

INSPECTION REPORT

HIDDEN LAKE DAM CT DEEP #06107

HIDDEN LAKE ROAD
TRIBUTARY TO POND MEADOW BROOK
HADDAM, CONNECTICUT



PREPARED FOR:

HIDDEN LAKE ASSOCIATION

MARCH 2015

Prepared by:

KARL F. ACIMOVIC, P.E.
588 Stonehouse Road
Coventry, CT 06238

INSPECTION REPORT



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Water Protection & Land Reuse
Inland Water Resources Division



DAM SAFETY PROGRAM DAM INSPECTION REPORT FORM – FOR REGULATORY INSPECTION

Please complete this form in accordance with the instructions (DEEP-DAM-INST-002).

Part I: Summary of Dam Inspection

Dam Name: Hidden Lake Dam	Inspection Date(s): 08-12-2014, 12-22-2014
Alternate Dam Name(s):	CT Dam ID #: 06107
Location (Municipality): Haddam	Temperature / Weather: 70's, Partly Sunny
Registered?: Yes or No If yes, provide the 9 digit registration number found on the notification letter. 201206867	Pool Level: See Instructions 3" Below Crest (08-14) ~2' Below Crest (12-22)
Emergency Action Plan?: Yes or No Yes If Yes, see instructions	Impoundment Use: use options listed in instructions Recreation & Conservation
Hydraulic and Hydrologic Analysis?: Yes or No Yes If Yes, see instructions	Stability Analysis?: Yes or No No If Yes, see instructions
Overall Condition: (refer to Appendix A located at the end of this form) Good	

Persons present at the inspection <i>(select the tab button in the last cell to the right to create another row)</i>		
Name	Title/Position	Representing
Karl F. Acimovic, P.E.	Consulting Engineer	Inspector

Owners and Operators: If there is more than one owner or operator, copy the empty table below for each owner or operator and paste right below the previous table, then complete the information for each

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject report. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes by email via deep.damsafety@ct.gov.

Indicate if Owner or Operator: Owner

Name: **Hidden Lake Association**

Mailing Address: **342 Hidden Lake Road**

City/Town: **Higganum**

State: **CT**

Zip Code: **06441**

Phone: [REDACTED]

ext.:

Emergency Phone:

*E-mail: [REDACTED]

Part II: General Dam Information

General Description: Earth Embankment Dam, with concrete spillway and an emergency overflow area (the surface of Hidden Lake Road) situated approximately 1,200 ft. to the east of the dam.			
Hazard Classification:	B	Dam Height (ft):	13 ft.
Dam Length (ft):	100 ft.	Spillway Length (ft):	16 ft.
Spillway Type:	Broad Crested Concrete Weir	Normal Freeboard (ft):	3.0 ft.
Drainage Area (square miles):	1.18 sq. mi.	Impoundment Area (at principal spillway crest, in acres):	38 ac.
Watercourse(s): Tributary to Pond Meadow Brook			

OTHER INFORMATION: (see instructions)

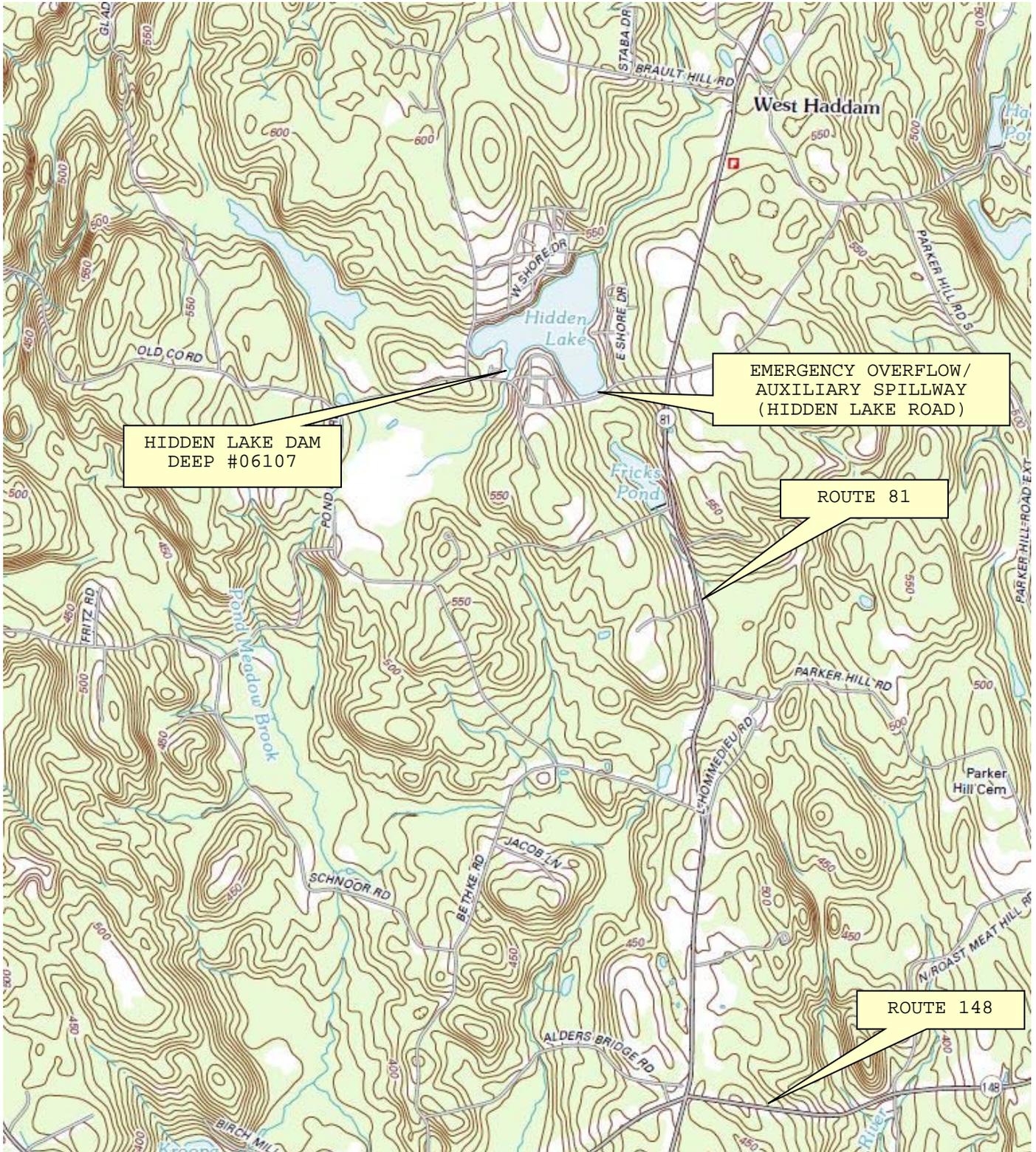
This dam and spillway were last reconstructed during 1993 and 1994 (design by Karl Acimovic, P.E.), at which time the spillway was relocated further to the right of the downstream house, the embankments and related walls were modified and repaired, and the intake was extended further into the pond due to the reconstruction of the upstream slope. No Phase I Corps report was available for this site, but DEEP files did contain copies of reconstruction plans dated variously for the late 1960's and the early 1990's. Because some of the recommended improvements shown thereon did not appear to match existing conditions during the 1993 – 1994 reconstruction, the extent of work performed under these previous refurbishments could not be fully verified.

As noted in the inspection report, no recent dive inspections (i.e., since the 1993 – 1994 reconstruction) have been completed for the upstream intake area. Because the pond is drawn down on an annual basis, however, there does not appear to be any operational issue. As further recommended herein, it is prudent that such an inspection be done in the near future.

An Emergency Action Plan was recently submitted to the DEEP for review; it takes into account the latest reconstruction and the potential overflow area to the east of the dam. As part of the preparation for this submittal, a hydrologic and hydraulic analysis was performed. The results of this analysis indicate that the 100-year storm safely passes the spillway with approximately 1.9 feet of remaining freeboard, but overtopping the road to the east (emergency overflow area) by about 0.4 feet. In addition, the PMF outflow reaches just to the top of the dam without overtopping, but with the road to the east being overtopped by about 1.9 feet. (See attached Outflow Stage Discharge Curve.)

Part III: Aerial Photo/Location Map (insert the aerial photo and location map under this Part. See instructions for details.)





HIDDEN LAKE DAM
DEEP #06107

EMERGENCY OVERFLOW/
AUXILIARY SPILLWAY
(HIDDEN LAKE ROAD)

ROUTE 81

ROUTE 148

Part IV: Dam/Embankment/Dike Information

Number of Dam/Embankments/Dikes: 1 (if there is more than one dam/embankment or dike, reproduce this section and paste right below the previous section)

Dam/Embankment/Dike Name (see instructions): Hidden Lake Dam

General Description: Earth Embankment Dam, with concrete spillway and an emergency overflow area (the surface of Hidden Lake Road) situated approximately 1,200 ft. to the east of the dam.

General Condition: Satisfactory

Concrete Condition: Only one section of the dam or earth embankment has concrete. It is the fill between laid stone comprising the left downstream embankment slope between the spillway and the house. It is in generally good condition, with only minor and small vegetative growth in small open joint areas. There is, however, no major cracking and there are no points of instability along the slope.

Stone Masonry: Not applicable.

Settlement/Alignment/Movement: None observed.

Seepage/Foundation Drainage: No uncontrolled seepage was observed. There are footing and spillway drain outlets on each side of the spillway, one of which – the right side – needs to be cleared of small roots left from cut brush.

Riprap: Laid stone / riprap with a level top surface is situated as noted previously, between the spillway and house on the left downstream slope. It is in good condition, firmly set and filled in with concrete to provide an impervious surface. Some minor brush growth, as previously noted under Concrete Conditions (above), is present in small joint areas and needs to be removed on a regular basis (see Recommendations).

Erosion/Burrows: A small area of exposed soil was noted at the crest of the left downstream embankment between the spillway and house. This should be repaired (see Recommendations).

Vegetative Cover: The grass cover is generally in good condition, particularly along the crest of the dam. Areas designated for clearance of brush and small trees should, to the greatest extent possible, be reestablished with a grass cover for future ease of maintenance. Brush and trees have been noted (see photos) along the right abutment and embankment, along portions of the downstream channel near the dam and along the left abutment; these require clearance as further detailed under Recommendations.

Other:

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part V: Principal Spillway, Training Walls, Apron

Number of Principal Spillways: 1 (if there is more than one principal spillway, reproduce this section and paste right below the previous section)

Spillway Type (see instructions): (Single) Principal Spillway

General Description: Broad Crested Concrete Weir

General Condition: Good

Concrete Condition: Good with minor signs of surface erosion along the spillway surface (see Recommendations).

Stone Masonry: Not applicable.

Settlement/Alignment/Movement: None observed.

Cracks: 1 very minor crack along the right downstream slope wall; monitor only.

Scouring/Undermining: None observed.

Seepage/Foundation Drainage: None observed, other than a small amount of discharge from the toe and spillway foundation drains on either side of the base spillway training walls.

Other: The footbridge across the spillway was in good condition.

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part VI: Auxiliary Spillway, Training Walls, Apron

Number of Auxiliary Spillways: 1 (if there is more than one auxiliary spillway, reproduce this section and paste right below the previous section)

Auxiliary Spillway Type (see instructions): Not applicable.

General Description: This area, approximately 1,200 feet east, or left, of the dam and primary spillway is not a formal structure, but a roadway that is maintained by the Town. The overflow area is approximately 450 to 500 feet in length and is composed of an asphalt road surface with vegetated shoulder areas on both sides.

General Condition: Fair, based on road surface and vegetative cover along the shoulder areas.

Concrete Condition: Not applicable.

Stone Masonry: Not applicable.

Settlement/Alignment/Movement: None apparent for the area overall, but see cracks below.

Cracks: The road surface has deteriorated and is severely cracked. Although no signs of serious issues are apparent at this time, this situation could lead to erosion during times of high overflow conditions. See Recommendations.

Scouring/Undermining: None apparent.

Vegetative Cover: The downstream side of the road embankment has a well maintained grass cover. The upstream side, however, is heavily covered by small brush, phragmites, and small emergent trees. Although this provides a substantial privacy screen for the lake, it will impede flow in the event of severe storm conditions, leading to irregular discharge points along the length of the overflow area. See Recommendations.

Riprap: Not applicable.

Seepage/Foundation Drainage: None apparent.

Other:

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part VII: Downstream Channel

Number of Downstream Channels: 1 (if there is more than one downstream channel, reproduce this section and paste right below the previous section)

Channel Name (see instructions), include Watercourse Name: Tributary to Pond Meadow Brook

General Description: Earth channel, with vegetated side slopes.

General Condition: Base of channel is in good condition; side slopes were heavily vegetated at the time of the first inspection, particularly in the vicinity of the dam and spillway, but cleared for the second inspection. Heavy growth could impede flow and decrease the hydraulic efficiency during high outflow conditions.

Scouring: None apparent.

Debris: None observed at the time of inspection.

Riprap: At the base of the spillway, riprap was in good condition with no apparent displacement of stone.

Other:

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part VIII: Intake Structure(s)

Number of Intake Structures: 1 (if there is more than one intake structure, reproduce this section and paste right below the previous section)

Intake Structure Type (see instructions): Single intake / outlet, adjacent to the left side of the spillway.

General Description: Open 14-inch ductile iron pipe with intake screen.

General Condition: Currently unknown, but rebuilt with an extension to the existing during the reconstruction of the dam in 1993 – 1994.

Concrete Condition: Not applicable.

Stone Masonry: Not applicable.

Settlement/Alignment/Movement: None apparent.

Cracks: None apparent.

Other: Because the intake area is submerged, it has not been examined since the reconstruction. It is, however, operable since there have been no issues with annual drawdowns since that time. A diving inspection has been recommended.

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part IX: Outlet Structure(s)

Number of Outlet Structures: 1 (if there is more than one outlet structure, reproduce this section and paste right below the previous section)

Outlet Structure Type (see instructions): Single structure, left of the spillway.

General Description: A valve chamber consisting of a concrete manhole with a gate valve and 16-inch connecting pipes to the upstream intake and downstream outlet at the base of the dam adjacent to the left side of the spillway.

General Condition: The structure is in generally satisfactory condition, the gate valve is fully operable, but the manhole is consistently flooded and the gate valve submerged. See Recommendations.

Concrete Condition: Good.

Stone Masonry: Not applicable.

Settlement/Alignment/Movement: None apparent.

Scouring/Undermining: None apparent.

Other: The valve was operated during the inspection and functioned well during opening and closing. No sediment was noted in the discharge.

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part X: Miscellaneous Features

List miscellaneous features: (e.g., access roads, bridges, etc.):

Access for pedestrian and vehicle access, located on the left side of the dam and house, is in good condition except for one shrub on the right side which should be removed.

There are no distinct safety features at this site, except for railings along the footbridge over the spillway, which were in good condition.

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part XI: Downstream Hazard Classification Reassessment

Downstream Hazard Classification: *(provide recommendation for the hazard class based on the Dam Safety regulation. See Instructions and [Appendix B.](#))*

The dam is currently classified as a “B” hazard. Based on the lack of any substantive changes to the downstream floodplain since the preparation of the Emergency Plan, no change in its status is recommended at this time.

Part XII: Recommendations *(See instructions for identifying recommendations)*

Recommendations: *(Each item should be numbered)*

1. **Vegetative Cover** – There are several trees and areas of brush which require removal along abutment, embankment, toe and channel areas within the 25-foot regulated zones of the dam. In particular, there are trees at the left and right abutments, as well as along the left toe area, the right embankment and right toe area. Although brush can be cleared at any time without supervision, trees need to be removed under the supervision of an engineer, particularly with respect to the extent of root base removal required in each case. In addition, the downstream channel embankments between the base of the spillway and the culvert beneath Hidden Lake Road should be kept clear to maintain an efficient hydraulic condition and avoid excessive tail water conditions, particularly in the vicinity of the downstream house at the base of the left embankment. When completed, a stable grass cover should be planted and maintained for ease of future maintenance and unimpeded inspection and monitoring.

Grass areas on top of the dam are in good condition and well maintained. However, as pointed out in the photo report, a small area of exposed soil on the top of the left downstream slope should be repaired and then monitored until a good cover is reestablished.

2. **Property Issues** – Portions of both the left and right abutment areas, as well as the house on the downstream slope of the left embankment are owned by parties other than the Hidden Lake Association. As such, cooperation is required from these owners to carry out specific and required maintenance tasks. It is recommended that the Association work with these owners to establish a maintenance routine accommodating to both parties to maintain a safe dam and reduce potential liabilities. In the event that such agreement cannot be reached, it is recommended that the Association seek the assistance of the DEEP Dam Safety Section for assistance.

3. **Concrete Repairs and Maintenance** – Several minor crack and joint openings have been noted along upstream embankment walls and at their junctions with the spillway training walls. These should be repaired or maintained with the use of cementitious or epoxy repair materials and joint sealants. In addition, although a slow process, small and scattered areas of erosion on the spillway surface should be repaired and a cementitious coating should then be applied for long term protection from weathering, abrasion and cavitation.

4. **Emergency Overflow Along Hidden Lake Road** – This area, approximately 1,200 feet east of the main dam, has long been an important element of extreme overflow events. Over the past two decades, a substantial growth of vegetation has developed along the upstream road edge adjacent to the pond, to the point where flow may be hindered and obstructed from a uniform sheet flow as originally envisioned. Overflow through this mass will most likely short circuit through small locations and may result in localized deep flow and, based on velocity, lead to erosion of the road surface. Note that the road surface is extensively cracked and susceptible to erosion in the event of overtopping. It is recommended that the vegetation be evenly cut and maintained on a regular basis going forward and that, in cooperation with the Town, the road be repaired and graded according to the proposed grading plan reviewed by all parties and the DEEP several years ago to avoid failure of the road embankment and potential isolation of residences during future storm events.

5. **Valve Chamber** - Concern was expressed about the exterior condition of the valve body and the water within the valve chamber (manhole). Some slow leakage is expected for this type of concrete structure, as is the corrosion on the valve itself. Unless maintained and operated on a consistent basis, slow deterioration will occur. It is recommended that a contractor be hired to pump out the chamber and then apply a coating to the valve and the piping within the structure. As the chamber is pumped out, care should be taken to observe the location of any seepage, the quantity of seepage and the rate of infiltration. With this information, a judgment can be made as to the extent of any additional remedial work (beyond that noted above) which may be

required. After pumping out the chamber, the functionality of the valve should be checked. That is, the valve should be opened and closed slowly several times, first to check its operability and secondly to flush out any debris within the pipe. If the valve leaks, or the stem is difficult to turn, the bonnet may have to be opened and repacked. As the valve is flushed out, someone should be checking the discharge area to ascertain the water quality of the discharge. If it does not clear up within a short period of time, contact an engineer for advice prior to proceeding further. At a minimum, the valve and chamber should be inspected at least on an annual basis. At the same time, check for seepage into the chamber and exercise the valve as previously noted.

6. **Low Level Intake** – Within the lake and just upstream of the dam is a pipe intake, where water enters the pipe, covered with a filter (trash rack) constructed of steel rods. If it has not been inspected in the recent past, the condition of this intake should be checked by a diver. Subsequently, if the filter intake is in relatively good condition, a dive inspection should be conducted once every two years. If it is in poor condition, plans should be made for its repair. Since the rods used for the filter often are corroded after many years of use, a diver may be able to remove the apparatus, have a new one constructed and then reinstall it. In any case, the filter should be inspected and any built-up debris removed.

Part XIII: Photographs/Graphics (see instructions and [Appendix C](#))

[insert photos/graphics here if not included in each part above]

Note: Several photos within this report are duplicates. This is made necessary by the general requirement of the new DEEP / Dam Safety inspection format which requires specific numbered views for certain portions of the dam. Hence, photos which depict more than one required feature will sometimes be shown more than once to satisfy these requirements. The numbering sequence of the photos follows that of the DEEP form.



Photo 1a – An overview of the dam taken from the left (east) abutment. The spillway is at the upper center of the photo; the spillway bridge is visible at the top left center.



Photo 1b – Another upstream view, again taken from the left abutment area, but at a later date subsequent to annual fall drawdown. [12-18-2014]



Photo 2 – Overview of the dam from the right downstream channel embankment looking toward the spillway and left embankment area. Because of the heavy vegetative cover, a more encompassing overview was impractical.



Photo 3 – Although an upstream view of the dam from the right abutment was not available due to heavy vegetative cover, this view gives some idea of the appearance (see also Photos 1a and 1b from the left abutment area).



Photo 4 – A view of the upstream face from the left abutment. Note the spillway is in the upper center of the photo and that the right abutment is covered in trees and brush.



Photo 5a – An overview of the dam crest from the right abutment looking towards the left. The spillway footbridge crossing is in the foreground, and a manhole cover just to the left of the bridge and past the spillway training wall is the outlet valve control chamber.



Photo 5b – Another overview of the dam from the right abutment showing the relationship of the downstream house to the dam embankment.



Photo 6 – An overview of the dam crest from the left abutment area. Again, note the house location with respect to the left embankment.



Photo 7a – The downstream face as seen from atop the right abutment area. The spillway is at the left bottom of the photo. Note the extensive vegetative growth along the right abutment and right downstream slope.



Photo 7b – The downstream face left of the spillway, showing growth of small trees along the left toe area.



Photo 8a – The downstream face of the embankment to the left of the spillway as seen from the top of the dam, adjacent to the house (to the left of the photo – see Photo 8c). Note heavy vegetative growth along the toe and right embankment areas, as well as small brush growth within the downstream riprap slope.



Photo 8b – The same view as Photo 8a above, but taken at a later date, 12/22/2014.



Photo 8c – Another view of the downstream slope to the left of the spillway, taken from atop the left embankment crest. (See also Photos 6 and 7b for views of the house situated on the left downstream embankment.)



Photo 9 – The spillway looking in a downstream direction from atop the spillway footbridge on the upstream end.



Photo 10a – The spillway as seen from the downstream channel. Note tree and brush cover along both sides.



Photo 10b – Another view of the spillway from downstream with particular emphasis on the cover along the right spillway embankment slope area.



Photo 11a – Overview of the right training wall with dense brush and arbor vitae growth.



Photo 11b – A close-up of the upstream end of the right spillway training wall.



Photo 12a – An overview of the left spillway training wall; this wall is in generally good condition.



Photo 12b – Another view of the left spillway training wall from the center of the downstream channel. (See also Photo 5a for a view of the left training wall at the footbridge crossing).



Photo 13 – An overview of the spillway weir, as seen from the left training wall looking upstream.



Photo 14 – The stilling basin at the lower end of the sloped spillway discharge channel. The riprap at the base was in stable condition.



Photo 15a – An overview of the downstream channel, as seen from the entrance area to the road culvert.



Photo 15b – An overview of the downstream channel as seen from the top of the spillway looking toward the road culvert. Note dense vegetative growth along the channel slopes.



Photo 16 – The exterior of the valve chamber for the low level outlet pipe.

Photos 17 & 18 – Not available at the time of inspection – overviews of the valve chamber interior and valve control mechanism.



Photo 19 – The low level outlet area at the base of the left embankment adjacent to the spillway, showing the ductile iron outlet pipe and PVC discharge pipes for toe drain and spillway underdrain pipes. The intake area on the upstream side was submerged beneath pond level and could not be accessed at the time of inspection.



Photo 20 – An overview of Hidden Lake as seen from the left abutment of the dam.



Photo 21a – The left upstream embankment wall showing minor crack and joint opening.



Photo 21b – Minor cracking and joint opening at the right upstream corner of the right spillway training wall. These should be cleaned and filled with appropriate repair materials.



Photo 21c – The break in the spillway weir crest showing signs of mild weathering and surface erosion.



Photo 21d – Crest of the downstream embankment, left of the spillway and right of the house showing an area devoid of vegetation.



Photo 21e – An overview of the left downstream embankment, toe and channel areas, showing tree, brush and woody vegetative growth.



Photo 21f – Another view of the dense vegetative cover along the right and left embankment and toe areas.



Photo 21g – The tree and brush cover along the right abutment embankment slope and dam crest.



Photo 21h – The vegetative cover along the toe and downstream channel side slope areas.



Photo 21i – The end of the right downstream spillway training wall, at the exit of the right toe and spillway underdrain discharge. Roots in this area need to be removed to allow free discharge of flow from the drains.



Photo 21j – Trees at the left abutment area within the 25-foot clearance zone.



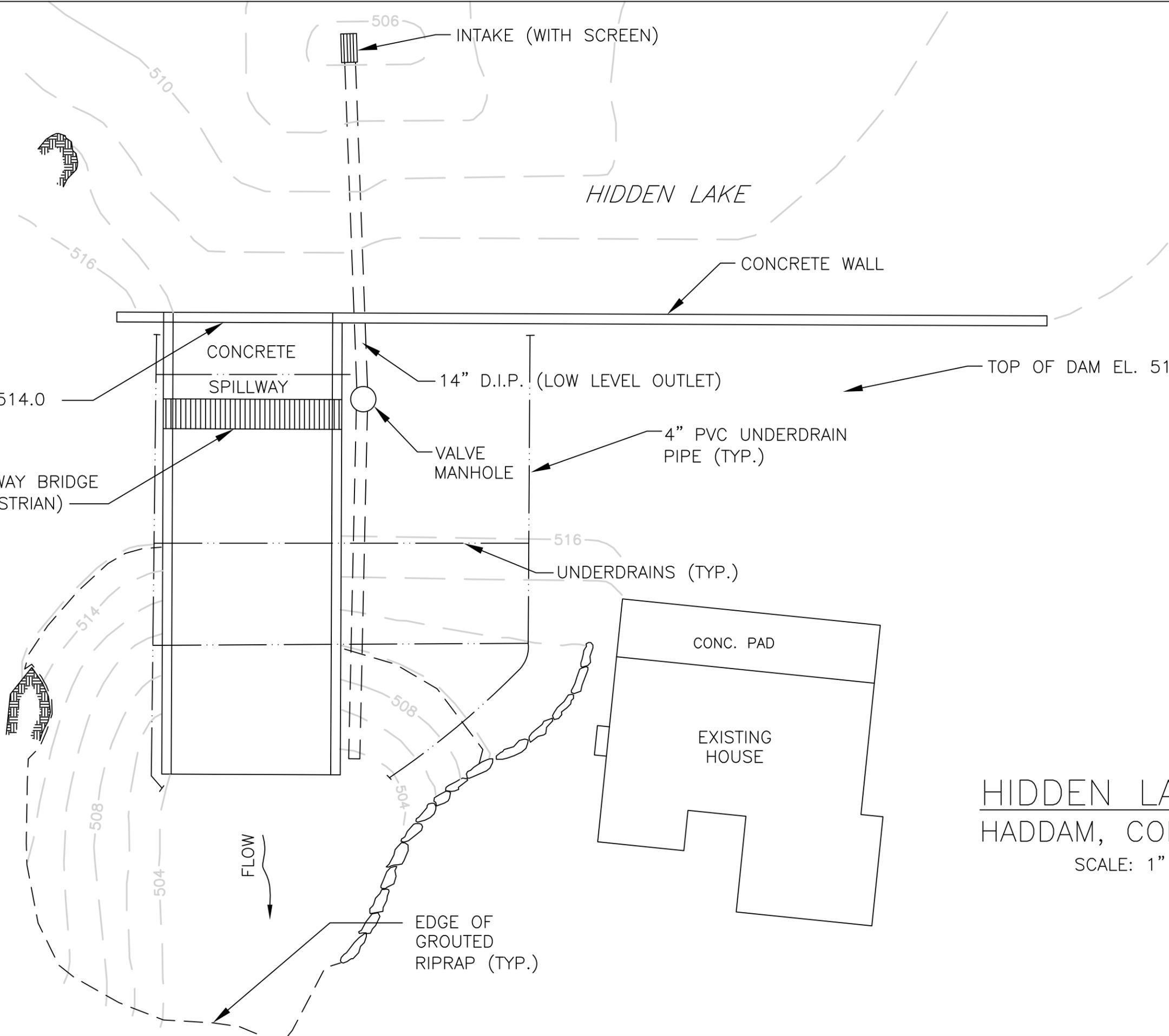
Photo 21k – The emergency overflow area along Hidden Lake Road, approximately 1,200 feet east of the main dam embankment, showing a heavy vegetative growth between the edge of the road and the pond, which edge is approximately 10 feet to the left of the dense growth of phragmites.

Part XIV: Sketches

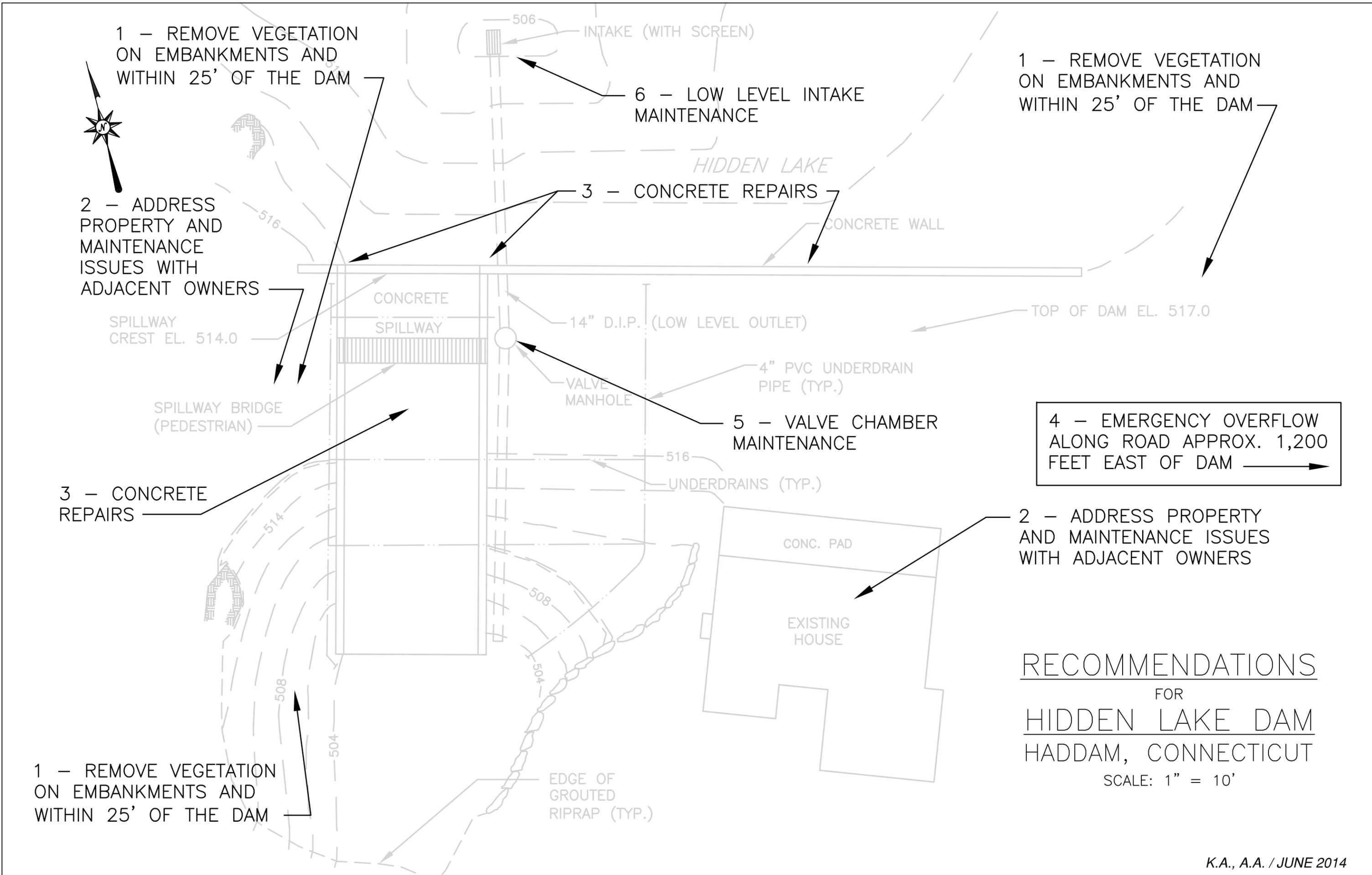
This completed report must include a sketch of the plan view of the dam to aid in the description of its condition. Refer to the instructions for more detail and an example.

[insert sketches here if not included in each part above].

See attached site plans / sketches.



HIDDEN LAKE DAM
HADDAM, CONNECTICUT
SCALE: 1" = 10'



1 - REMOVE VEGETATION ON EMBANKMENTS AND WITHIN 25' OF THE DAM

2 - ADDRESS PROPERTY AND MAINTENANCE ISSUES WITH ADJACENT OWNERS

SPILLWAY CREST EL. 514.0

SPILLWAY BRIDGE (PEDESTRIAN)

3 - CONCRETE REPAIRS

1 - REMOVE VEGETATION ON EMBANKMENTS AND WITHIN 25' OF THE DAM

INTAKE (WITH SCREEN)

6 - LOW LEVEL INTAKE MAINTENANCE

3 - CONCRETE REPAIRS

CONCRETE WALL

CONCRETE

SPILLWAY

14" D.I.P. (LOW LEVEL OUTLET)

VALVE MANHOLE

5 - VALVE CHAMBER MAINTENANCE

4" PVC UNDERDRAIN PIPE (TYP.)

UNDERDRAINS (TYP.)

CONC. PAD

EXISTING HOUSE

EDGE OF GROUTED RIPRAP (TYP.)

1 - REMOVE VEGETATION ON EMBANKMENTS AND WITHIN 25' OF THE DAM

4 - EMERGENCY OVERFLOW ALONG ROAD APPROX. 1,200 FEET EAST OF DAM

2 - ADDRESS PROPERTY AND MAINTENANCE ISSUES WITH ADJACENT OWNERS

RECOMMENDATIONS FOR HIDDEN LAKE DAM HADDAM, CONNECTICUT

SCALE: 1" = 10'

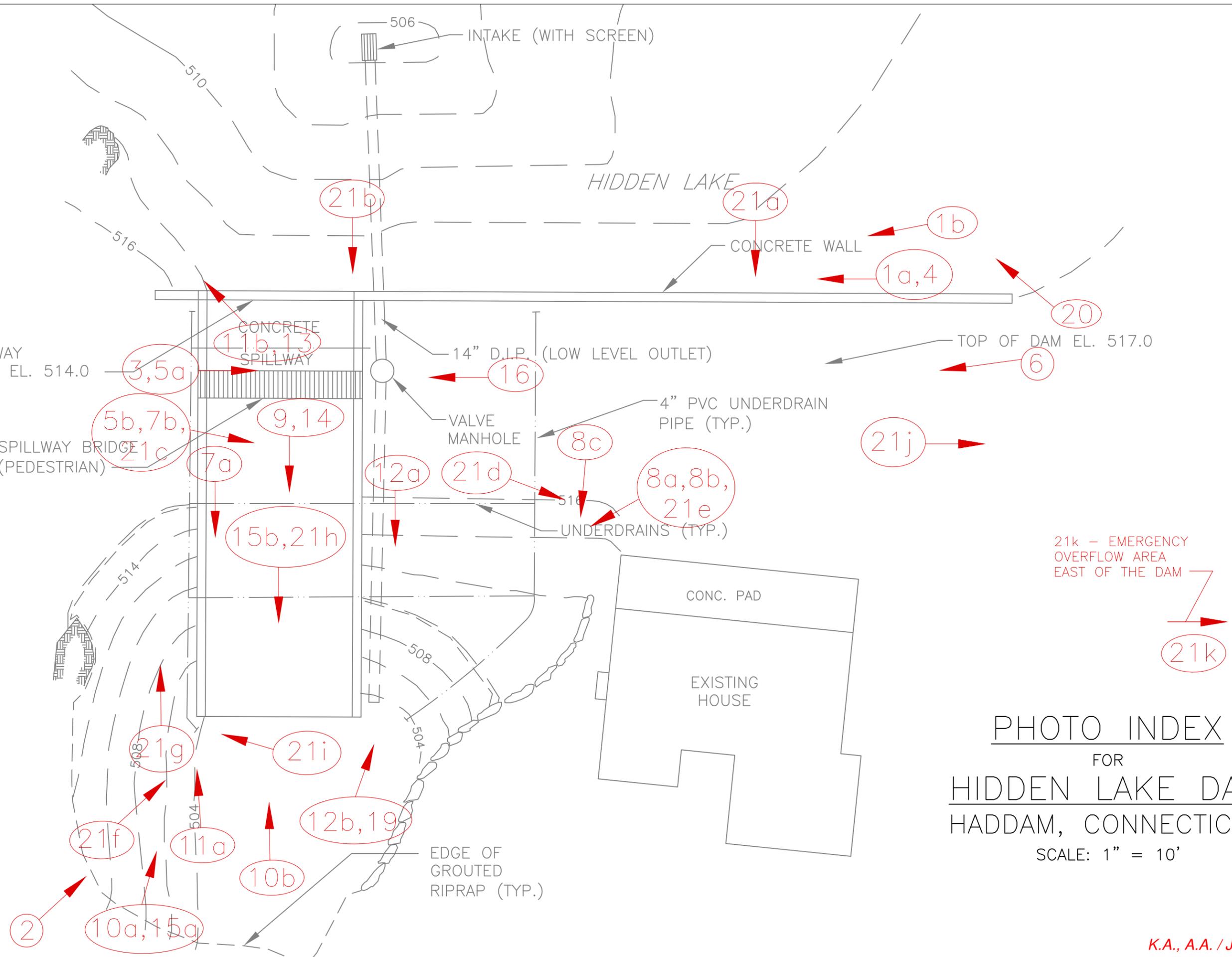
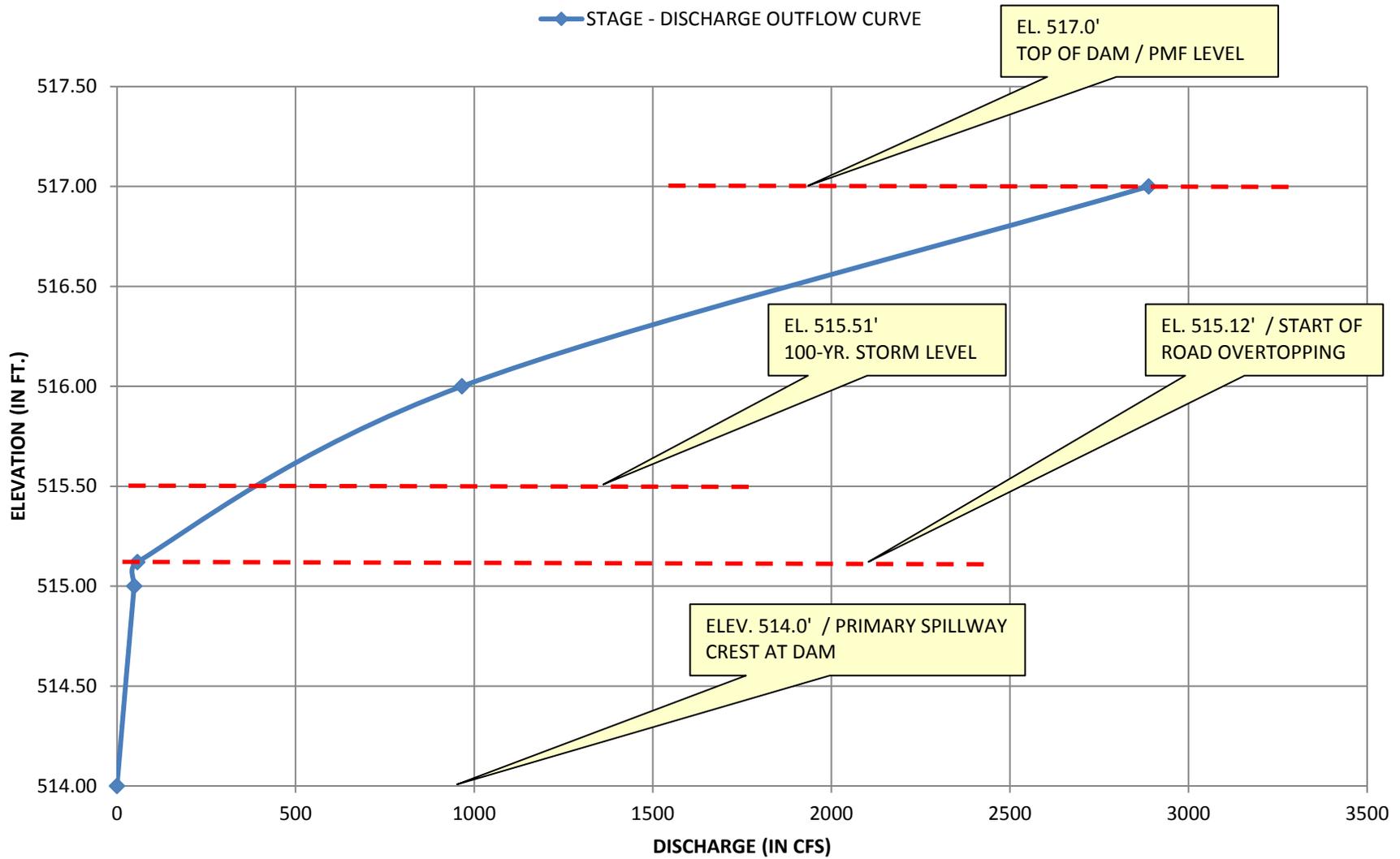


PHOTO INDEX
 FOR
HIDDEN LAKE DAM
HADDAM, CONNECTICUT
 SCALE: 1" = 10'

HIDDEN LAKE DAM / OUTFLOW / STAGE - DISCHARGE



Part XV: Professional Engineer Certification

The following certification must be signed by a Professional Engineer

"I hereby certify that the information provided in this report has been examined by me and found to be true and correct in my professional judgment."

Karl F. Acimovic
Signature of Professional Engineer

03/05/2015
Date

Karl F. Acimovic, P.E.

13032

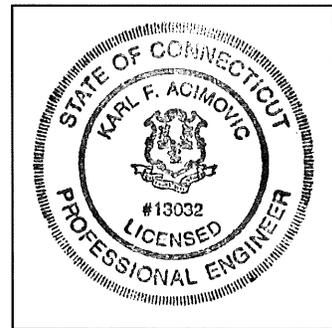
Printed Name of Professional Engineer

Title

CT P.E. Number

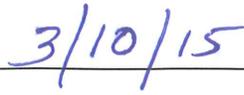
Karl F. Acimovic, P.E. & L.S., Consulting Engineer
Name of Firm

Affix P.E. Stamp Here



Part XVI: Owner Signature

The following statement must be signed by the Owner(s) of the subject Dam.

"The information provided in this report has been examined by me."	
	
Signature of Owner	Date
<u>LLOYD A. PEARSON</u>	<u>BOARD MEMBER</u>
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)

Note: Mail the completed inspection report to:

DAM SAFETY PROGRAM
INLAND WATER RESOURCES DIVISION
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106

In addition, please send this completed report converted to Adobe portable document format (pdf) including a scan of the signature page via email to: DEEP.DamSafety@ct.gov

Appendix A: Overall Dam Condition Selection Standards

Condition	Definition
Good	Through file research and after a thorough visual inspection it has been determined that the dam is well maintained and no existing dam safety deficiencies are recognized. Only continued routine maintenance is required.
Satisfactory	Through file research and after a thorough visual inspection it has been determined that no significant deficiencies are recognized. Only minor maintenance is required and only minor flaws are noted.
Fair	Through file research and after a thorough visual inspection it has been determined that there are no critical deficiencies with the dam that would require engineering analysis with the following exception: the engineer may recommend that a hydrologic and hydraulic analysis be conducted due to the lack of adequate freeboard and/or the lack of spillway capacity documentation. A condition exists at the dam that may require some sort of additional monitoring.
Poor	Through file research and after a thorough visual inspection it has been determined that deficiencies are recognized that require engineering analysis and/or remedial action.
Unsatisfactory	Through file research and after a thorough visual inspection it has been determined that a deficiency is recognized that requires immediate or emergency action. Administrative/Enforcement action may be required as determined by the Dam Safety Program. Reservoir level restrictions may be necessary until the problem is resolved.

Appendix B - Hazard Classification of Dams

I. A Class AA dam is a negligible hazard potential dam which, if it were to fail, would result in the following:

- (i) no measurable damage to roadways;
- (ii) no measurable damage to land and structures;
- (iii) negligible economic loss.

II. A Class A dam is a low hazard potential dam which, if it were to fail, would result in any of the following:

- (i) damage to agricultural land;
- (ii) damage to unimproved roadways (less than 100 ADT);
- (iii) minimal economic loss.

III. A Class BB dam is a moderate hazard potential dam which, if it were to fail, would result in any of the following:

- (i) damage to normally unoccupied storage structures;
- (ii) damage to low volume roadways (less than 500 ADT);
- (iii) moderate economic loss.

IV. A Class B dam is a significant hazard potential dam which, if it were to fail, would result in any of the following:

- (i) possible loss of life;
- (ii) minor damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
- (iii) damage to or interruption of the use of service of utilities;
- (iv) damage to primary roadways (less than 1500 ADT) and railroads;
- (v) significant economic loss.

V. A Class C dam is a high hazard potential dam which, if it were to fail, would result in any of the following:

- (i) probable loss of life;
- (ii) major damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
- (iii) damage to main highways (greater than 1500 ADT);
- (iv) great economic loss.

Appendix C - PHOTOGRAPH INSTRUCTIONS

All photographs shall be color photographs. Photographs shall be clear and include scale references where applicable. Photographs shall include, but not be limited to the following:

1. Overview of dam(s)/dike(s) from upstream
2. Overview of dam(s)/dike(s) from downstream
3. Overview of upstream face from right abutment
4. Overview of upstream face from left abutment
5. Overview of dam crest from right abutment
6. Overview of dam crest from left abutment
7. Overview of downstream face from right abutment
8. Overview of downstream face from left abutment
9. Overview of spillway(s) from upstream
10. Overview of spillway(s) from downstream (tailrace or channel area)
11. Overview of right training wall(s)
12. Overview of left training wall(s)
13. Overview of weir
14. Overview of stilling basin
15. Overview of downstream channel
16. Overview of gatehouse exterior
17. Overview of gatehouse interior
18. Overview of operators
19. Outlet inlets and discharge points
20. Overview of reservoir area
21. Areas of specific deficiencies (e.g., cracks, erosion, displacement, seeps, deterioration, etc.)