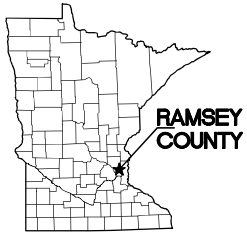
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION



LOCATION MAP



VICINITY MAP

0 100 200
SCALE IN FEET

PROJECT COORDINATE SYSTEM

HORIZONTAL: MnDOT RAMSEY COUNTY, US FOOT, NAD 1983 DATUM
VERTICAL: NAVD 88 DATUM

DRAWING INDEX

DWG. NO.	DESCRIPTION
G-01	PROJECT LOCATION AND SHEET INDEX
	EXISTING CONDITIONS SURVEY - 1 OF 2
	EXISTING CONDITIONS SURVEY - 2 OF 2
G-02	TREE PROTECTION AND REMOVALS PLAN
G-03	TREE PROTECTION AND REMOVALS TABLE
G-04	EROSION AND SEDIMENT CONTROL PLAN
G-05	EROSION AND SEDIMENT CONTROL DETAILS
G-06	STORM WATER POLLUTION PREVENTION PLAN (SWPPP) - 1 OF 2
G-07	STORM WATER POLLUTION PREVENTION PLAN (SWPPP) - 2 OF 2
CIVIL	
C-01	DEBRIS MANAGEMENT PLAN
C-02	GRADING AND STORM SEWER PLAN
C-03	GRADING SECTIONS - WEST TO EAST
C-04	GRADING SECTIONS - NORTH TO SOUTH
LANDSCAPE	
L-01	RESTORATION AND PLANTING PLAN
L-02	RESTORATION AND PLANTING NOTES
L-03	RESTORATION AND PLANTING DETAILS

CONTACTS

BARR ENGINEERING CO.
BRENDAN DOUGHERTY, PLA
PROJECT MANAGER
LANDSCAPE ARCHITECT
PHONE: 952-842-3694
EMAIL: BDOUGHERTY@BARR.COM

BARR ENGINEERING CO.
JOSH PHILLIPS, PE
CIVIL ENGINEER
PHONE: 952-832-2723
EMAIL: JPHILLIPS@BARR.COM

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT
PAIGE AHLBORG
PROJECT MANAGER
PHONE: 651-792-7964
EMAIL: PAIGE.AHLBORG@RWMWD.ORG

CITY OF SHOREVIEW
TOM WESOLOWSKI
PUBLIC WORKS DIRECTOR
PHONE: 651-490-4662
EMAIL: TWESOLOWSKI@SHOREVIEWMN.GOV

CITY OF SHOREVIEW
KRISTA BILLERBECK
NATURAL RESOURCES MANAGER
PHONE: 651-490-4665
EMAIL: KBILLERBECK@SHOREVIEWMN.GOV

GOPHER STATE ONE CALL

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

CONTRACTOR IS RESPONSIBLE FOR FIELD-LOCATING ALL SITE UTILITIES, PRIVATE AND PUBLIC, PRIOR TO STARTING THE WORK. ALL UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. ANY UTILITIES DAMAGED BY CONTRACTOR TO BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE UTILITY OWNER.

95% DESIGN DRAFT
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
-	-	-	-	———	-

CLIENT: 4/24/2024
BID
CONSTRUCTION

RELEASED TO/FOR

DATE RELEASED: A B C 0 1 2 3

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

Scale	AS SHOWN
Date	04/24/2024
Drawn	OQR
Checked	BHD
Designed	BARR
Approved	BHD

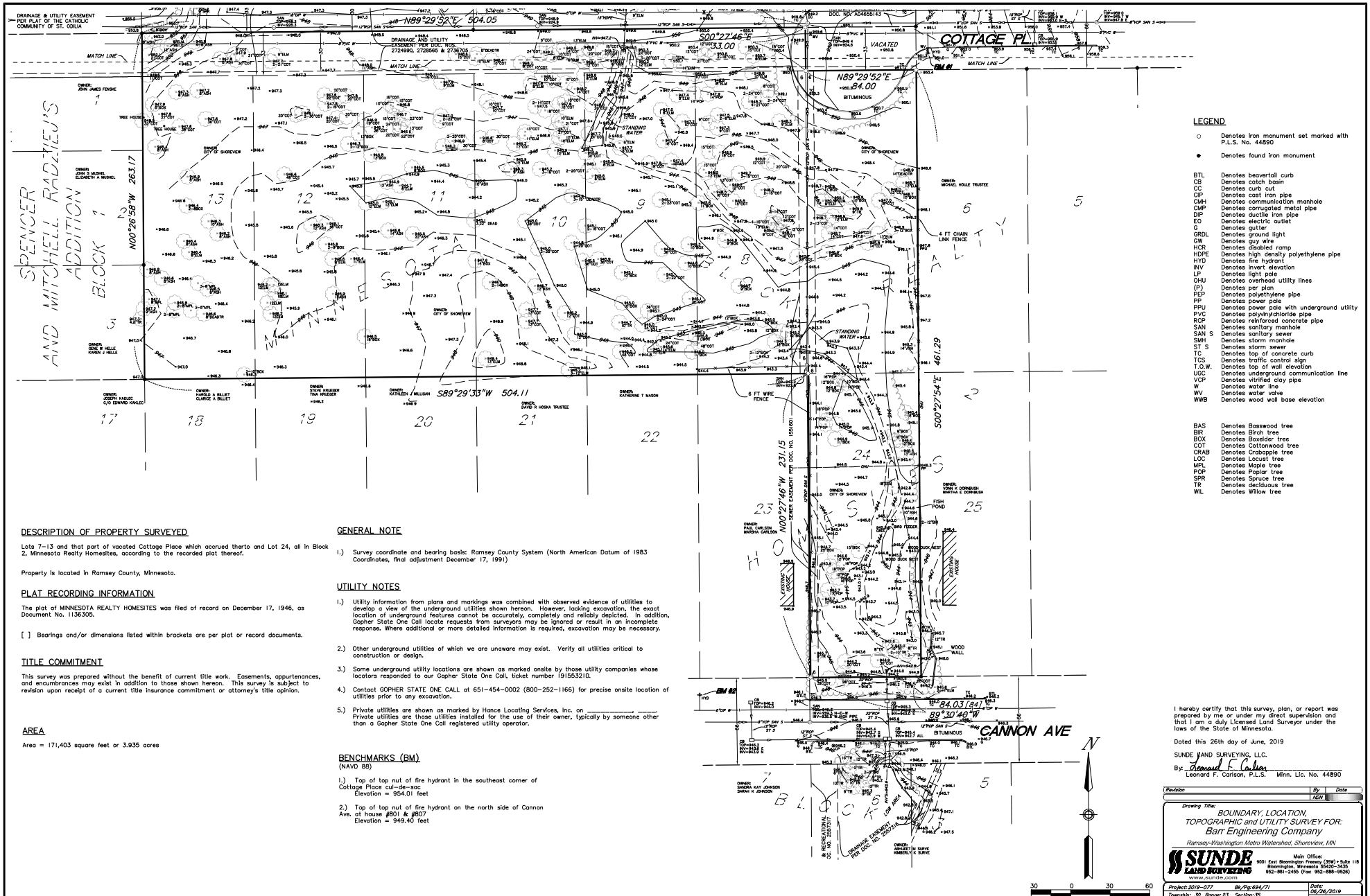
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

PROJECT LOCATION AND SHEET INDEX

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No. -
DWG. No. G-01
REV. No. A

CADD USER: Owen Q, Wolfsey FILE: M:\DES\SHO\CAD\62-1493\PLS\CIVIL\C-01_PROJECT LOCATION AND SHEET INDEX-2.DWG PLOT SCALE: 1:2 PLOT DATE: 4/24/2024 12:55 PM
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LEGEND

○	Denotes iron monument set marked with P.L.S. No. 44890
●	Denotes found iron monument
BTL	Denotes beavertail curb
CB	Denotes catch basin
CC	Denotes curb cut
CIP	Denotes cast iron pipe
CMH	Denotes communication manhole
CMP	Denotes corrugated metal pipe
DIP	Denotes ductile iron pipe
EO	Denotes electric outlet
G	Denotes gutter
GRDL	Denotes ground light
GW	Denotes guy wire
HCR	Denotes disabled ramp
HDPE	Denotes high density polyethylene pipe
HYD	Denotes fire hydrant
INV	Denotes invert elevation
LP	Denotes light pole
OHU	Denotes overhead utility lines
(P)	Denotes per plan
PEP	Denotes polyethylene pipe
PP	Denotes power pole
PPLI	Denotes power pole with underground utility
PVC	Denotes polyvinylchloride pipe
RCP	Denotes reinforced concrete pipe
SAN	Denotes sanitary manhole
SAN S	Denotes sanitary sewer
SMH	Denotes storm manhole
ST S	Denotes storm sewer
TC	Denotes top of concrete curb
TCS	Denotes traffic control sign
T.O.W.	Denotes top of wall elevation
UGC	Denotes underground communication line
VCP	Denotes vitrified clay pipe
W	Denotes water line
WV	Denotes water valve
WWB	Denotes wood wall base elevation

BAS	Denotes Basswood tree
BIR	Denotes Birch tree
BOX	Denotes Boxelder tree
COT	Denotes Cottonwood tree
CRAB	Denotes Crabapple tree
LOC	Denotes Locust tree
MPL	Denotes Maple tree
POP	Denotes Poplar tree
SPR	Denotes Spruce tree
TR	Denotes deciduous tree
WIL	Denotes Willow tree

DESCRIPTION OF PROPERTY SURVEYED

Lots 7–13 and that part of vacated Cottage Place which accrued thereto and Lot 24, all in Block 2, Minnesota Realty Homesites, according to the recorded plat thereof.

Property is located in Ramsey County, Minnesota.

PLAT RECORDING INFORMATION

The plat of MINNESOTA REALTY HOMESITES was filed of record on December 17, 1946, as Document No. 1136305.

[ ] Bearings and/or dimensions listed within brackets are per plat or record documents.

TITLE COMMITMENT

This survey was prepared without the benefit of current title work. Easements, appurtenances, and encumbrances may exist in addition to those shown hereon. This survey is subject to revision upon receipt of a current title insurance commitment or attorney's title opinion.

AREA

Area = 171,403 square feet or 3.935 acres

GENERAL NOTE

1.) Survey coordinate and bearing basis: Ramsey County System (North American Datum of 1983 Coordinates, final adjustment December 17, 1991)

UTILITY NOTES

1.) Utility information from plans and markings was combined with observed evidence of utilities to develop a view of the underground utilities shown hereon. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. In addition, Gopher State One Call locate requests from surveyors may be ignored or result in an incomplete response. Where additional or more detailed information is required, excavation may be necessary.

2.) Other underground utilities of which we are unaware may exist. Verify all utilities critical to construction or design.

3.) Some underground utility locations are shown as marked onsite by those utility companies whose locators responded to our Gopher State One Call, ticket number 191553210.

4.) Contact GOPHER STATE ONE CALL at 651-454-0002 (800-252-1166) for precise onsite location of utilities prior to any excavation.

5.) Private utilities are shown as marked by Hance Locating Services, Inc. on _____, ____. Private utilities are those utilities installed for the use of their owner, typically by someone other than a Gopher State One Call registered utility operator.

BENCHMARKS (BM)

(NAVD 88)

1.) Top of top nut of fire hydrant in the southeast corner of Cottage Place cul-de-sac
Elevation = 954.01 feet

2.) Top of top nut of fire hydrant on the north side of Cannon Ave. at house #801 & #807
Elevation = 949.40 feet

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 26th day of June, 2019

SUNDE LAND SURVEYING, LLC.

By: Leonard F. Carlson
Leonard F. Carlson, P.L.S. Minn. Lic. No. 44890

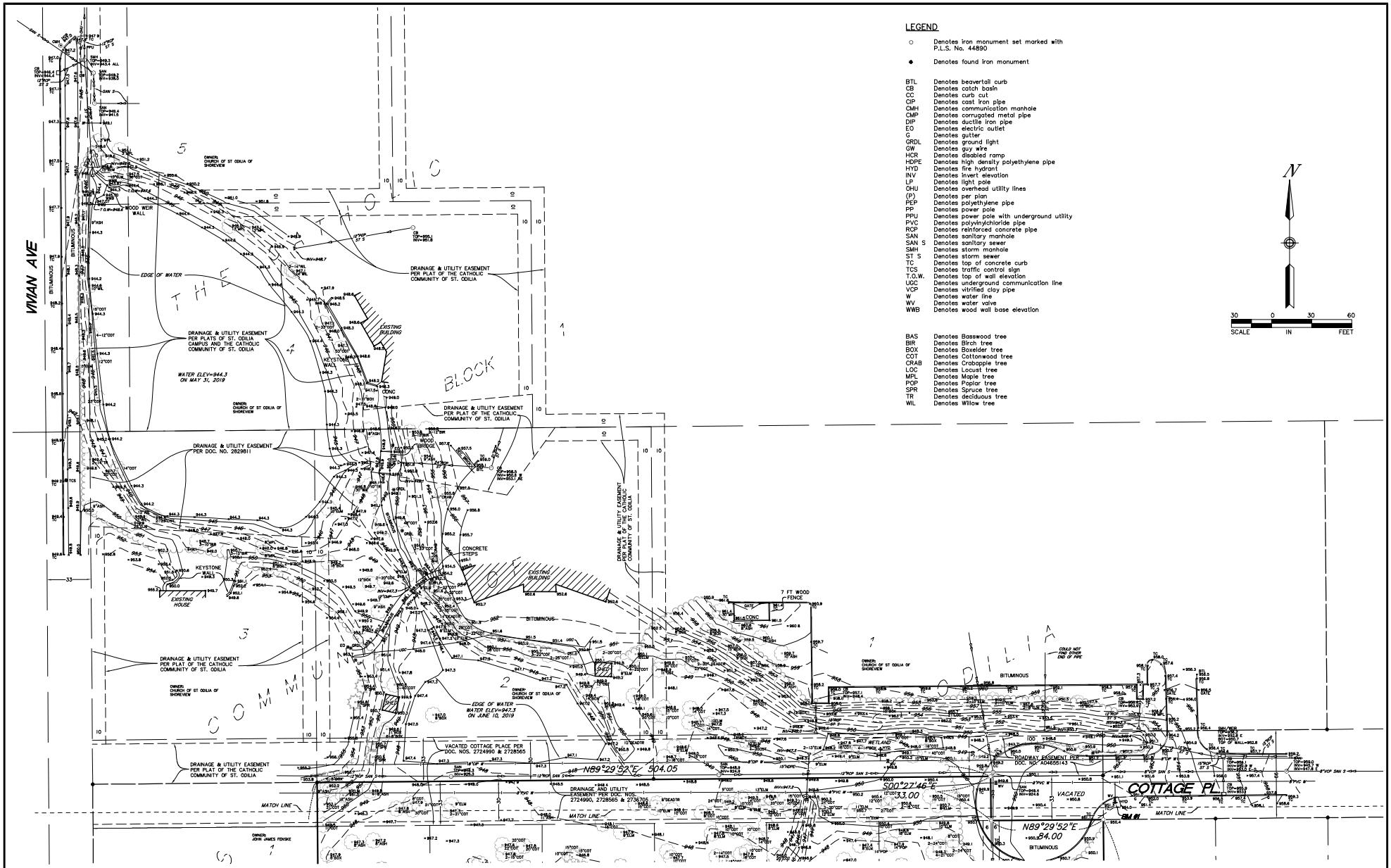
Revision	By	Date
	NDN	

Drawing Title:
BOUNDARY, LOCATION, TOPOGRAPHIC and UTILITY SURVEY FOR:
Barr Engineering Company
Ramsey-Washington Metro Watershed, Shoreview, MN

SUNDE LAND SURVEYING
Main Office:
901 East Bloomington Freeway (35W) • Suite 118
Bloomington, Minnesota 55420-3435
952-881-2455 (Fax: 952-888-9526)
www.sunde.com

Project: 2019-077 Bk/Pg: 694/71	Date: 06/26/2019
Township: 30 Range: 23 Section: 35	Sheet: 1 of 2
File: 2019077001.dwg	

SCALE 30 0 30 60 IN FEET



LEGEND

○	Denotes iron monument set marked with P.L.S. No. 44890
◆	Denotes found iron monument

BTL	Denotes beavertail curb
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WIL	Denotes Willow tree

Dated this 26th day of June, 2019

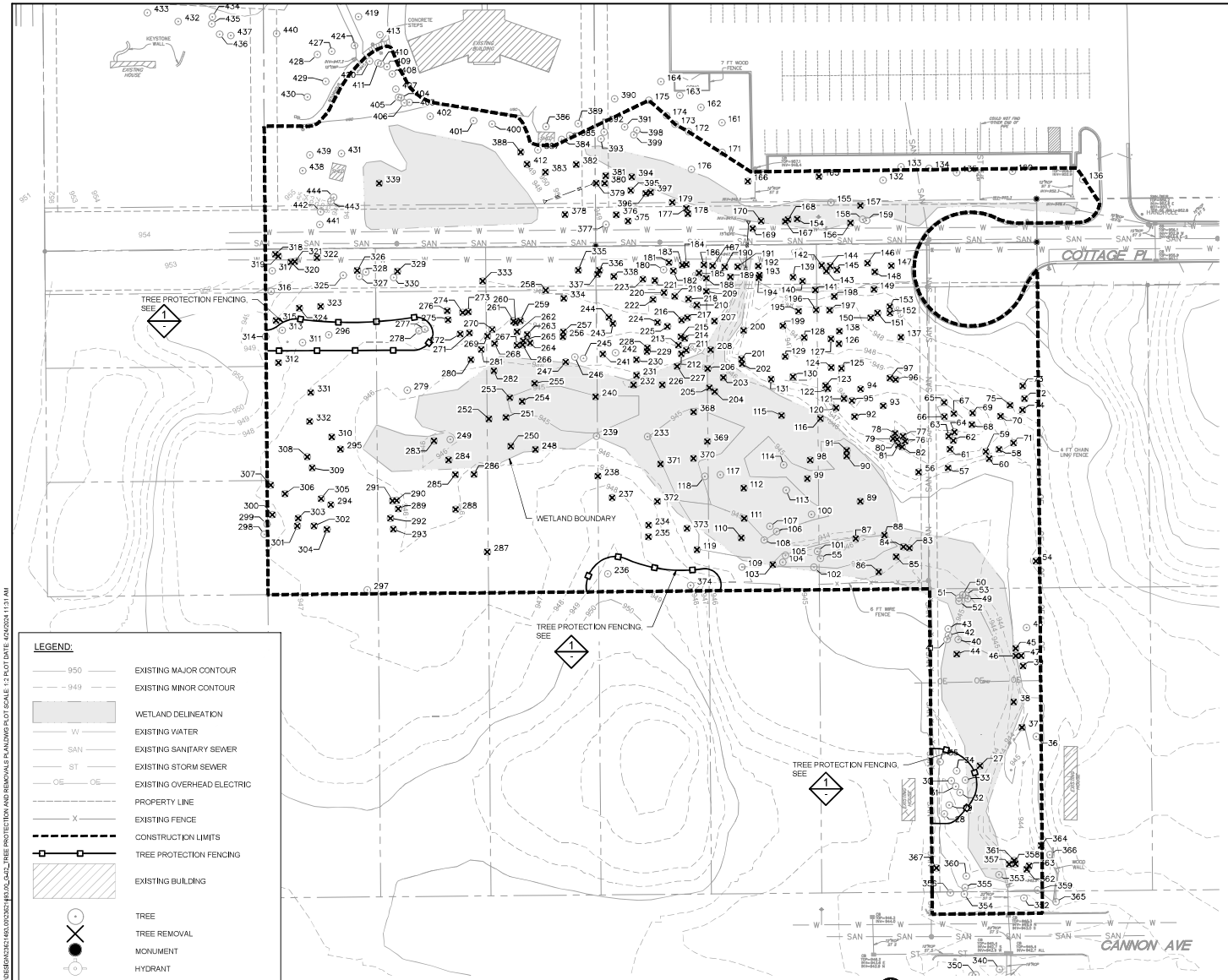
Certified by: Leonard F. Carlson

Leonard F. Carlson, P.L.S. Minn. Lic. No. 44890

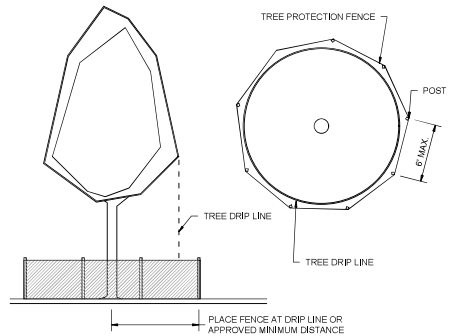
SUNDE LAND SURVEYING
www.sunde.com
Main Office:
9001 East Bloomington Freeway (35W) • Suite 115
Bloomington, Minnesota 55420-3436
952-881-2455 (Fax: 952-888-9526)

File: 2019077001.dwg

Sheet: 2 of 2



1 PLAN: TREE PROTECTION AND REMOVAL
0 40 80
SCALE IN FEET



NOTES:
1. 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. FOLLOWING COMPLETION OF CONSTRUCTION PROCESS, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TREE PROTECTION FENCING.
2. CONSTRUCTION MATERIALS, STOCKPILES, EQUIPMENT, VEHICLES, AND TEMPORARY FACILITIES SHALL NOT BE STORED OR OPERATED WITHIN THE TREE PROTECTION ZONE.
3. 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 OR LANDSCAPE ARCHITECT.
4. ADDITIONAL TREE PROTECTION MEASURES MAY BE REQUIRED.

1 DETAIL: TREE PROTECTION FENCING
NOT TO SCALE

NOTES:
1. PROVIDE EROSION AND SEDIMENT CONTROLS PRIOR TO LAND DISTURBING ACTIVITIES.
2. SEE SHEET G-03 FOR TREE REMOVAL TABLE.
3. SUBMIT A TREE REMOVAL PLAN TO LIMIT DISTURBANCE WITHIN EXISTING WETLAND.
4. 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.
5. FOLLOW ALL ROAD RESTRICTION REGULATIONS WHEN REMOVING TREES.
6. LANDSCAPE ARCHITECT SHALL MARK ALL TREES FOR REMOVAL PRIOR TO ANY CONSTRUCTION ACTIVITY. COORDINATE WITH LANDSCAPE ARCHITECT TWO (2) WEEKS PRIOR TO CONSTRUCTION.
7. REMOVE, GRIND STUMPS, AND DISPOSE OF ALL WOOD AND DEBRIS IN ACCORDANCE WITH ALL LOCAL RULES AND REGULATIONS.
8. CONTRACTOR TO VERIFY AND RECORD QUANTITY OF TREES REMOVED WITH DIAMETER GREATER THAN 8".
9. ALL TREES LARGER THAN 8" NOT MARKED FOR REMOVAL SHALL BE AVOIDED AND ANY GRADING OR COMPACTION WITHIN THE DRIPLINE SHALL BE MINIMIZED.
10. TREE SURVEY FOR PROJECT AREA WAS COMPLETED ON 6/24/2019. TREES NOT SPECIFICALLY SHOWN WERE NOT INCLUDED IN ORIGINAL SURVEY.
11. CLEAR AND GRUB ALL INVASIVE TREES AND SHRUBS LESS THAN 8" DIAMETER.

95% DESIGN DRAFT
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
-	-	-	-	-	-

RELEASED TO/FOR: CLIENT, PERMIT, BID, CONSTRUCTION, RECORD
DATE RELEASED: 4/24/2024 — A B C 0 1 2 3

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

Scale	AS SHOWN
Date	04/24/2024
Drawn	CQR
Checked	BHD
Designed	BARR
Approved	BHD

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

TREE PROTECTION AND REMOVALS PLAN
-

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. G-02
REV. No. A

CADD USER: OWEN.G.BRADLEY FILE: M:\DESIGN\23621493.00\CAD\23621493.00_G-02_TREE PROTECTION AND REMOVALS PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 4/24/2024 11:31 AM

TREE ID	SPECIES	DIAMETER (INCHES)	REMOVE	LANDMARK TREE	COMMENT
27	BOXELDER	15	YES		
28	ASPEN	10	NO		
29	ASPEN	17	NO	X	
30	ASPEN	16	NO	X	
31	ASPEN	12	NO		
32	ASPEN	16	NO	X	
33	ASPEN	16	NO	X	
34	ASPEN	12	NO		
35	BOXELDER	25	NO		
36	BIRCH	2-12	NO		MULTI-STEM
37	GREEN ASH	10	YES		
38	ELM	18	YES	X	
39	GREEN ASH	13	YES		
40	ASPEN	14	NO		
41	ASPEN	14	NO		
42	ASPEN	14	NO		
43	ASPEN	18	NO	X	
44	BOXELDER	11	YES		
45	BOXELDER	9	YES		
46	BOXELDER	12	YES		
47	BOXELDER	12	YES		
48	BOXELDER	18	NO		
49	ASPEN	14	NO		
50	ASPEN	16	NO	X	
51	BOXELDER	12	NO		
52	BOXELDER	12	NO		
53	BOXELDER	10	NO		
54	GREEN ASH	14	YES		
55	COTTONWOOD	48	NO	X	
56	COTTONWOOD	33	YES	X	
57	BOXELDER	18	YES		
58	ELM	13	YES		
59	COTTONWOOD	2-24	YES		MULTI-STEM
60	COTTONWOOD	14	YES		
61	COTTONWOOD	14	YES		
62	COTTONWOOD	14	YES		
63	COTTONWOOD	2-13	YES		MULTI-STEM
64	ELM	13	YES		
65	BOXELDER	11	YES		
66	ELM	9	YES		
67	ELM	9	YES		
68	DECIDUOUS (SP.)	9	YES		
69	BOXELDER	10	YES		
70	COTTONWOOD	18	YES		
71	BOXELDER	3-12	YES		MULTI-STEM
72	ELM	13	YES		
73	DEAD	14	YES		DEAD
74	BOXELDER	10	YES		
75	COTTONWOOD	12	YES		
76	COTTONWOOD	2-12	YES		MULTI-STEM
77	COTTONWOOD	12	YES		
78	COTTONWOOD	2-14	YES		MULTI-STEM
79	COTTONWOOD	4-18	YES		MULTI-STEM
80	ELM	13	YES		
81	COTTONWOOD	9	YES		
82	COTTONWOOD	15	YES		
83	BOXELDER	12	YES		
84	BOXELDER	12	YES		
85	BOXELDER	12	YES		
86	BOXELDER	2-12	YES		MULTI-STEM
87	BOXELDER	12	YES		
88	BOXELDER	19	YES		
89	BOXELDER	9	YES		
90	BOXELDER	9	YES		
91	BOXELDER	9	YES		
92	COTTONWOOD	15	YES		
93	COTTONWOOD	2-15	YES		MULTI-STEM
94	COTTONWOOD	2-15	YES		MULTI-STEM
95	COTTONWOOD	12	YES		
96	COTTONWOOD	20	YES		
97	COTTONWOOD	12	YES		
98	BOXELDER	10	YES		
99	BOXELDER	10	YES		
100	COTTONWOOD	36	NO	X	
101	BOXELDER	11	NO		
102	BOXELDER	11	NO		
103	ELM	10	YES		
104	ELM	14	NO		
105	COTTONWOOD	24	NO		
106	COTTONWOOD	2-24	NO		MULTI-STEM
107	COTTONWOOD	36	NO	X	
108	COTTONWOOD	24	NO		
109	COTTONWOOD	48	NO	X	
110	DECIDUOUS (SP.)	10	YES		
111	BOXELDER	10	YES		
112	BOXELDER	10	YES		
113	COTTONWOOD	2-22	NO		MULTI-STEM
114	COTTONWOOD	36	NO	X	
115	COTTONWOOD	2-23	YES		MULTI-STEM
116	BOXELDER	11	YES		
117	COTTONWOOD	36	NO	X	
118	COTTONWOOD	36	NO	X	
119	COTTONWOOD	12	YES		
120	COTTONWOOD	16	YES		
121	COTTONWOOD	13	YES		
122	ELM	13	YES		
123	COTTONWOOD	15	NO		
124	COTTONWOOD	15	NO		
125	COTTONWOOD	18	YES		
126	COTTONWOOD	9	YES		
127	COTTONWOOD	9	YES		
128	COTTONWOOD	10	YES		
129	COTTONWOOD	16	YES		
130	GREEN ASH	10	YES		
131	COTTONWOOD	19	YES		
132	HONEY LOCUST	21	NO		
133	ELM	2-10	NO		MULTI-STEM
134	ELM	2-10	NO		MULTI-STEM
135	ELM	3-8	NO		MULTI-STEM
136	SILVER MAPLE	18	NO		
137	ELM	9	YES		
138	ELM	3-8	YES		MULTI-STEM
139	ELM	11	YES		
140	ELM	11	YES		
141	COTTONWOOD	10	YES		
142	COTTONWOOD	12	YES		
143	COTTONWOOD	21	YES		
144	COTTONWOOD	12	YES		
145	COTTONWOOD	2-16	YES		MULTI-STEM
146	COTTONWOOD	15	YES		
147	COTTONWOOD	18	YES		
148	ELM	8	YES		
149	ELM	10	YES		
150	COTTONWOOD	4-21	YES		MULTI-STEM
151	COTTONWOOD	2-24	YES		MULTI-STEM
152	COTTONWOOD	2-24	YES		MULTI-STEM
153	COTTONWOOD	8	YES		
154	BOXELDER	4-14	YES		MULTI-STEM
155	COTTONWOOD	30	NO	X	
156	ELM	10	YES		
157	BOXELDER	8	YES		
158	COTTONWOOD	18	NO		
159	COTTONWOOD	40	NO	X	
160	BOXELDER	15	NO		
161	GREEN ASH	10	NO		
162	GREEN ASH	15	NO	X	
163	GREEN ASH	8	NO		
164	SILVER MAPLE	30	NO	X	
165	BOXELDER	10	YES		
166	BOXELDER	2-12	YES		MULTI-STEM
167	ELM	9	YES		
168	COTTONWOOD	18	YES		
169	ELM	9	YES		
170	ELM	2-13	YES		MULTI-STEM
171	GREEN ASH	8	NO		
172	BOXELDER	2-12	NO		MULTI-STEM
173	BOXELDER	9	NO		
174	BOXELDER	12	NO		
175	BOXELDER	8	NO		
176	COTTONWOOD	55	NO	X	
177	ELM	10	YES		
178	COTTONWOOD	4-20	YES		MULTI-STEM
179	BOXELDER	14	YES		
180	COTTONWOOD	24	NO		
181	COTTONWOOD	9	YES		
182	ELM	8	YES		
183	COTTONWOOD	10	YES		
184	COTTONWOOD	14	YES		
185	ELM	8	YES		
186	ELM	13	YES		
187	COTTONWOOD	20	YES		
188	COTTONWOOD	12	YES		
189	COTTONWOOD	10	YES		
190	COTTONWOOD	10	YES		
191	COTTONWOOD	13	YES		
192	COTTONWOOD	24	YES		
193	COTTONWOOD	3-20	YES		MULTI-STEM
194	ELM	12	YES		
195	ELM	8	YES		
196	ASPEN	14	YES		
197	ASPEN	14	YES		
198	ELM	18	YES	X	
199	ELM	8	YES		
200	COTTONWOOD	12	YES		
201	ELM	8	YES		
202	ELM	8	YES		
203	ELM	8	YES		
204	ELM	9	YES		
205	COTTONWOOD	3-20	YES		MULTI-STEM
206	COTTONWOOD	30	YES	X	
207	COTTONWOOD	20	YES		
208	COTTONWOOD	24	YES		
209	ELM	8	YES		
210	COTTONWOOD	14	YES		
211	ELM	10	YES		
212	ELM	10	YES		
213	COTTONWOOD	21	YES		
214	COTTONWOOD	21	YES		
215	ELM	10	YES		
216	COTTONWOOD	18	YES		
217	COTTONWOOD	10	YES		
218	COTTONWOOD	10	YES		
219	COTTONWOOD	10	YES		
220	COTTONWOOD	10	YES		
221	COTTONWOOD	10	YES		
222	ELM	8	YES		
223	COTTONWOOD	9	YES		
224	COTTONWOOD	2-14	YES		MULTI-STEM
225	COTTONWOOD	18	YES		
226	COTTONWOOD	3-15	YES		MULTI-STEM
227	ELM	10	YES		
228	COTTONWOOD	13	YES		
229	ELM	11	YES		
230	COTTONWOOD	17	YES		
231	ELM	15	YES	X	
232	GREEN ASH	9	YES		
233	COTTONWOOD	38	NO	X	
234	COTTONWOOD	13	YES		
235	COTTONWOOD	13	YES		
236	ELM	13	NO		
237	BOXELDER	2-14	YES		MULTI-STEM
238	BOXELDER	14	YES		
239	DEAD	32	NO	X	DEAD
240	GREEN ASH	10	YES		
241	COTTONWOOD	8	YES		
242	COTTONWOOD	30	NO	X	
243	COTTONWOOD	10	YES		
244	COTTONWOOD	10	YES		
245	COTTONWOOD	30	NO	X	
246	COTTONWOOD	2-20	NO		MULTI-STEM
247	BOXELDER	11	YES		
248	GREEN ASH	22	YES	X	
249	COTTONWOOD	46	NO	X	
250	GREEN ASH	14	YES		
251	ELM	12	YES		
252	ELM	12	YES		
253	GREEN ASH	12	YES		
254	ELM	9	YES		
255	BOXELDER	8	YES		
256	COTTONWOOD	9	YES		
257	COTTONWOOD	2-22	YES		MULTI-STEM
258	COTTONWOOD	15	YES		
259	COTTONWOOD	15	YES		
260	COTTONWOOD	15	YES		
261	COTTONWOOD	10	YES		
262	COTTONWOOD	15	YES		
263	COTTONWOOD	23	YES		
264	COTTONWOOD	13	YES		
265	COTTONWOOD	24	YES		
266	COTTONWOOD	22	YES		
267	COTTONWOOD	20	YES		
268	COTTONWOOD	26	YES		
269	COTTONWOOD	19	YES		
270	DEAD	12	YES		DEAD
271	COTTONWOOD	20	YES		
272	COTTONWOOD	20	YES		
273	COTTONWOOD	20	YES		
274	COTTONWOOD	20	YES		
275	COTTONWOOD	2-15	YES		MULTI-STEM
276	COTTONWOOD	22	YES		
277	COTTONWOOD	7-30	NO	X	MULTI-STEM
278	COTTONWOOD	30	NO	X	
279	COTTONWOOD	48	NO	X	
280	BOXELDER	7-12	YES		MULTI-STEM
281	BOXELDER	13	YES		
282	BOXELDER	13	YES		
283	GREEN ASH	12	YES		
284	BOXELDER	2-9	YES		MULTI-STEM
285	ELM	9	YES		
286	ELM	11	YES		
287	BOXELDER	18	YES		
288	GREEN ASH	13	YES		
289	ELM	18	YES	X	
290	ELM	12	YES		
291	ELM	12	YES		
292	ELM	12	YES		
293	ELM	12	YES		
294	GREEN ASH	8	YES		
295	GREEN ASH	8	YES		
296	COTTONWOOD	36	NO	X	
297	BOXELDER	2-10	NO		MULTI-STEM
298	ELM	5	NO		
299	GREEN ASH	9	NO		
300	SILVER MAPLE	8	YES		
301	SILVER MAPLE	3-4	YES		MULTI-STEM
302	SILVER MAPLE	3-4	YES		MULTI-STEM
303	SILVER MAPLE	2-3	YES		MULTI-STEM
304	DEAD	8	YES		DEAD
305	SILVER MAPLE	3-4	YES		MULTI-STEM
306	GREEN ASH	8	YES		
307	GREEN ASH	8	YES		
308	GREEN ASH	8	YES		
309	ELM	8	YES		
310	GREEN ASH	10	YES		
311	COTTONWOOD	38	NO	X	
312	GREEN ASH	8	YES		
313	COTTONWOOD	27	NO		
314	COTTONWOOD	32	NO	X	
315	BOXELDER	8	YES		
316	COTTONWOOD	11	NO		
317	COTTONWOOD	21	NO		
318	BOXELDER	4-8	YES		MULTI-STEM
319	GREEN ASH	9	YES		
320	GREEN ASH	12	YES		
321	ELM	9	YES		
322	GREEN ASH	4-8	YES		MULTI-STEM
323	GREEN ASH	8	YES		
324	GREEN ASH	8	YES		
325	GREEN ASH	8	NO		
326	COTTONWOOD	8	YES		
327	COTTONWOOD	30	NO	X	
328	COTTONWOOD	21	NO		
329	ELM	9	YES		
330	COTTONWOOD	2-21	NO		MULTI-STEM
331	GREEN ASH	8	YES		
332	BOXELDER	2-9	YES		MULTI-STEM
333	GREEN ASH	11	YES		
334	ELM	9	YES		
335	COTTONWOOD	15	YES		
336	DEAD	8	YES		DEAD
337	ELM	10	YES		
338	COTTONWOOD	10	YES		
339	BOXELDER	8	YES		
340	COTTONWOOD	22	NO		
341	DECIDUOUS (SP.)	2-9	NO		MULTI-STEM
342	DECIDUOUS (SP.)	9	NO		
343	DECIDUOUS (SP.)	12	NO		
344	DECIDUOUS (SP.)	9	NO		
345	DECIDUOUS (SP.)	9	NO		
346	DECIDUOUS (SP.)	9	NO		
347	DECIDUOUS (SP.)	8	NO		
348	DECIDUOUS (SP.)	10	NO		
349	DECIDUOUS (SP.)	12	NO		
350	DECIDUOUS (SP.)	12	NO		
351	DECIDUOUS (SP.)	16	NO	X	
352	DECIDUOUS (SP.)	12	NO		
353	COTTONWOOD	30	NO	X	
354	COTTONWOOD	28	NO		
355	COTTONWOOD	22	NO		
356	COTTONWOOD	32	NO	X	
357	DECIDUOUS (SP.)	8	YES		
358	DECIDUOUS (SP.)	2-10	YES		MULTI-STEM
359	COTTONWOOD	28	YES		
360	COTTONWOOD	20	YES		
361	DECIDUOUS (SP.)	10	YES		
362	DECIDUOUS (SP.)	2-7	YES		MULTI-STEM
363	DECIDUOUS (SP.)	8	YES		
364	DECIDUOUS (SP.)	8	YES		
365	ELM	2-11	NO		MULTI-STEM
366	DECIDUOUS (SP.)	12	NO		
367	DECIDUOUS (SP.)	9	YES		
368	DEAD	3-15	YES		DEAD, MULTI-STEM
369	COTTONWOOD	2-15	YES		MULTI-STEM
370	COTTONWOOD	2-20	YES		MULTI-STEM
371	COTTONWOOD	3-25	YES		MULTI-STEM
372	GREEN ASH	12	YES		
373	COTTONWOOD	12	YES		
374	ELM	3-12	NO		MULTI-STEM
375	COTTONWOOD	2-15	YES		MULTI-STEM
376	ELM	8	YES		
377	COTTONWOOD	2-16	NO		MULTI-STEM
378	DEAD	12	YES		DEAD
379	COTTONWOOD	20	YES		
380	COTTONWOOD	12	YES		
381	COTTONWOOD	15	YES		
382	COTTONWOOD	16	YES		
383	DECIDUOUS (SP.)	15	NO		
384	ELM	9	NO		
385	COTTONWOOD	4-22	NO		MULTI-STEM
386	COTTONWOOD	2-20	NO		MULTI-STEM
387	COTTONWOOD	13	NO		
388	BOXELDER	14	YES		
389	ELM	12	NO		
390	BOXELDER	8	NO		
391	COTTONWOOD	22	NO		
392	COTTONWOOD	24	NO		
393	COTTONWOOD	11	NO		
394	COTTONWOOD	14	YES		
395	COTTONWOOD	14	YES		
396	COTTONWOOD	14	YES		
397	ELM	12	YES		
398	DEAD	2-20	NO		DEAD, MULTI-STEM
399	COTTONWOOD	23	NO		
400	COTTONWOOD	2-25	NO		MULTI-STEM
401	COTTONWOOD	3-22	NO		MULTI-STEM
402	COTTONWOOD	28	NO		
403	COTTONWOOD	2-22	NO		MULTI-STEM
404	COTTONWOOD	20	NO		
405	ELM	8	NO		
406	ELM	12	NO		
407	DEAD	14	NO		DEAD
408	COTTONWOOD	2-25	NO		MULTI-STEM
409	COTTONWOOD	20	NO		
410	COTTONWOOD	4-22	NO		MULTI-STEM
411	COTTONWOOD	2-22	NO		MULTI-STEM
412	BOXELDER	14	YES		
413	CRAB APPLE	4-9	NO		MULTI-STEM
419	COTTONWOOD	2-23	NO		MULTI-STEM
420	ELM	9	NO		
424	ELM	9	NO		
427	COTTONWOOD	2-20	NO		MULTI-STEM
428	BOXELDER	12	NO		
429	GREEN ASH	9	NO		
430	BOXELDER	9	NO		
431	COTTONWOOD	2-10	NO	X	MULTI-STEM
432	BIRCH	3-12	NO		
433	BIRCH	3-10	NO		MULTI-STEM
434	SILVER MAPLE	8	NO		
435	SILVER MAPLE	8	NO		
436	BOXELDER	8	NO		
437	BOXELDER	2-8	NO		MULTI-STEM
438	SPRUCE	11	NO		
439	SPRUCE	9	NO		
440	BOXELDER	18	NO		
441	SPRUCE	9	NO		
442	SPRUCE	9	NO		
443	BOXELDER	6-8	NO		MULTI-STEM
444	BOXELDER	11	NO		

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NOT FOR CONSTRUCTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
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CLIENT	04/24/2024
PERMIT	
BID	
CONSTRUCTION	
RECORD	

DATE RELEASED: A B C 0 1 2 3

BARR

Project Office:
BARR ENGINEERING CO.
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Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-(800)-632-2277

Scale	AS SHOWN
Date	04/24/2024
Drawn	OQR
Checked	BHD
Designed	BARR
Approved	BHD

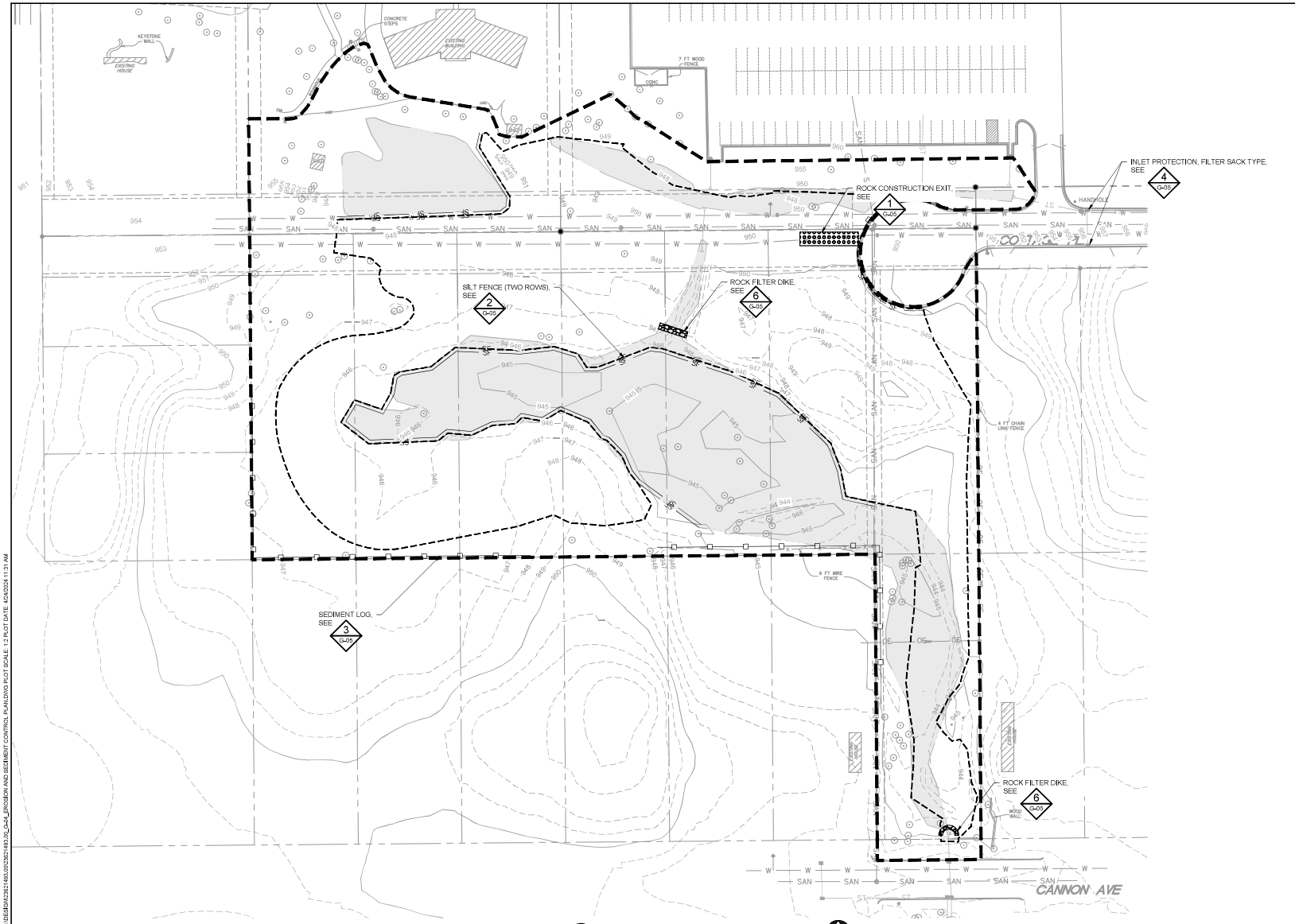
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

TREE PROTECTION AND REMOVAL TABLE

BARR PROJECT No.	
23/62-1493.00	
CLIENT PROJECT No.	
DWG. No.	REV. No.
G-03	A

C:\PROJ\RAMSEY_WASHINGTON_DISTRICT\PROJECT FILE_M:\DESIGN\23062-1493\00\23621493G00_G-03_TREE PROTECTION AND REMOVALS TABLE.DWG PLOT SCALE: 1:2 PLOT DATE: 4/24/2024 11:53 AM



NOTES:
1. CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY CITY OF ANY DISCREPANCIES.
2. UTILITY LOCATIONS ARE APPROXIMATE. ALL UTILITIES IN THE PROJECT AREA SHOULD BE MARKED AND POTHOLED PRIOR TO EXCAVATION.
3. PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.

1 – PLAN: EROSION AND SEDIMENT CONTROL

0 40 80
SCALE IN FEET

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Checked	JPP
Designed	BARR
Approved	JPP

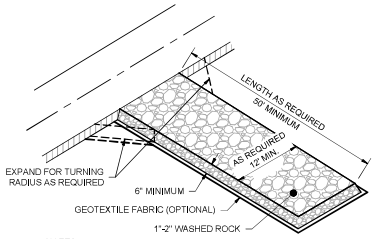
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

EROSION AND SEDIMENT CONTROL PLAN
-

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. G-04
REV. No. A

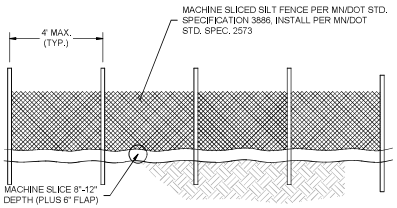
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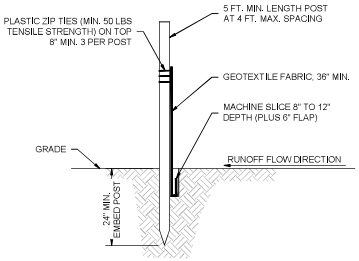
NOTES:

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

1 - DETAIL: ROCK CONSTRUCTION EXIT
NOT TO SCALE



DOWNSTREAM VIEW

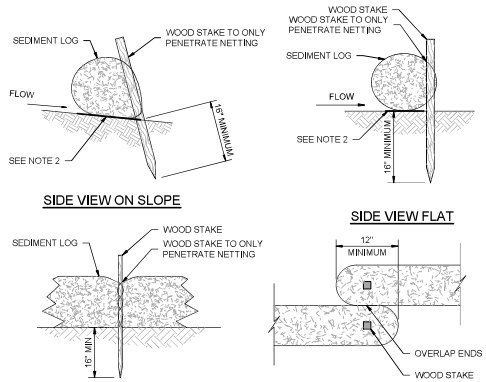


SECTION VIEW

NOTES:

1. 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.
2. SILT FENCE MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATIONS 2573 AND 3886.
3. NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SILT FENCE. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
4. 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.
5. 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.

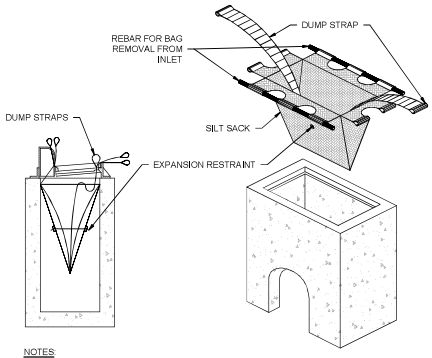
2 - DETAIL: SILT FENCE - MACHINE SLICED
NOT TO SCALE



NOTES:

1. INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION).
2. REMOVE ALL SNOW AND SOIL IRREGULARITIES SO EROSION LOG IS IN FULL CONTACT WITH THE GROUND (NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG).
3. REMOVE ACCUMULATED SEDIMENT WHEN REACHING 1/3 OF LOG HEIGHT.
4. MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACED AS REQUIRED.

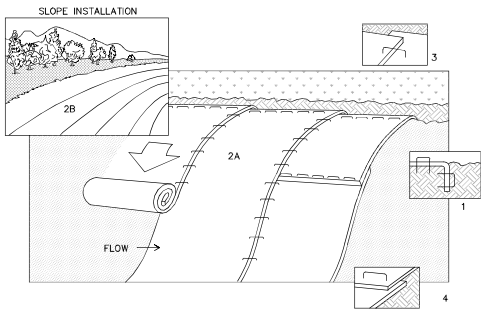
3 - DETAIL: SEDIMENT LOG
NOT TO SCALE



NOTES:

1. INSTALL INLET PROTECTION PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED OR IMMEDIATELY FOLLOWING ANY CATCHBASIN INSTALLATION AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD.
2. MATERIALS SHALL BE SUFFICIENT TO ALLOW FLOW WHILE BLOCKING SEDIMENT. NO HOLES OR GAPS SHALL BE PRESENT IN/AROUND FILTER SACK.
3. CLEAN FILTER SACK AND REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO ALLOW FLOW INTO THE CATCHBASIN AND PREVENT SEDIMENT FROM LEAVING THE DEVICE.
4. REMOVE DEVICE AND ANY ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.

4 - DETAIL: INLET PROTECTION, FILTER SACK TYPE
NOT TO SCALE



NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

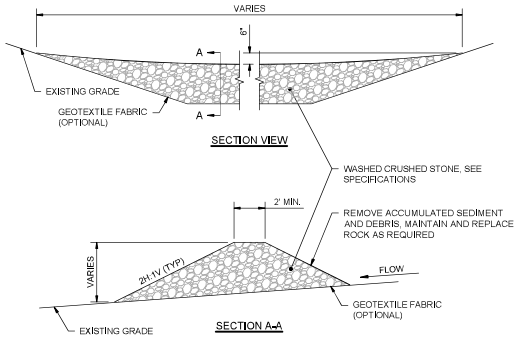
1. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

2. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.

3. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP, WITH THE UPHILL BLANKET ON TOP.

4. 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.

5 - DETAIL: TEMPORARY EROSION CONTROL BLANKET
NOT TO SCALE



NOTES:

1. AGGREGATE SIZE MAY VARY AND DEPENDING ON CHANNEL SIZE, FLOW, SEDIMENT LOAD OR OTHER SITE CONDITIONS; AGGREGATE USED SHOULD BE RELATIVELY FREE OF SEDIMENT PRIOR TO INSTALLATION.
2. ROCK FILTER DIKE SHALL BE CLEANED OR REPLACED WHEN SEDIMENT BUILD UP REACHES 1/2 OF THE DIKE HEIGHT. ALTERNATIVELY A SECOND ROCK FILTER DIKE MAY BE INSTALLED DOWNSTREAM OF THE EXISTING DIKE AT A SUITABLE DISTANCE.
3. ROCK FILTER DIKE SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. ROCK, GEOTEXTILE AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.

6 - DETAIL: ROCK FILTER DIKE
NOT TO SCALE

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Checked	JPP
Designed	BARR
Approved	JPP

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

EROSION CONTROL DETAILS
-

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. G-05
REV. No. A

CADD USER: OWEN.G_REVIT FILE: M:\DES\WIN\2024\1493.00\25_CAD_EROSION CONTROL DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/24/2024 11:31 AM

1.0 GENERAL CONSTRUCTION ACTIVITY INFORMATION:

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

THE PROJECT IS LOCATED IN THE CITY OF SHOREVIEW, RAMSEY COUNTY, MINNESOTA. PROPOSED CONSTRUCTION ACTIVITIES WILL TAKE PLACE NEAR ST. ODILIA SCHOOL. THE APPROXIMATE CENTROID OF THE PROJECT HAS A LATITUDE OF 45.04570 AND A LONGITUDE OF -93.13550.

THIS PROJECT INVOLVES DEBRIS MANAGEMENT, WETLAND EXCAVATION AND EXPANSION, AND VEGETATION IMPROVEMENTS. THE PROJECT AS PROPOSED HAS A TOTAL DISTURBANCE AREA OF 4.41 ACRES. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE REQUIRED TO MINIMIZE SEDIMENT FROM BEING TRANSPORTED INTO THE ONSITE WETLAND. 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 4.41 ACRES.
- THE TOTAL AREA OF PRE-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0 ACRES.
- THE TOTAL AREA OF POST-CONSTRUCTION IMPERVIOUS AREA IS APPROXIMATELY 0.078 ACRES.
- THE TOTAL NEW IMPERVIOUS AREA IS APPROXIMATELY 0.078 ACRES.

1.2 DATES OF CONSTRUCTION:

- ANTICIPATED START DATE: NOVEMBER 2024
- ANTICIPATED END DATE: OCTOBER 2025

1.3 CONTACT INFORMATION:

OWNER: CITY OF SHOREVIEW
MAILING ADDRESS: 4600 VICTORIA ST N, SAINT PAUL, MN, 55126
CONTACT PERSON: TOM WESOLOWSKI — TITLE: PUBLIC WORKS DIRECTOR
PHONE NUMBER: 651-490-4652 — EMAIL ADDRESS: TWESOLOWSKI@SHOREVIEWMN.GOV
ALTERNATE CONTACT PERSON: — TITLE:
PHONE NUMBER: — EMAIL ADDRESS:

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

PARTY RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM:
CITY OF SHOREVIEW
MAILING ADDRESS: 4600 VICTORIA ST N, SAINT PAUL, MN, 55126
CONTACT PERSON: TOM WESOLOWSKI — TITLE: PUBLIC WORKS DIRECTOR
PHONE NUMBER: 651-490-4652 — EMAIL ADDRESS: TWESOLOWSKI@SHOREVIEWMN.GOV

2.0 RECEIVING WATERS:

THERE ARE NO WATERS WITHIN ONE MILE (NEAREST STRAIGHT LINE DISTANCE) THAT ARE LIKELY TO RECEIVE STORMWATER RUNOFF FROM THE PROJECT SITE. (CSW PERMIT ITEM 5.10)

2.1 SPECIAL AND IMPAIRED WATERS: ACCORDING TO THE MPCA'S SPECIAL AND IMPAIRED WATERS SEARCH TOOL, NO SPECIAL OR IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS MEASUREMENT) OF THE PROJECT SITE. (CSW PERMIT ITEM 2.7 AND SECTION 23)

THIS PROJECT DOES NOT REQUIRE ANY ADDITIONAL BMPS OR OTHER SPECIFIC CONSTRUCTION RELATED IMPLEMENTATION ACTIVITIES IDENTIFIED IN AN APPROVED TOTAL MAXIMUM DAILY LOAD (TMDL). (CSW PERMIT ITEM 5.19)

2.2 PUBLIC WATERS WITH WORK IN WATER RESTRICTIONS: THIS PROJECT DOES NOT INCLUDE WORK IN PUBLIC WATERS. (CSW PERMIT ITEM 5.11)

2.3 WETLAND IMPACTS: THIS IS A WETLAND RESTORATION PROJECT AND WILL NOT RESULT IN ADVERSE IMPACTS TO WETLANDS. (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	SHEET NUMBER
• PROJECT LOCATION AND CONSTRUCTION LIMITS	G-01
• 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	C-02
• SOIL TYPES AT THE SITE	G-07
• LOCATIONS OF IMPERVIOUS SURFACES	N/A
• LOCATIONS OF AREAS NOT TO BE DISTURBED (E.G., BUFFER ZONES, WETLANDS, ETC.)	G-04,C-02
• LOCATIONS OF AREAS OF STEEP SLOPES	N/A
• LOCATIONS OF AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE DURATION OF EXPOSED SOILS	N/A
• PORTIONS OF THE SITE THAT DRAIN TO A PUBLIC WATER WITH DNR WORK IN WATER RESTRICTIONS FOR FISH SPAWNING TIMEFRAMES	N/A
• LOCATIONS OF ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS AS REQUIRED IN PERMIT SECTIONS 8 THROUGH 10 AND 14 THROUGH 19	G-04
• BUFFER ZONES AS REQUIRED IN PERMIT ITEMS 9.17 AND 23.11	N/A
• LOCATIONS OF POTENTIAL POLLUTION-GENERATING ACTIVITIES IDENTIFIED IN PERMIT SECTION 12	N/A
• STANDARD DETAILS FOR EROSION AND SEDIMENT CONTROL BMPS TO BE INSTALLED AT THE SITE	G-05

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, PRESERVATION OF MATURE VEGETATION, MULCH, VEGETATIVE SLASH OR EQUIVALENT MEASURES.
   b. IF PRESENT, SOIL STOCKPILES WILL BE STABILIZED WITH MULCH (SUCH AS STRAW MULCH, SLASH MULCH, WOOD CHIP, OR OTHER APPROPRIATE MULCH) (IF SLOPES ≤3H:1V), COVER MATERIAL SUCH AS TARPS, PLASTIC SHEETING 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. SOIL DISTURBANCE WILL BE MINIMIZED WHEREVER POSSIBLE TO AID IN EROSION PREVENTION.
   b. EXISTING VEGETATION WILL BE PRESERVED WHEREVER POSSIBLE TO LIMIT EXPOSED SOIL AND THUS WILL SERVE AS NATURAL VEGETATIVE BUFFERS.
   c. EXPOSED SOIL ON STEEP SLOPES (≤3H:1V) WILL BE STABILIZED USING EROSION CONTROL BLANKET.
   d. HORIZONTAL SLOPE GRADING WILL BE UTILIZED TO MINIMIZE EROSION POTENTIAL.

4.2 SEDIMENT CONTROL PRACTICES:

1. DOWNGRADIENT PERIMETER CONTROLS: (CSW PERMIT ITEMS 9.2 THROUGH 9.6)
   a. SEDIMENT CONTROL PRACTICES WILL BE ESTABLISHED ON ALL DOWNGRADIENT PERIMETERS AND LOCATED UPGRADIENT OF ANY BUFFER ZONES. PERIMETER SEDIMENT CONTROLS WILL INCLUDE: SILT FENCE, SEDIMENT CONTROL LOGS / BIOROLLS (FILLED WITH COMPOST, WOOD CHIPS, ROCK, ETC.), VEGETATIVE SLASH BARRIERS, OTHER NATIVE MATERIAL BARRIERS, VEGETATIVE BUFFERS (RETAIN EXISTING VEGETATION WHERE POSSIBLE), EARTHEN BERMS, ROCK CHECKS OR EQUIVALENT MEASURES.
   b. PERIMETER SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE ANY UPGRADIENT 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 DOWNGRADIENT SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENT), INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS TO ELIMINATE THE OVERLOADING AND AMEND THE SWPPP TO IDENTIFY THESE ADDITIONAL PRACTICES.
2. SOIL STOCKPILE PERIMETER CONTROLS: TEMPORARY SOIL STOCKPILES WILL BE SURROUNDED BY: SILT FENCE, 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 DOWNGRADIENT 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: 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, MUD MATS, SLASH MULCH 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: (CSW PERMIT SECTION 10 AND ITEM 10.5)

   a. THE FOLLOWING WILL BE USED TO TREAT/DISPOSE OF TURBID OR SEDIMENT-LADEN WATER DURING DEWATERING OR BASIN DRAINING: SEDIMENT FILTER BAGS, TEMPORARY SEDIMENTATION BASINS, OR EQUIVALENT MEASURES.
   b. THE EROSION OR SCOUR OF DISCHARGE POINTS DURING DEWATERING OR BASIN DRAINING WTE FOLLOWING WILL BE USED TO PREVENT: DISCHARGING ONTO VEGETATED AREAS, ARMORING, OR EQUIVALENT MEASURES.
   c. FILTERS FOR BACKWASH WATER WILL BE MANAGED ON THE SITE OR PROPERLY DISPOSED OF.

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 LISTED IN THE CONTRACT DOCUMENTS.

95% DESIGN DRAFT
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
-	-	-	-	———	-

RELEASED TO/FOR: CLIENT, PERMIT, BID, CONSTRUCTION, RECORD
DATE RELEASED: 8/21/2024 — A B C 0 1 2 3

BARR
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Scale	AS SHOWN
Date	04/24/2024
Drawn	CQR
Checked	JPP
Designed	BARR
Approved	JPP

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

SWPPP - 1 OF 2
-

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. G-06
REV. No. A

CAD: USER: OWEN.G PATH:Y:\FILE MODE\PROJECTS\2024\1493.00\CAD\G_CAD_SWPPP - 1 OF 2.DWG PLOT SCALE: 1:1 PLOT DATE: 4/24/2024 11:32 AM

5.0 PERMANENT STORMWATER MANAGEMENT SYSTEM:

A PERMENANCT 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)

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

5.6 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
JOSH PHILLIPS	PREPARATION OF THE SWPPP	BARR ENGINEERING CO.	MAY 2023
	OVERSIGHT OF SWPPP IMPLEMENTATION, REVISION, AND AMMENDMENT		
	PERFORMANCE OF SWPPP INSPECTIONS		
	PERFORMANCE OR SUPERVISION OF INSTALLATION, MAINTENANCE, AND REPAIR OF BMPS		

*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 USEPA/MPCA OFFICIALS INDICATE THAT THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER; THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES; OR THE SWPPP IS NOT CONSISTENT WITH A USEPA APPROVED TMDL.
   b. ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION WILL BE DOCUMENTED AS REQUIRED WITHIN 7 CALENDAR DAYS.
   c. AMENDMENTS WILL BE COMPLETED BY AN APPROPRIATELY TRAINED INDIVIDUAL. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP WILL INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.
3. RECORDS RETENTION: THE SWPPP, INCLUDING ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS WILL BE KEPT AT THE SITE DURING CONSTRUCTION BY THE PERMITTEE WHO HAS OPERATIONAL CONTROL OF THE SITE. THE SWPPP CAN BE KEPT IN EITHER A FIELD OFFICE OR IN AN ON SITE VEHICLE DURING NORMAL WORKING HOURS.
4. RECORD AVAILABILITY: THE PERMITTEES WILL MAKE THE SWPPP, INCLUDING INSPECTION REPORTS, MAINTENANCE RECORDS, AND TRAINING RECORDS, AVAILABLE TO FEDERAL, STATE, AND LOCAL OFFICIALS WITHIN THREE DAYS UPON REQUEST FOR THE DURATION OF THE PERMIT COVERAGE AND FOR THREE YEARS FOLLOWING THE NOTICE OF TERMINATION.

7.0 POLLUTION PREVENTION MEASURES:

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

8.0 PERMANENT COVER AND PERMIT TERMINATION CONDITIONS:

1. THE AREAS DISTURBED DURING CONSTRUCTION WILL BE STABILIZED WITH PERMANENT COVER UPON COMPLETION OF WORK. PERMANENT COVER MAY BE VEGETATIVE OR NON-VEGETATIVE, AS APPROPRIATE. ESTABLISHMENT OF PERMANENT COVER MAY INCLUDE THE FOLLOWING ACTIVITIES: ONE OR A COMBINATION OF: SEEDING, MULCHING, EROSION CONTROL BLANKETS, PLACEMENT OF IMPERVIOUS SURFACES, ETC. (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.

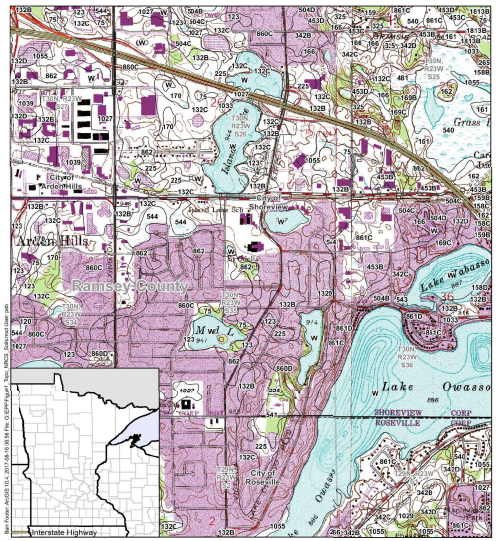


Figure 1

TOPOGRAPHIC MAP WITH SURFACE WATERS AND SOIL TYPES
Stormwater Pollution Prevention Plan
Ramsey County, Minnesota

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Ph: 1-800-632-2277

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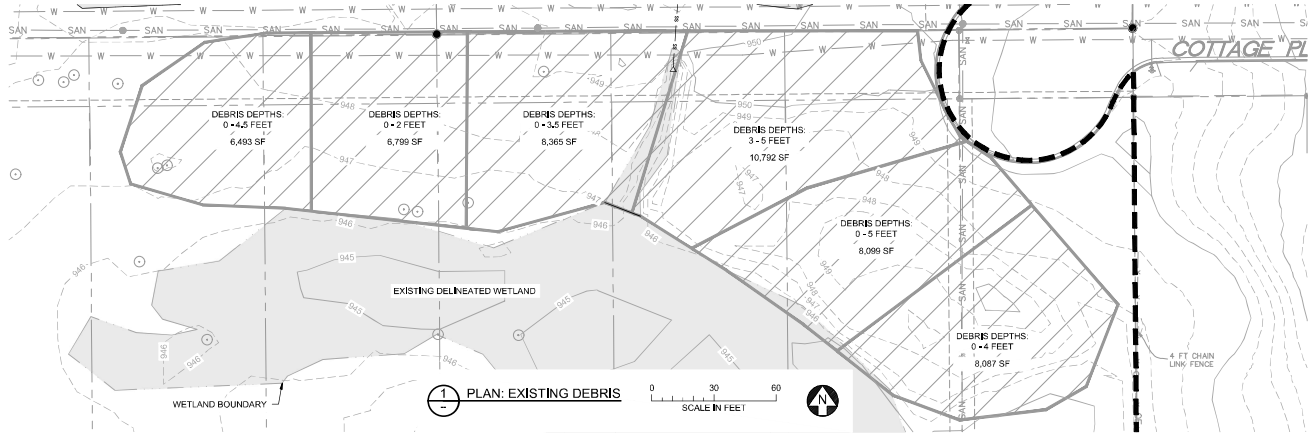
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

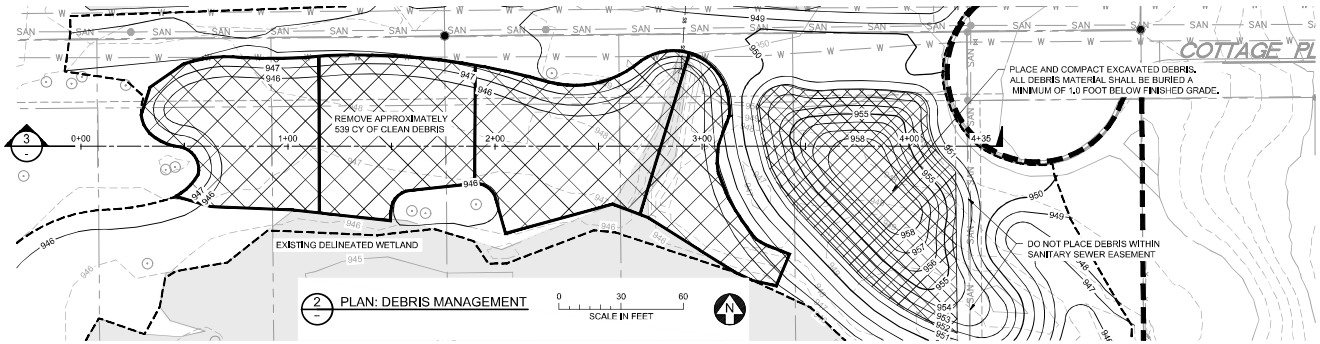
COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

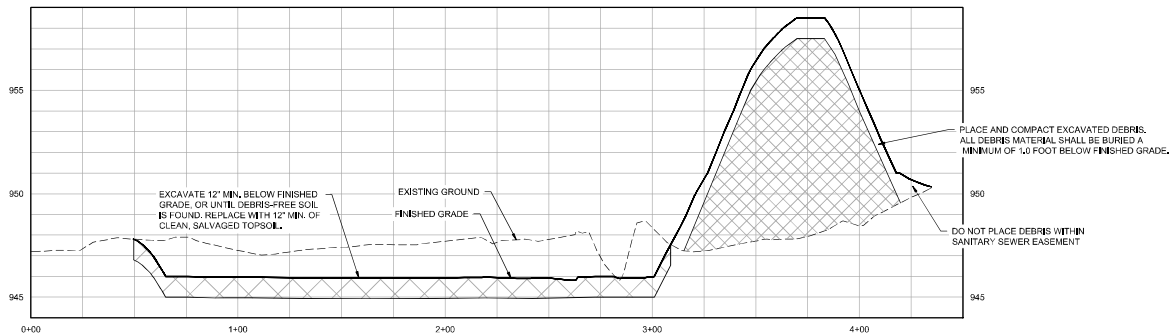
SWPPP - 2 OF 2
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CLIENT PROJECT No.
DWG. No. G-07
REV. No. A

C:\DOCUMENTS AND SETTINGS\JPHILLIPS\LOCAL SETTINGS\TEMP\ACPUBLISH_2356\SWPPP - 2 OF 2.DWG PLOT SCALE = 1.0 PLOT DATE = 8/24/2024 11:32 AM







LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- WETLAND DELINEATION
- EXISTING WATER
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- PROPERTY LINE
- EXISTING FENCE
- CONSTRUCTION LIMITS
- GRADING LIMITS
- TREE
- MONUMENT
- HYDRANT
- DEBRIS EXTENTS

NOTES:

1. NOTIFY ENGINEER A MINIMUM OF 2 DAYS PRIOR TO DEBRIS REMOVAL ACTIVITIES.
2. SALVAGE AND RETAIN ALL DEBRIS-FREE SOIL AND TOPSOIL FOR USE ON-SITE. BACKFILL SUBCUT FOR DEBRIS REMOVAL WITH DEBRIS-FREE SOIL. RESTORE ALL DEBRIS REMOVAL AREAS WITH A MINIMUM OF 6 INCHES OF CLEAN, SALVAGED TOPSOIL.
3. DO NOT PLACE OR STOCKPILE ANY SOIL OR CONSTRUCTION MATERIALS WITHIN DELINEATED WETLANDS.
4. DISPOSE OF CONCRETE, ASPHALT, AND OTHER CONSTRUCTION DEBRIS LARGER THAN 3" IN DIAMETER OFFSITE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. DISPOSE OF ALL METAL, GLASS, AND WOOD DEBRIS AT AN APPROPRIATE, LICENSED LANDFILL.
6. SALVAGE AND REUSE CONCRETE, ASPHALT, AND OTHER CONSTRUCTION DEBRIS LESS THAN 3" AS FILL. PROVIDE A MINIMUM OF 1 FOOT OF CLEAN SOIL ABOVE ALL BACKFILLED DEBRIS MATERIALS.
7. CONTRACTOR TO SUBMIT DETAILED TRAFFIC PLAN FOR REVIEW AND APPROVAL.
8. CONTRACTOR RESPONSIBLE FOR PROTECTING ALL EXISTING PLANTINGS, TREES, SIDEWALKS, PATHS, CURBS, SITE AMENITIES, AND SIGNAGE UNLESS INDICATED FOR REMOVAL. ANY DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
9. CONTRACTOR TO VERIFY EXISTING STORM SEWER AND CULVERT INVERTS AND DIAMETERS PRIOR TO PERFORMING THE WORK.
10. DEWATERING AND CONTROL OF WATER, INCLUDING TEMPORARY BYPASS OF EXISTING STORMWATER FLOWS REQUIRED TO COMPLETE THE WORK IS CONSIDERED INCIDENTAL.
11. ALL DISTURBED GROUND SHALL BE RESTORED IN ACCORDANCE WITH SITE RESTORATION PLAN.
12. EXCAVATION OF WETLAND AREAS SHALL BE COMPLETED USING A BACKHOE WITH A TOOTHED BUCKET. SCRAPING OR PUSHING OF SOIL IN WETLAND AREAS IS NOT PERMITTED. WHERE POSSIBLE, EXCAVATION SHALL BE DONE FROM THE SIDES AND OUTSIDE THE FOOTPRINT OF THE WETLAND AREAS TO AVOID SOIL COMPACTION.
13. CONTRACTOR SHALL NOT COMPACT THE SUBGRADE BENEATH EXCAVATION AREAS.
14. NATIVE SOILS IN THE EXCAVATION AREAS SHALL BE DECOMPACTED TO A MINIMUM DEPTH OF 12 INCHES BELOW SUBGRADE PRIOR TO FINAL SEEDING.

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Approved	JPP

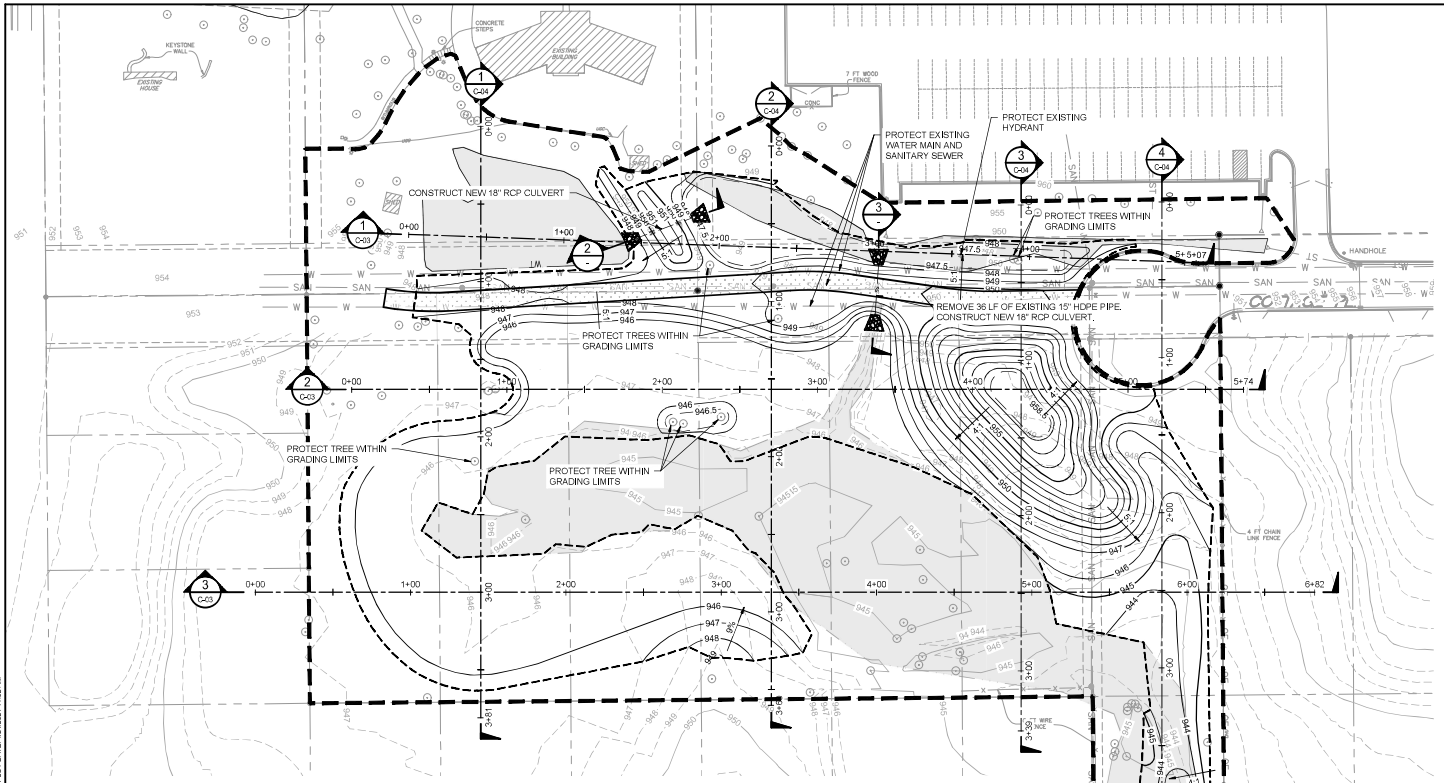
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

DEBRIS MANAGEMENT PLAN

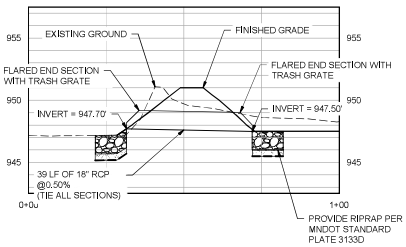
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CLIENT PROJECT No.
DWG. No. C-01
REV. No. A

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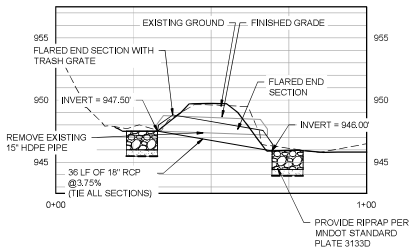
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SCALE IN FEET: 0, 40, 80



2 - PROFILE: NORTHWEST STORM SEWER CULVERT

HORIZONTAL SCALE IN FEET: 0, 20, 40 — VERTICAL SCALE IN FEET: 0, 5, 10



3 - PROFILE: NORTHEAST STORM SEWER CULVERT

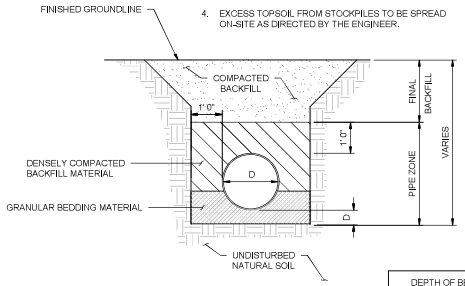
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LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- WETLAND DELINEATION
- EXISTING WATER
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING OVERHEAD ELECTRIC
- PROPERTY LINE
- EXISTING FENCE
- CONSTRUCTION LIMITS
- GRADING LIMITS
- EXISTING BUILDING
- TREE
- MONUMENT
- HYDRANT
- DEBRIS EXTENTS

NOTES:

1. EXCAVATE SOILS TO THE LIMITS INDICATED, USING TECHNIQUES THAT WILL MINIMIZE DISTURBANCE.
2. PLACE LOOSE TOPSOIL WITH LOW GROUND PRESSURE EQUIPMENT. NO RUBBER TIRES ON TOPSOIL AFTER PLACEMENT.
3. ANY COMPACTION OF PREVIOUSLY LOOSENED SOILS MUST BE RE-LOOSENED AT CONTRACTORS EXPENSE.
4. EXCESS TOPSOIL FROM STOCKPILES TO BE SPREAD ON-SITE AS DIRECTED BY THE ENGINEER.



NOTE:
SHAPED SUBGRADE WITH GRANULAR FOUNDATION ALSO PERMITTED

DEPTH OF BEDDING BELOW PIPE	
D	d (MIN.)
27" & LESS	3"
30" to 60"	4"
66" & LARGER	6"

4 - DETAIL: RCP STORM SEWER TRENCH

NOT TO SCALE

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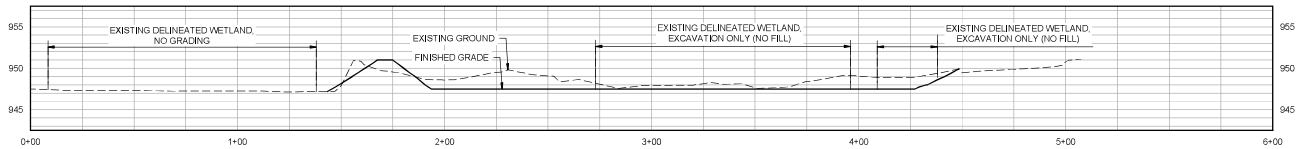
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

GRADING AND STORM SEWER PLAN
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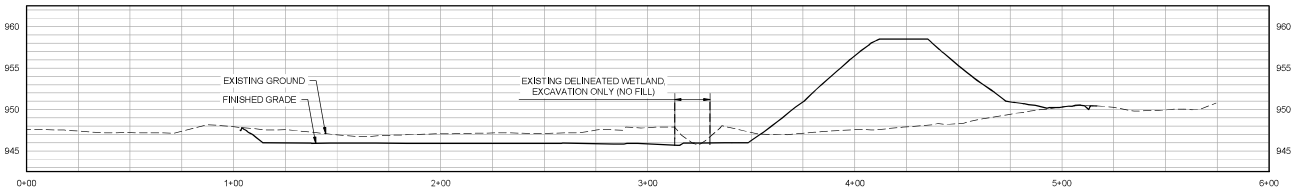
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DWG. No. C-02
REV. No. A

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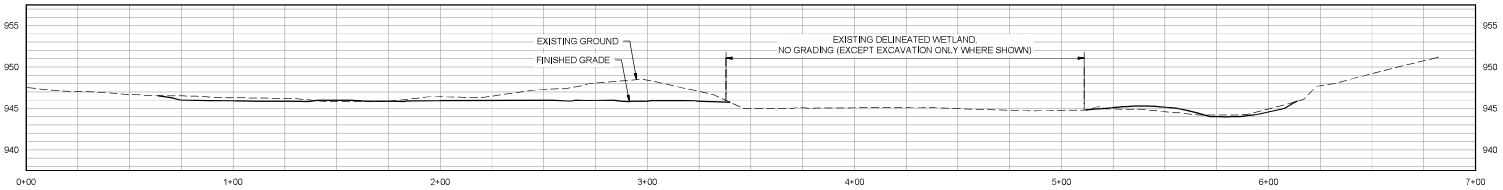
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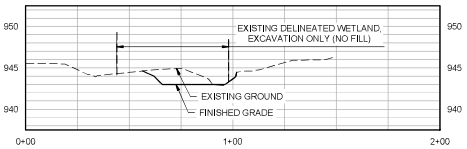
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0 30 60
SCALE IN FEET



3 - PROFILE: WEST-EAST SECTION 3

0 30 60
SCALE IN FEET



4 - PROFILE: WEST-EAST SECTION 4

0 30 60
SCALE IN FEET

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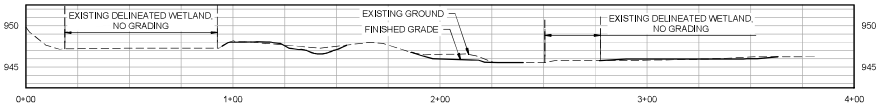
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

GRADING SECTIONS
WEST TO EAST

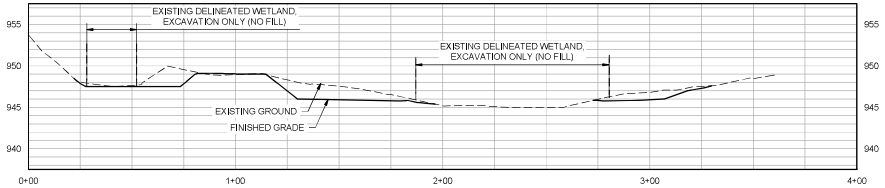
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DWG. No. C-03
REV. No. A

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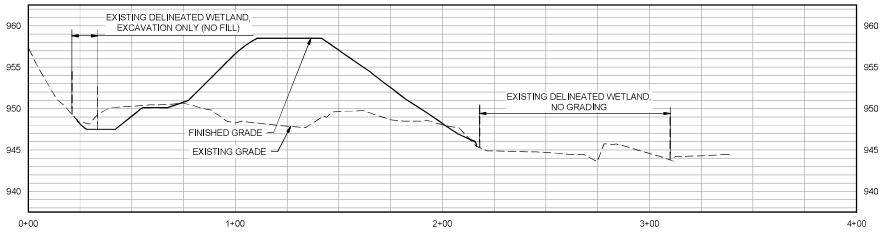
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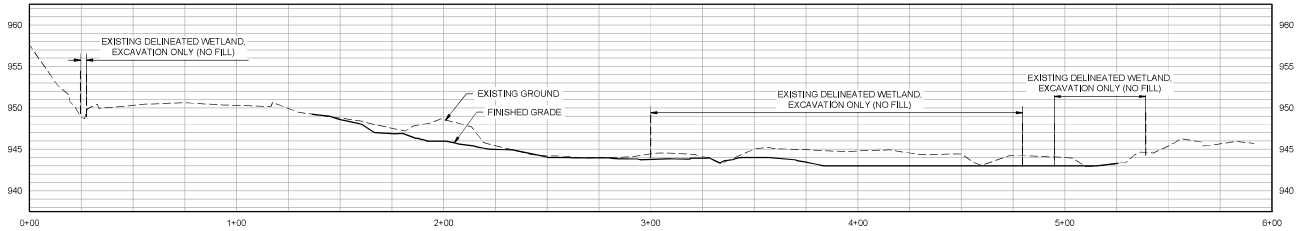
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0 30 60
SCALE IN FEET



3 - PROFILE: NORTH-SOUTH SECTION 3

0 30 60
SCALE IN FEET



4 - PROFILE: NORTH-SOUTH SECTION 4

0 30 60
SCALE IN FEET

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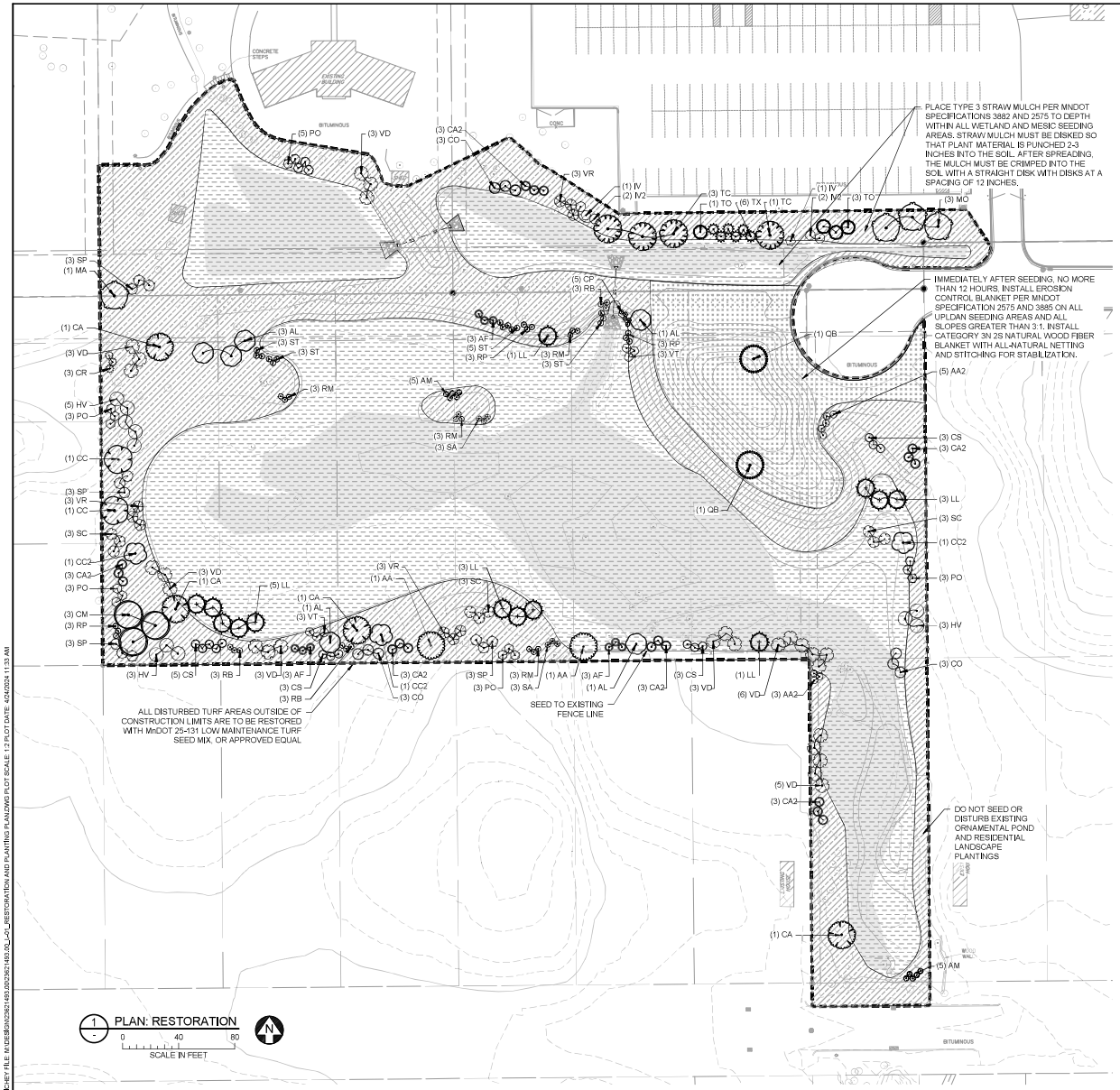
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

GRADING SECTIONS
NORTH TO SOUTH

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LEGEND:

- EXISTING MAJOR CONTOUR (950)
- EXISTING MINOR CONTOUR (949)
- WETLAND DELINEATION
- EXISTING WATER (W)
- EXISTING SANITARY SEWER (SAN)
- EXISTING STORM SEWER (ST)
- EXISTING OVERHEAD ELECTRIC (OE)
- PROPERTY LINE
- EXISTING FENCE
- CONSTRUCTION LIMITS
- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING TREE
- MONUMENT
- HYDRANT
- PROPOSED MAJOR CONTOUR (950)
- PROPOSED MINOR CONTOUR (949)
- GRADING LIMITS

NOTES:

1. SEE L-02 FOR SEED MIX, PLUGS, AND GENERAL SITE RESTORATION NOTES.
2. SEE SHEET L-03 FOR TREE AND SHRUB PLANTING DETAILS.

PLANT SCHEDULE

SYMBOL	CODE	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER	QTY
TREES						
	AL	ALLEGHENY SERVICEBERRY	AMELANCHIER LAEVIS	#10	CONT.	6
	CC2	AMERICAN HORNBEAM MULTI-TRUNK	CARPINUS CAROLINIANA	#10	CONT.	3
	CM	BIG-FRUIT HAWTHORN	CRATAEGUS MACROSPERMA	#10	CONT.	3
	AA	DOWNY SERVICEBERRY	AMELANCHIER ARBOREA	#10	CONT.	2
	TC	EASTERN HEMLOCK	TSUGA CANADENSIS	#10	CONT.	4
	CC	NORTHERN STRAIN EASTERN REDBUD	CERCIS CANADENSIS 'NORTHERN STRAIN'	#10	CONT.	2
	CA	PAGODA DOGWOOD	CORNUS ALTERNIFOLIA	#10	CONT.	4
	MA	SPRING SNOW CRABAPPLE	MALUS X 'SPRING SNOW'	#10	CONT.	4
	QB	SWAMP WHITE OAK	QUERCUS BICOLOR	#10	CONT.	2
	LL	TAMARACK	LARIX LARICINA	#10	CONT.	13
	TX	TAUNTON YEW	TAXUS X MEDIA 'TAUNTONII'	#10	CONT.	6
	TO	TECHNY ARBORVITAE	THUJA OCCIDENTALIS 'TECHNY'	#10	CONT.	4
SHRUBS						
	VT	AMERICAN CRANBERRYBUSH	VIBURNUM TRILOBUM	#5	CONT.	6
	SC	AMERICAN ELDERBERRY	SAMBUCUS CANADENSIS	#2	CONT.	9
	CA2	AMERICAN HAZELNUT	CORYLUS AMERICANA	#5	CONT.	18
	SP	AMERICAN RED ELDER	SAMBUCUS PUBENS	#2	CONT.	12
	AM	BLACK CHOKEBERRY	ARONIA MELANOCARPA	#5	CONT.	10
	CO	BUTTONBUSH	CEPHALANTHUS OCCIDENTALIS	#5	CONT.	9
	PO	COMMON NINEBARK	PHYSOCARPUS OPULIFOLIUS	#5	CONT.	17
	SA	COMMON WHITE SNOWBERRY	SYMPHORICARPOS ALBUS	#2	CONT.	6
	HV	COMMON WITCH HAZEL	HAMAMELIS VIRGINIANA	#5	CONT.	11
	VR	DOWNY ARROWWOOD	VIBURNUM RAFINESQUIANUM	#2	CONT.	9
	AF	FALSE INDIGO	AMORPHA FRUTICOSA	#2	CONT.	9
	IV	JIM DANDY WINTERBERRY	ILEX VERTICILLATA 'JIM DANDY'	#5	CONT.	2
	RB	MEADOW ROSE	ROSA BLANDA	#5	CONT.	9
	RM	MISSOURI GOOSEBERRY	RIBES MISSOURIENSE	#5	CONT.	12
	VD	NANNYBERRY	VIBURNUM DENTATUM	#5	CONT.	26
	IV2	RED SPRITE WINTERBERRY	ILEX VERTICILLATA 'NANA'	#5	CONT.	4
	CS	RED TWIG DOGWOOD	CORNUS SERICEA	#2	CONT.	14
	CR	ROUND-LEAVED DOGWOOD	CORNUS RUGOSA	#2	CONT.	3
	AA2	SERVICEBERRY	AMELANCHIER ALNIFOLIA	#5	CONT.	8
	ST	STEEPLEBUSH	SPIRAEA TOMENTOSA	#2	CONT.	14
	RP	SWAMP ROSE	ROSA PALUSTRIS	#2	CONT.	9
	CP	SWEET FERN	COMPTONIA PEREGRINA	#5	CONT.	5
SEED						
		WETLAND SEED MIX	119,839 SF			
		MESIC SEED MIX	83,950 SF			
		UPLAND SEED MIX	16,691 SF			

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Scale	AS SHOWN
Date	04/24/2024
Drawn	EMB
Checked	BHD
Designed	BARR
Approved	BHD

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

RESTORATION AND PLANTING PLAN
-

BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. L-01
REV. No. A

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Upland			
Common Name	**Scientific Name**	**PLS Rate (lb/ac)**	**% of Mix (by weight)**
Sideoats Grama	*Bouteloua curtipendula*	1.75	4.8%
Blue Grama	*Bouteloua gracilis*	2.00	5.5%
Purple Love Grass	*Eragrostis spectabilis*	0.03	0.1%
June Grass	*Koeleria macrantha*	0.40	1.1%
Little Bluestem	*Schizachyrium scoparium*	2.50	6.9%
Prairie Dropseed	*Sporobolus heterolepis*	0.40	1.1%
	Grasses Subtotal	**7.08**	**20%**
Prairie onion	*Allium stellatum*	0.09	0.2%
Lead Plant	*Amorpha canescens*	0.08	0.2%
Pearly Everlasting	*Anaphalis margaritacea*	0.02	0.1%
Pasque Flower	*Anemone patens wolfgangiana*	0.05	0.1%
Pussytoes	*Antennaria plantaginifolia*	0.05	0.1%
Columbine	*Aquilegia canadensis*	0.09	0.2%
Purple Milkwed	*Asclepias purpurascens*	0.10	0.3%
Butterfly weed	*Asclepias tuberosa*	0.50	1.4%
Partridge Pea	*Chamaecrista fasciculata*	1.00	2.8%
Purple Prairie Clover	*Dalea purpureum*	0.10	0.3%
Narrow-Leaved Coneflower	*Echinacea angustifolia*	0.30	0.8%
Prairie Smoke	*Geum triflorum*	0.03	0.1%
Alum Root	*Heuchera richardsonii*	0.02	0.1%
Button Blazing Star	*Liatris aspera*	0.06	0.2%
Wild Lupine	*Lupinus perennis*	0.80	2.2%
Spotted Bee Balm	*Monarda punctata*	0.05	0.1%
Large-flowered Beardtongue	*Penstemon grandiflorus*	0.10	0.3%
Black-Eyed Susan	*Rudbeckia hirta*	0.06	0.2%
Compass Plant	*Silphium laciniatum*	0.50	1.4%
Gray Goldenrod	*Solidago nemoralis*	0.01	0.0%
Aromatic aster	*Symphyotrichum oblongifolium*	0.04	0.1%
Prarie Spiderwort	*Tradescantia bracteata*	0.06	0.2%
	Forbs Subtotal	**4.11**	**11%**
Oats (April-August) Winter Wheat (Sept.-Nov)	*Avena sativa*	25.00	69.1%
	Total Cover Crop	**25.00**	**69%**
	Total	**36.19**	**100%**

Mesic			
Common Name	**Scientific Name**	**PLS Rate (lb/ac)**	**% of Mix (by weight)**
Big Bluestem	*Andropogon gerardii*	1.00	2.3%
Kalm's Brome	*Bromus kalmii*	0.50	1.1%
Hairy Wood Chess	*Bromus pubescens*	1.00	2.3%
Riverbank Wild Rye	*Elymus riparius*	1.00	2.3%
Silky wild rye	*Elymus villosus*	0.75	1.7%
Virginia Wild Rye	*Elymus virginicus*	0.50	1.1%
Fowl Manna Grass	*Glyceria striata*	0.06	0.1%
Switchgrass	*Panicum virgatum*	0.80	1.8%
Little Bluestem	*Schizachyrium scoparium*	1.80	4.1%
Indian Grass	*Sorghastrum nutans*	0.75	1.7%
Prairie Cordgrass	*Spartina pectinata*	0.30	0.7%
	Grasses Subtotal	**8.46**	**19%**
Common Wood Sedge	*Carex blanda*	0.12	0.3%
Plains Oval Sedge	*Carex brevior*	0.15	0.3%
Ivory Sedge	*Carex eburnea*	0.13	0.3%
Field Oval Sedge	*Carex molesta*	0.13	0.3%
Palm Sedge	*Carex muskingumensis*	0.20	0.5%
Wooly Sedge	*Carex pellita*	0.30	0.7%
Long-beaked Sedge	*Carex sprengelii*	0.30	0.7%
Fox Sedge	*Carex vulpinoidea*	0.08	0.2%
Path Rush	*Juncus tenuis*	0.05	0.1%
	Sedges & Rushes Subtotal	**1.45**	**3%**
Fragrant Hyssop	*Agastache foeniculum*	0.05	0.1%
Canada Anemone	*Anemone canadensis*	1.00	2.3%
Tall Thimbleweed	*Anemone virginiana*	0.19	0.4%
Columbine	*Aquilegia canadensis*	0.19	0.4%
Jack-in-the-Pulpit	*Arisaema triphyllum*	3.00	6.9%
Butterfly Milkweed	*Asclepias tuberosa*	0.10	0.2%
Whorled Milkweed	*Asclepias verticillata*	0.03	0.1%
Tall Bellflower	*Campanula americana*	0.15	0.3%
Partridge Pea	*Chamaecrista fasciculata*	1.00	2.3%
Big-leaved Aster	*Eurybia macrophylla*	0.08	0.2%
Wild Geranium	*Geranium maculatum*	0.13	0.3%
Ox-eye	*Heliopsis helianthoides*	0.04	0.1%
Virginia Waterleaf	*Hydrophyllum virginianum*	0.06	0.1%
Rough Blazing Star	*Liatris aspera*	0.05	0.1%
Meadow Blazing Star	*Liatris ligulistylis*	0.05	0.1%
Cardinal Flower	*Lobelia cardinalis*	0.06	0.1%
Great Blue Lobelia	*Lobelia siphilitica*	0.06	0.1%
Wild Lupine	*Lupinus perennis*	0.60	1.4%
Solomon's Plume	*Maianthemum racemosum*	0.50	1.1%
Wild Mint	*Mentha arvensis*	0.01	0.0%
Wild Bergamot	*Monarda fistulosa*	0.03	0.1%
Solomon's Seal	*Polygonatum biflorum*	0.31	0.7%
Virginia mountain mint	*Pycnanthemum virginianum*	0.04	0.1%
Black-eyed Susan	*Rudbeckia hirta*	0.31	0.7%
Zig Zag Goldenrod	*Solidago flexicaulis*	0.05	0.1%
Heart-leaved Aster	*Symphyotrichum cordifolium*	0.19	0.4%
Smooth Aster	*Symphyotrichum laeve*	0.04	0.1%
Tall Meadow Rue	*Thalctrum dasycarpum*	0.13	0.3%
Early Meadow Rue	*Thalictrum dioicum*	0.20	0.5%
Ohio Spiderwort	*Tradescantia ohiensis*	0.02	0.0%
Heart-leaf Golden Alexanders	*Zizia aptera*	0.10	0.2%
	Forbs Subtotal	**8.77**	**20%**
Oats (April-August) Winter Wheat (Sept.-Nov)	*Avena sativa*	25.00	57.2%
	Total Cover Crop	**25.00**	**57%**
	Total	**43.68**	**100.0%**

Wetland			
Common Name	**Scientific Name**	**PLS Rate (lb/ac)**	**% of Mix (by weight)**
Big Bluestem	*Andropogon gerardii*	0.75	5.2%
Canada Blue Joint Grass	*Calamagrostis canadensis*	0.10	0.7%
Canada Wild Rye	*Elymus canadensis*	0.50	3.4%
Riverbank Wild Rye	*Elymus riparius*	0.50	3.4%
American Manna Grass	*Glyceria grandis*	0.25	1.7%
Fowl Manna Grass	*Glyceria striata*	0.20	1.4%
Rice Cut Grass	*Leersia oryzoides*	0.25	1.7%
Fowl Bluegrass	*Poa palustris*	0.40	2.8%
Prairie Cordgrass	*Spartina pectinata*	0.75	5.2%
	Grasses Subtotal	**3.70**	**25.5%**
Common Wood Sedge	*Carex blanda*	0.10	0.7%
Plains Oval Sedge	*Carex brevior*	0.08	0.6%
Crested Oval Sedge	*Carex cristatella*	0.12	0.8%
Slender Wood Sedge	*Carex gracilescens*	0.08	0.6%
Wood Gray Sedge	*Carex grisea*	0.13	0.9%
Lake Sedge	*Carex lacustris*	0.13	0.9%
Field Oval Sedge	*Carex molesta*	0.10	0.7%
Wooly Sedge	*Carex pellita*	0.08	0.6%
Long-beaked Sedge	*Carex sprengelii*	0.13	0.9%
Tussock Sedge	*Carex stricta*	0.04	0.3%
Fox Sedge	*Carex vulpinoidea*	0.30	2.1%
Great Spike Rush	*Eleocharis palustris*	0.13	0.9%
Common Rush	*Juncus effusus*	0.08	0.6%
Green Bulrush	*Scirpus atrovirens*	0.40	2.8%
Wool Grass	*Scirpus cyperinus*	0.08	0.6%
	Sedges & Rushes Subtotal	**1.98**	**13.6%**
Red Baneberry	*Actaea rubra*	0.15	1.0%
Angelica	*Angelica atropurpurea*	0.09	0.6%
Swamp Milkweed	*Asclepias incarnata*	0.40	2.8%
Bur Marigold	*Bidens cernua*	0.13	0.9%
Beggarticks	*Bidens frondosa*	0.15	1.0%
False Aster	*Boltonia asteroides*	0.06	0.4%
Flat-Topped Aster	*Doellingeria umbellata*	0.03	0.2%
Rattlesnake Master	*Eryngium yuccifolium*	0.40	2.8%
Boneset	*Eupatorium perfoliatum*	0.15	1.0%
Grass-Leaved Goldenrod	*Euthamia graminifolia*	0.02	0.1%
Joe-Pye Weed	*Eutrochium maculatum*	0.08	0.6%
Sneezeweed	*Helenium autumnale*	0.08	0.6%
Sawtooth Sunflower	*Helianthus grosseserratus*	0.06	0.4%
Spotted Touch Me Not	*Impatiens capensis*	0.10	0.7%
Cardinal Flower	*Lobelia cardinalis*	0.06	0.4%
Great Blue Lobelia	*Lobelia siphilitica*	0.06	0.4%
Fringed Loosestrife	*Lysimachia ciliata*	0.04	0.3%
Swamp Candles	*Lysimachia terrestris*	0.04	0.3%
Monkey Flower	*Mimulus ringens*	0.05	0.3%
Virginia mountain mint	*Pycnanthemum virginianum*	0.04	0.3%
New England Aster	*Symphyotrichum novae-angliae*	0.08	0.6%
Ironweed	*Vernonia fasciculata*	0.10	0.7%
Culver's Root	*Veronicastrum virginicum*	0.06	0.4%
Golden Alexander	*Zizia aurea*	0.40	2.8%
	Forbs Subtotal	**2.83**	**19.5%**
Oats (April-August) Winter Wheat (Sept.-Nov)	*Avena sativa*	6.00	41.4%
	Total Cover Crop	**6.00**	**41.4%**
	Total	**14.51**	**100.0%**

Plugs			
Common Name	**Scientific Name**	**Size**	**Quantity**
Snowflag	*Acerus calamus*	Plug	54
Red Baneberry	*Actaea rubra*	Plug	36
Lead Plant	*Amorpha canescens*	Plug	24
Columbine	*Aquilegia canadensis*	Plug	54
Spikenard	*Aralia racemosa*	Plug	36
Jack-in-the-Pulpit	*Arisaema triphyllum*	Plug	54
Wild Ginger	*Asarum canadense*	Plug	90
Purple Milkweed	*Asclepias purpurascens*	Plug	24
White Wild Indigo	*Baptisia alba*	Plug	18
Marsh marigold	*Caltha palustris*	Plug	24
Bebb's Sedge	*Carex bebbii*	Plug	54
Ivory Sedge	*Carex eburnea*	Plug	96
Common Bur Sedge	*Carex grayi*	Plug	54
Porcupine Sedge	*Carex hystericina*	Plug	54
Pennsylvania Sedge	*Carex pensylvanica*	Plug	54
Palm Sedge	*Carex muskingumensis*	Plug	54
Fox Sedge	*Carex vulpinoidea*	Plug	96
Blue Cohosh	*Caulophyllum thalictroides*	Plug	24
Purple Prairie Clover	*Dalea purpureum*	Plug	24
Elliptic Spikerush	*Eleocharis elliptica*	Plug	54
Rattlesnake Master	*Eryngium yuccifolium*	Plug	54
Dudley's rush	*Juncus dudleyi*	Plug	24
Torrey's Rush	*Juncus torreyi*	Plug	24
Wild Golden Glow	*Rudbeckia laciniata*	Plug	54
Bloodroot	*Sanguinaria canadensis*	Plug	54
Bellwort	*Uvularia grandiflora*	Plug	36
		Total	1224

SITE RESTORATION NOTES

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND FIELD-VERIFYING ALL EXISTING UTILITIES PRIOR TO INITIATING WORK ON THE SITE AND THROUGHOUT THE TERM OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING UTILITIES FROM DAMAGE DURING ALL SITE RESTORATION AND PLANTING OPERATIONS.
2. CONSTRUCTION LIMITS AS SHOWN ARE APPROXIMATE. FINAL CONSTRUCTION LIMITS TO BE COORDINATED WITH THE OWNER AND STAKED IN THE FIELD.
3. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE THE TRANSFER OF AQUATIC AND TERRESTRIAL INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
4. ALL EXISTING TREES SHALL BE PROTECTED DURING CONSTRUCTION, UNLESS IDENTIFIED FOR REMOVAL PER PLAN OR AS DIRECTED IN THE FIELD BY THE ENGINEER.
5. ALL EXISTING TREES TO REMAIN, TREE ROOTS, PLANTING BEDS, CONCRETE, ASPHALT, EXISTING CURBS, PAVEMENT, SIDEWALKS, AND OTHER SITE ELEMENTS SHALL BE PROTECTED FROM IMPACTS FROM ALL SOIL PREPARATION AND LANDSCAPING OPERATIONS. AVOID COMPACTING SOIL WITH HEAVY EQUIPMENT. ANY DAMAGE TO EXISTING SITE FEATURES, STRUCTURES, OR NEWLY CONSTRUCTED ITEMS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE AND TO THE OWNER'S SATISFACTION.
6. PROTECT PLANTS ON THE SITE FROM STRESS PRIOR TO INSTALLATION BY PLACING IN SHADE, HEELING INTO MULCH, WATERING, AND USE OF OTHER APPROPRIATE MEASURES.
7. ANY COMPACTION OF PREVIOUSLY LOOSENED SOIL MUST BE RELOOSENED PRIOR TO TOPSOILING OR PLANT INSTALLATION. SEE LANDSCAPE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
8. STAKE OR OTHERWISE LAYOUT ALL INDIVIDUAL/SPECIMEN TREES AND SHRUBS 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 A MINIMUM OF THREE (3) DAYS PRIOR TO PLANT DELIVERY.
9. THOROUGHLY WATER ALL PLANTINGS WITHIN 2 HOURS AFTER INSTALLATION. SEE PROJECT SPECIFICATIONS.
10. CONTRACTOR IS RESPONSIBLE FOR WATERING PLANTS (REGARDLESS OF NOTIFICATION) THROUGHOUT THE ENTIRE WARRANTY PERIOD. WATERING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
11. NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN PLANS, SPECIFICATIONS, AND/OR FIELD CONDITIONS ENCOUNTERED.
12. THE CONTRACTOR WILL TREAT THE ENTIRE SITE WITH APPROPRIATE SELECTIVE AND NON-SELECTIVE HERBICIDE USING MANUFACTURER RECOMMENDED RATES TO ELIMINATE ALL UNWANTED VEGETATION. CONTRACTOR WILL PROTECT SURROUNDING AND ALL DESIRED NATIVE VEGETATION IN THE SITE AREA DURING TREATMENT.
13. REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN DETAILS, PLANS, AND/OR SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.
14. PLUGS TO BE PLACED IN THE FIELD WITH DIRECTION FROM LANDSCAPE ARCHITECT.

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Scale	AS SHOWN
Date	04/24/2024
Drawn	EMB
Checked	BHD
Designed	BARR
Approved	BHD

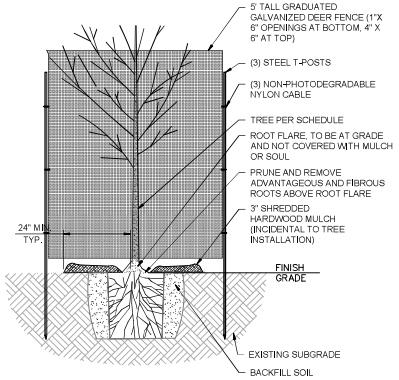
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA

RESTORATION AND PLANTING NOTES
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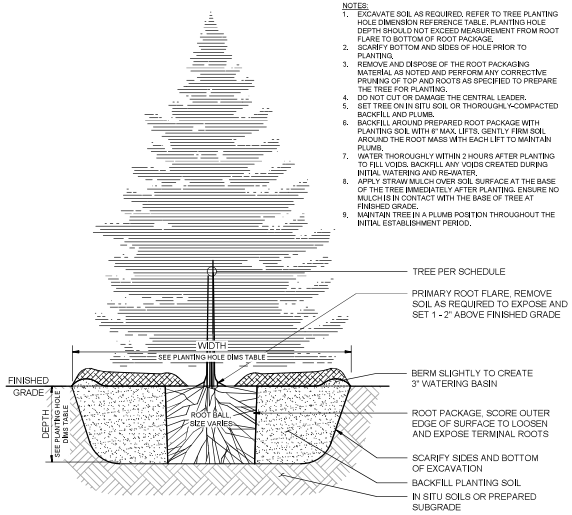
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DWG. No. L-02
REV. No. A

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TREE PLANTING NOTES:
1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
2. ALL DECIDUOUS TREES SHALL BE ENCLOSED BY GALVANIZED DEER FENCING TO PROTECT FROM ANIMAL BROWSING. TREE PROTECTION SHALL BE CONSIDERED INCIDENTAL TO TREE PLANTING
3. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT. DO NOT CUT THE LEADER
4. IF ROOT FLARE IS NOT EXPOSED WITHIN THE CONTAINER EXCAVATE SURFACE SOIL TO BASE OF ROOT FLARE.
5. DIG PLANT HOLES 6" MIN. LARGER THAN ROOT MASS, ALL SIDES.
6. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING
7. SET TREE ON LIGHTLY FIRMED BACKFILL SOIL SO ROOT FLARE IS EVEN WITH FINISH GRADE.
8. BACKFILL WITH PLANTING SOIL AND FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
9. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
10. PLACE SHREDDED HARDWOOD MULCH (MN/DOT SPEC 3882.2 TYPE 6 - WEED SEED FREE SHREDDED HARDWOOD.) TO A RADIUS OF 24" AND TO A DEPTH OF 3" AROUND TREE (SOIL PREPARED AS PER PLAN).
11. NO MULCH TO BE IN CONTACT WITH BASE OF PLANT.
12. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
13. CONTRACTOR TO WATER AS NECESSARY THROUGHOUT GUARANTEE PERIOD TO MAINTAIN IN A HEALTHY CONDITION. AT THE END OF THE GUARANTEE PERIOD ALL TREES THAT ARE DEAD OR DETERMINED UNHEALTHY OR UNSIGHTLY SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. SEE TREE ESTABLISHMENT SPECIFICATIONS FOR ADDITIONAL DETAIL.

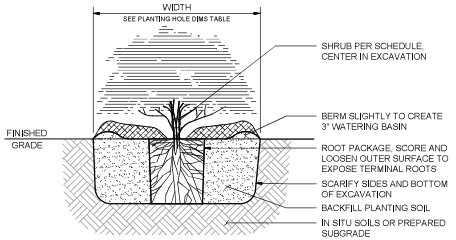
1 DETAIL: DECIDUOUS TREE PLANTING
NOT TO SCALE



NOTES:
1. EXCAVATE SOIL AS REQUIRED. REFER TO TREE PLANTING HOLE DIMENSION REFERENCE TABLE. PLANTING HOLE DEPTH SHOULD NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF ROOT PACKAGE.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. REMOVE AND DISPOSE OF THE ROOT PACKAGING MATERIAL AS NOTED AND PERFORM ANY CORRECTIVE PRUNING OF TOP AND ROOTS AS SPECIFIED TO PREPARE THE TREE FOR PLANTING.
4. DO NOT CUT OR DAMAGE THE CENTRAL LEADER.
5. SET TREE ON IN SITU SOIL OR THOROUGHLY-COMPACTED BACKFILL AND PLUMB.
6. BACKFILL AROUND PREPARED ROOT PACKAGE WITH PLANTING SOIL WITH 6" MAX. LIFTS. GENTLY FIRM SOIL AROUND THE ROOT MASS WITH EACH LIFT TO MAINTAIN PLUMB.
7. WATER THOROUGHLY WITHIN 2 HOURS AFTER PLANTING TO FILL VOIDS. BACKFILL ANY VOIDS CREATED DURING INITIAL WATERING AND RE-WATER.
8. APPLY STRAW MULCH OVER SOIL SURFACE AT THE BASE OF THE TREE IMMEDIATELY AFTER PLANTING. ENSURE NO MULCH IS IN CONTACT WITH THE BASE OF TREE AT FINISHED GRADE.
9. MAINTAIN TREE IN A PLUMB POSITION THROUGHOUT THE INITIAL ESTABLISHMENT PERIOD.

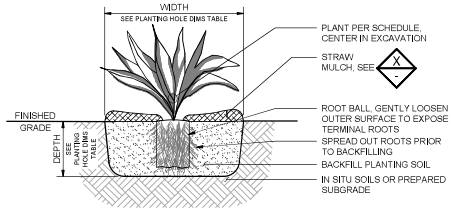
2 DETAIL: EVERGREEN TREE PLANTING
NOT TO SCALE

NOTES:
1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
2. REMOVE AND DISPOSE OF THE ROOT PACKAGING MATERIAL AS NOTED AND PERFORM ANY CORRECTIVE PRUNING OF TOP AND ROOTS AS SPECIFIED TO PREPARE THE SHRUB FOR PLANTING.
3. SET SHRUB ON IN SITU SOIL OR THOROUGHLY-COMPACTED BACKFILL AND PLUMB.
4. BACKFILL AROUND PREPARED ROOT PACKAGE WITH PLANTING SOIL WITH 6" MAX. LIFTS. GENTLY FIRM SOIL AROUND THE ROOT MASS WITH EACH LIFT TO MAINTAIN PLUMB.
5. WATER THOROUGHLY WITHIN 2 HOURS AFTER PLANTING TO FILL VOIDS. BACKFILL ANY VOIDS CREATED DURING INITIAL WATERING AND RE-WATER.
6. APPLY STRAW MULCH OVER SOIL SURFACE AT THE BASE OF THE SHRUB IMMEDIATELY AFTER PLANTING. ENSURE NO MULCH IS IN CONTACT WITH THE BASE OF SHRUB AT FINISHED GRADE.
7. MAINTAIN SHRUB IN A PLUMB POSITION THROUGHOUT THE INITIAL ESTABLISHMENT PERIOD.



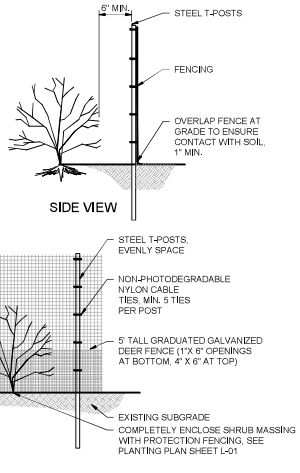
3 DETAIL: SHRUB PLANTING
NOT TO SCALE

NOTES:
1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
2. PREPARE PLANTING SOIL AS SPECIFIED.
3. REMOVE AND DISPOSE OF THE ROOT PACKAGING MATERIAL AS NOTED. SCARIFY BOTTOM AND OUTER PERIMETER OF ROOTBALL TO LOOSEN ROOTS AND PREPARE THE PLANT FOR PLANTING.
4. SET PLANT ON IN SITU SOIL IN EXCAVATION AND PLUMB.
5. BACKFILL AROUND PREPARED ROOT PACKAGE WITH PLANTING SOIL. GENTLY FIRM SOIL AROUND THE ROOT MASS TO MAINTAIN PLUMB.
6. WATER THOROUGHLY WITHIN 2 HOURS AFTER PLANTING TO FILL VOIDS. BACKFILL ANY VOIDS CREATED DURING INITIAL WATERING AND RE-WATER.
7. APPLY STRAW MULCH OVER SOIL SURFACE AT THE BASE OF THE PLANT IMMEDIATELY AFTER PLANTING. ENSURE NO MULCH IS IN CONTACT WITH THE BASE OF PLANT AT FINISHED GRADE.
8. MAINTAIN PLANT IN A PLUMB POSITION THROUGHOUT THE INITIAL ESTABLISHMENT PERIOD.



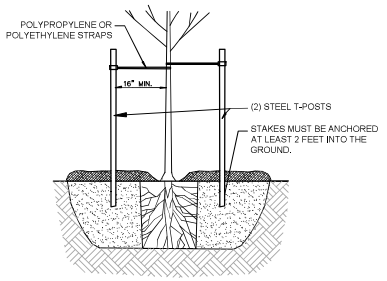
4 DETAIL: PLUG PLANTING
NOT TO SCALE

SHRUB PROTECTION NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROTECTION FENCE THROUGHOUT THE GUARANTEE PERIOD.
2. CONTRACTOR IS RESPONSIBLE FOR REMOVING FENCING AFTER GUARANTEE PERIOD, OR AS DIRECTED BY OWNER. INSTALL AND REMOVAL IS INCIDENTAL TO COST OF SHRUBS



5 DETAIL: SHRUB PROTECTION FENCE
NOT TO SCALE

TREE STAKING NOTES:
1. ALL TREES SHALL BE STAKED AND TIED TO MAINTAIN VERTICALITY FOLLOWING PLANTING. TREE STAKING SHALL BE CONSIDERED INCIDENTAL TO TREE PLANTING.
2. INSTALL TWO (2) 8' STEEL T-POSTS, ANCHORED 2' INTO THE GROUND ON EITHER SIDE OF THE TRUNK.
3. INSTALL 16" LONG 40 MIL POLYPROPYLENE OR POLYETHYLENE STRAPS AROUND TRUNK AND AFFIX TO TO HOLES IN T-POSTS WITH 10 GAUGE WIRE.
4. REMOVE THE TREE STAKING AFTER TWO (2) YEARS OF MAINTAINED PLUMB POSITION, OR AS DIRECTED BY OWNER. INSTALL AND REMOVAL IS INCIDENTAL TO COST OF TREES.



6 DETAIL: TREE STAKING
NOT TO SCALE

95% DESIGN DRAFT
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
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RELEASED TO/FOR: CLIENT, PERMIT, BID, CONSTRUCTION, RECORD
DATE RELEASED: 04/24/2024 — A B C 0 1 2 3

BARR
Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277
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Scale	AS SHOWN
Date	04/24/2024
Drawn	EMB
Checked	BHD
Designed	BARR
Approved	BHD

RAMSEY-WASHINGTON METRO WATERSHED DISTRICT

COTTAGE PLACE WETLAND RESTORATION
SHOREVIEW, MINNESOTA
RESTORATION AND PLANTING DETAILS
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BARR PROJECT No. 23/62-1493.00
CLIENT PROJECT No.
DWG. No. L-03
REV. No. A

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