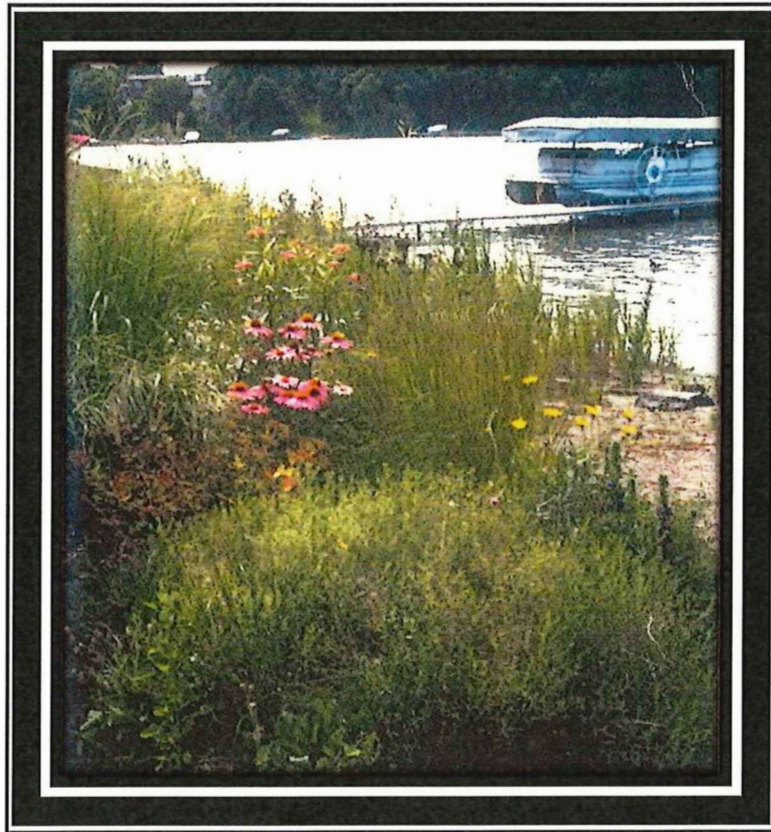


The Lakes of Radisson Master Association



Lakeshore Buffer Zone Alteration Permit Application Process & Alteration Regulations and Standards 2025

THIS DOCUMENT WAS DRAFTED BY
AND THESE REGULATIONS AND
STANDARDS ARE IMPOSED BY:
THE LAKES OF RADISSON
ARCHITECTURAL CONTROL COMMITTEE

AMENDED 5-20-2025

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**LAKES OF RADISSON MASTER ASSOCIATION
LAKESHORE BUFFER ZONE ALTERATION
PERMIT APPLICATION PROCESS & ALTERATION
REGULATIONS AND STANDARDS**

GENERAL INFORMATION

- GI-1. Policy:** Any proposed alterations or improvements within the designated lakeshore buffer zone having an estimated total cost/value of more than \$500 must be authorized by a written permit issued by the Lakes of Radisson Master Association. Any proposed project having an estimated cost/value of \$500 or less does not require an alteration permit. However, in such a case, the Manager of the Master Association must receive written notification declaring the proposed low cost project and its qualifying estimated cost/value. When the Master Association records indicate that accumulated multiple low cost alteration projects on the same property have a lump sum cost/value that exceeds \$500, any subsequent proposed low cost/value alteration project will require an alteration permit and payment of related fees regardless of the estimated cost/value of the current project. The “in-planting” of forb and grass plants, selected from the list of species that are components of the approved seed mixes specified in **R-13**, within the area of existing native vegetation for the purpose of increasing plant density and diversity and/or enhancing seasonal flower display is included, by default, in the low cost/value category.
- GI-2. Intent:** The purpose of the permitting process and the alteration regulations are to ensure the long term preservation of the health of Sunrise Lake and the protection of its water quality, shoreline habitat, shoreline aesthetics and community property values.
- GI-3. Authority:** The authority to adopt, impose and enforce regulations and standards affecting the preservation and alteration of the lakeshore buffer zone as defined by the Lakes of Radisson Lake Management Plan is established by Article V, Sections 1 as amended, 3-11 and 17; Article VI, Section 3; and Article VII, Section 6 of the Master Declaration of the Lakes of Radisson Master Association made on August 21, 2003.
- GI-4. Architectural Control Committee Establishment and Duties:** The Architectural Control Committee (the Committee or ACC) has been duly established and appointed by the Board of Directors of the Lakes of Radisson Master Association as a permanent committee in accordance with Article V, Section 1 of the Master Declaration and Section 6.13 of the Master By-laws of the Lakes of Radisson Master Association to oversee, review and regulate all matters involving the preservation, restoration and alteration of the lakeshore buffer zone. Accordingly, the Committee may establish and enforce certain reasonable regulations and standards necessary to accomplish its assigned mission. The Committee shall have the right to approve or disapprove any and all proposed alterations and restorations of the lakeshore buffer zone. The Committee may reject or refuse to approve any application that it deems unsuitable, undesirable or inconsistent with the Lakes of Radisson Lake Management Plan or the intent of the Master Association to protect lake water quality and overall integrity of the lakeshore buffer zone. The Committee may require that the plan(s) submitted with an application be prepared by a landscape architect or other qualified person.
- GI-5. Permit Application/Project Implementation Process Schedule:** The chronological scheduling of tasks listed in the table below are put into context by the guidelines following the table.
- GI-6. Application Availability and Submission:** Application forms are available online at the Master Association’s website www.LakesofRadissonMaster.connectresident.com or the Management Company’s website www.fsresidential.com/minnesota/homeowner (see web results: “Find My Community Website – First Service Residential”). Completed applications (i.e., application form, Certificate of Survey & improvement plan) should be submitted to the Lakes of Radisson Master Association at 8100 Old Cedar Avenue, Suite 300, Bloomington, MN 55425 or emailed to the current manager of the Master Association as indicated on the appropriate application form.

PERMIT REVIEW AND PROJECT OVERSIGHT TASKS

Provision	Task	Responsible Party	*Timing (After Receipt, Request or Action)
GI-7	Pre-Application Meeting	Applicant	When ready
GI-6	Submission of Application	Applicant	When ready
P-3	Notification of Receipt of Application	Assn. Manager	Within 3 business days
P-2	Determination of Application Completeness	Assn. Manager	Within 7 business days
P-2	Correction of Any Deficiencies	Applicant	Within 10 business days
P-3	Review of Application	Committee	Within 15 business days
P-3	Notification of Permit Disapproval or Tabling	Assn. Manager	Within 3 business days
P-5	Request Application Assistance Meeting	Applicant	When needed
P-5	Application Assistance Meeting	Committee	Within 7 business days
P-7	Appeal of Permit Disapproval	Applicant	Within 30 days
P-7	Appeal Action	Board of Directors	Within 30 days
P-6	Submission of Revised Plan	Applicant	Within 10 business days
P-3	Notification of Permit & Plan Approval	Assn. Manager	Within 3 business days
GI-9 & S-1g	Payment of Escrow Fee	Applicant	Within 3 business days
P-3 & R-5	Mandatory Pre-Permit Issuance Meeting	Committee	Within 7 business days
P-3	Issuance of Permit	Assn. Manager	Within 3 business days
GI-11a	Request Inspection 1	Applicant	When ready
GI-11a	Schedule Inspection 1	Assn. Manager	Within 3 business days
GI-11a	Inspection 1	Committee	Within 7 business days
GI-11b	Request Inspection 2	Applicant	When ready
GI-11b	Schedule Inspection 2	Assn. Manager	Within 3 business days
GI-11b	Inspection 2	Committee	Within 7 business days
GI-11c	Request Inspection 3	Applicant	When ready
GI-11c	Schedule Inspection 3	Assn. Manager	Within 3 business days
GI-11c	Inspection 3	Committee	Within 7 business days
GI-9	Return Balance of Escrow Fee Based on Inspection 3 Results	Assn. Manager	Within 14 business days

*The above chronological schedule has been organized to fit the 30-day approval/disapproval time frame provision established by the Master Declaration. However, the Committee will attempt to conclude its review, approval/disapproval action and project oversight in a timely manner.

- GI-7. Pre-Application Meeting:** Any applicant may request an informal pre-application consultation with a member of the Committee to consider the application process and its requirements, and details of the proposed project and regulation compliance. The meeting shall be held at the site of the proposed buffer zone improvement and shall be attended by both the applicant and the contractor.
- GI-8. Inspection Access:** Following reasonable notice given to the owner, representatives of the Master Association and members of the Committee may enter upon the property to inspect the buffer zone alteration and/or renovation project that is the subject of a duly submitted permit application for the purpose of determining whether the project is in compliance with the submitted plan and applicable ACC regulations and standards. An owner may waive the need for such reasonable notice and grant permission to access the project site unaccompanied without prior notice during the permitting process and at the start, during and completion of the permitted alterations and/or renovation.
- GI-9. Fees:** The applicant will be charged an application fee and an escrow fee per **S-1g** to ensure performance of the alterations and/or renovation in conformance with the approved plan, and compliance with established regulations and standards, and any related special conditions imposed by the permit. The non-refundable application fee must be included with the submitted application, and will be processed immediately. The escrow fee will be due 3 days after notification of the approval of the application, and prior to the mandatory Pre-Permit issuance Meeting. **(See R-5.)** If an application is withdrawn, the entire escrow fee will be returned to the applicant within 14 business days. Upon completion of a permitted project and its final inspection, the applicant will be entitled to a refund of all, or a portion of, the posted escrow fee within 14 business days. Deductions may be subtracted from the escrow fee as reimbursement for any corrective work done by the Master Association, and imposed fines for permit violations. **(See Appendix A** for a schedule of permit violation fines.) A portion of the escrow may be retained until any seeding of the buffer zone has successfully germinated. The Master Association will not pay interest on escrow deposits
- GI-10. Response to Violations and Penalties:** The Master Association will immediately issue a “cease and desist order” to any person responsible for altering the buffer zone without an approved permit or required notification, and for executing alterations that are not in accordance with an approved plan and related permit. Such persons shall be responsible for the cessation and/or removal of unauthorized alterations, implementation of corrective measures, and the restoration of the natural character of the buffer zone. If required corrections are not made as directed, in a timely manner, the Master Association may order the repairs and assess all related costs against the subject property in accordance with applicable provisions of the Master Declaration. **(See Appendix A)** for a schedule of permit violation fines.)
- GI-11. Inspections:** All approved buffer zone alteration and/or renovation projects shall be subject to at least three (3) sequential inspections by representatives of the Master Association:
- a. Inspection 1: to verify that an adequate silt fence has been properly installed prior to the start of any alteration and/or renovation work. (The fence must remain in place and intact until all work has been completed and the third or final inspection has been done.)
 - b. Inspection 2a: to verify that the required sample riprap panel conforms with the typical section shown on the submitted plan, and that the proposed riprap alignment will be the appropriate distance for the landward boundary of the buffer zone.
 - c. Inspection 2b: to verify that surface water runoff from the rear yard and area of alteration will properly flow into and through the native vegetation of the shoreline buffer zone, to evaluate the relative impact of any grade changes, and to substantiate that existing berm/swale ground forms have been preserved and proposed berm/swale ground forms have been constructed landward of the normal definable shoreline. This inspection shall precede the installation of any ornamental plantings, planting and/or seeding of approved native plant mixes, and soil retaining structures and hardscape features.
 - d. Inspection 3: to verify that the project has been completed in accordance with the approved plan and related alteration and/or renovation regulations and standards.

It shall be the applicant’s responsibility to notify the Manager of the Master Association of each pending phase of the alteration and/or renovation project, and schedule each related inspection. Such inspections shall be made within seven (7) business days of the applicant’s (permit holder) request for an inspection.

APPLICATION PROCEDURES

P-1. Applicant Responsibilities: It is the responsibility of the applicant:

- a. To be familiar with the permit application process and alteration and/or renovation regulations and standards.
- b. To know the nature and scope of the proposed buffer zone alteration and/or renovation project.
- c. To organize and provide the information required for the Committee's review of the proposed alteration, and/or renovation project.
- d. To ensure that the application and information to be reviewed is complete, accurate and consistent with the lakeshore buffer zone alteration and/or renovation regulations and standards established by the Architectural Control Committee.
- e. To confirm that the collective area of site improvements does not exceed the 30% limitation on the permitted alterations of the lakeshore buffer zone.
- f. To pay all fees and escrows as may be required.

P-2. Application Completeness: A determination of whether a permit application is complete will be made within seven (7) business days following receipt of the application. No application will be considered complete, unless it is accompanied by the non-refundable application fee. If any of the required general or specific information is omitted from the application, and the Manager of the Master Association determines that the application is not complete, the Manager will notify the applicant of the specific deficiencies. The Master Association will take no further action on the application until the deficiencies are remedied. Failure of the applicant to rectify noted deficiencies or provide the requested information within ten (10) business days will be deemed as a withdrawal of the permit application. The Manager of the Master Association may grant an extension to the timeline.

P-3. Timing: The Manager of the Master Association will notify the applicant within three (3) business days that the application has been received. An application deemed to be complete will be reviewed and acted upon (approved, tabled or disapproved) by the Committee at a regularly scheduled meeting within fifteen (15) business days following receipt of the complete application. The Manager will notify the applicant of the Committee's approval within three (3) business days of the Committee's action; schedule the Committee's mandatory Pre-Permit Issuance Meeting with the applicant and contractor within seven (7) business days; and issue the approved alteration permit within three (3) business days after the Pre-Permit Issuance Meeting. If the Committee disapproves or tables the application, it will issue a written notice stating its findings and specific concerns or issues within three (3) business days of its decision.

P-4 Variances: The Committee may grant variances to provisions of the lakeshore buffer zone alteration regulations and standards to provide relief if the applicant can demonstrate that strict compliance will create an undue hardship due to circumstances unique to the property under consideration, and the proposed improvements will not impair nor be contrary to the intent of the Master Association's lakeshore buffer zone regulations, standards and policies.

P-5 Application Assistance Meeting: If an applicant feels stymied and is unable to resolve the issues or findings that contributed to the disapproval or tabling of his/her application, the applicant may request a meeting with a representative of the Committee for assistance and guidance, and to discuss acceptable measures that will correct plan deficiencies and satisfy Committee expectations. The Committee representative will meet with the applicant and contractor within seven (7) business days of the request for such a meeting.

P-6 Resubmission of Revised Plan: An alteration and/or renovation plan that was initially tabled or disapproved and subsequently revised shall be resubmitted to the Master Association within 10 business days, and will be reviewed and acted upon by the Committee within 15 business days.

P-7 Appeals: An applicant may appeal the decision of the Committee to the Board of Directors of the Master Association within thirty (30) days of the Committee's decision. The Master Board will make its determination and notify the applicant within thirty (30) days of receipt of the appeal. The determination of the Master Board shall be final and binding upon the applicant.

P-8 Permit Reconsideration: The Committee may re-evaluate its decision on the approval of a permit at any time the circumstances warrant. Circumstances that could warrant such reconsideration include, but are not limited to the following:

- a. Failure to comply with any special terms and conditions imposed by the permit.
- b. The information stated in the application and/or the improvements depicted and/or described on the supporting plan prove to be false, incomplete, or inaccurate.
- c. Significant new information arises that was not considered when the permit was initially approved.

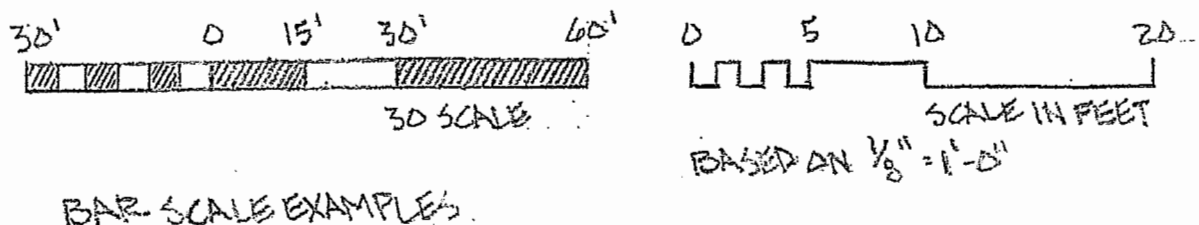
SUBMISSIONS

S-1. General Information Requirements: All applications for a buffer zone alteration and/or renovation permit shall include the following information, unless the submission requirements are modified or waived:

- a. Applicant's name (property owner), address, phone number, and email address.
- b. Builder, contractor, or consultant's name, address, phone number, and email address.
- c. Address of project site, if different than the applicant's address.
- d. Sub-Association name.
- e. Anticipated project start and completion dates.
- f. Itemized estimate of project cost/value.
- g. A non-refundable permit application fee and an escrow fee of \$500 or 10% of the estimated project cost, whichever is greater, (check or money order made payable to Lakes of Radisson Master Association). The escrow fee will be due 3 days after notification of plan approval, prior to the mandatory Pre-Permit Issuance Meeting. (See R-5). The escrow fee will be returned to the applicant within 14 business days if an application is withdrawn or after the final inspection and approval of the permitted alterations, and/or renovation minus any deductions for fines or corrective work done by the Master Association.

S-2. Specific Information Requirements: All applications for a buffer zone alteration and/or renovation permit shall include all of the following pertinent information unless specifically waived and deemed by the Manager not to be applicable to the proposed project or subject site.

- a. Copy of the lot's Certificate of Survey showing the edge of water, drainage easement, direction of surface water flow, finished spot elevations, and the map scale depicted as a graduated linear bar. Note: A Certificate of Survey is typically included in the property closing documents, and is available from the City of Blaine website at www.blainemn.gov.
- b. Legible copy of the buffer zone alteration and/or renovation plan. The following applicable information shall be graphically shown, stated or listed. The Plan (sheet or set of drawings) shall be submitted on an 8.5" x 11" sheet or sheets. The map scale shall be depicted as a graduated linear bar (See example below.) Selection of an appropriate bar scale shall be mutually suitable for the size of the plan and size of the site. (See Sample Alteration Plan on page 7.)



Reference Check the Following When Completed:

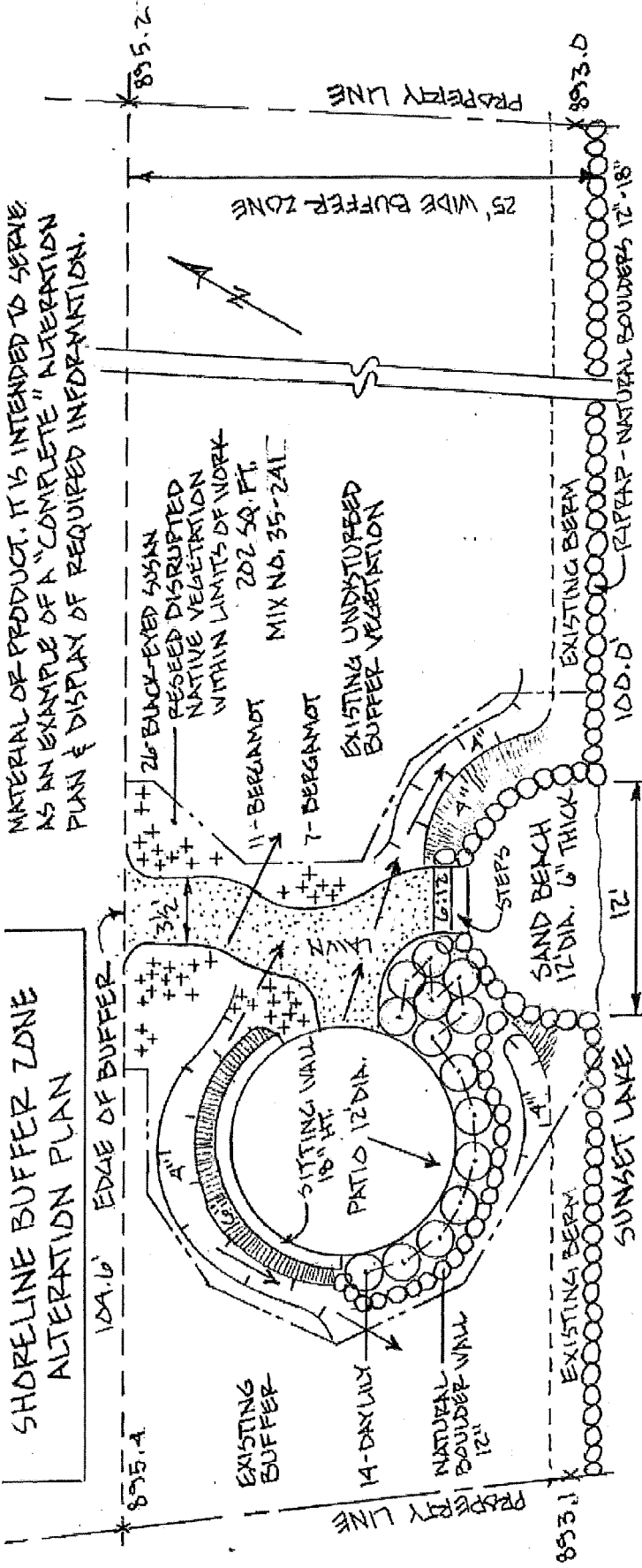
The following checklist itemizes potentially applicable information that should be included on the Plan sheet(s) and thereby help the applicant prepare a complete application.

- ☐ Landward and lakeward boundary of draining easement.
- ☐ Edge of water.
- ☐ Existing and proposed ground forms (berm/swales).
- ☐ Existing and/or proposed patio (include a materials list and pattern).
- ☐ Existing and/or proposed modular unit or boulder walls (include heights, widths, and materials list).
- ☐ Existing and/or proposed deck.
- ☐ Existing and/or proposed stairs (include materials list).
- ☐ Existing and/or proposed lawn areas.
- ☐ Existing and/or proposed gravel, flagstone, paver, turf and wood mulch paths (include materials list).
- ☐ Existing and/or proposed riprap (include size and type of boulders, and typical section). **(See Appendix E)**
- ☐ Access routes through Protection Zone for riprap installation.
- ☐ Individual plant installation locations for all ornamental woody and herbaceous plants (label species).
- ☐ Areas to be seeded with a mixture of grasses and forbs (include square footage, application rates and Minnesota seed mix number). **(See Appendix C.)**
- ☐ Areas to be planted with a mixture of native herbaceous plants (include square footage, spacing pattern, and species). **(See Appendix D.)**
- ☐ Areas to be sodded (include square footage).
- ☐ Area to be covered with beach sand (include depth and square footage).
- ☐ Areas to be covered with decorative landscape rock (include square footage, depth and type).
- ☐ Surface water runoff flow.
- ☐ Areas of existing buffer zone vegetation to be preserved.
- ☐ Plant list of proposed ornamental woody and herbaceous material (include species, size, quantity, type of root).

Plant and construction materials lists may be included as separate sheets.

SHORELINE BUFFER ZONE ALTERATION PLAN

MATERIAL OF PRODUCT. IT IS INTENDED TO SERVE
AS AN EXAMPLE OF A "COMPLETE" ALTERATION
PLAN & DISPLAY OF REQUIRED INFORMATION.



PLANT MATERIALS LIST

QUANT.	SPECIES	SIZE
14	DAYLILY SP.	2' D.C.
18	WILD BERGAMOT	1.5' D.C.
26	BLACK-EYED SUSAN	1.5' D.C.
	MIN STATE SEED MIX NO. 35-241	0.8 LB / 1000 SAFT.

LAKE ELEV. ON 8-28-13 890.4
PLAN DATE 8-30-13 SHEET 1 OF 1

BUFFER ZONE ALTERATION PLAN

ANN APPLICANT PROPERTY
1234 SHORELINE LANE

ALTERATIONS AREAS

BUFFER ZONE	2575 SQ. FT.
30% AREA	773 SQ. FT.
30% SHORELINE	30 LIN. FT.
SITTING WALL	12 SQ. FT.
TURF PATH	67 SQ. FT.
BOULDER WALLS	37 SQ. FT.
PERENNIAL BED	56 SQ. FT.
STRIPS	7 SQ. FT.
PATIO	113 SQ. FT.
SAND BEACH (12 LIN. FT.)	67 SQ. FT.
TOTAL	359 SQ. FT.

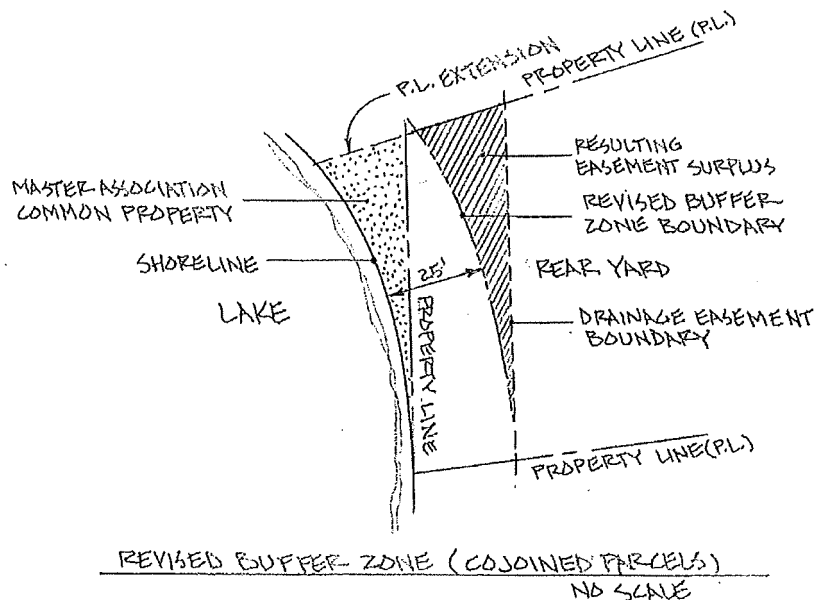
KEY

- LIMITS OF WORK
- RUNOFF FLOW
- OOOOO NATURAL BOULDERS
- HERBACEOUS PERENNIALS
- + NATIVE HERBACEOUS FORBS
- PROPOSED BERM
- PROPOSED SWALE
- HARDSCAPE MATERIALS LIST
- ° PATIO - BORGERT Pavers
- ° CRACOVIA, MINNESOTA BLUE
- ° SITTING WALL - BORGERT
- ° MADEIRA, MINNESOTA BLUE
- ° STEPS - BORGERT STEP UNITS
- ° MINNESOTA BLUE

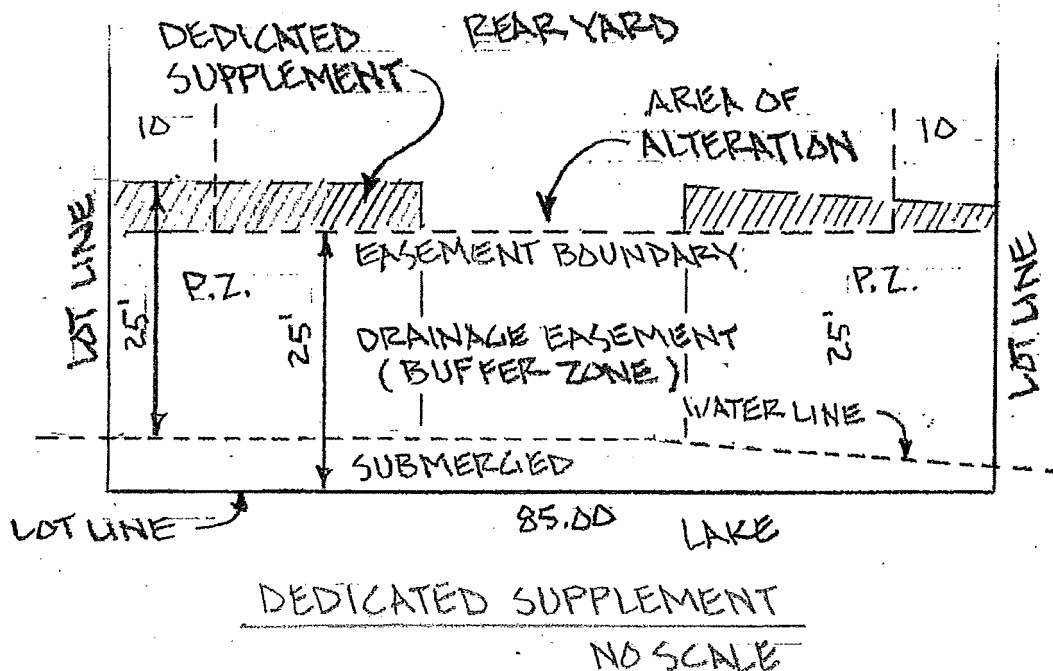
REGULATIONS AND STANDARDS

- R-1. Policy:** No alterations nor improvements shall be made to or within the designated lakeshore buffer zone of Sunrise Lake and its connecting bays without a written permit issued by the Master Association or notification by the property owner, whichever is required, dependent on the estimated project cost/value. (See **GI-1**). Preservation and maintenance of native herbaceous vegetation along the lakeshore of the lake is one of the fundamental measures endorsed by the Lakes of Radisson Lake Management Plan to protect the lake.
- R-2. Buffer Zone:** The 2003 "Lake Management Plan" for Sunrise Lake declares that a 25 foot wide buffer zone of native herbaceous plants shall be established, preserved and maintained around the lakeshore of the lake. In most cases the buffer zone will coincide with a lakeshore lot's rear yard "drainage easement" as defined on the lot's Certificate of Survey, the lakeward boundary being the unsubmerged rear yard lot line or if submerged, the "long-term average water level" shoreline. If the width of the defined or mapped easement is greater than 25 feet (e.g., 30'), only the lakeward 25 feet is subject to the prescribed "Buffer Zone Regulations and Standards". If the width is less than 25 feet (e.g., 15'), legitimate extension of the width and landward boundary of the buffer zone to 25 feet or greater is subject to the property owner's approval and dedication. The landward boundary of the buffer zone or easement that parallels the shoreline shall be determined on site in accordance with the property's Certificate of Survey by measuring the scaled distance from the lakeward wall of the house. Once established, this boundary shall serve as the baseline for all alteration calculations and measurements.
- R-3. Lake Levels:** Since the water level trends of Sunrise Lake have varied over the years, and consequently the "normal water level" is not a consistent elevation, it is more aptly defined as the "long-term average lake water level" or "operational water level" as evidenced by the changing stability. The ordinary high water level of the lake is 891.5. If current lake level information is needed to guide the proposed installation of riprap (See **R-12** and **Appendix D**), the ACC will provide the real time data at the mandatory pre-permit issuance meeting (See **R-5**).
- R-4. Scope:** The following regulations and standards do not address every conceivable alteration of the lakeshore buffer zone. Any proposed structures, landscape features, significant modeling of the ground surface, and use of materials that are not directly covered by this document will be individually evaluated by the Committee during its review of the application.
- R-5. Mandatory Pre-Permit Issuance Meeting:** The applicant and contractor shall attend a mandatory Pre-Permit Issuance Meeting scheduled by the Manager of the Master Association with a member of the Committee at the project site prior to the issuance of a project permit and start of any approved buffer zone alterations and/or renovation. The purpose of the meeting will be to review and discuss applicable provisions and conditions of the buffer zone alteration, and/or renovation permit, related regulations and standards, and required inspections.
- R-6. Alteration Limitations:** No more than 30 percent of the buffer zone (based on square footage) of each lakeshore lot, and no more than 30 percent of the shoreline at the water's edge (based on linear footage) shall be altered or improved. This limitation does not apply to the installation of shoreline riprap. Such alteration can include the removal of existing vegetation for the installation of improvements such as beach sand, sodded lawn, paved patios, walls, paths (paved, gravel, or turf), stairs, retaining walls, wood decks and ornamental plantings. Retaining walls and hardscape features shall not be constructed closer than 5 feet to the edge of the shoreline. If a portion of the designated buffer zone or easement is submerged by lake water at the time of the submission of the alteration permit application, and has been so covered for more than 3 consecutive months (based on lake level records maintained by the City of Blaine), the uncovered area that can be altered in accordance with the provisions of this document shall be adjusted and limited to 30 percent of the remaining regulated area above the current water line.

- R-7. Protection Zone:** Ideally, the Protection Zone is intended to be a “no-touch” undisturbed natural landscape comprised of a dense covering of a diverse mixture of native herbaceous plant species. The Protection Zone is the protected area of the buffer zone that has not been altered, to date and/or is prohibited from being altered at any time. It can be the entire buffer zone if there has been no alteration, and it must always be at least 70 percent of the defined buffer zone area. Although some existing buffer zones may be comprised of woody plants (e.g., willow) and/or herbaceous invasive or weed species (e.g., thistle, nettle), renovation or transformation of such areas to a desired native plant community is an encouraged voluntary initiative, except such work may be a conditional requirement associated with an alteration permit. Such renovation projects shall be done in accordance with the provisions of **R-16**. Work associated with a permitted alteration project shall not encroach into the defined Protection Zone except for authorized shoreline access routes for riprap installation, followed by appropriate restoration measures in accordance with the provisions of **R-13** and **R-14**.
- R-8. Common Property Usage:** In those situations where it is determined that the normal shoreline of Sunrise Lake and its connecting bays is located a discernable distance lakeward beyond a lakeshore unit’s rear yard line, and the intervening adjoining area of land (sediment or outlot) is by description “Master Common Property”, the owner of the contiguous lakeshore property can conjoin the abutting properties, thereby reshaping the lakeshore property’s buffer zone and relocating the landward boundary of the buffer zone 25 feet landward from the normal shoreline, subject to Committee approval. In keeping with **Provision R-6**, up to 30 percent of the revised buffer zone formed by the consolidated parcels can be altered or improved, and at least 70 percent must be established as native herbaceous vegetation. The resulting easement area surplus located landward and beyond the redefined buffer zone boundary can be retained as Protection Zone (**R-7**), or improved as part of the proposed area of alteration and/or general rear yard landscape



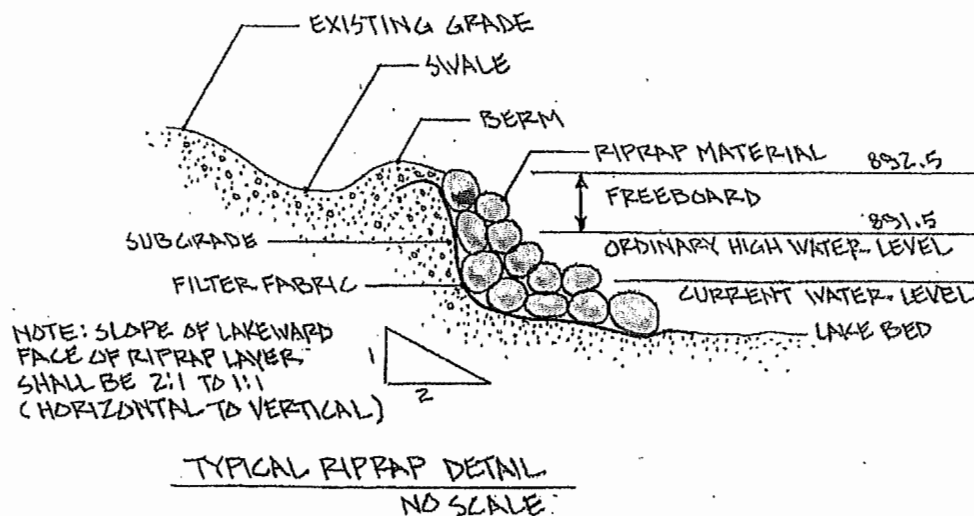
R-9. Property Dedication: In the event that the normal shoreline and rear yard lot line do not coincide due to a portion of the rear yard buffer zone being submerged (i.e., shoreline landward of rear yard lot line), thereby reducing the standard 25 foot width of the buffer zone, the 25 foot width can be realized or restored if the permit applicant/owner voluntarily “dedicates” a compensating full-length equivalent strip of rear yard immediately landward of and adjacent to the landward boundary of the easement/buffer zone. The dedicated strip of land shall be set-aside as part of the Protection Zone.



- R-10. Buffer Protection Zone Cutting:** The cutting or mowing of established native herbaceous vegetation within the Protection Zone shall be restricted to one cutting during early spring and / or one cutting during late summer or early fall, unless otherwise authorized by a written conditional cutting permit issued by the Master Association. (See Appendix B “Shoreline Buffer Zone Maintenance Guidelines”).
- R-11. Temporary Erosion Control:** Adequate temporary erosion control measures (e.g., geotextile silt fence) shall be properly installed prior to the start of any work within the buffer zone. The installed silt fence shall be inspected and approved by a representative of the Committee, and must remain in place and intact until all work has been satisfactorily completed and a final inspection has been done, unless prior removal is authorized by the Committee. The fence stakes should be lakeward and the geotextile fabric should be landward. The bottom edge of the fabric, which is a loose flap, should be buried in a small trench when on dry land or forcibly inserted into the lake bottom when installed in the lake. For projects not disturbing the shoreline, the silt fence should be installed along the landward edge of the shoreline, turning landward at the side yard lot lines for the full width of the easement, or at the “limit of work” line or boundary if the subject alteration project area is restricted and will not disturb the entire buffer zone. For riprap projects or alteration projects that include installation of riprap, the silt fence should be installed in the lake at a suitable distance from the shoreline with the ends returning to the shore at the side yard lot lines. If the only disturbance of the shoreline will involve a shoreline improvement such as a sand beach, the silt fence needs only to be installed in the lake, opposite the improvement, returning to and over the shoreline embankment at the extremities of the beach.

R-12. Riprap: Riprap is an aggregated layer of clean (debris and dirt free) well-graded natural boulders or angular stones that shall be no less than 6 inches nor more than 24 inches in diameter, randomly or hand-placed along the shoreline as an erosion deterrent. Being a shoreline protection measure, riprap is not included in the calculation of the 30 percent limitation on the alteration of the buffer zone and shoreline, unless the riprap intrudes landward beyond the rear yard lot line and/or existing upper edge of the shoreline bank if the lot line is submerged.

- a. Riprap shall extend upward from the toe of the bank and lake bottom to an elevation of 892.5 (freeboard of one foot above the ordinary high water level of 891.5). If the existing elevation of the bank is lower than the prescribed freeboard elevation, soil fill that will be added to construct the required berm can provide the necessary subgrade for the extension of the contiguous riprap layer. The finished slope of the lakeward face of the riprap layer shall be no less than 2:1 nor more than 1:1 (horizontal to vertical). The layer of interlocked stone shall be twice as thick as the average diameter of the selected riprap material, and the placement of stone shall produce a surface that appears reasonably uniform. A permeable heavy-duty geotextile filter fabric shall be placed beneath the riprap against the subgrade that shall be free of extraneous and objectionable debris. The upper edge of the filter fabric (flap) shall be buried at least 8 inches below the subgrade. Every reasonable effort shall be exercised to restrain the erratic displacement of riprap material during placement.
- b. Any anticipated disruption of the buffer zone beyond any permitted alteration in order to facilitate the installation of riprap (e.g., access routes) shall be indicated on the plan submitted with the application, and shall be restored in accordance with the provisions of **R-13**, **R-14** and **R-15**, and approved by the Committee prior to implementation.
- c. If not existing, a berm/swale ground form shall be constructed immediately landward of, or abutting newly installed riprap. (**Refer to Appendix E** for the required demonstration of installation practices and results).
- d. If the buffer zone has a uniform slope or gentle grade to the water line without a "cut" shoreline embankment, and is not conducive to the installation of a 1:1 or 2:1 riprap section, the proposed riprap may be installed as a "blanket" that conforms to the existing unaltered contours. If the riprap blanket will extend landward into the buffer zone beyond the rear yard lot line or normal shoreline, as the case may be, the total area of intruding riprap shall be included in the calculation of the 30 percent area of alteration. (See **Appendix D, Section No. 3**).



a. Minnesota State Seed Mix No. 34-262 Wet Prairie
Minnesota State Seed Mix No.34-271 Wet Meadow South & West
Minnesota State Seed Mix No. 35-241 Mesic Prairie General
Minnesota State Seed Mix No. 35-641 Mesic Prairie Southeast

- b. For seedling identification see “Minnesota Wetland Restoration Plant ID Guide” online at www.bwsr.state.mn.us/native-plant-id-and-information.
- c. Seedlings shall be immediately covered by a thin layer of clean weed-free grain straw providing a 90% coverage of the exposed soil surface or seedbed. The straw layer shall be held in place by a thin photodegradable staple anchored netting.
- d. It is expected that any area that is seeded with a native plant seed mix will demonstrate successful germination, survival and commenced establishment as evidenced by a seedbed that has a uniform cover of native plants that is at least 6 inches high. If it is determined that the initial seeding, as a whole, or measurable patches have failed to successfully or significantly germinate by the one-year anniversary date of the seeding, the unacceptable areas shall be reseeded, and continue to be reseeded, until successful germination is achieved. Watering and weed control, as described in **R-15** and **Appendix B**, are essential to a successful outcome. The Master Association will withhold a percentage of the escrow fee, up to \$1500, until successful germination is verified.

3'

1.5' 1.5'

○ X ○

2.25 SQ. FT.
PER PLANT

X | X |

1.5' 1.5'

○ X ○

3'

1.5' 1.5'

○ X ○

KEY

○ GRASSES

X FORBS (WILD FLOWERS)

TYPICAL SPACING FOR GRASSES & FORBS PLANTINGS

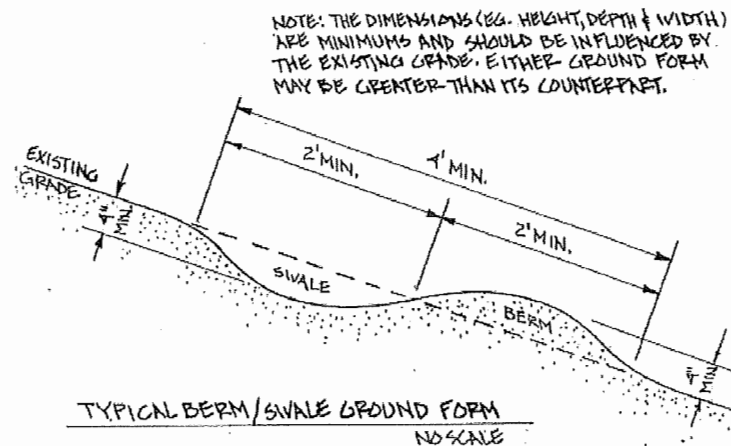
NO SCALE

- a. A planted bed of potted plants shall be covered by a thin layer of natural, not color enhanced, shredded hardwood mulch up to 1 ½ inches thick. On steep slopes the mulch should be held in place by a light nylon photodegradable netting.
- b. Plugs and seedlings shall be inserted through a blanket of clean weed-free straw mulch and Photodegradable netting that covers a planting bed sown with a light application of a seed mix composed of species that are the same as or compatible with the plant species being installed.
- c. Purposely selected and scattered groupings of potted plants to be planted into a seedbed sown with an approved native seed mixture at the normal recommended application rate shall be inserted through a blanket of clean weed-free straw mulch and photodegradable netting.

At the time of, or before the final inspection, the applicant shall provide documents to the Committee that Substantiates the species and quantities of containerized plants that have been planted.

- R-15. Establishment Period Maintenance:** Areas that will be seeded and/or planted with native herbaceous plants should receive supplemental watering and diligent weeding during the establishment period. During the first year the areas should be deeply watered at least once a week. During the second and third years watering will be necessary only during periods of droughty conditions. Replacement seeding or plantings should be made where large gaps have developed, using species that have become successfully established (See Appendix B).
- R-16. Buffer Zone Renovation:** The natural character and quality of the Protection Zone may be renovated, restored or enhanced at the same time or independently of a permitted alteration or improvement project. Such renovation can include removal of existing vegetation, site preparation and seeding and/or planting of native forbs and grasses in accordance with the provisions of **R-13**, **R-14** and **R-15**. Existing berm/swale ground form within the Protection Zone or any otherwise unaltered buffer zone area shall be maintained or reconstructed if disrupted during such renovation or restoration. If there is/are no existing identifiable berm/swale ground forms located land ward of the shoreline within the area of renovation or there are existing remnant ground form segments, a berm/swale ground form shall be constructed and/or reconstructed, as needed, within the full-length of the Protection Zone. (See **R-19**). Any renovation of existing buffer zone vegetation must be authorized by a written conditional permit issued by the Master Association.
- R-17. Ornamental Herbaceous Plant Installation:** There are no restrictions on the selection of ornamental herbaceous plant species that are to be planted within the 30 percent area of alteration. However, consideration should be given to the inclusion of herbaceous plant species that are forb and grass components of the approved seed mixtures specified in **R-13**. Planting beds should be covered by a layer of shredded hardwood mulch or 1½" decorative landscape rock underlaid by a permeable 3-4 oz. fabric weed barrier.
- R-18. Ornamental Shrub Installation:** There are no restrictions on the selection of ornamental shrub species that are to be planted within the 30 percent area of alteration except their branching must not overhang the Protection Zone. Planting beds should be covered by a layer of shredded hardwood mulch or 1 ½ inch decorative landscape rock underlaid by a permeable 3-4 oz. fabric weed barrier.
- R19. Berm/Swale Ground Forms:** Existing berm/swale ground forms within the Protection Zone shall be protected during an alteration project. The construction of such ground forms as part of an alteration project within the 30 percent allotted area of alteration may be a conditional requirement of the approved permit imposed by the Committee. The invert depth of such depressions shall be at least 4 inches, the crown height of such soil berms shall be at least 4 inches and they each shall be at least 2 feet wide. Ground forms within the approved area of alteration shall be covered by one or more of the following materials: turf, ornamental herbaceous and/or woody plants, shredded hardwood mulch or 1½" decorative landscape rock. The placement or installation of such materials shall be done in accordance with the applicable provisions of **R-17**, **R-18**, and **R-22**. The inclusion of such ground forms within the permitted area of alteration will be counted as part of the allowable 30 percent area of alteration. Segments of existing ground forms disrupted by alteration actions outside of the perimeter of the permitted area of alteration (limits of work) and within the Protection Zone shall be structurally reconstructed or restored and replanted or seeded in accordance with the applicable provisions of **R-13** and **R-14**.

The reconstruction of original berm/swale ground forms that no longer exist within the buffer zone due to the passage of time is permitted, provided the vegetative cover in disturbed areas is restored by seeding or planting in accordance with the applicable provisions of **R-13** and **R-14**. Such ground form reconstruction and vegetation restoration will not be counted against the 30 percent alteration limit, but does require prior notification of the Manager of the Master Association. If not existing, a berm/swale ground form shall be constructed as an integral part of any riprap improvement project immediately landward of or abutting the newly installed riprap.



- R-20. Storm Water Runoff from Lawns:** Rear yard storm water drainage and runoff shall not flow directly unimpeded to the lake, but instead shall be directed into the buffer zone and any existing ground depressions located within the buffer zone.
- R-21. Alteration Area Drainage:** Any water runoff from hard surface improvements and ornamental planting beds within the area of permitted alterations shall be directed into existing or conditionally required ground depressions within the area of natural vegetation (Protection Zone) or area of permitted alterations.
- R-22. Grass Pathways:** Any mowed grass path within an area of permitted alteration shall meander from the rear yard lawn to the lake and shall be crowned or side-sloped to direct water runoff into the adjacent undisturbed natural areas or ground depressions.
- R-23. Walkways:** Other than grass pathways, any walkways shall be constructed of crushed gravel, poured in-place concrete, natural flagstone, or concrete, stone or brick pavers. Freestanding crushed gravel or paver walkways bordered by the natural vegetation of the Protection Zone shall be edged by aluminum, steel or vinyl edging. The outer margins of an edged walkway shall be level with the surface of any abutting Protection Zone. Stepping-stone units can be placed in a surrounding bed of shredded hardwood mulch that is bordered by landscape edging. If applicable, continuous walkways shall meander from the rear yard lawn to the Lake, and the subgrade shall be crowned or side-sloped to direct water runoff into the adjacent undisturbed natural areas.
- R-24. Sand Beaches:** Beach sand shall be clean and washed free of fine particles and must be of the appropriate grain size (course sand or larger) to stay in place under wave action.. Sand blankets shall not be placed lakeward of the normal shoreline or water's edge. The sand beach area shall be defined or edged with appropriately sized boulders, stone outcroppings, concrete modular units or vinyl landscape edging. The alteration permit could require, as a condition, the construction of a soil berm and/or depression behind or landward of the required edging. (See **R-19**). Subject to prior notification of the Manager of the Master Association, refreshment of the sand blanket will be allowed without an alteration permit issued by the Master Association.

- R-25 Decks:** Decks shall be ground level structures with the top surface being no higher than 12 inches above the underlying ground surface. Decks shall not be placed closer than 5 feet to the edge of the shoreline. Deck framing shall be constructed in accordance with established structural standards. The deck structure shall not be attached to permanent footings. Decking may be treated lumber, or suitable plastic or composite material.
- R-26 Patios:** Patios shall be setback at least 5 feet from the edge of the shoreline. Patios may be constructed of poured in-place concrete, concrete pavers, natural stone pavers, brick pavers, natural flagstone or crushed gravel. Patio surface runoff shall be directed into constructed depressions in the area of alteration and/or existing depressions in the buffer zone. Applicants should consider the use of permeable interlocking concrete pavers placed on permeable open-graded crushed stone bedding and aggregate sub-base.
- R-27 Walls:** Sitting and/or retaining walls shall not be constructed closer than 5 feet to the edge of the shoreline. Walls may be constructed of concrete modular units, natural wall stone, stone outcroppings or boulders.
- R-28 Maintenance of Improvements:** General maintenance of existing alterations or improvements within the 30 percent area of alterations such as replacement of ornamental plants, replacement of pavers and refreshment of hardwood mulch and riprap does not require a permit, payment of fees nor notification.
- R-29 Prohibited Uses:** Buildings, fences, vegetable gardens, organic yard debris deposits, rock piles and storage of any kind, except docks and boat lifts during the post and pre-boating season, is prohibited within the Protection Zone or any otherwise unaltered area of the buffer zone.
- R-30 Native Herbaceous Plant Maintenance:** Existing native herbaceous vegetation (forbs and grasses) that is being retained or preserved within the buffer zone should be periodically inspected to detect invasive herbaceous weeds and woody plants, and continually maintained to promote the growth of desirable plants in accordance with the applicable provisions of the Shoreline Buffer Zone Maintenance Guidelines.(See Appendix B).
- R-31 Shredded or Chipped Wood Mulch:** Generally, any wood mulch material that was permitted by the Master Association and placed within the buffer zone prior to 2015 can be refreshed, as needed. Any refreshment mulch layer shall not exceed 2 inches in depth, and shall be identical to the existing mulch material. Also, wood mulch material can be placed in ornamental landscape planting beds within a permitted area of alteration, and can be refreshed as needed. The placement of any wood mulch, post 2014, is only permitted within the Protection Zone in conjunction with a buffer zone renovation planting of containerized native herbaceous plants (See R-14 and R-16), but shall not be refreshed upon its eventual natural decomposition. Effective measures shall be implemented to prevent the washing of mulch material into the lake.
- R-32 Mineral Mulch:** Mineral mulch or decorative landscape rock (e.g., river rock, pea gravel, crushed stone, crushed brick, lava rock) can be placed in ornamental landscape planting beds within a permitted area of alteration. Such mulch material shall not be placed within the Protection Zone at any time, for any reason.
- R-33 Woody Plant Coverage:** The stems, crown and/or branches of any tree or shrub planted within the 30 percent area of alteration or planted within a rear yard area contiguous to the Protection Zone shall not extend into or over the Protection Zone at the time of planting, nor anytime thereafter. The species and location of any trees that are proposed to be planted within the 30 percent area of alteration shall be approved by the Committee. The planting of woody plants that are not part of an approved comprehensive buffer zone alteration or improvement plan will not be permitted, under any circumstances. The area of canopy coverage and/or foliage mass of existing naturally established woody plants within the Protection Zone and outside of an approved area of alteration shall not be counted as part of the area to be altered. Any woody plants that have been permitted and subsequently planted within the lakeshore buffer zone prior to the submission and approval of a buffer zone alteration plan shall be incorporated, as much as possible, into the proposed area of alteration.

R-34 Woody Plant Removal: All woody plants (e.g., trees and shrubs) within the Protection Zone should be removed to promote the growth of desirable native forbs and grasses. All woody plant removals shall be carefully done at a time when such removal will cause the least amount of damage to the existing native forbs and grasses. The cost of such removals shall be borne by the subject property owner.

- a. Existing naturally, established or invasive volunteer woody plants should be removed to the ground line, and the flush-cut surface of resulting stumps and stubs should be grubbed-out or properly treated with a brushed-on application of a “brush-killer” herbicide.
- b. Any woody plants that have been intentionally planted within the Protection Zone without a written permit issued by the Master Association shall be removed, and the resulting stumps and stubs grubbed-out or properly treated with a with a brushed-on application of a “brush-killer” herbicide.
- c. Any woody plant that was previously “permitted” to be planted within the Protection Zone and is subsequently removed, for any reason, shall not be replaced.
- d. If invasive woody plants such as shrub willow and cottonwood saplings occupy most of the area of the lakeshore buffer zone, it is recommended that all vegetation (woody plants and herbaceous native plants) should be removed, and the “cleared” area renovated in accordance with the provisions of **R-16**.

Note: Copper Bay Projects

A 6-inch water main is located within the buffer zone of Copper Bay. Prior to the start of any excavation within the area of an approved project, the water main alignment must be located (flagged or painted) by Mickman Brothers, Inc. The applicant is responsible for the timely scheduling of the locate and shall be financially responsible for all costs associated with the repair of any damage to the water main that occurs during the permitted alteration project.

SEVERABILITY AND WAIVER

The invalidity or unenforceability of any part of this document shall not impair nor affect in any manner the validity, enforceability or effect of the balance of this document. No regulation, standard, restriction, condition, obligation or provision contained herein shall be deemed to have been abrogated or waived by reason of any failure to enforce the same, irrespective of the number of breaches thereof which may occur.

REVISIONS

This document will be reviewed and revised from time to time, as needed. The latest version will be available at the office of the Master Association.

APPENDIX A

SCHEDULE OF PREDETERMINED FINES FOR BUFFER ZONE ALTERATION VIOLATIONS

Authority: The authority to adopt, levy and impose fines and assessments is established under, Article IV, Section 1 and Article V, Section 3 of the Master Declaration of the Lakes of Radisson Master Association executed and recorded on August 21, 2003.

Intent: The purpose of a schedule of predetermined fines is to:

- a. Discourage irresponsible and/or presumptuous actions.
- b. Notify Owners of potential monetary consequences for noncompliance with regulations, standards and procedures that have been established to protect lake water quality and the related functions of the native vegetation of the lakeshore buffer zone.
- c. Ensure that the penalty imposed on all parties for the same violation is equitable and consistent.

Policy: All alteration and/or renovation activities and resulting improvements within the designated buffer zone of a lakeshore lot are subject to approval of a project permit application and implementation plan by the Master Association's Architectural Control Committee (ACC). Any Owner that fails to apply for and receive such a permit, and facilitates the initiation of any unapproved alteration or improvement is in violation of regulations and standards duly imposed by the ACC. Any such unauthorized actions or alterations are subject to applicable fines.

If an Owner or his/her contractor fails to comply with any buffer zone alteration regulations, standards and procedures established by the ACC, the Owner may be required to pay applicable predetermined fines listed herein. Additional fines may be imposed in response to any unauthorized deviation from the approved project plan and/or failure to comply with any special condition assigned by the approved permit. Such penalties, if imposed, would be totaled and subsequently subtracted from the posted escrow fee. The Master Board may also levy an additional assessment against the violating Owner and subject property if the posted escrow fee is not adequate to cover all assigned monetary penalties or costs associated with the enforcement of applicable buffer zone alteration and preservation regulations and standards and/or the resolution and remediation of alteration permit violations, including without limitation any related fees of attorneys or other professionals.

Procedure: The ACC shall, in its sole discretion, have the exclusive right to recommend that the Master Board impose certain fines, monetary penalties and assessments as prescribed by the "Schedule of Predetermine Fines" for violations of established regulations, standards and procedures relating to the alteration of the shoreline buffer zone. Acting upon any recommendation issued by the ACC, the Master Board may impose such predetermined fines and/or levy such assessments it deems fitting.

Any owner alleged to have violated the shoreline buffer zone regulations (whether such violation was committed by the Owner or hired contractor) is entitled to written notice of the violation and an opportunity to be heard by the Master Board or a committee appointed by the Master Board before a fine is assessed.

Upon receipt of a written notice of violation from the Master Association or its authorized agent, an Owner who desires to having a hearing must make a written request for a hearing by contacting the Master Association's management agent within ten (10) days of the date of the violation notice. If a hearing is timely requested, the Master Association will schedule a hearing to be held within thirty (30) days of receipt of the request for a hearing, and with at least five (5) business days prior to written notice to the offender. If the offending Owner fails to appear at the hearing, then the right to a hearing shall be waived and the Master Board may take such action as it deems appropriate.

The decision of the Master Board and the rules for the conduct of hearings established by the Master Board shall be final and binding to all parties. The Master Board's decision shall be delivered in writing to the offender within a reasonable time following the hearing, if not delivered to the offender at the hearing.

Schedule of Fines for Alteration Permit Violations:

Violation	Fine
1. Starting buffer zone alterations and/or renovation (estimated project cost/value more than \$500) without an approved alteration and/or renovation permit.	\$600
2. Starting minor alterations (cost/value of \$500 or less) without prior notification of the Master Association.	\$100
3. Intentional misrepresentation of the estimated cost of the improvement project (being \$500 or less when, in fact, it will be more than \$500).	\$100
4. Scalping all or a part of the native vegetation in the protected natural area of the buffer zone beyond the limits of an approved alteration project or not done in conjunction with an approved renovation project.	\$100 plus \$1 sq. ft. of scalped area
5. Starting alterations and/or renovation prior to proper installation of temporary erosion control measures (e.g., silt fence).	\$100
6. Starting alterations and/or renovation prior to inspection and approval of installed erosion control measures (Inspection 1).	\$100
7. Starting general installation of riprap prior to the inspection and approval of the required sample panel and delineation of the proposed riprap alignment (Inspection 2a).	\$100
8. Starting installation of ornamental plantings, soil retaining structures and hardscape features within the area to be altered prior to inspection and approval of the directed flow of surface water runoff, grade changes and constructed ground forms (Inspection 2b).	\$100
9. Starting seeding and/or planting of native forbs and grasses within the natural area or Protection Zone prior to inspection and approval of grade changes, constructed ground forms and the directed flow of surface water runoff (Inspection 2b).	\$100
10. Planting or seeding of noncompliant (not preapproved) herbaceous plants or seed mixtures in the Protection Zone.	\$100
11. Installation of alteration improvements not shown nor disclosed on the submitted alteration plan, and/or not in compliance with the approved alteration plan (e.g., dimensions, location) and related regulations and standards, and/or contrary to any condition imposed by the approved project permit. The Owner shall remove or modify any and all alterations that are not authorized by the approved permit or in compliance with established standards or in accordance with the approved alteration plan. The cost of any required remediation shall be borne by the Owner. If required corrections are made by the Master Association, the related costs will be assessed against the subject property in accordance with the applicable provisions of the Master Declaration.	\$100 plus \$100/item
12. Failure to schedule the final inspection to determine that the project has been completed in accordance with the approved plan and permit (Inspection 3).	Forfeiture of posted escrow amount

APPENDIX B

LAKESHORE BUFFER ZONE MAINTENANCE GUIDELINES

Background: The lakeshore buffer zone around Sunrise Lake and its connecting bays was initially established by the developer of the Lakes of Radisson community, and is subsequently being protected by the Master Association through regulations. The initial intent was to provide and secure a strip of native herbaceous vegetation along the lakeshore that would be low maintenance while helping protect lake water quality by filtering rear yard runoff, increasing storm water infiltration, assimilating suspended nutrients and chemical pollutants and reducing shoreline erosion.

It remains a primary lakeshore management objective of the Master Association to continue to promote the growth of desirable native grasses and forbs (wildflowers) and the sustainability of the buffer zone as a natural landscape.

Although the lakeshore buffer zone is intended to be a low maintenance landscape, it should be afforded periodic monitoring and directed maintenance, from time to time. Dedicated care will ensure that the associated benefits of a buffer zone are realized by the lake lot owner and the Lakes community as a whole.

Maintenance Schedule Summary: The maintenance tasks listed in the schedule below are discussed in detail following the table.

A. Establishment Period (3 years after installation)

Code	Situation	Task	Frequency/Timing
M-1	First Year	Watering	1 inch/week
M-2	First Year	Weed control	Once every 2 weeks
M-3	First Year	Cut-back vegetation to 4"- 5"	After planting, every 30 days until September 30 th
M-4	Second Year	Watering	During droughty periods
M-5	Second Year	Weed control	Once every 3 weeks
M-6	Second Year	Cut-back vegetation to 4" – 5"	Once between June 1 – August 15
M-7	Third Year	Watering	During droughty periods
M-7	Third Year	Weed control	Once every 3 weeks
M-8	Third Year	Cut-back vegetation to 2" – 3"	Early Spring
M-8	Third Year	Replant or reseed voids	Early Spring

B. Post Establishment Period

Code	Situation	Task	Frequency/Timing
M-9	Woody plant invasion	Woody plant control	Early Fall
M-10	Thriving native vegetation	Weed control	As needed
M-11	Dominance by weeds	Cut-back vegetation to 4" – 5"	Late Summer – Early Fall
M-11	Dominance by weeds	Weed control	Late Summer – Early Fall
M-12	Thinning of native vegetation	Cut-back vegetation to 4" – 5"	Early Spring
M-12	Thinning of native vegetation	Weed control	Early Spring
M-12	Thinning of native vegetation	Plant or seed to increase diversity or enhance color	Early Spring
M-13	Thinning of native vegetation	Consecutive alternation of spring and fall cuttings	Spaced at least a full growing season apart

- A. **Maintenance During Establishment Period:** During the first three years after a new or rejuvenated seeding and/or planting within the lakeshore buffer zone, the focus should be on 1) eliminating or suppressing the growth of invasive weed species and 2) providing supplemental watering. Such regular maintenance will give the desired native plants (e.g. grasses and forbs) the necessary competitive advantage over weed species. Common herbaceous weeds that will be found growing in the buffer zone include thistle, nettle, ragweed, reed canary grass and quack grass. (See identification photos on-line at www.weedimages.org).

Become familiar with the potential weed species as well as the desirable native plant species in order that desirable plants are not mistakenly eradicated. Place a labeled stake next to a selected example of each planted species or sprout a small sample of the native seed mix in a tray for reference.

First Year

M-1. Watering: Seeding or plantings will need at least 1 inch of water per week. (A sprinkler application for 1-2 hours will provide the required deep soaking.) Water with caution on steep slopes to avoid erosion.

M-2. Weed Control: Inspect the seeded or planted area once every two weeks to locate emerging weeds. Detected weeds should be hand-pulled or spot-sprayed with a broadleaf or selective herbicide as per label recommendations. Spray cautiously to avoid damaging nearby desirable plants.

M-3. Cutting: Cut growing vegetation to a height of 4" – 5" every 30 days until September 30th.

Second Year

M-4. Watering: Watering of seedlings or plantings will be necessary only during periods of drought.

M-5. Weed Control: Inspecting for and eradication of detected weeds needs to be done only once every three weeks.

M-6. Cutting: Cut the buffer vegetation to a height of 4" – 5" one time between June 1 – August 15 to prevent the setting and release of weed seeds. Leave the cuttings in place to serve as an organic mulch.

Third Year

M-7. Watering & Weeding: Continue the same watering and weeding program recommended for the second year.

M-8. Cutting: During early spring when weather conditions permit, cut-back all dried herbaceous vegetation from the previous year to within 2" – 3" of the ground. Leave the cuttings in place to serve as an organic mulch. Any significant voids or gaps that have developed in the vegetation should be reseeded or replanted with desirable plant species that have become successfully established.

- A. Maintenance After Establishment:** After the seeded or planted grass and forb species have become established and are able to survive without supplemental watering, and outcompete most weeds except for woody plants such as willow, the focus should be on 1) removing noticeable weed species that occasionally sprout as individuals within the buffer and as colonies along its edges and 2) promoting the sustained density of desirable plants.

M-9. Woody Plant Invasion: Cut-back invasive woody vegetation (trees and shrubs) to the ground line in early fall and treat (brushed-on application) the fresh-cut surface of the stubs with a chemical brush killer.

M-10. Thriving Vegetation: If the desirable plants are thriving, hand-pull or spot-spray young or rejuvenated (previously cut) weed species as noticed or needed. Any broadleaf or selective herbicide should be applied as per label instructions and care should be exercised to shield nearby desirable plants during application. It is advisable to wear heavy-duty leather work gloves when pulling thistle and nettles.

M-11. Dominance by Weeds: If the buffer zone has been overrun by weeds, cut-back the entire area to a height of 4" – 5" during late summer or early fall to eliminate seed production and dispersal by maturing weed plants. The cutting will also facilitate the spot application of an herbicide directly to the base of identified weed plants. Such cutting may need to be repeated the following year to achieve the desired level of weed control. Remove the loose cuttings from the buffer zone.

M-12. Thinning Vegetation: If the density of the desirable plants appears to be thinning, cut-back the entire area to a height of 4" – 5" during early spring to stimulate the growth and spread of these plants. A spring cutting is also the opportune time to alter the dominance of certain species, increase species diversity and/or enhance seasonal flower color displays by spot seeding or planting additional plants. It is recommended that such cutting be done only as needed. Remove cuttings to accommodate seeding and/or planting. The best time for early spring cutting is normally after the snow has disappeared and the soil and plants are dry enough to work with (normally before the new growth has reached a height of 10" – 12").

M-13. Consecutive Cuttings: Any consecutive alternation of spring and fall cuttings should be spaced at least a full growing season apart.

It is likely that the character of the lakeshore buffer zone will continue to naturally change over time, requiring some periodic adjustment of normal maintenance practices. Proper conscientious maintenance will perpetuate the envisioned natural character of the lakeshore buffer zone and, in doing so, will solidify the resulting environmental, aesthetic and wildlife habitat benefits.

Recommended Herbicides: The herbicides are listed by their active ingredients and trade names.

For Broadleaf Weeds

- 2, 4-D & dicamba (e.g. Weed-B-Gon)
- 2, 4-D, dicamba & mecoprop (e.g. Trimec)

For Grassy Weeds

- fluazifop (e.g. Grass-B-Gone, Fusilade II)

For Woody Plants

- triclopyr (e.g. Garlon 4, Brush-B-Gon)
- glyphosate (e.g. Roundup)

APPENDIX C

APPROVED REGIONAL NATIVE SEED MIXTURES

Policy: The following lists of approved regional native seed mixtures are prescribed in **R-13** of the Lakeshore Buffer Zone Alteration Regulations and Standards, and shall be the basis for any restorative or renovative seeding and/or planting within the Protection Zone. (See **R-7**). All seedings and/or plantings within the Protection Zone shall comply with applicable provisions of **R-13**, **R-14** and **R-15** of the Lakeshore Buffer Zone Alteration Regulations and Standards. All proposed native herbaceous plants to be planted within the Protection Zone shall be selected from the list of plant species that are components of the approved seed mixtures.

Note: The renovation of all or a part of the unaltered lakeshore buffer zone or the Protection Zone (minus Area of Alteration) must be authorized by a written conditional permit issued by the Master Association. (See **GI-I** and **R-16**). A permit applicant may propose and submit a modified similar seed mix, as a substitute, for review and approval by the Architectural Control Committee.

34-262 Wet Prairie

Seeding Rate: 14.5 lb/Acre (125.6 Seeds/ft²)

Notes: Wet prairie reconstruction for wetland mitigation or ecological restoration.

SCIENTIFIC NAME	COMMON NAME	% of Mix	Seeds/R ²	Rate/Acre
GRASSES:				
<i>Andropogon gerardii</i>	Big Bluestem	6.90%	3.7	1.00 PLS lb
<i>Bromus ciliatus</i>	Fringed Brome	10.34%	5.5	1.50 PLS lb
<i>Calamagrostis canadensis</i>	Blue Joint Grass	0.28%	4.1	0.04 PLS lb
<i>Elymus virginicus</i>	Virginia Wild Rye	12.07%	2.7	1.75 PLS lb
<i>Glyceria grandis</i>	Reed Mann Grass	1.03%	3.9	0.15 PLS lb
<i>Glyceria striata</i>	Fowl Manna Grass	0.76%	3.6	0.11 PLS lb
<i>Panicum virgatum</i>	Switchgrass	5.17%	3.9	0.75 PLS lb
<i>Poa palustris</i>	Fowl Bluegrass	1.38%	9.6	0.20 PLS lb
<i>Sorghastrum nutans</i>	Indiangrass	3.45%	2.2	0.50 PLS lb
<i>Spartina pectinata</i>	Prairie Cord Grass	3.45%	1.2	0.50 PLS lb
SEDGES & RUSHES:				
<i>Carex pellita</i>	Broad-leaved Woolly Sedge	0.34%	0.5	0.05 PLS lb
<i>Carex stricta</i>	Tussock Sedge	0.14%	0.4	0.02 PLS lb
<i>Carex vulpinoidea</i>	Brown Fox Sedge	0.69%	3.7	0.10 PLS lb
<i>Scirpus atrovirens</i>	Green Bulrush	0.69%	16.9	0.10 PLS lb
<i>Scirpus cyperinus</i>	Woolgrass	0.21%	18.7	0.03 PLS lb
FORBS:				
<i>Anemone canadensis</i>	Canada Anemone	0.21%	0.1	0.03 PLS lb
<i>Asclepias incarnata</i>	Swamp Milkweed	0.55%	0.1	0.08 PLS lb
<i>Aster puniceus</i>	Swamp Aster	0.55%	2.4	0.08 PLS lb
<i>Aster umbellatus</i>	Flat-topped Aster	0.34%	1.2	0.05 PLS lb
<i>Desmodium canadense</i>	Showy Tick Trefoll	3.45%	1.0	0.50 PLS lb
<i>Eupatorium maculatum</i>	Joe Pye Weed	0.28%	1.4	0.04 PLS lb
<i>Eupatorium perfoliatum</i>	Boneset	0.21%	1.8	0.03 PLS lb
<i>Helenium autumnale</i>	Sneezeweed	0.34%	2.4	0.05 PLS lb
<i>Mimulus ringens</i>	Monkey Flower	0.08%	8.4	0.01 PLS lb
<i>Pycnanthemum virginianum</i>	Mountain Mint	0.50%	4.8	0.06 PLS lb
<i>Solidago gigantea</i>	Giant Goldenrod	0.17%	1.8	0.02 PLS lb
<i>Solidago graminifolia</i>	Grass-leaved Goldenrod	0.08%	1.3	0.01 PLS lb
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	0.08%	0.0	0.01 PLS lb
<i>Verbena hastata</i>	Blue Vervain	1.08%	4.4	0.13 PLS lb
<i>Vernonia fasciculata</i>	Common Ironweed	0.25%	0.3	0.03 PLS lb
<i>Veronicastrum virginicum</i>	Culver's Root	0.08%	2.9	0.01 PLS lb
<i>Zizia aurea</i>	Golden Alexanders	2.08%	1.0	0.25 PLS lb
COVER CROP:				
<i>Avena sativa</i>	Oats	58.33%	3.1	7.00 PLS lb

34-271 Wet Meadow South & West

Seeding Rate: 12 lb/Acre (187 Seeds/ft²)

Notes: Wet meadow/Sedge meadow reconstruction for wetland mitigation or ecological restoration projects.

SCIENTIFIC NAME	COMMON NAME	% of Mix	Seeds/ft ²	Rate/Acre
GRASSES:				
<i>Bromus ciliatus</i>	Fringed Brome	9.17%	4.0	1.10 PLS lb
<i>Calamagrostis canadensis</i>	Blue Joint Grass	0.42%	5.1	0.05 PLS lb
<i>Elymus virginicus</i>	Virginia Wild Rye	8.33%	1.5	1.00 PLS lb
<i>Glyceria grandis</i>	Reed Manna Grass	1.25%	3.9	0.15 PLS lb
<i>Glyceria striata</i>	Fowl Manna Grass	0.83%	3.3	0.10 PLS lb
<i>Leersia oryzoides</i>	Rice Cut Grass	2.08%	3.1	0.25 PLS lb
<i>Poa palustris</i>	Fowl Bluegrass	2.92%	16.7	0.35 PLS lb
SEDGES & RUSHES:				
<i>Carex comosa</i>	Bottlebrush Sedge	1.75%	2.3	0.21 PLS lb
<i>Carex scoparia</i>	Pointed-broom Sedge	0.42%	1.5	0.05 PLS lb
<i>Carex stipata</i>	Fox Sedge	1.42%	2.1	0.17 PLS lb
<i>Carex stricta</i>	Tussock Sedge	0.25%	0.6	0.03 PLS lb
<i>Carex vulpinoidea</i>	Brown Fox Sedge	1.17%	5.1	0.14 PLS lb
<i>Juncus tenuis</i>	Path Rush	0.33%	14.7	0.04 PLS lb
<i>Scirpus atrovirens</i>	Green Bulrush	1.50%	30.4	0.18 PLS lb
<i>Scirpus cyperinus</i>	Woolgrass	0.67%	50.0	0.08 PLS lb
FORBS:				
<i>Asclepias incarnata</i>	Swamp Milkweed	2.00%	0.4	0.24 PLS lb
<i>Aster puniceus</i>	Swamp Aster	1.42%	5.0	0.17 PLS lb
<i>Aster simplex</i>	Panicled Aster	0.25%	1.7	0.03 PLS lb
<i>Eupatorium maculatum</i>	Joe Pye Weed	0.17%	0.7	0.02 PLS lb
<i>Eupatorium perfoliatum</i>	Boneset	0.17%	1.2	0.02 PLS lb
<i>Helenium autumnale</i>	Sneezeweed	0.25%	1.4	0.03 PLS lb
<i>Helianthus grosseserratus</i>	Sawtooth Sunflower	0.33%	0.2	0.04 PLS lb
<i>Lobelia siphilitica</i>	Great Blue Lobelia	0.17%	3.7	0.02 PLS lb
<i>Mimulus ringens</i>	Monkey Flower	0.08%	8.4	0.01 PLS lb
<i>Pycnanthemum virginianum</i>	Mountain Mint	0.50%	4.8	0.06 PLS lb
<i>Solidago gigantea</i>	Giant Goldenrod	0.17%	1.8	0.02 PLS lb
<i>Solidago grammifolia</i>	Grass-leaved Goldenrod	0.08%	1.3	0.01 PLS lb
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	0.08%	0.0	0.01 PLS lb
<i>Verbena hastata</i>	Blue Vervain	1.08%	4.4	0.13 PLS lb
<i>Vernonia fasciculata</i>	Common Ironweed	0.25%	0.3	0.03 PLS lb
<i>Veronicastrum virginicum</i>	Culver's Root	0.08%	2.9	0.01 PLS lb
<i>Zizia aurea</i>	Golden Alexanders	2.08%	1.0	0.25 PLS lb
COVER CROP:				
<i>Avena sativa</i>	Oats	58.33%	3.1	7.00 PLS lb

35-241 Mesic Prairie General

Seeding Rate: 36.5 lb/Acre (70.2 Seeds/ft²)

Notes: General mesic prairie mix for native roadsides,
ecological restoration, or conservation program plantings.

SCIENTIFIC NAME	COMMON NAME	% of Mix	Seeds/ft ²	Rate/Acre
GRASSES:				
<i>Agropyron trachycaulum</i>	Slender Wheatgrass	2.74%	2.5	1.00 PLS lb
<i>Andropogon gerardii</i>	Big Bluestem	5.48%	7.3	2.00 PLS lb
<i>Bouteloua curtipendula</i>	Sideoats Grama	4.38%	3.5	1.60 PLS lb
<i>Bromus kalmii</i>	Prairie Brome	1.37%	1.5	0.50 PLS lb
<i>Elymus canadensis</i>	Canada Wild Rye	3.21%	2.2	1.17 PLS lb
<i>Panicum virgatum</i>	Switchgrass	0.16%	0.3	0.06 PLS lb
<i>Schizachyrium scoparium</i>	Little Bluestem	4.38%	8.8	1.60 PLS lb
<i>Sorghastrum nutans</i>	Indiangrass	5.48%	8.8	2.00 PLS lb
<i>Sporobolus heterolepis</i>	Prairie Dropseed	0.19%	0.4	0.07 PLS lb
FORBS:				
<i>Agastache foeniculum</i>	Anise Hyssop	0.16%	2.0	0.06 PLS lb
<i>Amorpha canescens</i>	Lead Plant	0.16%	0.4	0.06 PLS lb
<i>Asclepias syriaca</i>	Common Milkweed	0.11%	0.1	0.04 PLS lb
<i>Asclepias tuberosa</i>	Butterfly Milkweed	0.11%	0.1	0.04 PLS lb
<i>Aster ericoides</i>	Heath Aster	0.08%	2.2	0.03 PLS lb
<i>Aster laevis</i>	Smooth Blue Aster	0.16%	1.2	0.06 PLS lb
<i>Astragalus canadensis</i>	Canada Milk Vetch	0.16%	0.4	0.06 PLS lb
<i>Dalea candidum</i>	White Prairie Clover	0.16%	0.4	0.06 PLS lb
<i>Dalea purpurea</i>	Purple Prairie Clover	0.52%	1.0	0.19 PLS lb
<i>Desmodium canadense</i>	Showy Tick Trefoil	0.16%	0.1	0.06 PLS lb
<i>Helianthus laetiflorus</i>	Showy Sunflower	0.16%	0.1	0.06 PLS lb
<i>Helianthus annuus</i>	Ox-eye Sunflower	0.36%	0.3	0.13 PLS lb
<i>Liatris aspera</i>	Button Blazingstar	0.08%	0.2	0.03 PLS lb
<i>Liatris pycnostachya</i>	Prairie Blazingstar	0.08%	0.1	0.03 PLS lb
<i>Monarda fistulosa</i>	Wild Bergamot	0.16%	1.5	0.06 PLS lb
<i>Rudbeckia hirta</i>	Black-eyed Susan	0.85%	10.5	0.31 PLS lb
<i>Solidago rigida</i>	Stiff Goldenrod	0.16%	0.9	0.06 PLS lb
<i>Verbena hastata</i>	Blue Vervain	0.11%	1.4	0.04 PLS lb
<i>Verbena stricta</i>	Hoary Vervain	0.16%	0.6	0.06 PLS lb
<i>Zizia aurea</i>	Golden Alexanders	0.16%	0.2	0.06 PLS lb
COVER CROP:				
<i>Avena sativa</i>	Oats	68.49%	11.0	25.00 PLS lb

35-641

Mesic Prairie Southeast

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	<i>Andropogon gerardii</i>	1.01	0.90	7.49%	3.30
side-oats grama	<i>Bouteloua curtipendula</i>	1.54	1.37	11.38%	3.01
nodding wild rye	<i>Elymus canadensis</i>	1.18	1.05	8.77%	2.01
slender wheatgrass	<i>Elymus trachycaulus</i>	1.01	0.90	7.50%	2.28
switchgrass	<i>Panicum virgatum</i>	0.24	0.21	1.78%	1.10
little bluestem	<i>Schizachyrium scoparium</i>	1.42	1.27	10.59%	7.00
Indian grass	<i>Sorghastrum nutans</i>	2.24	2.00	16.68%	8.82
Total Grasses		8.63	7.70	64.19%	27.52
butterfly milkweed	<i>Asclepias tuberosa</i>	0.07	0.06	0.53%	0.10
whorled milkweed	<i>Asclepias verticillata</i>	0.01	0.01	0.10%	0.05
Canada milk vetch	<i>Astragalus canadensis</i>	0.18	0.16	1.33%	1.00
partridge pea	<i>Chamaecrista fasciculata</i>	0.67	0.60	5.00%	0.60
white prairie clover	<i>Dalea candida</i>	0.01	0.01	0.07%	0.06
purple prairie clover	<i>Dalea purpurea</i>	0.10	0.09	0.76%	0.50
Canada tick trefoil	<i>Desmodium canadense</i>	0.17	0.15	1.24%	0.30
ox-eye	<i>Heliopsis helianthoides</i>	0.06	0.05	0.43%	0.12
rough blazing star	<i>Liatris aspera</i>	0.03	0.03	0.21%	0.15
great blazing star	<i>Liatris pycnostachya</i>	0.03	0.03	0.29%	0.14
wild bergamot	<i>Monarda fistulosa</i>	0.01	0.01	0.06%	0.18
stiff goldenrod	<i>Oligoneuron rigidum</i>	0.02	0.02	0.17%	0.31
gray-headed coneflower	<i>Ratibida pinnata</i>	0.02	0.02	0.15%	0.20
black-eyed susan	<i>Rudbeckia hirta</i>	0.06	0.05	0.38%	1.54
heath aster	<i>Symphyotrichum ericoides</i>	0.01	0.01	0.05%	0.40
smooth aster	<i>Symphyotrichum laeve</i>	0.06	0.05	0.41%	1.00
bracted spiderwort	<i>Tradescantia bracteata</i>	0.04	0.04	0.34%	0.15
blue vervain	<i>Verbena hastata</i>	0.04	0.04	0.37%	1.50
hoary vervain	<i>Verbena stricta</i>	0.11	0.10	0.85%	1.05
golden alexanders	<i>Zizia aurea</i>	0.08	0.07	0.60%	0.29
Total Forbs		1.79	1.60	13.34%	9.64
Oats or winter wheat (see note at beginning of list for recommended dates)		3.03	2.70	22.47%	1.20
Total Cover Crop		3.03	2.70	22.47%	1.20
Totals:		13.45	12.00	100.00%	38.36
Purpose:	Regional mesic prairie reconstruction for wetland mitigation, ecological restoration, or conservation program plantings.				
Planting Area:	Eastern Broadleaf Forest Province excluding Hardwood Hills subsection. Mn/DOT Districts Metro & 6.				

APPENDIX D

RIPRAP INSTALLATION GUIDELINES

The following guidelines supplement **Provision R-12** of the Lakeshore Buffer Zone Alteration Regulations & Standards.

Profile Details: Every buffer zone alteration application and plan that proposes the installation of riprap shall include section details that represent accurate scaled dimensions depicting (i) the actual shoreline (existing land surface contour and edge, lake bottom and current water level), (ii) proposed shoreline regrading, if applicable, (iii) proposed riprap installation (lakeward slope of boulders stating horizontal to vertical ratio and fabric placement), and (iv) berm (soil fill placement) and swale construction. Since the profiles of existing shorelines may vary from site to site, as well as along the subject alignment, more than one typical section detail may be necessary to describe the proposed riprap installation. (Actual elevations are not required). See example Sections below.

Sample Panel: The applicant or engaged contractor shall construct, in place, a ten (10) foot long section of the proposed riprap to serve as a "sample panel" that will demonstrate the dimensions, cross-section, structure, material and general character of the proposed riprap installation. Upon notification, the Architectural Control Committee will inspect the sample panel to verify compliance with the approved plan and profile details, and authorize continuance of the proposed riprap installation.

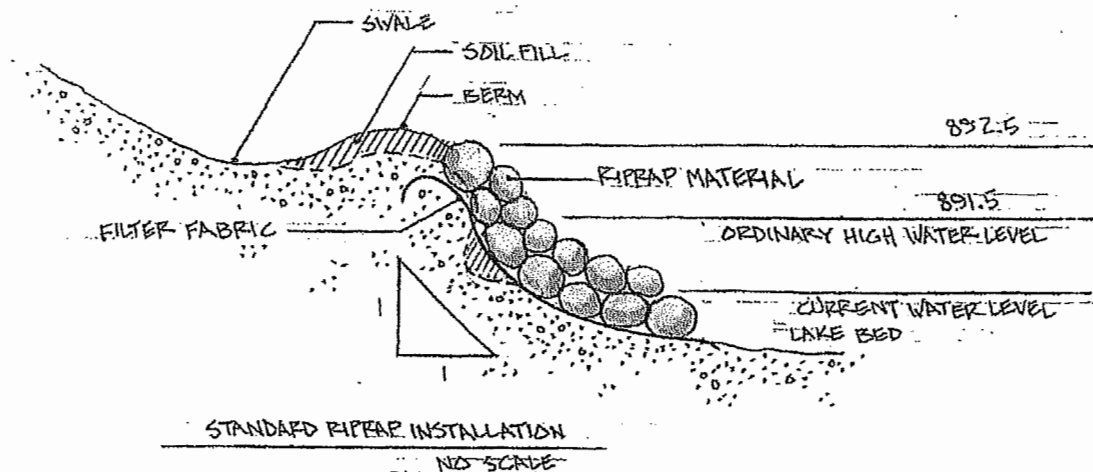
Painted Landward Limit Line: The applicant or engaged contractor shall paint a solid or dashed line on the ground along the full-length of the proposed riprap alignment to delineate the landward limit of riprap installation. The placement of any riprap landward of the existing established brink or upper edge of the shoreline cut will be counted or calculated as part of the 30% area of alteration. **Provision R-10** prescribes that the typical expected riprap installation be placed lakeward of the brink or upper edge of the shoreline. Stakes or other permanent markers shall be placed at the outer limits of the painted line and preserved, until after the "berm/swale" inspection (Inspection No. 2b). The painted line and the markers shall be in-place and ready for review by the Architectural Control Committee at the time of the special inspection of the sample panel.

Work Restrictions: The slope and character of the shoreline shall not be altered nor shall any riprap material be placed along the shoreline except for the riprap sample panel prior to the "special" inspection and approval of the sample panel by the Architectural Control Committee.

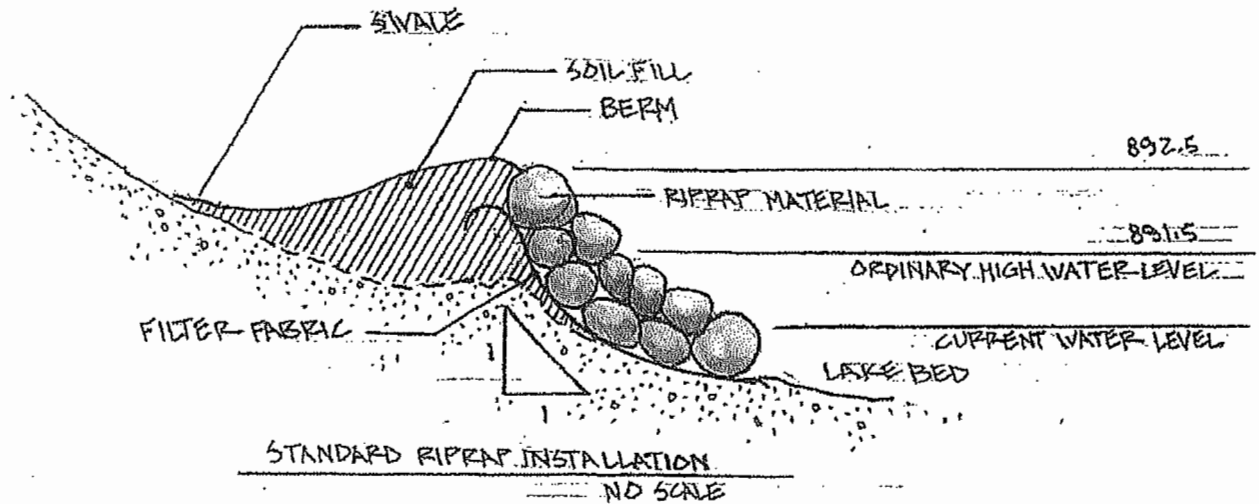
Non-Compliant Installation: Any riprap installation that is non-compliant or deviates from the approved plan, accompanying profile sections and/or the approved riprap sample panel at the time of the final inspection shall be immediately corrected to fulfill the requirements of the approved permit.

Example Sections: The following typical sections are representative examples of installation solutions related to typically encountered shoreline embankment contours:

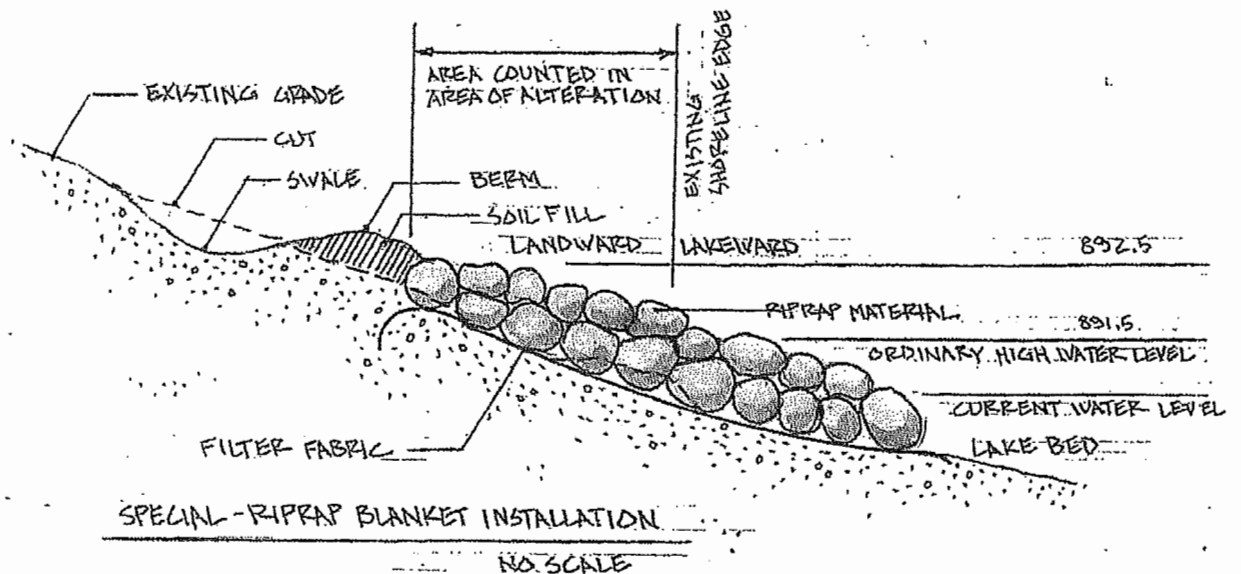
Section No. 1



Section No. 2



Section No. 3



Required Inspections:

- Inspection No. 1 – Silt Fence Installation;
- Special Inspection No. 2a – Sample Riprap Panel and Painted Landward Alignment;
- Inspection No. 2b – Completed Riprap Installation, Completed Berm/Swale Construction; and
- Inspection No. 3 (Final) – Application of Specified Seed Mix and Placement of Biodegradable Netting.

APPENDIX E

NATIVE HERBACEOUS PLANT INSTALLATION GUIDELINES

The following guidelines supplement **Provision R-14** of the Lakeshore Buffer Zone Alteration Regulations & Standards (Native Herbaceous Plant Installation).

The placement of native herbaceous plants (e.g., grasses and forbs) within the Protection Zone (**See R-7**) as part of a buffer zone alteration (**See R-6**) or renovation (**See R-16**) project can be the product of a random arrangement, an organized design, or a combination thereof. The prescribed modular grid pattern (**See R-14**) shall control the overall placement of the proposed plantings. The selection of plant species from the approved regional native plant “pick lists” (**See Appendix C**) is based on the applicant’s personal preferences. The intended result is to establish a diverse mix or composition of plants that, while being resilient and sustainable, will when established fulfill the functions of a lakeshore buffer zone.

The following table prescribes the minimum quantities of plant types (e.g., grasses and forbs) and selected species that will be required to be planted in given example areas:

		TOTAL PLANT TYPE		NUMBER OF SPECIES*		SPECIES % OF PLANT TYPES	
Example Area Sq. Ft.	Total Plants	Grass (29%)	Forb (71%)	Grass	Forb	Grass	Forb
250	111	32	79	2	4	50%	25%
500	222	64	158	3	6	33%	17%
750	333	97	236	4	8	25%	12%
1,000	444	129	315	5	10	20%	10%
1,500	666	193	473	6	12	17%	8%

*Any increase in the “number of species” should be matched by a proportional decrease in the “species percentage of plant types”.

The quantity of plants (e.g., type and species) required for any area measurement between the example areas can be calculated by applying the predetermined factors listed in the table above.

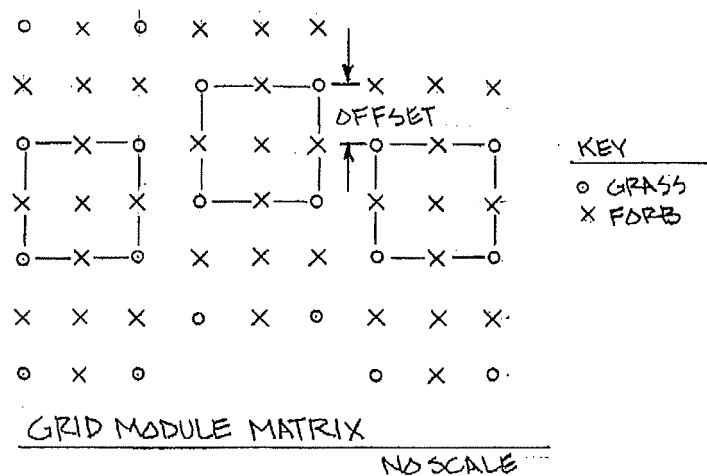
Step One: Number of Plants = (Total Area) / (2.25 Sq. Ft. per plant).

Step Two: Number of Species = Number (quantity) assigned to the preceding given table area.

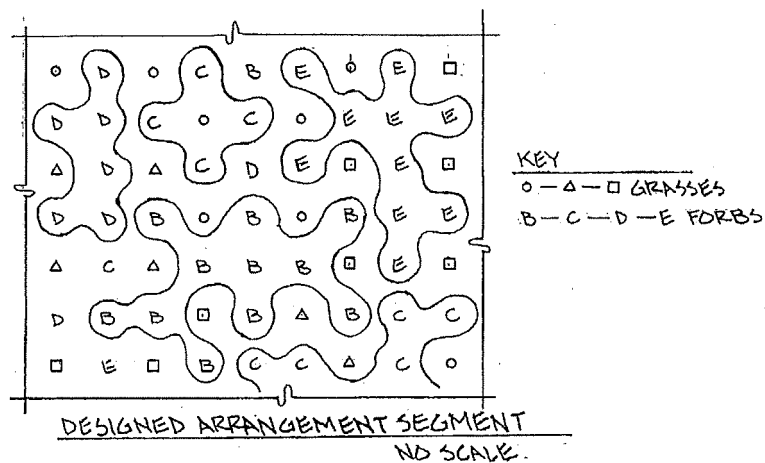
Step Three: Species Percentage of Plant Type = Number (%) assigned to the preceding given table area.

Arrangement Options:

- A. **Random Arrangement of Selected Species:** As the term “random” implies, aside from following the typical grid pattern module with grasses placed at the corners of the module and forbs equidistantly interspersed between the grassy corners, the actual plant species selection (albeit from an approved species list) and placement do not adhere to a predetermined composition arrangement. The established result will resemble the randomness of an area seeded with an approved seed mix (**See Appendix C**).
- B. **Designed Arrangement of Selected Species:** If it is intended that the established planting feature massing or collections of certain plant species that exhibit desired characteristics (e.g., flower color, height, texture), the matrix of connected grid pattern modules can serve as a map to organize the predetermined species placement. During the plan sheet and on-the-ground layout of predetermined species arrangements, each row of connected grid modules should be offset or displaced from the contiguous parallel row by one line to facilitate the intentional species massing’s (See example below).



The diagrammed arrangement plan depicting the collective massing of forb species will resemble the shape of fitted jigsaw puzzle pieces (See example below). Such arrangements can also include solitary species and/or a variety of single species placement.



Note: The Arrangement Example is not a recommendation of any particular placement, positioning or pattern.

- A. **Combination of Random and Designed Arrangement of Selected Species:** This hybrid arrangement option will produce a predetermined intermixing of scattered or intermittent designed grid modules within a dominant matrix of grid modules composed of random species arrangements.