

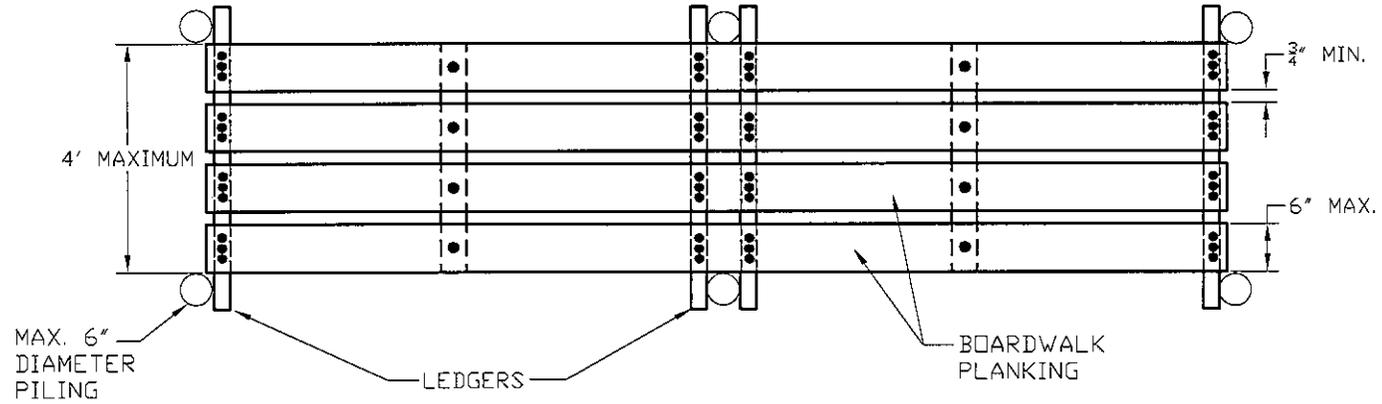
## **Carlton County Standards for Wetland Crossing Boardwalks to Qualify for a No Loss Determination under the MN Wetlands Conservation Act**

To qualify under the MN Wetlands Conservation Act for a no loss determination, vegetation under the boardwalk should not be significantly hindered from growing by lack of sunlight or water, soil should not be significantly disturbed, and lateral groundwater flow should not be impeded. Toward that end the following standards are required:

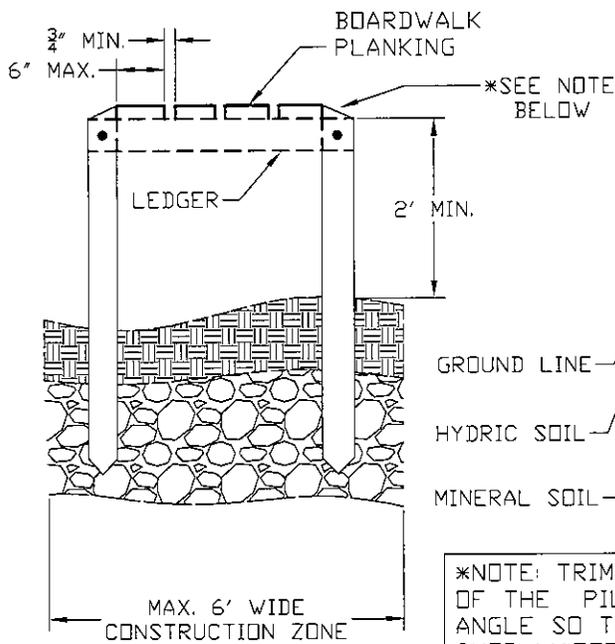
- Maximum width 4 feet.
- Boardwalks shall be of wood construction. Non-wood fasteners are allowed. If treated wood is used, treated wood scraps shall not be burned, and shall be disposed of according local, state and federal regulations.
- Minimum height of lower surface of horizontal members, excluding ledgers, shall be 2 feet above ground surface.
- Maximum height of boardwalk shall be 3 ½ feet above ground.
- For boardwalks with transverse decking, a minimum ¾ inch spacing between decking members shall be spaced at a minimum of every 6 inches. For boardwalks with treads parallel to the boardwalk the minimum spacing shall be ¾ inch between treads.
- No railings.
- Vertical support pilings that are end-bearing shall be used where firm earth is 10 feet or less below grade. They shall have a maximum diameter of 6 inches and shall be driven until they fetch up on firm earth. Where peat soil is greater than 10 feet in depth friction-bearing pilings shall be used. Friction-bearing pilings shall be 12 feet long, tapered in shape, and 10 – 12 inches in diameter on the wide end. Friction-bearing pilings shall be driven down until they fetch up in the peat soil. Peat soil shall be probed to determine its depth for pile length design. Minimum spacing of pilings is one pair every 8 feet of boardwalk. Maximum spacing of pilings shall be what is needed to prevent the lower edge of horizontal members from sagging to less than 2 feet above the soil surface when not bearing a load. Horizontal support “sleepers” on or in the soil are not allowed.
- Woody vegetation may be removed to ground level for a 6 foot wide construction zone centered on the planned walkway centerline. Cut vegetation shall be allowed to regrow with no further cutting.
- Root mat and soil disturbance is not allowed except as to drive pilings. Rutting or compaction of soil during construction is not allowed.
- Boardwalk plans shall be submitted by the applicant to Carlton County Zoning & Environmental Services for a MN Wetland Conservation Act no loss determination, to the US Army Corps of Engineers for authorization, and, for projects within external reservation boundaries, to the Fond du Lac Indian Reservation, before construction is permitted. Plans shall include scale drawings, specifications of materials and methods, and dimensions of plan view and cross-section (including soil types and depths), and dates of construction.
- If the boardwalk deteriorates or settles so as not to meet the above standards the Carlton County Zoning & Environmental Services office shall be notified. Carlton County may require the boardwalk be repaired or removed within 30 days.

DISCLAIMER: THIS DRAWING IS NOT TO SCALE AND IS NOT INTENDED AS AN ARCHITECTURAL OR ENGINEERING PLAN. IT IS DESIGNED ONLY AS A REFERENCE FOR USE WHEN DESIGNING A BOARDWALK THAT MEETS "CARLTON COUNTY STANDARDS FOR WETLAND CROSSING BOARDWALKS TO QUALIFY FOR A NO LOSS DETERMINATION UNDER THE MN WETLANDS CONSERVATION ACT." CARLTON COUNTY ASSUMES NO LIABILITY FOR DAMAGE TO PROPERTY, INJURY, OR MONETARY LOSS AS A RESULT OF USE OF THESE PLANS.

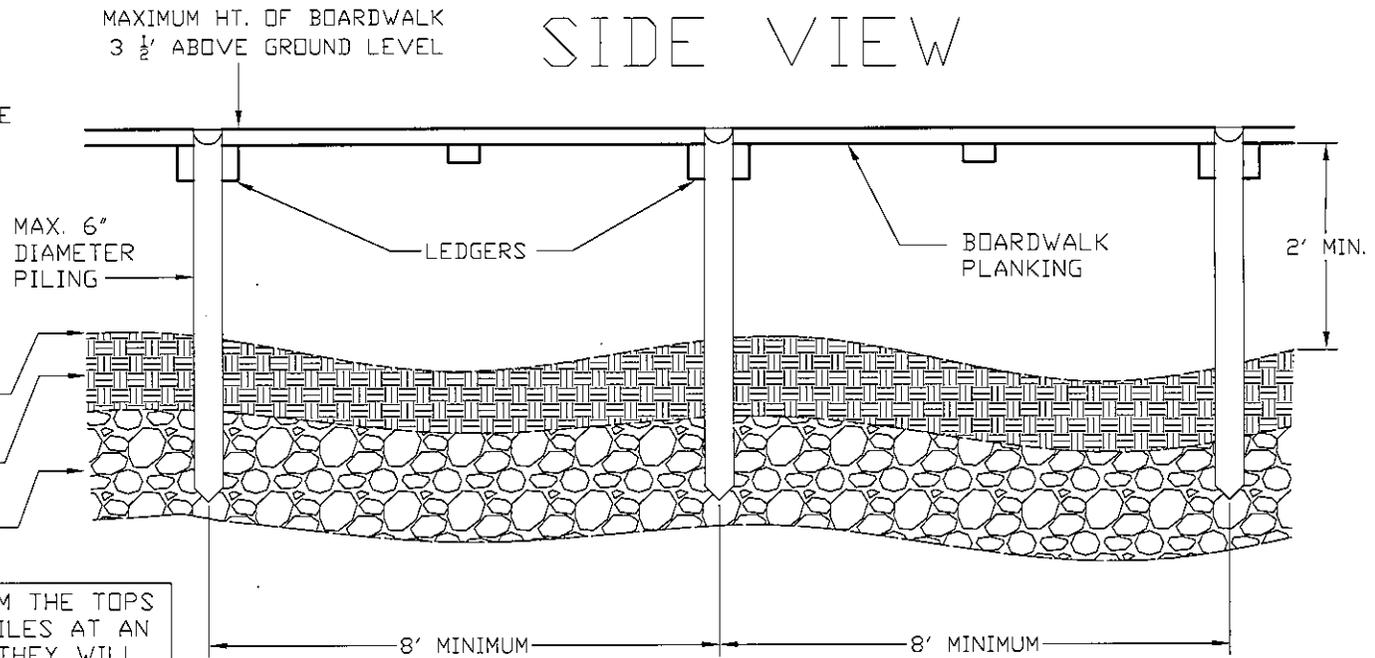
### TOP VIEW



### END VIEW



### SIDE VIEW



\*NOTE: TRIM THE TOPS OF THE PILES AT AN ANGLE SO THEY WILL SHED WATER