



# WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

## A. General Information

1. Applicant:

Town of Acton - Natural Resources Department Name	ttidman@acton-ma.gov E-Mail Address	
472 Main Street Mailing Address		
Acton City/Town	MA State	01720 Zip Code
(978) 264 - 9631 Phone Number	(978) 264 - 9630 Fax Number (if applicable)	

2. Representative (if any):

Firm		
Contact Name	E-Mail Address	
Mailing Address		
City/Town	State	Zip Code
Phone Number	Fax Number (if applicable)	

## B. Determinations

1. I request the Acton make the following determination(s). Check any that apply:  
Conservation Commission

- a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Town of Acton - Chapter F "Environmental Protection"  
Name of Municipality

- e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



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## C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

<u>354B Great Road - 'Quail Ridge Golf Course'</u>	<u>Acton</u>
Street Address	City/Town
<u>C-4 &amp; D-4</u>	<u>Pcl. 2</u>
Assessors Map/Plat Number	Parcel/Lot Number

b. Area Description (use additional paper, if necessary):

Area is currently forested open space associated with the Quail Ridge Golf Course. Adjacent to the proposed trail and boardwalk is a Bordering Vegetated Wetlands area and vernal pool. (see attached plans).

c. Plan and/or Map Reference(s):

<u>USGS - Billerica Quadrangle</u>	<u>1987</u>
Title	Date
<u>Town of Acton - Atlas C - 4</u>	<u>1/2009</u>
Title	Date
<u>Stamski &amp; McNary - Natural Features and Existing Conditions</u>	<u>7/18/07</u>
Title	Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

Construction of a 3' wide trail through Quail Ridge Golf Course, connecting Acorn Park Subdivision to the Nagog Hill Conservation Area, trail will be located in a pedestrian easement. In addition, a boardwalk (3' X 130') will be constructed across a wetlands area, (see attached plans). Boardwalk construction details have been submitted for review with the Request for Determination.



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### C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

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3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

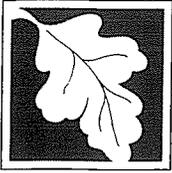
- Single family house on a lot recorded on or before 8/1/96
- Single family house on a lot recorded after 8/1/96
- Expansion of an existing structure on a lot recorded after 8/1/96
- Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- New agriculture or aquaculture project
- Public project where funds were appropriated prior to 8/7/96
- Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- Residential subdivision; institutional, industrial, or commercial project
- Municipal project
- District, county, state, or federal government project
- Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)

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## D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

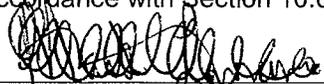
Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

QR Properties, LLC  
 Name  
 354B Great Rd  
 Mailing Address  
 Acton  
 City/Town  
 MA  
 State  
 01720  
 Zip Code

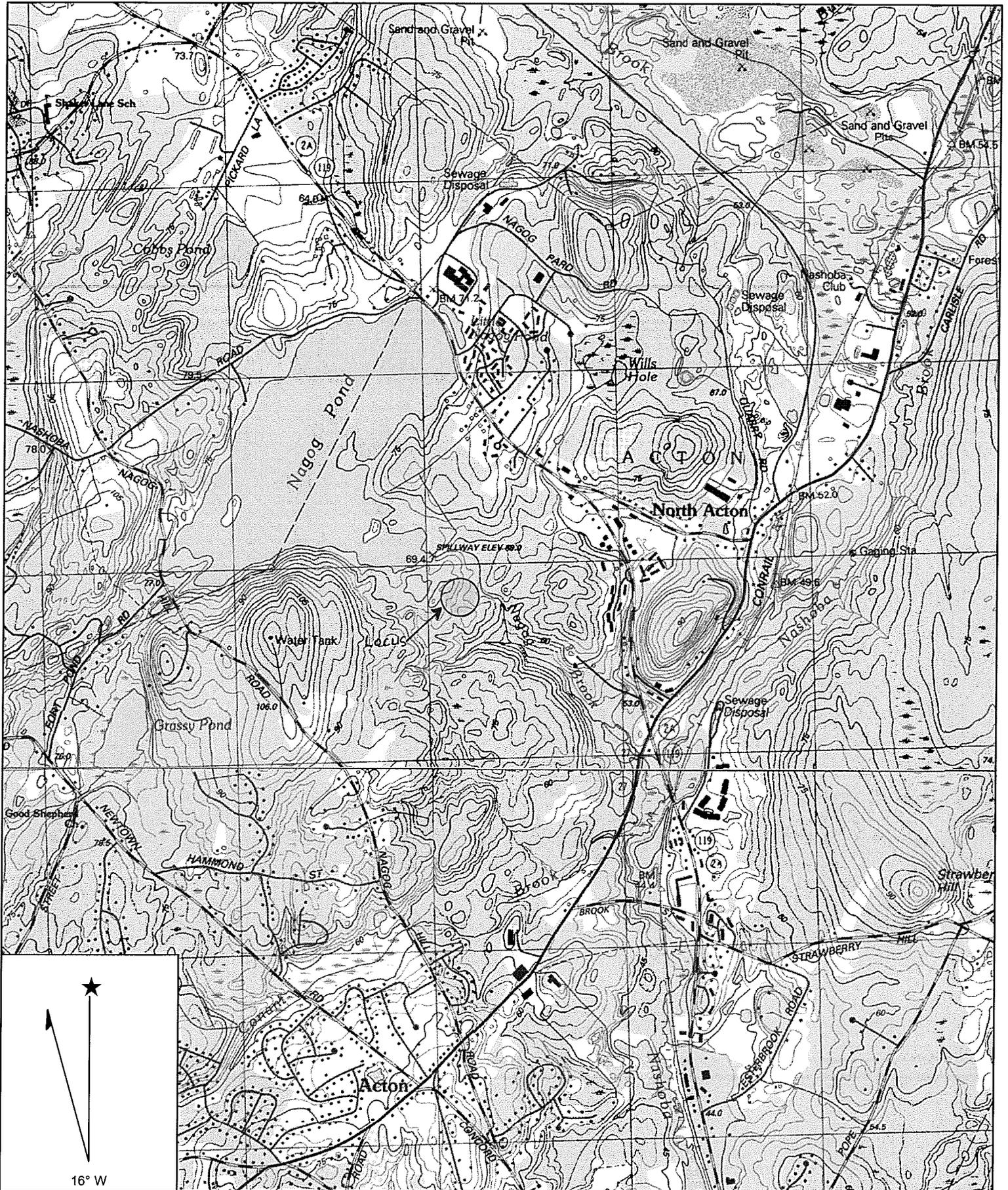
Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

  
 Signature of Applicant  
 2/11/10  
 Date

Mark T Lamm  
 Signature of Representative (if any)  
 2/11/10  
 Date





Name: BILLERICA  
 Date: 1/28/2010  
 Scale: 1 inch equals 2000 feet

Location: 042° 30' 28.7" N 071° 25' 46.2" W



# Boardwalk Design Guidelines



Acton Land Stewardship Committee  
Acton, Massachusetts

## **Boardwalk Construction Guidelines**

Acton Conservation Commission - Land Stewardship Committee

Bob Guba – Construction Coordinator

The Land Stewardship Committee developed these guidelines for boardwalk construction after it was formed in 1996 to manage the conservation lands of the town of Acton, Massachusetts. Analysis of earlier constructed boardwalks led to corrective construction procedures that are presented here to assure the following qualities: level and stable deck surface, strength, ease of disassembly and/or repair, non-polluting, extended life, and less susceptibility to vandalism.

**Site Survey** – The first step is a careful survey of the site where a boardwalk is required, as this will govern its design and materials cost. Place stakes along the centerline of the trail in the wetland where the boardwalk is to be located at stringer length intervals, typically 8 feet using 4"x4"s, 9 feet using 2"x6"s, or 10 feet using 2"x8"s. The first and last stakes are placed at elevated points at the edge of the wetland at the maximum historical high water level. If there are no natural barriers such as large trees and rocks to force the boardwalk to meander then slight turns should be incorporated into the design for an esthetic experience.

A string is secured to the first stake at ground level and continued to the following stakes using a string level. The boardwalk deck height above ground is now measured at each stake from which sill height is determined after factoring in stringer support block (if needed), stringer height and deck plank thickness (see Figure 1).

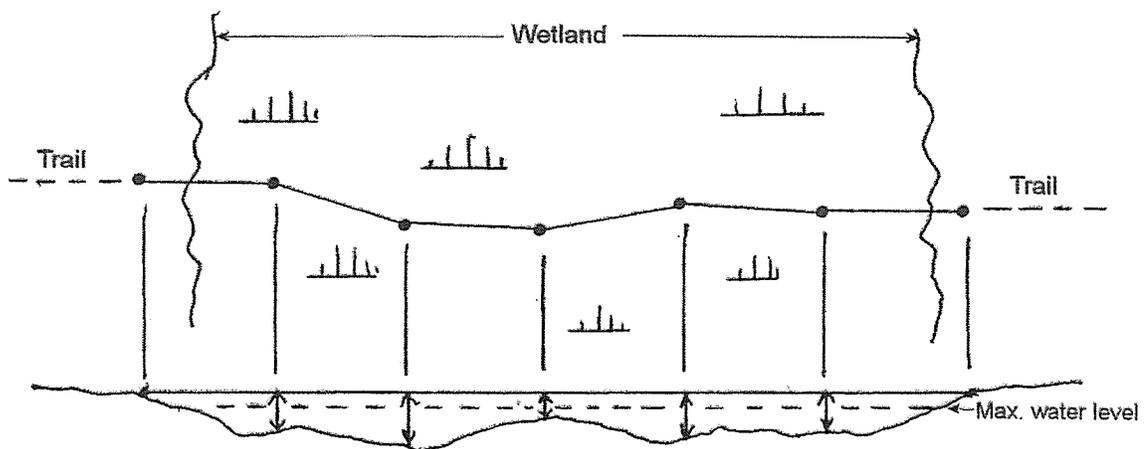


Figure 1 – Determining sill height and placement

**Boardwalk Support** – The boardwalk stringers are supported by laterally placed sills or steel pipe depending on wetland water depth. Material selection for the sills is an important phase of the boardwalk project. Earlier boardwalks relied on very heavy, polluting sections of utility poles or railroad ties for sills. Three sill materials that won't harm the environment are ACQ (Alkaline-Copper-Quat) pressure treated lumber, fiberglass reinforced plastic (FRP) lumber, and corrugated plastic pipe.

For locales where maximum water depth doesn't exceed a few inches, square, cross-section ACQ or FRP lumber can be used. For locales where maximum water depth doesn't exceed 18 inches and the soil is fairly firm sills made with annular ring, polyethylene pipe that has the qualities of light weight and high strength is recommended. Plastic pipe diameters for boardwalk use range from 4" to 15". For stringer support in those areas where the soil is very soft and the water depth can exceed 18 inches use steel pipe with an attached auger and dock fitting that is rotated through the soft soil and peat to be securely embedded into the clay or gravel sub-soil. Figure 2 illustrates these methods.

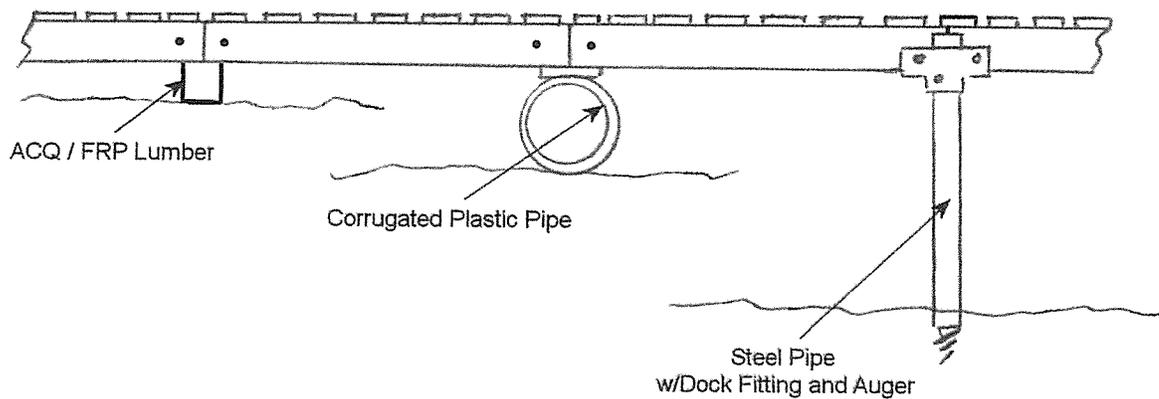


Figure 2 – Boardwalk support types

**Sill Fabrication** - Since most boardwalk locations are remote it helps to fabricate the sill assembly offsite where power tools are readily available. Lumber sills using 4"x4"/6"x6" stock and plastic pipe sills use a bent Simpson "T" (Figure 3) to secure the stringers to the sills. Plastic pipe sills also require a stringer support pad (Figure 4) to provide a flat support surface on the pipe.

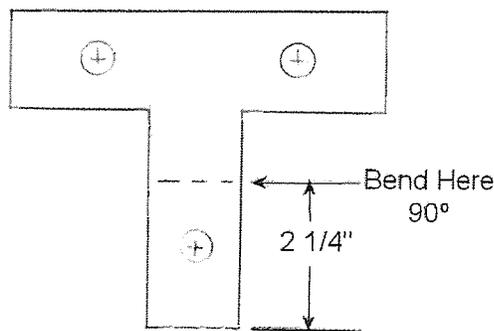


Figure 3 – Simpson T-Strap Tie

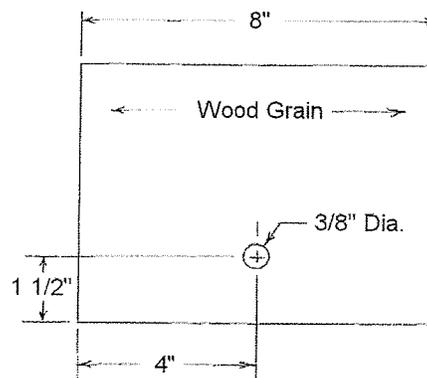


Figure 4 – Stringer Support Pad  
2"x6" ACQ Pressure Treated

**Lumber Sills** - Experience has shown that nailing the end of the stringer to the sills, either by nail toeing or driving spikes vertically through the stringer, stresses the wood and may cause a cracked stringer at the time of assembly or later from the stress of use and environmental effects due to the rigidity of the attachment. Stringers bolted to the sills provide a more flexible attachment for stringer deflection. Figure 5 shows an end view of the attachment of the boardwalk stringers to the lumber sill.

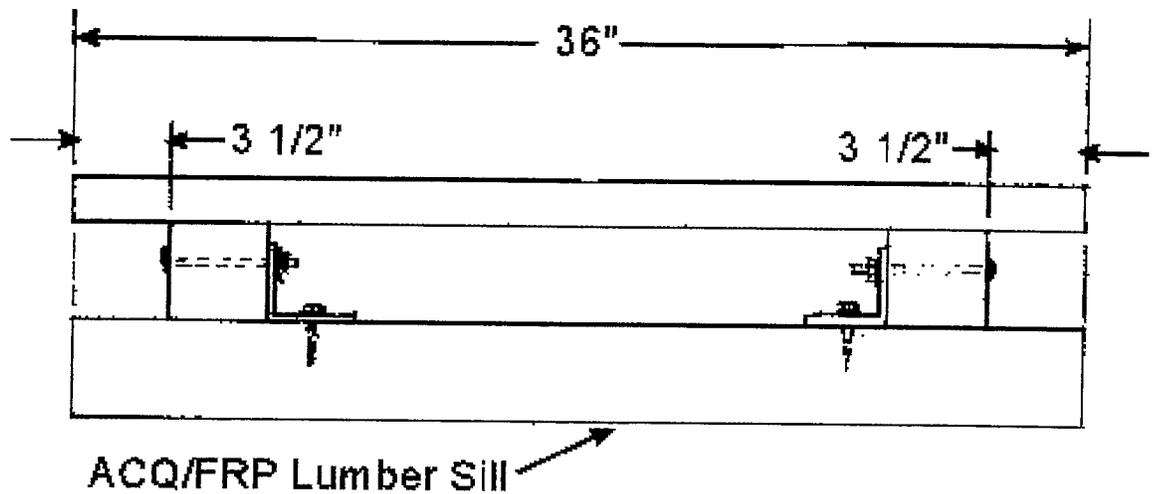


Figure 5

**Plastic Pipe Sills** – Figure 6 depicts the strong, lightweight plastic sill with stringer pads and attachment hardware.

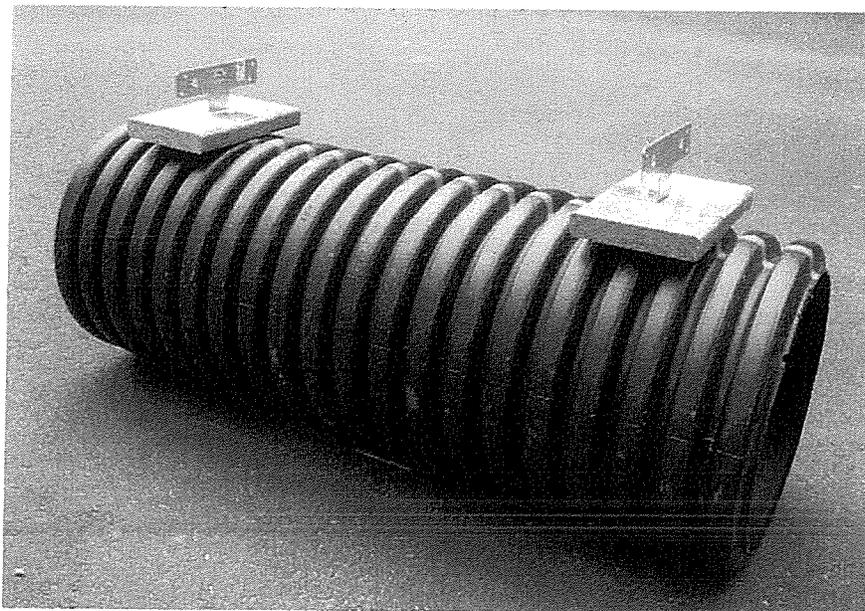


Figure 6 Plastic Corrugated Pipe Assembly

Figure 7 is an assembly drawing showing a 12" or 15" diameter plastic pipe with an end view of stringer pads, brackets/hardware, and stringer frame with decking.

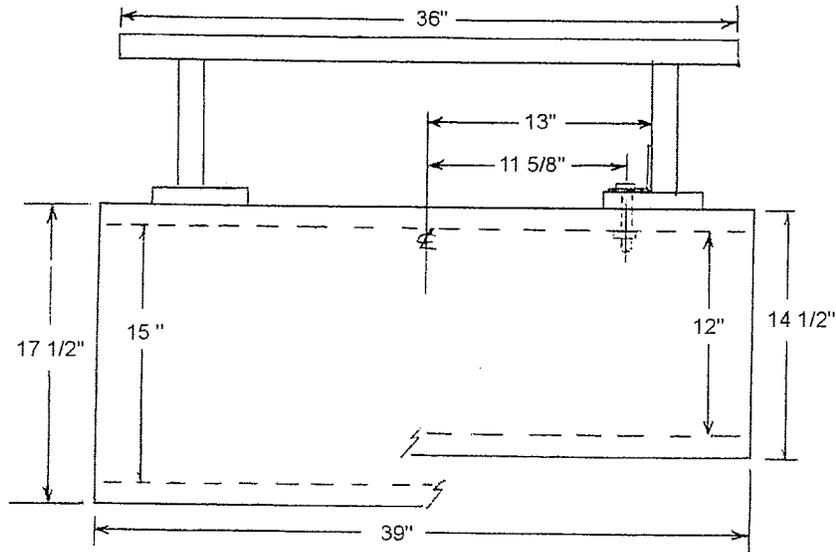


Figure 7

**Steel Pipes** – An auger is permanently attached to 2" galvanized steel water pipe that is rotated into the firm sub-soil with a pipe wrench. A dock fitting is then attached to support the stringer. This assembly is shown in Figure 8.



Figure 8 – Pipe with auger and dock fitting attached.

**Frame Stringers** – Figure 9 depicts the construction of a frame stringer using 2" lumber. This design adds height above a locale that experiences water level changes. This design can be assembled off site with three deck planks attached for strength in transport.

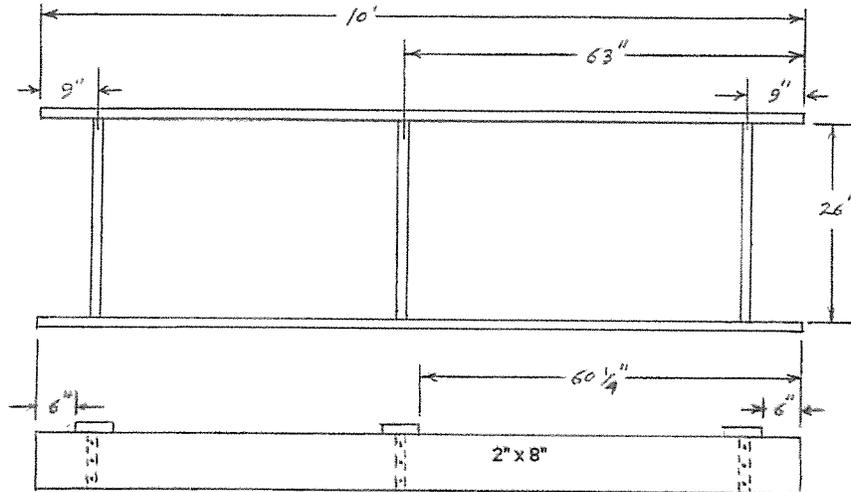


Figure 9 Stringer Frame

**Sill Placement** – After the first sill is in place and level then the stringers can be placed across the span to the second sill and with the use of a carpenter level determine if the second sill has to be dug in more or shimmed up. Shimming is accomplished with an assortment of spacers made from 5/4", 1", and 2" PT boards as depicted in Figure 4 that are placed between the "T" straps and the sill. Once the second sill is in place and leveled then the stringers can be bolted to the "T" straps. The use of bolts to secure the joint not only strengthens it but also facilitates removal of the boardwalk sections if damaged or needing relocation. Maintain a 3/8" gap between stringers at the junction point to allow for vertical flexing in case the ground is (or becomes) spongy. This process is repeated until the last sill is reached. If the wet area experiences high flooding, anchor the end sills and an occasional one in between by using re-bar through the ends of the sills to prevent the boardwalk from shifting off its footprint. The top of the re-bar should just clear the underside of the deck plank. The clearance holes in the sills must be slightly oversize so the boardwalk can freely ride up on the re-bar. When using steel pipe for stringer support the path of the boardwalk must be probed at stringer-length intervals through the soft soil to the firm sub-soil with a thin, firm rod such as fiberglass wands or 3/8" dia. re-bar. This measurement is needed to calculate the required pipe lengths to support the boardwalk.

**Decking** – Planks for decking are 2"x6"x3' PT boards which are much stronger than the 5/4" PT boards used earlier which experienced breakage from falling limbs and vandalism. Decking is nailed with 16d hot galvanized nails at a spacing of 3/8" to 1/2". Having pairs of 3/8", 7/16", and 1/2" thick wood gauges are helpful in spacing the planks when nailing. Figure 10 illustrates two methods for decking at bends in the boardwalk. Fanning the planks as shown in 10(a) is useful for shallow bends while sharper bends use tapered planks cut as shown in 10(b) with equal spacing. The detail for cutting these tapered planks is shown in Figure 10 (c).

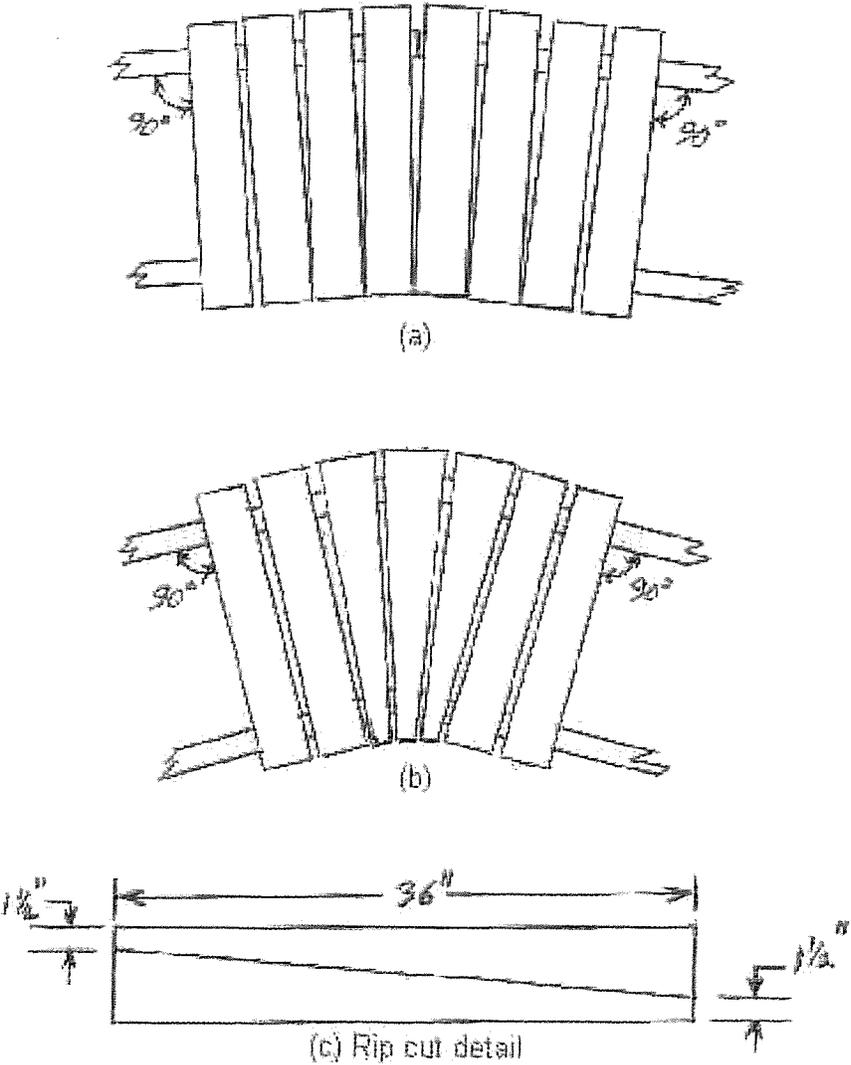


Figure 10 – Decking Detail at Bends

**Ramps** – The final step in installing a boardwalk is the addition of ramps at each end to facilitate access whether on foot, cross-country skis, or mountain bike. Earlier boardwalks had high ends, which made it difficult if on skis and bicycle cranks would often scar the first plank. The ramp stringers are tapered and bolted to the Simpson “T” ties as shown in Figure 11.

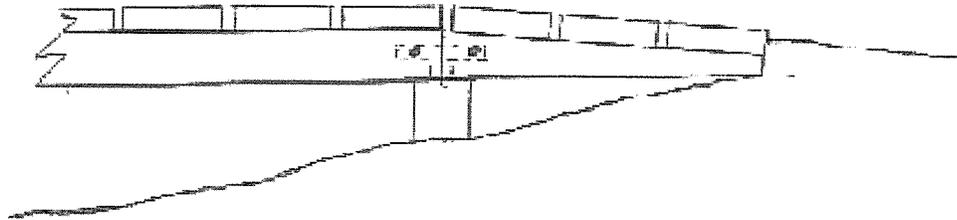


Figure 11 – Ramp Detail

### **Materials List**

#### **Sills**

4"x4" or 6"x6" environmentally safe pressure treated wood Chemical Specialties \*

4"x4" or 6"x6" fiberglass reinforced plastic lumber U.S. Plastic Lumber Ltd. \* Trimax\*

Polyethylene corrugated pipe Advanced Drainage Systems N-12 ST 1B pipe \*

#### **Hardware**

Simpson Strong Tie T Strap Model 66T

Dock hardware: Perma Dock Marine Products, 2930 Anthony Lane North  
Minneapolis, MN 55418 Phone: (612) 638-1350

2" galvanized steel water pipe – schedule 40

3/8" zinc plated lag screws\*\*

3/8"x4" zinc plated carriage bolts

3/8"-16 zinc plated hex head bolts\*\*

3/8" zinc plated flat washers

3/8"-16 zinc plated hex nuts

16d hot galvanized common nails

\* typical companies

\*\* length determined by design