

Riley-Purgatory-Bluff Creek Watershed District
Board of Managers Regular Meeting
Wednesday, July 7, 2021 5:00pm Work Session Scheduled 7:00PM Regular Meeting
Virtual Meeting via ZOOM
<https://us02web.zoom.us/j/86875409929>

Agenda

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| 1. 5:00pm Work Session on Preliminary 2022 Budget | Information |
| 2. 7:00pm Call to Order Meeting of the Board of Managers | Action |
| 3. Approval of the agenda | Action |
| 4. Matters of general public interest | Information |

Welcome to the Board Meeting. Anyone may address the Board on any matter of interest in the watershed. Speakers will be acknowledged by the President; please come to the podium, state your name and address for the record. Please limit your comments to no more than three minutes. Additional comments may be submitted in writing. Generally, the Board of Managers will not take official action on items discussed at this time but may refer the matter to staff for a future report or direct that the matter be scheduled on a future agenda.

- | | |
|---|---------------|
| 5. Reading and approval of minutes | Action |
| a. Board of Managers Regular Meeting, June 2, 2021 | |
| b. Board of Managers Special Meeting, June 11, 2021 | |
| 6. Citizen Advisory Committee | Action |
| a. Report | |
| b. Confirm August Board CAC representative | |

7. Consent Agenda

(The consent agenda is considered as one item of business. It consists of routine administrative items or items where discussion isn't essential to understanding. Any manager may remove an item from the consent agenda for action.)

- a. Accept June Staff Report
- b. Accept June Engineer's Report
- c. Accept June Construction Inspection Report
- d. Accept 2020 Audit Report and authorize Administrator to distribute.
- e. Approve 2020-060 Christian Brothers Automotive as presented in the proposed board action section of the permit review report
- f. Approve Permit 2021-015 Groveland School Road Reconstruction as presented in the proposed board action section of the permit review report

- g. Approve 2021-038 Burger King EP as presented in the proposed board action section of the permit review report.
- h. Approve 2021-042 Pioneer Wetland Restoration as presented in the proposed board action section of the permit review report.
- i. Approve grant agreement in the amount of \$10,000 with the Preserve Association for the conversion of turf grass to Prairie.
- j. Approve agreement with HDR for website redevelopment and monthly maintenance in the amount of \$9,995 and authorize Interim Administrator Jeffery to sign.

8. Action Items

Action

- a. Pulled consent items
- b. Accept May Treasurer's Report
- c. Approve paying of the bills
- d. Consider authorizing 3- years of continued funding of University of Minnesota's research on the impacts of water quality and invasive macrophyte management on native macrophyte communities.
- e. Consider approval of request for variance from Rule D, Subsection 3.2.b minimum and average buffer widths for permit application 2021-017 Middle Riley Creek Stabilization Project
- f. Consider approval of request for variance from Rule D, Subsection 3.4 buffer monumentation requirements.
- g. Consider approval of permit 2021-017 Middle Riley Creek Stabilization Project as presented in the proposed board action section of the permit review report.
- h. Consider approval of cooperative agreement with Bearpath Golf and Country Club and authorize President Ward to sign.
- i. Consider approval of license with Bearpath Homeowners' Association and authorize President to sign.
- j. Consider approval of resolution 2021-005 authorizing solicitation of bids for Middle Riley Creek Stabilization project.
- k. Consider approval of cooperative agreement with City of Chanhassen for the Rice Marsh Lake Water Quality Treatment Project and authorize President to sign.
- l. Consider approval of resolution 2021-006 authorizing solicitation of bids for Rice Marsh Lake Water Quality Treatment project.

9. Discussion Items

Information

- a. In-Person Meetings and Meeting Facilities
- b. Attorney Report
- c. Administrator Report
 - i. Online Payment
 - ii. UMN Healthy Waters Initiative Update
 - iii. 2021-012 Noble Hill Slope Stability Study Update
 - iv. Website Update
 - v. Meeting with Chanhassen
- d. Manager Report

- i. Partnership with member communities on Green Step Cities (Crafton)
- ii. Audit and Accounting Workshop/Meeting (Koch)

10. Upcoming Board Topics

- a. Preliminary 2022 Budget Discussion

11. Upcoming Events

Information

- July 19th CAC Meeting, 6pm virtual
- August 4th Board Meeting with Workshop, 5PM and 7PM

Please check www.rpbcwd.org for the most current meeting details.

MEETING MINUTES

Riley-Purgatory-Bluff Creek Watershed District

June 2, 2021, RPBCWD Board of Managers Workshop and Monthly Meeting

PRESENT:

Managers:

Jill Crafton, Treasurer
Larry Koch
Dorothy Pedersen, Vice President
Dick Ward, President
David Ziegler, Secretary

Staff:

Amy Bakkum, Administrative Assistant
Zach Dickhausen, Water Resources Technician II
Liz Forbes, Grant Coordinator
Terry Jeffery, Interim District Administrator and Watershed Planning Manager
Eleanor Mahon, Education and Outreach Coordinator
Josh Maxwell, Water Resources Coordinator
Louis Smith, Attorney, Smith Partners
Scott Sobiech, Engineer, Barr Engineering Company

Other attendees:

Jeff Abrahamson	Teresa Halonen*
Calvin Alexander*	Greg Hawks*
Pat Andrican*	Elizabeth Henley
Miel Arredondo*	Paul Heuer, Pulte Homes*
Kim Behrens*	Susu Jeffery*
Sue Bennetts*	David Klopp*
Jeff Borowiak*	Seth Loken*
Justin Blum*	Dean Lotter*
Brinkley*	Peter Loyle*
Briana Crusan*	Madhura*
Chesney Engquist*	Jesse Mercado*
Elaine Evans*	Rebecca Prochaska*
Liz Forbes	Rod Rue*
Heidi Groven*	

**Indicates attendance only at the Regular meeting*

Note: this workshop and meeting were held remotely via meeting platform Zoom in abidance with the District's procedures in response to state COVID-19 actions, mandates, and guidance.

1. Workshop: 10-Year Plan Review

1 Interim Administrator Jeffery said this workshop is to discuss the District's 10-Year Plan project
2 prioritization metrics and benefits and four approaches staff has been discussing internally. He
3 reviewed the nine project benefits considered as part of the District's project prioritization
4 process for the 10-Year Plan:

- 5 •District Goals
- 6 •Sustainability
- 7 •Volume Management
- 8 •Pollutant Management
- 9 •Habitat Restoration
- 10 •Shoreline/Streambank Restoration
- 11 •Watershed Benefit
- 12 •Partnership Opportunities, and
- 13 •Public Access/Education

14 Interim Administrator Jeffery asked for feedback on whether any of these benefits should be
15 removed from the consideration and prioritization process. He gathered managers comments.

16 Interim Administrator Jeffery asked for feedback on whether any project benefits should be
17 redefined. There was manager discussion about points he raised, including points about pollutant
18 management, habitat restoration, shoreline/streambank restoration, and watershed benefit.
19 Managers and staff talked about soil health and whether it should be included as part of habitat
20 restoration or as an additional project benefit. Interim Administrator Jeffery said staff will bring
21 something back to the Board about soil health.

22 The group talked about whether project benefits should be added, such as a social vulnerability
23 metric, protection of sensitive or at-risk habitats, project logistics, or alignment with cities'
24 Capital Improvement Programs. Interim Administrator Jeffery recommended getting up and
25 running again a subcommittee on Diversity and Inclusion to meet and bring something to the
26 Board.

27 Interim Administrator Jeffery raised the question of what the District plans to do about marginal
28 or high-risk areas that will be under development pressure. He brought up ideas such as acquiring
29 property or partnering with MN Land Trust. Several managers commented about approaching
30 these possible projects as opportunity projects. Regarding alignment with cities, the managers
31 talked about making sure cities are aware of the District's Cost-Share program.

32 Interim Administrator Jeffery thanked the managers for their feedback and said he said staff will
33 prepare something based on the comments provided and will bring it back in front of the Board at
34 its next regular meeting, after which the CAC and TAC will be engaged.

35 The workshop concluded at 6:06 p.m.

36

2. Call to Order of the Regular Meeting of the RPBCWD Board of Managers

37 President Ward called to order the Wednesday, June 2, 2021, Board of Managers Regular
38 Meeting at 7:01 p.m. The meeting was held remotely via meeting platform Zoom.

39

3. Introduction of New Staff

40 Interim Administrator Jeffery introduced new District staff member Eleanor Mahon, Education
41 and Outreach Coordinator. Ms. Mahon shared about her previous experience including her
42 education in conservation biology and environmental education and her previous professional
43 roles.

44

4. Approval of Agenda

45 Manager Koch requested removing Consent Agenda items 8d – Accept 2020 Audit and Authorize
46 Staff to Distribute, and 8e – Approve Permit #2021-014 St. Hubert School Water Quality
47 Improvement Project with staff Recommendations. He requested adding item 9f – Authorization
48 of managers and staff to attend seminars put on by the Minnesota Department of Administration
49 regarding the Minnesota Data Practices Act and the Open Meeting laws.

50 Manager Ziegler moved to approve the agenda as amended. Manager Pedersen seconded the
51 motion. Upon a roll call vote, the motion carried 5-0 as follows:

52

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

53

5. Matters of General Public Interest

54 President Ward explained the procedures for speaking during the matters of general public
55 interest and stated comments can also be submitted in writing to District Interim Administrator
56 Jeffery.

57 Ms. Sue Bennetts of 9992 Indigo Drive, Eden Prairie, commented she has been a resident for 30
58 years and as a concerned citizen she wants to protect the Lower Riley Creek area from the
59 negative environmental impacts of the Noble Hill project. She said the project will make it more
60 difficult to restore the creek. Ms. Bennetts said more than two million dollars have been spent on
61 Lower Riley Creek stabilization projects, which is alarming to her since the MPCA has issued a
62 report showing the creek water quality has declined due to increasing phosphorous levels. She
63 raised her concerns about long-term effects of the project on this area of Eden Prairie, effects
64 including soil erosion, storm water runoff, the Noble Hill retaining walls, grading the project
65 would require, and impacts from removing 455 mature trees. Ms. Bennetts said one of the City of
66 Eden Prairie Council Members stated that the District, as an independent body, would make sure
67 the Council did not make any mistakes on the Noble Hill project. Ms. Bennetts commented that
68 without an EAW study, it isn't possible to understand the long-term effects of the project on this
69 area. She said she is asking the District Board to delay the permit process for this project, so she
70 has time to pursue an EAW appeal. She said she would like to work with the District to ensure the
71 safety and protection of this area.

72 Professor Calvin Alexander, professor emeritus at the University of Minnesota and resident at
73 4216 11th Avenue S., Minneapolis, shared PowerPoint slides on the topic of slope stability. He
74 commented that a slope stability investigation of the Noble Hill Project was recommended in a
75 Braun Intertec report. Professor Alexander read an excerpt of item C.1.e. of the report, addressing
76 slope stability and recommending that "a slope stability analysis be performed to estimate the
77 safety factor of the proposed slopes to evaluate that the safety factor is adequate." He commented
78 that the soils on the north side of the Minnesota River are subject to collapse, and he shared
79 images of slope failure in the Richard T. Anderson Preserve. Professor Alexander talked about
80 the effects of cutting into the toe of a slope, the delicate equilibrium of the site and the
81 significance of the presence of the springs at the site. He said he thinks slope stability needs to be
82 investigated further before the project process proceeds. Professor Alexander said he is open to
83 answering questions if they are submitted to him.

84 Mr. Justin Blum of 6155 Church Road, Shorewood, provided a summary of his professional
85 experience as a hydrologist and stated he was the Chair and Treasurer of the Hennepin County
86 Conservation District for four years. He said he has seen repeatedly that some developers submit
87 plans, which after getting approved and projects getting constructed, they walk away with the
88 profits and the infrastructure that's turned over to the City or local government to maintain have
89 problems. Mr. Blum said it has been his experience that those problems take a minimum of five
90 years to get addressed. He requested the District Board delay approving the project permit so
91 additional information can be gathered. Mr. Blum said the landscape of the proposed Noble Hill
92 project site is prone to problems.

93 Mr. Ken Brown of 6840 Parkview Lane, Eden Prairie, said his experience with slope stability
94 comes from working as a geologist with the U.S. Forest Service. He said he had wondered why
95 Gonyea Homes decided not to build on this site, and he talked about his review of the
96 geotechnical analysis conducted by Braun Intertec for Gonyea Homes and also submitted by
97 Pulte. Mr. Brown said he thinks the risks and costs made the project prohibitive for Gonyea, and
98 he listed the reasons he thinks this. He commented removing the toe of the slope would create a
99 significant stability problem and added that a retaining wall is only as stable as what it is built

100 upon. Mr. Brown said Braun Intertec recognized this, which is why Braun recommended a slope
101 stability analysis, which didn't occur. He talked about the soils on the site and went into more
102 detail about Braun Intertec's recommendations. Mr. Brown said Gonyea Homes pulled out of the
103 project and shared his opinion on why Gonyea pulled out. He said Pulte provided the Gonyea
104 report prepared by Braun to the Eden Prairie City Council, but even through Braun said their
105 evaluation shouldn't be used for another project proposal, the City of Eden Prairie accepted it.
106 Mr. Brown said retaining walls have a limited life, and Noble Hill project lacks data.

107 Ms. Briana Crusan of 2910 Thomas Avenue North, Minneapolis, commented her biggest concern
108 is that decisions about this project are being made based on a fourteen-year-old EAW. She noted
109 the EAW was prepared for a roadway project, not a development. Ms. Crusan said she is
110 concerned that the 2007 EAW is inadequate to address the impact of a new housing project. She
111 remarked the Riley Purgatory watershed is 22% covered by impervious surface, and stream
112 quality impairment begins when the percentage of impervious surface area reaches 10%.Ms.
113 Crusan commented that almost \$2,000,000 has been spent already to try to repair the damage that
114 has been done. She encouraged the Board to delay the release of the permit to Pulte while she and
115 others investigate what is going on and get a new EAW. Ms. Crusan said she and a group are
116 going into a legal process to appeal the City Council's decision, and she requested the Board to
117 delay the Board's decision while her group goes through the District court proceeding. She
118 requested the Board invest in prevention as it is significantly less costly that investing in
119 recovery.

120 Ms. Chesney Enquist of 4549 41st Avenue South, Minneapolis, said she is here to speak about her
121 concerns on slope analysis and discussing the deforestation, which impacts the potential for
122 erosion and landslide. She said when tree boughs are removed and soil microbes are disrupted,
123 there is an increased potential for erosion and landslide. Ms. Enquist said she found a 2-D model
124 that shows how this works, and she will send it to the Board. She said sheer intensile strength has
125 not been considered as part of this proposal in terms of the slope analysis in terms of the
126 vegetation and soil organisms in the hillside. Ms. Enquist said as part of her oath as a mechanical
127 engineer she is speaking out about her understanding and knowledge to protect others, and the
128 slope analysis needs to be done. She said she would try to figure out the hydrological approach
129 that the Board would want to consider when taking on the liability of the City's decision to
130 rezone and develop because there are many environmental factors and water quality factors in the
131 EAW that the City Council is asking the watershed to burden in terms of information and purview
132 that may not be within the watershed's jurisdiction and focus regarding code and permitting. Ms.
133 Enquist spoke in favor of the Board delaying the project permit approval so she and her group can
134 go through the legal appeal process and protect everyone in terms of authority, accountability,
135 and accuracy.

136 Dr. Elaine Evans of 1171 Edmund Avenue, St. Paul, spoke about the rusty patched bumblebee,
137 which is an endangered species and has been documented to be highly likely to be in the area of
138 the proposed Noble Hill project due to the habitat. She said she is a researcher at the bee lab at the
139 University of Minnesota and has worked studying this bee for a long time. Dr. Evans said the
140 construction would most likely be lethal to bees present in the proposed project area, and this bee
141 is already at risk of extinction. She explained the rusty patched bumblebee has already
142 disappeared from 95% of the places it used to be found, and the area around the Twin Cities is

143 one of the last havens for this species Dr. Evans asked the Board to consider the impact of the
144 project on this endangered species. That's in need of protection in this area. She said people can
145 contact her directly with any questions.

146
147 Ms. Miel Arredondo of 2214 Lincoln Street Northeast, Minneapolis, acknowledged that many of
148 the people on the meeting were on Dakota territory. She commented on Pulte's environmental
149 record and her concern for past permit violations. She asked the Board to postpone issuing a
150 permit and allow for due process for the EAW appeal. Ms. Arrendondo said in conversation with
151 Dr. Waski from the University of Wisconsin, an expert in earth science, he asked if Pulte is using
152 the latest adaptation strategies for the development or are they relying on stormwater and erosion
153 management methods developed for the last century. She said the current erosion concerns for the
154 proposed Noble Hill project are amplified by climate change and rainfall, evident in Eden Prairie
155 with the 2014 Bur Ridge home landslide, gas leak, and neighborhood evacuation, induced by
156 stormwater erosion. She provided details about that event, noting it occurred only four miles the
157 proposed Noble Hills site. Ms. Arrendondo stated the event occurred because the climate change
158 induced an above-average rainfall, one-month's-worth in one day, She said climate change plus
159 slope failure is a viable concern at Noble Hill and in conjunction with Pulte Homes seeming
160 inability to conduct due diligence and best management practices, she questions Pulte Homes'
161 track record and integrity in carrying out any permits. She asked the Board to postpone issuing a
162 permit until a slope stability analysis can be completed as recommended by experts. Ms.
163 Arrendondo commented the Dakota Territory ancestral cemeteries are all within the region
164 around the Noble Hill site.

165 Mr. Justin DeAngelo of 112366 Idle Circle in Chaska, Minnesota, commented one of the aspects
166 of denial for more study was a study Pulte conducted for rare plants in the area dated April 27. He
167 said April had 10 days below freezing, so there was not enough time for endangered plant species
168 to show up and be easily recognizable. Mr. DeAngelo commented that is another reason why the
169 Board should delay permits to allow more study.

170 Ms. Madhura of Shakopee said Sue and Brianna covered the topics she was planning to raise in
171 her comments.

172 Ms. Rebecca Prochaska of Porchlight Lane, Eden Prairie, commented there is a line between
173 what is in the District's authority and what is not. She said it looks like a lot of the serious
174 concerns around slope and cumulative effects may not be. Ms. Prochaska asked the Board to
175 delay issuing the permit because there is a big misunderstanding as it relates to the City Council's
176 understanding of the District's responsibilities and roles. She read excerpts from the City Council
177 meeting minutes regarding the point that the District is an independent body that will review the
178 project. Ms. Prochaska asked the Board to postpone its action on the permit until the EAW appeal
179 and to conduct a slope stability analysis to determine risk. She said she is hearing slope stability is
180 a unanimous concern, and she thinks it would be prudent for the Board to check budget and see if
181 it would make sense to work with citizens groups or experts to conduct a slope stability analysis
182 would make sense.

183 Mr. David Klopp of 3715 Cedar Lake Road South, Minneapolis, and the Cedar Lake Park
184 Association, commented the Cedar Lake Trail was the first greenway trail in America. He said it

185 runs into the Minnesota Bluffs Trail, which collapsed under a landslide and was closed for years.
186 He said he lives by the Great Medicine Spring in Wirth Park. Mr. Klopp said the spring is
187 contaminate with arsenic and high levels of bacteria and good water quality is not attainable. He
188 said across the river from the RPBCWD is Eagle Creek, which is the last trout stream on the
189 Minnesota River. Mr. Klopp said the watershed managers between Savage and Shakopee new the
190 value of that water and that trout creek. He said Boiling Springs was a unique geological asset to
191 the community. Mr. Klopp said the city is going to grow, and it needs areas like this. He asked
192 everyone to think about how many areas are like this where one can go fill up a jug of great
193 tasting spring water without paying a nickel. Mr. Klopp said he is a citizen activist and has a
194 history of going to the legislature, doing bonding bills, and has had successes like with Eagle
195 Creek. He commented on working with the managers of the watershed between Savage and
196 Shakopee, and funding including a grant. Mr. Klopp talked about the idea of Pulte putting fewer
197 homes in the development proposal and leaving a greater amount of undeveloped area around the
198 spring.

199 Ms. Susu Jeffery, founder of Friends of Cold Water, said Cold Water was one of the last
200 accessible springs in Hennepin County. She said the spring is no longer accessible. She described
201 the status of other area springs, noting the Frederick Miller Spring is the last of the free good
202 water access. Ms. Jeffery displayed a map from DNR landslide inventory indicating landslides
203 along the Minnesota River slippery ridge area. She commented Pulte Homes will not guarantee
204 the retaining wall, and it will be the responsibility of the homeowners to sustain the wall. Ms.
205 Jeffery said she thinks if the wall were a good wall, Pulte Homes would guarantee it. She said the
206 fact that Pulte Homes isn't going to guarantee the retaining wall is a big no-no for her. She asked
207 the Board to consider her points.

208 Mr. Jeff Abrahamson stated he represents the Standahl family who owns the property being
209 discussed. He said he resides at 631 Arcade Street, St. Paul, Minnesota. He said the Standahl
210 family respects the Board and its decisions and all the individuals here to speak tonight. Mr.
211 Abrahamson said the point Ms. Prochaska raised about the Board's jurisdiction and purview is
212 correct, and many of the comments shared tonight are not within the Board's jurisdiction or
213 purview. He asked the Board to rule within its jurisdiction and purview. Mr. Abrahamson said the
214 Standahl family has owned the property since 1977 and have been good stewards of the property
215 including the area that abuts the Riley Creek spring. He said the family has worked diligently
216 with Pulte Homes to put property protections in place while allowing the development to go
217 forward. Mr. Abrahamson said for the last 20 years, the Standahl family has looked at this
218 property as retirement for the family. He provided details about the previously considered
219 development project by Gonyea Homes, explaining the company didn't pull out because of
220 concerns about landslides. He said Gonyea Homes pulled out because of everything going on
221 regarding the pandemic. Mr. Abrahamson said the Standahls have been delayed well over a year
222 from achieving their retirement. He said everyone commenting this evening has asked the Board
223 for a delay, and these requests were raised in front of the Eden Prairie City Council on May 4.
224 Mr. Abrahamson said he understands people may not like the Council's ruling, but the watershed
225 is not the place to relitigate those issues. He said the Board delaying its obligation to allow people
226 to seek legal recourse isn't the Board's jurisdiction or venue. Mr. Abrahamson stated his clients
227 asked him to be here tonight to ask the Board to rule on the rules, regulations, and requirements

228 that the Board rules on. He said there are legal ramifications if the project is delayed another 30
 229 days, because it could cause his clients and Pulte Homes to miss their closing. He asked the
 230 Board to follow through within its jurisdiction and purview to go ahead and ultimately do the work
 231 the Board is asked to do.

232 Ms. Prochaska responded to Mr. Abrahamson and commented the reason she is here is because
 233 the City Council did not address these serious concerns and said it was under the watershed’s
 234 purview to look at these things, which he just said it isn’t. She said this is a problem, and an EAW
 235 is needed to sort it out. Ms. Prochaska said the project can’t be pushed through when there is
 236 confusion over the impacts and who has responsibility.

237 President Ward reiterated that additional comments can be submitted to the District in writing to
 238 Interim Administrator Jeffery.

6. Reading and Approval of Meeting Minutes

239 a. **May 5, 2021, RPBCWD Board of Managers Regular Meeting, Including Continuance**
 240 Manager Pedersen noted the word “it” should be removed from line 31, on line 56 revise
 241 the word comments to comment, on line 64 remove the word “the” before the word
 242 “checklists”, and on line 353 add the missing 0 to \$5,000. Manager Crafton said the
 243 words “stated the” should be deleted on line 255, and the words “of way” should be added
 244 on line 263, so the phrase reads “right of way.” President Ward noted on line 109 of the
 245 meeting continuation, the words “by Manager Koch” should be added, so the sentence
 246 reads, “...comments provided by Manager Koch in previous Board meetings...”

247 Manager Ziegler moved to approve the minutes of the May 5th Board of Managers
 248 Regular Meeting and meeting continuance. Manager Pedersen seconded the motion.

249 Upon a roll call vote, the motion carried 5-0 as follows:

250

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

251

7. CAC

252 Ms. Kim Behrens stated the CAC report includes two items regarding the Noble Hill project. She
 253 said four of the individuals here tonight presented at the CAC meeting. Ms. Behrens reported the

254 CAC passed a motion to recommend the Board delay its decision on the Noble Hill project permit
255 as statutorily allowed to give citizens petition time to go through the appeal process through the
256 District Court. She reported the CAC passed a second motion to ask the Board to direct District
257 staff to compile spring and seep data for the lower values of Riley, Purgatory and Bluff Creek to
258 input into the Minnesota DNR’s spring inventory. She reported on other items discussed at the
259 meeting, including the District’s 10-Year Plan. Ms. Behrens said a survey of CAC members is
260 being conducted to find out interests of the group. She said at least two CAC members are
261 interested in participating in the District’s strategic planning process.

262 President Ward said he will attend the CAC’s June meeting as the Board representative.

263

8. Consent Agenda

264 President Ward reported the May Construction Report isn’t yet available, so isn’t part of today’s
265 Consent Agenda. Manager Ziegler moved to approve items A - Accept May Staff Report, and B-
266 Accept May Engineer’s Report, on the Consent Agenda. Manager Pedersen seconded the motion.

267 Upon a roll call vote, the motion carried 5-0 as follows:

268

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

269

270

9. Action Items

a. Items Pulled from Consent Agenda

i. Accept 2020 Audit Report and authorize staff to distribute

Manager Koch stated he presented the auditors with several pages of issues, to which he received an acceptable response to half of the issues he raised. He said several important issues remain to be addressed, and he listed the issues. Manager Koch moved to lay this item over to a follow up meeting before the District must submit it and ask the auditors to respond to his questions. President Ward, Interim Administrator Jeffery, and Attorney Smith confirmed the District needs to submit the audit by June 30. President Ward seconded the motion.

Manager Pedersen asked Treasurer Crafton about her opinion of the audit report. Manager Crafton said she had some of the same concerns Manager Koch raised. She said she doesn't think the issues are significant and the audit could be submitted as is, but it would be worth the time to clarify some of the questions Manager Koch has raised. Manager Ziegler made the friendly amendment that the Board direct Administrator Jeffery to set up the meeting. Manager Koch and President Ward accepted the friendly amendment. President Ward made the friendly amendment that Manager Crafton and Manager Koch interact with the auditor to get the Board's questions answered. Managers Koch and Ziegler agreed to the friendly amendment.

Upon a roll call vote, the motion carried 5-0 as follows:

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

ii. Approve permit #2021-014 St Hubert School Water Quality Improvement Project with staff recommendations

Manager Koch asked for more details about the project, and Interim Administrator Jeffery provided them. Manager Koch moved to approve permit

300 #2021-014 to adopt the resolution based on the staff recommendations in the
 301 staff report in the Board packet. Manager Ziegler seconded the motion.

302 Upon a roll call vote, the motion carried 5-0 as follows:

303

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

304

305 **b. Accept April Treasurer’s Report**

306 Manager Crafton stated the report has been reviewed in accordance with internal
 307 controls and procedures. She moved to accept the Treasurer’s Report. Manager Ziegler
 308 seconded the motion. Manager Koch asked for more details about the payment to
 309 Freshwater Scientific and the payment to Houston Engineering. Treasurer Crafton and
 310 Mr. Maxwell provided more information about the invoice from Freshwater Scientific.
 311 Manager Koch said his understanding is the District doesn’t have anything budgeted for
 312 the database work for this year. Manager Koch asked if the Board should look to move
 313 money out of its reserve to cover the permit, the grant database, and excess professional
 314 services cost. Interim Administrator Jeffery said a discussion about the best path
 315 forward can be part of the Board’s agenda for its July meeting.

316 Upon a roll call vote, the motion carried 5-0 as follows:

317

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

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c. Approve Paying of Bills

Manager Crafton moved to pay the bills. Manager Pedersen seconded the motion. Upon a roll call vote, the motion carried 5-0 as follows:

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

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324

d. Authorize Advertisement for Bids for Pioneer Wetland Restoration Project

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Interim Administrator Jeffery reminded the Board the District has a BWSR grant for this work. He displayed proposed plans for the project, showing the grading and utility plans and the restoration plan. He reported the engineer’s opinion of probable construction cost based on the final design configuration is \$468,000, noting it’s a \$100,000 reduction in price compared to the engineer’s opinion of probable cost at the feasibility stage. Interim Administrator Jeffery stated the annual total phosphorous removal based on final design is 4.2 pounds per year, the final design annual cost per pound of total phosphorous removed is \$3,710 per year. He reviewed the anticipated project schedule.

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Interim Administrator Jeffery asked the Board to authorize staff to solicit bids. There was discussion about the restoration plan. Manager Ziegler moved to authorize staff to go out for bids for the Pioneer Wetland Restoration Project. Manager Pedersen seconded the motion. Upon a roll call vote, the motion carried 5-0 as follows:

338

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

339

340 e. Approve Permit 2021-012 Nobel Hill with Staff Recommendations

341 Engineer Sobiech displayed slides and indicated on a map where the proposed project is
342 located. He described the current site and the proposed project, noting the proposed
343 project is on the east side of Riley Creek and the Fredrick Miller spring is on the west
344 side of the creek. He went through the permit review summary and explained the
345 engineer’s two permit-specific conditions and stipulations, including the applicant needs
346 to enter into a maintenance declaration and have it recorded on the property.

347 Engineer Sobiech summarized the Engineer’s recommendation, which is approval of the
348 permit contingent upon:

- 349 • Continued compliance with General Requirements
- 350 • Financial Assurance in the amount of \$150,030
- 351 • Applicant provides documentation demonstrating the necessary land-use rights
352 have been obtained for the proposed activities within the right of way
- 353 • Applicant provides name and contact information of the general contractor
354 responsible for erosion and sediment control at the site
- 355 • Additional soil investigation will be needed to verify adequate separation to
356 groundwater
- 357 • Receipt in recordation of a maintenance declaration for the stormwater
358 management facilities and buffers. Drafts of any and all documents to be
359 recorded must be approved by the District prior to recordation.

360 Manager Ziegler asked Engineer Sobiech if given the questions raised today about the
361 project, if he would change any recommendations. Engineer Sobiech responded that
362 when looking at the permit with respect to the regulatory program and the criteria, the
363 project is consistent and compliant with the criteria the way they are established in the
364 regulatory program today.

365 Engineer Sobiech responded to questions. Manager Koch described his concerns about
366 the slope and said he would like legal to weigh in on the extent of the District’s rules
367 and requirements. Manager Koch commented he doesn’t have enough data to make a
368 decision. President Ward asked if an EAW has been ordered. Interim Administrator
369 Jeffery said the City of Eden Prairie decided there is enough data that it’s not necessary
370 to move forward with an EAW.

371 Managers commented about the steep slope on the proposed project site and their
372 concerns about slope failure and the lack of a slope stability analysis. Manager Pedersen
373 said she doesn’t think the Board has enough information at this point to move forward.
374 President Ward concurred and stated he is concerned about the high-risk erosion area so
375 close to the stream. He said he would like to see a slope stability analysis. Manager
376 Crafton talked about information Dr. Alexander, who commented tonight, presented at
377 the District’s CAC meeting, including he recently walked the proposed project site and
378 found 12 springs that had not been previously identified to submit to the DNR spring

379 inventory. She said there isn't enough information about what's below the surface, and
380 she's concerned about what the removal of trees will do to the soil stability. Manager
381 Crafton said the Board should delay its decision on the permit for 60 days to allow the
382 citizen petition to go to District Court and get a ruling given the Board doesn't have
383 adequate information. Manager Pedersen agreed.

384 Manager Ziegler said the presentation to the city indicated which trees were being saved
385 and which trees were being removed, which would be useful information for the Board
386 to have.

387 Manager Koch remarked the citizens' petition isn't this Board's bailiwick, and instead
388 the District needs adequate information to determine application of the District's rules.
389 He said he doesn't want that hillside filling up Riley Creek. Manager Koch said the
390 Board needs additional data and then advice of its legal counsel regarding application of
391 the District's rules. He said he supports extending the District's review of the permit
392 application based on his comments.

393 Manager Koch moved to formerly approve an extension of 30 days direct staff to gather
394 the information mentioned and re-evaluate and get the advice from counsel. Manager
395 Crafton seconded the motion and made the friendly amendment to extend for 60 days.
396 Manager Koch accepted the friendly amendment.

397 Mr. Heuer of Pulte Homes stated he will address misstatements he has heard presented
398 this evening. He said the previous applicant, Gonyea Homes, didn't withdraw due to
399 their fear of the site's slopes but due to the pandemic. Mr. Heuer stated the geotechnical
400 report for Gonyea Homes proposed project was created for Gonyea Homes' plan, which
401 had steeper slopes than Pulte's plan. He said it is clear from comments tonight that this
402 wasn't known. Mr. Heuer said Gonyea Home's plan included slopes at a 2:1 gradient,
403 and Pulte Home's plan includes slopes no steeper than 3:1, which is a huge difference
404 and leaves no geotechnical questions.

405 Mr. Heuer said an EAW hasn't been done for this project, but Pulte Homes completed
406 pretty much every study in an EAW for this property. Mr. Heuer said the LGU, the City
407 of Eden Prairie, determined an EIS is not required, and the Environmental Quality
408 Board didn't determine an EAW is warranted but determined administratively that the
409 petition met the legal precedence to forward it on to the City for its decision, and the
410 EQB expressed no support of requiring an EAW. Mr. Heuer expressed his frustration
411 with comments made against the integrity of Pulte Homes and said context is important,
412 understanding the size of Pulte Homes as a company. He commented on his long career
413 marked by working with integrity and honesty and expressed his displeasure in the
414 comments and innuendos earlier in the meeting suggesting that he and Pulte Homes are
415 dishonest and have been dishonest in this development process.

416 Mr. Heuer addressed the comment about the rare plant study, adding that the
417 commentor didn't say that the ecologist went to a known colony of rare plants in
418 another known area, and the plants were at a stage of growth that they were identifiable.
419 Mr. Heuer said Pulte Homes builds retaining walls through a contractor, who gives a

420 warranty for the construction of the wall, and their maintenance is the responsibility of
 421 the homeowners’ associations in perpetuity, and this is standard procedure.

422 Mr. Heuer listed the ways Pulte Homes worked with the City and Watershed District to
 423 make this a better application than the one from Gonyea Homes, and he said the project
 424 complies with all the City and Watershed District rules. He stated the Board delayed
 425 action on this item by one month already and delaying 60-days could cause damage to
 426 the Standahls and Pulte Homes because of the effects of the delay on the contract and
 427 schedule. Mr. Heuer requested the Board not delay longer than necessary because
 428 damages start accruing quickly.

429 Mr. Abrahamson said the Board has a duty and rules, and his clients, the Standahls, has
 430 worked diligently with Pulte Homes. He said the comments provided to the Board
 431 tonight were presented to the City of Eden Prairie along with 1,600 pages of
 432 documentation about the proposed project. However, he said, it worries him that the
 433 Board seems to be taking the comments of the public, who may not have professional
 434 technical backgrounds, over the recommendation of the District’s own technical staff.
 435 He said if the Board needed more information, why did the Board not request it 30 days
 436 ago. Mr. Abrahamson said delaying this permit by even 30 days harms his clients, and
 437 his clients are residents of Eden Prairie and this property since 1977. He said citizens
 438 can pursue legal recourse through the District court, and the comments shared tonight
 439 informed the group that citizens are pursuing legal recourse. Mr. Abrahamson said it is
 440 not the Board’s purview to say the Board is going to delay action to allow citizens time
 441 to seek recourse. He said if the Board needed more information, the Board should have
 442 notified Pulte Homes 30 days ago with the request because the discussion tonight could
 443 have addressed any issues. Mr. Abrahamson said a delay of 60 days could effectively
 444 terminate Pulte’s ability to move forward this year with any project whatsoever in this
 445 building season.

446 Attorney Smith reiterated that the Board’s request for an extension of 60-days for the
 447 permit application is for further review of the application based on Minnesota Statutes
 448 1599.

449 Upon a roll call vote, the motion carried 4-1 as follows:

450

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	No

451

452 **f. Authorization of Managers and Staff to Attend Seminars put on by the**
 453 **Minnesota Department of Administration Regarding the Minnesota Data**
 454 **Practices Act and Open Meeting Laws**

455 Manager Koch moved to authorize staff to attend the seminars put on by the Department
 456 of Administration regarding the Minnesota Data Practices Act and the Open Meeting
 457 laws. Manager Ziegler seconded the motion. Upon a roll call vote, the motion carried 5-
 458 0 as follows:

459

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye
Pedersen	Aye
Ward	Aye
Ziegler	Aye

460

10. Discussion Items

461 **a. In-Person Meetings Timeline**

462 Attorney Smith summarized the recent Governor’s order. The managers, staff, and legal
 463 counsel discussed the District’s approach to determining what is practical and prudent
 464 regarding in-person meetings and staff returning to working in-person. Attorney Smith
 465 recommended the Board discuss this item at its next monthly meeting and in the
 466 meantime staff should discuss what it sees as practical and prudent regarding returning to
 467 in-person working conditions.

468 Manager Koch moved that the Board would continue to hold its meeting remotely until it
 469 makes a further determination based on further guidance because at this time the Board
 470 does not see it is prudent to meet in person due to the lack of vaccinations and moved to
 471 direct Interim Administrator Jeffery to develop recommendations to present to the Board
 472 regarding a return to in-person work policy regarding the status of COVID-19. Upon a
 473 roll call vote, the motion carried 5-0 as follows:

474

<i>Manager</i>	<i>Action</i>
Crafton	Aye
Koch	Aye

Pedersen	Aye
Ward	Aye
Ziegler	Aye

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476

b. Attorney Report

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Attorney Smith said it is his understanding that the term of the managers was established in the original establishment order that the state water resources board issued, and that term expiration is July 31. He said that establishment order is what Carver County and Hennepin County rely on to establish the terms, and it is up to the counties to follow.

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Manager Koch said he didn't find this information in the Board's Governance Manual or Bylaws, and the District may want to consider adding such information about the term of the managers. Attorney Smith said it is addressed in statute, but the Board could address it in the manual as well.

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c. Administrator Report

486

Interim Administrator Jeffery reported on working with citizens about their concerns about a decrease in Silver Lake's lake level. He noted a cost of approximately \$100 to the District to have surveyors take readings about the outlet structure, which will help the District understand what might be going on.

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Interim Administrator Jeffery reported about a policy drafted by MAWD regrading distribution of the Clean Water Implementation Grants, explaining several watershed districts have drafted letters of support to send to John Jaschke and the Minnesota Board of Water and Soil Resources. Interim Administrator Jeffery said he would like to draft a letter of support from this District to provide to the Board for its review. The managers indicated agreement with Interim Administrator Jeffery drafting a letter for the Board's review.

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d. Managers' Report

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Manager Koch commended Interim Administrator Jeffery on the job he has been doing in his new role as Interim Administrator for the District and particularly in his communication with Manager Koch.

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11. Upcoming Board Topics

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President Ward noted upcoming events and said he would like the Board to have a budget workshop prior to the Board's July 7th meeting. The managers agreed by consensus for staff to schedule a budget workshop.

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President Ward adjourned the meeting at 9:52 p.m.

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Respectfully submitted,

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David Ziegler, Secretary

Draft Minutes: June 21, 2021
RPBCWD Citizens' Advisory Committee Monthly Meeting
Virtual Via Zoom

Member Attendance (By each name, put a P=Present, E=Excused, not present but with notification or A=Absent with no notification)

Andrew Aller	P	Samuel Griffin	P	Terry Jorgenson	P	Jeff Weiss	E
Rodey Batiza	P	Heidi Groven	P	Sharon McCotter	P	Jessica Wiley	P
Kim Behrens	P	Michelle Frost	A	Jan Neville	P		
Jim Boettcher	P	Peter Iverson	E	Marilynn Torkelson	P		

Terry Jeffery	RPBCWD staff	P
Liz Forbes	RPBCWD	P
Eleanor Mahon	RPBCWD staff	P
Manager Ward	BOM	A
Calvin Alexander	UM Professor emeritus & guest speaker	P

Key CAC MOTIONS for the Board of Managers: 1. Instead of our regularly scheduled July 19th meeting, we'll have a field trip joining the Wild Ones Prairie Edge tour on July 27th from 6pm-8:30pm starting at Eden Prairie Fire Station #2 and continuing to Jan Neville and Lori Tritz restorations. Heidi made motion, Sharon seconded.

Key CAC discussion items for the Board of Managers: Prof. Alexander's spring presentation was recorded. Key point is that seeps and springs can be adversely affected by human activities including introducing increased amounts of road salt, harmful bacterias and viruses. Water temperatures from seeps and springs at some sites are also increasing due to human activities/development.

I. Opening

- A. **Call CAC meeting to Order:**
- B. **Attendance:** As noted above.
- C. **Staff and Manager introductions** Eleanor Mann started May 24th as new E&O coordinator.
- D. **Matters of general public interest:** none
- E. **Approval of Agenda:** Jan to be timekeeper. Add to V2: Water Stewardship Grant liaison needed to replace Heidi. Andrew made a motion to approve the agenda and Terry J. seconded. Motion passed.
- F. **Approval of May 17, 2021 CAC Special Meeting Minutes:** Marilyn made a motion, Terry J seconded. 2 people abstained. Motion to approve minutes was approved.

II. Board Meeting Recap and Discussion -

- A. Highlights from the (monthly) managers meeting were presented by Kim. 45 people were on the Zoom call with 14 speakers (2 in favor of the Nobel Hill project, including the housing developer and current owners-the other 12 spoke against the project due to environmental concerns including potential harm to Riley Creek or the Frederick Miller Spring). Permit approval was postponed for 60 days by BOM. The BOM also authorized bids for the Pioneer Trail wetland restoration.
- B. Response on CAC recommendation to the Board (Nobel Hill) The BOM decided that under MN State statute Environmental Rights Act, there are enough concerns to water quality from this project that additional information should be required. Pulte will be given a list of additional information needed this week.
- C. New Advisory Topics from the Board? None

III. Education / Learning Topic 6:20-7pm

- A. **Seeps and Springs: Professor Alexander emeritus professor U of M** Earth & Environmental Science. MN definition spring and seep. Residence Time is defined as the time between when the water fell out of the sky and later resurfaces in a spring or seep which can be hours or many millions of years. A spring inventory of public lands is in process (private lands aren't as accessible) and is nowhere near complete. There are four different kinds of springs. In order to find springs, ask people, travel creeks upstream and look for open water or green areas in the winter time. Characteristic plants around seeps and springs include Marsh Marigolds and/ or watercress in summer. There are always more springs than you realize because some springs are ephemeral or located on private property. Characteristic biology: Amphipods and bright orange bacterial flocs. Groundwater is not as pure as once thought. Some viruses and bacteria are naturally occurring and others have been introduced by humans and are potentially harmful. Prof. Alexander still has not been able to get Eden Prairie's data from their monitoring of the Frederick Miller Spring. BOM directed staff to collect spring and seep data.
- B. **Water Conservation Education - Eleanor 7-7:20pm** Conserving Resources in a Drought. We may be doing more harm than good by watering lawns to try to keep grass from going dormant in periods of drought. Dormancy is normal and better for

your lawn when temps are above 85F for several days in a row. The grass goes dormant to reprioritize keeping its roots alive. Keep your lawnmower on the highest setting to have the longest roots.

IV. BOM / 10 Year Plan Program and Project Updates—7:20 -7:30pm

- A. Items from BOM minutes for discussion/motions: none
- B. Request from Manager Meeting to CAC- Pioneer Wetland would like CAC input. Terry to review BOM minutes on Prince's property-100 acres was donated and could be a possible field trip for the CAC. Terry to meet with the city of Chanhassen. A park could almost encircle Lake Ann with only one private homeowner left.
- C. Background Presentation wanted from staff on Advisory Topics from Board of Managers- Heidi asked for a presentation on Pioneer Trail wetland restoration. Jim asked about water reuse.

V. CAC Business: Process and Function

- A. Topics for future CAC Agenda
 - 1. CAC Member Survey: Heidi created with the intent to have presentations by staff, CAC members or guest speakers where the CAC has an interest but little knowledge. Remaining CAC members please complete the survey by the end of the month.
 - 2. Volunteer projects ideas: MNWater Stewards recruit for district projects & ongoing training, fall leaf cleanup, trash pickups, invasive species removal. Heidi suggested that at our August meeting we designate an hour to brainstorm activities.
 - 3. **Water Stewardship Grant liaison needed to replace Heidi.** Rodey and Terry Jorgenson are interested.
- B. **Re-Entry Plan: Hybrid meeting for July?** For July we'll have a field trip joining the Wild Ones Prairie Edge tour on July 27th to replace the regularly scheduled July 19th meeting. Heidi made motion, Sharon seconded. August the CAC will likely return to in person meetings at the RPBCWD office.
- C. **2021 Calendars**
 - 1. **Volunteers for Board meetings:** Volunteers needed for July 7th Board meeting. Marilyn tentatively to cover. Sign up on the Google docs calendar to cover July Board meeting in the spreadsheet in the CAC google folder

VI. Upcoming Events and Meeting Close.

- A. RPBCWD Board of Managers July 7th 2021; 7:00 PM Regular board meeting – virtual Zoom meeting - Need a volunteer to attend on behalf of the CAC
- B. RPBCWD CAC Meeting July 27th, 2021; 6:00 PM – Fire Station #2; Manager ? to attend on behalf of the managers. Terry to check on a microphone.
- C. Motion to Adjourn made by Sharon and seconded by Jan. Meeting adjourned at 8:03 pm.

Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers and District Administrator
From: Barr Engineering Co.
Subject: Engineer's Report Summarizing June 2021 Activities for July 7, 2021, Board Meeting
Date: June 30, 2021

The purpose of this memorandum is to provide the Riley-Purgatory-Bluff Creek Watershed District (RPBCWD) Board of Managers and the District Administrator with a summary of the activities performed by Barr Engineering Co., serving in the role of District Engineer, during June 2021.

General Services

- a. Continued working with Counsel Smith and Interim Administrator Jeffery to revise the draft cooperative agreement with Bearpath Golf and Country Club of the Middle Riley Creek project, including suggested text additions/revisions, virtual meetings on June 24th & June 29th, revisions to easement exhibit, and development of a draft maintenance plan.
- b. Participated in a June 17th meeting at Bearpath Golf and Country Club to discuss the revised draft cooperative agreement, site access alternatives to avoid private driveway, project timeline, permitting requirements, and needed agreements with Homeowners Association to facilitate access.
- c. Participated in June 8th and 28th meetings with Interim Administrator Jeffery and staff Bakkum to discuss 2022 activities and begin developing the 2022 budget and levy estimates.
- d. Met with Interim Administrator Jeffery and Counsel Welsh on June 3rd to discuss the District process for capital improvement project implementation (steps, timelines, and property rights) 10-year plan, begin identifying potential enhancements and policies, and plan for the June Board workshop.
- e. Met with Interim Administrator Jeffery and Counsel Welsh on June 21st to discuss RPBCWD standard contracting requirements and timelines for vegetation warranty and vegetation establishment period. Discussion also included revisions to the draft cooperative agreement for the Rice Marsh Lake subwatershed 12 project and letter from BWSR indicating potential state shutdown could impact grant funding. In response to the BWSR letter Interim Administrator Jeffery directed the Pioneer wetland bid solicitation be delayed.
- f. Participated June 2nd workshop on the 10-year plan prioritization metrics.
- g. Participated in a June 30th meeting with President Ward, interim Administrator Jeffery, and Counsel Smith to discuss upcoming July 7th Agenda.
- h. Participated in the June 2nd regular Board of Managers meeting.
- i. Prepared Engineer's Report for engineering services performed during June 2021.

- j. Miscellaneous discussions and coordination with Interim Administrator Jeffery about the 2022 budget process, upcoming board workshop, regulatory program, and upcoming Board meeting agenda.

Wetland Management Program Assistance

- a. Assisted incorporating Rapid Floristic Quality Assessment (FQA) methodology with full vegetation list in District's MNRAM assessments:
- b. Participated in virtual meetings with Interim Administrator Jeffery and staff Dickhausen discussing FQA spreadsheet and MNRAM and data management.
- c. Communication regarding formulas in FQA spreadsheet.
- d. Modify, test and review FQA spreadsheet calculations containing the full vegetation list
- e. Reviewed District shapefiles and geodatabase to identify numbering for MNRAM wetland complexes and for individual polygons
- f. Participated in virtual meetings with Interim Administrator Jeffery and staff Dickhausen discussing MNRAM numbering based on township/range/section (TRS)TRS. Discussed how to manage these numbers within the geodatabase, MNRAM, and FQA spreadsheet so data is linked

Permitting Program

- a. *Permit 2020-029: CorTrust Bank* – This project proposes reconstruction of the CorTrust bank building parking lot constructed in the 1990s located in Minnetonka, MN. The project will restore the parking lot to the intended grade and improve storm sewer drainage to an existing storm water pond on the east side of the site. The proposed project triggers RPBCWD's floodplain Management and Drainage Alterations, erosion prevention and sediment control, wetland and creek buffers, and storm water management rules. Participated in a June 14th virtual meeting with the applicant to discuss potential avenues forward given the Board's denial of floodplain variance, approval of buffer variance, and conditional approval of the permit in July 2020. Discussed potential floodplain mitigation ideas to eliminate or significantly reduce the floodplain variance request and the potential for the applicant to discuss the project with the Board at a work session.
- b. *Permit 2020-060: Christian Brothers Automotive*– This project proposed construction of an auto care center and associated parking areas on Crossroads Boulevard in Chanhassen, MN. A subsurface stormwater management facility, iron enhanced sand filter, hydrodynamic separator, Bayfilter filtration device, and rainwater harvest and reuse are proposed to provide volume control, water quality, and rate control. The project triggers the erosion prevention and sediment control rule and the stormwater management rule. Participated in a June 21st virtual meeting with the applicant's engineer to discuss additional site restrictions, proposed stormwater management facilities and modeling techniques to demonstrate compliance. Reviewed June 24th submittal and drafted a permit report for consideration at the July 7th Board of Managers meeting.
- c. *Permit 2021-008: Minnetonka High School Momentum Building Addition* – This project consists of proposed building addition located at 18301 Highway 7 in Minnetonka. Site

- improvements include construction of a building addition, new sidewalks, grading, landscaping, and related utilities. A subsurface stormwater management system will provide stormwater rate, volume, and water quality control. The project triggers the erosion prevention and sediment control rule and the stormwater management rule. Reviewed maintenance agreement and provided comments to the applicant.
- d. *Permit 2021-012: Noble Hill*– The applicant is planning a low-density residential development consisting of 50 single-family homes on a 32-acre site in Eden Prairie, Minnesota. The site contains large varying slopes including steep slopes within a high-risk erosion area as delineated by the District and most of the site discharges to a wetland which abuts Riley Creek on the western border of the site. The proposed development of 50 single-family homes will include construction of associated streets, underground utilities, and stormwater features. Three infiltration basins and one sediment basin are proposed to provide stormwater quantity, volume and quality control. The proposed project triggers RPBCWD's erosion prevention and sediment control, wetland and creek buffers, and stormwater management rules. Met virtually with Interim Administrator Jeffery and the applicant on June 4th. Participated in virtual meetings with President Ward, interim Administrator Jeffery, and Counsel Smith on June 7th, 11th, and 14th to discuss Board's request to the applicant for additional information on slope stability, groundwater seeps & spring, pollutants, and vegetation. Developed a detailed scope of work outlining the additional analysis and information needed to help the Board make an informed decision on the development. Met with Interim Administrator Jeffery, City of Eden Prairie, and the developer on June 23rd to discuss required analyses to address city and watershed district concerns. Participated in a June 24th virtual meeting with the applicant and Braun Intertec to go over the required stability analysis and timeline. t
- e. *Permit 2021-015: Groveland Street Reconstruction*– The City of Minnetonka is proposing a linear reconstruction project within the Groveland Neighborhood of Minnetonka, MN. The portions of Groveland School Road and Lowell Street within RPBCWD will construct 34,700 square feet (SF) of reconstructed impervious area and 1,400 SF of new impervious area. The proposed project triggers RPBCWD's erosion prevention and sediment control, and stormwater management rules. Reviewed June 8th submittal and drafted a permit report for consideration at the July 7th Board of Managers meeting.
- f. *Permit 2021-016: Duck Lake Road reconstruction*: The project includes full reconstruction of Duck Lake Road from Duck Lake Trail to Mallard Court in Eden Prairie, MN. The project also includes replacing the culvert under Duck Lake Road with a bridge, installing a backyard drain behind the homes along pardons Drive, constructing an infiltration basin, filling a portion of the floodplain of Duck Lake, and restoring the lake outlet to the elevation permitted by the DNR in 1969. This project will trigger RPBCWD Rules B, C, D, E, F, G, and J. Reviewed draft maintenance agreement and provided comments to the applicant.
- g. *Permit 2021-017: Middle Riley Creek Stabilization*– The project will involve the stabilization of two segments of Riley Creek upstream of Lake Riley; a southern reach between the Hole #16 fairway and green, approximately 580 feet in length feet and a northern reach west of the Hole #13 tee box, a length of approximately 390 feet. To accommodate the creek stabilization, Bearpath Country Club will elevate hole #13 tee boxes, moving them to the east, and remove a portion of the existing impervious trail and improve hole #12 green area. The project includes realigning the existing creek channel, grading to reconnect the creek with its

- floodplain, installation of rock riffles, cross vanes, and J-hook vanes within the channel at key locations to provide grade control and reduce the potential of further erosion. The proposed project triggers RPBCWD's floodplain management, erosion prevention and sediment control, wetland and creek buffers, shoreline and streambank stabilization, waterbody crossings, and variance rules. Reviewed application materials, drafted permit report and variance summaries and addressed legal counsel review comments on the draft permit report. Finalized permit report for consideration at the July 7th Board of Managers meeting.
- h. *Permit 2021-028: Morimoto City Homes:* The project proposes to develop a 2.8-acre site into 4 new townhome buildings and associated parking along Hennepin Town Road just south of Anderson Lakes Parkway in Eden Prairie, MN. The proposed project triggers RPBCWD's erosion prevention and sediment control, wetland buffers, and stormwater management rules. Participated in a June 1st virtual meeting with the applicant engineer to answer questions about review comments. Owner notified reviewer on June 25th that the permit fee deposit was mailed. Once the fee deposit is received review of the application will continue.
 - i. *Permit 2021-030 Bennett Development-* The project proposes to develop a 2.1-acre site into 6 single family home lots in Eden Prairie, MN. The proposed project triggers RPBCWD's erosion prevention and sediment control, and stormwater management rules. The applicant is proposing three infiltration basins to provide water quality treatment, rate control, and volume abstraction. Worked with Interim Administrator Jeffery to extend the permit review timeline 60 days. Reviewed submittal materials and provided review comments to the applicant on June 29th.
 - j. *Permit 2021-038 Burger King-* The project proposes to reconstruct a Burger King at the intersection of Eden Prairie Road and Highway 5. The proposed project triggers RPBCWD's erosion prevention and sediment control and stormwater management rules. Reviewed May 27th and June 10th submittals and drafted a permit report for consideration at the July 7th Board of Managers meeting.
 - k. *Permit 2021-042 Pioneer Wetland Restoration-* The proposed Pioneer Trail wetland restoration project includes the reconstruction of an existing outlet, grading to reduce the seedbank of invasive grasses while increasing floodplain storage, and restoration of land adjacent to a 4.32-acre, medium value wetland with diverse native vegetation. The proposed project triggers RPBCWD's floodplain management, erosion prevention and sediment control, wetland and creek buffer, and stormwater management rules. Reviewed June 15th revised submittal materials and drafted a permit report for consideration at the July 7th Board of Managers meeting.
 - l. Participated in an April May 24th preapplication meeting with applicant's engineer (Alliant) I to discuss RPBCWD permitting requirements for the proposed lot split at Eagle Ridge in Chanhassen..
 - m. Miscellaneous preapplication calls from applicant with questions about rule applicability and criteria.
 - n. Miscellaneous conversations with Interim Administrator Jeffery about rules, permit database status, which permits will be reviewed by staff versus Barr, and rule application.

Data Management/Sampling/Equipment Assistance

- a. Prepared, loaded, and verified RMB laboratory (RMB) reports.
- b. Prepared field data collected with the Survey123 mobile application for the Lakes monitoring program.
- c. Worked with RMB labs to correct electronic data deliverables (EDD).
- d. Worked on electronic submittal of relevant 2020 creek and lake data to the MPCA in the agencies data specific format.

Task Order 6: WOMP Station Monitoring

Purgatory Creek Monitoring Station at Pioneer Trail

- a. Storm event sampling.
- b. Download and review data.

Purgatory Creek Monitoring Station at Valley View Rd

- a. Download and review data.
- b. Storm event sampling.

Task Order 24B: Silver Lake Water Quality Improvement Project

- a. All contraction documents fully-executed and agreement with private property owner now fully-executed.
- b. Compiling "Issued for Construction" contract documents with all fully executed items.
- c. Coordination with contractor (Molnau) regarding submittals, including review of two submittal received to date.

Task Order 28B: Rice Marsh Lake (RM_12a) Water Quality Improvement Project

- a. Received City's approval of the 90% design drawings.
- b. Begin development of 100% drawings.
- c. Finalize RPBCWD permit report to meet District requirements.
- d. Finalize development of technical specifications and engineer's opinion of probable cost.
- e. Finalize development of soil amendment design and monitoring plan and native vegetation types for restoration plan.

Task Order 29B: Middle Riley Creek (Reach R3) Stabilization Project Design

- a. Barr staff reviewed front end language with RPBCWD legal counsel June 10th, 2021 – updates included language related to coordination with Bearpath contractor and milestones.
- b. A draft permit application was submitted to the USACE April 23. RPBCWD staff completed the wetland report and submitted to USACE and City of Eden Prairie on June 2nd.

- c. Barr provided an updated plan set for review to Bearpath and the District on June 4th, 2021.
- d. Barr met onsite with Bearpath on June 17th to review proposed new/alternate access routes and parking areas for construction crews, as well as project timelines and coordination.
- e. Performed a turning radius analysis and cost comparison assessment of site access alternatives.
- f. Golf Course construction is slated for September 2021, with the goal of finishing the north area stream work by September 24, 2021 the south area stream work by November 15, 2021, and the tee areas by October 1st, 2021, with final completion no later than May 15, 2022.
- g. Coordinated with Bearpath Golf and Country Club representative about revised site access, changes to draft cooperative agreement, changes to homeowner's association (HOA) access license due to revise access route, project timeline and construction coordination, letter received from HOA's attorney requesting financial assurances, and mandatory pre-bid meeting.
- h. Because of multiple design iterations, ongoing frequent coordination with Bearpath, unanticipated site visits to address Bearpath questions and concerns, more than anticipated golf-course requested drawing and specification revisions, coordination and design/specification updates related to prairie establishment, significantly greater effort needed for creek and wetland buffer mapping/permitting, Barr taking on additional project coordination and management due to the prior administrator's departure, anticipated increased time required for additional coordination with Bearpath and construction observation (including an extended vegetation establishment period), Barr has nearly expended the entire authorized engineering budget and will be requesting additional funding for the project bidding and construction administration services.

Task Order 30B: Pioneer Trail Wetland Restoration Project

- a. Completed 100% specifications in response to legal review comments, design drawings and opinion of probable cost.
- b. Because of a letter from BWSR indicating potential state shutdown could impact grant funding, Interim Administrator Jeffery directed the Pioneer wetland bid solicitation be delayed until July 1st to gain a better understanding of grant fund availability.
- c. The Ad for bid and bid opening is anticipated to take place in July.

Task Order 032A: Upper Riley Creek Ecological Enhancement Plan

- a. Finalized the Ecological Enhancement Plan.

Task Order 033: Wetland Assessment – Phase 1

- a. Continued drafting field data collection needs and methodologies to support the framework including Floristic Quality Assessment methodologies.

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers and District Administrator
From: Barr Engineering Co.
Subject: Engineer's Report Summarizing June 2021 Activities for July 7, 2021, Board Meeting
Date: June 30, 2021
Page: 7

- b. Performed GIS analysis to identify primary, secondary, and ancillary wetland habitats for four wildlife guilds (forest, shrub, open water, and shallow marsh) in the surrounding Mitchell Lake area for wetland restoration prioritization
- c. Reviewed of Wisconsin Wetlands By Design for wetland habitat score criteria
- d. Reviewed of Wisconsin Wetlands By Design to potentially incorporate fish, reptile, and amphibian habitat into the model
- e. Summarize habitat score criteria
- f. Continued drafting Phase 1 report to define ecosystem services and describe methodology for assessing each service.

Task Order 035: Eden Prairie Stormwater Model Update and Flood-Risk Area Prioritization

- a. Continued reviewing watershed divides that were updated to include additional resolution for the City of Eden Prairie's storm sewer system. Subwatershed divides were added such that the level of resolution in the model is consistent with the level of detail in the City of Eden Prairie's subwatershed GIS file. Subwatershed divides for Riley Creek and the south half of Purgatory Creek are complete and will be submitted to City of Eden Prairie staff for review by the end of June. Subwatershed divides for the north half of Purgatory Creek are anticipated to be submitted to City staff for review in July.
- b. Started adding resolution to the storm sewer system. Additional details for the storm sewer system and overland flow paths are required to connect the updated subwatershed divides to the existing model. Staff are using the City of Eden Prairie's GIS files to populate model input parameters such as pipe inverts, shape, and length. Information not included in the City's GIS files will be tracked and Barr will coordinate collection of missing data with City and District staff later this fall.
- c. The schedule for this task order extends through 2022. In 2021 work will focus on updating the District's stormwater models for Riley Creek and Purgatory Creek to include additional detail within Eden Prairie. Currently staff are working on subwatershed delineation and adding resolution to the storm sewer system. These tasks will continue through the summer. This fall work will shift to calculating hydrologic parameters, available floodplain storage volume, and debugging the updated models.. In 2022, work will include model validation, simulation of design events, inundation mapping, identification and prioritization of flood prone areas, and documentation.

Task Order 036A: Bluff Creek Reach 5 Concept Design

- a. Conducted a site visit and assessment for sub-reach 5B-5C on June 21st. The team collected photos and measurements throughout the reach.
- b. Beginning concept design brainstorming and layout.

MEMORANDUM

TO: RPBCWD Board of Managers

FROM: Terry Jeffery, Interim District Administrator

DATE: July 1, 2021

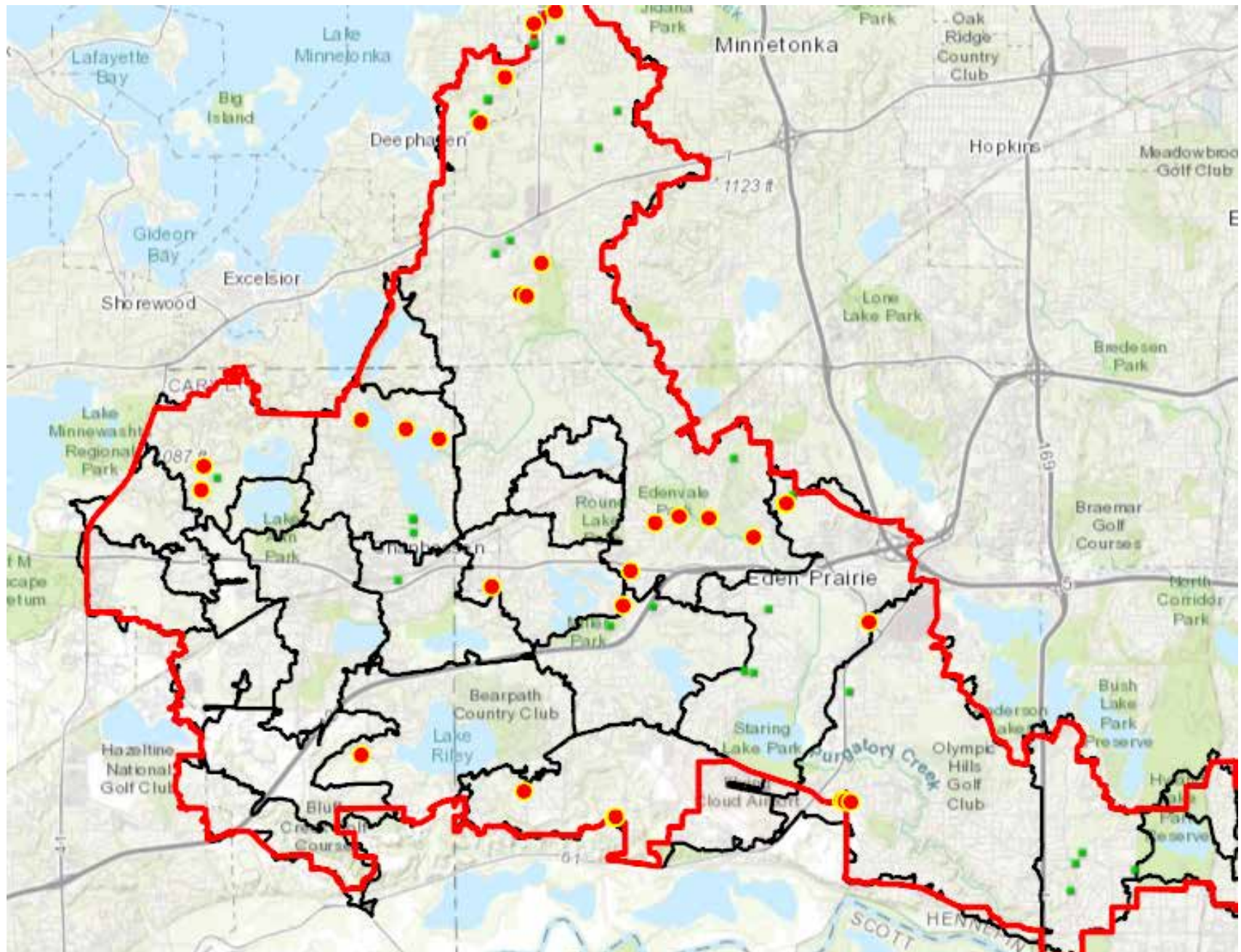
SUBJECT: June 2021 Construction Inspection Report

In the month of June, 71 one site inspections were performed. These inspections found 44 instances of note. These ranged in seriousness from minor street tracking that was actively being swept to unstabilized slopes upgradient of a stormwater BMP. Inspection reports were sent to non-compliant sites.

The attached table list the non-compliant sites. The area needing to be addressed is signified by the comment under the appropriate heading. For instance, if the inlet column has a note, it means that an issue was found with their inlet protection at a catch-basin. The attached map shows the location of the non-compliant sites in red and other inspections in green.

Number	Project Name	Address	Municipality	Inspection Date	Perimeter Comments:	Inlet Comments:	Entrance Comments:	Sediment Comments:	Stabilization Comments:
2019-001	Galpin / Nelson Property		Chanhassen	06/14/2021				Moderate tracking around house builds	
2019-001	Galpin / Nelson Property		Chanhassen	06/28/2021				Some tracking on streets, but sweeper is on site cleaning	
2019-003	Stable Path		Eden Prairie	06/14/2021	Bioroll along curb needs maintenance		Non functional at some lots leading to tracking	Tracking on road	Unstabilized soil on inactive areas
2019-007	Beverly Hills		Eden Prairie	06/14/2021	Entire perimeter silt fence needs spot maintenance, especially around infiltration basin where run over by equipment	Catch basins 1/4 to 1/3 full		Moderate tracking on road, accumulation in silt fence approaching maximum	Large areas of bare or poorly vegetated soil in inactive areas, unprotected stockpiles
2019-017	6650 Pawnee Dr.	6650 Pawnee Dr	Chanhassen	06/24/2021					NE corner slope unstabilized
2019-019	Sheldon Place Townhomes			06/11/2021	Bioroll around pavement needs maintenance			Sediment on pavement needs to be swept	
2021-024	Jess Kuhn	3508 Rainbow Drive	Minnetonka	06/11/2021					
2019-024	Conifer Heights		Minnetonka	06/10/2021	Silt fence damaged and nonfunctional in multiple places Entire perimeter needs spot repairs, particularly along Mahoney Rd and property line behind 5541 Conifer trail		Completely nonfunctional, tracking occurring	Extensive tracking and sediment flow on road. Large sediment delta in infiltration basin.	Mulch and landscape blanket tilled or nonexistent on large areas of bare soil. Erosion channels present on NE slope
2019-024	Conifer Heights		Minnetonka	06/24/2021			Either not present or completely buried in soil	Heavy tracking in Cul de Sac. Large sediment delta in infiltration basin.stabilization	Stabilization has failed in areas. Erosion channels present, particularly deep channel in basin forebay Unstabilized stockpile, erosion channels on slope above retaining wall, washout of soil in forebay eroding into basin
2019-024	Conifer Heights		Minnetonka	06/28/2021	Silt fence needs to be put back up along Mahoney and on Conifer	Southernmost most catch basin needs silt bag emptied	Needs maintenance, rock completely sunken into dirt	Heavy accumulation on Conifer, sediment delta in catch basin	Deep erosion channel above FES #4 in bank of BMP #2, unstabilized soil stockpiles
2020-008	Eden Ridge Estates		Eden Prairie	06/29/2021	Silt fences needs repair in SE corner and around infiltration basins	Catchbasin #3 has unprotected curb cut, FES #1 unprotected			Areas of unstabilized soil with erosion channels. Unprotected stockpiles
2020-031	Prairie Heights	12701 Pioneer Trail	Eden Prairie	06/10/2021	Breach in silt fence at bottom of south property line		No stabilized entrances	Some sediment tracking on road	Deep erosion channels along silt fence southwest side of property
2020-031	Prairie Heights	12701 Pioneer Trail	Eden Prairie	06/28/2021	Silt fence down at bottom of slope near infiltration basin			Sediment accumulation at bottom of slope south edge of property	
2020-035	Honeysuckle Single Family	18100 Honeysuckle Lane		06/10/2021	Most of the perimeter silt fence has been removed	Unprotected catch basin			Unprotected soil stockpiles
2020-043	GBM Realty Parking Lot		Chanhassen	06/25/2021					
2020-045	Galpin Project	6921 Galpin Blvd	Chanhassen	06/10/2021	Silt fence on south property line compromised sediment release has occurred	Inlet and outlet of drainage channel crossing property completely unprotected from bare soil slopes. No BMPs present.	No stabilized entrance at Ruby lane		Most soils and stockpiles unstabilized
2020-045	Galpin Project	6921 Galpin Blvd	Chanhassen	06/14/2021	Inner silt fence collapsed on large portions of south perimeter, including small sediment breach through both silt fences to wetland	Inlet and outlet of drainage channel crossing west end of property are completely unprotected, slopes need to be stabilized and redundant sediment protection installed			Bare soil in inactive areas needs to be stabilized, especially in areas with less than 50ft natural vegetated buffer
2020-047	Abdul Landscaping Project	6921 Howard Lane	Eden Prairie	06/14/2021					Turf grass seeded and filling in, bare areas mulched.
2020-057	Bluff 25 Culvert Rehabilitation Project		Eden Prairie	06/15/2021					Soil is starting to slump on steeper un-vegetated slopes

Number	Project Name	Address	Municipality	Inspection Date	Perimeter Comments:	Inlet Comments:	Entrance Comments:	Sediment Comments:	Stabilization Comments:
2020-065	Terry Pine Coffee		Eden Prairie	06/17/2021		Protection does not protect entire inlet.			
2020-067	Conifer Heights Storm Sewer Improvements			06/24/2021	Controls need spot repairs				
2020-072	Erhart Wetland Alteration		Chanhassen	06/14/2021					Some areas of vegetation on graded access road have failed to establish. Unstabilized soil stockpile near access road entrance.
2021-002	Fifield Pool	7292 Ontario Blvd	Eden Prairie	06/15/2021	Bioroll buried in a few places, talked to worker on site who will take care of it				
2021-015	Groveland Neighborhood Street Reconstruction Project	Groveland School Road, Lowell St	Minnetonka	06/11/2021	No perimeter BMPs present	Unprotected culvert mouth adjacent to soil disturbance		Some trackin	Disturbed soils unstabilized
2021-020	Cumberland Road Rehabilitation	Cumberland Road from Mitchell Road to Sycamore Court	Eden Prairie	06/14/2021					
2021-021	CSAH 60 - Baker Rd (WO# 97179999)	Mitchell Road and Fairway Drive	Eden Prairie	06/14/2021	No controls present			Large amount of sediment on road	
2021-029	Bruner Residence	6609 Horseshoe curve	Chanhassen	06/11/2021	Controls at lake shore need to be made redundant				
2021-029	Bruner Residence	6609 Horseshoe curve	Chanhassen	06/24/2021	Second row of silt fence going when I stopped by to inspect.				
2021-031	2021-102 PMP Street Maintenance Project	1700 W. 98th Street	Bloomington	06/07/2021	Excavation under way, spoke with site supervisor who assured that stockpiles will be biorolled by end of day.			Some tracking, site supervisor assured cleanup by end of day.	
2019-051	Berrospid Addition			06/25/2021					
2021-036	Chanhassen 2021 Pavement Rehabilitation	361 Trappers Pass	Chanhassen	06/25/2021	Non present			Tracking on pavement	Disturbed soils not stabilized
2021-039	Fazendin Home	18452 Heathcote Drive	Deephaven	06/11/2021	Previously missing silt fence now in place.				
2021-040	HC Project # 183320	13983 St Andrew Dr	Eden Prairie	06/25/2021		Inadequate catch basin screen not installed, laying next to inlet on sidewalk			Landscape blanket only installed on part of slope
2021-040	HC Project # 183320	13983 St Andrew Dr	Eden Prairie	06/29/2021					Landscape blanket in place
2019-007	Beverly Hills			06/29/2021	Maintenance/repair needed multiple places. See photos	Unprotected outlet downslope of unstabilized soil behind 9822 Rodeo Cir			Unstabilized stockpiles and yards, erosion channels behind 9832 Rodeo Cir upslope of infiltration basin
2021-043	Lowell Street Reconstruction	Lowell Street	Minnetonka	06/11/2021					Small stockpiles need bioroll or stabilized



Annual Financial Report

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota

For the Year Ended
December 31, 2020

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Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Annual Financial Report
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 For the Year Ended December 31, 2020

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INTRODUCTORY SECTION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

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Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Board of Managers and Appointed Officials
For the Year Ended December 31, 2020

BOARD OF MANAGERS

<u>Name</u>	<u>Title</u>	<u>Term Expires</u>
Dick Ward	President	07/01/23
Dorothy Pedersen	Vice President	07/01/23
Jill Crafton	Treasurer	07/01/21
David Ziegler	Secretary	07/01/22
Larry Koch	Manager	07/01/21

APPOINTED OFFICIALS

Claire Bleser	District Administrator
Smith Partners PLLP	District Council
Barr Engineering	District Engineer

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FINANCIAL SECTION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

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INDEPENDENT AUDITOR'S REPORT

Board of Managers
Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities and major fund of the Riley Purgatory Bluff Creek Watershed District, Minnesota (the District), as of and for the year ended December 31, 2020, and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the District's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the District's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and major fund of the District as of December 31, 2020 and the respective changes in financial position and the budgetary comparison for the 509 Plan Implementation fund for the year then ended in accordance with accounting principles generally accepted in the United States of America.

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Other Matters

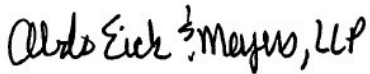
Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis starting on page 15 and the Schedules of Employer's Share of the Net Pension Liability and the Schedules of Employer's Contributions, the related note disclosures, starting on page 50 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the District's basic financial statements. The introductory section is presented for purposes of additional analysis and are not a required part of the basic financial statement.

The introductory section has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.



ABDO, EICK & MEYERS, LLP
Minneapolis, Minnesota
May 26, 2021

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Management's Discussion and Analysis

As management of the Riley Purgatory Bluff Creek Watershed District (the District), Chanhassen, Minnesota, we offer readers of the District's financial statements this narrative overview and analysis of the financial activities of the District for the fiscal year ended December 31, 2020. We encourage readers to consider the information presented here in conjunction with the financial statements, which follow this section.

Financial Highlights

- The assets and deferred outflows of resources of the District exceeded its liabilities and deferred inflows of resources at the close of the most recent fiscal year by \$6,382,684 (net position). Of this amount, \$5,644,109 (unrestricted net position) may be used to meet the District's ongoing obligations.
- The District's total net position decreased by \$464,679, which is mostly due to project, program and general government costs exceeding current year levy and partnership revenues during the year. The District has been building reserves for payment of current and future projects.
- As of the close of the current fiscal year, the District's governmental fund reported ending fund balances of \$5,926,225, a decrease of \$407,373 in comparison with the prior year.
- The ending 509 Plan Implementation fund balance is \$5,926,225, which is made up of nonspendable (\$39,158), assigned (\$214,180), and (\$5,672,887) committed fund balance. The total fund balance is 78.4 percent of the 2021 budgeted expenditures.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the District’s basic financial statements. The District’s basic financial statements are comprised of three components: 1) government-wide financial statements, 2) fund financial statements, and 3) notes to the financial statements. This report also contains other required supplemental information in addition to the basic financial statements themselves.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of combining and individual fund financial statements and schedules that further explains and supports the information in the financial statements. Figure 1 shows how the required parts of this annual report are arranged and relate to one another.

**Figure 1
Required Components of the
District’s Annual Financial Report**

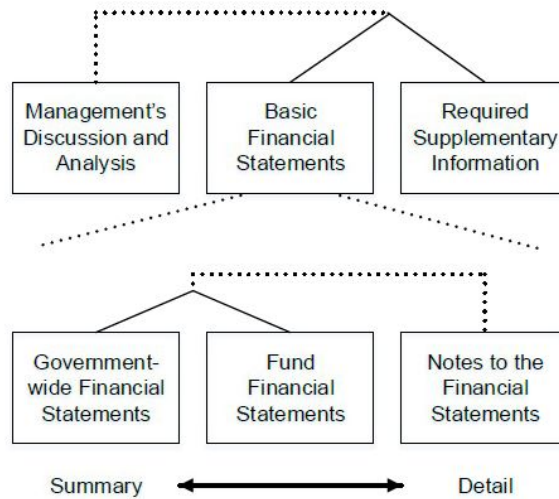


Figure 2 summarizes the major features of the District’s financial statements, including the portion of the District they cover and the types of information they contain. The remainder of this overview section of management’s discussion and analysis explains the structure and contents of each of the statements.

**Figure 2
Major Features of the Government-wide and Fund Financial Statements**

	Fund Financial Statements	
	Government-wide Statements	Governmental Funds
Scope	Entire District	The activities of the District
Required financial statements	<ul style="list-style-type: none"> • Statement of Net Position • Statement of Activities 	<ul style="list-style-type: none"> • Balance Sheet • Statement of Revenues, Expenditures, and Changes in Fund Balances
Accounting Basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of deferred outflows/inflows of resources information	All deferred outflows/inflows of resources, regardless of when cash is received or paid	Only deferred outflows of resources expected to be used up and deferred inflows of resources that come due during the year or soon thereafter; no capital assets included
Type of inflow/out flow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Financial Statements. The government-wide financial statements are designed to provide readers with a broad overview of the District's finances, in a manner similar to a private-sector business.

The *statement of net position* presents information on all of the District's assets, deferred outflows of resources, liabilities and deferred inflows of resources, with the difference between them reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the District is improving or deteriorating.

The *statement of activities* presents information showing how the District's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (e.g., grants and earned but unused vacation and sick leave).

The governmental activities of the District include general government and program costs. The government-wide financial statements start on page 24 of this report.

Fund Financial Statements. A *fund* is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The District, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. The District currently maintains one governmental fund.

Governmental Funds. *Governmental funds* are used to account for essentially the same functions reported as *governmental activities* in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term inflows and outflows of spendable resources*, as well as on *balances of spendable resources* available at the end of the fiscal year. Such information may be useful in evaluating a government's near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact by the government's near-term financing decisions. Both the governmental fund balance sheets and the governmental fund statements of revenues, expenditures and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The District adopts an annual appropriated budget for its 509 Plan Implementation fund. A budgetary comparison statement has been provided for the 509 Plan Implementation fund to demonstrate compliance with this budget.

The basic governmental fund financial statements start on page 28 of this report.

Notes to the Financial Statements. The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes to the financial statements start on page 33 of this report.

Required Supplementary Information. This report also presents certain required supplementary information concerning the progress in funding its obligation to provide pension to its employees. Required supplementary information can be found starting on page 50 of this report.

Government-wide Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. In the case of the District, assets and deferred outflows of resources exceeded liabilities and deferred inflows of resources by \$6,382,684 at the close of the most recent fiscal year.

The largest portion, 88.4 percent (\$5,644,109) of the District's net position are unrestricted and available to meet the ongoing needs of the District. 11.6 percent or \$738,575 reflects its net investment in capital assets (e.g., land, land improvements, and permanent easements).

Riley Purgatory Bluff Creek Watershed District's Summary of Net Position

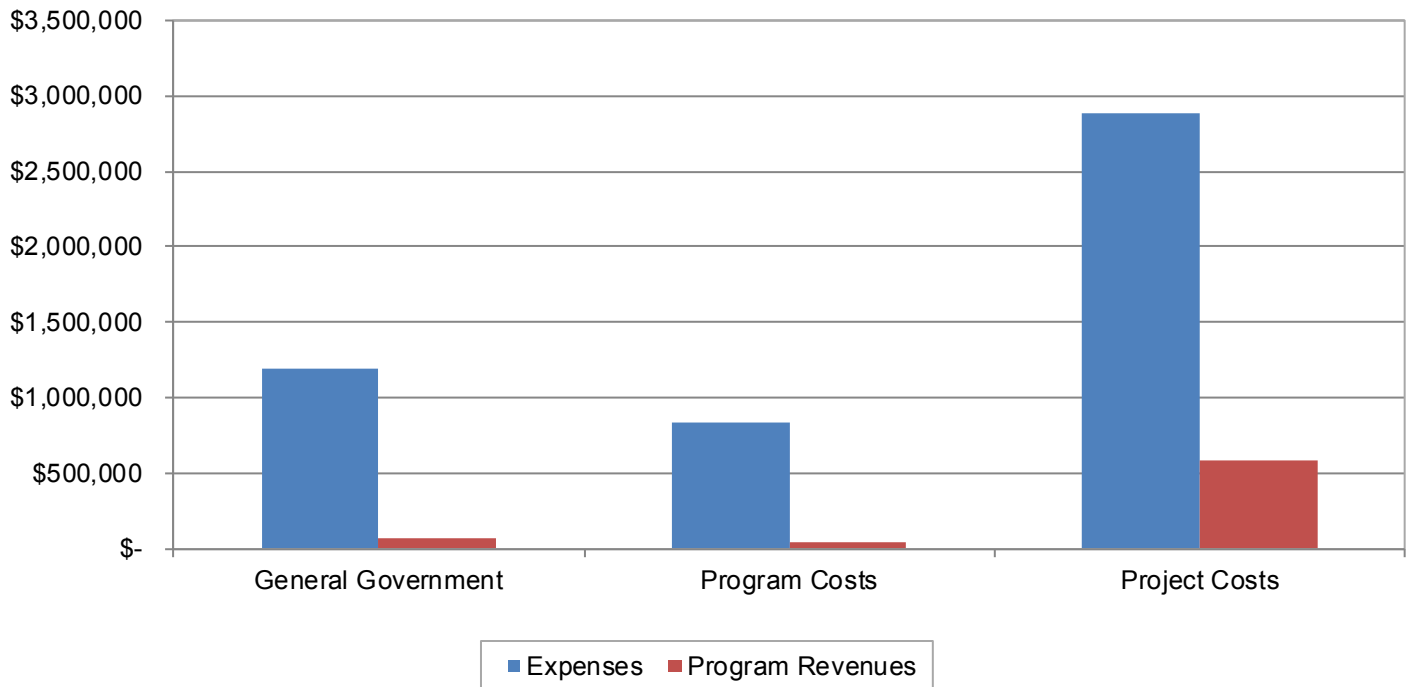
	December 31,		Increase (Decrease)
	2020	2019	
Assets			
Current	\$ 7,155,303	\$ 8,180,041	\$ (1,024,738)
Capital assets, net	738,575	768,521	(29,946)
Total Assets	<u>7,893,878</u>	<u>8,948,562</u>	<u>(1,054,684)</u>
Deferred Outflows of Resources			
Pension resources	<u>112,406</u>	<u>120,605</u>	<u>(8,199)</u>
Liabilities			
Current	1,194,286	1,810,440	(616,154)
Noncurrent	<u>410,703</u>	<u>352,499</u>	<u>58,204</u>
Total Liabilities	<u>1,604,989</u>	<u>2,162,939</u>	<u>(557,950)</u>
Deferred Outflows of Resources			
Pension resources	<u>18,611</u>	<u>58,865</u>	<u>(40,254)</u>
Net Position			
Investment in capital assets	738,575	768,521	(29,946)
Unrestricted	<u>5,644,109</u>	<u>6,078,842</u>	<u>(434,733)</u>
Total Net Position	<u>\$ 6,382,684</u>	<u>\$ 6,847,363</u>	<u>\$ (464,679)</u>

Governmental Activities. Governmental activities decreased the District's net position by \$464,679, which was mostly due to project, program and general government expense exceeding revenues during the year.

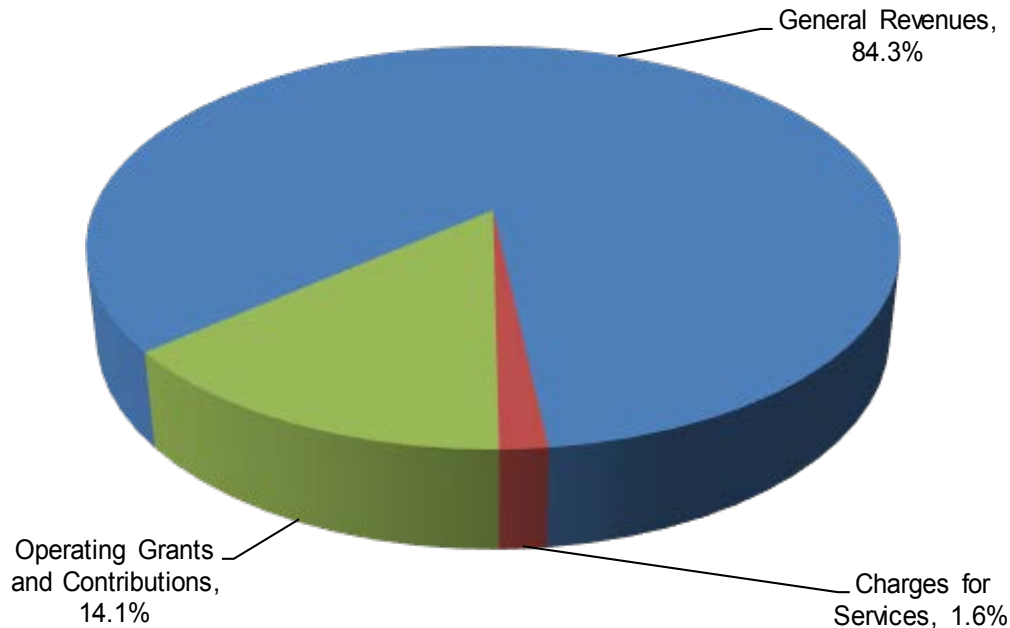
Riley Purgatory Bluff Creek Watershed District's Changes in Net Position

	December 31,		Increase (Decrease)
	2020	2019	
Revenues			
Program			
Charges for services	\$ 71,640	\$ 44,344	\$ 27,296
Operating grants and contributions	626,479	169,285	457,194
Capital grants and contribution	-	295,950	(295,950)
General			
Property taxes	3,702,672	3,588,077	114,595
Unrestricted investment earnings	29,900	109,652	(79,752)
Gants and contributions not restricted to specific programs	15,867	5,299	10,568
Total Revenues	<u>4,446,558</u>	<u>4,212,607</u>	<u>233,951</u>
Expenses			
General government	1,193,300	1,200,266	(6,966)
Program costs	834,979	625,572	209,407
Project costs	<u>2,882,958</u>	<u>710,935</u>	<u>2,172,023</u>
Total Expenses	<u>4,911,237</u>	<u>2,536,773</u>	<u>2,374,464</u>
Change in Net Position	(464,679)	1,675,834	(2,140,513)
Net Position, January 1	<u>6,847,363</u>	<u>5,171,529</u>	<u>1,675,834</u>
Net Position, December 31	<u>\$ 6,382,684</u>	<u>\$ 6,847,363</u>	<u>\$ (464,679)</u>

The following graph depicts various governmental activities and shows the revenue and expenses directly related to those activities.



Revenues by Source - Governmental Activities



Financial Analysis of the Government's Funds

As noted earlier, the District uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental Funds. The focus of the District's *governmental funds* is to provide information on near-term inflows, outflows and balances of *spendable* resources. Such information is useful in assessing the District's financing requirements. In particular, *unreserved fund balance* may serve as a useful measure of a government's net resources available for spending at the end of the fiscal year.

As of the end of the current fiscal year, the District's governmental fund reported ending fund balances of \$5,926,225, a decrease of \$407,373 in comparison with the prior year. The total fund balance is split between three designations. 1) Nonspendable (\$39,158) for prepaid items 2) Assigned (\$214,180) for 509 plan implementation, and 3) Committed (\$5,672,887) for 509 plan implementation.

The 509 Plan Implementation fund is the chief operating fund of the District. At the end of the current year, the fund balance of the 509 Plan Implementation fund was \$5,926,225. As a measure of the 509 Plan Implementation fund's liquidity, it may be useful to compare total fund balance to total fund expenditures. Total fund balance represents 122.1 percent of 2020 actual expenditures. The 509 Implementation fund balance decreased by \$407,373 during the current fiscal year.

Budgetary Highlights

The District's 509 Plan Implementation budget was not amended during the year as presented in the financial statements. The actual revenues results were more favorable than those projected by the 2020 budget. Revenues were over budget by \$643,801. The largest variance was in partner funds which was over budget by \$550,498. Expenditures were under budget by \$1,721,826. The largest variance was related to program costs which were under budget by \$1,260,442.

Capital Assets

The District's investment in capital assets for its governmental activities as of December 31, 2020 amounts to \$738,575 (net of accumulated depreciation). This investment in capital assets includes land, easements, infrastructure, and land improvements.

Riley Purgatory Bluff Creek Watershed District's Capital Assets (Net of Depreciation)

	December 31,		Increase (Decrease)
	2020	2019	
Land	\$ 627,043	\$ 627,043	\$ -
Equipment, Boats and Vehicles	92,518	119,007	(26,489)
Intangibles	19,014	22,471	(3,457)
Total	<u>\$ 738,575</u>	<u>\$ 768,521</u>	<u>\$ (29,946)</u>

Additional information on the District's capital assets can be found in Note 3B on page 41 of this report.

Economic Factors and Next Year's Budgets

In 2020, the Watershed District levied remained in line with the proposed budget as outlined in the 2018 10-Year Watershed Management Plan. Even though this was a 2.7% increase from the previous year, the District's Budget increased by 19% due to project being carried over from previous years.

Requests for Information

This financial report is designed to provide a general overview of the District's finances for all those with an interest in the District's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to Riley Purgatory Bluff Creek Watershed District, 18681 Lake Drive East, Chanhassen, MN 55317.

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GOVERNMENT-WIDE FINANCIAL STATEMENTS
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Statement of Net Position
 December 31, 2020

	Governmental Activities
Assets	
Cash and temporary investments	\$ 6,572,169
Receivables	
Accounts	6,712
Accrued interest	8
Taxes	63,376
Due from other governments	473,880
Prepaid items	39,158
Capital assets	
Nondepreciable assets	627,043
Depreciable assets, net of accumulated depreciation	111,532
Total Assets	7,893,878
Deferred Outflows of Resources	
Deferred pension resources	112,406
Liabilities	
Accounts payable	272,177
Accrued salaries payable	23,348
Due to other governments	56,425
Deposits payable	659,183
Unearned revenue	183,153
Noncurrent liabilities	
Due within one year	
Compensated absences payable	31,068
Due in more than one year	
Compensated absences payable	19,908
Net pension liability	359,727
Total Liabilities	1,604,989
Deferred Inflows of Resources	
Deferred pension resources	18,611
Net Position	
Investment in capital assets	738,575
Unrestricted	5,644,109
Total Net Position	\$ 6,382,684

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Statement of Activities
 For the Year Ended December 31, 2020

Functions/Programs	Expenses	Program Revenues			Net (Expense)
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Revenue and Changes in Net Position
					Governmental Activities
Governmental Activities					
General government	\$ 1,193,300	\$ 71,640	\$ 3,200	\$ -	\$ (1,118,460)
Program costs	834,979	-	41,417	-	(793,562)
Project costs	2,882,958	-	581,862	-	(2,301,096)
Total	\$ 4,911,237	\$ 71,640	\$ 626,479	\$ -	(4,213,118)
General Revenues					
Property taxes					3,702,672
Unrestricted investment earnings					29,900
Other revenues					15,867
Total General Revenues					<u>3,748,439</u>
Change in Net Position					(464,679)
Net Position, January 1					<u>6,847,363</u>
Net Position, December 31					<u>\$ 6,382,684</u>

The notes to the financial statements are an integral part of this statement.

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FUND FINANCIAL STATEMENTS
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Balance Sheet
 Governmental Funds
 December 31, 2020

	<u>509 Plan Implementation</u>
Assets	
Cash and temporary investments	\$ 6,572,169
Receivables	
Accounts	6,712
Accrued interest	8
Taxes	63,376
Due from other governments	473,880
Prepaid items	<u>39,158</u>
Total Assets	<u><u>\$ 7,155,303</u></u>
Liabilities	
Accounts payable	\$ 272,177
Accrued salaries payable	23,348
Due to other governments	56,425
Deposits payable	659,183
Unearned revenue	<u>183,153</u>
Total Liabilities	<u>1,194,286</u>
Deferred Inflows of Resources	
Unavailable revenue - taxes	<u>34,792</u>
Fund Balances	
Nonspendable - prepaid items	39,158
Committed for planning and implementation	5,672,887
Assigned for 509 plan implementation	<u>214,180</u>
Total Fund Balances	<u>5,926,225</u>
Total Liabilities, Deferred Inflows of Resources and Fund Balance	<u><u>\$ 7,155,303</u></u>

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Reconciliation of the Balance Sheet
 to the Statement of Net Position
 Governmental Funds
 December 31, 2020

Amounts reported for the governmental activities in the statement of net position are different because

Total Fund Balances - Governmental	\$ 5,926,225
<p>Capital assets used in governmental activities are not financial resources and therefore are not reported as assets in governmental funds.</p>	
Cost of capital assets	872,467
Less accumulated depreciation	(133,892)
<p>Noncurrent liabilities, including bonds payable, are not due and payable in the current period and therefore are not reported as liabilities in the funds.</p>	
<p>Noncurrent liabilities at year-end consist of</p>	
Compensated absences payable	(50,976)
Net pension liability	(359,727)
<p>Some receivables are not available soon enough to pay for the current period's expenditures and therefore are unavailable in the funds.</p>	
Taxes receivable	34,792
<p>Governmental funds do not report long-term amounts related to pensions.</p>	
Deferred outflows of pension resources	112,406
Deferred inflows of pension resources	(18,611)
	(18,611)
Total Net Position - Governmental Activities	\$ 6,382,684

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Statement of Revenues, Expenditures and Changes in Fund Balances
 Governmental Funds
 For the Year Ended December 31, 2020

	<u>509 Plan Implementation</u>
Revenues	
Property taxes	\$ 3,703,883
Permit income	71,640
Partner funds	550,498
Intergovernmental	76,051
Interest on investments	29,900
Miscellaneous	14,829
Total Revenues	<u>4,446,801</u>
 Expenditures	
Current	
General government	1,158,632
Programs	796,558
Project	2,882,958
Capital outlay	
Programs	16,026
Total Expenditures	<u>4,854,174</u>
 Net Change in Fund Balances	 (407,373)
 Fund Balances, January 1	 <u>6,333,598</u>
 Fund Balances, December 31	 <u><u>\$ 5,926,225</u></u>

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Reconciliation of the Statement of
 Revenues, Expenditures and Changes in Fund Balances
 to the Statement of Activities
 Governmental Funds
 For the Year Ended December 31, 2020

Amounts reported for governmental activities in the statement of activities are different because

Total Net Change in Fund Balances - Governmental Funds	\$ (407,373)
<p>Capital outlays are reported in governmental funds as expenditures. However in the statement of activities, the cost of those assets is allocated over the estimated useful lives as depreciation expense.</p>	
Depreciation expense	(29,946)
<p>Certain revenues are recognized as soon as they are earned. Under the modified accrual basis of accounting, certain revenues cannot be recognized until they are available to liquidate liabilities of the current period.</p>	
Property taxes	(1,211)
<p>Long-term pension activity is not reported in governmental funds.</p>	
Pension expense	(24,557)
Pension revenue	968
<p>Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in governmental funds.</p>	
Compensated absences payable	<u>(2,560)</u>
Change in Net Position - Governmental Activities	<u><u>\$ (464,679)</u></u>

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
 Chanassen, Minnesota
 Statement of Revenues, Expenditures and Changes in Fund Balances -
 Budget and Actual
 509 Plan Implementation Fund
 For the Year Ended December 31, 2020

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final		
Revenues				
Property taxes	\$ 3,703,000	\$ 3,703,000	3,703,883	\$ 883
Permit Income	25,000	25,000	71,640	46,640
Partner funds	-	-	550,498	550,498
Intergovernmental	-	-	76,051	76,051
Interest on investments	75,000	75,000	29,900	(45,100)
Miscellaneous	-	-	14,829	14,829
Total Revenues	<u>3,803,000</u>	<u>3,803,000</u>	<u>4,446,801</u>	<u>643,801</u>
Expenditures				
Current				
General government	1,196,000	1,196,000	1,158,632	37,368
Programs	2,057,000	2,057,000	796,558	1,260,442
Projects				
Bluff creek	370,000	370,000	152,967	217,033
Riley creek	2,415,000	2,415,000	2,456,890	(41,890)
Purgatory creek	538,000	538,000	273,101	264,899
Capital outlay				
Programs	-	-	16,026	(16,026)
Total Expenditures	<u>6,576,000</u>	<u>6,576,000</u>	<u>4,854,174</u>	<u>1,721,826</u>
Net Change in Fund Balances	(2,773,000)	(2,773,000)	(407,373)	2,365,627
Fund Balances, January 1	<u>6,333,598</u>	<u>6,333,598</u>	<u>6,333,598</u>	<u>-</u>
Fund Balances, December 31	<u>\$ 3,560,598</u>	<u>\$ 3,560,598</u>	<u>\$ 5,926,225</u>	<u>\$ 2,365,627</u>

The notes to the financial statements are an integral part of this statement.

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 1: Summary of Significant Accounting Policies

A. Reporting Entity

The Riley Purgatory Bluff Creek Watershed District (the District), Chanhassen, Minnesota was originally created in 1969 by the Minnesota Water Resources Board acting under the authority of the Watershed Law. The District is operated by a five-member Board of Managers originally appointed by the Board.

The District has considered all potential units for which it is financially accountable, and other organizations for which the nature and significance of their relationship with the District are such that exclusion would cause the District's financial statements to be misleading or incomplete. The Governmental Accounting Standards Board (GASB) has set forth criteria to be considered in determining financial accountability. These criteria include appointing a voting majority of an organization's governing body, and (1) the ability of the primary government to impose its will on that organization or (2) the potential for the organization to provide specific benefits to, or impose specific financial burdens on the primary government. The District has no component units that meet the GASB criteria.

B. Government-wide and Fund Financial Statements

The government-wide financial statements (i.e., the statement of net position and the statement activities) report information on all of the non-fiduciary activities of the District. For the most part, the effect of interfund activity has been removed from these statements.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. *Direct expenses* are those that are clearly identifiable with a specific function or segment. Amounts reported as *program revenues* include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Other items not properly included among program revenues are reported instead as *general revenues*.

Separate financial statements are provided for the major governmental fund. The major individual governmental fund is reported as separate a column in the fund financial statements.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 1: Summary of Significant Accounting Policies (Continued)

C. Measurement Focus, Basis of Accounting and Basis of Presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be *available* when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the District considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Charges for service, assessments to members, grants and interest associated with the current fiscal period are all considered susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenue items are considered to be measurable and available only when cash is received by the organization.

Revenue resulting from exchange transactions, in which each party gives and receives essentially equal value, is recorded on the accrual basis when the exchange takes place. On a modified accrual basis, revenue is recorded in the year in which the resources are measurable and become available.

Non-exchange transactions, in which the District receives value without directly giving equal value in return, include grants, entitlement and donations. Eligibility requirements include timing requirements, which specify the year when the resources are required to be used or the year when use is first permitted, matching requirements, in which the District must provide local resources to be used for a specified purpose, and expenditure requirements, in which the resources are provided to the District on a reimbursement basis. On a modified accrual basis, revenue from non-exchange transactions must also be available before it can be recognized.

Unearned revenue arises when assets are recognized before revenue recognition criteria have been satisfied. Grants and entitlements received before eligibility requirements are met are also recorded as unearned revenue.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

The District reports the following major governmental funds:

The *509 Plan Implementation Fund* - Notwithstanding chapter 103D, a local government unit or watershed management organization may levy a tax to pay the increased costs of preparing a plan under sections 103B.231 and 103B.235 or for projects identified in an approved and adopted plan necessary to implement the purposes of section 103B.20 1. The proceeds of any tax levied under this section shall be deposited in a separate fund and expended only for the purposes authorized by this section. Watershed management organizations and local government units may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.

As a general rule the effect of interfund activity has been eliminated from government-wide financial statements.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 1: Summary of Significant Accounting Policies (Continued)

D. Assets, Deferred Outflows of Resources, liabilities, Deferred Inflows of Resources, and Net Position/Fund Balance

Deposits and Investments

The District's cash and temporary investments are considered to be cash on hand, demand deposits and short term investments with original maturities of three months or less from the date of acquisition.

Cash balances from all funds are pooled and invested, to the extent available, in certificates of deposit and other authorized investments. Earnings from such investments are allocated on the basis of applicable participation by each of the funds.

The District may also invest idle funds as authorized by Minnesota statutes, as follows:

1. Direct obligations or obligations guaranteed by the United States or its agencies.
2. Shares of investment companies registered under the Federal Investment Company Act of 1940 and received the highest credit rating, rated in one of the two highest rating categories by a statistical rating agency, and have a final maturity of thirteen months or less.
3. General obligations of a state or local government with taxing powers rated "A" or better; revenue obligations rated "AA" or better.
4. General obligations of the Minnesota Housing Finance Agency rated "A" or better.
5. Obligation of a school district with an original maturity not exceeding 13 months and (i) rated in the highest category by a national bond rating service or (ii) enrolled in the credit enhancement program pursuant to statute section 126C.55.
6. Bankers' acceptances of United States banks eligible for purchase by the Federal Reserve System.
7. Commercial paper issued by United States banks corporations or their Canadian subsidiaries, of highest quality category by at least two nationally recognized rating agencies, and maturing in 270 days or less.
8. Repurchase or reverse repurchase agreements and securities lending agreements with financial institutions qualified as a "depository" by the government entity, with banks that are members of the Federal Reserve System with capitalization exceeding \$10,000,000, a primary reporting dealer in U.S. government securities to the Federal Reserve Bank of New York, or certain Minnesota securities broker-dealers.
9. Guaranteed Investment Contracts (GIC's) issued or guaranteed by a United States commercial bank, a domestic branch of a foreign bank, a United States insurance company, or its Canadian subsidiary, whose similar debt obligations were rated in one of the top two rating categories by a nationally recognized rating agency.

The broker money market accounts operate in accordance with appropriate state laws and regulations. The reported value of the pools is the same as the fair value of the pool shares. The District does not have a formal investment policy.

The District categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The District's recurring fair value measurements are listed in detail on page 41 and are valued using quoted market prices.

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 1: Summary of Significant Accounting Policies (Continued)

The District has the following recurring fair value measurements as of December 31, 2020:

- Negotiable Certificates of Deposits of \$996,214 are valued using quoted market prices (Level 2 inputs)

Property Taxes

The Board of Managers annually adopts a tax levy and certifies it to the County in December of each year for collection in the following year. The County is responsible for billing and collecting all property taxes for itself, the District, the local School District and other taxing authorities. Such taxes become a lien on January 1st and are recorded as receivables by the District at that date. Real property taxes are payable (by property owners) on May 15th and October 15th of each calendar year. Personal property taxes are payable by taxpayers on February 28th and June 30th of each year. These taxes are collected by the County and remitted to the District on or before July 7th and December 2nd of the same year. The District has no ability to enforce payments of property taxes by property owners. The County possesses this authority.

Delinquent taxes receivable include the past six years' uncollected taxes. Delinquent taxes have been offset by a deferred inflow of resources for taxes not received within 60 days after year end in the fund financial statements.

Accounts Receivable

Accounts receivable include amounts billed for services provided before year end.

Prepaid Items

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items and are recorded as prepaid items. The District uses the consumption method to account for all prepaid items.

Capital Assets

Capital assets, which include land, land improvements and easements are reported in the applicable governmental activities columns in the government-wide financial statements. Capital assets are defined by the District as assets with an initial, individual cost of more than \$5,000 and an estimated useful life in excess of one year. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets lives are not capitalized.

GASB Statement No. 34 required the District to report and depreciate new infrastructure assets effective with the beginning of the 2004 calendar year. Infrastructure assets include lake improvements, dams and drainage systems. Neither their historical cost nor related depreciation had historically been reported in the financial statements. For governmental entities with total annual revenues of less than \$10 million for the fiscal year ended December 31, 1999 the retroactive reporting of infrastructure is not required under the provisions of GASB Statement No. 34. The District implemented the general provisions of GASB Statement No. 34 in the 2004 calendar year and has elected not to report infrastructure assets acquired in years prior to 2004.

Major outlays for capital assets and improvements are capitalized as projects are constructed.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Notes to the Financial Statements
 December 31, 2020

Note 1: Summary of Significant Accounting Policies (Continued)

Capital assets of the District are depreciated using the straight-line method over the following estimated useful lives:

Assets	Useful Lives in Years
Building	30
Equipment, Boats and Vehicles	7 - 10
Intangibles	10

Deferred Outflows of Resources

In addition to assets, the statement of net position will report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The District has only one item that qualifies for reporting in this category. Accordingly, the item, deferred pension resources, is reported only in the statements of net position. This item results from actuarial calculations and current year pension contributions made subsequent to the measurement date.

Pensions

For purposes of measuring the net pension liability, deferred outflows/inflows of resources, and pension expense, information about the fiduciary net position of the Public Employees Retirement Association (PERA) and additions to/deductions from PERA's fiduciary net position have been determined on the same basis as they are reported by PERA except that PERA's fiscal year end is June 30th. For this purpose, plan contributions are recognized as of employer payroll paid dates and benefit payments and refunds are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value. The General fund is typically used to liquidate the governmental net pension liability.

The total pension expense for all plans recognized by the District for the year ended December 31, 2020, \$58,158

Compensated Absences

It is the District's policy to permit employees to accumulate earned but unused vacation and sick pay benefits, which is paid to the employee upon separation. All vacation pay is accrued when incurred in the government-wide financial statements. A liability for these amounts is reported in governmental funds only if they have matured, for example, as a result of employee resignations and retirements. The 509 Plan Implementation fund is typically used to liquidate governmental compensated absences payable.

Long-term Obligations

In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities statement of net position. The recognition of bond premiums and discounts are amortized over the life of the bonds using the straight line method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as an expense in the period incurred. The District has no bonds outstanding for the year ended December 31, 2020

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 1: Summary of Significant Accounting Policies (Continued)

Deferred Inflows of Resources

In addition to liabilities, the statement of net position and fund financial statements will report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of fund balance that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The District has only one type of item, which arises only under a modified accrual basis of accounting that qualifies for reporting in this category. Accordingly, the item, unavailable revenue, is reported only in the governmental funds balance sheet. The governmental funds report unavailable revenues from property taxes. These amounts are deferred and recognized as an inflow of resources in the period that the amounts become available.

The District has an additional item which qualifies for reporting in this category. The item, deferred pension resources, is reported only in the statements of net position and results from actuarial calculations.

Fund Balance

In the fund financial statements, fund balance is divided into five classifications based primarily on the extent to which the District is bound to observe constraints imposed upon the use of resources reported in the governmental funds. These classifications are defined as follows:

Nonspendable - Amounts that cannot be spent because they are not in spendable form, such as prepaid items.

Restricted - Amounts related to externally imposed constraints established by creditors, grantors or contributors; or constraints imposed by state statutory provisions.

Committed - Amounts constrained for specific purposes that are internally imposed by formal action (resolution) of the Board, which is the District's highest level of decision-making authority. Committed amounts cannot be used for any other purpose unless the Board modifies or rescinds the commitment by resolution.

Assigned - Amounts constrained for specific purposes that are internally imposed. In governmental funds other than the General fund, assigned fund balance represents all remaining amounts that are not classified as nonspendable and are neither restricted nor committed. In the General fund, assigned amounts represent intended uses established by the Board itself or by an official to which the governing body delegates the authority

Unassigned - The residual classification for the General fund and also negative residual amounts in other funds.

The District considers restricted amounts to be spent first when both restricted and unrestricted fund balance is available. Additionally, the District would first use committed, then assigned, and lastly unassigned amounts of unrestricted fund balance when expenditures are made. The district strives to maintain an unassigned fund balance of an amount not less than 50 percent of next year's budgeted expenditures for working capital.

Net Position

Net position represents the difference between assets and deferred outflows of resources and liabilities and deferred inflows of resources. Net position is displayed in three components:

- a. Investment in capital assets - Consists of capital assets, net of accumulated depreciation
- b. Restricted net position - Consists of net position balances restricted when there are limitations imposed on their use through external restrictions imposed by creditors, grantors, laws or regulations of other governments.
- c. Unrestricted net position - All other net position balances that do not meet the definition of "restricted" or "investment in capital assets".

When both restricted and unrestricted resources are available for use, it is the District's policy to use restricted resources first, then unrestricted resources as they are needed.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 2: Stewardship, Compliance and Accountability

Budgetary Information

The Board of Managers adopts an annual budget for the 509 Plan Implementation fund of the District on an annual basis. During the budget year, supplemental appropriations and deletions are or may be authorized by the Board. The modified accrual basis of accounting is used by the District for budgeting data. All appropriations end with the fiscal year for which they were made. The District does not use encumbrance accounting.

The District monitors budget performance on the fund basis. All amounts over budget have been approved by the Board through the disbursement process. The budget was not amended in 2020.

Note 3: Detailed Notes on Accounts

A. Deposits and Investments

Deposits

Custodial credit risk for deposits and investments is the risk that in the event of a bank failure, the District's deposits and investments may not be returned or the District will not be able to recover collateral securities in the possession of an outside party. In accordance with Minnesota statutes and as authorized by the District Council, the District maintains deposits at those depository banks, all of which are members of the Federal Reserve System.

Minnesota statutes require that all District deposits be protected by insurance, surety bond or collateral. The market value of collateral pledged must equal 110 percent of the deposits not covered by insurance or bonds, with the exception of irrevocable standby letters of credit issued by Federal Home Loan Banks as this type of collateral only requires collateral pledged equal to 100 percent of the deposits not covered by insurance or bonds.

Authorized collateral in lieu of a corporate surety bond includes:

- United States government Treasury bills, Treasury notes, Treasury bonds;
- Issues of United States government agencies and instrumentalities as quoted by a recognized industry quotation service available to the government entity;
- General obligation securities of any state or local government with taxing powers which is rated "A" or better by a national bond rating service, or revenue obligation securities of any state or local government with taxing powers which is rated "AA" or better by a national bond rating service;
- General obligation securities of a local government with taxing powers may be pledged as collateral against funds deposited by that same local government entity;
- Irrevocable standby letters of credit issued by Federal Home Loan Banks to a municipality accompanied by written evidence that the bank's public debt is rated "AA" or better by Moody's Investors Service, Inc., or Standard & Poor's Corporation; and
- Time deposits that are fully insured by any Federal agency.

At the end of the year, the District's carrying amount of deposits was \$2,538,231 and the bank balance was \$2,551,082 (which includes the \$2,538,231 in deposits). Of the bank balance, \$500,000 was covered by Federal depository insurance. The remaining balance was covered by collateral held by the pledging financial institution's trust department in the District's name.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Notes to the Financial Statements
 December 31, 2020

Note 3: Detailed Notes on Accounts (Continued)

Investments

The investments of the District are subject to the following risks:

- *Credit Risk* is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Ratings are provided by various credit rating agencies and where applicable, indicate associated credit risk. The District follows State Statutes in regards to credit risk of investments. The District policy does not further limit investment choices. All of the District's investments were covered by FDIC insurance, see Custodial Credit Risk below.
- *Custodial Credit Risk* for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. Investments in securities that are held by the District's broker-dealer include \$500,000 that is insured through the securities investor protection corporation (SIPC). The broker-dealer has provided additional protection by providing additional insurance in the amount of \$5,212,885. This insurance is subject to aggregate limits to all of the broker-dealer's accounts.
- *Concentration of Credit Risk*. This is the risk of loss attributed to the magnitude of a government's investment in a single issuer. The District places no limit on the amount that may be invested in any one issuer. Most of the investments held by the District are over the 5% credit concentration threshold. The District does not have a policy limiting concentration in one issuer.
- *Interest Rate Risk*. This is the risk that changes in interest rates will adversely affect the fair value of an investment. The District does not have an investment policy to address interest rate risk.

At year end, the District's investment balances were as follows:

Types of Investments	Credit Quality/ Ratings (1)	Segmented Time Distribution (2)	Amount	Fair Value Measurement Using		
				Level 1	Level 2	Level 3
Pooled Investments at Amortized Costs						
Brokered Money Market	N/A	less than 6 months	\$ 3,037,724	\$ -	\$ -	\$ -
Non-pooled Investments at Fair Value						
Negotiable certificates of deposits	N/A	less than 1 year	747,214	-	747,214	-
Negotiable certificates of deposits	N/A	1 - 5 years	249,000	-	249,000	-
Total			<u>\$ 4,033,938</u>	<u>\$ -</u>	<u>\$ 996,214</u>	<u>\$ -</u>

(1) Ratings are provided by Moody's where applicable to indicate associated credit risk.

(2) Interest rate risk is disclosed using the segmented time distribution method.

N/A Indicates not applicable or available.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Notes to the Financial Statements
 December 31, 2020

Note 3: Detailed Notes on Accounts (Continued)

A reconciliation of cash and temporary investments as shown on the statement of net position for the District follows:

Primary Government	
Carrying Amount of Deposits	\$ 2,538,231
Investments	<u>4,033,938</u>
Total Cash and Temporary Investments	<u><u>\$ 6,572,169</u></u>

B. Capital Assets

Capital asset activity for the year ended December 31, 2020 was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental Activities				
Capital Assets, not being Depreciated				
Land	<u>\$ 627,043</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 627,043</u>
Capital Assets, being Depreciated				
Equipment, boats, vehicles	210,853	-	-	210,853
Intangibles	<u>34,571</u>	<u>-</u>	<u>-</u>	<u>34,571</u>
Total Capital Assets, being Depreciated	<u>245,424</u>	<u>-</u>	<u>-</u>	<u>245,424</u>
Less Accumulated Depreciation for				
Equipment, boats and vehicles	(91,846)	(26,489)		(118,335)
Intangibles	<u>(12,100)</u>	<u>(3,457)</u>	<u>-</u>	<u>(15,557)</u>
Total Accumulated Depreciation	<u>(103,946)</u>	<u>(29,946)</u>	<u>-</u>	<u>(133,892)</u>
Total Capital Assets being Depreciated, Net	<u>141,478</u>	<u>(29,946)</u>	<u>-</u>	<u>111,532</u>
Governmental Activities Capital Assets, Net	<u><u>\$ 768,521</u></u>	<u><u>\$ (29,946)</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 738,575</u></u>

Depreciation expense charged to the project costs function for 2020 was \$29,946.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Notes to the Financial Statements
 December 31, 2020

Note 3: Detailed Notes on Accounts (Continued)

C. Long-term Debt

Changes in Long-term Liabilities

Long-term liability activity for the year ended December 31, 2020 was as follows:

	<u>Beginning Balance</u>	<u>Increases</u>	<u>Decreases</u>	<u>Ending Balance</u>	<u>Current Portion</u>
Governmental Activities					
Compensated Absences Payable	\$ 48,416	\$ 36,878	\$ (34,318)	\$ 50,976	\$ 31,068

D. Operating Lease Obligation

The district entered into an operating lease agreement for building space on January 10, 2017 with CSM Investors Inc. The agreement term is 122 calendar months beginning on March 1, 2017. The lease has base monthly payments that increase from year to year. The district will have the option to extend the lease and additional 5 years when the current lease expires in April of 2027. The total rent expense for the year ended December 31, 2020 was \$90,817.

Future minimum lease payments are as follows:

<u>Year Ending December 31,</u>	<u>Payment</u>
2021	\$ 92,128
2022	93,339
2023	94,603
2024	95,878
2025	97,206
2026 - 2027	<u>131,689</u>
Total	<u>\$ 604,843</u>

Note 4: Defined Benefit Pension Plans - Statewide

A. Plan Description

The District participates in the following cost-sharing multiple-employer defined benefit pension plans administered by the Public Employees Retirement Association of Minnesota (PERA). PERA's defined benefit pension plans are established and administered in accordance with *Minnesota statutes*, chapters 353 and 356. PERA's defined benefit pension plans are tax qualified plans under Section 401(a) of the Internal Revenue Code.

General Employees Retirement Plan

All full-time and certain part-time employees of the District are covered by the General Employees Plan. Members belong to the Coordinated Plan. Coordinated Plan members are covered by Social Security.

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 4: Defined Benefit Pension Plans - Statewide (Continued)

B. Benefits Provided

PERA provides retirement, disability and death benefits. Benefit provisions are established by state statute and can only be modified by the state legislature. Vested, terminated employees who are entitled to benefits but are not receiving them yet are bound by the provisions in effect at the time they last terminated their public service.

General Employee Plan Benefits

General Employees Plan benefits are based on a member's highest average salary for any five successive years of allowable service, age, and years of credit at termination of service. Two methods are used to compute benefits for PERA's Coordinated Plan members. Members hired prior to July 1, 1989, receive the higher of Method 1 or Method 2 formulas. Only Method 2 is used for members hired after June 30, 1989. Under Method 1, the accrual rate for Coordinated members is 1.2 percent of average salary for each of the first 10 years of service and 1.7 percent of average salary for each additional year. Under Method 2, the accrual rate for Coordinated members is 1.7 percent for average salary for all years of service. For members hired prior to July 1, 1989 a full annuity is available when age plus years of service equal 90 and normal retirement age is 65. For members hired on or after July 1, 1989 normal retirement age is the age for unreduced Social Security benefits capped at 66.

Benefit increases are provided to benefit recipients each January. Beginning in 2019, the postretirement increase will be equal to 50 percent of the cost-of-living adjustment (COLA) announced by the SSA, with a minimum increase of at least 1 percent and a maximum of 1.5 percent. Recipients that have been receiving the annuity or benefit for at least a full year as of the June 30 before the effective date of the increase will receive the full increase. For recipients receiving the annuity or benefit for at least one month but less than a full year as of the June 30 before the effective date of the increase will receive a reduced prorated increase. For members retiring on January 1, 2024, or later, the increase will be delayed until normal retirement age (age 65 if hired prior to July 1, 1989, or age 66 for individuals hired on or after July 1, 1989). Members retiring under Rule of 90 are exempt from the delay to normal retirement.

C. Contributions

Minnesota statutes chapter 353 sets the rates for employer and employee contributions. Contribution rates can only be modified by the state Legislature.

General Employees Fund Contributions

Coordinated Plan members were required to contribute 6.50 percent of their annual covered salary in fiscal year 2020 and the District was required to contribute 7.50 percent for Coordinated Plan members. The District's contributions to the General Employees Fund for the years ending December 31, 2020, 2019 and 2018 were \$33,599, \$31,326, and \$23,840, respectively. The District's contributions were equal to the required contributions for each year as set by state statute.

D. Pension Costs

General Employees Fund Pension Costs

At December 31, 2020, the District reported a liability of \$359,727 or its proportionate share of the General Employees Fund's net pension liability. The District's net pension liability reflected a reduction due to the State of Minnesota's contribution of \$16 million. The State of Minnesota is considered a non-employer contributing entity and the State's contribution meets the definition of a special funding situation. The State of Minnesota's proportionate share of the net pension liability associated with the District totaled \$11,120. The net pension liability was measured as of June 30, 2020, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The District's proportionate share of the net pension liability was based on the District's contributions received by PERA during the measurement period for employer payroll paid dates from July 1, 2019 through June 30, 2020 relative to the total employer contributions received from all of PERA's participating employers. The District's proportion was 0.0060 percent which was an increase of 0.0005 its proportion measured as of June 30, 2019.

Riley Purgatory Bluff Creek Watershed District
Chanhasen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 4: Defined Benefit Pension Plans - Statewide (Continued)

District's Proportionate Share of the Net Pension Liability	\$ 359,727
State of Minnesota's Proportionate Share of the Net Pension Liability Associated with the District	<u>11,120</u>
Total	<u><u>\$ 370,847</u></u>

For the year ended December 31, 2020, the District recognized pension expense of \$57,190, or its proportionate share of the General Employees Plan's pension expense. In addition, the District recognized an additional \$968 as pension expense (and grant revenue) for its proportionate share of the State of Minnesota's contribution of \$16 million to the General Employees Fund.

At December 31, 2020, the District reported its proportionate share of the General Employees Plan's deferred outflows of resources and deferred inflows of resources, related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between Expected and Actual Experience	\$ 3,381	\$ 4,764
Changes in Actuarial Assumptions	1,413	13,847
Net Difference between Projected and Actual Earnings on Plan Investments	20,650	-
Changes in Proportion	69,088	-
Contributions Paid to PERA Subsequent to the Measurement Date	<u>17,874</u>	<u>-</u>
Total	<u><u>\$ 112,406</u></u>	<u><u>\$ 18,611</u></u>

The \$17,874 reported as deferred outflows of resources related to pensions resulting from the District's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2021. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

2021	\$ 30,241
2022	22,440
2023	14,550
2024	8,690

E. Actuarial Assumptions

The total pension liability in the June 30, 2020 actuarial valuation was determined using an individual entry-age normal actuarial cost method and the following actuarial assumptions:

Inflation	2.75% per year
Active Member Payroll Growth	3.50% per year
Investment Rate of Return	7.50%

Salary increases were based on a service-related table. Mortality rates for active members, retirees, survivors and disability rates were based on RP-2014 tables for males or females, as appropriate, with slight adjustments to fit PERA's experience. Cost of living benefit increases after retirement for retirees are assumed to be 1.25 percent per year for General Employees Plan.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 4: Defined Benefit Pension Plans - Statewide (Continued)

Actuarial assumptions used in the June 30, 2020 valuation were based on the results of actuarial experience studies. The most recent four-year experience study in the General Employees Plan was completed in 2019. The assumption changes were adopted by the Board and become effective with the July 1, 2020 actuarial valuation.

The following changes in actuarial assumptions and plan provisions occurred in 2020:

General Employees Fund

Changes in Actuarial Assumptions

- The price inflation assumption was decreased from 2.50% to 2.25%.
- The payroll growth assumption was decreased from 3.25% to 3.00%.
- Assumed salary increase rates were changed as recommended in the June 30, 2019 experience study. The net effect is assumed rates that average 0.25% less than previous rates.
- Assumed rates of retirement were changed as recommended in the June 30, 2019 experience study. The changes result in more unreduced (normal) retirements and slightly fewer Rule of 90 and early retirements.
- Assumed rates of termination were changed as recommended in the June 30, 2019 experience study. The new rates are based on service and are generally lower than the previous rates for years 2-5 and slightly higher thereafter.
- Assumed rates of disability were changed as recommended in the June 30, 2019 experience study. The change results in fewer predicted disability retirements for males and females.
- The base mortality table for healthy annuitants and employees was changed from the RP-2014 table to the Pub-2010 General Mortality table, with adjustments. The base mortality table for disabled annuitants was changed from the RP-2014 disabled annuitant mortality table to the PUB-2010 General/Teacher disabled annuitant mortality table, with adjustments.
- The mortality improvement scale was changed from Scale MP-2018 to Scale MP-2019.
- The assumed spouse age difference was changed from two years older for females to one year older.
- The assumed number of married male new retirees electing the 100% Joint & Survivor option changed from 35% to 45%. The assumed number of married female new retirees electing the 100% Joint & Survivor option changed from 15% to 30%. The corresponding number of married new retirees electing the Life annuity option was adjusted accordingly.

Changes in Plan Provisions

- Augmentation for current privatized members was reduced to 2.0% for the period July 1, 2020 through December 31, 2023 and 0.0% after. Augmentation was eliminated for privatizations occurring after June 30, 2020.

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Notes to the Financial Statements
 December 31, 2020

Note 4: Defined Benefit Pension Plans - Statewide (Continued)

The State Board of Investment, which manages the investments of PERA, prepares an analysis of the reasonableness on a regular basis of the long-term expected rate of return using a building-block method in which best-estimate ranges of expected future rates of return are developed for each major asset class. These ranges are combined to produce an expected long-term rate of return by weighting the expected future rates of return by the target asset allocation percentages. The target allocation and best estimates of geometric real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Domestic Stocks	35.5 %	5.10 %
Alternative Assets (Private Markets)	25.0	5.90
Bonds (Fixed Income)	20.0	0.75
International Stocks	17.5	5.30
Cash	2.0	-
Total	<u>100.00 %</u>	

F. Discount Rate

The discount rate used to measure the total pension liability in 2020 was 7.50 percent. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers will be made at rates set in Minnesota Statutes. Based on these assumptions, the fiduciary net position of the General Employees Fund was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

G. Pension Liability Sensitivity

The following presents the District's proportionate share of the net pension liability for all plans it participates in, calculated using the discount rate disclosed in the preceding paragraph, as well as what the District's proportionate share of the net pension liability would be if it were calculated using a discount rate 1 percentage point lower or 1 percentage point higher than the current discount rate:

	1 Percent Decrease (6.50%)	Current (7.50%)	1 Percent Increase (8.50%)
General Employees Fund	\$ 576,518	\$ 359,727	\$ 180,892

H. Pension Plan Fiduciary Net Position

Detailed information about each pension plan's fiduciary net position is available in a separately-issued PERA financial report that includes financial statements and required supplementary information. That report may be obtained on the Internet at www.mnpera.org.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Notes to the Financial Statements
December 31, 2020

Note 5: Other Information

Risk Management

The District is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters for which the District carries insurance. The District pays annual premiums for its workers compensation and property and casualty insurance. Settled claims have not exceeded the District's coverage in any of the past three fiscal years.

Liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. Liabilities, if any, include an amount for claims that have been incurred but not reported (IBNRs). The District's management is not aware of any incurred but not reported claims.

Note 6: COVID-19

On January 30, 2020, the World Health Organization ("WHO") announced a global health emergency because of a new strain of coronavirus ("COVID-19") and the risks to the international community as virus spreads globally. On March 11, 2020, the WHO classified the COVID-19 outbreak as a pandemic, based on the rapid increase in exposure globally. In response to the pandemic, the State of Minnesota has issued stay-at-home orders and other measures aimed at slowing the spread of the coronavirus.

The full impact of the COVID-19 outbreak continues to evolve as of the date of this report. Due to the rapid development and fluidity of this situation, the District cannot determine the ultimate impact that the COVID-19 pandemic will have on its financial condition, liquidity, and future revenue collection, and therefore any prediction as to the ultimate impact on the District's financial condition, liquidity, and future results of its revenue collections is uncertain.

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REQUIRED SUPPLEMENTARY INFORMATION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

Riley Purgatory Bluff Creek Watershed District
 Chanhassen, Minnesota
 Required Supplementary Information
 December 31, 2020

Schedule of Employer's Share of PERA Net Pension Liability - General Employees Retirement Fund

Fiscal Year Ending	District's Proportion of the Net Pension Liability	District's Proportionate Share of the Net Pension Liability (a)	State's Proportionate Share of the Net Pension Liability Associated with the District (b)	Total (a+b)	District's Covered Payroll (c)	District's Proportionate Share of the Net Pension Liability as a Percentage of Covered Payroll ((a+b)/c)	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability
06/30/20	0.0060 %	\$ 359,727	\$ 11,120	\$ 370,847	\$ 426,004	84.4 %	79.0 %
06/30/19	0.0055	304,083	9,500	313,583	360,608	87.0	80.2
06/30/18	0.0047	260,737	8,633	269,370	316,977	85.0	79.5
06/30/17	0.0034	217,054	2,731	219,785	220,465	99.7	75.9
06/30/16	0.0028	227,346	2,931	230,277	172,425	133.6	68.9
06/30/15	0.0021	98,647	-	98,647	84,947	116.1	78.2

Note: Schedule is intended to show 10-year trend. Additional years will be reported as they become available

Schedule of Employer's PERA Contributions - General Employees Fund

Year Ending	Statutorily Required Contribution (a)	Contributions in Relation to the Statutorily Required Contribution (b)	Contribution Deficiency (Excess) (a-b)	District's Covered Payroll (c)	Contributions as a Percentage of Covered Payroll (b/c)
12/31/20	\$ 33,599	\$ 33,599	\$ -	\$ 447,990	7.5 %
12/31/19	31,326	31,326	-	417,681	7.5
12/31/18	23,840	23,840	-	317,869	7.5
12/31/17	21,160	21,160	-	282,139	7.5
12/31/16	13,813	13,813	-	184,176	7.5
12/31/15	12,742	12,742	-	169,893	7.5

Note: Schedule is intended to show 10-year trend. Additional years will be reported as they become available

Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota
Required Supplementary Information (Continued)
December 31, 2020

Notes to the Required Supplementary Information - General Employees Fund

Changes in Actuarial Assumptions

2020 - The price inflation assumption was decreased from 2.50% to 2.25%. The payroll growth assumption was decreased from 3.25% to 3.00%. Assumed salary increase rates were changed as recommended in the June 30, 2019 experience study. The net effect is assumed rates that average 0.25% less than previous rates. Assumed rates of retirement were changed as recommended in the June 30, 2019 experience study. The changes result in more unreduced (normal) retirements and slightly fewer Rule of 90 and early retirements. Assumed rates of termination were changed as recommended in the June 30, 2019 experience study. The new rates are based on service and are generally lower than the previous rates for years 2-5 and slightly higher thereafter. Assumed rates of disability were changed as recommended in the June 30, 2019 experience study. The change results in fewer predicted disability retirements for males and females. The base mortality table for healthy annuitants and employees was changed from the RP-2014 table to the Pub-2010 General Mortality table, with adjustments. The base mortality table for disabled annuitants was changed from the RP-2014 disabled annuitant mortality table to the PUB-2010 General/Teacher disabled annuitant mortality table, with adjustments. The mortality improvement scale was changed from Scale MP-2018 to Scale MP-2019. The assumed spouse age difference was changed from two years older for females to one year older. The assumed number of married male new retirees electing the 100% Joint & Survivor option changed from 35% to 45%. The assumed number of married female new retirees electing the 100% Joint & Survivor option changed from 15% to 30%. The corresponding number of married new retirees electing the Life annuity option was adjusted accordingly.

2019 - The mortality projection scale was changed from MP-2017 to MP-2018.

2018 - The mortality projection scale was changed from MP-2015 to MP-2017. The assumed benefit increase was changed from 1.00 percent per year through 2044 and 2.50 percent per year thereafter to 1.25 percent per year.

2017 - The Combined Service Annuity (CSA) loads were changed from 0.8 percent for active members and 60 percent for vested and non-vested deferred members. The revised CSA loads are now 0.0 percent for active member liability, 15.0 percent for vested deferred member liability and 3.0 percent for non-vested deferred member liability. The assumed post-retirement benefit increase rate was changed from 1.0 percent per year for all years to 1.0 percent per year through 2044 and 2.5 percent per year thereafter.

2016 - The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2035 and 2.5 percent per year thereafter to 1.0 percent per year for all future years. The assumed investment return was changed from 7.9 percent to 7.5 percent. The single discount rate was changed from 7.9 percent to 7.5 percent. Other assumptions were changed pursuant to the experience study dated June 30, 2015. The assumed future salary increases, payroll growth and inflation were decreased by 0.25 percent to 3.25 percent for payroll growth and 2.50 percent for inflation.

2015 - The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2030 and 2.5 percent per year thereafter to 1.0 percent per year through 2035 and 2.5 percent per year thereafter.

Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Required Supplementary Information (Continued)
December 31, 2020

Notes to the Required Supplementary Information - General Employees Fund (Continued)

Changes in Plan Provisions

2020 - Augmentation for current privatized members was reduced to 2.0% for the period July 1, 2020 through December 31, 2023 and 0.0% after. Augmentation was eliminated for privatizations occurring after June 30, 2020.

2019 - The employer supplemental contribution was changed prospectively, decreasing from \$31.0 million to \$21.0 million per year. The state's special funding contribution was changed prospectively, requiring \$16.0 million due per year through 2031.

2018 - The augmentation adjustment in early retirement factors is eliminated over a five-year period starting July 1, 2019, resulting in actuarial equivalence after June 30, 2024. Interest credited on member contributions decreased from 4.00 percent to 3.00 percent, beginning July 1, 2018. Deferred augmentation was changed to 0.00 percent, effective January 1, 2019. Augmentation that has already accrued for deferred members will still apply. Contribution stabilizer provisions were repealed. Postretirement benefit increases were changed from 1.00 percent per year with a provision to increase to 2.50 percent upon attainment of 90.00 percent funding ratio to 50.00 percent of the Social Security Cost of Living Adjustment, not less than 1.00 percent and not more than 1.50 percent, beginning January 1, 2019. For retirements on or after January 1, 2024, the first benefit increase is delayed until the retiree reaches normal retirement age; does not apply to Rule of 90 retirees, disability benefit recipients, or survivors. Actuarial equivalent factors were updated to reflect revised mortality and interest assumptions.

2017 - The State's contribution for the Minneapolis Employees Retirement Fund equals \$16,000,000 in 2017 and 2018, and \$6,000,000 thereafter. The Employer Supplemental Contribution for the Minneapolis Employees Retirement Fund changed from \$21,000,000 to \$31,000,000 in calendar years 2019 to 2031. The state's contribution changed from \$16,000,000 to \$6,000,000 in calendar years 2019 to 2031.

2016 - No changes noted

2015 - On January 1, 2015, the Minneapolis Employees Retirement Fund was merged into the General Employees Fund, which increased the total pension liability by \$1.1 billion and increased the fiduciary plan net position by \$892 million. Upon consolidation, state and employer contributions were revised.

OTHER REQUIRED REPORT
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

FOR THE YEAR ENDED
DECEMBER 31, 2020

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INDEPENDENT AUDITOR'S REPORT
ON MINNESOTA LEGAL COMPLIANCE

Board of Managers
Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the governmental activities and each major fund of the Riley Purgatory Bluff Creek Watershed District (the District), Chanhassen, Minnesota, as of and for the year ended December 31, 2020, and the related notes to the financial statements and have issued our report thereon dated May 26, 2021.

In connection with our audit, nothing came to our attention that caused us to believe that the District failed to comply with the provisions of the contracting and bidding, deposits and investments, conflicts of interest, public indebtedness, claims and disbursements, miscellaneous provisions, and tax increment financing sections of the *Minnesota Legal Compliance Audit Guide for Cities*, promulgated by the State Auditor pursuant to Minn. Stat. § 6.65, except as described in the Schedule of Findings and Responses as items 2020-001. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding the District's noncompliance with the above referenced provisions, insofar as they relate to accounting matters.

This report is intended solely for the information and use those charged with governance and management of the District and the State Auditor and is not intended to be and should not be used by anyone other than these specified parties.

Abdo Eick & Meyers, LLP
ABDO, EICK & MEYERS, LLP
Minneapolis, Minnesota
May 26, 2021

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Riley Purgatory Bluff Creek Watershed District
Chanhausen, Minnesota
Schedule of Finding and Response
December 31, 2020

<u>Finding</u>	<u>Description</u>
2020-001	Time Period for Payment
<i>Condition:</i>	Auditing for legal compliance requires a review of the District's payment of claims. Our audit indicated an instance of non-compliance that we believe is required to be remedied.
<i>Criteria:</i>	Minnesota statute section 471.425 requires that the District pay bills within 35 days from receipt. If the invoice is not paid within the 35 days, interest at 1.5 percent per month is to be added to amount due.
<i>Cause:</i>	We noted several instances where invoices that were paid after the 35-day period. This was due to invoices submitted and received after the internal cutoff date.
<i>Effect:</i>	The District is out of compliance with this statute.
<i>Recommendation:</i>	We recommend that the District develop policies and procedures related to the accounts payable cycle. These policies and procedures should include payment terms that are outlined within State statutes. We also recommend purchasing a date stamp to document when all invoices are received at the District. Implementing this recommendation will not result in any additional cost to the District.

Management Response:

The District's Board of Managers has adopted the auditor's recommendation that the District date stamp each invoice when it is received by the District in order to substantiate the beginning of the 35 day period. In addition, because the Board of Managers generally only meets once per month, the Board of Managers has adopted a policy that all contracts must include and all vendors must agree to allow the District not less than 60 day after receipt of an invoice to process and pay such invoice as allowed by Minnesota statute section 471.425. Notwithstanding the foregoing, the District intends to process and pay all invoices as expeditiously as possible. The District intends to review all invoices received in 2020 and pay all interest that is required by law to be paid.

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2020-060

Considered at Board of Managers Meeting: July 7, 2021

Received complete: June 24, 2021

- Applicant:** Christian Brothers Automotive
Consultant: Christian Jones and Brandon Elegert P.E., Kimley-Horn
Project: Christian Brothers Automotive – The applicant proposes the construction of a new automotive repair building, associated parking areas, landscaping, utilities and stormwater management facilities. Stormwater management facilities include hydrodynamic separators (Hydro International’s Downstream Defenders), an underground stormwater detention system, an iron-enhanced filtration basin, rainwater harvest and reuse system, and a proprietary stormwater treatment unit (Bayfilter Stormwater Filtration System) to provide volume control, water quality, and rate control.
Location: 8941 Crossroads Blvd, Chanhassen, MN
Reviewer: Dallen Webster E.I.T. and Scott Sobiech P.E., Barr Engineering

Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that the application for Permit 2020-060 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report.

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2020-060 to the applicant on behalf of RPBCWD.

Upon roll call vote, the resolutions were adopted, _____.

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RPBCWD Rules?	Comments	
C	Erosion Control Plan	See Comment	See Rule Specific Permit Condition C1.	
J	Stormwater Management	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See Rule Specific Permit Condition J1.
		Chloride Management	See Comment	See stipulation #4.
		Wetland Protection	Yes	
L	Permit Fee Deposit	See Comment	\$1,500 received September 28, 2020.	
M	Financial Assurances	See Comment	The financial assurance is calculated at \$181,610	

Background

The applicant proposes construction of a 5,100 square foot automotive repair building and parking lot, associated utilities, and stormwater management facilities on a vacant lot which was part of a larger site development prior to RPBCWD’s regulatory program reinstatement. The project will include construction of stormwater management facilities including hydrodynamic separators (Hydro International’s Downstream Defenders), an underground stormwater detention system, an iron-enhanced filtration basin, rainwater harvest and reuse system, and a proprietary stormwater treatment unit (Bayfilter Stormwater Filtration System) to provide volume control, water quality, and rate control.

The project site information is summarized below:

Project Site Information	Area (acres)
Total Site Area	0.91
Existing Impervious	0.04
Disturbed Existing Impervious Area	0.04 (100%)
Proposed Impervious Area	0.58
Change in Impervious Area	0.54 (>100% increase)
Regulated Impervious Area	0.58
Total Disturbed Area	0.91

The following materials were reviewed in support of the permit request:

1. Permit Application received October 5, 2020 (Notified applicant on October 7, 2020, May 19, 2021, and June 1, 2021 that submittal was incomplete)
2. Stormwater Management Report dated October 5, 2020 (revised March 5, 2021; May 20, 2021; and June 24, 2021)
3. Project Plan Set dated October 5, 2020 (revised March 5, 2021; May 19, 2021; and June 24, 2021)
4. ALTA/NSPS Land Title Survey received on October 5, 2020
5. Operation and Maintenance Plan dated October 5, 2020 (revised May 19, 2021 and June 24, 2021)
6. Electronic HydroCAD models received on May 19, 2021 (revised June 24, 2021)
7. Electronic MIDS models received on May 19, 2021 (revised June 24, 2021)
8. Geotechnical Boring Logs by Earth Sciences, LLC dated May 3, 2021
9. Double-Ring Infiltrometer Testing Results by Chosen Valley Testing, Inc dated May 3, 2021
10. Engineer's Opinion of Probable Construction Costs by Kimley-Horn dated May 19, 2021 (revised June 24, 2021)
11. Response to RPBCWD Comments on May 4, 2021 submittal received on May 19, 2021
12. Response to RPBCWD Comments on June 1, 2021 submittal received on June 24, 2021
13. Temporary Grading Easement for Lot 1 received June 24, 2021
14. Temporary Grading Easement for Lot 2 received June 24, 2021
15. Electronic P8 models received on June 24, 2021

As the above inventory shows, while the application was originally submitted last fall, the applicant did not submit all supporting materials necessary to complete the application until June 24, 2021.

Rule Specific Permit Conditions

Rule C: Erosion Prevention and Sediment Control

Because the project will alter 0.91 acres of land-surface area, the project must conform to the requirements in the RPBCWD Erosion Prevention and Sediment Control rule (Rule C, Subsection 2.1).

The erosion and sediment control plans prepared by Kimley-Horn include installation of perimeter control, inlet protection for storm sewer catch basins, a rock construction entrance, protection of stormwater management facilities, placement of a minimum of 6 inches of topsoil, construction sequencing, decompaction of pervious areas compacted during construction, and retention of native topsoil onsite. To conform to RPBCWD Rule C requirements the following revisions are needed:

- C1. The Applicant must provide the name and contact information of the individual responsible for erosion control at the site. RPBCWD must be notified if the responsible individual changes during the permit term.

Rule J: Stormwater Management

Because the project will alter 0.91 acres of land-surface area on a vacant lot the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1) for all the impervious surface on the site.

The project proposes the installation of proprietary hydrodynamic separators (Hydro International's Downstream Defenders) and construction of an underground stormwater detention system, an iron-enhanced filtration basin, and rainwater harvest and reuse system, as well as a proprietary stormwater treatment unit (Bayfilter Stormwater Filtration System) to provide volume control, water quality, and rate control. Site runoff conveyed to the rainwater harvest and reuse system will be collected from paved customer parking areas and rooftops that are separate from interior automotive repair and storage areas as to minimize sources of potential contamination. Stored runoff retained in the underground detention system will be used for irrigation of pervious areas on site.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The Applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in the table below.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
South	0.3	0.1	0.8	0.3	2.0	0.8	0.4	0.3
North	0.1	0.1	0.3	0.1	0.9	0.2	0.2	0.0
Northwest	0.2	0.2	0.5	0.2	1.1	0.9	0.2	0.2
West	0.2	0.1	0.6	0.2	1.6	0.4	0.4	0.1

The proposed stormwater management plan will provide rate control in compliance with the RPBCWD requirements for the 2-, 10-, and 100-year events. Thus, the proposed project meets the rate control requirements in Rule J, Subsection 3.1a.

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the new and disturbed impervious surface of the parcel. An abstraction volume of 2,316 cubic feet is required from the proposed 0.58 acres (25,265 square feet) of impervious area.

The Geotechnical Report prepared by Earth Sciences, LLC dated June 10, 2021 shows groundwater on site as shallow as 3 feet below existing and proposed grades. The Engineer concurs that the presence of high groundwater shows that the abstraction standard in Subsection 3.1 of Rule J cannot practicably be met, the site is considered a restricted site and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J.

For restricted sites, subsection 3.3 of Rule J requires rate control in accordance with subsection 3.1.a and that abstraction and water-quality protection be provided in accordance with the following sequence: (a) Abstraction of 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or (b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or (c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c. The engineer concurs that the 1,705 cubic feet of abstraction provided by the applicant’s proposed rainwater harvest and reuse system is in accordance with subsection 3.3.a.

The table below summarizes the volume abstraction required and the volume abstraction achieved by the proposed stormwater management facilities on site. The proposed project is in conformance with Rule J, Subsection 3.3.a.

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	1,158	0.81	1,705

Because the proposed stormwater reuse system requires consistent use at a specified rate to meet District requirements, performance monitoring for the site will be required to ensure that the project provides the proposed volume abstraction.

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide for at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions. The applicant is proposing to use proprietary hydrodynamic separators (Hydro International’s Downstream Defenders), an underground stormwater detention system, an iron-enhanced filtration basin, rainwater harvest and reuse system, and a proprietary stormwater treatment unit (Bayfilter Stormwater Filtration System) to achieve the required TP and TSS removals.

P8 water quality monitoring software was used to evaluate the removal efficiencies of the underground retention system and iron-enhanced sand filtration basin. P8 removal efficiencies were imported to the MIDs calculator to estimate the TP and TSS removals for the rainwater harvest and reuse system, iron-

enhanced sand filtration basin, hydrodynamic separator, and stormwater reuse. The results of this modeling are summarized in tables below showing the annual TSS and TP removal requirements are achieved and that there is no net increase in TSS and TP leaving the site. The engineer concurs with the modeling and finds that the proposed project is in conformance with Rule J, Subsection 3.1.c.

Annual TSS and TP removal summary

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	203.4	183.1 (90%)	185.1 (91%)
Total Phosphorus (TP)	1.12	0.67 (60%)	0.77 (69%)

Summary of net change in TSS and TP leaving the site

Pollutant of Interest	Existing Site Loading (lbs/yr)	Proposed Site Load after Treatment (lbs/yr)	Change (lbs/yr)
Total Suspended Solids (TSS)	27.4	18.3	-9.1
Total Phosphorus (TP)	0.23	0.10	-0.13

Low floor Elevation

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation of a waterbody or stormwater management facility. No stormwater management system may be constructed or reconstructed in a manner that brings the low floor elevation of an adjacent structure into noncompliance according to Rule J, Subsection 3.6.

The low floor elevation of the proposed building and the adjacent iron-enhanced stormwater detention feature are summarized below. The proposed project is in conformance with Rule J, Subsection 3.6.

Low Floor Elevation of Proposed Building (feet)	100-year Event Flood Elevation of Stormwater Facility (feet)	Freeboard (feet)
923.00	920.96	2.04

Maintenance

Subsection 3.7 of Rule J requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The stormwater management facilities include the hydrodynamic separators (Hydro International’s Downstream Defenders), an underground stormwater detention system, rainwater harvest and reuse system, and a proprietary stormwater treatment unit (Bayfilter Stormwater Filtration System) and thus maintenance will need to be provided in accordance with the manufacturers’ guidance/manual. The Applicant must provide a draft maintenance and inspection declaration in conformance with Rule J, Subsection 3.7, for approval by RPBCWD staff prior to recordation. To conform to the RPBCWD Rule J the following revisions are needed:

J1. Permit applicant must provide a maintenance and inspection declaration as required by Rule J, Subsection 3.7. A maintenance declaration template is available on the permits page of the RPBCWD website (<http://www.rpbcwd.org/permits/>). The declaration must also include a stormwater reuse monitoring and reporting plan that includes protection of the greenspace to be irrigated and metering of the volume of reuse. A draft declaration must be provided for District approval prior to recordation as a condition of issuance of the permit.

Wetland Protection

Because runoff from this site is directly tributary to a downstream, off-site stormwater pond and is not tributary to any wetland, the proposed project does not trigger analysis under Rule J, subsection 3.10.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. To close out the permit and release the \$5,000 in financial assurance held for the purpose of chloride management, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.

Rule L: Permit Fee Deposit:

The RPBCWD permit fee schedule adopted in February 2020 requires permit applicants to deposit \$3,000 to be held in escrow and applied to cover the \$10 permit-processing fee and reimburse RPBCWD for permit review and inspection-related costs and when a permit application is approved, the deposit must be replenished to the applicable deposit amount by the applicant before the permit will be issued to cover actual costs incurred to monitor compliance with permit conditions and the RPBCWD Rules. A permit fee deposit of \$1,500 was received on September 29, 2020.

Rule M: Financial Assurance:

Rules C: Silt fence and silt dikes: 290L.F. x \$2.50/L.F. =	\$725
Inlet protection: 6 x \$100 =.....	\$600
Rock Entrance: 1 x \$250 =	\$250
Restoration: 0.91 acres x \$2,500/acre =	\$2,275
Rules J: Stormwater Management Facility: \$125,000 x 125% of engineer’s opinion of cost=	\$156,250
Chloride Management Plan: \$5,000	\$5,000
Contingency (10%)	<u>\$16,510</u>
Total Financial Assurance.....	\$181,610

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.
3. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
4. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
5. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
6. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
7. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
8. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets, and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

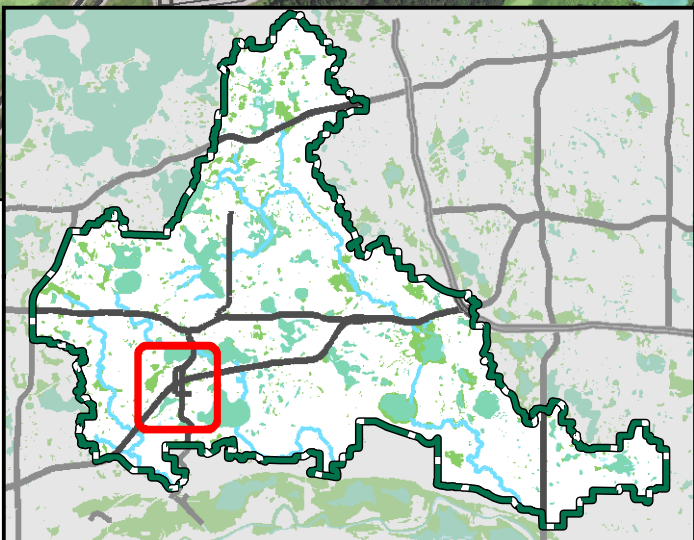
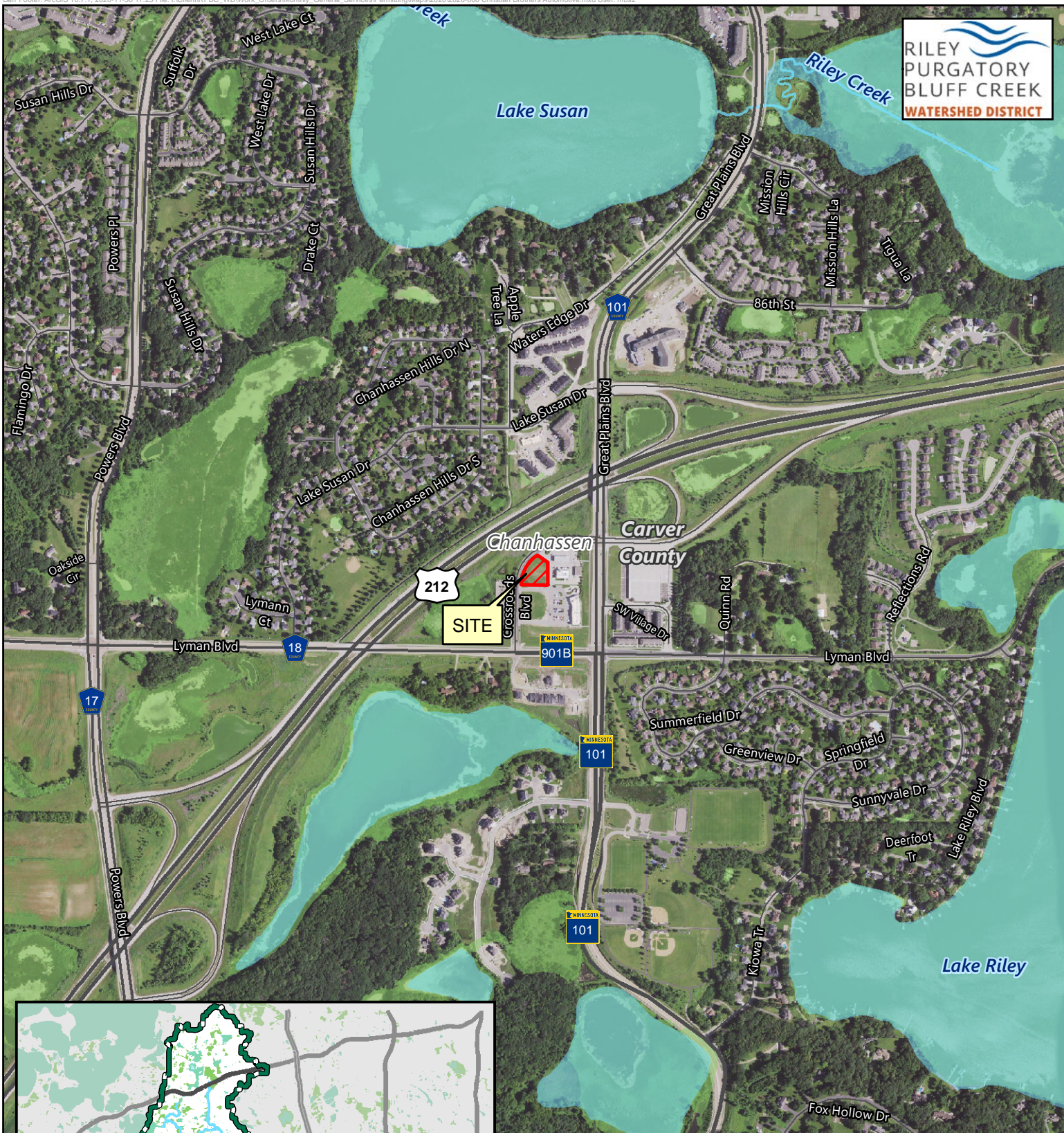
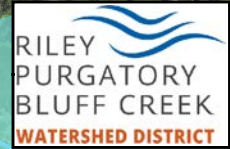
Approval, contingent upon:

1. Continued compliance with General Requirements

2. Financial Assurance in the amount of \$181,610.
3. Applicant providing the name and contact information of the individual responsible for erosion and sediment control at the site.
4. Receipt in recordation a maintenance declaration for the operation and maintenance all stormwater management facilities. The declaration must also include a stormwater reuse monitoring and reporting plan that includes protection of the greenspace to be irrigated and metering of the volume of reuse, as well as maintenance specifics provided by the manufacturer(s) or installer(s) for the proprietary systems. Drafts of all documents to be recorded must be approved by the District prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, all the stormwater facilities conform to design specifications and function as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
 - a. the surveyed bottom elevations, water levels, and general topography of all facilities;
 - b. the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
 - c. the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
2. Providing the following additional close-out materials:
 - a. Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C.2c criteria
3. The work on the Christian Brothers Automotive development under the terms of permit 2020-060, if issued, must have an impervious surface area and configuration materially consistent with the approved plans. Design that differs materially from the approved plans (e.g., in terms of total impervious area) will need to be the subject of a request for a permit modification or new permit, which will be subject to review for compliance with all applicable regulatory requirements.
4. To close out the permit and release the \$5,000 in financial assurance held for the purpose of the chloride management, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.
5. Replenish the permit fee deposit to the original amount or such lesser amount as the RPBCWD administrator determines sufficient within 45 days of receiving notice that such deposit is due in order to cover continued actual costs incurred to monitor compliance with permit conditions and the RPBCWD Rules.



Feet



Permit Location Map

CHRISTIAN BROTHERS
AUTOMOTIVE
Permit 2020-060

Riley Purgatory Bluff Creek
Watershed District

- LEGEND**
- PROPERTY LINE
 - EXISTING CURB
 - PROPOSED CURB
 - EROSION CONTROL BLANKET
 - ROOF-CONSTRUCTION ENTRANCE
 - INLET PROTECTION
 - HEAVY DUTY BELT FENCE
 - PROPOSED STORM MANHOLE (80" DIA.)
 - PROPOSED STORM MANHOLE (54" DIA.)
 - PROPOSED STORM MANHOLE (30" DIA.)
 - PROPOSED STORM MANHOLE (24" DIA.)
 - PROPOSED STORM MANHOLE (18" DIA.)
 - PROPOSED SPOT ELEVATION
 - PROPOSED HIGH POINT ELEVATION
 - PROPOSED LOW POINT ELEVATION
 - MATCH-DRAINAGE DIRECTION
 - PROPOSED AS FLOOR
 - PROPOSED SITE LIGHTING. SEE LIGHTING PLAN FOR DETAILS
 - PROPOSED SWAMP

EROSION CONTROL PLAN NOTES

1. ALL PERMITTED SILT FENCE AND/OR CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
2. THE CONSTRUCTION SHALL BE SITED ON BARE EROSION CONTROL MEASURES.
3. SLOPE SHALL BE SITED ON BARE EROSION CONTROL MEASURES.
4. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED ACCORDANCE WITH CITY, STATE, AND WATERSHED DISTRICT PERMITS.
5. THE SLOPE SHALL BE SITED ON BARE EROSION CONTROL MEASURES.
6. ANY EXCESS EROSION CONTROL MEASURES SHALL BE REMOVED BY THE CONTRACTOR.
7. REMOVAL OF EROSION CONTROL MEASURES AFTER VEGRETATION IS ESTABLISHED.
8. THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKING DEPOSITED ON EXISTING PAVED AREAS AND SHALL SWEEP ADJACENT STREETS AS NECESSARY IN ACCORDANCE WITH CITY AND WATERSHED DISTRICT PERMITS.
9. IF OVERSIGHT OCCURS, THE CONTRACTOR SHALL SWEEP FROM A TRUCK.
10. THE USE OF FERTILIZERS, PESTICIDES, OR OTHER CHEMICALS SHALL BE PROHIBITED.
11. THE USE OF FERTILIZERS, PESTICIDES, OR OTHER CHEMICALS SHALL BE PROHIBITED.
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14. THE USE OF FERTILIZERS, PESTICIDES, OR OTHER CHEMICALS SHALL BE PROHIBITED.
15. THE USE OF FERTILIZERS, PESTICIDES, OR OTHER CHEMICALS SHALL BE PROHIBITED.

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPT. RECORDS.
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15. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPT. RECORDS.

GRADING PLAN NOTES

1. ALL WORK SHALL BE ACCORDANCE WITH THE CITY OF CHANHASSEN SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
2. CONTRACTOR TO CALL LANDSCAPE STATE CALL ONE (612) 440-3030 AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION FOR UTILITY LOCATIONS.
3. STORMWATER SHALL BE AS FOLLOWS:
 - 10% PER ASPHALT
 - 15% PER ASPHALT
 - 10% PER ASPHALT
 - 15% PER ASPHALT
 - 10% PER ASPHALT
 - 15% PER ASPHALT
4. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPT. RECORDS.
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RILEY PURGATORY BLUFF CREEK WATERSHED NOTES

1. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPT. RECORDS.
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LANDSCAPE AREA SPECIFICATIONS

1. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPT. RECORDS.
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PHI 2 BMP QUANTITIES

HEAVY DUTY BELT FENCE	4920 LF
EROSION CONTROL BLANKET	44,200 SF
INLET PROTECTION	13 EA

SITE DATA TABLE

TOTAL PROPERTY AREA	389 AC
EXISTING IMPERVIOUS AREA	1,914 AC
EXISTING PERVIOUS AREA	3,048 AC
PROPOSED IMPERVIOUS AREA	3,917 AC
PROPOSED PERVIOUS AREA	3,339 AC

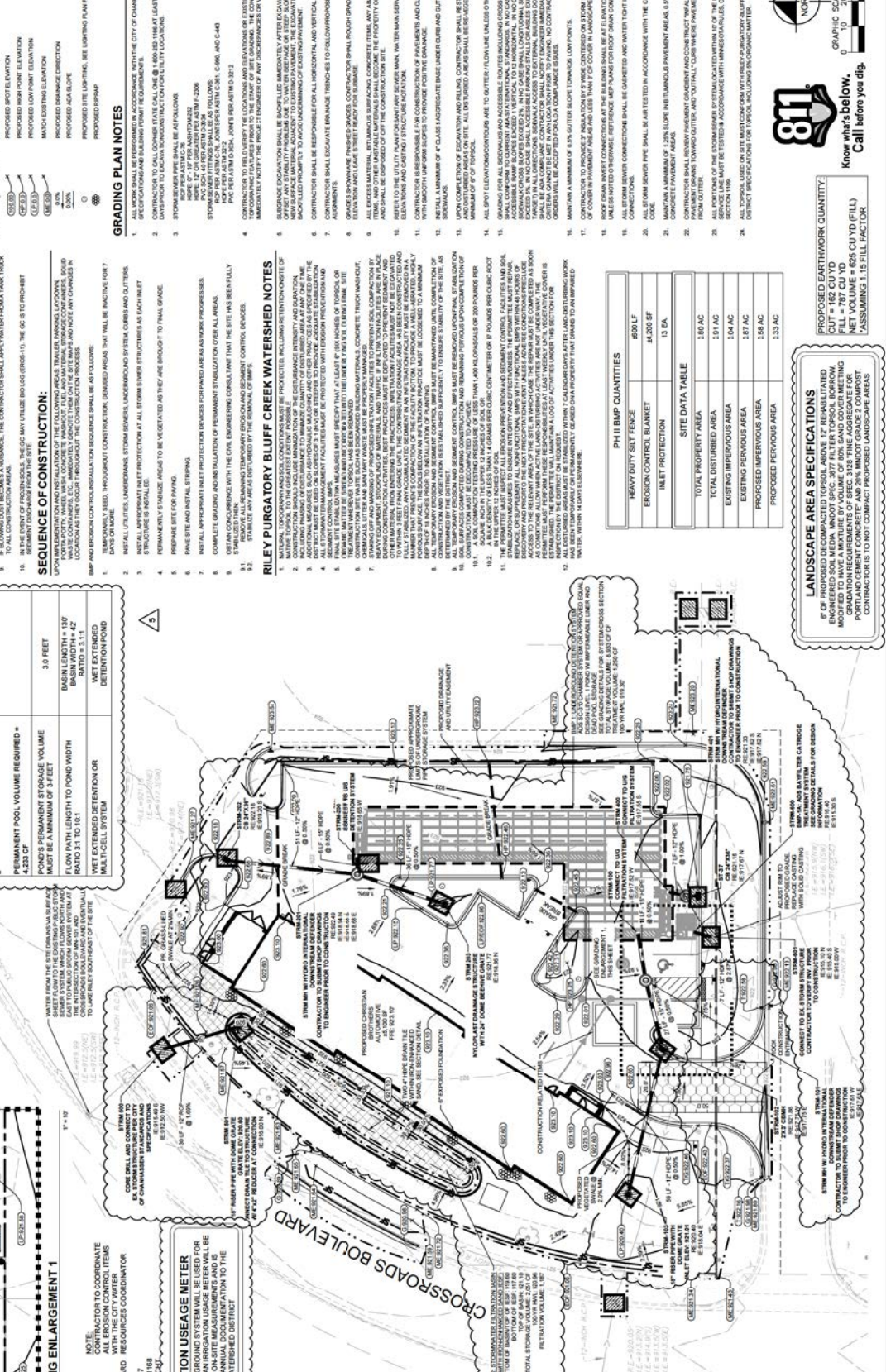
STORMWATER POND REQUIREMENTS

REQUIREMENT	PROPOSED
DEAD STORAGE OF AT LEAST 1800 CUBIC FEET PER ACRE OF DRAINAGE AREA	1,200,000 CU YD
DEAD POOL VOLUME = 1.0% OF REQUIRED	1,200,000 CU YD
WATER QUALITY VOLUME IS GREATER THAN 1% OF IMPERVIOUS AREA	1,200,000 CU YD
PERMANENT POOL VOLUME PROVIDED = 4,139 CF	4,139 CF
PERMANENT POOL VOLUME REQUIRED = 4,333 CF	4,333 CF
POND'S PERMANENT STORAGE VOLUME MUST BE A MINIMUM OF 3 FEET	3 FEET
LOWEST PATH LENGTH TO POND WIDTH RATIO SHALL BE 10:1	10:1
MAY BE EXTENDED DETENTION OR MULTICELL SYSTEM	30 FEET
BASIN LENGTH = 150 FEET	150 FEET
BASIN WIDTH = 4 FEET	4 FEET
MAXIMUM DETENTION TIME = 2.5 HOURS	2.5 HOURS

IRRIGATION USAGE METER

NOTE: CONTRACTOR TO COORDINATE WITH THE CITY WATER UTILITIES DEPARTMENT FOR METER INSTALLATION AND RECORDS.

CHANHASSEN MN 55317
P.O. BOX 1417 BLDG
CHANHASSEN MN 55317



GRADING ENLARGEMENT 1

NOTE: CONTRACTOR TO COORDINATE WITH THE CITY WATER UTILITIES DEPARTMENT FOR METER INSTALLATION AND RECORDS.

CHANHASSEN MN 55317
P.O. BOX 1417 BLDG
CHANHASSEN MN 55317

PROPOSED UNDERGROUND SYSTEM WILL BE USED FOR IRRIGATION. AN IRRIGATION USAGE METER WILL BE REQUIRED FOR ANNUAL DOCUMENTATION TO THE WATERSHED DISTRICT.

NO.	REVISIONS	DATE	BY
10/16/2020	CITY COMMENTS		
09/05/2021	CITY SUBMITTALS		
09/05/2021	CITY COMMENTS		
09/05/2021	WATERSHED RESUBMITTAL		
06/22/2021	WATERSHED RESUBMITTAL		

WWW.KIMLEY-HORN.COM
 2020 KIMLEY-HORN ASSOCIATES, INC.
 307 EAST STREET, SUITE 100, ST. PAUL, MN 55114
 PHONE: 651-454-4199
 FAX: 651-454-4198

8941 CROSSROADS
 BLVD
 PREPARED FOR
 CHRISTIAN BROTHERS
 AUTOMOTIVE
 CHANHASSEN

**GRADING AND
DRAINAGE
DETAILS**

SHEET NUMBER
C3.1

NOA PROJECT	09/22/2021
DATE	09/22/2021
DESIGNED BY	AS SHOWN
CHECKED BY	AS SHOWN
DATE	09/22/2021
NOA PROJECT	09/22/2021

PRELIMINARY - NOT FOR CONSTRUCTION

STORMWATER MANAGEMENT NOTES

- UNDERGROUND STORMWATER MANAGEMENT SYSTEM SHALL BE INSTALLED WITH IMPERMEABLE LINER.
- STORMWATER MANAGEMENT SYSTEM SHALL BE INSTALLED WITH IMPERMEABLE LINER AND SHALL BE CONSTRUCTED WITH A 4" MINIMUM THICKNESS OF ENGINEERED SOILS WITH A PERCENTAGE OF SANDY SILT AS SPECIFIED IN THE CONTRACT DOCUMENTS.
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- REGULATION OF WATER LEVELS IS CRITICAL TO PREVENT SMILING. SCHEDULE WORK FOR REGULATION OF WATER LEVELS TO BE COMPLETED PRIOR TO THE START OF CONSTRUCTION.
- DO NOT ALLOW EXCESSIVE WATER TO REMAIN ON EXPOSED SURFACE. EXCESSIVE WATER FROM RUNOFF OF PRECIPITATION (CAUSED BY THE EVENT OF HEAVY RAIN) IN THE EVENT OF A MAJOR RAIN EVENT MUST BE REMOVED IMMEDIATELY TO PREVENT OVERSATURATION OF SOILS WITH WATER AND IMPERMEABLE SHEETING.
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- EXCAVATE SEGMENT SOIL TO EXPOSE THE BMP DURING OR IMMEDIATELY FOLLOWING A MAJOR RAIN EVENT. THE CONTRACTOR SHALL TAKE THE NEAREST APPROPRIATE ACTION TO PREVENT DAMAGE TO THE BMP.
- STOPPING OF MATERIAL SHALL NOT BE ALLOWED DURING DRY SOIL CONDITIONS.
- ALL BARGE CONSTRUCTION ACTIVITIES SHALL BE COMPLETED DURING DRY SOIL CONDITIONS.
- ALL WET POND SHALL BE PROTECTED DURING CONSTRUCTION OPERATIONS.

STORMWATER HARVESTING SYSTEM REQUIREMENTS

SYSTEM SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER OR LICENSED LANDSCAPE ARCHITECT.

- THE SYSTEM SHALL BE DESIGNED TO PROVIDE A MINIMUM OF 120 DAYS OF STORAGE.
- THE SYSTEM SHALL BE DESIGNED TO PROVIDE A MINIMUM OF 120 DAYS OF STORAGE.
- THE SYSTEM MUST INCLUDE A CONNECTION TO MANHOLE WATER AS A BACK UP IRRIGATION SOURCE. THE CONNECTION MUST INCLUDE AN AIR GAP OR OTHER BYPASS PREVENTION TO PREVENT BACKFLOW INTO THE IRRIGATION SYSTEM.
- MANHOLE WATER CANNOT BE PUMPED INTO POND TO BE LATER PUMPED INTO THE IRRIGATION SYSTEM.
- PRIVATE IRRIGATION WELLS AS A BACK UP IRRIGATION SOURCE ARE NOT ALLOWED.
- IRRIGATION HEADS MUST BE PLACED MINIMUM 4" FROM BACK OF CURB, TRAIL, SIDEWALK OR OTHER HARD SURFACE.
- EMPHASIZED SMART CONTROLLERS MUST BE USED.
- NO IRRIGATION SHALL BE ALLOWED TO OCCUR WHILE THE SYSTEM IS UNDER CONSTRUCTION.
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SITE COMPACTION NOTES

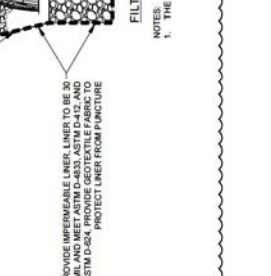
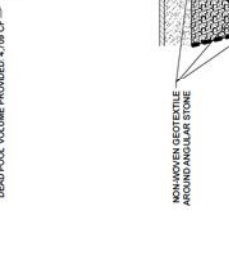
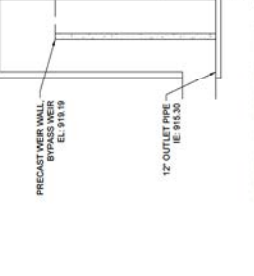
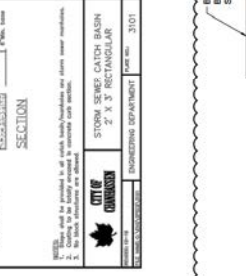
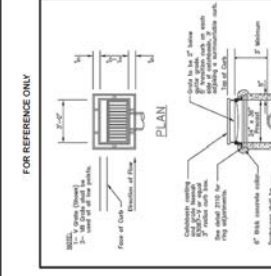
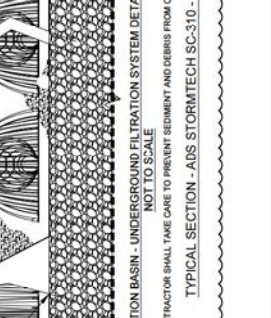
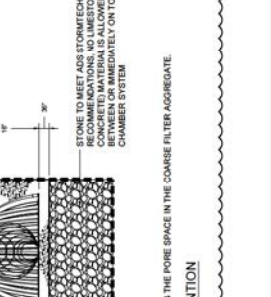
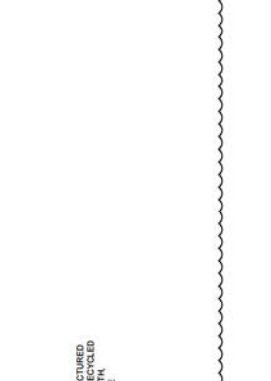
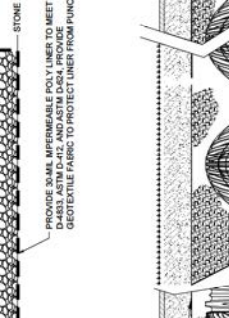
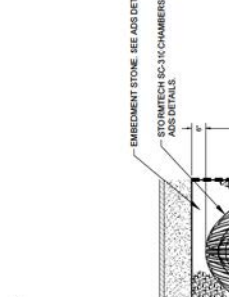
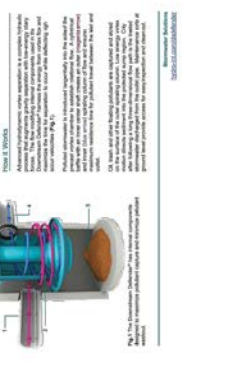
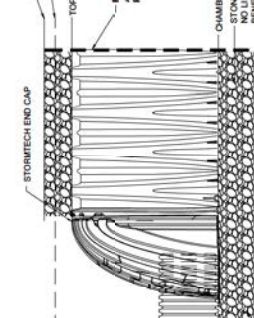
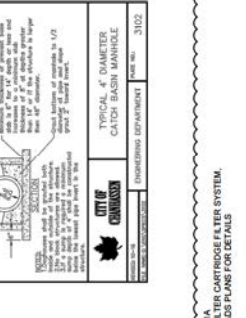
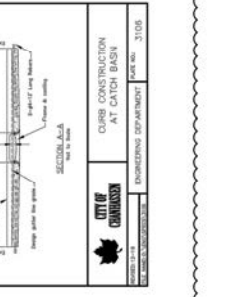
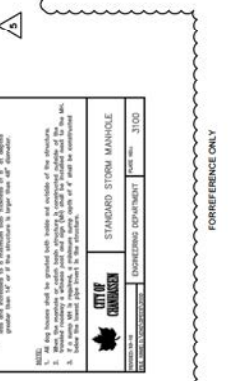
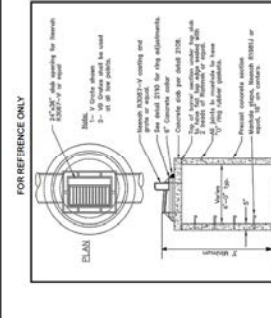
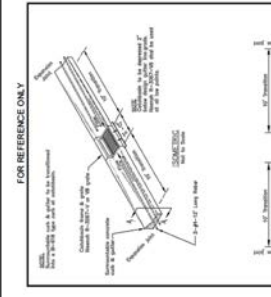
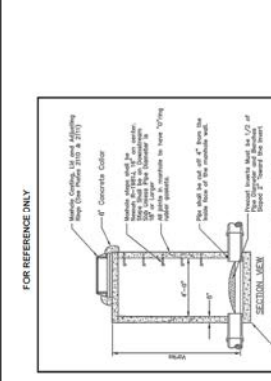
- THE CONTRACTOR SHALL REGRADE ALL SOIL SURFACES TO BE COMPACTED TO THE PROPOSED FINISH ELEVATION.
- ALL SOIL SURFACES TO BE COMPACTED SHALL BE TESTED FOR MOISTURE AND DENSITY.
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RPBCWD EROSION CONTROL PLAN NOTES

- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
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STORMWATER MANAGEMENT NOTES (Continued)

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- ALL WET POND SHALL BE PROTECTED DURING CONSTRUCTION OPERATIONS.



NOTES:
 1. THE CONTRACTOR SHALL TAKE CARE TO PREVENT SEDIMENT AND DEBRIS FROM CLOGGING THE PORE SPACE IN THE COARSE FILTER AGGREGATE.
 NOT TO SCALE
 TYPICAL SECTION - ADS STORMTECH SC-310 - DETENTION

NO.	REVISIONS	DATE	BY
1	CITY COMMENTS	10/16/2020	CLT
2	STORMWATER AND UTIL. REVISIONS	03/05/2021	CLT
3	CITY SUBMITTAL	04/14/2021	CLT
4	WATERSHED RESUBMITTAL	06/22/2021	CLT

Kimley-Horn
 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 707 EAST ST. PAUL, MN 55114
 PHONE: 651-445-4197
 WWW.KIMLEY-HORN.COM

WHA PROJECT	DATE	SCALE	DRAWN BY	CHECKED BY
18000000	06/22/2021	AS SHOWN	KAM	KAM

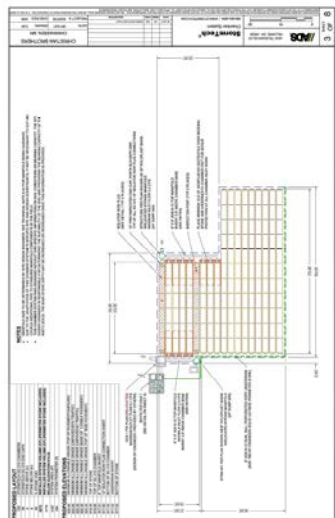
GRADING AND DRAINAGE DETAILS

8941 CROSSROADS BLVD
 PREPARED FOR
CHRISTIAN BROTHERS
 AUTOMOTIVE
 CHANHASSEN, MN

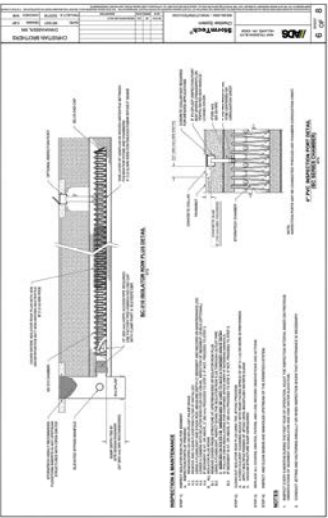
SHEET NUMBER
C3.2

PRELIMINARY - NOT FOR CONSTRUCTION

FOR REFERENCE ONLY



FOR REFERENCE ONLY



FOR REFERENCE ONLY

FOR REFERENCE ONLY

CHRISTIAN BROTHERS
 CHANHASSEN, MN

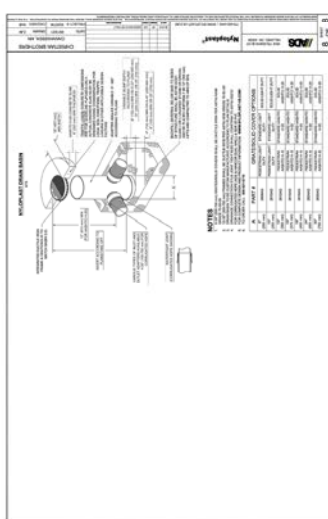
MANUFACTURER MATERIALS SPECIFICATIONS

1. ALL MATERIALS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
2. ALL MATERIALS SHALL BE NEW AND UNUSED.
3. ALL MATERIALS SHALL BE OF THE HIGHEST QUALITY AVAILABLE.
4. ALL MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER.
5. ALL MATERIALS SHALL BE SUBJECT TO TESTING AND APPROVAL BY THE ENGINEER.
6. ALL MATERIALS SHALL BE SUBJECT TO FIELD TESTING AND APPROVAL BY THE ENGINEER.
7. ALL MATERIALS SHALL BE SUBJECT TO LABORATORY TESTING AND APPROVAL BY THE ENGINEER.
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9. ALL MATERIALS SHALL BE SUBJECT TO DIMENSIONAL INSPECTION AND APPROVAL BY THE ENGINEER.
10. ALL MATERIALS SHALL BE SUBJECT TO PERFORMANCE TESTING AND APPROVAL BY THE ENGINEER.

FOR REFERENCE ONLY



FOR REFERENCE ONLY



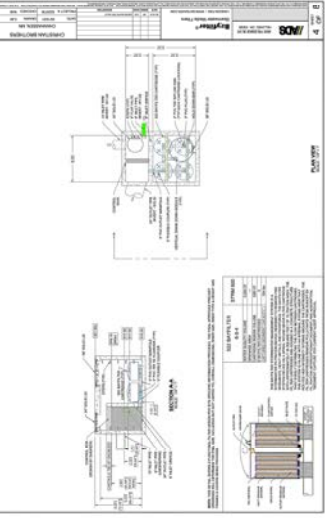
FOR REFERENCE ONLY

ADS
 AUTOMATED DRAINAGE SYSTEMS
 CHANHASSEN, MN

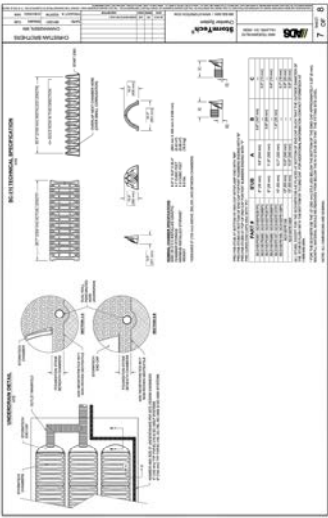
ADS 310 STORMWATER CHAMBER SPECIFICATIONS

1. ALL MATERIALS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
2. ALL MATERIALS SHALL BE NEW AND UNUSED.
3. ALL MATERIALS SHALL BE OF THE HIGHEST QUALITY AVAILABLE.
4. ALL MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER.
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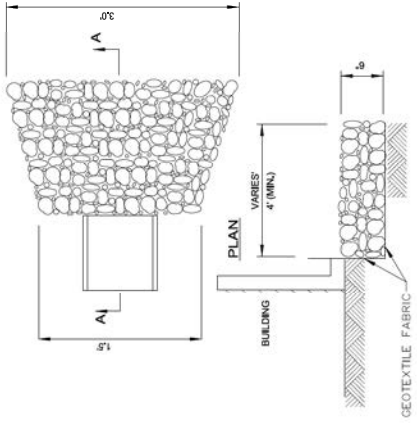
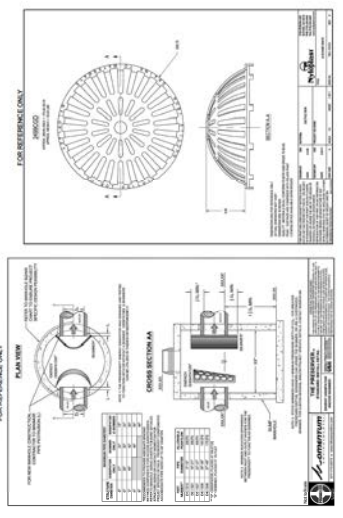
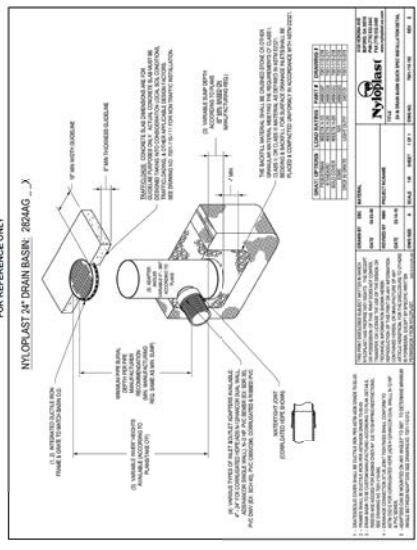
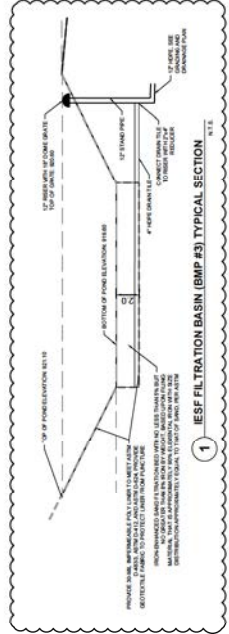
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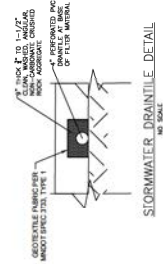


NO.	REVISIONS	DATE	BY
1	CITY COMMENTS	10/16/2020	CLT
2	STORMWATER AND UTIL. REVISIONS	03/25/2021	MMK
3	CITY SUBMITTAL	04/14/2021	CLT
4	WATERFED RESUBMITTAL	06/22/2021	CLT
5	WATERFED RESUBMITTAL	06/22/2021	CLT



RIP RAP PAD DETAIL

NOTES:
RIP RAP SHALL BE RIP RAP CL II



BANSAYER FILTERMATS D6

BANFILTER™ STORMWATER FILTRATION SYSTEM

... (text describing the system) ...

FEATURES:

- Superior filtration performance
- Long service life
- Easy to install
- Available in various sizes and configurations
- Available in various colors
- Available in various thicknesses
- Available in various materials
- Available in various shapes
- Available in various sizes
- Available in various colors
- Available in various thicknesses
- Available in various materials
- Available in various shapes
- Available in various sizes

BANSAYER FILTERMATS D6

BANSAYER FILTERMATS D6

... (text describing the system) ...

PRODUCTS:

- 12\"/>

INSTALLATION:

- ... (text describing installation) ...

NO.	REVISIONS	DATE	BY
1	CITY COMMENTS	10/16/2020	CLD
2	SITING/PAVING AND UTILITY REVISIONS	03/05/2021	CLD
3	CITY SUBMITTAL	04/16/2021	KAM
4	WATERSEED AND CITY RESUBMITTAL	06/17/2021	CLD
5	WATERSEED RESUBMITTAL	06/22/2021	CLD

Kimley-Horn
 2020 KIMLEY-HORN AND ASSOCIATES, INC.
 707 EAST ST. SUITE 100, ST. PAUL, MN 55114
 PHONE: 651-445-4187
 WWW.KIMLEY-HORN.COM

PROJECT: 8941 CROSSROADS LANDSCAPE DECOMPACTION MAP
 DRAWN BY: KAM
 CHECKED BY: KAM
 DATE: 03/05/21
 SCALE: AS SHOWN
 DATE: 06/22/2021
 PROJECT: 8941 CROSSROADS LANDSCAPE DECOMPACTION MAP
 DRAWN BY: KAM
 CHECKED BY: KAM
 DATE: 03/05/21
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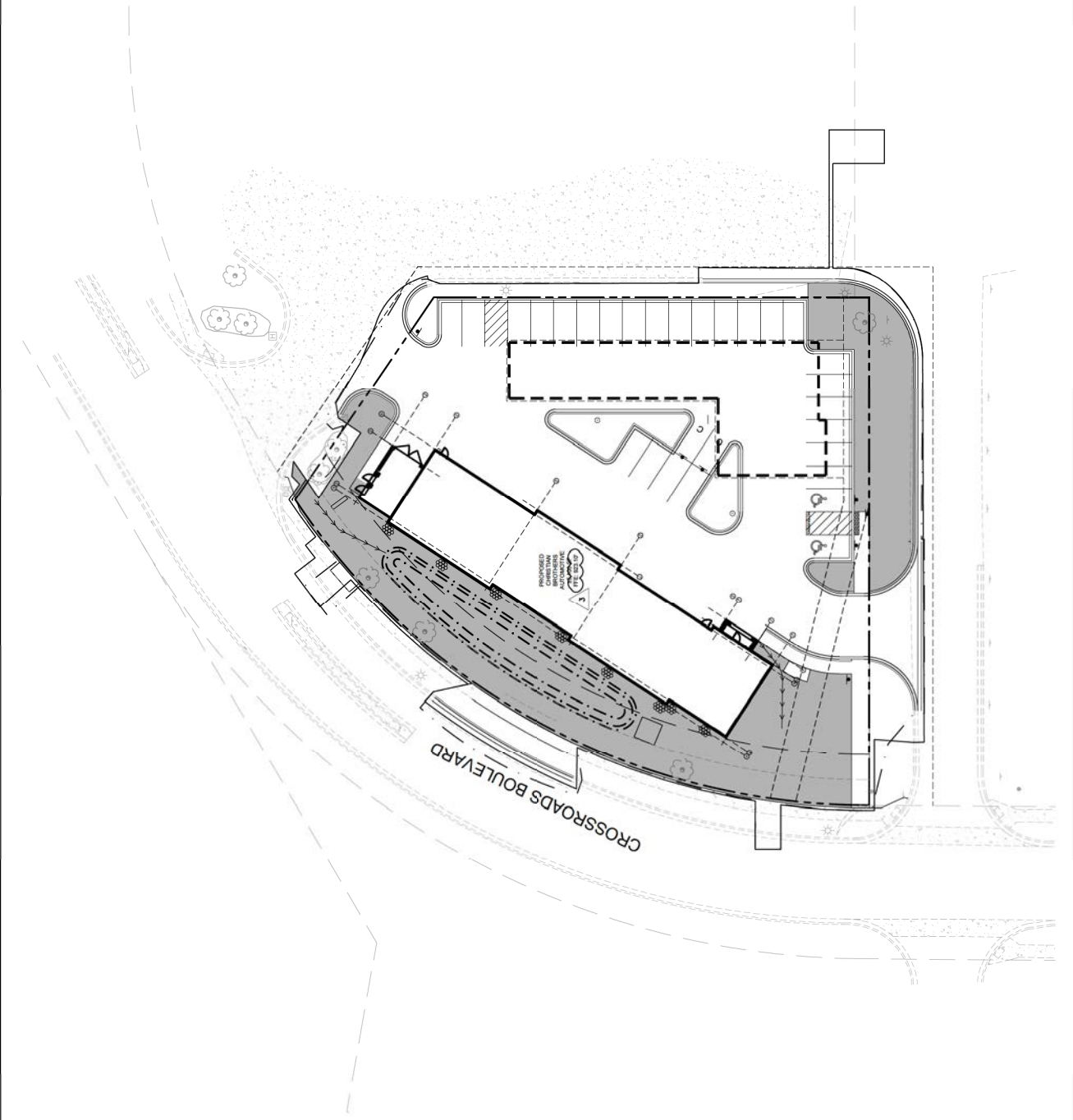
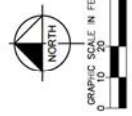
LANDSCAPE DECOMPACTION MAP

8941 CROSSROADS BLVD
 PREPARED FOR
 CHRISTIAN BROTHERS
 AUTOMOTIVE
 CHANHASSEN, MN

SHEET NUMBER
 C3.4

PRELIMINARY - NOT FOR CONSTRUCTION

- LEGEND**
- PROPERTY LINE
 - SETBACK LINE
 - PROPOSED CURB AND OUTER LIMITS OF DISTURBANCE
 - LANDSCAPE AREAS TO BE DECOMPACTED (0.27 AC)
 - PROPOSED SITE LIGHTING, SEE LIGHTING PLAN FOR DETAILS
 - PROPOSED TRIP-PAD



Riley-Purgatory-Bluff Creek Watershed District Permit Application Review

Permit No: 2021-015

Received complete: April 27, 2021

Considered at Board of Manager's Meeting: July 7, 2021

Applicant: City of Minnetonka
Consultant: Mark Christenson and Jeremy Walgrave, PE (SEH Inc.)
Project: Groveland Neighborhood Street Reconstruction – the applicant proposes to reconstruct a section of Groveland School Road in Minnetonka, MN. The applicant proposes the use of an existing infiltration basin on site to provide water quality treatment, volume abstraction and rate control for runoff prior to discharging offsite.
Location: Groveland School Road from Minnetonka Boulevard to Bay Lane in Minnetonka
Reviewer: Dallen Webster, EIT; and Scott Sobiech, PE; Barr Engineering Co.

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that the application for Permit 2021-015 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval of the permit have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver to the applicant, Permit 2021-015 on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RPBCWD Rules?	Comments	
C	Erosion Control Plan	See Comment	See Rule Specific Permit Condition C1.	
J	Stormwater Management	Rate	Yes	
		Volume	Yes	
		Water Quality	NA	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See Rule Specific Permit Condition J1.
		Chloride Management	See Comment	See stipulation 3.
		Wetland Protection	NA	
L	Permit Fees	NA	Governmental Agency	
M	Financial Assurances	NA	Governmental Agency	

Project Description

The city proposes to reconstruct 33,121 square feet of Groveland School Road in Minnetonka, MN. The applicant proposes the use of an existing infiltration basin on site to provide water quality treatment, volume abstraction and rate control for runoff prior to discharging offsite. The project site information is summarized in Table 1.

Table 1. Project site information

	Project Total
Existing Site Impervious (acres)	0.68
Existing Impervious Area Disturbed (acres)	0.68
New (Increase) in Site Impervious Area (acres)	0.08
Proposed Impervious Area (acres)	0.76
Exempt Trail and Sidewalk Area (acres)	0
Total Disturbed Area (acres)	1.07
Total Site Area (acres)	1.14

The following materials were reviewed in support of the permit request:

1. Permit application received March 17, 2021 (Incomplete notice was sent on April 2, 2021; materials submitted to complete application on April 27, 2021; RPBCWD extended permit review timeline on June 24, 2021 in accordance with Mn Statute 15.99)
2. Stormwater Memo dated March 17, 2021 (revised April 27, 2021, May 24, 2021, and June 8, 2021)
3. Modified Phillips Dunn Infiltrometer Testing results dated May 21, 2021
4. HydroCAD modeling received April 7, 2021 (revised April 27, 2021, May 24, 2021, and June 8, 2021)
5. Construction Plans (179 sheets) dated January 25, 2021
6. Page 209 of the project specification manual received April 27, 2021
7. Draft Maintenance Agreement received on April 7, 2021
8. Applicant's response to RPBCWD April 2, 2021 comments received April 19, 2021
9. Applicant's response to RPBCWD April 14, 2021 comments received April 27, 2021
10. Applicant's response to RPBCWD May 12, 2021 comments received May 24, 2021
11. Unsigned chloride management plan received April 27, 2021

Rule C: Erosion and Sediment Control

Because the project will alter 1.07 acres of surface area the project must conform to the requirements in the RPBCWD Erosion Prevention and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plans prepared by SEH include installation of silt fence, sediment control log, inlet protection for storm sewer catch basins, placement of a minimum of 6 inches of topsoil, decompaction of pervious areas compacted during construction prior to topsoil placement, and retention of native topsoil onsite.

To conform to the RPBCWD Rule C requirements the following revisions are needed:

- C1. The Applicant must provide the name and contact information of the general contractor responsible for the site. RPBCWD must be notified if the responsible party changes during the permit term.

Rule J: Stormwater Management

Because the project will alter 1.07 acres of surface area, conformance with RPBCWD's Stormwater Management Rule (Rule J) is required.

The project entails construction and reconstruction that altogether amounts to 33,121 square feet of linear impervious surface; therefore, stormwater management for the project must be provided in

accordance with the criteria of Subsection 3.2 (Rule J, Subsection 2.4). Because the proposed project creates between 10,000 square feet and 1 acre of new and/or fully reconstructed impervious surface, subsection 3.2 requires the project to provide for abstraction onsite of 1.1 inches of runoff from the net increase in impervious surface and rate-control in accordance with subsection 3.1a.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site.

The Applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in Table 2. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Table 2. Rate control summary:

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
East	5.3	5.1	7.9	7.7	16.7	16.5	0.7	0.7
South	2.5	2.5	3.8	3.8	6.7	6.7	0.1	0.1

Volume Abstraction

Subsection 3.2b of Rule J requires the abstraction onsite of 1.1 inches from the net increase in linear impervious area. An abstraction volume of 302 cubic feet is required from the 3,296 square feet of new impervious surface on the site for volume retention. Based on survey information provided by the applicant, the existing infiltration basin has the capacity to abstract 879 cubic feet of runoff. Because the existing impervious area tributary to the infiltration basin (1,158 square-foot) contributes 106 cubic feet of runoff from 1.1 inch rainfall event; the infiltration basin contains excess capacity to abstract additional 302 cubic feet of runoff from the 3,296 square feet of new impervious surface.

No groundwater was observed while digging the May 21, 2021 test pit to a depth of approximately 4 ft below the existing infiltration basin, thus confirming adequate separation to groundwater. Below the initial foot of topsoil a layer of gravelly sand was observed followed by sand at the bottom of the test pit. An infiltration test conducted on the subsurface soils below the infiltration basin indicate an infiltration rate of 2.03 inches/hour.

The Engineer concurs with the Applicant’s analysis (see Table 3) for the project site and the proposed activity conforms to Rule J, Subsection 3.2b.

Table 3. Volume abstraction summary

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (cubic feet)	Provided Abstraction Volume (cubic feet)
1.1	302	1.1	302

Water Quality Management

The criteria for linear project creating between 10,000 square feet and 1 acre of new and/or reconstructed impervious surface do not require water quality analysis. Therefore, a water quality analysis is not required for this linear project.

Low floor Elevation

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation according to Rule J, Subsection 3.6. In addition, a stormwater-management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with a standard in this subsection 3.6. The project does not propose to construct or reconstruct structures that have low-floor elevations or reconstruct the existing infiltration basin, thus the proposed project does not trigger analysis under subsection 3.6.

Maintenance

Subsection 3.7 of Rule J requires the submission of maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed.

- J1. Permit applicant must provide a draft maintenance and inspection plan. As a public entity, the City of Minnetonka may comply with this requirement by entering into a maintenance agreement with the RPBCWD.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. The unsigned draft chloride management plan provided designates Darin Ellingson as the city employee authorized to implement the city’s chloride management plan and documentation provided confirms he is certified by the Minnesota Pollution

Control Agency as a certified salt applicator. Once the signed version of the chloride management is provided the project will conform with Rule J, subsection 3.8.

Wetland Protection

Subsection 3.10 of Rule J requires that the proposed work may not alter a site in a manner that alters the bounce in water level, duration of inundation, or change the runout elevation in the subwatershed in which the site is located for any wetland receiving discharge directly from the site beyond the limits specified in Table J.1 and that discharge from regulated disturbed areas to a protected wetland must be treated. Because the project does not propose to discharge to a wetland, the proposed project does not trigger analysis under subsection 3.10

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed above and on the permit. The granting of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
5. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
6. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
7. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to the criteria of Rules C and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

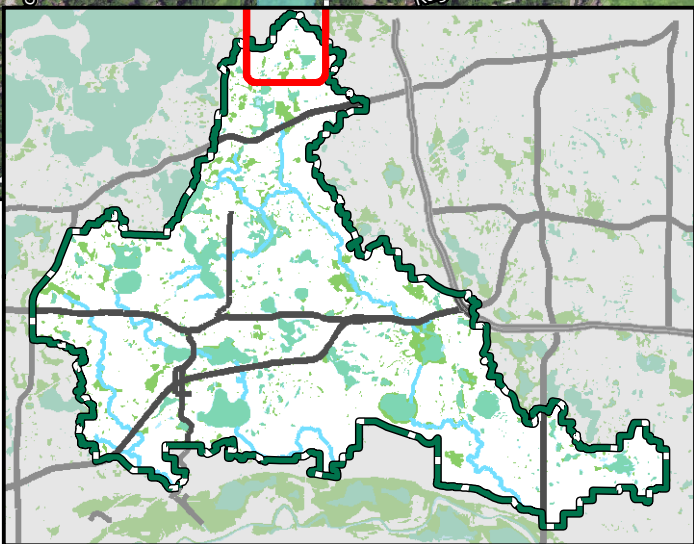
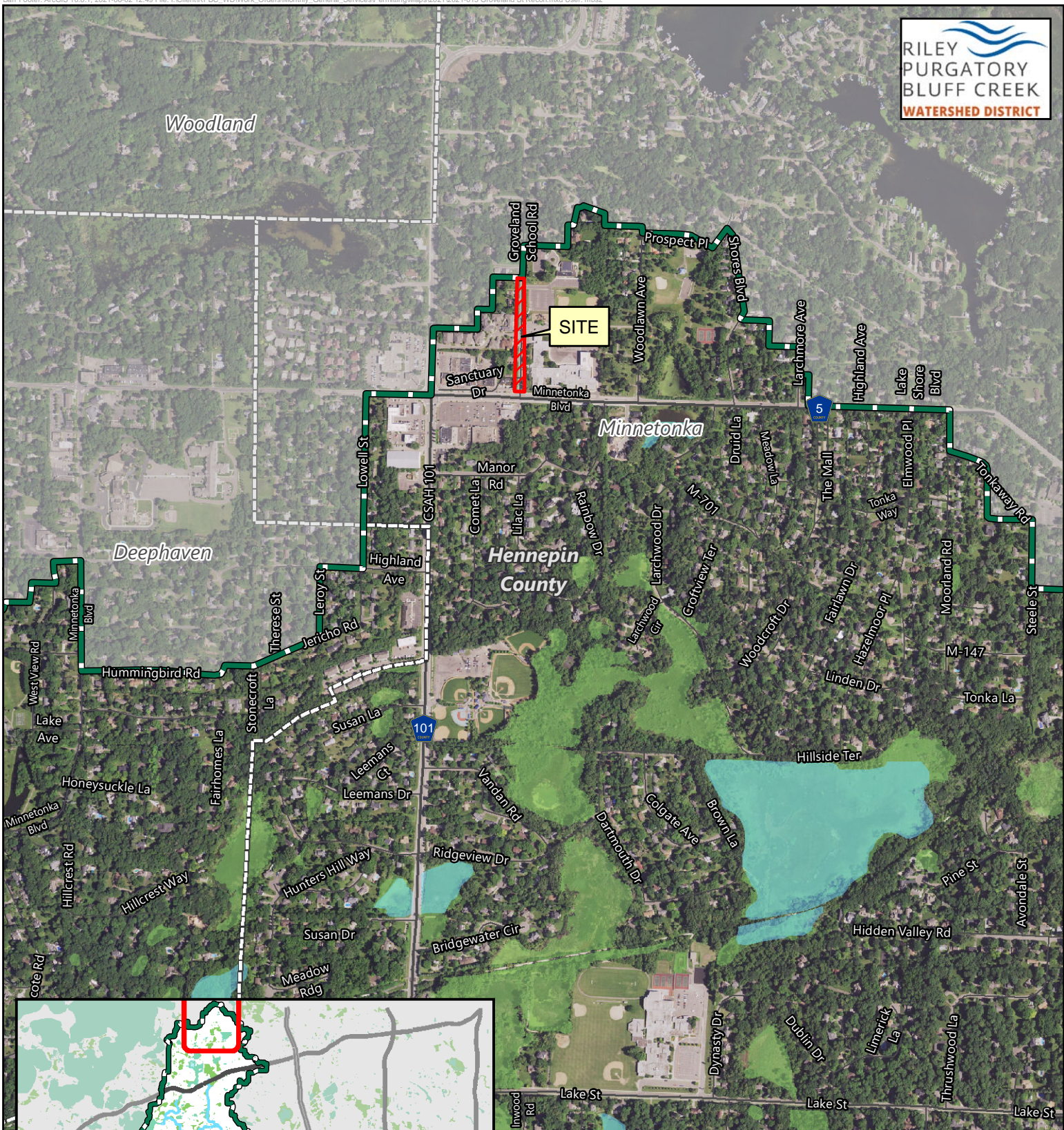
Approval of the permit contingent upon:

1. Continued compliance with General Requirements.
1. Permit applicant must provide the name and contact information of the general contractor responsible for the site. RPBCWD must be notified if the responsible party changes during the permit term.
2. Permit applicant must provide a draft maintenance agreement and inspection plan for the management of stormwater BMP, including exhibit clearly identifying stormwater BMP. Once approved by RPBCWD, the City must enter an agreement with RPBCWD to maintain the project facilities in accordance with the plan.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, the infiltration basin conform to design specifications and function as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
 - a) the surveyed bottom elevations, water levels, and general topography of all facilities;
 - b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
 - c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
 - d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
 - e) photographic evidence of buffer marker locations indicated by permanent, free-standing markers in accordance with Rule D, Subsection 3.4 criteria.
2. Providing the following additional close-out materials:
 - a) Documentation that constructed infiltration basin perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD
 - b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C.2c criteria

3. To close out the permit, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.



Permit Location Map

GROVELAND SCHOOL ROAD
RECONSTRUCTION
Permit 2021-015
Riley Purgatory Bluff Creek
Watershed District



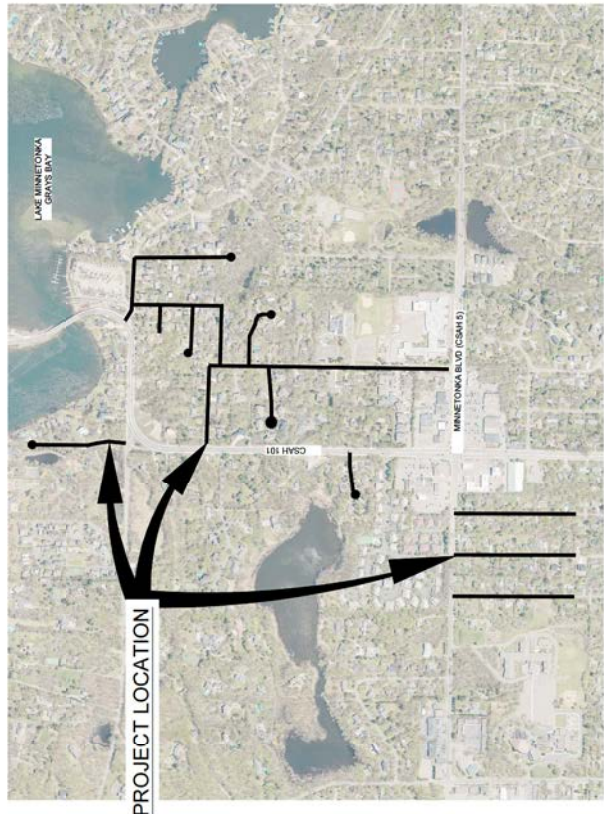
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CITY OF MINNETONKA, MINNESOTA

CONSTRUCTION PLANS FOR GROVELAND-BAY IMPROVEMENTS PROJECT

CITY PROJECT NO. 21602



NOTE: THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CHASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR SHALL CALL THE GORNER STATE ONE CALL SYSTEM AT 811 BEFORE COMMENCING EXCAVATION.

811
Know what's below.
Call before you dig.

<p>EXISTING</p> <p>RIGHT OF WAY PERMANENT EASEMENT PROPERTY LINE HORIZONTAL CONTROL POINT BENCHMARK SURVEY MARKER SOIL BORING SANITARY SEWER AND MANHOLE FORCE MAIN AND LIFT STATION SANITARY SEWER SERVICE & CLEANOUT WATERMAIN, HYDRANT, VALVE AND MANHOLE WATER SERVICE AND CURB STOP BOX STORM SEWER, MANHOLE AND CATCH BASIN CULVERT AND APRON ENDWALL MANHOLE SANITARY VALVE, VENT AND METER BURIED FIBER OPTIC CABLE AND MANHOLE BURIED PHONE CABLE, PEDESTAL AND MANHOLE BURIED TV, CABLE, PEDESTAL AND MANHOLE BURIED ELECTRIC CABLE, PEDESTAL, MANHOLE, TRANSFORMER AND METER OVERHEAD WIRE, POLE AND GUY WIRE LIGHT POLE TRAFFIC SIGNAL STREET NAME SIGN SIGN (NON STREET NAME) RAILROAD TRACKS DECIDUOUS AND CONIFEROUS TREE BUSH / SHRUB AND STUMP EDGE OF WOODED AREA WETLAND BUILDING FENCE (UNIDENTIFIED) BARBED WIRE FENCE CHAIN LINK FENCE ELECTRIC WIRE FENCE WOOD FENCE WOVEN WIRE FENCE PLATE BEAM GUARDRAIL CABLE GUARDRAIL POST / BOLLARD RETAINING WALL</p>	<p>PROPOSED</p> <p>STREET CENTERLINE RIGHT-OF-WAY PERMANENT EASEMENT TEMPORARY EASEMENT CONSTRUCTION LIMITS WATERMAIN, TEE, HYDRANT, BULKHEAD AND MANHOLE SANITARY SERVICE AND CLEANOUT WATERMAIN, TEE, HYDRANT, BULKHEAD AND VALVE WATERMAIN TRENCHLESS CURIED IN PLACE PIPE LINER WATER VALVE MANHOLE, REDUCER, BEND AND CROSS WATER SERVICE AND CURB STOP BOX ABANDON WATERMAIN AND FILL WITH FLOWABLE FILL STORM SEWER, MANHOLE AND CATCH BASIN CULVERT AND APRON ENDWALL DRAIN TILE DITCH / SWALE RIPRAP STREET NAME SIGN SIGN (NON STREET NAME) RETAINING WALL</p>
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GOVERNING SPECIFICATIONS
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

INDEX

SHEET NO.	DESCRIPTION
01	TITLE SHEET
02-04	LOCATION MAP
05-09	TABULATIONS
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24-37	STANDARD PLATES
38-39	TYPICAL SECTIONS
40	PROPOSED CONSTRUCTION PHASING PLAN
41-45	ALLEGED EASEMENT PLAN
46-47	TEMP WATER ACCESS PLAN
48-57	REMOVAL PLAN
58-77	SANITARY SEWER AND WATERMAIN PLAN AND STREET AND STORM SEWER PLAN AND PROFILE
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104-118	SUPPLEMENTED TRAFFIC CONTROL PLAN
119-121	PAVEMENT MARKING AND SIGNING PLAN
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LS1-LS3	ELECTRICAL PLAN, DETAILS, AND SYMBOLS
E1-E4	ELECTRICAL PLAN, DETAILS, AND SYMBOLS

THIS PLAN CONTAINS 179 SHEETS.

PROJECT LOCATION
CITY OF MINNETONKA, MN
HENNEPIN COUNTY

MINNETONKA, MINNESOTA

PHONE: 952.932.2000
FAX: 952.932.2000
1000 CIRCLE DRIVE
SUITE 300
MINNETONKA, MN 55343
www.sehinc.com

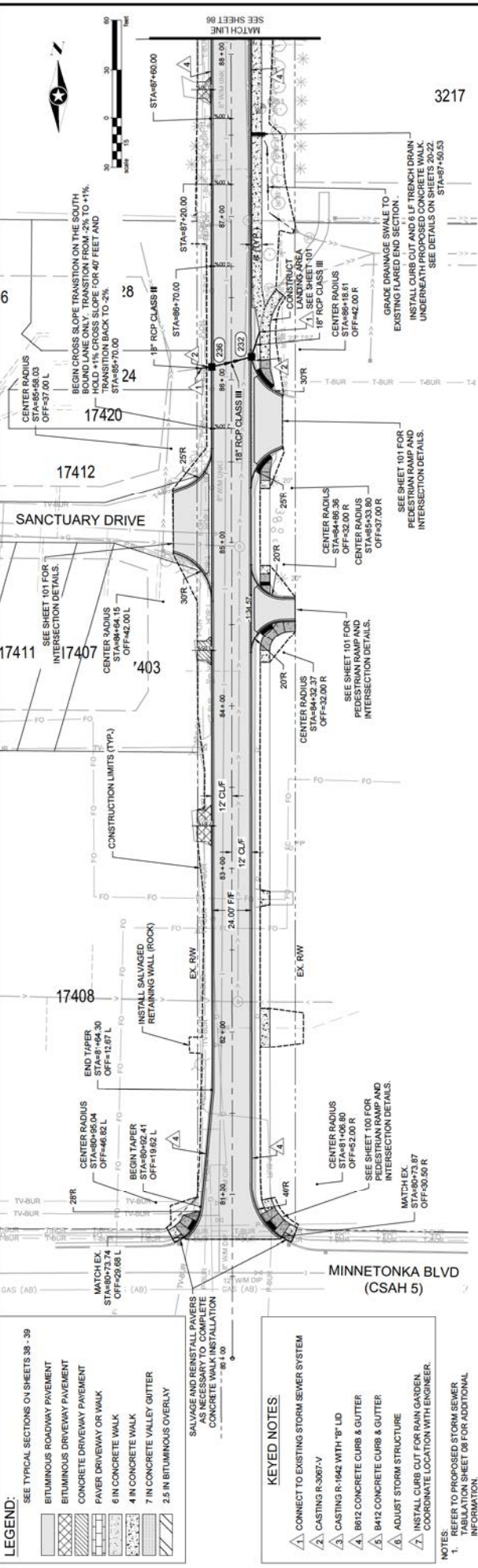
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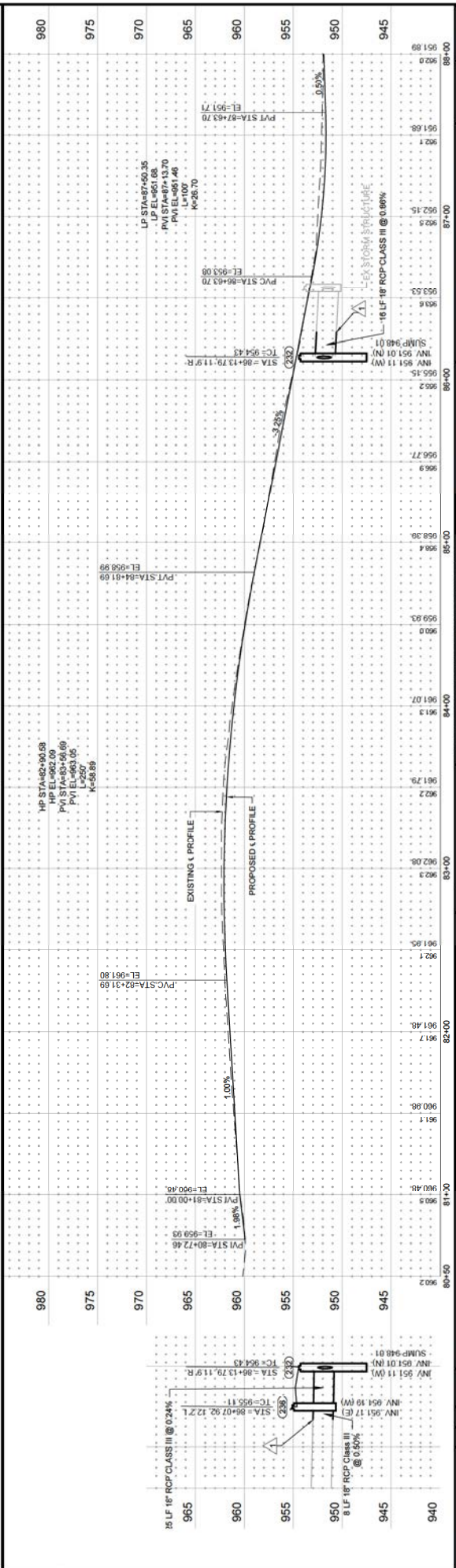
SEH
Toby M...
Signature
TOBY MUSE, PE

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE LATEST EDITION OF THE MANUAL ON TEMPORARY TRAFFIC CONTROL DEVICES.

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



GROVELAND SCHOOL ROAD



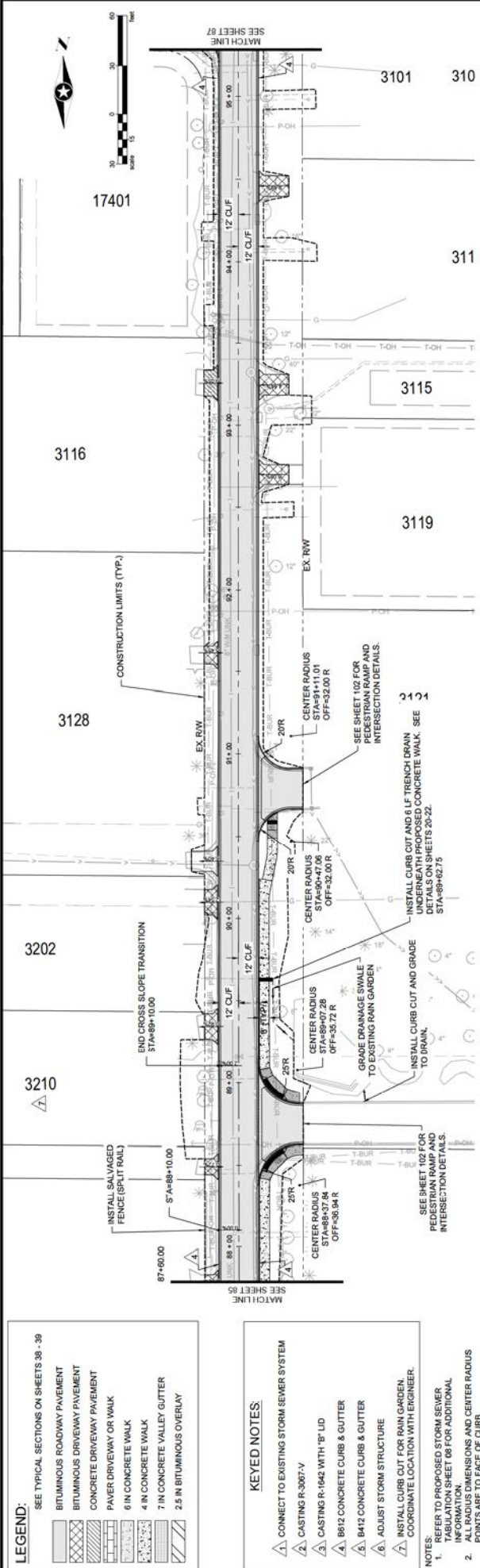
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REVISIONS			
85 FILE NO. 155911 STREET AND STORM SEWER PLAN AND PROFILE GROVELAND BLVD IMPROVEMENTS PROJECT			
MINNETONKA, MINNESOTA			
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Date: <u> </u> License No.: <u> </u> TORNY MUSE, PE			
SEH PHONE: 952.542.2000 10001 RED CIRCLE DRIVE MINNETONKA, MN 55343 www.sehinc.com			

3217

- SEE TYPICAL SECTIONS ON SHEETS 38 - 39
 - BITUMINOUS ROADWAY PAVEMENT
 - BITUMINOUS DRIVEWAY PAVEMENT
 - CONCRETE DRIVEWAY PAVEMENT
 - FAVER DRIVEWAY OR WALK
 - 6 IN CONCRETE WALK
 - 4 IN CONCRETE WALK
 - 7 IN CONCRETE VALLEY GUTTER
 - 2.5 IN BITUMINOUS OVERLAY
- SALVAGE AND REINSTALL PAVERS AS NECESSARY TO COMPLETE CONCRETE WALK INSTALLATION

- ### KEYED NOTES:
- CONNECT TO EXISTING STORM SEWER SYSTEM
 - CASTING R-3087-V
 - CASTING R-1942 WITH "B" LID
 - 8612 CONCRETE CURBS & GUTTER
 - 8412 CONCRETE CURBS & GUTTER
 - ADJUST STORM STRUCTURE
 - INSTALL CURB CUT FOR RAIN GARDEN
 - COORDINATE LOCATION WITH ENGINEER.
- NOTES:
- REFER TO PROPOSED STORM SEWER TABULATION SHEET 08 FOR ADDITIONAL INFORMATION ON SIZES AND DIMENSIONS AND CENTER RADII.
 - ALL POINTS ARE TO FACE OF CURB.
 - INSTALL MAILBOXES PER DETAIL ON SHEET 20

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LEGEND:

SEE TYPICAL SECTIONS ON SHEETS 38 - 39

- BITUMINOUS ROADWAY PAVEMENT
- BITUMINOUS DRIVEWAY PAVEMENT
- CONCRETE DRIVEWAY PAVEMENT
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- 6 IN CONCRETE WALK
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- 2.5 IN BITUMINOUS OVERLAY

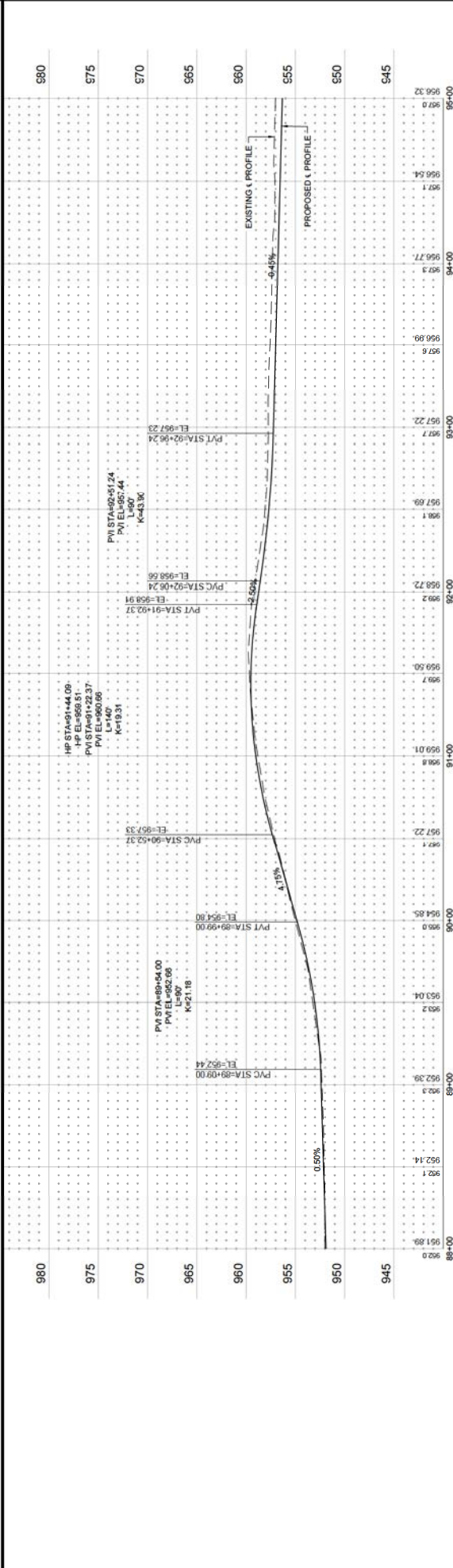
KEYED NOTES:

- △ CONNECT TO EXISTING STORM SEWER SYSTEM
- △ CASTING R-3067-V
- △ CASTING R-1642 WITH 8" LID
- △ B612 CONCRETE CURB & GUTTER
- △ B412 CONCRETE CURB & GUTTER
- △ ADJUST STORM STRUCTURE
- △ INSTALL CURB CUT FOR RAIN GARDEN. COORDINATE LOCATION WITH ENGINEER.

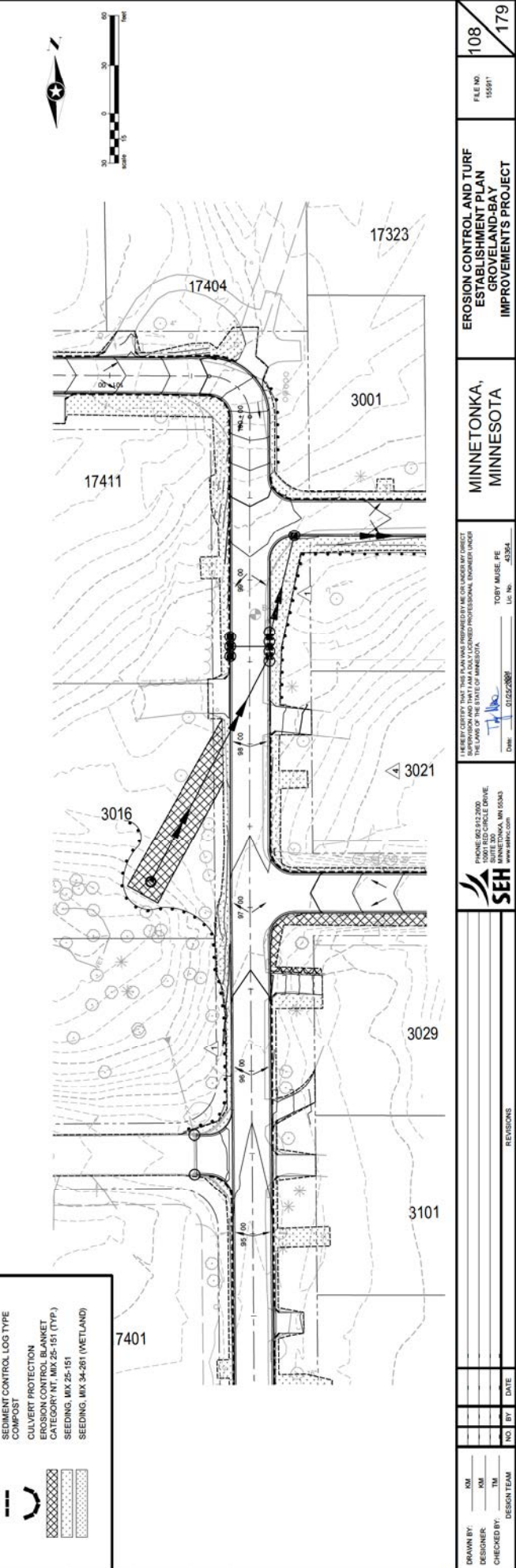
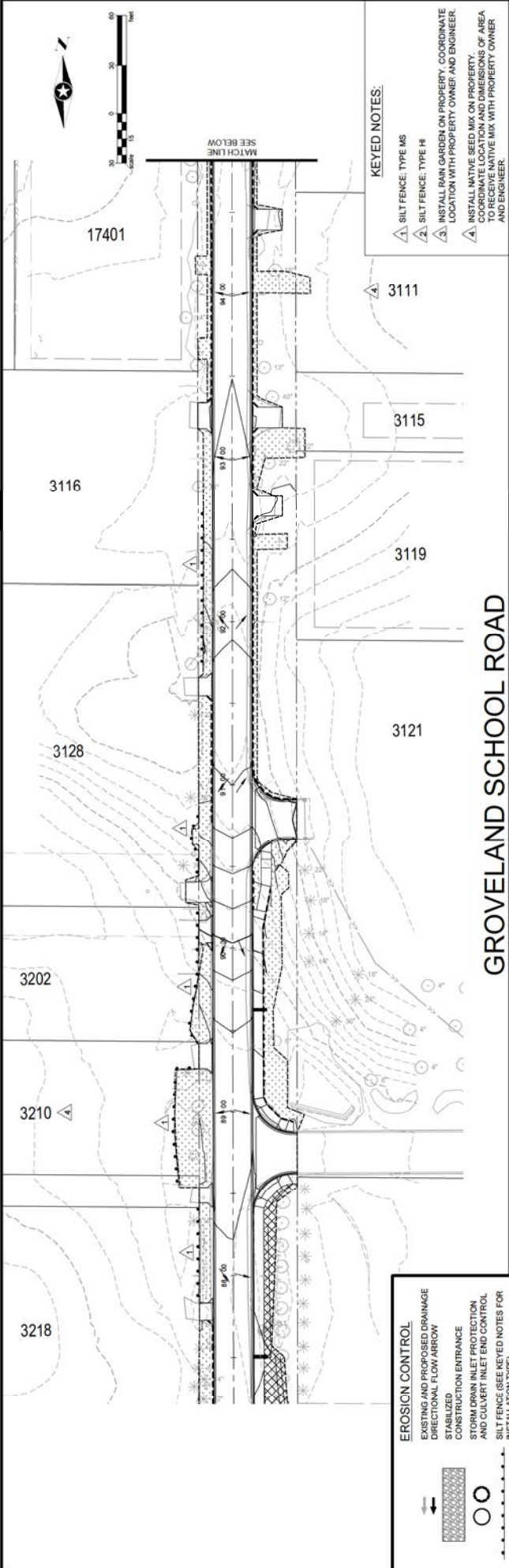
NOTES:

- REFER TO PROPOSED STORM SEWER TABULATION SHEET 08 FOR ADDITIONAL INFORMATION. DIMENSIONS AND CENTER RADIUS POINTS ARE TO FACE OF CURB.
- INSTALL MAILBOXES PER DETAIL ON SHEET 20

GROVELAND SCHOOL ROAD



DRAWN BY: DESIGNER: CHECKED BY: DESIGN TEAM:	NO: DATE:	REVISIONS:	DATE:
<p>SEH 10001 RED CIRCLE DRIVE MINNETONKA, MN 55343 PHONE: 952.942.2000 WWW.SEHINC.COM</p>			
<p>MINNETONKA, MINNESOTA</p>			
<p>STREET AND STORM SEWER PLAN AND PROFILE GROVELAND, MINNESOTA IMPROVEMENTS PROJECT</p>			
FILE NO. 155911			86 179



GROVELAND SCHOOL ROAD

EROSION CONTROL

- EXISTING AND PROPOSED DRAINAGE DIRECTIONAL FLOW ARROW
- STABILIZED CONSTRUCTION ENTRANCE
- STORM DRAIN INLET PROTECTION AND CULVERT INLET END CONTROL
- SILT FENCE (SEE KEYED NOTES FOR INSTALLATION TYPE)
- SEDIMENT CONTROL LOG TYPE COMPOST
- CULVERT PROTECTION
- EROSION CONTROL BLANKET CATEGORY NT, MX 25-151 (TYP.) SEEDING, MX 25-151
- SEEDING, MX 34-281 (WETLAND)

108
FILE NO. 155911
179

EROSION CONTROL AND TURF ESTABLISHMENT PLAN GROVELAND RAY IMPROVEMENTS PROJECT

MINNETONKA, MINNESOTA

TOBY MUSE, PE
Lic. No. 45364

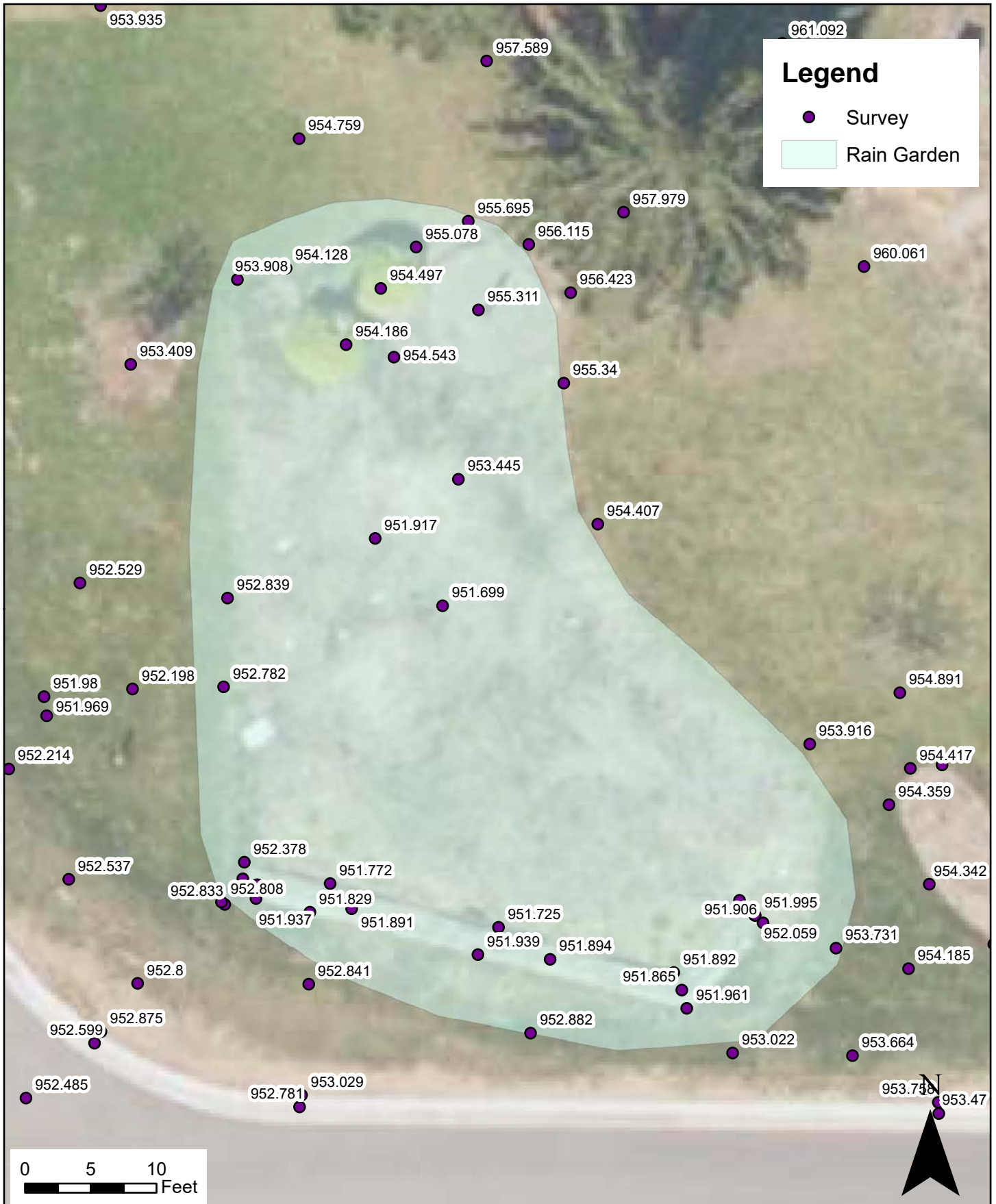
PHONE: 952.942.2000
10001 RED CIRCLE DRIVE
MINNETONKA, MN 55343
www.sehinc.com

DATE: 01/25/2021


NO.	BY	DATE	REVISIONS

DESIGN TEAM

NO. BY DATE



Path: C:\Projects\Minne-155917\gsr_working.mxd

	3535 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 490-2000 FAX: (888) 908-8166 TF: (800) 325-2055 www.sehinc.com	Project: MINNE-155917 Print Date: 6/8/2021	<h2>Survey Shots</h2> <h3>Groveland Bay Street Reconstruction</h3> <h3>Minnetonka, MN</h3>	<h2>Figure</h2> <h1>7</h1>
		Map by: mchristenson Projection: Hennepin County Source: MnGEO, SEH, City of Minnetonka		

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



DRAWN BY:				
DESIGNER:				
CHECKED BY:				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

SEH
 PHONE: 952.912.2600
 10901 RED CIRCLE DRIVE,
 SUITE 300
 MINNETONKA, MN 55343
 www.sehinc.com

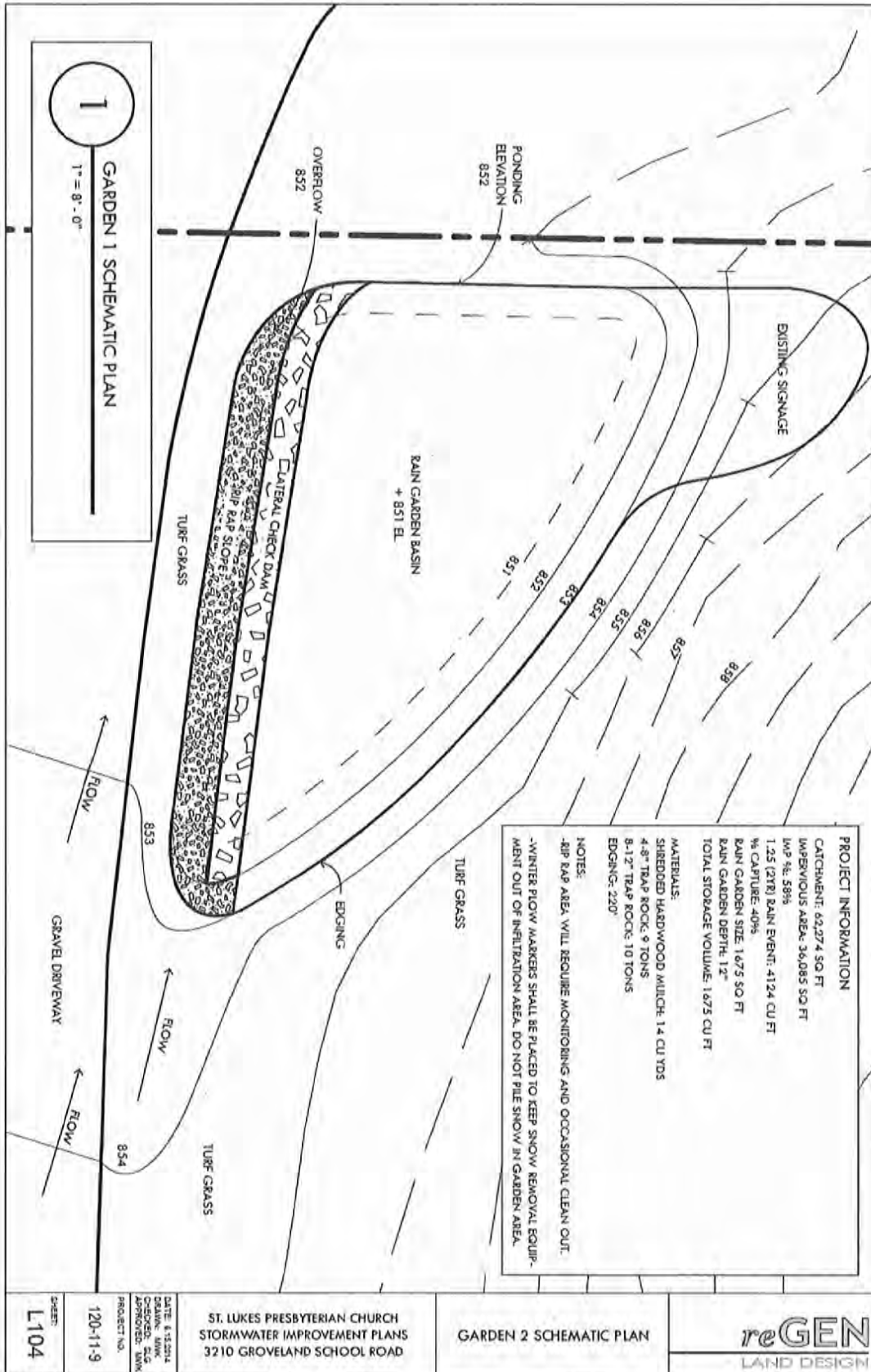
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

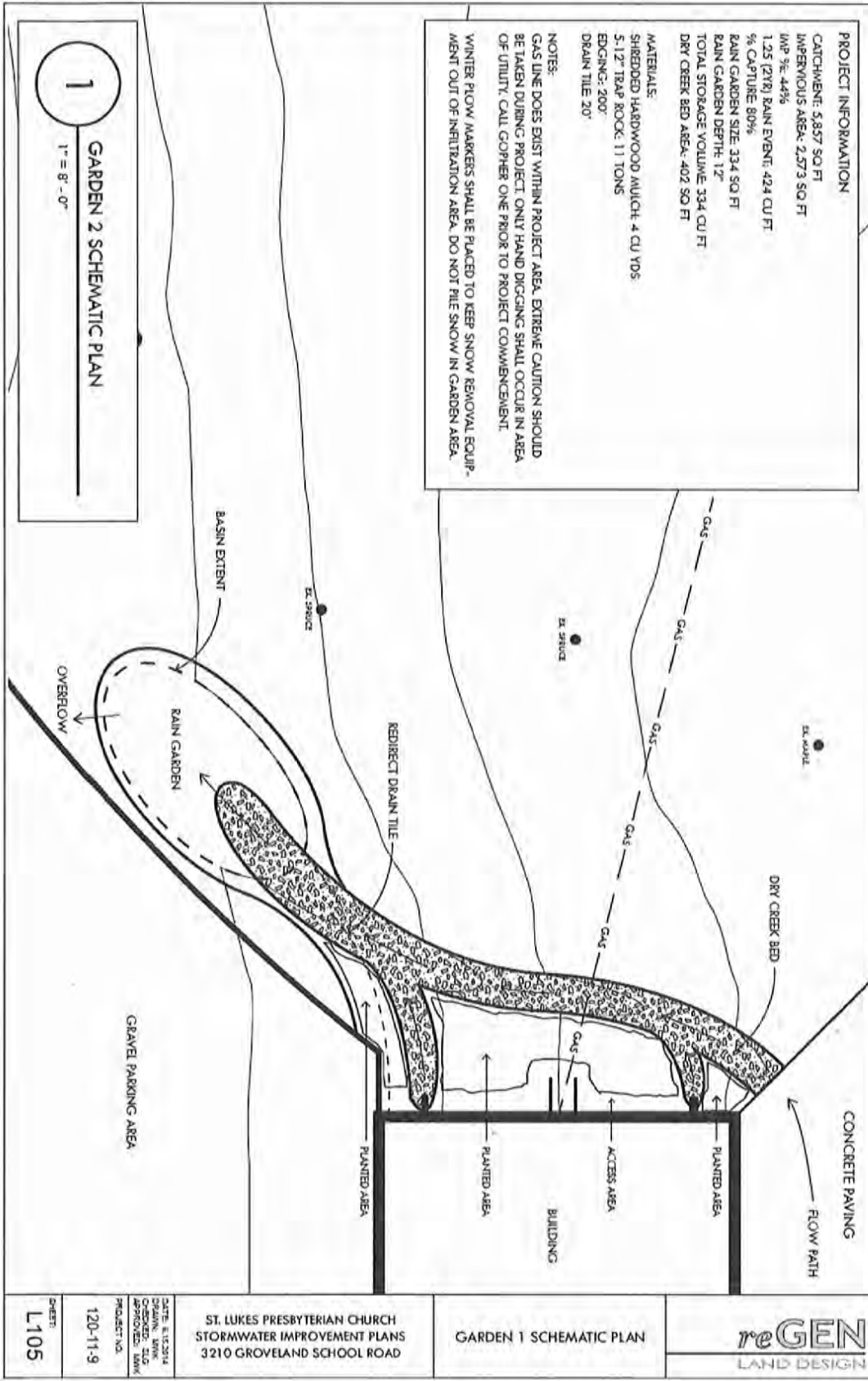
T. Muse
 TOBY MUSE, PE
 Lic. No. 43364
 Date: 05/19/2021

MINNETONKA,
 MINNESOTA

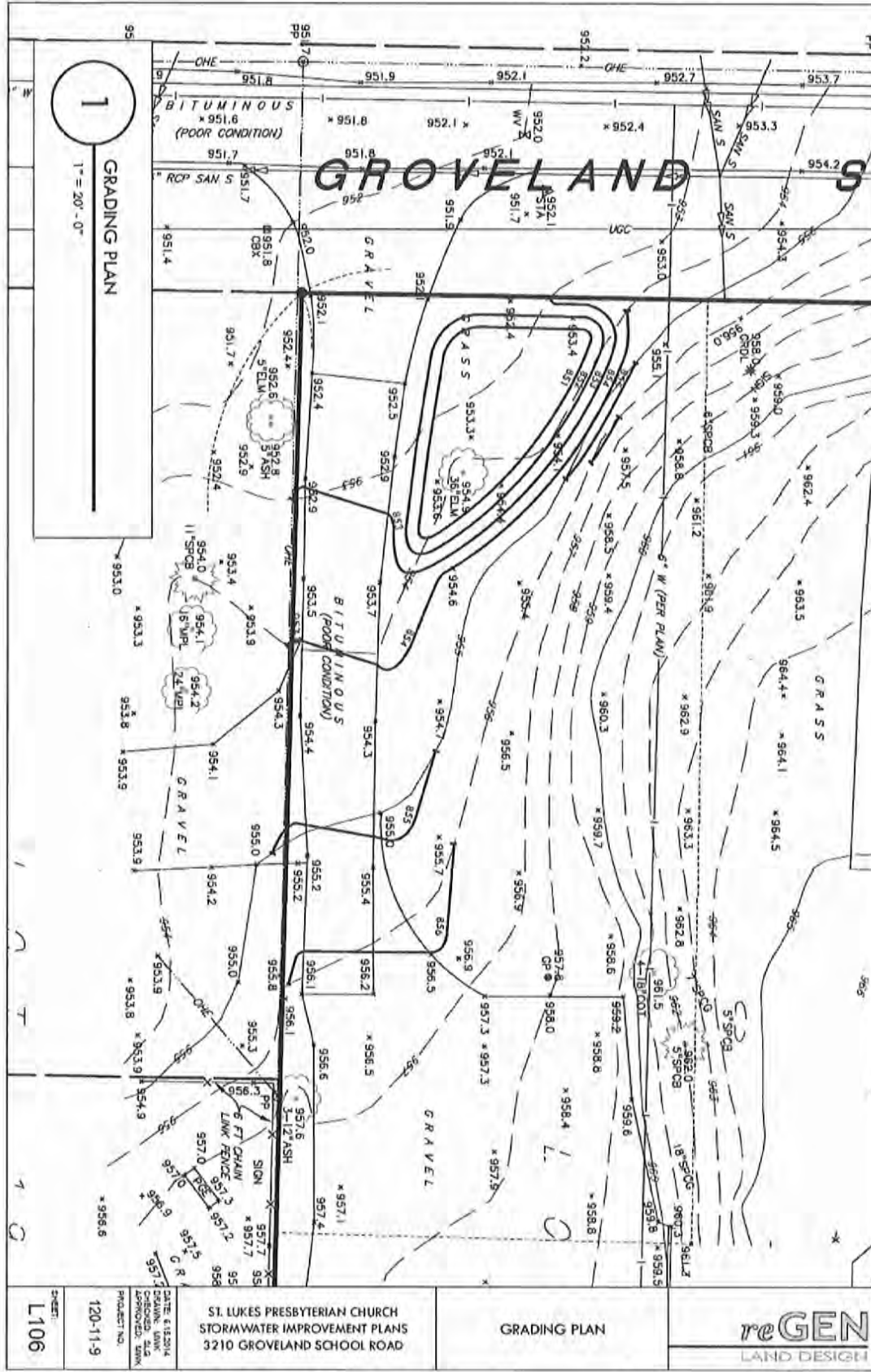
ST. LUKES RAIN GARDEN AS-BUILT
 GROVELAND BAY NEIGHBORHOOD

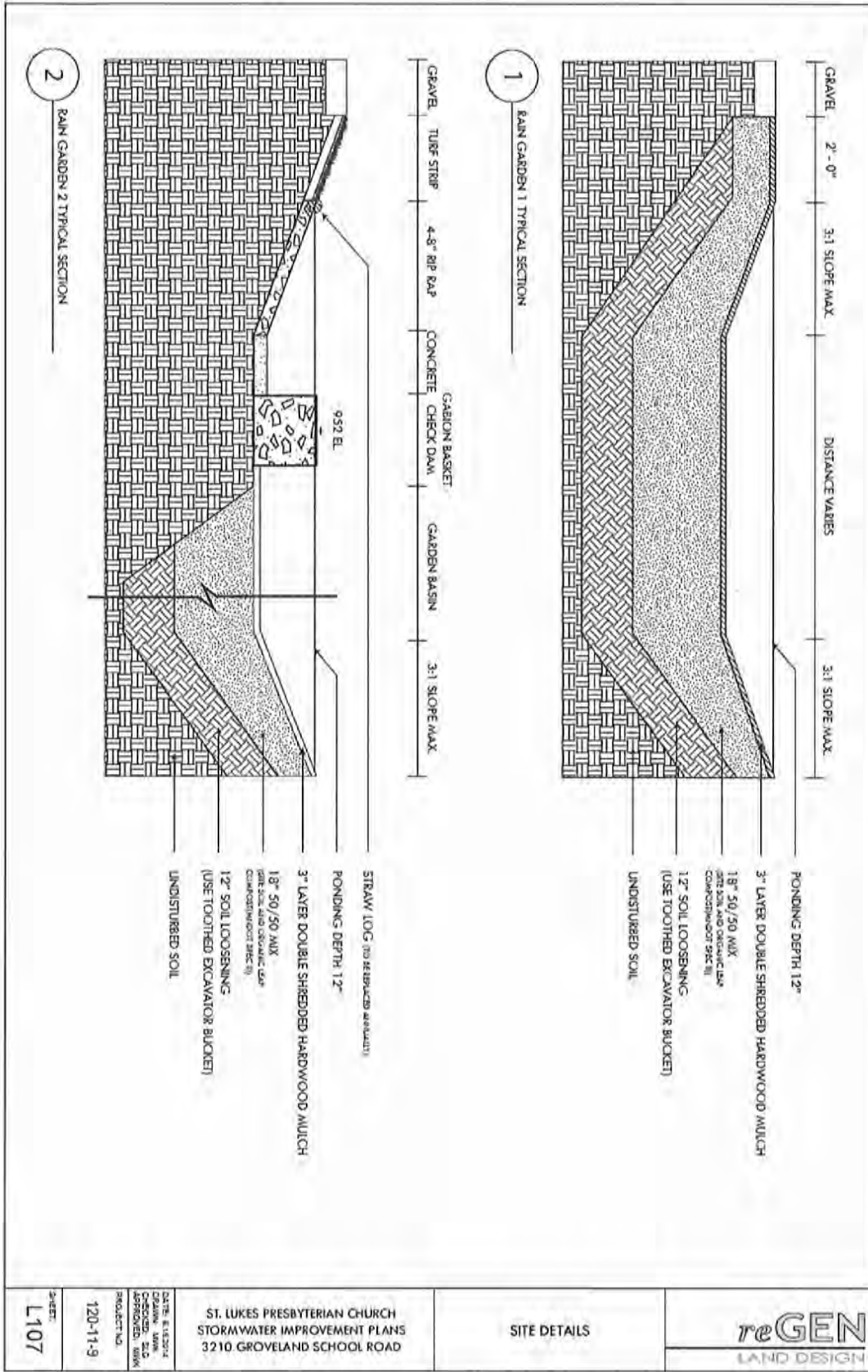
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SHEET: L105	DATE: 10/20/14 DRAWN BY: JMM CHECKED BY: JMM APPROVED: TJS PROJECT NO.: 120-11-9	ST. LUKES PRESBYTERIAN CHURCH STORMWATER IMPROVEMENT PLANS 3210 GROVELAND SCHOOL ROAD	GARDEN 1 SCHEMATIC PLAN	
	120-11-9	ST. LUKES PRESBYTERIAN CHURCH STORMWATER IMPROVEMENT PLANS 3210 GROVELAND SCHOOL ROAD	GARDEN 1 SCHEMATIC PLAN	





SITE DETAILS

ST. LUKES PRESBYTERIAN CHURCH
STORMWATER IMPROVEMENT PLANS
3210 GROVELAND SCHOOL ROAD

DATE & LOCATION
DRAWN: [blank]
CHECKED: SJC
APPROVED: WMM
PROJECT NO.
120-11-9
SHEET
L107



18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2021-038

Considered at Board of Managers Meeting: July 7, 2021

Received complete: May 27, 2021

Applicant: John Kayser, Cave Enterprises, LLC

Representative: Excel Engineering, Inc., Jason Daye

Project: The project proposes the redevelopment of a Burger King restaurant and associated onsite parking areas in Eden Prairie, Minnesota.

Location: 16345 Terrey Pine Dr, Eden Prairie, Minnesota 55344

Reviewer: Dallen Webster, EIT; and Scott Sobiech, PE; Barr Engineering Co.

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that the application for Permit 2021-038 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval of the permit have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2021-038 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments	
C	Erosion Control Plan	See comment.	See rule-specific permit condition C1.	
J	Stormwater Management	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See rule-specific permit condition J1
		Chloride Management	See Comment	See stipulation 3.

Rule	Issue		Conforms to RBPCWD Rules?	Comments
		Wetland Protection	See Comment	See rule-specific permit condition J2
L	Permit Fee Deposit		Yes	\$3,000 deposit fee received May 6, 2021.
M	Financial Assurance		See Comment	The financial assurance is calculated at \$24,613.

Background

The proposed work will redevelop 1.35 acres of an existing Burger King restaurant site and associated onsite parking areas in Eden Prairie. The proposed redevelopment will include the removal of the existing Burger King building and parking lot for the construction a new building, onsite parking, playground area, as well as underground utilities and a stormwater management facility. The stormwater management system includes the construction an infiltration basin to provide water quality treatment, rate control, and volume abstraction. However, the treated runoff leaving the site from the subsurface stormwater management system is conveyed via storm sewer directly to an off-site protected wetland.

The project site information is summarized in Table 1.

Table 1. Project site information

Site Information	Project Area
Total Site Area (acres)	1.35
Existing Site Impervious Area (acres)	0.95
Post Construction Site Impervious (acres)	0.65
Reduction (decrease) in Site Impervious Area (acres)	0.30
Percent decrease in Impervious Surface	32%
Disturbed Site Impervious Area (acres)	0.95
Percent Disturbance of Existing Impervious Surface	100%
Total Disturbed Area (acres)	1.18

Exhibits:

1. Permit application dated April 26, 2021 (Notified applicant on May 12, 2021 that submittal was incomplete, revised materials completing the application received May 27, 2021)
2. Project Plan set dated April 26, 2021 (revised May 27, 2021)
3. Stormwater Report memo dated April 26, 2021 (revised May 27, 2021)
4. Existing and Proposed HydroCAD Models received April 27, 2021 (revised May 27, 2021)

5. Review Responses dated May 27, 2021 (i.e., the applicant's responses to the May 12th incomplete notice/review comments)
6. Geotechnical Evaluation Report dated May 27, 2021
7. Appendix J1 Analysis received June 10, 2021.

Rule Specific Permit Conditions

Rule C: Erosion Prevention and Sediment Control

Because the project will involve the alteration 1.18 acres of land-surface area or vegetation, the project must conform to the erosion prevention and sediment control requirements established in Rule C.

The erosion control plan prepared by Excel Engineering includes installation of perimeter control (silt fence or sediment control logs), a stabilized rock construction entrance, inlet protection, daily inspection, staging areas, placement of a minimum of 6 inches of topsoil (at 5% organic matter), decompaction of areas compacted during construction, and retention of native topsoil onsite to the greatest extent possible. To conform to RPBCWD Rule C requirements, the following revisions are needed:

- C1. The Applicant must provide the name, address and phone number of the individual who will remain liable to the District for performance under this rule and maintenance of erosion and sediment-control measures from the time the permitted activities commence until vegetative cover is established.

Rule J: Stormwater Management

Because the project will disturb 1.18 acres of land-surface area, the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 will apply to the entire site because the project will disturb more than 50% of the existing impervious surface on the parcel (Rule J, Subsection 2.3).

The applicant is proposing construction of an infiltration basin to provide the rate control, volume abstraction and water quality management for the disturbed and replaced impervious area. Pretreatment for runoff entering the infiltration basin is being provided by catch basins with sumps.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in Table 2 below. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Table 2. Existing and Proposed Peak Runoff Rates

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
North	3.8	0.9	6.0	5.4	11.3	10.3	0.2	<0.1

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the regulated impervious surface of the site. An abstraction volume of 2,601 cubic feet is required from the 0.65 acres (28,377 square feet) of regulated impervious area. Pretreatment of runoff entering the infiltration area is provided with catch basins with sumps to conform to Rule J, Subsection 3.1.b.1. The soil boring, two test pits and one double-ring infiltrometer test performed by Braun Intertec show that soils in the project area are primarily Poorly Graded Sand. Groundwater was not observed at the soil boring located at the proposed stormwater management facility, which terminated at elevation 871.9. Because the bottom of the proposed stormwater management facility is at elevation 880.0, adequate groundwater separation will be provided between the bottom of the infiltration basin and the groundwater table, thus conforming with Rule J, Subsection 3.1.b.2.a.

Double-ring infiltrometer testing conducted by Braun Intertec measured an infiltration rate of 1.7 inches per hour (in/hr) at the site. The engineer concurs with the applicant’s design infiltration rate of 0.9 in/hr. The proposed stormwater facility provides adequate surface area (1,655 SF) to drawdown the abstraction volumes within the required 48-hour period, thus conforming with Rule J, Subsection 3.1.b.3.

The table below summarizes the volume abstraction for the site. The engineer concurs with the submitted information and finds that the proposed project will conform with Rule J, Subsection 3.1.b.

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
1.1	2,601	1.37	3,251

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide volume abstraction in accordance with 3.1b or least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions. Because the infiltration basin proposed by the applicant provides

more volume abstraction than is required by 3.1b and the engineer concurs with the modeling, the engineer finds that the proposed project is in conformance with Rule J, Subsection 3.1.c.

Low floor Elevation

All new buildings must be constructed such that the lowest floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a stormwater-management facility according to Rule J, Subsection 3.6a. In addition, a stormwater-management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with this requirement according to Rule J, Subsection 3.6b. The low floor elevation of the proposed Burger King is summarized below and shows proposed project is in conformance with Rule J, Subsection 3.6a.

Because the proposed stormwater management facility has 100-year flood elevations above the proposed low floor of Terry Pines Coffee (Permit 2020-065), the applicant applied the alternative low floor criteria in Rule J, Appendix J.1 – Low-Floor Elevation Assessment. According to *Plot 1: Minimum Depth to Water Table for No Further Analysis*, the minimum permissible depth to water table is 8.5 feet based on the stormwater facility horizontal separation to the adjacent habitable structure (see below table). Groundwater was not observed in the closest boring location which demonstrates that groundwater must be below the elevation where the boring was stopped (~El 870.5 feet). Because the provided separation is greater than the minimum permissible, the location and elevation of the proposed infiltration basin results in the lowest floor elevation on the adjacent parcel meeting the requirement in Rule J, Subsection 3.6.b (ii).

Structure	Low Floor Elevation of Building (feet)	Adjacent Stormwater Facility	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard to 100-year Event (feet)	Distance from Building to Adjacent Facility (feet)	Water Table Elevation (feet)	Minimum Permissible Depth to Water Table ¹ (feet)	Provided Depth from Low Floor Elevation to Water Table (feet)
Propose Burger King	887.0	Infiltration Basin	881.68	5.32	-	-	-	-
Terry Pines Coffee	881.45	Infiltration Basin	881.68	-0.32	40	870.5	8.5	11.95

Maintenance

Subsection 3.7 of Rule J requires the submission of maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. While the applicant provided a draft post construction operation and maintenance plan for review, the following revisions are needed:

- J1. Permit applicant must provide a maintenance and inspection declaration. A maintenance declaration template is available on the permits page of the RPBCWD website.

(<http://www.rpbcwd.org/permits/>). A draft declaration must be provided for District review prior to recording.

Wetland Protection

In accordance with Rule J, subsection 3.10a, there is no proposed activity subject to Rule J that will alter the site in a manner that increases the bounce in water level, duration of inundation, or change the runoff elevation in the subwatershed, for the wetland receiving runoff from the land disturbing activities. Because the applicant's HydroCAD model results demonstrate, and the engineer concurs, that the proposed flow rate and volumes flowing towards the off-site wetland are less than the under existing conditions, the bounce and inundation will not increase, thus the project meets the Bounce and Inundation criterion.

Rule J, Subsection 3.10b requires that treatment of runoff to low and medium value wetland to the water quality criteria in Rule J, Subsection 3.1ci and high and exceptional value wetlands achieve 90 percent total suspended solids removal and 75 percent total phosphorus removal. Because the value of the off-site wetland is unknown, the following revisions are needed to conform to RPBCWD Rule J requirements:

- J2. Provide a MnRAM assessment of the off-site wetland to determine the wetland value. If the wetland is determined to be low or medium value and because the proposed stormwater facility provides the volume abstraction required in accordance with 3.1b, the proposed system complies with water quality criteria 3.1ci, thus the engineer finds that the proposed project would conform with Rule J, Subsection 3.10b. Alternatively, the applicant must present water quality modeling demonstrating the design achieve 90 percent total suspended solids removal and 75 percent total phosphorus removal. If these removals are not demonstrated, design modifications would be required.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. To close out the permit and release the \$5,000 in financial assurance held for the purpose of chloride management, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.

Rule L: Permit Fee

The RPBCWD permit fee schedule requires permit applicants to submit a permit-fee deposit of \$3,000 to be held in escrow and applied to reimburse RPBCWD for the permit-application processing fee and permit review and inspection-related costs. A permit fee deposit of \$3,000 was received on behalf of Cave Enterprises, LLC on May 6, 2021.

Rule M: Financial Assurance

Rule C:

Perimeter Control: 380 L.F. x \$2.50/L.F. =	\$950
Restoration: 1.18 acres x \$2,500/acre =	\$2,950
Inlet Protection: 6 x \$100/each =.....	\$600
Construction Entrance: 1 x \$250/each =.....	\$250
Rule J:	
Stormwater facilities: 125% of Engineer's Opinion of Cost (1.25*\$13,200) =	\$16,500
Chloride Management Plan =	\$5,000
Contingency (10%)	<u>\$2,625</u>
Total Financial Assurance.....	\$28,875

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.
3. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
4. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
5. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
6. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
7. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
8. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

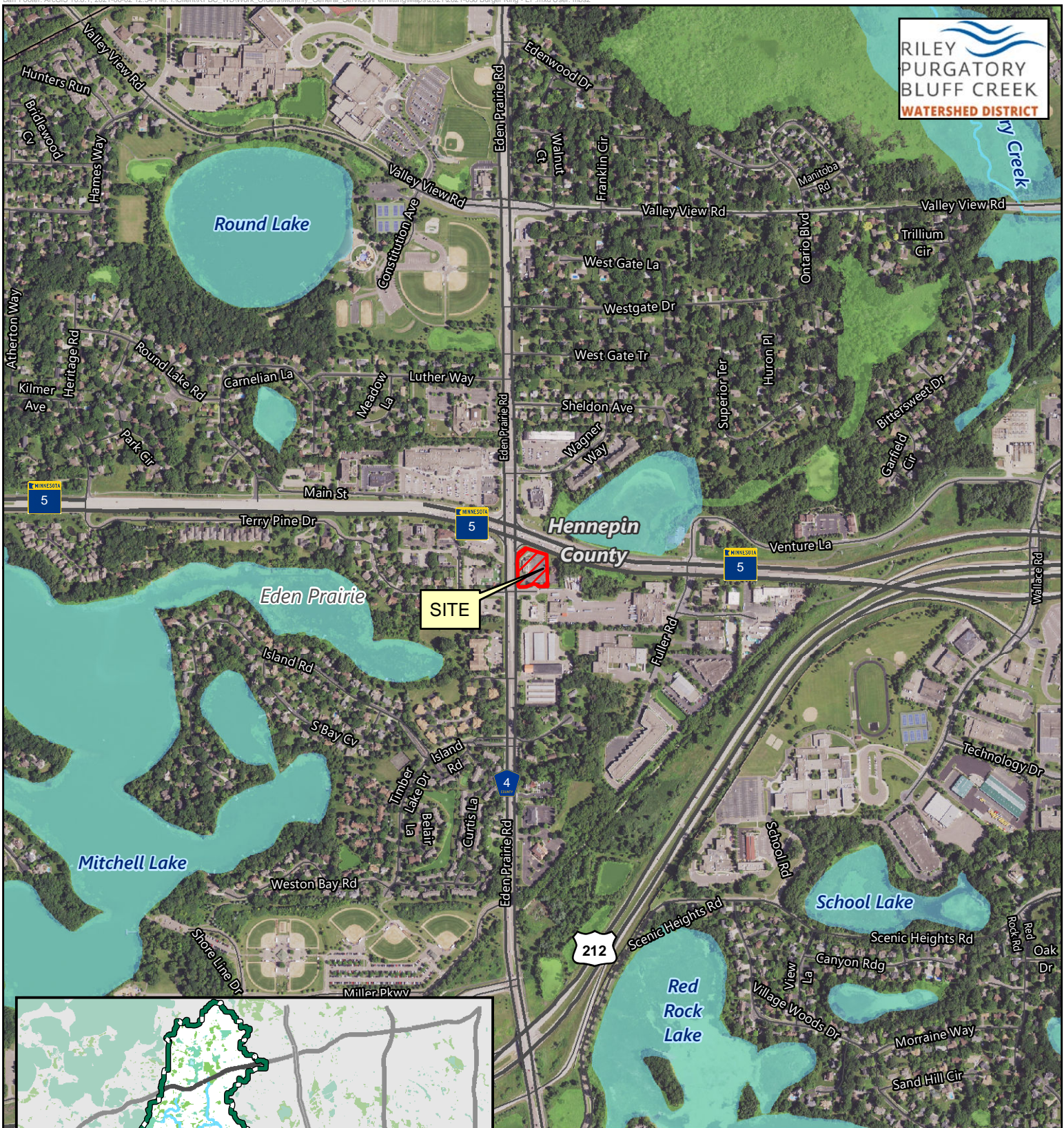
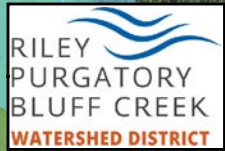
Approval of the permit contingent upon:

1. Continued compliance with General Requirements.
2. Financial Assurance in the amount of \$28,875.
3. Permit applicant must provide the name and contact information of the general contractor responsible for the site. RPBCWD must be notified if the responsible party changes during the permit term.
4. Receipt in recordation a maintenance declaration for the stormwater management facilities. A draft must be approved by the District prior to recordation.
5. Receipt of a MnRAM assessment of the off-site wetland to determine the wetland value. If the wetland is determined to be low or medium value and because the proposed stormwater facility provides the volume abstraction required in accordance with 3.1b, the proposed system complies with water quality criteria 3.1ci, thus the engineer finds that the proposed project would conform with Rule J, Subsection 3.10b. Alternatively, the applicant must provide water quality modeling demonstrating the design achieve 90 percent total suspended solids removal and 75 percent total phosphorus removal. If these removals are not demonstrated, design modifications would be required.

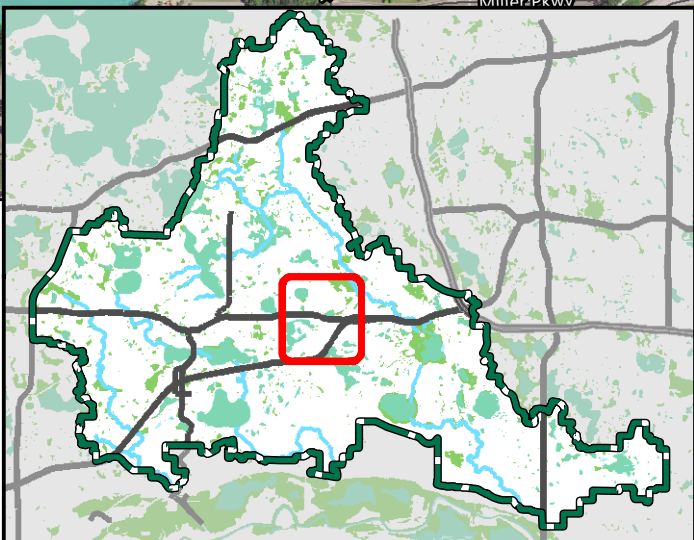
By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization the stormwater management facility conforms to design specifications and functions as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
 - a) the surveyed bottom elevations, water levels, and general topography of all facilities;
 - b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
 - c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
 - d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
2. Providing the following additional close-out materials:
 - a) Documentation that constructed infiltration facilities perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD

- b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C.2c criteria
- 3. To close out the permit and release the \$5,000 in financial assurance held for the purpose of the chloride management, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.



SITE



Feet



Permit Location Map

**BURGER KING,
EDEN PRAIRIE**

Permit 2021-038

Riley Purgatory Bluff Creek
Watershed District

PROPOSED BURGER KING FOR: CAVE ENTERPRISES EDEN PRAIRIE, MINNESOTA LEGEND

- EXISTING CURB (AS SHOWN)
- EXISTING DRIVE (AS SHOWN)
- EXISTING SIDEWALK (AS SHOWN)
- PROPOSED SIDEWALK (REFERENCE TO FULL RETAIL)
- PROPOSED DRIVE (REFERENCE TO FULL RETAIL)
- PROPOSED SIDEWALK (AS SHOWN)
- PROPOSED DRIVE (AS SHOWN)
- PROPOSED SIDEWALK (AS SHOWN)
- PROPOSED DRIVE (AS SHOWN)
- PROPOSED SIDEWALK (AS SHOWN)
- PROPOSED DRIVE (AS SHOWN)

- PROPOSED WATER VALVE IN BOX
- PROPOSED TRENCH CATCH BASIN - ST OR
- PROPOSED TRENCH FIELD INLET - ST FI
- PROPOSED TRENCH CURB INLET - ST CI
- PROPOSED TRENCH FLOW
- PROPOSED SHARED EIO SECTION
- PROPOSED MATTING
- PROPOSED INLET PROTECTION
- PROPOSED HANDicap PARKING SPOT
- PROPOSED PROPERTY LINE
- PROPOSED TRENCH SEWER AND MANHOLE - ST SR
- PROPOSED SANITARY SEWER AND MANHOLE - SAN SR
- PROPOSED WATER JET AND INFLUENT
- PROPOSED CURB AND GUTTER
- GRADING/RETAINING WALLS
- PROPOSED STORMING CONTOUR

CONTACTS

OWNER
CAVE ENTERPRISES
15400 EDEN PRAIRIE DRIVE
EDEN PRAIRIE, MN 55346
TEL: 952-255-4000
WWW.CAVEENTERPRISES.COM

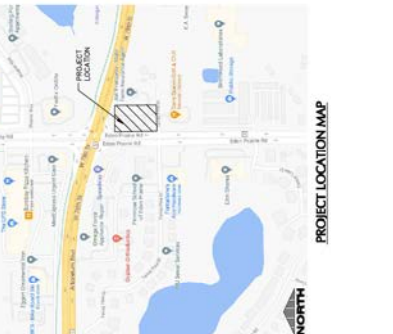
CIVIL ENGINEER
JAMES C. BURGER, P.E.
15400 EDEN PRAIRIE DRIVE
EDEN PRAIRIE, MN 55346
TEL: 952-255-4000
WWW.CAVEENTERPRISES.COM

GENERAL PROJECT NOTES

- ALL UTILITY AND CONDUIT TO BE CONFINED TO EXISTING OR NEW UTILITY TRENCHES.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT.
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STORMWATER POND ASSEMBLY NOTE

CONTRACTOR TO CONTACT LOCAL ENGINEERING TO COMPLETE AN ASSEMBLY SURVEY FOLLOWING COMPLETION OF THE CONSTRUCTION. ENGINEER TO VERIFY THE POND IS ASSEMBLED IN ACCORDANCE WITH THE LOCAL REGULATIONS AND TO PROVIDE THE NECESSARY TOLERANCES FOR THE POND. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT.



PLAN SPECIFICATIONS (BASED ON CSI FORMAT)

31 10 00 SITE CLEARING (DEMOLITION)

- REMOVE ALL EXISTING BUILDINGS, STRUCTURES, AND UTILITIES TO BE DEMOLISHED.
- REMOVE ALL EXISTING CURB, DRIVE, SIDEWALK, AND OTHER PAVED AREAS TO BE DEMOLISHED.
- REMOVE ALL EXISTING UTILITY TRENCHES, CONDUITS, AND MANHOLES TO BE DEMOLISHED.
- REMOVE ALL EXISTING TREES AND OTHER VEGETATION TO BE DEMOLISHED.
- REMOVE ALL EXISTING FENCES, WALLS, AND OTHER OBSTRUCTIONS TO BE DEMOLISHED.
- REMOVE ALL EXISTING SIGNAGE AND MARKINGS TO BE DEMOLISHED.
- REMOVE ALL EXISTING MATERIALS TO BE DEMOLISHED.
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31 20 00 EARTH WORK

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32 00 00 CONCRETE AND AGGREGATE

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32 10 00 AGGREGATE BASE AND ASPHALT PAVEMENT

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32 20 00 CONCRETE AND AGGREGATE

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Table A. Allowable Pipe Material Schedule

Utility	Material	Pipe Code	Notes
Sanitary Sewer	HDPE	4000	
Storm Sewer	SMCP	4000	
Water	PVC	4000	
Gas	PE	4000	
Electric	PVC	4000	
Telecom	PVC	4000	

CONSTRUCTION SEQUENCE

Phase	Type of Action
1. PRE-CONSTRUCTION ACTION	<ol style="list-style-type: none"> 1. CONTRACTOR TO CALL JOBBERS WITHIN A MINIMUM OF 3 DAYS PRIOR TO CONSTRUCTION. 2. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 4. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 5. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 6. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 7. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 8. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 9. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 10. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT.
2. CONSTRUCTION ACTION	<ol style="list-style-type: none"> 1. SITE DEMOLITION AS REQUIRED. 2. STORMWATER POND CONSTRUCTION. 3. STORMWATER POND CONSTRUCTION. 4. STORMWATER POND CONSTRUCTION. 5. STORMWATER POND CONSTRUCTION. 6. STORMWATER POND CONSTRUCTION. 7. STORMWATER POND CONSTRUCTION. 8. STORMWATER POND CONSTRUCTION. 9. STORMWATER POND CONSTRUCTION. 10. STORMWATER POND CONSTRUCTION.
3. FINISH CONSTRUCTION ACTION	<ol style="list-style-type: none"> 1. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 2. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 3. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 4. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 5. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 6. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 7. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 8. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 9. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT. 10. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AGENCIES INVOLVED IN THE PROJECT.

CONTRACTOR TO FOLLOW THE PROVISION CONTROL SPECIFICATIONS FOR CONSTRUCTION DESIGN CONTROL, INSPECTION AND MAINTENANCE.



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PRELIMINARY DATES

APR. 19, 2021
MAY 27, 2021

NOT FOR CONSTRUCTION

JOB NUMBER
21024-20

SHEET NUMBER
C0.1

PROJECT LOCATION MAP

CIVIL COVER AND SPECIFICATION SHEET

SPECIFICATION NOTE:
 SEE SHEET C0.1 FOR PLAN
 SPECIFICATIONS AND REQUIREMENTS

NOTES:

1. HANDICAP STAIRS AND ACCESSIBLE ASLES SHALL NOT EXCEED 1/4" OF SLOPE IN ANY DIRECTION. HANDICAP STAIRS & ACCESSIBLE ASLES SHALL BE CONSTRUCTED TO MEET THE CURRENT EDITION OF ADA REQUIREMENTS.
2. ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.

INLET PROTECTION NOTE:

CONTRACTOR SHALL PROVIDE TEMPORARY NET PROTECTION FOR ALL CURB INLETS & CATCH BASINS AND ALL OTHER INLETS TO MAINSTREAM OF THE PROJECT SITE PER LOCAL CODE.

STABILIZED CONSTRUCTION ENTRANCE NOTE:

CONTRACTOR SHALL PROVIDE ESTABLISHED CONSTRUCTION ENTRANCE AT CONSTRUCTION ENTRANCE FOR PROPOSED IMPROVEMENTS AS REQUIRED PER CODE.

CONCRETE WASHOUT NOTE:

CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER LOCAL CODE. LOCATION TBD BY CONTRACTOR.

SIM. FACILITY COST ESTIMATE:

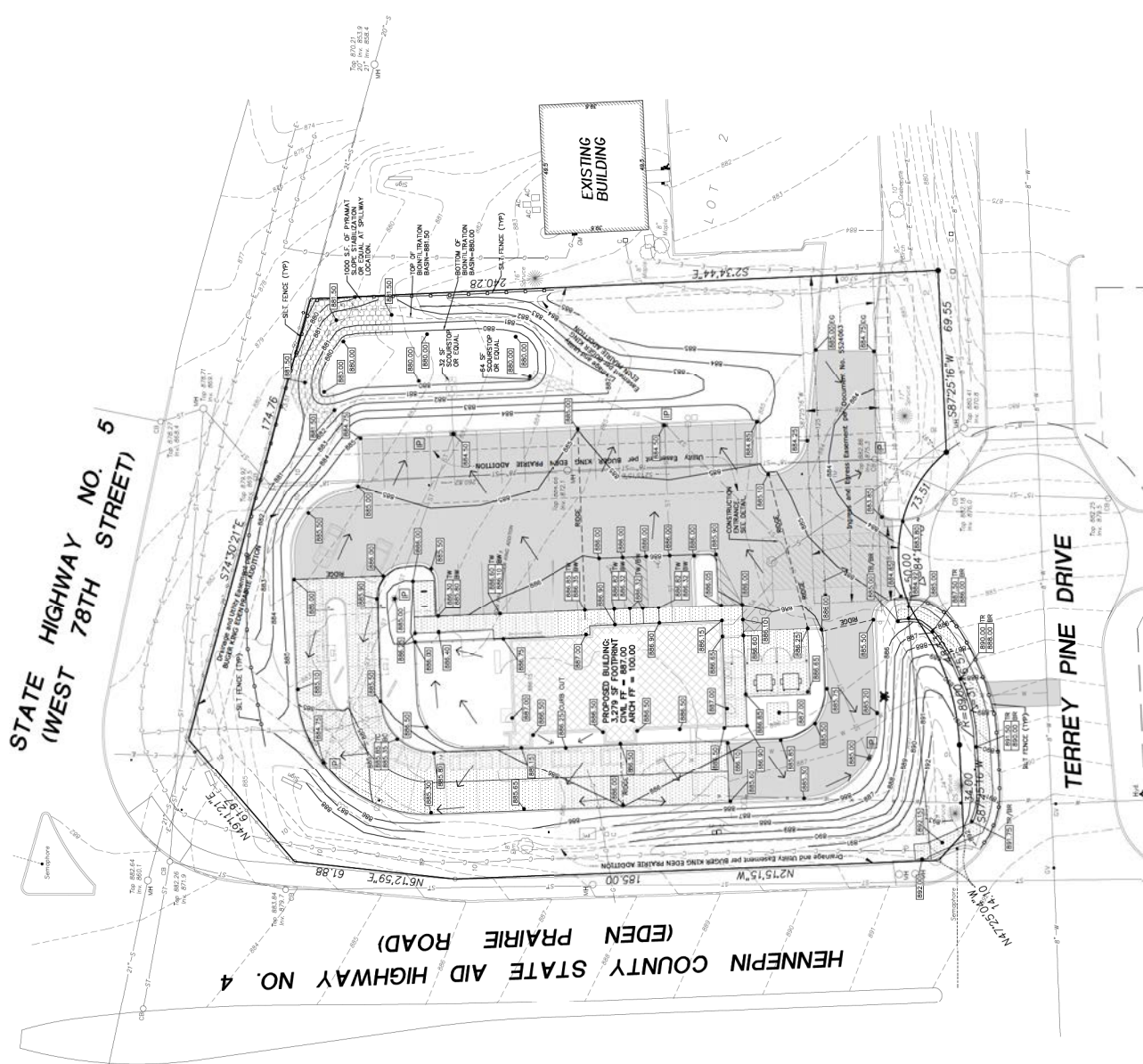
BASIN EXCAVATION/GRADING	L.S.	-\$5,000
ENGINEERED EROSION MEDIA	\$20/CY	-\$1,000
SEEDING/PLANTING	\$25/SY	-\$250
EROSION CONTROL	L.S.	-\$250
TOTAL SIM FACILITY COST		=\$13,200

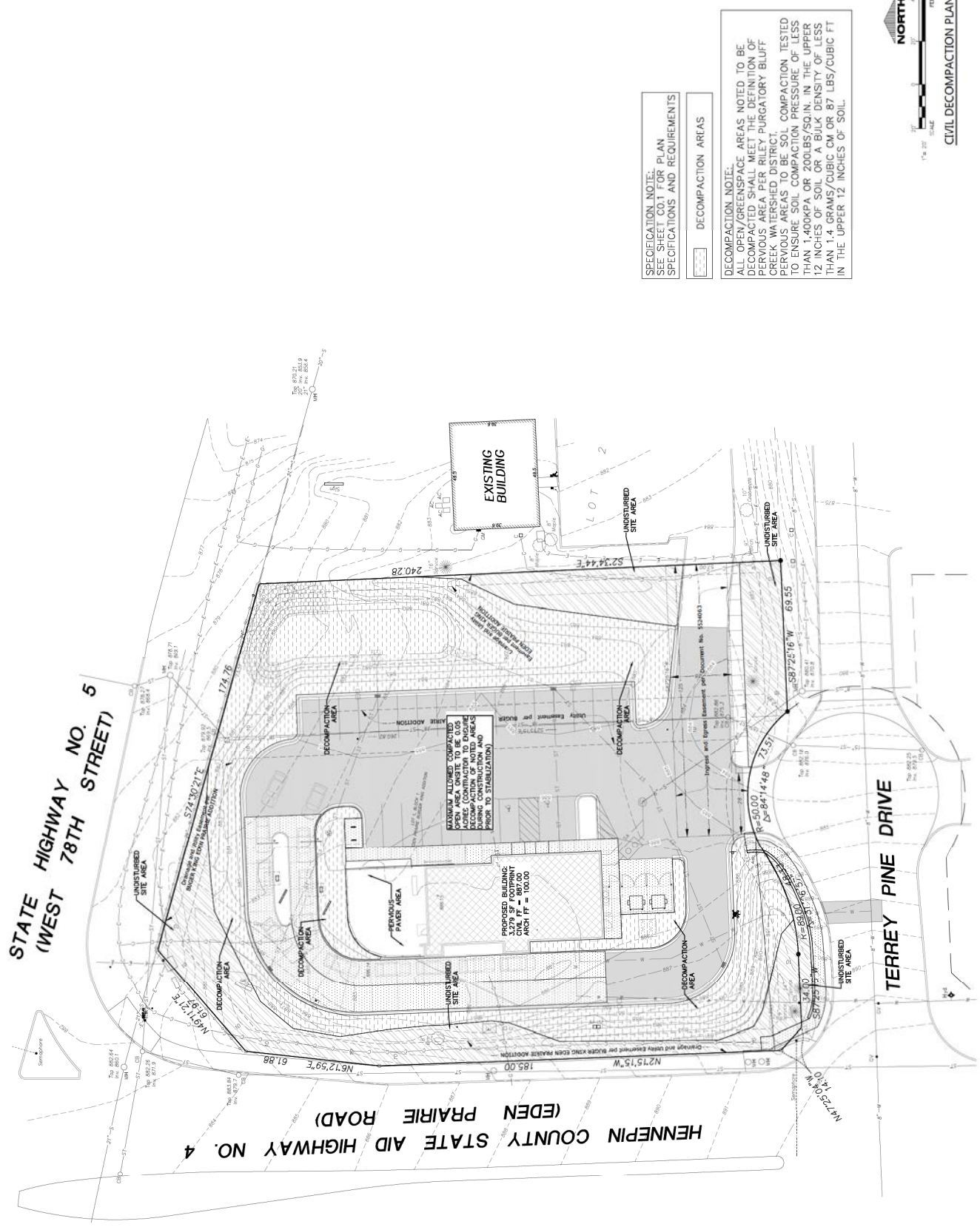
INFILTRATION BASIN NOTE:

CONTRACTOR TO COORDINATE STAKING OFF AND MARKING OF PROPOSED INFILTRATION FACILITIES TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT, STOCKPILING OF MATERIALS, AND TRAFFIC. INFILTRATION FACILITIES SHALL BE PROTECTED FROM SOIL COMPACTION BY HEAVY EQUIPMENT AND MATERIAL FROM ENTERING THE PRACTICE(S). INFILTRATION FACILITIES MUST NOT BE EXCAVATED WITHIN 10 FEET OF FINAL GRADE. UNTIL THE FACILITY IS STABILIZED, ANY ACCUMULATED SEDIMENT IN AN INFILTRATION FACILITY MUST BE REMOVED IN MANNER THAT PREVENTS COMPACTION OF THE INFILTRATION FACILITY. PROTECT INFILTRATION FACILITIES FROM SOIL COMPACTION BY LOOSENING THE SOILS BELOW AN INFILTRATION PRACTICE TO A MINIMUM DEPTH OF 18 INCHES PRIOR TO INSTALLATION OR PLANTING.

Standard Erosion Control Notes:

- Natural topography and soil conditions must be protected, including retention onsite of native topsoil to the greatest extent possible.
- 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 is lost.
- 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 required by the District.
- All temporary erosion and sediment control (BMPs) must be removed upon final stabilization.
- Soil surfaces compacted during construction and remaining previous upon completion of construction must be decomposed to achieve a soil compaction testing pressure of less than 1500 psi. The contractor shall be responsible for the removal of the soil profile while taking care to protect utilities, trees, rocks, and other existing vegetation.
- All disturbed areas must be stabilized within 7 calendar days after land-disturbing work has been completed. The contractor shall be responsible for the removal of the soil profile while taking care to protect utilities, trees, rocks, and other existing vegetation.
- The contractor must install a minimum topsoil, mulch and seed at 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 contractor shall be responsible for the removal of the soil profile while taking care to protect utilities, trees, rocks, and other existing vegetation. The permittee will maintain a log of activities under this section for inspection by the District on request.

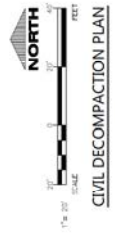




SPECIFICATION NOTE:
 SEE SHEET C0.1 FOR PLAN
 SPECIFICATIONS AND REQUIREMENTS

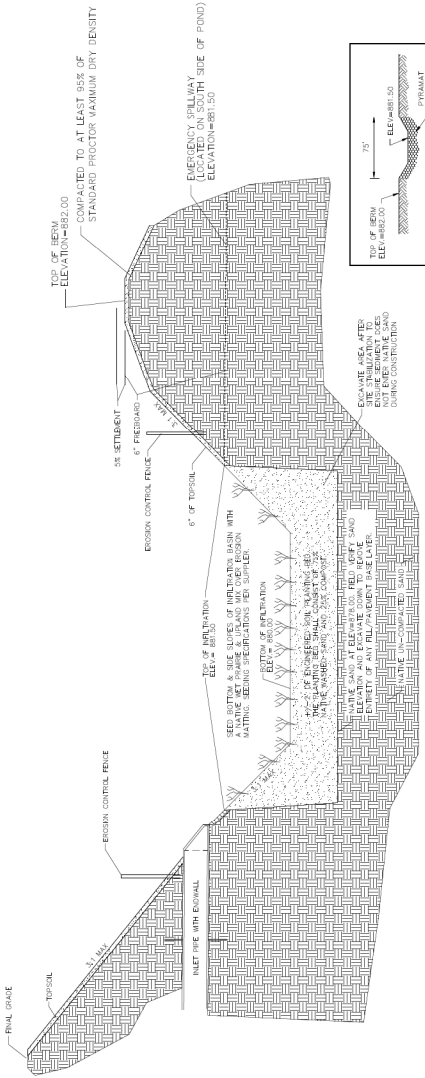
DECOMPACTION AREAS

DECOMPACTION NOTE:
 ALL OPEN/GREENSPACE AREAS NOTED TO BE DECOMPACTIONED SHALL MEET THE DEFINITION OF PERVIOUS PAVEMENT PER ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT 10 SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION TO ENSURE SOIL COMPACTION TESTED TO BE AT LEAST 98% OF THE THEORETICAL MAXIMUM DENSITY OF THE SOIL. IN THE UPPER 12 INCHES OF SOIL OR A BULK DENSITY OF LESS THAN 1.400G/CM³ OR 200LBS/SQ.FT. IN THE UPPER 12 INCHES OF SOIL OR A BULK DENSITY OF LESS THAN 1.4 GRAMS/CUBIC CM OR 87 LBS/CUBIC FT IN THE UPPER 12 INCHES OF SOIL.



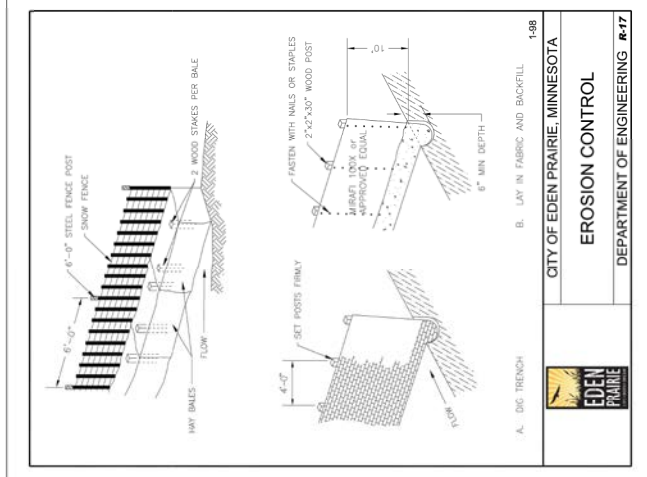
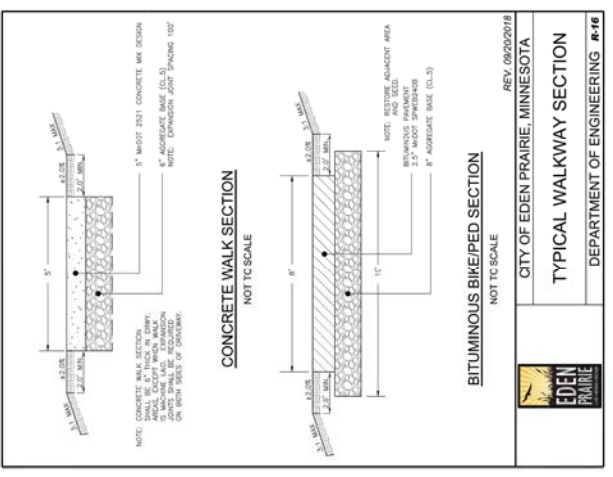
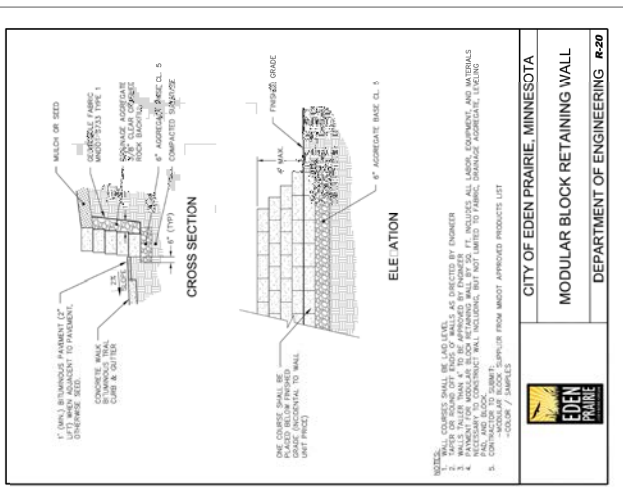
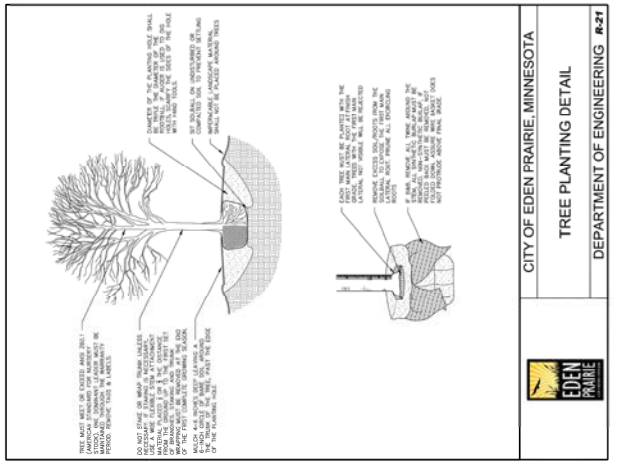
SEE SHEET C01 FOR PLAN PREPARATIONS AND REVISIONS

CIVIL DETAILS



EMERGENCY SPILLWAY DETAIL
 NO SCALE

BIO-INFILTRATION BASIN
 NO SCALE



CITY OF EDEN PRAIRIE, MINNESOTA
 DEPARTMENT OF ENGINEERING R-21

CITY OF EDEN PRAIRIE, MINNESOTA
 DEPARTMENT OF ENGINEERING R-20

CITY OF EDEN PRAIRIE, MINNESOTA
 DEPARTMENT OF ENGINEERING R-17

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2021-042

Considered at Board of Managers Meeting: July 7, 2021

Application Received complete: June 15, 2021

Applicant: Riley Purgatory Bluff Creek Watershed District

Consultant: Barr Engineering Co., Heather Hlavaty, PE

Project: Pioneer Trail Wetland Restoration – The applicant proposes a wetland and upland restoration project using native vegetation to improve diversity and increase flood storage.

Location: The north side of Pioneer Trail just west of Great Plains Boulevard in Chanhassen, MN

Reviewer: Dallen Webster, EIT, and Scott Sobiech, PE, Barr Engineering

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that the application for Permit 2021-042 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been met, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2021-042 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments
B	Floodplain Management and Drainage Alterations	Yes.	
C	Erosion Control Plan	See Comment	See Rule Specific Permit Condition C1.
D	Wetland and Creek Buffer	See Comment	See Rule Specific Permit Condition D1.
J	Stormwater Management	NA	
L	Permit Fee	NA	Governmental Agency.
M	Financial Assurance	NA	Governmental Agency.

Project Description

The proposed Pioneer Trail wetland restoration project includes the reconstruction of an existing outlet, grading to reduce the seedbank of invasive grasses while increasing floodplain storage, and restoration of land adjacent to a[n] 4.32-acre, medium value wetland with diverse native vegetation. The 7.32-acre project is located within the Bluff Creek watershed, on the north side of Pioneer Trail just west of Great Plains Boulevard in Chanhassen, MN. The project will involve the removal of 0.07 acres of the existing impervious area, resulting in a roughly 88% decrease in impervious coverage. Because the land-disturbing activities do not involve the creation of new impervious surface, reconstruction of existing impervious surface or grading that materially alters stormwater flow at a site boundary, the project is exempt from the requirements set forth by RPBCWD’s Stormwater Management rule.

The project site information is summarized below:

	Area (acres)
Total Site Area (acres)	7.32
Existing Site Impervious Area (acres)	0.08
Post Construction Site Impervious (acres)	0.01
Reduction in Site Impervious Area (acres)	0.07 (>88% decrease)
Disturbed Impervious Area (acres)	0.07 (88% disturbed)
Total Disturbed Area (acres)	7.32

Exhibits:

1. Permit Application received May 17, 2021 (Notified applicant on June 2, 2021 that the application was incomplete. Materials completing the application were received on June 15, 2021)
2. Stormwater Management Report dated May 17, 2021.
3. Project Plan Set (attached to Stormwater Management Report) dated May 17, 2021.
4. MNRAM Report and Wetland Delineation Report dated May 17, 2021 (revised June 3, 2021).
5. Electronic P8 and PCSWMM models received on May 18, 2021.
6. Cut-Fill Report received June 15, 2021.

Rule Specific Permit Conditions

Rule A: Procedural Requirements

Because the proposed project includes undertaking an activity for which a RPBCWD permit is required, the applicant must obtain the required permit prior to commencing the activity that is regulated by the District and must conform to the RPBCWD’s Procedural Requirements (Rule A).

Rule A, Subsection 2.3 requires that an application be authorized by all property owners must be submitted to the District to obtain a permit. Because the removal of a small portion of the existing retaining wall on the adjacent property and revegetation work in Carver County right of way is part of the project, the applicant provided documentation demonstrating that the necessary land-use rights have been obtained for the proposed activities.

Rule B: Floodplain Management and Drainage Alterations

Because the proposed project will involve land disturbing activities and placement of 55 cubic yards of fill below the 100-year, 24-hour flood elevation of the wetland (el. 808.7 msl), the project activities must conform to the RPBCWD’s Floodplain Management and Drainage Alterations rule (Rule B).

Because the project does not propose to construct or reconstruct structures that have low floors, Rule B Subsection 3.1 does not apply.

Rule B, Subsection 3.2 requires that compensatory storage be provided for any fill below the 100-year flood elevation (el. 808.7 msl). The placement of the 55 cubic yards of fill material will be at or below existing grades. Site grading will involve 3,008 cubic yards of excavation to flatten the bank of existing channels within the site, increase floodplain storage, and reduce the seed bank of invasive grass. Because there will be a net increase in floodplain storage below the 100-yr flood elevation of 2,954 cubic yards, the project conforms to Rule B subsection 3.2.

Total Site Fill (cubic yards)	Total Site Cut (cubic yards)	Net Site Cut/Fill (cubic yards)
55	3,008	2,954

Rule B, Subsection 3.3 prohibits projects that could cause adverse offsite impacts or alterations reasonably likely to adversely affect flood risk, basin or channel stability, groundwater hydrology, stream base flow, water quality or aquatic or riparian habitat. The PCSWMM modeling results in the table below show that the project will not result in increased peak flows downstream or increases in the flood elevation within the wetland during the 2-, 10-, 100-year, and 10-day snowmelt events.

Design Event	Existing Conditions		Proposed Conditions	
	Peak Watershed Runoff to Southwest Ditch (cfs)	Peak Flood Elevation in Wetland (ft msl)	Peak Watershed Runoff to Southwest Ditch (cfs)	Peak Flood Elevation in Wetland (ft msl)
2-year, 24-hour	6.6	878.1	5.7	878.0
10-year, 24-hour	11.1	879.1	10.2	879.0
100-year, 24-hour	19.5	880.7	19.4	880.6
100-year, 10-day Snowmelt	10.6	879.0	10.1	879.0

The P8 water quality modeling results in the table below summarize the reduced pollutant loads leaving the site post-project. Therefore, the project is not reasonably likely to have adverse offsite impacts and the provisions in Subsection 3.3 will be met.

Pollutant of Interest	Existing Site Loading to Downstream Ditch (lbs/year)	Proposed Site Loading to Downstream Ditch (lbs/year)	Net Change (lbs/year)
Total Suspended Solids (TSS)	2,438	1,258	-1,180
Total Phosphorus (TP)	25.3	21.0	-4.2

In conformity with subsection 3.4, no enclosed structures will be placed within 100-feet of the centerline of the watercourse.

The applicant provided an erosion prevention and sediment control plan, per criteria in Rule B, Subsection 3.5, and the plans and specifications also include notes requiring the contractor to control terrestrial and aquatic invasive species entering and leaving the site, per Rule B, Subsection 3.6.

The proposed project conforms to the floodplain management and drainage alteration requirements of RPBCWD Rule B.

Rule C: Erosion and Sediment Control

Because the project will alter 7.32 acres of land-surface area, the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plan prepared by Barr Engineering Co. includes installation of silt fence, rock construction entrance, erosion control blanket, daily inspection, placement of a minimum of 6 inches of topsoil, decompaction of areas compacted during construction, and retention of native topsoil onsite. To conform to the RPBCWD Rule C requirements the following revisions are needed:

C1. The Applicant must provide the name and contact information of the individual responsible for erosion control at the site. RPBCWD must be notified if the responsible individual changes during the permit term.

Rule D: Wetland and Creek Buffers

Because the proposed work will disturb the onsite, Wetland Conservation Act (WCA) protected wetland, the project must conform to the requirements in the RPBCWD Wetland and Creek Buffers rule (Rule D, Subsection 3). Rule D, Subsection 3.1a requires that buffers be provided around the entire wetland under ownership by the applicant because 2.2 acres of the 4.32-acres of on-site wetland will be disturbed by surface grading activities to restore native vegetation and increase flood storage. The April 20, 2021, Minnesota Routine Analysis Method (MnRAM) report indicates the 4.32-acre onsite wetland is medium value (Appendix D1). Rule D, Subsection 3.2b.iii requires an average buffer width of 40 feet from the delineated edge of a medium value wetland, and a minimum buffer width of 20 feet at any point along the wetland boundary up to the property boundary. Because Sheet R-01 of the plans show the wetland extends off the parcels owned by the applicant, the project will provide wetland buffer area to the limits of the property owned by the applicant, thus conforming to Rule D, subsection 3.2f. The wetland buffer summary table below indicates more than the required average buffer widths will be provided around the delineated wetland.

Wetland Buffer Analysis Summary

RPBCWD Wetland Value	Required Minimum Width ¹ (ft)	Required Average Width ¹ (ft)	Provided Minimum Width (ft)	Provided Average Width (ft)
Medium	20	40	0 ²	77.3

¹ Average and minimum required buffer width under Rule D, Subsection 3.2.

² Because the wetland extends off the parcels owned by the applicant, the project will provide wetland buffer area to the limits of the property owned by the applicant, Rule D, subsection 3.2f.

Because the submitted project plans show the disturbed wetland area within the delineated wetland boundary will be restored with native-based wetland seed mixes and the buffer area around the wetland will be restored with native wildflowers, sedges, grasses, shrubs and trees, the project will conform to Rule D, Subsection 3.3. Buffer marker placement and marker details shown on the plans conform to requirements in Rule D, Subsection 3.4.

Subsection 3.5 of Rule D requires the submission of a maintenance declaration, requiring RPBCWD to maintain on file a wetland-buffer maintenance plan conforming to the requirements of Rule D. A note is included on the plan sheet indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible conforming to Rule D, Subsection 3.6.

The following revisions are needed to conform to the RPBCWD Rule D:

- D1. Buffer areas and maintenance requirements must be documented in a wetland-buffer maintenance plan in accordance with Rule D, Subsection 3.5. The maintenance agreement must also include an exhibit clearly showing the buffer area and monument locations.

Rule J: Stormwater Management

Because the land-disturbing activities do not involve the creation of new impervious surface, reconstruction of existing impervious surface or grading that materially alters stormwater flow at a site boundary, the project is exempt from the requirements set forth by RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1b) for all disturbed land-surface.

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
5. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
6. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
7. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

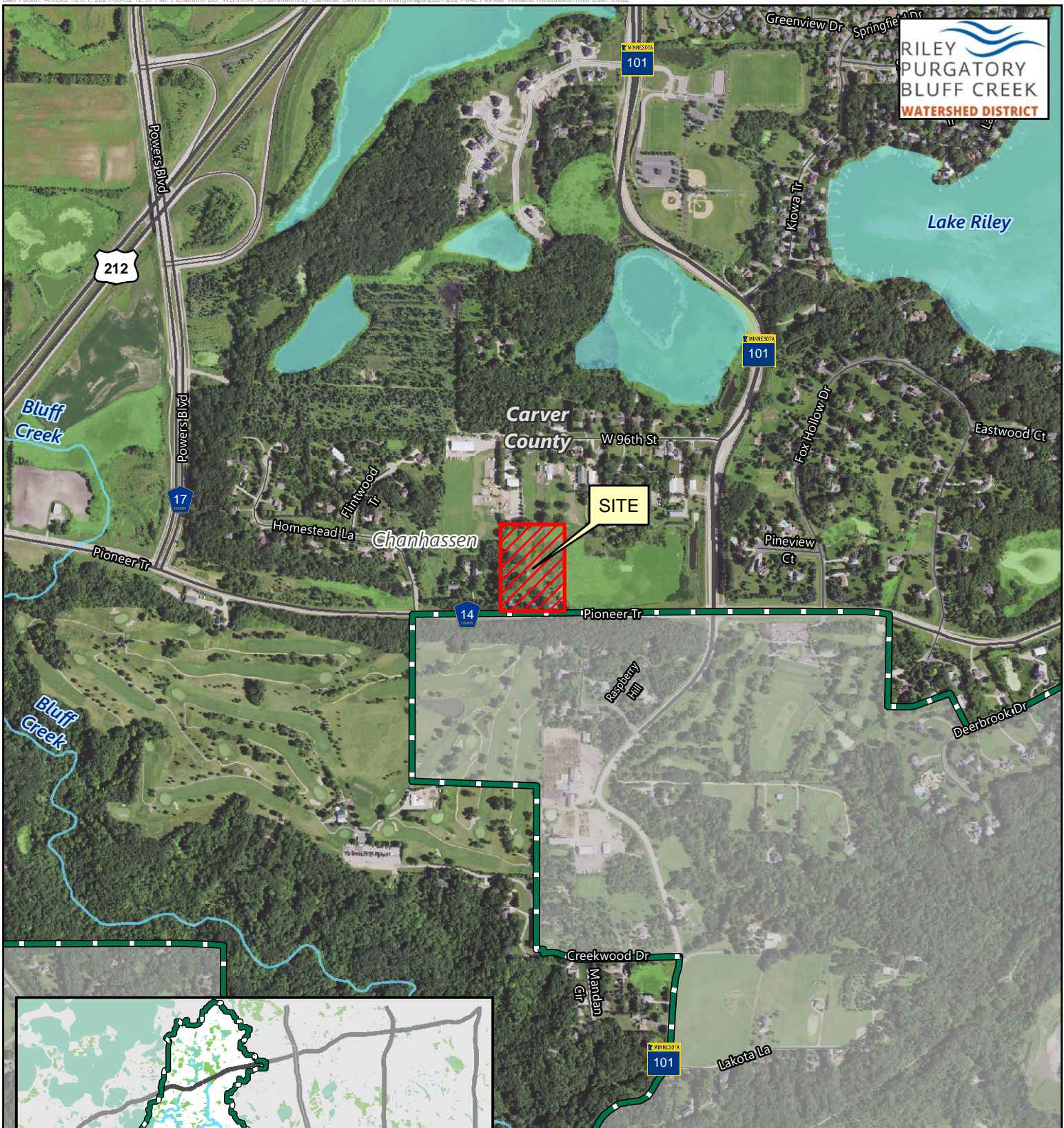
1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.

2. The proposed project conforms to Rules B and D requirements and will conform to Rule C, if the Rule Specific Permit Conditions listed above are met.

Recommendation:

Approval of the permit contingent upon:

1. Continued compliance with General Requirements.
2. The applicant providing documentation demonstrating that the necessary land-use rights have been obtained for the proposed activities within right of way and on the adjacent property.
3. Applicant providing the name and contact information of the individual responsible for erosion and sediment control at the site.
4. RPBCWD maintaining on file a wetland-buffer maintenance plan conforming to the requirements of Rule D.



RILEY
PURGATORY
BLUFF CREEK
WATERSHED DISTRICT

Lake Riley

Bluff
Creek

Bluff
Creek

Carver
County

Chanhasen

SITE

Fox Hollow Dr

Pineview
Ct

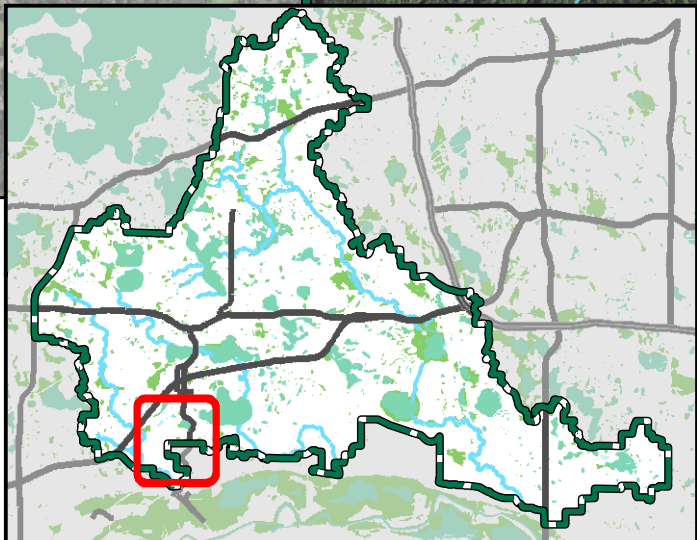
Raspberry
Hill

Creekwood Dr

Mandan
Cir

Lakota La

Deerbrook Dr



Permit Location Map



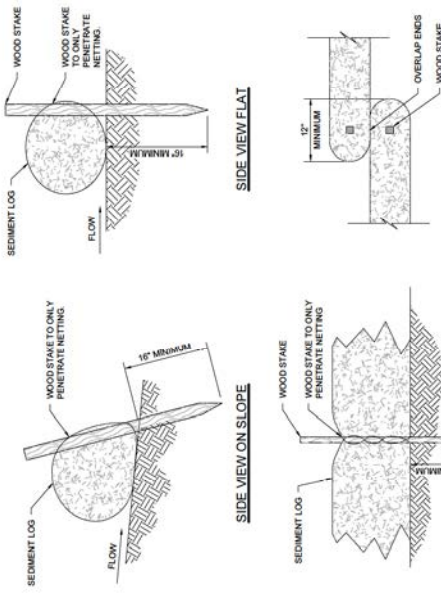
Feet



PIONEER WETLAND
RESTORATION

Permit 2021-042

Riley Purgatory Bluff Creek
Watershed District

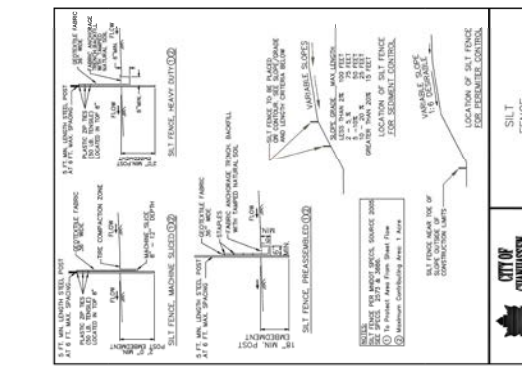


FRONT VIEW

NOTES

1. INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION)
2. NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
3. REMOVE ACCUMULATED SEDIMENT WHEN REACHING 10' OF LOG HEIGHT.
4. MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACED AS REQUIRED.

3 DETAIL-SEDIMENT LOG-STAKING
NOT TO SCALE



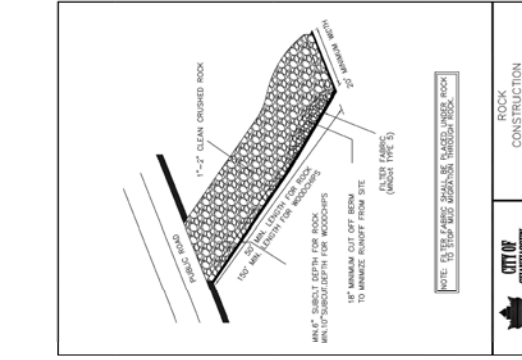
CITY OF CHANHASSEN

SILT FENCE

ENGINEERING DEPARTMENT

DATE NO. 5300

2 DETAIL-SILT FENCE
NOT TO SCALE



CITY OF CHANHASSEN

ROCK CONSTRUCTION ENTRANCE

ENGINEERING DEPARTMENT

DATE NO. 5301

1 DETAIL-ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

90% PRELIMINARY DRAFT
ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

DATE PROJECT NO.	2327-0055.308
CLIENT PROJECT NO.	
DATE NO.	C-02
REV. NO.	B

AS SHOWN	DATE	BY
CONF	04/29/2023	SCS
CONF		SCS
CONF		SCS
CONF		SCS

DATE RELEASED	A	B	C	D	1	2	3
DATE							

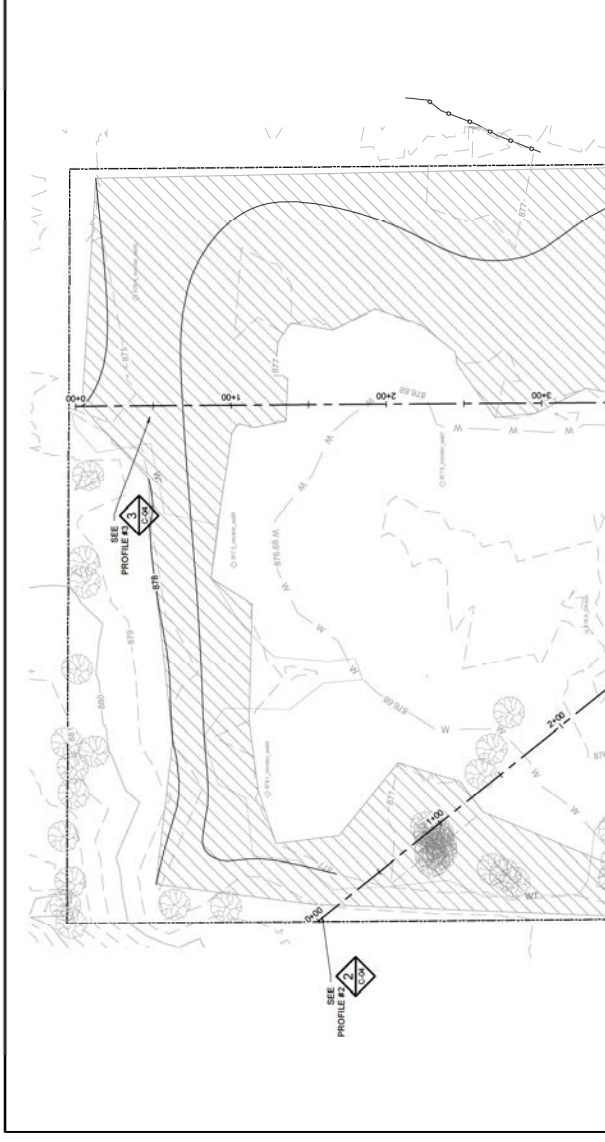
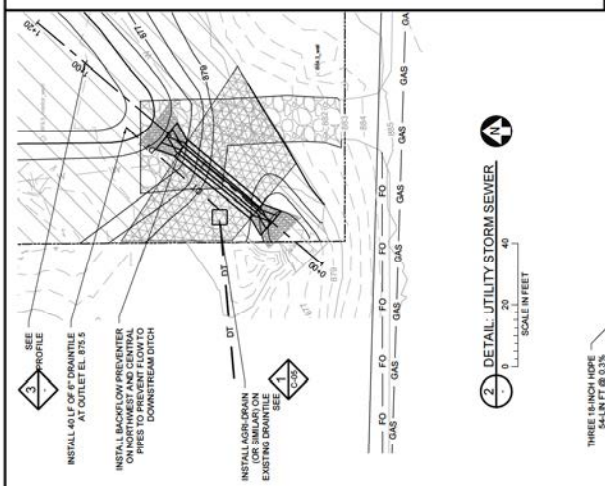
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION

PROJECT NO. 2327-0055.308
PROJECT NAME: PIONEER TRAIL WETLAND RESTORATION PROJECT
CLIENT: CHANHASSEN, MN

DATE: 04/29/23
BY: SCOTT A. BORDCH
STATE OF MINNESOTA

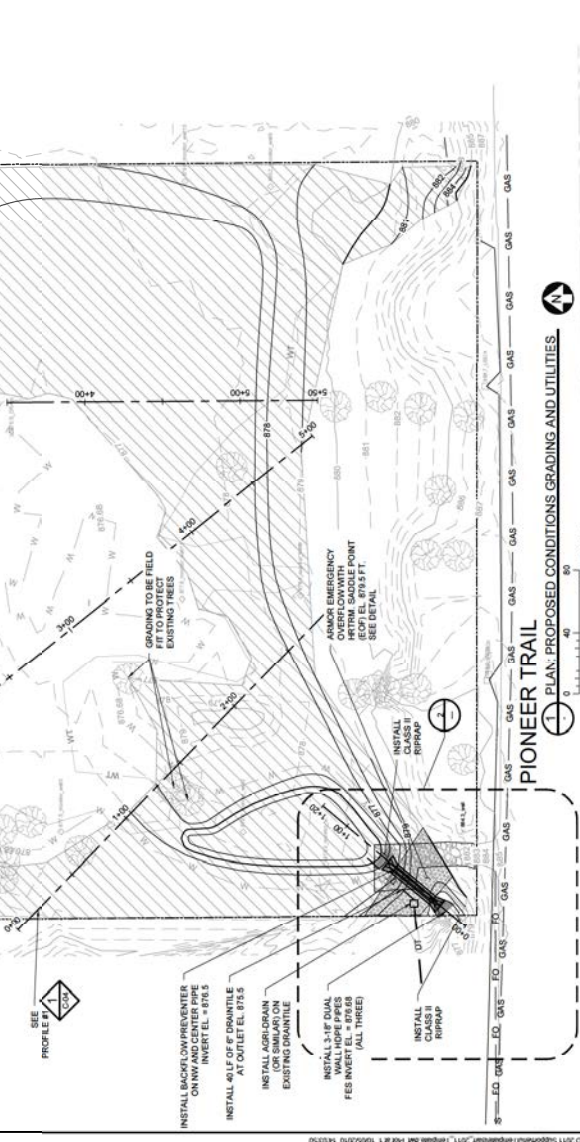
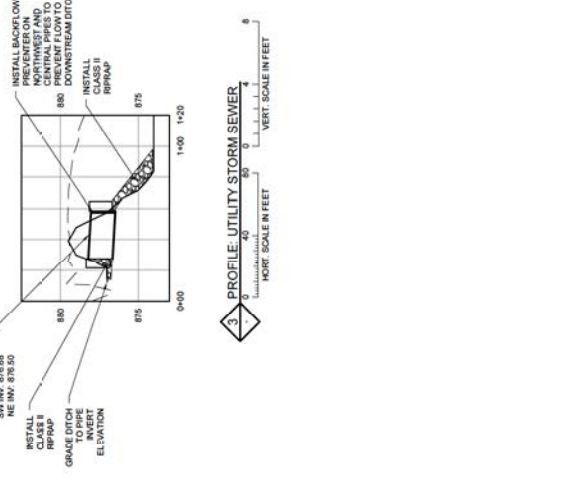
LEGEND

- EXISTING FINCFEET CONTOUR
- EXISTING ONE-FOOT CONTOUR
- PROPOSED FINCFEET CONTOUR
- PROPOSED ONE-FOOT CONTOUR
- CONSTRUCTION LIMITS
- NORMAL WATER LEVEL EL. 876.8
- PROPOSED DRAINILE
- PROPOSED HIGH PERFORMANCE TURF REPAIRING MAT
- PROPOSED RRPPAP OUTLET
- EXISTING PROPERTY LINE
- EXISTING DRAINAGE DITCH
- EXISTING DELINEATED WETLAND
- EXISTING FIBER OPTICS LINE
- EXISTING GAS LINE
- EXISTING STRUCTURAL FENCE
- EXISTING TREE
- APPROXIMATE GRADING EXTENTS



NOTES

- CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
- EXISTING STRUCTURAL FENCES, AND SIGNS SHALL BE PROTECTED DURING CONSTRUCTION.
- CONTRACTOR SHALL INSTALL AND MAINTAIN PROSON CONTROL BARRIERS PRIOR TO COMMENCEMENT OF WORK.
- ALL GROUND DISTURBANCE SHALL BE STABILIZED AND PROTECTED WITH EROSION CONTROL MATS, TROPICAL SEED, AND EROSION CONTROL BLANKET. THE TOPSOIL USED FOR RESTORATION MAY BE STOCKPILED FROM GRADE BACK ALL EXISTING DITCH OVERBANKS TO 5:1 SIDE SLOPES.
- SIDE SLOPES, CLEARING OR PROTECTED WILL BE MARKED IN THE FIELD BY ENGINEER AND IN CONSULTATION WITH CITY OF CHANHASSEN.
- PROTECTION SHALL BE PROVIDED AGAINST ROOT DAMAGE, AND DISBURSEMENT. CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN AND MAINTAIN PROTECTION OF TREES NOT IDENTIFIED TO BE REMOVED. SHALL BE INDICATED BY CONSIDERING OF METAL DEBRIS TO BE REMOVED AS DISCOVERED IN PROJECT REACH.
- CONTRACTOR SHALL MAINTAIN ALL EXISTING LIMITS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
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90% PRELIMINARY DRAFT
ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

PIONEER TRAIL WETLAND RESTORATION PROJECT
SITE GRADING AND UTILITY PLAN

RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

DATE: 04/29/2021
DRAWN BY: JLS
CHECKED BY: JLS
APPROVED BY: JLS

REVISION DESCRIPTION

NO.	BY	DATE	DESCRIPTION

DATE RELEASED

DATE	RELEASER

PROJECT DATA

PROJECT NO.	2021-0055.308
CIENT PROJECT NO.	

AS SHOWN
DATE: 04/29/2021
DRAWN BY: JLS
CHECKED BY: JLS
APPROVED BY: JLS

BARR
BARR ENGINEERING CO.
200 W. WASHINGTON AVENUE
MINNEAPOLIS, MN 55433
TEL: (612) 338-2000
FAX: (612) 338-2001
www.barr.com

PROJECT OWNER: BARR ENGINEERING CO.
PROJECT ADDRESS: 200 W. WASHINGTON AVENUE, MINNEAPOLIS, MN 55433
PROJECT NO.: 2021-0055.308
CIENT PROJECT NO.:

PRINTED NAME: SCOTT A. BARRICH
STATE: MINNESOTA
DATE: 04/29/2021

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Cost-Share Funding Agreement
The Preserve Association

LOCATION: **11221 Anderson Lakes Pkwy, Eden Prairie, MN 55344**
PARCEL PIN: **2411622310120**
PARCEL PIN: **2411622320020**

This cost-share Agreement, for support of water resource protection and education through the Riley Purgatory Bluff Creek Watershed District Cost-Share Program, is entered into between the Riley Purgatory Bluff Creek Watershed District, a public body with purposes and powers set forth at Minnesota Statutes chapters 103B and 103D (RPBCWD), and **The Preserve Association** (OWNER), a Minnesota nonprofit corporation and fee title owner of the Common Elements of the Property, as described in The Articles of Incorporation recorded with the State of Minnesota as documents no. **3956335 on 6/19/1972** (the Property).

RPBCWD has determined that it will contribute cost-share funding for construction of water resources-conservation practices in conjunction with a project that OWNER has undertaken to **convert a 33,600 square foot area of turf grass east of Neill Lake to native prairie plants and pollinator friendly vegetation**. RPBCWD has determined the amount of funding that it will contribute to the construction and design of the practices on the basis of the water-quality improvement, public education and demonstration benefits that will be realized. RPBCWD commits to reimburse OWNER in accordance with the terms and on satisfaction of the conditions of this Agreement.

1. Scope of Work

OWNER will provide for construction of **convert a 33,600 square foot area of turf grass east of Neill Lake (on parcels 2411622310120 and 2411622320020) to native prairie plants and pollinator friendly vegetation** (the Facilities) on the Property in accordance with the Site Plan, Design and Budget attached to and incorporated into this Agreement as Exhibit A. OWNER may adjust the work during construction based on field conditions or other adaptive design considerations as in its judgment will better achieve the purposes of the Facilities.

OWNER will submit to RPBCWD a report that includes a narrative describing the construction of the Facilities, as-built drawings of the Facilities, a description of and receipts documenting eligible costs incurred including in-kind contributions, a description of any changes made or expected to the Facilities and photographs documenting construction (Project Report). A final Project Report must be submitted to RPBCWD within 30 days of the certification by OWNER's engineer of completion of construction.

OWNER will maintain a copy of the Site Plan and Design and other records concerning the Facilities for six years from the date OWNER receives or completes the as-built drawings of the Facilities. RPBCWD may examine, audit or copy any such records on reasonable notice to OWNER.

2. Contractor

OWNER will select a contractor or contractors for the Facilities or construct the Facilities itself and ensure construction of the Facilities in substantial conformity with Exhibit A. In contracting for construction of the Facilities, OWNER will ensure that no person is excluded from full employment rights or participation in or benefits of any program, service, or activity on the grounds of race, color, creed, religion, age, sex, disability, marital status, sexual orientation, public-assistance status or national origin, and that no person protected by applicable federal or state laws, rules or regulations against discrimination is subject to discrimination. Further, OWNER will ensure that any contract for construction of the Facilities complies with state prevailing wages requirements, Minnesota Statutes sections 177.41 to 177.44 and corresponding Minnesota Rules 5200.1000 to 5200.1120.

3. Reimbursement

When RPBCWD has inspected the Facilities to confirm functionality and construction in material conformity with Exhibit A and received from OWNER:

- a. documentation that the maintenance declaration required by section 5 of this Agreement has been filed for recordation; and
- b. an invoice and receipts documenting the Facilities costs, along with any completed reimbursement forms required by RPBCWD,

RPBCWD will reimburse OWNER **75 percent** of OWNER's eligible costs to design and construct the Facilities. Contributed labor will not be reimbursed, but may be applied toward total cost of completion of the Facility. Labor contributed toward the completion of the Facility by OWNER will be assigned a value of \$14.25 per hour for unskilled labor and \$25 per hour for skilled labor. Reimbursement under this Agreement for installation of the facility will not exceed a total of **\$10,000.00**. RPBCWD will make payment within 30 days of receipt of the invoice and required accompanying documentation described above, unless the RPBCWD finds that the Facilities do not meet standards described herein for reimbursement, in which case RPBCWD will provide an explanation to OWNER sufficient for OWNER to cure the deficiency.

RPBCWD on receipt and approval of documentation (including receipts) will reimburse the OWNER once per year over three consecutive years immediately following Facilities installation for professional maintenance of the Facilities. Reimbursement for professional maintenance of the Facilities under this Agreement will not exceed a total of **\$2,000.00**.

RPBCWD has determined that partial performance of obligations under section 1 of this Agreement may confer no or limited benefit on RPBCWD. As a result:

- a. RPBCWD may withhold 10 percent of any reimbursement under this section 3 until RPBCWD has confirmed substantial completion of the Facilities; and
- b. if construction, including vegetation establishment where specified, of the Facilities is not substantially completed in material conformance with the approved plans and specifications within two (2) years of the date this Agreement is fully executed, subject to delays outside of OWNER's control, RPBCWD will not be obligated to provide reimbursement to OWNER under this Agreement and may declare this Agreement

rescinded and no longer of effect. Notwithstanding, the parties will consult before RPBCWD makes a decision to deny reimbursement or rescind the Agreement.

4. Right of Access

OWNER will permit RPBCWD representatives to enter the Property at reasonable times to inspect the work, ensure compliance with this Agreement and monitor or take samples for the purposes of assessing the construction or performance of the Facilities and compliance with the terms of this Agreement. If RPBCWD finds that an obligation under this Agreement is not being met, it will provide 30 days' written notice and opportunity to cure, and thereafter may declare this Agreement void. OWNER will reimburse RPBCWD for all costs incurred in the exercise of this authority, including reasonable engineering, legal and other contract costs.

5. Maintenance

Exhibit B, a declaration of covenants for inspection and maintenance of the Facilities, is attached to and incorporated into this Agreement. The attached declaration provides that OWNER and its successors and assigns will inspect and maintain the Facilities in accordance with Exhibit B. Within 30 days of the certification of completion of the Facilities by RPBCWD, OWNER will execute and file Exhibit B, or an instrument materially conforming thereto, with the county recorder or registrar, as appropriate. RPBCWD and its representatives may enter the Property at reasonable times to inspect the condition of the Facilities and confirm proper maintenance.

6. Acknowledgment and Publicity

The OWNER will cooperate with RPBCWD to seek Publicity and media coverage of the Facilities, and to allow members of the public periodically to enter the Property to view the Facilities in the company of an RPBCWD representative. OWNER will permit RPBCWD, at its cost and discretion, to place reasonable signage on OWNER's property informing the general public about the Facilities and RPBCWD's cost-share program.

7. Independent Relationship; Indemnification

RPBCWD's role under this Agreement is solely to provide funds to support the Facilities, in recognition of the maintenance, demonstration and dissemination of knowledge about innovative approaches to stormwater management. RPBCWD's review of design, plans and specification notwithstanding, RPBCWD has no authority to select, nor has it had any role in selecting, the design, means, method or manner of performing any work or the person or firm who will perform the work necessary to construct the Facilities. OWNER acts independently and selects the means, method and manner of constructing the Facilities. Review of any plans, specifications, design or installation by RPBCWD or its representative is solely for the purpose of establishing accountability for RPBCWD funds expended. Neither OWNER nor OWNER's contractor acts as the agent or representative of RPBCWD in any manner.

OWNER will hold RPBCWD, its officers, board members, employees and agents harmless, and will defend and indemnify RPBCWD, with respect to all actions, costs, damages and liabilities of any nature arising from: (a) OWNER's negligent or otherwise wrongful act or omission, or breach

of a specific contractual duty; or (b) a subcontractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty owed by OWNER to RPBCWD. No action or inaction of RPBCWD or the OWNER under this Agreement creates a duty of care on the part of RPBCWD or the OWNER for the benefit of any third party.

8. Remedies; Immunities

Only contractual remedies are available for a party's failure to fulfill the terms of this Agreement. Notwithstanding any other term of this Agreement, the District and the Partner waive no immunities in tort. No action or inaction of a party under this Agreement creates a duty of care for the benefit of any third party. This Agreement creates no right in and waives no immunity, defense or liability limitation with respect to any third party.

9. Effective Date; Termination; Survival of Obligations

This Agreement is effective when fully executed by all parties and expires 5 years thereafter. RPBCWD retains the right to void this Agreement if construction of the Facilities is not certified as substantially complete by **July 7th, 2022**. RPBCWD may grant a request to extend the construction-completion period based on satisfactory explanation and documentation of the need for an extension. Upon issuance by RPBCWD of notice of RPBCWD's determination to void this Agreement, OWNER will not receive any further reimbursement for work subject to this Agreement, unless RPBCWD extends the construction-completion period.

All obligations that have come into being before termination, specifically including obligations under paragraphs 4, 5, 6, 7 and 8 will survive expiration.

10. Compliance With Laws

OWNER is responsible to secure all permits and comply with all other legal requirements applicable to the construction of the Facilities.

11. Notices

Any written communication required under this Agreement shall be addressed to the other party as follows:

To RPBCWD :

Administrator
Riley Purgatory Bluff Creek Watershed District
18681 Lake Drive East
Chanhassen, MN 55317

To OWNER:

The Preserve Association
Attn: Paul Musegades
11221 Anderson Lakes Pkwy
Eden Prairie, MN 55344

12. Waiver

RPBCWD's failure to insist on the performance of any obligation under this Agreement does not waive its right in the future to insist on strict performance of that or any other obligation. Notwithstanding any other term of this Agreement, RPBCWD waives no immunities in tort. This Agreement creates no rights in and waives no immunities with respect to any third party or a party to this Agreement.

13. Venue and Jurisdiction

The Agreement will be construed under and governed by the laws of the State of Minnesota. The appropriate venue and jurisdiction for any legal action hereunder will be Hennepin County, Minnesota.

Intending to be bound, the parties hereto execute and deliver this Agreement.

OWNER

_____ Date:
Name: _____
Title: _____

STATE OF MINNESOTA)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 20__, by _____ as _____ of the _____.

Notary Public

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

By _____ Date _____
Name _____
District Administrator

Exhibit A
[SITE PLAN, DESIGN, PLANS & SPECIFICATIONS/BUDGET]

Watershed Stewardship Grant Application Report

Form: Watershed Stewardship Grant Application

Applicant type	Non-profit (association, church, etc.)
Owner Name	The Preserve Association
Owner Mailing address	11221 Anderson Lakes Pkwy, 11221 Anderson Lakes Pkwy, Eden Prairie, 55344
Owner Phone	9529418400
Owner Email	scott@preserveassociation.com
Primary contact information is the same as above	false
Contact Name	Scott, Anderson
Contact Phone	9529418400
Contact Email	scott@preserveassociation.com
Have you had a site visit with the CCSWCD (Seth Ristow) or Watershed District technician?	Yes
Project title	Backyard Field
Projected total project cost (\$)	21337.20
Grant amount requested (\$)	16000.00
Estimated start date	01-Jun-2021
Estimated completion date	16-Jul-2021
Type of project	Habitat restoration
if you selected "other", please describe:	
My project is within the Riley	true

Purgatory Bluff Creek Watershed District	
Project address	11221 AndersonLakes Pkwy, 11221 Anderson Lakes Pkwy, Eden Prarie, 55344
Property ID number (PID)	2411622310120
Please describe the current condition of the property, relevant site history, and past management	Currently anf for about 50 years this has been mowed turf grass. Prior to that it was farm land
Please describe the project in detail, including any site issues you are hoping to address through it.	<p>Kill all turf in the restoration area.</p> <p>Drill in a custom prairie seed mix into the dead turf. Make several passes in a grid pattern. An oats cover crop will also be seeded.</p> <p>Cover the entire site with weed-free prairie straw.</p> <p>Lay out plants into plant zones per plan specifications.</p> <p>9. We will use 2,248 – 3” container plants for your restorations. These are more conservative plant species that do not do well from seed. These are much more robust than the 2” plugs and have a higher survival rate.</p> <p>Install all plants @ approximately 5.0’ centers.</p> <p>We will install more showy species closer to the walking pathway.</p> <p>Install 50 native shrubs (2-3 gal.) in patches along the edges of the prairie restoration.</p>
Summarize your workplan. How will the project be completed?	Kill turf grass and replace with native prairie grasses and pollinators
Who will be completing the work, and where will you be purchasing supplies/ equipment from?	Natural Shore Technologies
Which water quality goals from the District's 10-year plan does your project meet? My project...	Incorporates habitat protection or enhancement into development and redevelopment projects, Establishes and preserves natural corridors for wildlife habitat and migration, Minimizes pollutant loading to water resources
Which water quantity goals from the District's 10-year plan does	Promotes infiltration, where feasible, as a best

your project meet? My project...	management practice to reduce runoff volume, improve water quality, and promote aquifer recharge.
How will your project increase awareness of water resource issues and/ or clean water practices/ projects?	We will continue to educate our residents on the benefits of native prairies as apposed to turf grass. We will partner with RPBDWD and Wild ones to diseminate information
May we share your project with the community on our website, social media, or other media?	Yes
Could we highlight your project on a tour or training event? (with prior notice and agreement)	Yes
I understand that if my project is approved for funding, I/ my organization will enter into a maintenance agreement with the Riley Purgatory Bluff Creek Watershed District	true
How will the project be monitored and maintained?	Part of this land is owned by the City of EP. They have contracted Natural Shore separately so as to execute as one contiguous project. We will hire Natural Shore for a two year matainance period followed by our Grounds Crew continuing their processes. We will inspect the area monthly to assess maintanance needs
I understand that if my project is approved for funding I must submit a project report within 30 days of completing my project and a yearly report containing updates on maintenance and function of the project.	true
What variables will track and report? How will you track these variables?	Growth of new plantings Insure that no invasive plants creep into the area Visual inspection and photographs on a monthly basis.
File Upload	



Backyard_prairie-3-21.pdf



IMG_0001_003.jpg



Backyard_field_in_kind_description.docx

Authorized Representative Name	Scott Anderson
Role	General Manager
Date	19-Apr-2021
I/ we submit this application for consideration for a 2020 Watershed Stewardship Grant	true
Site Visit ID	
Unique ID	WSG-16
Added Time	19-Apr-2021 09:12:08
CRM Status	New Record - Record added
Referrer Name	http://rpbcwd.org/
Mail Merge Status	Zoho Writer - Successful at 19-Apr-2021 09:12 AM.
Task Owner	lforbes@rpbcwd.org



Hennepin County Natural Resources Map

Date: 5/5/2021



Legend

- Project area
(approx. half done by Preserve Association & half by City of Eden Priarie)
- Preserve Association portion of project

No results

Comments:

1 inch = 100 feet

This data (i) is furnished 'AS IS' with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this data.

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Restoration Proposal for:

Mr. Scott Anderson – The Preserve in Eden Prairie

Proposal Date: March 28, 2021

Prepared by:

Bill Bartodziej M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542 bill.b@naturalshore.com





USING ECOLOGY TO RESTORE LAND AND WATER

612.703.7581 | naturalshore.com | Office & Nursery 1480 County Rd 90 Independence, MN 55359

March 28, 2021

Dear Scott:

Thank you for giving Natural Shore Technologies the opportunity to bid on your project. Below is a *Project Summary* which outlines our *restoration methods* and *cost breakdown*. We would like to emphasize that we tailor our restoration approach to fit your site characteristics and specific objectives. We look forward to continuing our partnership with you to produce exceptional restorations that exceeds your expectations.

We would enjoy the chance to answer any questions that you have regarding this restoration proposal. We take great pride in our reputation and attention to customer satisfaction. After you have read through and are comfortable with the proposed plan and specified cost, please sign the contract that is provided. A down payment and a signed contract are required to book your project.

Best regards,

Bill Bartodziej, M.S.
Senior Restoration Ecologist, Natural Shore

Project Summary – Turf to Prairie

1. Dimensions: **Backyard Prairie in partnership with Eden Prairie** – 33,600 SF
2. Site assessment and plan development include: detailed site preparation methods, plant and selection, and a project timeline and work schedule for our staff.
3. Delineate and verify total restoration project area.
4. Design planting so that flowering will occur at different periods throughout the growing season.
5. Kill all turf in the restoration area.
6. Drill in a custom prairie seed mix into the dead turf. Make several passes in a grid pattern. An oats cover crop will also be seeded.
7. Cover the entire site with weed-free prairie straw.
8. Lay out plants into plant zones per plan specifications.
9. We will use 1,356 – 3” container plants for your restorations. These are more conservative plant species that do not do well from seed. These are much more robust than the 2” plugs and have a higher survival rate.
10. Install all plants @ approximately 5.0’ centers. We will install more showy species closer to the walking pathway.
11. Maintenance (separate contract)



Project Cost

This bid includes project design and management, all materials, and labor.

Cost Breakdown

Backyard Prairie - 33,700 SF (including the additional 3,000 SF)

Site Design, Project Management, Mobilization	\$839.00
Site preparation, clean straw mulch, seed drilling	\$3,345.00
1,356 Plants - 3" containers @ 5' spacing and custom seed mix	\$6,635.20
50 - 2-3 gal. - native shrubs - installed	\$1,100.00
TOTAL =	\$11,919.20

Site maintenance (will included on a different contract)

Site maintenance includes three visits per year during the growing season to monitor and conduct activities that will ensure proper restoration establishment. We use the most appropriate, up-to-date maintenance techniques such as targeted herbicide application, hand pulling, mowing, and spot weed whipping to effectively control invasive weeds. Our lead maintenance supervisor has a B.S. in Biology and 10 years of field experience.

****Note we do offer long-term maintenance contracts. Over 90% of our clients use that service.***

Staff Qualifications

Our company has over 50 years of combined ecological restoration experience. We are a local company that focuses on quality ecological restoration in the Metro area. Our clients vary from private estates on Lake Minnetonka, to large corporate headquarters in Eden Prairie. We also work with many city and county governments and watershed management organizations. We are fully insured.

Our specialty is lakeshore and wetland restoration. We have restored many miles of lakeshore in Minnesota, more than any other company. Please see our portfolio for examples of our restoration projects that include; shorelines, wetlands, prairies, savannas, and rain gardens.

Please see our **project photo book** at: <http://www.blurb.com/books/6034090-natural-shore-technologies-inc-photobook>

Natural Shore Technologies Plant Material

We have commercial and retail greenhouses in Maple Plain. Our plants are Minnesota native perennials that will flourish year after year. Utilizing our own plant material in our projects assure quality control. Our wetland and prairie plants are guaranteed to establish during the first growing season. Perennial plants put most of their energy into establishing root systems so please keep in mind that the first year of growth will be mainly underground. You will see some flowering the first year, but significantly more flowering during the second year of establishment.

Information about our **retail native plant greenhouses** located in Maple Plain is also available at: www.naturalshore.com

Guarantee

We stand by our native plant material and our ecological restoration services.

Native plants that we install are guaranteed to establish during the first growing season. Any plant material that does not make it through the first growing season will be replaced at no charge to the client.

On projects that we install and manage, we will guarantee successful establishment of your ecological restoration within three full growing seasons. This proposal provides a plan for accomplishing the restoration of the project site. If successful establishment does not occur within three growing seasons, all necessary steps will be taken to ensure the eventual success of the project, at no additional charge. For purposes of this guarantee, successful establishment is defined as follows: That the presence of at least 80% of the original seeded or planted species can be found on the site, and that the overall density of vegetation is comprised of no less than 80% native species.

The only exceptions to this guarantee have to do with plant death due to acts of God (floods or drought) the actions of others (vandalism), or animal herbivory (e.g., geese, muskrats). If these extreme circumstances do happen to occur, we will work with the client at a reduced rate to make all necessary repairs.

Our goal will always be to create successful, long-term partnerships with our clients. Our guarantee is the best in the business, and provides you with a clear understanding that we are here to fully support your ecological restoration endeavor.

Contract

A down payment of \$5,959.00 is required to schedule your project.

The remainder of the project cost is due at project completion.

Please note that this proposal is valid for 30 days from the date on this Contract.

If you would like to proceed with the above outlined project, please sign the contract below.

Client name: Mr. Scott Anderson

Contract Value: \$11,919.20

Signed: _____ **Date** _____

Contractor: *Natural Shore Technologies, Inc.*

Signed:

Contract Date: Contract Date for 30 Day term



William M. Bartodziej, M.S.

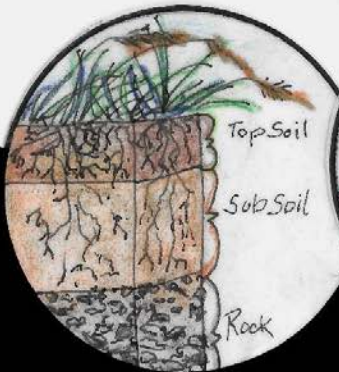
Senior Restoration Ecologist, Natural Shore Technologies

Please return a signed copy of this contract and a check to:

Natural Shore Technologies, Inc.
6275 Pagenkopf Rd.
Maple Plain, MN 55359

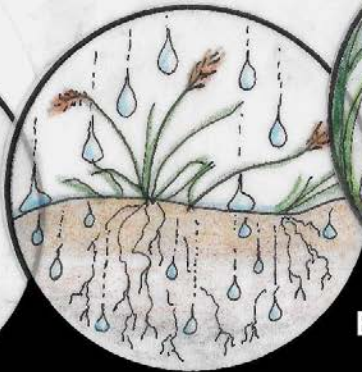


Benefits of our quality restoration work.



Conserve Soil

- Native plants:
- * Build soil health
 - * Capture carbon



Protect Water Quality

- Deep roots:
- * Promote infiltration
 - * Reduce runoff
 - * Prevent erosion from runoff & wave action



Beautiful Landscapes

- * Connect with nature
- * Enjoy your view
- * Wild experiences in your own backyard



Create Habitat

- * For: birds, fish, insects & other wildlife
- * Diverse plant communities
- * Food sources
- * Attract pollinators



Educate Future Conservationists

- * Field experience
- * Make connections between human impact & ecosystem health

Savanna Mix - 1 acre

Common Name Scientific name weight (oz) notes- seed/oz

Grass/Sedge (8 species)			
Plains Oval Sedge	<i>Carex brevior</i>	5	25,000
Field oval sedge	<i>Carex molesta</i>	3	10,000
Long-beaked sedge	<i>Carex sprengeii</i>	12	7,600
Canada rye	<i>Elymus canadensis</i>	64	5,200
Bottlebrush grass	<i>Elymus hystrix</i>	10	5,500
Silky wild rye	<i>Elymus villosus</i>	48	4,200
Virginia wild rye	<i>Elymus virginicus</i>	9	29,000
Little bluestem	<i>Schizachyrium scoparium</i>	48	15,000
total =		199	

12.44

Forb (21 species)	Scientific name	weight (oz)	notes- seed/oz
Canada anemone	<i>Anemone canadensis</i>	1.00	8,000
Tall thimbleweed	<i>Anemone virginiana</i>	0.25	28,000
Wild columbine	<i>Aquilegia canadensis</i>	1.00	30,000
White indigo	<i>Baptisia alba</i>	2.00	1,700
Blue wild indigo	<i>Baptisia australis</i>	2.00	1,500
Hairy wood mint	<i>Blephilia hirsuta</i>	0.25	240,000
Purple coneflower	<i>Echinacea purpurea</i>	5.00	6,600
Pale purple coneflower	<i>Echinacea pallida</i>	3.00	5,200
Big leaf aster	<i>Eurybia macrophylla</i>	0.25	27,000
Blue bottle gentian	<i>Gentiana andrewsii</i>	0.50	280,000
Cream gentian	<i>Gentiana flavida</i>	1.00	140,000
Early sunflower	<i>Heliopsis helianthoides</i>	3.00	4,600
Wild bergamot	<i>Monarda fistulosa</i>	0.50	70,000
Foxglove beardtongue	<i>Penstemon digitalis</i>	0.50	130,000
Large-flowered Beardtongue	<i>Penstemon grandiflorus</i>	2.00	14,000
Jacob's ladder	<i>Polemonium reptans</i>	0.50	18,000
Hairy mountain mint	<i>Pycnanthemum verticillatum</i>	0.25	185,000
Black-eyed susan	<i>Rudbeckia hurta</i>	6.00	6,600
Calico aster	<i>Symphotrichum lateriflorum</i>	0.25	250,000
Spiderwort	<i>Tradescantia ohiensis</i>	2.00	8,000
Golden alexander	<i>Zizia aurea</i>	2.00	11,000
total =		33.250	

2.08

NST - Short Grass Prairie

Common Name	Scientific name	weight (oz)	notes- seed/oz
Grass/Sedge (7 species)			
Side oats grama	<i>Bouteloua curtipendula</i>	72	6,000
Blue grama	<i>Bouteloua gracilis</i>	56	40,000
Prairie brome	<i>Bromus kalmii</i>	6	8,000
Plains Oval Sedge	<i>Carex brevior</i>	3	29,000
June grass	<i>Koeleria macrantha</i>	2	200,000
Little bluestem	<i>Schizachyrium scoparium</i>	72	15,000
Prairie dropseed	<i>Sporobolus heterolepsis</i>	3	16,000
total =		214	

(13.34 lbs)

Forb (25 species)	Scientific name	weight	notes- seed/oz
Anise Hyssop	<i>Agastache foeniculum</i>	0.250	90,000
Prairie onion	<i>Allium stellatum</i>	1.000	11,000
Nodding onion	<i>Allium cernuum</i>	1.000	7,600
Wild columbine	<i>Aquilegia canadensis</i>	0.500	38,000
Butterflyweed	<i>Asclepias tuberosa</i>	5.000	4,300
Heath aster	<i>Aster ericoides</i>	0.125	200,000
Sky blue aster	<i>Aster oolentangiense</i>	0.250	80,000
Aromatic aster	<i>Aster oblongifolius</i>	0.500	51,000
Blue wild indigo	<i>Baptisia australis</i>	1.000	1,500
Cream indigo	<i>Baptisia bracteata</i>	0.500	1,400
Partridge pea	<i>Chamaecrista fasciculata</i>	10.000	2,700
Lance-leaf coreopsis	<i>Coreopsis lanceolata</i>	2.000	20,000
Midland shooting star	<i>Dodecatheon meadia</i>	0.250	60,000
Pale purple coneflower	<i>Echinacea pallida</i>	5.000	5,200
Purple coneflower	<i>Echinacea purpurea</i>	5.000	6,600
Rough blazing star	<i>Liatris aspera</i>	0.500	16,000
Large-flowered Beardtongue	<i>Penstemon grandiflorus</i>	2.000	14,000
White prairie clover	<i>Dalea candida</i>	1.000	19,000
Purple prairie clover	<i>Dalea purpurea</i>	1.000	15,000
Prairie phlox	<i>Phlox pilosa</i>	0.250	19,000
Mountain Mint	<i>Pycnanthemum virginianum</i>	0.125	220,000
Black-eyed susan	<i>Rudbeckia hurta</i>	2.000	92,000
Spiderwort	<i>Tradescantia ohioensis</i>	2.000	8,000
Hoary vervain	<i>Verbena stricta</i>	1.000	28,000
Golden alexander	<i>Zizia aurea</i>	2.000	11,000
total =		44.250	

(2.77 lbs)

Preliminary Plant List - Preserve

Common Name	Scientific Name	Height (ft)	Color	Bloom Time	Sun Exposure	Number
PRAIRIE						
Grasses, Sedges						
Side Oats Grama	<i>Bouteloua curtipendula</i>	1.5 to 2.5	Red-green	July - September	S PS	64
Blue Grama	<i>Bouteloua gracilis</i>	.5 to 1	Green-purple	July-September	S PS	64
Plains oval sedge	<i>Carex brevior</i>	1 to 2	Green	June-July	S PS Sh	64
Canada Wild Rye	<i>Elymus canadensis</i>	3 to 4	Green	July - August	S PS	64
June grass	<i>Koeleria macrantha</i>	1 to 2	Amber	May-June	S	64
Little Bluestem	<i>Schizachyrium scoparium</i>	1.5 to 3	Amber	July - September	S PS	64
Indian Grass	<i>Sorghastrum nutans</i>	4 to 6	Amber	July - September	S PS	64
Prairie Dropseed	<i>Sporobolus heterolepis</i>	1.5 to 3	Green	August - October	S PS	64
Forbs						
Anise Hyssop	<i>Agastache foeniculum</i>	2 to 4	Purple	June-October	S SH	64
Prairie Onion	<i>Allium stellatum</i>	1 to 1.5	Pink	July - September	S PS	64
Butterfly Milkweed	<i>Asclepias tuberosa</i>	1 to 2	Orange	June - September	S PS	64
Blue wild indigo	<i>Baptisia australis</i>	4.0	Blue	May-July	S PS	64
Harebell	<i>Campanula rotundifolia</i>	1.0	Purple	June-August	S PS	64
Lance-leaved Tickseed	<i>Coreopsis lanceolata</i>	2 to 3	Yellow	June-August	S	64
Prairie Coreopsis	<i>Coreopsis palmata</i>	1.5 to 2.5	Yellow	June - September	S PS	64
White prairie clover	<i>Dalea candida</i>	2.0	White	June - September	S PS	64
Purple prairie clover	<i>Dalea purpurea</i>	2.0	Purple	July-September	S PS	64
Pale purple coneflower	<i>Echinacea pallida</i>	2 to 4	Lavender	June-July	S PS	96
Purple coneflower	<i>Echinacea purpurea</i>	4.0	Purple	July-September	S PS	96
Rattlesnake master	<i>Eryngium yuccifolium</i>	4.0	White	July-September	S	64
Prairie Smoke	<i>Geum triflorum</i>	0.5 to 1	Rose	May - June	S PS	64
Oxeye	<i>Heliopsis helianthoides</i>	5.0	Yellow	June-September	S PS	64
Rough Blazingstar	<i>Liatriis aspera</i>	1.5 to 3	Purple	July - September	S PS	64
Dotted blazing star	<i>Liatriis punctata</i>	1 to 2	Purple	August, September	S PS	64
Prairie blazing star	<i>Liatriis pycnostachya</i>	2 to 5	Purple	August - September	S PS	64
Wild bergamot	<i>Monarda fistulosa</i>	4.0	Pink-Purple	July-September	S PS	64
Horsemint	<i>Monarda punctata</i>	2.0	Purple	July-August	S PS	64
Foxglove Beardtongue	<i>Penstemon digitalis</i>	3 to 4	White	July-August	S PS	64
Prairie Phlox	<i>Phlox pilosa</i>	1.5 to 2	Pink	May - June	S PS	64
Pasque flower	<i>Pulsatilla patens</i>	1.0	Purple	May-June	S PS	64
Mountain Mint	<i>Pycnanthemum virginianum</i>	2 to 3	White	July - September	S PS	64
Grey-headed Coneflower	<i>Ratibida pinnata</i>	5.0	Yellow	July-September	S PS	96
Black Eyed Susan	<i>Rudbeckia hirta</i>	2 to 3	Yellow	June - October	S PS	75
Stiff Goldenrod	<i>Solidago rigida</i>	2 to 5	Yellow	August-October	S PS	64
Showy Goldenrod	<i>Solidago speciosa</i>	2 to 3	Yellow	August - September	S PS	64
Heath aster	<i>Symphotrichum ericoides</i>	2 to 4	White	August-September	S PS	64
Smooth blue aster	<i>Symphotrichum laeve</i>	4	Blue	August-October	S PS	64
Aromatic aster	<i>Symphotrichum oblongifolium</i>	2	Purple	August-November	S PS	96
Sky Blue Aster	<i>Symphotrichum oolentangiense</i>	2 to 3.5	Purple	August-October	S PS	64
Ohio Spiderwort	<i>Tradescantia ohioensis</i>	2 to 4	Blue	July - October	S SH	64
Hoary vervain	<i>Verbena stricta</i>	1 to 3	Purple	July-August	S PS	64
Golden Alexanders	<i>Zizia aurea</i>	1 to 3	Yellow	May-July	S PS	64
SAVANNA - WLND						
Thimbleweed	<i>Anemone virginiana</i>	1 to 2	white	June-August	PS SH	96
Sprengel's sedge	<i>Carex sprengei</i>	1 to 2	yellow	April-June	PS SH	96
Bottlebrush Grass	<i>Elymus hystrix</i>	2 to 3	Cream	July-September	PS SH	
Large Leaf Aster	<i>Eurybia macrophylla</i>	.5 to 1.5	White	August - October	PS SH	96
Wild Strawberry	<i>Fragaria virginiana</i>	.4 to .8	White	April - June	S PS	32
Virginia bluebells	<i>Mertensia virginica</i>	1 to 2	blue	April-May	PS SH	8
Jacobs Ladder	<i>Polemonium reptans</i>	0.5 to 1	blue	April-June	S SH	96
Zig Zag Goldenrod	<i>Solidago flexicaulis</i>	2.0	Yellow	August - September	PS SH	96
Total =						3347
Trees and Shrubs						
Red Osier Dogwood	<i>Cornus sericea</i>	6.0	White	May - July	S SH	25
Highbush Cranberry	<i>Viburnum opulus var. americanum</i>	10 to 12	White	June	S SH	25
Total =						50

Backyard Field

The Preserve grounds crew will contribute approximately 60 hours toward buckthorn removal and eradication in this area

At an hourly rate of \$25 that comes to \$1500 as an in kind contribution which is included in total costs

Scott Anderson

Subject: RE: City approval
Date: Tuesday, May 25, 2021 at 12:58:40 PM Central Daylight Time
From: Matthew Bourne <mbourne@edenprairie.org>
To: Scott <scott@preserveassociation.com>
CC: Liz Forbes <LForbes@rpbcd.org>

Hi Scott,

I was able to share this with others and everything looks good to us.

Thanks,

Matt Bourne
Parks and Natural Resources Manager
City of Eden Prairie
952-949-8535

From: Scott <scott@preserveassociation.com>
Sent: Thursday, May 20, 2021 9:17 AM
To: Matthew Bourne <mbourne@edenprairie.org>
Cc: Liz Forbes <LForbes@rpbcd.org>
Subject: RE: City approval

Hi Matt,

When do you think you will be able to look into this?

Scott Anderson
The Preserve Association
11221 Anderson Lakes Pkwy
Eden Prairie, MN 55344
(952) 941-8400

Don't Forget to "Like" our Facebook Page!
<https://www.facebook.com/ThePreserveAssociation/>
<http://preserveassociation.com/>

From: Scott
Sent: Tuesday, May 11, 2021 1:46 PM
To: 'Matthew Bourne' <mbourne@edenprairie.org>
Cc: 'Liz Forbes' <LForbes@rpbcd.org>
Subject: City approval

Matt,

I have included Liz Forbes from RPBCWD in this email.

I am writing to you regarding the two projects The Preserve Association would like to have done this year. One is the "Backyard Prairie" which borders city land that will be transformed at the same time (PA proposal from Natural Shore is attached). The second is at Anderson Lakes Pkwy and Center Way, I have attached the map you gave me with parameters for planting in the right of way along ALP. I've also attached maps outlining the boundaries of the projects.

Please confirmation from the City that they have reviewed the project proposals and boundaries and understand that WSG grant agreement requires that the projects **must stay in place for 5 years** (or the grant money has to be returned).

Also included are links to the WSG Program webpage (<http://www.rpbcd.org/grants/watershed-stewardship-grants-1>) and guidelines (http://www.rpbcd.org/application/files/4616/1532/7421/2021_Watershed_Stewardship_Grant_Guidelines.pdf).

Thank you for your partnership on these projects!

Scott Anderson
The Preserve Association
11221 Anderson Lakes Pkwy
Eden Prairie, MN 55344
(952) 941-8400

Don't Forget to "Like" our Facebook Page!

<https://www.facebook.com/ThePreserveAssociation/>
<http://preserveassociation.com/>

Watershed Stewardship Grant

Grant Award/Disbursement Summary

**Applicant: Scott Anderson
The Preserve Association**

11221 Anderson Lakes Pkwy, Eden Prairie, MN 55344

Project name: Backyard Prairie (33,600 SF)

As part of grant agreement, project must be maintained for 5 years (grant agreement does not require these years of maintenance to be done by a professional). **Incentive for professional maintenance of some projects:** Up to an additional 30% of "Adjusted Grant Dollar Amount" may be added to grant offer to help cover cost of first three years of professional maintenance.

Installation of Project

July 2021-2022

Notes

Total Project Cost (contractor bid)	\$11,919.20	Amount of bid submitted by contractor
In-kind labor	\$1,500.00	60 hours x \$25
Total Eligible Project Cost	\$13,419.20	Total project cost less non-eligible items
Grant Award Percentage	75%	Maximum award: Up to 75%
Grant Dollar Amount Calculation (possible)	\$10,064.40	Maximum for non-profit is \$20,000
Adjusted Grant Dollar Amount (adjusted to stay under maximum allowable)	\$10,000.00	Grant funds disbursed upon confirmation of completion of project installation.

Support for 3 years of professional maintenance

Grant assistance to support 3 years of professional maintenance	30%	Maximum is 30% of Adjusted Grant Dollar Amount
Dollar Amount for 3 Years of Maintenance (Adjusted Grant Dollar Amount x 30%)	\$3,000.00	Maximum available for three years combined

SUMMARY

Amount not to exceed

Timing of funds disbursement

Grant award for project installation	\$10,000.00	<i>Disbursed upon confirmation of project completion (receipts, etc.)</i>
Grant assistance for professional maintenance: Year 1	\$600.00	<i>Disbursed upon confirmation of Year 1 maintenance (receipts, etc.)</i>
Grant assistance for professional maintenance: Year 2	\$700.00	<i>Disbursed upon confirmation of Year 2 maintenance (receipts, etc.)</i>
Grant assistance for professional maintenance: Year 3	\$700.00	<i>Disbursed upon confirmation of Year 3 maintenance (receipts, etc.)</i>
TOTAL GRANT AWARD	\$12,000.00	

Exhibit B Maintenance Plan & Schedule

Prairie Restoration Areas. Prairie restoration areas described in the Site Plan and Design attached as Exhibit A to the Agreement must be maintained as follows:

- a. The prairie restoration will be maintained in perpetuity free from mowing and other vegetative disturbance except as specified herein, fertilizer application, yard or other waste disposal, the placement of structures, or any other alteration that impedes the function of the prairie restoration in protecting water quality, shading riparian edge areas, moderating flow into an adjacent wetland or waterbody or providing habitat.
- b. As feasible under applicable city, county or other code, upland plantings will be subject to annual controlled burning to eliminate invasive species by a qualified professional every three to five years; where burning is not feasible, upland plantings will be mowed to control invasive species. Invasive vegetation will be destroyed by spot treatment; herbaceous vegetation 24 inches tall or more will be mowed to a height of 16 inches.
- c. Upland plantings will be replaced and seeded areas will be reseeded as necessary each spring to maintain ecological health and function and in accordance with a written proposal or plan prepared by the Owner and approved by RPBCWD staff.

Reporting. Owner will submit to the RPBCWD at 1, 3, and 5 years following completion of the project described in the Site Plan and Design attached as Exhibit A to the Agreement a brief written report that describes the maintenance activities performed under the Agreement to which this Exhibit is attached, including dates, locations of inspection, maintenance activities performed and photographs of the Project.

**SHORT FORM AGREEMENT BETWEEN OWNER AND
HDR ENGINEERING, INC. FOR PROFESSIONAL SERVICES**

THIS AGREEMENT is made as of this 30th day of July 2021, between Riley Purgatory Bluff Creek Watershed District (“OWNER”) a government unit responsible for managing and protecting water resources, with principal offices at 18681 Lake Drive East, Chanhassen, MN 55317, and HDR ENGINEERING, INC., (“ENGINEER” or “CONSULTANT”) for services in connection with the project known as (2021-2022 Website Services) (“Project”);

WHEREAS, OWNER desires to engage ENGINEER to provide professional engineering, consulting and related services (“Services”) in connection with the Project; and

WHEREAS, ENGINEER desires to render these Services as described in SECTION I, Scope of Services.

NOW, THEREFORE, OWNER and ENGINEER in consideration of the mutual covenants contained herein, agree as follows:

SECTION I. SCOPE OF SERVICES

ENGINEER will provide Services for the Project, which consist of the Scope of Services as outlined on the attached Exhibit A.

SECTION II. TERMS AND CONDITIONS OF ENGINEERING SERVICES

The HDR Engineering, Inc. Terms and Conditions, which are attached hereto in Exhibit B, are incorporated into this Agreement by this reference as if fully set forth herein.

SECTION III. RESPONSIBILITIES OF OWNER

The OWNER shall provide the information set forth in paragraph 6 of the attached “HDR Engineering, Inc. Terms and Conditions for Professional Services.”

SECTION IV. COMPENSATION

Compensation for ENGINEER’S services under this Agreement shall be on the basis of Time and Materials shall mean actual labor hours at the rates included in Exhibit A, to be paid as total compensation for each hour an employee works on the project, plus Reimbursable Expenses. HDR will perform the Scope of Services identified in Exhibit A on a time and expenses basis for a not-to-exceed fee of \$9,995

The amount of any sales tax, excise tax, value added tax (VAT), or gross receipts tax that may be imposed on this Agreement shall be added to the ENGINEER'S compensation as Reimbursable Expenses.

Compensation terms are defined as follows:

Direct Labor Cost shall mean salaries and wages, (basic and overtime) paid to all personnel engaged directly on the Project. The Direct Labor Costs and the factor applied to Direct Labor Costs will be adjusted annually as of the first of every year to reflect equitable changes to the compensation payable to Engineer.

Reimbursable Expense shall mean the actual expenses incurred directly or indirectly in connection with the Project for transportation travel, subconsultants, subcontractors, technology charges, telephone, telex, shipping and express, and other incurred expense. ENGINEER will add ten percent (10%) to invoices received by ENGINEER from subconsultants and subcontractors to cover administrative expenses and vicarious liability.

SECTION V. PERIOD OF SERVICE

Upon receipt of written authorization to proceed, ENGINEER shall perform the services

within the time period(s) described in Exhibit A.

as follows:

Unless otherwise stated in this Agreement, the rates of compensation for ENGINEER'S services have been agreed to in anticipation of the orderly and continuous progress of the project through completion. If any specified dates for the completion of ENGINEER'S services are exceeded through no fault of the ENGINEER, the time for performance of those services shall be automatically extended for a period which may be reasonably required for their completion and all rates, measures and amounts of ENGINEER'S compensation shall be equitably adjusted.

SECTION VI. SPECIAL PROVISIONS

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first written above.

"OWNER"

BY: _____

NAME: _____

TITLE: _____

ADDRESS: _____

HDR ENGINEERING, INC.

"ENGINEER"

BY: Christine A. Wiegert

NAME: Christine A. Wiegert

TITLE: Vice President

ADDRESS: 1601 Utica Ave South, Suite 600
Minneapolis, MN 55416

EXHIBIT A

SCOPE OF SERVICES

Terry Jeffery, Interim District Administrator & Watershed Planning Manager
Riley Purgatory Bluff Creek Watershed District
18681 Lake Drive East
Chanhassen, MN 55317

Mr. Jeffery,

Please find HDR's scope and budget for 2021-2022 Website Services below. We look forward to continuing our work for RPBCWD!

Scope of Services

Task 1: Project Management

Includes:

- Invoices as required (up to 6)
- Contract administration

Task 2: Monthly Website Maintenance

Includes:

- Response to questions from RBPCWD regarding the website
- Modifications to existing web services or web graphics as needed
- Response to system issues resulting in disrupted function or site downtime
- Required system upgrades or patches
- Web hosting and domain renewal for one year

Assumptions:

- HDR assumes 1 hours/month for website maintenance for the duration of the contract If web service modification or addition requests are significant and require more than the 1 hours allotted per month, a contract amendment will be required.
- HDR will make modifications to existing website graphics within the 1 allotted hours per month. New graphic requests will require a contract amendment.
- HDR will support browser versions that are currently active and supported by their creating companies. In particular, Chrome, Firefox, Safari, and Internet Explorer version 11+.

Task 3: Website Redevelopment

Includes:

- One and final preliminary design mockups of home page to set design direction



- One draft and final mockup of home page and 10 top-level pages
- Redevelopment and migration of existing site to new, upgraded version of the Concrete5 CMS
- Additional features:
 - One searchable, filterable document library
 - Filterable event calendar

Assumptions:

- HDR will use version 8.5 (latest available) version of Concrete5
- RPBCWD will migrate and organize documents
- RPBCWD will migrate new and event postings
- RPBCWD will provide any new multimedia assets as requested for the website
- HDR will continue to host the site on it's VPS through Veerotech, where the existing site is hosted.

Budget

Based on the scope of work described above, HDR proposes to provide these services on a time and expenses basis with a limit **not to exceed** \$9,995 without prior authorization of Riley Purgatory Bluff Creek Watershed District.

Task	Hours	Cost
Task 1: Project Management	6 hours	\$1,680
Task 2: Monthly Website Maintenance	12 hours (1 hours/month for 1 years)	\$1,955
Task 3: Website Redevelopment	39 hours	\$6,355
Total Cost	59 hours	\$9,995

Schedule

This contract is valid from July 26, 2021 through July 26, 2022.

EXHIBIT B

TERMS AND CONDITIONS

HDR Engineering, Inc. Terms and Conditions for Consulting Services

1. STANDARD OF PERFORMANCE

The standard of care for all professional engineering, consulting and related services performed or furnished by CONSULTANT and its employees under this Agreement will be the care and skill ordinarily used by members of CONSULTANT's profession practicing under the same or similar circumstances at the same time and in the same locality. CONSULTANT makes no warranties, express or implied, under this Agreement or otherwise, in connection with CONSULTANT's services.

2. INSURANCE/INDEMNITY

CONSULTANT agrees to procure and maintain, at its expense, Workers' Compensation insurance as required by statute; Employer's Liability of \$250,000; Automobile Liability insurance of \$1,000,000 combined single limit for bodily injury and property damage covering all vehicles, including hired vehicles, owned and non-owned vehicles; Commercial General Liability insurance of \$1,000,000 combined single limit for personal injury and property damage; and Professional Liability insurance of \$1,000,000 per claim for protection against claims arising out of the performance of services under this Agreement caused by negligent acts, errors, or omissions for which CONSULTANT is legally liable. OWNER shall be made an additional insured on Commercial General and Automobile Liability insurance policies and certificates of insurance will be furnished to the OWNER. CONSULTANT agrees to indemnify OWNER for third party personal injury and property damage claims to the extent caused by CONSULTANT's negligent acts, errors or omissions. However, neither Party to this Agreement shall be liable to the other Party for any special, incidental, indirect, or consequential damages (including but not limited to loss of use or opportunity; loss of good will; cost of substitute facilities, goods, or services; cost of capital; and/or fines or penalties), loss of profits or revenue arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to any such damages caused by the negligence, errors or omissions, strict liability or breach of contract.

3. ESTIMATES

Any estimates of project cost, value or savings provided by CONSULTANT are intended to allow a comparative evaluation between alternatives and do not constitute a detailed evaluation or prediction of actual project costs, value or savings. Any such estimates are made on the basis of information available to CONSULTANT and on the basis of CONSULTANT's experience and qualifications, and represents its judgment as an experienced and qualified professional engineer. However, since CONSULTANT has no control over the impact of various factors that impact the actual project cost, value or savings, CONSULTANT does not guarantee that the actual project cost, value or savings will not vary from CONSULTANT's estimates.

4. CONTROLLING LAW

This Agreement is to be governed by the law of the state where CONSULTANT's services are performed.

5. SUCCESSORS, ASSIGNS AND BENEFICIARIES

OWNER and CONSULTANT, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the covenants of this Agreement. Neither OWNER nor CONSULTANT will assign, sublet, or transfer any interest in this Agreement or claims arising therefrom without the written consent of the other. No third party beneficiaries are intended under this Agreement.

6. SERVICES AND INFORMATION

OWNER will provide all criteria and information pertaining to OWNER's requirements for the project, including design

objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations. OWNER will also provide copies of any OWNER-furnished Standard Details, Standard Specifications, or Standard Bidding Documents which are to be incorporated into the project.

OWNER will furnish the services of soils/geotechnical engineers or other consultants that include reports and appropriate professional recommendations when such services are deemed necessary by CONSULTANT. The OWNER agrees to bear full responsibility for the technical accuracy and content of OWNER-furnished documents and services.

In performing professional engineering, consulting and related services hereunder, it is understood by OWNER that CONSULTANT is not engaged in rendering any type of legal, insurance or accounting services, opinions or advice. Further, it is the OWNER's sole responsibility to obtain the advice of an attorney, insurance counselor or accountant to protect the OWNER's legal and financial interests. To that end, the OWNER agrees that OWNER or the OWNER's representative will examine all studies, reports, sketches, drawings, specifications, proposals and other documents, opinions or advice prepared or provided by CONSULTANT, and will obtain the advice of an attorney, insurance counselor or other consultant as the OWNER deems necessary to protect the OWNER's interests before OWNER takes action or forebears to take action based upon or relying upon the services provided by CONSULTANT.

7. RE-USE OF DOCUMENTS

All documents, including all reports, drawings, specifications, computer software or other items prepared or furnished by CONSULTANT pursuant to this Agreement, are instruments of service with respect to the project. CONSULTANT retains ownership of all such documents. OWNER may retain copies of the documents for its information and reference in connection with the project; however, none of the documents are intended or represented to be suitable for reuse by OWNER or others on extensions of the project or on any other project. Any reuse without written verification or adaptation by CONSULTANT for the specific purpose intended will be at OWNER's sole risk and without liability or legal exposure to CONSULTANT, and OWNER will defend, indemnify and hold harmless CONSULTANT from all claims, damages, losses and expenses, including attorney's fees, arising or resulting therefrom. Any such verification or adaptation will entitle CONSULTANT to further compensation at rates to be agreed upon by OWNER and CONSULTANT.

8. TERMINATION OF AGREEMENT

OWNER or CONSULTANT may terminate the Agreement, in whole or in part, by giving seven (7) days written notice to the other party. Where the method of payment is "lump sum," or cost reimbursement, the final invoice will include all services and expenses associated with the project up to the effective date of termination. An equitable adjustment shall also be made to provide for termination settlement costs CONSULTANT incurs as a result of commitments that had become firm before termination, and for a reasonable profit for services performed.

9. SEVERABILITY

If any provision of this agreement is held invalid or unenforceable, the remaining provisions shall be valid and binding upon the parties. One or more waivers by either party of any provision, term or condition shall not be construed by the other party as a waiver of any subsequent breach of the same provision, term or condition.

10. CONTROLLING AGREEMENT

These Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice-to-proceed, or like document.

11. INVOICES

CONSULTANT will submit monthly invoices for services rendered and OWNER will make payments to CONSULTANT within thirty (30) days of OWNER's receipt of CONSULTANT's invoice.

CONSULTANT will retain receipts for reimbursable expenses in general accordance with Internal Revenue Service rules pertaining to the support of expenditures for income tax purposes. Receipts will be available for inspection by OWNER's auditors upon request.

If OWNER disputes any items in CONSULTANT's invoice for any reason, including the lack of supporting documentation, OWNER may temporarily delete the disputed item and pay the remaining amount of the invoice. OWNER will promptly notify CONSULTANT of the dispute and request clarification and/or correction. After any dispute has been settled, CONSULTANT will include the disputed item on a subsequent, regularly scheduled invoice, or on a special invoice for the disputed item only.

OWNER recognizes that late payment of invoices results in extra expenses for CONSULTANT. CONSULTANT retains the right to assess OWNER interest at the rate of one percent (1%) per month, but not to exceed the maximum rate allowed by law, on invoices which are not paid within thirty (30) days from the date OWNER receives CONSULTANT's invoice. In the event undisputed portions of CONSULTANT's invoices are not paid when due, CONSULTANT also reserves the right, after seven (7) days prior written notice, to suspend the performance of its services under this Agreement until all past due amounts have been paid in full.

12. CHANGES

The parties agree that no change or modification to this Agreement, or any attachments hereto, shall have any force or effect unless the change is reduced to writing, dated, and made part of this Agreement. The execution of the change shall be authorized and signed in the same manner as this Agreement. Adjustments in the period of services and in compensation shall be in accordance with applicable paragraphs and sections of this Agreement. Any proposed fees by CONSULTANT are estimates to perform the services required to complete the project as CONSULTANT understands it to be defined. For those projects involving conceptual or process development services, activities often are not fully definable in the initial planning. In any event, as the project progresses, the facts developed may dictate a change in the services to be performed, which may alter the scope. CONSULTANT will inform OWNER of such situations so that changes in scope and adjustments to the time of performance and compensation can be made as required. If such change, additional services, or suspension of services results in an increase or decrease in the cost of or time required for performance of the services, an equitable adjustment shall be made, and the Agreement modified accordingly.

13. EQUAL EMPLOYMENT AND NONDISCRIMINATION

In connection with the services under this Agreement, CONSULTANT agrees to comply with the applicable provisions of federal and state Equal Employment Opportunity for individuals based on color, religion, sex, or national origin, or disabled veteran, recently separated veteran, other protected veteran and armed forces service medal veteran status, disabilities under provisions of executive order 11246, and other

employment, statutes and regulations, as stated in Title 41 Part 60 of the Code of Federal Regulations § 60-1.4 (a-f), § 60-300.5 (a-e), § 60-741 (a-e).

14. EXECUTION

This Agreement, including the exhibits and schedules made part hereof, constitute the entire Agreement between CONSULTANT and OWNER, supersedes and controls over all prior written or oral understandings. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by the parties.

15. ALLOCATION OF RISK

OWNER AND CONSULTANT HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING CONSULTANT'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE RISKS, SO, TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF CONSULTANT (AND ITS RELATED CORPORATIONS, SUBCONSULTANTS AND EMPLOYEES) TO OWNER AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE LESSER OF \$1,000,000 OR ITS FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF CONSULTANT'S SERVICES OR THIS AGREEMENT REGARDLESS OF CAUSE(S) OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY.

16. LITIGATION SUPPORT

In the event CONSULTANT is required to respond to a subpoena, government inquiry or other legal process related to the services in connection with a legal or dispute resolution proceeding to which CONSULTANT is not a party, OWNER shall reimburse CONSULTANT for reasonable costs in responding and compensate CONSULTANT at its then standard rates for reasonable time incurred in gathering information and documents and attending depositions, hearings, and trial.

17. NO THIRD PARTY BENEFICIARIES

This Agreement gives no rights or benefits to anyone other than the OWNER and CONSULTANT and has no third-party beneficiaries. All work product will be prepared for the sole and exclusive use of the OWNER and is not for the benefit of any third party and may not be distributed to, disclosed in any form to, used by, or relied upon by, any third party without the prior written consent of CONSULTANT, which consent may be withheld in its sole discretion. OWNER agrees to indemnify CONSULTANT and its officers, employees, subcontractors, and affiliated corporations from all claims, damages, losses, and costs, including but not limited to litigation expenses and attorney's fees arising out of or related to the unauthorized disclosure, change, or alteration of such work product.

Use of any report or any information contained therein by any party other than OWNER shall be at the sole risk of such party and shall constitute a release and agreement by such party to defend and indemnify CONSULTANT and its affiliates, officers, employees and subcontractors from and against any liability for direct, indirect, incidental, consequential or special loss or damage or other liability of any nature arising from said party's use of such report or reliance upon any of its content. To the maximum extent permitted by law, such release from and indemnification against liability shall apply in contract, tort (including negligence), strict liability, or any other theory of liability.

18. DISCLAIMER

In preparing reports, CONSULTANT relies, in whole or in part, on data and information provided by the OWNER and third parties, which information has not been independently verified by CONSULTANT and which CONSULTANT has assumed to be accurate, complete, reliable, and current. Therefore, while CONSULTANT has utilized the customary professional standard of care in preparing this report, CONSULTANT does not warrant or guarantee the conclusions set forth in reports which are dependent or based upon data, information or statements supplied by third parties or the OWNER.

19 OPERATIONAL TECHNOLOGY SYSTEMS

OWNER agrees that the effectiveness of operational technology systems ("OT Systems") and features designed, recommended or assessed by CONSULTANT are dependent upon OWNER's continued operation and maintenance of the OT Systems in accordance with all standards, best practices, laws, and regulations that govern the operation and maintenance of the OT Systems. OWNER shall be solely responsible for operating and maintaining the OT System in accordance with applicable industry standards (i.e. ISA, NIST, etc.) and best practices, which generally include but are not limited to, cyber security policies and procedures, documentation and training requirements, continuous monitoring of assets for tampering and intrusion, periodic evaluation for asset vulnerabilities, implementation and update of appropriate technical, physical, and operational standards, and offline testing of all software/firmware patches/updates prior to placing updates into production. Additionally, OWNER recognizes and agrees that OT Systems are subject to internal and external breach, compromise, and similar incidents. Security features designed, recommended or assessed by CONSULTANT are intended to reduce the likelihood that OT Systems will be compromised by such incidents. However, CONSULTANT does not guarantee that OWNER's OT Systems are impenetrable and OWNER agrees to waive any claims against CONSULTANT resulting from any such incidents that relate to or affect OWNER's OT Systems.

20. FORCE MAJEURE

CONSULTANT shall not be responsible for delays caused by factors beyond CONSULTANT's reasonable control, including but not limited to delays because of strikes, lockouts, work slowdowns or stoppages, government ordered industry shutdowns, power or server outages, acts of nature, widespread infectious disease outbreaks (including, but not limited to epidemics and pandemics), failure of any governmental or other regulatory authority to act in a timely manner, failure of the OWNER to furnish timely information or approve or disapprove of CONSULTANT's services or work product, or delays caused by faulty performance by the OWNER's or by contractors of any level or any other events or circumstances not within the reasonable control of the party affected, whether similar or dissimilar to any of the foregoing. When such delays beyond CONSULTANT's reasonable control occur, the OWNER agrees that CONSULTANT shall not be responsible for damages, nor shall CONSULTANT be deemed in default of this Agreement, and the parties will negotiate an equitable adjustment to CONSULTANT's schedule and/or compensation if impacted by the force majeure event or condition.

RPBCWD June Staff Report

Administration		Staff update	Partners
Accounting, Audit, and Budget	<p>Coordinate with Accountants for the development of financial reports.</p> <p>Coordinate with the Auditor.</p> <p>Continue to work with the Treasurer to maximize on fund investments.</p>	<p>Staff Bakkum and Interim Administrator Jeffery compiled the monthly treasurer's report.</p> <p>To increase efficiency and better track expenses, the accounting software Quickbooks Online was purchased. This software allows staff to input invoices and receipts, track payments, and explore future functionality such as receiving online payments, tracking staff time, etc.</p> <p>Interim Administrator Jeffery, District Engineer Sobiech, and Office Administrator Bakum reviewed the existing budget and the 10-year plan to begin budgeting.</p> <p>Interim Administrator Jeffery met with Manager Koch, Manager Crafton, and the Auditors to discuss changes to the auditor report.</p> <p>Interim Administrator Jeffery and Office Administrator Bakum met with Redpath Accounting to discuss 2022 budget.</p>	
Administration		<p>Interim Administrator Jeffery, Staff Forbes, and Staff Mahon met with the staff from the City of Chanhasen including City Manager Hokanen to discuss partnership opportunities related to the Lake Ann Preserve, conversion of lawn to prairie at city facilities, and future downtown Chanhasen redevelopment.</p>	
Annual Report & Communication	<p>Compile, finalize and submit an annual report to agencies.</p>	<p>Staff Mahon has begun working on the 2021 Annual Communication which is the calendar we alternate with Nine Mile in putting together.</p>	

DEI	Diversity, Equity and Inclusion	No change.	
Human Resources	General Human Resources	Office Administrator Bakkum and Interim Administrator Jeffery have solicited proposals from HR firms. These will be brought to the board in August.	
Internal Policies	Work with Governance Manual and Personnel Committees to review bylaws and manuals as necessary.	Interim Administrator Jeffery will schedule a meeting with personnel committee to discuss employee performance and compensation.	
Advisory	Engage with the Technical Advisory Committee on water conservation, chloride management and emerging topics. Engage with the Citizen Advisory Committee on water conservation, annual budget and emerging topics.	The CAC held a regular meeting on June 21. Professor Alexander from U of M gave a learning presentation on seeps and springs, and Staff Mahon gave a presentation on water conservation. No July meeting will be held. The next meeting in August will be a brainstorming session.	

Local SWMP		No change.	
MAWD		Watershed Based Implementation Funding has been of primary concern as MAWD has entered in to discussions with BWSR. RWMWD and CRWD have sent a letter to BWSR outlining how they feel funding should be allocated.	
District-Wide			
Regulatory Program	Review regulatory program to maximize efficiency. Engage Technical Advisory Committee and Citizen Advisory Committee on possible rule changes. Implement a regulatory program.	The new public interface is up and running for the permit database and application. You can view that here: MS4 Permit Software (ms4front.net) Eleven applications for a permit have been received since the June meeting. Five permits have been administratively approved since the June meeting.	

<p>Aquatic Invasive Species</p>	<p>Review AIS monitoring program. Develop and implement Rapid Response Plan as appropriate Coordinate with LGUs and keep stakeholders aware of AISmanagement activities. Manage and maintain the aeration system on Rice Marsh Lake. Riley Chain of Lakes Carp Management. Purgatory Chain of Lakes Carp Management. Review AIS inspection program. Keep abreast in technology and research in AIS. Zebra mussel adult and veliger monitoring.</p>	<p>The Purgatory Creek Rec Area (PCRA)/Staring fish barrier remained closed over the winter and so far, this year. Staff have removed 511 carp below the barrier across four sampling events. warranted. Low water and lack of water has ended spring removals early this year due to lack of fish movement. Staff purchased and stocked 1,000 bluegills – 800 Rice Marsh Lake and 200 in Purgatory Creek Recreational Area. These stockings should help prevent carp from having a successful recruitment year in these systems. Water samples were collected this month on all lakes to be scanned for zebra mussel veligers.</p>	<p>City of Chanhassen City of Eden Prairie University of Minnesota MN DNR Carver County</p>
<p>Cost-Share</p>	<p>Schedule and coordinate site visits. Review applications and recommend implementation. Evaluate program.</p>	<p>More than 40 site visits with potential WSG applicants have been conducted in 2021. A total of seven WSG agreements have been executed so far in 2021. Several other grant agreements are pending signatures or approaching the signature stage. Three WSG applications are pending review. Staff Forbes created an online project completion report and an online annual project report as a convenient way for grantees to submit project information.</p>	<p>Carver County Soil and Water Conservation District</p>

<p>Data Collection</p>	<p>Continue Data Collection at permanent sites. Watershed Outlet Monitoring Program. Identify monitoring sites to assess future project sites.</p>	<p>WOMP stations: samples were collected 3 times this month for the Metropolitan Council. Staff conducted two regular stream sampling events and one regular lake sampling event in May. A total of 4 stormwater ponds are being monitored biweekly to add to the District's and partners stormwater pond work to understand and improve function of the ponds. Staff have placed three auto sampling stations this year: Site B5 - Bluff Creek/Hwy 5. Site LL_7 - West Lotus Lake North Tributary. Site STL_17 - Purgatory Creek/Staring Lake Parkway. These stations were placed to collect more storm event nutrient and flow data to assess/confirm upstream loading for the proposed upcoming project sites. Bank pin erosion data was collected at all regular stream monitoring sites this month. The Purgatory Creek Recreational Area appears to have had a partial fish kill this month. Staff received reports of a limited fish kill on Red Rock Lake last month. These minor kills have been due to stress associated with primarily spawning stress, rapidly rising temperatures, and columnaris bacteria.</p>	<p>Metropolitan Council City of Eden Prairie University of MN City of Chanhassen MNDNR City of Minnetonka</p>
<p>District Hydrology and Hydraulics Model</p>	<p>Coordinate maintenance of Hydrology and Hydraulics Model. Coordinate model update with LGUs if additional information is collected. Partner and implement with the City of Bloomington on Flood Evaluation and Water Quality Feasibility.</p>	<p>District Staff, Barr Engineering, and Eden Prairie staff have been in discussions about updates to the District's stormwater model within the City (both Purgatory Creek and Riley Creek models). District staff have installed monitoring equipment in the Upper Purgatory Creek Recreational Area, Bren Pond, Eden Lake, and three additional ponds. Three stream units were also installed on Purgatory Creek. This data will be used for model validation.</p>	<p>City of Bloomington City of Minnetonka City of Eden Prairie City of Deephaven City of Shorewood.</p>

<p>Education and Outreach</p>	<p>Implement Education & Outreach Plan, review at year end. Manage partnership activities with other organizations. Coordinate Public Engagement with District projects.</p>	<p>Staff Bakkum continues to receive inquiries via the District’s website “Contact Us” form. Staff Mahon sent out 150+ postcards to local property managers, housing complexes, faith-based organizations and schools to advertise upcoming July 15th Smart Salting training. Staff Mahon met with NMCWD and the Cities of Eden Prairie, Minnetonka and Bloomington to discuss the future of the Adopt-A-Drain program. Staff Mahon is putting together learning topics to add to website. Staff Forbes is coordinating with HDR and holding internal meetings to move website redevelopment forward. Staff Forbes has developed website map as well as content prioritization to create a more user friendly and intuitive website. Interim Administrator Jeffery, Staff Forbes, and Staff Mahon met with City of Chanhassen staff to discuss opportunities for collaboration at the city’s new preserve property on the west side of Lake Ann. Staff Forbes is updating waterbody fact sheets with 2020 data.</p>	<p>Adopt a drain: City of Eden Prairie, City of Minnetonka, City of Bloomington, City of Eden Prairie Hamline University, Nine Mile Creek Watershed District, MPCA, Fortin Consulting</p> <p>City of Chanhassen</p>
<p>Groundwater Conservation</p>	<p>Work with other LGUs to monitor, assess, and identify gaps. Engage with the Technical Advisory Committee to identify potential projects. Develop a water conservation program (look at Woodbury model).</p>	<p>The CAC has passed a motion requesting that the Board of Managers direct staff to begin inventorying springs and seeps in the District and populate the DNR Spring and Seep Inventory Database. With the hire of Staff Mahon and Staff Forbes it is anticipated that the District will begin work on this initiative again.</p>	<p>Metropolitan Council City of Eden Prairie City of Shorewood City of Bloomington City of Minnetonka City of Chanhassen</p>

<p>Lake Vegetation Management</p>	<p>Work with the University of Minnesota or Aquatic Plant Biologist, Cities of Chanhassen and Eden Prairie, lake associations, and residents as well as the Minnesota Department of Natural Resources on potential treatment. Implement herbicide treatment as needed. Secure DNR permits and contracts with herbicide applicators. Lakes the District is monitoring for treatment include: Lake Susan, Lake Riley, Lotus Lake, Mitchell Lake, Red Rock Lake, and Staring Lake. Work with Three Rivers Park District for Hyland Lake.</p>	<p>Spring herbicide application surveys were completed, and diquat herbicide was applied. Below is a list of what was treated:</p> <ul style="list-style-type: none"> • CLP - Red Rock - 13.04 acres • CLP - Mitchell - 12.8 acres • CLP - Lotus – 22.8 acres • CLP - Riley - 22.3 acres • CLP - Susan - 8.64 acres <p>This year Point Intercept Vegetation Surveys will be conducted on:</p> <ul style="list-style-type: none"> • Red Rock • Staring • Riley • Idlewild • McCoy 	<p>City of Eden Prairie City of Chanhassen University of Minnesota MNDNR</p>
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Opportunity Projects	Assess potential projects as they are presented to the District.	Interim Administrator Jeffery, Staff Forbes, and Staff Mahon met with the Chanhassen City Administrator and Chanhassen Parks and Recreation Director to identify future efforts to align goals and collaborate on projects. St Hubert project will begin construction by mid July.	Chanhassen St Hubert School
Total Maximum Daily Load	Continue working with Minnesota Pollution Control Agency on the Watershed Restoration and Protection Strategies (WRAPS). Engage the Technical Advisory Committee.	No new updates	MPCA
Repair and Maintenance Grant	Develop and formalize grant program.	Interim Administrator Jeffery and Engineer Sobiech have begun preliminary conversations regarding how this might be applied to the District's existing facilities.	
University of Minnesota	Review and monitor progress on University of Minnesota grant. Support Dr John Gulliver and Dr Ray Newman research and coordinate with local partners. Keep the manager abreast to progress in the research. Identify next management steps.	Staff and University of Minnesota staff have been working to get access to additional ponds for sampling as well as to continue the iron filings research in 2021. The U of MN has a new project funded by the Local Road Research Board to study wetlands (historic/converted to pond) and they will be conducting in situ monitoring and laboratory studies with sediment cores on a pond in Shorewood and Chanhassen.	Stormwater ponds partners: Bloomington, Chanhassen, Eden Prairie, Minnetonka, Shorewood, U of MN,

Watershed Plan	Review and identify needs for amendments.	No changes	
Wetland Conservation Act (WCA)	Administer WCA within the Cities of Shorewood and Deephaven. Represent the District on Technical Evaluation Panel throughout the District.	No WCA applications have been received in Deephaven. No WCA applications have been received in Shorewood.	City of Shorewood City of Deephaven City of Chanhassen City of Eden Prairie MCWD BWSR DNR ACOE
Wetland Management	Assess known existing wetlands, identify previously unknown wetlands, identify wetlands for potential restoration/ rehabilitation and wetlands requiring additional protection.	Staff Jeffery, Staff Dickhausen and staff Nicklay continue updating the MNRAM Access database. Staff Dickhausen and Interim Administrator Jeffery are continuing to develop biological assessment metrics of wetlands with Barr Engineering staff to supplement District MNRAM assessments. Staff Dickhausen with minor help from Interim Administrator Jeffery submitted WCA and ACOE permit applications along with delineation reports for District projects and secured permissions.	City of Chanhassen City of Eden Prairie Hennepin County Carver County MNDNR BWSR USFWS
Hennepin County Chloride Initiative	Phase 1: Develop a plan to target commercial and association-based sources or chloride pollution - businesses, malls, HOAs, property management companies and the private applicators that they hire. We will hire a consultant to facilitate focus groups with private applicators, as well as those that execute contracts with private applicators. These focus groups will help identify needs and barriers for our target audience. The	Staff Forbes developed a draft communication plan for property managers for the HCCI education subgroup. The group is currently reviewing and will discuss at the next meeting on July 7.	

	consultant will compile information into a plan for implementation.		
Lower Minnesota Chloride Cost-Share Program	The Lower Minnesota River Watersheds are coming together to offer cost-share grants.	Chloride Reduction cost-share grant remains open and is posted on District website and advertised through Fortin Consulting and the MPCA.	LMRWD, RBWMO, NMCWD
Bluff Creek One Water			
Bluff Creek Tributary Restoration	Implement and finalize restoration. Monitor Project.	Staff Maxwell walked the site and observed good vegetation growth.	City of Chanhassen
Wetland Restoration at Pioneer and 101	Remove 3 properties from flood zone, restore a minimum 7 acres and as many as 16 acres of wetlands, connect public with resources, reduction of volume, rate, pollution loads to Bluff Creek.	Staff Dickhausen conducted a site visit with City of Chanhassen and Carver County staff in June to review the site's wetland delineation report. City and County staff found no issue with proposed wetland boundaries after observing the site. Interim Administrator Jeffery is working with Carver County Recorder and Counselor Welch to address 0.08' discrepancy in property description for the most westerly property. Plans and Specifications were submitted for bid solicitation.	City of Chanhassen MN DNR Carver County
Riley Creek One Water			

Lake Riley Alum	Continuing to monitor the Lake.	Coring will occur in the fall of 2021 to assess the effectiveness of the alum application. Summer monitoring will continue.	
Lake Susan Improvement Phase 2	Complete final site stabilization and spring start up. Finalize and implement E and O for the project. Monitor project.	There has been issues with the priming of the system which has led to gaps where the system is not online. District Administrator Jeffery and Engineer Sobiech are work with the Contractor (Peterson) to address this issue moving forward.	City of Chanhassen Clean Water Legacy Amendment
Lake Susan Spent Lime	2021 startup and monitoring.	The unit was turned on in May and an Enviro DIY unit was placed to monitor water levels. Samples are being collected at least once a week.	City of Chanhassen
Lower Riley Creek Stabilization	Coordinate agreement and acquire easements if needed for the restoration of Lower Riley Creek reach D3 and E. Implement Project. Continue Public Engagement for project and develop signage of restoration.	Interim Administrator Jeffery, Water Resources Coordinator Maxwell, and staff from Eden Prairie will be walking the corridor in July prior to handing over maintenance responsibilities.	City of Eden Prairie Lower MN River Watershed District
Rice Marsh Lake Alum Treatment	Continuing to monitor the Lake.	No new updates.	City of Eden Prairie City of Chanhassen
Rice Marsh Lake Watershed Load Project 1	Conduct feasibility. Develop cooperative agreement with City of Chanhassen.	The Chanhassen City Council approved the Cooperative agreement with the District. Final plans are completed and Interim Administrator Jeffery and Engineer Sobiech are requesting to go out for bids.	City of Chanhassen
Upper Riley Creek	Work with city to develop scope of work(in addition to stabilizing the creek can we mitigate for climate change). Conduct feasibility. Develop cooperative agreement with the City of Chanhassen. Order project and begin design.	Interim Administrator Jeffery is working with Counselor Welch to develop the term sheet and subsequent cooperative agreement with Chanhassen.	City of Chanhassen

<p>Middle Riley Creek</p>	<p>Work with Bearpath HOA/Golf Course to develop scope of work (in addition to stabilizing the creek can we mitigate for climate change and provide for an improved recreational experience). Draft feasibility report. Develop cooperative agreement with Bearpath.</p>	<p>Engineer Sobiech, Counselor Smith, and Interim Administrator Jeffery have been working with legal counsel and maintenance staff for Bearpath Golf Course to finalize cooperative agreement and property license. Administrator Jeffery would like to acknowledge the efforts of Engineer Sobiech and Counselor Smith in making this happen.</p> <p>Staff Dickhausen conducted a site visit with City of Eden Prairie staff in June to review the site's wetland delineation report.</p>	<p>Bearpath Neighborhood Association. City of Eden Prairie Dept. of Natural Resources</p>
<p>St Hubert Water Quality Project</p>		<p>Minger Construction has installed safety fence at the site and will begin work Interim Administrator Jeffery and Staff Mahon are working with the school to develop curriculum. Engineer Sobiech and Interim Administrator Jeffery are working to develop soil sampling protocol based upon Cornell University guidance.</p>	<p>CCSWCD Metropolitan Council City of Chanhassen</p>
<p>Purgatory Creek One Water</p>			
<p>PCRA Berm</p>		<p>No updates.</p>	<p>City of Eden Prairie MN DNR</p>
<p>Duck Lake Water Quality Project</p>	<p>Work with the City to implement neighborhood BMP. Identify neighborhood BMP to help improve water resources to Duck Lake. Implement neighborhood BMPs.</p>	<p>No Change</p>	<p>City of Eden Prairie</p>

Lotus Lake – Internal Load Control	Continuing monitoring the lake. Plan second alum dose application.	In 2021, staff will add phosphorus monitoring at a second location on Lotus Lake in the east bay. This will allow staff to better assess the alum treatment effectiveness across Lotus Lake.	
Scenic Heights	Continue implementing restoration effort. Work with the City of Minnetonka and Minnetonka School District on Public Engagement for project as well as signage.	Interim Administrator Jeffery worked with the new staff liaison for the project to provide education as to on-going maintenance requirements.	Minnetonka Public School District City of Minnetonka Hennepin County
Silver Lake Restoration	Order project. Design Project. Work with the City of Chanhassen for Design, cooperative agreement and Implementation.	Molnau Trucking LLC will begin work in late July/early August.	City of Chanhassen

Professional Development



June 30, 2021

Terry Jeffery
Interim District Administrator
Riley Purgatory Bluff Creek Watershed District
18681 Lake Drive E.
Chanhassen, Minnesota 55317

Dear Terry:

Enclosed please find the checks and Treasurer's Report for Riley Purgatory Bluff Creek Watershed District for the one month and five months ending May 31, 2021.

Please examine these statements and if you have any questions or need additional copies, please call me.

Sincerely,

REDPATH AND COMPANY, LTD.

A handwritten signature in black ink that reads "Mark Gibbs".

Mark C. Gibbs, CPA
Enclosure



To The Board of Managers
Riley Purgatory Bluff Creek Watershed District
Chanhassen, Minnesota

Accountant's Opinion

The Riley Purgatory Bluff Creek Watershed District is responsible for the accompanying May 31, 2021 Treasurer's Report in the prescribed form. We have performed a compilation engagement in accordance with the Statements on Standards for Accounting and Review promulgated by the Accounting and Review Services Committee of AICPA. We did not audit or review the Treasurer's Report nor were we required to perform any procedures to verify the accuracy or completeness of the information provided by the Riley Purgatory Bluff Creek Watershed District. Accordingly, we do not express an opinion, a conclusion, nor provide any form of assurance on the Treasurer's Report.

Reporting Process

The Treasurer's Report is presented in a prescribed form mandated by the Board of Managers and is not intended to be a presentation in accordance with accounting principles generally accepted in the United States of America. The reason the Board of Managers mandates a prescribed form instead of GAAP (Generally Accepted Accounting Principles) is this format gives the Board of Managers the financial information they need to make informed decisions as to the finances of the watershed.

GAAP basis reports would require certain reporting formats, adjustments to accrual basis and supplementary schedules to give the Board of Managers information they need, making GAAP reporting on a monthly basis extremely cost prohibitive. An independent auditing firm is retained each year to perform a full audit and issue an audited GAAP basis report. This annual report is submitted to the Minnesota State Auditor, as required by Statute, and to the Board of Water and Soil Resources.

The Treasurer's Report is presented on a modified accrual basis of accounting. Expenditures are accounted for when incurred. For example, payments listed on the Cash Disbursements report are included as expenses in the Treasurer's Report even though the actual payment is made subsequently. Revenues are accounted for on a cash basis and only reflected in the month received.

REDPATH AND COMPANY, LTD.

A handwritten signature in black ink that reads "RedPath and Company, Ltd." in a cursive script.

St. Paul, Minnesota
June 30, 2021

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

Treasurers Report

May 31, 2021

REPORT INDEX

<u>Page #</u>	<u>Report Name</u>
1	Cash Disbursements
2	Fund Performance Analysis – Table 1
3	Multi-Year Project Performance Analysis – Table 2
4	Balance Sheet
5	VISA Activity

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

Cash Disbursements

May 31, 2021

Accounts Payable:

Check #	Payee	Amount
5604	Abdo, Eick & Meyers, LLC	\$500.00
5605	Barr Engineering	74,570.35
5606	B9 Polar Waters, LLC	5,603.98
5607	Carver County	35.97
5608	CenterPoint Energy	59.37
5609	Coverall of the Twin Cities, Inc.	316.76
5610	ECM Publishers	1,018.80
5611	Fortin Consulting, Inc.	1,000.00
5612	Freshwater Scientific Services	1,350.00
5613	HealthPartners	3,371.98
5614	Amy Herbert	1,200.00
5615	Olivia R. Holstine	405.95
5616	Iron Mountain	162.57
5617	Larry Koch	1,269.81
5618	Joe Kreuser	2,459.05
5619	Metro Sales, Inc.	257.26
5620	Metro Watershed Partner	890.03
5621	PLM Lake & Land Management	3,051.55
5622	ProTech	236.57
5623	Purchase Power	168.18
5624	Redpath & Company	1,313.07
5625	RMB Environmental Laboratories, Inc.	2,654.00
5626	RMB Environmental Laboratories, Inc.	972.00
5627	RMB Environmental Laboratories, Inc.	1,401.00
5628	RMB Environmental Laboratories, Inc.	989.00
5629	Smith Partners	16,053.78
5630	Southwest News Media	73.70
5631	SRF Consulting Group, Inc.	13,927.25
5632	Stantec Consulting Service	1,490.50
5633	Xcel Energy	554.02
5634	Regents of the University of Minnesota	36,719.00

Total Accounts Payable: \$174,075.50

Payroll Disbursements:

Payroll Processing Fee	139.95
Employee Salaries	35,502.03
Employer Payroll Taxes	2,480.85
Employer Benefits (H.S.A. Match)	600.00
Employee Benefit Deductions	(516.04)
Staff Expense Reimbursements	4,523.80
PERA Match	2,939.47

Total Payroll Disbursements: \$45,670.06

VISA - NO PAYMENT IN MAY, 2021 -

Permit Fee Refund - Joe Kreuser - Ck #5618 (2,459.05)

TOTAL DISBURSEMENTS: \$217,286.51

Memos

The 2021 mileage rate is .56 per mile. The 2020 rate was .575
Old National VISA will be paid on-line.

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Fund Performance Analysis - Table 1
May 31, 2021

	2021 Budget	Fund Transfers	2021 Budget	Current Month	Year-to-Date	Year-to Date Percent of Budget
REVENUES						
Plan Implementation Levy	\$3,575,000.00	-	\$3,575,000.00	-	-	0.00%
Permit Fees	25,000.00	-	25,000.00	3,740.95	30,340.95	121.36%
Grant Income	272,580.00	-	272,580.00	31,933.00	31,933.00	11.72%
Investment Income	30,000.00	-	30,000.00	(34.73)	350.10	1.17%
Miscellaneous Income	-	-	-	-	2.99	---
Past Levies	3,204,427.00	-	3,204,427.00	-	-	0.00%
Partner Funds	451,000.00	-	451,000.00	-	2,000.00	0.44%
TOTAL REVENUE	\$7,558,007.00	-	\$7,558,007.00	\$35,639.22	\$64,627.04	0.86%
EXPENDITURES						
Administration						
Audit	\$15,000.00	-	\$15,000.00	500.00	\$12,000.00	80.00%
Accounting (and Audit)	\$31,000.00	-	31,000.00	1,453.02	16,870.20	54.42%
Advisory Committees	7,000.00	-	7,000.00	-	-	0.00%
Insurance and bonds	18,000.00	-	18,000.00	-	414.00	2.30%
Engineering Services	112,000.00	-	112,000.00	10,045.00	56,168.50	50.15%
Legal Services	84,000.00	-	84,000.00	5,152.55	39,244.09	46.72%
Manager Per Diem/Expense	30,000.00	-	30,000.00	1,375.00	8,668.88	28.90%
Dues and Publications	16,000.00	-	16,000.00	-	9,006.00	56.29%
Office Cost	190,000.00	-	190,000.00	7,460.92	50,187.08	26.41%
Permit Review and Inspection	140,000.00	-	140,000.00	13,892.31	67,193.11	48.00%
Permit and Grant Database	-	-	-	-	10,750.00	---
Professional Services	10,000.00	-	10,000.00	-	12,335.50	123.36%
Recording Services	15,000.00	-	15,000.00	1,200.00	6,765.00	45.10%
Staff Cost	802,054.00	-	802,054.00	31,097.45	208,498.33	26.00%
Subtotal	\$1,470,054.00	-	\$1,470,054.00	\$72,176.25	\$498,100.69	33.88%
Programs and Projects						
District Wide						
10-year Management Plan	\$10,000.00	-	\$10,000.00	\$23.90	\$3,273.50	32.74%
AIS Inspection and early response	85,000.00	-	85,000.00	4,437.52	14,012.68	16.49%
Cost-Share/Stewardship Grant	346,735.00	-	346,735.00	5,813.63	37,680.49	10.87%
Data Collection and Monitoring	193,000.00	-	193,000.00	20,689.22	114,235.73	59.19%
Community Resiliency	111,058.00	-	111,058.00	605.00	7,596.50	6.84%
Education and Outreach	100,834.00	-	100,834.00	3,702.95	11,980.33	11.88%
Plant Restoration - U of M	61,613.00	-	61,613.00	-	9,474.60	15.38%
Repair and Maintenance Fund *	212,540.00	-	212,540.00	-	170.00	0.08%
Wetland Management*	111,248.00	-	111,248.00	4,767.57	70,250.41	63.15%
Groundwater Conservation*	229,444.00	-	229,444.00	-	450.00	0.20%
Lake Vegetation Implementation	83,083.00	-	83,083.00	1,490.50	9,756.38	11.74%
Opportunity Project*	317,480.00	-	317,480.00	-	-	0.00%
Stormwater Ponds - U of M	67,164.00	-	67,164.00	36,719.00	36,719.00	54.67%
Hennepin County Chloride Initiative	92,971.00	-	92,971.00	-	-	0.00%
Lower Minnesota Chloride Cost-Share	217,209.00	-	217,209.00	-	-	0.00%
Subtotal	\$2,239,379.00	-	\$2,239,379.00	\$78,249.29	\$315,599.62	14.09%
Bluff Creek						
Bluff Creek Tributary*	\$7,251.00	-	\$7,251.00	-	-	0.00%
Wetland Restoration at Pioneer	\$665,285.00	-	665,285.00	12,994.50	60,267.45	9.06%
Bluff Creek B5 by Galpin	140,000.00	-	140,000.00	-	-	0.00%
Subtotal	\$812,536.00	-	812,536.00	\$12,994.50	\$60,267.45	7.42%
Riley Creek						
Lake Riley - Alum Treatment*	\$62,885.00	-	\$62,885.00	-	-	0.00%
Rice Marsh Lake in-lake phosphorus load	45,636.00	-	45,636.00	286.80	2,700.70	5.92%
Rice Marsh Lake Water Quality Improvement Phase 1	634,147.00	-	634,147.00	13,550.00	33,575.30	5.29%
Riley Creek Restoration (Reach E and D3)	107,047.00	-	107,047.00	4,094.82	7,044.99	6.58%
Upper Riley Creek Stabilization	902,025.00	-	902,025.00	1,043.50	26,966.06	2.99%
Middle Riley Creek	192,363.00	-	192,363.00	15,345.00	67,223.00	34.95%
Lake Ann Wetland Restoration	50,000.00	-	50,000.00	-	-	0.00%
St. Hubert Water Quality Project	147,063.00	-	147,063.00	17,970.65	74,053.31	50.35%
Subtotal	\$2,141,166.00	\$0.00	2,141,166.00	\$52,290.77	\$211,563.36	9.88%
Purgatory Creek						
Purgatory Creek Rec Area- Berm/retention area - feasibility/design	\$34,899.00	-	\$34,899.00	-	\$4,634.75	13.28%
Lotus Lake in-lake phosphorus load control	79,225.00	-	79,225.00	-	-	0.00%
Silver Lake Restoration - Feasibility Phase 1	207,208.00	-	207,208.00	1,575.70	38,054.00	18.37%
Scenic Heights	92,040.00	-	92,040.00	-	2,983.00	3.24%
Hyland Lake in-lake phosphorus load control	20,000.00	-	20,000.00	-	-	0.00%
Duck Lake watershed load	32,120.00	-	32,120.00	-	4,376.00	13.62%
Lotus Lake Kerber Pond	14,380.00	-	14,380.00	-	-	0.00%
Duck lake Partnership	235,000.00	-	235,000.00	-	-	0.00%
Subtotal	\$714,872.00	\$0.00	\$714,872.00	\$1,575.70	\$50,047.75	7.00%
Reserve	\$180,000.00	\$0.00	180,000.00	-	-	0.00%
TOTAL EXPENDITURE	\$7,558,007.00	\$0.00	\$7,558,007.00	\$217,286.51	\$1,135,578.87	15.02%
EXCESS REVENUES OVER (UNDER) EXPENDITURES	\$0.00	\$0.00	\$0.00	(\$181,647.29)	(\$1,070,951.83)	

*Denotes Multi-Year Project - See Table 2 for details

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Muti-Year Project Performance Analysis - Table 2
May 31, 2021

Programs and Projects	Total	FUNDING SOURCE			Current	Costs	Costs	Total Costs	District's Share	District's Share
	Lifetime Budget	District funds	Partner Fund	Grants	Year Budget	Month End	Year-to-Date	to Date	Current Year	Future Years
District Wide										
Community Resiliency	\$148,000.00	\$98,000.00	-	50,000.00	\$111,058.00	\$605.00	\$7,596.50	\$69,537.57	\$75,000.00	60,000.00
Repair and Maintenance Fund	277,005.00	277,005.00	-	-	212,540.00	-	170.00	89,635.08	-	20,000.00
Wetland Management	200,000.00	200,000.00	-	-	111,248.00	4,767.57	70,250.41	184,002.29	-	70,000.00
Groundwater Conservation	180,000.00	180,000.00	-	-	229,444.00	-	450.00	1,005.85	50,000.00	79,000.00
Opportunity Project*	300,000.00	300,000.00	-	-	317,480.00	-	-	26,165.29	50,000.00	70,000.00
Stormwater Ponds - U of M	106,092.00	64,092.00	42,000.00	-	67,164.00	36,719.00	36,719.00	95,646.97	20,000.00	-
Hennepin County Chloride Initiative	120,800.00	19,000.00	-	101,800.00	92,971.00	-	-	27,829.77	-	-
Lower Minnesota Chloride Cost-Share	217,209.00	20,000.00	-	197,209.00	217,209.00	-	-	-	-	-
Subtotal	\$1,549,106.00	\$1,158,097.00	\$42,000.00	\$349,009.00	\$1,359,114.00	\$42,091.57	\$115,185.91	\$493,822.82	195,000.00	299,000.00
Bluff Creek										
Bluff Creek Tributary*	\$436,750.00	\$386,750.00	\$50,000.00	-	\$7,251.00	-	-	\$391,498.69	-	-
Wetland Restoration at Pioneer	857,820.00	450,000.00	-	407,820.00	665,285.00	12,994.50	60,267.45	702,804.61	450,000.00	-
Bluff Creek B5 by Galpin	614,000.00	614,000.00	-	-	140,000.00	-	-	-	140,000.00	614,000.00
Subtotal	\$1,908,570.00	\$1,450,750.00	\$50,000.00	\$407,820.00	\$812,536.00	12,994.50	\$60,267.45	\$1,094,303.30	\$590,000.00	614,000.00
Riley Creek										
Lake Riley - Alum Treatment 1st dose *	\$560,000.00	\$560,000.00	-	-	\$62,885.00	-	-	\$512,114.57	-	-
Rice Marsh Lake in-lake phosphorus load	150,000.00	150,000.00	-	-	45,636.00	286.80	2,700.70	107,065.35	-	170,000.00
Rice Marsh WQ 1	300,000.00	300,000.00	-	-	634,147.00	13,550.00	33,575.30	49,427.80	350,000.00	-
Riley Creek Restoration (Reach E and D3) *	2,168,148.00	1,615,000.00	553,148.00	-	107,046.00	4,094.82	7,044.99	2,234,902.02	40,000.00	-
Upper Riley Creek Stabilization	950,000.00	950,000.00	-	-	902,025.00	1,043.50	26,966.06	74,940.58	100,000.00	-
Middle Riley Creek	45,000.00	-	45,000.00	-	192,363.00	15,345.00	67,223.00	67,223.00	-	-
St Hubert	178,865.00	-	65,000.00	113,865.00	147,063.00	17,970.65	74,053.31	74,053.31	100,000.00	-
Subtotal	\$4,352,013.00	\$3,575,000.00	\$663,148.00	\$113,865.00	\$2,091,165.00	\$52,290.77	\$211,563.36	\$3,119,726.63	\$590,000.00	170,000.00
Purgatory Creek										
Purgatory Creek Rec Area- Berm/retention area - feasibility/design	\$50,000.00	\$50,000.00	-	-	\$34,899.00	-	4,634.75	\$19,736.03	-	-
Lotus Lake in-lake phosphorus load control	345,000.00	345,000.00	-	-	79,225.00	-	-	265,773.75	-	345,000.00
Silver Lake Restoration Project WQ1	268,013.00	268,013.00	-	-	207,208.00	1,575.70	38,054.00	98,859.19	-	-
Scenic Heights	260,000.00	165,000.00	45,000.00	50,000.00	92,040.00	-	2,983.00	210,942.75	-	-
Hyland Lake Internal Load	150,000.00	130,000.00	20,000.00	-	20,000.00	-	-	128,612.41	20,000.00	150,000.00
Duck Lake watershed load	220,000.00	220,000.00	-	-	32,120.00	-	4,376.00	192,255.01	-	-
Subtotal	\$1,293,013.00	\$1,178,013.00	\$65,000.00	\$50,000.00	\$465,492.00	\$1,575.70	\$50,047.75	\$916,179.14	\$20,000.00	495,000.00
Total Multi-Year Project Costs	\$9,102,702.00	\$7,361,860.00	\$820,148.00	\$920,694.00	\$4,728,307.00	\$108,952.54	\$437,064.47	\$5,624,031.89	\$1,395,000.00	\$1,578,000.00

Riley Purgatory Bluff Creek Watershed District
Balance Sheet
As of May 31, 2021

ASSETS

Current Assets

General Checking-Old National	\$1,805,047.46
Checking-Old National/BMW	23,256.03
Investments-Standing Cash	3,287,037.04
Investments-Wells Fargo	747,253.98
Accrued Investment Interest	7.50
Due From Other Governments	143,280.00
Taxes Receivable-Delinquent	34,792.36
Pre-Paid Expense	31,914.23
Security Deposits	7,244.00

Total Current Assets: \$6,079,832.60

LIABILITIES AND CAPITAL

Current Liabilities

Accounts Payable	\$301,443.45
Retainage Payable	27,616.74
Withholding Taxes	(1,633.27)
Permits & Sureties Payable	679,189.25
Deferred Revenue	34,792.36
Unearned Revenue	183,153.00

Total Current Liabilities: \$1,224,561.53

Capital

Fund Balance-General	\$5,926,222.90
Net Income	(1,070,951.83)

Total Capital \$4,855,271.07

Total Liabilities & Capital \$6,079,832.60

RILEY PURGTORY BLUFF CREEK WATERSHED DISTRICT
OLD NATIONAL BANK VISA ACTIVITY
May 31, 2021

DATE	PURCHASED FROM	AMOUNT	DESCRIPTION	ACCOUNT #	RECEIPT
05/20/21	USPS	77.00	Postage	10-00-4280	Y
05/20/21	1 Password	239.40	Annual Software Subscription	10-00-4203	Y
05/20/21	1 Password	4.78	Annual Software Subscription	10-00-4203	Y
05/21/21	Costco Warehouse	69.03	Kitchen Restock	10-00-4200	Y
05/21/21	Microsoft	93.96	Monthly Software Subscription	10-00-4203	Y
05/22/21	CenturyLink	294.93	CenturyLink/Lumen Payment	10-00-4240	Y
05/22/21	Dells Sales & Service	46.16	Office Equipment-Laptop	10-00-4635	Y
05/22/21	DNI*Dell Sales & Service	96.63	Office Equipment-Laptop	10-00-4635	Y
05/26/21	Randy's Sanitation	320.53	Monthly Trash & Recycling	10-00-4220	Y
05/26/21	Target	10.74	Office Equipment-Comuper Accessory	10-00-4635	Y
05/26/21	Best Buy	86.01	Office Equipment-Comuper Accessory	10-00-4635	Y
06/03/21	Intuit	35.00	Monthly Software Subscription	10-00-4203	Y
06/08/21	Finance & Commerce	280.11	RFP Publication	10-00-4290	Y
06/12/21	Microsoft	147.64	Computer Software Subscription	10-00-4203	Y
06/15/21	Kowalski's	23.98	Kitchen Restock	10-00-4200	Y
06/16/21	SmartPress.com	81.10	Business Cards	10-00-4208	Y
06/16/21	Amzn Mktp.	59.18	Field Supplies - Medical	10-00-4201	Y
06/16/21	Amazon.com	96.95	Refrigerator Filter	10-00-4200	Y
06/17/21	Credit Card	35.00	Late Fee	10-00-4910	Y
06/18/21	General Delivery Services	59.71	Courier Service	10-00-4280	Y
06/21/21	Credit Card	53.51	Interest Charge	10-00-4910	Y
		\$2,211.35			
05/24/21	Best Buy	75.25	Office Equipment-Computer Accessory	20-08-4635	Y
05/25/21	Cub Foods	5.34	Field Supplies	20-05-4201	Y
05/25/21	SP*Wellbots	149.00	Field Equipment-Tech	20-05-4635	Y
05/26/21	Northern Tool	75.64	Field Equipment - AIS	20-02-4635	Y
05/27/21	Voltaic Systems	167.30	Field Equipment - Environmental DIY	20-05-4635	Y
05/27/21	Hach Company	328.76	Field Supplies - Chemical	20-05-4201	Y
05/28/21	City of Chanhassen	50.00	Zoning Permit-St. Hubert Project	40-12-4600	Y
06/01/21	Hach Company	301.35	Field Supplies - Chemical	20-05-4201	Y
06/01/21	Home Depot	213.97	Equipment - Tools	20-05-4635	Y
06/02/21	Apple.Com	41.93	Office Equipment - Phone Accessory	20-08-4635	Y
06/03/21	Menards Eden Prairie	56.47	Field Equipment - Miscellaneous	20-05-4635	Y
06/04/21	Hach Company	123.30	Field Supplies - Chemical	20-05-4201	Y
06/09/21	Speedway	77.12	Vehicle Fuel	20-05-4322	Y
06/10/21	Merlins Ace Hardware	13.72	Field Supplies - Miscellaneous	20-05-4201	Y
06/10/21	Amzn Mktp.	53.18	Office Supplies	20-13-4200	Y
06/10/21	O'Reilly Auto Parts	126.69	Field Equipment - Battery	20-05-4635	Y
06/10/21	Home Depot	17.38	Field Equipment - Hardware	20-05-4635	Y
06/11/21	Amzn Mktp.	89.06	Field Equipment	20-05-4635	Y
06/11/21	SQ*Maxbotix, Inc.	73.74	Field Equipment - Sensors	20-05-4635	Y
06/11/21	Zoho-Forms	1.84	Computer Software	20-08-4203	Y
06/12/21	Amzn Mktp.	80.00	Field Equipment - Sensors	20-05-4635	Y
06/12/21	Amzn Mktp.	12.26	Field Equipment - Hardware	20-05-4635	Y
06/12/21	Amzn Mktp.	17.10	Field Equipment - Hardware	20-05-4635	Y
06/15/21	Speedway	94.09	Vehicle Fuel	20-05-4322	Y
06/16/21	Holiday Stations	68.36	Vehicle Fuel	20-05-4322	Y
06/18/21	Zoho-Forms	192.00	Annual Software Subscription	20-08-4203	Y
		\$2,504.85	District-Wide Total		
		\$4,716.20	GRAND TOTAL		

Managing water quality and invasive macrophytes to promote healthy native aquatic plant communities

Raymond M. Newman, PI, Fisheries, Wildlife, and Conservation Biology,
University of Minnesota, St. Paul, MN 55108 RNewman@umn.edu

Co-PI's: William R. Herb, St. Anthony Falls Laboratory, University of Minnesota
and Lucia R. Levers, Water Resources Center, University of Minnesota

Abstract: Aquatic macrophytes are often limited by water clarity, particularly in impaired lakes, and improvements in water quality via reductions in external and internal loading often result in expansion of submersed macrophytes. In many instances, however, invasive aquatic plants are present and increase at the expense of native plants. Invasive macrophytes usually can persist in poorer water clarity conditions than native plants and although there are a variety of methods to effectively control invasives, restoring native plant communities is difficult without further water quality enhancements. Thus management agencies attempting to meet water quality standards and nutrient, clarity and biological criteria, have a difficult time balancing water quality improvements with invasive plant impacts. We will use a combination of field assessments of water quality and aquatic plants in managed lakes, within-lake water quality modeling and an across basin water quality and management response optimization framework to assess best practices to enhance native macrophyte communities while improving water quality to meet water quality standards. We will also assess current practices used by Twin Cities Metro Watershed Districts and agencies to determine which practices appear to be most effective and cost effective. Our results will inform our basic understanding of the interlinkage of water quality and native and invasive macrophytes and provide recommendations for effective and attainable actions that can be used to address water quality and invasive plant issues across the Upper Mississippi Basin.

2. The Problem

Many lakes in the Upper Mississippi Basin are impaired for water quality (often nutrients, clarity and algae) and numerous strategies have been developed to improve water quality, including reduction of external loading, control of internal loading and biological manipulations such as carp removal and macrophyte control or removal. Invasive aquatic plants such as curlyleaf pondweed (*Potamogeton crispus*) and Eurasian watermilfoil (*Myriophyllum spicatum*) are widespread in these systems and in addition to causing biological impairment often complicate approaches to enhance water quality. Improvements to water clarity can allow the invasives to expand and dominate the system (Bakker et al. 2013). These invasive plants have also been implicated in nutrient release and reinforcement of poor water clarity, particularly upon senescence (James et al. 2002, Bartodziej et al. 2017, but see Johnson et al. 2012).

Management agencies spend considerable resources to delist nutrient impaired waterbodies (Osgood 2013, 2016) and control invasive species (Homans and Newman 2011). Reduction of external loading via watershed management or BMPs is often the

first focus of management and essential to address (Lathrop and Carpenter 2014), however, it is not clear that external load control beyond regulation of sewage input will be quickly effective in meeting water quality standards (Osgood 2013); legacy effects are pervasive and can delay response to external loading for 10 to 20 years if internal loading interventions are not initiated (Sharpley et al. 2013). Furthermore, other water quality and lake management issues such as invasive species are not effectively addressed with watershed management (Osgood 2018) and these projects tend to be long term and expensive (Osgood 2016). In addition to direct water quality (nutrients, algae, and clarity) improvement, macrophyte communities will respond to internal and external nutrient controls, however community composition may differ in response to these actions and both approaches will likely be needed to develop stable conditions with diverse macrophyte communities (Hilt et al. 2018).

Common carp removal is an effective in-lake approach to improve water clarity and enhance macrophyte communities (Weber and Brown 2009, Bajer and Sorensen 2015, Vilizzi et al. 2015), however internal loading may still persist and constrain mid summer clarity (Bajer and Sorensen 2015). Reduced late season clarity is likely to favor invasive plants such as curlyleaf pondweed and Eurasian watermilfoil (eutrophic species) over native taxa (Knopik and Newman 2018, Verhoeven et al. 2020b). Thus additional interventions to further enhance clarity may be needed to restore native plant communities. Alum (Huser et al. 2016a) and bentonite (Phoslock; Spears et al. 2016) are effective interventions to reduce internal loading and enhance clarity and have often been associated with increases in plant abundance and diversity (e.g., Spears et al. 2016, Dunne and Newman 2019).

Although a number of studies have assessed the effectiveness and occasionally the cost of approaches to reduce external loading (Osgood 2016), internal loading (Huser et al. 2011, 2016b, Spears et al. 2016, Bajer and Sorensen 2015, Bartodziej et al. 2017) and invasive macrophyte control (e.g., Johnson et al. 2012, Nault et al. Verhoeven et al. 2020a) a comprehensive assessment is rarely considered. Water quality specialists focus on nutrient and algal management while invasive species specialist focus on invasive plants and animals. Few studies have examined the combined effects of nutrient and water clarity improvements on invasive macrophytes and the associated native plant community.

Lake scientists and managers are expanding their efforts to meet water quality standards and to control invasive plants, yet substantial uncertainty exists surrounding optimal decision-making regarding strategies. A number of projects are planned in the region this year, highlighting the need for a more comprehensive approach to lake management (Baker and Newman 2014). Development of an integrated approach will benefit WMOs, agencies (e.g., MN PCA and DNRs), Lake Associations, and lake shore owners.

Our proposed research addresses components of all three of the stated Research Priorities. Firstly, it will improve our understanding of the impacts of invasive aquatic plants on lakes in the Upper Mississippi Basin and their relationship to water quality. Secondly, we will identify lake characteristics (nutrients, water quality, plant communities and management) that influence establishment, expansion and impacts of invasive aquatic plants in these systems and how management of invasives and water quality can be used to improve water resources in similar lakes throughout the Upper

Mississippi Region. Finally, we will conduct a bioeconomic assessment of costs and benefits of various approaches to control invasives and enhance native plants and water quality and develop approaches to guide management of aquatic invasive plants to restore native plant communities.

3. Results and Benefits

Our research will enhance our understanding of the interrelationship of water quality, native macrophytes and invasive macrophytes, building on alternative stable state theory (e.g., Scheffer et al. 1993, Scheffer 1998, Hilt et al. 2018) to develop a more complete model of these interactions (Figure 1). We will be able to identify practices and assessment metrics to determine if and when stable native macrophyte communities are established. It will also enhance development of lake water quality models as diagnostic tools and predictive models. Our assessment of the approaches used by regional management agencies to meet water quality standards, while sustaining and enhancing native plant communities and thus fish habitat and retaining recreational use and lake aesthetics, will produce a catalog of successful and ineffective practices and allow a bio-economic cost-benefit framework of strategies suited to particular systems.

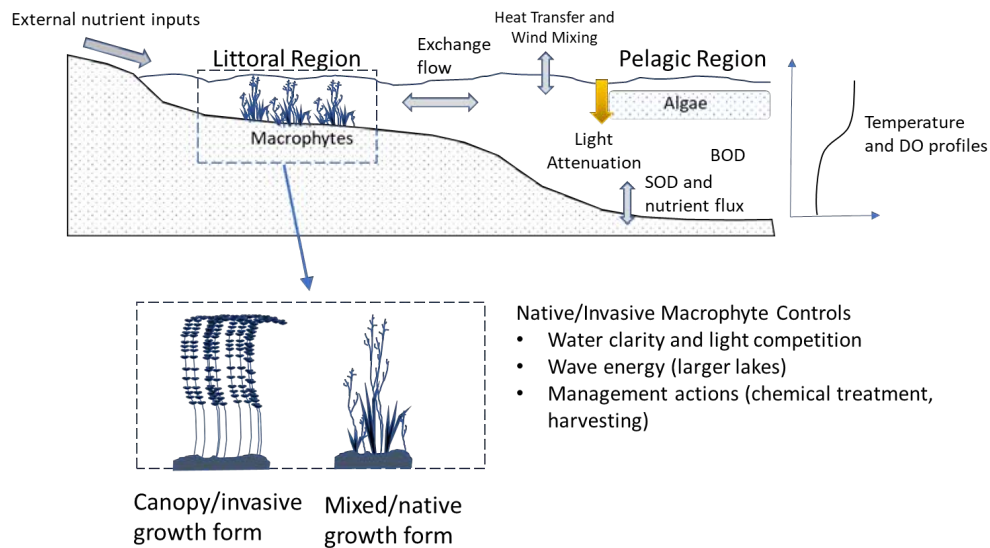


Figure 1: Macrophyte and management process interconnectedness

Specifically, we will gain a better understanding of how water quality, and invasive plants and their management affect native plant community structure and coverage. We hypothesize that improved clarity should particularly benefit native plants if invasive plants can be selectively controlled, but improvements in clarity without invasive management or invasive management without improvements in clarity will not result in a stable native plant community and will require continued and intensive management. Our field and modeling research will also provide a broader overview of the response of water quality (P, chl-a, clarity) to management actions and how those influence plant communities. In addition, based on alternative stable state theory, we expect that expanded plant coverage should further enhance water clarity. We hypothesize that native

plants that are more clarity dependent will better reinforce clear water than canopy forming and turbidity tolerant invasive Eurasian watermilfoil and curlyleaf pondweed.

Our broader assessment of WMO management practices, results and self assessments will provide a summary of WMO actions in the Twin Cities and their relative effectiveness under particular circumstances. This information will be of particular use to other organizations in the metro but will be of broad interest to managers, researchers, and WMO's throughout the Upper Mississippi Basin, North America and the world.

4. Nature, Scope and Objectives

We will focus on lakes in the Twin Cities Metro Region, which are governed by the Metropolitan Area Surface Water Management Act (<https://bwsr.state.mn.us/metro-watershed-management-plan> and <https://www.pca.state.mn.us/water/twin-cities-metro-politain-area-tcma-watersheds>). These include shallow and deep lakes, fully-developed and undeveloped lakes, and large (>7000 ha) and small (< 5ha) lakes and are managed by a group of Metropolitan Watershed Management Organizations (MWMOs, Figure 2).

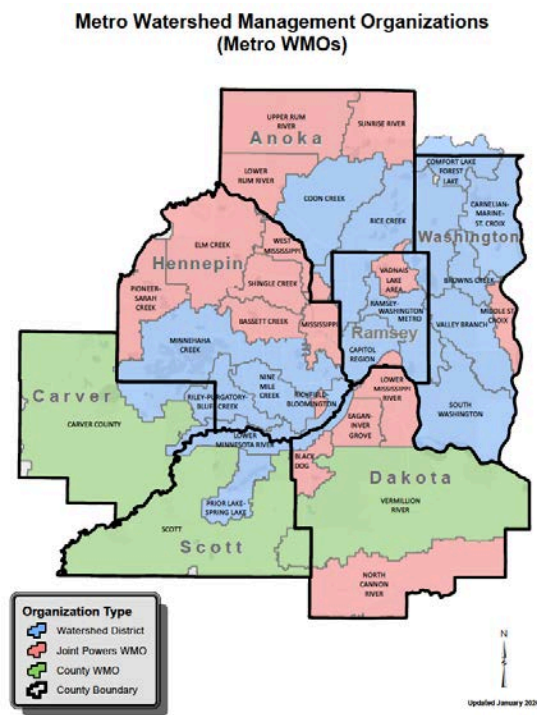


Figure 2. Twin Cities Metropolitan Watershed Management Organizations (from bwsr.state.mn.us)

We will address three objectives in this project:

Objective 1. Assess the response of native and invasive aquatic macrophytes to management interventions reduced nutrient loading and associated water quality

improvements and the effects of invasive macrophyte management of native plants and water quality.

Objective 2. Model the response of water quality (nutrients, algae and clarity) and aquatic macrophytes with a 1-D shallow lake and 2-D deep lake (CE-QUAL-W2), compare results and determine best approach to model and assess response to management actions

Objective 3. Assess current practices used by Twin Cities Metro Watershed Districts and agencies to determine which practices appear to be most effective and cost effective and develop an across basin water quality and management response decision framework to assess best practices to enhance native macrophyte communities while improving water quality to meet water quality standards.

During the first year of the project we will meet with stakeholders and determine lake and projects to assess in summer 2021. Field data on plants and water quality will be collected from May to October in 2021 and 2022 – some additional data will be collected in 2023 to fill in gaps or address outstanding questions. Modeling efforts will start immediate and the 1-D model should be completed by June 2021 and the 2-D model by June 2022. This will feed into the bio-economic analysis.

	Year 1				Year 2				Year 3			
	2020		2021		2022		2023		2020		2023	
	Sep	Dec	Mar	June	Sep	Dec	Mar	June	Sep	Dec	Mar	June
Objective 1												
Planning and lake selection	X	X	X			X						
Field sampling				X	X		X		X			
Data analysis and reporting						X	X		X	X	X	X
Objective 2												
1-D shallow lake model completed				X								
2-D lake models for study lakes							X					
Simplified lake model development									X			
Objective 3												
Watershed selection for inclusion				X								
Literature Review				X								
Watershed data collection					X							
Framework development												X

Activity Timeline.

5. Methods, Procedures and Facilities

Field collected data

We will continue to collect plant community and water quality data on three lakes within the Riley Purgatory Bluff Creek Watershed District: Riley (DOW ID 10-0002), Staring (27-0078), and Susan (10-0013). For these lakes we have data on the plant community in May, June and August from 2010 or 2011 to present. These data include point intercept data (fixed grid with 140 to 240 sampling points in the littoral zone) on species occurrence, relative abundance, plant height and sampling depth (e.g., Knopik and Newman 2018, Dunne and Newman 2019) as well as biomass estimates (Johnson

and Newman 2011) by species from a subset of locations. We also have total plant coverage and biovolume estimates from BioBase sonar assessments (biobasemaps.com). In addition we have temperature, oxygen, and light by depth profiles for each sampling date and the watershed district has similar data plus total phosphorous and chlorophyll-a collected on a bi-weekly basis throughout the growing season.

In addition to the lakes we have been sampling within the Riley Basin we will assess 5 additional lakes in the Metro Watersheds that have recently or will have efforts to improve water quality and clarity while managing invasive plants. For example, we will add assessments of Hyland Lake, Dakota County (19-0025), which has had a number of BMPs since the late 1990s including, external load reduction, a recent alum treatment (2019) and invasive plant control; Bald Eagle, Ramsey County (62-0002), which had an alum treatment in 2014 and 2018 and is currently managing for Eurasian watermilfoil and curlyleaf pondweed and three other lakes yet to be determined. .

Historical (pre-proposal) data for lakes chosen as study sites will typically include biweekly water quality data (temperature and oxygen profiles, Secchi depth and TP and chlorophyll-a) and at least one or two point intercept survey of plant communities each year. These data are collected by the WMOs or their contractors, or occasionally the MN DNR or consultants for plant control permit requirements. Lake selection will be based on availability of background and pre-treatment data and well planned manipulations and invasive control that will allow an assessment of the response to management.

We will enhance the available and agency-collected water quality data with spatially distributed profiles collected with a YSI ProDSS to get biweekly temperature, oxygen, NO₃ and chlorophyll by depth from profiles from mid May until mid September at multiple locations within lakes. This will allow us to assess these parameters within and outside of macrophyte beds and will contribute to our modeling efforts. Two lakes will be monitored with continuous logging arrays during summer to monitor temperature (5 depths), light (3 depths), dissolved oxygen, water level and wind speed. In one lake the array will be placed in deep water for open water assessment and in the second lake 3 arrays will be placed at different locations to obtain data from open water as well as in or near macrophyte beds or bays in the lake. These data will be used to parameterize and calibrate the water quality and plant models and will corroborate the ProDSS measurements.

Finally, we will do additional plant and water quality sampling on a Sentinel Lake for CE-Qual 2 model verification. USGS scientists Richard Kiesling and Erik Smith have developed and calibrated this model in Pearl Lake and Madison Lake. We will select one of these lakes (likely Madison, a deep lake with both Eurasian watermilfoil and curlyleaf pondweed) for further data collection and analysis, including spatial assessment of water quality profiles and plants surveys if not already planned by the MN DNR.

Lake model development

The lake modeling effort will 1) help quantify interactions between water quality and the abundance of invasive and native submersed macrophytes, and 2) enable us to test the effectiveness of different management strategies to suppress invasives and enhance native plant communities, and 3) develop simplified models for watershed-level management studies. The crux of the effort will be to model the effect of seasonally variable water

clarity and temperature on the growth success of native and invasive submersed plant communities. The modeling study will begin using one-dimensional (1-D) models, where the variation of temperature, light, and plant mass is modeled over depth for a laterally uniform system (Figure 3). This sub-model will need to consider the growth form of target species, the temperature- and light-dependent growth rates, and the partitioning of available growth between plant mass in the water column and root mass. Once the growth characteristics of the native and invasive plant species have been established, growth competition between species can be modeled under different physical conditions, e.g. for a series of growing seasons with varying open-water season lengths, water temperatures, solar radiation, and water clarity. Additional sub-models will be needed to simulate water temperature and varying water depth as a function of weather conditions and runoff inputs. Water clarity will be an external input to the 1-D model based on measurements for the study lake or based on remote sensing data. As the modeling effort progresses, algae growth models will be added to the 1-D model or the 2-D models described below, to simulate light competition between macrophytes and algae.

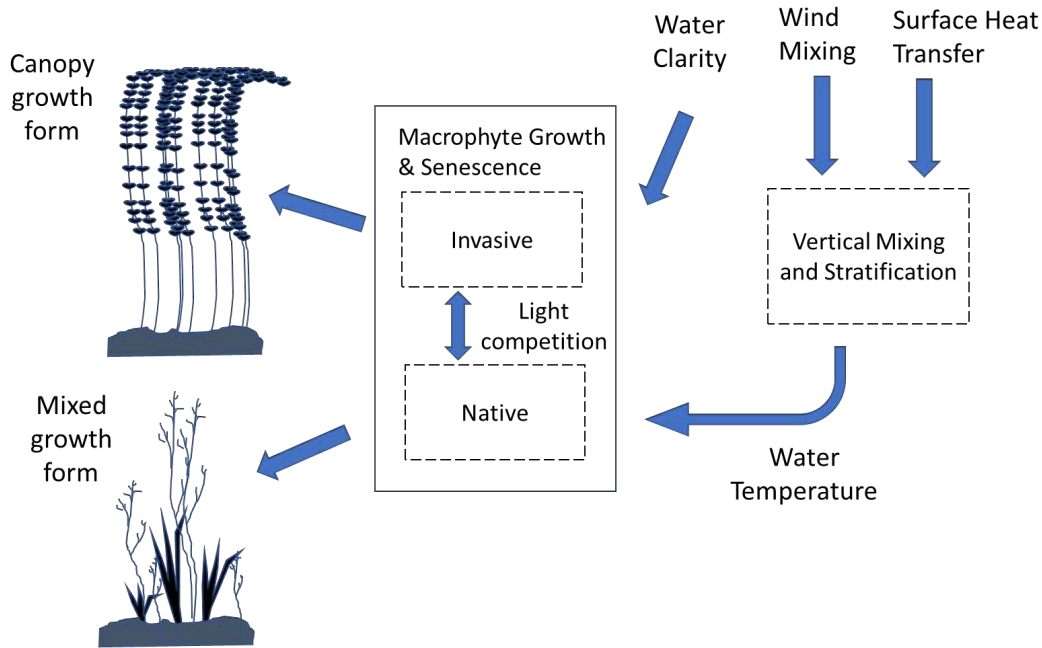


Figure 3. Schematic diagram of a 1-D macrophyte growth model with physical models for temperature and light inputs.

In the second phase of the modeling study, 2-D lake models will be used to simulate water quality interactions in study lakes with both littoral areas with macrophytes and deeper basins. In addition to the processes considered in the 1-D model, the 2-D models will also include phosphorus dynamics and algae growth dynamics (Figure 4). The 2-D modeling framework will likely be based on the CE-QUAL-W2 models developed by USGS for the Sentinel lake in Minnesota (Smith et al. 2014). The existing CE-QUAL-W2 models for Madison Lake (Blue Earth County, MN) or Pearl Lake (Stearns County, MN) are likely starting points. The macrophyte model features built into CE-QUAL-W2 (Cole & Wells 2008; Sullivan et al. 2013) will be used to model littoral macrophyte

growth and the corresponding effects on mixing, stratification, and lake water quality, and run for multiple-year simulations to study seasonal dynamics and year-to-year differences from climate variability.

The 2-D modeling framework will then be applied to several of the study lakes, such as Staring Lake and Lake Susan in the Riley Purgatory Bluff Creek Watershed District. Measured temperature, dissolved oxygen, chlorophyll and phosphorus profiles will be used to calibrate the 2-D models in the littoral and pelagic zones. The calibrated models can then be used to study the effect of different management scenarios (e.g external nutrient load reduction or alum treatment) on seasonal lake water quality coupled with invasive and native macrophyte growth. Multiple-year simulations will be used to assess the response of water quality and plant growth to variable climate and nutrient inputs.

As the CE-QUAL-W2 is run, we will compare 1-D and 2-D lake modeling results, with the goal of creating a simplified lake model framework that adequately captures the dynamics of water quality and plant growth. A key step will be to assess the degree of coupling in water quality processes between lake littoral areas and the pelagic basins. For example, two 1-D models, one for the littoral zone and one for the pelagic basin, may be able to represent the basic processes in shallow and deep areas of a lake, with some degree of coupling via exchange flows.

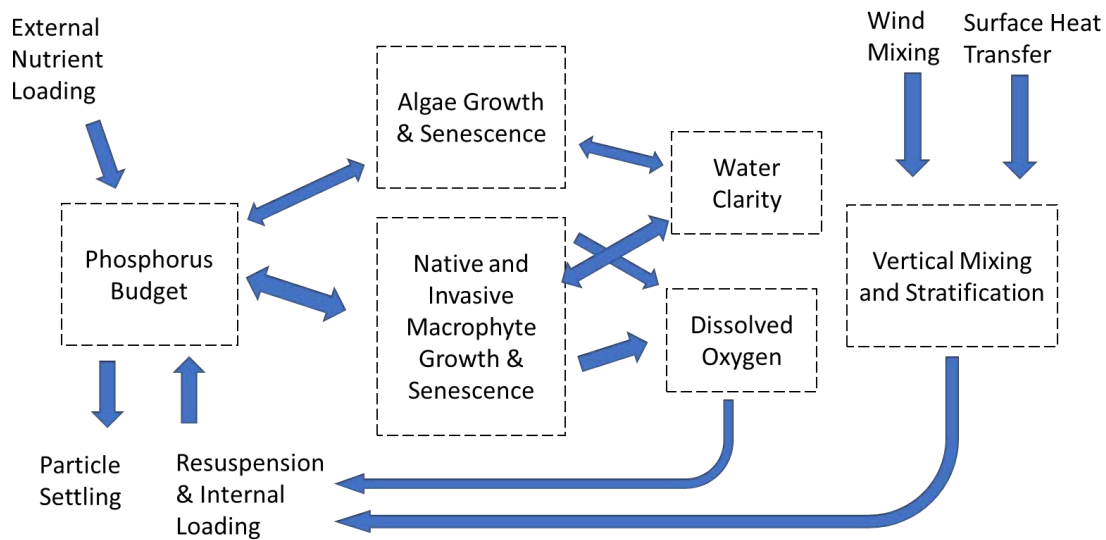


Figure 4. Processes considered in the 2-D lake models (CE-QUAL-W2)

Water quality and management response decision framework

We will develop a bio-economic cost-benefit decision framework with inputs from 1) watershed district datasets, 2) the lake model (in turn informed by field data collection) and 3) data from the literature/publicly available data (Figure 5).

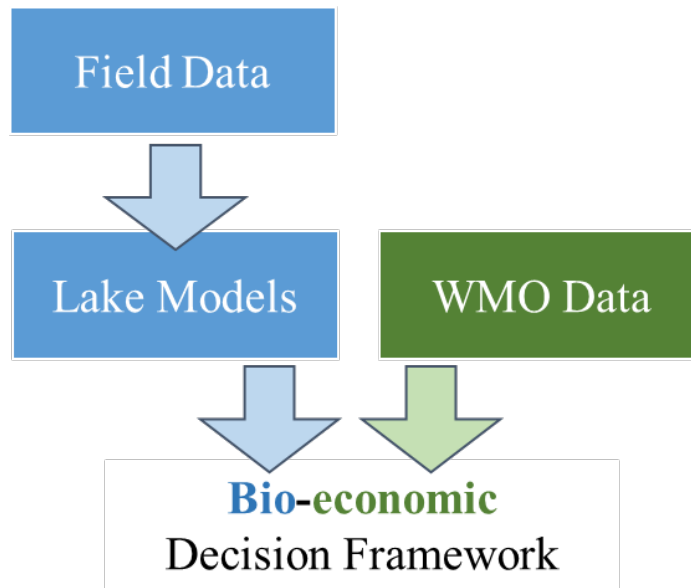


Figure 5: Informing the decision framework: field data collection, lake modelling, and water management organization (WMO) data

Integrating bio-economic optimization methodology (Levers et al. 2019 and Levers and Schwabe, 2017) with cost-benefit or cost-effectiveness frameworks is not uncommon in conservation literature (Reyns et al. 2018, Norbury et al. 2014, Kronbak et al, 2009), but has not been extensively developed for aquatic invasive species, nor is it routinely available to AIS managers, though it clearly would assist with management decisions (Büyüktaktın & Haight 2018, Pradhananga et al. unpublished, Duhr unpublished).

Watershed district data will include, but is not limited to, accounting costs of invasive species and water quality management methods, dates of management events, measured water quality metrics, quantitative or qualitative data on infestation magnitudes, and metrics related to ecological and recreational value. We will focus on lakes under established management, e.g. Riley (DOW ID 10-000200), Staring (27-0078), and Susan (10-001300) in the Riley Purgatory Bluff Creek Watershed District (RPBCWD), which has already agreed to provide us with any data they have collected. We will also identify lakes and projects from several other water management organizations in the Twin Cities Metro to include in our analysis with the assistance of AIS researchers and local resource managers (See Figure 2). We will also use results of previous and concurrent projects to inform data collection (Duhr 2020, Pradhananga et al. N.D.).

Outputs from the Lake Model developed (Figure 1) will be used to inform the bio-economic framework. Specifically, the simplified lake model framework that adequately captures the dynamics of water quality and plant growth will be used to estimate the impacts of different management methods, both for water quality and invasive species. Additional parameters for consideration will include local land cover (critical for external loading), recreational activities, and ecosystem metrics such as biodiversity. Local land cover may be important in differentiating lakes for management type. Ecosystem metrics and recreational activities can provide information on nonmarket benefits of management. Regression analysis will be used to estimate relationships.

6. Related research

This research expands on previous research conducted by our and other groups on assessing and managing water quality and aquatic plant communities. It builds on alternative stable state theory developed for shallow lakes, whereby excess nutrients support phytoplankton that shades out submersed macrophyte communities (turbid state), but well developed macrophyte communities can enhance clarity and reduce phytoplankton by stabilizing sediments, sequestering nutrients and providing refuge for phytoplankton grazers. Invasive macrophytes such as curlyleaf pondweed and Eurasian watermilfoil can often persist in lower water clarity but will respond positively to water quality improvements and clarity and outcompete native macrophytes. Although methods to selectively control these invasive plants exist (e.g., Johnson et al. 2012, Nault et al. 2014, 2018) they often do not result in substantial increases in native macrophytes (Jones et al. 2012) or can result in monocultures of low-light tolerant natives (McComas et al. 2015). Enhancements to water quality (e.g., via alum treatments Huser et al. 2011, 2016) can promote native plant communities (Bakker et al. 2013, Hilt et al. 2018, Dunne and Newman 2019), but need to be integrated with proper invasive plant management to be sustainable.

Newman has been working on restoration of native plant communities since 2009 when he started working with the RPBCWD to assess macrophyte response to invasive carp removal. This work assessed the effectiveness of native plant transplanting (Knopik and Newman 2018), herbicide treatments (e.g., Verhoeven et al. 2020a) and alum and seedbank assessments (Dunne and Newman 2019) on restoring native plant communities. Current work funding by the RPBCWD aims to identify key indicators to use a management endpoints or criteria for success in developing sustainable native plant communities.

There has been substantial previous work on modeling submersed macrophyte growth by the U.S. Army Corps (Best & Dassen 1987; Best and Boyd 1996, 1999) and others (Gao et al. 2017; Håkanson & Boulion 2002; Hootsmans 1994; Van Nes et al. 2003), as well as work at the University of Minnesota (Herb & Stefan 2003, Herb & Stefan 2006). These models predict macrophyte biomass as a function of physical parameters (light, temperature, nutrients) and growth form, and are typically calibrated for particular native and/or invasive species. Macrophyte growth models have also been integrated into larger water quality models for lakes, rivers, and reservoirs, to study couplings of plant growth and senescence with algae, nutrient cycling, and water quality (Hilt et al. 2018; Janse et al. 2008; Sullivan et al. 2013; Vilas et al. 2018) and flow conditions (Bulat et al. 2019, Herb and Stefan 2005a, 2005b; Vilas et al. 2018). The Hilt et al., study, in particular, gives relevant methods and results for this study, where coupled macrophyte/algae/water quality models are used to study seasonal water quality states in shallow lakes in response to external and internal nutrient load changes. The complex nature of these models requires field observations to calibrate the parameters describing growth, dissolved oxygen, nutrients, etc.

Bioeconomic analyses, which incorporate both economic and biophysical processes, are common in environmental and watershed analyses (e.g., Levers and Schwabe 2017 and Levers et al. 2019) but are less common in lake water quality and invasive species assessments. A Minnesota Aquatic Invasive Research Center

(MAISRC)'s grant (Pradhananga, Levers, Dalzel, and Bajer et al. N.D.), funded a Minnesota watershed district survey of invasive carp management and phosphorus levels, which resulted in a framework for contacting watershed districts, processing their data, and accessing effectiveness. Additionally, Levers has submitted a proposal to MAISRC, *AIS Management Data Collection and AIS Database Exploration*, which proposes to curate available AIS infestation data, explore viability of a MAISRC database or catalog, and collect data on AIS management from counties/lakeshore associations. If funded, these data will be available to enhance the decision framework developed here.

7. Training potential

One graduate student will be supported with a University of Minnesota Water Resources Center WRS Graduate Research Assistantship Supplement for two years. An additional year of funding will come as a Research Assistantship funded by the Riley Purgatory Bluff Creek Watershed District. The grad students will work with all the PIs, and collaborators as well as regularly interacting with our agencies partners for data acquisition and management applications. We will train at least 6 undergraduates (2 per year) who will participate in field, survey or modeling research full time during each summer and part time during the academic year. A junior researcher, Research Associate Lucia Levers, will also gain further experience and training interacting with an experienced modeler and an applied aquatic ecologist while developing relationships with a number of management agencies and lake professionals.

8. Government involvement

Drs. Erik Smith (USGS Oklahoma-Texas Water Science Center) and Richard Kiesling (USGS Upper Midwest Science Center, Moundsview, MN) have agreed to provide advice on modeling with their work on the 2-D model CE-QUAL-W2. Although they do not have funding to collaborate in more detail they will share their model and insights from efforts in Pear and Madison Lakes (MN) and will also serve on graduate student committees if needed.

9. Information transfer

Through collaboration (access to data, sharing data, collecting data from agency systems) with local water management agencies in the Twin Cities Metro we will be directly sharing our results and insights from their management actions and an assessment of the most effective approaches on a subset of lakes. Further, our analysis of their actions and efforts more broader (meta analysis of agencies assessment of management actions, costs, outcomes and benefits) will further allow the agencies to learn from each other and see which approaches are most likely to achieve water quality goals within realistic budgets and social acceptance ...

We will start with a planning effort meeting with representatives from the Twin Cities Metro Water Management Organizations as well as the MN DNR, MN PCA, Met Council, and Three Rivers Park District. The aim of the first meeting will be introduce our plans, assess the agency needs, identify planned projects worthy of field assessment, and developing a process for continued collaboration. We will meet with this group at least once per year in the subsequent years to share results and further plan sampling and data acquisition efforts.

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- Verhoeven, M. R., W. J. Glisson, and D. J. Larkin. 2020b. Niche Models Differentiate Potential Impacts of Two Aquatic Invasive Plant Species on Native Macrophytes. *Diversity* **12**.
- Vilas, M. P., C. L. Marti, M. P. Adams, C. E. Oldham, and M. R. Hipsey. 2017. Invasive Macrophytes Control the Spatial and Temporal Patterns of Temperature and Dissolved Oxygen in a Shallow Lake: A Proposed Feedback Mechanism of Macrophyte Loss. *Frontiers in Plant Science* **8**:14.
- Vitense, K., M. A. Hanson, B. R. Herwig, K. D. Zimmer, and J. Fieberg. 2019. Predicting total phosphorus levels as indicators for shallow lake management. *Ecological Indicators* **96**:278-287.
- Vilizzi, L., A. S. Tarkan & G. H. Copp, 2015. Experimental evidence from causal criteria analysis for the effects of common carp *Cyprinus carpio* on freshwater ecosystems: A global perspective. *Reviews in Fisheries Science & Aquaculture* **23**: 253-290.
- Weber, M. J. & M. L. Brown, 2009. Effects of common carp on aquatic ecosystems 80 years after “Carp as a Dominant”: Ecological insights for fisheries management. *Reviews in Fisheries Science* **17**: 524-537.

CURRICULUM VITAE

Newman, Raymond M.

Department of Fisheries, Wildlife and Conservation Biology
University of Minnesota
St. Paul, MN 55108 (612 625-5704)
Rnewman@umn.edu

Professional Preparation:

Slippery Rock University, Biology, B.S. 1978 Magna cum laude
University of Minnesota, Fisheries, M.S. 1982 (Minor: Applied Statistics)
University of Minnesota, Fisheries, Ph.D. 1985
University of Minnesota, Postdoctoral Research Specialist, Forestry, 1985-1986
University of Connecticut, Renewable Natural Resources, Postdoctoral Fellow 1986-1988

Appointments:

Director of Undergraduate Studies, Marine Biology Minor 2020
Director of Undergraduate Studies, Fisheries, Wildlife, and Conservation Biology 2017-2019
Fulbright Scholar, Rhodes University, Grahamstown, South Africa 2011-2012
Director of Graduate Studies, Water Resources Science (Acting 1996), 2003-2011
Professor, Fisheries, University of Minnesota 2002-
Guest Scientist, Max Planck Institute of Chemical Ecology 2002
Associate Professor, Fisheries, University of Minnesota 1995-2002
Visiting Scientist, Inst. Freshwat. Ecol., River Lab, Dorset, UK April-May 1997
Assistant Professor, Fisheries, University of Minnesota 1988-1995
Postdoctoral Fellow, Renewable Natural Resources, University of Connecticut 1986-1988

Five Most Relevant Products:

Dunne, M.A. and R. M. Newman. 2019. Effect of light on macrophyte sprouting and assessment of viable seedbank to predict community composition. *Journal of Aquatic Plant Management* 57:90-98.
Knopik, J. M and R. M. Newman. 2018. Transplanting aquatic macrophytes to restore the littoral community of a eutrophic lake after the removal of common carp. *Lake and Reservoir Management* 34(4): 365–375.
Baker, L.A. and R.M. Newman. 2014. Managing the biological, economic, and social aspects of sustainability of lake ecosystems. Pages 76-86 in S. Ahuja, *Comprehensive Water Quality and Purification*, Volume 4, Elsevier.
Jones, A.R., J.A. Johnson and R.M. Newman. 2012. Effects of repeated, early season, herbicide treatments of curlyleaf pondweed on native macrophyte assemblages in Minnesota lakes. *Lake and Reservoir Management* 28(4): 364-374.
Huser, B.J., P. L. Brezonik and R. M. Newman. 2011. Effects of alum treatment on water quality and sediment in the Minneapolis Chain of Lakes, Minnesota, USA. *Lake and Reservoir Management* 27(3): 220-228.

Other significant products:

Verhoeven, M. R., D. J. Larkin, and R. M. Newman. 2020. Constraining invader dominance: effects of repeated herbicidal management and environmental factors on curlyleaf pondweed dynamics in 50 Minnesota lakes. *Freshwater Biology* 65:849-862.
Eltawely, J.A., R.M. Newman and R.A. Thum. 2020. Factors influencing the distribution of invasive hybrid (*Myriophyllum spicatum* × *M. sibiricum*) watermilfoil and parental taxa in Minnesota. *Diversity* 12(3), 120; doi:10.3390/d12030120.
Thum, R. A., G. M. Chorak, R. M. Newman, J. A. Eltawely, J. Latimore, E. Elgin, and S. Parks. *In press*. Genetic diversity and differentiation in populations of invasive Eurasian

- (*Myriophyllum spicatum*) and hybrid (*M. spicatum* × *M. sibiricum*) watermilfoil. Invasive Plant Science and Management. DOI: <https://doi.org/10.1017/inp.2020.12>
- Marko, M. D. and R. M. Newman. 2017. Fecundity of a native herbivore on its native and exotic host plants and relationship to plant chemistry. *Aquatic Invasions* 12 (3): 355-369.
- Moody, M.L., N. Palomino, P. Weyl, J. Coetzee, R.M. Newman, X. Liu, X. Xu, R.A. Thum. 2016. Unraveling the biogeographic history of the Eurasian watermilfoil invasion in North America. *American Journal of Botany* 103(4):1-10. .doi: 10.3732/ajb.1500476
- Johnson, J.A., A. R. Jones and R.M. Newman. 2012. Evaluation of lakewide, early season herbicide treatments for controlling invasive curlyleaf pondweed (*Potamogeton crispus*) in Minnesota lakes. *Lake and Reservoir Management* 28(4): 346-363.
- Homans, F. and R.M. Newman. 2011. Management of aquatic invasive species. Pages 226-245 in K. W. Easter and J. Perry (eds). *Water policy in Minnesota: Issues, incentives, and action*. Resources For the Future, Washington, DC.
- Borman, S.C., S.M. Galatowitsch and R.M. Newman. 2009. The effects of species immigrations and changing conditions on isoetid communities. *Aquatic Botany* 91(3): 143-150.
- Roley, S.S. and R.M. Newman. 2008. Predicting Eurasian watermilfoil invasions in Minnesota. *Lake and Reservoir Management* 24(4): 361-369.
- Newman, R.M. 2004. Invited Review – Biological control of Eurasian watermilfoil by aquatic insects: basic insights from an applied problem. *Arch. Hydrobiologie* 159 (2): 145-184.

Current Grants:

- Riley Purgatory Bluff Creek Watershed District, 2018-2021, PI (\$120,337). Managing for sustainable native macrophyte communities in lakes of the Riley Purgatory Bluff Creek Watershed District
- Environment and Natural Resources Trust Fund (LCCMR). 2019-2021. PI; R. Thum co-PI (\$236,436) Genetics to improve hybrid and Eurasian watermilfoil management.

Teaching:

- Fisheries Ecology and Management, FW 5604 (3 sem cr) Winter 1997-2001; 2003-2017
- Introduction to Marine Biology, FW 2003 (3cr) Winter 2014, Fall 2014, Winter 2018
- Stream and River Ecology, FW 8/5459 (3 sem cr) Fall even years 1990-2000, 2004-2018
- Invasive Plants and Animals, ESPM 3515 (3cr) Fall odd years 2017-

Synergistic Activities:

- University of Minnesota Award for Outstanding Contributions to Postbaccalaureate, Graduate, and Professional Education and Academy of Distinguished Teachers 2011
- Project Director, Risk Analysis for Introduced Species and Genotypes, an NSF sponsored IGERT program and Director of Graduate Studies of the associated minor, 2007- 2011
- Editorial Board, *Ecol. Freshwat. Fish*, 1992-2011; *Freshwater Biology* 2008-
- Instructor, White Earth Math and Science program, Summer course for tribal primary and secondary students 1999-2017; program won 2001 USDA Secretary's Honor Award
- Member of organizing committee and presenter at:
- Fundamentals of Lake Processes - Nutrient (Phosphorus) Impairment Workshop, Applied Lake Management & Stormwater Series. University of Minnesota Extension, 22 February 2018, Farmington, MN.
- Lake Management Tools Workshop, Applied Lake Management & Stormwater Series. University of Minnesota Extension, 21 February 2019, Minneapolis, MN.

Students and advisors:

- Thesis Advisor: Thomas F. Waters (MS and PhD), deceased, U of MN
- Postdoctoral Advisor: James A. Perry (U of MN) and David B. Schroeder (UCONN)
- Graduate Students (36 total, 22 MS, 11 PhD graduated)

William R. Herb, Ph.D

Research Associate

University of Minnesota, St. Anthony Falls Laboratory

2 Third Ave SE, Minneapolis, MN 55414

Office Phone: 612-624-5147

Email: herb0003@umn.edu

Education

B.S., Mechanical Engineering, University of Wisconsin-Madison, 1985

M.S., Mechanical Engineering, University of Minnesota, 1991

Ph.D., Mechanical Engineering, University of Minnesota, 1996

M.S., Water resources Science, University of Minnesota, 2004

Professional Experience

2001-present	Research Associate	University of Minnesota
1996-2001	Principal Research Scientist	Honeywell Technology Center
1995-1996	Research Associate	Honeywell Technology Center
1991-1995	Student Aid	Honeywell Technology Center
1990-1991	Teaching Assistant	University of Minnesota
1985-1989:	Development Engineer	Enkel Corporation, Rockford, IL

Grants Received

Minnesota Local Road Research Board, “Assessing Culverts in Minnesota: Fish Passage and Storm Vulnerability”, 7/18-6/21, \$154,000. (co-PI, with PI Jessica Kozarek)

Minnesota Coastal Program, “Detailed Hydrology for Stormwater BMPs”, September 2018 – November 2019, \$182,688 (PI, with Co-PIs John Gulliver and Lucinda Johnson).

Legislative-Citizen Commission on Minnesota Resources, “Prioritizing shoreline habitat restoration in Minnesota lakes”, 7/17-6/20, \$294,000 (PI).

Metropolitan Council Environmental Services, “Long-throated Flume Study”, 9/16-9/17, \$200,000. (PI)

Legislative-Citizen Commission on Minnesota Resources, “Prioritizing Future Management of North Shore Trout Streams”, 7/15-6/18, \$357,000. (co-PI, with Lucinda Johnson).

Minnesota Local Road Research Board, “Study of de-icing salt accumulation and transport through a watershed”, 6/14-12/17, \$160,000. (PI, with Co-PI Heinz Stefan)

Minnesota Department of Natural Resources, “Quantifying wind-wave energy on Minnesota Lakes”, 10/14 – 6/16, \$25,000. (PI, with co-PI Heinz Stefan).

Professional Memberships

American Geophysical Union

Association for the Sciences of Limnology and Oceanography

Select Peer-reviewed Publications

Missaghi, S., Hondzo, M, and W. Herb, 2017. Prediction of Lake Water Temperature, Dissolved Oxygen, and Fish Habitat under Changing Climate. *Climatic Change* 141(4), 747-757.

Herb, W. R., Johnson, L. B., Jacobson, P. C., & Stefan, H.G., 2014. Projecting cold-water fish habitat in lakes of the glacial lakes region under changing land use and climate regimes. *Canadian Journal of Fisheries and Aquatic Sciences*, 71(9), 1334-1348.

Herb, W.R. and H.G. Stefan, 2011. Equilibrium temperature models for coldwater streams, *Water Resources Research*, 47: W06519.

Herb, W.R., B. Janke, O. Mohseni and H.G. Stefan, 2009. Simulation of temperature mitigation by a stormwater detention pond, *Journal of the American Water Resources Association*, 45(5): 1164-1178.

Herb, W.R. and Stefan, H.G. Integral growth of submersed macrophytes in varying light regimes. *Ecological Modelling*, 168(12): 77-100, 2003.

Herb, W.R. and Stefan, H.G. Model for wind-driven vertical mixing in a shallow lake with submersed macrophytes. *Journal of Hydraulic Engineering*, 131(6): 488-496, 2005.

Herb, W.R. and Stefan, H.G. A numerical model for temperature stratification and vertical mixing dynamics in a shallow lake with submersed macrophytes. *Water Resources Research*, 41(2), W02023, 2005.

Herb, W.R., Stefan, H.G., 2006. Seasonal growth of submersed macrophytes in lakes: the effects of biomass density and light competition. *Ecol. Model.* 193, 560–574.

Select Reports

Herb, W.; Janke, B., and H. Stefan, 2017. Study of de-icing salt accumulation and transport through a watershed. Final Report 2017-50, Minnesota Department of Transportation, Research Services & Library, 128 pp.

Herb, W., K. Blann, L. Johnson, R. Garono, J. Jereczek, M. White and H. Sorensen. 2016. Sustaining Minnesota's Lake Superior Tributaries in a Changing Climate. Final Report to NOAA's Office for Coastal Management.

Johnson, L. B., Herb, W.R., and Cai, M., 2013. Assessing Impacts of Climate Change on Vulnerability of Brook Trout in Lake Superior's Tributary Streams of Minnesota. Final Report to Minnesota Department of Natural Resources.

Lucia R. Levers, PhD
llevers@umn.edu; 559-859-4319; [@LuciaLevers](https://twitter.com/LuciaLevers)

Education

- PhD Environmental Sciences: Environmental Sciences and Management** 2015
University of California, Riverside
Dissertation: *Bio-Economic Analyses of Biofuel-Based Integrated Farm Drainage Management Systems on Marginal Land in a Salinity and Drainage Impacted Region: The Case of California's Central Valley*
- MS Environmental Sciences: Environmental and Natural Resource Economics** 2010
University of California, Riverside
- BA Human Biology: Sustainable Human/Environment Interactions** 2004
Stanford University
Capstone: *Community Engagement with the Wildlife Center of Silicon Valley*

Research Experience

- Research Associate** 2017 - Present
Water Resources Center: University of Minnesota, Twin Cities
- Postdoctoral Researcher** 2015 - 2017
USDA-ARS Salinity Laboratory: Riverside, CA
Department of Environmental Sciences: University of California, Riverside
- Junior Research Specialist** 2014
Department of Plant and Environmental Sciences: University of California, Davis

Peer Review Publications

- Levers, L., Pradhananga, A., & Peterson, J.** *Whom do you trust? Farmer Willingness to Accept for Perennial Crop Adoption.* Submitted for publication.
- Levers, L., & Pradhananga, A.** *Willingness to Pay for Aquatic Invasive Species Management: an Onsite Survey of Minnesota Lakes.* Submitted for publication.
- Levers, L., Story, D. & Schwabe, K.** (In press). Boons or Boondoggles: An Assessment of Salton Sea Water Importation Proposals. *California Agriculture.*
- Levers, L., Skaggs, T., & Schwabe, K.** (2019). Buying Water for the Environment: A Hydro-Economic Analysis of Salton Sea Inflows. *Agricultural Water Management.* 213C, 554-567.
- Levers, L. R., & Schwabe, K. A.** (2017). Biofuel as an Integrated Farm Drainage Management crop: A Bio-Economic Analysis. *Water Resources Research*, 53(4), 2940-2955.
- George, N., **Levers, L.**, Thompson, S., Hollingsworth, J., & Kaffka S. (2017). Modeling identifies optimal fall planting times and irrigation requirements for canola and camelina at locations across California. *California Agriculture*, 71(4):214-220.

State Agency Reports

- Calow, P., Lewandowski, A., **Levers, L.**, & Kirby, E. (2020). *Final Report on the Future of Minnesota Drinking Water: A Framework for Managing Risk.* Minnesota Department of Health.
Retrievable from <https://www.wrc.umn.edu/future-minnesota-drinking-water>
- Synomik, D., **Levers L.**, & Calow, P. (2019). Lead in Minnesota Drinking Water. Minnesota

- Department of Health. Retrieval from <https://www.health.state.mn.us/communities/environment/water/docs/leadreport.pdf>
- Rhees, S., Weirens, D., Peterson, J., Lewandoski, A., **Lever, L.**, Lazarus, W., & Pradhananga, (2018). *Working Lands Watershed Restoration Feasibility Study and Program Plan*. Retrieved from <http://www.bwsr.state.mn.us/>
- Kelly, S., Calow, P., Lewandowski, A., **Lever, L.**, Kirby, E., & Ntouko, M. (2018). *Interim Report on The Future of Minnesota Drinking Water: A Framework for Managing Risk*. Minnesota Department of Health. Retrieval from <https://www.wrc.umn.edu/future-minnesota-drinking-water>
- Lever, L.**, & Kaffka, S. (2015). *California Energy Commission Task 4: Integrated Assessment of Agricultural Biomass Derived Alternative Fuels and Power in California: Supplemental Information Part 1; Use of Marginal Lands in California for Biomass Feedstocks*. California Energy Commission.

Select Manuscripts in Preparation

- Lever, L.**, & Kaffka, S. *Retirement or Reuse? Bioenergy on Marginal Land Under California's Sustainable Groundwater Management Act*. Manuscript in preparation.
- Lever, L.**, Dalzell, B., & Peterson, J. *Optimizing Conservation Practices: A Bio-economic Spatial Model*. Manuscript in preparation.
- Franklin, B., Schwabe, K., Knapp, K., & **Lever, L.** *The Economics of Jointly Managed Irrigated Perennials and Groundwater Stocks*. Manuscript in preparation.

Select Grants

- PI**; Grant co-author Feb 17, 2020 – Aug 17, 2020
Lever, L., Zukoski, A., Walker-Swaney, J., Waring, P. "Obesity mapping with state issued identification cards." BOLD Ideas. University of Minnesota Office of Academic Clinical Affairs. \$30,000.
- Researcher**; Grant co-author June 17, 2019 - Dec 31, 2020
Bilotta, J., Runkel, T., Arnold, B., Bohman, B., Lever, L., Jennings, C., Kang, P. "Managed Aquifer Recharge." Environmental and Natural Resources Trust Fund. \$350,000.
- Researcher**; Grant co-author March 1, 2019 - Dec 31, 2020
Lenhart, C., Current, D., & **Lever, L.** "Assessment of cover crop effectiveness within a treatment train of farm BMPs." Minnesota Department of Agriculture. \$64,286.
- Researcher**; Grant co-author Sep 28, 2018 - Sep 30, 2021
Lewandowski, A., Current, D., Jelinski, N., Gutknecht, J., Magner, J., Drewitz, M., & **Lever, L.** "Measuring Soil Health in the Upper Midwest to Improve Water Quality". Natural Resources Conservation Service: United States Department of Agriculture. \$885,047.
- Co-PI**; Grant co-author July 1, 2018 - June 30, 2020
Pradhananga, A., **Lever, L.**, Bajer, P., & Dalzell, B. "Public Values of Aquatic Invasive Species Management." Minnesota Aquatic Invasive Species Research Center. \$242,091.
- Co-PI**; Grant co-author July 1, 2018 - June 30, 2021
Shottler, S., **Lever, L.** & Peterson, J. "Develop Market Based Alternatives for Perennial Crops to Benefit Water and Wildlife". Environment and Natural Resources Trust Fund. \$150,000.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Upper Midwest Water Science Center - Minnesota
2280 Woodale Dr.
Mounds View, MN 55112
763-783-3100

Date: June 1, 2020
From: Erik Smith, Ph.D., Oklahoma-Texas Water Science Center
Richard Kiesling, Ph.D., Hydrologist, Upper Midwest Water Science Center

To Whom It May Concern:

We are writing in support of the research proposal, “Managing water quality and invasive macrophytes to promote healthy native aquatic plant communities”, that is being submitted to the USGS/NIWR Water Resources Research Act Program/Aquatic Invasive Competitive Grants Program. Although we do not have funding to participate directly in this research, we can help provide input into the research, assist with model development, or in advising on how to update previously published CE-QUAL-W2 models.

Through previous U.S. Geological Survey (USGS) research completed for both the National Park Service and the Minnesota Department of Natural Resources, we have extensive experience with CE-QUAL-W2 hydrodynamic and water-quality models. We have calibrated and published several models using the CE-QUAL-W2 modeling framework, including two applications (Madison Lake, Minnesota; Pearl Lake, Minnesota) that included using the macrophyte component of the model. We would both be interested in the usage of the macrophyte component in particular, which we have not previously calibrated through direct measurements. A comparison of the results from this work from the CE-QUAL-W2 model with the one-dimensional model from Dr. William Herb will be insightful.

In support of this work, we are willing to provide some advisory capacity and offer input, help serve on graduate student committees, and potentially participate in manuscript development for model application and insights.

Sincerely,

Erik A. Smith, Ph.D.
U.S. Geological Survey | Ann Arbor, MI
Oklahoma-Texas Water Science Center
Work #: (734) 214-7253
Cell #: (612) 386-1558

Richard L. Kiesling, Ph.D.
U.S. Geological Survey | Mounds View, MN
Upper Midwest Water Science Center
Work #: (763) 783-3131
Cell #: (612) 817-2826



18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Tuesday, June 2, 2020

Raymond M. Newman
Department of Fisheries, Wildlife, and Conservation Biology
University of Minnesota
St. Paul, MN 55108

Dear Prof. Newman:

I am writing in support of your research proposal "Managing water quality and invasive macrophytes to promote healthy native aquatic plant communities" that is being submitted to USGS/NIWR Water Resources Research Act Program/Aquatic Invasive Species Competitive Grants Program. This proposed research complements and expands on your past research conducted with the support, funding and collaboration of the district and addresses many of our key concerns with invasive species management in impaired waterbodies that are being managed for water quality improvements. We are currently managing 7 waterbodies impaired for nutrients and clarity and 5 of these have invasive aquatic plant species that complicate management. Your proposed research will further our understanding of integrated adaptable water resource management. This holistic approach will allow water resource managers take management steps in a way that maximizes success and provide multiple benefits.

I also appreciate the expansion to include other Metro Water Management Organizations – we all face similar problems and use variations on similar approaches. A formal analysis across the broader array of lakes and approaches will help us all improve management in a cost-effective manner.

Although the district cannot commit at present to another round of funding starting in 2021, we anticipate considering an ongoing project after review of your annual report in January 2021. You may use the remaining funds committed to your project for the coming academic year (September 2020 through May 2021) to support graduate student Jacob Olson and ongoing research as a match for this USGS proposal. After expenditures this summer, the District anticipates > \$30,000 will be available from Contract 76110 Managing for sustainable native macrophyte communities in lakes of the Riley Purgatory Bluff Creek Watershed District (Project #: 00074343).

We are excited about this project and look forward to furthering our understanding of our water resources and making better management decisions.

Sincerely,

A handwritten signature in blue ink that reads "Claire Bleser".

Claire Bleser
District Administrator, Riley Purgatory Bluff Creek Watershed District

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2021-017

Received complete: May 17, 2021

Board Meeting: July 7, 2021

Applicant: Riley Purgatory Bluff Creek Watershed District – Attn: Terry Jeffery, on behalf of itself and Bearpath Golf and Country Club (Bearpath)

Consultant: Barr Engineering

Project: Middle Riley Creek Stabilization and Bearpath Golf Course Renovation – The project will involve the stabilization of two segments of Riley Creek, totaling 970 feet, upstream of Lake Riley. The project includes realigning the existing creek channel, grading to reconnect the creek with its floodplain, installation of rock riffles, cross vanes, and J-hook vanes within the channel at key locations to provide grade control, improve the in-stream and riparian habitat in conjunction with the reduction in sediment load delivered downstream from channel and bank erosion. To accommodate the creek stabilization, Bearpath Golf and Country Club will elevate hole #13 tee boxes, moving them to the east and remove a portion of the existing impervious trail and improve hole #12 green area. In addition, and auxiliary to the creek stabilization, Bearpath will concurrently undertake course improvements.

Location: Along Riley Creek from Bearpath Trail to Lake Riley Road, Eden Prairie, MN

Reviewer: Bob Obermeyer, PE and Scott Sobiech, PE; Barr Engineering Co.

Potential Board Variance Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that variance requests 1 and 2 from compliance with Rule D for Permit 2021-017 are approved based on the facts and analysis provided by the RPBCWD engineer below and placed in the record at the July 7, 2021, meeting of the managers, and the managers' findings in the record of the July 7 meeting, and subject to the following conditions: 1. [CONDITION(S)],

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the July 7, 2021 meeting of the managers:

Resolved that the application for Permit 2021-017 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been met, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2021-017 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RPBCWD Rules?	Comments
B	Floodplain Management and Drainage Alterations	Yes	
C	Erosion Control Plan	See Comment	See Rule Specific Permit Condition C1.
D	Wetland and Creek Buffers	See Comment	See Rule Specific Permit Condition D1.
F	Streambank and Shoreline Stabilization	See Comment	See Rule Specific Permit Condition F1.
G	Waterbody Crossings and Structures	Yes	
K	Variations and Exceptions	See Comment	See Rule K Variance Request.
L	Permit Fees	NA	Governmental Agency
M	Financial Assurances	NA	Governmental Agency

Project Description and Background

The proposed project is located on Riley Creek north of Riley Lake Road and entirely within Bearpath Golf Course in Eden Prairie, Minnesota. The project includes the stabilization of two segments of Riley Creek; a southern reach between the Hole #16 fairway and green and a northern reach west of the Hole #13 tee box (580 and 390 feet, respectively). The southern reach includes steep eroding outer bend streambanks that are 4 to 6 feet tall along with streambank undercutting (see Figure 1), while the northern reach includes erosion along outer bend of streambanks as well as a segment that appears to have been straightened (see Figure 2). In addition, the project will restore 0.4 acres of wetland adjacent to Riley Creek, designate about 15.6 acres of wetland and creek buffer, and convert an additional 0.6 acres of mowed turf to native prairie restoration.

The proposed project includes realigning the Middle Riley Creek channel and grading the channel bank and floodplain in portions of the upstream and downstream locations to improve the creek’s connection to the floodplain and minimize streambank erosion. The realigned channel shape and capacity have been designed to minimize shear stress for both the stream’s baseflow and 100-year design storm. Specific bank stabilization measures placed in the channel at key locations to provide grade control and reduce the risk of future erosion will include J-hook log vanes, rock cross-vanes, live stakes, vegetated riprap, and Vegetated Reinforced Soil Slope (VRSS). To the extent possible, log vanes will utilize wood salvaged on site.

One grade-control riffle, one cross-vane, and three J-hooks will be installed in the northern (upstream) reach to provide channel bottom stability and direct flows away from outer banks. Additionally, 114 linear feet of channel will be realigned in the reach. For the southern (downstream) reach, three grade-control riffles, one cross-vane, and five J-hook vanes will be installed along with realigning 154 linear feet of the channel. The Project will also replace a storm sewer outfall within the southern reach.



Figure 1. Southern Site Photos

Figure 2. Northern Site Photos

To accommodate the creek stabilization, Bearpath will elevate and relocate hole #13 tee boxes to the east, remove roughly 400 feet of the existing impervious cart path, reconstruct about 210 feet of 8-foot-wide bituminous cart path, and improve hole #12 green area. Materials to elevate the #13 tee back and improve #12 green will be excavated from the eastern portion of the #12 fairway and transported to the green and tee box areas.

In addition, and auxiliary to the creek-stabilization work, Bearpath will renovate bunkers at #12, #13 and #16 greens, modify vegetation at greens #12 and #13 greens; construct a new #12 tee box and realign approximately 125 feet of 8-foot-wide cart path at #12 tee area. Under the cooperative agreement for the project, the application for the creek-stabilization work includes these course renovations, and analysis of compliance with RPBCWD regulatory requirements is included below.

On behalf of itself and Bearpath, RPBCWD is proposing wetland and creek buffers for areas downgradient from all proposed land-disturbing activities and around wetlands that will be disturbed by project work. In addition, Bearpath proposes to provide buffer along Riley Creek and other wetlands not disturbed or downgradient from land-disturbing activities (see Sheets C-04, C-05 and C-06 on the attached plan set).

Table 1 provides a brief explanation of how each resource is implicated by the project.

Table 1 Water Resources potential impacts by proposed project

Water Resource	Potential resource impacts
Riley Creek	Creek is disturbed for stream stabilization measures
Wetland 27-116-19-009 (NW wetland)	Wetland is disturbed for stream stabilization measures
Wetland 27-116-19-010 (NE wetland)	Wetland is downgradient from #12 green modifications
Wetland 27-116-19-025 (#12 Fairway)	Wetland is downgradient from the soil borrow area used for raising the #13 tee box
Wetland 27-116-19-040 (#16 Fairway and Green – South Site)	Wetland is disturbed for stream stabilization measures

The project site information is summarized below in Table 2:

Table 2 Project site information

	Project Total
Existing Site Impervious (acres)	3.34
Existing Impervious Area Disturbed (acres)	0.1 (3.9% disturbed)
New (Increase) in Site Impervious Area (acres)	0.05
Proposed Impervious Area (acres)	3.29
Exempt Trail and Sidewalk Area (acres)	0.05
Total Disturbed Area (acres)	5.01
Total Site Area (acres)	41.6

Exhibits:

1. Permit Application dated March 25, 2021. (Will be complete on receipt of cooperative easement agreement currently being work on with Bearpath.)
2. Table 3 summarizes the required and supplied submittals with this application. In addition, information about how the project complies with the criteria in each rule is summarized in the following subsections. The information provided is included in the plan set, latest revision date June 28, 2021, project narrative, dated May 4, 2021 (revised), wetland application and delineation report prepared by District staff submitted to the City of Eden Prairie, the local government unit administering WCA, on June 3 for review and approval as well as for type and boundary determination

Table 3 Permit materials

Submittal	Relevant Rule(s)	Submittal status Electronic Copy
One reduced size plan set (11"x17")	All applications	X
Site Plan	B, F, J	X
Grading Plan	B, C, D, F, G	X
Determination of 100-year floodplain	B	X
Cut, Fill, and change in storage volume computations	B	X
Erosion Control Plan	B, C, F, G	X
Project Narrative	C	X
Construction Implementation Schedule	C	X
Proposed changes to floodplain	B, C	X
SWPPP	C	X
Wetland delineation report	D	X
Restoration Plan	D, F	X

Rule Specific Permit Analysis

Rule B - Floodplain Management and Drainage Alterations

Because portions of Riley Creek will be realigned as part of the project, which involves placing fill below the existing 100-year flood profile of Riley Creek, the project must conform to the RPBCWD’s Floodplain Management and Drainage Alterations rule (Rule B). In the realigned channel segments, the project will raise (i.e., fill) the channel bed in some locations 0.5 feet to reconnect to the adjacent floodplain.

Because the project does not propose to construct or reconstruct structures that have low floors, Rule B subsection 3.1 does not apply.

The summary of the changes to the floodplain storage capacity is provided in Table 4. The project meets the requirements for compensatory storage (+/- 1 foot) for any fill placed in the floodplain by providing a net increase in storage of 194 cubic yards for the northern reach and 287 cubic yards for the southern reach, thus conforming with Rule B, subsection 3.2.

Table 4 Stage storage computation below existing 100-year flood elevation

Northern Location				Southern Location			
Elevation	Existing Storage volume (CY)	Proposed Storage Volume (CY)	Difference (CY) ¹	Elevation	Existing Storage volume (CY)	Proposed Storage Volume (CY)	Difference (CY) ¹
870	33	133	100	864	0	26	26
871	114	161	47	865	15	126	111
872	308	362	54	866	263	342	79
873 ^{2,4}	621	628	-7	867	488	510	22
-	-	-	-	868	827	856	29
-	-	-	-	869	1,111	1129	18
-	-	-	-	870 ^{3,4}	1,265	1267	2
Total Change			194	Total Change`			287
Notes							
(1) Negative (-) volume indicates fill							
(2) The maximum 100-year flood elevation for the northern area is 873							
(3) The maximum 100-year flood elevation for the southern area is 870							
(4) No change in floodplain storage above elevation 873 for Northern Location and 870 for Southern Location							

Because filling of floodplain has the potential to alter the timing and duration of flows leaving the site, the applicant must demonstrate that the alterations are not reasonably likely to have an adverse offsite impact and not reasonably likely adversely affect flood risk, basin or channel stability, groundwater hydrology, stream baseflow, water quality, or aquatic or riparian habitat (Rule B subsection 3.3). Modeling indicates the project will not alter surface flow beyond the project limits. By stabilizing the streambanks and reconnecting flows to the floodplain the proposed project will improve water quality and riparian habitat; and the project will have no impact on groundwater hydrology or stream base flow. The project will result in a slight increase in the flood level along one isolated section within the northern reach (a segment of approximately 150 feet) and 25 feet in the southern reach. Despite the slight increase in the highwater level (less than 0.1 feet), there will not be an increase to the flood risk for any adjacent properties or structures. The increase in the flood level is limited to the Bearpath property and is within the degree of engineering accuracy for the modeling completed. The modeling shows the improvements will not have adverse offsite impacts. Based on these findings, the RPBCWD engineer concurs with the hydraulic analysis conducted by the applicant’s engineer which demonstrates that the project will not materially alter flood elevations or surface flow, thus the project meets the requirements of Rule B, subsection 3.3.

Criteria 3.4 is met because no enclosed structure(s) will be placed within 100-ft of the centerline of the watercourse. This restriction does not apply to the two existing bridges within 100 feet of the creek (Rule B, subsection 3.4a) or to the golf course path that is less than 10 feet wide and designed primarily for nonmotorized use (Rule B, subsection 3.4b).

An erosion prevention and sediment control plan has been provided, per Criteria 3.5, along with the plans and specifications that include notes for controlling terrestrial and aquatic invasive species entering and leaving the site, per Criteria 3.6.

The proposed project conforms to the floodplain management and drainage alteration requirements of Rule B.

Rule C – Erosion and Sediment Control

The project disturbs more than 5,000 square feet, so it must meet all the requirements in Rule C. Table 5 summarizes how the Rule C criteria are met.

Table 5 Rule C Criteria and how criteria are met

Rule C Criteria	How Criteria is addressed
3.1a	The channel and the immediate floodplain will be disturbed by project grading. The project notes call for on-site topsoil to be preserved (Sheet C-01, C-02).
3.1b	The plans include callouts and/or notes to require rock construction entrances, inlet protections, floating silt curtains, sediment logs, and silt fence to prevent erosion from leaving the site. (Sheet G-02, C-01, C-02)
3.1c	The SWPPP includes provisions to utilize phasing to minimize the duration of disturbance. (Sheet G-02)
3.1d	Plans call for slopes steeper than 3:1 to be stabilized with VRSS or other measure (C-01, C-02)
3.1e	Inlet protection is a requirement the erosion control plan, Note 3. (Sheet C-01, C-02)
3.1f	Note 7 in the erosion control plan specifies the requirement to include a minimum of six inches of topsoil. (Sheets C-01, C-02, C-11 and C-12)
3.1g	The Pollution Prevention Management Measures section of the SWPPP includes provisions to manage construction site waste and to prevent chemical, litter, concrete, and sanitary waste.
3.2a	Note 9 on Sheet C-01& C-02 requires BMP maintenance until vegetation establishment
3.2b	Note 10 on Sheet C-01& C-02 requires removal of BMPs when stabilization has been established
3.2c	Note 11 on Sheet C-01& C-02 requires decompaction
3.2d	Note 12 on Sheet C-01& C-02 requires stabilization within 7 calendar days of work temporarily or permanently stopping.
3.3	Inspection and maintenance requirements are addressed on the Erosion Control Plan (Sheet C-01& C-02)
3.3a	Erosion control blanket or straw mulch will be required on all disturbed areas. (Sheet R-01 & R-02)
3.3b	Not applicable
3.3c	Sediment barriers are required at all necessary areas. (Sheets C-01 & C-02)
3.3d	Erosion control blanket will be used on all slopes steeper than 3:1 (H:V).
3.3e	Stockpiled soils are addressed in the BMPs subsection of the Temporary Sediment Control Practices in the SWPPP (Sheet G-02)
3.3f	A Rock Construction Entrance is required (Sheet C-01 & C-02)

The erosion and sediment control plan prepared by Barr Engineering Co. includes installation of perimeter controls (i.e., silt fence and floating silt curtain), inlet protection for storm sewer catch basins, stabilized rock construction entrances, decompaction of areas compacted during construction, six inches

of topsoil, and retention of native topsoil onsite. To conform to the RPBCWD Rule C requirements the following revisions are needed:

- C1. The Applicant must provide the name and contact information of the general contractor responsible for the site. RPBCWD must be notified if the responsible party changes during the permit term.

Rule D – Wetland and Creek Buffers

Because the proposed work triggers a permit under RPBCWD Rules B, F, and G for the streambank stabilization and temporary stream crossing, Subsections 2.1 and 3.1 require buffer adjacent to Riley Creek, a public water course, with an average width of 50 feet and a minimum width of 30 feet from the thalweg of the watercourse. In addition, wetlands border large portions of the creek in the project area (as shown by the wetland delineations included on Sheet C-04 of the construction drawings.) Because two wetlands will be disturbed for the proposed channel modifications and two are downgradient of the construction activities, Rule D, Subsections 2.1a and 3.1 apply and require buffers on these wetlands.

The wetland boundary determinations within the project limits were completed by the RPBCWD staff and submitted to the City of Eden Prairie, the LGU administering WCA, on June 3 for type and boundary determination. RPBCWD staff also completed Minnesota Routine Assessment Method (MnRAM) analyses and determined that the wetlands onsite are exceptional and high value (Appendix D1), as detailed in Table 6. Rule D, Subsection 3.2.b.ii requires for a high value wetland, a buffer being a minimum of 30 feet in width with an average width of 60 feet. For an exceptional value wetland, a buffer being a minimum of 40 feet with an average width of 80 feet is required.

The buffers will be located on land owned by the Bearpath Golf and Country Club. The buffers are shown on Sheets C-04, C-05 and C-06 on the attached plan set. The buffer widths are summarized in Table 6 below.

Table 6 Wetland Buffer Analysis

Wetland ID	RPBCWD Wetland Value	Required Minimum Width ¹ (ft)	Required Average Width ¹ (ft)	Provided Minimum Width (ft)	Provided Average Width (ft)
Riley Creek	NA	30	50	11	63
Wetland 27-116-19-009 (NW wetland)	Exceptional	40	80	8	82
Wetland 27-116-19-010 (NE wetland)	High	30	60	8	92
Wetland 27-116-19-025 (#12 Fairway)	High	30	60	8	70
Wetland 27-116-19-040 (#16 Fairway and Green – South Site)	Exceptional	40	80	10	110

¹ Average and minimum required buffer width under Rule D, Subsection 3.2ba.

The applicant is requesting approval of variances for the minimum buffer-width shortfalls shown in Table 6, based on impact to the existing golf course layout. (See Rule K variance discussion)

Some of the identified buffer areas are currently are being mowed by Bearpath. Bearpath will cease mowing within these areas, which will allow the native vegetation to be established. In addition, the project is proposing revegetating disturbed areas within the proposed buffer with native vegetation in conformance with Rule D, Subsection 3.3.

Buffer markers located at inflection points in the buffer's upland edge and along the edge of the buffer at intervals of 200 feet or less are required by Rule D, Subsection 3.4. As shown on Sheets C-04, C-05 and C-06 of the attached plans, the buffer markers will be located per Rule D criteria. Bearpath has requested a variance from the requirement for free-standing signs on private property to allow flush to the ground markers (See Rule K variance discussion). The RPBCWD and Bearpath are currently working on a cooperative agreement for long-term project maintenance, including maintenance of the buffer areas (subsection 3.5). Subsection 3.5 also requires the maintenance requirements of the buffer areas be recorded with Hennepin County. A note on sheet C-01 requires that the contractor conduct activities in a way that will minimize the potential for the transfer of AIS (subsection 3.6).

Aside from the variance requests, the following revisions are needed to conform to the RPBCWD Rule D:

- D1. Buffer areas and maintenance requirements must be documented in a declaration recorded after approval by RPBCWD. The declaration must also include an exhibit clearly showing the buffer area and monument locations.

Rule F – Shoreline and Streambank Stabilization

Because the applicant proposes to install improvements to stabilize Riley Creek, a public watercourse, the project must conform to the criteria in Rule F. In addition, there are two areas in the creek that will be realigned slightly to reduce the erosion potential and stabilize the creek.

As shown on Figure 1 and Figure 2, there are eroding banks throughout this project reach, thus demonstrating a need for stabilization conforming with Rule F, Subsection 3.1.

For criteria 3.2b, the streambank shear stress was computing using the HEC-RAS modeling software from the US Army Corps of Engineers. Based on the modeling results, the shear stress along the majority of the reach is between <0.1 pounds per square foot (psf) and 0.6 psf for the 10-year storm event resulting in the majority of the reach being desigated a low energy stream because the maximum shear stress is less than 2.5 pounds per square foot (psf). Therefore, erosion along most of the reach could be stabilized with bioengineering. Because the engineer concurs that with the shear stress computations provided by the applicant's engineer demonstrating that the localized shear stress at some bends in the creek is estimated at 2.7 psf, the bends are consider medium energy sites and the erosion could be stabilized with combination of bioengineering and riprap.

The design for the stream includes bioengineering methods, which are consistent with the design criteria for a low energy stream, as well as in-channel structures to facilitate floodplain connection. The proposed design includes the placement of the following bioengineering methods along the streambanks: coir log with native plantings, bank grading and native vegetation, vegetated reinforced

soil slopes (VRSS) without rock toe stabilization, VRSS with rock toe stabilization, and native live stake plantings (rule F, subsection 3.3.a.i). Bank grading will produce finished stabilized slope below the ordinary high water level (OHW) of 3H:1V as indicated on plan Sheet C-08 and C-10 (3.3.a.ii).

The drawing indicated that field stone vegetated-riprap is proposed for the medium energy creek bend and demonstrates the riprap aligns with the creek channel. The proposed riprap will have an average size of 9 inches in diameter (MNDOT Class III Riprap), a geotextile (MnDOT 3733), and transitional layer of 6 inches of granular bedding consistent with Rule F, Subsections 3.3b.i and 3.3b.iii. Notes on the plan sheet prohibit the use of limestone or dolomite consistent with Rule F, Subsections 3.3b.i. The proposed natural stone riprap for the vegetated riprap can withstand shear stress of 3.8 psf, which is consistent with the erosion intensity for the flow in the creek at this bend location (Rule F, Subsection 3.3b.i).

The drawing confirms the vegetated riprap on the creek bend conforms to the natural alignment of the tributary (3.3.b.ii). The placement of riprap is for the purpose of stabilizing the creek bends, thus riprap is not proposed for cosmetic purposes (Rule F, subsection 3.3.b.vi)

As indicated on Sheet C-01, C-02, C-11, and C-12 of the attached plan set, construction activities must be conducted to minimize the potential transfer of invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible. (Rule F, subsection 3.3e)

The Minnesota Department of Natural Resources has waived jurisdiction over the proposed work to RPBCWD. To benefit from the authorization available under DNR General Permit #2015-1192 issued for work in the Riley-Purgatory-Bluff watershed, the applicant will need to comply with the terms and conditions of the general permit.

The following revisions are needed to conform to the RPBCWD Rule F:

- F1. The vegetated riprap detail on sheet D-02 must be revised so the riprap will extend no higher than the top of bank, the finished stabilized slope will be 3:1 below the OHW, the riprap will not reduce the cross-sectional area (3.3.a.ii and 3.3.b.v).

Rule G – Waterbody Crossings and Structures

An existing storm sewer flared end section, shown in Figure 4, is to be replaced as part of the project. Because this replacement will result in work that is in contact with the bank of the waterbody, Rule G applies. In addition, the project proposes to install an at-grade crossing of the creek to facilitate site access as well as constructing riffles, cross vanes, and log vanes in contact with the bed of Riley Creek to restore a natural pool-riffle sequence along the reach.

Because no directional boring or horizontal drilling is proposed, and no structures will be removed, the criteria in subsections 3.4 and 3.6 require no analysis here.

A note on plan sheet G-02 requires no activity in the creek between March 15 and June 15, thus conforming to Rule G subsection 3.7a. The project plans and specifications indicate the banks will be immediately stabilized after completion of permitted work and revegetated as soon as growing

conditions allow (Rule G, Subsection 3.7b). A note is included on the plan sheet indicating the project will be constructed to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible (Rule G, Subsection 3.7c).

Flared end section specific analysis



Figure 3. Erosion at existing flared end section near the #16 Green

As illustrated in Figure 3, the flared end section has become perched approximately 2.5-feet above the existing channel bottom.

The proposed grading will not elevate the stream bed to the invert of the existing flared end section. A new manhole in addition to the new flared end section will be installed bringing the outlet to the elevation of the proposed stream bed.

Because leaving the existing flared end section in place will result in continuing erosion that will contribute to degraded water quality on all reaches of Riley Creek downstream of this project, there is a demonstrated public benefit (improved water quality) from replacing this flared end section, meeting section 3.1b.

Criteria 3.3 is met because as shown on plan sheet D-06, the new flared end section will include a riprap apron and stilling basin to reduce risk of bank erosion. The flared end section will be replaced to prevent scour. Also, the drop into the new manhole structure will dissipate stormwater energy discharging into the channel. Because there is an upgradient, existing stormwater pond which will reduce peak flows and reduce pollutants the project conforms with criteria 3.3b and 3.3c.

Rule G, Subsection 3.7d requires compliance with the applicable criteria in subsections 3.3 of Rule F. Construction drawings submitted show the finished, stabilized side slopes of the channel banks will not be steeper than 3:1 as required by Rule F, Subsection 3.3a (ii). Drawings confirm the replaced outfall will follow the existing alignment of the watercourse (Rule F, Subsection 3.3a (iii)). The project proposes the use field stone riprap for the construction of the crossing with an average size of 9 inches in diameter (MNDOT Class III Riprap), a geotextile (MnDOT 3733), and transitional layer of 6 inches of granular bedding consistent with Rule F, Subsections 3.3b.i and 3.3b.iii.. Because the proposed riprap can withstand flow velocities greater anticipated leaving the outfall, the riprap design is consistent with the expected erosion intensity at this location, thus conforming to Rule F, Subsection 3.3.a.iv. Notes on the plan sheet prohibit the use of limestone or dolomite consistent with Rule F, Subsections 3.3b.i. The outfall detail on sheet detail on sheet D-06 indicates the riprap will extend no higher than the top of bank (Rule F, Subsection 3.3b.v).

Grade control features and at-grade waterbody crossing specific analysis

The at-grade waterbody crossing is needed to facilitate site access to restore the streambanks and install grade control features along the creek to reduce the amount of TSS and TP being contributed to Riley Creek and Lake Riley, both of which are impaired waterbodies. Therefore, this work represents a public benefit by reducing erosion and the pollutant load entering the downstream impaired waters (Rule G, Subsection 3.1b)

Subsection 3.2:

- a. The plans require that the proposed creek crossing be constructed at grade, meaning the cross-sectional flow area of the proposed crossing will be equal to or slightly greater than the existing cross section, thus maintaining adequate hydraulic capacity (Rule G, subsection 3.2a).
- b. Because the drawings show the crossing will be installed at-grade, maintain the same cross-sectional area, and use materials sized to withstand the anticipated erosive forces (see Rule G, Subsection 3.7d discussion below), the project will not alter flows and is thus not reasonably likely to increase scour, erosion, or sedimentation. (Rule G subsections 3.2b and 3.3c)
- c. Criteria 3.2d is achieved because the proposed at-grade crossing maintains consistent elevations and flow characteristics, thus wildlife passage after the project will be the same as pre-project conditions.
- d. A creek crossing is needed for equipment and materials to access the creek stabilization sites. The project meets the “minimal impact” solution because other crossing alternatives, such as culverts, would have had a much larger footprint to meet the same design objectives and result in additional floodplain fill and riparian wetland impacts. In addition, without the crossing the larger stream stabilization project would not be accessible. (Rule G subsections 3.2e)

RPBCWD completed a 2020 feasibility study for this area which analyzed two stabilization concepts, stabilize in-place or re-meandering. The final recommendation in the feasibility report was a combination of the two concepts. This combined approach includes the stream realignment near the Hole 13 tee box and restoration of the downstream segment largely in the existing stream pattern. A slight channel realignment away from the Hole 16 green is necessary to achieve a 3:1 slope. Additionally, the recommended approach would include the boulder wall that aligns with the aesthetic goals of the golf course. This recommendation provides the greatest level of habitat improvements and a resilient solution to the stream erosion. The proposed project further refined the recommended concept to reduce the stream re-meandering length and incorporate significant riparian buffer to further protect the waterbodies, thus the proposed design represents the minimal impact solution, and it represents the minimal disturbance area to significantly reduce pollution from this reach (Rule G, subsection 3.5a and 3.5b). The Rule B analysis provided above demonstrates the project complies with district’s floodplain rule as required by Rule G, subsection 3.5c.

The proposed grading, rock riffle, cross vanes, log vanes, and vegetation reestablishment will help control flows, reduce velocities, and reduce erosion within the creek. Water quality modeling indicates the project will improve water quality by significantly reducing the erosion caused by the eroding banks within the project area by approximately 17,000 lbs. of TSS per year and 8.3 lbs. of TP per year. Because implementation of the plans will provide a reduction in pollutant loading and show that discharges rates

are unchanged, the proposed alterations are not likely to cause adverse impacts and the project conforms to Rule G, Subsection 3.5d.

Rule G, Subsection 3.7d requires compliance with the applicable criteria in subsections 3.3 of Rule F. Construction drawings submitted show the finished, stabilized side slopes of the channel banks associated with the at-grade crossing and grade control features will not be steeper than 3:1 as required by Rule F, Subsection 3.3a (ii). Drawings confirm the proposed crossing and grade control features will follow the existing alignment of the watercourse (Rule F, Subsection 3.3a (iii)). The project proposes the use field stone riprap for the construction of the crossing with an average size of 6 inches in diameter (MNDOT Class II Riprap), with a geotextile (MnDOT 3733) and transitional layer of 6 inches of granular bedding consistent with Rule F, Subsections 3.3b.i and 3.3b.iii.. Notes on the plan sheet prohibit the use of limestone or dolomite consistent with Rule F, Subsections 3.3b.i. Because the proposed riprap can withstand flow velocities of between 5-10 feet per second, which is slightly greater than the anticipated velocities (3-6 fps), the crossing design is consistent with the erosion intensity for the flow in creek at this location, thus conforming to Rule F, Subsection 3.3.a.iv and 3.3.b.i. Because the crossing, vane, and riffle purpose and design are different than typical riprap installation, Rule F, Subsection 3.3b does not impose requirements on this permit.

The proposed streambank stabilization complies with RPBCWD Rule G. The Minnesota Department of Natural Resources has waived jurisdiction. To benefit from the authorization available under DNR General Permit #2015-1192 issued for work in the Riley-Purgatory-Bluff watershed, the applicant will need to comply with the terms and conditions of the general permit.

Rule J – Stormwater Management

The project will disturb more than 5,000 square feet of land-surface area; however, the project will reduce the amount of paved trail and the portions of the trail that will be realigned will not exceed 10 feet in width and will be bordered downgradient by a pervious area a least half the trails width. In addition, the proposed site grading and slight reduction in impervious surface will not change the stormwater flows at the site boundary.

Under Rule J, subsection 2.2d and 2.4e, the project is exempt from Rule J.

Rule K – Variances and Exceptions

Table 7 summarizes the Applicant’s request for approval of two variances from the RPBCWD regulatory requirements.

Table 7. Variance request summary

Variance number	Rule	Subsection	Requested Variance	Notes
1.	D	3.2b	Minimum width along 27% of the buffer on all four wetlands and the creek	Bioswale proposed along about 70% of shortfall areas
2.	D	3.4	Buffer-signage requirements	Allow for flush mount marker

Rule K requires the Board of Managers to find that because of unique conditions inherent to the subject property the application of rule provisions will impose a practical difficulty on the Applicant. Assessment of practical difficulty is conducted against the following criteria:

1. how substantial the variation is from the rule provision;
2. the effect of the variance on government services;
3. whether the variance will substantially change the character of or cause material adverse effect to water resources, flood levels, drainage, or the general welfare in the District, or be a substantial detriment to neighboring properties;
4. whether the practical difficulty can be alleviated by a technically and economically feasible method other than a variance. Economic hardship alone may not serve as grounds for issuing a variance if any reasonable use of the property exists under the terms of the District rules;
5. how the practical difficulty occurred, including whether the landowner, the landowner's agent or representative, or a contractor, created the need for the variance; and
6. considering all the above factors, whether allowing the variance will serve the interests of justice.

Variance Request #1

The variance request is from the minimum width requirement for the wetlands on the site and Riley Creek (Rule D, Subsection 3.2.b). The required and provided buffer widths are summarized in the Table 9. . The buffer-size variances requested are related and based on area Bearpath wishes to see converted to buffer.

- Related to variance criterion 1 – Table 8 and Table 9, below, identify the required and provided buffer areas as well as the shortfalls in the required minimum buffer widths for Riley Creek and the four onsite wetlands. The summary table shows substantial shortfalls from the minimum buffer widths require for the four wetlands and Riley Creek. The most substantial shortfall in the minimum widths is for is Wetland 27-116-19-009 (32 feet or 80% shortfall). The largest shortfall in the average buffer width is for Wetland 27-116-19-040 (30 feet or 75% shortfall). Considering the site in aggregate, a shortfall in the minimum width occurs along 27% of the combined length of creek and wetland boundary.

Table 8 Wetland and Creek Buffer Area Summary

Resource ID	Needed Area (sq ft)	Provided Area (sq ft)
Riley Creek	279,200	350,900
Wetland 27-116-19-009 (NW wetland)	191,600	197,400
Wetland 27-116-19-010 (NE wetland)	31,400	48,100
Wetland 27-116-19-025 (#12 Fairway)	13,700	16,000
Wetland 27-116-19-040 (#16 Fairway and Green – South Site)	57,200	78,400
	573,100	690,800

Table 9 Wetland and Creek Buffer Analysis

Resource ID	RPBCWD Wetland Value	Required Minimum Width ¹ (ft)	Required Average Width ¹ (ft)	Provided Minimum Width (ft)	Provided Average Width (ft)	Shortfall in Minimum Width Provided	% Shortfall in Minimum Width Provided
Riley Creek	NA	30	50	11	63	19	63
Wetland 27-116-19-009 (NW wetland)	Exceptional	40	80	8	82	32	80
Wetland 27-116-19-010 (NE wetland)	High	30	60	8	92	22	73
Wetland 27-116-19-025 (#12 Fairway)	High	30	60	8	70	22	73
Wetland 27-116-19-040 (#16 Fairway and Green – South Site)	Exceptional	40	80	10	110	30	75

¹ Average and minimum required buffer width under Rule D, Subsection 3.2.a.

- Regarding variance criteria 2 and 3 – The information submitted demonstrates that the proposed buffer minimum widths will not have adverse effects to the resource because the runoff from the adjacent areas is from vegetated expanses (golf course turf or woodland), similar to existing conditions. As shown in Table 8 below, the proposed additional buffer area will more than offset the encroachment caused by the reduced buffer widths.
- Technical measures considered to alleviate the practical difficulty (variance criterion 4) include relocating and reducing the golf course features. The features are needed at these locations to accommodate the golf course design, most of which is existing. The applicant is also proposing to install 917 linear feet of vegetated bioswales along the edges of wetlands 27-116-19-010 and 27-116-19-040 to offset the shortfall. The bioswales, planted with native vegetation, between the land-disturbing activities and the regulated features alleviate some of the shortfall by promoting infiltration, pollutant reduction, and habitat. In addition, Bearpath proposes to provide buffer along Riley Creek and other wetlands not disturbed or downgradient from land-disturbing activities (see Sheets C-04, C-05 and C-06 on the attached plan set)
- Regarding variance criterion 5, the applicant has created the need for the variance by enhancing and restoring portions of Riley Creek that are contributing excess sediment to the creek and Lake Riley.

The engineer finds there is adequate technical basis for the managers to rely on to grant the requested variance because of the added resource protection of the additional buffer area provided by the project and the installation of bioswale in 72% of the area with shortfalls from the minimum buffer width.

Variance Request #2

The second variance request is from Rule D, Subsection 3.4 requiring free-standing signs on private property.

- Related to variance criterion 1 – There are 79 buffer signs required to meet the monumentation requirement in Rule D, Subsection 3.4. The request variance is to replace 62 of the free standing signs along the playable portion of the course with flush to the ground markers. This represents a 78% shortfall from the free-standing sign requirement.
- Regarding variance criteria 2 and 3 – Converting to a flush to the ground monument will reduce the ability for grounds crew conducting maintenance on the golf course to easily identify the edge of the buffer areas. GPS location of the flush to the ground markers will be require with the information used by Bearpath maintenance personal in mowing and buffer maintenance activities on the course. The use of flush to the ground monuments will have no impact on government service and not materially change or impact the water resources. However, without free-standing signs there is a reduced public educational value.
- Technical measures considered to alleviate the practical difficulty (variance criterion 4) include using flush to the ground markers that will be located with GPS coordinates. In addition, Bearpath has indicated a willingness to include buffer education materials and maps in the clubhouse and on their website. Also, the flush mount buffer maker will have minimum diameter of 3 inches, identify the monument as a “Buffer Marker”, state “No Mowing Beyond”, and include RPBCWD’s web address.
- Regarding variance criterion 5, the applicant has created the need for the variance by enhancing and restoring portions of Riley Creek that are contributing excess sediment to the creek and Lake Riley. Bearpath is designation as a Jack Nicklaus Signature golf course. It is the engineer’s understanding that maintaining the Jack Nicklaus Signature golf course status requires incorporating the following characteristics into any design modification: challenge, aesthetics, conditioning, distinctiveness, character, shot options, and layout variety. Bearpath has expressed concerns with the number and location of the free-standing buffer signs required by the District rule and the signs compatibility with Jack Nicklaus Signature golf course golf course aesthetics requirements. The project is almost entirely for water-resource improvement purposes being undertaken and scoped by RPBCWD. Therefore, it may not be reasonable to require the property owner to dedicate additional land area, where such dedication would negatively affect its ongoing, established use.

The engineer makes no determination as to whether there is an adequate technical basis for the managers to rely on to grant the requested variances from the free-standing sign requirement (Rule D, subsection 3.4). The managers may wish to consider – in weighing whether to approve the variance – conditioning approval on Bearpath’s written commitment to include buffer education materials and maps in the clubhouse and on their website.

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.

2. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed above and on the permit. The granting of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
5. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
6. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
7. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

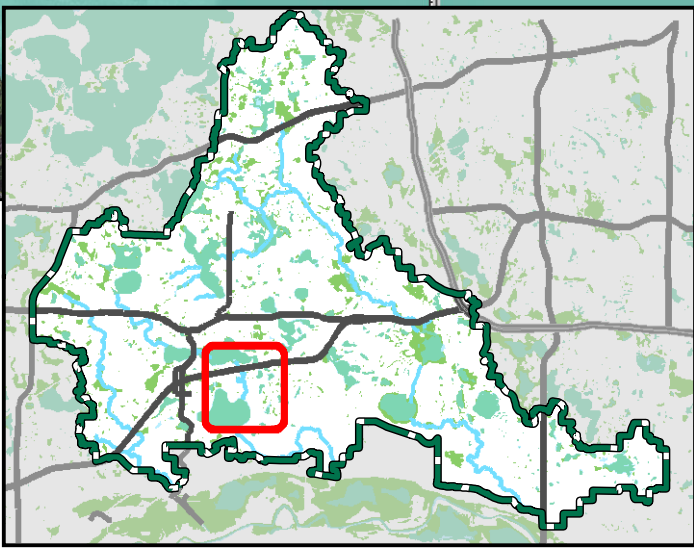
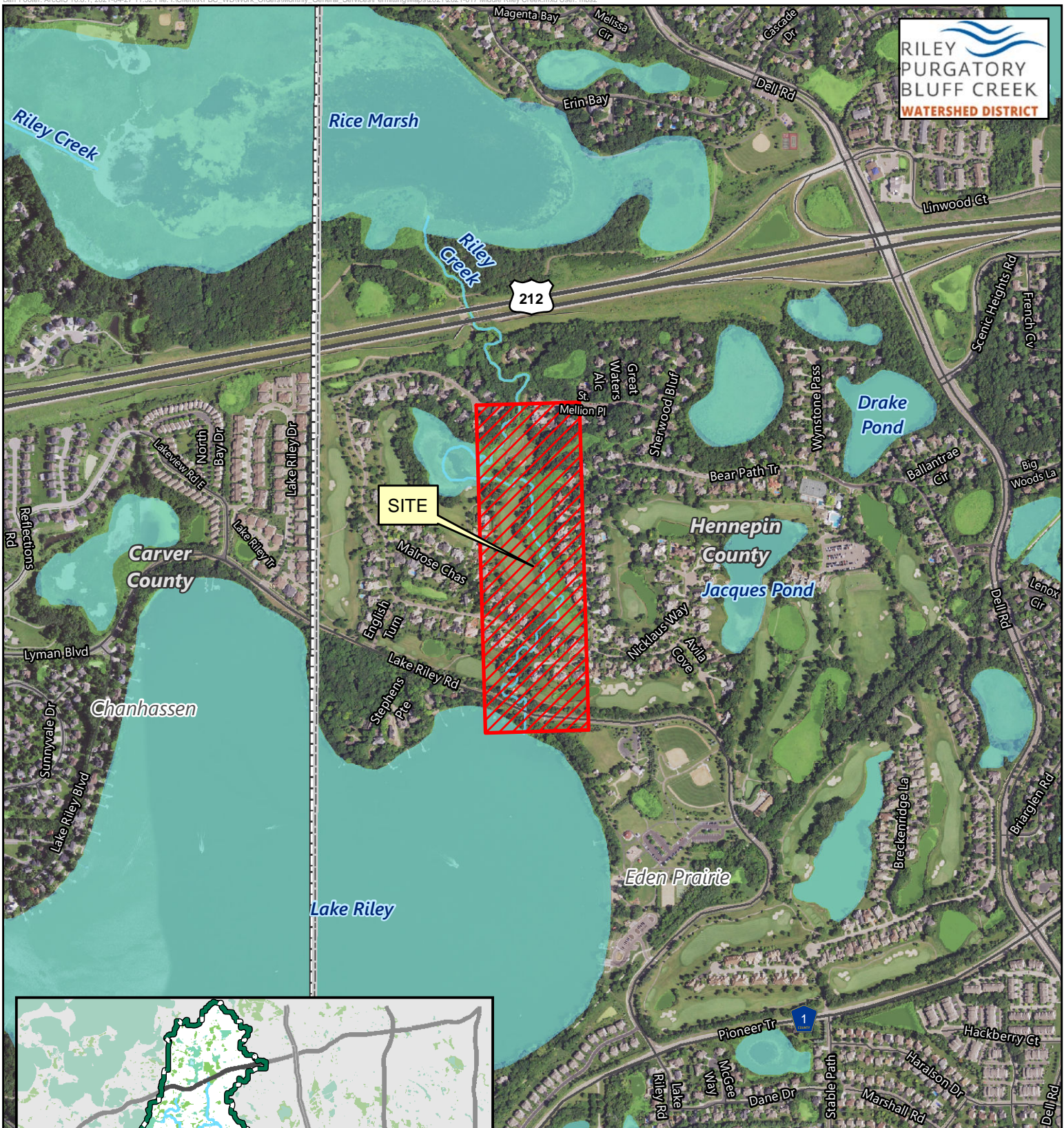
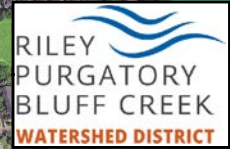
Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. Aside from the variance requests from the provisions of Rule D cited above (subsection 3.2 and 3.4), the proposed project will conform to the remaining criteria of Rules D if the Rule Specific Permit Conditions listed above are met.
3. The proposed project conforms to Rules B, and G and will conform to Rules C and F if the Rule Specific Permit Conditions listed above are met.
4. Under Minnesota Department of Natural Resources General Permit 2015-1192 (attached to this report) and given the waiver described above by DNR to the general permit, approval of work under RPBCWD rules F and G constitutes approval under applicable DNR work in waters rules. Compliance with conditions on approval and payment of applicable fees, if any, are necessary to benefit from general permit and the responsibility of the applicants.

Recommendation:

Approval, contingent upon:

1. Continued compliance with General Requirements.
2. The applicant must provide the name and contact information of the individual responsible for erosion prevention and sediment control at the site (Phases 1 and 2). RPBCWD must be notified if the responsible party changes during the permit term.
3. The vegetated riprap detail on sheet D-02 must be revised so the riprap will extend no higher than the top of bank, the finished stabilized slope will be 3:1 below the OHW, the riprap will not reduce the cross-sectional area (3.3.a.ii and 3.3.b.v).
4. In accordance with Rule 3.5, a receipt showing recordation of a maintenance declaration for the wetland buffer areas and the waterbody crossings. A draft of the declaration must be approved by the District prior to recordation



Feet

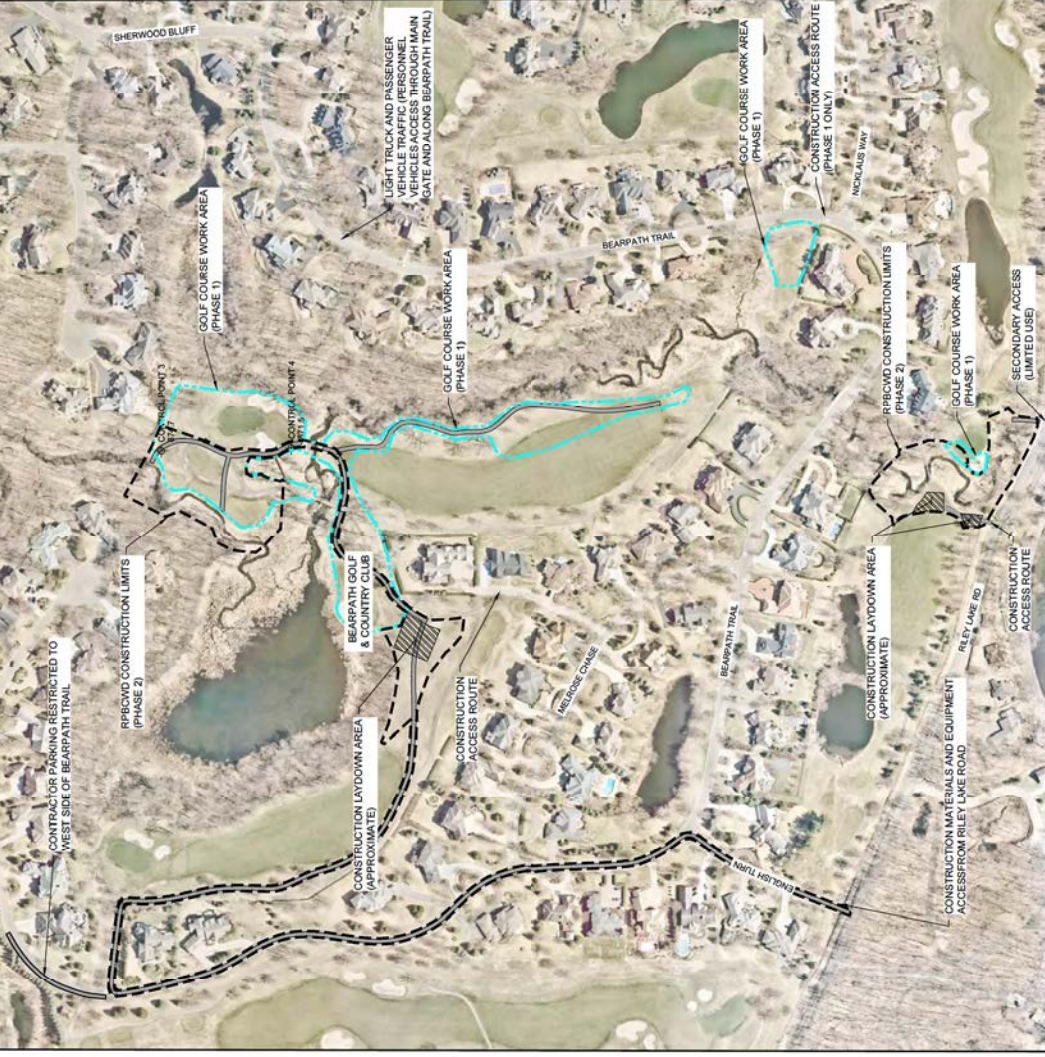


Permit Location Map

MIDDLE RILEY CREEK
Permit 2021-017

Riley Purgatory Bluff Creek
Watershed District

MIDDLE RILEY CREEK STABILIZATION AND BEARPATH GOLF COURSE RENOVATION RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT



INDEX OF SHEETS

G-01	TITLE SHEET, PROJECT LOCATION, AND SHEET INDEX
G-02	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
G-03	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
G-04	TREE INVENTORY AND TREE REMOVALS - SOUTH
G-05	TREE INVENTORY AND TREE REMOVALS - NORTH
PHASE 2 - MIDDLE RILEY CREEK STABILIZATION	
C-01	EXISTING CONDITIONS, REMOVALS, AND EROSION CONTROL PLAN - SOUTH
C-02	EXISTING CONDITIONS, REMOVALS, AND EROSION CONTROL PLAN - NORTH
C-03	EROSION CONTROL DETAILS
C-04	EASEMENTS, FLOODPLAINS, AND WETLAND BOUNDARIES - RILL SITE
C-05	EASEMENTS, FLOODPLAINS, AND WETLAND BOUNDARIES - SOUTH
C-06	EASEMENTS, FLOODPLAINS, AND WETLAND BOUNDARIES - NORTH
C-07	STREAM STABILIZATION SOUTH - PLAN
C-08	STREAM STABILIZATION SOUTH - PROFILE AND SECTIONS
C-09	STREAM STABILIZATION NORTH - PLAN
C-10	STREAM STABILIZATION NORTH - PROFILE AND SECTIONS
PHASE 1 - BEARPATH GOLF COURSE RENOVATION	
D-01	STABILIZATION DETAILS
D-02	STABILIZATION DETAILS
D-03	STABILIZATION DETAILS
D-04	STABILIZATION DETAILS
D-05	ROCK WALL DETAILS
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	
C-11	EROSION CONTROL PLAN - #16 GREEN, #12 TEE BOX, #12 FARWAY
C-12	EROSION CONTROL PLAN - #13 GREEN, #12 TEE BOX, #12 FARWAY
C-13	EROSION CONTROL DETAILS
C-14	GRADING PLAN - #16 GREEN, #12 TEE BOX, #12 FARWAY
C-15	GRADING PLAN - #13 GREEN, #13 TEE BOX
R-04	RESTORATION PLAN - #16 GREEN, #12 TEE BOX, #12 FARWAY
R-05	RESTORATION PLAN - #13 GREEN, #13 TEE BOX

SYMBOLS AND ABBREVIATIONS:

SECTION IDENTIFIER (TYP.)	SECTION GRAPHICS STANDARDS	SECTION VIEW CALL OUT
SECTION REFERENCES (TYP.)	SECTION IS CALLED-OUT ON	SECTION IS LOCATED ON
DETAIL IDENTIFIER (TYP.)	DETAIL GRAPHICS STANDARDS	DETAIL VIEW CALL OUT
DETAIL REFERENCES (TYP.)	DETAIL IS CALLED-OUT ON	DETAIL IS LOCATED ON



MINNESOTA COUNTY MAP

CONTACTS:

ENGINEER CONTACT:
 Jessica Olson
 BARR Engineering Co.
 320 South Lake Avenue
 Duluth, MN 55802
 jolson@barr.com

OWNER'S REPRESENTATIVE CONTACT:
 Terry Jeffrey
 Hennepin District Administrator
 Purgatory Bluff Watershed District
 19611 Lake Drive West
 Champlin, MN 55317
 tjeffrey@purdow.org
 952-697-6985

PROPERTY OWNER CONTACT:
 Bearpath Golf & Country Club
 19100 Rockwood Lane
 Eden Prairie, MN 55347
 952-978-0123
 kashimura@bearpathgolf.com

- ### GENERAL NOTES:
- CONTOUR DATA SHOWN IN THIS PLAN SET IS BASED ON 2015 DATA FROM A SURVEY PERFORMED BY BARR ENGINEERS ON JUNE 11, 2020.
 - PROPERTY COORDINATES, NATIONAL GRID, NAD83, US SURVEY FEET.
 - VERTICAL DATUM: NAVD88.
 - ALL ACCESS POINTS FROM LAKE RILEY ROAD MUST BE SECURE AT ALL TIMES. IF ACCESS IS UNLOCKED, RESPONSIBLE CONTRACTOR MUST ENSURE ONLY AUTHORIZED EQUIPMENT AND PERSONNEL ACCESS SITE.

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	11765.1257	46517.1257	875.20	VIS SPRK 1
2	11800.1150	465879.4857	874.71	VIS SPRK 2
3	11841.8202	465988.5332	871.54	VIS SPRK 3
4	11841.8202	465988.5332	871.54	VIS SPRK 4



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BARR ENGINEERING CO. 320 South Lake Avenue Duluth, MN 55802 Tel: 218-826-2000 Fax: 218-826-2001 www.barr.com		PROJECT INFO: PROJECT NO.: 23077-0053.14 CLIENT PROJECT NO.: DRAWING NO.: SHEET NO.: G-01
CLIENT: RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		ISSUED FOR BID MIDDLE RILEY CREEK STABILIZATION & BEARPATH GOLF COURSE RENOVATION TITLE SHEET, PROJECT LOCATION, AND SHEET INDEX
DATE RELEASED: A B C D E F G H I J 0 0 0 0 0 0 0 0 0 0		REVISION DESCRIPTION: 1. ISSUED FOR BID 2.

5.0. PERMANENT STORMWATER MANAGEMENT SYSTEM.

A PERMANENT STORMWATER MANAGEMENT SYSTEM IS REQUIRED IF THE PROJECT RESULTS IN ONE ACRE OR MORE OF 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 20.14)

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)

5.0. 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 COVER HAS BEEN INSTALLED 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. THE TRAINING WILL BE APPROPRIATELY TRAINED INDIVIDUALS WHO ARE 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 MAINTENANCE, REVISION, AND AMENDMENT	TBD	TBD
TBD	PERFORMANCE OF SWPPP INSPECTIONS	TBD	TBD
TBD	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)

- WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS
- WHERE PARTS OF THE CONSTRUCTION AREAS HAVE PERMANENT COVER, BUT WORK REMAINS ON OTHER PARTS
- WHERE CONSTRUCTION AREAS HAVE PERMANENT COVER AND NO CONSTRUCTION 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 CAN BE REDUCED TO ONCE PER MONTH AND, AFTER 12 MONTHS, MAY BE SUSPENDED UNTIL CONSTRUCTION ACTIVITY RESUMES.

6.3. INSPECTION REQUIREMENTS. EACH CONSTRUCTION STORMWATER SITE INSPECTION WILL INCLUDE INSPECTION OF THE FOLLOWING AREAS:

- ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs AND INSPECTION PREVENTION MEASUREMENT
- SURFACE WATERS FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION
- 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:

- 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.
- PERMETER CONTROL DEVICES WILL BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICES.
- NONFUNCTIONAL PERMETERS WILL BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THE SEDIMENT REACHES 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 PERFORMED WITHIN 1 CALENDAR DAY OF DISCOVERY.
- PHYSICAL ACCESS CONSTRAINTS, IF PRECLUDED DUE TO ACCESS CONSTRAINTS, REASONABLE EFFORTS TO OBTAIN ACCESS WILL BE USED. REMOVAL AND STABILIZATION WILL TAKE PLACE WITHIN 1 CALENDAR DAY OF OBTAINING ACCESS.
- TRACKED SEDIMENT ON PAVED SURFACES WILL BE REMOVED WITHIN 1 CALENDAR DAY OF DISCOVERY.
- AREAS UNDERGOING STABILIZATION WILL BE RE-STABILIZED AS NECESSARY TO ACHIEVE REQUIRED COVER.

6.5. RECORDKEEPING REQUIREMENTS.

6.5.1. ALL INSPECTIONS AND MAINTENANCE ACTIVITIES WILL BE RECORDED IN WRITING WITHIN 24 HOURS OF BEING CONDUCTED AND THESE RECORDS WILL BE RETAINED WITH THE SWPPP. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY WILL BE MAINTAINED FOR THE DURATION OF THE SWPPP AND FOR 12 MONTHS AFTER THE DATE OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS AND THE AMOUNT OF RAINFALL FOR EACH EVENT.

6.5.2. ANY DISCHARGE IS OBSERVED DURING THE INSPECTION, THE LOCATION AND APPEARANCE OF THE DISCHARGE (E.G. COLOR, OIL, OR SUSPENDED SOLIDS) AND THE SOURCE (E.G. TIRE TRACKS, AND OTHER OBVIOUS INDICATORS OF POLLUTANTS) WILL BE DOCUMENTED AND A PHOTOGRAPH WILL BE TAKEN.

6.5.3. 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, SURFACE WATER, OR GROUNDWATER.

6.5.4. THE SWPPP WILL BE AMENDED WHEN INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER, OPERATOR, OR CONTRACTORS OR BY USEPA/PCA OFFICIALS INDICATE THAT THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.

6.5.5. 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 OVER THE PROJECT.

6.5.6. 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.

6.5.7. 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 RODS) 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 OR TEMPORARY RODS) 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 OTHER FLAMMABLE LIQUIDS) WILL BE STORED UNDER COVER (E.G. PLASTIC SHEETING OR TEMPORARY RODS) TO PREVENT DISCHARGE OF POLLUTANTS THROUGH MINIMIZATION OF CONTACT WITH STORMWATER. STORAGE OF SUCH MATERIALS WILL BE MINIMIZED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEMS 2.3 AND 12.4)
- HAZARDOUS MATERIALS AND TOXIC WASTE (E.G. OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND OTHER FLAMMABLE LIQUIDS) WILL BE STORED UNDER COVER (E.G. PLASTIC SHEETING OR TEMPORARY RODS) TO PREVENT DISCHARGE OF POLLUTANTS THROUGH MINIMIZATION OF CONTACT WITH STORMWATER. STORAGE OF SUCH MATERIALS WILL BE MINIMIZED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEMS 2.3 AND 12.4)

6.5.8. PORTABLE TOILETS WILL BE LOCATED AWAY FROM SURFACE WATERS AND POSITIONED AND SECURED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEM 12.5)

6.5.9. PORTABLE TOILETS WILL BE LOCATED AWAY FROM SURFACE WATERS AND POSITIONED AND SECURED TO THE EXTENT POSSIBLE. (CSW PERMIT ITEM 12.5)

6.5.10. ACCORDING TO MINNESOTA RULES, CHAPTER 70A1, PORTABLE TOILETS WILL BE PERIODICALLY EMPTIED AND THE WASTE HULDED OFF-SITE BY A LICENSED HALLER. (CSW PERMIT ITEM 12.6)

6.5.11. ANY FUELING WILL ONLY OCCUR IN DESIGNATED AREAS. SPILL KITS SIZED APPROPRIATELY FOR THE AMOUNT OF FUELING TO BE CONDUCTED WILL BE LOCATED AT ALL FUELING SITES. SPILL KITS WILL BE CLEARLY LABELED AND CONTAIN HEAVY-DUTY PROTECTIVE GLOVES. SPILLS WILL BE REPORTED TO THE MINNESOTA DUTY OFFICER AS REQUIRED BY MINNESOTA STATUTES. SECTION 116.061. (CSW PERMIT ITEMS 2.3 AND 12.7)

6.5.12. ANY FUEL TANKS BROUGHT ON-SITE WILL HAVE PROPERLY SIZED CONTAINMENT AND WILL NOT BE TOPPED OFF ON-SITE. FUEL TANKS WILL BE STORED UNDER COVER (E.G. PLASTIC SHEETING OR TEMPORARY RODS) TO HOLD FUEL TYPE, PROPERLY MAINTAINED, NOT ILLEGALLY MODIFIED, NOT MISSING LEAK INDICATOR, AND HAVE DOUBLE WALLED TANKS, SIGHT GAUGES (NOT USED, ETC.) OR BE REMOVED FROM THE WORK AREA.

6.5.13. GUIDELINES FOR SPILL PREVENTION AND RESPONSE INCLUDE:

- INCLUDING THE USE OF DRIP PANS OR AREA WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED, INCLUDING THE USE OF DRIP PANS OR ABSORBENTS UNLESS INFEASIBLE.
- PERFORM REGULAR PREVENTATIVE MAINTENANCE ON TANKS AND FUEL LINES.
- INSPECT FOR LEAKS, HOSES, VALVES, AND OTHER MECHANICAL EQUIPMENT ON-SITE FOR DAMAGE, WEAR, OR DEFECTS.
- 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.
- MAINTAIN ADEQUATE SUPPLIES TO CLEAN UP DISCHARGED MATERIALS AND PROVIDE AN APPROPRIATE DISPOSAL METHOD FOR RECOVERED SPILLED MATERIALS.
- 1150R USING DRY CLEAN UP MEASURES WHERE POSSIBLE, AND
- MAINTAIN COPIES OF SAFETY DATA SHEETS (SDS) FOR HAZARDOUS MATERIALS ON-SITE IN LOCATIONS READILY AVAILABLE TO EMERGENCY RESPONDERS.

6.5.14. IF VEHICLE AND EQUIPMENT WASHING IS NECESSARY, A VEHICLE WASH STATION WILL BE LOCATED IN A DESIGNATED AREA. 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 12.9)

6.5.15. THE PROJECT WILL INCLUDE THE CONSTRUCTION OF OTHER WASHOUT ACTIVITIES, IF NECESSARY. A DESCRIPTION OF THE TYPE AND LOCATION 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.

8.0.1. THE AREAS DISTURBED DURING CONSTRUCTION WILL BE STABILIZED WITH PERMANENT COVER UPON COMPLETION OF CONSTRUCTION. PERMANENT COVER SHALL BE INSTALLED WITHIN 30 DAYS AFTER THE DATE OF PERMIT TERMINATION.

8.0.2. ESTABLISHMENT OF PERMANENT COVER MAY INCLUDE THE FOLLOWING ACTIVITIES: SEEDING, MULCHING, EROSION CONTROL BLANKETS. (CSW PERMIT ITEM 3.17)

8.0.3. FOR A CONSTRUCTION-SITE TO ACHIEVE PERMANENT COVER, THE FOLLOWING REQUIREMENTS MUST BE COMPLETED AND SUBMITTED TO THE PERMITTING AGENCY:

- PERMANENT COVER SHALL BE INSTALLED WITHIN 30 DAYS AFTER THE DATE OF PERMIT TERMINATION.
- PERMANENT COVER SHALL BE INSTALLED WITHIN 30 DAYS AFTER THE DATE OF PERMIT TERMINATION.
- PERMANENT COVER SHALL BE INSTALLED WITHIN 30 DAYS AFTER THE DATE OF PERMIT TERMINATION.
- PERMANENT COVER SHALL BE INSTALLED WITHIN 30 DAYS AFTER THE DATE OF PERMIT TERMINATION.

8.0.4. ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPs HAVE BEEN REMOVED. BMPs DESIGNED TO DECOMPOSE ON-SITE MAY BE LEFT IN PLACE.

8.0.5. WITHIN 30 DAYS AFTER THE TERMINATION CONDITIONS ARE COMPLETE, A NOTICE OF TERMINATION (NOT) FORM WILL BE SUBMITTED TO THE MPCA.

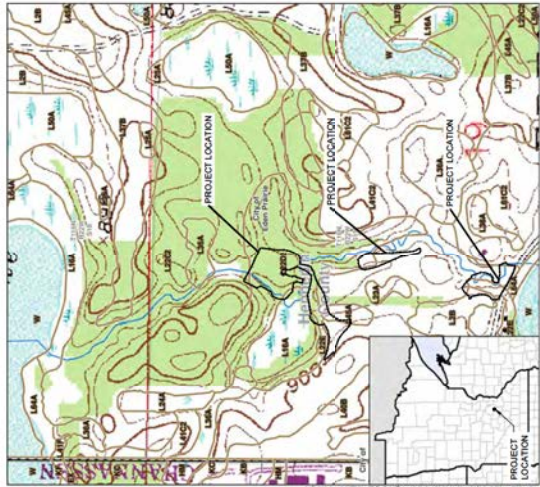


Figure 1
TOPOGRAPHIC MAP WITH SURFACE WATERS AND SOIL TYPES Stormwater Pollution Prevention Plan Hennepin County, Minnesota
SCALE IN FEET
0 5,000 10,000

ISSUED FOR BID

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

RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN

BARB PROJECT NO. 23077-0053 14
CLIENT PROJECT NO.
DRAWN BY: G-03
REVISED BY: 0

Project Title: BARB ENGINEERING CO. 10000 RILEY POINT DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Phone: (612) 332-2021 Fax: (612) 332-2021 www.barb.com

AS SHOWN: 09/25/2021
DATE: 09/25/2021
DATE: 09/25/2021
DATE: 09/25/2021
DATE: 09/25/2021
DATE: 09/25/2021
DATE: 09/25/2021

DATE RELEASED: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

ISSUED FOR BID: 09/25/2021
REVISION DESCRIPTION: 09/25/2021

CLIENT: BARB ENGINEERING CO. 10000 RILEY POINT DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Phone: (612) 332-2021 Fax: (612) 332-2021 www.barb.com

DESIGNED BY: JESSICA ALEXANDER
CHECKED BY: JESSICA ALEXANDER
DATE: 09/25/2021

DATE: 09/25/2021

DATE: 09/25/2021

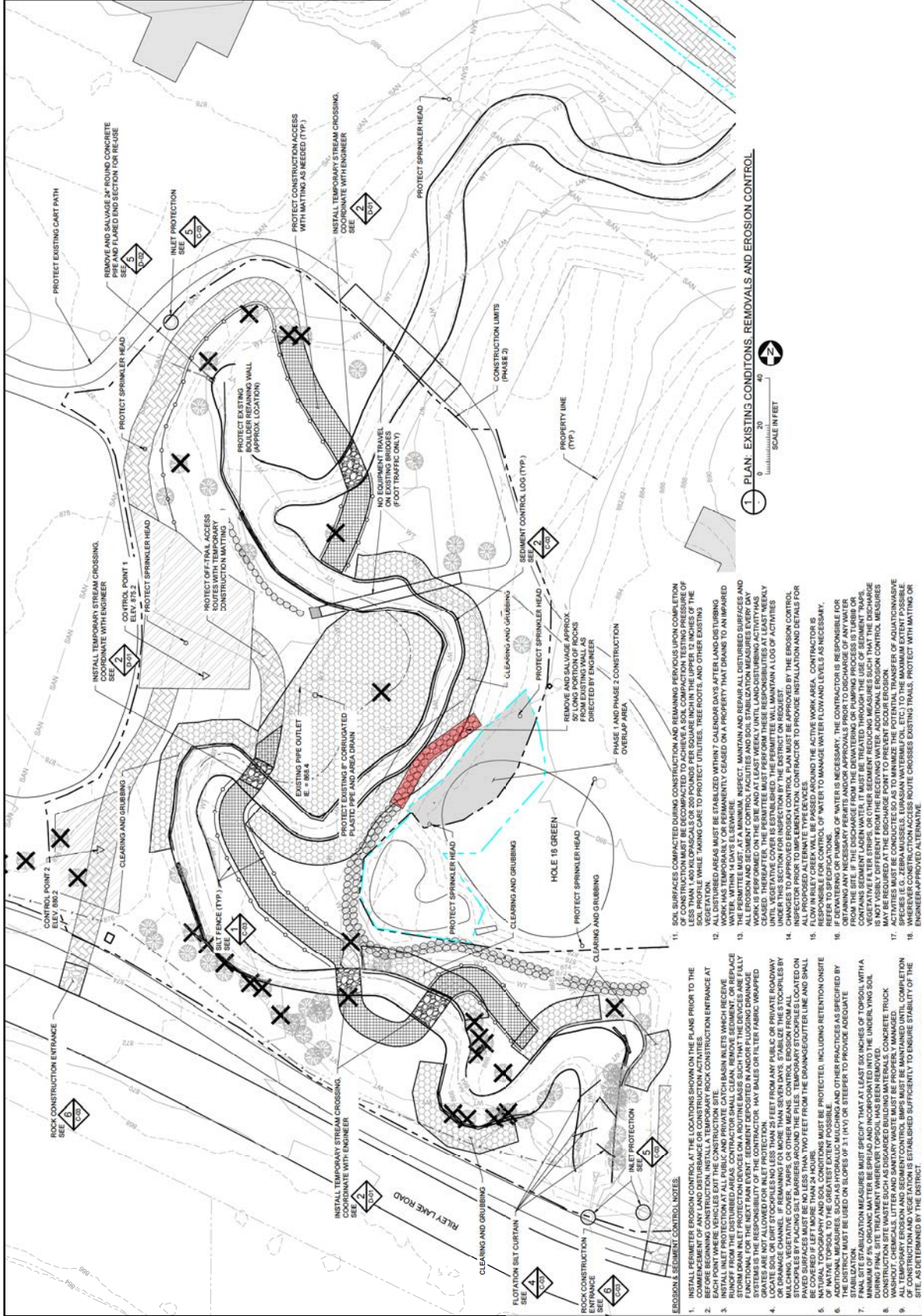
DATE: 09/25/2021

SYMBOL AND PATTERN LEGEND

[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING WETLAND DELINEATION (PHASE 1)
[Symbol]	EXISTING WETLAND DELINEATION (PHASE 2)
[Symbol]	CONSTRUCTION LIMITS
[Symbol]	SET FENCE
[Symbol]	SEDIMENT CONTROL LOGS
[Symbol]	CONSTRUCTION ACCESS ROUTE WITH PROTECTIVE MATTING
[Symbol]	TEMPORARY CREEK CROSSING
[Symbol]	CLEARING AND GRUBBING AREA
[Symbol]	REMOVE AND SALVAGE TREE
[Symbol]	PROTECT EXISTING TREE

GENERAL NOTES:

1. ALL WORK SHALL BE COMPLETED BY THE END OF THE PUBLIC WATER WORK YEAR AND AROUND THE CREEK MAY NOT OCCUR BETWEEN MARCH 15TH AND JUNE 15TH.
2. ALL TREES TO BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED FOR REMOVAL OR PROTECT ALL EXISTING IRRIGATION SYSTEM COMPONENTS, INCLUDING BUT NOT LIMITED TO SPRINKLER HEADS.
- 3.



1. PLAN, EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL

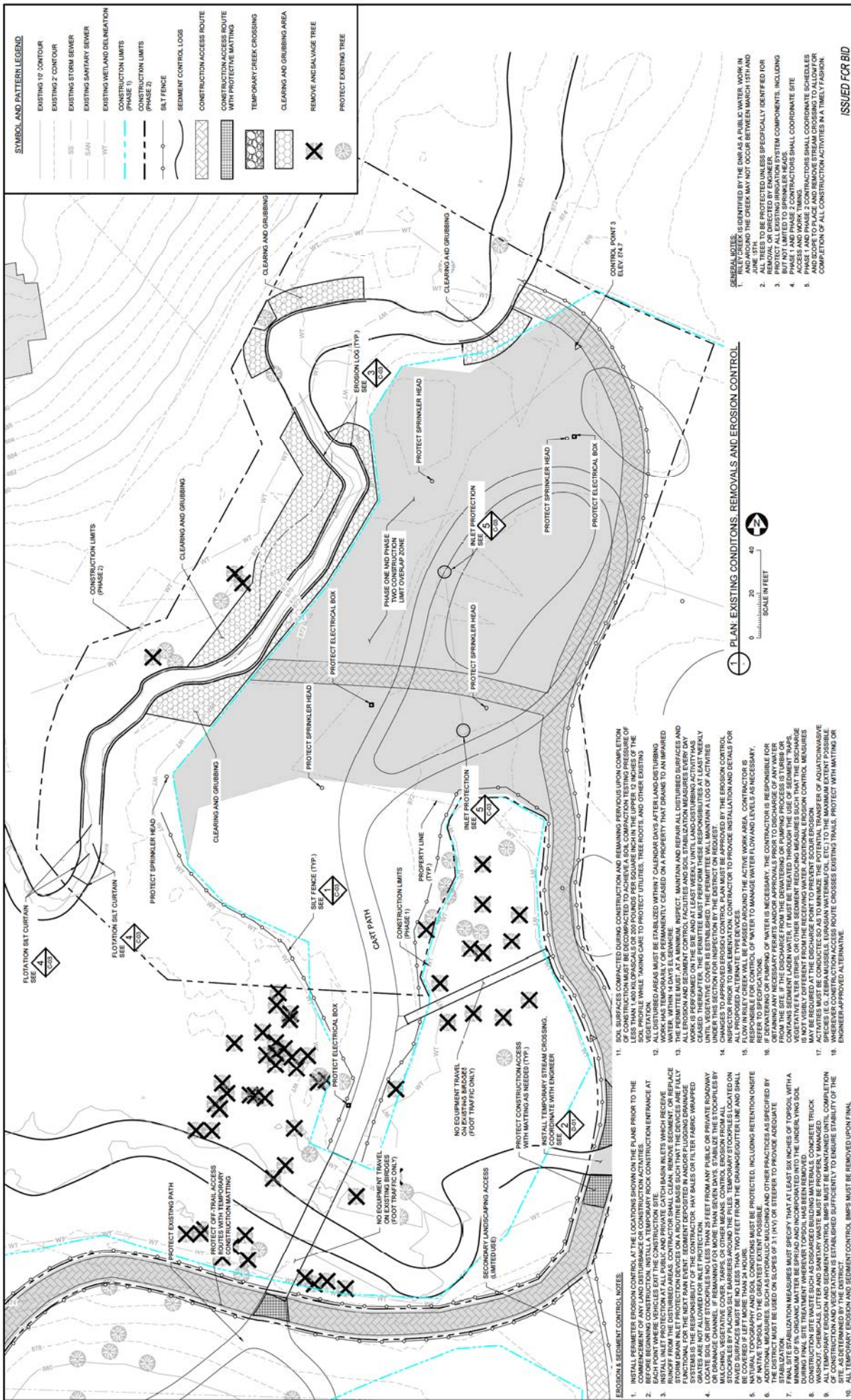
SCALE IN FEET: 0, 20, 40

ISSUED FOR BID

AS SHOWN DATE: 09/25/2023 DRAWN BY: EPF CHECKED BY: JAC APPROVED BY: JAC		PROJECT INFO: BARR ENGINEERING CO. 5001 RILEY POINT DRIVE SUITE 200 MINNEAPOLIS, MN 55435 PHONE: (612) 332-1200 FAX: (612) 332-1201 WWW.BARR-ENG.COM	
PROJECT NO.: 23077-0053 14 CLIENT PROJECT NO.: DATE: 09/25/2023 SCALE: C-01 REV. NO.: 0		MIDDLE RILEY CREEK STABILIZATION (PHASE 2) RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN SOUTH	

1. SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PEROUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE A SOIL COMPACTION TESTING PRESSURE OF 100% AT THE SURFACE AND 90% AT THE BASE OF THE SOIL. THE CONTRACTOR SHALL MAINTAIN THE ORIGINAL SEAL PROFILE WHILE TAKING CARE TO PROTECT UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGETATION.
2. WORK AREAS MUST BE ESTABLISHED WITHIN 7 CALENDAR DAYS AFTER LANDSCAPE TURNING. WATER WITHIN 14 DAYS OF TURNING. INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITS WILL MAINTAIN A LOG OF ACTIVITIES AND IS REQUIRED TO BE REVIEWED AND SIGNED BY THE ENGINEER AT LEAST ONCE EVERY WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITS WILL MAINTAIN A LOG OF ACTIVITIES AND IS REQUIRED TO BE REVIEWED AND SIGNED BY THE ENGINEER AT LEAST ONCE EVERY WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED.
3. CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR FLOW IN RILEY CREEK WALL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY.
4. IF FERTILIZING OR PAMPING OF WATERS IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND APPROVALS PRIOR TO DISCHARGE OF ANY WATER INTO RILEY CREEK. FERTILIZERS AND PAMPING SHALL BE APPLIED TO THE SURFACE OF THE WATER. VEGETATIVE FILTER STRIPS OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS. SEDIMENT TRAPS SHALL BE MAINTAINED AND REPAIRED AS NECESSARY.
5. ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF ADJUTANTIVE OR OTHER HAZARDOUS MATERIALS TO RILEY CREEK. CONTRACTOR SHALL MAINTAIN A LOG OF ACTIVITIES AND IS REQUIRED TO BE REVIEWED AND SIGNED BY THE ENGINEER AT LEAST ONCE EVERY WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED.
6. WHEREVER CONSTRUCTION ACCESS ROUTES EXIST, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.
7. SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PEROUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE A SOIL COMPACTION TESTING PRESSURE OF 100% AT THE SURFACE AND 90% AT THE BASE OF THE SOIL. THE CONTRACTOR SHALL MAINTAIN THE ORIGINAL SEAL PROFILE WHILE TAKING CARE TO PROTECT UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGETATION.
8. WORK AREAS MUST BE ESTABLISHED WITHIN 7 CALENDAR DAYS AFTER LANDSCAPE TURNING. WATER WITHIN 14 DAYS OF TURNING. INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITS WILL MAINTAIN A LOG OF ACTIVITIES AND IS REQUIRED TO BE REVIEWED AND SIGNED BY THE ENGINEER AT LEAST ONCE EVERY WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED.
9. CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR FLOW IN RILEY CREEK WALL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER FLOW AND LEVELS AS NECESSARY.
10. IF FERTILIZING OR PAMPING OF WATERS IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND APPROVALS PRIOR TO DISCHARGE OF ANY WATER INTO RILEY CREEK. FERTILIZERS AND PAMPING SHALL BE APPLIED TO THE SURFACE OF THE WATER. VEGETATIVE FILTER STRIPS OR OTHER SEDIMENT REDUCING MEASURES SUCH THAT THE DISCHARGE CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF SEDIMENT TRAPS. SEDIMENT TRAPS SHALL BE MAINTAINED AND REPAIRED AS NECESSARY.
11. ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF ADJUTANTIVE OR OTHER HAZARDOUS MATERIALS TO RILEY CREEK. CONTRACTOR SHALL MAINTAIN A LOG OF ACTIVITIES AND IS REQUIRED TO BE REVIEWED AND SIGNED BY THE ENGINEER AT LEAST ONCE EVERY WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED.
12. WHEREVER CONSTRUCTION ACCESS ROUTES EXIST, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

1. INSTALL PERMITS 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 RILEY LAKE ROAD. THE ENTRANCE SHALL BE CONSTRUCTED WITH A 24" DIAMETER PIPE AND SHALL BE FUNCTIONAL FOR THE NEXT RAIN EVENT. SEGMENT DEPOSITED IN AND/OR FLOODING DRAINAGE AREAS SHALL BE ALLOWED TO REMAIN IN PLACE UNTIL VEGETATIVE COVER IS ESTABLISHED.
3. LOCATE SOIL OR BIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY. STOCKPILES SHALL BE BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON RILEY LAKE ROAD SHALL BE BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON RILEY LAKE ROAD SHALL BE BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON RILEY LAKE ROAD SHALL BE BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON RILEY LAKE ROAD SHALL BE BARRIERS AROUND THE PILES. TEMPORARY STOCKPILES LOCATED ON RILEY LAKE ROAD SHALL BE BARRIERS AROUND THE PILES.
4. 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 EROSION CONTROL.
5. FINAL SITE STABILIZATION MEASURES MUST SPECIFY THAT AT LEAST SIX INCHES OF TOPSOIL WITH A MINIMUM OF 5% ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL. CONSTRUCTION SITE WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY MANAGED. COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO ENSURE STABILITY OF THE SITE, AS DETERMINED BY THE DISTRICT.
6. WHEREVER CONSTRUCTION ACCESS ROUTES EXIST, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.



SYMBOL AND PATTERN LEGEND

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

GENERAL NOTES:

- RILEY CREEK IS IDENTIFIED BY THE DNR AS A PUBLIC WATER. WORK IN RILEY CREEK AND THE CREEK MAY NOT OCCUR BETWEEN MARCH 15TH AND JUNE 15TH.
- ALL TREES TO BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED FOR REMOVAL.
- PROTECT ALL EXISTING IRRIGATION SYSTEM COMPONENTS, INCLUDING BUT NOT LIMITED TO SPRINKLER HEADS.
- CONTRACTOR SHALL COORDINATE WITH THE DNR FOR ACCESS AND WORK TIMING.
- PHASE 1 AND PHASE 2 CONSTRUCTION SHALL COORDINATE SCHEDULES FOR ALL CONSTRUCTION ACTIVITIES IN A TIMELY FASHION.

1 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL

SCALE IN FEET

0 20 40

EROSION & SEDIMENT CONTROL NOTES:

- INSTALL PERMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLAN PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT THE LOCATION SHOWN ON THE PLAN.
- 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 INLET PROTECTION FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR FLOUGHING DRAINAGE DRAINAGE AREAS SHALL BE REMOVED AND ALL EXISTING INLET PROTECTION SHALL BE MAINTAINED UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITS WILL MAINTAIN A LOG OF ACTIVITIES CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR EROSION CONTROL MEASURES TO THE EROSION CONTROL INSPECTOR.
- IF WEATHERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER CONTAINING 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 WATER IS CLEAR AND FREE OF SEDIMENT. THE CONTRACTOR SHALL MAINTAIN LOGS OF ALL DISCHARGE ACTIVITIES. DISCHARGE POINTS TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED AS TO MINIMIZE THE POTENTIAL TRANSFER OF ADIUTANTATIVE MATERIALS TO RILEY CREEK. WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.
- SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PREVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE A SOIL COMPACTION TESTING PRESSURE OF 100% OF THE ORIGINAL SOIL PROFILE WHILE TAKING CARE TO PROTECT UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGETATION.
- WORK AREAS MUST BE ESTABLISHED WITHIN 7 CALENDAR DAYS AFTER LANDSCAPE TUBING IS INSTALLED. WITHIN 14 DAYS OF TUBING, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN LOGS OF ALL LANDSCAPE TUBING ACTIVITIES UNTIL VEGETATIVE COVER IS ESTABLISHED. THE PERMITS WILL MAINTAIN A LOG OF ACTIVITIES CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR EROSION CONTROL MEASURES TO THE EROSION CONTROL INSPECTOR.
- RESPONSIBLE FOR CONTROL OF WATER TO MANAGE WATER LOW AND LEVELS AS NECESSARY.
- IF WEATHERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND/OR APPROVALS PRIOR TO DISCHARGE OF ANY WATER CONTAINING 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 WATER IS CLEAR AND FREE OF SEDIMENT. THE CONTRACTOR SHALL MAINTAIN LOGS OF ALL DISCHARGE ACTIVITIES. DISCHARGE POINTS TO PREVENT SCOUR EROSION.
- ACTIVITIES MUST BE CONDUCTED AS TO MINIMIZE THE POTENTIAL TRANSFER OF ADIUTANTATIVE MATERIALS TO RILEY CREEK. WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

REVISION DESCRIPTION

NO.	DATE	BY	DESCRIPTION
1	03/25/2022	JES/AL	ISSUED FOR BID
2	03/25/2022	JES/AL	REVISION DESCRIPTION

PROJECT INFORMATION

PROJECT NO: 23077-0053 14
 CLIENT PROJECT NO:
 PROJECT NAME: MIDDLE RILEY CREEK STABILIZATION (PHASE 1 & 2)
 LOCATION: EDEN PRAIRIE, MN
 DRAWING NO: C-02
 SHEET NO: 0

CLIENT INFORMATION

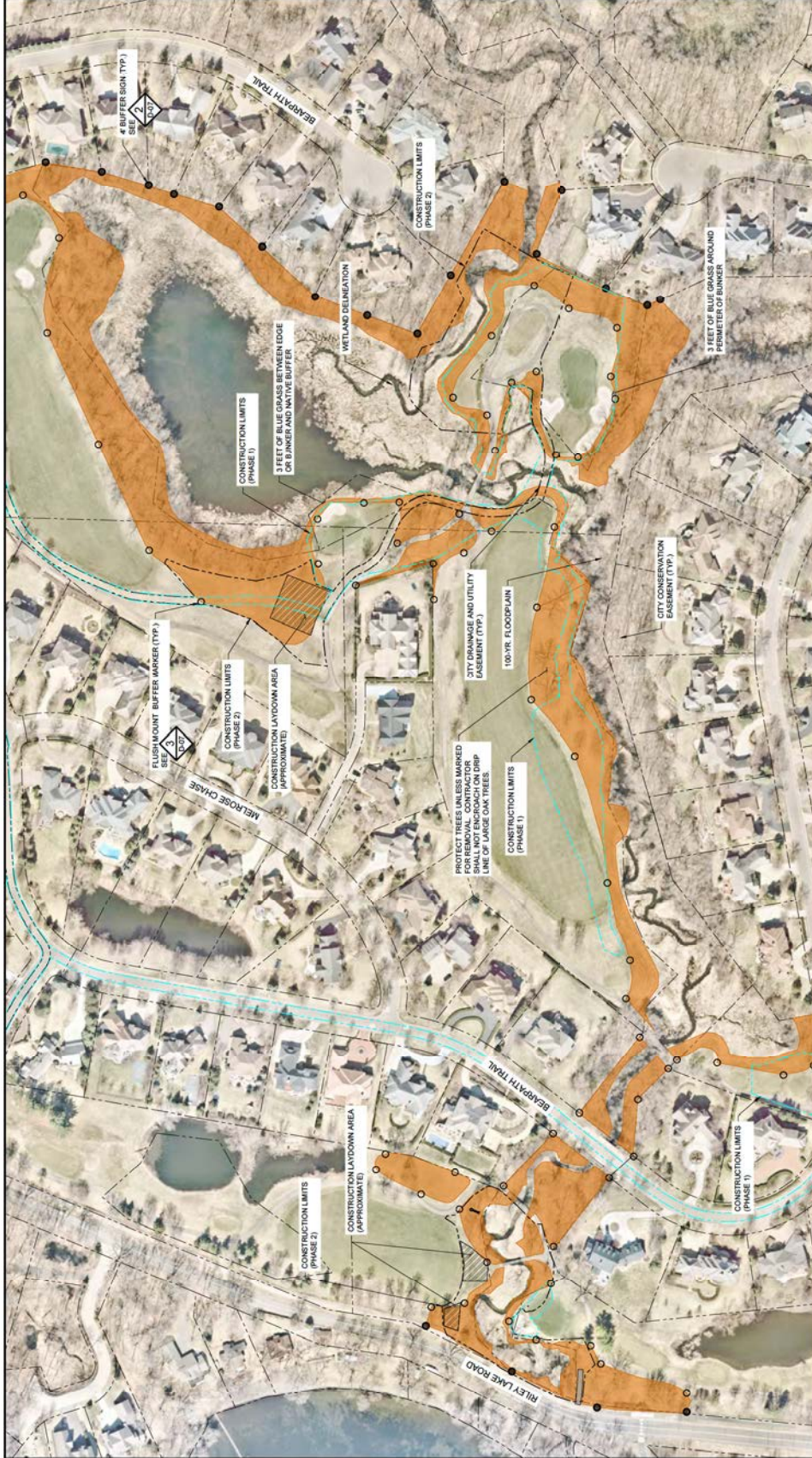
CLIENT: RILEY PURGATORY BLUFF CREEK WD
 ADDRESS: CHANHASSEN, MN
 CONTACT: NORTH

DATE RELEASED

DATE RELEASED: 03/25/2022

PROJECT OFFICE

BARR ENGINEERING CO.
 10000 RIVERVIEW DRIVE
 SUITE 200
 MINNEAPOLIS, MN 55435
 (612) 338-8800
 www.barr.com



SYMBOL AND PATTERN LEGEND

---	CONSTRUCTION LIMITS (PHASE 1)
---	CONSTRUCTION LIMITS (PHASE 2)
---	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
●	4' BUFFER SIGN
○	FLUSH MOUNT BUFFER MARKER

- NOTES:**
1. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
 2. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, AND UTILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH OWNER TO DOCUMENT EXISTING UTILITIES AND MAINTAIN ALL UTILITIES THROUGHOUT CONSTRUCTION.
 3. EROSION CONTROL BMPs PRIOR TO COMMENCEMENT PROVIDED INSIDE THE PROJECT'S DOWNWATER CONSTRUCTION. EROSION CONTROL PLANS ARE PROVIDED TO THE OWNER AND SHALL BE APPROVED. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE. FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND SHALL BE APPROVED. CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS AND ACCESS ROUTES.
 4. TREES TO BE CLEARED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL TREES > 8" DIAMETER NOT IDENTIFIED BY ENGINEER FOR REMOVAL SHALL BE PROTECTED AND NOT CUT. CONTRACTOR SHALL MAINTAIN PROTECTION AGAINST ROOT CONTACT, DAMAGE, AND REMOVAL OF TREES NOT IDENTIFIED TO BE REMOVED. TREE SPECIES TO BE IDENTIFIED TO MEET THE DEFINITION REQUIREMENTS. TREE SPECIES TO BE IDENTIFIED TO MEET THE DEFINITION REQUIREMENTS. TREE SPECIES TO BE IDENTIFIED TO MEET THE DEFINITION REQUIREMENTS. TREE SPECIES TO BE IDENTIFIED TO MEET THE DEFINITION REQUIREMENTS.
 5. SOIL SURFACES COMPACTED DURING CONSTRUCTION MUST BE DECOMPACTED TO A SOIL COMPACTING VALUE OF 95% OR LESS. SOIL SURFACES TO BE DECOMPACTED TO A SOIL COMPACTING VALUE OF 95% OR LESS. SOIL SURFACES TO BE DECOMPACTED TO A SOIL COMPACTING VALUE OF 95% OR LESS.
 6. SOIL SHEET # 6-01 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
 7. CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 14 DAYS PRIOR TO ALLOWING FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE: -PRESS INSTALLATION -PRESS INSTALLATION -PRESS INSTALLATION
 8. SHOULDER WADE INSTALLATION. BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.

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

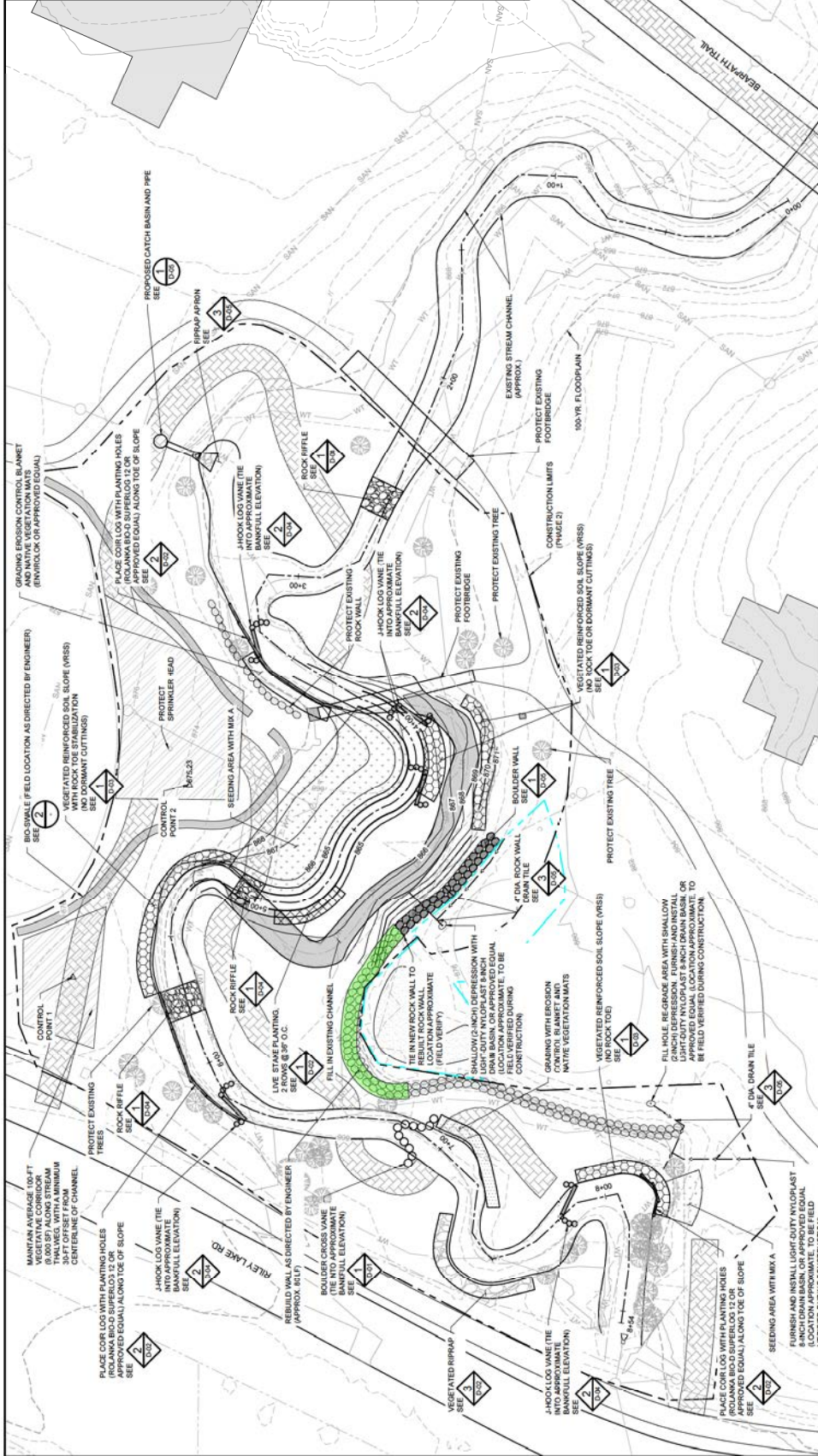
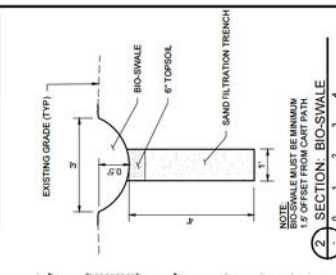


ISSUED FOR BID

PROJECT INFORMATION PROJECT NO: 2321-0054-14 CLIENT PROJECT NO: TRNS NO: C-04 REV NO: 0		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
CLIENT RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
PROJECT OFFICE BARR ENGINEERING CO. 5000 W. WISCONSIN DRIVE SUITE 200 MINNEAPOLIS, MN 55435 (612) 338-1000 www.barr.com		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
PROJECT NAME RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
PROJECT NO 2321-0054-14		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
CLIENT PROJECT NO C-04		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
TRNS NO C-04		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
REV NO 0		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	
ISSUED FOR BID REVISION DESCRIPTION		DATE RELEASED DATE: 03/25/2024 TIME: 10:00 AM	

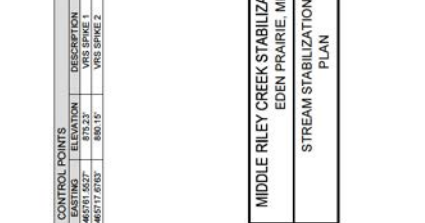
SYMBOL AND PATTERN LEGEND

[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	EXISTING PROPERTY LINE
[Symbol]	EXISTING STREAM THALWEG (APPROX.)
[Symbol]	EXISTING 100-YR FLOODPLAIN
[Symbol]	PROPOSED 2' CONTOUR
[Symbol]	PROPOSED 10' CONTOUR
[Symbol]	CONSTRUCTION LIMITS (PHASE 1)
[Symbol]	CONSTRUCTION LIMITS (PHASE 2)
[Symbol]	ROCK RIPPLE
[Symbol]	LIVE STAKES
[Symbol]	VRES
[Symbol]	FILL EXISTING CREEK
[Symbol]	SEEDING AREA WITH MIX A
[Symbol]	BOULDER CROSSVALE
[Symbol]	GRADING WITH EROSION CONTROL BLANKET AND NATIVE VEGETATION MATS
[Symbol]	JHOCK LOGVALE



CONTROL POINTS

POINT #	NORTHING	EASTING	DESCRIPTION
1	117922.4629	465191.2527	VRS SPIKE 1
2	117920.1329	465171.6169	VRS SPIKE 2



NOTES:

- CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES UNDER 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 PROVIDE EROSION CONTROL MEASURES 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.
- TREES TO BE REMOVED SHALL BE IDENTIFIED AND STAKED IN THE FIELD BY ENGINEER. ALL TREES > 4" DIAMETER NOT MARKED FOR REMOVAL SHALL BE PROTECTED.
- TREES IDENTIFIED BY ENGINEER FOR ADDITIONAL PROTECTION AGAINST ROOT COMPACTON, DAMAGE AND DISFORMATIONS IN ACCORDANCE WITH M-207.
- THREE 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.
- SEE SHEET 203 FOR PLANTING SCHEDULE AND SITE RESTORATION DETAILS.
- CONTRACTOR SHALL BE RESPONSIBLE TO COMPACT TO A SOIL COMPACTING PRESSURE OF LESS THAN 1400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 1" INCH OF SOIL.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
 - RIPPRAP APRON PROTECTION INSTALLATION
 - BOULDER WARE INSTALLATION
 - SEEDING CONSTRUCTION
- SEE CONSTRUCTION SPECIFICATIONS FOR REQUIRED CONTRACTOR QUALIFICATIONS FOR GOLF COURSE FEATURE RESTORATION AND INSTALLATION.

REVISION DESCRIPTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
1					
2					
3					

PROJECT INFORMATION

CLIENT	BARB ENGINEERING CO.
PROJECT NAME	MIDDLE RILEY CREEK STABILIZATION (PHASE 2)
PROJECT ADDRESS	EDEN PRAIRIE, MN
PROJECT NUMBER	23077-0053-14
DATE	09/25/2023
SCALE	AS SHOWN
STATUS	ISSUED FOR BID

DESIGNER INFORMATION

DESIGNER	BARR ENGINEERING
DESIGNER ADDRESS	10000 UNIVERSITY DRIVE, SUITE 200, MINNEAPOLIS, MN 55438
DESIGNER PHONE	(612) 338-2000
DESIGNER FAX	(612) 338-2001
DESIGNER WEBSITE	www.barr.com

APPROVALS

DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE

ISSUED FOR BID

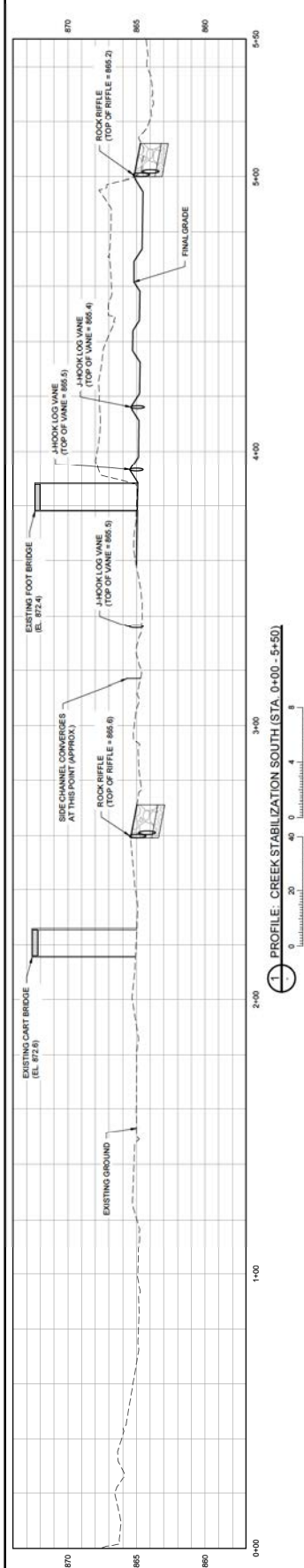
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DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE

PROJECT SUMMARY

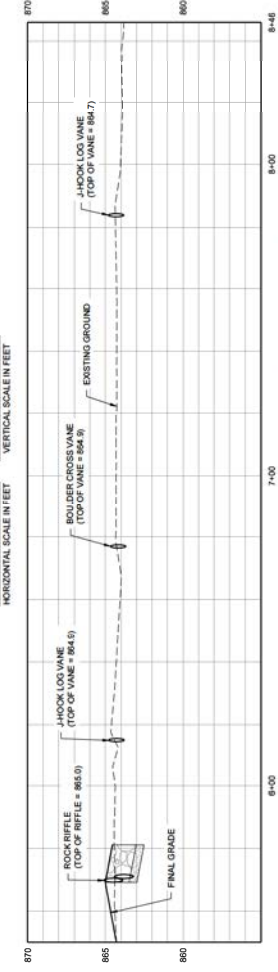
PROJECT NAME	MIDDLE RILEY CREEK STABILIZATION (PHASE 2)
PROJECT ADDRESS	EDEN PRAIRIE, MN
PROJECT NUMBER	23077-0053-14
DATE	09/25/2023
SCALE	AS SHOWN
STATUS	ISSUED FOR BID

CLIENT INFORMATION

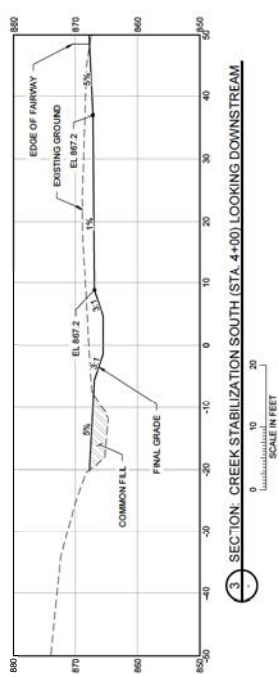
CLIENT	BARB ENGINEERING CO.
CLIENT ADDRESS	10000 UNIVERSITY DRIVE, SUITE 200, MINNEAPOLIS, MN 55438
CLIENT PHONE	(612) 338-2000
CLIENT FAX	(612) 338-2001
CLIENT WEBSITE	www.barr.com



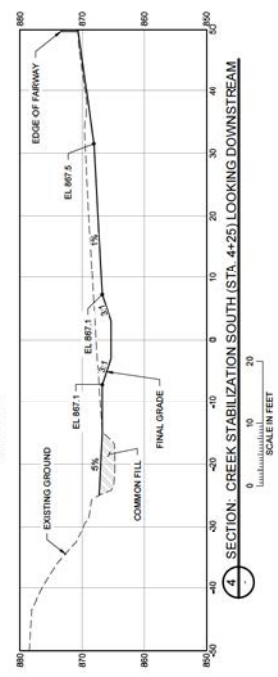
1 PROFILE: CREEK STABILIZATION SOUTH (STA. 0+00 - 5+50)



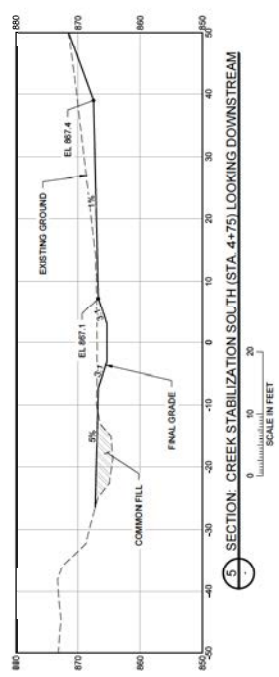
2 PROFILE: CREEK STABILIZATION SOUTH (STA. 5+50 - 8+46)



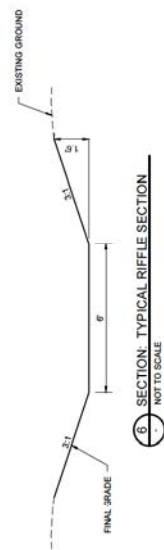
3 SECTION: CREEK STABILIZATION SOUTH (STA. 4+00) LOOKING DOWNSTREAM



4 SECTION: CREEK STABILIZATION SOUTH (STA. 4+25) LOOKING DOWNSTREAM



5 SECTION: CREEK STABILIZATION SOUTH (STA. 4+75) LOOKING DOWNSTREAM

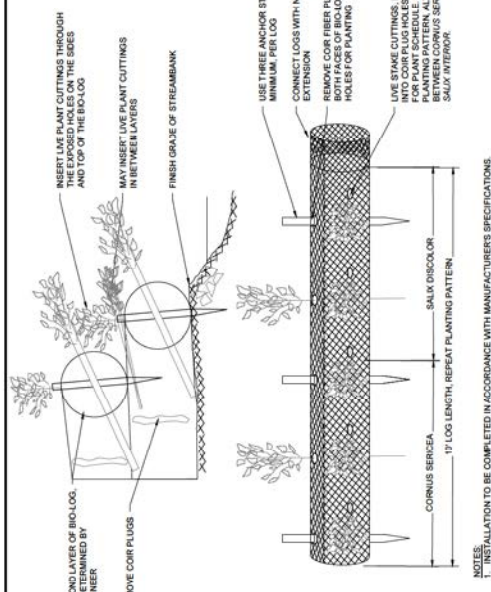


6 SECTION: TYPICAL RIFFLE SECTION

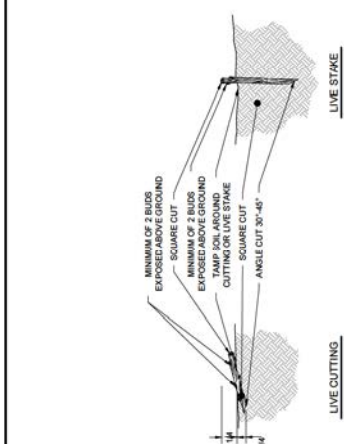
NOTE: SEE SHEET C08 FOR ROCK WALL DETAIL.

ISSUED FOR BID

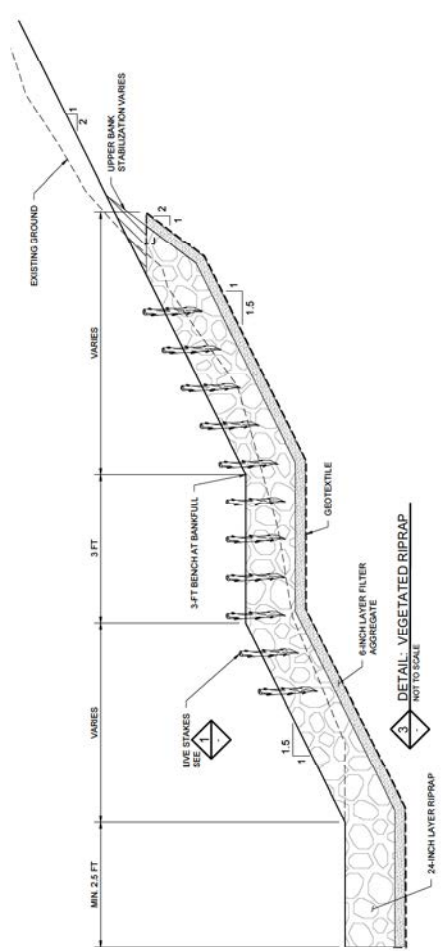
BARR BARR ENGINEERING CO. 2307 DODD DRIVE MINNEAPOLIS, MN 55403 TEL: (612) 338-2000 FAX: (612) 338-2001 WWW.BARR.COM		Project Title: MIDDLE RILEY CREEK STABILIZATION (PHASE 2) RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		AS SHOWN DATE: 08/25/2023 DRAWN: EPF CHECKED: JAC APPROVED: JSD		BARR PROJECT NO. 2307-0053.14 CLIENT PROJECT NO. C-08 TRNS NO. C-08 REV. NO. 0	
NO.	DATE	ISSUED FOR BID	REVISION DESCRIPTION	DATE	BY	APP.	DATE
1	08/25/2023	EPF	ISSUED FOR BID				
2	08/25/2023	EPF	REVISION DESCRIPTION				



NOTES:
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 2. DETAIL: COIR LOG WITH PLANTING HOLES
 NOT TO SCALE



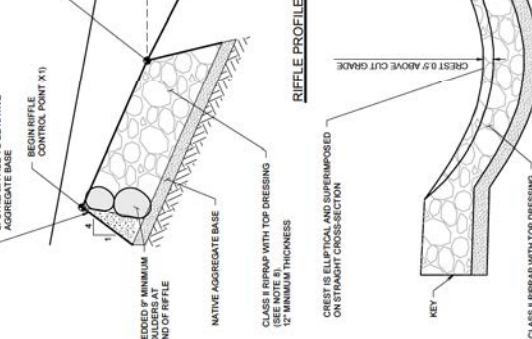
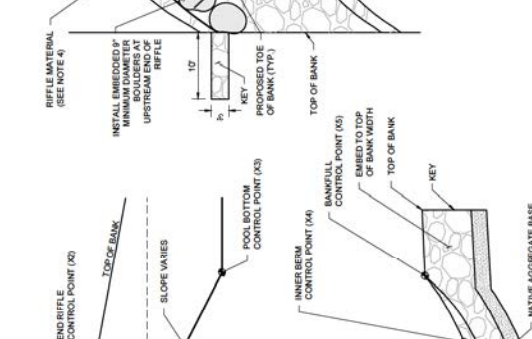
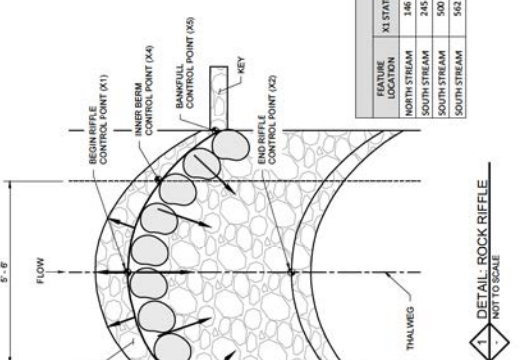
GENERAL NOTES:
 1. LIVE STAKE OR CUTTING PLANTED PERPENDICULAR TO GROUND SURFACE.
 2. SEE SHEET D-02 FOR PLANT MATERIAL LIST FOR SPECIES, LENGTH AND SPACING.
 3. LIVE STAKE OR CUTTING SHALL BE 3/4" DIAMETER MINIMUM. LIVE CUTTINGS SHALL BE 3/4" DIAMETER MINIMUM.
 DETAIL: LIVE CUTTINGS OR LIVE STAKES
 NOT TO SCALE



ISSUED FOR BID

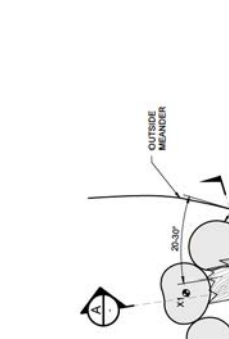
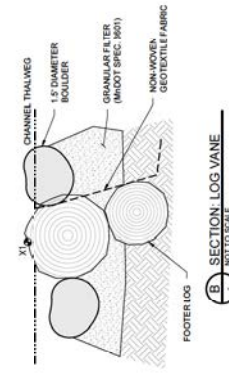
MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN		AS SHOWN 08/25/2023 EPF SANC BOHR ZSD	RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN	PROJECT NO.: 23077-0053.14 CLIENT PROJECT NO.: D-02 REV. NO.: 0
PROJECT OWNER: BARR BARR ENGINEERING CO. 5000 W. WYOMING DRIVE SUITE 200 MINNEAPOLIS, MN 55435 (612) 338-2000 (612) 338-2001 www.barr.com		DATE RELEASED: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	REVISION DESCRIPTION NO. BY DATE 01. EJE/SJK/203/08/2023 02. BY: DMK/JPP DATE	

- NOTES:**
- ROCK RIFLES SHALL BE INSTALLED WITHIN THE EXISTING RIVER CHANNEL AS SPECIFIED.
 - ELEVATION CONTROL POINTS SHALL BE DESIGNATED AT THE BEGINNING AND END OF RIFLE POINTS TO ESTABLISH PART OF THE PROFILE OF THE CHANNEL. SURVEY OF CONTROL POINTS SHALL BE REQUIRED TO ESTABLISH ACCURATE RIFLE INSTALLATION.
 - RIFLE MATERIAL SHALL BE CLASS II RIPRAP FROM THE SITE AND/OR IMPORTED. INSTALLED WITH A MINIMUM THICKNESS OF 15".
 - THE FACE OF THE RIFLE UPSTREAM OF THE BEGIN RIFLE CONTROL POINT SHALL BE NATIVE GRADE. THE FACE OF THE RIFLE DOWNSTREAM OF THE END RIFLE CONTROL POINT SHALL BE NATIVE GRADE. THE RIFLE SHALL BE CLASS II RIPRAP WITH A MINIMUM THICKNESS OF 15".
 - THE PLACEMENT OF BACKFILL AND/OR RIFLE MATERIAL SHALL BE DONE IN HANDBY TO CREATE A SMOOTH PROFILE. WITH NO ABRUPT JUMP (TRANSITION) BETWEEN THE UPSTREAM POOL/GRADE AND THE RIFLE, AND LIKEWISE NO ABRUPT DROP (TRANSITION) BETWEEN THE RIFLE AND THE DOWNSTREAM POOL/GRADE. THE RIFLE SHALL BE CLASS II RIPRAP WITH A MINIMUM THICKNESS OF 15". THE RIFLE WIDTH SHALL BE AS SPECIFIED IN THE RIFLE MATERIAL MATCHES. THE SHAPE AND DIMENSIONS SHOWN ON THE RIFLE TYPICAL SECTION.
 - SEE THE ROCK RIFLES TABLE FOR STATIONING AND ELEVATIONS.
 - SEE TYPICAL RIFLE SECTION (D-04) FOR CHANNEL DIMENSIONS.
 - RIFLE SURFACE TO BE TOP-DRESSED WITH #4 MDOOT CLASS RIPRAP TO REDUCE VOID SPACE.

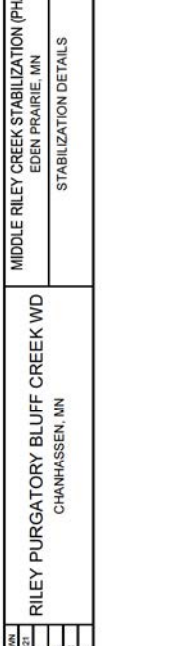


FEATURE LOCATION	X1 STATION		X2 STATION		X3 STATION		X4 STATION		X5 STATION		X6 BANKFULL		NOTES
	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	
NORTH STREAM	146	870.1	158	869.8	171.5	-	147	870.3	148	871.5	148	871.5	
SOUTH STREAM	245	865.2	257	865.2	267.1	-	246	865.7	247	867.1	247	867.1	
SOUTH STREAM	500	865.2	512	864.9	866.8	-	501	865.4	502	866.8	502	866.8	
SOUTH STREAM	552	865.0	574	864.7	866.6	-	563	865.2	564	866.6	564	866.6	

- 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.
 - THE LOG VANE SHALL BE PLACED IN A TRENCH 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.
 - NON-WOVEN GEOTEXTILE FABRIC IS ATTACHED WITH ROOFING NAILS TO ENTIRE LENGTH OF LOG ON UPSTREAM SIDE AND DOWNSTREAM SIDE.
 - NON-WOVEN GEOTEXTILE FABRIC IS ATTACHED WITH ROOFING NAILS TO ENTIRE LENGTH OF LOG ON UPSTREAM SIDE AND DOWNSTREAM SIDE.
 - LARGE BOULDERS ARE PLACED ON BOTH SIDES OF THE LOG VANE AT THE INTERFAC WITH THE BANK TO CREATE A CUT OFF BILL.
 - PLACE GRANULAR FILTER AGGREGATE (MDOOT SPEC. 900) ON BOTH SIDES OF THE LOG VANE AT THE INTERFAC WITH THE BANK TO STABILIZE WITH SEDIMENT AND MULCH AS SPECIFIED FOR EACH SITE AS SHOWN IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.
 - EXCAVATE SQUOR-HOLE IN STREAM BED ADJACENT TO LOG VANE AS SHOWN IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.



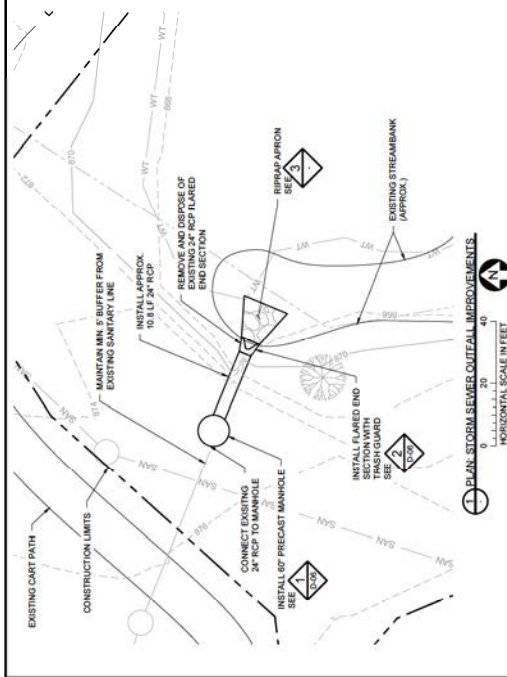
FEATURE LOCATION	X1 STATION		X2 STATION		X3 STATION		X4 STATION		X5 STATION		X6 BANKFULL		NOTES
	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	
NORTH STREAM	22	870.4	27.8	871.1	28	871.1	24	870.6	24	870.6	24	870.6	
NORTH STREAM	66	870.4	67.8	871.8	78	871.1	68	870.4	68	870.4	68	870.4	
NORTH STREAM	117	870.1	117.6	871.6	129	870.9	119	870.4	119	870.4	119	870.4	
SOUTH STREAM	338	865.1	348	866.3	367.1	-	340	865.2	340	865.2	340	865.2	
SOUTH STREAM	393	865.1	397.1	867.1	408	866.3	397.1	865.7	395	865.7	395	865.7	
SOUTH STREAM	418	865.4	427	866.2	437	866.2	418	865.6	418	865.6	418	865.6	
SOUTH STREAM	615	864.3	625	865.5	637	865.5	617	865.1	617	865.1	617	865.1	
SOUTH STREAM	784	864.7	866.3	865.5	876	865.5	786	864.9	786	864.9	786	864.9	



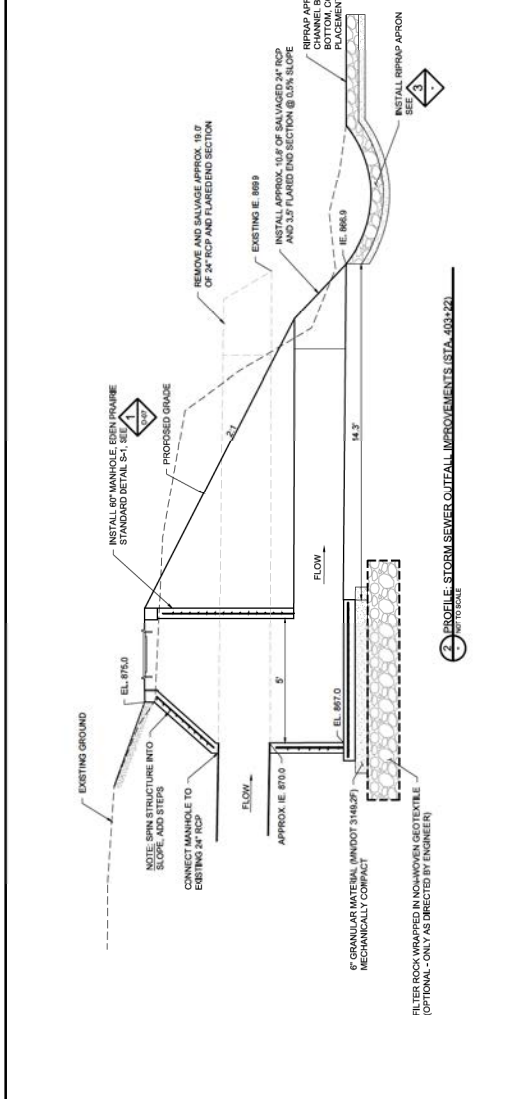
NO.	DATE	BY	APP.	DATE	REVISION DESCRIPTION
1	03/25/2022	JES			ISSUED FOR BID

AS SHOWN: 02/25/2022
 DATE: 02/25/2022
 DRAWN BY: JES
 CHECKED BY: JES
 APPROVED BY: JES
 DATE RELEASED: 03/25/2022

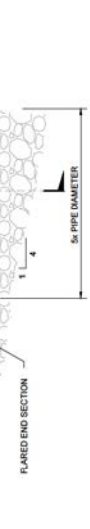
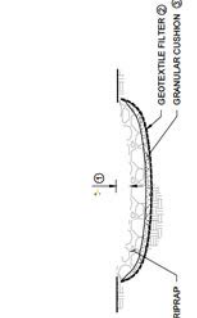
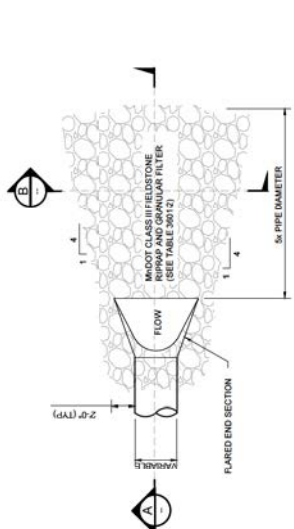
PROJECT: RILEY PURGATORY BLUFF CREEK WD
 CLIENT: CHANHASSEN, MN
 DRAWING NO: D-04
 REV. NO: 0



1 PLAN STORM SEWER OUTFALL IMPROVEMENTS
HORIZONTAL SCALE IN FEET



2 PROFILE STORM SEWER OUTFALL IMPROVEMENTS (STA. 408+29)



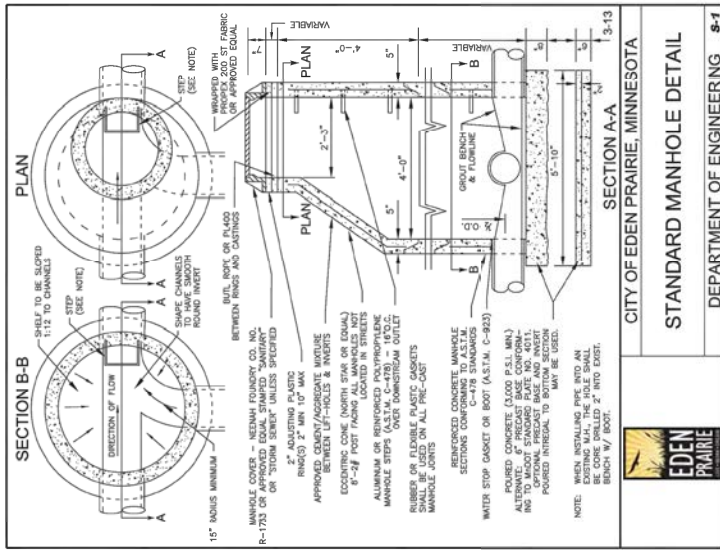
NOTES:
REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS SHALL BE DESIGNATED IN THE PLANS.
PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

- FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1'.
- GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP.
- GRANULAR FILTER, SPEC. 3901, USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
- GRANULAR FILTER OR RIPRAP, SPEC. 3901, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE MANHOLE. INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN STABILIZING FOR APRON PLACEMENT. CRUSHED ROCK IS INCIDENTAL.

3 DETAIL RIPRAP APRON
NOT TO SCALE

ISSUED FOR BID

REVISION DESCRIPTION NO. BY CHK APP DATE		DATE RELEASED A B C D E F G H I J		DATE 01/20/20 02/25/20 03/23/20 04/08/20 05/04/20 06/01/20 06/29/20 07/27/20 08/24/20 09/20/20 10/18/20 11/15/20 12/13/20	
DRAWN BY: JESICA ALLEN CHECKED BY: JESICA ALLEN DATE: 02/25/20		CLIENT: MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN		PROJECT NO.: 23077-0053.14 CLIENT PROJECT NO.:	
PROJECT NO.: 23077-0053.14 CLIENT PROJECT NO.:		RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		TRKS NO.: D-06 REV. NO.: 0	
PROJECT OFFICE: BARR BARR ENGINEERING CO. 2000 W. WISCONSIN STREET, SUITE 200 MINNEAPOLIS, MN 55405 PH: 612.339.2001 FAX: 612.339.2001 WWW.BARR-ENG.COM		AS SHOWN DATE: 09/25/2020 BY: EPF CHECKED BY: JAC APPROVED BY: JSD		MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN	

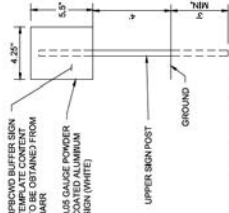


CITY OF EDEN PRAIRIE, MINNESOTA
STANDARD MANHOLE DETAIL
 DEPARTMENT OF ENGINEERING **s-1**

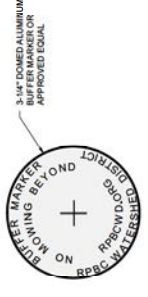
1. DETAIL: STANDARD MANHOLE
 NOT TO SCALE



- NOTES:**
1. SIGNS TO BE INSTALLED AT LOCATIONS SHOWN ON SHEET C-04.
 2. SIGNS TO BE ADDED TO EXISTING ON EXISTING SIGNS AS NECESSARY TO FIT BOTH SIGNS.
 3. CONTRACTOR TO OBTAIN SIGN DESIGN FROM ENGINEER PRIOR TO MAKING SIGNS.
 4. SIGNS SHALL BE TAMPER PROOF.
 5. SIGNS SHALL BE PAINTED GREEN. 3 LBFT



2. DETAIL: BUFFER SIGN INSTALLATION
 NOT TO SCALE



- NOTES:**
1. BUFFER MARKER TO BE IDENTIFIED WITH DURABLE MARKER OR CAP BEARING INFORMATION SHOWN ON SHEET C-04.
 2. BUFFER MARKER TO BE COMPOSED OF A DURABLE MATERIAL.
 3. INSTRUMENTS TO BE SETTABLE WITH CONVENTIONAL OBJECTS.
 4. BUFFER MARKERS TO BE INSTALLED FLUSH TO THE GROUND SURFACE.
 5. BUFFER MARKER TO BE MOUNTED TO A BURIED PIPE WITH A MINIMUM DIAMETER OF 1/2 INCH IN REBAR IS ACCEPTABLE.

3. DETAIL: FLUSH MOUNT BUFFER MARKERS
 NOT TO SCALE

ISSUED FOR BID

MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN		BARR PROJECT NO. 23077-0053 14 CLIENT PROJECT NO.
RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		TRNS NO. D-07 REV. NO. 0
OUTLET IMPROVEMENT DETAILS		
AS SHOWN 09/25/2023 EPF SAGE BOYR JSD	Date 09/25/2023 User EPF Checked SAGE Approved BOYR	Project Owner BARR ENGINEERING CO. 2000 W. WISCONSIN AVE. SUITE 400 MINNEAPOLIS, MN 55405 Tel: 612.333.3001 www.barr.com
BARR BARR ENGINEERING CO. 2000 W. WISCONSIN AVE. SUITE 400 MINNEAPOLIS, MN 55405 Tel: 612.333.3001 www.barr.com	CLIENT CITY OF EDEN PRAIRIE 15000 EDEN PRAIRIE BLVD EDEN PRAIRIE, MN 55424 Tel: 952.466.1000 www.edenprairie.org	REVISION DESCRIPTION DATE BY APPR DATE

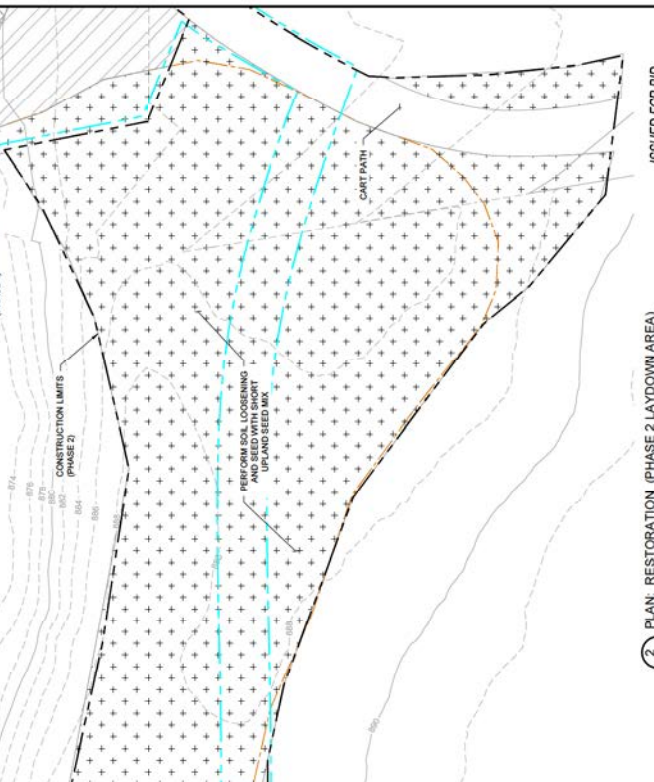
SYMBOL AND PATTERN LEGEND

	EXISTING 1/2 CONTOUR		ROCK RIFFLE
	EXISTING 2' CONTOUR		LIVE STAKES
	EXISTING PROPERTY LINE		VRS
	EXISTING STREAM THALWEG (APPROX)		SOD
	EXISTING 100-YR FLOODPLAIN		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	PROPOSED 1/2 CONTOUR		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	PROPOSED 2' CONTOUR		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	CONSTRUCTION LIMITS (PHASE 1)		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	CONSTRUCTION LIMITS (PHASE 2)		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	CONSTRUCTION LIMITS (PHASE 3)		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	CONSTRUCTION LIMITS (PHASE 4)		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
	PROPOSED BUFFER		SOD AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03

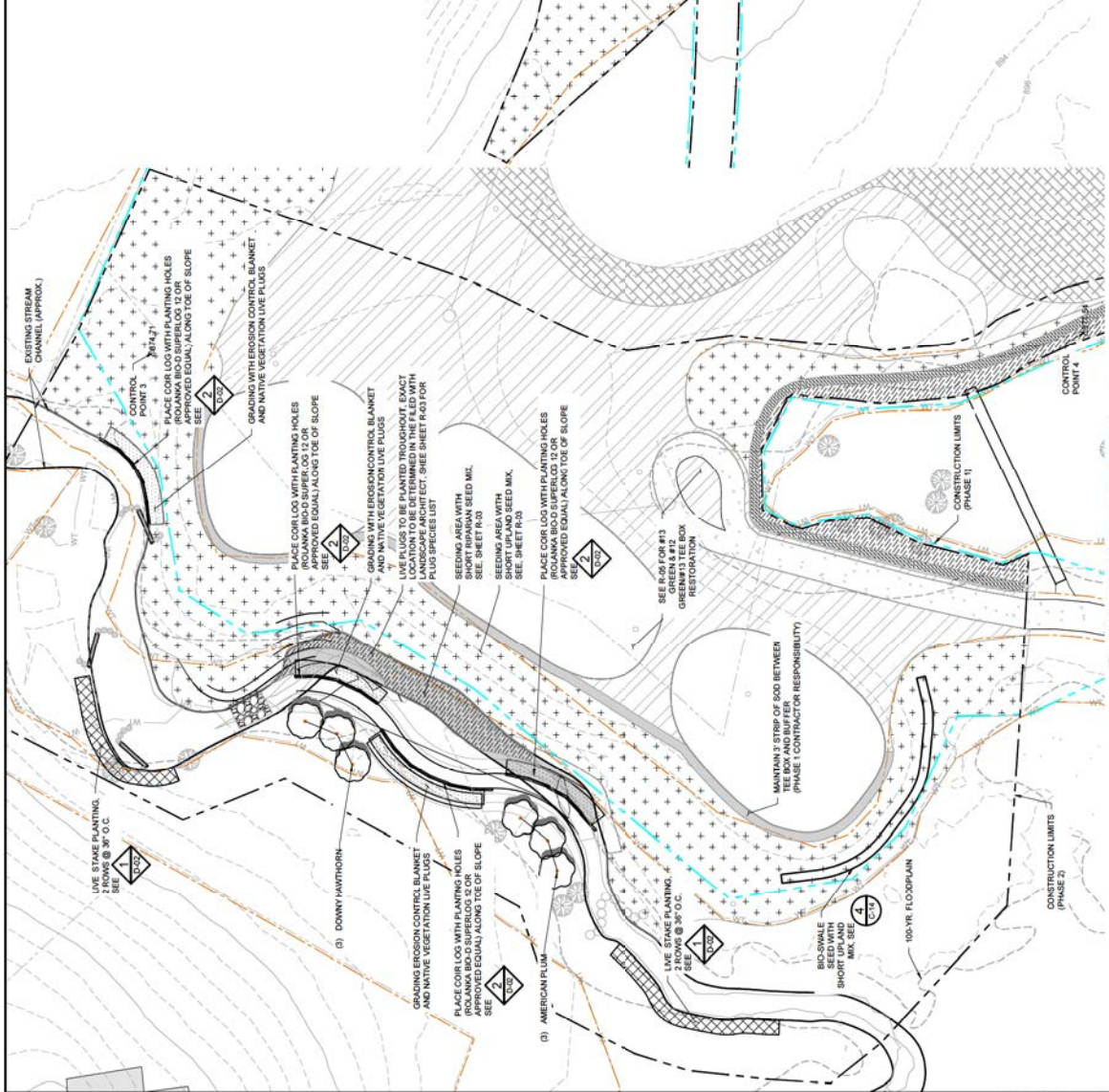
NOTES:

- PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE TIMING OF ALL CONSTRUCTION ACTIVITIES TO MINIMIZE DELAYS AND ENSURE ALL WORK IS COMPLETED ACCORDING TO PLAN.
- CONTRACTOR, THE TIMING OF WHICH MUST BE COORDINATED WITH PHASE 2 CONTRACTOR RESPONSIBLE FOR BIODIVALE AND NATIVE VEGETATION RESTORATION WITHIN PHASE 2 CONSTRUCTION LIMITS AND WITHIN OVERLAP AREAS IS THE RESPONSIBILITY OF THE PHASE 1 CONTRACTOR.

POINT #	NORTHING	EASTING	DESCRIPTION
3	119026.11507	4615573.43017	VRS SPRKZ 3
4	119491.92922	4615585.53222	VRS SPRKZ 4



2. PLAN, RESTORATION (PHASE 2 LAYDOWN AREA)
 SCALE IN FEET: 0, 30, 60
 ISSUED FOR BID



1. PLAN, CREEK RESTORATION NORTH
 SCALE IN FEET: 0, 30, 60
 DATE RELEASED: 10/01/2021

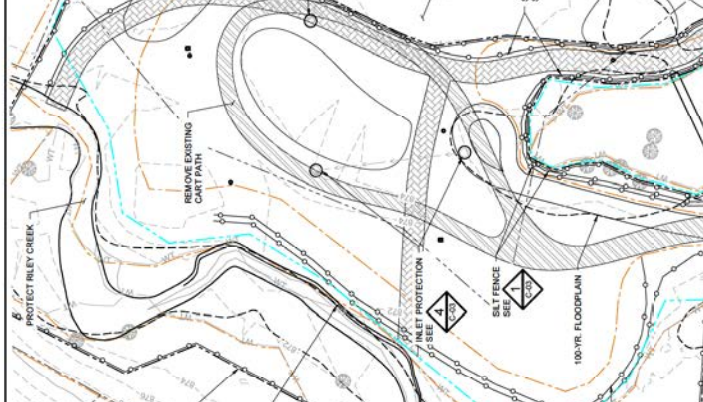
PROJECT INFORMATION PROJECT NAME: RILEY PURGATORY BLUFF CREEK WD CLIENT: CHANHASSEN, MN PROJECT NO.: 2307-0053.14 SHEET NO.: R-02 DATE: 10/01/2021		REVISIONS NO. BY: CHM/APP DATE: 10/01/2021 DESCRIPTION: ISSUED FOR BID	
DESIGNER INFORMATION DESIGNER: BARR ENGINEERING CO. ADDRESS: 10000 POINT DRIVE, SUITE 200, MINNEAPOLIS, MN 55435 PHONE: (612) 333-3331, FAX: (612) 333-3331		APPROVALS AS SHOWN: 09/25/2021 DATE: 09/25/2021 BY: BMD CHECKED: [Signature] APPROVED: [Signature]	
PROJECT LOCATION COUNTY: WASHINGTON TOWNSHIP: [Blank] RANGE: 200 SECTION: 11 CORNER: 11		REVISION HISTORY NO. BY: CHM/APP DATE: 10/01/2021 DESCRIPTION: ISSUED FOR BID	

SYMBOL AND PATTERN LEGEND	
[Symbol]	EXISTING 1/2 CONTOUR
[Symbol]	EXISTING 2' CONTOUR
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING WETLAND DELINEATION
[Symbol]	EXISTING PROPERTY LINE
[Symbol]	EXISTING 100-YR FLOODPLAIN
[Symbol]	CONSTRUCTION LIMITS (PHASE 1)
[Symbol]	CONSTRUCTION LIMITS (PHASE 2)
[Symbol]	PROPOSED BUFFER
[Symbol]	SILT FENCE
[Symbol]	SEDIMENT CONTROL LOGS
[Symbol]	CONSTRUCTION ACCESS ROUTE
[Symbol]	TEMPORARY CREEK CROSSING
[Symbol]	EXISTING TREE

GENERAL NOTES:
 PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE SITE ACCESS AND WORK TIMING.



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



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

- EROSION & SEDIMENT CONTROL NOTES:**
- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS BEFORE BEGINNING CONSTRUCTION. INSTALL A TEMPORARY ROCK CONSTRUCTION INLET PROTECTION AT ALL PUBLIC AND PRIVATE CATCH BASIN INLETS WHICH RECEIVE RUNOFF FROM THE DISTURBED AREAS. CONTRACTORS SHALL CLEAN, REMOVE AND REPAIR ALL INLETS AND SEDIMENT TRAP DEVICES BEFORE ANY CONSTRUCTION. SUCH THAT THE DEVICES ARE FULLY FUNCTIONAL FOR THE NEXT RAIN EVENT. SEDIMENT DEPOSITED IN AND/OR PLOUGHING DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF THE CONTRACTOR. UNLESS OTHERWISE SPECIFIED, ALL OTHERS ARE NOT ALLOWED FOR INLET PROTECTION.
 - LOCATE SOIL OR SILT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE WATERWAY. STOCKPILES SHALL BE COVERED WITH MULCH, TARP, OR OTHER MEANS TO PREVENT EROSION FROM ALL LOGS. STOCKPILES SHALL BE REMOVED AND RELOCATED TO ANOTHER LOCATION IF STOCKPILES ARE FOUND TO BE MORE THAN TWO FEET FROM THE DRAINAGE OUTER LINE AND SHALL BE COVERED IF LEFT UNPROTECTED.
 - NATURAL VEGETATION AND SOIL CONDITIONS MUST BE PROTECTED, INCLUDING RETENTION ON SITE OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE. SOIL STOCKPILES SHALL BE COVERED WITH MULCH, TARP, OR OTHER MEANS TO PREVENT EROSION FROM ALL LOGS. STOCKPILES SHALL BE REMOVED AND RELOCATED TO ANOTHER LOCATION IF STOCKPILES ARE FOUND TO BE MORE THAN TWO FEET FROM THE DRAINAGE OUTER LINE AND SHALL BE COVERED IF LEFT UNPROTECTED.
 - PROVIDE ADEQUATE STABILIZATION. MUST BEGRASS THAT AT LEAST 50% INCREASE OF TOPSOIL WITH A MINIMUM OF 5% ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT. WHEREVER TOPSOIL HAS BEEN REMOVED FROM THE SITE, IT SHALL BE REAPPLIED TO THE SAME LOCATION. TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTE MUST BE PROPERLY DISPOSED AT AN APPROVED LOCATION.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO PREVENT EROSION AND SEDIMENTATION. BMPs MUST BE REMOVED UPON COMPLETION OF CONSTRUCTION AND VEGETATION IS ESTABLISHED SUFFICIENTLY TO PREVENT EROSION AND SEDIMENTATION.

- FINAL REVISION:**
- SOIL SURFACES COMPLETED DURING CONSTRUCTION AND REMAINING FERROUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE A SOIL COMPACTION PER SQUARE INCH IN THE UPPER 12 INCHES OF THE SOIL PROFILE WHILE TAKING CARE TO PROTECT UTILITIES, TREE ROOTS, AND OTHER EXISTING VEGETATION.
 - LAND DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROPERTY SURFACE AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORKS PERFORMED ON THE SITE AND AT LEAST 48 HOURS BEFORE THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS CHANGES TO APPROVED EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL AUTHORITY. CONTRACTORS SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA.
 - IF DEWATERING OR PUMPING OF WATER IS NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE RECEIVING WATER BODY. THE CONTRACTOR SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA. CONTRACTOR SHALL MAINTAIN CONTACT TO PROVIDE FLOW IN RILEY CREEK WILL BE PASSED AROUND THE ACTIVE WORK AREA.
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ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

ISSUED FOR BID

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

BEARPATH GOLF & COUNTRY CLUB
 CHANHASSEN, MN

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

BARR PROJECT NO: 23027-0053.14
 CLIENT PROJECT NO:
 DRAWING NO: C-12
 REV. NO: 0

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
1	EFF	ACD	ELL	8/25/2023	ISSUED FOR BID
2	EFF	ACD	ELL	8/25/2023	REVISION DESCRIPTION

BARR
 BARR ENGINEERING CO.
 10000 UNIVERSITY DRIVE
 SUITE 200
 MINNEAPOLIS, MN 55415
 TEL: 612.338.3301
 FAX: 612.338.3301
 WWW.BARRINC.COM

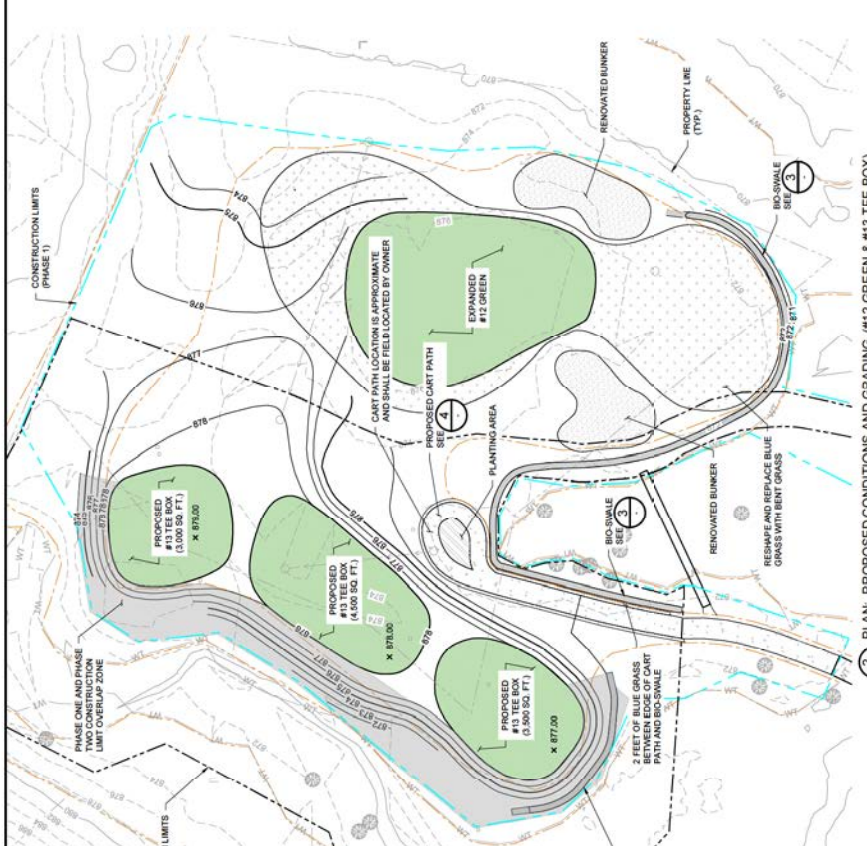
Project Office:
 BARR ENGINEERING CO.
 10000 UNIVERSITY DRIVE
 SUITE 200
 MINNEAPOLIS, MN 55415
 TEL: 612.338.3301
 FAX: 612.338.3301
 WWW.BARRINC.COM

DATE	BY	CHK	APP	DATE	REVISION DESCRIPTION
08/25/2023	EFF	ACD	ELL	8/25/2023	ISSUED FOR BID
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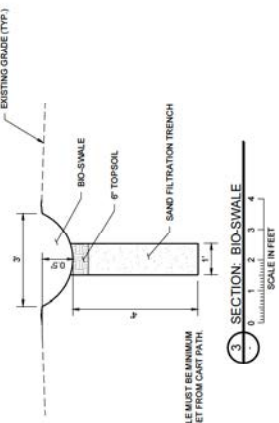
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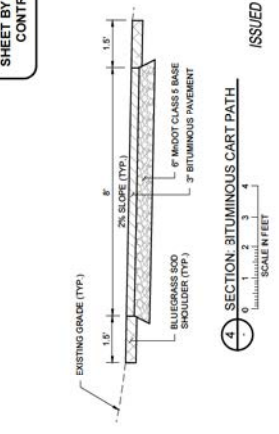
SYMBOL AND PATTERN LEGEND	
	EXISTING 10' CONTOUR
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	EXISTING PROPERTY LINE
	PROPOSED 5' CONTOUR
	PROPOSED 10' CONTOUR
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	PROPOSED BUFFER
	PROPOSED GOLF COURSE
	PROPOSED SAND BUNKER
	PLANTING AREA
	BENT GRASS SEEDING AREA



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



3 SECTION: BIOSWALE



4 SECTION: BITUMINOUS CART PATH



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

- NOTES:**
- CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK.
 - ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, BONES OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE SURVEYS WITH OWNER TO DOCUMENT PRE-CONSTRUCTION EXISTING CONDITION ISSUES.
 - 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.
 - TREES TO BE CLEARED WILL BE MARKED BY ENGINEER. ALL TREES 4" DBH (DIAMETER NOT MARKED FOR REMOVAL) SHALL BE PROTECTED.
 - TREES IDENTIFIED BY ENGINEER FOR ADDITIONAL PROTECTION AGAINST ROOT COMPACTON, DAMAGE AND DISFIGUREMENTS IN ACCORDANCE WITH IMOOT 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.
 - POUNDS PER SQUARE INCH IN THE UPPER 1 INCH OF SOIL MUST BE DECOMPACTED TO A SOIL COMPACTING PRESSURE OF LESS THAN 1400 PSI (AS 91.25).
 - CONTRACTOR SHALL CONTACT ENGINEER AT LEAST 24 HOURS PRIOR TO CONSTRUCTION OF CRITICAL DESIGN ITEMS TO ALLOW FOR CONSTRUCTION OBSERVATION. CRITICAL DESIGN ITEMS INCLUDE:
 - SHOULDER WANE INSTALLATION

ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

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

BEARPATH GOLF & COUNTRY CLUB
CHANHASSEN, MN

AS SHOWN
DATE: 03/25/2022
DRAWN: JLD
CHECKED: JLD
APPROVED: JLD

Project Title:
BARR ENGINEERING CO
1500 HUNTERS LANE
SUITE 200
MINNEAPOLIS, MN 55413
Tel: (612) 332-3301
www.barr.com

BARR
ENGINEERING
CONSULTANTS
INC.

CLIENT: BARR ENGINEERING CO
CONTRACTOR: BARR ENGINEERING CO
PROFESSIONAL ENGINEER LICENSE NO. 0000000000
STATE OF MINNESOTA

PRINTED NAME: JLD/JLD/0000000000
SIGNATURE: JLD/JLD/0000000000
DATE: 03/25/2022

DATE RELEASED: 03/25/2022

ISSUED FOR BID

REVISION DESCRIPTION

NO. BY: JLD/JLD/0000000000

DATE: 03/25/2022

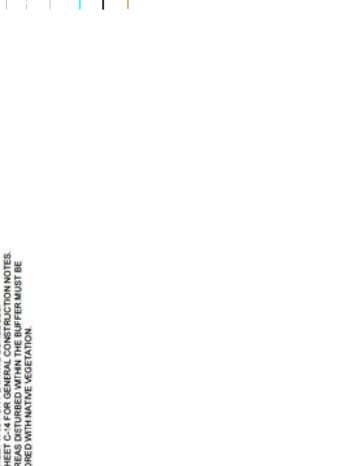
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NOTES:

- SEE SHEET R-01 FOR SITERESTORATION DETAILS.
- SEE SHEET C-4 FOR GENERAL CONSTRUCTION NOTES.
- ALL AREAS DISTURBED WITHIN THE BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.
- SEE SHEET C-4 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
- PROPOSED GOLF COURSE
- PROPOSED SAND BLINKER
- SEEDING AREA WITH BIO-SWALE SEED MIX. SEE SHEET R-03
- SEEDING AREA WITH SHORT KENTUCKY BLUE GRASS AND MIX. SEE SHEET R-03
- SEEDING AREA WITH SHORT UPLAND SEED MIX. SEE SHEET R-03
- SOD AREA WITH KENTUCKY BLUE GRASS. OTHER TO SPECIFY SOD MIX.
- SOD AREA WITH BENTGRASS AND MIX. OWNER TO SPECIFY SOD MIX.



2 PLAN: RESTORATION (#12 TEE BOX).

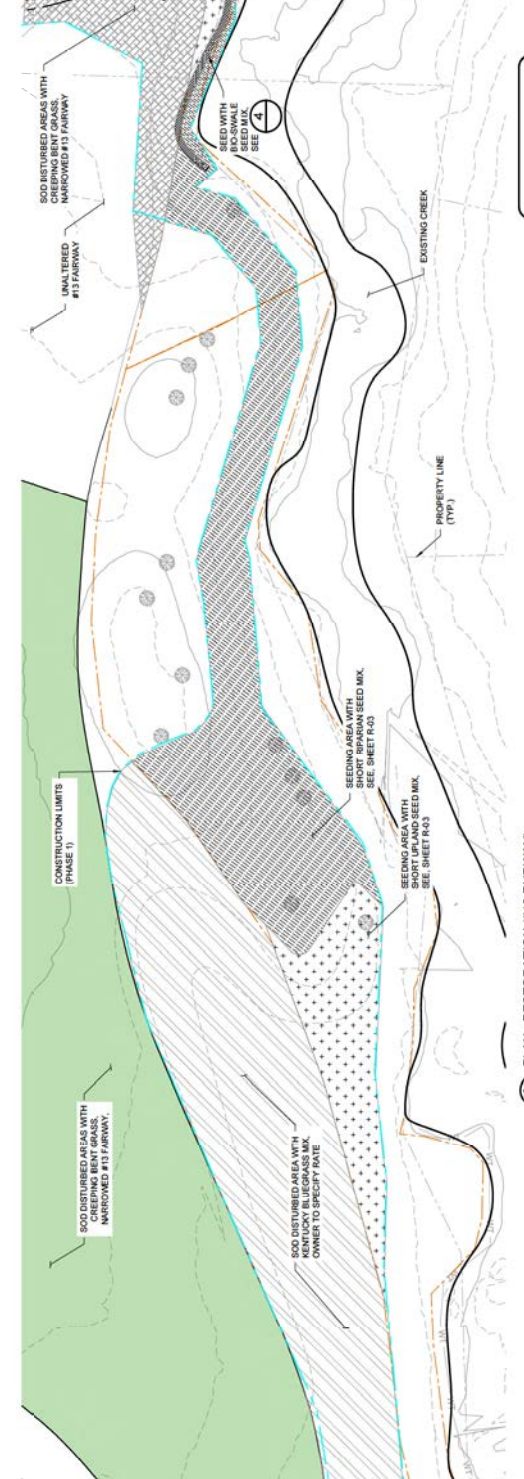
SCALE IN FEET: 0, 30, 60



1 PLAN: RESTORATION (#16 GREEN).

SCALE IN FEET: 0, 30, 60

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



3 PLAN: RESTORATION (#12 FAIRWAY).

SCALE IN FEET: 0, 30, 60

ISSUED FOR BID
ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

DATE RELEASED		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
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CLIENT: BEARPATH GOLF & COUNTRY CLUB, CHANHASSEN, MN PROJECT: BEARPATH GOLF COURSE RENOVATION (PHASE 1) CLIENT PROJECT NO.: 23/07-0053_14 TRK# NO.: R-04 REV. NO.: 0																					

DATE	BY	DESCRIPTION
08/25/2023	JCD	ISSUED FOR BID
08/25/2023	JCD	REVISION DESCRIPTION

BARR ENGINEERING CO.
 5400 W. WISCONSIN AVE., SUITE 200
 MINNEAPOLIS, MN 55415
 (612) 338-3300
 www.barr.com

COOPERATIVE AGREEMENT
Between Bearpath Golf and Country Club and
Riley-Purgatory-Bluff Creek Watershed District

Middle Riley Creek Stabilization Project

DRAFT July 1, 2021

This cooperative agreement is made by and between Bearpath Golf and Country Club, a Minnesota limited partnership (Bearpath) and Riley-Purgatory-Bluff Creek Watershed District, a watershed district created pursuant to Minnesota Statutes chapters 103B and 103D (RPBCWD); to achieve shared water-resource protection and improvement goals through design, construction and maintenance of a stabilization project along Middle Riley Creek on the campus of Bearpath Golf and Country Club (the Bearpath Property), which is owned in fee by Bearpath Golf and Country Club. While this agreement is primarily established for the project described below, it is the intent of both parties to continue a partnership beyond the term of this agreement and work cooperatively in the future to meet the shared goals of the RPBCWD and the Bearpath Property.

Recitals

WHEREAS RPBCWD has an approved water resources management plan pursuant to Minnesota Statutes section 103B.231 (the Plan) that has as a primary goal the improvement of water quality in Riley Creek and in the Riley Creek watershed generally;

WHEREAS the Plan identifies creek restoration and stabilization at Riley Creek as a Proposed Project in the Riley Creek Watershed (Plan, Section 8, Table 8-2);

WHEREAS Bearpath believes that through cooperative work with RPBCWD Bearpath can assist in improving water quality in Riley Creek and the Riley Creek Watershed as well as pursue its goal to improve the quality of the golf course;

WHEREAS Riley Creek is listed on the Minnesota Pollution Control Agency's list of impaired waters for turbidity, aquatic macroinvertebrate bioassessments, fishes bioassessments, and *E. coli*, and the Minnesota River, into which Riley Creek flows, is impaired for nutrients/eutrophication and turbidity;

WHEREAS RPBCWD and Bearpath recognized a mutual opportunity to address streambank erosion, impairments, and golf course impacts by partnering in a project to restore a section of Middle Riley Creek (R3);

WHEREAS at the direction of the RPBCWD board of managers and in collaboration with Bearpath, the RPBCWD engineer studied the feasibility of providing a biologically diverse stream reach that significantly reduces streambank erosion and sediment and phosphorus loading to Riley Creek and downstream waterbodies; improves water quality, and improves natural stream habitat for aquatic organisms along 815 feet of Riley Creek Reach R3 (the Project); the engineer estimated that the Project would result in 0.2 acres of in-channel habitat improvements and 0.5 acres of riparian habitat improvements; reduce TSS by 16,640 lbs/yr and reduce TP by 8.3 lbs/yr; restore 815 feet of reach R3; and generally would help protect Riley Creek from erosion by moving the stream away from the banks;

WHEREAS the Project will increase public awareness of erosion issues and water quality of Riley Creek due to the accessible location of the project for Bearpath members; stabilize the slope failure area on the Hole 16 green and the bank erosion that is exposing golf course infrastructure next to the Hole #13 tee box; provide a natural stream corridor and additional and improved habitat by increasing stream length; provide greater stream depth variability and other in-stream enhancements that will potentially allow more opportunities for macroinvertebrates and fish to use this reach of Riley Creek; and improve long-term stability of the reach of Riley Creek that passes through the Bearpath Property;

WHEREAS on April 1, 2020, the RPBCWD board of managers conducted a duly-noticed public hearing on and ordered the Project in accordance with Minnesota Statutes section 103B.251;

WHEREAS Bearpath has committed to contribute \$43,500 in cash and other in kind contributions to for a total equivalent value not to exceed \$82,500 except as provided in paragraph 3.C; RPBCWD will cover the remaining costs of the Project, the total estimated cost of which is \$510,000 through its ad valorem property tax levy to implement its watershed management plan pursuant to Minnesota Statutes Section 103B.21, 77% of which is paid by RPBCWD property taxpayers in Hennepin County and 23% is paid by RPBCWD property taxpayers in Carver County;

WHEREAS the Project will be constructed entirely on the Bearpath Property in the area depicted and labeled "Construction Limits" in Exhibit B, attached to and incorporated into this agreement;

WHEREAS Bearpath will own and maintain the Project when it is completed;

WHEREAS Bearpath and RPBCWD acknowledge that their ability to achieve Project objectives depends on each party satisfactorily and promptly performing individual obligations and working cooperatively with the other party to this agreement; and

WHEREAS Minnesota Statutes §103D.335, subdivisions 7 and 21 authorize RPBCWD to enter this cooperative agreement with Bearpath.

Agreement

NOW, THEREFORE Bearpath and RPBCWD enter into this agreement to document their understanding as to the scope of the Project, affirm their commitments as to the responsibilities of and tasks to be undertaken by each party, grant and assign the necessary land-use rights, and facilitate communication and cooperation to successfully complete the Project.

1 Organization and Relationship of the Parties

- A. The RPBCWD administrator and Bearpath's Executive Golfer, Kevin Cashman, will serve as project leads and the principal contacts for their respective organizations for the Project, charged to conduct the day-to-day activities necessary to ensure that the Project is completed in accordance with the terms of this agreement.
- B. The project leads will coordinate and communicate informally and formally to timely address any issues of concern to ensure the successful completion of the Project.

- C. Bearpath and RPBCWD enter this agreement with the joint purposes of improving water quality and stabilizing and reducing erosion in Riley Creek while at the same time allowing Bearpath to pursue its goal of maintaining and improving the quality of the Bearpath golf course; maintaining its designation as a Jack Nicklaus Signature golf course; and maintaining its status as a top quality golf course by incorporating the following characteristics into any design: challenge, aesthetics, conditioning, distinctiveness, character, shot options, and layout variety. Only contractual remedies are available for the failure of a party to fulfill the terms of this agreement.
- D. Notwithstanding the foregoing or any other provision of this agreement, Bearpath's and RPBCWD's obligations and rights under paragraphs 2E, 3B, 5C, 6A and 6C of the agreement will survive the termination of the agreement.
- E. This agreement creates no right in and waives no immunity, defense or liability limitation with respect to any non-party.

2 Project Design, Construction and Maintenance

- A. The Project is further defined for purposes of this cooperative agreement as the work specified in the designs that RPBCWD generated with its engineer, and plans and specifications attached to and incorporated into this agreement as Exhibit C. The design provides that Bearpath may coordinate its design and relocation of Hole #13 tee boxes and #12 green area of the golf course designated as Phase I on the plans in Exhibit C. RPBCWD work in the Project is designated as Phase II on the plans in Exhibit C.
- B. The Project will include, after completion of construction, assessment of the effectiveness of the Project by the parties and development by the RPBCWD engineer of specific written schedules, procedures and protocols for routine and major operation and maintenance of the Project. This agreement also provides terms and conditions for post-construction operation and maintenance of the Project.
- C. **Construction contracting.** RPBCWD will solicit bids in accordance with applicable state and federal law, and will contract with the bidder it determines is the lowest-cost responsible and responsive bidder. The contract for construction will:
 - i. Require the contractor to indemnify, defend and hold harmless Bearpath, its officers, employees and agents, from any and all actions, costs, damages and liabilities of any nature arising from the contractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty, or a subcontractor's negligent or otherwise

wrongful act or omission, or breach of a specific contractual duty owed by the contractor to RPBCWD;

- ii. Require that the contractor for the Project name Bearpath as an additional insured for general liability with primary and noncontributory coverage for general liability and provide a certificate showing same prior to construction;
- iii. Extend the contractor's warranties under the agreement to Bearpath;
- iv. Require the contractor to determine and obtain all permits and other regulatory approvals applicable to the Project on behalf of RPBCWD and Bearpath.

D. Construction.

- i. RPBCWD, or the RPBCWD engineer on RPBCWD's behalf, will provide construction oversight for and oversee implementation of the Project. RPBCWD may adjust the plans and specifications for the work during implementation, as long as the revised plans do not require RPBCWD to exceed the scope of the rights granted under this agreement, and such changes are made in coordination with Bearpath to ensure compatibility of the Project with Bearpath's continued use and operation of the Bearpath Property for its customary and intended purposes. Project construction is planned to commence on or about September 1, 2021, with site restoration and planting to take place in spring 2022 before the golf season commences.
- ii. RPBCWD will coordinate construction activities with Bearpath's construction to relocate Hole #13 tee boxes and modifying Hole #12 tee, fairway and green areas.
- iii. RPBCWD will timely engage and consult Bearpath on material changes to the Project plans and specifications.
- iv. Until substantial completion of construction of the Project for the purposes intended, if RPBCWD, in its judgment, should decide that the Project is infeasible, RPBCWD, at its option, may declare the agreement rescinded and annulled. If RPBCWD so declares, all obligations herein, performed or not, will be voided, except that RPBCWD will return the Bearpath Property materially to its prior condition or to a condition agreed to by Bearpath.
- v. RPBCWD will notify Bearpath within five business days of receipt of a certification of substantial completion from the contractor contracted to construct the Project.
- vi. Within 90 days of certification of substantial completion or termination of this agreement, RPBCWD will ensure that the Project site is substantially restored to a condition consistent with the use of the Property for its intended purposes as approved by Bearpath, and consistent with the ordinary time required to re-establish vegetation.

E. Maintenance.

- i. After completion of the three-year vegetation establishment period for the Project, Bearpath will provide, at its sole expense ongoing routine maintenance of the Project. RPBCWD will provide, at its sole expense, ongoing technical assistance and support for maintenance of the Project, and conduct specialized maintenance and repairs.
- ii. The Maintenance Plan in Exhibit D delineates necessary routine maintenance of the Project, as well as roles and responsibilities supplemental to and consistent with the

terms of this agreement for implementation of maintenance work for the Streambank Stabilization Easement Areas and Buffer Maintenance Areas shown on Exhibit B.

iii. RPBCWD may conduct monitoring of the performance of the Project.

3 Costs

- A. Except for reimbursement as provided in paragraph 3C herein, each party will be responsible for the costs of performance of its obligations and exercise of its rights under this agreement.
- B. As provided in paragraph 2.F.i herein, Bearpath will be responsible for the costs of routine post-construction maintenance of the Project in conformance with the Maintenance Plan.
- C. On receipt of documentation of payment as may be reasonably requested, Bearpath will reimburse RPBCWD \$43,500 of documented costs of construction of the Project plus all costs associated with rebuilding the portion so the boulder wall beyond the 50 feet associated with the slope failure into Riley Creek at the unit price per lineal foot secured through the project bidding process times the length rebuilt. Because the RPBCWD and Bearpath Contractors will jointly access the site using the same route, Bearpath will reimburse RPBCWD 50 percent of the cost of restoring the access route jointly used by both contractors. Additionally, Bearpath will commit the following expenditures or in-kind contributions:
 - i. \$950 in payment to Barr Engineering for conceptual design development, information from which was used in the Middle Riley Creek Stabilization Feasibility Report;
 - ii. \$6,550 in future payments planned, and under contract, from Bearpath to Barr Engineering, for consulting on final golf-related design development and golf feature construction related to the Project;
 - iii. All design and construction costs, estimated at \$24,700, related to relocation of Hole #13 tee boxes and modifying Hole #12 green area to accommodate the Project;
 - iv. In-kind long-term maintenance of the Project, in accordance with the Maintenance Plan, excluding material costs associated with implementing the Maintenance Plan, an estimated value of \$6,800 (40 hours of labor per year);
- D. The entirety of the Project work will be the subject of one single permit jointly prepared and submitted by Bearpath and RPBCWD, including Bearpath's in-kind work on Hole #13 tee boxes and modifying Hole #12 tee, fairway and green areas ; Bearpath will be responsible for any other permits and access agreements for its work related to the Project;
- E. Except as specifically provided otherwise herein, each of the parties will bear the costs of fulfilling its responsibilities and obligations under this agreement and, in the event of

cancellation, the parties will bear all costs incurred prior to RPBCWD's issuance of notice to Bearpath in accordance with paragraph 2.E.iv herein.

4 Grant of Property-Use Rights

Bearpath holds fee simple on the parcel(s) legally described in Exhibit A to this Agreement and agrees to grant RPBCWD an easement over the areas identified in Exhibit B to this Agreement. This easement will provide for access and use of the burdened areas for purposes of construction and ongoing inspection and maintenance of the Project, and provide for conservation of the Project and related buffer areas. Buffer areas will be memorialized by installing monuments flush with the ground as approved by Bearpath so as not to interfere with play. Bearpath will facilitate communication with property owners in order for RPBCWD to acquire rights to access the site using roadways under ownership of the Bearpath HOA (PID: 1911622230035, 1911622230027, 1911622220019, 191162224006, and 19116221140016).

5 RPBCWD's Further Rights and Obligations

- A. RPBCWD will not be deemed to have acquired by entry into or performance under this agreement any form of interest or ownership in the Bearpath Property. RPBCWD will not by entry into or performance under this agreement be deemed to have exercised any form of control over the use, operation or management of any portion of the Bearpath Property or adjacent property so as to render RPBCWD a potentially responsible party for any contamination or exacerbation of any contamination conditions under state and/or federal law, except in the event that any contamination occurs due to actions taken by the RPBCWD.
- B. RPBCWD will provide (in both digital and paper copy format) as-built construction drawings of the Project to Bearpath within 90 days of certification of the Project as substantially complete for the intended purposes.
- C. RPBCWD contracted with the RPBCWD engineer for the development of the plans and specification for the Project, along with all necessary construction documentation, and the Maintenance Plan. Notwithstanding the foregoing, RPBCWD makes no warranty to Bearpath regarding the RPBCWD engineer's or another non-party's performance in design, construction or construction management for the Project.

6 Potential Future Collaboration

Bearpath has identified a potential future project for coordination with RPBCWD on the addition of a stone wall or similar structure near the #1 green area to facilitate in separating the buffer area from the playable course and preventing erosion; reworking of the #6 tee area and a bunker to facilitate better play and water treatment; and to rework the #8 tee area and green, both of which abut the buffer zone. Included in the work on #8 will be the addition of a stone wall or

similar structure to prevent erosion on the green and to create an obvious boundary between the golf course and the buffer zone.

7 General Terms

- A. **Publicity and endorsement.** RPBCWD and Bearpath will collaboratively develop, produce and disseminate public education and outreach materials and conduct at least one, and possibly annual, public educational and informational meetings about the Project. Each party, at its sole expense, may develop, produce and, after approval of the other party, distribute educational, outreach and publicity materials related to the Project. Any publicity regarding the Project must identify Bearpath and RPBCWD as sponsoring entities. For purposes of this provision, publicity includes notices, informational pamphlets, press releases, research, reports, signs and similar public notices prepared by or for Bearpath or RPBCWD individually or jointly with others, or any subcontractors, with respect to the Project.
- B. **Data management.** All designs, written materials, technical data, research or any other work in progress will be shared among the parties to this agreement on request, except as prohibited by law. As soon as is practicable, the party preparing plans, specifications, contractual documents, materials for public communication or education will provide them to the other parties for recordkeeping and other necessary purposes.
- C. **Data Practices.** All data created, collected, received, maintained or disseminated for any purpose in the course of this agreement is governed by the Minnesota Government Data Practices Act, Minnesota Statutes chapter 13, and any state rules adopted to implement the act, as well as federal regulations on data privacy
- D. **Entire agreement.** This agreement, as it may be amended in writing, contains the complete and entire agreement between the parties relating to the subject matter hereof, and supersedes all prior negotiations, agreements, representations and understandings, if any, between the parties respecting such matters. The recitals stated at the outset are incorporated into and made a part of the agreement.
- E. **Force majeure.** RPBCWD will not be liable for failure to complete the Project if the failure results from an act of god (including fire, flood, earthquake, storm, other natural disaster or other weather conditions that make it infeasible or materially more costly to perform the specified work), embargo, labor dispute, strike, lockout or interruption or failure of public utility service. In asserting force majeure, RPBCWD must demonstrate that it took reasonable steps to minimize delay and damage caused by foreseeable events, that it substantially fulfilled all non-excused obligations, and that it timely notified Bearpath of the likelihood or actual occurrence of the force majeure event. Delay will be excused only for the duration of the force majeure.
- F. **Waivers.** The waiver by Bearpath of any breach or failure to comply with any provision of this agreement by the other parties will not be construed as nor will it constitute a continuing waiver of such provision or a waiver of any other breach of or failure to comply with any other provision of this agreement.

G. **Notices.** Any notice, demand or communication under this agreement by any party to the others will be deemed to be sufficiently given or delivered if it is dispatched by registered or certified mail, postage prepaid to:

Bearpath
James Senske
Owner
18100 Bearpath Trail
Eden Prairie, MN, 55347
jsenske@cbmn.bank
(952) 841-9770

RPBCWD
Terry Jeffery
Interim Administrator
18681 Lake Drive East
Chanhassen, MN 55317
tjeffery@rpbcd.org
952-807-6885

H. **Term; termination.** This agreement is effective on execution by each of the parties and will terminate three years from the date of execution of this agreement or on the written agreement of all three parties.

[SIGNATURE PAGE FOLLOWS.]

IN WITNESS WHEREOF, the parties have caused the agreement to be duly executed intending to be bounded thereby.

Bearpath

By: James Senske, Owner

Date: _____

and

By: [NAME],

Date: _____

Riley-Purgatory-Bluff Creek Watershed District

By: Dick Ward, President

Date: _____

Approved as to form & execution:

RPBCWD counsel

DRAFT

EXHIBIT A
Legal Description of the Bearpath Property

[This should come from Bearpath.]

EXHIBIT B
Easement

EXHIBIT C
Project Plans

EXHIBIT D
Maintenance Agreement

**RESOLUTION NO. 21-XX
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
BOARD OF MANAGERS**

**APPROVING AND AUTHORIZING EXECUTION OF COOPERATIVE AGREEMENT
WITH BEARPATH GOLF AND COUNTRY CLUB FOR THE MIDDLE RILEY CREEK
STABILIZATION PROJECT**

Manager _____ offered the following resolution and moved its adoption, seconded by
Manager _____:

WHEREAS, the Riley Purgatory Bluff Creek Watershed District’s (District) 2018 10-Year Watershed Management Plan (Plan) identified creek restoration and stabilization at Riley Creek as a Proposed Project in the Riley Creek Watershed (Plan, Section 8, Table 8-2); Bearpath Golf and Country Club (Bearpath) approached the District requesting coordination to restore a section of middle Riley Creek that has resulted in erosion of golf course features; a technical stakeholder meeting was held on February 10, 2020 to provide stakeholders an opportunity to review the proposed alternatives and issues; in March 2020 the District engineer developed a Feasibility Study for providing an ecologically diverse stream reach that significantly reduces streambank erosion and sediment and phosphorus loading to Riley Creek and downstream waterbodies; improves water quality; and improves natural stream habitat for aquatic organisms along 815 feet of Riley Creek Reach R3 (Project);

WHEREAS on April 1, 2020, the Board of Managers held a duly noticed public hearing to receive comments on the proposed Project, and the Board of Managers carefully considered these comments, and ordered the Project, and directed the development of a cooperative agreement with Bearpath; District staff and Bearpath representatives have developed the attached draft cooperative agreement to provide for coordination and implementation of the Project;

NOW THEREFORE BE IT RESOLVED that the Board of Managers hereby approves the attached cooperative agreement with Bearpath Golf and Country Club for the Middle Riley Creek Stabilization Project dated July 1, 2021 with such non-substantive changes as may be necessary to finalize the agreement, and authorizes the president of the Riley Purgatory Bluff Creek Watershed District Board of Managers to execute the cooperative agreement.

The question was on the adoption of the resolution and there were _____ yeas and _____ nays as follows:

Yea Nay Abstain Absent

**CRAFTON
KOCH
PEDERSEN
WARD
ZIEGLER**

Upon vote, the president declared the resolution _____.

Dated: _____, _____, 2021.

David Ziegler, Secretary

* * * * *

I, David Ziegler, secretary of the Riley Purgatory Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this _____ day of _____, 2021.

David Ziegler, Secretary

Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
From: Jessica Olson, P.E. and Scott Sobiech, P.E., Barr Engineering Co.
Subject: Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project – Request Board Authorization to Solicit Bids for Construction
Date: July 1, 2021
Project: 23/27-0053.14 029
c: Terry Jeffery – RPBCWD Interim Administrator

Requested Board Action

It is requested that the RPBCWD Board of Managers authorize Barr Engineering Co. to solicit bids from contractors to construct the Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project as designed and shown on the construction documents.

The Middle Riley Creek stabilization and Bearpath Golf Course Renovation project is located on Riley Creek immediately upstream of Lake Riley, west of Dell Road and north of Riley Lake Road, entirely within Bearpath Golf Course in Eden Prairie, Minnesota. This project was identified in a March 2020 feasibility study for the area with the goal of the project to protect, restore, and enhance water resources while providing a natural stream corridor through the golf course that meets the aesthetic and use goals for Bearpath Golf and Country Club. The feasibility study identified two creek reaches in need of restoration. The southern reach includes steep eroding outer bend streambanks that are 4 to 6 feet tall along with streambank undercutting, while the northern reach includes erosion along outer bend streambanks as well as a segment that appears to have been straightened at some point, possibly related to historical farming operations in the area.

The proposed restoration measures include realigning the Middle Riley Creek channel and grading the channel bank and floodplain in portions of the upstream and downstream locations to improve connection to the floodplain and to prevent streambank erosion. The realigned channel shape and capacity have been designed to minimize shear stress for the stream's baseflow and the 100-year design storm. In addition, rock riffles, cross vanes, and J-hook vanes will be placed in the channel at key locations to provide grade control and reduce the risk of future erosion.

The project includes the stabilization of two segments of Riley Creek; a southern reach between the Hole #16 fairway and green and a northern reach west of the Hole #13 tee box (580 and 390 feet, respectively). To accommodate the creek stabilization portion of the project, Bearpath Country Club will raise the hole #13 tee boxes and shift them to the east, remove a portion of the existing impervious trail, and improve the #12 green area. Total new buffer area designated for the project is 690,800 square feet, which is 117,700 square feet more than required by strict interpretation of the RPBCWD rules. In addition to the buffer area, nearly 0.6 acres of mono-culture sod will be converted to native prairie vegetation adjacent to the #14 tee box area.

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Date: July 1, 2021
Page: 2

The RPBCWD Board of Managers ordered the Middle Riley Creek stabilization and Bearpath Golf Course Renovation project at the April 2020 regular meeting for the detailed design, preparation of construction documents, and permitting for the recommended project from the feasibility study. The following table summarizes necessary permits and the approval status:

Table 1. Anticipated Project Benefits

	TSS Load Reduction¹ (lb/yr)	TP Load Reduction¹ (lb/yr)	Stream Length Restored (ft)	Wetland and Creek Buffer Dedicated (ac)	Native Prairie Area Restoration (ac)	Wetland Area Restoration (ac)
Feasibility Study	16,645,	8.3	1,435	0.37	0	0.1
100% Design	16,645,	8.3	970	15.6	0.6	0.4

¹ Only reflect reductions due to streambank stabilization

Construction documents including bidding documents, construction drawings, and technical specifications, have been prepared for the Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project. The contract documents (i.e., specifications) have been finalized in response to RPBCWD legal counsel comments. The design of the proposed system includes, but is not limited to: grading of the channel and stream banks; installation of cross vanes, riprap, constructed riffles; vegetated reinforced soil slopes; log vanes; removal of existing storm sewer; clearing and grubbing; removal of impervious surfaces; excavation of floodplain storage; installation of storm sewer, flared end sections, and drintile; erosion and sediment control; soil rehabilitation, site restoration with native plantings; and maintaining/establishing buffer for the delineated wetlands and creek. District and Bearpath staff participated in design reviews at 60% and 90% design.

The following table summarizes necessary permits and the approval status:

Table 2 Permitting status

Permitting Agency	Status
City of Eden Prairie	City Land Alteration and Vegetation Management permit applications will be submitted after District approval
RPBCWD	Submitted to RPBCWD and under District Review
WCA	Request for wetland boundary/type and no-loss approval – under review by LGU (City of Eden Prairie)
U.S. Army Corps of Engineers	Request for Approved Jurisdictional Determination and confirmation of pre-authorization of Nationwide Permit 27 – under review by USACE

The Engineer’s opinion of probable cost (OPC) presented in the March 2020 feasibility study and the OPC based on the 100% design are summarized in Table 3. The 100% OPC was developed using recent bid prices from similar projects that have been bid in 2019 and 2020. The overall opinion of probable construction costs for the 100% design configuration are higher than the feasibility study OPC resulting in

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Date: July 1, 2021
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a higher cost per pound of pollutant removed when compared to feasibility study for the following reasons:

- Volatility in construction bids in 2021
- Condensed construction window to accommodate Bearpath golf course restoration
- Increased site access length and restoration
- Expanding the project to include nearly 0.6 acres of native prairie restoration, including improved soil health
- Installation of additional 200 square yards of boulder wall
- Additional project coordination the contractor will need to undertake with Bearpath contractor
- Added 630 linear feet of bioswale
- Additional 0.4 acres wetland restoration area
- Additional stream stabilization features
- Replacement of 382 square yards golf cart path

The OPC provided is made on the basis of Barr Engineering’s experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. Because we have no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor’s methods of determining prices, or over competitive bidding or market conditions, Barr Engineering cannot and does not guarantee that proposals, bids, or actual costs will not vary from the OPC presented.

Table 3. Engineer’s Opinion of Probable Construction Cost

Item	Feasibility Study Design (March 2020) ¹	Feasibility Level Annual Cost for TP Removal (\$/lb TP/yr)	Feasibility Level Annual Cost for TSS Removal (\$/lb TP/yr)	Final Design Configuration ²	Final Design Annual Cost for TP Removal (\$/lb TP/yr)	Final Design Annual Cost for TSS Removal (\$/lb TP/yr)
ESTIMATED CONSTRUCTION COST	\$220,000	\$1,321	\$0.66	\$344,000	\$2,072	\$1.03
ESTIMATED ACCURACY RANGE	\$198,000	\$1,189	\$0.59	\$327,000	\$1,970	\$0.98
	\$286,000	\$1,717	\$0.86	\$362,000	\$2,181	\$1.09

¹Estimated accuracy range for feasibility study was -10% and +30% of the estimated total construction cost. This includes 30% contingency, as noted in Appendix B of the Feasibility Report.

²Estimated accuracy range for 100% design configuration was -5% and +5% of the estimated total construction cost. This includes 5% contingency.

It is requested that the RPBCWD Board of Managers authorize Barr Engineering Co. to solicit bids from contractors to construct Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project as designed and shown on the construction documents. If the Board of Managers authorizes solicitation of bids to construct the Project, the following tasks would be completed.

The anticipated schedule is outlined below.

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
From: Jessica Olson, P.E. and Scott Sobiech, P.E., Barr Engineering Co.
Subject: Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project – Request Board Authorization to Solicit Bids for Construction
Date: July 1, 2021
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- July 7, 2021 – Board of Managers authorizes Barr Engineering Co. to solicit bids
- July 8, 2021 – Advertise in construction bulletin and in local papers and begin virtual bidding in Quest CDN
- July 16, 2021 – Pre-bid site meeting
- July 28, 2021 – Virtual bid opening
- August 4, 2021 – Recommended bidder and Board approval of bid
- About September 1, 2021 – Notice to Proceed
 - Tentative construction window:
 - August 18, 2021 – November 15, 2021 – substantial completion, (some vegetation restoration may need to extend into the spring of 2022)
- Annual vegetation establishment activities result in project close-out and final payment by May 15, 2025 (will be impacted by the substantial completion date)

Attachments

- Table of contents of the specifications
- Advertisement for Bid
- The complete drawing package for the Middle Riley Creek Stabilization and Bearpath Golf Course Renovation Project.

Contract Documents

***Middle Riley Creek Stabilization
Eden Prairie, Minnesota***

***Prepared for:
Riley Purgatory Bluff Creek Watershed District***

June 30, 2021



CONTRACT DOCUMENTS

MIDDLE RILEY CREEK STABILIZATION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
EDEN PRAIRIE, MINNESOTA

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MIDDLE RILEY CREEK STABILIZATION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
EDEN PRAIRIE, MINNESOTA
ADVERTISEMENT FOR BIDS

Owner will be accepting online electronic bids only. Bids for Middle Riley Creek Stabilization Project in Eden Prairie, Hennepin County, Minnesota, will be received by the Owner via QuestCDN VirtuBid (vBid) until 2:00 p.m, CST, Wednesday, July 28, 2021 and then publicly opened and read aloud via WebEx online video-conferencing system. Interested parties can join the WebEx bid opening using the following:

Link: X prompted for a meeting password: X

For audio, call in via phone: 1-877-310-7479 USA/Canada Toll Free

If prompted for meeting number or access code: X

The **Middle Riley Creek Stabilization** consists of providing all labor, materials, equipment and skills, and performing all operations to realign Riley Creek, grade the channel bank, and install grade control and bank stabilization structures to improve connection of the stream to the floodplain and prevent streambank erosion in two locations within Bearpath Golf Course and Country Club. The Work for the Middle Riley Creek Stabilization includes, but is not limited to, mobilization/demobilization; erosion and sedimentation control; traffic control; installation of storm sewer pipes, catch basins, one manhole, and associated castings; golf feature/boulder wall construction and fine grading/shaping work on golf course property adjacent to boulder walls; grading of the channel bank; realignment of a portion of the creek; installation of rock riffles, cross vanes, and J-hook vanes; installation of vegetated reinforced soil slopes; site restoration including decompaction, placement of topsoil, seeding (native seed mix) and planting of plugs, shrubs, and trees, and installation of erosion control blanket over all exposed soil areas; site clean-up, and remove all temporary erosion control best-management practices; provide three years of vegetation establishment and maintenance; all as provided for in the Bidding Documents for the Middle Riley Creek Stabilization.

All quantities and work items in this advertisement for bid are approximate and not guaranteed.

Complete digital project documents are available at www.questcdn.com. To access the electronic bid form, download the project documents and click the online bidding button at the top of the advertisement. You may download the digital plan documents for thirty dollars (\$30.00) by inputting Quest Project #XXXXXXX on the website's Project Search page.

Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Potential bidders may obtain



the printed documents from the Engineer for a nonrefundable price of one hundred dollars (\$100.00) per set. Please make your check payable to Barr Engineering Co. and send it to 4300 MarketPointe Drive, Suite 200, Minneapolis, Minnesota 55435. Please contact us at Phone: 952-832-2750; or Fax: 952-832-2601 if you have any questions. Partial sets of documents will not be issued.

A mandatory pre-bid meeting will be held on July 16, 2021 at 9:00 AM. Potential bidders should meet at the gated access to Bearpath Golf and Country Club at the intersection of Riley Lake Road and English Turn. Attendees are encouraged to RSVP one day ahead of the meeting to Jessica Olson at jolson@barr.com.

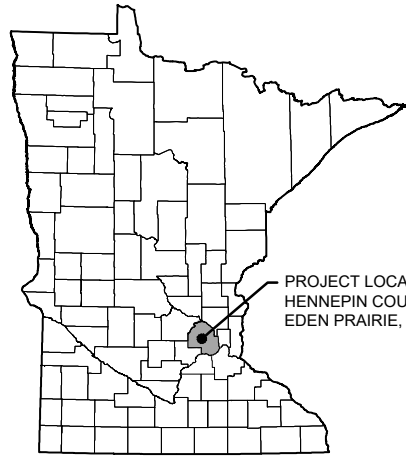
A contractor responding to this solicitation document shall submit to the Owner a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in Minnesota Statutes section 16C.285 subdivision 4.

The bid of the lowest responsible and responsive bidder is intended to be accepted on or before the expiration of sixty (60) days after the date of the opening of bids. The Owner, however, reserves the right to reject any or all bids and to waive any nonmaterial irregularities, informalities, or discrepancies, and further reserves the right to award a contract for each project in the best interest of the Riley-Purgatory-Bluff Creek Watershed District.



MIDDLE RILEY CREEK STABILIZATION AND BEARPATH GOLF COURSE RENOVATION

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT



PROJECT LOCATION
HENNEPIN COUNTY
EDEN PRAIRIE, MN

MINNESOTA COUNTY MAP

CONTACTS:

ENGINEER CONTACT:

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

OWNER'S REPRESENTATIVE CONTACT:

Terry Jeffery
Interim District Administrator
Riley Purgatory Watershed District
18681 Lake Drive East
Chanhassen, MN 55317
952-807-6885
tjeffery@rpbwd.org

PROPERTY OWNER CONTACT:

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

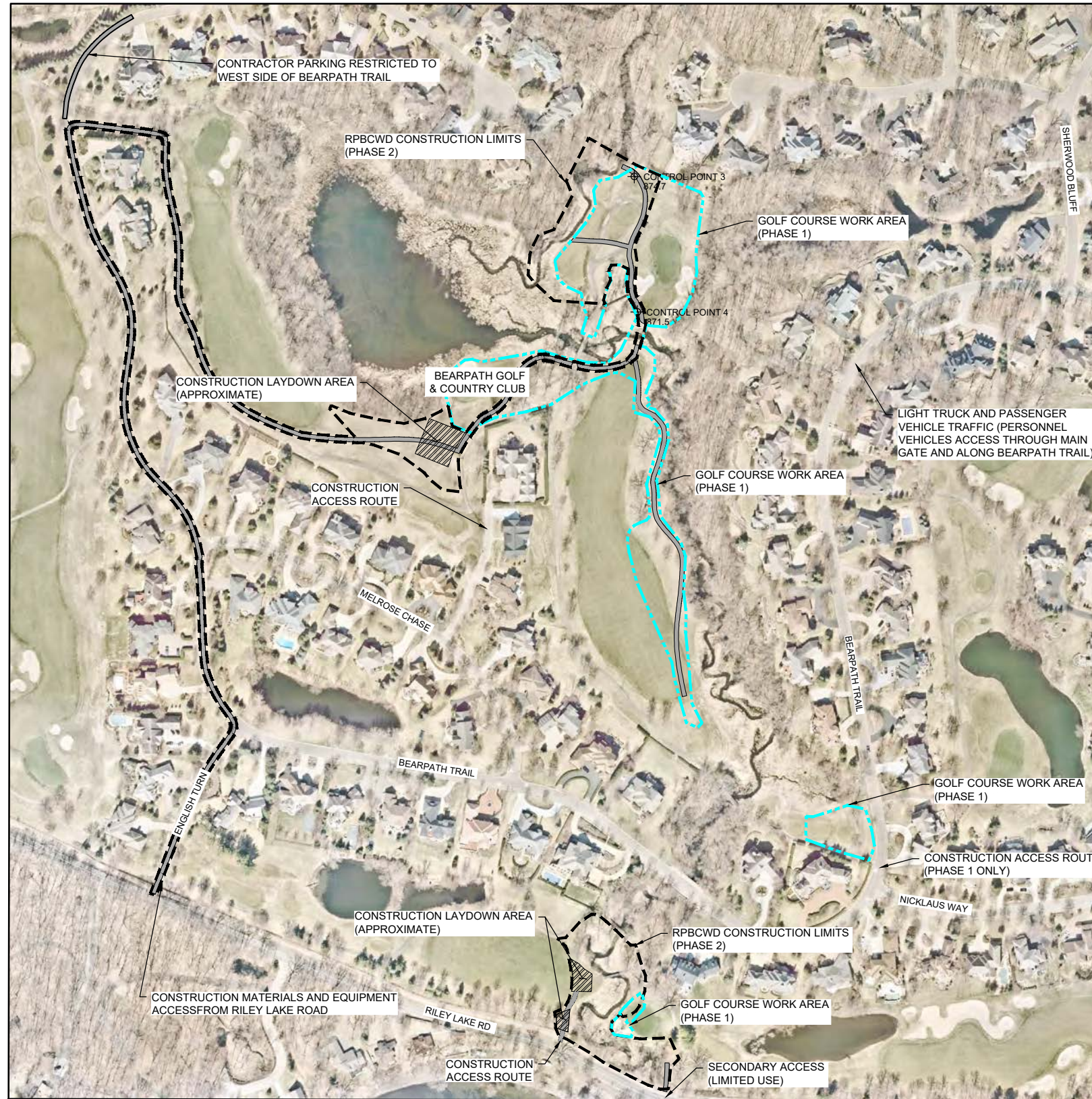
GENERAL NOTES:

- CONTOUR DATA SHOWN IN THIS PLAN SET IS BASED ON 2015 LIDAR TOPOGRAPHY AND SURVEYS PERFORMED BY RPBWCD 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.
- PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE SITE ACCESS AND WORK TIMING.
- ALL ACCESS POINTS FROM LAKE RILEY ROAD MUST BE SECURE AT ALL TIMES. IF ACCESS IS UNLOCKED, RESPONSIBLE CONTRACTOR MUST ENSURE ONLY AUTHORIZED EQUIPMENT AND PERSONNEL ACCESS SITE.

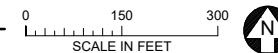
CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	117922.4829'	465761.5527'	875.23'	VRS SPIKE 1
2	117850.1325'	465717.6763'	880.15'	VRS SPIKE 2
3	119806.1150'	465879.4807'	874.71'	VRS SPIKE 3
4	119491.9292'	465886.5323'	871.54'	VRS SPIKE 4



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



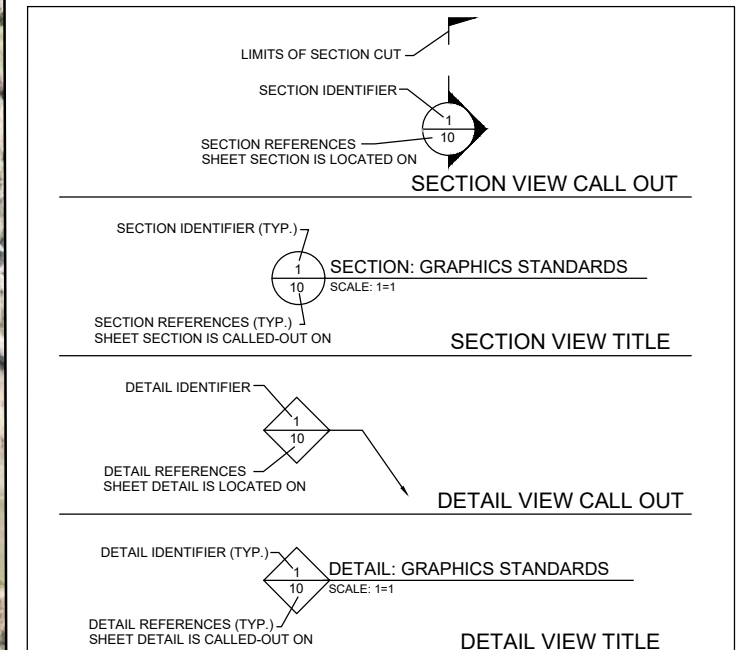
1 PLAN: PROJECT LOCATION



INDEX OF SHEETS

- G-01 TITLE SHEET, PROJECT LOCATION, AND SHEET INDEX
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 D-03 STABILIZATION DETAILS
 D-04 STABILIZATION DETAILS
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- C-11 EROSION CONTROL PLAN - #16 GREEN, #12 TEE BOX, #12 FAIRWAY
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 R-05 RESTORATION PLAN - #13 GREEN, #12 GREEN, #13 TEE BOX

SYMBOLS AND ABBREVIATIONS:



ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
 SIGNATURE: *J. Olson*
 DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	05/11/21	06/25/21
BID				
CONSTRUCTION PERMITTING			03/12/21	
RELEASED TO/FOR	A	B	C	D
DATE RELEASED	0	1	2	

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

Project Office:
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 www.barr.com

Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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.	0

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053.14\MIDDLE RILEY STABILIZATION\DWG PLOT SCALE: 1:2 PLOT DATE: 06/25/2021 1:40 PM
 BARR M:\AutoCAD\2011\AutoCAD 2011 Support\enu\Template\Bar_2011_Template.dwt Plot at 1: 10/06/2010 14:03:30

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, REGRADING 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 7.55 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 7.55 ACRES (STAGE 1 = 4.33 ACRES, STAGE 2 = 3.22 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, CHANHASSEN, 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 PRAIRIE, 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 ⁽¹⁾	WATER BODY ID ⁽²⁾	SPECIAL WATER? ⁽³⁾	IMPAIRED WATER? ⁽³⁾	PUBLIC WATER WITH WORK IN WATER RESTRICTIONS?
LAKE RILEY	LAKE	27-0132P	NO	YES	NO
RILEY CREEK	CREEK	07020012-855	NO	NO	YES

- 1) TYPE EXAMPLES: DITCH, POND, WETLAND, CALCAREOUS FEN, LAKE, STREAM, RIVER
- 2) 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)
- 3) 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 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
- C-07, C-09, C-14, C-15
- 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:

1. 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.
2. TEMPORARY STABILIZATION OF SOILS AND SOIL STOCKPILES: (CSW PERMIT ITEMS 8.4, 8.5, AND 23.9)
 - a. AREAS OF EXPOSED SOIL WILL BE STABILIZED WITH EROSION CONTROL BLANKET OR EQUIVALENT MEASURES.
 - b. IF PRESENT, SOIL STOCKPILES WILL BE STABILIZED WITH FAST GROWING COVER CORP, MULCH SUCH AS STRAW MULCH OR EQUIVALENT MEASURES.
 - c. 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.
2. STABILIZATION OF DITCH AND SWALE WETTED PERIMETERS: (CSW PERMIT ITEMS 8.6 THROUGH 8.8)
 - a. 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.
 - b. 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.
 - c. 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.
 - d. 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.
3. 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)
4. EROSION PREVENTION IMPLEMENTATION TIMELINES: (CSW PERMIT ITEMS 5.4, 8.4 THROUGH 8.6, AND 23.9)
 - a. 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.
 - b. 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.
 - c. 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.
5. 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)
 - a. CONSTRUCTION PHASING WILL BE UTILIZED TO MINIMIZE THE AREA OF SOIL EXPOSED AT ANY ONE TIME.
 - b. SOIL DISTURBANCE WILL BE MINIMIZED WHEREVER POSSIBLE TO AID IN EROSION PREVENTION.
 - c. EXISTING VEGETATION WILL BE PRESERVED WHEREVER POSSIBLE TO LIMIT EXPOSED SOIL AND THUS WILL SERVE AS NATURAL VEGETATIVE BUFFERS.
 - d. EXPOSED SOIL ON STEEP SLOPES (≤3H:1V) WILL BE STABILIZED USING EROSION CONTROL BLANKETS AND SEEDING.
 - e. HORIZONTAL SLOPE GRADING WILL BE UTILIZED TO MINIMIZE EROSION POTENTIAL.
 - f. TERRACING WILL BE USED TO MINIMIZED EROSION POTENTIAL.

4.2 SEDIMENT CONTROL PRACTICES:

1. DOWNGRADIANT PERIMETER CONTROLS: (CSW PERMIT ITEMS 9.2 THROUGH 9.6)
 - a. SEDIMENT CONTROL PRACTICES WILL BE ESTABLISHED ON ALL DOWNGRADIANT PERIMETERS AND LOCATED UPGRADIANT 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.
 - b. PERIMETER SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE ANY UPGRADIANT LAND-DISTURBING ACTIVITIES BEGIN AND REMAIN IN PLACE UNTIL PERMANENT COVER HAS BEEN ESTABLISHED.
 - c. 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.
 - d. IF THE DOWNGRADIANT SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENT), INSTALL ADDITIONAL UPGRADIANT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPs TO ELIMINATE THE OVERLOADING AND AMEND THE SWPPP TO IDENTIFY THESE ADDITIONAL PRACTICES.
2. 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)
3. STORM DRAIN INLET PROTECTION: (CSW PERMIT ITEMS 9.7 AND 9.8)
 - a. INLET PROTECTION BMPs WILL BE INSTALLED AROUND ALL STORM DRAIN INLETS DOWNGRADIANT OF CONSTRUCTION ACTIVITIES.
 - b. STORM DRAIN INLETS WILL BE PROTECTED UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.
 - c. INLET PROTECTION BMPs WILL BE: [SEDIMENT CONTROL LOG, FILTER SACK, ROCK WITH FILTER FABRIC, FILTER FENCE BOX] OR EQUIVALENT MEASURES.
4. VEHICLE TRACKING BMPs: (CSW PERMIT ITEMS 9.11 AND 9.12)
 - a. 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.
 - b. 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.
5. 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)
6. 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)
7. PRIORITIZATION OF ONSITE INFILTRATION AND SEDIMENT REMOVAL: (CSW PERMIT ITEM 9.16)
 - a. PRIOR TO OFFSITE DISCHARGE, INFILTRATION AND SEDIMENT REMOVAL WILL BE IMPLEMENTED ONSITE WHERE POSSIBLE.
 - b. 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.
8. BUFFER ZONE OR REDUNDANT SEDIMENT CONTROLS TO PROTECT SURFACE WATERS: (CSW PERMIT ITEM 9.17)
 - a. 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.
 - b. 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.
 - c. REDUNDANT PERIMETER CONTROLS WILL BE INSTALLED AT LEAST 5 FEET APART UNLESS LIMITED BY LACK OF AVAILABLE SPACE.
9. 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)
10. 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:

1. EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION:
2. NATURE OF STORMWATER RUNOFF AND RUN-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES:
3. 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:
4. 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)

ISSUED FOR BID

CADD USER: ERIC P. FITZGERALD FILE: M:\DESIGN\23270653.1\MIDDLE RILEY STREAM\23270653.14_G-02_SWPPP.DWG PLOT SCALE: 1:2 PLOT DATE: 06/25/2021 1:52 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: 07/15/20 08/08/20 05/11/21 06/25/21 BID: _____ CONSTRUCTION: _____ PERMITTING: 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: AS SHOWN Date: 06/25/2021 Drawn: EPF Checked: SAB2 Designed: BARR Approved: JCO				MIDDLE RILEY CREEK STABILIZATION & BEARPATH GOLF COURSE RENOVATION STORMWATER POLLUTION PREVENTION PLAN (SWPPP)				BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. _____ DWG. No. G-02 REV. No. 0			
PRINTED NAME: JESSICA OLSON		SIGNATURE:		DATE: 06/25/2021		LICENSE # 43102		RELEASED TO/FOR: A B C D 0 1 2		DATE RELEASED: _____		NO. BY CHK. APP. DATE REVISION DESCRIPTION											

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.
- DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS WILL BE REMOVED, AND THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL WILL BE RE-STABILIZED. THE REMOVAL AND STABILIZATION WILL BE COMPLETED WITHIN 7 CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED DUE TO ACCESS CONSTRAINTS, REASONABLE EFFORTS TO OBTAIN ACCESS WILL BE USED. REMOVAL AND STABILIZATION WILL TAKE PLACE WITHIN 7 CALENDAR DAYS OF OBTAINING ACCESS.
- TRACKED SEDIMENT ON PAVED SURFACES WILL BE REMOVED WITHIN 1 CALENDAR DAY OF DISCOVERY.
- AREAS UNDERGOING STABILIZATION WILL BE RESTABILIZED AS NECESSARY TO ACHIEVE REQUIRED COVER.

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

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

7.0 POLLUTION PREVENTION MEASURES:

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

8.0 PERMANENT COVER AND PERMIT TERMINATION CONDITIONS:

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

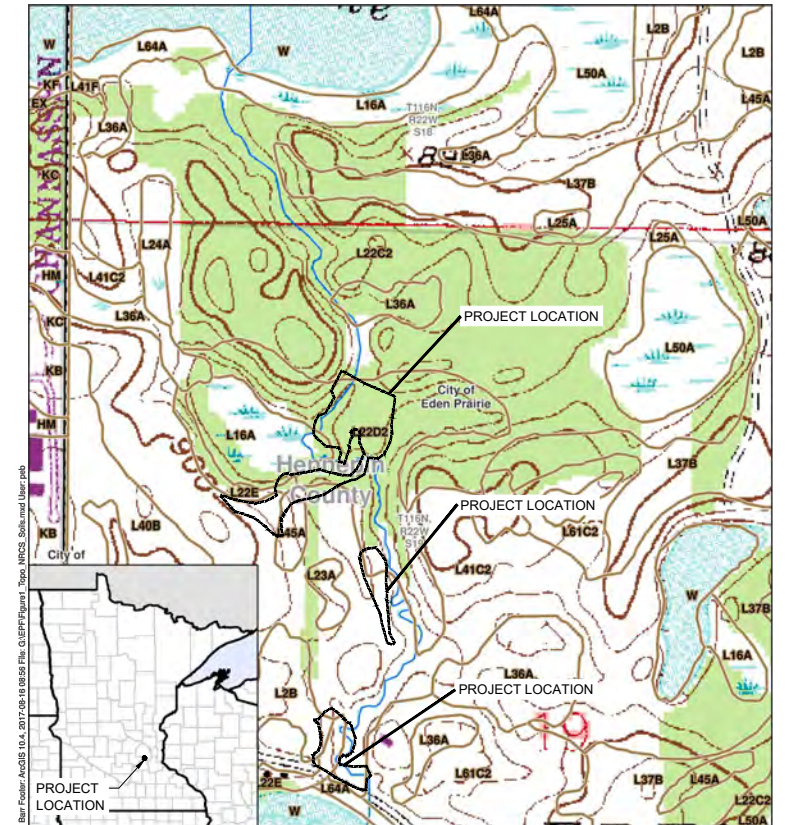


Figure 1
TOPOGRAPHIC MAP WITH SURFACE WATERS AND SOIL TYPES
Stormwater Pollution Prevention Plan
Hennepin County, Minnesota

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGNS\23270053_1\MIDDLE RILEY CREEK STABILIZATION\DWG\12_PLOT.DWG PLOT SCALE: 1:2 PLOT DATE: 02/25/2021 12:37 PM
BARR M:\AutoCAD\2011\AutoCAD 2011 Support\enu\Template\Bar_2011_Template.dwg Plot at 1: 10/06/2010 14:09:30

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
SIGNATURE: *Jessica Olson*
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING			03/12/21	
RELEASED TO/FOR	A	B	C	D
DATE RELEASED	0	1	2	

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Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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
CLIENT PROJECT No.	
DWG. No.	G-03
REV. No.	0



1 PLAN: TREE PROTECTION AND REMOVALS

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
---	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

NOTES:

- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.

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.

TREE SURVEY AND REMOVAL TABLE - SOUTH

TREE ID #	TREE SPECIES	DBH (INCHES)	SIGN.	TREE HEALTH	REMOVED BY
100	BASSWOOD	11		HEALTHY	NO
101	RED ASH	16	S	HEALTHY	RPBCWD
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	RPBCWD
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	RPBCWD
120	ASH	9		HEALTHY	RPBCWD
121	ASH	4		HEALTHY	RPBCWD
122	UNKNOWN	5		DEAD	RPBCWD
123	BUCKTHORN	9		DEAD	RPBCWD
124	ASH	10		HEALTHY	RPBCWD
125	ASH	15	S	HEALTHY	RPBCWD
126	ASH	8		HEALTHY	RPBCWD
127	ASH	9		HEALTHY	RPBCWD
128	ASH	12	S	UNHEALTHY	RPBCWD
129	OAK	13	S	HEALTHY	NO
130	ASH	27	S	HEALTHY	RPBCWD
131	ASH	9		HEALTHY	NO

132	ASH	11		HEALTHY	RPBCWD
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	RPBCWD
142	ASH	4		HEALTHY	RPBCWD
143	ASH	6		HEALTHY	RPBCWD
144	BASSWOOD	28	S	UNHEALTHY	NO
145	MAPLE	4		HEALTHY	RPBCWD
146	ASH	4		HEALTHY	RPBCWD
147	OAK	6		HEALTHY	RPBCWD
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	RPBCWD
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	RPBCWD
159	BOX ELDER	16	S	HEALTHY	NO
160	ELM	16		HEALTHY	RPBCWD
161	RED ASH	16	S	HEALTHY	RPBCWD
162	ASH	22	S	HEALTHY	BEARPATH
163	SYCAMORE	20	S	HEALTHY	RPBCWD
164	CHERRY	12	S	HEALTHY	NO
165	RED ASH	14	S	HEALTHY	BEARPATH

166	MAPLE	13	S	UNHEALTHY	NO
167	BOX ELDER	16		HEALTHY	NO
168	BASSWOOD	15	S	HEALTHY	NO
169	ASH	9		HEALTHY	RPBCWD
170	ASH	10		HEALTHY	RPBCWD
171	ASH	12		HEALTHY	RPBCWD
172	ASH	8		HEALTHY	BEARPATH
173	ASH	14		HEALTHY	BEARPATH
174	CEDAR	8	S	HEALTHY	NO

NOTE: SIGNIFICANT TREES DENOTED BY 'S'

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
 SIGNATURE: *J. Olson*
 DATE: 06/25/2021 LICENSE # 43102

CLIENT	BID	07/15/20	08/08/20	09/11/21	10/25/21
CONSTRUCTION					
PERMITTING					

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

Scale: AS SHOWN
 Date: 06/25/2021
 Drawn: EPF
 Checked: SAB2
 Designed: BARR
 Approved: JCO

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

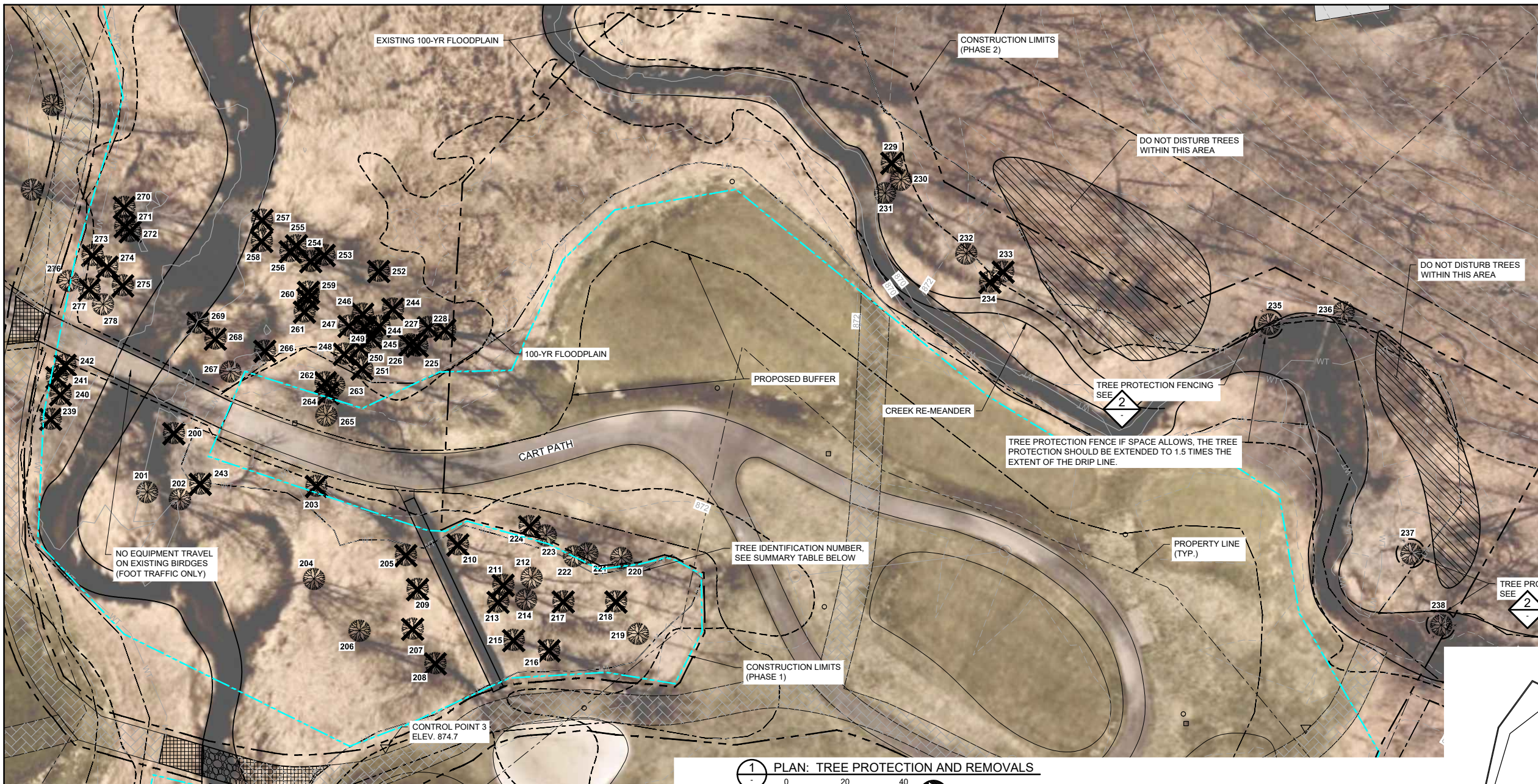
RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

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

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

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_14\MIDDLE RILEY STREAM\INVENTORY.DWG PLOT SCALE: 1/2 PLOT DATE: 6/25/2021 1:58 PM
 BARR:\AutoCAD\2011\AutoCAD 2011 Support\enu\TemplateBar_2011_Template.dwg Plot at 1: 10/06/2010 14:03:50



SYMBOL AND PATTERN LEGEND

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WETLAND DELINEATION
	EXISTING 100-YR FLOODPLAIN
	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

NOTES:

- ASH TREES MUST BE REMOVED BETWEEN OCTOBER 1ST AND APRIL 30TH AND TAKEN TO AN APPROVED SITE FOR DISPOSAL. CONTRACTOR MUST PROVIDE ASSURANCE THAT ASH TREES DO NOT LEAVE QUARANTINED AREA.

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

0 20 40
SCALE IN FEET

TREE SURVEY AND REMOVAL TABLE - NORTH

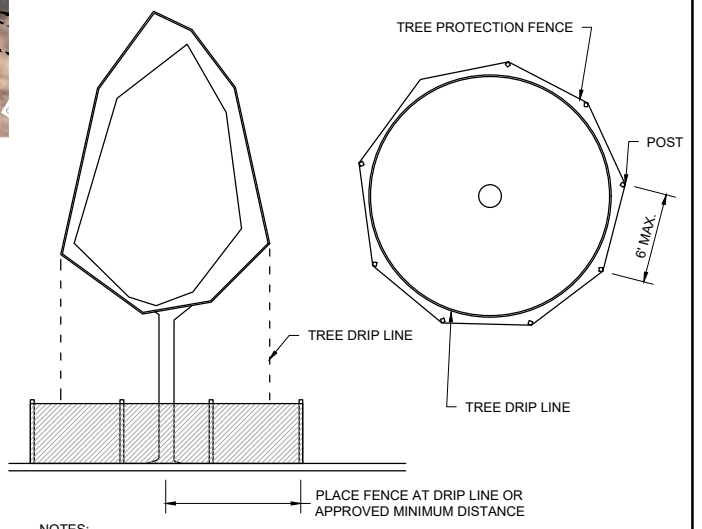
TREE ID #	TREE SPECIES	DBH (INCHES)	SIGN.	TREE HEALTH	REMOVED BY
200	ASH	18	S	HEALTHY	BEARPATH
201	ASH	14	S	UNHEALTHY	NO
202	ELM	18		HEALTHY	NO
203	ASH	16	S	UNHEALTHY	BEARPATH
204	BASSWOOD	15	S	HEALTHY	NO
205	ASH	8		HEALTHY	BEARPATH
206	BASSWOOD	7 (4)		HEALTHY	NO
207	ASH	4		HEALTHY	BEARPATH
208	ELM	16		HEALTHY	BEARPATH
209	BOX ELDER	4		HEALTHY	BEARPATH
210	ASH	7		HEALTHY	BEARPATH
211	ASH	7		HEALTHY	BEARPATH
212	OAK	6		UNHEALTHY	NO
213	ASH	7 (2)		HEALTHY	BEARPATH
214	BASSWOOD	8		HEALTHY	NO
215	ASH	12	S	HEALTHY	BEARPATH
216	ASH	14	S	HEALTHY	BEARPATH
217	ASH	4		HEALTHY	BEARPATH
218	ASH	6		HEALTHY	BEARPATH
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	BEARPATH
225	ASH	6		DEAD	BEARPATH
226	ASH	8		DEAD	BEARPATH
227	ASH	12		HEALTHY	BEARPATH
228	ASH	7		HEALTHY	BEARPATH
229	ASH	10		HEALTHY	BEARPATH
230	RED OAK	10 (2)		HEALTHY	NO
231	ASH	14	S	HEALTHY	NO
232	BASSWOOD	14	S	HEALTHY	NO
233	ASH	11		HEALTHY	RPBCWD
234	BASSWOOD	12	S	HEALTHY	RPBCWD
235	BASSWOOD	8		HEALTHY	NO
236	BASSWOOD	8		HEALTHY	NO
237	OAK	24	S	HEALTHY	NO
238	ELM	16		HEALTHY	NO
239	ASH	13		HEALTHY	BEARPATH
240	ASH	1		HEALTHY	BEARPATH

241	ASH	18		HEALTHY	BEARPATH
242	ASH	13		HEALTHY	BEARPATH
243	ASH	18		UNHEALTHY	BEARPATH
244	ASH	8		HEALTHY	BEARPATH
245	ASH	6		HEALTHY	BEARPATH
246	ASH	11		HEALTHY	BEARPATH
247	ASH	7		HEALTHY	BEARPATH
248	ASH	7		DEAD	BEARPATH
249	ASH	13		HEALTHY	BEARPATH
250	ASH	14		HEALTHY	BEARPATH
251	UNKNOWN	5		DEAD	BEARPATH
252	ASH	7		HEALTHY	BEARPATH
253	ASH	15		HEALTHY	BEARPATH
254	ASH	12		HEALTHY	BEARPATH
255	ELM	7		DEAD	BEARPATH
256	ASH	9		UNHEALTHY	BEARPATH
257	ASH	10		HEALTHY	BEARPATH
258	ASH	17		HEALTHY	BEARPATH
259	ASH	7		HEALTHY	BEARPATH
260	ASH	7		HEALTHY	BEARPATH
261	ASH	8		HEALTHY	BEARPATH

262	ASH	12		HEALTHY	BEARPATH
263	HACKBERRY	5		HEALTHY	NO
264	ASH	18		HEALTHY	BEARPATH
265	OAK	18		HEALTHY	NO
266	ASH	3		HEALTHY	BEARPATH
267	ELM	10,13,7		HEALTHY	NO
268	ASH	10,6		HEALTHY	BEARPATH
269	ASH	14		HEALTHY	BEARPATH
270	ASH	13		HEALTHY	BEARPATH
271	ASH	10		DEAD	BEARPATH
272	ASH	12		HEALTHY	BEARPATH
273	ASH	2		HEALTHY	BEARPATH
274	ASH	5		UNHEALTHY	BEARPATH
275	ASH	12		UNHEALTHY	BEARPATH
276	BASSWOOD	11		HEALTHY	NO
277	ASH	12		HEALTHY	BEARPATH
278	BUCKTHORN	5,6		HEALTHY	NO

NOTE: SIGNIFICANT TREES DENOTED BY 'S'



NOTES:

- TREE PROTECTION FENCING SHALL BE INSTALLED ACCORDING TO PLAN PRIOR TO DEMOLITION OR OTHER SITE WORK. ANY RELOCATION OF THE TREE PROTECTION FENCING TO BE APPROVED BY CITY FORESTER. TREE PROTECTION FENCING SHALL BE MAINTAINED FOR THE DURATION OF THE CONSTRUCTION PROCESS.
- CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, VEHICLES, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE.
- ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
- ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

2 DETAIL: TREE PROTECTION FENCING
NOT TO SCALE

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
SIGNATURE:
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	09/11/21	10/25/21
BID				
CONSTRUCTION PERMITTING			03/12/21	
RELEASED TO/FOR	A	B	C	D
DATE RELEASED	0	1	2	

Project Office:
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Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

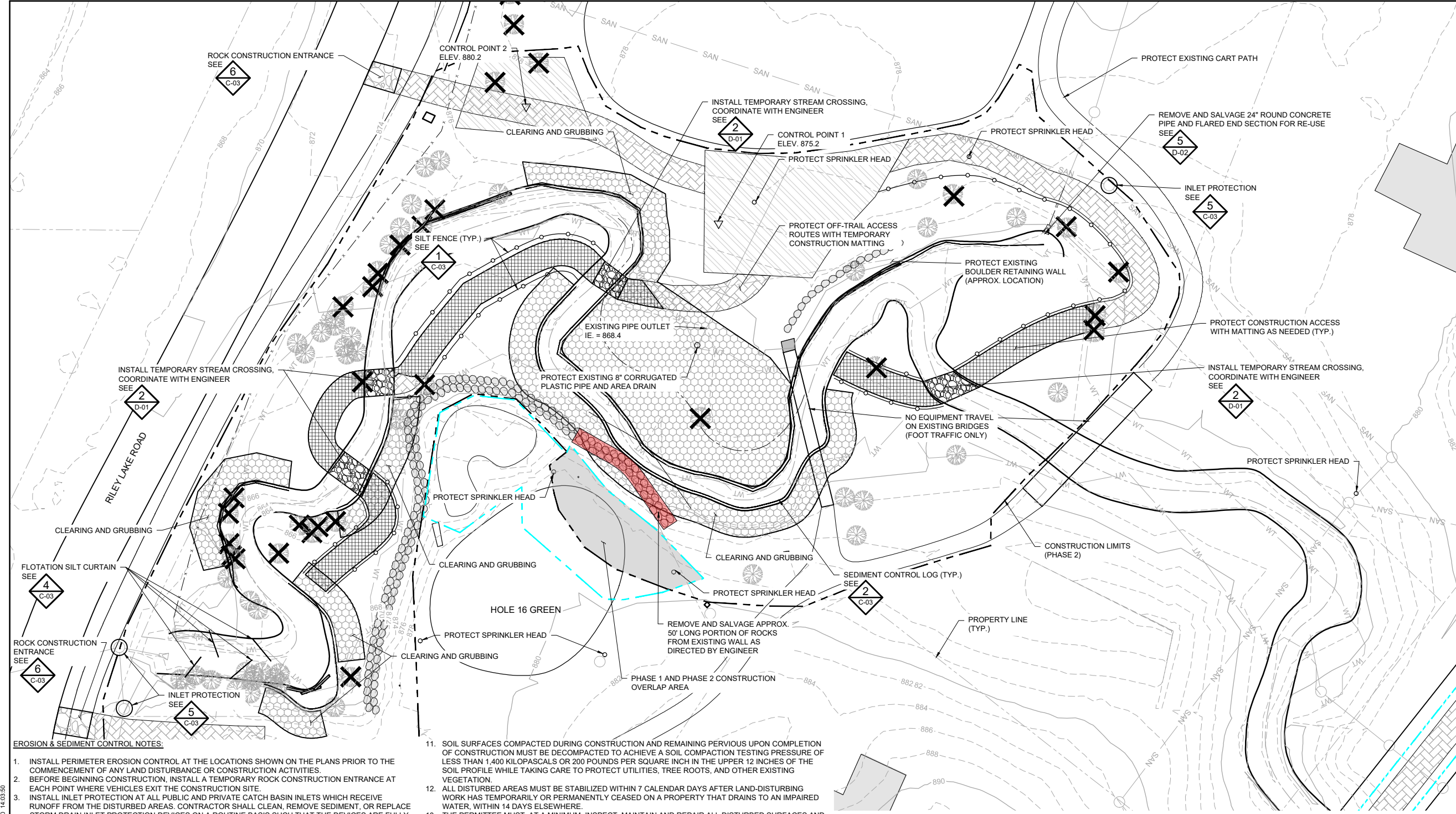
RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

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.	0

CADD USER: Eric P. Fingerhaff FILE: M:\DESIGN\23270053.MIDDLE RILEY CREEK STABILIZATION.DWG PLOT SCALE: 1:2 PLOT DATE: 6/25/2021 2:01 PM
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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: 06/28/2021 11:01 AM
 BARR M:\AutoCAD\2011\AutoCAD 2011 Support\Temp\TempTableBar_2011_Template.dwg Plot at 1:10/06/2020 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
- CONSTRUCTION ACCESS ROUTE WITH PROTECTIVE MATTING
- TEMPORARY CREEK CROSSING
- CLEARING AND GRUBBING AREA
- REMOVE AND SALVAGE TREE
- PROTECT EXISTING TREE

- GENERAL NOTES:**
- 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.
 - ALL TREES TO BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED FOR REMOVAL OR DIRECTED BY ENGINEER.
 - PROTECT ALL EXISTING IRRIGATION SYSTEM COMPONENTS, INCLUDING BUT NOT LIMITED TO SPRINKLER HEADS.

- 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, TARP, 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 WITH A MINIMUM OF 5% 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.
- WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

1 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL

0 20 40
SCALE IN FEET

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
 SIGNATURE: [Signature]
 DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING				

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

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Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

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

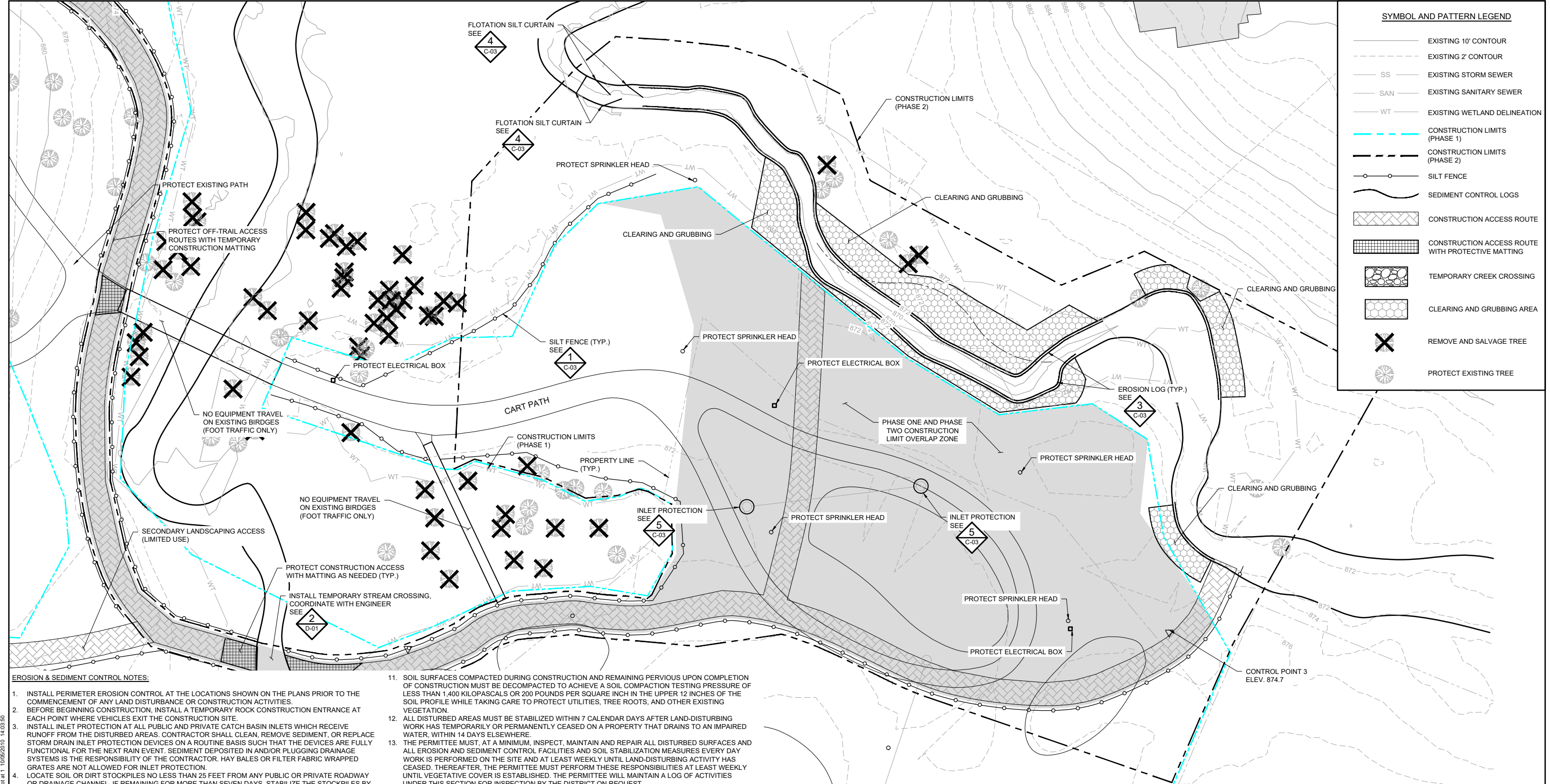
RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN
 SOUTH

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

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION\CONSTRUCTION CONTROL PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 06/28/2021 11:01 AM
 BARR M:\AutoCAD\2011\AutoCAD 2011 Support\Temp\TempTableBar_2011_Template.dwg Plot at 1: 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
- [Hatched Box] CONSTRUCTION ACCESS ROUTE
- [Grid Box] CONSTRUCTION ACCESS ROUTE WITH PROTECTIVE MATTING
- [Circle with X] TEMPORARY CREEK CROSSING
- [Hexagon with X] CLEARING AND GRUBBING AREA
- [X] REMOVE AND SALVAGE TREE
- [Circle with Tree] PROTECT EXISTING TREE

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.
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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 WITH A MINIMUM OF 5% ORGANIC MATTER BE SPREAD AND INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE TREATMENT WHEREVER TOPSOIL HAS BEEN REMOVED.
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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.
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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.
18. WHEREVER CONSTRUCTION ACCESS ROUTE CROSSES EXISTING TRAILS, PROTECT WITH MATTING OR ENGINEER-APPROVED ALTERNATIVE.

1 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL

0 20 40
SCALE IN FEET

- GENERAL NOTES:**
1. 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.
 2. ALL TREES TO BE PROTECTED UNLESS SPECIFICALLY IDENTIFIED FOR REMOVAL OR DIRECTED BY ENGINEER.
 3. PROTECT ALL EXISTING IRRIGATION SYSTEM COMPONENTS, INCLUDING BUT NOT LIMITED TO SPRINKLER HEADS.
 4. PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE SITE ACCESS AND WORK TIMING.
 5. PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE SCHEDULES AND SCOPE TO PLACE AND REMOVE STREAM CROSSING TO ALLOW FOR COMPLETION OF ALL CONSTRUCTION ACTIVITIES IN A TIMELY FASHION.

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
SIGNATURE:
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	09/11/21	10/25/21
BID				
CONSTRUCTION PERMITTING			03/12/21	
RELEASED TO/FOR	A	B	C	D
DATE RELEASED	0	1	2	

BARR
Corporate Headquarters: Minneapolis, Minnesota
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Project Office:
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MINNEAPOLIS, MN 55435
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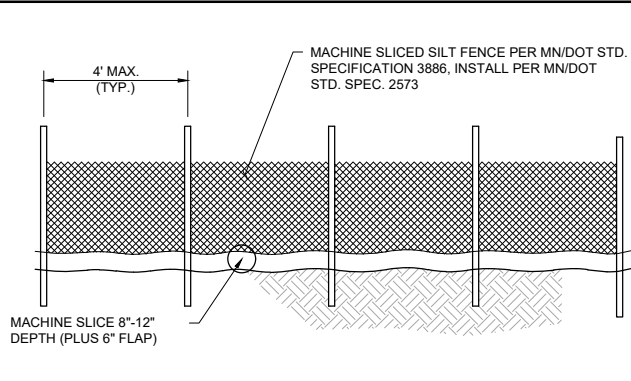
Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

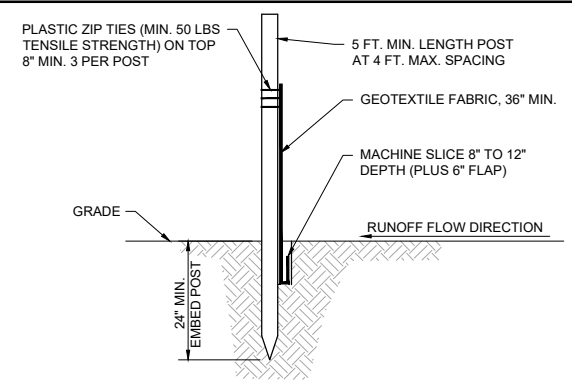
MIDDLE RILEY CREEK STABILIZATION (PHASE 1 & 2)
EDEN PRAIRIE, MN

EXISTING CONDITIONS, REMOVALS & EROSION CONTROL PLAN
NORTH

BARR PROJECT No. 23/27-0053.14
CLIENT PROJECT No.
DWG. No. C-02
REV. No. 0



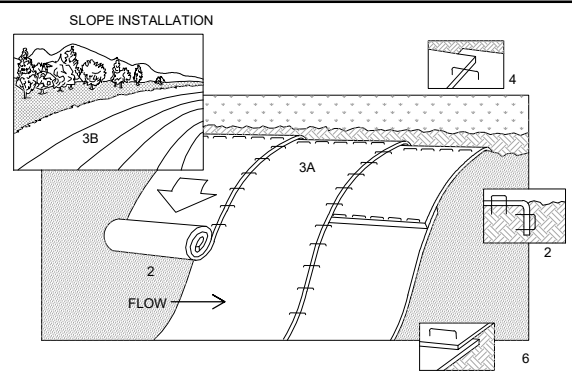
DOWNSTREAM VIEW



SECTION VIEW

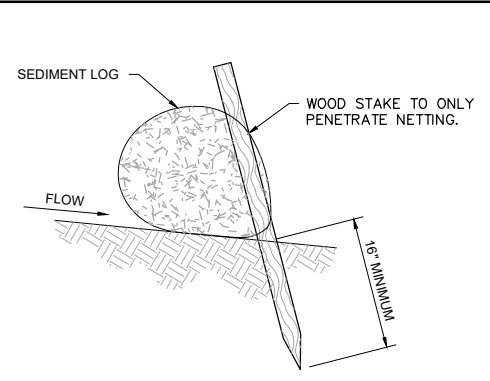
- NOTES:**
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. SILT FENCE AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
 - SILT FENCE INSTALLATION 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

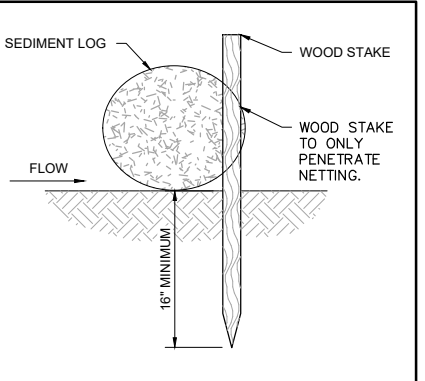


- NOTES:**
- REFER TO MANUFACTURER RECOMMENDATIONS FOR STAPLE PATTERNS FOR SLOPE INSTALLATIONS.
 - PREPARE SOIL BY LOOSENING TOP 1-2 INCHES AND APPLY SEED (AND FERTILIZER WHERE REQUIRED) PRIOR TO INSTALLING BLANKETS. GROUND SHOULD BE SMOOTH AND FREE OF DEBRIS.
 - BEGIN (A) AT THE TOP OF THE SLOPE AND 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.

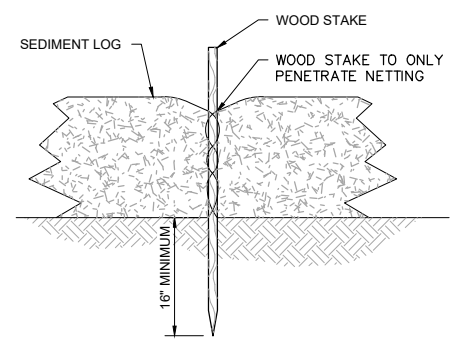
2 DETAIL: EROSION CONTROL BLANKET - INSTALLATION
NOT TO SCALE



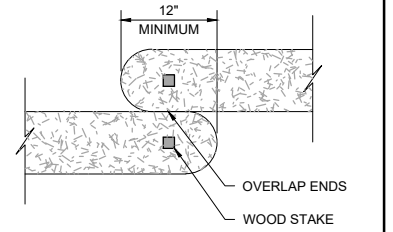
SIDE VIEW ON SLOPE



SIDE VIEW FLAT



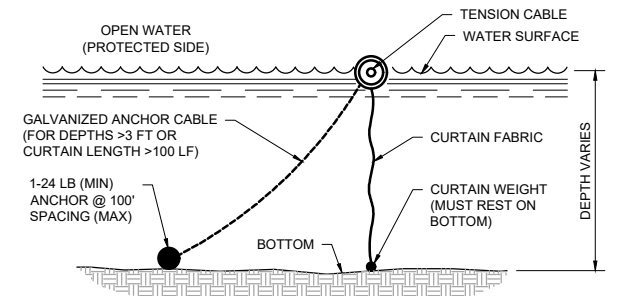
FRONT VIEW



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.

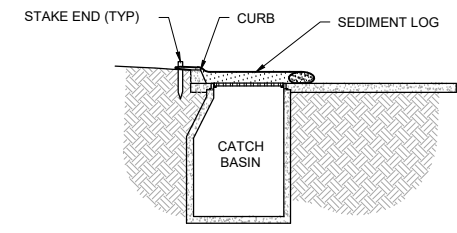
3 DETAIL: EROSION LOG - STAKING
NOT TO SCALE



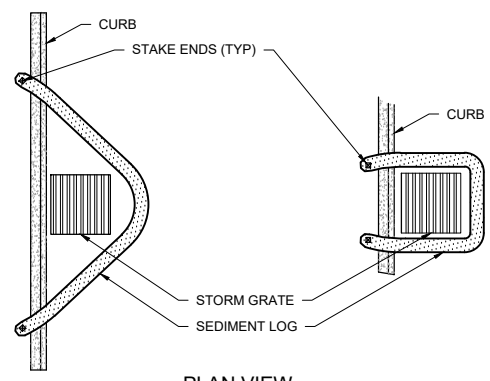
SECTION

- 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



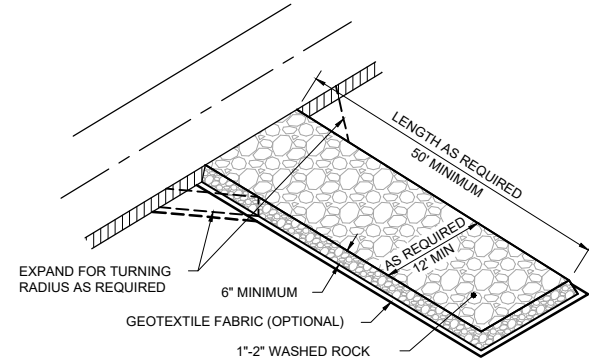
SECTION VIEW



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.

5 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.

6 DETAIL: CONSTRUCTION ENTRANCE - ROCK
NOT TO SCALE

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_14\MIDDLE RILEY CREEK STABILIZATION\23270053_14_C-03_EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 06/25/2021 2:28 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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PRINTED NAME: JESSICA OLSON
SIGNATURE: *J. Olson*
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	05/11/21	06/25/21
BID				
CONSTRUCTION				
PERMITTING		03/12/21		
RELEASED TO/FOR	A	B	C	D
DATE RELEASED	0	1	2	

BARR
Project Office:
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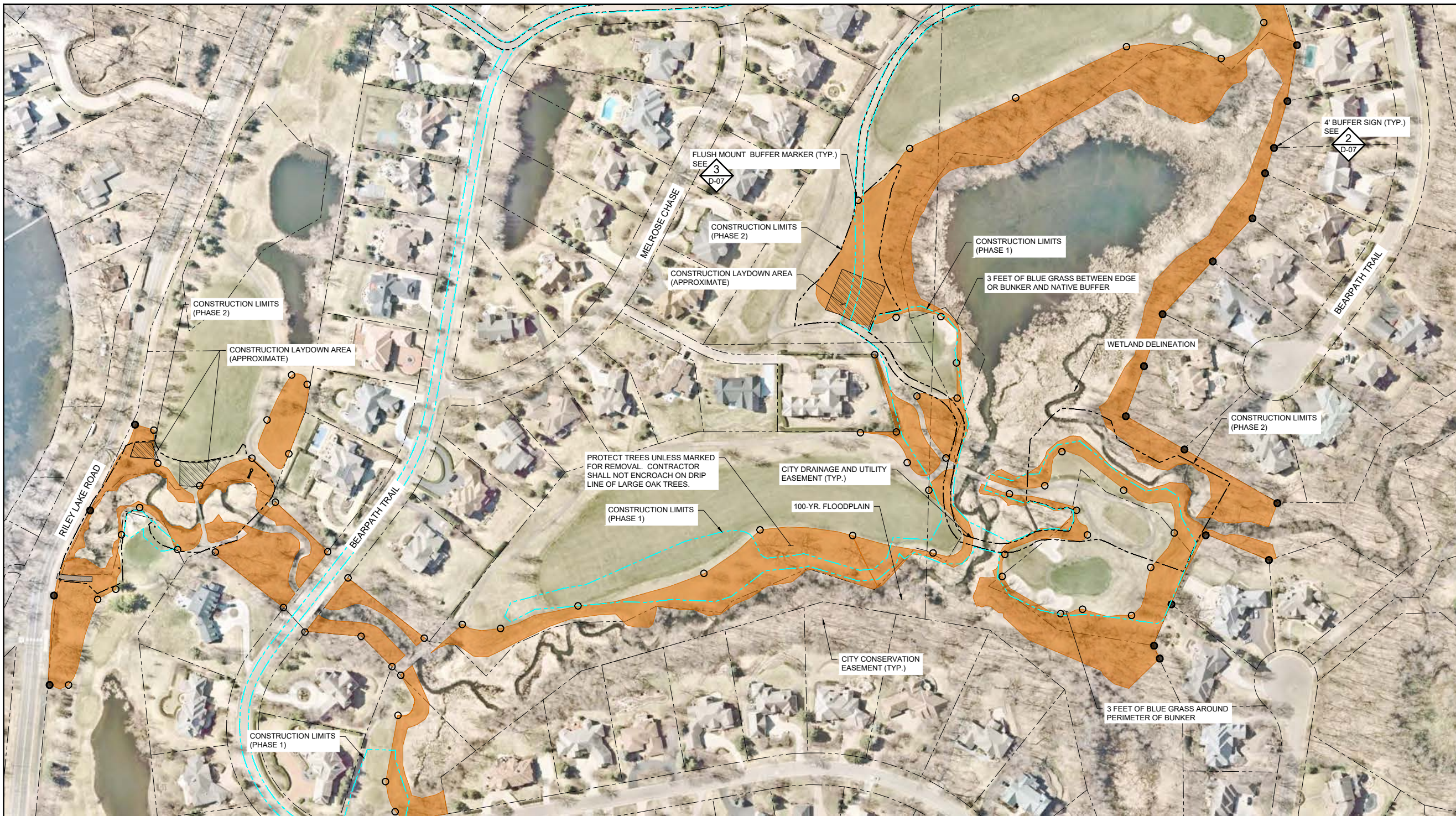
Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

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

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION PHASE 1_C-04_EASEMENTS - FULL SITEDWG.PLOT SCALE: 1:2 PLOT DATE: 6/28/2021 11:23 AM
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SYMBOL AND PATTERN LEGEND	
	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	EXISTING PROPERTY LINE
	SAN EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WETLAND DELINEATION
	EXISTING 100-YR FLOODPLAIN
	CITY CONSERVATION EASEMENT
	CITY DRAINAGE AND UTILITY EASEMENT
	PROPOSED BUFFER
	4' BUFFER SIGN
	FLUSH MOUNT BUFFER MARKER

- 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. 257.2. 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
 - GRSS INSTALLATION
 - SHOULDER VANE INSTALLATION
 - ALL AREAS DISTURBED WITHIN THE BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.

1 PLAN: EASEMENTS, FLOODPLAINS AND WETLAND BOUNDARIES - FULL SITE
 0 100 200
 SCALE IN FEET

ISSUED FOR BID

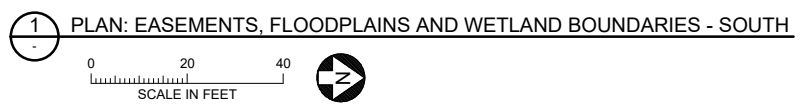
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: DATE: 06/25/2021 LICENSE # 43102		CLIENT: 07/15/20 08/08/20 05/11/21 06/25/21 CONSTRUCTION PERMITTING: 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: 06/25/2021 Drawn: EPF Checked: SAB2 Designed: BARR Approved: JCO		MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN RILEY PURGATORY BLUFF CREEK WD CHANHASSEN, MN		BARR PROJECT No. 23/27-00534.14 CLIENT PROJECT No. DWG. No. C-04 REV. No. 0	
NO. BY CHK. APP. DATE REVISION DESCRIPTION								EASEMENTS, FLOODPLAINS & WETLAND BOUNDARIES FULL SITE			



SYMBOL AND PATTERN LEGEND

	CONSTRUCTION LIMITS (PHASE 1)
	CONSTRUCTION LIMITS (PHASE 2)
	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
	4' BUFFER SIGN
	1.5' BUFFER MARKER

- 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
 - ALL AREAS DISTURBED WITHIN THE BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.



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

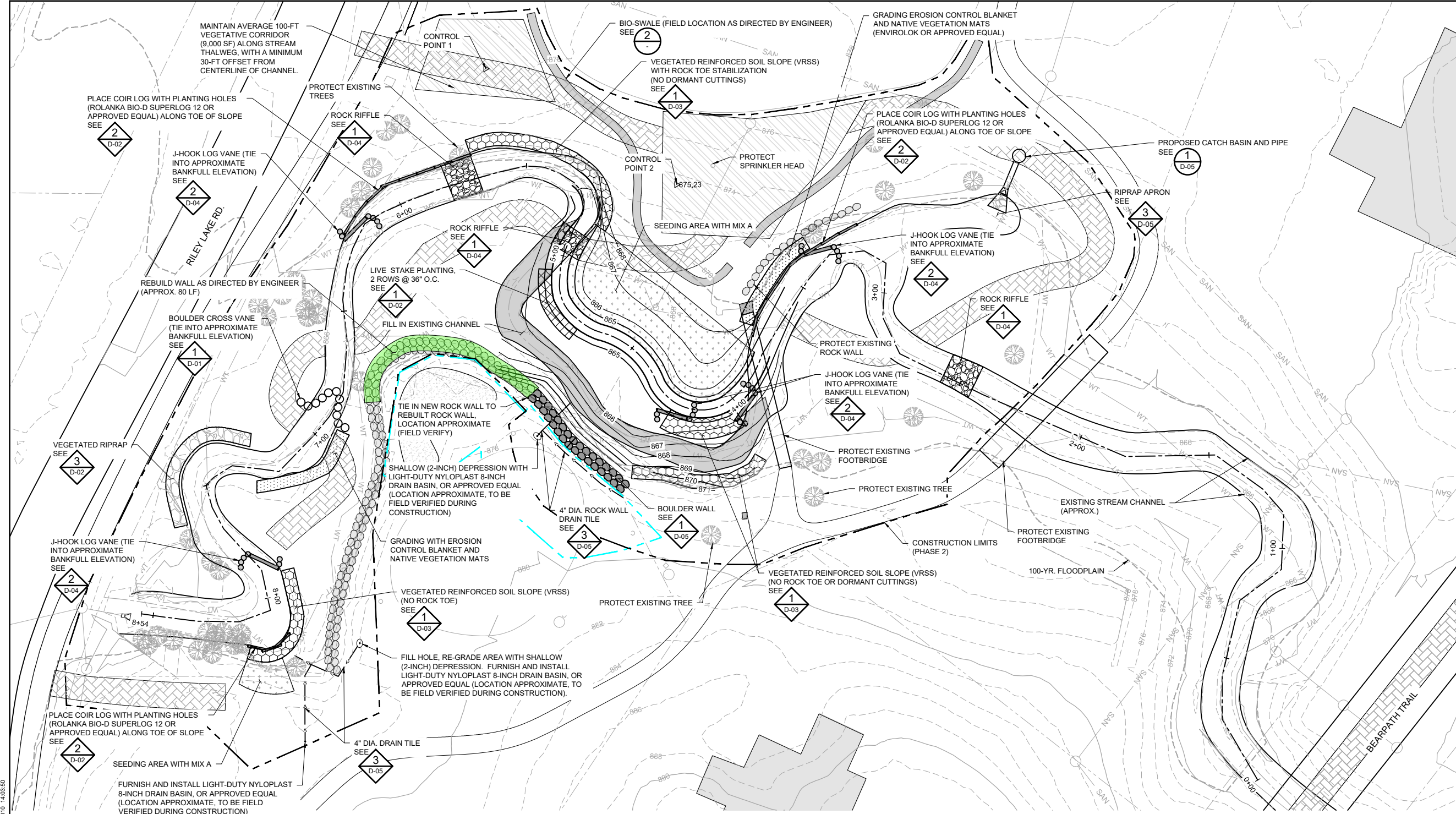
GENERAL NOTE:
 BUFFER LINES ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD TO MEET PERMIT AND GOLF COURSE REQUIREMENTS.

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CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION PHASE 1_C-05_EASEMENTS - SOUTH.DWG PLOT SCALE: 1:2 PLOT DATE: 6/28/2021 11:25 AM
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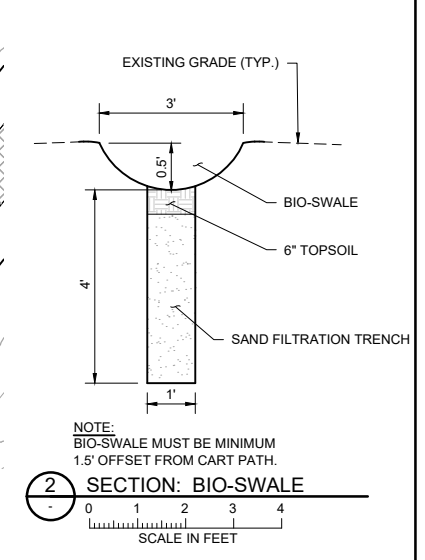
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION								
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID								

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION PHASE 1\C-07_STREAM PLAN & PROFILE - SOUTH DWG PLOT SCALE: 1:2 PLOT DATE: 02/25/2021 2:22 PM
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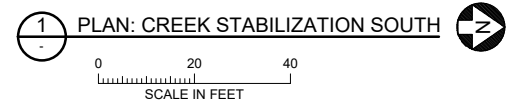


SYMBOL AND PATTERN LEGEND

- 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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 - CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE. FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND STAKED IN THE FIELD.
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 - 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
 - SEE CONSTRUCTION SPECIFICATIONS FOR REQUIRED CONTRACTOR QUALIFICATIONS FOR GOLF COURSE FEATURE RESTORATION AND INSTALLATION.



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

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 06/25/2021 LICENSE # 43102	CLIENT: 07/15/20 08/08/20 05/11/21 06/25/21 BID: 06/25/21 CONSTRUCTION: 03/12/21 PERMITTING: RELEASED TO/FOR: A B C D O 1 2 DATE RELEASED:
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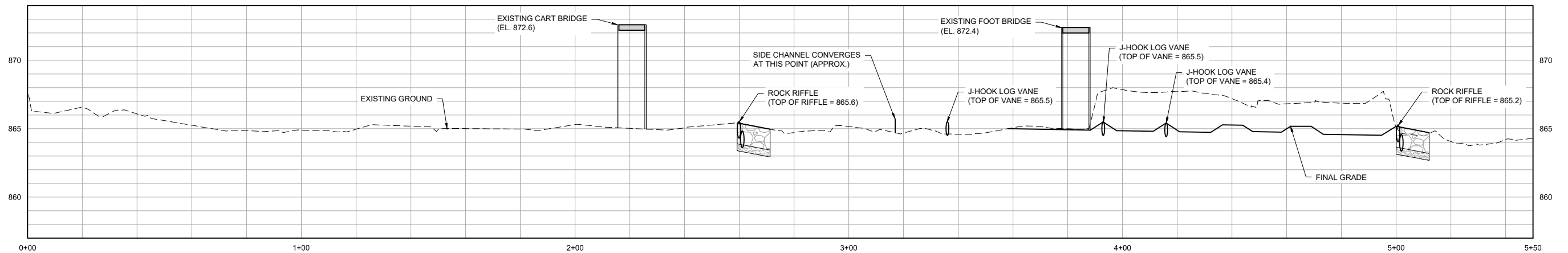
BARR
 Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435
 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com

RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

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

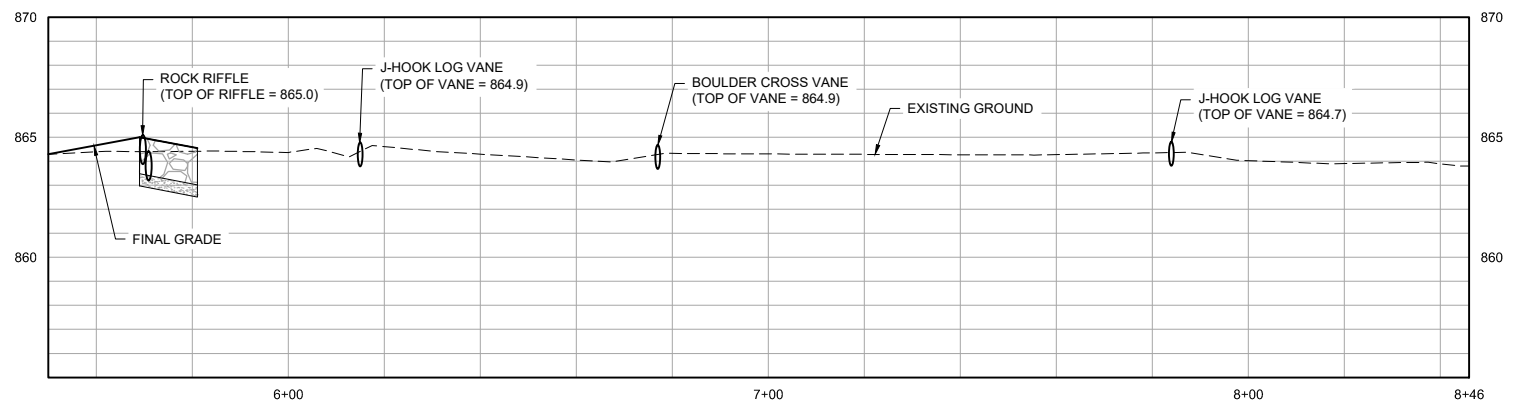
BARR PROJECT No. 23/27-0053.14	CLIENT PROJECT No.
DWG. No. C-07	REV. No. 0

ISSUED FOR BID



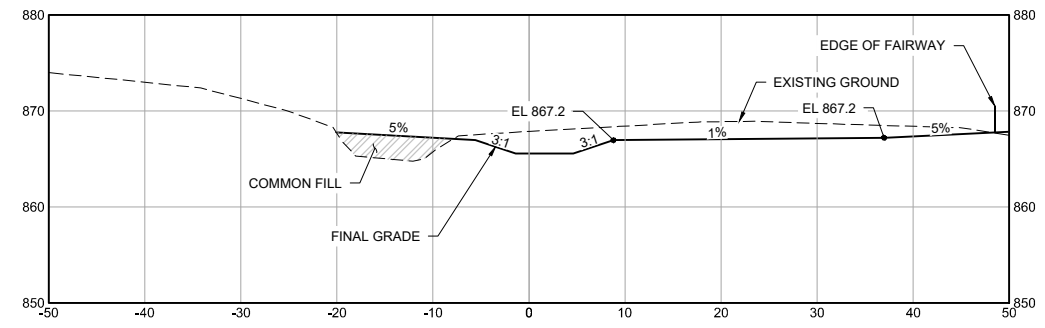
1 PROFILE: CREEK STABILIZATION SOUTH (STA. 0+00 - 5+50)

HORIZONTAL SCALE IN FEET: 0 20 40
VERTICAL SCALE IN FEET: 0 4 8



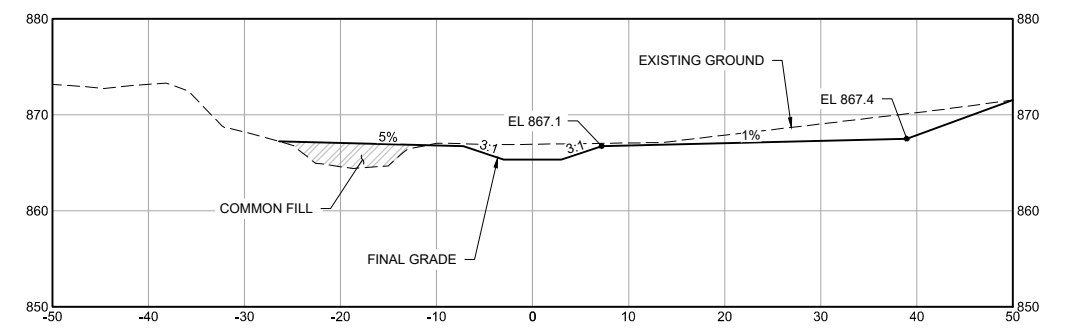
2 PROFILE: CREEK STABILIZATION SOUTH (STA. 5+50 - 8+46)

HORIZONTAL SCALE IN FEET: 0 20 40
VERTICAL SCALE IN FEET: 0 4 8



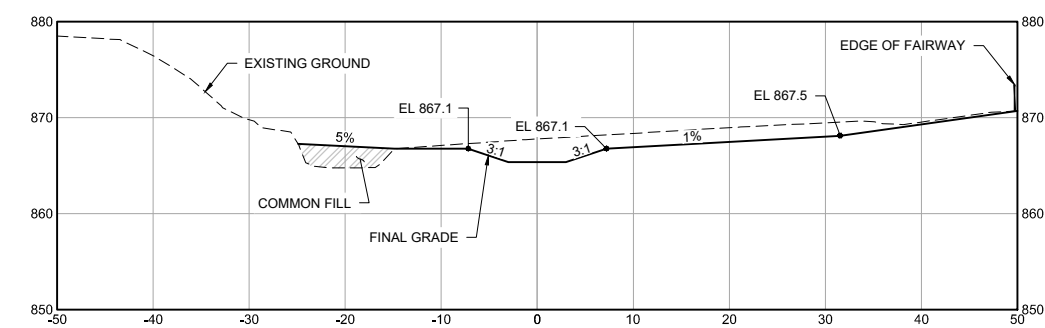
3 SECTION: CREEK STABILIZATION SOUTH (STA. 4+00) LOOKING DOWNSTREAM

SCALE IN FEET: 0 10 20



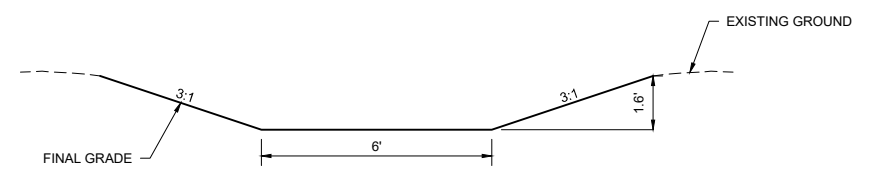
5 SECTION: CREEK STABILIZATION SOUTH (STA. 4+75) LOOKING DOWNSTREAM

SCALE IN FEET: 0 10 20



4 SECTION: CREEK STABILIZATION SOUTH (STA. 4+25) LOOKING DOWNSTREAM

SCALE IN FEET: 0 10 20



6 SECTION: TYPICAL RIFFLE SECTION
NOT TO SCALE

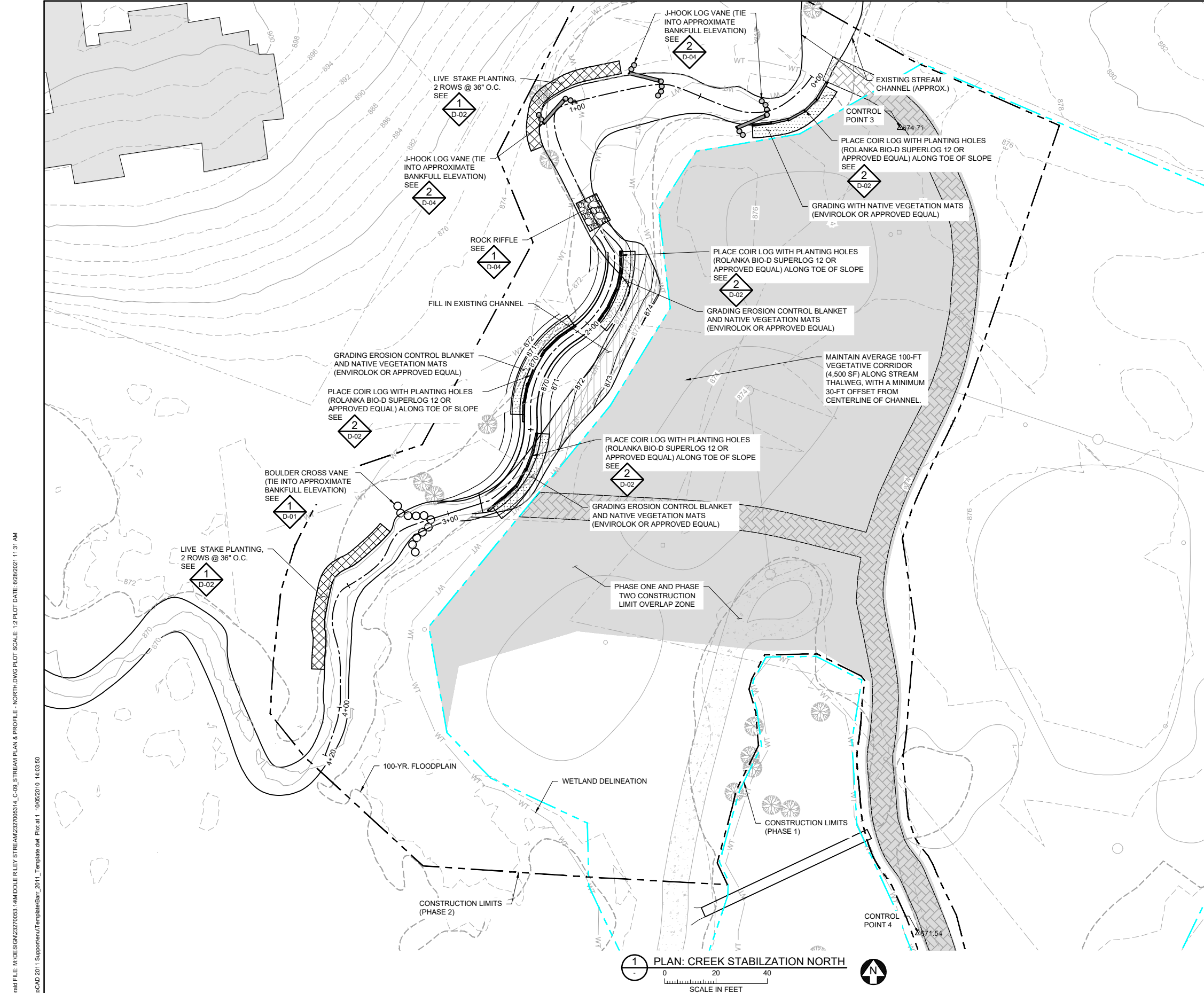
NOTE:
SEE SHEET D-05 FOR ROCK WALL DETAIL.

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DE\SIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION PHASE 14_C-07_STREAM PLAN & PROFILE - SOUTH.DWG PLOT SCALE: 1:12 PLOT DATE: 06/25/2021 2:21 PM

BARR - AutoCAD 2011 Support\template\Bar_2011_Template.dwt Plot at 1: 10/06/2010 14:09:50

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. PRINTED NAME: JESSICA OLSON SIGNATURE: <i>J. Olson</i> DATE: 06/25/2021 LICENSE # 43102		CLIENT: BARR ENGINEERING CO. BID: 23/27-0053.14 CONSTRUCTION: 03/12/21 PERMITTING: 03/12/21 RELEASED TO/FOR: A B C D 0 1 2 DATE RELEASED: 06/25/21		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: AS SHOWN Date: 06/25/2021 Drawn: EPF Checked: SAB2 Designed: BARR Approved: JCO		MIDDLE RILEY CREEK STABILIZATION (PHASE 2) EDEN PRAIRIE, MN STREAM STABILIZATION SOUTH PROFILE AND SECTIONS		BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. DWG. No. C-08 REV. No. 0	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION						
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID						



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.
- 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.
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 - RIPRAP TOE PROTECTION INSTALLATION
 - VRSS INSTALLATION
 - BOULDER VANE INSTALLATION
- PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE TIMING OF ALL CONSTRUCTION ACTIVITIES TO MINIMIZE DELAYS AND ENSURE ALL WORK IS COMPLETED ACCORDING TO PLANS.

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 STABILIZATION NORTH
SCALE IN FEET

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY STREAM\23270053_14_C-09_STREAM PLAN & PROFILE - NORTH.DWG PLOT SCALE: 1:2 PLOT DATE: 02/26/2021 11:31 AM
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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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PRINTED NAME: JESSICA OLSON
SIGNATURE: *J. Olson*
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING				

RELEASED TO/FOR: A B C D 0 1 2
DATE RELEASED

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BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
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MINNEAPOLIS, MN 55435

Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277
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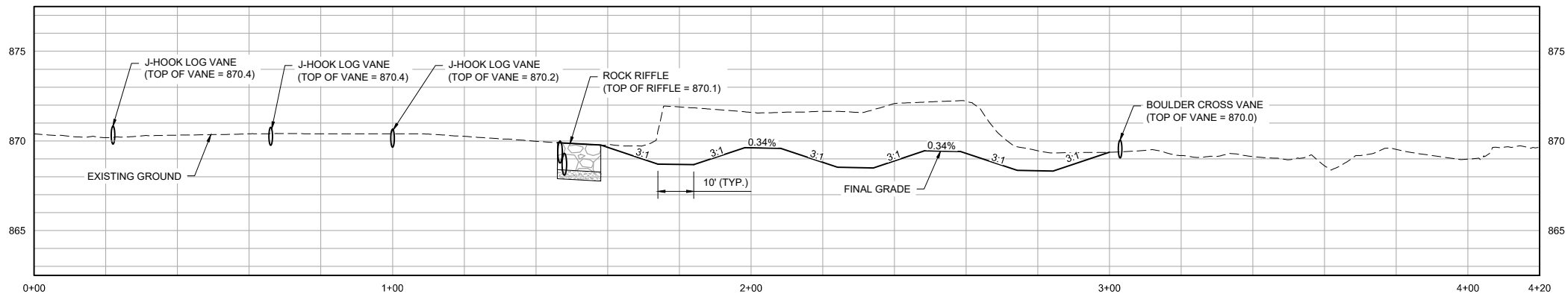
Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

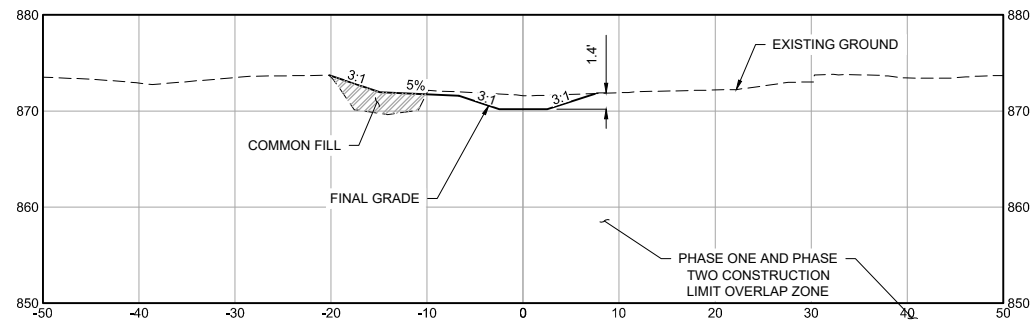
MIDDLE RILEY CREEK STABILIZATION (PHASE 2)
EDEN PRAIRIE, MN
STREAM STABILIZATION NORTH
PLAN

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

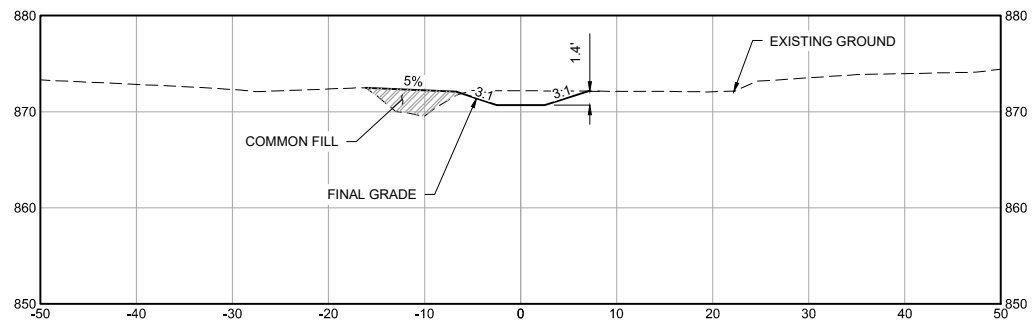
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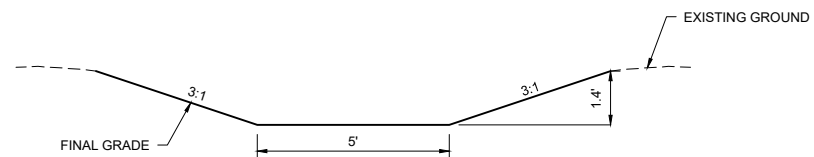
1 PROFILE: CREEK STABILIZATION NORTH
 HORIZONTAL SCALE IN FEET: 0, 20, 40
 VERTICAL SCALE IN FEET: 0, 4, 8



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

ISSUED FOR BID

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: 0/26/2021 11:29 AM
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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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 PRINTED NAME: JESSICA OLSON
 SIGNATURE: *J. Olson*
 DATE: 06/25/2021 LICENSE #: 43102

CLIENT	07/15/20	08/08/20	05/11/21			
BID					06/25/21	
CONSTRUCTION						
PERMITTING			03/12/21			
RELEASED TO/FOR	A	B	C	D	0	1
DATE RELEASED						2

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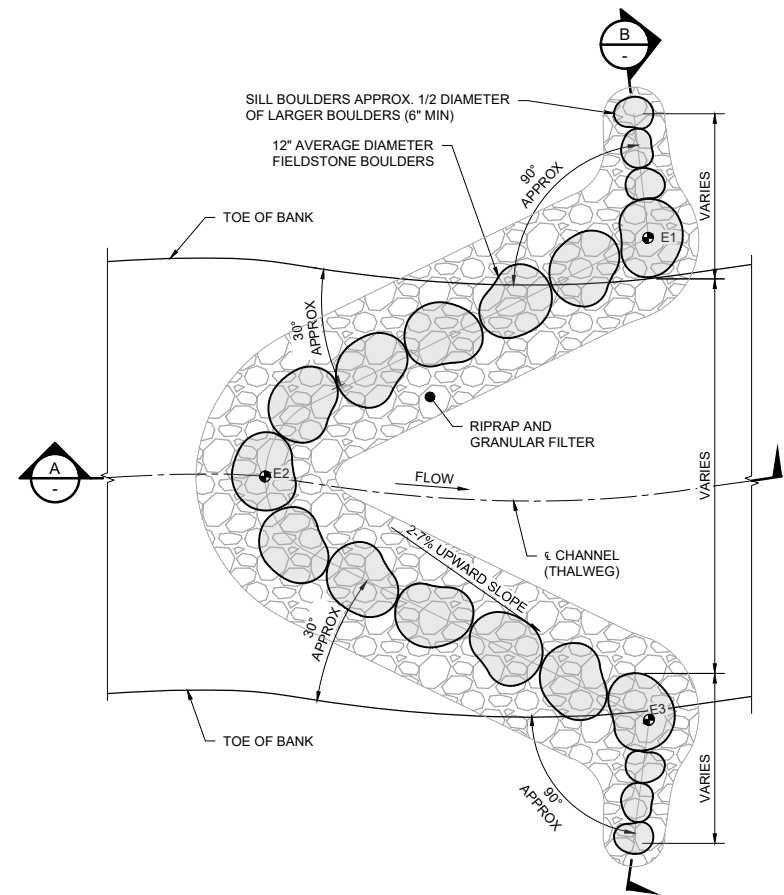
Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

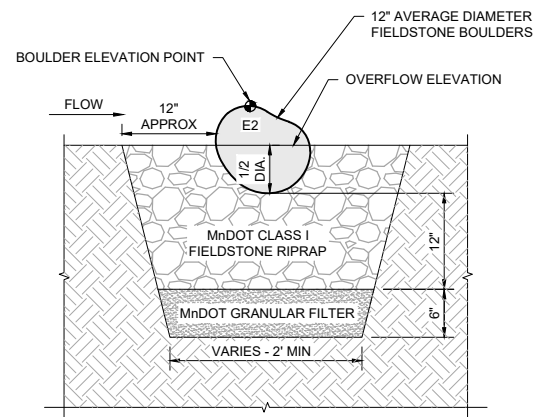
MIDDLE RILEY CREEK STABILIZATION (PHASE 2)
 EDEN PRAIRIE, MN
 STREAM STABILIZATION NORTH
 PROFILE AND SECTIONS

BARR PROJECT No.	23/27-0053.14
CLIENT PROJECT No.	
DWG. No.	C-10
REV. No.	0

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION\DWG\14_D-01_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 6/25/2021 2:11 PM
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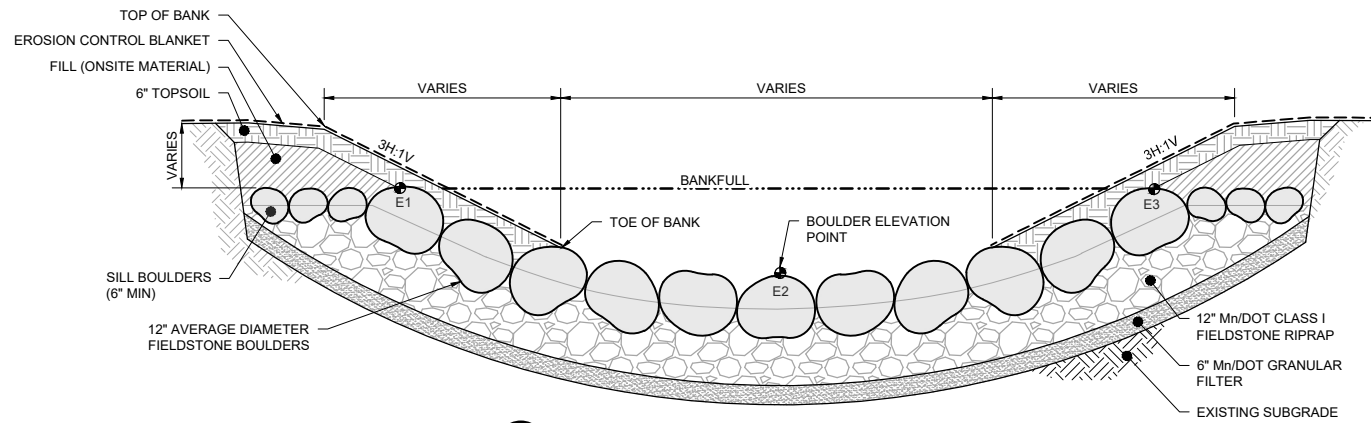


1 DETAIL: CROSS VANE - SINGLE BOULDER
NOT TO SCALE



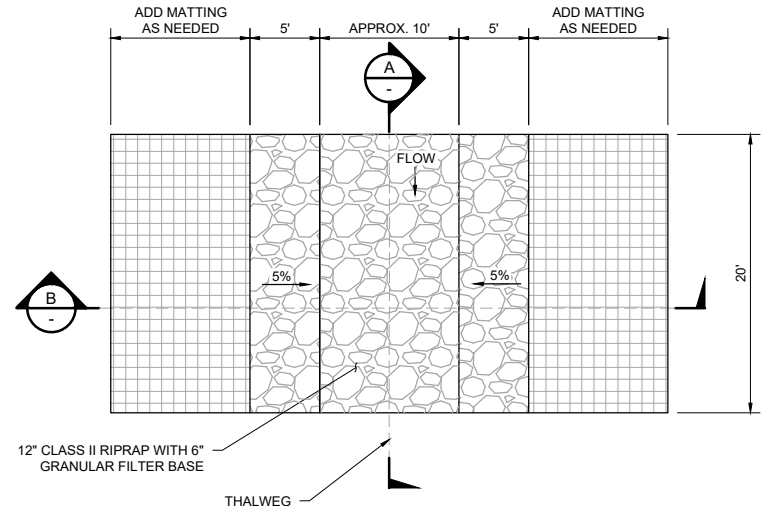
A SECTION: CROSS VANE - SINGLE BOULDER
NOT TO SCALE

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

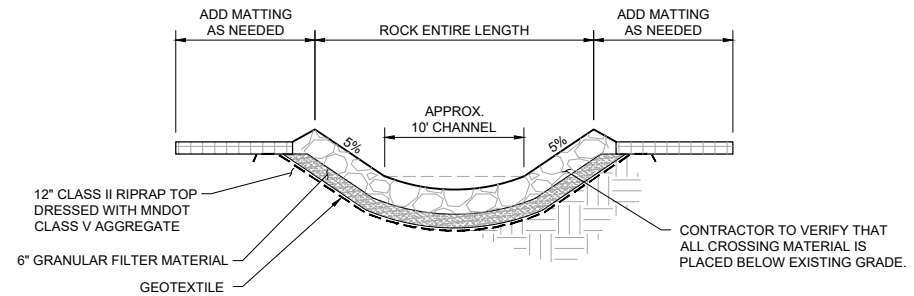


B SECTION: CROSS VANE - SINGLE BOULDER
NOT TO SCALE

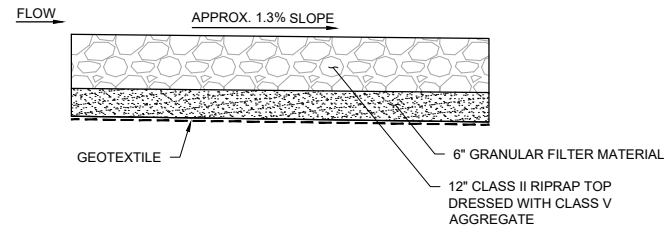
BOULDER VANES							NOTES
FEATURE LOCATION	E1 STATION	E1 ELEVATION	E2 STATION	E2 ELEVATION	E3 STATION	E3 ELEVATION	
NORTH STREAM	3+17	872.1	3+03	870.4	3+17	871.7	
SOUTH STREAM	6+94	866.5	6+77	864.0	6+94	866.4	



2 DETAIL: TEMPORARY CREEK CROSSING OPTION
NOT TO SCALE



D SECTION: TEMPORARY CREEK CROSSING OPTION
NOT TO SCALE

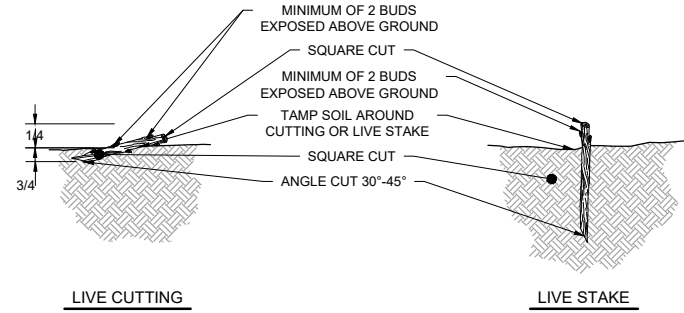


C SECTION: TEMPORARY CREEK CROSSING OPTION
NOT TO SCALE

- NOTES:**
- NO DOLOMITE OR LIMESTONE SHALL BE ALLOWED FOR ANY IN-CHANNEL BOULDERS, RIPRAP OR AGGREGATE.
 - THE TEMPORARY CREEK CROSSING SHALL BE PLACED SUCH THAT THE FINISHED GRADE IS AT OR BELOW THE ORIGINAL CREEK GRADE. CONTRACTOR SHALL SURVEY CREEK CROSSING BEFORE AND AFTER PLACEMENT OF RIPRAP TO CONFIRM CORRECT PLACEMENT OF RIPRAP.

ISSUED FOR BID

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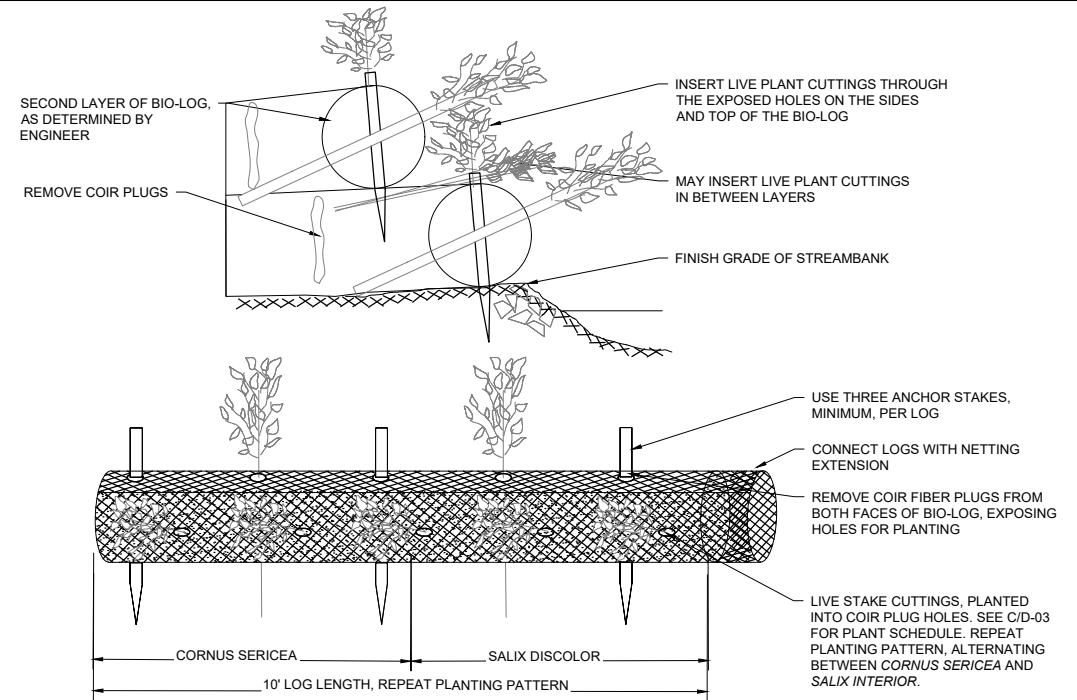
LIVE CUTTING

LIVE STAKE

GENERAL NOTES:

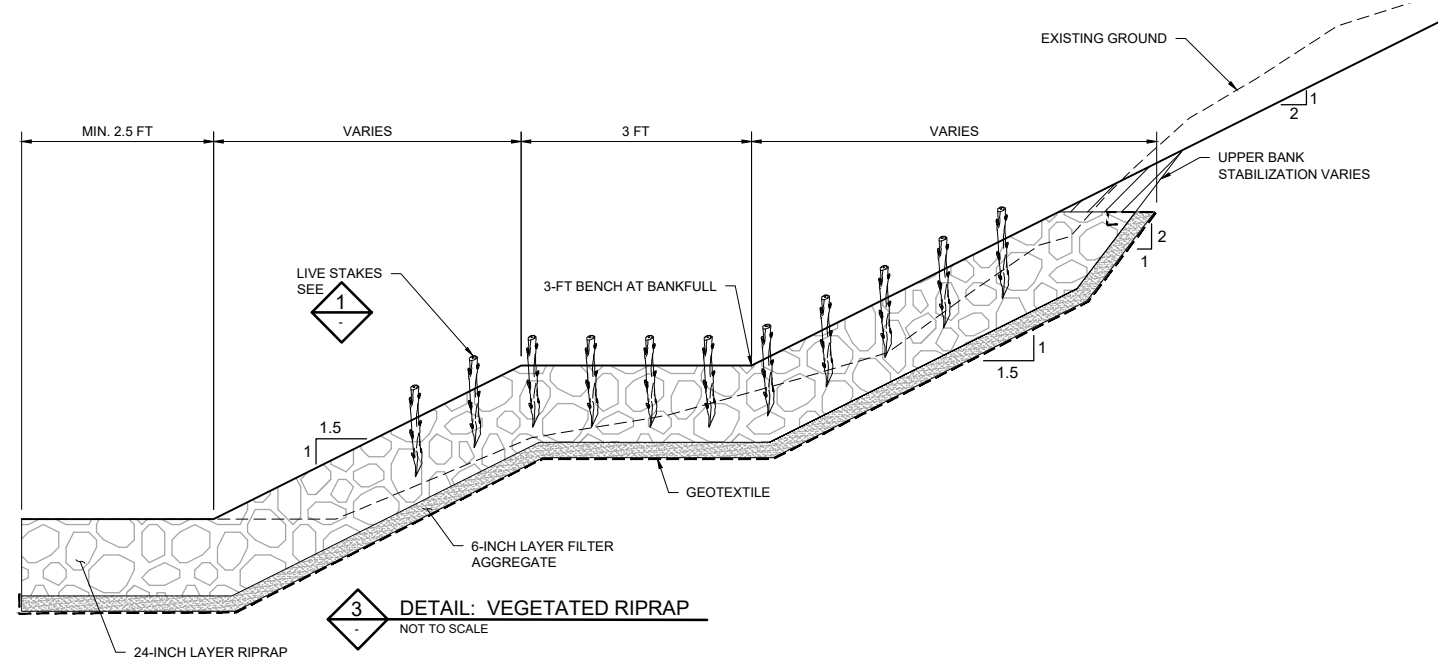
1. LIVE STAKE OR CUTTING PLANTED PERPENDICULAR TO GROUND SURFACE.
2. SEE SHEET D-03 FOR PLANT MATERIAL LIST FOR SPECIES LENGTH AND SPACING.
3. LIVE STAKES SHALL BE 3/4" DIAMETER MINIMUM. LIVE CUTTINGS SHALL BE 3/4" DIAMETER MINIMUM.

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

ISSUED FOR BID

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: 6/25/2021 12:12 PM
ref: M:\Design\23270053_14\002\032701086_D-02_Erosion Control Details.dwg Plot at 0 05/23/2019 13:16:29

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PRINTED NAME: JESSICA OLSON
SIGNATURE: *J. Olson*
DATE: 06/25/2021 LICENSE # 43102

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BID				
CONSTRUCTION				
PERMITTING		03/12/21		

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

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Suite 200
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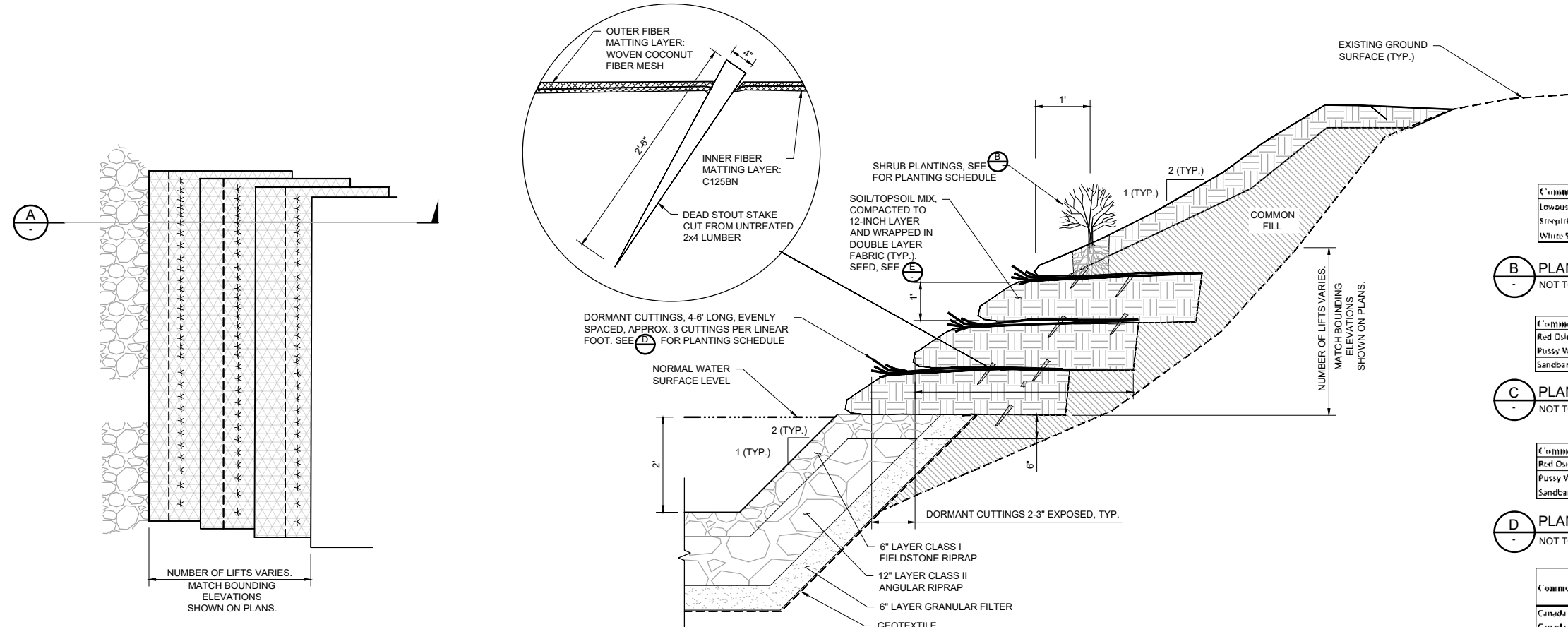
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Scale	AS SHOWN
Date	06/25/2021
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Designed	BARR
Approved	JCO

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.	0



Common Name	Scientific Name	Quantity	Spacing	Size
Lowwash Honeysuckle	<i>Lonicera japonica</i>	28	4' O.C.	#2 Pot
Strepitibush	<i>Spiraea tomentosa</i>	138	4' O.C.	#1 Pot
White Snowberry	<i>Symphoricarpos albus</i>	28	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>	149	Per P an
Pussy Willow	<i>Salix discolor</i>	145	Per P an
Sandbar Willow	<i>Salix interior</i>	58	Per P an

C PLANT SCHEDULE: LIVE STAKES
NOT TO SCALE

Common Name	Scientific Name	Quantity	Spacing
Red Osier Dogwood	<i>Cornus sericea</i>	153	Per P an
Pussy Willow	<i>Salix discolor</i>	77	Per P an
Sandbar Willow	<i>Salix interior</i>	77	Per P an

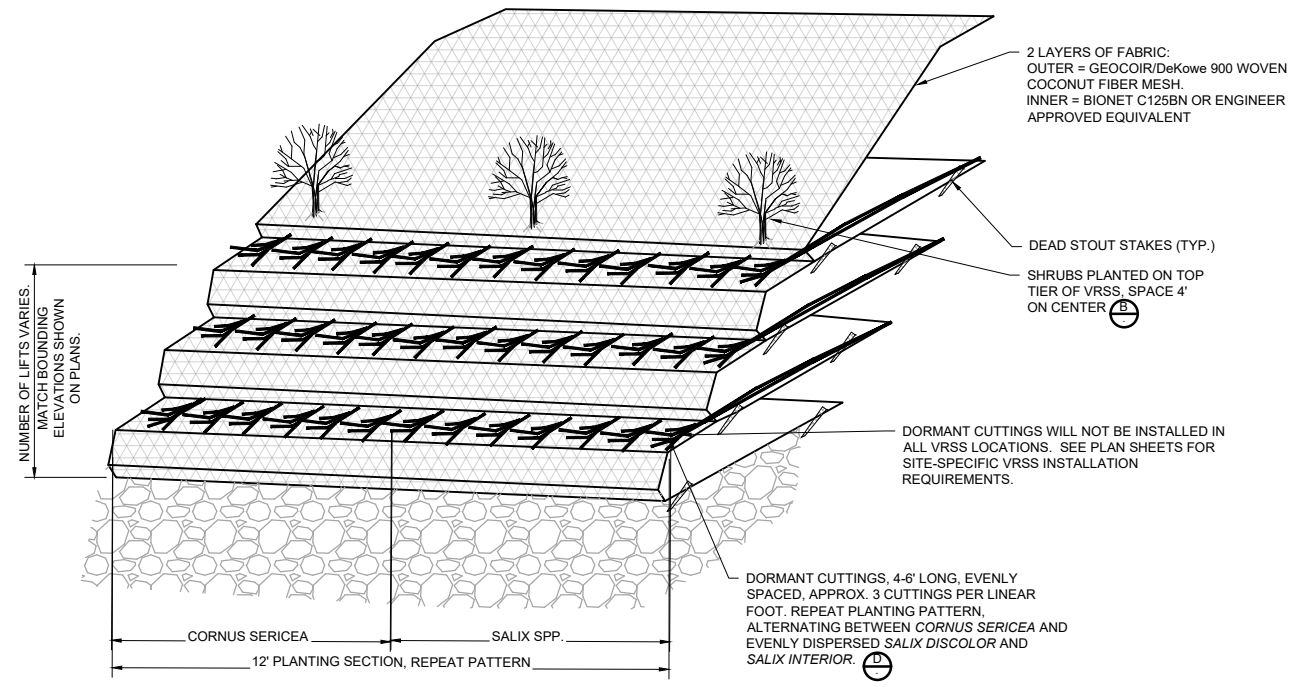
D PLANT SCHEDULE: DORMANT CUTTINGS (4-6')
NOT TO SCALE

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%
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	0.04	0.2%
Fowl Nuts Grass	<i>Glyceria striata</i>	6.00	23.2%
Rice Cut Grass	<i>Leersia oryzoides</i>	4.00	15.5%
Fowl Bluegrass	<i>Poa palustris</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%
Total		25.84	100%

E PLANT SCHEDULE: VRSS SEED MIX
NOT TO SCALE

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

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



2 DETAIL: LIVE PLANT VEGETATED REINFORCED SOIL SLOPE (V.R.S.S.)
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.

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_1\MIDDLE RILEY CREEK STABILIZATION\DWG\01_DETAILS\DWG\01_12_PLOT_DATE_06252021_12:14 PM
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NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	SAB2	JCO	06/25/2021	

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

PRINTED NAME: JESSICA OLSON
 SIGNATURE: *J. Olson*
 DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING				

RELEASED TO/FOR: A B C D 0 1 2
 DATE RELEASED

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

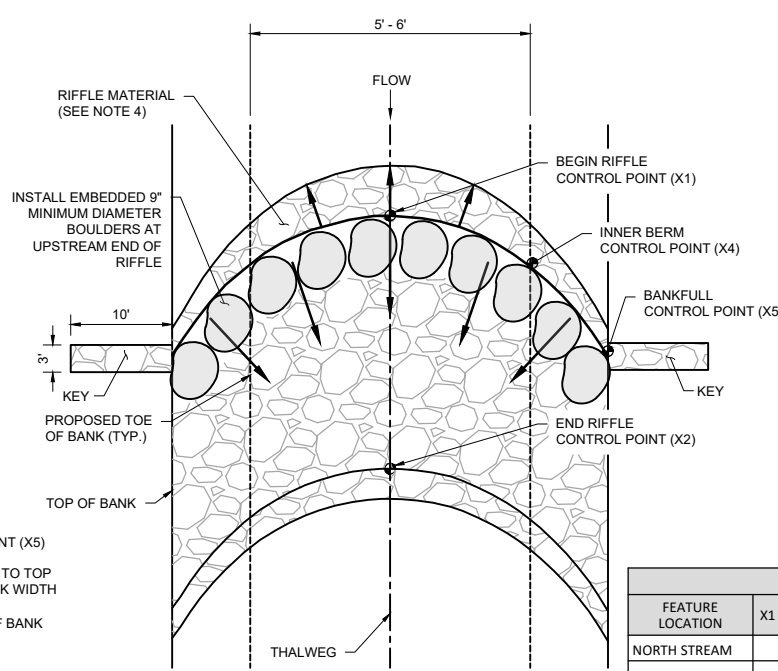
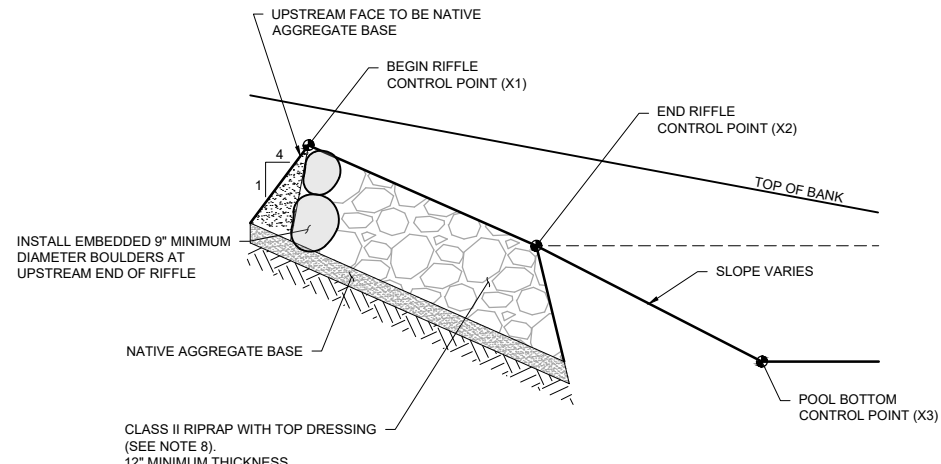
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 Fax: (952) 832-2601
 www.barr.com

Scale	AS SHOWN
Date	06/25/2021
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-03	REV. No. 0

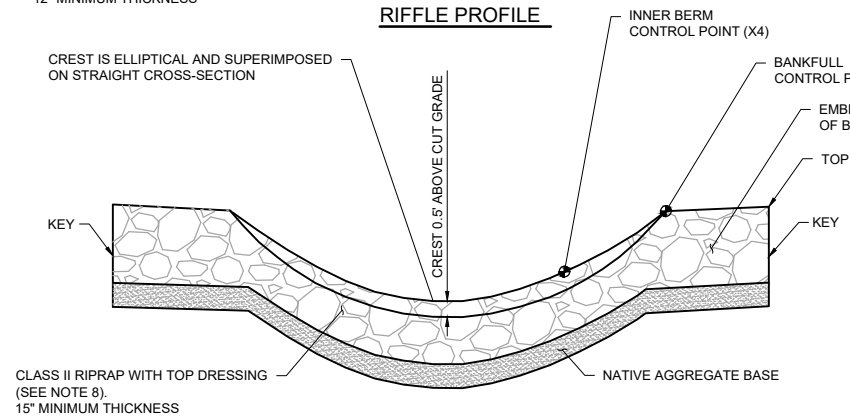


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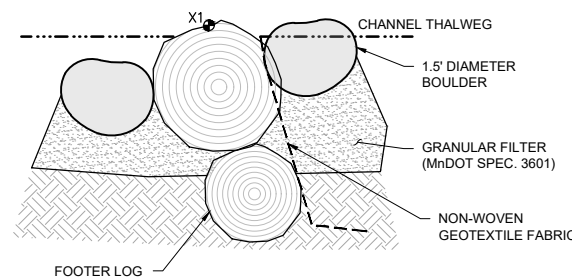
1. ROCK RIFFLES SHALL BE INSTALLED WITHIN THE EXISTING RIVER CHANNEL AS SPECIFIED.
2. ELEVATION CONTROL POINTS SHALL BE DESIGNATED AT THE BEGINNING AND END OF RIFFLE POINTS TO ESTABLISH PART OF THE PROFILE OF THE CHANNEL. SURVEY OF CONTROL POINTS SHALL BE REQUIRED TO ESTABLISH ACCURATE RIFFLE INSTALLATION.
3. RIFFLE MATERIAL SHALL BE CLASS II RIPRAP FROM THE SITE AND/OR IMPORTED, INSTALLED WITH A MINIMUM THICKNESS OF 15\".
4. THE FACE OF THE RIFFLE UPSTREAM OF THE BEGIN RIFFLE CONTROL POINT SHALL BE NATIVE AGGREGATE BASE. 9\" MINIMUM DIAMETER BOULDERS EMBEDDED IN RIFFLE IMMEDIATELY DOWNSTREAM OF THE NATIVE AGGREGATE BASE.
5. 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.
6. SEE THE ROCK RIFFLES TABLE FOR STATIONING AND ELEVATIONS.
7. SEE TYPICAL RIFFLE SECTION (D-04) FOR CHANNEL DIMENSIONS.
8. RIFFLE SURFACE TO BE TOP-DRESSED WITH 6\" OF MnDOT CLASS I RIPRAP TO REDUCE VOID SPACE.

Rock Riffles												
FEATURE LOCATION	X1 STATION	X1 ELEVATION	X2 STATION	X2 ELEVATION	X2 BANKFULL	X3 STATION	X3 ELEVATION	X4 STATION	X4 ELEVATION	X5 STATION	X5 BANKFULL	NOTES
NORTH STREAM	146	870.1	158	869.8	871.5	-	-	147	870.3	148	871.5	
SOUTH STREAM	245	865.5	257	865.2	867.1	-	-	246	865.7	247	867.1	
SOUTH STREAM	500	865.2	512	864.9	866.8	-	-	501	865.4	502	866.8	
SOUTH STREAM	562	865.0	574	864.7	866.6	-	-	563	865.2	564	866.6	

1 DETAIL: ROCK RIFFLE
NOT TO SCALE



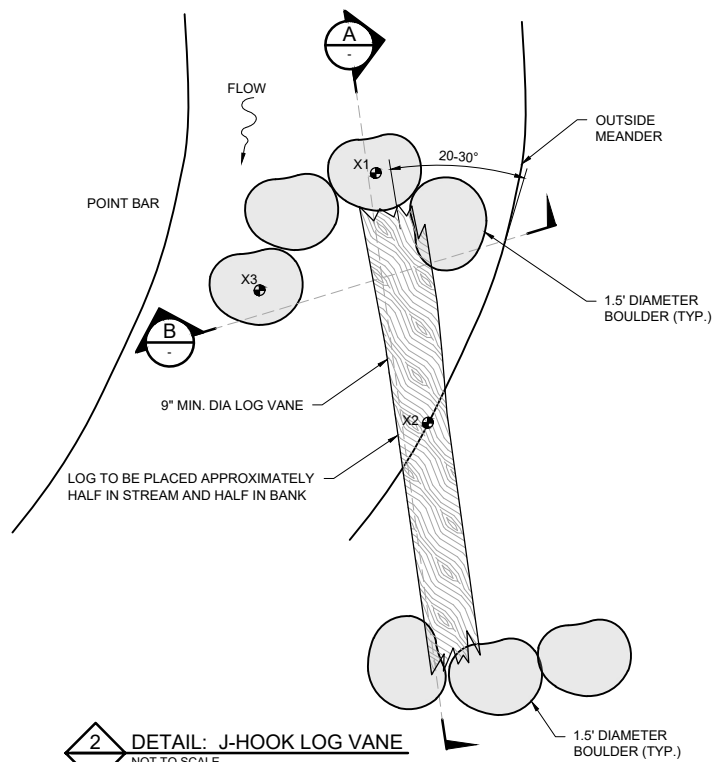
RIFFLE CROSS SECTION



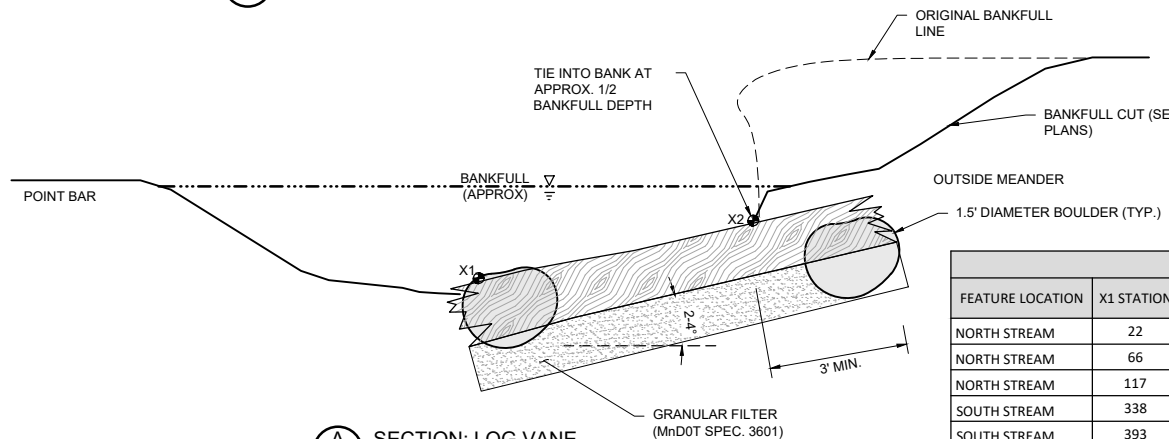
B SECTION: LOG VANE
NOT TO SCALE

GENERAL NOTES:

1. THE ENGINEER MUST BE NOTIFIED AT LEAST 3 DAYS PRIOR TO LOG VANE INSTALLATION AND MUST BE ON SITE DURING INSTALLATION.
2. TO THE EXTENT POSSIBLE, LOG VANES SHOULD BE CREATED FROM TREES THAT WILL BE REMOVED FROM THE SITES WITHIN THE PROJECT AREA.
3. EITHER DRIVE THE LOG VANE INTO THE BANK, OR EXCAVATE A TRENCH IN WHICH TO PLACE THE LOG VANE. IF THE LOG VANE IS DRIVEN INTO THE BANK, SHARPEN THE END OF THE LOG VANE TO A POINT.
4. THE LOG VANE MUST BE PLACED AT APPROXIMATELY A 20-30 DEGREE ANGLE, OR AS DIRECTED BY THE ENGINEER.
5. PLACE FOOTER LOG SLIGHTLY UPSTREAM AND UNDER MAIN LOG TO PROVIDE PROTECTION AGAINST SCOUR.
6. 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.
7. THE LOG VANE MUST BE PLACED IN THE BANK SO THAT AT LEAST 1/2 OF THE LOG VANE IS EMBEDDED INTO THE BANK.
8. LARGE BOULDERS ARE PLACED ON BOTH SIDES OF THE LOG VANE AT THE INTERFACE WITH THE BANK TO CREATE A CUT-OFF SILL.
9. LARGE BOULDERS ARE ALSO PLACED AT THE END OF THE LOG VANE IN THE CHANNEL AS DIRECTED BY THE ENGINEER.
10. PLACE GRANULAR FILTER AGGREGATE (MnDOT STANDARD SPECIFICATION 3601) AS BEDDING FOR BOULDERS IF NECESSARY.
11. MATCH EXISTING GRADE OR PLANNED GRADE AS APPROPRIATE WITH BACKFILL.
12. REVEGETATE AND STABILIZE WITH SEED AND MULCH AS SPECIFIED FOR EACH SITE AS SHOWN IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.
13. EXCAVATE SCOUR HOLE IN STREAM BED ADJACENT TO LOG VANE AS DIRECTED BY THE ENGINEER.



2 DETAIL: J-HOOK LOG VANE
NOT TO SCALE



A SECTION: LOG VANE
NOT TO SCALE

J-Hook Log Vanes									
FEATURE LOCATION	X1 STATION	X1 ELEVATION	X1 BANKFULL	X2 STATION	X2 ELEVATION	X2 BANKFULL	X3 STATION	X3 ELEVATION	NOTES
NORTH STREAM	22	870.4	871.8	28	871.1	871.8	24	870.6	
NORTH STREAM	66	870.4	871.8	78	871.1	871.8	68	870.6	
NORTH STREAM	117	870.2	871.6	129	870.9	871.6	119	870.4	
SOUTH STREAM	338	865.5	867.1	346	866.3	867.1	340	865.7	
SOUTH STREAM	393	865.5	867.1	404	866.3	867.1	395	865.7	
SOUTH STREAM	416	865.4	867.0	427	866.2	867.0	418	865.6	
SOUTH STREAM	615	864.9	866.5	623	865.7	866.5	617	865.1	
SOUTH STREAM	784	864.7	866.3	792	865.5	866.3	786	864.9	

ISSUED FOR BID

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 PRINTED NAME: JESSICA OLSON
 SIGNATURE: *J. Olson*
 DATE: 06/25/2021 LICENSE #: 43102

CLIENT	07/15/20	08/06/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING		03/12/21		
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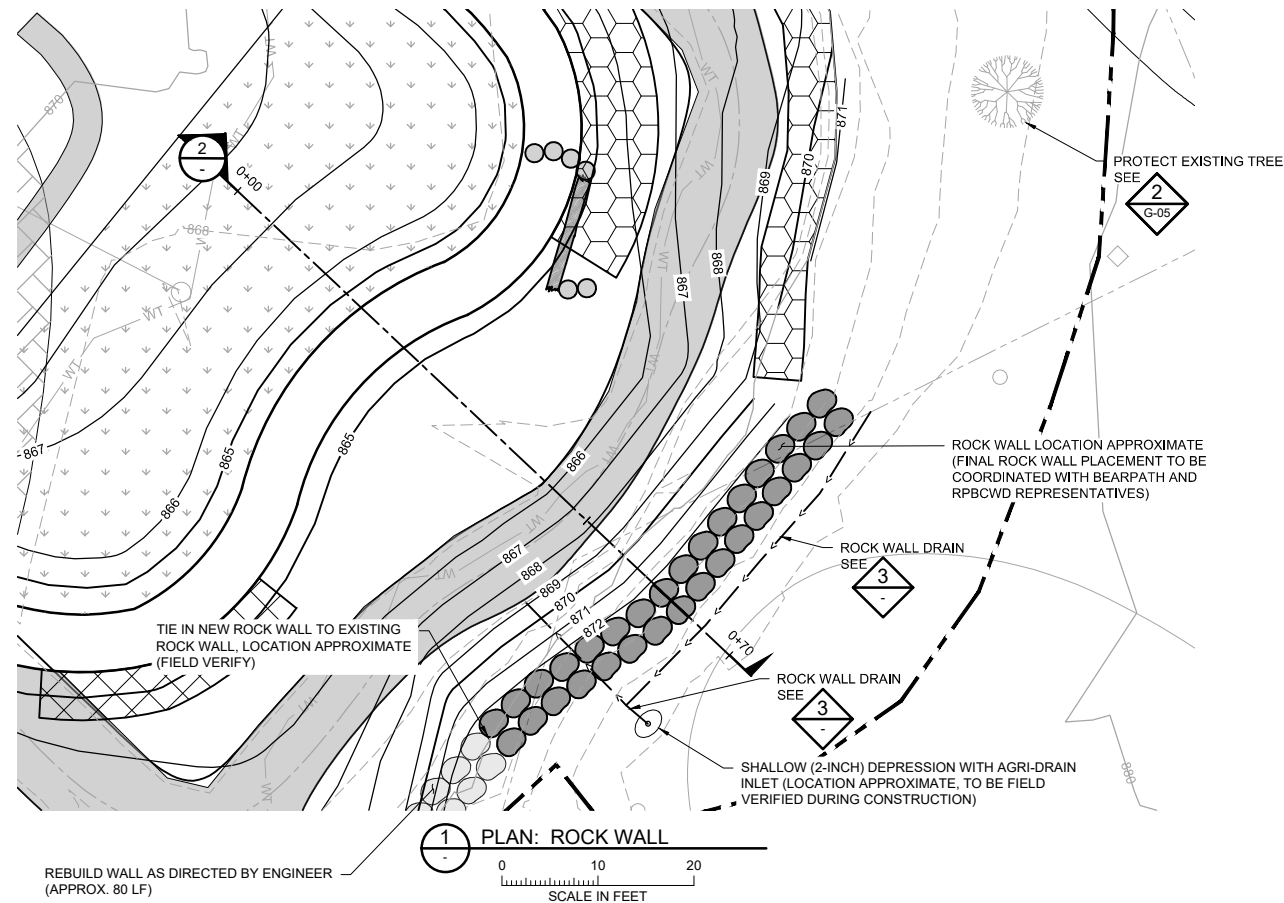
BARR
 Project Office:
 BARR ENGINEERING CO.
 4300 MARKETPOINTE DRIVE
 Suite 200
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 Corporate Headquarters:
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 Ph: 1-800-632-2277
 Fax: (952) 832-2601
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 Date: 06/25/2021
 Drawn: EPF
 Checked: SAB2
 Designed: BARR
 Approved: JCO

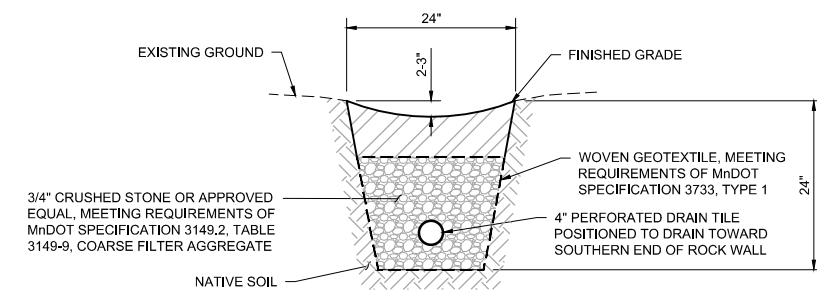
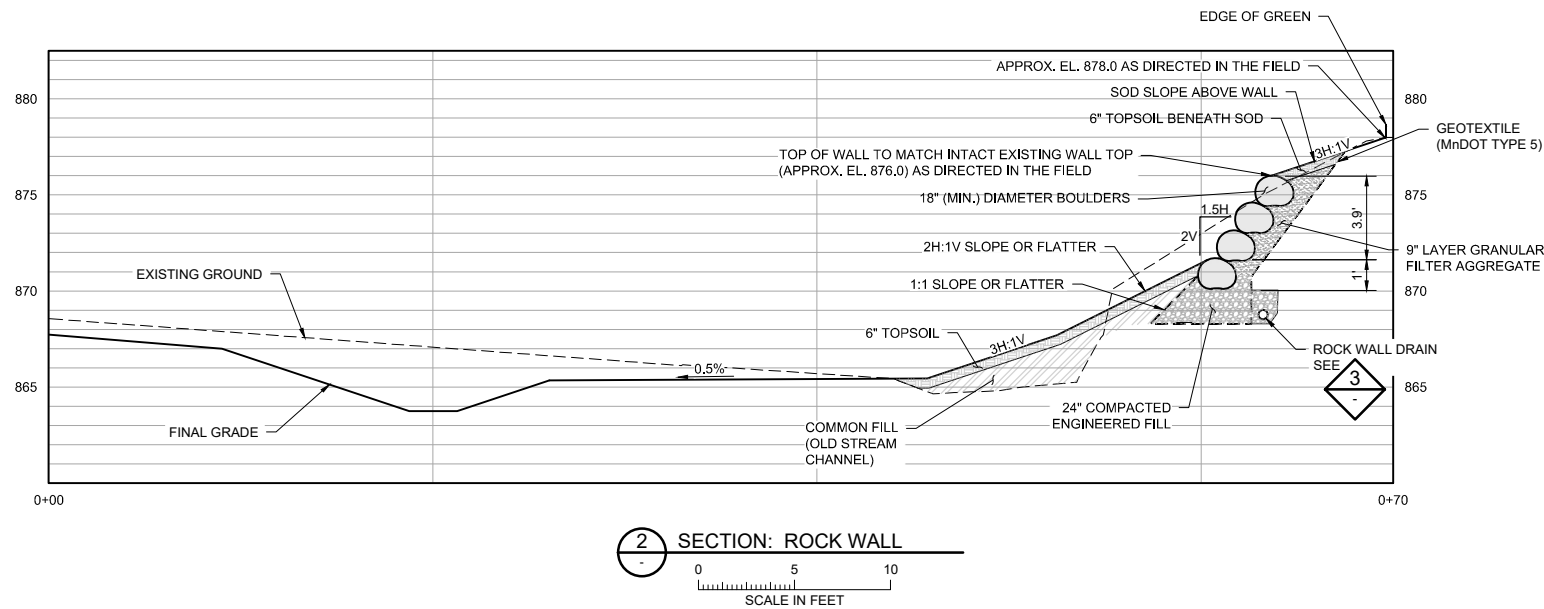
RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

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. 0



ROCK WALL RENDERING



NOTE:
CRUSHED LIMESTONE IS NOT ALLOWED.

ISSUED FOR BID

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0	EPF	SAB2	JCO	06/25/2021	ISSUED FOR BID

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PRINTED NAME: JESSICA OLSON
SIGNATURE: *J. Olson*
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/06/20	09/11/21	10/25/21
BID				
CONSTRUCTION				
PERMITTING			03/12/21	

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DATE RELEASED							

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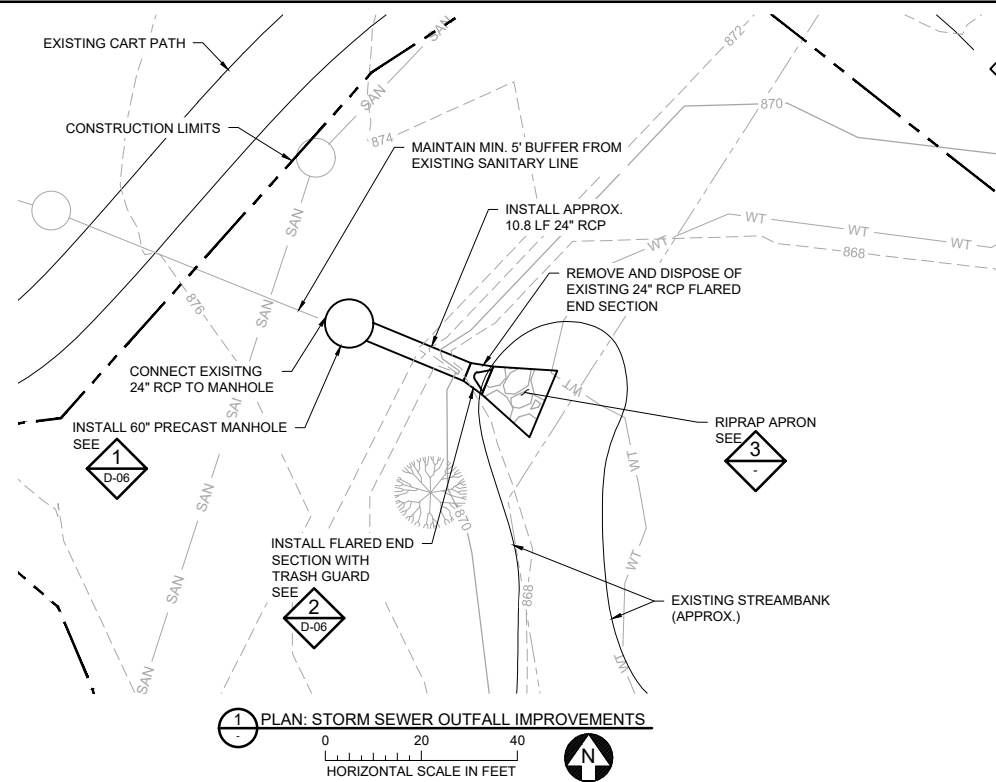
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Minneapolis, Minnesota
Ph: 1-800-632-2277
Ph: 1-800-632-2277

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Approved	JCO

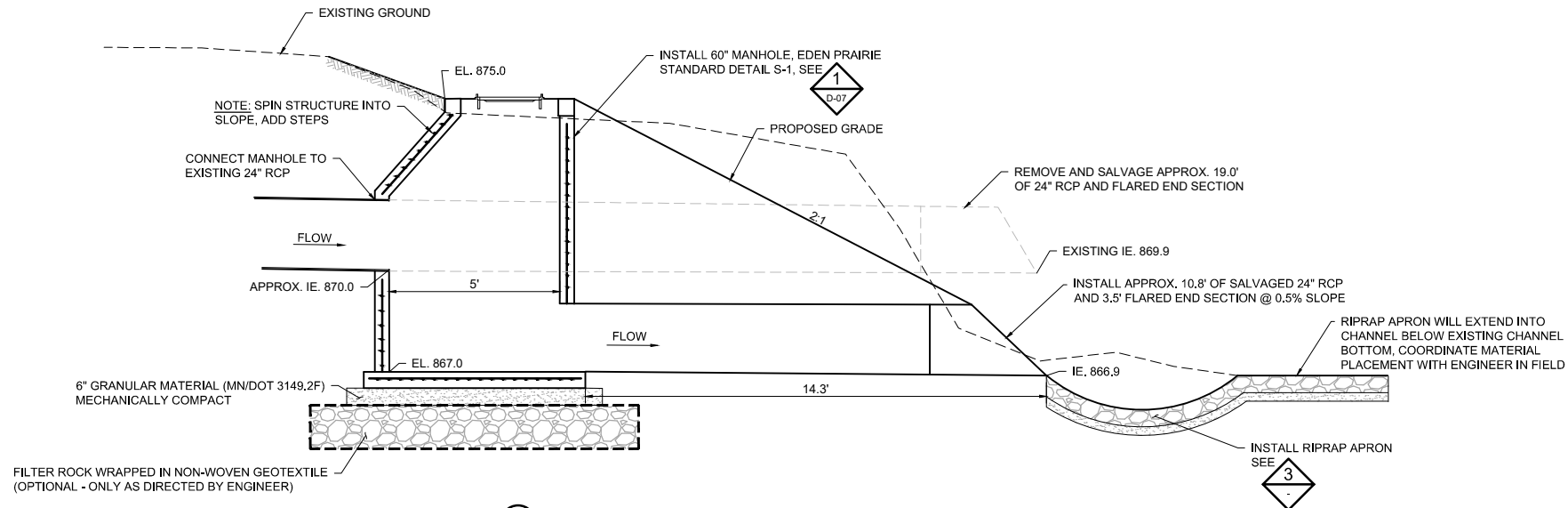
RILEY PURGATORY BLUFF CREEK WD
CHANHASSEN, MN

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

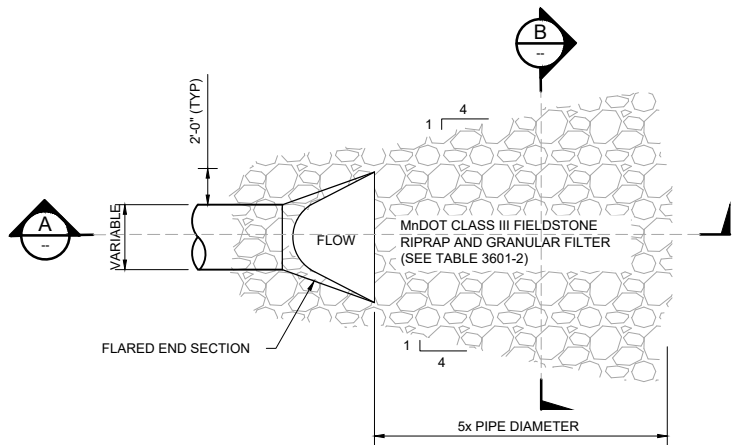
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CLIENT PROJECT No.	
DWG. No. D-05	REV. No. 0



1 PLAN: STORM SEWER OUTFALL IMPROVEMENTS
 HORIZONTAL SCALE IN FEET

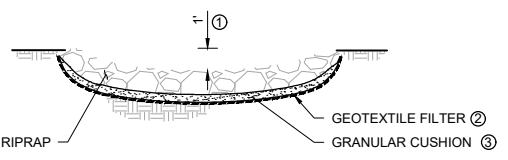


2 PROFILE: STORM SEWER OUTFALL IMPROVEMENTS (STA. 403+22)
 NOT TO SCALE

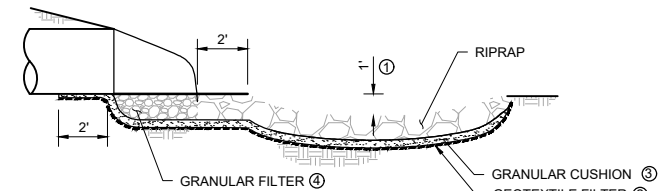


NOTES:
 REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS SHALL BE DESIGNATED IN THE PLANS.
 PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.
 ① FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5".
 ② GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED 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.

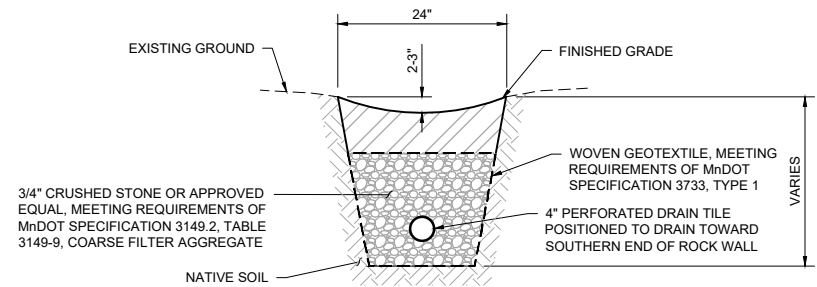
3 DETAIL: RIPRAP APRON
 NOT TO SCALE



B SECTION: RIPRAP APRON
 NOT TO SCALE



A SECTION: RIPRAP APRON
 NOT TO SCALE



4 DETAIL: DRAIN TILE BEDDING
 NOT TO SCALE

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BID				
CONSTRUCTION				
PERMITTING		03/12/21		

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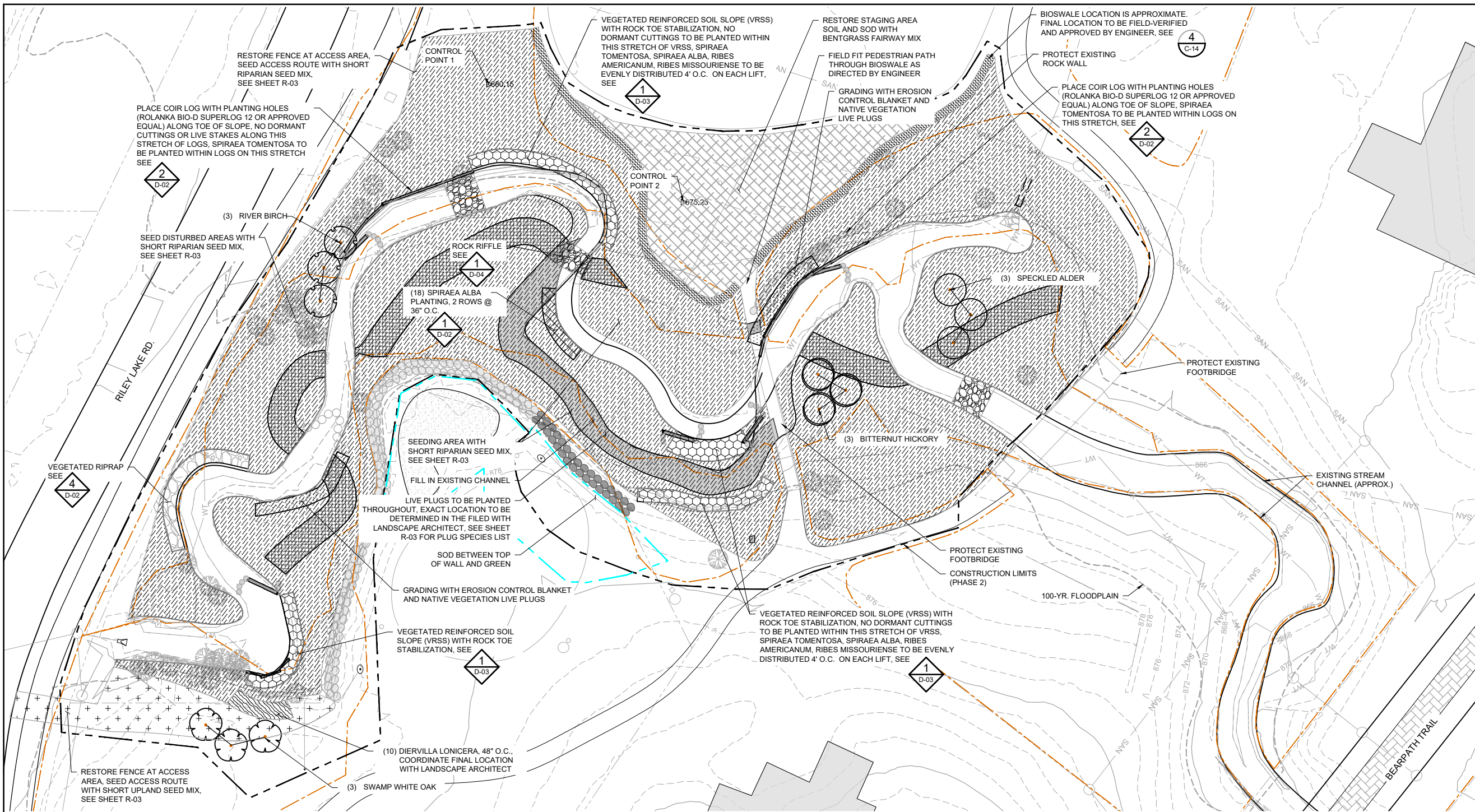
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Date	06/25/2021
Drawn	EPF
Checked	SAB2
Designed	BARR
Approved	JCO

RILEY PURGATORY BLUFF CREEK WD
 CHANHASSEN, MN

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

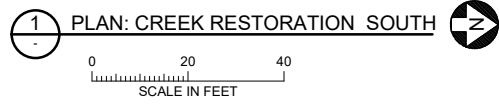
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CLIENT PROJECT No.	
DWG. No. D-06	REV. No. 0

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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)
- PROPOSED BUFFER
- ROCK RIFFLE
- LIVE STAKES
- VRSS
- SEEDING AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
- GRADING WITH EROSION CONTROL BLANKET AND NATIVE VEGETATION LIVE PLUGS
- SEEDING AREA WITH BIO-SWALE SEED MIX, SEE SHEET R-03
- SEEDING AREA WITH SORT UPLAND SEED MIX, SEE SHEET R-03
- SOD AREA WITH BENTGRASS MIX, OWNER TO SPECIFY SOD MIX
- BOULDER CROSS VANE
- J-HOOK LOG VANE



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

GENERAL LANDSCAPE NOTES:

- PLANTING SHALL CONFORM TO MNDOT SPEC 2571, PLANT INSTALLATION AND ESTABLISHMENT, EXCEPT AS INDICATED OTHERWISE IN THE PLANTING SHEETS.
- INFORM THE LANDSCAPE ARCHITECT OF PLANTING TWO DAYS PRIOR TO PLANT DELIVERY.
- CONTRACTOR SHALL COORDINATE LAYOUT OF ALL PLANTS WITH DIRECTION OF LANDSCAPE ARCHITECT IN THE FIELD.
- CONFIRM ALL QUANTITIES, SHAPES AND LOCATIONS OF VRSS, BIOLOGS, AND ALL SEEDING AND PLANTING AREAS; ADJUST QUANTITIES AS REQUIRED TO CONFORM TO THE SITE CONDITIONS. CONFIRM ANY ADJUSTMENTS WITH THE LANDSCAPE ARCHITECT.
- LOCATE ALL UTILITIES. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH PLANT INSTALLATION.
- LONG-TERM STORAGE OF MATERIALS OR SUPPLIES ON-SITE WILL NOT BE ALLOWED. ANY PLANT STOCK NOT PLANTED ON DAY OF DELIVERY SHALL BE HELED IN AND WATERED UNTIL INSTALLATION. PLANTS NOT MAINTAINED IN THIS MANNER WILL BE REJECTED.
- THE PLAN TAKES PRECEDENCE OVER THE PLANT SCHEDULE IF DISCREPANCIES EXIST. ADVISE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

PROTECTIONS:

- THE CONTRACTOR SHALL AVOID DAMAGING EXISTING TREES. DO NOT STORE OR DRIVE HEAVY MATERIALS OVER TREE ROOTS. DO NOT DAMAGE TREE BARK OR BRANCHES.

- THE CONTRACTOR SHALL KEEP PAVEMENTS, FIXTURES AND BUILDINGS CLEAN AND UNSTAINED. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE PROJECT SITE SHALL BE KEPT CLEAR OF CONSTRUCTION WASTES AND DEBRIS.
- PROVIDE SILT FENCE IF NECESSARY TO PROTECT STREET FROM EROSION.

SEEDING:

- ANY EXOTIC INVASIVE PLANTS AND WEEDS WITHIN THE SEEDING AREAS SHALL BE SPRAYED WITH HERBICIDE 14 DAYS PRIOR TO SEEDING OR AS PER MANUFACTURE'S RECOMMENDATION. SIGNAGE INDICATING THE USE OF HERBICIDES MUST BE POSTED ON SITE.
- ALL HERBICIDE APPLICATION SHALL BE APPLIED BY A LICENSED APPLICATOR WITHIN THE STATE OF MINNESOTA.
- SEED IN ACCORDANCE WITH THE SPECIFICATIONS. SEEDING IS TO TAKE PLACE IMMEDIATELY FOLLOWING FINAL GRADING AND SOIL PLACEMENT TO PREVENT EROSION AND COMPACTION.
- COVER CROP IS TO BE SEEDING WITHIN ALL AREAS.
- AFTER SEEDING, TYPE 8 MULCH MATERIAL SHALL BE DISC-ANCHORED OVER ENTIRE SEEDING AREA IN ACCORDANCE WITH MNDOT STANDARD SPECIFICATION 3882.
- REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS, OR SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

MAINTENANCE AND CARE:

- MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PORTION OF THE WORK IS IN PLACE. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF PLANTINGS IS COMPLETE. INSPECTION HAS BEEN MADE AND PLANTING IS ACCEPTED EXCLUSIVE OF THE GUARANTEE.
- MAINTENANCE SHALL INCLUDE WATERING, WEEDING, MULCHING, REMOVAL OF DEAD MATERIAL PRIOR TO GROWING SEASON, RE-SETTING PLANTS AND PROPER GRADE, AND KEEPING PLANTS IN A PLUMB POSITION.
- WATERING: MAINTAIN A WATERING SCHEDULE WHICH WILL THOROUGHLY WATER ALL PLANTS ONCE A WEEK. IN EXTREMELY HOT, DRY WEATHER, WATER MORE OFTEN AS REQUIRED BY INDICATIONS OF HEAT STRESS SUCH AS WILTING LEAVES. CHECK MOISTURE UNDER MULCH PRIOR TO WATERING TO DETERMINE NEED. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR WATER.
- REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS, OR SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

SOIL LOOSENING & AMENDMENT REQUIREMENTS:

- SOIL LOOSENING APPLIES TO ALL DISTURBED SOILS TO BE RE-VEGETATED, INCLUDING SEEDING/SODDING/LANDSCAPE AREAS (NOT INCLUDING AREAS UNDER EXISTING TREE DRIP-LINES OR WITHIN 5-FEET OF BUILDING/PAVEMENT FOUNDATIONS), TO RESTORE SOIL PERMEABILITY.
- SOIL REMEDIATION MUST BE IMPLEMENTED PRIOR TO ANY INSTALLATION OF IRRIGATION SYSTEM COMPONENTS, TREES, SHRUBS, SOD AND/OR SEED. NO WHEELED EQUIPMENT SHALL BE USED ON LOOSENED SOIL - WIDE TRACK EQUIPMENT ONLY.
- SOIL LOOSENING MUST PRESERVE EXISTING TREES. NO LOOSENING SHALL OCCUR WITHIN DRIP LINE OF ANY EXISTING TREE.
- ALL DISTURBED AREAS TO BE RE-VEGETATED SHALL HAVE 12-INCH MINIMUM DEPTH OF SOIL LOOSENING (E.G. SOIL RIPPING, 6-INCH MAX. TOOTH SPACING).
- LOOSENED SOILS SHALL HAVE A MAXIMUM OF 200 PSI IN TOP 12 INCHES.
- CONTRACTOR TO TEST EXISTING TOPSOIL PRIOR TO PLANTING (MINIMUM 3 TESTS AT LEAST 500 FEET APART). IF EXISTING TOP 6" OF SOIL DOES NOT HAVE AT LEAST 5% SOIL ORGANIC CONTENT CONTRACTOR IS TO AMEND WITH MNDOT 3890 GRADE 2 COMPOST TO MEET REQUIREMENT. IMPLEMENTATION DOCUMENTATION SHALL BE PROVIDED TO ENGINEER TO VERIFY EXISTING ORGANIC CONTENT IN SOIL AND PROPOSED AMENDMENTS.

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	BHD	SAB2	JCO	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: JESSICA OLSON
SIGNATURE: *J. Olson*
DATE: 06/25/2021 LICENSE # 43102

CLIENT	07/15/20	08/08/20	09/11/21	10/14/21	11/17/21	12/20/21	01/23/22	02/26/22	03/30/22	04/23/22	05/26/22
BID											
CONSTRUCTION											
PERMITTING											
RELEASED TO/FOR	A	B	C	D	0	1	2				
DATE RELEASED											

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Scale	AS SHOWN
Date	06/25/2021
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 SOUTH

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

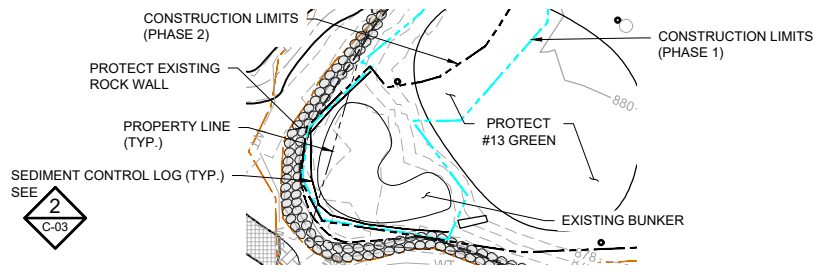
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EROSION & SEDIMENT CONTROL NOTES:

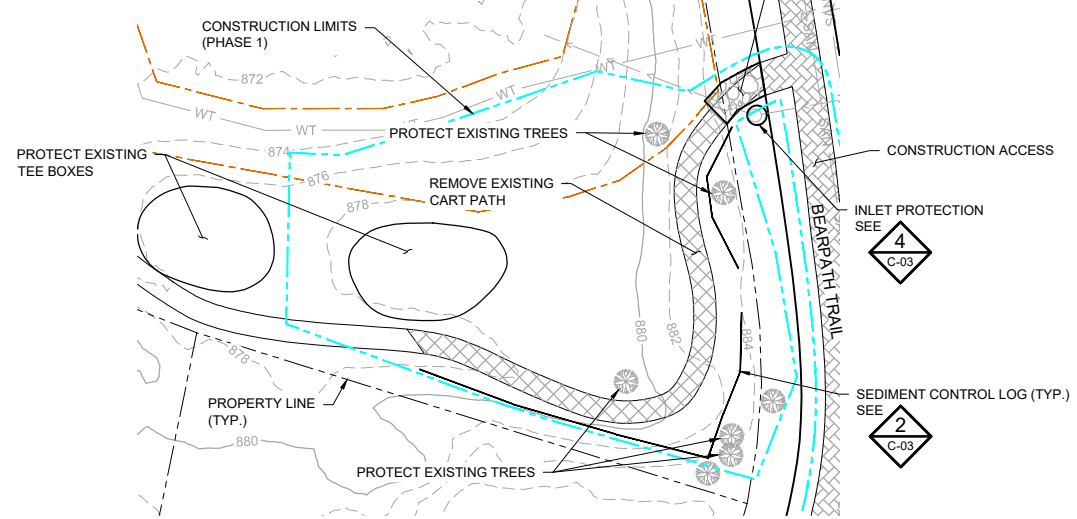
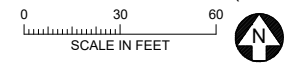
1. INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
2. BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE.
3. INSTALL INLET 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 WITH A MINIMUM OF 5% 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.
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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.

SYMBOL AND PATTERN LEGEND

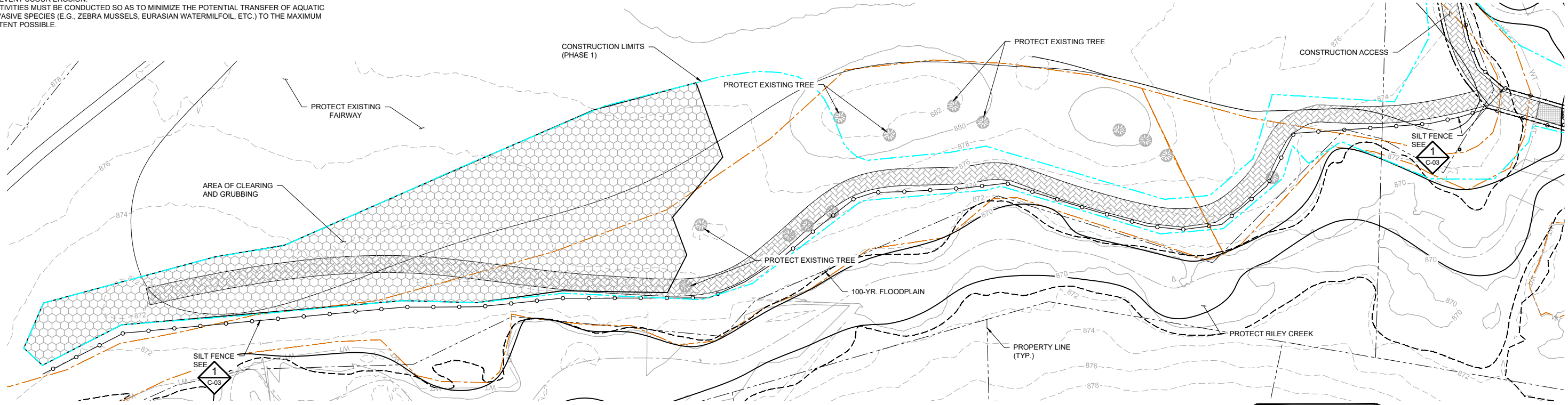
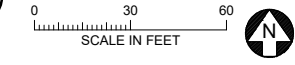
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SS EXISTING STORM SEWER
- SAN EXISTING SANITARY SEWER
- WT EXISTING WETLAND DELINEATION
- EXISTING PROPERTY LINE
- EXISTING 100-YR FLOODPLAIN
- CONSTRUCTION LIMITS (PHASE 1)
- CONSTRUCTION LIMITS (PHASE 2)
- PROPOSED BUFFER
- SILT FENCE
- SEDIMENT CONTROL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



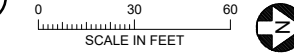
1 PLAN: EXISTING CONDITONS, REMOVALS AND EROSION CONTROL (#16 GREEN)



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



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



ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

ISSUED FOR BID

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

PRINTED NAME: BRAD LINDAMAN
SIGNATURE: [Signature]
DATE: 06/25/2021 LICENSE # 43102

CLIENT	05/11/21						
BID							
CONSTRUCTION							
PERMITTING	03/12/21						
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

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Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	BJL
Designed	BARR
Approved	BJL

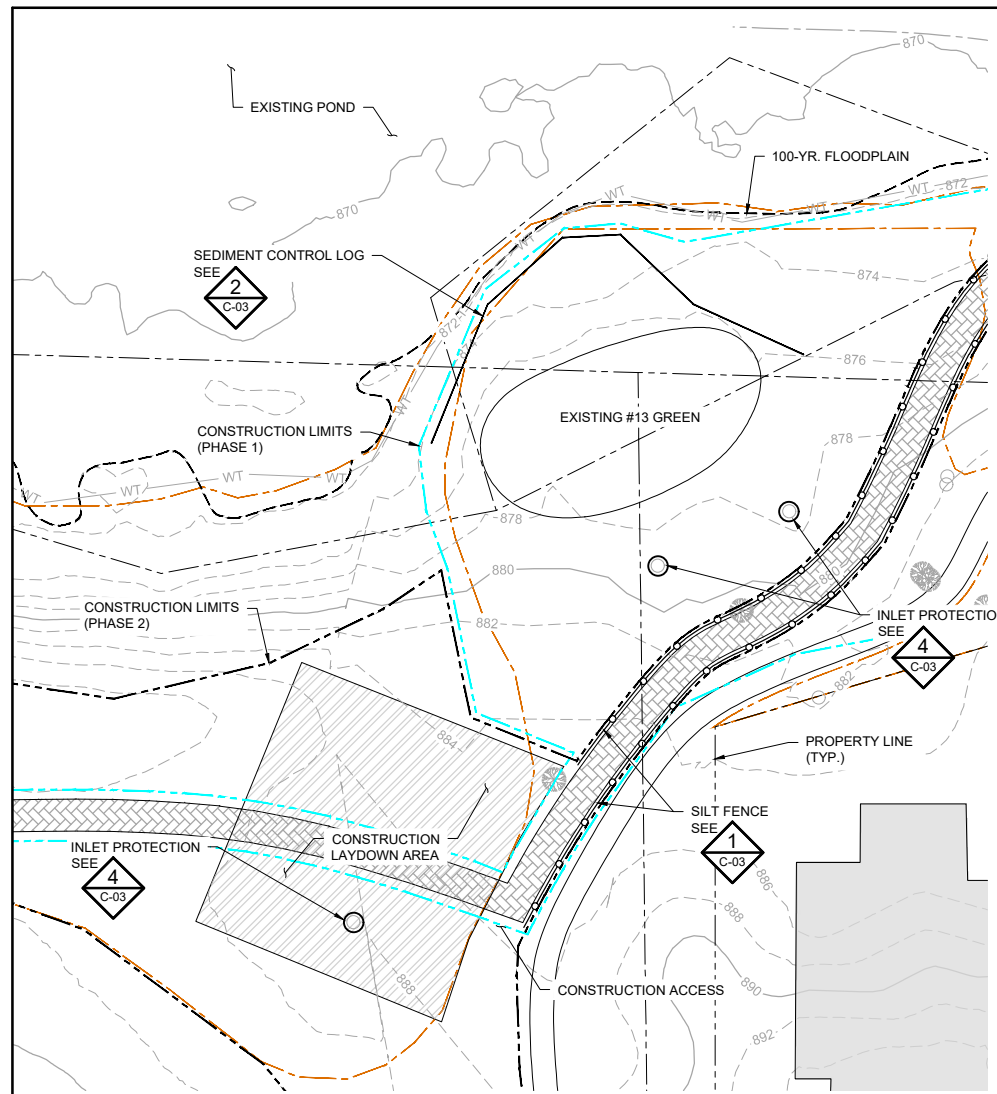
BEARPATH GOLF & COUNTRY CLUB
CHANHASSEN, MN

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.	0

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

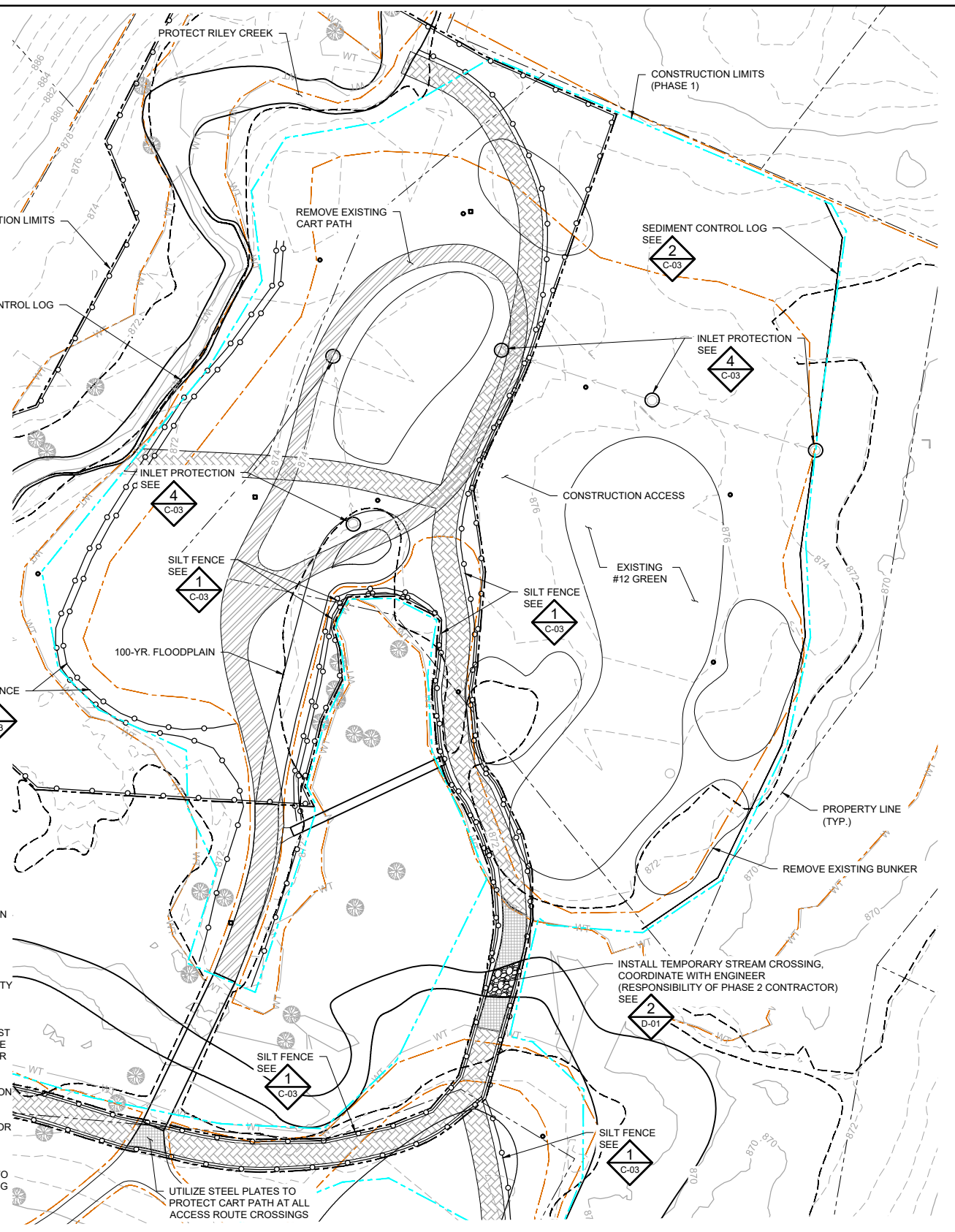
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SCALE IN FEET

EROSION & SEDIMENT CONTROL NOTES:

- INSTALL PERIMETER EROSION CONTROL AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE OR CONSTRUCTION ACTIVITIES.
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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.
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2 PLAN: EXISTING CONDITIONS, REMOVALS AND EROSION CONTROL (#12 GREEN & #13 TEE BOX)

0 30 60
SCALE IN FEET

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

- GENERAL NOTES:**
- PHASE 1 AND PHASE 2 CONTRACTORS SHALL COORDINATE SITE ACCESS AND WORK TIMING.

ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
PRINTED NAME: BRAD LINDAMAN	SIGNATURE: <i>[Signature]</i>
DATE: 02/25/2021	LICENSE #: 43102

CLIENT	BARR ENGINEERING CO.
BID	05/11/21
CONSTRUCTION	09/23/21
PERMITTING	03/12/21
RELEASED TO/FOR	A B C 0 1 2 3
DATE RELEASED	

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MINNEAPOLIS, MN 55435

Project Office:
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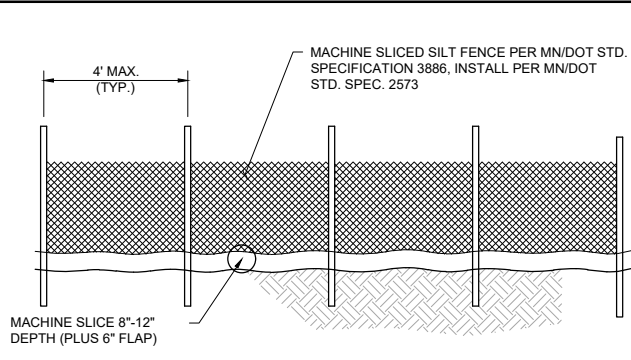
Scale	AS SHOWN
Date	06/25/2021
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	BJL

BEARPATH GOLF & COUNTRY CLUB
CHANHASSEN, MN

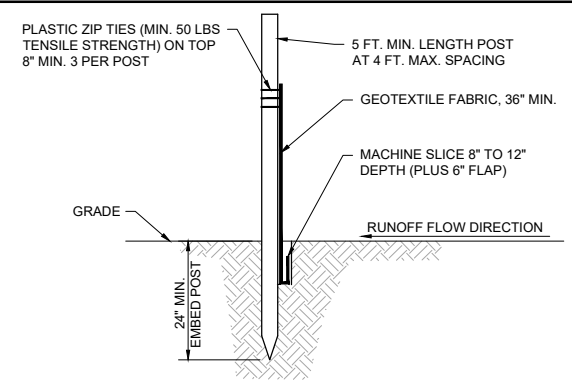
BEARPATH GOLF COURSE RENOVATION (PHASE 1)
EDEN PRAIRIE, MN

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.	0



DOWNSTREAM VIEW

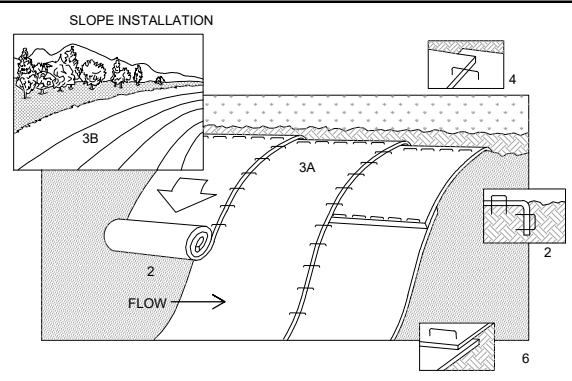


SECTION VIEW

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.

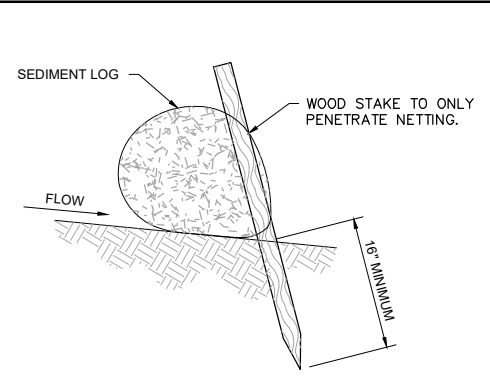
1 **DETAIL: SILT FENCE - MACHINE SLICED**
NOT TO SCALE



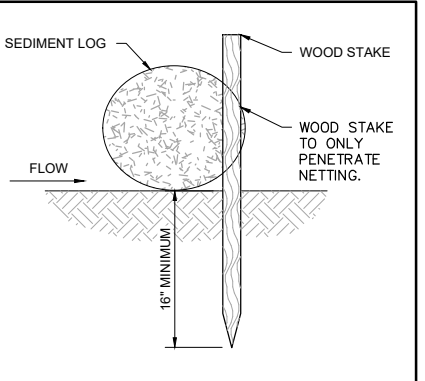
NOTES:

- 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.

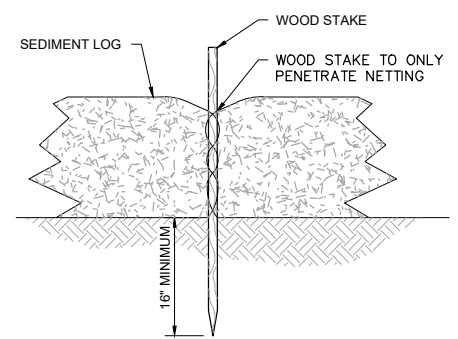
2 **DETAIL: EROSION CONTROL BLANKET - INSTALLATION**
NOT TO SCALE



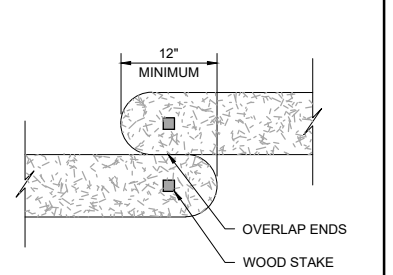
SIDE VIEW ON SLOPE



SIDE VIEW FLAT



FRONT VIEW

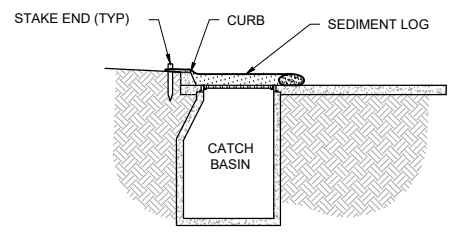


TOP VIEW

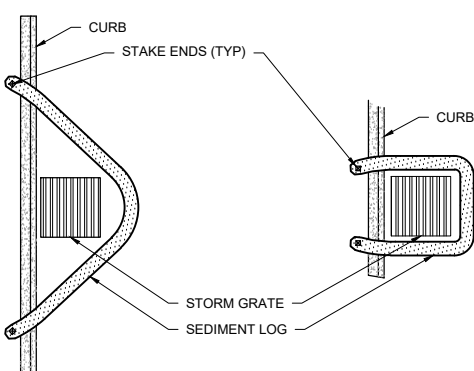
NOTES:

- 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

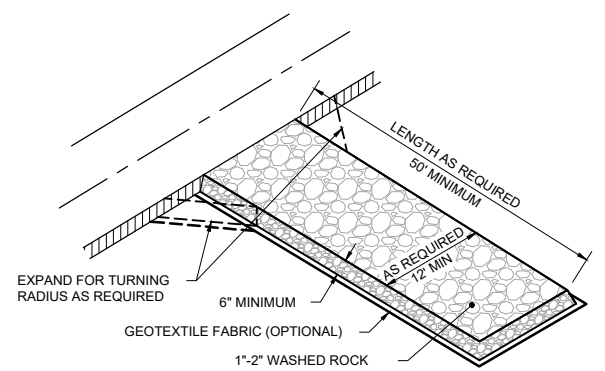


PLAN VIEW

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

ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

ISSUED FOR BID

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_14\MIDDLE RILEY STREAM\23270053_14_C-13_BEARPATH_EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 06/28/2021 12:21 PM

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	EPF	JCO	BJL	06/25/2021	ISSUED FOR BID

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

PRINTED NAME: BRAD LINDAMAN
SIGNATURE: *[Signature]*
DATE: 06/25/2021 LICENSE #: 43102

CLIENT	05/11/21						
BID							
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
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	06/25/2021
Drawn	EPF
Checked	JCO
Designed	BARR
Approved	BJL

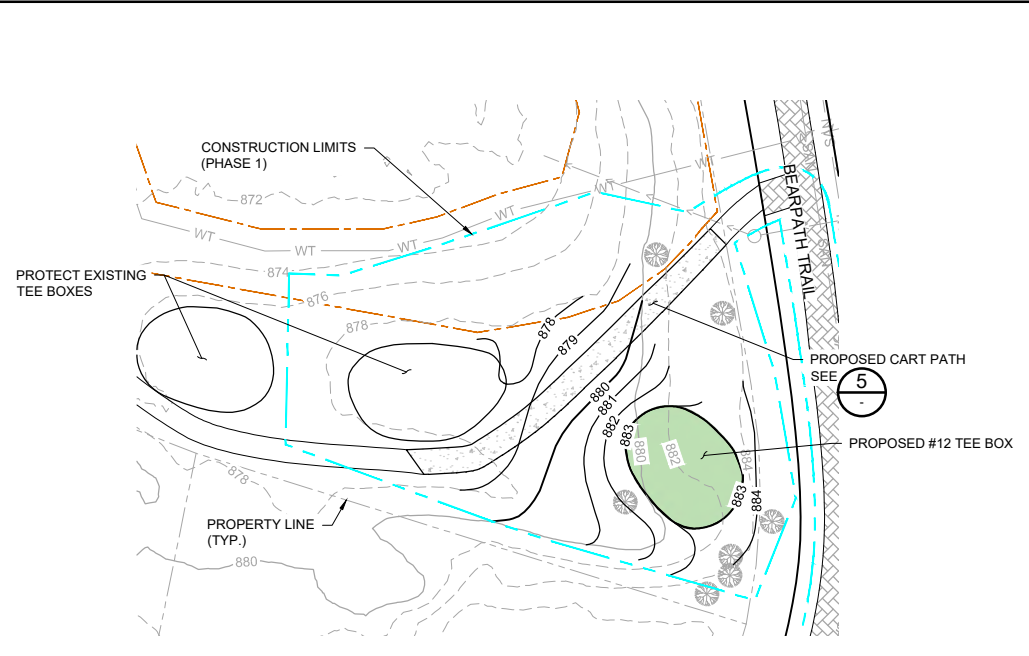
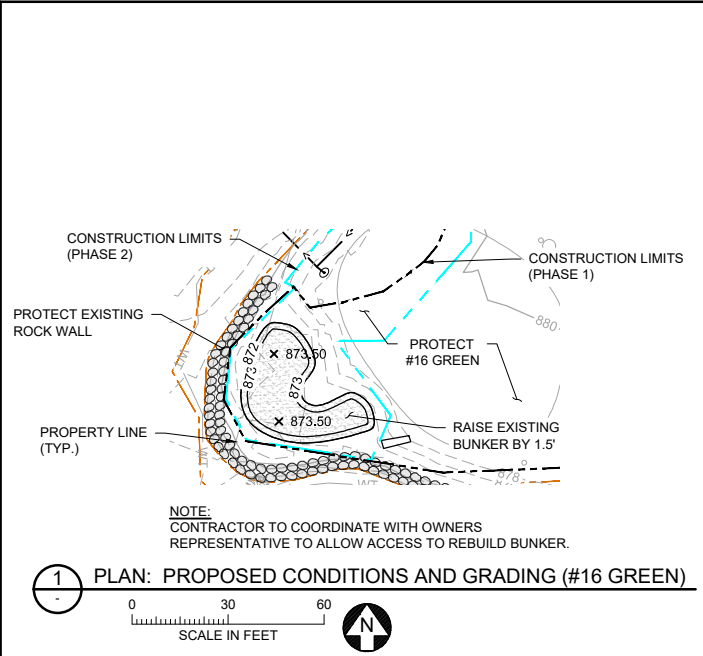
BEARPATH GOLF & COUNTRY CLUB
CHANHASSEN, MN

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

EROSION CONTROL DETAILS

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

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_14\MIDDLE RILEY STREAM\23270053_14_C-14_BEARPATH_GRADING PLANDWG.PLOT SCALE: 1:2 PLOT DATE: 6/28/2021 12:33 PM
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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

- 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

4 SECTION: BIO-SWALE

EXISTING GRADE (TYP.)

3'

0.5'

BIO-SWALE

6" TOPSOIL

SAND FILTRATION TRENCH

1'

NOTE: BIO-SWALE MUST BE MINIMUM 1.5' OFFSET FROM CART PATH.

SCALE IN FEET

5 SECTION: BITUMINOUS CART PATH

EXISTING GRADE (TYP.)

1.5'

8'

2% SLOPE (TYP.)

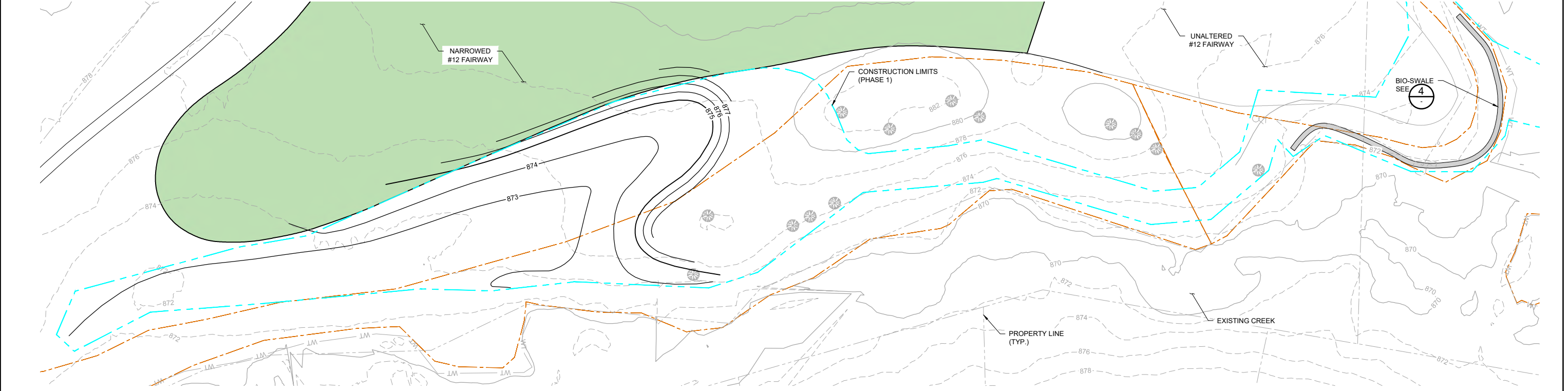
BLUEGRASS SOD SHOULDER (TYP.)

6" MnDOT CLASS 5 BASE

3" BITUMINOUS PAVEMENT

1.5'

SCALE IN FEET

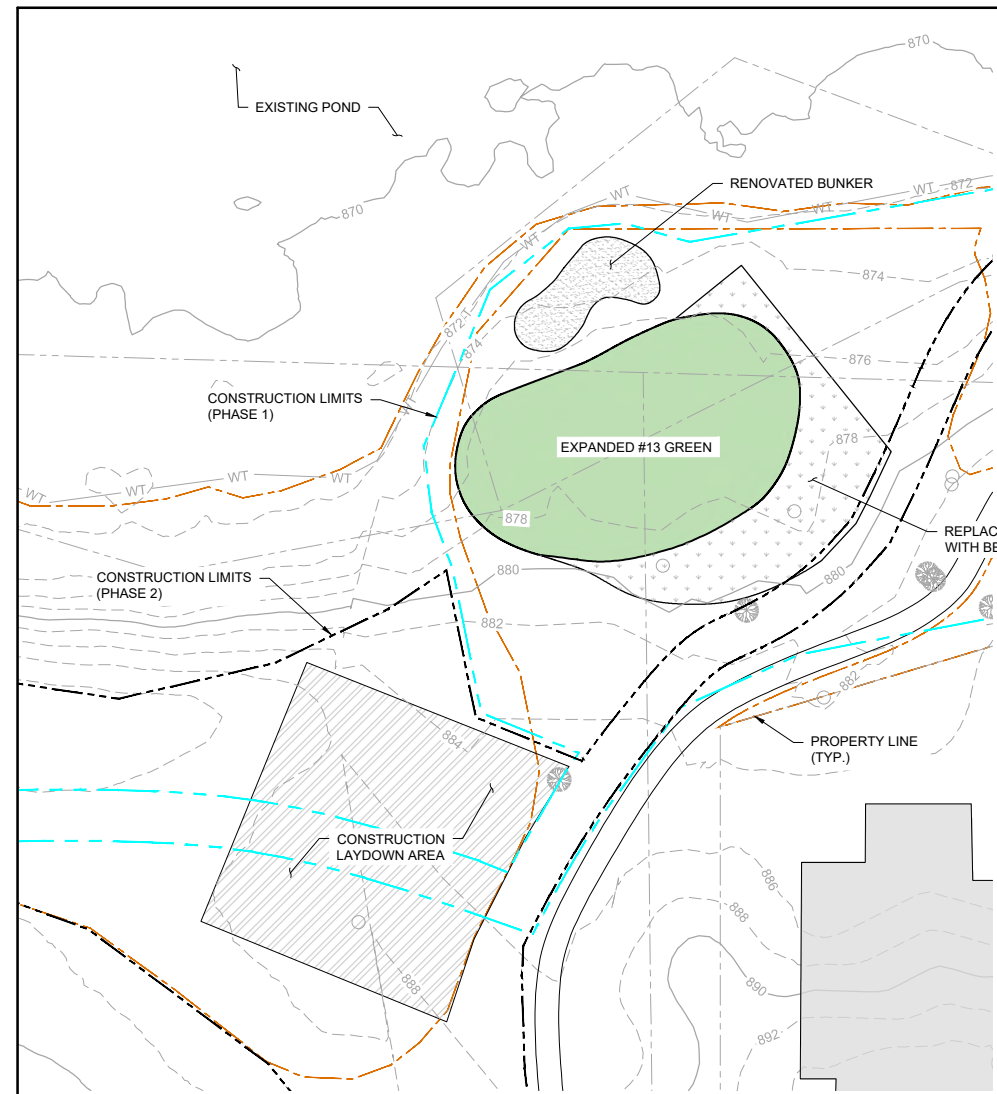


ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

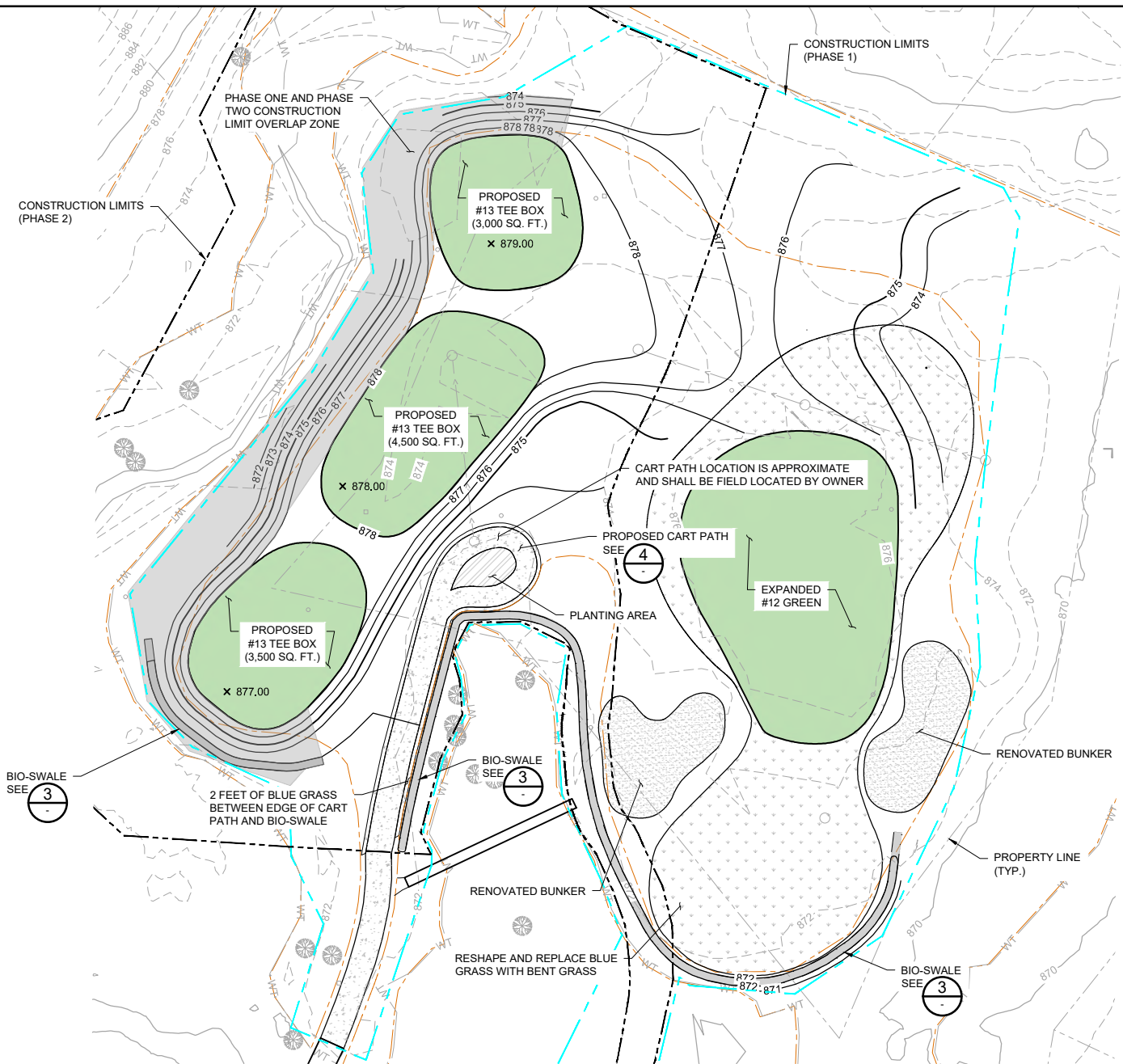
ISSUED FOR BID

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID	05/11/21	06/25/21			Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435	Scale AS SHOWN	BEARPATH GOLF COURSE RENOVATION (PHASE 1) EDEN PRAIRIE, MN	BARR PROJECT No. 23/27-0053.14	
PRINTED NAME BRAD LINDAMAN		CONSTRUCTION PERMITTING	03/12/21				Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com	Date 06/25/2021			CLIENT PROJECT No.
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	RELEASED TO/FOR	A B C 0 1 2 3	DATE RELEASED	BEARPATH GOLF & COUNTRY CLUB CHANHASSEN, MN	DWG. No. C-14	REV. No. 0
0	BHD	JCO	BJL	06/25/2021	ISSUED FOR BID						

CADD USER: Eric P. Fitzgerald FILE: M:\DESIGN\23270053_14\MIDDLE RILEY STRE\M23270053_14_C-14_BEARPATH_GRADING_PLANDWG_PLOT_SCALE: 1:2 PLOT DATE: 6/28/2021 12:37 PM



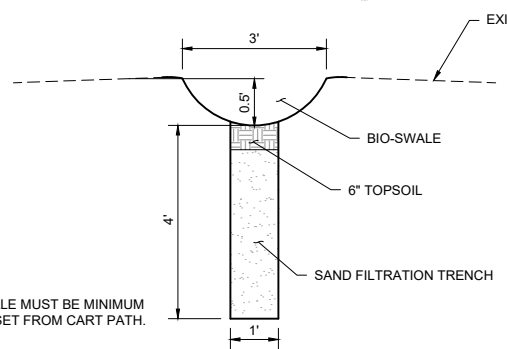
1 PLAN: PROPOSED CONDITIONS AND GRADING (#13 GREEN)
 SCALE IN FEET



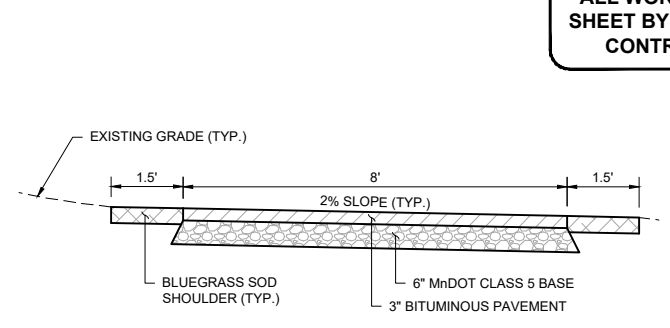
2 PLAN: PROPOSED CONDITIONS AND GRADING (#12 GREEN & #13 TEE BOX)
 SCALE IN FEET

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:**
- 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



3 SECTION: BIO-SWALE
 SCALE IN FEET



4 SECTION: BITUMINOUS CART PATH
 SCALE IN FEET

ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR

ISSUED FOR BID

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
0	BHD	JCO	BJL	06/25/2021	ISSUED FOR BID

CLIENT	BID	CONSTRUCTION	PERMITTING
BARR ENGINEERING CO.	05/11/21	06/25/21	03/12/21

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

Scale	Date	Drawn	Checked	Designed	Approved
AS SHOWN	06/25/2021	EPF	JCO	BARR	BJL

BEARPATH GOLF & COUNTRY CLUB
 CHANHASSEN, MN

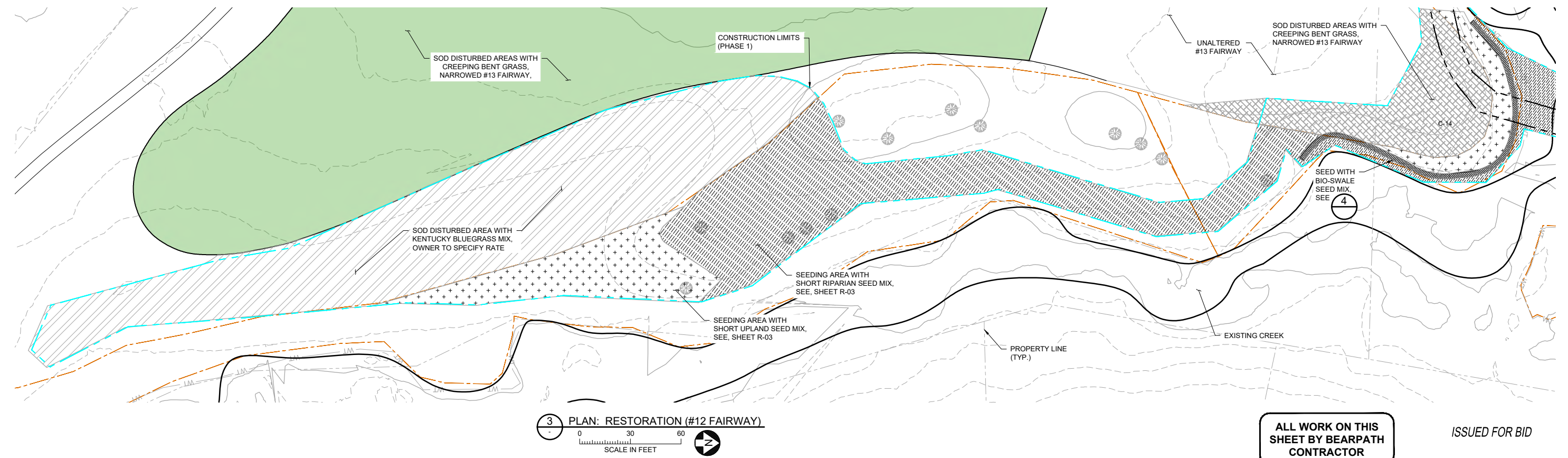
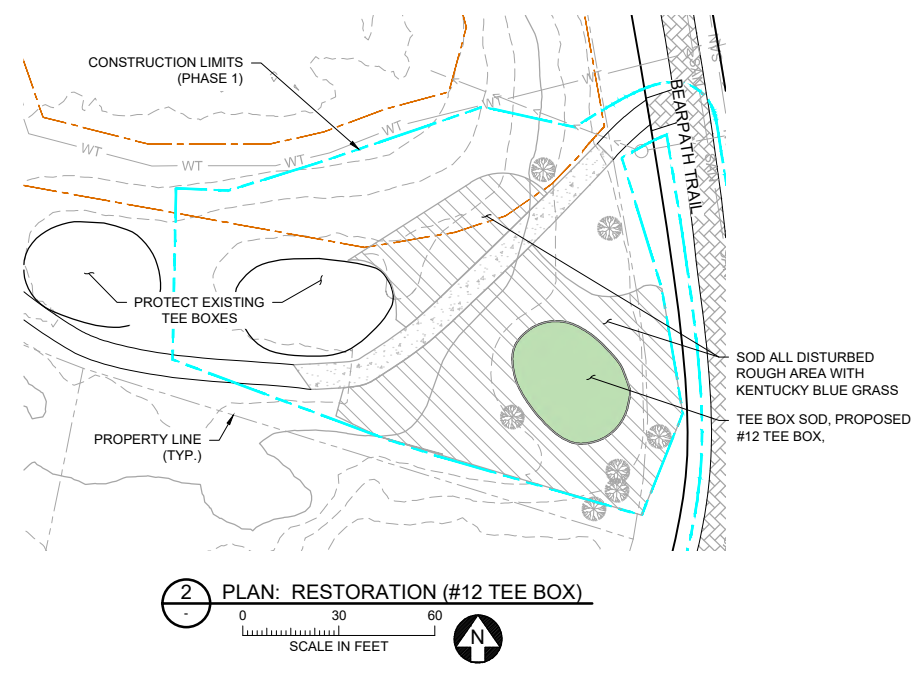
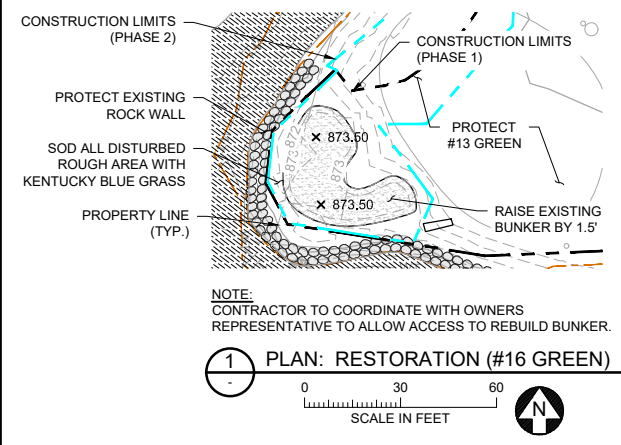
BEARPATH GOLF COURSE RENOVATION (PHASE 1)
 EDEN PRAIRIE, MN
PROPOSED CONDITIONS AND GRADING PLAN
 #13 GREEN & #12 GREEN/#13 TEE BOX

BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
23/27-0053.14		C-15	0

- NOTES:**
1. SEE SHEET R-01 FOR SITE RESTORATION DETAILS.
 2. SEE SHEET R-03 FOR PLANTING SCHEDULE.
 3. SEE SHEET C-14 FOR GENERAL CONSTRUCTION NOTES.
 4. ALL AREAS DISTURBED WITHIN THE BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.

SYMBOL AND PATTERN LEGEND

- EXISTING 10' CONTOUR
- - - EXISTING 2' CONTOUR
- - - EXISTING PROPERTY LINE
- - - CONSTRUCTION LIMITS (PHASE 1)
- - - CONSTRUCTION LIMITS (PHASE 2)
- - - PROPOSED BUFFER
- [Green Box] PROPOSED GOLF COURSE
- [Hatched Box] PROPOSED SAND BUNKER
- [Diagonal Hatched Box] SEEDING AREA WITH BIO-SWALE SEED MIX, SEE SHEET R-03
- [Cross-hatched Box] SEEDING AREA WITH SHORT RIPARIAN SEED MIX, SEE SHEET R-03
- [Cross-hatched Box] SEEDING AREA WITH SHORT UPLAND SEED MIX, SEE SHEET R-03
- [Diagonal Hatched Box] SOD AREA WITH KENTUCKY BLUEGRASS MIX, OWNER TO SPECIFY SOD MIX
- [Diagonal Hatched Box] SOD AREA WITH BENTGRASS MIX, OWNER TO SPECIFY SOD MIX



ALL WORK ON THIS SHEET BY BEARPATH CONTRACTOR ISSUED FOR BID

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: 6/28/2021 11:57 AM
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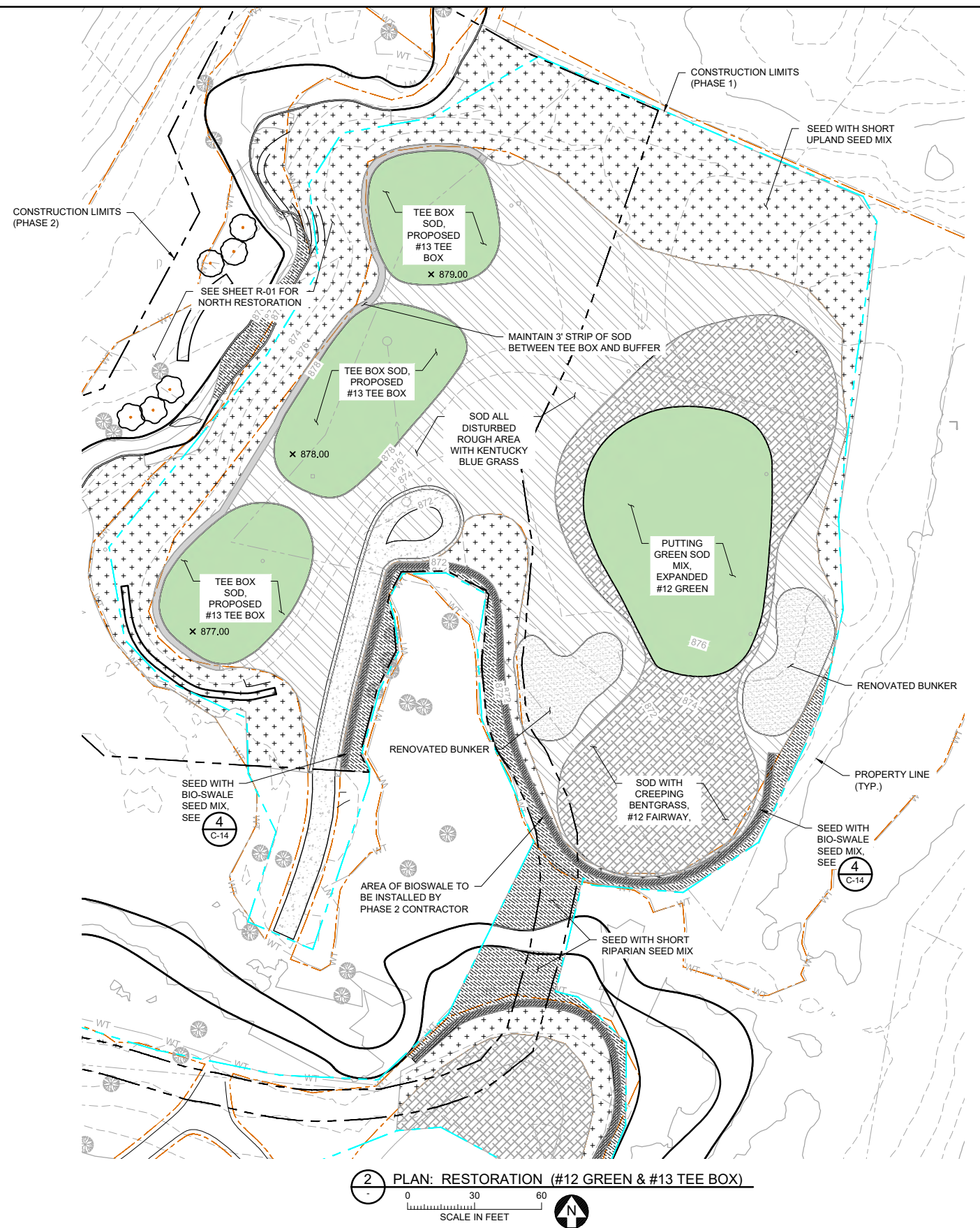
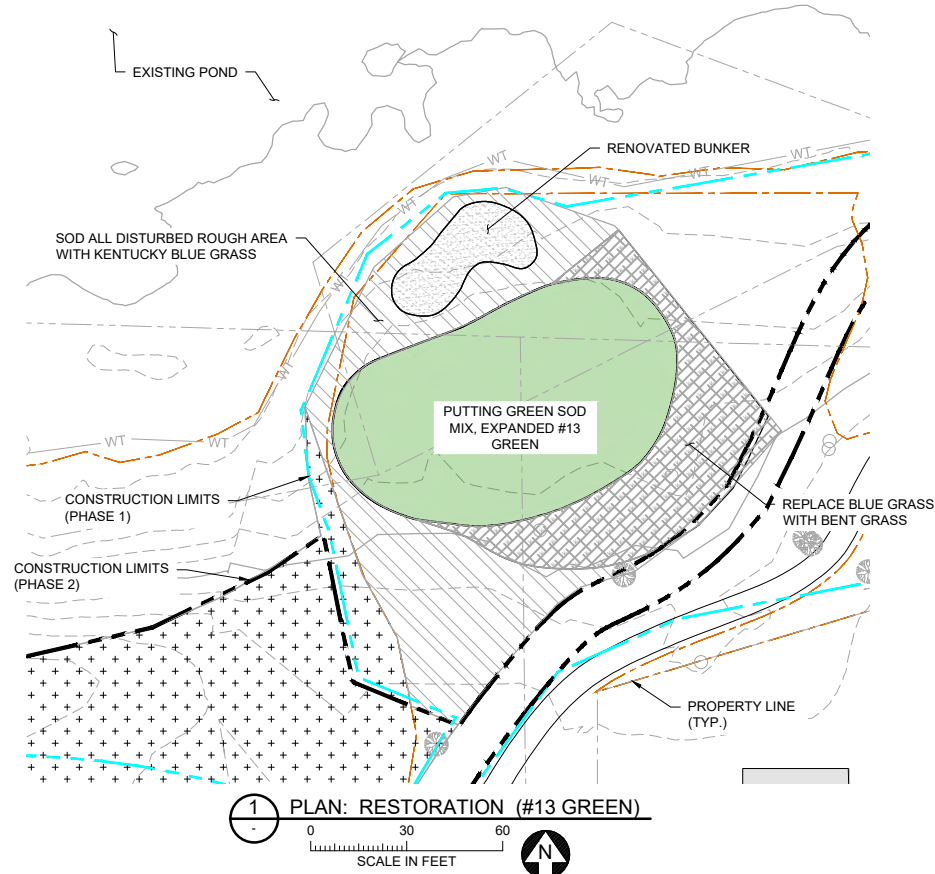
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: BRAD LINDAMAN SIGNATURE: <i>[Signature]</i> DATE: 06/25/2021 LICENSE #: 43102		CLIENT: 05/11/21 BID: 06/25/21 CONSTRUCTION PERMITTING: 03/12/21 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED:		Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 06/25/2021 Drawn: BHD Checked: JCO Designed: BARR Approved: BJL		BEARPATH GOLF & COUNTRY CLUB CHANHASSEN, MN		BEARPATH GOLF COURSE RENOVATION (PHASE 1) 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. 0	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION								
0	BHD	JCO	BJL	06/25/2021	ISSUED FOR BID								

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
- 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
- SOD AREA WITH KENTUCKY BLUEGRASS MIX, OWNER TO SPECIFY SOD MIX
- SOD AREA WITH BENTGRASS MIX, OWNER TO SPECIFY SOD MIX

NOTES:

1. SEE SHEET R-01 FOR SITE RESTORATION DETAILS.
2. SEE SHEET R-03 FOR PLANTING SCHEDULE.
3. SEE SHEET C-14 FOR GENERAL CONSTRUCTION NOTES.
4. ALL AREAS DISTURBED WITHIN THE BUFFER MUST BE RESTORED WITH NATIVE VEGETATION.
5. PHASE 2 CONTRACTOR RESPONSIBLE FOR BIOSWALE AND NATIVE VEGETATION RESTORATION WITHIN PHASE 2 CONSTRUCTION LIMITS AND AREAS THAT OVERLAP WITH PHASE 1 LIMITS. ALL OTHER RESTORATION WITHIN OVERLAP AREAS IS THE RESPONSIBILITY OF THE PHASE 1 CONTRACTOR.



ISSUED FOR BID

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: 6/28/2021 11:59 AM
 BARR - AutoCAD 2011 Support\Temp\Barr_2011_Template.dwg Plot at 1: 10/06/2010 14:09:50

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
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 PRINTED NAME: BRAD LINDAMAN
 SIGNATURE: *[Signature]*
 DATE: 06/25/2021 LICENSE # 43102

CLIENT	05/11/21						
BID				06/25/21			
CONSTRUCTION							
PERMITTING	03/12/21						
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

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

Scale	AS SHOWN
Date	06/25/2021
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.	0

**RESOLUTION NO. 21-XX
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
BOARD OF MANAGERS**

**AUTHORIZING SOLICITATION OF BIDS FOR
THE MIDDLE RILEY CREEK STABILIZATION PROJECT**

Manager _____ offered the following resolution and moved its adoption, seconded by
Manager _____:

WHEREAS, the Riley Purgatory Bluff Creek Watershed District’s (District) 2018 10-Year Watershed Management Plan (Plan) identified creek restoration and stabilization at Riley Creek as a Proposed Project in the Riley Creek Watershed (Plan, Section 8, Table 8-2); in March 2020 the District engineer developed a Feasibility Study for providing an ecologically diverse stream reach that significantly reduces streambank erosion and sediment and phosphorus loading to Riley Creek and downstream waterbodies; improves water quality; and improves natural stream habitat for aquatic organisms along 815 feet of Riley Creek Reach R3 (Project);

WHEREAS on April 1, 2020, the Board of Managers held a duly noticed public hearing to receive comments on the proposed Project, and the Board of Managers carefully considered these comments, and ordered the Project, and directed the development of a cooperative agreement with Bearpath; District staff and Bearpath representatives have developed the attached draft cooperative agreement to provide for coordination and implementation of the Project;

WHEREAS, at its April 1, 2020 meeting, the Board of Managers also directed the RPBCWD engineer to develop plans and specifications and all other documentation necessary to procure bids for the construction of the Project, and the engineer has prepared such plans, specifications and further documentation.

NOW THEREFORE BE IT RESOLVED that the Riley Purgatory Bluff Creek Watershed District Board of Managers authorizes the administrator, on completion of review of the bid documents by RPBCWD legal counsel, to issue solicitation of bids in accordance with applicable public-procurement law for the construction of the Project and to timely present bids received to the managers for selection of a contractor for the construction of the Project.

The question was on the adoption of the resolution and there were _____ yeas and _____ nays as follows:

Yea Nay Abstain Absent

**CRAFTON
KOCH
PEDERSEN
WARD
ZIEGLER**

Upon vote, the president declared the resolution _____.

Dated: _____, _____, 2021.

David Ziegler, Secretary

* * * * *

I, David Ziegler, secretary of the Riley Purgatory Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this _____ day of _____, 2021.

David Ziegler, Secretary

RESOLUTION NO. 21-XX

**Riley-Purgatory-Bluff Creek Watershed District
Board of Managers**

**Authorizing execution of a cooperative agreement with Chanhassen for
the construction of the Rice Marsh Lake Water Quality Project**

Manager _____ offered the following resolution and moved its adoption, seconded by
Manager _____:

WHEREAS Riley-Purgatory-Bluff Creek Watershed District’s 2018 10-Year Watershed Management Plan identifies potential projects in the Riley Creek subwatershed, including a watershed phosphorus-load control project, to improve Rice Marsh Lake, and in May 2020, the RPBCWD engineer completed a feasibility report that recommended the installation of a membrane-filtration facility in the Rice Marsh Lake subwatershed as the most feasible best management practice to reduce phosphorus loading and improve water quality in the lake (the Project);

WHEREAS at its January 6, 2021, meeting, the RPBCWD Board of Managers ordered the Project in accordance with Minnesota Statutes section 103B.251, and directed the administrator to develop a cooperative agreement with the City of Chanhassen for the construction of the Project in Rice Marsh Lake Park, which is owned by the city, and the administrator has developed, with the assistance of legal counsel, a draft of such agreement and coordinated the construction of the Project with planned improvements by the city to streets adjacent to Rice Marsh Lake Park; and

WHEREAS the Chanhassen City Council authorized execution of the attached draft cooperative agreement on its behalf at its June 28, 2021, meeting.

NOW THEREFORE BE IT RESOLVED that the Board of Managers authorizes the RPBCWD president, on advice of counsel, to execute the attached cooperative agreement with the City of Chanhassen, with such nonsubstantive changes as may be necessary to finalize the agreement, for the Rice Marsh Lake Water Quality Project.

The question was on the adoption of the resolution and there were _____ yeas and _____ nays as follows:

Yea Nay Abstain Absent

**CRAFTON
KOCH
PEDERSEN
WARD
ZIEGLER**

Upon vote, the president declared the resolution _____.

* * * * *

I, David Ziegler, secretary of the Riley-Purgatory-Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this ____ day of _____, 2021.

David Ziegler, Secretary

DRAFT

COOPERATIVE AGREEMENT
Between the Riley-Purgatory-Bluff Creek Watershed District
and the City of Chanhassen

Rice Marsh Lake Subwatershed 12a Water Quality Improvement

This cooperative agreement (“the Agreement”) is made by and between the Riley-Purgatory-Bluff Creek Watershed District, a watershed district created pursuant to Minnesota Statutes chapters 103B and 103D (RPBCWD), and the City of Chanhassen, a governmental subdivision and body corporate and politic of the State of Minnesota (Chanhassen), for the design, construction, operation and maintenance of the Rice Marsh Lake Subwatershed 12a Water Quality Improvement.

Recitals

WHEREAS the Minnesota Pollution Control Agency has designated Rice Marsh Lake as impaired for aquatic recreation because of excessive nutrients, and while RPBCWD has documented some intermittent improvement in water quality in the lake in recent years, the 10-year average total phosphorus concentration of 84 micrograms per liter does not meet the state shallow-lake water-quality standard of 60 micrograms per liter, and reduction in watershed phosphorus loading is needed to improve water quality, address the impairment, and contribute to meeting the reduction required by the MPCA’s Minnesota River Watershed Total Maximum Daily Load II target;

WHEREAS the capital improvements program in RPBCWD’s approved 2018 watershed management plan (the Plan) includes Marsh Lake Subwatershed 12a phosphorous-loading reduction project, reflecting 2016 RPBCWD research which determined that the 240-acre subwatershed contributes approximately 232 pounds of phosphorus to the lake per year – 32 percent of the total external load and the largest single source of phosphorus to the lake;

WHEREAS the RPBCWD engineer completed a feasibility study in May 2020 that identified a combination of soil health restoration and construction of a proprietary stormwater-treatment device in Rice Marsh Lake Park (the Project), owned by Chanhassen, as a cost-effective and efficacious approach, and Chanhassen staff concurred in and supported the approach developed by the RPBCWD engineer, noting the opportunity and need to coordinate implementation of the Project with Chanhassen plans for improvement of adjacent city roads;

WHEREAS Chanhassen wishes to contribute rights to access and use the portions of Rice Marsh Lake Park and adjacent city right-of-way as shown in Exhibit A, which is attached to and incorporated into this Agreement as a term hereof (the Project Area), for construction of the Project at no cost to RPBCWD;

WHEREAS Chanhassen intends to undertake improvements to right-of-way adjacent to and including a portion of the Project Area, including replacement of a manhole in Dakota Lane

that is necessary to facilitate the Project, and wishes to coordinate the timing and conduct of such work with RPBCWD's timing and conduct of the Project;

WHEREAS after a duly noticed public hearing held by RPBCWD on December 9, 2020, the RPBCWD Board of Managers ordered the Project on January 6, 2021;

WHEREAS Chanhassen operates its stormwater-management system under the state Municipal Separate Storm Sewer System general permit, and construction and maintenance of the Project will accrue toward Chanhassen's fulfillment of its obligations to contribute to phosphorus load reductions assigned by the state;

WHEREAS Chanhassen and RPBCWD acknowledge that their ability to complete the Project depends on each party satisfactorily and promptly performing individual obligations and working cooperatively with the other party; and

WHEREAS Minnesota Statutes section 471.59 authorizes Chanhassen and RPBCWD to enter into this Agreement.

AGREEMENT

NOW, THEREFORE Chanhassen and RPBCWD enter into this Agreement to document their understanding of the scope of the Project, affirm their commitments as to the responsibilities of and tasks to be undertaken by each party, establish procedures for performing these tasks and carrying out these responsibilities, convey rights to use Rice Marsh Lake Park for the Project and facilitate communication and cooperation to successfully complete, then operate and maintain the Project.

1 Project Design, Construction and Maintenance

1.1 The Project is further defined and specified for purposes of this Agreement as consisting of the plans and design attached to and incorporated into this Agreement as Exhibit B, providing for the following:

- a. Erosion and sediment-control measures – temporary and permanent;
- b. procurement and installation of a proprietary mechanical stormwater-treatment best-management practice (the BMP) in Rice Marsh Lake Park at the location shown in Exhibit A;
- c. modification of Dakota Lane adjacent to Rice Marsh Lake Park to install a curb cut to promote stormwater flow to amended soils and the BMP;
- d. restoration of soils in the disturbed portion of the Project Area to ensure capacity and suitability for infiltration;
- e. enhancement of vegetation in Rice Marsh Lake Park for purposes of improving water quality and soil health, including three years of vegetative establishment and a one-year warranty on vegetation; and
- f. associated and supporting elements.

The plan sheets, drawings and technical specifications will serve as the primary technical elements of the contract documents prepared for purposes of contracting for implementation of the Project. The bidding process and documents for the Project will also include replacement by RPBCWD's contractor of a manhole in Rice Marsh Lake Park (the Manhole), as shown in Exhibit B, on Chanhassen's behalf.

1.2 By its signature hereunder, Chanhassen approves the design and plans provided in Exhibit B, except that in the event the contractor selected by RPBCWD includes an equivalent substitute to the BMP specified in the design and plans for the Project, RPBCWD will provide notice to Chanhassen of such substitution and any further related documentation that may be reasonably requested by Chanhassen, and Chanhassen will have 10 days to review, comment on and approve the substitution, such rights not to be unreasonably exercised. In the event Chanhassen does not approve the substitution, this Agreement will be rescinded and annulled, and all obligations herein, performed or not, will be voided.

1.3 CONTRACTING. RPBCWD will contract for the implementation of the Project and replacement of the Manhole in accordance with applicable public-procurement law.

1.4 COORDINATION. RPBCWD and Chanhassen will coordinate construction of the Project with Chanhassen's implementation of improvements to the right-of-way in and adjacent to the Project Area. In addition, Chanhassen will provide for connection of the Project to the city storm sewer in the plans, designs and specifications for the right-of-way improvements and ensure that the right-of-way improvements are constructed in a manner that provides for and facilitates such connection.

1.4 CONSTRUCTION. The Project will be implemented by a contractor under contract to RPBCWD, with construction oversight and management by the RPBCWD engineer under contract to RPBCWD. Construction will include advance determination by RPBCWD of the need for and procurement of permits and other regulatory approvals necessary for the Project.

1.5 MAINTENANCE AND ASSESSMENT PLAN. In collaboration with Chanhassen, the RPBCWD engineer will develop, under contract with RPBCWD, a plan for the post-construction maintenance of the Project (the Maintenance Plan). The Maintenance Plan will identify routine maintenance and repair of the Project, and will include the BMP manufacturer's and/or installer's maintenance guidance and specifications as the RPBCWD determines warranted and prudent. The Maintenance Plan will delineate and distinguish routine operation, maintenance and repair of the Project from major maintenance and repair. The Maintenance Plan also will include protocols and specifications for the collaborative assessment of the effectiveness of the Project. RPBCWD will convey the draft Maintenance Plan to Chanhassen for its approval. If Chanhassen does not approve the Maintenance Plan within 45 days of receipt of the draft, all maintenance and repair necessary to assure that the Project will continue to effectively function as designed will become the sole responsibility of Chanhassen.

1.6 PROJECT MAINTENANCE. After substantial completion of the Project, Chanhassen will perform routine maintenance and the parties will collaborate on assessment of the effectiveness of the Project, both for no less than 20 years from the date the Project is substantially complete for its intended purposes or earlier as may be agreed to by the parties. Chanhassen's maintenance

work will inform the development of the Maintenance Plan. After approval of the Maintenance Plan as provided in paragraph 1.5 and otherwise herein, at the request of Chanhassen, RPBCWD will duly consider levying and dedicating funds to major maintenance or repair of the Project.

2 Chanhassen's Specific Rights and Duties, and Grant of Land-Use Rights

2.1 By execution of this Agreement, Chanhassen grants to RPBCWD, its contractors, agents and assigns a license to access and use that portion of the properties described by property identification numbers 25-1820740 and 25-3451130 in the Carver County property records and that portion of Dakota Lane shown and labeled as the Project Area in Exhibit A for purposes of RPBCWD's exercise of its rights and fulfillment of its obligations under this Agreement. Chanhassen's grant of property-use rights hereunder is nonexclusive, except that RPBCWD, on 48 hours' notice to Chanhassen, may temporarily restrict or preclude public access to the Project Area to ensure safety while construction activities are under way. Access to the Project Area will be restricted as briefly and infrequently as reasonably possible, and will be imposed only as necessary for Project access, construction and safety purposes. RPBCWD will respond within one business day to any communication from Chanhassen regarding closure of the Project Area.

2.2 The license granted by Chanhassen in paragraph 2.1 include the right of RPBCWD, its contractors, agents and assigns to enter the Project Area for construction of the Project. The right of RPBCWD to enter the Project Area to perform monitoring, maintenance and repair of the Project and otherwise to fulfill its obligations and exercise its rights under this Agreement will continue for 20 years after completion of the Project. The license also includes the right of reasonable ingress and egress and to pass over and through the Project Area on foot and using motorized equipment for purposes of completing and assessing the effectiveness the Project, so long as such ingress and egress shall not unreasonably interfere with the use and operations of Rice Marsh Lake Park. After completion of construction of the Project, RPBCWD will restore any trail within the Project Area damaged or degraded by use for the Project and ensure that the trail supports future park uses and Project maintenance needs. RPBCWD also will restore any portions of Rice Marsh Lake Park outside the Project Area affected by the Project to conditions materially similar to conditions existing prior to commencement of the Project construction or otherwise as agree to by the parties.

2.3 On completion of construction of the Project, Chanhassen will retain ownership of Rice Marsh Lake Park, and ownership of all constructed and installed elements of the Project will vest in Chanhassen.

2.4 Chanhassen will forbear from any activity, other than emergency activities, that interferes with the RPBCWD's ability to exercise its rights or meet its obligations under this Agreement. Chanhassen will facilitate RPBCWD's reasonable exercise of its rights under this Agreement with regard to access to and use of the Project Area. Chanhassen will not take any action on, in or adjacent to the Project Area that could reasonably be expected to diminish the effectiveness or function of the Project for the purposes intended, and after notice of completion of construction of the Project from RPBCWD, Chanhassen will continue to operate and maintain Dakota Lane and Rice Marsh Lake Park in a manner that avoids inhibiting the operation and effectiveness of the Project. If Chanhassen transfers ownership of a fee interest in Rice Marsh Lake Park or any

portion of Rice Marsh Lake Park improved by the Project during the term of this Agreement, Chanhassen will require as a condition of sale and enforce a requirement that the transferee assume in writing Chanhassen's obligations and responsibility under this Agreement.

3 RPBCWD's Specific Rights and Duties

3.1 As between the parties, RPBCWD will obtain all necessary permits, licenses and approvals for the Project on behalf of itself and Chanhassen, including but not limited to approvals for the Project from Metropolitan Council, holder of an easement over a portion of the Project Area, and will ensure that the Project is completed in accordance with applicable law and regulatory requirements. Chanhassen, as owner of Rice Marsh Lake Park, will cooperate with RPBCWD's and its contractor's efforts to connect the Project to Chanhassen's existing storm sewer system and otherwise obtain permits and approvals needed for the Project. Chanhassen, in its regulatory capacity, will facilitate the proper and efficient processing of any permits or approvals needed for the Project.

3.2 RPBCWD has contracted with the RPBCWD engineer for the development of designs, plans and specifications for the Project, along with the technical specifications and all other necessary bidding and construction documentation, and construction oversight, as well as the development of the Maintenance Plan. Notwithstanding, RPBCWD makes no warranty to Chanhassen regarding the RPBCWD engineer's or another third party's performance in designing, specifying or overseeing construction of the Project or developing the Maintenance Plan. In the event of an apparent failure in the RPBCWD engineer's performance in designing, specifying or overseeing construction of the Project or developing the Maintenance Plan, RPBCWD will consult with Chanhassen in determining measures to be undertaken to address such failure in performance or to obtain appropriate corrections for such failure on RPBCWD and Chanhassen's behalf and at RBPCWD's cost, including possible legal action.

3.2 RPBCWD will implement the Project as follows:

- a. The RPBCWD engineer will incorporate the technical specifications and drawings that have been supplied by Chanhassen for the Manhole into the bidding and construction documents for the Project.
- b. RPBCWD will require that the contractor for the Project name Chanhassen as an additional insured with primary and noncontributory coverage for general liability and provide a certificate showing same prior to construction. RPBCWD will require that the contractor extend all product warranties and workmanship guaranties to Chanhassen.
- c. RPBCWD or the RPBCWD engineer on RPBCWD's behalf will oversee the construction of the Project. With consultation of and coordination with Chanhassen, RPBCWD may adjust the designs, plans and specifications for the Project during construction, as long as the revisions do not require RPBCWD to exceed the scope of the rights granted under this Agreement.
- d. On completion of construction of the Project, RPBCWD will restore the Project Area to a safe and functional condition, consistent with its ongoing use for public

recreational purposes, except to the extent Rice Marsh Lake Park is improved by the Project. RPBCWD will provide as-built construction drawings of the Project to Chanhassen after certification of the Project as substantially complete for the intended purposes, along with notice of the date of substantial completion.

- e. RPBCWD will contract with the RPBCWD engineer for the development of the Maintenance Plan. The contract for the Maintenance Plan will require the RPBCWD engineer to provide the Maintenance Plan for approval by Chanhassen within one year of certification by a qualified engineer of completion of the Project, such approval not to be unreasonably withheld.

3.3 Until completion of construction of the Project, if RPBCWD, in its judgment, should decide that the Project is infeasible, RPBCWD, at its option, may declare the Agreement rescinded and annulled. If RPBCWD so declares, all obligations herein, performed or not, will be voided, except that RPBCWD will return the Project Area materially to its prior condition or to a condition agreed to by Chanhassen and RPBCWD.

4 Cost and Credit Allocation

4.1 Costs. Except as specified in paragraph 4.2, 4.3 and 4.4, each party will bear the costs of fulfilling its responsibilities and performing its obligations under this Agreement, as well as its internal, administrative and incidental costs. Neither party will be responsible for or will reimburse costs incurred by the other.

4.2 Manhole reimbursement. Chanhassen, on receipt from RPBCWD of documentation of payment and other documentation as may be reasonably requested, will reimburse RPBCWD within 35 days of costs of the Manhole in accordance with subsection 1.1 herein.

4.3 Maintenance costs. Chanhassen will be responsible for costs of routine maintenance of the Project in accordance with the Maintenance Plan. RPBCWD will duly consider levying and dedicating maintenance funds for major maintenance of the Project.

4.4 Compliance credit. Stormwater-management and nutrient-reduction capacity created by the Project, if any, may be utilized exclusively by Chanhassen in accounting for compliance with its Municipal Separate Storm Sewer System permit or other regulatory obligations. Chanhassen will determine, at its cost except that RPBCWD will provide all data and analysis on the effectiveness and operation of the Project to Chanhassen at no cost, available credit from the Project. RPBCWD makes no representation or warranty as to credit that will be available from or results that will be achieved by the Project.

5 General Terms

5.1 INDEPENDENT RELATIONSHIP; LIABILITY.

- a. Chanhassen and RPBCWD enter this Agreement solely for the purposes of improving water quality in Rice Marsh Lake. This Agreement does not create a joint powers board or organization within the meaning of Minnesota Statutes section 471.59, and neither party agrees to be responsible for the acts or omissions of the other or the

results thereof pursuant to subdivision 1(a) of the statute. Only contractual remedies are available for the failure of a party to fulfill the terms of this Agreement.

- b. Minnesota Statutes chapter 466 and other applicable law govern liability of each of the parties. The limits of liability for the parties may not be added together to determine the maximum amount of liability for either party. Notwithstanding the foregoing or any other provision of this Agreement, Chanhassen's and RPBCWD's obligations under this paragraph will survive the termination of the Agreement.
- c. This Agreement creates no right in and waives no immunity, defense or liability limitation with respect to any third party.
- d. RPBCWD will not be deemed to have acquired by entry into or performance under this Agreement, any form of interest or ownership in the Project Area. RPBCWD will not by entry into or performance under this Agreement be deemed to have exercised any form of control over the use, operation or management of any portion of the Project Area or adjacent property so as to render RPBCWD a potentially responsible party for any contamination under state and/or federal law.

5.2 PUBLICITY AND ENDORSEMENT. Any publicity regarding the Project must identify Chanhassen and RPBCWD as the sponsoring entities. For purposes of this provision, publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for Chanhassen or RPBCWD individually or jointly with others, or any subcontractors, with respect to the Project. RPBCWD and Chanhassen may collaborate on the development of educational and informational signage pertinent to the Project, and each party, at its cost, may develop, produce and, after approval of the other party, distribute educational, outreach and publicity materials related to the Project.

5.3 DATA MANAGEMENT. All designs, written materials, technical data, research or any other work-in-progress will be shared between the parties to this Agreement on request, except as prohibited by law. As soon as is practicable, the party preparing plans, specifications, contractual documents, materials for public communication or education will provide them to the other party for recordkeeping and other necessary purposes.

5.4 DATA PRACTICES. All data created, collected, received, maintained or disseminated for any purpose in the course of this Agreement is governed by the Minnesota Government Data Practices Act, Minnesota Statutes chapter 13, and any state rules adopted to implement the act, as well as federal regulations on data privacy

5.5 ENTIRE AGREEMENT. This Agreement, as it may be amended in writing, contains the complete and entire agreement between the parties relating to the subject matter hereof, and supersedes all prior negotiations, agreements, representations and understandings, if any, between the parties respecting such matters. The recitals stated at the outset are incorporated into and made a part of the Agreement.

5.6 WAIVERS. The waiver by Chanhassen or RPBCWD of any breach or failure to comply with any provision of this Agreement by the other party will not be construed as nor will it constitute

a continuing waiver of such provision or a waiver of any other breach of or failure to comply with any other provision of this Agreement.

5.7 NOTICES. Any notice, demand or communication under this Agreement by either party to the other will be deemed to be sufficiently given or delivered if it is dispatched by registered or certified mail, postage prepaid to:

Chanhassen
Public Works Director
7700 Market Blvd
Chanhassen, MN 55317
952-227-1169

RPBCWD
Administrator
18681 Lake Drive East
Chanhassen MN 55317
952-607-6512

5.8 TERM; TERMINATION. This Agreement is effective on execution by both parties and will terminate three years from the date of execution of this Agreement or on the written agreement of both parties. Any responsibility or obligation that has come into being before expiration, specifically including maintenance obligations under paragraph 1.6 will survive expiration.

[signature page follows]

DRAFT

IN WITNESS WHEREOF, the parties have executed this Agreement.

City of Chanhassen,

a statutory city and political subdivision of the State of Minnesota

By _____ Date: _____
Elise Ryan
Mayor

By _____ Date: _____
Laurie Hokannen
City Manager

Riley-Purgatory-Bluff Creek Watershed District,

a watershed district and political subdivision of the State of Minnesota

By _____ Date: _____
Dick Ward
President

Approved as to form and execution

By _____
RPBCWD counsel

Exhibit A
Scaled Site Plan – Project Area

DRAFT

Exhibit B
Project Design and Plans

DRAFT

Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
From: Heather Hlavaty, P.E. and Scott Sobiech, P.E., Barr Engineering Co.
Subject: Rice Marsh Lake Water Quality Improvement Project – Request Board Authorization to Solicit Bids for Construction
Date: July 1, 2021
Project: 23/27-0053.14 028
c: Terry Jeffery – RPBCWD Interim Administrator

Requested Board Action

It is requested that the RPBCWD Board of Managers authorize Barr Engineering Co. to solicit bids from contractors to construct the Rice Marsh Lake Water Quality Improvement Project as designed and shown on the construction documents.

The Rice Marsh Lake water quality improvement project is located within the Riley Creek watershed, on the north side of Rice Marsh Lake, just north of the existing pond RM_12 and south of Dakota Lane in Chanhassen, Minnesota. The site receives drainage from a 232-acre watershed consisting of primarily low- and medium-density residential, commercial, and open-space/park areas with some undeveloped, institutional, and high-density residential areas. Discharge enters the 0.64-acre site through an existing storm sewer flowing directly into the constructed pond before reaching Rice Marsh Lake. Water quality data collected by the RPBCWD from 2016 through 2018 reveals high levels of TSS, TP, and TDP discharging to the existing pond with the riparian wetland to Rice Marsh Lake through the existing storm sewer.

This project was identified in a May 2020 feasibility study with the goal of the project to reduce nutrient loading to Rice Marsh Lake. The City is also planning a street reconstruction project along Dakota Lane during the summer of 2021. The proposed water quality project will be constructed in tandem with the City's work. The proposed project includes reconstruction of an existing catch basin manhole by the City, construction of a low-flow diversion weir and bypass storm sewer, installation of a pre-manufactured stormwater filtration treatment system, grading of a filtration rain garden, soil amendment, and restoration with diverse native and pollinator vegetation. The proposed project does not change drainage patterns in the watershed and does not change the total impervious area within the site. The work does not include excavation within a wetland. The project will not increase the 2-, 10-, and 100-year flood elevation or peak discharge in the downstream constructed pond or Rice Marsh Lake.

The RPBCWD Board of Managers ordered the Rice Marsh Lake water quality improvement project at the January 2021 regular meeting for the design and preparation of construction documents for the recommended project from the feasibility study.

Construction documents including bidding documents, construction drawings, and technical specifications, have been prepared for the Rice Marsh Lake Water Quality Improvement Project. The contract documents (i.e., specifications) are in the process of being reviewed by RPBCWD legal counsel

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
From: Heather Hlavaty, P.E. and Scott Sobiech, P.E., Barr Engineering Co.
Subject: Rice Marsh Lake Water Quality Improvement Project – Request Board Authorization to Solicit Bids for Construction
Date: July 1, 2021
Page: 2

and will be finalized prior to being published for bidding. The design of the proposed system includes, but is not limited to: removal and replacement of existing storm catch basin manholes; clearing and grubbing; installation of low-flow weir and bypass storm sewer, manholes and pre-fabricated stormwater filtration treatment system, and inline slide gate; construction of filtration rain garden; bituminous trail replacement; erosion and sediment control; soil rehabilitation, site restoration with native and pollinator plantings; and maintaining/establishing buffer for Rice Marsh Lake. District and City staff participated in design reviews at 60% and 90% design.

The following table summarizes necessary permits and the approval status:

Table 1 Permitting status

Permitting Agency	Status
City of Chanhassen	City Earthwork/Grading permit will be submitted after District approval Conditional Use permit for vegetation abatement – RPBCWD staff coordinating
RPBCWD	Submitted to RPBCWD and under District Review
Metropolitan Council	Work within MCES easement

The Engineer’s opinion of probable cost (OPC) presented in the May 2020 feasibility study and the OPC based on the 100% design are summarized in Table 2. The 100% OPC was developed using recent bid prices from similar projects that have been bid in 2019 and 2020. The overall opinion of probable construction costs for the 100% design configuration are within the feasibility study OPC range. The annual phosphorus reduction to Rice Marsh Lake decreased from 52 lbs/yr to 40 lbs/yr during final design. The decrease in estimated total phosphorus load removal to Rice Marsh Lake is because of a slight reduction in the treatment capacity of the proprietary filter unit to align with a standard manufacturer unit to avoid the additional cost of a specialty design. In addition, the flow diversion weir was relocated to the new manhole being installed in Dakota Lane. The final design results in a higher cost per pound of TP removed when compared to feasibility study as shown in Table 2.

Some of the changes in the OPCs as the project advanced from feasibility to detailed construction documents are attributed to the following items:

- Volatility in construction bids in 2021
- Increase pricing for propriety filter units
- A manhole replacement in the park per the cooperative agreement with the City
- Additional soil rehabilitation area
- Rain garden addition to improve runoff dispersion to rehabilitated soil areas

The OPC provided is made on the basis of Barr Engineering’s experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. Because we have no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor’s methods of determining prices, or over competitive bidding or market conditions, Barr

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
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Engineering cannot and does not guarantee that proposals, bids, or actual costs will not vary from the OPC presented.

Table 2. Engineer’s Opinion of Probable Construction Cost

Item	Feasibility Study Design (May 2020) ¹	Feasibility Level Annual Cost for TP Removal (\$/lb TP/yr) ²	Final Design Configuration (July 2021) ³	Final Design Annual Cost for TP Removal (\$/lb TP/yr) ²
ESTIMATED CONSTRUCTION COST	\$446,000	\$270	\$525,000	\$440
ESTIMATED ACCURACY RANGE	\$356,800	\$220	\$498,750	\$420
	\$669,000	\$380	\$551,250	\$460

¹The opinion of probable construction costs is detailed in Appendix A of the feasibility report and includes the cost to build the BMP, conduct soil rehabilitation, and a 25 percent contingency. The estimated accuracy range for feasibility study was -20% and +50% of the estimated total project cost.

²Reflect the cost to build the BMP, estimated annual total phosphorus reduction, and an anticipated 30 year BMP life span.

³Estimated accuracy range for 100% design configuration was -5% and +5% of the estimated total project cost.

It is requested that the RPBCWD Board of Managers authorize Barr Engineering Co. to solicit bids from contractors to construct the Rice Marsh Lake Water Quality Improvement Project as designed and shown on the construction documents. If the Board of Managers authorizes solicitation of bids to construct the Project, the following tasks would be completed.

The anticipated schedule is outlined below.

- July 7, 2021 – Board of Managers authorizes Barr Engineering Co. to solicit bids
- July 8, 2021 – Submit advertisement to local papers and begin virtual bidding in Quest CDN
- July 15, 2021 – Advertise in in local papers
- July 29, 2021 – Virtual bid opening
- August 4, 2021 – Recommended bidder and Board approval of bid
- About September 1, 2021 – Notice to Proceed
- Tentative construction window: September 1, 2021 – June 1, 2021 –start of construction and substantial completion are dependent on procurement of the proprietary filter units.
- Annual vegetation establishment activities result in project close-out and final payment by November 15, 2024 (will be impacted by the substantial completion date)

Attachments

- Table of contents of the specifications
- Advertisement for Bid
- The complete drawing package for the Rice Marsh Lake Water Quality Improvement Project.

Contract Documents

***Rice Marsh Lake Water Quality Treatment
Project
Chanhassen, Minnesota***

***Prepared for:
Riley Purgatory Bluff Creek Watershed District***

July 8, 2021



Contract Documents

Rice Marsh Lake Water Quality Treatment Project

Chanhassen, Minnesota

Prepared for:

Riley Purgatory Bluff Creek Watershed District

July 8, 2021



TECHNICAL SPECIFICATIONS

**RICE MARSH LAKE WATER QUALITY TREATMENT PROJECT
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA**

These specifications were prepared by Barr Engineering Co.



Barr Engineering Co.
4300 MarketPointe Drive
Suite 200
Minneapolis, MN 55435

ENGINEER CERTIFICATION Division 00, Division 01, Division 31, Section 32 10 10, and Division 33 of these Technical Specifications were 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.

A handwritten signature in black ink that reads "Heather N. Hlavaty".

Heather N. Hlavaty, P. E.

Date: July 8, 2021

Registration No.: 58700

ENGINEER CERTIFICATION

I hereby certify that Section 32 93 10 and Section 32 93 43 these Technical Specifications were prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

A handwritten signature in black ink that reads "Marcy Bean".

Marcy Bean, L.A.

Date: July 8, 2021

Registration No.: 48430



CONTRACT DOCUMENTS

RICE MARSH LAKE WATER QUALITY TREATMENT PROJECT
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA

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Appendices



Advertisement for Bids

Instructions to Bidders

Bid Form

List of Proposed Subcontractors

List of Proposed Suppliers

Noncollusion Affidavit

Bid Bond

Affidavit of Responsible Contractor Compliance

Sworn Statement of Responsible Bidder

Notice of Award

Form of Agreement

Notice to Proceed

Construction Performance Bond Form

Construction Payment Bond Form

Contractor's Application for Payment

Certificate of Substantial Completion

General Conditions

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General Requirements

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Earthwork

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Division 33

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DIVISION 33 – UTILITES

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Drawings

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RICE MARSH LAKE WATER QUALITY TREATMENT PROJECT

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

CHANHASSEN, MINNESOTA

ADVERTISEMENT FOR BIDS

Riley Purgatory Bluff Creek Watershed District (Owner) will be accepting online electronic bids only. Bids for Rice Marsh Lake Water Quality Treatment Project in Chanhassen, Minnesota will be received by the Owner via QuestCDN VirtuBid (vBid) until 10:30 a.m., CDT, Thursday, July 29, 2021, then publicly opened and read aloud via WebEx online video-conferencing system. Interested parties can join the WebEx bid opening using the following:

Link: <https://barr.webex.com/barr/j.php?MTID=ma2a43d5de440e0060640377d506d0c6e>

If prompted for a meeting password: 072921

For audio, call in via phone: 1-877-310-7479 USA/Canada Toll Free

If prompted for meeting number or access code: 177 108 8581

The **Rice Marsh Lake Water Quality Treatment Project** consists of providing all labor, materials, equipment, and skills, and performing all operations to construct and install stormwater-management facilities and associated infrastructure to improve and treat stormwater draining to Rice Marsh Lake. The Work for the Rice Marsh Lake Water Quality Treatment Project includes, but is not limited to, mobilization/demobilization; erosion and sedimentation control; traffic control; strip and salvage topsoil, installation of storm sewer pipes, manholes, manhole/catch basin, connections to structures, and associated castings; furnish and install stormwater filtration chambers and components, furnish and install 16" wall mount sluice gate in manhole with extension rod, remove and replace 72" diameter precast concrete manhole, install rain garden underdrain system including all fittings and Nyloplast structure and fine filter aggregate; excavate, grade, and shape rain garden and add rain garden soil and mulch, construct rain garden inlet splash block assembly; perform grading including associated excavation and filling of soil amendment areas, rip soil amendment areas and till in compost, remove and replace bituminous trail pavement, install trail pedestrian ramp, protect existing bituminous trails; tree protection, install landscape edging, rain garden plantings, site restoration including decompaction, placement of topsoil, seeding (native seed mix) and planting of plugs, and installation of erosion control blanket over all exposed soil areas; site clean-up, and remove all temporary erosion control best-management practices; provide three years of vegetation establishment and maintenance; all as provided for in the Bidding Documents for the Rice Marsh Lake Water Quality Treatment Project.

All quantities and work items in this advertisement for bid are approximate and not guaranteed.

Complete digital project documents are available at www.questcdn.com. To access the electronic bid form, download the project documents and click the online bidding button at the top of the advertisement.



You may download the digital plan documents for thirty dollars (\$30.00) by inputting Quest Project #7910279 on the website's Project Search page.

Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information.. Please contact us at Phone: 952-832-2600; or Fax: 952-832-2601 if you have any questions. Partial sets of documents will not be issued.

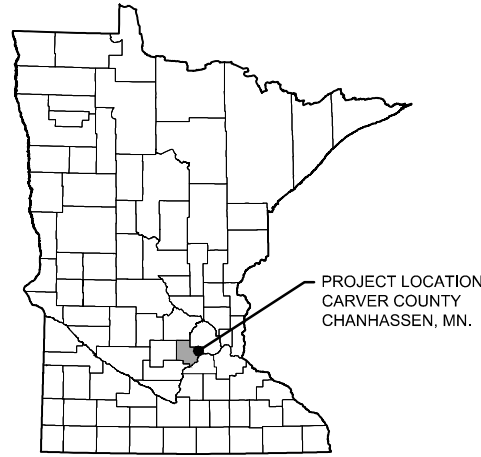
A contractor responding to this solicitation document shall submit to the Owner a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in Minnesota Statutes section 16C.285 subdivision 4.

The bid of the lowest responsible and responsive bidder is intended to be accepted on or before the expiration of sixty (60) days after the date of the opening of bids. The Owner, however, reserves the right to reject any or all bids and to waive any nonmaterial irregularities, informalities, or discrepancies, and further reserves the right to award a contract for each project in the best interest of the Riley-Purgatory-Bluff Creek Watershed District.



RICE MARSH LAKE WATER QUALITY TREATMENT

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
CHANHASSEN, MINNESOTA



MINNESOTA COUNTY MAP



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

CONTACTS:

PROJECT OWNER:
Riley Purgatory Bluff Creek Watershed District

WATERSHED DISTRICT PROJECT MANAGER:
Terry Jeffery
Riley Purgatory Bluff Creek Watershed District
Phone: 952-807-6885
Email: tjeffery@rpbccd.org

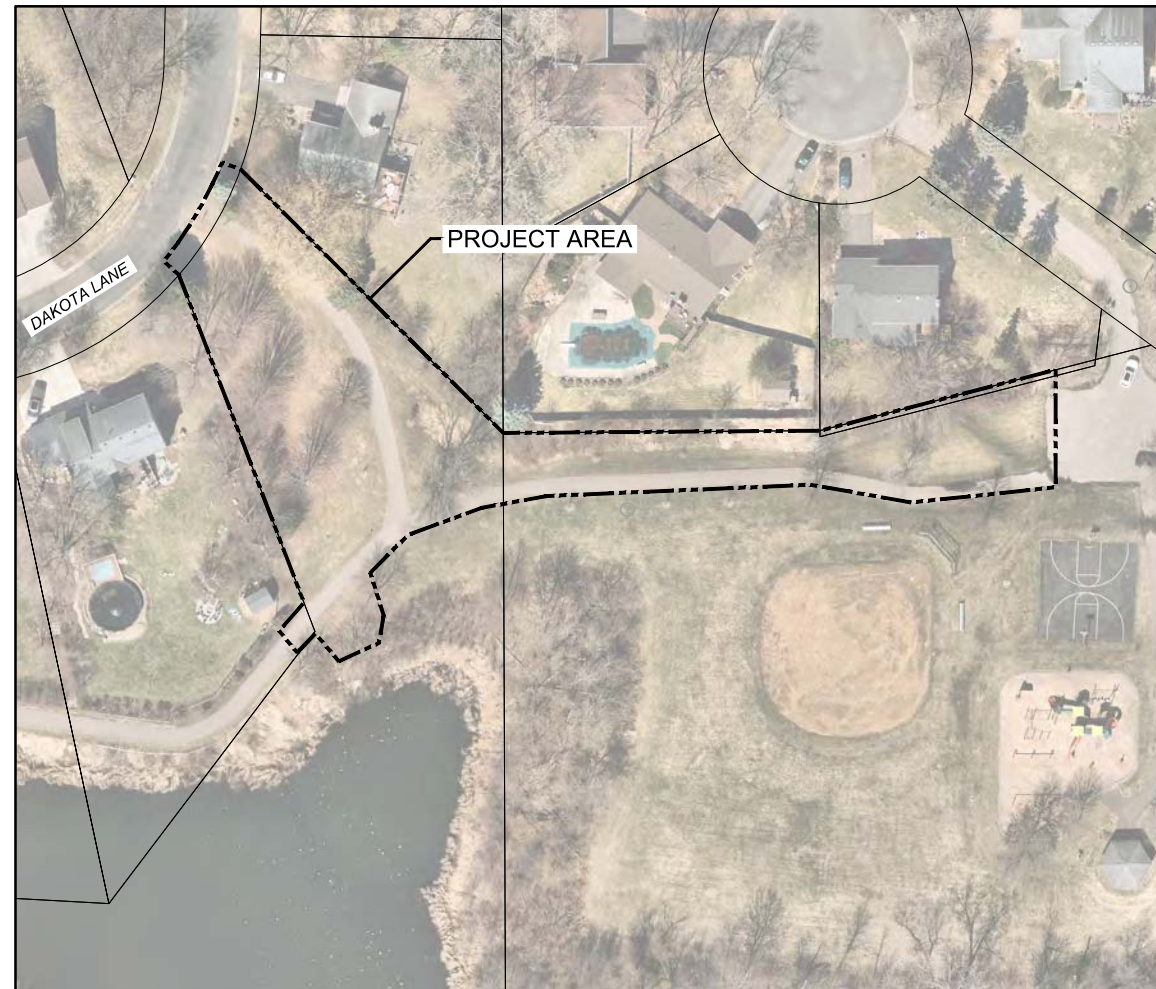
RPBCWD ENGINEER:
Scott Sobiech, PE
Barr Engineering Co.
Phone: 952-832-2755
Email: ssobiech@barr.com

PROJECT ENGINEER:
Heather N. Hlavaty, PE
Barr Engineering Co.
Phone: 952-842-3613
Email: HHlavaty@barr.com

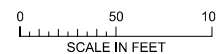
CITY REPRESENTATIVES:
Charles Howley
Director of Public Works/City Engineer
Phone: 952-227-1169
Email: CHowley@ci.chanhassen.mn.us

Matt Unmacht
Water Resources Coordinator
Phone: 952-227-1168
Email: MUnmacht@ci.chanhassen.mn.us

Matt Petite
Construction Manager
Phone: 952-227-1166
Email: MPetite@ci.chanhassen.mn.us



PROJECT AREA



SHEET NO.	DESCRIPTION
G-01	SITE LOCATION AND SHEET INDEX
C-01	EROSION CONTROL AND REMOVAL PLAN
C-02	EROSION CONTROL SECTIONS AND DETAILS
C-03	STORM SEWER AND WATER QUALITY TREATMENT - PLAN AND PROFILES
C-04	GRADING AND PAVEMENT RESTORATION - PLAN, PROFILE AND SECTIONS
C-05	CURB INLET AND SPLASH BLOCK ASSEMBLY - PLAN, SECTION AND DETAIL
C-06	CONSTRUCTION DETAILS AND SLIDE GATE DETAILS
C-07	CITY STANDARD PLATES
C-08	KRAKEN FILTRATION SYSTEM STANDARD DETAIL (PROPRIETARY)
C-09	KRAKEN FILTRATION SYSTEM PARTITION & BAFFLE WALL DETAILS (PROPRIETARY)
L-01	LANDSCAPE PLAN
L-02	LANDSCAPE SECTIONS AND DETAILS

GENERAL NOTES:

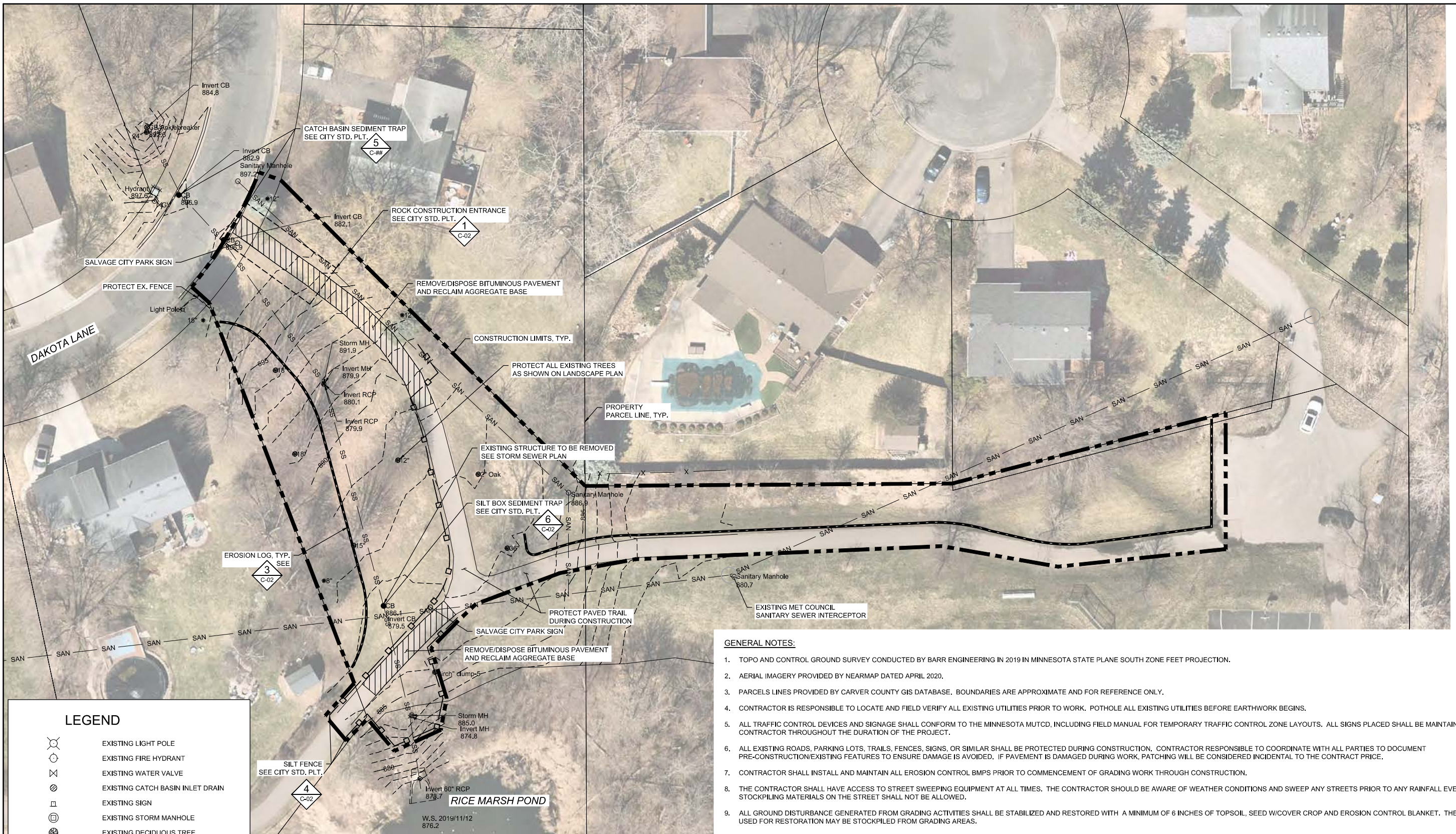
1. TOPOGRAPHIC SURVEY CONDUCTED BY BARR ENGINEERING CO. IN NOVEMBER 2019.
2. IMAGERY: COPYRIGHT NEARMAP LIMITED, DATED APRIL 2020.
3. HORIZONTAL DATUM AND COORDINATE SYSTEM: NAD83 MINNESOTA STATE PLANES, SOUTH ZONE, US FOOT.
4. VERTICAL DATUM: NAVD88.
5. UTILITIES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY BASED ON AVAILABLE DATA AND DO NOT REFLECT A COMPREHENSIVE INVENTORY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES.

ISSUED FOR BID

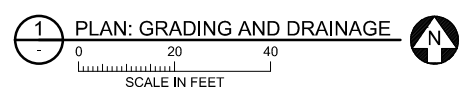
CADD USER: Greg Nelson FILE: I:\DESIGN\2327053.14_T028_G-01.DWG PLOT SCALE: 1:2 PLOT DATE: 6/29/2021 4:10 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD	4/19/2021 6/28/2021 7/7/2021	Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 Ph: 1-800-632-2277 www.barr.com		Scale Date Drawn Checked Designed Approved	AS SHOWN 4/12/2021 GJN - - -	RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT	RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA	BARR PROJECT No. 23/27-0053.14	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	RELEASED TO/FOR	DATE RELEASED		SITE LOCATION AND SHEET INDEX	CLIENT PROJECT No. TO28B	DWG. No. G-01

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LEGEND	
	EXISTING LIGHT POLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING CATCH BASIN INLET DRAIN
	EXISTING SIGN
	EXISTING STORM MANHOLE
	EXISTING DECIDUOUS TREE
	EXISTING WOOD FENCE
	EXISTING SANITARY SEWER LINE
	EXISTING STORM SEWER LINE
	EXISTING MAJOR CONTOUR INTERVAL
	EXISTING MINOR CONTOUR INTERVAL
	CONSTRUCTION LIMITS



GENERAL NOTES:

1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN 2019 IN MINNESOTA STATE PLANE SOUTH ZONE FEET PROJECTION.
2. AERIAL IMAGERY PROVIDED BY NEARMAP DATED APRIL 2020.
3. PARCELS LINES PROVIDED BY CARVER COUNTY GIS DATABASE. BOUNDARIES ARE APPROXIMATE AND FOR REFERENCE ONLY.
4. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK. POTHOLE ALL EXISTING UTILITIES BEFORE EARTHWORK BEGINS.
5. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL CONFORM TO THE MINNESOTA MUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. ALL SIGNS PLACED SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT.
6. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE WITH ALL PARTIES TO DOCUMENT PRE-CONSTRUCTION/EXISTING FEATURES TO ENSURE DAMAGE IS AVOIDED. IF PAVEMENT IS DAMAGED DURING WORK, PATCHING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT PRICE.
7. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPs PRIOR TO COMMENCEMENT OF GRADING WORK THROUGH CONSTRUCTION.
8. THE CONTRACTOR SHALL HAVE ACCESS TO STREET SWEEPING EQUIPMENT AT ALL TIMES. THE CONTRACTOR SHOULD BE AWARE OF WEATHER CONDITIONS AND SWEEP ANY STREETS PRIOR TO ANY RAINFALL EVENT. STOCKPILING MATERIALS ON THE STREET SHALL NOT BE ALLOWED.
9. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET. THE TOPSOIL USED FOR RESTORATION MAY BE STOCKPILED FROM GRADING AREAS.
10. GROUND DISTURBANCE SHALL BE CONFINED TO THE CONSTRUCTION LIMITS. ALL GROUND DISTURBANCE OUTSIDE THE CONSTRUCTION LIMITS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
11. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE. FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE CITY OF CHANHASSEN AND STAKED IN THE FIELD.
12. CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS UNLESS DIRECTED BY THE CITY OR OWNER.
13. TREES TO BE REMOVED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL REMAINING TREES SHALL BE PROTECTED.
14. TREES TO REMAIN SHALL BE PROTECTED AGAINST ROOT COMPACTION, DAMAGE AND DISFIGUREMENT IN ACCORDANCE WITH MnDOT SPEC. 2572. PROTECTION OF THESE TREES SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT.
15. COMPACTED SOIL MUST BE DECOMPACTED TO A SOIL COMPACTION TESTING PRESSURE OF LESS THAN 1,400 KILOPASCALS OF 20 POUNDS PER SQUARE INCH IN THE UPPER 12 INCHES OF SOIL.

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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: HEATHER N. HLAVATY
 SIGNATURE: _____
 DATE: JULY 7, 2021 LICENSE # 58700

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED

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

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

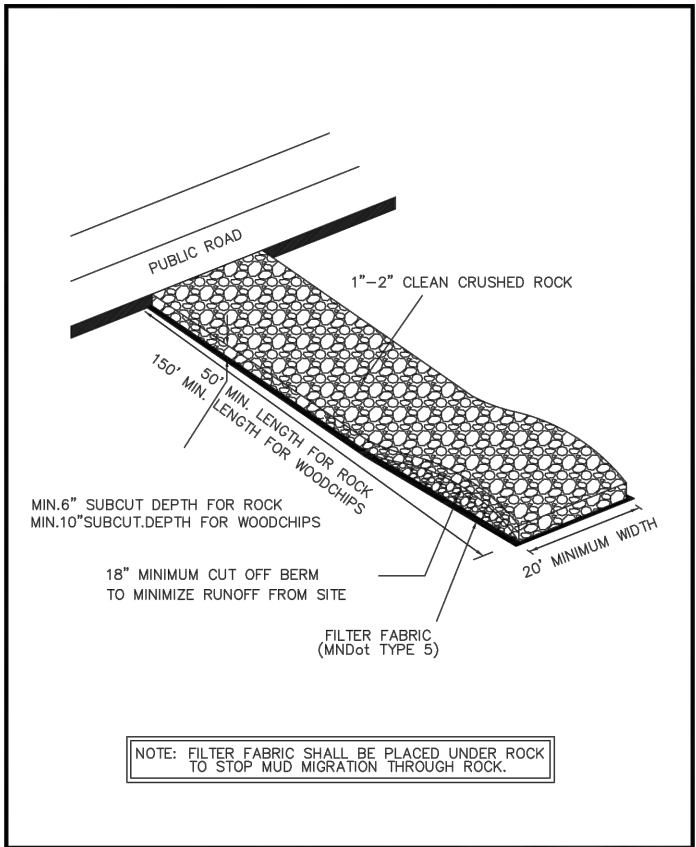
Scale	AS SHOWN
Date	6/22/2021
Drawn	GGN
Checked	-
Designed	-
Approved	-

RILEY PURGATORY BLUFF CREEK
 WATERSHED DISTRICT

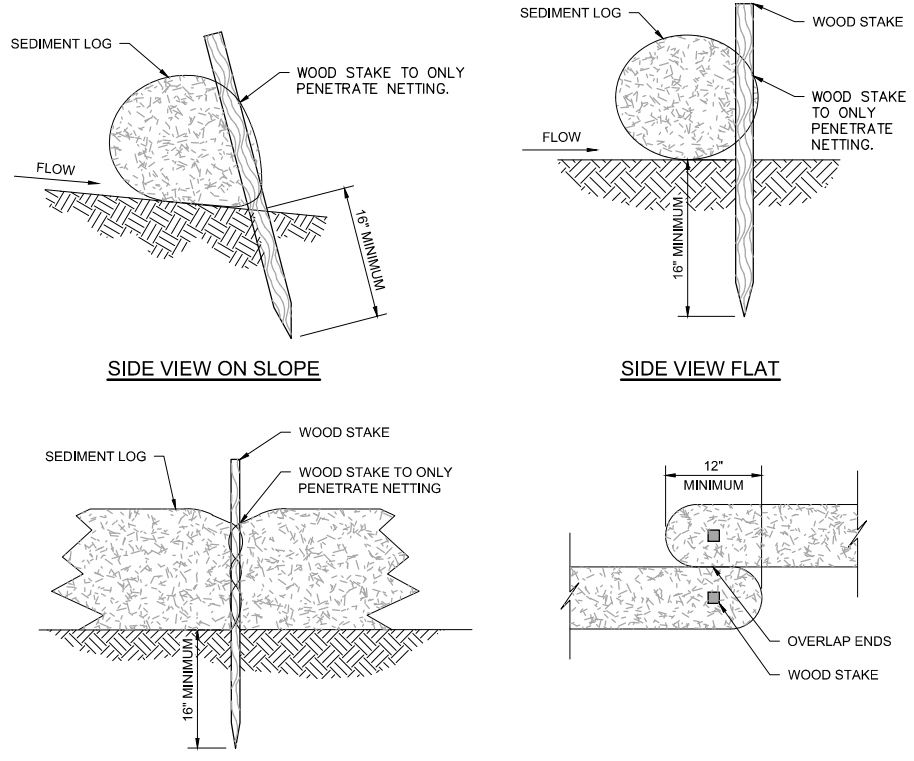
RICE MARSH LAKE WQ TREATMENT
 CHANHASSEN, MINNESOTA

EROSION CONTROL AND REMOVAL PLAN

BARR PROJECT No.	
23/27-0053.14	
CLIENT PROJECT No.	
TO28B	
DWG. No.	REV. No.
C-01	0



	ROCK CONSTRUCTION ENTRANCE	
	REVISED: 12-19 FILE NAME: G:\ENG\SPCS\5301	ENGINEERING DEPARTMENT PLATE NO.: 5301

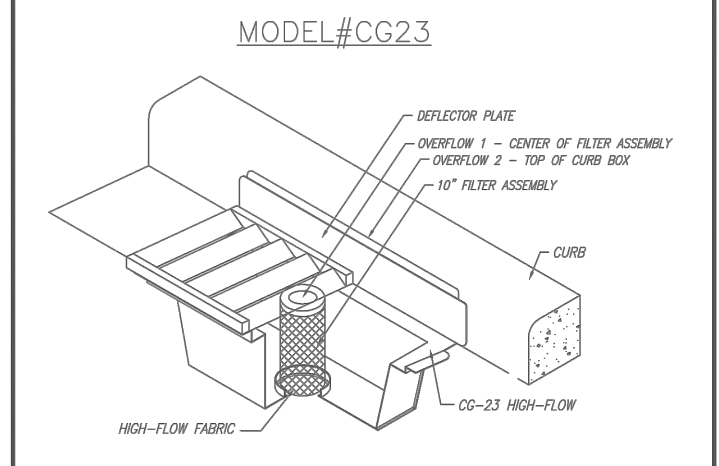


- NOTES:**
- INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION).
 - NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
 - REMOVE ACCUMULATED SEDIMENT WHEN REACHING 1/3 OF LOG HEIGHT.
 - MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD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

3 DETAIL: EROSION LOG - STAKING
NOT TO SCALE

SEDIMENT TRAP

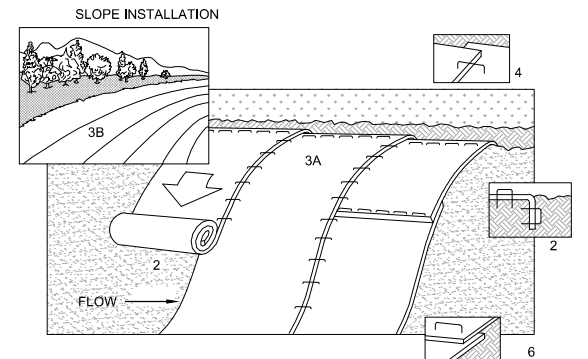
MANUFACTURED BY WIMCO, LLC. SHAKOPEE, MN.,
ESS BROS., CORCORAN, MN. OR EQUAL



- NOTES:**
- CLEAN FILTER MEDIA AFTER EACH RAIN EVENT AND REPLACE IF FILTER IS CLOGGED WITH SEDIMENT.
 - REMOVE DEBRIS/SEDIMENT FROM RECEPTACLE AFTER EACH RAIN EVENT.

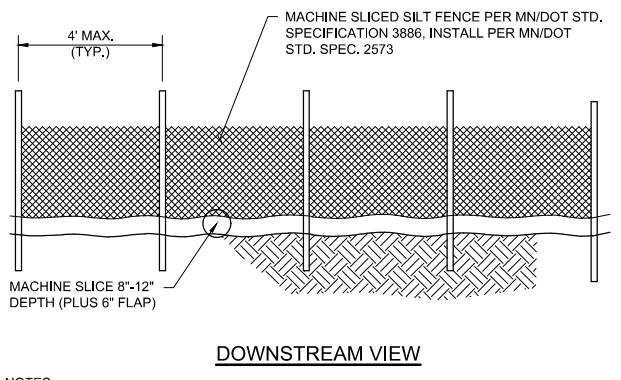
	CATCH BASIN SEDIMENT TRAP	
	REVISED: 1-10 FILE NAME: G:\ENG\SPCS\5302A	ENGINEERING DEPARTMENT PLATE NO.: 5302A

1 CITY STANDARD PLATE 5301
NOT TO SCALE



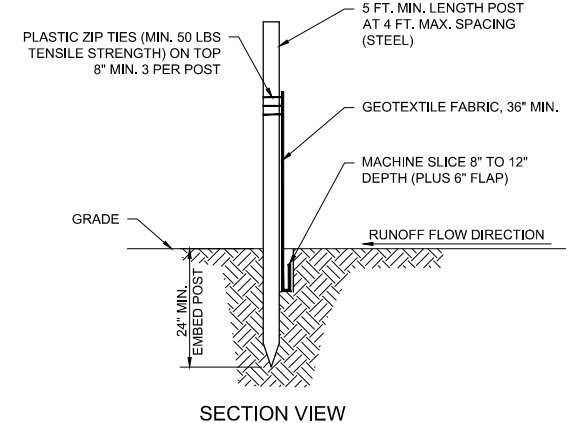
- NOTES:**
- REFER TO MANUFACTURER RECOMMENDATIONS FOR STAPLE PATTERNS FOR SLOPE INSTALLATIONS.
 - PREPARE SOIL BY LOOSENING TOP 1-2 INCHES AND APPLY SEED (AND FERTILIZER WHERE REQUIRED) PRIOR TO INSTALLING BLANKETS. GROUND SHOULD BE SMOOTH AND FREE OF DEBRIS.
 - BEGIN (A) AT THE TOP OF THE SLOPE AND 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

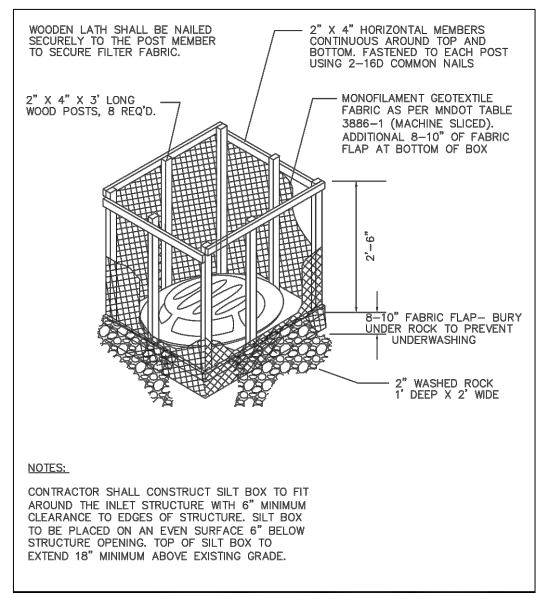


- NOTES:**
- INSTALL SILT FENCE PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD. REMOVE SILT FENCE AND ANY ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
 - SILT FENCE MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS 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.
 - REMOVE ACCUMULATED SEDIMENT WHEN BUILD UP REACHES 1/3 OF FENCE HEIGHT. OR INSTALL A SECOND SILT FENCE DOWNSTREAM OF THE ORIGINAL 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 AND COMPACT BACKFILL.

4 DETAIL: SILT FENCE - MACHINE SLICED
NOT TO SCALE



5 CITY STANDARD PLATE 5302A
NOT TO SCALE



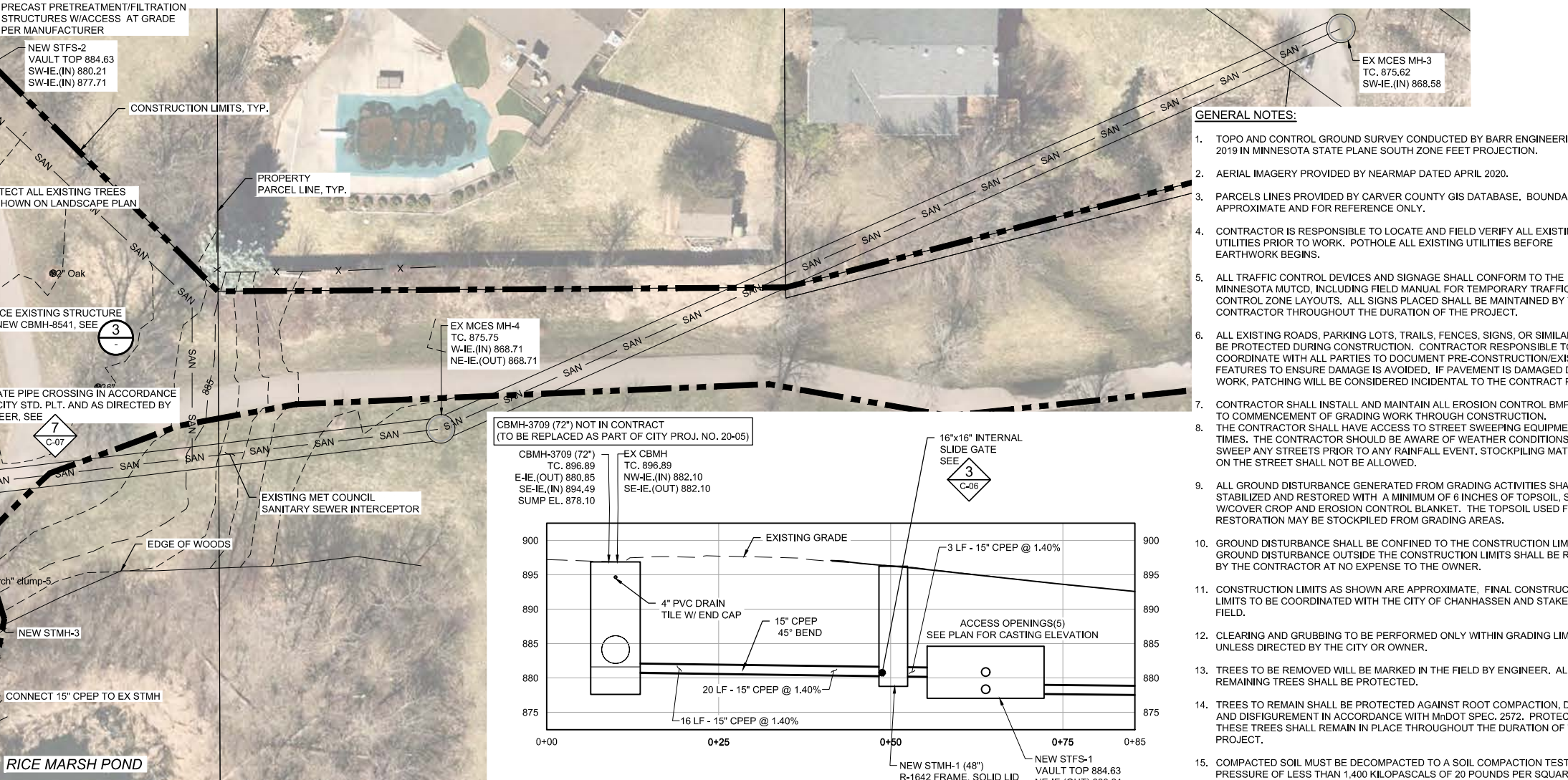
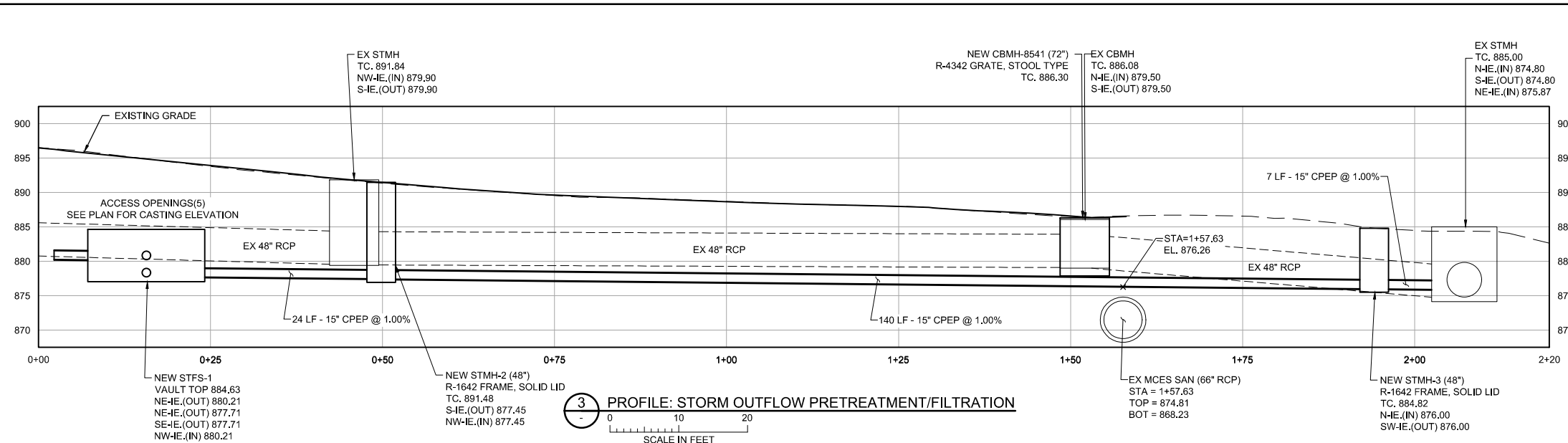
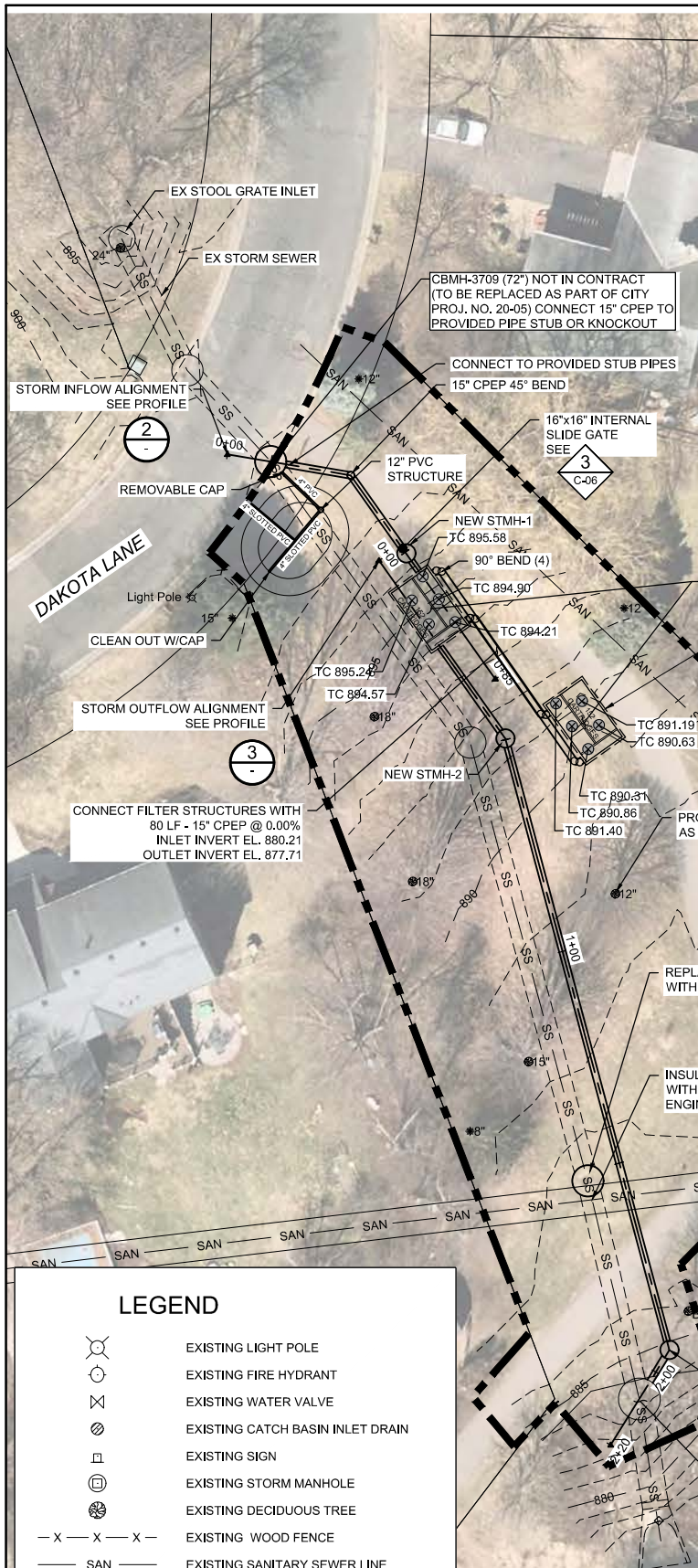
6 CITY STANDARD PLATE 5302G
NOT TO SCALE

CADD USER: Greg Nelson FILE: I:\DESIGN\23270053\14\23270053_14_T02B_C-04_C-06_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 6/29/2021 4:12 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: <u>HEATHER N. HLAVATY</u> SIGNATURE: _____ DATE: <u>JULY 7, 2021</u> LICENSE # <u>58700</u>		CLIENT: BARR ENGINEERING CO. BID: 7/7/2021 CONSTRUCTION RECORD: _____ RELEASED TO/FOR: _____ DATE RELEASED: _____	Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2801 www.barr.com	Scale: AS SHOWN Date: 4/12/2021 Drawn: GGN Checked: - Designed: - Approved: -	RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT	RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA EROSION CONTROL SECTIONS AND DETAILS	BARR PROJECT No. 23/27-0053.14 CLIENT PROJECT No. TO28B DWG. No. C-02 REV. No. 0
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ISSUED FOR BID

CADD USER: Greg Nelson FILE: I:\DESIGN\23270053\14_T028_C-01.DWG PLOT SCALE: 1:2 PLOT DATE: 02/25/2021 4:12 PM



- GENERAL NOTES:**
1. TOPO AND CONTROL GROUND SURVEY CONDUCTED BY BARR ENGINEERING IN 2019 IN MINNESOTA STATE PLANE SOUTH ZONE FEET PROJECTION.
 2. AERIAL IMAGERY PROVIDED BY NEARMAP DATED APRIL 2020.
 3. PARCELS LINES PROVIDED BY CARVER COUNTY GIS DATABASE. BOUNDARIES ARE APPROXIMATE AND FOR REFERENCE ONLY.
 4. CONTRACTOR IS RESPONSIBLE TO LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO WORK. POT HOLE ALL EXISTING UTILITIES BEFORE EARTHWORK BEGINS.
 5. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL CONFORM TO THE MINNESOTA MUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. ALL SIGNS PLACED SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT.
 6. ALL EXISTING ROADS, PARKING LOTS, TRAILS, FENCES, SIGNS, OR SIMILAR SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE WITH ALL PARTIES TO DOCUMENT PRE-CONSTRUCTION/EXISTING FEATURES TO ENSURE DAMAGE IS AVOIDED. IF PAVEMENT IS DAMAGED DURING WORK, PATCHING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT PRICE.
 7. CONTRACTOR SHALL INSTALL AND MAINTAIN ALL EROSION CONTROL BMPS PRIOR TO COMMENCEMENT OF GRADING WORK THROUGH CONSTRUCTION. THE CONTRACTOR SHALL HAVE ACCESS TO STREET SWEEPING EQUIPMENT AT ALL TIMES. THE CONTRACTOR SHOULD BE AWARE OF WEATHER CONDITIONS AND SWEEP ANY STREETS PRIOR TO ANY RAINFALL EVENT. STOCKPILING MATERIALS ON THE STREET SHALL NOT BE ALLOWED.
 8. ALL GROUND DISTURBANCE GENERATED FROM GRADING ACTIVITIES SHALL BE STABILIZED AND RESTORED WITH A MINIMUM OF 6 INCHES OF TOPSOIL, SEED W/COVER CROP AND EROSION CONTROL BLANKET. THE TOPSOIL USED FOR RESTORATION MAY BE STOCKPILED FROM GRADING AREAS.
 9. GROUND DISTURBANCE SHALL BE CONFINED TO THE CONSTRUCTION LIMITS. ALL GROUND DISTURBANCE OUTSIDE THE CONSTRUCTION LIMITS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
 10. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE. FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE CITY OF CHANHASSEN AND STAKED IN THE FIELD.
 11. CLEARING AND GRUBBING TO BE PERFORMED ONLY WITHIN GRADING LIMITS UNLESS DIRECTED BY THE CITY OR OWNER.
 12. TREES TO BE REMOVED WILL BE MARKED IN THE FIELD BY ENGINEER. ALL REMAINING TREES SHALL BE PROTECTED.
 13. TREES TO REMAIN SHALL BE PROTECTED AGAINST ROOT COMPACTION. DAMAGE AND DISFIGUREMENT IN ACCORDANCE WITH MNDOT SPEC. 2572. PROTECTION OF THESE TREES SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT.
 14. COMPACTED SOIL MUST BE DECOMPACTED TO A SOIL COMPACTION TESTING PRESSURE OF LESS THAN 1,400 KILOPASCALS OF 20 POUNDS PER SQUARE INCH IN THE UPPER 12 INCHES OF SOIL.
 15. CONTRACTOR TO PROVIDE PIPE TRENCH MATERIAL PER MNDOT SPEC. 3149.2F GRANULAR BEDDING FOR ALL NON-RIGID STORM SEWER PIPE.

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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: HEATHER N. HLAWATY
 SIGNATURE: _____
 DATE: JULY 7, 2021 LICENSE # 58700

CLIENT	BID	CONSTRUCTION RECORD	RELEASED TO/FOR	DATE RELEASED
BARR ENGINEERING CO.				

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

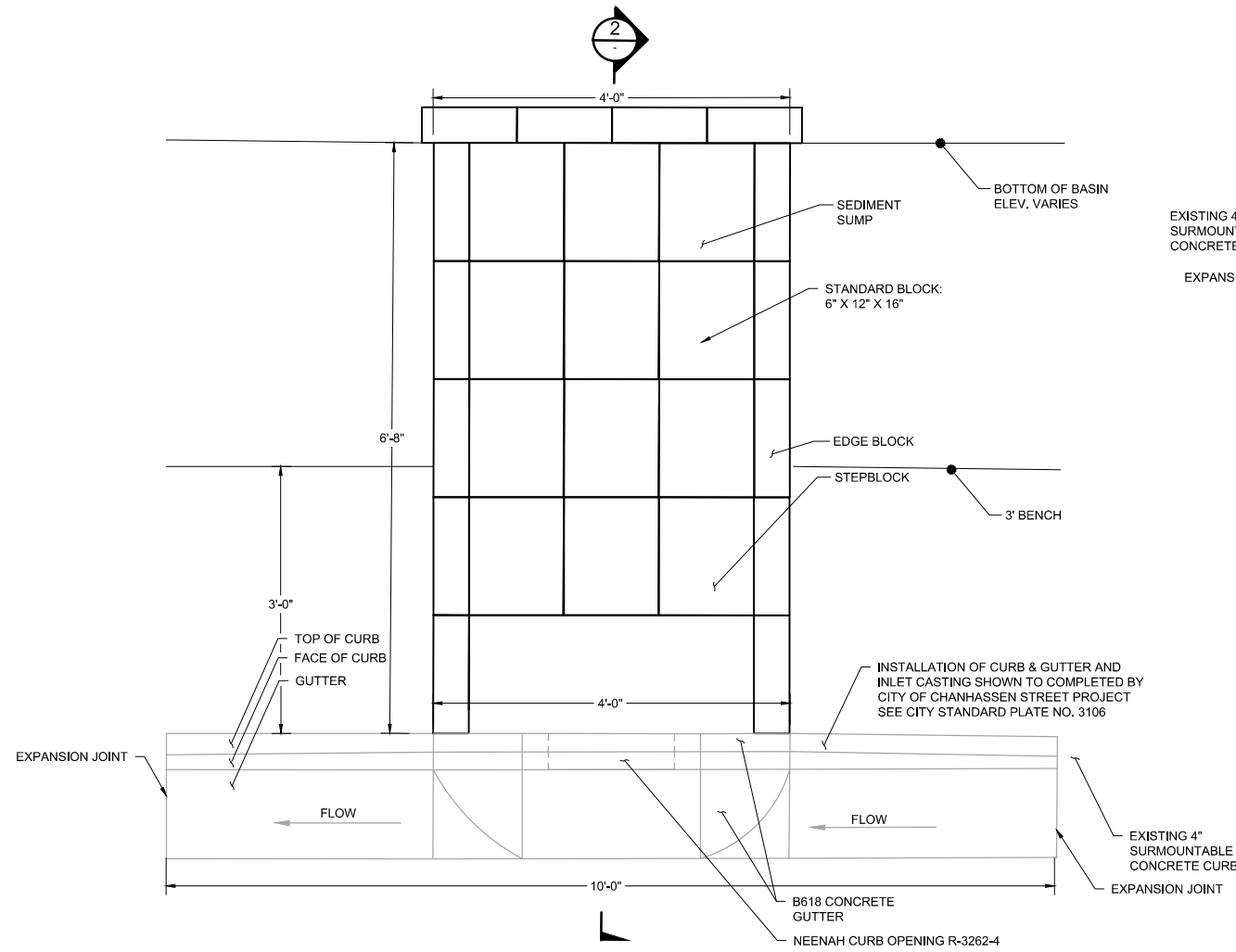
Scale	AS SHOWN
Date	2/4/2021
Drawn	GGN
Checked	-
Designed	-
Approved	-

RILEY PURGATORY BLUFF CREEK
 WATERSHED DISTRICT

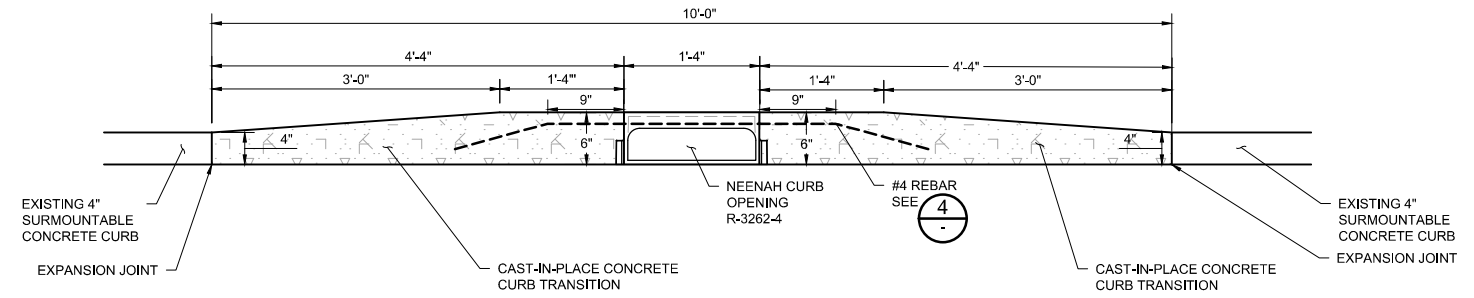
RICE MARSH LAKE WQ TREATMENT
 CHANHASSEN, MINNESOTA

STORM SEWER AND WATER QUALITY TREATMENT
 PLAN AND PROFILES

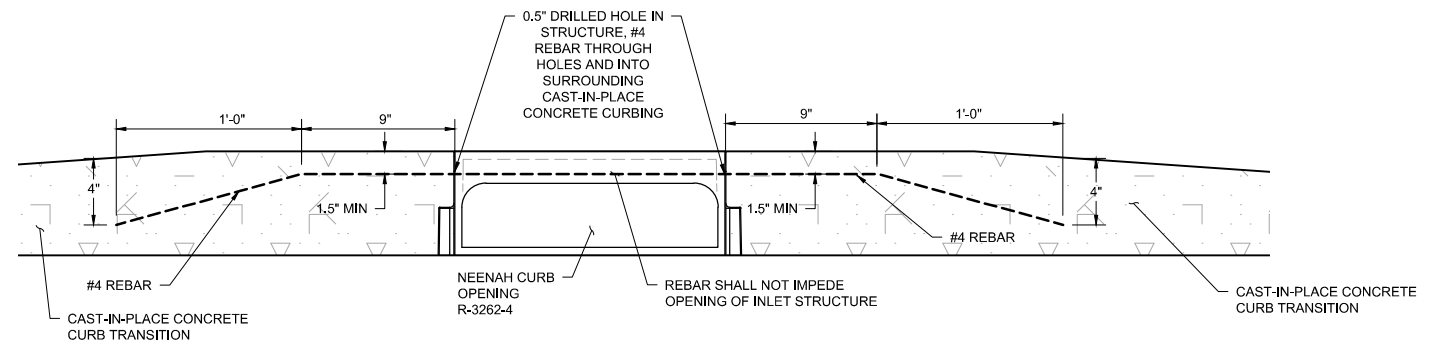
BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
23/27-0053.14	TO28B	C-03	0



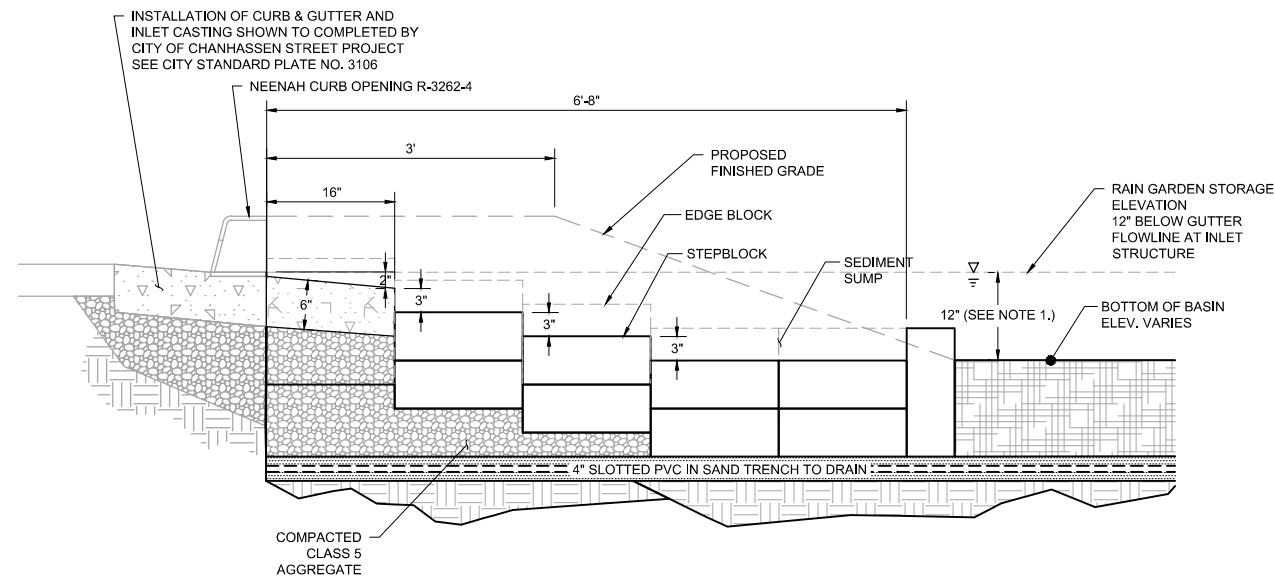
1 PLAN: CURB OPENING INLET WITH STONE SPLASH BLOCK ASSEMBLY
NOT TO SCALE



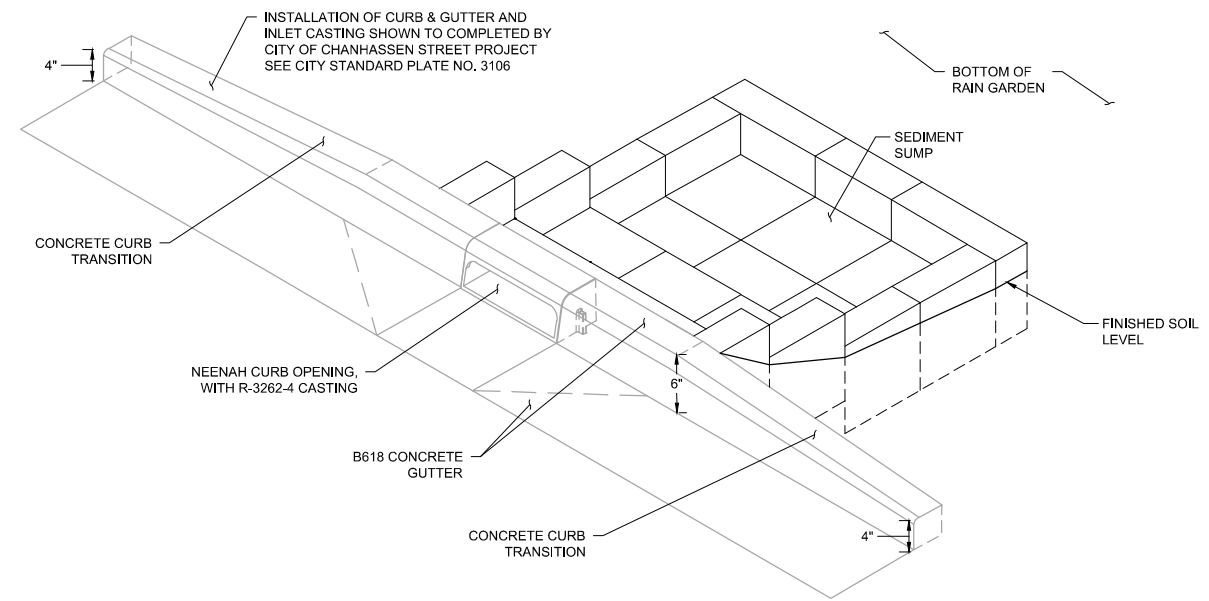
3 PROFILE: CURB OPENING INLET (N.I.C.)
NOT TO SCALE



4 DETAIL: REINFORCEMENT FOR CURB OPENING INLET (N.I.C.)
NOT TO SCALE



2 SECTION: STONE SPLASH BLOCK ASSEMBLY AT CURB INLET OPENING
NOT TO SCALE

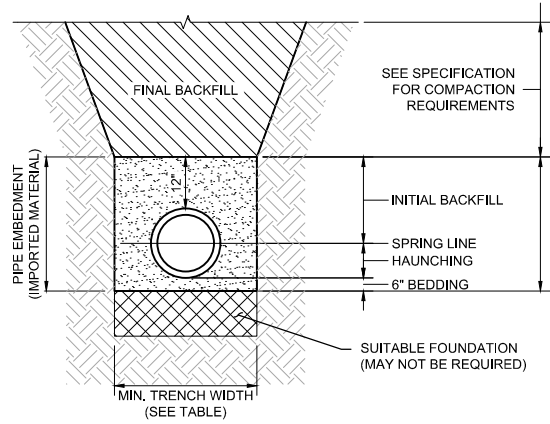


5 ISOMETRIC: STONE SPLASH BLOCK ASSEMBLY AT CURB INLET OPENING
NOT TO SCALE

CADD USER: Greg Nelson FILE: I:\DESIGN\23270053\14_T028_C-03.DWG PLOT SCALE: 1:2 PLOT DATE: 02/25/2021 4:14 PM

NO.		BY	CHK.	APP.	DATE	REVISION DESCRIPTION
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: HEATHER N. HLAVATY SIGNATURE: _____ DATE: JULY 7, 2021 LICENSE # 58700						
CLIENT		4/19/2021		6/28/2021		
BID				7/7/2021		
CONSTRUCTION RECORD						
RELEASED TO/FOR		A	B	C	0	1 2 3
DATE RELEASED						
BARR Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2801 www.barr.com		Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2801 www.barr.com		Scale: AS SHOWN Date: 2/4/2021 Drawn: GGN Checked: - Designed: - Approved: -		RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA						BARR PROJECT No. 23/27-0053.14
CURB INLET AND SPLASH BLOCK ASSEMBLY PLAN, SECTION AND DETAIL						CLIENT PROJECT No. TO28B
DWG. No. C-05						REV. No. 0

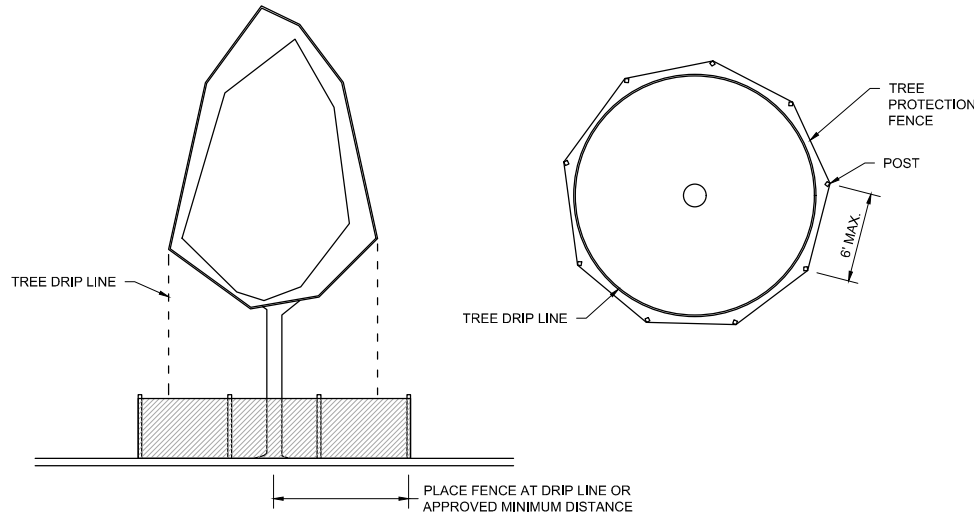
ISSUED FOR BID



PIPE DIAM. INCHES	MIN. TRENCH WIDTH INCHES
4	21
6	23
8	26
10	28
12	30
15	34
18	39
24	48
30	56
36	64
42	72
48	80
54	88
60	96

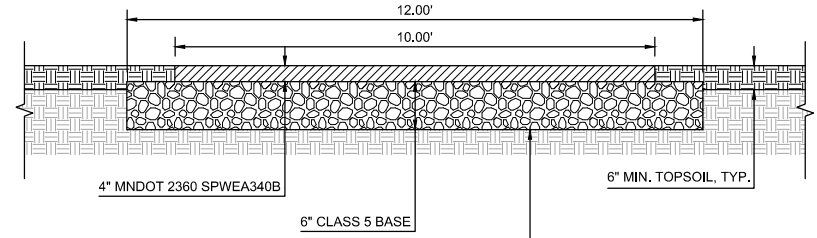
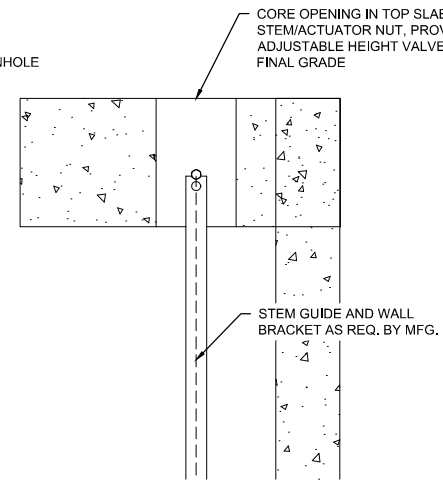
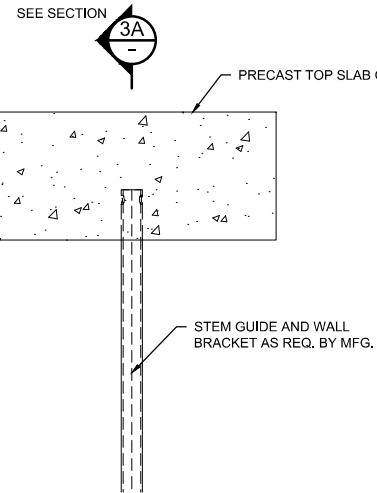
- IMPORTED PIPE EMBEDMENT MATERIAL PER MNDOT SPEC. 3149.2F GRANULAR BEDDING, 100% PASSING THE 1" SIEVE AND NOT MORE THAN 10.5% WILL PASS THE #200 SIEVE.
- IMPORTED PIPE EMBEDMENT MATERIAL SHALL BE COMPACTED IN UNIFORM LIFTS, 8" OR LESS IN DEPTH, LOOSE MEASURE, TO 95% STANDARD PROCTOR DENSITY FROM THE BEDDING TO A MINIMUM DEPTH OF AT LEAST 12" ABOVE THE CROWN OF THE PIPE.

1 DETAIL: NON-RIGID STORM SEWER TRENCH
NOT TO SCALE



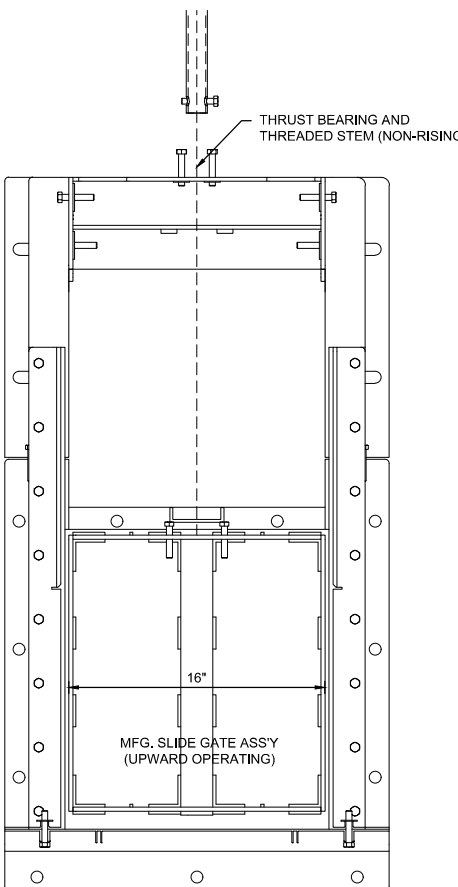
- NOTES:
- CONSTRUCTION FENCE MATERIAL SHALL BE ORANGE COLORED POLY NET AT MIN. FINISHED HEIGHT OF 4' ERECTED VERTICALLY USING 6' LONG STEEL POSTS EMBEDDED INTO THE GROUND 2', SPACED A MIN. OF 6' APART HORIZONTALLY. FENCE MATERIAL SHALL BE FASTENED WITH PLASTIC TIES SPACED 12" MIN. APART (4 PER POST).
 - TREE PROTECTION FENCING SHALL BE INSTALLED ACCORDING TO PLAN PRIOR TO DEMOLITION OR OTHER SITE WORK. ANY RELOCATION OF THE TREE PROTECTION FENCING TO BE APPROVED BY CITY FORESTER (651.632.5129). TREE PROTECTION FENCING SHALL BE MAINTAINED FOR THE DURATION OF THE CONSTRUCTION PROCESS.
 - CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, VEHICLES, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE.
 - ROOTS OUTSIDE OF THE TREE PROTECTION ZONE EXPOSED OR DAMAGED DURING EXCAVATION OR OTHER CONSTRUCTION ACTIVITY SHALL BE CLEANLY CUT AS DIRECTED BY THE CITY FORESTER.
 - ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

2 DETAIL: TREE PROTECTION FENCING
NOT TO SCALE

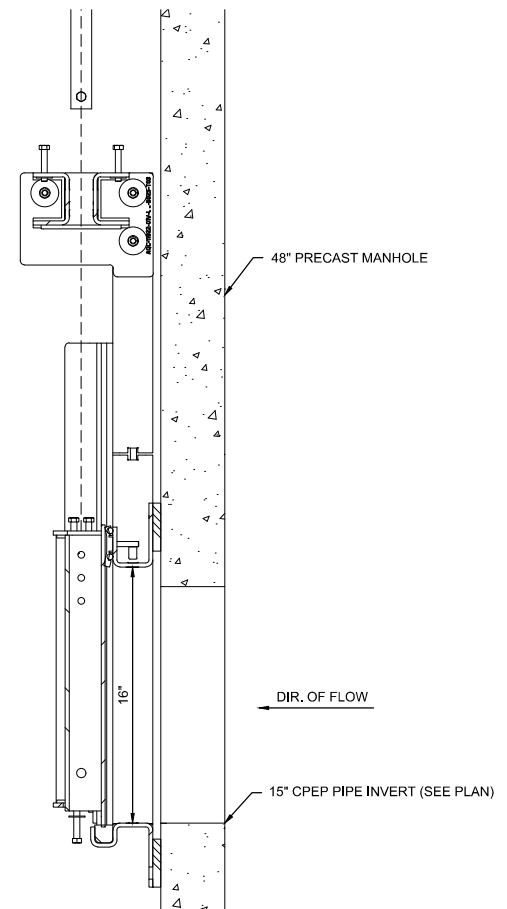


- NOTES:
- SHOULDERS TO BE BACKFILLED AND RESTORED WITH TOPSOIL AND RE-VEGETATED WITH SOD OR SEED/MULCH.
 - BITUMINOUS TRAILS MAY NOT BE CONSTRUCTED ON UNSUITABLE SOILS. NO WASTE MATERIAL, BLACK DIRT, OR ORGANIC SOILS ALLOWED.
 - ADDITIONAL DESIGN AND FIELD MODIFICATIONS MAY BE REQUIRED DEPENDING ON EXISTING SUB-GRADE SOIL CONDITIONS.

4 HEAVY-DUTY BITUMINOUS TRAIL
SCALE IN FEET



3 DETAIL: SLIDE GATE
NOT TO SCALE



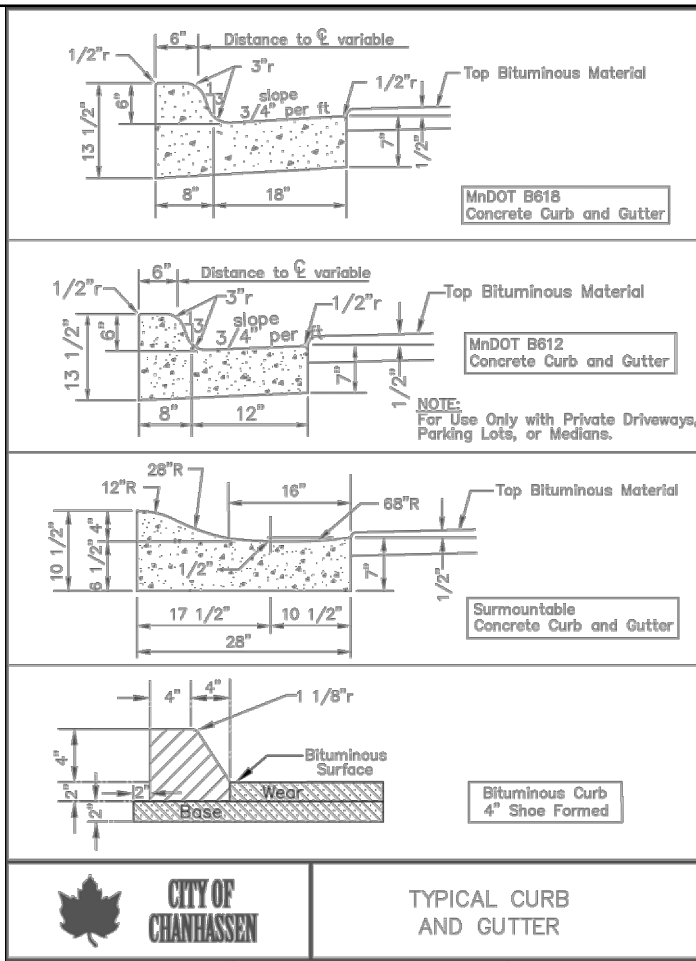
3A SECTION: SLIDE GATE
NOT TO SCALE

NOTE: GATE TO BE MOUNTED INSIDE A 48" ROUND PRECAST MANHOLE STRUCTURE. COORDINATION WITH GATE SUPPLIER WILL BE REQUIRED.

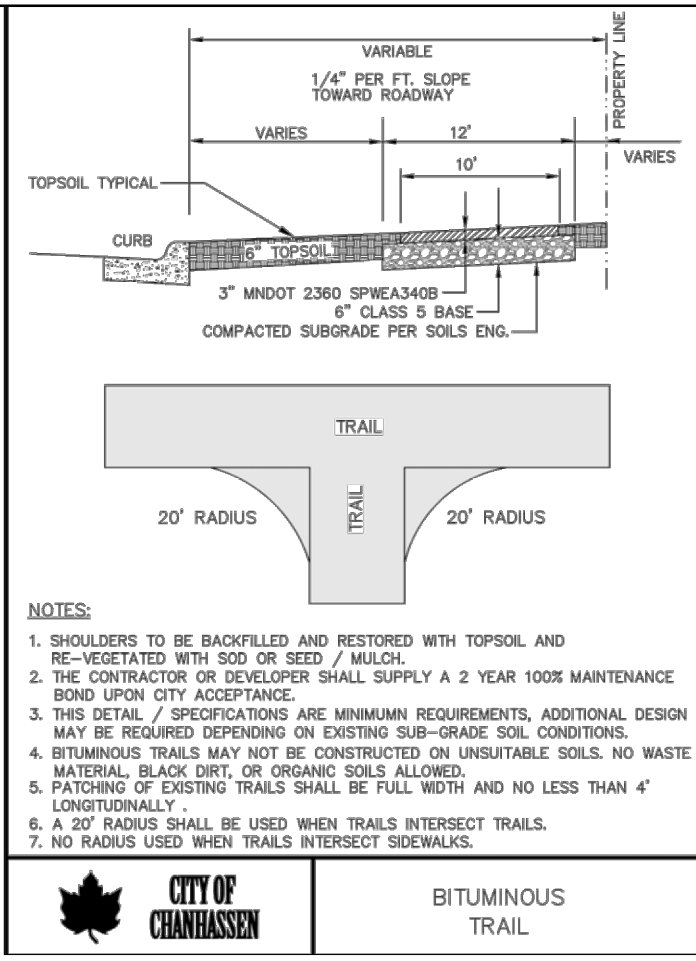
CADD USER: Greg Nelson FILE: I:\DESIGN\2327055\14\2327055\14_T028_C-04_C-06_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 6/29/2021 4:30 PM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: <u>HEATHER N. HLAVATY</u> SIGNATURE: _____ DATE: <u>JULY 7, 2021</u> LICENSE # <u>58700</u>		CLIENT: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2801 www.barr.com		Scale: AS SHOWN Date: 4/12/2021 Drawn: GGN Checked: - Designed: - Approved: -		RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT		RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA		BARR PROJECT No. 23/27-0053.14	
		RELEASED TO/FOR: _____ DATE RELEASED: _____				CONSTRUCTION DETAILS AND SLIDE GATE DETAILS		CLIENT PROJECT No. TO28B		DWG. No. C-06 REV. No. 0	

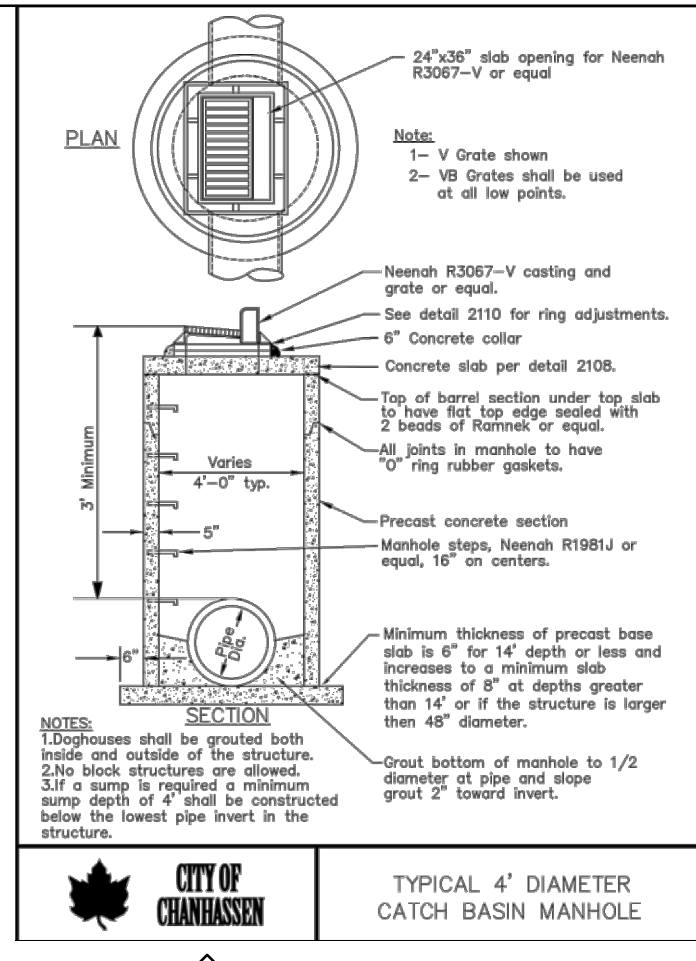
ISSUED FOR BID



1 CITY STANDARD PLATE 5203 NOT TO SCALE

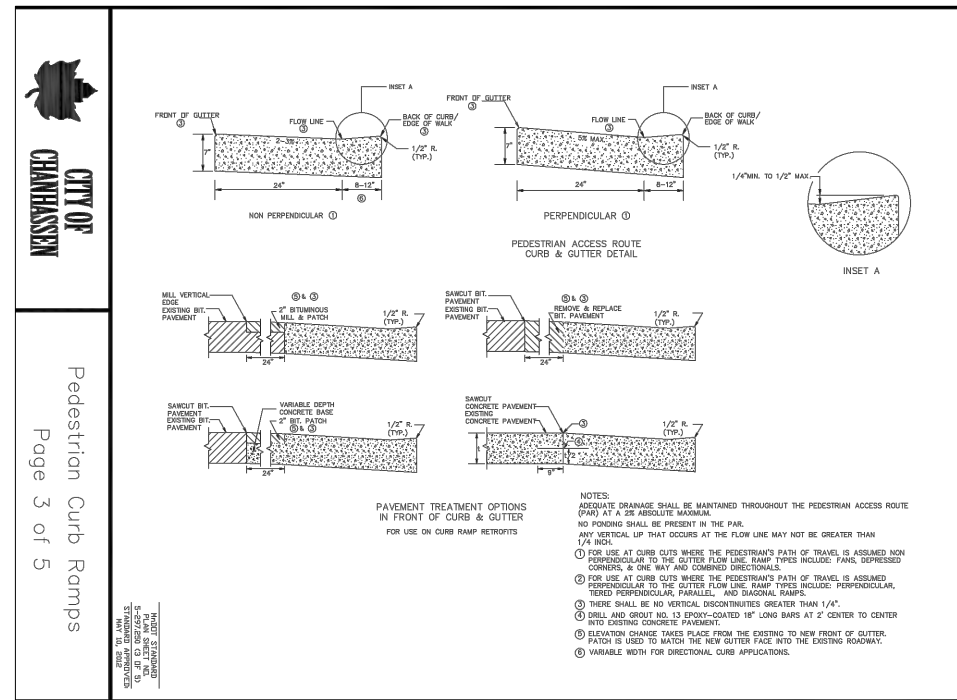


2 CITY STANDARD PLATE 5216 NOT TO SCALE

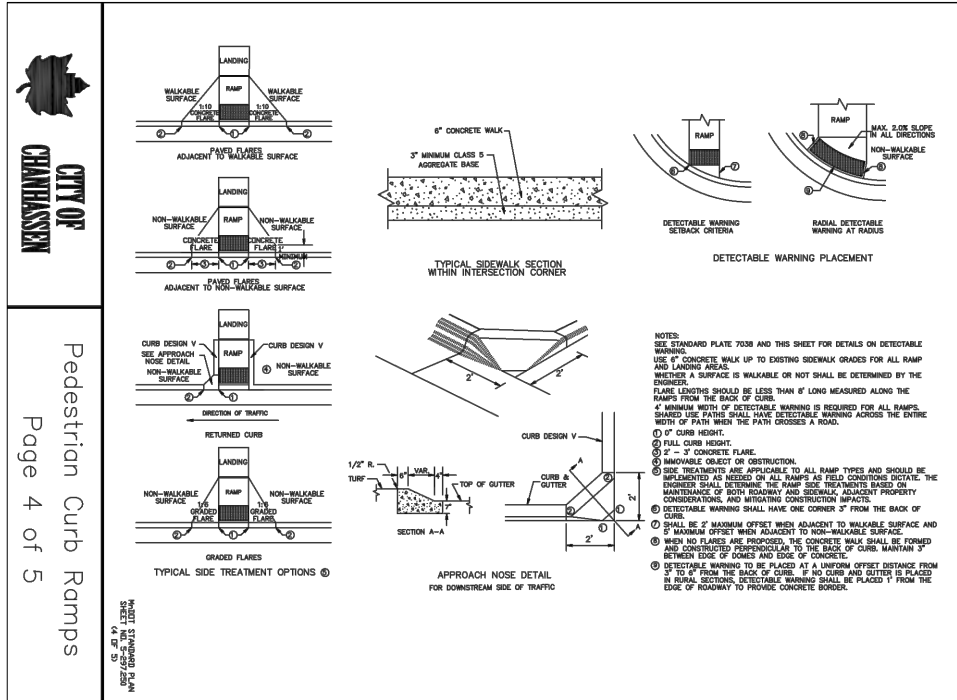


3 CITY STANDARD PLATE 3102 NOT TO SCALE

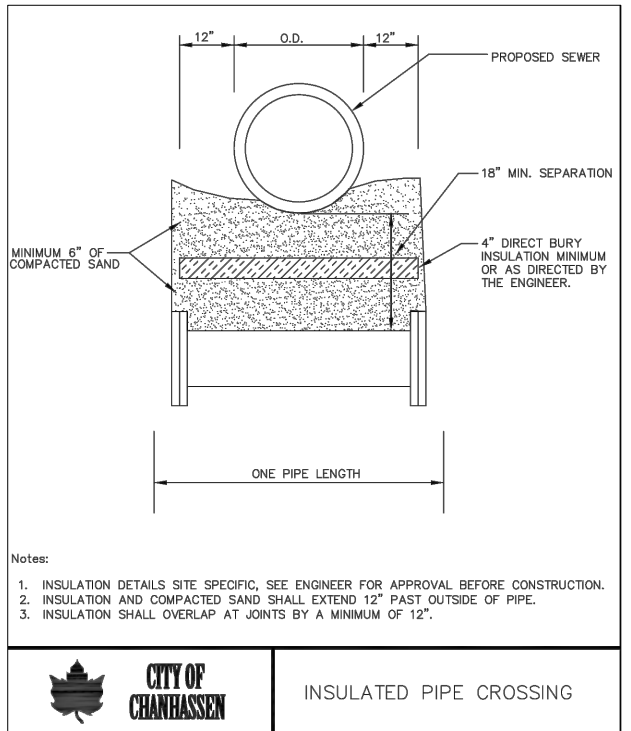
4 CITY STANDARD PLATE 3110 NOT TO SCALE



5 CITY STANDARD PLATE 5215B NOT TO SCALE



6 CITY STANDARD PLATE 5215C NOT TO SCALE



7 CITY STANDARD PLATE 2204 NOT TO SCALE

CADD USER: Greg Nelson FILE: I:\DESIGN\2022\05514_1\T028_C-04_C-06_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 6/29/2021 4:30 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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PRINTED NAME: HEATHER N. HLAVATY
 SIGNATURE: _____
 DATE: JULY 7, 2021 LICENSE # 58700

CLIENT	4/19/2021	6/28/2021					
BID							
CONSTRUCTION RECORD							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

BARR
 Project Office: BARR ENGINEERING CO., 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435
 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2801 www.barr.com

Scale	AS SHOWN
Date	4/12/2021
Drawn	GGN
Checked	-
Designed	-
Approved	-

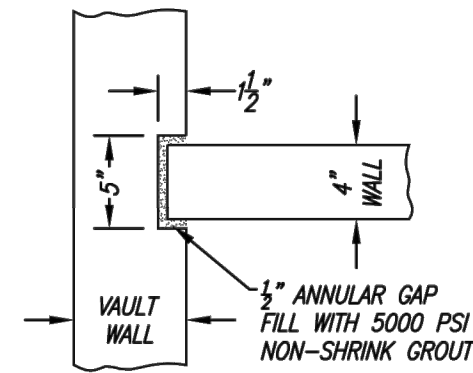
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA
 CITY STANDARD PLATES

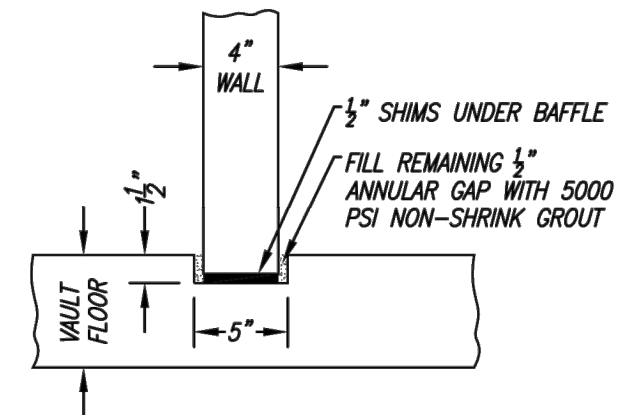
ISSUED FOR BID
 BARR PROJECT No. 23/27-0053.14
 CLIENT PROJECT No. TO28B
 DWG. No. C-07 REV. No. 0

PRECAST VAULT DESIGN & DRAWING PACKAGE REQUIREMENTS:

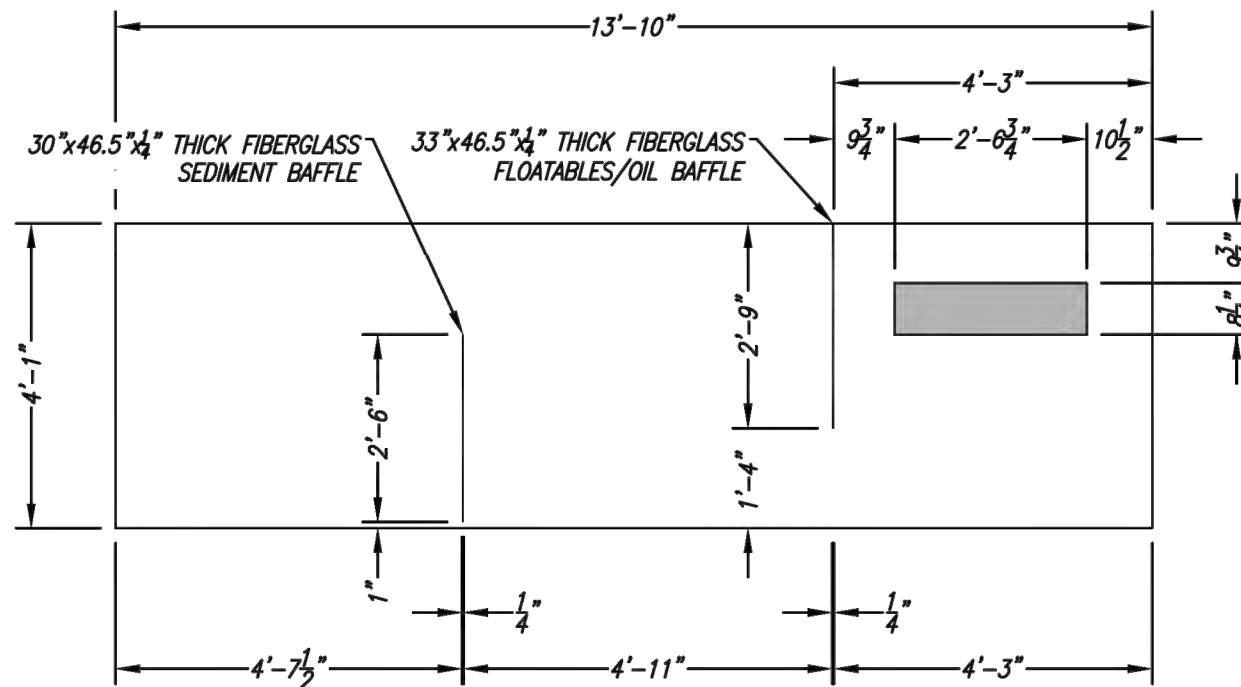
1. REFER TO KRAKEN INSTALLATION MANUAL FOR INSTALLATION OF FIBERGLASS BAFFLE WALLS AND INTERNAL PIECES.
2. CONCRETE PARTITION WALLS TO BE GROUTED AT BOTTOM AND SIDES TO BE WATERTIGHT.
3. CONCRETE PARTITION WALLS LIFTING RECESSES TO BE FILLED AFTER INSTALLATION.
4. UNDERDRAIN MANIFOLD TUBING TO BE INSTALLED PRIOR TO PARTITION WALLS.
5. 'INFLOW', 'OUTFLOW' OPENINGS AND 'BIO CLEAN' LOGO TO BE STENCILED ON EXTERIOR FACES.
6. WEIGHT ESTIMATION OF EACH PRECAST PIECE TO BE INCLUDED.
7. LIFTING POINTS SHALL BE LOCATED ON THE OUTSIDE OF ALL PIECES, DIMENSIONED AND LABELED WITH MANUFACTURER AND MODEL NUMBER.
8. HATCHES, MANHOLES, COVERS AND GRATES SHALL BE LABELED WITH MANUFACTURER AND MODEL NUMBER AND/OR SUBMITTED WITH ADDITIONAL MANUFACTURER'S DETAIL PAGE.
9. BIO CLEAN PROJECT NUMBER TO BE INCLUDED ON DRAWINGS AND DOCUMENTS.
10. STRUCTURAL DESIGN MEETS OR EXCEEDS REQUIREMENTS OF ASTM C857 & C858.
11. ALL CONCRETE PIECES DRY FIT BEFORE SHIPPING.
12. QUALITY CONTROL DRAWINGS AND PHOTOS MUST BE SUBMITTED AND APPROVED BEFORE SHIPPING.
13. JOINT SEALANT INCLUDED IN SHIPMENT: BUTYL RUBBER PER FEDERAL SPEC SS-S-210A.



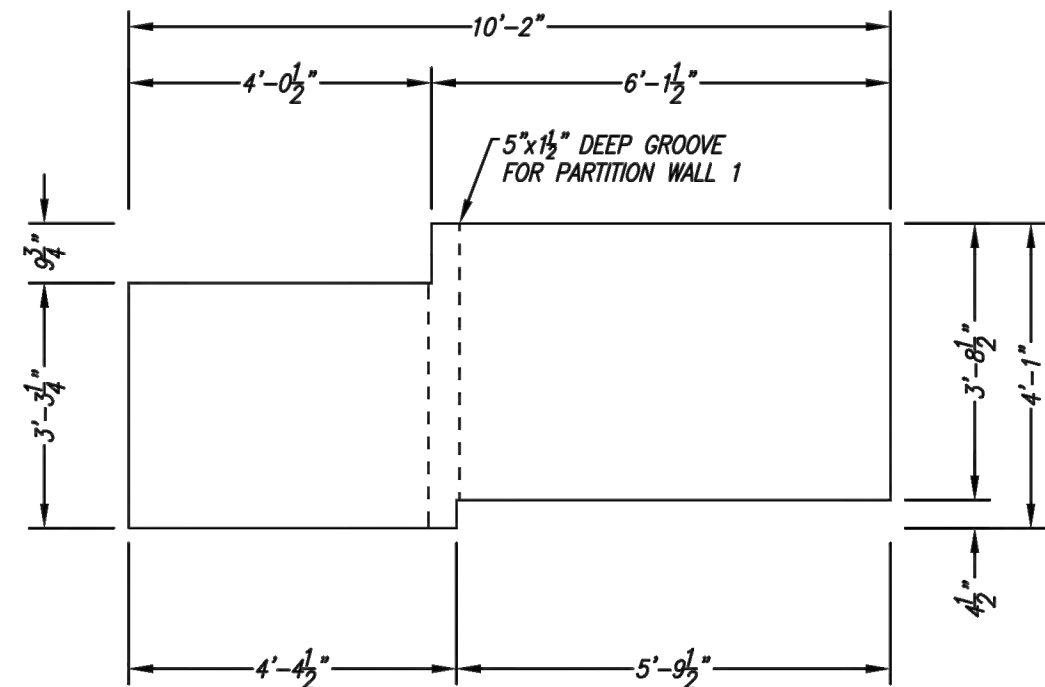
CONCRETE PARTITION WALL TO VAULT WALL CONNECTION
1:10 SCALE



CONCRETE PARTITION WALL TO VAULT FLOOR CONNECTION
1:10 SCALE



CONCRETE PARTITION WALL 1
4" THICK 1:30 SCALE



CONCRETE PARTITION WALL 2
4" THICK 1:30 SCALE

NOTE: CONTRACTOR IS REQUIRED TO HAVE THE MANUFACTURES REPRESENTATIVE SUPERVISE THE INSTALLATION OF THIS PROPRIETARY STRUCTURAL BMP

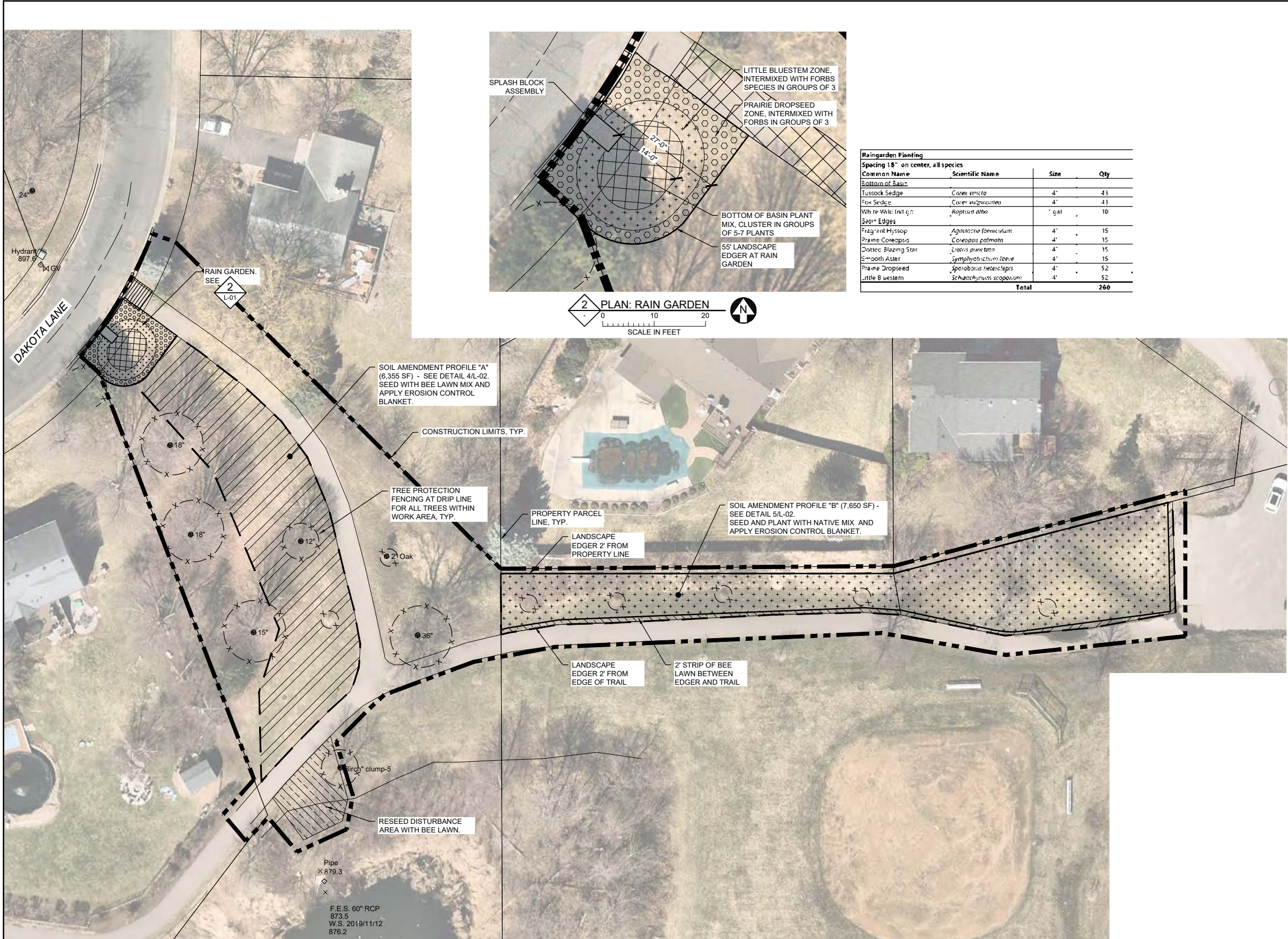
PROJECT NUMBER	1111
PROJECT NAME	TEST1
PROJECT LOCATION	TEST2
STRUCTURE ID	TEST3

PROPRIETARY AND CONFIDENTIAL:
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KRAKEN KF-10-16-72
MEMBRANE FILTRATION SYSTEM WITH PRETREATMENT
PARTITION & BAFFLE WALL DETAILS

CADD USER: Greg Nelson FILE: I:\DESIGN\23270551\4_23270551_4_T028_C-07_C08 KRAKEN.DWG PLOT SCALE: 1:2 PLOT DATE: 6/29/2021 4:31 PM



Raingarden Planting
Spacing 18" on center, all species

Common Name	Scientific Name	Size	Qty
Bottom of Basin			
Tussock Sedge	<i>Carex stricta</i>	4"	43
Fox Sedge	<i>Carex vulpocarpa</i>	4"	43
White Wild Indigo	<i>Rhynchospora alba</i>	1 gal	10
Best Edges			
Fragrant Hyssop	<i>Agastache foeniculum</i>	4"	15
Prairie Coreopsis	<i>Coreopsis palmata</i>	4"	15
Dotterel Blazing Star	<i>Liatis pumila</i>	4"	15
Smooth Aster	<i>Synthyris chlorostachya</i>	4"	15
Prairie Dropseed	<i>Sporobolus heterolepis</i>	4"	52
Little Bluestem	<i>Schizachyrium scoparium</i>	4"	52
Total			260

Bee Lawn Seed Mix

Common Name	Scientific Name	%
Dutch White Clover	<i>Trifolium repens</i>	4.7
Creeping Thyme	<i>Thymus serpyllum</i>	0.7
Sea Purslane	<i>Portulaca oleraceae</i>	2.6
Red Fescue	<i>Festuca rubra var. rubra</i>	23.1
Chewing's Fescue	<i>Festuca rubra ssp. Commutata</i>	23.1
Hard Fescue	<i>Festuca trachypodium</i>	23.1
Sheep Fescue	<i>Festuca ovina</i>	23.1
Total		100

Native Planting Mix

Common Name	Scientific Name	PLS Rate (lb/ac)
Sideoats Grama	<i>Boerhaavia carolinensis</i>	8.00
Little Bluestem	<i>Schizachyrium scoparium</i>	3.00
Seeding Subtotal		11.00

Plug Planting, 32" on center, all species

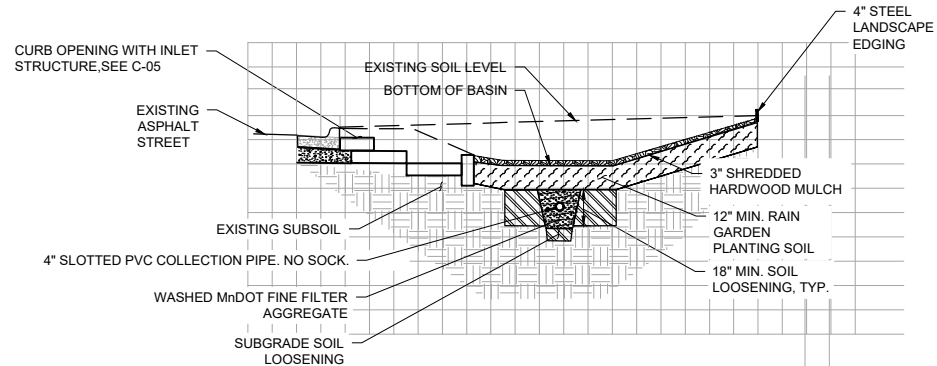
Common Name	Scientific Name	Size	Qty
Fox Sedge	<i>Carex vulpocarpa</i>	PLUG	125
Burton Blazing Star	<i>Liatis aspera</i>	PLUG	125
Dotterel Blazing Star	<i>Liatis pumila</i>	PLUG	125
Fraxinose Beardtongue	<i>Pentstemon digitalis</i>	PLUG	36
Great Blue Lobelia	<i>Lobelia siphilitica</i>	PLUG	36
Large Flowered Beardtongue	<i>Pentstemon grandiflorus</i>	PLUG	36
Worthington Onion	<i>Allium cernuum</i>	PLUG	75
Pale Purple Coneflower	<i>Echinacea pallida</i>	PLUG	35
Prairie Coreopsis	<i>Coreopsis palmata</i>	PLUG	36
Prairie Alumroot	<i>Heuchera richardsonii</i>	PLUG	50
Smooth Aster	<i>Synthyris chlorostachya</i>	PLUG	36
Planting Subtotal			855

- PLANTING NOTES:**
- CONTRACTOR SHALL HAVE UTILITIES LOCATED PRIOR TO BEGINNING WORK, AND IS RESPONSIBLE FOR PROTECTING UTILITIES FROM DAMAGE DURING PLANTING INSTALLATION.
 - PROTECT EXISTING AND PROPOSED CURBS, PAVEMENT, SIDEWALKS, AND OTHER SITE ELEMENTS FROM IMPACT BY SOIL PREPARATION AND PLANTING OPERATIONS. AVOID COMPACTING SOIL WITH HEAVY EQUIPMENT. ANY DAMAGE TO SITE TO BE REPAIRED AT CONTRACTOR'S EXPENSE.
 - PROTECT PLANTS AT SITE FROM STRESS PRIOR TO INSTALLATION BY PLACING IN SHADE, HEELING IN TO MULCH, WATERING, AND OTHER APPROPRIATE MEASURES.
 - STAKE OR OTHERWISE LAYOUT ALL PROPOSED PLANT BEDS AS SHOWN ON PLAN, DETAILS, AND PLANT SCHEDULE. SOME FIELD ADJUSTMENT MAY BE NECESSARY. LANDSCAPE ARCHITECT TO REVIEW PLANT LAYOUT PRIOR TO PLANTING. INFORM THE LANDSCAPE ARCHITECT OF PLANTING TWO DAYS PRIOR TO PLANT DELIVERY.
 - NATIVE PLANTING AREA SHALL BE SEEDED. EROSION CONTROL BLANKET PLACED, AND PLUGS PLANTED THROUGH THE BLANKET.
 - PLUGS SHALL BE PLANTED IN CLUSTERS OF 5-7 PLANTS PER SPECIES AND STAGGERED THROUGHOUT NATIVE PLANTING AREA.
 - PLACE SHREDDED HARDWOOD MULCH (MIN/DOT SPEC 3882.2 TYPE 6 - WEED SEED FREE SHREDDED HARDWOOD) TO A DEPTH OF 3" WITHIN RAIN GARDEN.
 - THOROUGHLY WATER ALL PLANTINGS AFTER INSTALLATION.
 - NO RUBBER Tired EQUIPMENT IN BASIN AFTER LOOSENING. LOW GROUND PRESSURE TRACKED EQUIPMENT ONLY.
 - ANY COMPACTION OF PREVIOUSLY LOOSENEED SOIL MUST BE RELOOSENEED.
 - ALL TURF AREAS DISTURBED DURING CONSTRUCTION MUST BE RESTORED TO CITY SATISFACTION, INCLUDING BUT NOT LIMITED TO DECOMPACTION, MINIMUM 6" OF TOPSOIL, AND SODDING. FOR SOIL AMENDMENT AREAS SEE DETAILS ON L-02.

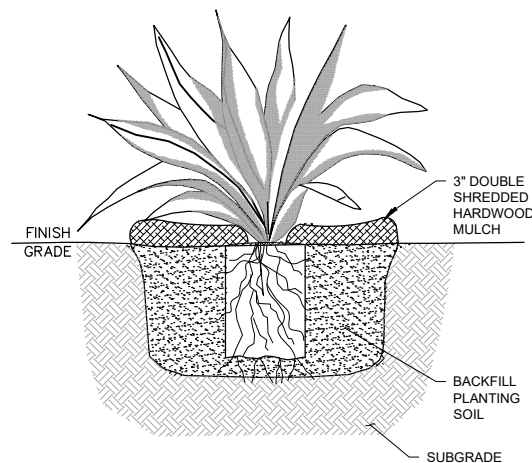
CADD USER: Marcy D. Bean FILE: MIDDESIGN2270053_14_T028_L-01.DWG PLOT SCALE: 1:2 PLOT DATE: 6/28/2021 10:13 AM

ISSUED FOR BID

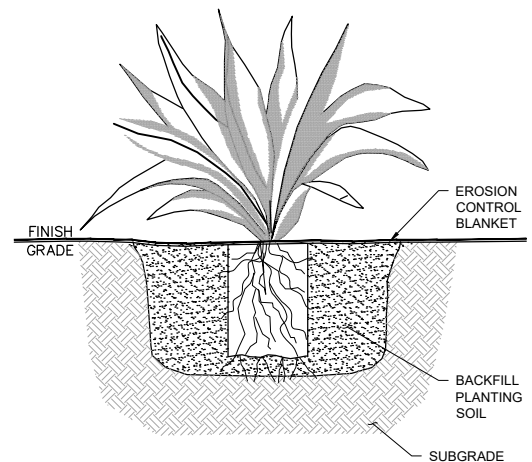
		I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION RECORD		DATE 4/19/2021 6/28/2021 7/17/2021		BARR Project Office: BARR ENGINEERING 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: 4/6/2021 Drawn: MDB3 Checked: GGN Designed: - Approved: -		RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT		RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA		BARR PROJECT No. 23/27-0053.14	
		PRINTED NAME: MARCY D. BEAN								STORM FILTER AND SOIL AMENDMENT LANDSCAPE PLAN				CLIENT PROJECT No. TO28B			
		SIGNATURE: _____ DATE: JULY 7, 2021 LICENSE # 48430		RELEASED TO/FOR: _____		DATE RELEASED: _____						DWG. No. L-01		REV. No. 0			



1 SECTION: RAIN GARDEN
NOT TO SCALE



2 DETAIL: PERENNIAL PLANTING - RAIN GARDEN
NOT TO SCALE



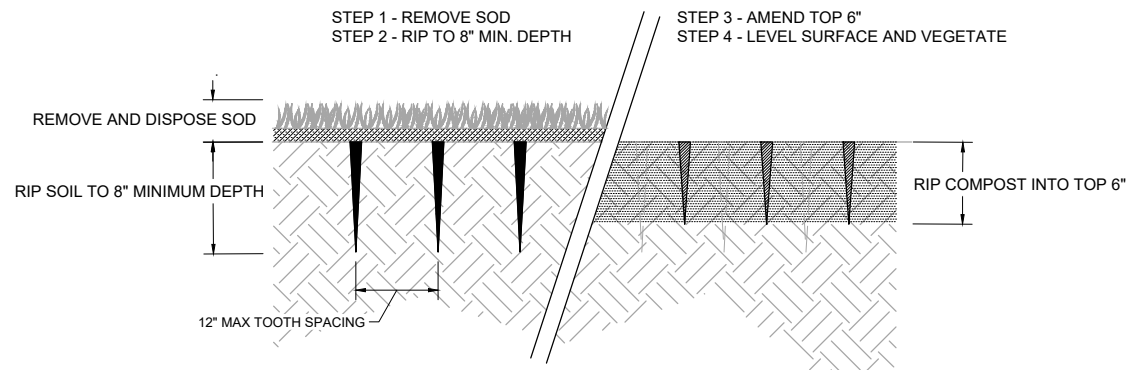
3 DETAIL: PERENNIAL PLANTING - NATIVE PLANTING
NOT TO SCALE

PERENNIAL PLANTING NOTES:

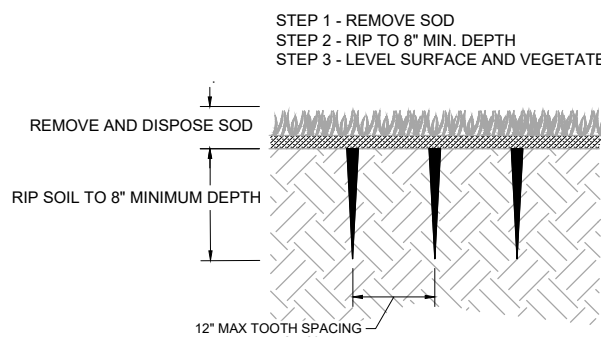
1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
2. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT.
3. DIG PLANT HOLES 18" MIN. LARGER THAN ROOT MASS, ALL SIDES.
4. SET PLANT ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY. BACK FILL WITH PLANTING SOIL FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
5. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
6. APPLY 3" DEPTH SHREDDED HARDWOOD MULCH TO ENTIRE PLANTING AREA (SOIL PREPARED AS PER PLAN).
7. NO MULCH TO BE IN CONTACT WITH PLANT.
8. WATER THOROUGHLY AFTER PLANTING.
9. CONTRACTOR WILL BE RESPONSIBLE FOR WATERING PLANTS (REGARDLESS OF NOTIFICATION) DURING ENTIRE 60 DAY WARRANTY PERIOD. WATERING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

PERENNIAL PLANTING NOTES:

1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
2. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT.
3. PREPARE SOIL PER SOIL AMENDMENT NOTES.
4. SEED AND INSTALL EROSION CONTROL BLANKET.
5. THROUGH EROSION CONTROL BLANKET, DIG PLANT HOLES 18" MIN. LARGER THAN ROOT MASS, ALL SIDES.
6. SET PLANT ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY. BACK FILL WITH PLANTING SOIL FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
7. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
8. CONTRACTOR WILL BE RESPONSIBLE FOR WATERING PLANTS (REGARDLESS OF NOTIFICATION) DURING ENTIRE 60 DAY WARRANTY PERIOD. WATERING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.



4 DETAIL: SOIL AMENDMENT PROFILE "A"
NOT TO SCALE
NOTE: SOIL AMENDMENT DETAILS AND NOTES BASED ON CITY OF EAGAN SOIL STRATEGY



5 DETAIL: SOIL AMENDMENT PROFILE "B"
NOT TO SCALE

SOIL AMENDMENT NOTES:

SOIL AMENDMENT PROFILE "A" - LOOSENING AND COMPOST APPLICATION
Prior to Final Stabilization:

1. Soil loosening & amendment requirement applies to all areas as shown on plans (not including areas under existing tree drip-lines or within 5-feet of building foundations), to restore soil permeability.
2. Soil remediation (loosening & amendment) must be implemented prior to any installation of irrigation system components, trees, shrubs, sod and/or seed. No wheeled equipment shall be used on loosened/amended soil - wide-tracked equipment only.
3. Soil remediation (loosening & amendment) must preserve existing trees. No remediation shall occur within dripline of all existing trees.
4. All disturbed areas to be revegetated (sod/seed and landscaping) shall have 8-inch minimum depth of soil loosening (e.g. soil ripping, 6-inch max. tooth spacing) and 3-inch minimum depth of MnDOT 3890 Grade 2 Compost incorporated into the top 6-inch depth of soil to restore soil permeability. Typical application rate is 50 cubic yards/10,000 square feet of MnDOT 3890 Grade 2 compost. Salvaged topsoil by itself does not count toward 5% soil organic content target.
5. Loosened/amended soils shall have a maximum of 200 psi in top 8-inches (inserting a 12-inch wire flag, by hand to depth) and a minimum of 5% organic content in top 6-inches of soil (visually black soil). Salvaged topsoil by itself does not count toward 5% soil organic target.
6. Implementation documentation shall be provided to Engineer to verify approved soil management strategy compliance. Documentation includes but is not limited to: photos/video of implementation, on-site soil samples, compost haul tickets, compaction testing, and soil organic content test results from vendor. Soil organic testing of final soil condition may be required by Engineer, if in question. Engineer is available prior to implementation to discuss necessary steps for compliance.
7. Contractor shall provide minimum of 24-hour notice to Engineer to arrange inspection of soil loosening/amendment process to verify soil remediation compliance.

SOIL AMENDMENT PROFILE "B" - LOOSENING ONLY

Prior to Final Stabilization:

1. Soil loosening applies to all areas as noted on the plans (not including areas under existing tree drip-lines or within 5-feet of building foundations), to restore soil permeability.
2. Soil remediation (loosening) must be implemented prior to any installation of irrigation system components, trees, shrubs, sod and/or seed. No wheeled equipment shall be used on loosened/amended soil - wide-tracked equipment only.
3. Soil remediation (loosening) must preserve existing trees. No remediation shall occur within dripline of all existing trees.
4. All disturbed areas to be revegetated (sod/seed and landscaping) shall have 8-inch minimum depth of soil loosening (e.g. soil ripping, 6-inch max. tooth spacing).
5. Loosened/amended soils shall have a maximum of 200 psi in top 8-inches (inserting a 12-inch wire flag, by hand to depth).
6. Implementation documentation shall be provided to Engineer to verify approved soil management strategy compliance. Documentation includes but is not limited to: photos/video of implementation, on-site soil samples, compost haul tickets, compaction testing, and soil organic content test results from vendor. Engineer is available prior to implementation to discuss necessary steps for compliance.
7. Contractor shall provide minimum of 24-hour notice to Engineer to arrange inspection of soil loosening process to verify soil remediation compliance.

CADD USER: Marcy D. Bean FILE: MIDDESIGN227063.14_T028_L01.DWG PLOT SCALE: 1:2 PLOT DATE: 6/28/2021 10:17 AM

ISSUED FOR BID

				I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.				CLIENT 4/19/2021 6/28/2021				BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435				Scale AS SHOWN				RICE MARSH LAKE WQ TREATMENT CHANHASSEN, MINNESOTA				BARR PROJECT No. 23/27-0053.14							
				PRINTED NAME MARCY D. BEAN				CONSTRUCTION RECORD				Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435				Date 4/6/2021				CLIENT PROJECT No. TO28B											
				SIGNATURE DATE: 7/7/2021 LICENSE # 48430				RELEASED TO/FOR				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Drawn MDB3				DWG. No. L-02				REV. No. 0							
NO.				BY				CHK				APP.				DATE				REVISION DESCRIPTION				RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT				STORM FILTER AND SOIL AMENDMENT LANDSCAPE SECTIONS AND DETAILS			

RESOLUTION NO. 21-XX

**Riley-Purgatory-Bluff Creek Watershed District
Board of Managers**

**Authorizing solicitation of bids for the construction of the
Rice Marsh Lake Water Quality Project**

Manager _____ offered the following resolution and moved its adoption, seconded by
Manager _____:

WHEREAS Riley-Purgatory-Bluff Creek Watershed District's 2018 10-Year Watershed Management Plan identifies potential projects in the Riley Creek subwatershed, including a watershed phosphorus-load control project, to improve Rice Marsh Lake, and in May 2020, the RPBCWD engineer completed a feasibility report that recommended the installation of a membrane-filtration facility in the Rice Marsh Lake subwatershed as the most feasible best management practice to reduce phosphorus loading and improve water quality in the lake (the Project);

WHEREAS at its January 6, 2021, meeting, the RPBCWD Board of Managers ordered the Project in accordance with Minnesota Statutes section 103B.251, and directed the administrator to develop a cooperative agreement with the City of Chanhassen for the construction of the Project in Rice Marsh Lake Park, which is owned by the city, and the administrator has developed, with the assistance of legal counsel, a draft of such agreement and coordinated the construction of the Project with planned improvements by the city to streets adjacent to Rice Marsh Lake Park; and

WHEREAS at its January 6, 2021, meeting, the managers also directed the RPBCWD engineer to develop plans and specifications and all other documentation necessary to procure bids for the construction of the Project, and the engineer has prepared such plans, specifications and further documentation.

NOW THEREFORE BE IT RESOLVED that the RPBCWD Board of Managers authorizes the administrator, on completion of review of the bid documents by RPBCWD legal counsel, to issue solicitation of bids in accordance with applicable public-procurement law for the construction of the Project and to timely present bids received to the managers for selection of a contractor for the construction of the Project.

The question was on the adoption of the resolution and there were _____ yeas and _____ nays as follows:

Yea

Nay

Abstain

Absent

**CRAFTON
KOCH
PEDERSEN
WARD**

ZIEGLER

Upon vote, the president declared the resolution _____.

David Ziegler, Secretary

* * * * *

I, David Ziegler, secretary of the Riley-Purgatory-Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this _____ day of _____, 2021.

David Ziegler, Secretary