2018 DAM INSPECTION REPORT
FOR
SILVER LAKE LEVEL CONTROL SYSTEM

Submitted to:

GRAND TRAVERSE COUNTY DRAIN COMMISSION
2650 LaFranier Road
Traverse City, Michigan 49686
SLargent@grandtraverse.org

Submitted by:

J.E. TIFFANY AND SONS, LLC
1707 N. 39 Road
Manton, MI 49663

December, 2018

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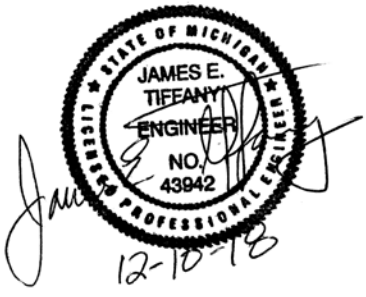
TITLE SHEET

Name of Dam:	Silver Lake Level Control System
I.D. Number:	955
County:	Grand Traverse
Location:	Blair Township, Section 07, Town 26N, Range 11W
Stream:	Tributary to Beitner Creek
Operator:	Grand Traverse County Drain Commission 2650 LaFranier Road Traverse City, Michigan 49686 Tel. (231) 922-4807
Hazard Potential Classification:	N/A
Inspection Date:	October 23, 2018

Professional Engineer in Responsible Charge of Inspection:

Name:	James E. Tiffany, P.E.
Address:	J.E. Tiffany and Sons, LLC 1707 N. 39 Road Manton, Michigan 49663

Signature & Professional Seal:



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION

DAM INSPECTION REPORT

This form is to be used for inspection reports required by Part 307, Inland Lake Levels, for those dams that do not meet the size criteria as defined by Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Dams six (6) feet or more in height, as defined by Part 315, and impounding five (5) acres or more at the design flood elevation, must meet the inspection report format as outlined in Section 31518 of Part 315.

A person failing to comply, or falsely representing dam conditions, is guilty of misconduct in office.

DAM NAME		DAM ID	COUNTY
Silver Lake Level Control System		955	Grand Traverse
DATE OF INSPECTION	NAME OF WATERBODY	SECTION, TOWN, RANGE	LEVEL THIS DATE
10/23/2018	Silver Lake/Trib. to Beitner Creek	Sec. 07 T 26N R 11W	861.38
DATE ELEVATION SET BY COURT 3/25/1987	LEGAL LEVEL 862.00	DRAWDOWN LEVEL N/A	HIGH WATER MARK ELEVATION N/A

EARTH EMBANKMENTS LEFT EMBANKMENT N/A FT. RIGHT EMBANKMENT N/A FT. TOTAL LENGTH N/A FT. (LOOKING DOWNSTREAM)

	UPSTREAM	CROWN	DOWNSTREAM
VEGETATIVE COVER	*	*	*
EROSION	*	*	*
SEEPAGE			*
SLIDES, SLUMPS & CRACKS	*	*	*
ANIMAL BURROWS	*	*	*
WAVE ACTION PROTECTION	*		*
REMARKS*	*	* No embankment, natural high ground, 730' between intake and discharge.	*

CONTROL STRUCTURE

TYPE	YEAR CONSTRUCTED	STRUCTURAL HEIGHT (top of dam elevation minus stream invert): 24.5' +/-
6' dia. fixed crest riser structure & butterfly valve on downstream 14" dia. discharge pipe	1987	
LENGTH OF SPILLWAY	FREEBOARD	HYDRAULIC HEIGHT (design flood elevation minus stream invert): 6.5' +/-
N/A	18' +/-	
VERTICAL PIPE SIZE	HORIZONTAL PIPE SIZE	HEAD (normal headwater minus normal tailwater): Approx. 5.6'
6' dia. concrete	14" dia x 730' long ductile iron	

DESCRIBE CONDITION OF THE FOLLOWING ITEMS.

STOPLOG VALVES AND GATES (open and close to check condition): Check location of top stoplog in relation to top of riser pipe intake box or fixed crest, for leakage, and condition of stoplogs, valves and gates.

14" diameter butterfly valve with riser stem and operating wheel in valve building approximately 75' downstream of the intake/riser structure. Has been operated in the last year.

OUTLET PIPE: Check for damage from ice, logs, vandalism; inside discharge pipe for settlement and/or joint separation; condition of pipe coating.

14" diameter class 50 cement lined ductile iron pipe. Video recording of pipe in last year indicates that the pipe is in good condition overall.

CONTROL STRUCTURE (continued)

CONCRETE STRUCTURE: Check for erosion; location of cracking or spalling. If old or new; settlement; need for crack repairs. 6' dia. concrete intake/riser structure with trash rack cover. All appear to be in good condition. Vortex forms when water is significantly above the rim of the structure decreasing discharge efficiency leading to higher than necessary lake levels during periods of high runoff.	
WALKWAY & RAILING: Check if in place or removed, condition, and if adequate protection provided. N/A	TRASHRACK OR LOG BOOM: Check if operable. Trashrack over top of concrete intake/riser structure is in good condition. Fencing/mesh is used surrounding structure to catch leaves & debris.
EMERGENCY SPILLWAY: Size, type, and condition. N/A	

INLET & OUTLET CHANNELS

	INLET	OUTLET
SIZE	Pond	Cox Pond
EXISTING CONDITION	Good	Good
EROSION	None	None
DEBRIS & OBSTRUCTIONS	None	Small shrubs and grass in outlet channel but not of significant concern at this time.
RIPRAP PROTECTION	None	Some riprap in bed of outlet channel downstream of discharge pipe.
REMARKS*	Recent project to place filter fabric and stone in bed of pond surrounding the intake/riser structure	The 36" dia. CSP downstream of the Cox Pond is failing. A sliplining project is recommended.

RECOMMENDATIONS

List work needed, how to be done, by whom, estimated cost, source of funds, recommended completion date. If emergency, to what extent. ADDITIONAL COMMENTS.

1) Sliplining 36" dia. CSP downstream of Cox Pond $115,000
2) Improvements to prevent vortex formation $ 3,500

Inspection Ordered By:

_____ County Delegated Agent

James E. Tiffany
INSPECTOR'S NAME (PRINTED)

ADDRESS: 1707 N. 39 Rd.

SIGNATURE

CITY, STATE, ZIP CODE: Manton, MI 49663

43942
P.E. REGISTRATION NO.

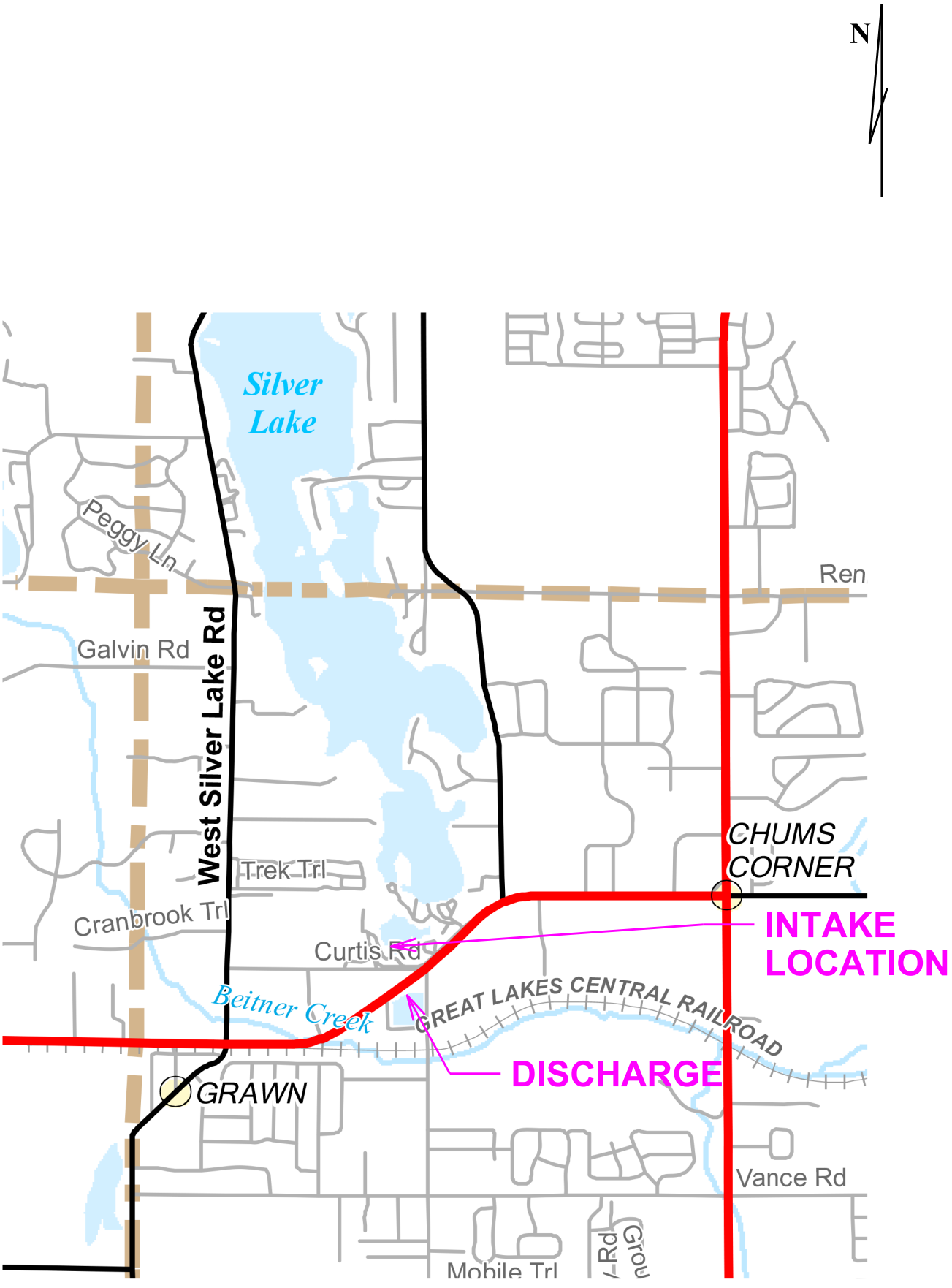
TELEPHONE NUMBER : 231-735-4546

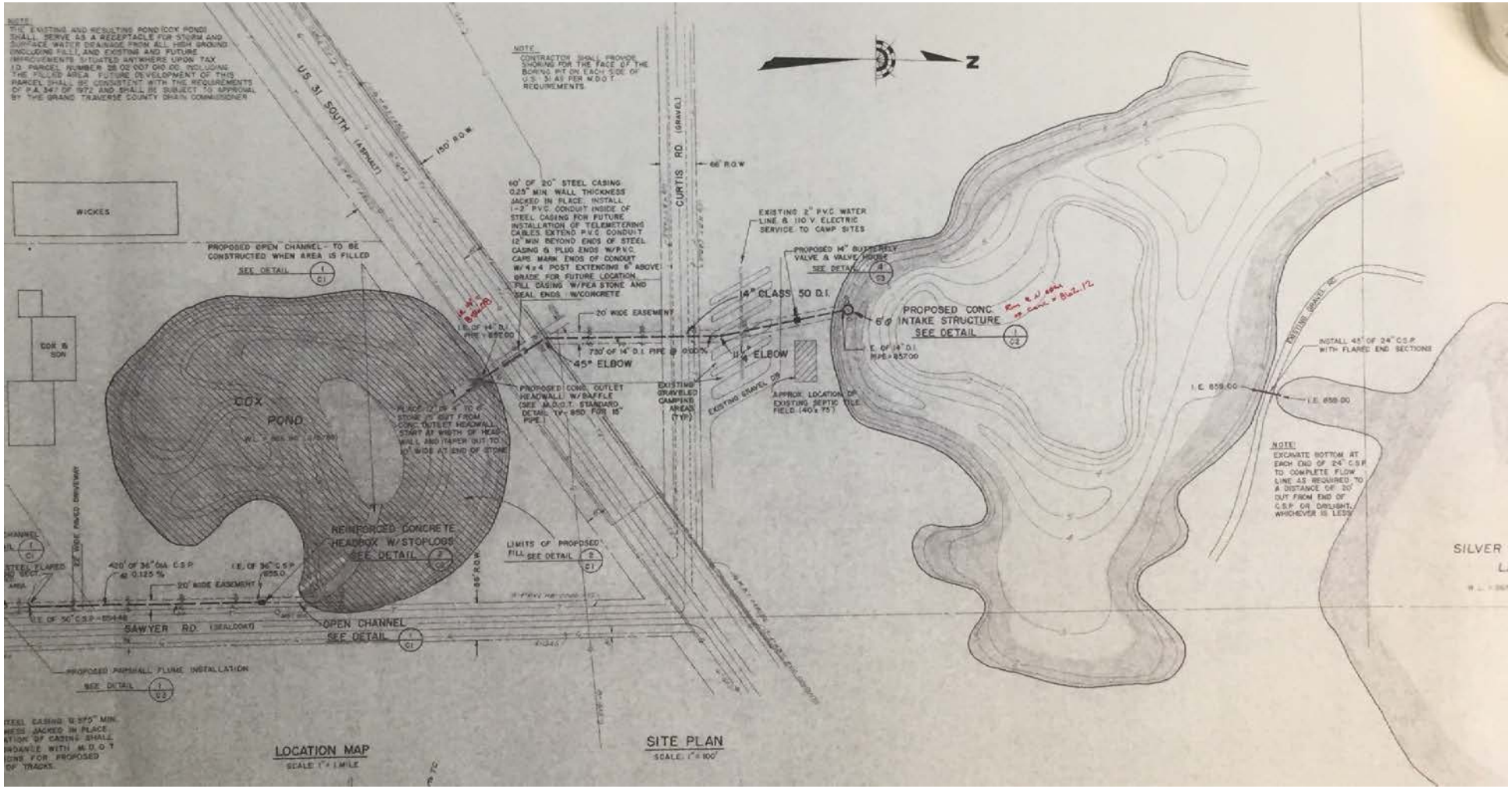
Please submit this completed report and photographs of the dam, downstream channel, and deficiencies cited in the report to:

DAM SAFETY PROGRAM
WATER RESOURCES DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30458
LANSING MI 48909-7958

*__NOTE:__ If space is inadequate for remarks, attach additional sheets as needed.

A. LOCATION MAP


N
Silver Lake
Peggy Ln
Ren
Galvin Rd
West Silver Lake Rd
Trek Trl
Cranbrook Trl
CHUMS CORNER
INTAKE LOCATION
Curtis Rd
Beitner Creek
GREAT LAKES CENTRAL RAILROAD
DISCHARGE
GRAWN
Vance Rd
Mobile Trl


NOTE
THE EXISTING AND RESULTING POND (COX POND) SHALL SERVE AS A RECEPTACLE FOR STORM AND SURFACE WATER DRAINAGE FROM ALL HIGH GROUND (INCLUDING FILL) AND EXISTING AND FUTURE IMPROVEMENTS SITUATED ANYWHERE UPON TAX I.D. PARCEL NUMBER 28 02 007 010 00 (INCLUDING THE FILLED AREA). FUTURE DEVELOPMENT OF THIS PARCEL SHALL BE CONSISTENT WITH THE REQUIREMENTS OF P.A. 347 OF 1972 AND SHALL BE SUBJECT TO APPROVAL BY THE GRAND TRAVERSE COUNTY DRAIN COMMISSIONER
US 31 SOUTH (ASPHALT)
150' R.O.W.
WICKES
COX & SON
COX POND
PROPOSED OPEN CHANNEL - TO BE CONSTRUCTED WHEN AREA IS FILLED
SEE DETAIL
NOTE:
CONTRACTOR SHALL PROVIDE SHORING FOR THE FACE OF THE BORING PIT ON EACH SIDE OF U.S. 31 AS PER M.D.O.T. REQUIREMENTS.
CURTIS RD. (GRAVEL)
66' R.O.W.
60' OF 20" STEEL CASING 0.25" MIN. WALL THICKNESS JACKED IN PLACE. INSTALL 1-2" P.V.C. CONDUIT INSIDE OF STEEL CASING FOR FUTURE INSTALLATION OF TELEMETERING CABLES. EXTEND P.V.C. CONDUIT 12" MIN. BEYOND ENDS OF STEEL CASING & PLUG ENDS W/P.V.C. CAPS. MARK ENDS OF CONDUIT W/ 4 x 4 POST EXTENDING 6' ABOVE GRADE FOR FUTURE LOCATION. FILL CASING W/PEA STONE AND SEAL ENDS W/CONCRETE
EXISTING 2" P.V.C. WATER LINE & 110 V. ELECTRIC SERVICE TO CAMP SITES
PROPOSED 14" BUTTERFLY VALVE & VALVE HOUSE
SEE DETAIL
14" CLASS 50 D.I.
20' WIDE EASEMENT
I.E. OF 14" D.I. PIPE = 852.00
730' OF 14" D.I. PIPE @ 0.00%
45° ELBOW
11 1/4° ELBOW
PROPOSED CONC. INTAKE STRUCTURE
SEE DETAIL
E. OF 14" D.I. PIPE = 857.00
PROPOSED CONC. OUTLET HEADWALL W/BAFFLE (SEE M.D.O.T. STANDARD DETAIL TY-850 FOR 15" PIPE)
EXISTING GRAVELED CAMPING AREAS (TYP.)
EXISTING GRAVEL DR.
APPROX. LOCATION OF EXISTING SEPTIC TILE FIELD (140' x 75')
PLACE 12" OF 4" TO 6" STONE IN CUT FROM CONC. OUTLET HEADWALL. START AT WIDTH OF HEADWALL AND TAPER OUT TO 40' WIDE AT END OF STONE
REINFORCED CONCRETE HEADBOX W/STOPLOGS
SEE DETAIL
LIMITS OF PROPOSED FILL SEE DETAIL
420' OF 36" DIA C.S.P. @ 0.125 %
I.E. OF 36" C.S.P. = 855.0
20' WIDE EASEMENT
I.E. OF 36" C.S.P. = 854.48
SAWYER RD. (SEALCOAT)
OPEN CHANNEL SEE DETAIL
PROPOSED PARSHALL FLUME INSTALLATION SEE DETAIL
INSTALL 45° OF 24" C.S.P. WITH FLARED END SECTIONS
I.E. 859.00
I.E. 858.00
NOTE:
EXCAVATE BOTTOM AT EACH END OF 24" C.S.P. TO COMPLETE FLOW LINE AS REQUIRED TO A DISTANCE OF 20' OUT FROM END OF C.S.P. OR DAYLIGHT, WHICHEVER IS LESS
SILVER
LOCATION MAP
SCALE: 1" = 1 MILE
SITE PLAN
SCALE: 1" = 100'

B. PHOTOGRAPHS

Silver Lake

Riser/Intake Structure in Pond Connected to Silver Lake

Trash Rack Over Riser/Intake Structure

Valve House Above Discharge Piping

Valve Well

Valve Operator

Downstream End of 14" Diameter Discharge Pipe

Interior of 14" Diameter Ductile Iron Discharge Pipe

Channel to Cox Pond & Cox Pond Downstream of Discharge

Culvert at Outlet of Cox Pond

Failing Culvert Downstream of Cox Pond

Staff Gauge in Silver Lake