

SPRING LAKE ESTATES HOMEOWNERS ASSOCIATION



P.O. Box 5701
Rockford, IL 61125

2021 INTERIM INSPECTION MEMO Permit No. 17607 Dam ID No. IL 00545

SPRING LAKE DAM
WINNEBAGO, COUNTY, ILLINOIS

ARC DESIGN
RESOURCES INC.

Observed by:
Arc Design Resources, Inc.
5291 Zenith Parkway
Loves Park, IL 61111

October 20, 2021, Field Visit
November 9, 2021, Memo

Table of Contents

1. 2021 Observed Deficiencies and Recommendations	3
2. Annual and Semi-Annual Maintenance	6

Tables and Figures

Site photos
Dam surface treatment photo examples
Site plan with lot numbers

2021 Observed Deficiencies and Recommendations

Spring Lake Homeowners Association President Josh Spencer requested an interim dam observation to identify additional progress made to the maintenance of the dam since the last dam inspection in October of 2020. Observations were conducted on October 20th. Some elements of this memo are the same as previously noted if no work was done since the 2020 observations.

For purposes of parcel identification in this memo, the parcels are numbered 1-9 starting at the east end of the dam, continuing to the condominium building at the west end of the dam. The condominium building is on lot 9.

Some repairs on Lot 1 have been completed. Most other lots showed little to no improvements on the recommendations made last October. Embankment deficiencies such as holes and soil sloughs have not been repaired.



Woody vegetation along the water's edge has grown in the past 12 months and continues to be a long-term problem with dam stability. Stumps from trees or woody bushes still exist along the waterline. Cutting stems or branches from the plants tends to invigorate the root growth. New branches grow in the growing season and are denser with larger roots than the previous year's growth. Trees in the downstream face of the dam must be removed. Tree stumps in the dam face must also be removed. If these stumps remain in place, over time the roots decompose leaving a potential route for water to pipe through the earthen dam.

Each location needing maintenance was marked in the field with a flagged lath. The specific item needing attention was marked on the lath. Woody vegetation along the water line that must be removed was flagged.

The dam backslope is littered with large pieces of rip rap which makes mowing of the dam backslope very difficult. These large pieces of rock should be moved to the stream bank and off the dam backslope so the future condition of the backslope is mowable.

Previous tree removal on lot 7 should be finalized by stump removal and slope correction.

The tree trimming on lot 9 is good.

Project Location:				Spring Lake Estates, Rockford, IL		
					Date:	26-Oct-21
					Job no:	16144
Spring Lake Dam Repair Inventory						
Repair items noted from dam inspection on October 20, 2021						
This inventory accompanies the dam site plan showing WinGIS property lines, ground contours, an underlying aerial photo and notations of various items requiring maintenance or repair. This inventory is meant to assist property owners in determining what items are located on their property that are in need of maintenance.						
Item Description on Dam Site Plan	Lot No.	Detailed Description		Repair Recommendation		
Minor sloughing along bank, woody plant material is growing	1	Soil embankment slope has become steeper due to lack of stabilizing rip-rap. Woody plant material along bank.		When lake level is down 2 feet, recompact weakened soil plane, add compacted clay, line with geotextile fabric, pull up sloughed rip rap along repaired slope to two feet above normal water level. Remove plants from edge of water.		
Hole 1	1	6" diameter hole in surface of dam face		Repairs have been completed.		
Hole 2	1	6" diameter hole in surface of dam face at water level		Repairs have been completed.		
Hole 3	2	3-4" diameter hole in surface of dam face		Remove vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix.		
7 small trees in this area, four on the back slope of the dam must be removed	2-3	3 of the 7 trees in this area must be removed because they are on the back slope of the dam. The remaining trees are in the creek channel.		Remove tree, cut stump off level with ground surface, treat stump with herbicide. Remove vegetation along the edge of water. Remove honeysuckle from backslope.		
Hole 4	3	3-4" diameter hole in surface of dam face, back slope		Hole has been filled, the back slope of the dam has been disturbed and must be regraded to and compacted to original grades. Remove vegetation along the edge of water.		
Hole 5	3	3-4" diameter hole in surface of dam face		Remove vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix. Remove vegetation along the edge of water.		
Hole 6	4	4' diameter hole in surface of dam face		Remove vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix. Remove vegetation along the edge of water.		
Hole 7	4	4' x 3' slough in surface of dam face upslope from rip-rap		Remove dislodged soil and vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix. Remove vegetation along the edge of water.		
Hole 7a - related to adjacent slough	4	2' x 2' slough in surface of dam face upslope from rip-rap		Remove dislodged soil and vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix. Remove vegetation along the edge of water.		
Hole 8	4	minor slough in surface of dam face, backslope surface repairs.		Removed dislodged soil, remove vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix. Remove vegetation along the edge of water. Repair backslope at toe of dam.		
Remove two trees from the backslope of the dam embankment, trees are flagged.	4	Remove trees		Grind stumps, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix.		
Woody vegetation along water's edge	5-6	Remove woody stemmed plants		Grind stumps, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix.		
Hole 11 - dam back slope also has grading irregularities in this area.	6	An animal bore hole exists, the area surrounding the hole is poorly graded.		Fill hole with compacted clay, regrade the area to match the adjacent grades, compact and restore the surface with the specified seed mix.		
Vegetation along the back slope of the embankment must be removed	7	Evergreen plants have been removed		Replace disturbed soil with compacted clay, cover with 4" of topsoil, apply specified seed mix.		
Hole 9, animal bore	7	2" diameter hole in surface of dam face		Remove vegetation, fill with compacted clay, cap with 4" of topsoil, seed with specified seed mix.		
Hole 10	8	3-4" diameter hole in back slope surface of dam face		Repair has been completed. Remove woody plants from the edge of water.		
Large maple tree, honey suckel shrubs	8-9	Trim maple tree to let sun light on dam bank. Remove all honey suckel shrubs.		Trim tree, (trimming complete) remove woody plant material and roots. Replace disturbed soil with compacted clay, cover with 4" of topsoil, apply specified seed mix.		
Vegetation along both sides of the dam embankment must be modified	9	Excessive plant growth on dam embankment and along water's edge is not acceptable.		Remove all woody plant material and roots. Replace disturbed soil with compacted clay, cover with 4" of topsoil, apply specified seed mix.		
Hole 12	9	2" diameter hole in in backslope of dam		Fill hole with compacted clay, cover with 4" of topsoil, apply specified seed mix.		

Items highlighted in green have been partially or completely repaired.

A clean dam surface covered in a healthy grass surface is the long-term goal for dam safety. The Spring Lake Dam Repair Inventory, included in this memo, outlines areas of maintenance concern for each lot along the dam. Recommendations for each deficiency are noted. Several items have been added to the Inventory. Completed or partially completed items are highlighted in green.

The reason a mowable grass surface is required on the earthen dam is twofold. First, the surface of the dam can be inspected for deficiencies after a mowing. Deficiencies such as erosion, animal bore holes or sloughing are very important safety features to be able to see through visual observations. Excessive vegetation blocks the view of the dam surface. Secondly, water has been known to travel along plant roots. If water finds its way through the dam along a root or a series of roots, it can lead to piping. Piping occurs when water establishes a flow route through the dam which, over time, allows the water flow rate and velocity to increase through the earthen dam causing failure.

Removal of woody plant material along the edge of water has been partially completed. Cutting the branches off the plants is not complete removal. The remaining stumps will grow back larger than before which exacerbates the original problem. Lowering of the lake level to perform the proper maintenance is recommended. Stump removal and minor bank regrading is recommended.

4" diameter trees and larger must have the stumps removed and backfilled with compacted clay and topped with 4" of locally sourced topsoil. Trees smaller than 4" diameter should be cut level with the existing grade and treated with herbicide. Trees and branches must also be removed from the slopes. Once cleared of trees and woody shrubs, the remaining vegetation must be mowed with a brush hog or large rotary mower. Overgrowth should be removed from the slopes to reduce the presence of existing seeds. Optimal times of the year to complete this work are before or after the growing seasons. Once the overgrowth is removed, the dam embankments are to be seeded with the seed mix as specified below.

IDOT Class 2 Roadside Mix

Application Rate: 200 lbs./acre

Pure Seed	Description	Germination	Source Origin
49.33%	Inferno Tall Fescue	98%	OR
24.29%	Perennial Ryegrass*	96%	OR
19.59%	Creeping Red Fescue*	88%	CAN
4.87%	Red Top	85%	IL

0.00% Other Crop	Date Tested	1/19
0.05% Weed Seed	IL. Permit	2411
1.87% Inert Matter	Net Weight	50 lb. / 22.68 kg.
Noxious Weeds: NONE	Sell By	1/20
*Variety Not Stated	Source:	Martenson Turf Products, Inc. 250 W. Adams

P.O. Box 218
Waterman, IL 60556-0218
Phone: 800-833-2290
Fax: 815-264-3324
Website: www.mtp78.com

This process may take one or more growing seasons to provide a homogeneous turf coverage on the earth embankment. The resultant turf coverage can be mowed twice per year. The grass will be visually acceptable long or mowed.

Other required maintenance items are defined in the inventory.

Annual and Semi-Annual Maintenance

A regular maintenance program is recommended and should include the following:

1. The dewatering valve will be exercised three times per year (Spring, Summer, and Fall), to ensure that it is operable. Moving parts will be lubricated in the Spring and Fall.
2. The slope of the upstream and downstream dam face will be kept clear of brush and tree growth. The slope will be maintained in a grass condition with a mowed height of 6 inches or less.
3. Semi-annual inspections will be made for animal habitations in the dam face. Animal habitations that are found will be destroyed, filled with compacted earth, and seeded.
4. Some large rip rap exists along the toe of the dam backslope. The presence of these rocks will make future mowing of the dam surface difficult. Moving the rocks to the bank of the creek and off the dam face is recommended. This can be a long-term project but should be considered in annual maintenance.

Photos from Interim Dam Observations



Woody plant material along bank must be removed.



Some progress has been made on developing a turf surface for the dam. Woody plant material must be removed, stumps ground and backfilled with compacted soil.



Sloughing and holes must be filled as specified with surface restoration.



There is too much non-turf vegetation on the fore slope and backslope of the dam.

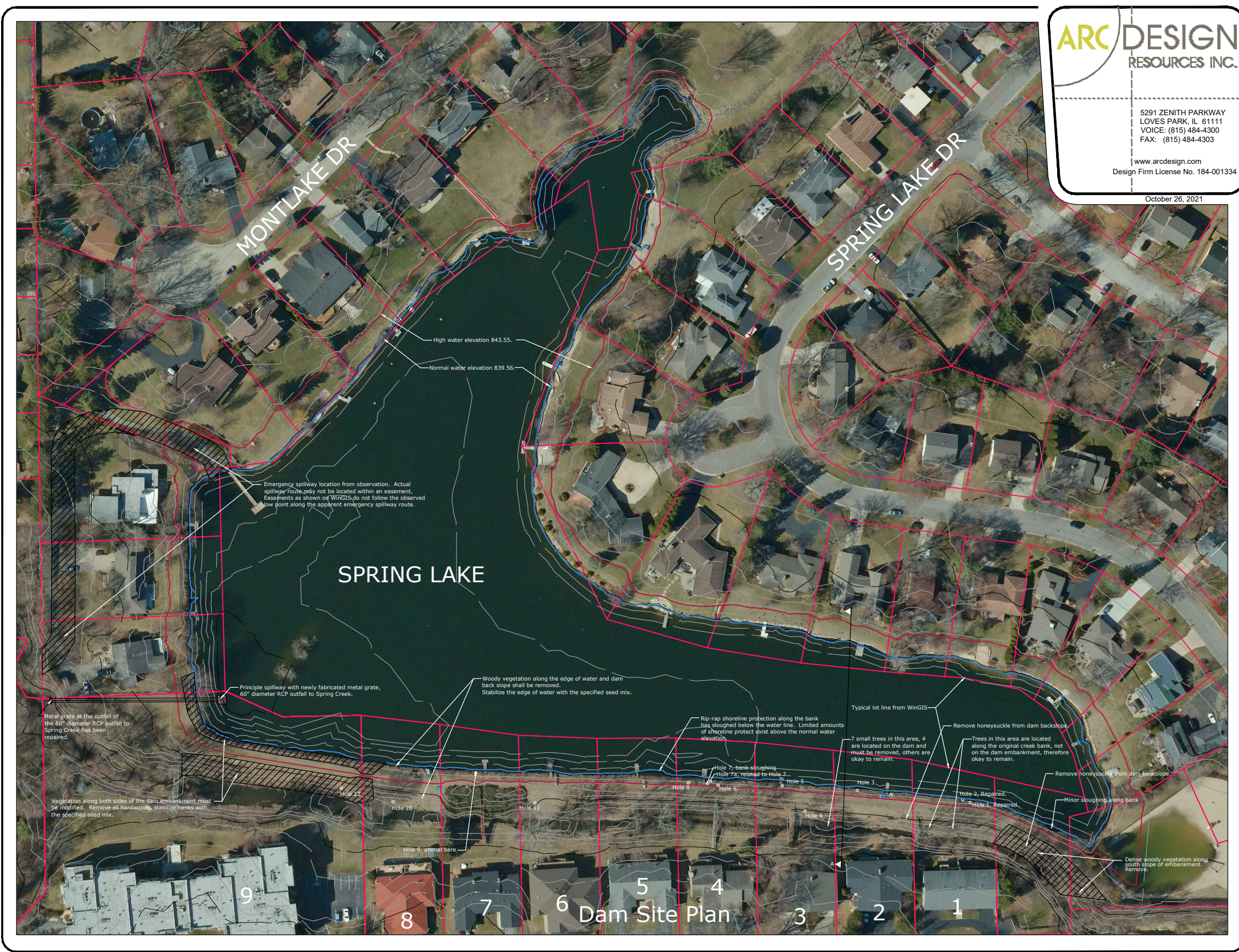
These photos are representative of the observations made. Refer to the table for a complete list of recommended maintenance items.



These two photos represent the goal for a well-maintained turf surface on an earthen dam. The dam at Spring Lake Estates could look like this with proper tree and shrub removal, topsoil dressing, and quality seed mix, fertilizer, and watering.

A lake photo showing lot numbers and required maintenance items is included as an 11 x 17 exhibit.

End of Memo



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October 26, 2021