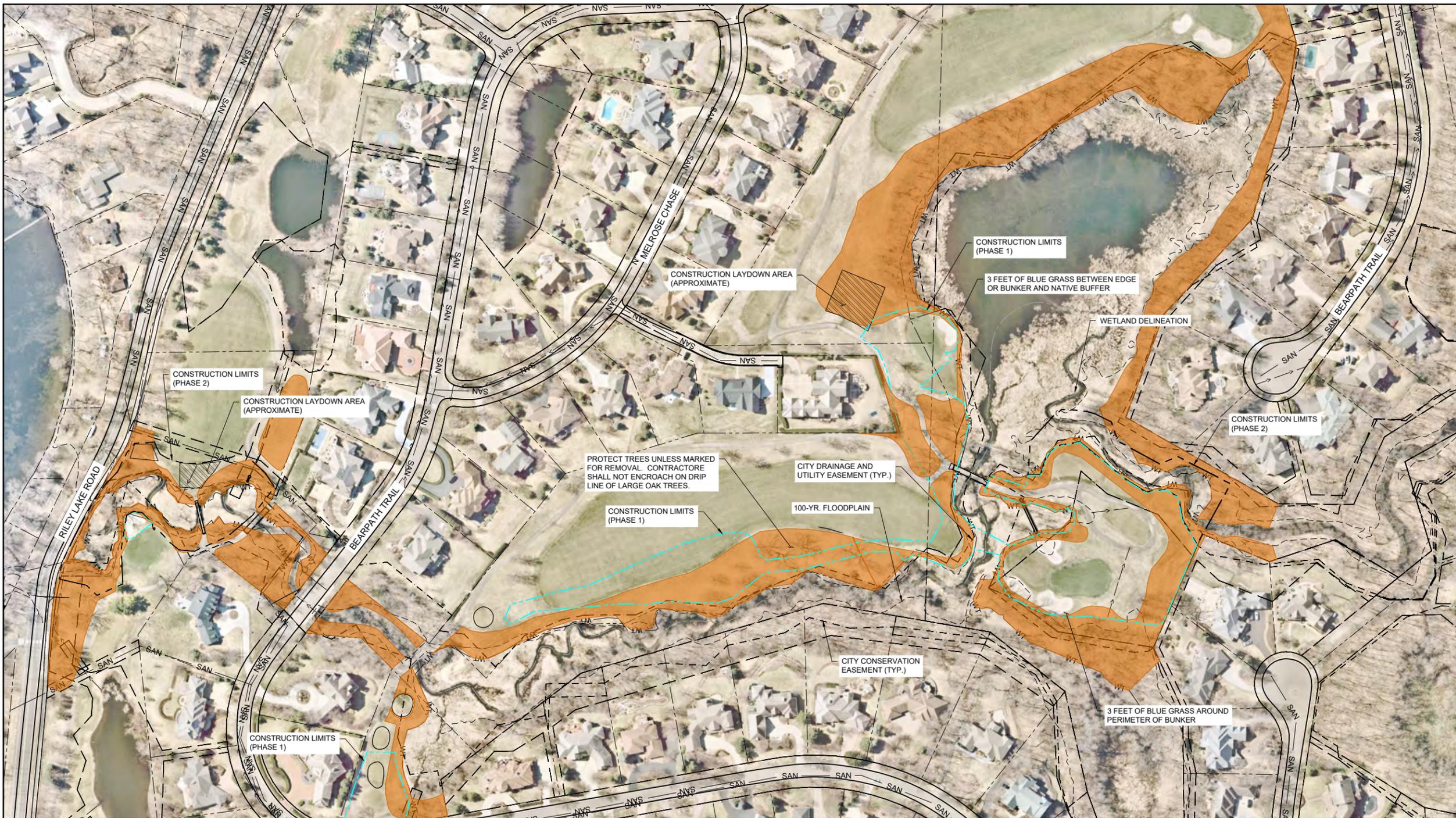
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Date: 05/07/2021  
Drawn: EPF  
Checked: SAB2  
Designed: BARR  
Approved: JCO

MIDDLE RILEY CREEK STABILIZATION (PHASE 2)  
EDEN PRAIRIE, MN  
EROSION CONTROL DETAILS

100% DESIGN  
NOT FOR CONSTRUCTION

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY CREEK STABILIZATION\23270053\_14\_C-04\_EASEMENTS - FULL SITEDWG.PLOT SCALE: 1:2 PLOT DATE: 4/30/2021 11:02 AM  
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SYMBOL AND PATTERN LEGEND	
	CONSTRUCTION LIMITS (PHASE 2)
	CONSTRUCTION LIMITS (PHASE 1)
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WETLAND DELINEATION
	EXISTING 100-YR FLOODPLAIN
	CITY CONSERVATION EASEMENT
	CITY DRAINAGE AND UTILITY EASEMENT
	PROPOSED BUFFER

- NOTES:**
- 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. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH 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).
  - CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND STAKED IN THE FIELD. CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS AND ACCESS ROUTES UNLESS DIRECTED BY ENGINEER.
  - TREES TO BE CLEARED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL TREES >= 8" DIAMETER NOT MARKED FOR REMOVAL SHALL BE PROTECTED.
  - TREES IDENTIFIED BY ENGINEER FOR ADDITIONAL PROTECTION AGAINST ROOT COMPACTION, DAMAGE AND DISFIGUREMENTS IN ACCORDANCE WITH MnDOT Spec. 2572. PROTECTION OF TREES NOT IDENTIFIED TO BE REMOVED SHALL BE INCIDENTAL.
  - TREE SURVEY COMPLETED 05/04/2020. "SIGNIFICANT TREES" MEET THE DEFINITION REQUIREMENTS. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE THE TRANSFER OF AQUATIC AND TERRESTRIAL INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
  - SOIL SURFACES COMPACTED DURING CONSTRUCTION MUST BE DECOMPACTED TO A SOIL COMPACTING PRESSURE OF LESS THAN 1400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 1 INCH OF SOIL.
  - SEE SHEET R-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
  - CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
    - RIPRAP TOE PROTECTION INSTALLATION
    - VRSS INSTALLATION
    - BOULDER VANE INSTALLATION

1 PLAN: EASEMENTS, FLOODPLAINS AND WETLAND BOUNDARIES - FULL SITE

0 100 200  
SCALE IN FEET

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07/15/20	08/06/20	03/12/21	A B C D O 1 2	05/07/21

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Checked	SAB2
Designed	BARR
Approved	JCO

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

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
EDEN PRAIRIE, MN

EASEMENTS, FLOODPLAINS & WETLAND BOUNDARIES  
FULL SITE

BARR PROJECT No.	23/27-00534.14
CLIENT PROJECT No.	
DWG. No.	C-04
REV. No.	D



**SYMBOL AND PATTERN LEGEND**

	CONSTRUCTION LIMITS (PHASE 2)
	CONSTRUCTION LIMITS (PHASE 1)
	EXISTING PROPERTY LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WETLAND DELINEATION
	EXISTING 100-YR FLOODPLAIN
	CITY CONSERVATION EASEMENT
	CITY DRAINAGE AND UTILITY EASEMENT
	PROPOSED BUFFER

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    - VRSS INSTALLATION
    - BOULDER VANE INSTALLATION



1	117922.4829'	465761.5527'	875.23'	VRS SPIKE 1
2	117850.1325'	465717.6763'	880.15'	VRS SPIKE 2

**GENERAL NOTE:**  
 BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT AND GOLF COURSE REQUIREMENTS.

100% DESIGN  
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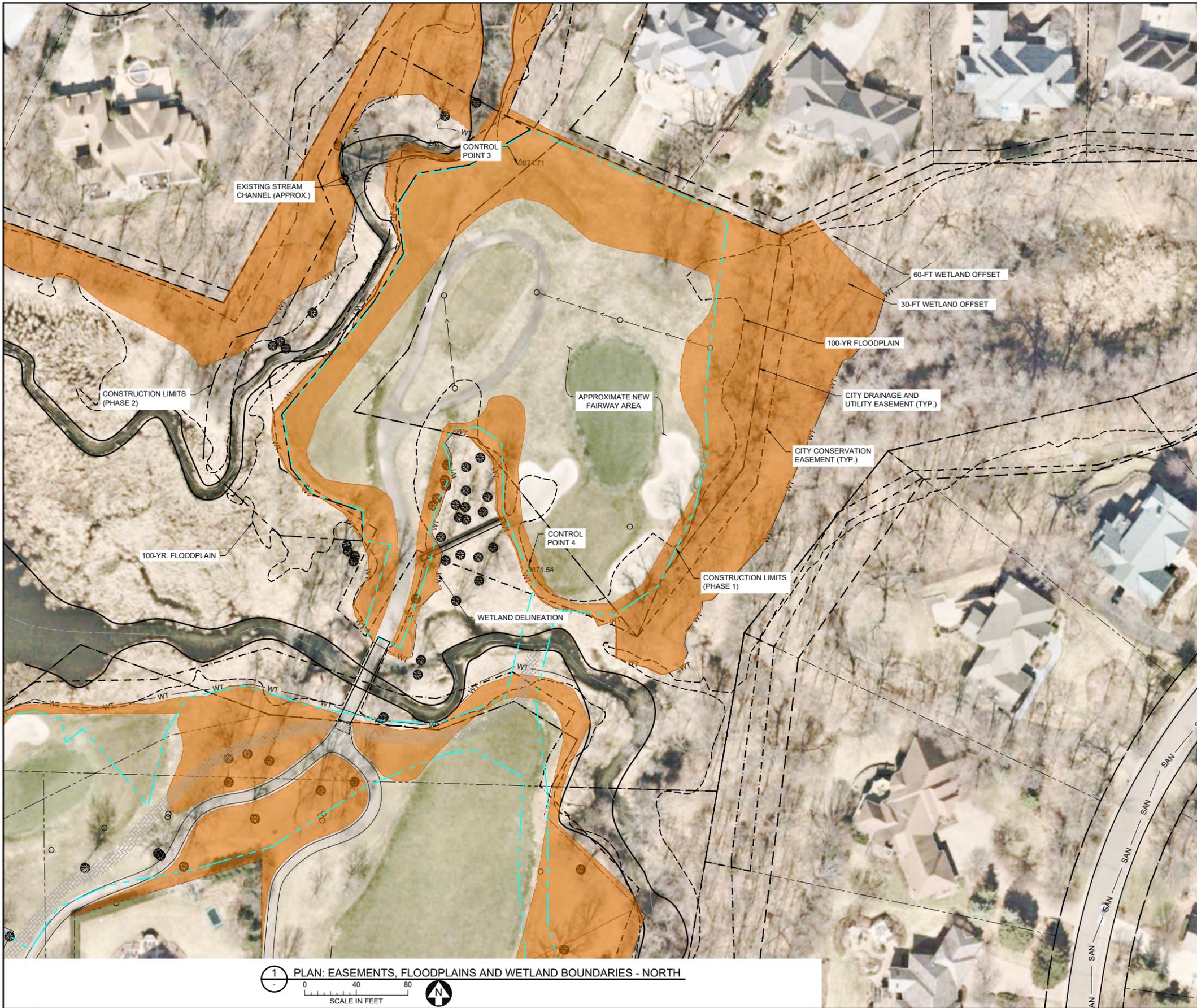
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Approved	JCO

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

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
 EDEN PRAIRIE, MN  
 EASEMENTS, FLOODPLAINS & WETLAND BOUNDARIES  
 SOUTH

BARR PROJECT No.	23/27-00534.14
CLIENT PROJECT No.	
DWG. No.	C-05
REV. No.	D

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY STREAM\23270053\_14\_C-05\_EASEMENTS - SOUTH.DWG PLOT SCALE: 1:2 PLOT DATE: 4/30/2021 11:03 AM  
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**SYMBOL AND PATTERN LEGEND**

- CONSTRUCTION LIMITS (PHASE 2)
- CONSTRUCTION LIMITS (PHASE 1)
- EXISTING PROPERTY LINE
- SAN EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- WT EXISTING WETLAND DELINEATION
- EXISTING 100-YR FLOODPLAIN
- CITY CONSERVATION EASEMENT
- CITY DRAINAGE AND UTILITY EASEMENT
- PROPOSED BUFFER

**NOTES:**

1. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
2. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
3. 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).
4. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND STAKED IN THE FIELD.
5. CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS AND ACCESS ROUTES UNLESS DIRECTED BY ENGINEER.
6. TREES TO BE CLEARED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL TREES >= 8" DIAMETER NOT MARKED FOR REMOVAL SHALL BE PROTECTED.
7. TREES IDENTIFIED BY ENGINEER FOR ADDITIONAL PROTECTION AGAINST ROOT COMPACTION, DAMAGE AND DISFIGUREMENTS IN ACCORDANCE WITH MnDOT Spec. 2572. PROTECTION OF TREES NOT IDENTIFIED TO BE REMOVED SHALL BE INCIDENTAL.
8. TREE SURVEY COMPLETED 05/04/2020. "SIGNIFICANT TREES" MEET THE DEFINITION REQUIREMENTS.
9. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE THE TRANSFER OF AQUATIC AND TERRESTRIAL INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
10. SOIL SURFACES COMPACTED DURING CONSTRUCTION MUST BE DECOMPACTED TO A SOIL COMPACTING PRESSURE OF LESS THAN 1400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 1 INCH OF SOIL.
11. SEE SHEET R-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
12. CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
  - RIPRAP TOE PROTECTION INSTALLATION
  - VRSS INSTALLATION
  - BOULDER VANE INSTALLATION

CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	119806.1150'	465879.4807'	874.71'	VRS SPIKE 3
4	119491.9292'	465886.5323'	871.54'	VRS SPIKE 4

**GENERAL NOTE:**

BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT AND GOLF COURSE REQUIREMENTS.

**1 PLAN: EASEMENTS, FLOODPLAINS AND WETLAND BOUNDARIES - NORTH**

0 40 80  
SCALE IN FEET

100% DESIGN  
NOT FOR CONSTRUCTION

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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: 05/07/2021 LICENSE # 43102

CLIENT	BID	PERMITTING	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.	07/15/20	03/08/20	A B C D O 1 2	05/07/21

**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	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

**RILEY PURGATRY BLUFF CREEK WD**  
CHANHASSEN, MN

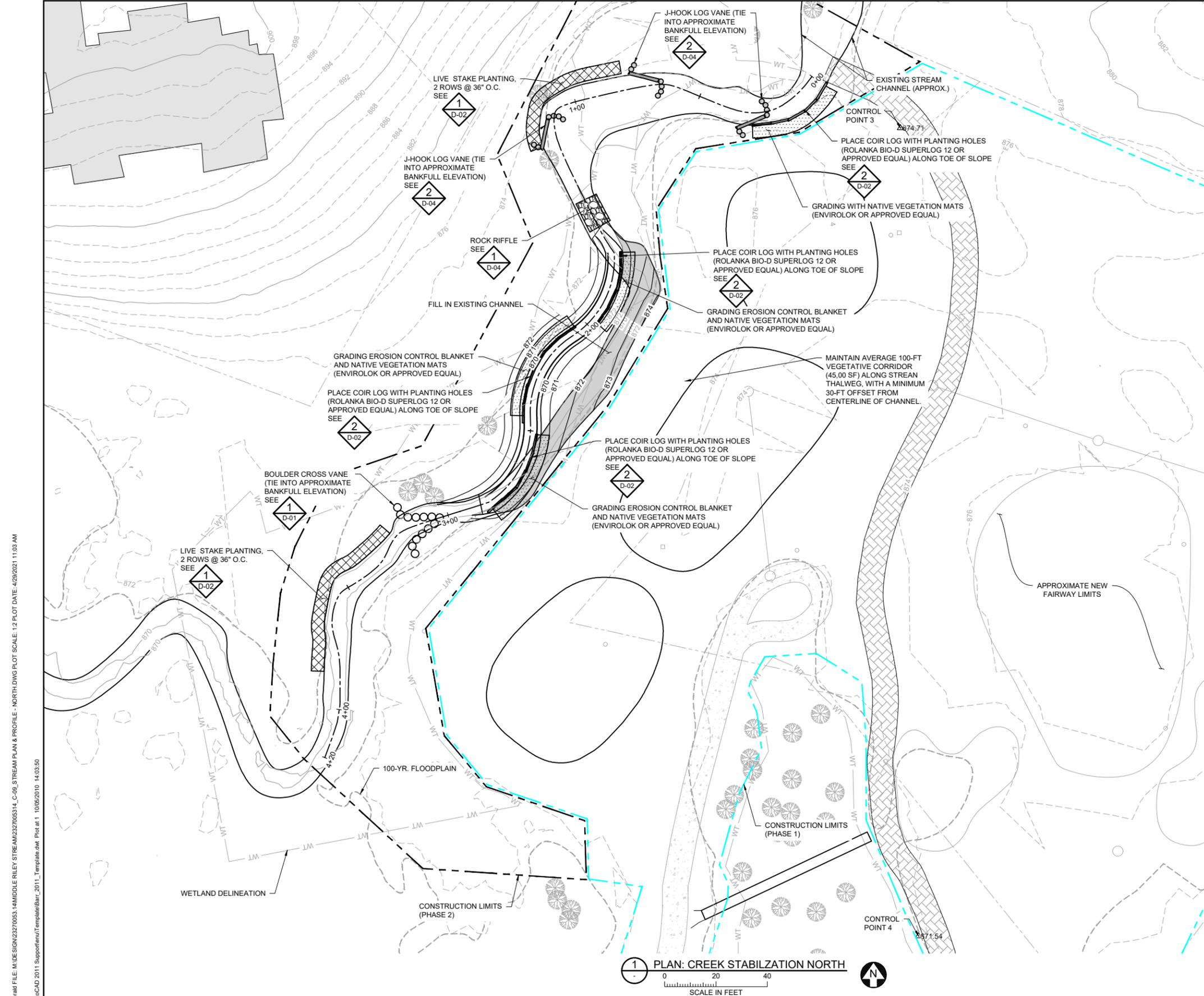
**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
EDEN PRAIRIE, MN  
EASEMENTS, FLOODPLAINS & WETLAND BOUNDARIES  
NORTH

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION\PHASE 2\C-06\_EASEMENTS - NORTH.DWG PLOT SCALE: 1:2 PLOT DATE: 4/30/2021 11:00 AM  
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**SYMBOL AND PATTERN LEGEND**

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING STREAM THALWEG (APPROX.)
	EXISTING 100-YR FLOODPLAIN
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	ROCK RIFFLE
	LIVE STAKES
	VRSS
	FILL EXISTING CREEK
	SEEDING AREA WITH MIX A
	BOULDER CROSS VANE
	GRADING WITH EROSION CONTROL BLANKET AND NATIVE VEGETATION MATS
	J-HOOK LOG VANE

- NOTES:**
- 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. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
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  - CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE THE TRANSFER OF AQUATIC AND TERRESTRIAL INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
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  - SEE SHEET R-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
  - CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
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    - BOULDER VANE INSTALLATION

CONTROL POINTS				
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3	119806.1150'	465879.4807'	874.71'	VRS SPIKE 3
4	119491.9292'	465886.5323'	871.54'	VRS SPIKE 4

**1 PLAN: CREEK STABILIZATION NORTH**  
 SCALE IN FEET  
 0 20 40

100% DESIGN  
 NOT FOR CONSTRUCTION

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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
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C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
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PRINTED NAME: JESSICA OLSON  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	03/07/21						
BID									
CONSTRUCTION									
PERMITTING									
RELEASED TO/FOR	A	B	C	D	0	1	2		
DATE RELEASED									

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

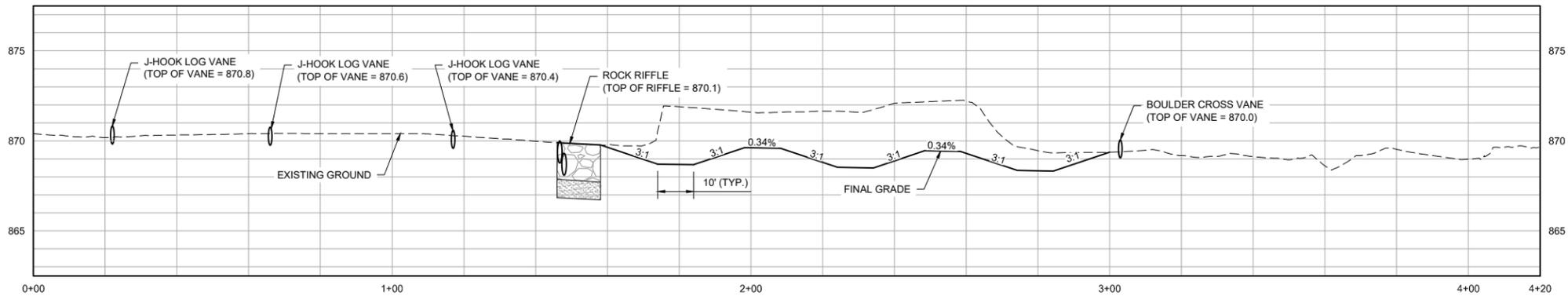
Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

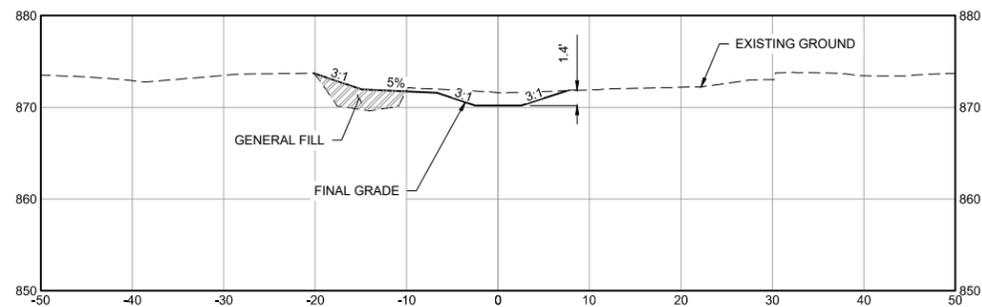
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
 EDEN PRAIRIE, MN  
 STREAM STABILIZATION NORTH  
 PLAN

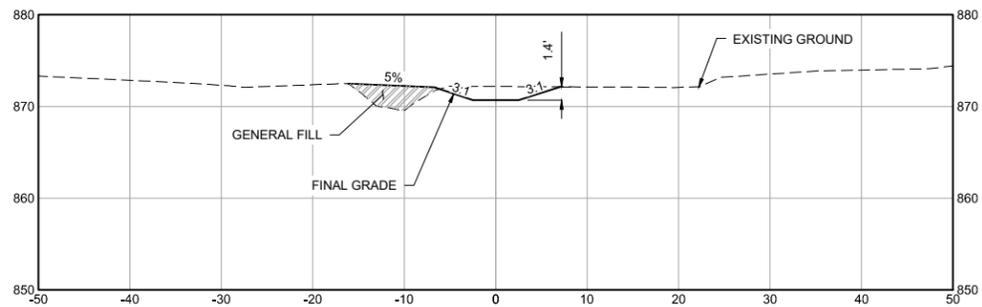
BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. C-09	REV. No. D



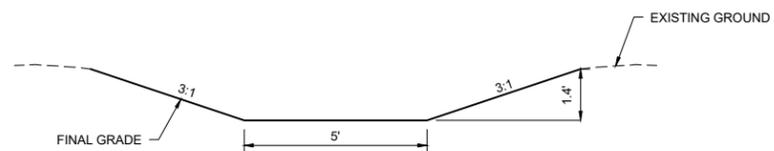
1 PROFILE: CREEK STABILIZATION NORTH  
 HORIZONTAL SCALE IN FEET: 0, 20, 40  
 VERTICAL SCALE IN FEET: 0, 4, 8



2 SECTION: CREEK STABILIZATION NORTH (STA. 2+00) LOOKING DOWNSTREAM  
 SCALE IN FEET: 0, 10, 20



3 SECTION: CREEK STABILIZATION NORTH (STA. 2+50) LOOKING DOWNSTREAM  
 SCALE IN FEET: 0, 10, 20



4 SECTION: TYPICAL RIFFLE SECTION  
 NOT TO SCALE

100% DESIGN  
 NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY STREAM\AM2327005314\_C-09\_STREAM PLAN & PROFILE - NORTH.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 11:01 AM  
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RELEASED TO/FOR	DATE RELEASED

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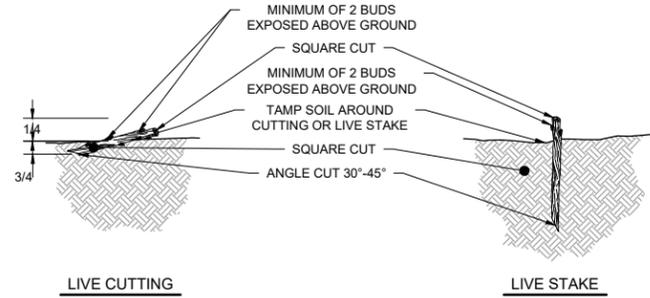
Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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

MIDDLE RILEY CREEK STABILIZATION (PHASE 2)  
 EDEN PRAIRIE, MN  
 STREAM STABILIZATION NORTH  
 PROFILE AND SECTIONS

BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. C-10	REV. No. D

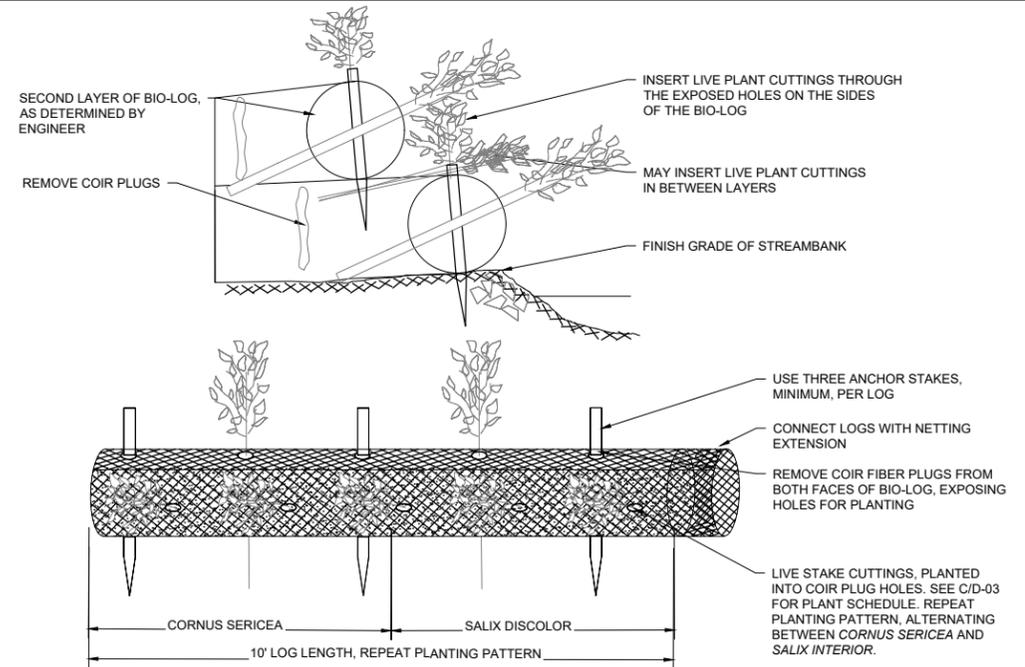




**GENERAL NOTES:**

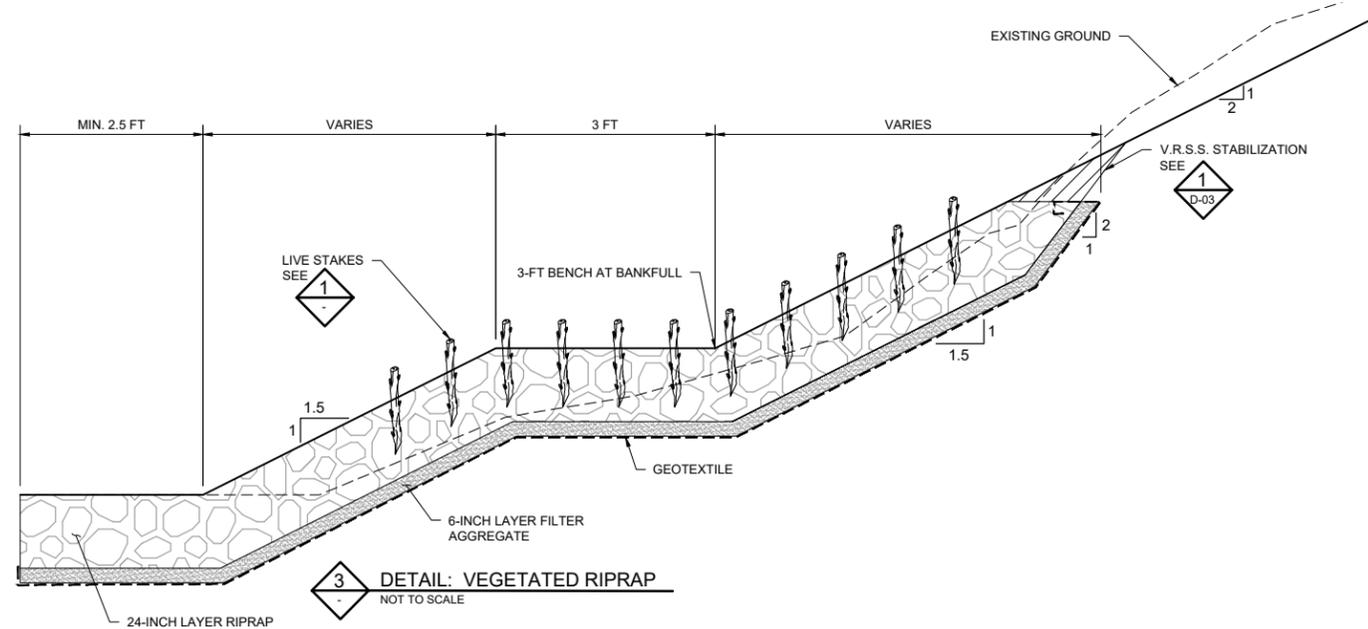
1. LIVE STAKE OR CUTTING PLANTED PERPENDICULAR TO GROUND SURFACE.
2. SEE SHEET D-03 FOR PLANT MATERIAL LIST FOR SPECIES LENGTH AND SPACING.
3. LIVE STAKES SHALL BE 3/4" DIAMETER MINIMUM. LIVE CUTTINGS SHALL BE 3/4" DIAMETER MINIMUM.

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



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

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



**3** DETAIL: VEGETATED RIPRAP  
NOT TO SCALE

100% DESIGN  
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CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY CREEK STABILIZATION\DWG\14\_D-01\_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 12:38 PM  
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
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PRINTED NAME: JESSICA OLSON  
SIGNATURE: \_\_\_\_\_  
DATE: 05/07/2021 LICENSE #: 43102

CLIENT	07/15/20	08/06/20	05/07/21			
BID						
CONSTRUCTION						
PERMITTING			03/12/21			
RELEASED TO/FOR	A	B	C	D	0	1 2
DATE RELEASED						

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

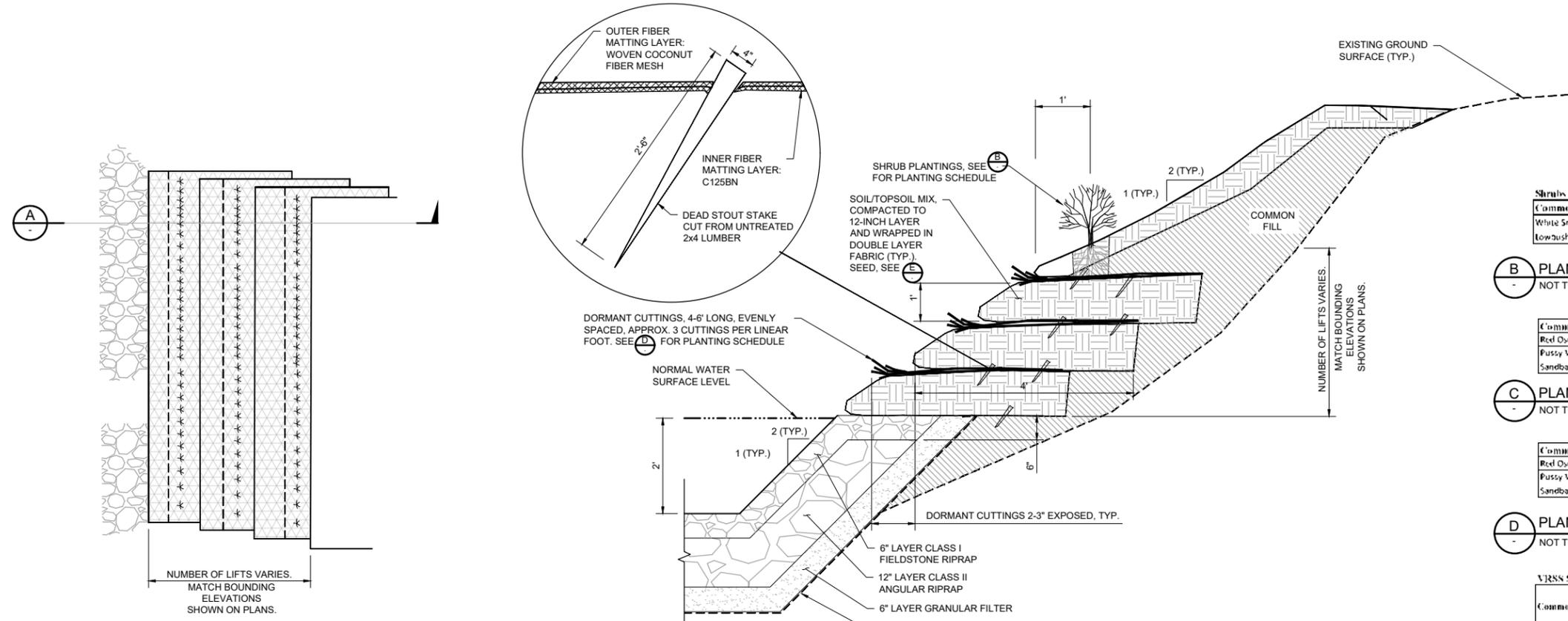
Corporate Headquarters:  
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Scale	AS SHOWN
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Checked	SAB2
Designed	BARR
Approved	JCO

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

MIDDLE RILEY CREEK STABILIZATION (PHASE 2)  
EDEN PRAIRIE, MN  
STABILIZATION DETAILS

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	D-02
REV. No.	D



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

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

**Shrubs**

Common Name	Scientific Name	Quantity	Spacing	Size
White Snowberry	<i>Symphoricarpos albus</i>	25	4' O.C.	#2 Pot
Lowash Honeysuckle	<i>Dierwilla lonicera</i>	4	4' O.C.	#2 Pot

**B PLANT SCHEDULE: SHRUBS**  
NOT TO SCALE

Common Name	Scientific Name	Quantity	Spacing
Red Osier Dogwood	<i>Cornus sericea</i>	219	Pe-P an
Pussy Willow	<i>Salix discolor</i>	218	Pe-P an
Sandbar Willow	<i>Salix interior</i>	58	Pe-P an

**C PLANT SCHEDULE: LIVE STAKES**  
NOT TO SCALE

Common Name	Scientific Name	Quantity	Spacing
Red Osier Dogwood	<i>Cornus sericea</i>	792	Pe-P an
Pussy Willow	<i>Salix discolor</i>	396	Pe-P an
Sandbar Willow	<i>Salix interior</i>	396	Pe-P an

**D PLANT SCHEDULE: DORMANT CUTTINGS (4-6')**  
NOT TO SCALE

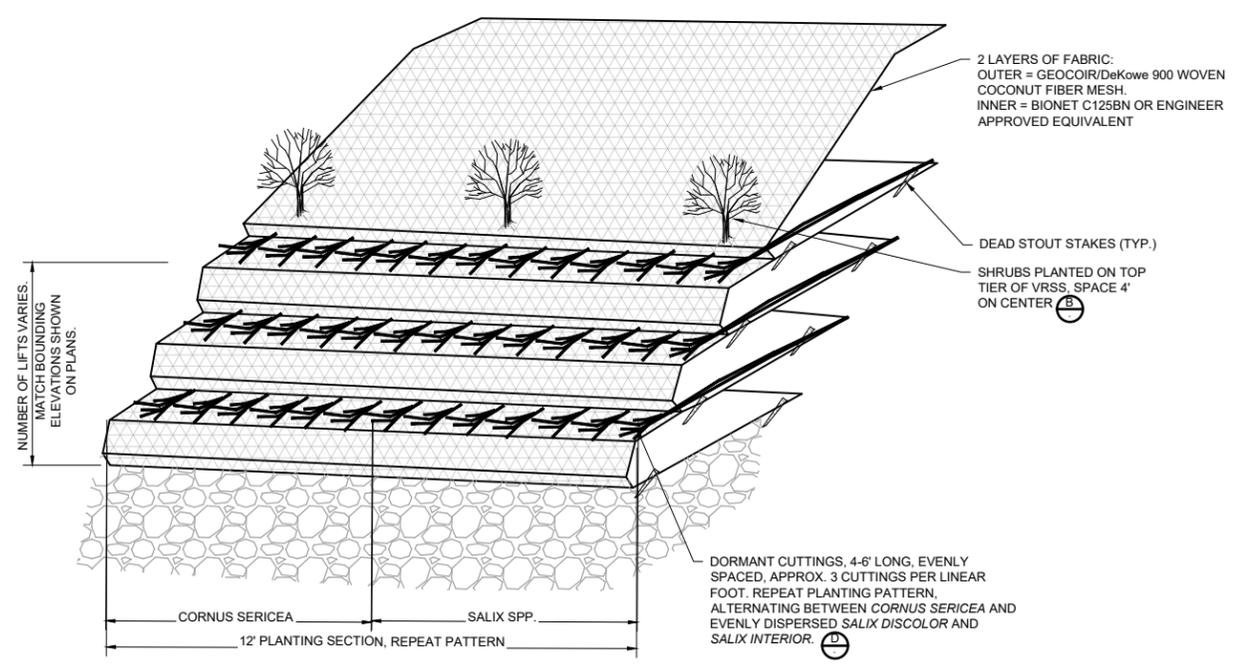
**VRSS Seed Mix**

Common Name	Scientific Name	PLS Rate (lbs/ac)	% of Mix (by weight)
Canada Anemone	<i>Anemone canadensis</i>	0.50	1.9%
Canada Blue Joint Grass	<i>Calamagrostis canadensis</i>	4.00	15.5%
Riverbank Wild Rye	<i>Elymus riparius</i>	4.50	17.4%
Fowl Manna Grass	<i>Glyceria striata</i>	6.00	23.3%
Rice Cut Grass	<i>Leersia oryzoides</i>	4.00	15.5%
Fowl Bluegrass	<i>Poa polystris</i>	5.50	21.3%
Wool Grass	<i>Scirpus cyperinus</i>	0.30	1.2%
Prairie Cordgrass	<i>Spartina pectinata</i>	1.00	3.9%
<b>Total</b>		<b>25.80</b>	<b>100%</b>

**E PLANT SCHEDULE: VRSS SEED MIX**  
NOT TO SCALE

**NOTES:**

- THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO ROOT WAD INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
- 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.
- INSTALL RIPRAP AND GRANULAR FILTER AGGREGATE AS SPECIFIED IN SECTION 02375 AND AS SHOWN ON THE DRAWINGS.
- 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.
- 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.
- 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-MATTM 90, OR AN ENGINEER APPROVED EQUIVALENT.
- 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.
- 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.
- 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.
- 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.

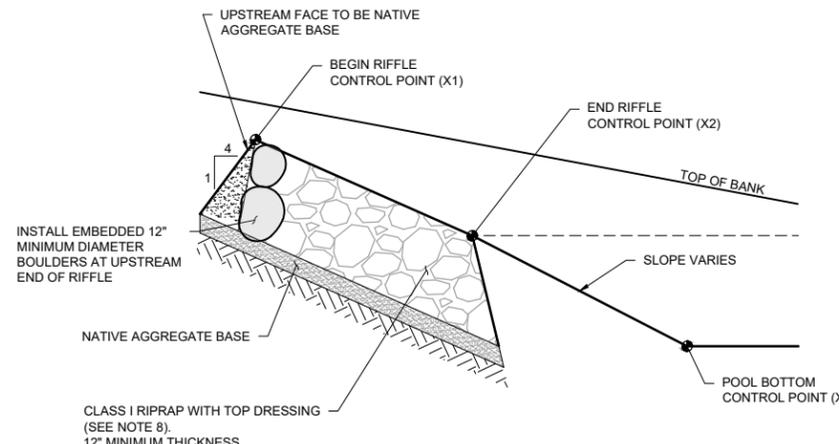


**2 DETAIL: LIVE PLANT VEGETATED REINFORCED SOIL SLOPE (V.R.S.S.)**  
NOT TO SCALE

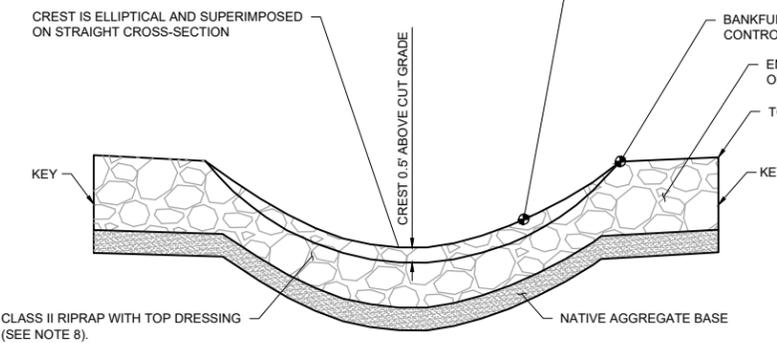
100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION PHASE 14\_D-01\_DETAILS.DWG PLOT SCALE: 1:12 PLOT DATE: 4/29/2021 12:38 PM

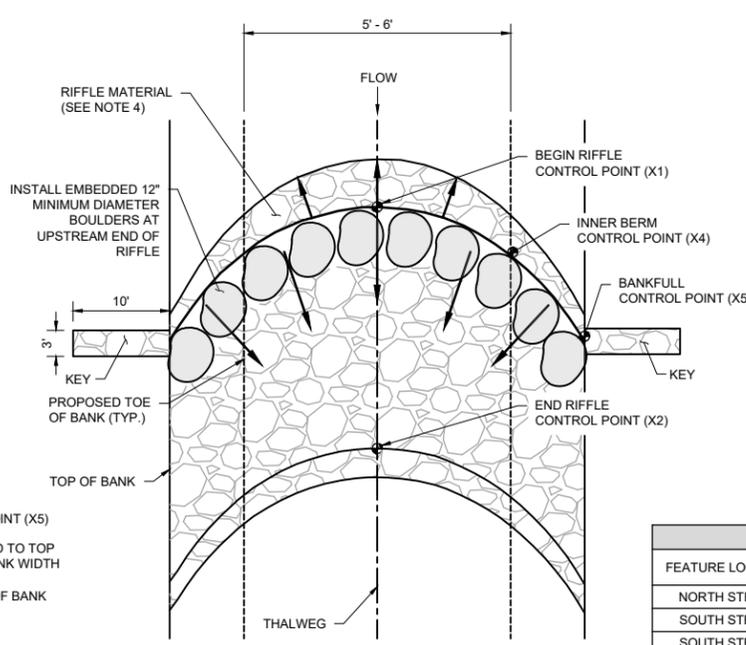
		I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION PERMITTING		07/15/20 08/06/20 05/07/21		<b>BARR</b> Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435		Scale Date Drawn Checked Designed Approved		<b>RILEY PURGATORY BLUFF CREEK WD</b> CHANHASSEN, MN		<b>MIDDLE RILEY CREEK STABILIZATION (PHASE 2)</b> EDEN PRAIRIE, MN		BARR PROJECT No. 23/27-0053.14	
		PRINTED NAME: JESSICA OLSON						<b>Corporate Headquarters:</b> Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				<b>STABILIZATION DETAILS</b>		CLIENT PROJECT No.		REV. No.	
NO. BY CHK. APP. DATE		REVISION DESCRIPTION		RELEASED TO/FOR		DATE RELEASED								DWG. No. D-03		D	



**RIFFLE PROFILE**



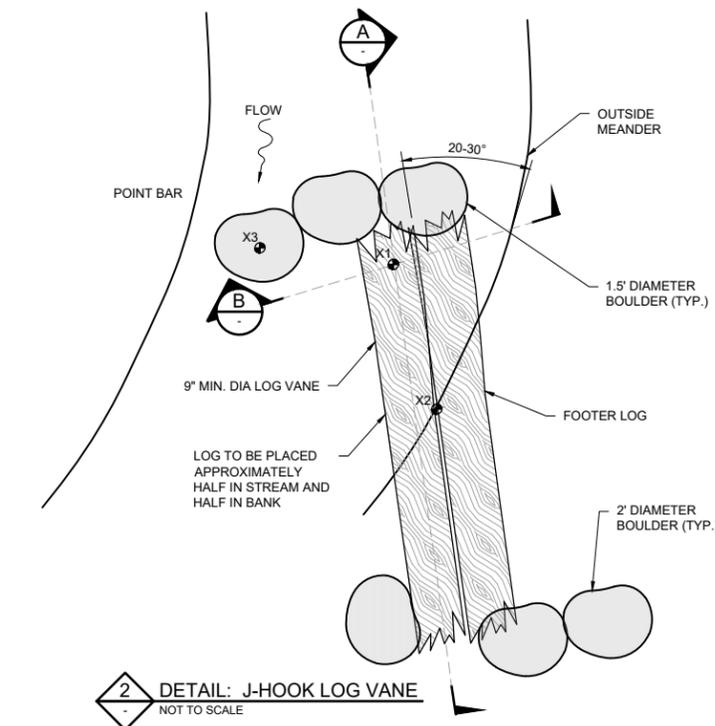
**RIFFLE CROSS SECTION**



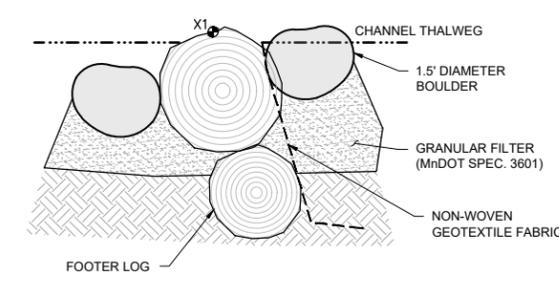
**1** **DETAIL: ROCK RIFFLE**  
NOT TO SCALE

- 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.
  - RIFFLE MATERIAL SHALL BE CLASS I RIPRAP FROM THE SITE AND/OR IMPORTED, INSTALLED WITH A MINIMUM THICKNESS OF 15\".
  - THE FACE OF THE RIFFLE UPSTREAM OF THE BEGIN RIFFLE CONTROL POINT SHALL BE NATIVE AGGREGATE BASE. 12\"/>
  - 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. 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 ROCK RIFFLES TABLE FOR STATIONING AND ELEVATIONS.
  - SEE TYPICAL RIFFLE SECTION (D-04) FOR CHANNEL DIMENSIONS.
  - RIFFLE SURFACE TO BE TOP-DRESSED WITH 6\"/>

ROCK RIFFLES									
FEATURE LOCATION	X1 STATION	X1 ELEVATION	X1 BANKFULL	X2 STATION	X2 ELEVATION	X2 BANKFULL	X3 STATION	X3 ELEVATION	NOTES
NORTH STREAM	1+46	870.1		1+58					
SOUTH STREAM	2+45	865.5		2+57					
SOUTH STREAM	5+00	865.2		5+12					
SOUTH STREAM	5+62	865.0		5+74					

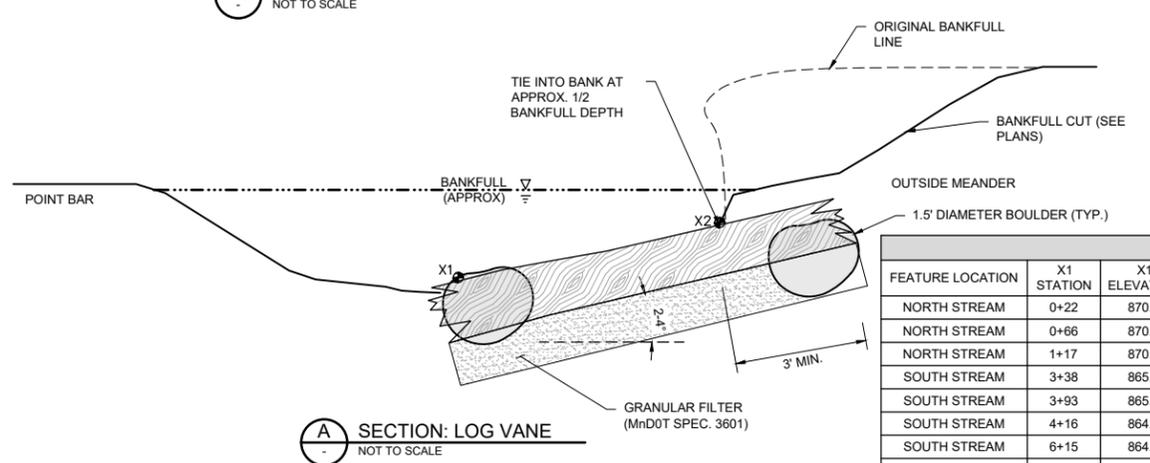


**2** **DETAIL: J-HOOK LOG VANE**  
NOT TO SCALE



**B** **SECTION: LOG VANE**  
NOT TO SCALE

- GENERAL NOTES:**
- THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO LOG VANE INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
  - TO THE EXTENT POSSIBLE, LOG VANES SHOULD BE CREATED FROM TREES THAT WILL BE REMOVED FROM THE SITES WITHIN THE PROJECT AREA.
  - 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.
  - THE LOG VANE MUST BE PLACED AT APPROXIMATELY A 20-30 DEGREE ANGLE, OR AS DIRECTED BY THE ENGINEER.
  - PLACE FOOTER LOG SLIGHTLY UPSTREAM AND UNDER MAIN LOG TO PROVIDE PROTECTION AGAINST SCOUR.
  - NON-WOVEN GEOTEXTILE FABRIC IS ATTACHED WITH ROOFING NAILS TO ENTIRE LENGTH OF LOG ON UPSTREAM SIDE AND EXTENDED OVER FOOTER LOG AND UNDER AGGREGATE BEDDING.
  - THE LOG VANE MUST BE PLACED IN THE BANK SO THAT AT LEAST 1/2 OF THE LOG VANE IS EMBEDDED INTO THE BANK.
  - LARGE BOULDERS ARE PLACED ON BOTH SIDES OF THE LOG VANE AT THE INTERFACE WITH THE BANK TO CREATE A CUT-OFF SILL.
  - LARGE BOULDERS ARE ALSO PLACED AT THE END OF THE LOG VANE IN THE CHANNEL AS DIRECTED BY THE ENGINEER.
  - PLACE GRANULAR FILTER AGGREGATE (MNDOT STANDARD SPECIFICATION 3601) AS BEDDING FOR BOULDERS IF NECESSARY.
  - MATCH EXISTING GRADE OR PLANNED GRADE AS APPROPRIATE WITH BACKFILL.
  - REVEGETATE AND STABILIZE WITH SEED AND MULCH AS SPECIFIED FOR EACH SITE AS SHOWN IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.
  - EXCAVATE SCOUR HOLE IN STREAM BED ADJACENT TO LOG VANE AS DIRECTED BY THE ENGINEER.



**A** **SECTION: LOG VANE**  
NOT TO SCALE

J-HOOK LOG VANES									
FEATURE LOCATION	X1 STATION	X1 ELEVATION	X2 STATION	X2 ELEVATION	X3 STATION	X3 ELEVATION	X4 STATION	X4 ELEVATION	NOTES
NORTH STREAM	0+22	870.8							
NORTH STREAM	0+66	870.6							
NORTH STREAM	1+17	870.6							
SOUTH STREAM	3+38	865.5							
SOUTH STREAM	3+93	865.4							
SOUTH STREAM	4+16	864.9							
SOUTH STREAM	6+15	864.9							
SOUTH STREAM	7+84	864.7							

100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK\23270053\_14\_D-01\_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 12:57 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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PRINTED NAME: JESSICA OLSON  
SIGNATURE: \_\_\_\_\_  
DATE: 05/07/2021 LICENSE #: 43102

CLIENT	BID	CONSTRUCTION	PERMITTING
07/15/20	08/06/20	05/07/21	
			03/12/21

RELEASED TO/FOR: A B C D O 1 2  
DATE RELEASED: \_\_\_\_\_

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

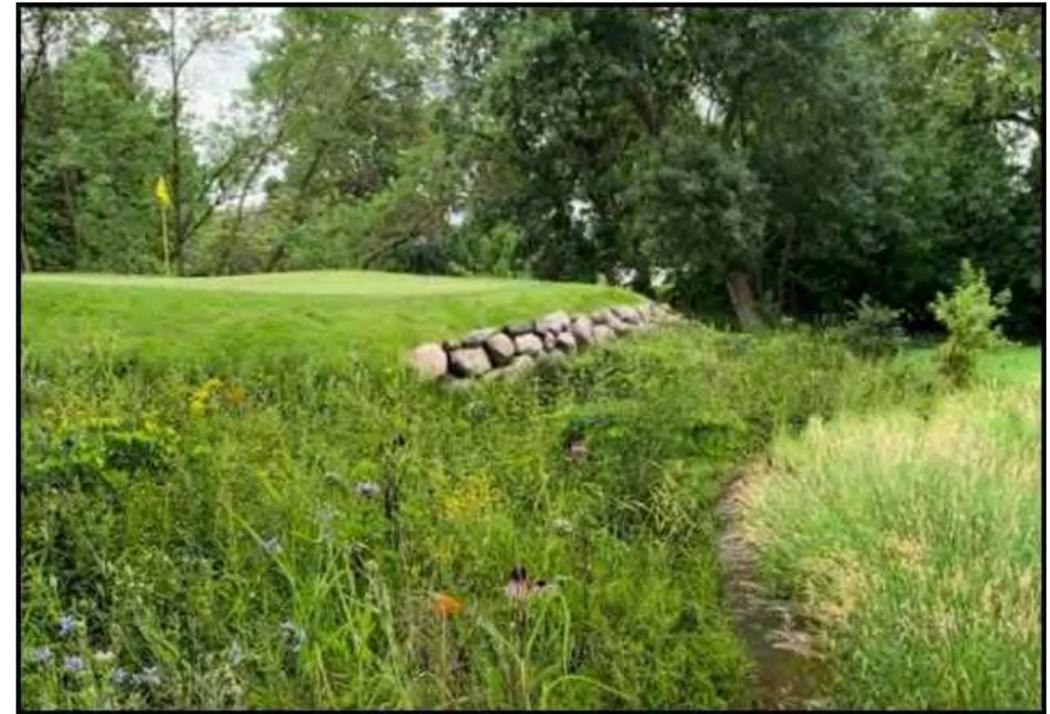
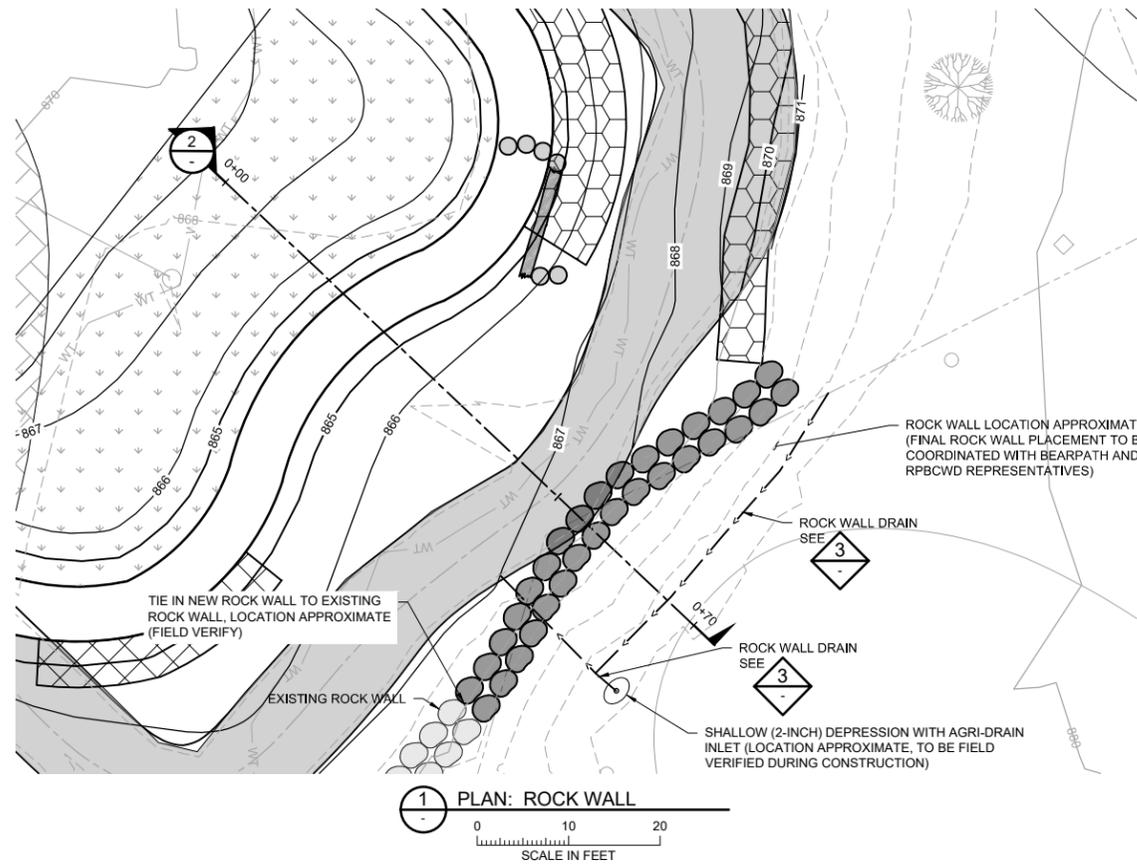
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

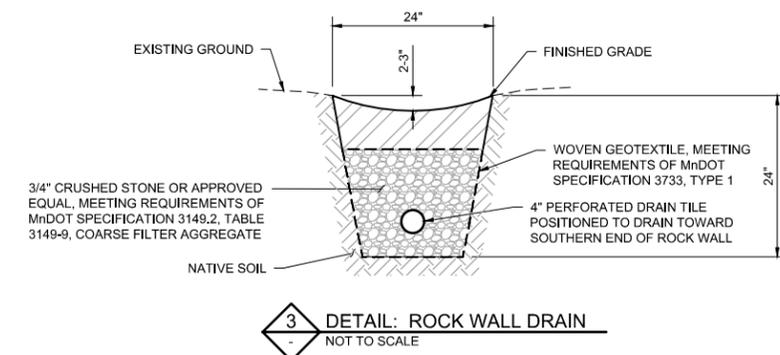
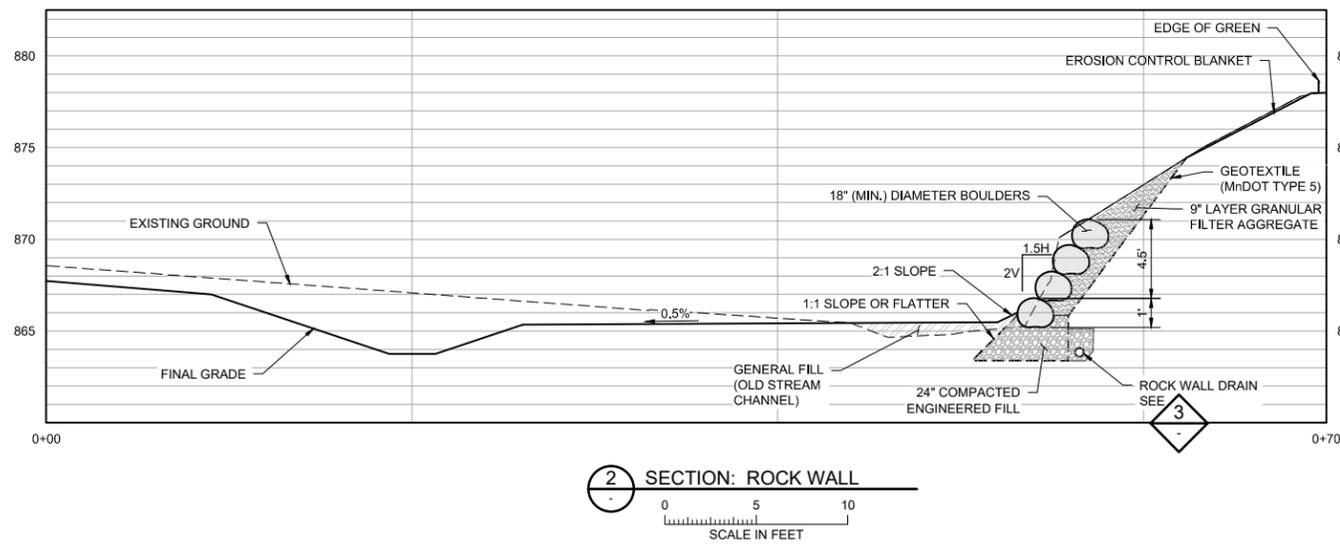
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
EDEN PRAIRIE, MN  
**STABILIZATION DETAILS**

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



ROCK WALL RENDERING



100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY CREEK STABILIZATION\STREAM PLAN & PROFILE - SOUTH DWG PLOT SCALE: 1:12 PLOT DATE: 5/2/2021 1:54 PM  
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	EPF	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
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A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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PRINTED NAME: JESSICA OLSON

SIGNATURE: \_\_\_\_\_

DATE: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	05/07/21			
BID						
CONSTRUCTION						
PERMITTING			03/12/21			
RELEASED TO/FOR	A	B	C	D	0	1 2
DATE RELEASED						

**BARR**

Project Office:  
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4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

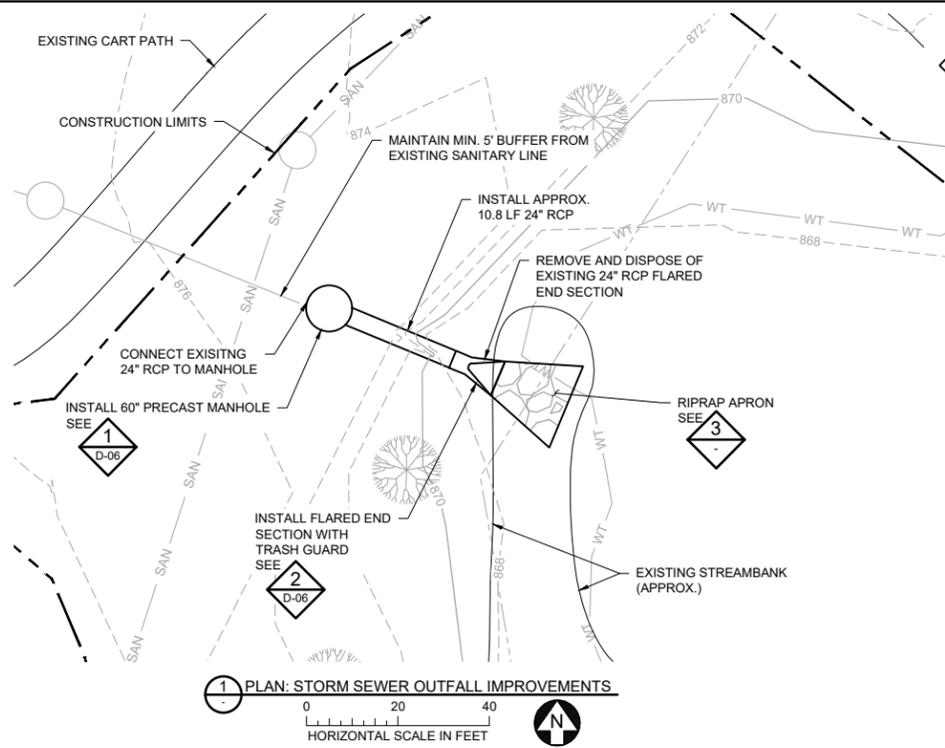
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
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Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

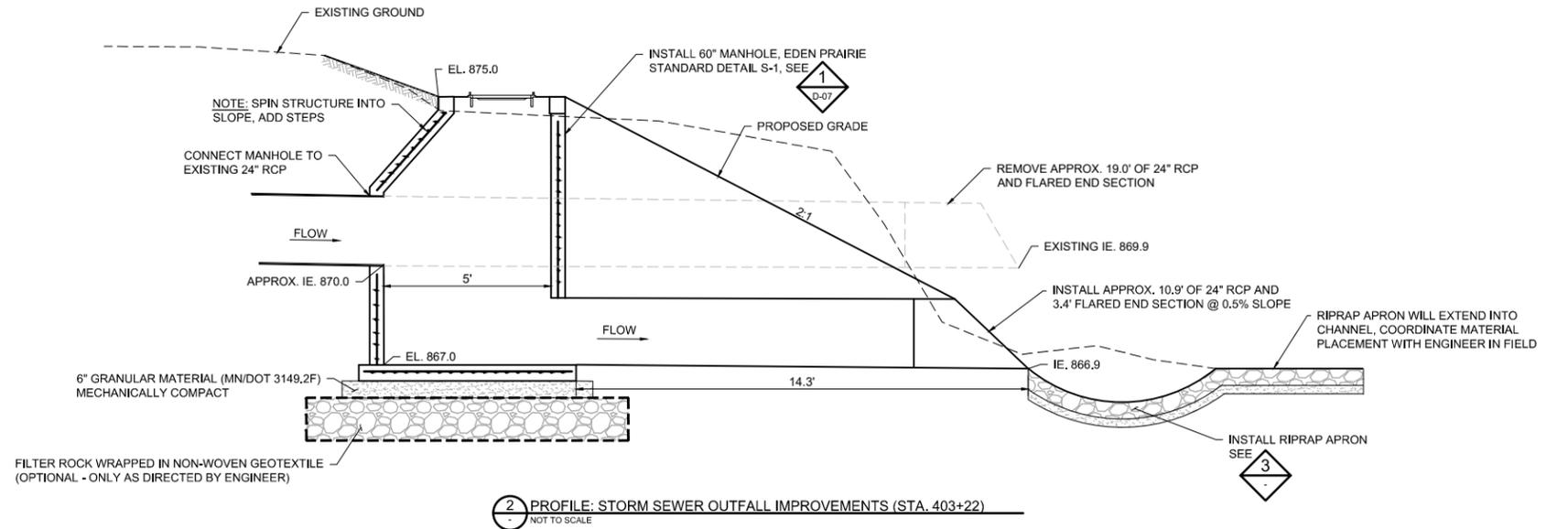
RILEY PURGATORY BLUFF CREEK WD  
CHANHASSEN, MN

MIDDLE RILEY CREEK STABILIZATION (PHASE 2)  
EDEN PRAIRIE, MN  
ROCK WALL DETAILS

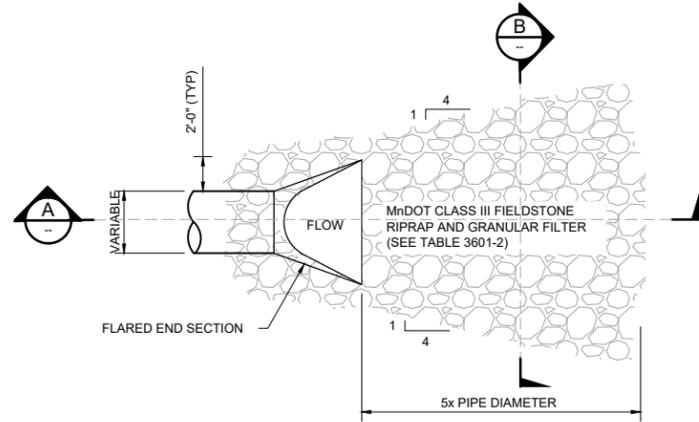
BARR PROJECT No.	
23/27-0053.14	
CLIENT PROJECT No.	
DWG. No.	REV. No.
D-05	D



1 PLAN: STORM SEWER OUTFALL IMPROVEMENTS  
HORIZONTAL SCALE IN FEET



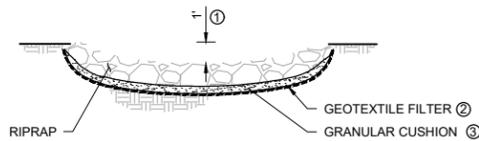
2 PROFILE: STORM SEWER OUTFALL IMPROVEMENTS (STA. 403+22)  
NOT TO SCALE



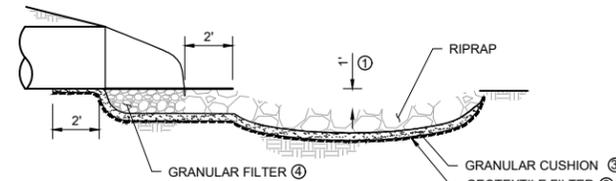
NOTES:

- REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS SHALL BE DESIGNATED IN THE PLANS.
- PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.
- 1 FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5.
- 2 GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP.
- 3 GRANULAR FILTER, SPEC. 3601, USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
- 4 GRANULAR FILTER OR RIPRAP, SPEC. 3601, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH. WHEN USING RIPRAP, INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN GRADING FOR APRON PLACEMENT. CRUSHED ROCK IS INCIDENTAL.

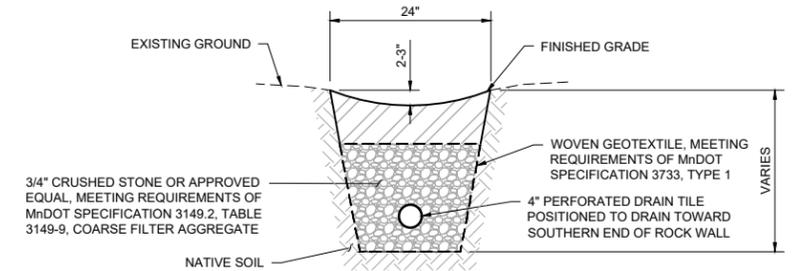
3 DETAIL: RIPRAP APRON  
NOT TO SCALE



B SECTION: RIPRAP APRON  
NOT TO SCALE



A SECTION: RIPRAP APRON  
NOT TO SCALE



4 DETAIL: DRAIN TILE BEDDING  
NOT TO SCALE

100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY CREEK STABILIZATION\DWG\23270053\_14\_D-01\_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 5/3/2021 12:04 PM  
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
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C	EPF	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
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PRINTED NAME: JESSICA OLSON  
SIGNATURE: \_\_\_\_\_  
DATE: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	05/07/21				
BID							
CONSTRUCTION							
PERMITTING			03/12/21				
RELEASED TO/FOR	A	B	C	D	0	1	2
DATE RELEASED							

Project Office:  
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MINNEAPOLIS, MN 55435

Corporate Headquarters:  
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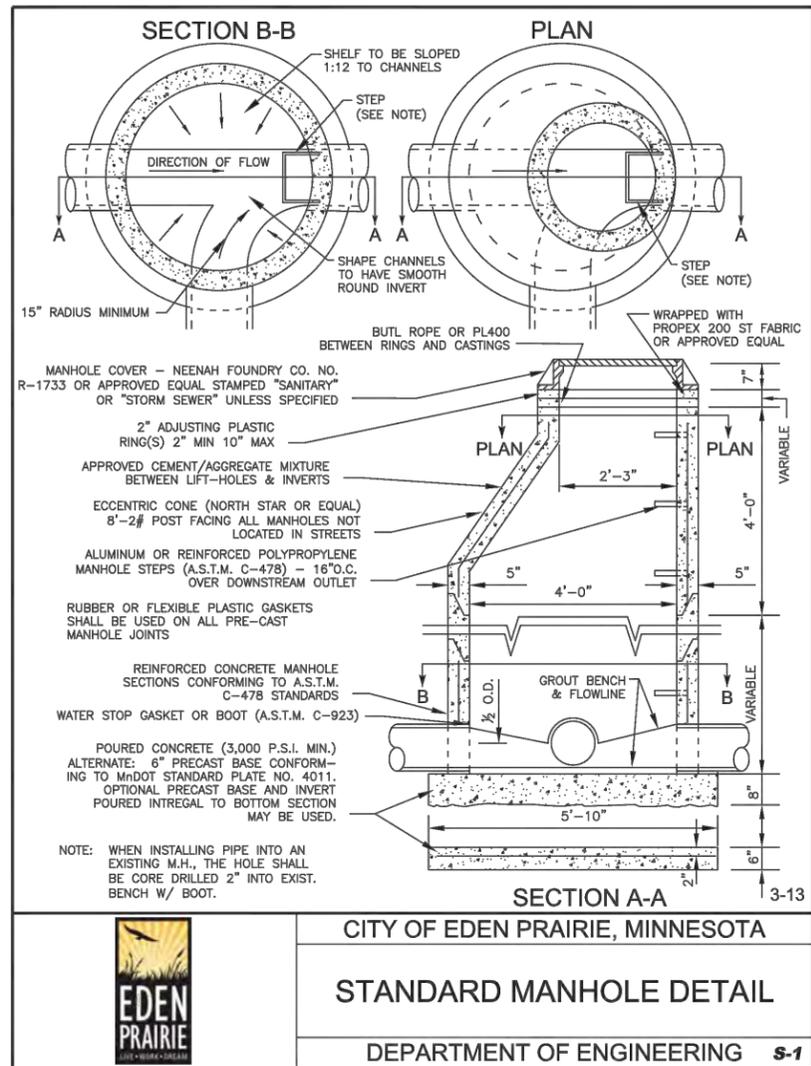
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Date	05/07/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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

MIDDLE RILEY CREEK STABILIZATION (PHASE 2)  
EDEN PRAIRIE, MN  
OUTLET IMPROVEMENT DETAILS

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK\STREAM\23270053\_14\_D-01\_DETAILS.DWG PLOT SCALE: 1:12 PLOT DATE: 4/29/2021 12:57 PM  
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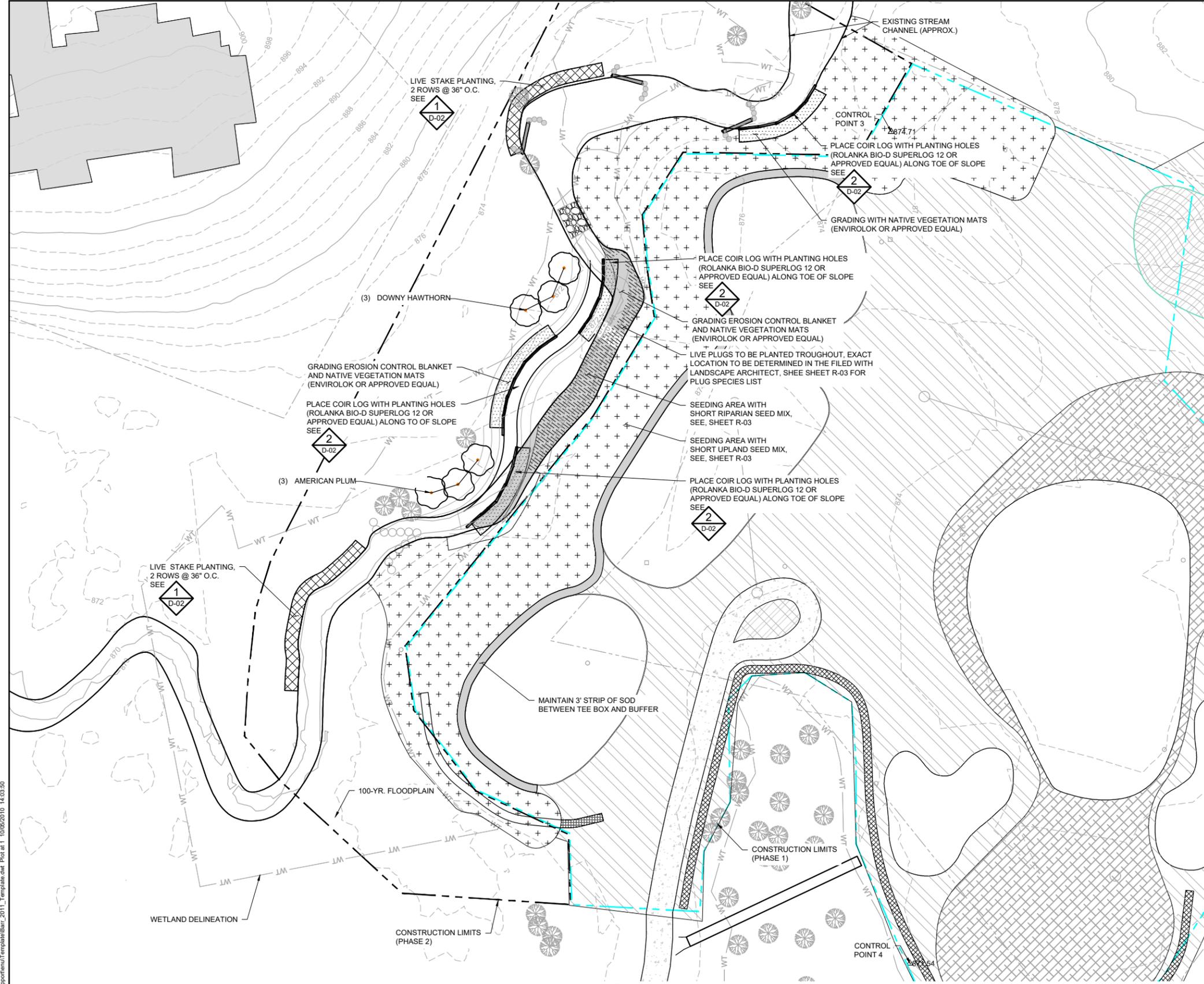
1 DETAIL: STANDARD MANHOLE  
 NOT TO SCALE

100% DESIGN  
 NOT FOR CONSTRUCTION

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NO. BY CHK. APP. DATE REVISION DESCRIPTION				PRINTED NAME JESSICA OLSON SIGNATURE DATE 05/07/2021 LICENSE # 43102				RELEASED TO/FOR DATE RELEASED A B C D 0 1 2				DWG. No. D-07 REV. No. D									



CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_1\MIDDLE RILEY CREEK STABILIZATION PHASE 1\_R-02\_RESTORATION PLAN - NORTH.DWG PLOT SCALE: 1:2 PLOT DATE: 4/29/2021 2:57 PM  
 BARR - AutoCAD 2011 Support\Temp\TempDrawBar\_2011\_Template.dwg Plot at 1: 10/06/2010 14:03:50



**SYMBOL AND PATTERN LEGEND**

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	EXISTING STREAM THALWEG (APPROX.)
	EXISTING 100-YR FLOODPLAIN
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	ROCK RIFFLE
	LIVE STAKES
	VRSS
	FILL EXISTING CREEK
	SEEDING AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	SEEDING AREA WITH SORT UPLAND SEED MIX, SEE SHEET R-03
	BOULDER CROSS VANE
	GRADING WITH EROSION CONTROL BLANKET AND NATIVE VEGETATION MATS
	J-HOOK LOG VANE

**CONTROL POINTS**

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	119806.1150'	465879.4807'	874.71'	VRS SPIKE 3
4	119491.9292'	465886.5323'	871.54'	VRS SPIKE 4

1 PLAN: CREEK RESTORATION NORTH  
 SCALE IN FEET  
 0 20 40

100% DESIGN  
 NOT FOR CONSTRUCTION

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	BHD	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	BHD	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
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 PRINTED NAME: JESSICA OLSON  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/07/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	03/07/21				
BID							
CONSTRUCTION							
PERMITTING			03/12/21				
RELEASED TO/FOR	A	B	C	D	0	1	2
DATE RELEASED							

**BARR**  
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 4300 MARKETPOINTE DRIVE  
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 www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	BHD
Checked	SAB2
Designed	BARR
Approved	JCO

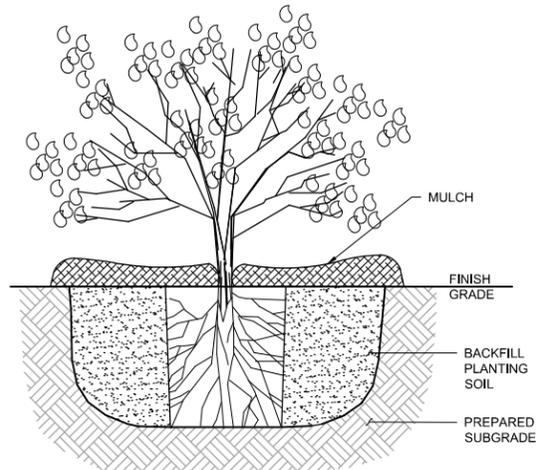
**RILEY PURGATORY BLUFF CREEK WD**  
 CHANHASSEN, MN

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
 EDEN PRAIRIE, MN  
**RESTORATION PLAN**  
 NORTH

BARR PROJECT No. 23/27-0053.14	
CLIENT PROJECT No.	
DWG. No. R-02	REV. No. D

**NOTES:**

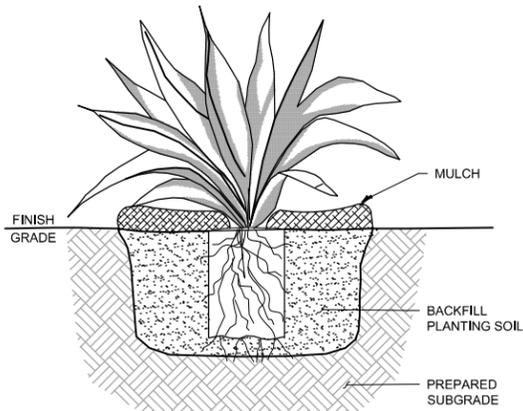
1. PREPARE PLANTING SOIL PER PLAN AND AS SPECIFIED.
2. PROVIDE AND INSTALL PLANTS PER PLANTING SCHEDULE.
3. DIG PLANT HOLES 18" MIN. LARGER THAN ROOT MASS, ALL SIDES.
4. SET SHRUB ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY.
5. BACKFILL WITH PLANTING SOIL. FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS IN SOIL REMAIN.
6. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF PLANTING.
7. APPLY MULCH OVER SOIL SURFACE (SOIL PREPARED AS PER PLAN).
8. NO MULCH SHALL BE ALLOWED TO BE IN CONTACT WITH PLANT.
9. NOTIFY OWNER FOR ALL INSPECTIONS FOR PLANTING AND REPLACEMENTS, AS SPECIFIED.



**1** DETAIL: SHRUB PLANTING  
R-03 NOT TO SCALE

**NOTES:**

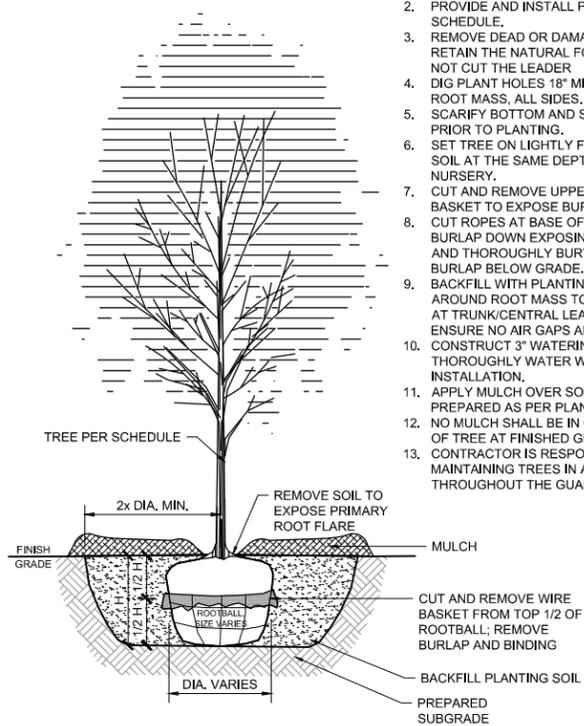
1. PREPARE PLANTING SOIL PER PLAN AND AS SPECIFIED.
2. PROVIDE AND INSTALL PLANTS PER PLANTING SCHEDULE.
3. DIG PLANTING HOLES 18" MIN. LARGER THAN ROOT MASS, ALL SIDES.
4. SET PERENNIAL OR GRASS ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY.
5. BACKFILL WITH PLANTING SOIL. FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS IN SOIL REMAIN.
6. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF PLANTING.
7. APPLY MULCH OVER SOIL SURFACE (SOIL PREPARED AS PER PLAN).
8. NO MULCH SHALL BE ALLOWED TO BE IN CONTACT WITH PLANT.
9. NOTIFY OWNER FOR ALL INSPECTIONS FOR PLANTING AND REPLACEMENTS, AS SPECIFIED.



**2** DETAIL: PERENNIAL PLANTING  
R-03 NOT TO SCALE

**NOTES:**

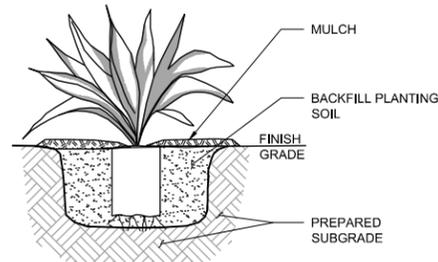
1. PREPARE SOIL PER PLAN AND AS SPECIFIED.
2. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
3. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT. DO NOT CUT THE LEADER.
4. DIG PLANT HOLES 18" MIN. LARGER THAN ROOT MASS, ALL SIDES.
5. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
6. SET TREE ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY.
7. CUT AND REMOVE UPPER 1/2 OF WIRE BASKET TO EXPOSE BURLAP.
8. CUT ROPES AT BASE OF TRUNK, PULL BURLAP DOWN EXPOSING 1/2 OF ROOTBALL AND THOROUGHLY BURY ROPES AND BURLAP BELOW GRADE.
9. BACKFILL WITH PLANTING SOIL. FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AT TRUNK/CENTRAL LEADER. WATER TO ENSURE NO AIR GAPS AROUND ROOT MASS. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
11. APPLY MULCH OVER SOIL SURFACE (SOIL PREPARED AS PER PLAN).
12. NO MULCH SHALL BE IN CONTACT WITH BASE OF TREE AT FINISHED GRADE.
13. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.



**3** DETAIL: TREE PLANTING  
R-03 NOT TO SCALE

**NOTES:**

1. EXCAVATE HOLE 3 TIMES WIDTH OF ROOTBALL.
2. BREAK BOTTOM OF ROOTBALL TO LOOSEN ROOTS.
3. PLANT THROUGH MULCH AND EROSION CONTROL BLANKET, ALIGNING TOP OF ROOTBALL EVEN WITH SOIL FINISH GRADE. FIRM SOIL TO ENSURE GOOD CONTACT WITH ROOTS.
4. WATER THOROUGHLY AFTER PLANTING.
5. SEE SPECIFICATIONS FOR FURTHER INSTRUCTION REGARDING PLANTING LAYOUT AND PROCEDURES.



**4** DETAIL: HERBACEOUS PLUG PLANTING  
R-03 NOT TO SCALE

**Middle Riley Creek Short Upland Mix**

Common Name	Scientific Name	PLS Rate (lbs/ac)	% of Mix (by weight)
Sideoats Grama	Bouteloua curtipendula	1.00	2.7%
Blue Grama	Bouteloua gracilis	2.50	6.7%
Canada Wild Rye	Elymus canadensis	0.80	2.1%
Virginia wild rye	Elymus virginicus	2.50	6.7%
Purple Top Grass	Eragrostis spectabilis	0.01	0.1%
Swatchgrass	Panicum virgatum	0.50	1.4%
Low Blugrass	Poa palustris	0.06	0.2%
Litt le Bluestem	Schizachyrium scoparium	2.50	6.7%
<b>Grasses Subtotal</b>		<b>9.89</b>	<b>27%</b>
Brown Fox Sedge	Carex vulpinoidea	0.24	0.6%
<b>Sedges &amp; Rushes Subtotal</b>		<b>0.24</b>	<b>1%</b>
Fragrant Hyssop	Agostache foeniculum	0.20	1.1%
Butterfly Milkweed	Asclepias tuberosa	0.06	0.2%
Whorled Milkweed	Asclepias verticillata	0.02	0.1%
White Wild Indigo	Baptisia alba	0.06	0.2%
Downy Wood Nit	Blephilia ciliata	0.02	0.0%
Partridge Pea	Chamaecrista fasciculata	0.60	1.6%
Purple Prairie Clover	Dalea purpurea	0.06	0.2%
Narrow-leaved Coneflower	Echinacea angustifolia	0.08	0.2%
Prairie blazing Star	Liatris pycnostachya	0.02	0.1%
Wild Luinoe	Lupinus perennis	0.30	0.8%
Wild Bergamot	Monarda fistulosa	0.06	0.2%
Spotted Bee Balm	Monarda punctata	0.01	0.0%
Large-flowered Beardtongue	Pentstemon grandiflorus	0.06	0.2%
Virginia Mountain Mint	Pycnanthemum virginianum	0.12	0.3%
Black-eyed Susan	Rudbeckia hirta	0.11	0.3%
Zig Zag Goldenrod	Solidago flexicaulis	0.08	0.2%
Heath Aster	Symphoricarpon angustifolium	0.01	0.0%
Goat's Rue	Tephrosia virginiana	0.01	0.0%
Foamy Vervain	Verbena stricta	0.20	0.3%
<b>Forbs Subtotal</b>		<b>2.18</b>	<b>6%</b>
Oats	Avena sativa	25	67.0%
<b>Cover Crop Subtotal</b>		<b>25</b>	<b>67.0%</b>
<b>Total</b>		<b>37.31</b>	<b>100%</b>

**Trees**

Common Name	Scientific Name	Quantity	Spacing	Size
Speckled Alder	Alnus rugosa	3	Per Plan	# 10 Pot
River Birch	Betula nigra	3	Per Plan	# 10 Pot
Bitternut Hickory	Cory cordifolia	3	Per Plan	# 10 Pot
Downy Hawthorne	Crataegus mollis	3	Per Plan	# 10 Pot
American Plum	Prunus americana	3	Per Plan	# 10 Pot
Swamp White Oak	Quercus bicolor	3	Per Plan	# 10 Pot

**Biostate Seed Mix**

Common Name	Scientific Name	PLS Rate (lbs/ac)	% of Mix (by weight)
Waxy Sedge	Carex oarnea	0.50	12.0%
Curly-styled Wood Sedge	Carex rostrata	1.25	30.0%
Plains Oval Sedge	Carex brevifolia	1.50	36.1%
Patn Rush	Juncus tenuis	0.10	3.8%
Pennsylvania Sedge	Carex pennsylvanica	0.75	18.0%
<b>Total</b>		<b>4.16</b>	<b>100%</b>

**Middle Riley Creek Short Riparian Mix**

Common Name	Scientific Name	PLS Rate (lbs/ac)	% of Mix (by weight)
Blue Joint Grass	Calamagrostis canadensis	0.06	0.2%
Canada Wild Rye	Elymus canadensis	0.50	2.2%
Riverbank Wild Rye	Elymus riparius	1.50	4.0%
Silky wild rye	Elymus villosus	0.75	2.0%
Rattlesnake Grass	Glyceria canadensis	0.12	0.3%
Swatchgrass	Panicum virgatum	0.80	2.2%
Fowl Blugrass	Poa palustris	0.12	0.3%
Litt le Bluestem	Schizachyrium scoparium	1.50	4.0%
Indiangrass	Sorghastrum nutans	1.00	2.7%
Prairie Cordgrass	Spartina pectinata	1.00	2.7%
Purple Top	Tridens flavus	0.24	0.6%
<b>Grasses Subtotal</b>		<b>7.89</b>	<b>21.3%</b>
Bristly Sedge	Carex canosa	0.18	0.5%
Lake Sedge	Carex lacustris	0.12	0.3%
Porcupine Sedge	Carex hystericina	0.09	0.2%
Awn-fruited Sedge	Carex stipata	0.17	0.5%
Wool Grass	Scirpus cyperinus	0.10	0.3%
<b>Sedges &amp; Rushes Subtotal</b>		<b>0.66</b>	<b>1.8%</b>
Fragrant Hyssop	Agostache foeniculum	0.20	1.1%
Canada Anemone	Anemone canadensis	0.14	0.4%
Columbine	Aquilegia canadensis	0.06	0.2%
Powder Milkweed	Asclepias exaltata	0.24	0.6%
Swamp Milkweed	Asclepias incarnata	0.24	0.6%
Tall Bellflower	Campanula americana	0.04	0.1%
Narrow-leaved Coneflower	Echinacea angustifolia	0.16	0.4%
Blue Flag Iris	Iris versicolor	1.00	2.7%
Meadow Blazing Star	Liatris ligulistylis	0.04	0.1%
Prairie Blazing Star	Liatris pycnostachya	0.04	0.1%
Wild Bergamot	Monarda fistulosa	0.17	0.3%
Black-eyed Susan	Rudbeckia hirta	0.24	0.6%
Heath Aster	Symphoricarpon angustifolium	0.03	0.1%
Smooth Blue Aster	Symphoricarpon laeve	0.16	0.4%
Ohio Spiderwort	Tradescantia ohioensis	0.24	0.6%
Golden Alexanders	Zizia aurea	0.42	1.1%
<b>Forbs Subtotal</b>		<b>3.57</b>	<b>9.6%</b>
Oats	Avena sativa	25	67.3%
<b>Cover Crop Subtotal</b>		<b>25</b>	<b>67.3%</b>
<b>Total</b>		<b>37.12</b>	<b>100%</b>

**Perennial Plugs**

Common Name	Scientific Name	Quantity	Spacing	Size
Pearly Everlasting	Anaphalis margaritacea	28	Field Fit	Plug
Columbine	Aquilegia canadensis	36	Field Fit	Plug
Butterfly Milkweed	Asclepias tuberosa	36	Field Fit	Plug
Purple Milkweed	Asclepias purpurascens	36	Field Fit	Plug
Whorled Milkweed	Asclepias verticillata	36	Field Fit	Plug
Wild White Indigo	Baptisia alba	28	Field Fit	Plug
Tall Bellflower	Campanula americana	36	Field Fit	Plug
Blue Cornish	Calliophyllum thalictroides	24	Field Fit	Plug
Prairie Coreopsis	Coreopsis palmata	24	Field Fit	Plug
Dutchman's Breeches	Dicentra cucullaria	36	Field Fit	Plug
Narrow-leaved Coneflower	Echinacea angustifolia	48	Field Fit	Plug
Rattlesnake Master	Eryngium yuccifolium	24	Field Fit	Plug
Prairie Alumroot	Heuchera richardsonii	48	Field Fit	Plug
Burnton Blazing Star	Liatris spicata	36	Field Fit	Plug
Meadow Blazing Star	Liatris ligulistylis	36	Field Fit	Plug
Dotted Blazing Star	Liatris punctata	21	Field Fit	Plug
Wild Luinoe	Lupinus perennis	36	Field Fit	Plug
Spotted Bee Balm	Monarda punctata	21	Field Fit	Plug
Foxglove Beardtongue	Pentstemon digitalis	48	Field Fit	Plug
Large-flowered Beardtongue	Pentstemon grandiflorus	21	Field Fit	Plug
Wild Blue Fox	Phlox divaricata	48	Field Fit	Plug
Passque Flower	Pulsatilla nuttalliana	21	Field Fit	Plug
Mountain Mint	Pycnanthemum virginianum	36	Field Fit	Plug
Stiff Goldenrod	Solidago rigida	22	Field Fit	Plug
Aromatic Aster	Symphoricarpon angustifolium	36	Field Fit	Plug
Sky Blue Aster	Symphoricarpon obovatum	24	Field Fit	Plug
Purple Meadow Rue	Thalictrum dasycarpum	36	Field Fit	Plug
Rue Anemone	Thalictrum thalictroides	36	Field Fit	Plug
Ohio Spiderwort	Tradescantia ohioensis	24	Field Fit	Plug
Common Ironweed	Veronica fasciculata	28	Field Fit	Plug
Cu ver's Root	Veronicastrum virginicum	48	Field Fit	Plug
<b>Total</b>		<b>1000</b>		

100% DESIGN  
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
D	BHD	SAB2	JCO	05/07/2021	100% ISSUED FOR REVIEW
C	BHD	SAB2	JCO	03/12/2021	ISSUED FOR PERMITTING
B	EPF	SAB2	JCO	08/06/2020	65% ISSUED FOR REVIEW
A	CWF	SAB2	JCO	07/15/2020	60% ISSUED FOR REVIEW

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: 05/07/2021 LICENSE # 43102

CLIENT	BID	07/15/20	08/06/20	05/07/21				
CONSTRUCTION								
PERMITTING				03/12/21				
RELEASED TO/FOR	A	B	C	D	0	1	2	

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	05/07/2021
Drawn	BHD
Checked	SAB2
Designed	BARR
Approved	JCO

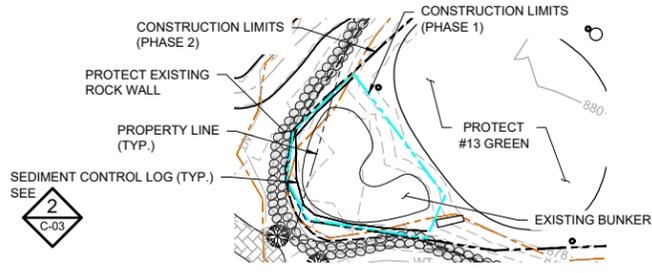
**RILEY PURGATORY BLUFF CREEK WD**  
CHANHASSEN, MN

**MIDDLE RILEY CREEK STABILIZATION (PHASE 2)**  
EDEN PRAIRIE, MN  
**RESTORATION DETAILS**

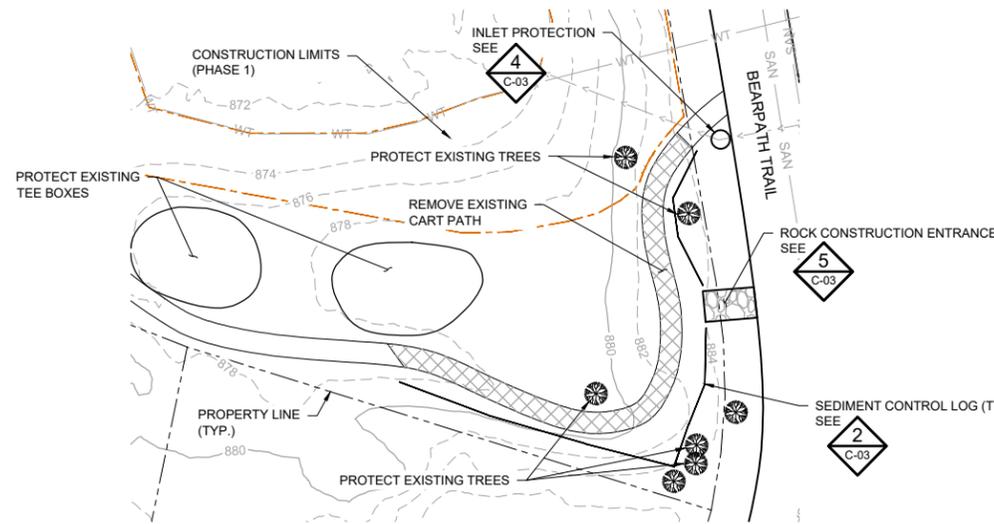
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CLIENT PROJECT No.	
DWG. No.	R-03
REV. No.	D

**EROSION & SEDIMENT CONTROL NOTES:**

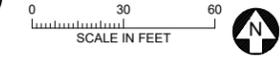
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
- INSTALL INLET 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 ON SITE 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.
- FINAL SITE STABILIZATION MEASURES MUST SPECIFY THAT AT LEAST SIX INCHES OF TOPSOIL OR ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT WHEREVER TOPSOIL HAS BEEN REMOVED.
- 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 TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE REMOVED UPON FINAL STABILIZATION.
- 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 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.



**1 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL (#16 GREEN)**

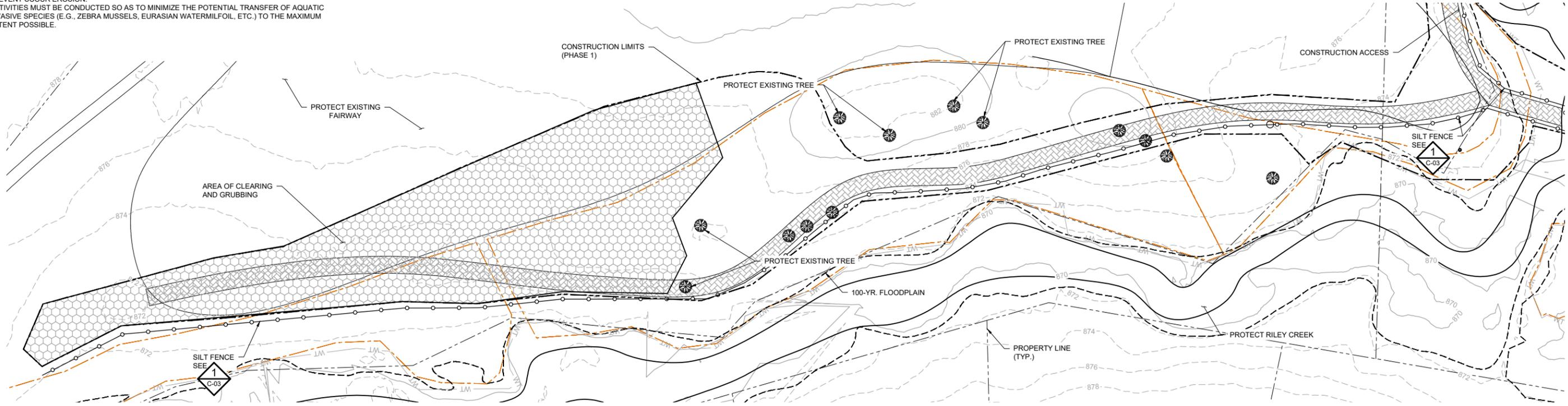


**2 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL (#12 TEE BOX)**

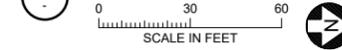


**SYMBOL AND PATTERN LEGEND**

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING 100-YR FLOODPLAIN
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS ROUTE
	TEMPORARY CREEK CROSSING
	EXISTING TREE



**2 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL (#12 FAIRWAY)**



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PRINTED NAME: BRAD LINDAMAN  
SIGNATURE: \_\_\_\_\_  
DATE: 05/07/2021 LICENSE # 43102

CLIENT	05/07/21						
BID							
CONSTRUCTION							
PERMITTING	03/12/21						
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** Engineering Co.  
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Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	BJL
Designed	BARR
Approved	BJL

**BEARPATH GOLF & COUNTRY CLUB**  
CHANHASSEN, MN

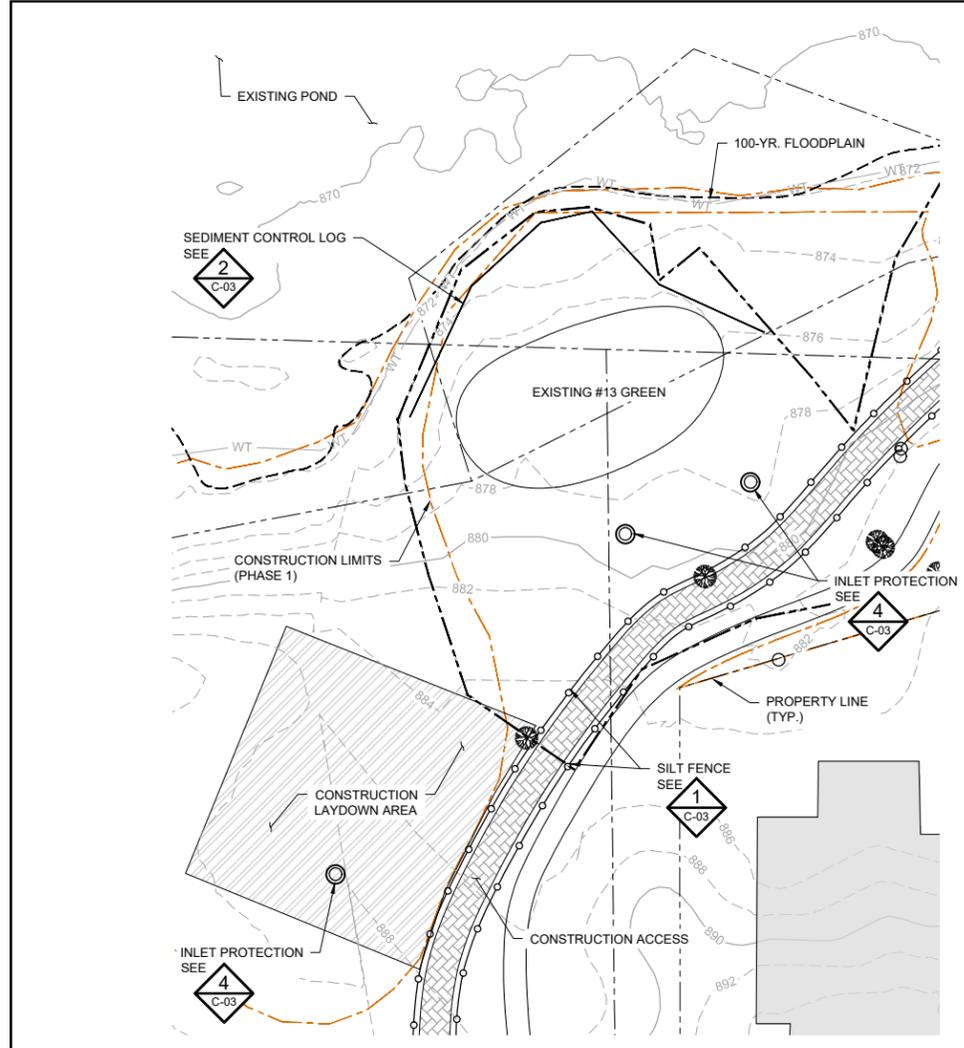
**BEARPATH GOLF COURSE RENOVATION (PHASE 1)**  
EDEN PRAIRIE, MN

EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN  
#16 GREEN, #12 TEE BOX & #12 FAIRWAY

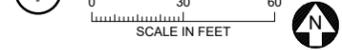
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-11
REV. No.	B

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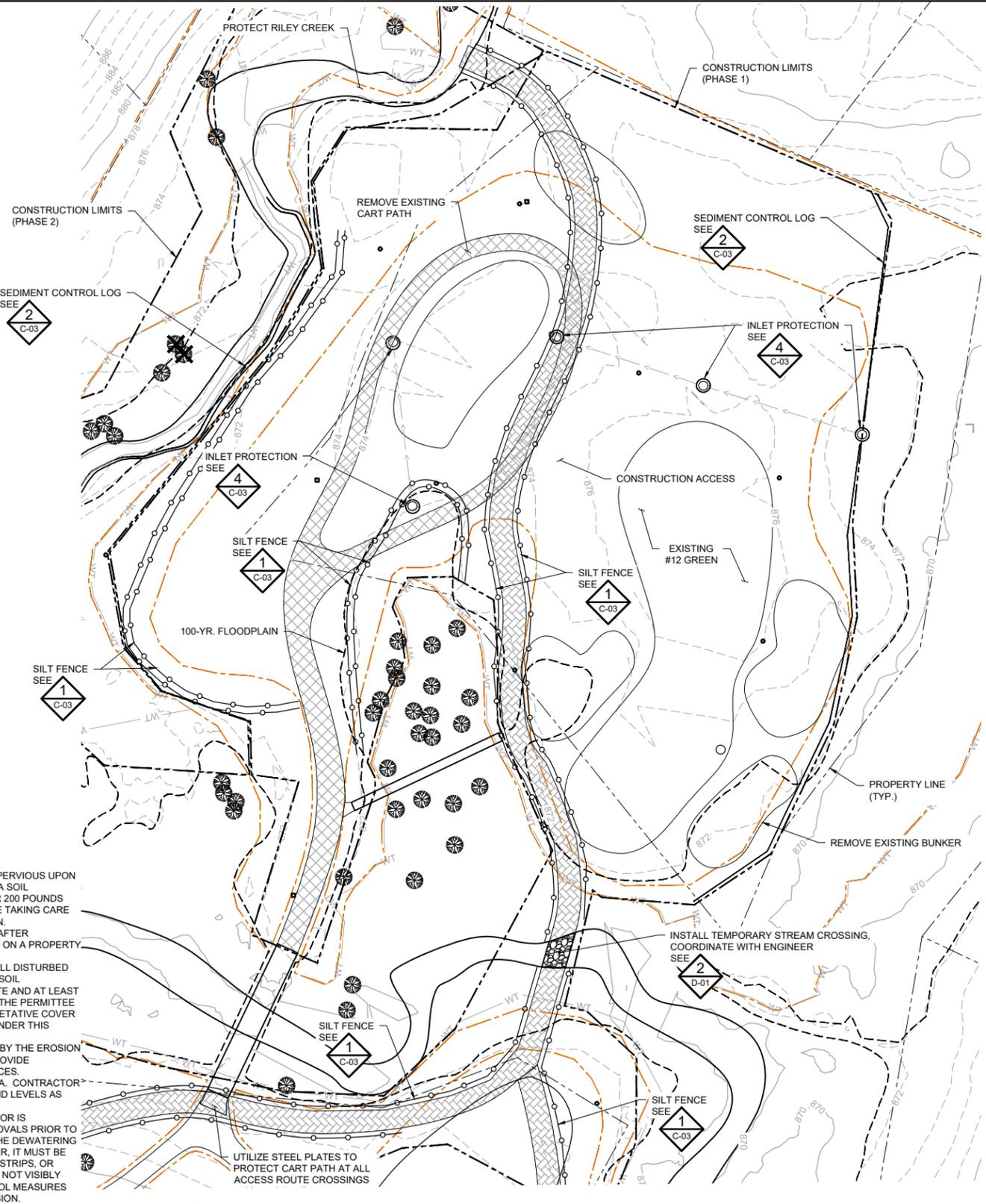
1 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL (#13 GREEN)



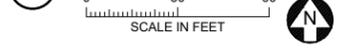
**EROSION & SEDIMENT CONTROL NOTES:**

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 ON-SITE 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. FINAL SITE STABILIZATION MEASURES MUST SPECIFY THAT AT LEAST SIX INCHES OF TOPSOIL OR ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT WHEREVER TOPSOIL HAS BEEN REMOVED.
8. CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED.
9. 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.
10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE REMOVED UPON FINAL STABILIZATION.

11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.



2 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL (#12 GREEN & #13 TEE BOX)



**SYMBOL AND PATTERN LEGEND**

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WETLAND DELINEATION
	EXISTING PROPERTY LINE
	EXISTING 100-YR FLOODPLAIN
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	SILT FENCE
	SEDIMENT CONTROL LOGS
	CONSTRUCTION ACCESS ROUTE
	TEMPORARY CREEK CROSSING
	EXISTING TREE

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
B	EPF	JCO	BJL	05/07/2021	100% ISSUED FOR REVIEW
A	EPF	JCO	BJL	03/12/2021	ISSUED FOR PERMITTING

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: BRAD LINDAMAN  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/07/2021 LICENSE #: 43102

CLIENT	BID	05/07/21							
CONSTRUCTION	PERMITTING	03/12/21							
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  
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Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	BJL

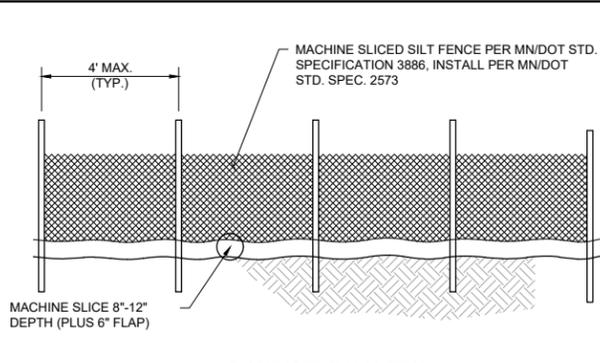
**BEARPATH GOLF & COUNTRY CLUB**  
 CHANHASSEN, MN

**BEARPATH GOLF COURSE RENOVATION (PHASE 1)**  
 EDEN PRAIRIE, MN

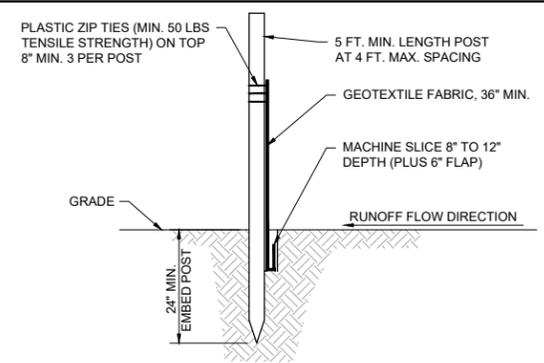
EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN  
 #13 GREEN & #12 GREEN/#13 TEE BOX

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-12
REV. No.	B

100% DESIGN  
 NOT FOR CONSTRUCTION



**DOWNSTREAM VIEW**

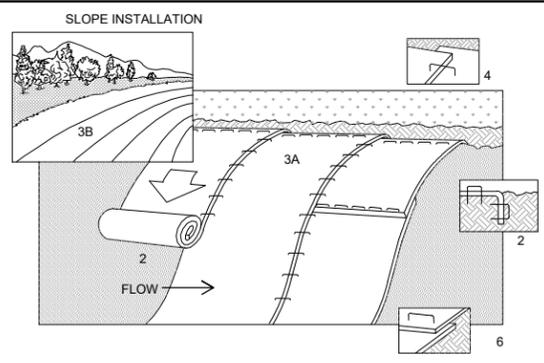


**SECTION VIEW**

**NOTES:**

- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. SILT FENCE AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
- SILT FENCE INSTALLATION AND MATERIALS SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATIONS 2573 AND 3886.
- NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SILT FENCE. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
- WHEN SEDIMENT BUILD UP REACHES 1/3 OF FENCE HEIGHT, THE SILT FENCE SHOULD BE REMOVED OR A SECOND SILT FENCE INSTALLED UPSTREAM OF THE EXISTING FENCE AT A SUITABLE DISTANCE.
- WHEN SPLICES ARE NECESSARY MAKE SPlice AT POST ACCORDING TO SPlice DETAIL. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS TOGETHER AT LEAST 180 DEGREES TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL. CUT THE FABRIC NEAR THE BOTTOM OF THE POSTS TO ACCOMMODATE THE 6 INCH FLAP. THEN DRIVE BOTH POSTS AND BURY THE FLAP. COMPACT BACKFILL.

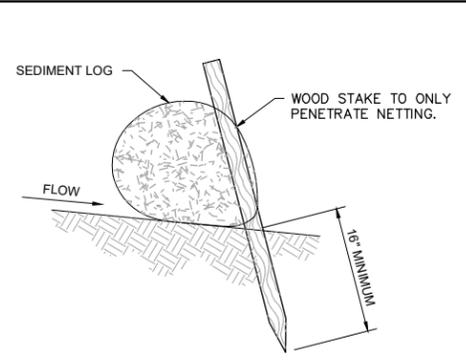
**1** DETAIL: SILT FENCE - MACHINE SLICED  
NOT TO SCALE



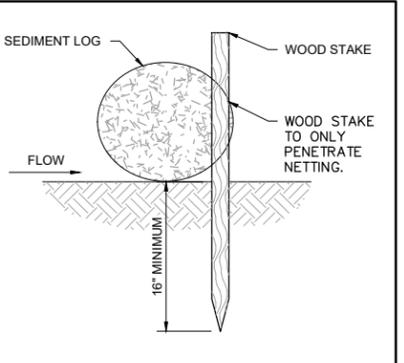
**NOTES:**

- REFER TO MANUFACTURER RECOMMENDATIONS FOR STAPLE PATTERNS FOR SLOPE INSTALLATIONS.
- PREPARE SOIL BY LOOSENING TOP 1-2 INCHES AND APPLY SEED (AND FERTILIZER WHERE REQUIRED) PRIOR TO INSTALLING BLANKETS. GROUND SHOULD BE SMOOTH AND FREE OF DEBRIS.
- BEGIN (A) AT THE TOP OF THE SLOPE AND ROLL THE BLANKETS DOWN OR (B) AT ONE END OF THE SLOPE AND ROLL THE BLANKETS HORIZONTALLY ACROSS THE SLOPE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP, WITH THE UPHILL BLANKET ON TOP.
- WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
- BLANKET MATERIALS SHALL BE AS SPECIFIED OR AS APPROVED BY ENGINEER.

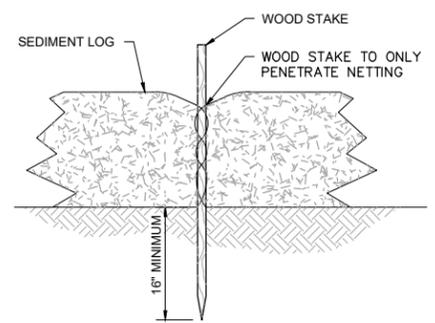
**2** DETAIL: EROSION CONTROL BLANKET - INSTALLATION  
NOT TO SCALE



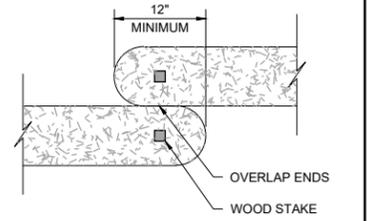
**SIDE VIEW ON SLOPE**



**SIDE VIEW FLAT**



**FRONT VIEW**

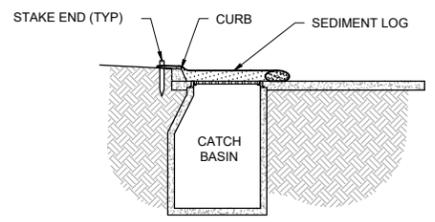


**TOP VIEW**

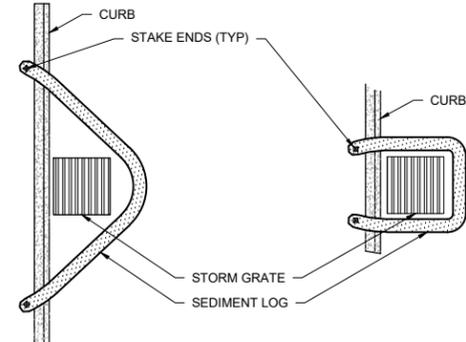
**NOTES:**

- INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION).
- NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
- REMOVE ACCUMULATED SEDIMENT WHEN REACHING 1/3 OF LOG HEIGHT.
- MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACED AS REQUIRED.

**3** DETAIL: SEDIMENT CONTROL LOG  
NOT TO SCALE



**SECTION VIEW**

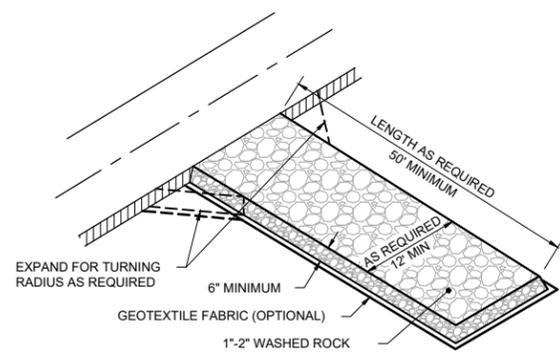


**PLAN VIEW**

**NOTES:**

- INLET PROTECTION SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED OR IMMEDIATELY FOLLOWING CATCHBASIN INSTALLATION, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- MATERIALS SHALL BE SUFFICIENT TO ALLOW FLOW WHILE BLOCKING SEDIMENT. NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SEDIMENT LOG.
- INLET PROTECTION SHALL BE CLEANED AS REQUIRED.
- MATERIALS AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.

**4** DETAIL: INLET PROTECTION - SEDIMENT LOG  
NOT TO SCALE



**NOTES:**

- MAINTAIN ENTRANCE THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACE AS REQUIRED TO PREVENT TRACKING OFFSITE.
- REMOVE ENTRANCE IN CONJUNCTION WITH FINAL GRADING AND SITE STABILIZATION.

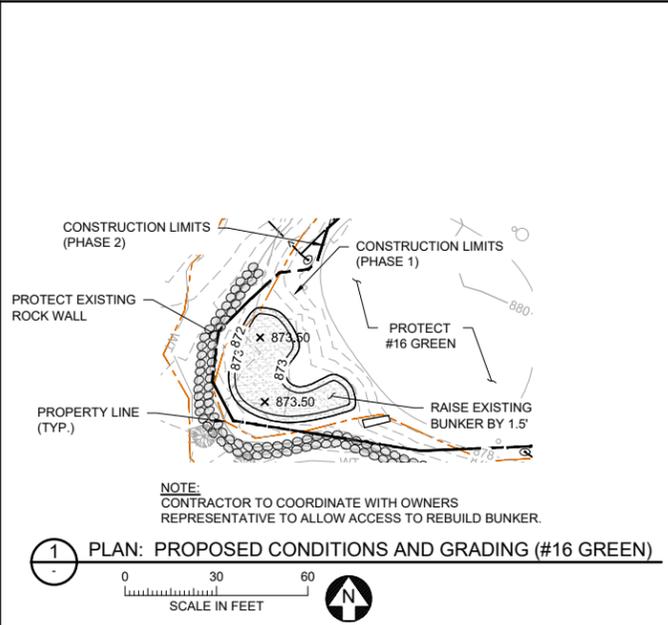
**5** DETAIL: CONSTRUCTION ENTRANCE - ROCK  
NOT TO SCALE

100% DESIGN  
NOT FOR CONSTRUCTION

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY STREAM\EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/26/2021 3:09 PM  
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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	05/07/21					<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	BEARPATH GOLF & COUNTRY CLUB CHANHASSEN, MN	BEARPATH GOLF COURSE RENOVATION (PHASE 1) EDEN PRAIRIE, MN EROSION CONTROL DETAILS	BARR PROJECT No. 23/27-0053.14	
PRINTED NAME: BRAD LINDAMAN SIGNATURE: _____ DATE: 05/07/2021 LICENSE # 43102		CONSTRUCTION PERMITTING	03/12/21	A	B	C	0		1	2			3	CLIENT PROJECT No.
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION				Approved	BJL				

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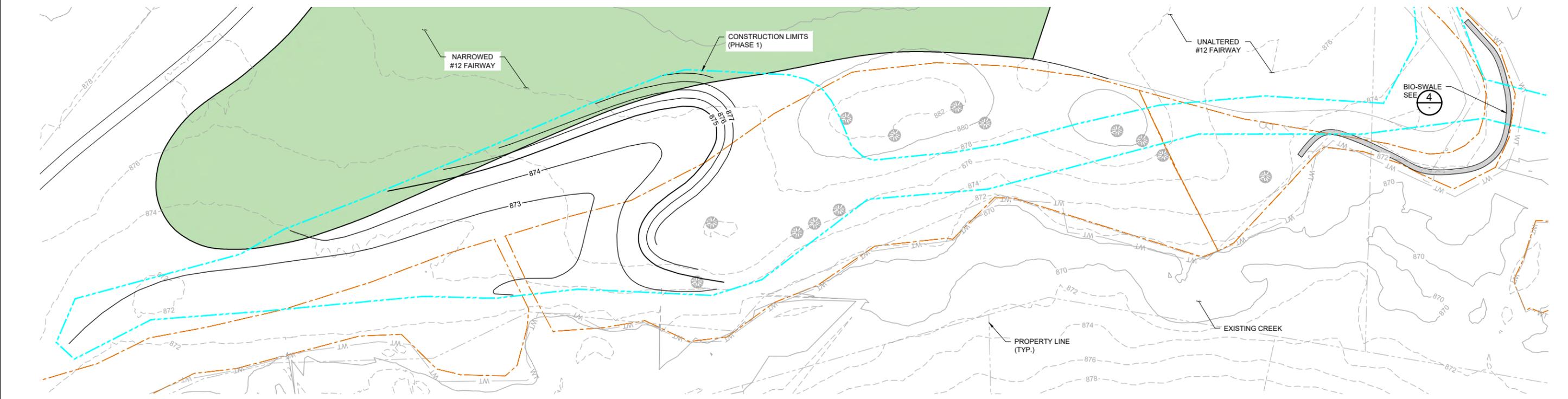
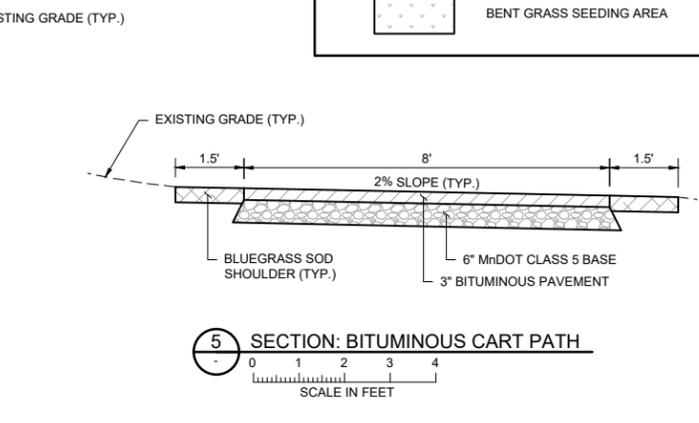
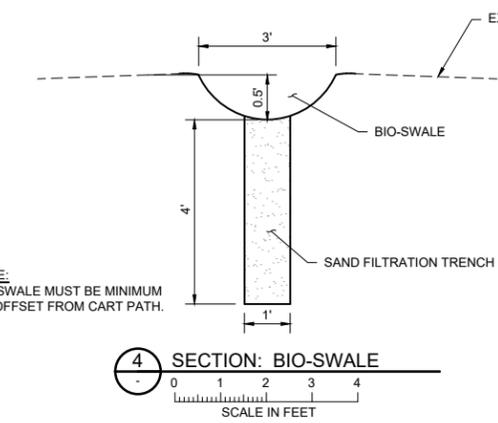


**NOTES:**

- 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. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH 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).
- CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND STAKED IN THE FIELD.
- CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS AND ACCESS ROUTES UNLESS DIRECTED BY ENGINEER.
- TREES TO BE CLEARED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL TREES >= 8" DIAMETER NOT MARKED FOR REMOVAL SHALL BE PROTECTED.
- TREES IDENTIFIED BY ENGINEER FOR ADDITIONAL PROTECTION AGAINST ROOT COMPACTION, DAMAGE AND DISFIGUREMENTS IN ACCORDANCE WITH MnDOT Spec. 2572. PROTECTION OF TREES NOT IDENTIFIED TO BE REMOVED SHALL BE INCIDENTAL.
- TREE SURVEY COMPLETED 05/04/2020. "SIGNIFICANT TREES" MEET THE DEFINITION REQUIREMENTS.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE THE TRANSFER OF AQUATIC AND TERRESTRIAL INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
- SOIL SURFACES COMPACTED DURING CONSTRUCTION MUST BE DECOMPACTED TO A SOIL COMPACTING PRESSURE OF LESS THAN 1400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 1 INCH OF SOIL.
- SEE SHEET R-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
- CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
  - RIPRAP TOE PROTECTION INSTALLATION
  - VRSS INSTALLATION
  - BOULDER VANE INSTALLATION

**SYMBOL AND PATTERN LEGEND**

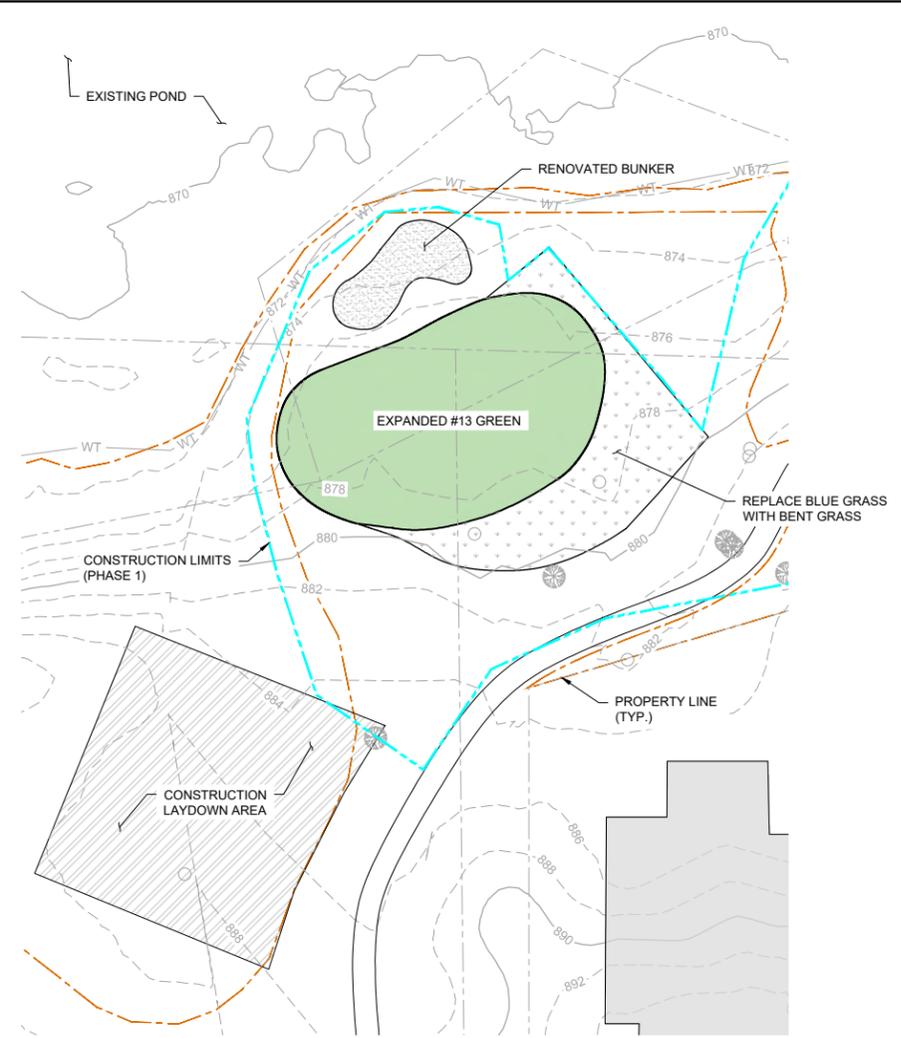
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- EXISTING 2' CONTOUR
- EXISTING PROPERTY LINE
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- CONSTRUCTION LIMITS (PHASE 1)
- CONSTRUCTION LIMITS (PHASE 2)
- PROPOSED BUFFER
- PROPOSED GOLF COURSE
- PROPOSED SAND BUNKER
- PLANTING AREA
- BENT GRASS SEEDING AREA



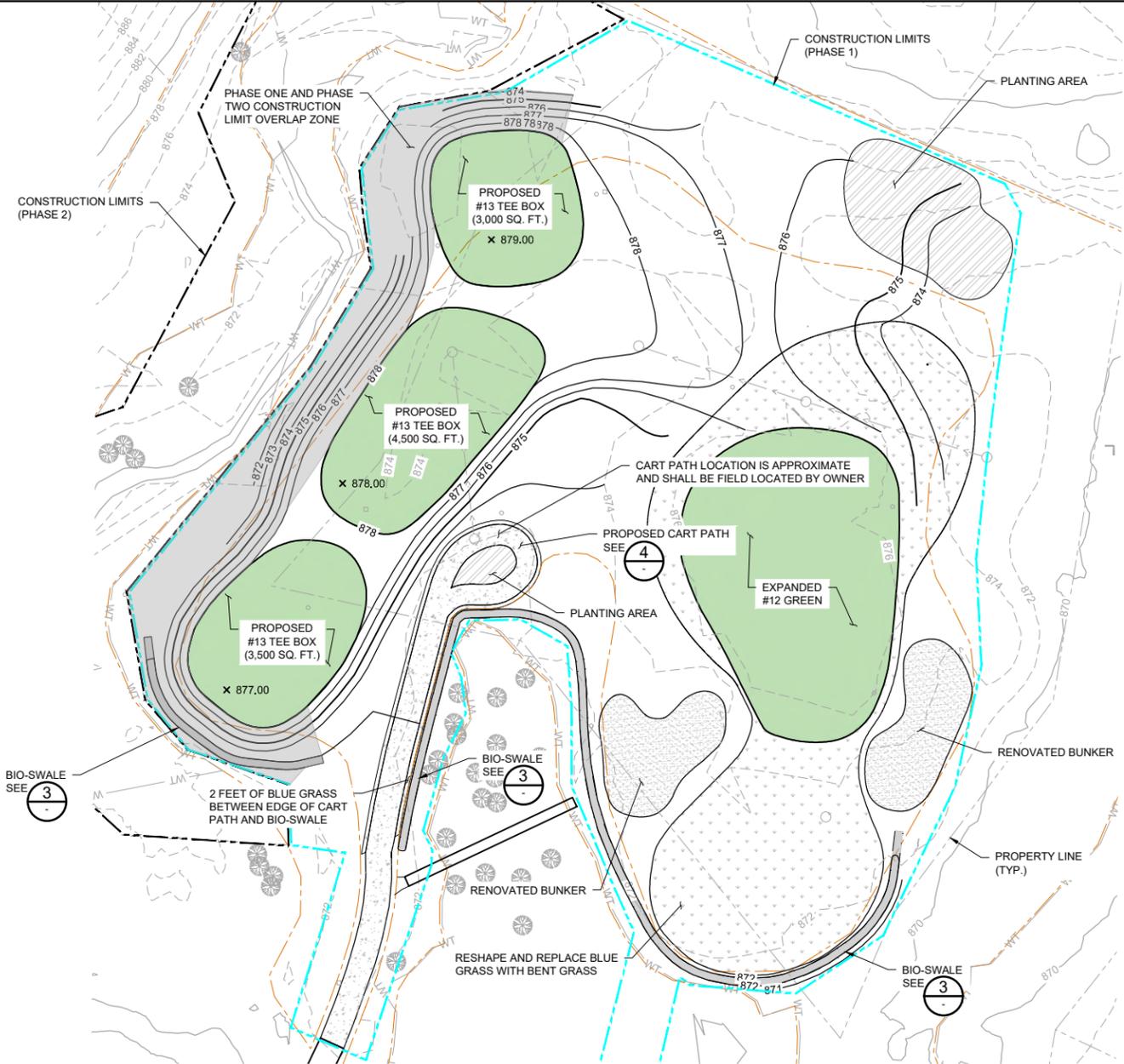
100% DESIGN  
NOT FOR CONSTRUCTION

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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	PRINTED NAME SIGNATURE DATE	RELEASED TO/FOR	A	B	C	0	1	2	3	DATE RELEASED	Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Ph: 1-800-632-2277	Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	DWG. No. C-14	REV. No. B

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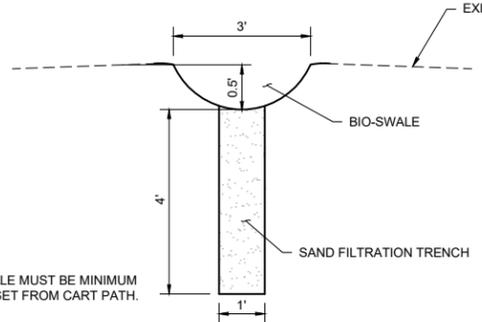
1 PLAN: PROPOSED CONDITIONS AND GRADING (#13 GREEN)  
 SCALE IN FEET



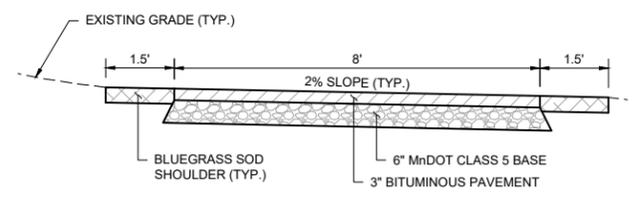
2 PLAN: PROPOSED CONDITIONS AND GRADING (#12 GREEN & #13 TEE BOX)  
 SCALE IN FEET

SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	PROPOSED 5' CONTOUR
	PROPOSED 1' CONTOUR
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	PROPOSED GOLF COURSE
	PROPOSED SAND BUNKER
	PLANTING AREA
	BENT GRASS SEEDING AREA

- NOTES:**
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  - SEE SHEET R-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
  - CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
    - RIPRAP TOE PROTECTION INSTALLATION
    - VRSS INSTALLATION
    - BOULDER VANE INSTALLATION



3 SECTION: BIO-SWALE  
 SCALE IN FEET



4 SECTION: BITUMINOUS CART PATH  
 SCALE IN FEET

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PRINTED NAME: BRAD LINDAMAN		CONSTRUCTION PERMITTING	03/12/21						
SIGNATURE: _____		RELEASED TO/FOR	A	B	C	0	1	2	3
DATE: 05/07/2021 LICENSE # 43102		DATE RELEASED							

**BARR**  
 Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
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 MINNEAPOLIS, MN 55435  
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 www.barr.com

Scale	AS SHOWN
Date	05/07/2021
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	BJL

**BEARPATH GOLF & COUNTRY CLUB**  
 CHANHASSEN, MN

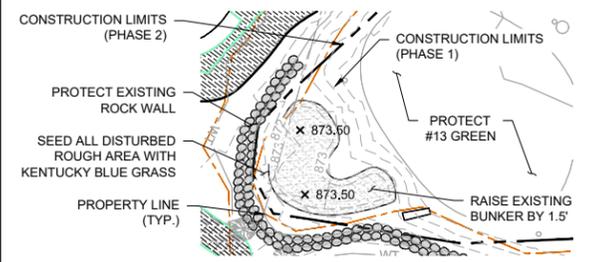
**BEARPATH GOLF COURSE RENOVATION (PHASE 1)**  
 EDEN PRAIRIE, MN  
**PROPOSED CONDITIONS AND GRADING PLAN**  
 #13 GREEN & #12 GREEN/#13 TEE BOX

100% DESIGN NOT FOR CONSTRUCTION	
BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-15
REV. No.	B

- NOTES:**
- SEE SHEET R-01 FOR SITE RESTORATION DETAILS.
  - SEE SHEET R-03 FOR PLANTING SCHEDULE.
  - SEE SHEET C-14 FOR GENERAL CONSTRUCTION NOTES.

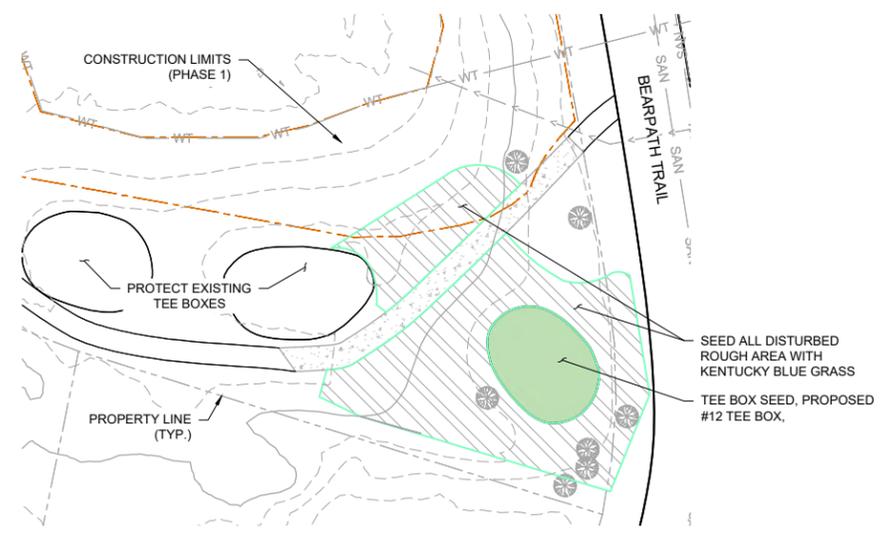
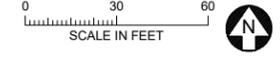
**SYMBOL AND PATTERN LEGEND**

- EXISTING 10' CONTOUR
- - - EXISTING 2' CONTOUR
- - - EXISTING PROPERTY LINE
- - - CONSTRUCTION LIMITS (PHASE 1)
- - - CONSTRUCTION LIMITS (PHASE 2)
- - - PROPOSED BUFFER
- [Green Fill] PROPOSED GOLF COURSE
- [Stippled Fill] PROPOSED SAND BUNKER
- [Diagonal Lines] SHRUB PLANTING
- [Cross-hatch Fill] SEEDING AREA WITH BIO-SWALE SEED MIX, SEE SHEET R-03
- [Dotted Fill] SEEDING AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
- [Cross-hatch with +] SEEDING AREA WITH SHORT UPLAND SEED MIX, SEE SHEET R-03
- [Diagonal Lines with +] SEEDING AREA WITH KENTUCKY BLUEGRASS SEED MIX, OWNER TO SPECIFY RATE
- [Cross-hatch with x] SEEDING AREA WITH BENTGRASS SEED MIX, OWNER TO SPECIFY RATE

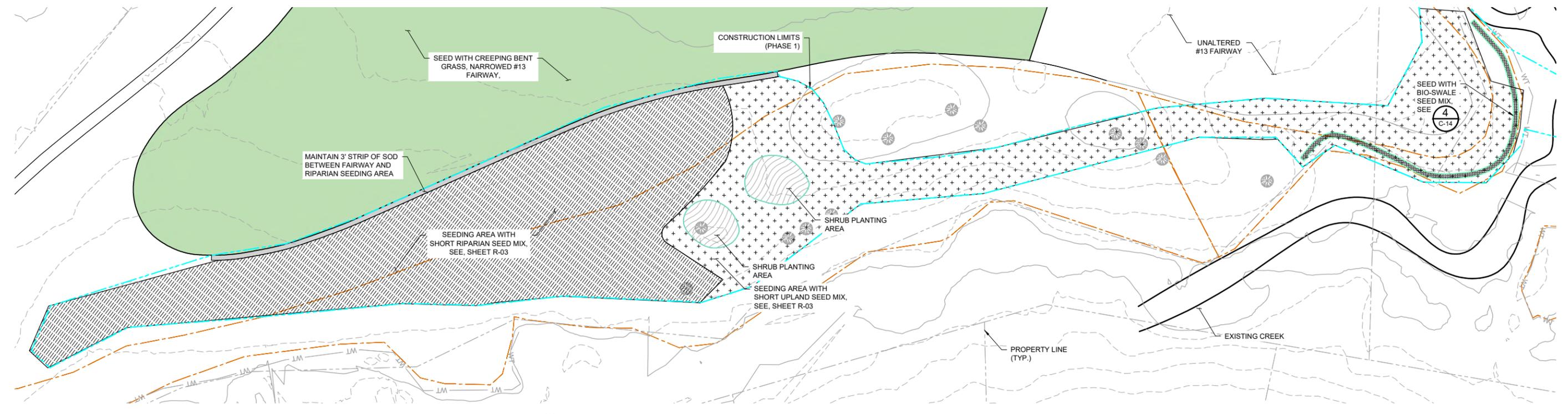


NOTE:  
CONTRACTOR TO COORDINATE WITH OWNERS REPRESENTATIVE TO ALLOW ACCESS TO REBUILD BUNKER.

1 PLAN: RESTORATION (#16 GREEN)



2 PLAN: RESTORATION (#12 TEE BOX)



3 PLAN: RESTORATION (#12 FAIRWAY)

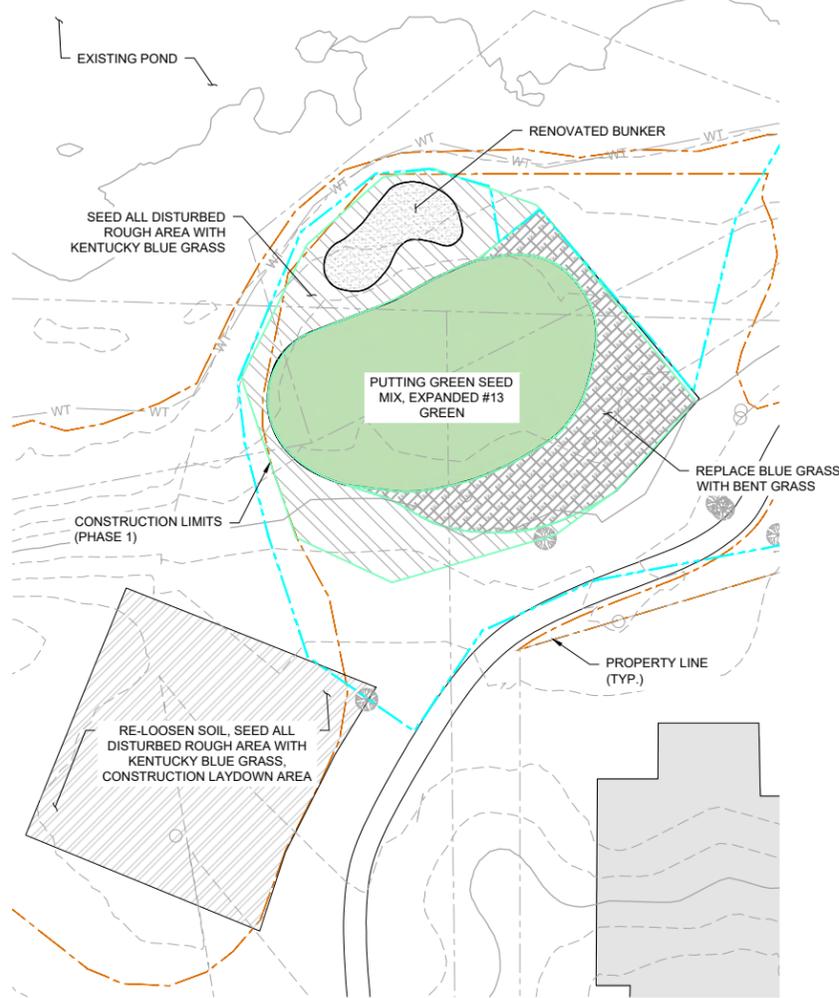


100% DESIGN  
NOT FOR CONSTRUCTION

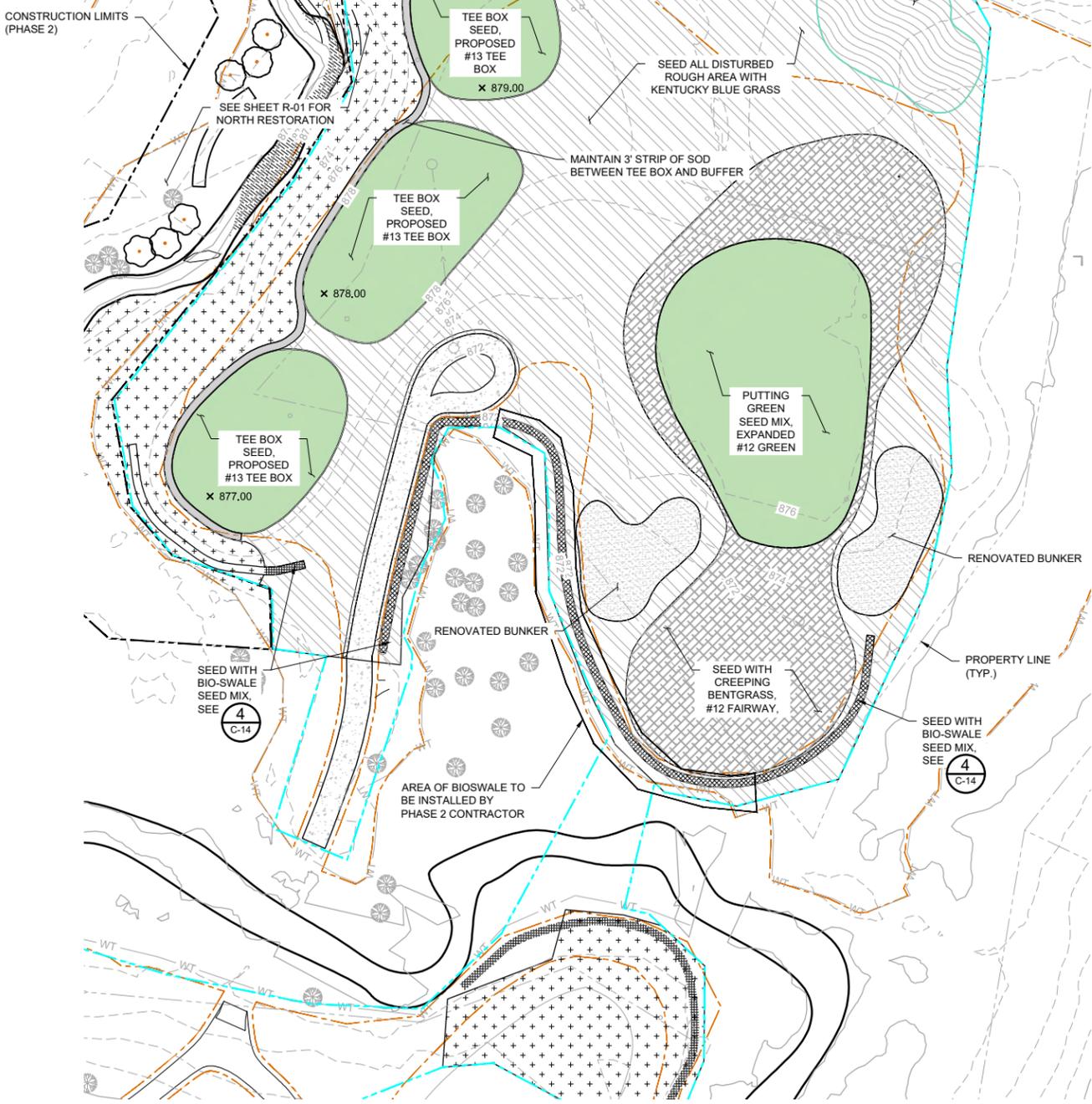
CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY STREAM\23270053\_14\_R-04\_BEARPATH\_RESTORATION PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 4/30/2021 12:04 PM  
BARR:\AutoCAD\2011\AutoCAD 2011\Support\Temp\templateBar\_2011\_Template.dwg Plot at 1: 10/06/2010 14:03:50

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 PERMITTING	05/07/21  03/12/21			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 05/07/2021 EPF JCO BARR BJL	<b>BEARPATH GOLF &amp; COUNTRY CLUB</b> CHANHASSEN, MN		<b>BEARPATH GOLF COURSE RENOVATION (PHASE 1)</b> EDEN PRAIRIE, MN RESTORATION PLAN #16 GREEN, #12 TEE BOX & #12 FAIRWAY		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-04 REV. No. B					
NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION	PRINTED NAME SIGNATURE DATE	05/07/2021	LICENSE #	43102	RELEASED TO/FOR	A	B	C	0	1	2	3	DATE RELEASED

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053\_14\MIDDLE RILEY STREAM\BARRPATH\_RESTORATION PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 4/30/2021 12:14 PM  
 BARR: M:\AutoCAD\2011\AutoCAD 2011\Support\enu\template\Bar\_2011\_Template.dwg Plot at 1: 10/06/2010 14:03:50



1 PLAN: RESTORATION (#13 GREEN)  
 SCALE IN FEET



2 PLAN: RESTORATION (#12 GREEN & #13 TEE BOX)  
 SCALE IN FEET

SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING PROPERTY LINE
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	PROPOSED GOLF COURSE
	PROPOSED SAND BUNKER
	SHRUB PLANTING
	SEEDING AREA WITH BIO-SWALE SEED MIX, SEE SHEET R-03
	SEEDING AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	SEEDING AREA WITH SHORT UPLAND SEED MIX, SEE SHEET R-03
	SEEDING AREA WITH KENTUCKY BLUEGRASS SEED MIX, OWNER TO SPECIFY RATE
	SEEDING AREA WITH BENTGRASS SEED MIX, OWNER TO SPECIFY RATE

100% DESIGN  
 NOT FOR 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: BRAD LINDAMAN SIGNATURE: _____ DATE: 05/07/2021 LICENSE # 43102		CLIENT: BARR ENGINEERING CO. BID: 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 PERMITTING: 03/12/21 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: 05/07/2021 Drawn: EPF Checked: JCO Designed: BARR Approved: BJL		BEARPATH GOLF & COUNTRY CLUB CHANHASSEN, MN		BEARPATH GOLF COURSE RENOVATION (PHASE 1) EDEN PRAIRIE, MN RESTORATION PLAN #13 GREEN & #12 GREEN/#13 TEE BOX		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. R-05 REV. No. B	
NO. BY CHK. APP. DATE REVISION DESCRIPTION													
B	EPF	JCO	BJL	05/07/2021	100% ISSUED FOR REVIEW								
A	EPF	JCO	BJL	03/12/2021	ISSUED FOR PERMITTING								