ICE HOUSE PARTNERS – ATTACHMENT 12

Description of the Generation Facility –

Ice House owns a now operating 280 KW hydro-electric facility in Ayer, Massachusetts on West Main Street. The Project (FERC No. P-12769-000) is an exempt from licensing, run-of-river hydro-electric project. A FERC exemption from licensing was issued on March 31, 2008. The Project has been in continuous compliance with its requirements for exemption from licensing since 2008.

Due to poor economic conditions in the residential ice business, the Project ceased operations in the 1940s.[1] On or about March 8, 2012, Ice House Partners commenced operations of the Facility after a sixty-year plus absence from generation. Subject to Protective Order, Ice House is prepared to file a detailed monthly generation history of the Project for the period of March 2012 to the present.

The Ice House dam was built in the 1790s. In 1907, an electrical powerhouse was installed at the dam that operated trolley cars until the 1920s, and subsequently, ice-making machinery.[2] During the 1970s, the powerhouse was destroyed by fire.[3] In 2007, Ice House Partners formally proposed to the Federal Energy Regulatory Commission ("FERC") to operate two turbine generating units located in the rebuilt powerhouse at the Project. Because the Project is located on a commerce clause waterway,[4] it affected interstate commerce through its connection to an interstate power grid and involved post-1935 construction; accordingly, it was required to be licensed or exempted from licensing by the FERC pursuant to FPA section 23(b)(1).

The Project is located on the Nashua River at 323 West Main Street in the Town of Ayer in Middlesex County, Massachusetts. The Ice House Project uses the pre-July 1, 2003 190-foot-long, 12-foot-high Ice House dam and spillway topped with existing 24-inch-high weir boards[5] that impound a 137-acre reservoir.[6] The project includes a pre-July 1, 2003 headgate structure, equipped with four 8-foot-high, 10-foot-wide gates, leading to a pre-September 1, 2005 50-foot-wide, 109-foot-long power canal. The restored powerhouse, which contains two new turbine generating units with a total installed capacity of 280 kilowatts,[7] is located in the canal about 75 feet downstream of the headgate. Water used for generation is discharged from the powerhouse into a pre-July 1, 2003 50-foot-wide, 400-foot-long tailrace (measured from the headgate to the tailrace outlet). The Project's power is transmitted through a new 480-volt, 100-foot-long

---

[1] While it cannot be precisely determined when the Project ceased operations, there is ample evidence that the facility was off-line on July 1, 2003 as well as being off-line for a continuous two-year period that includes July 1, 2003.

[2] It appears that from the records that the dam ceased hydro-electric generation sometime in the 1940s with the widespread use of refrigerators, eliminating the need for ice boxes.

[3] Photographs of the powerhouse from the late 1900s are enclosed. These photographs show no roof, no windows and no generating equipment.

[4] The Nashua River is a tributary to the Merrimack River, a navigable waterway.

[5] The weir boards are new but their height is same as the flashboards used prior to July 1, 2003.

[6] Of which the Project occupies 133 acres of federal lands administered by the U.S. Fish and Wildlife Service as part of the Oxbow National Wildlife Refuge.

[7] The turbine-generator sets are totally new machines, having been installed in 2002 but not declared in commercial operation until March 8, 2012. The old machines had already been removed.

underground transmission cable.[8] From there power is transmitted to distribution lines of Massachusetts Electric Company located along Main Street, in Ayer, Maine. The Nashua River reach that is bypassed by operating the project (measured from the dam to the tailrace outlet) is about 300 feet long. The pre-July 1, 2003 dam, headgate structure and powerhouse building have been restored.

- The Facility began operation on March 8, 2012 after being essentially abandoned prior to the 1950s, a period of more than 2 years;
- The Facility operates in a run-of-river mode; and,
- The Facility has a nameplate capacity of less than 5.00 MW.

Run of River Operation –

The Project is required to operate in a run-of-river mode except for very limited instances. The Project's FERC license states the following:

> "The Exemptee shall operate the project in a ***run-of-river mode (emphasis added)***, whereby inflow to the project will equal outflow from the project and water levels above the dam are not drawn down for the purpose of generating power. ***Run-of-river operation (emphasis added)*** may be temporarily modified if required by operating emergencies beyond the control of the Exemptee, or for short periods upon mutual agreement between the Exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife"

Summary –

The Facility is a hydro-electric facility located at 323 West Main Street, in Ayer, Massachusetts.

The Facility has a nameplate capacity of 0.280 megawatt.

The Facility began operation on March 8, 2012.

The Facility was removed from service in the 1940s.

The Facility was essentially abandoned from the 1940s until March 8, 2012.

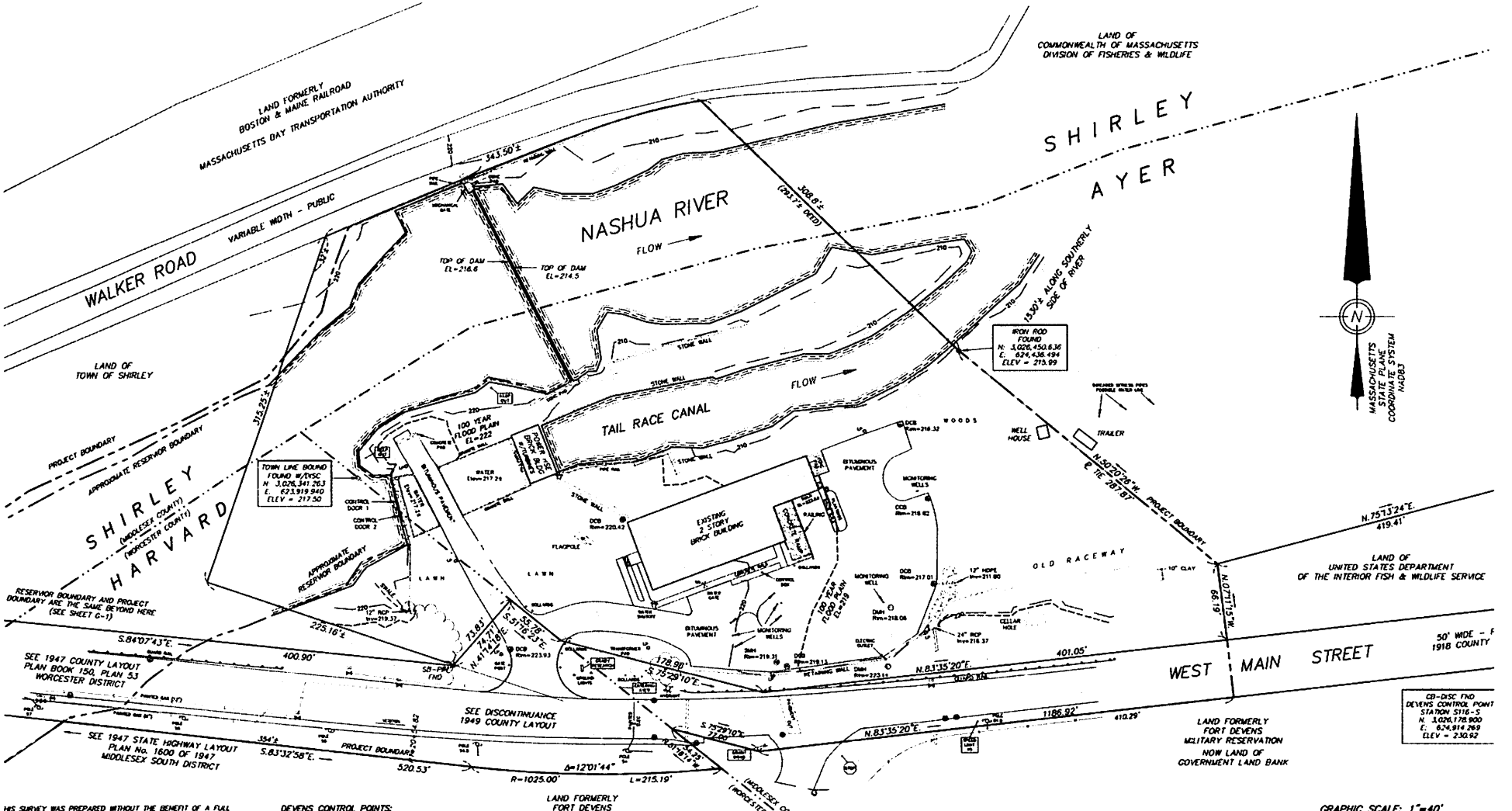
The Facility was returned to service on March 8, 2012.

The Facility is operated under a FERC License (P-12769-000), which became effective March 31, 2008 and continues in effect to this day.

The Facility operates in a run-of-river mode.

---

[8] All pre-July 1, 2003 electrical equipment was replaced.



THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A FULL TITLE REPORT AND IS SUBJECT TO ANY AND ALL RIGHTS AND ENCUMBRANCES THAT SUCH A REPORT MAY DISCLOSE.

THE UTILITIES SHOWN ARE THE RESULTS OF FIELD LOCATIONS, OBSERVATIONS AND/OR VARIOUS PLANS. NO GUARANTY AS TO THEIR ACCURACY IS WARRANTED OR IMPLIED BY THIS PLAN.

HANNIGAN ENGINEERING INC. MAKES NO REPRESENTATION AS TO THE EXISTENCE OF ANY OTHER PRIVATE OR PUBLIC UTILITIES THAT MAY AFFECT THE SURVEYED PROPERTY.

THE PROPERTY LINES SHOWN HEREON ARE THE RESULTS OF VARIOUS PLANS AND DEEDS OF RECORD AND A PARTIAL ON THE GROUND SURVEY. IT IS NOT PURPORTED TO BE A COMPLETE PROPERTY LINE SURVEY OF THE LOCUS PROPERTY.

THE FIELD WORK WAS PERFORMED IN JULY 2008.

ELEVATIONS AND ORIENTATION ARE BASED UPON CONTROL INFORMATION PROVIDED BY FORT DEVENS.

HORIZONTAL DATUM IS NAD83
VERTICAL DATUM IS NGVD29

THE 100 YEAR FEDERAL FLOOD PLAIN IS BASED ON THE FLOOD INSURANCE RATE MAPS FOR THE TOWN OF AYER, COMMUNITY PANEL No. 250180 0003 B, DATED JULY 19, 1982.

DEVENS CONTROL POINTS:
NAD83 & NGVD29
SEE SHEET G-1 FOR OVERALL LOCATIONS

STATION: 1509-M
N: 3,026,248.774
E: 623,280.935
ELEV = 232.78

STATION: 5116-S
N: 3,026,178.900
E: 624,914.269
ELEV = 230.92

STATION: 5130-SM
N: 3,026,276.579
E: 625,636.857
ELEV = 233.60

STATION: 5101-M
N: 3,017,719.233
E: 622,026.896
ELEV = 352.80

I HEREBY STATE THAT THE PROJECT BOUNDARY DELINEATION FOR THE ICE HOUSE PARTNERS PROJECT AS SHOWN ON THIS EXHIBIT G-2 IS DEVELOPED WITHIN REASONABLE ACCURACIES AS REQUIRED BY 180 CMR 4.41 TO THE GEOGRAPHIC LOCATION BASED ON A GRAPHICAL POSITIONING IN REFERENCE TO USGS QUADRANGLE MAPPING WITHIN ±40 FEET. THE PROJECT BOUNDARY LINE WAS ADJUSTED AND OR ROTATED TO BEST FIT WITHIN THE USGS QUADRANGLE MAP FEATURES GRAPHICALLY AND WAS NOT FIELD SURVEYED.

GRAPHIC SCALE: 1"=40'
0 10 20 30 40 50 75 100 150
0 5 10 15 20 30 40 50 60

FEDERAL ENERGY REGULATORY COMMISSION
PROJECT No. 12769-000-MA

Existing Condition Plan – Exhil
IN
AYER, MASSACHUSETTS

NO.	DATE	REVISION DESCRIPTION	BY
1	01/29/10	US FISH & WILDLIFE BOUNDARY	LRS
1	10/20/09	RESERVOIR LOCATION	LRS

PREPARED FOR:
ICE HOUSE PARTNERS, INC.
LISA DOND
323 WEST MAIN STREET
AYER, MASSACHUSETTS 01432
TEL: (978) 772-3303

CALC: LRS | DRWN
CHKD: WDH | SCALI
APPD: LRS | DATE

DWG: BASE
SRV: JEF-JHG
FB: E-2129.071508

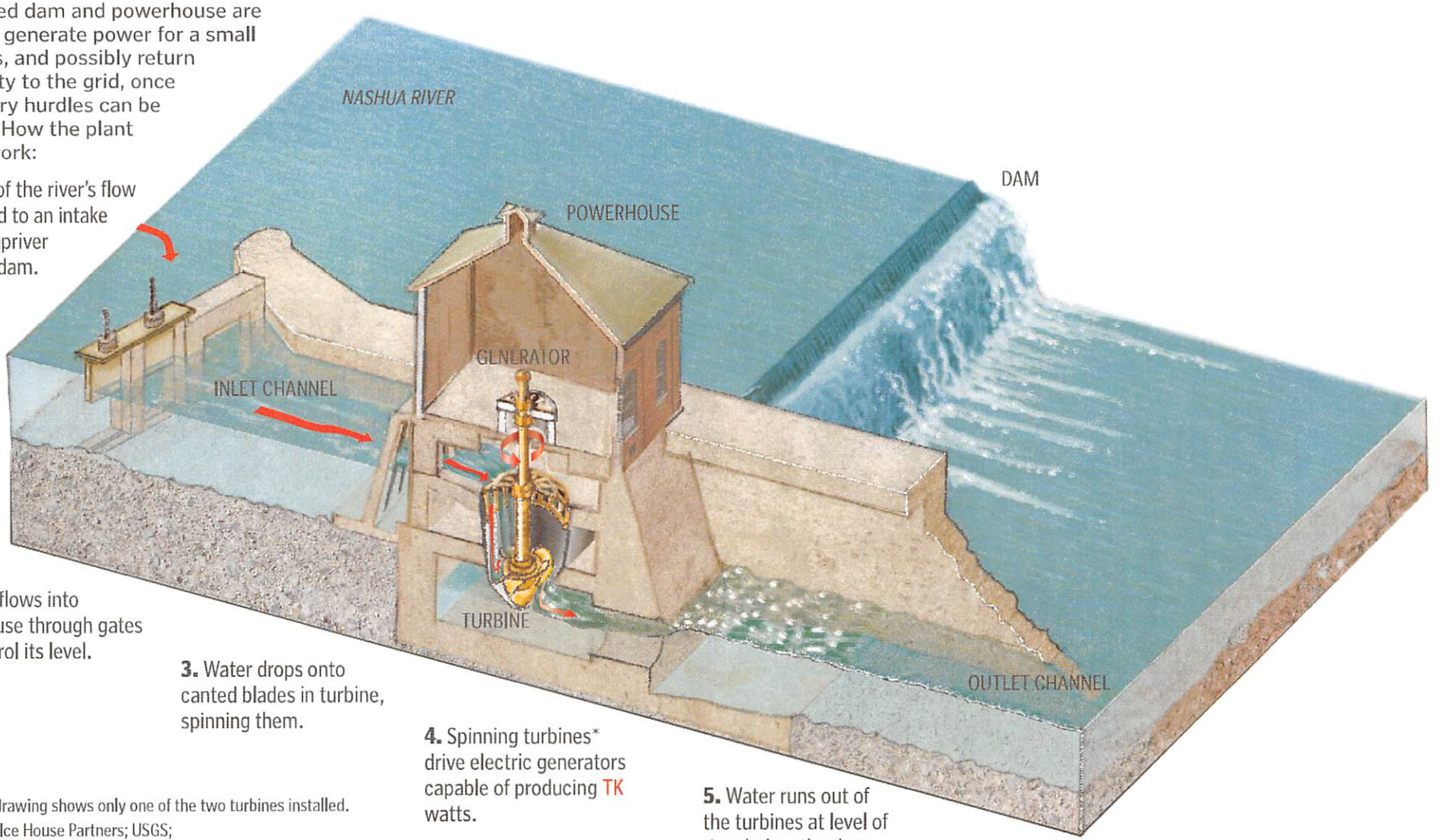
HANNIGAN ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8 MONUMENT SQUARE
LEOMINSTER, MASSACHUSETTS 01453
(978) 534-1234 FAX (978) 534-8080

JOB
SHE
PLA

Mini-hydroelectric plant on the Nashua River

A restored dam and powerhouse are ready to generate power for a small business, and possibly return electricity to the grid, once regulatory hurdles can be cleared. How the plant would work:

1. Some of the river's flow is diverted to an intake channel upriver from the dam.



2. Water flows into powerhouse through gates that control its level.

3. Water drops onto canted blades in turbine, spinning them.

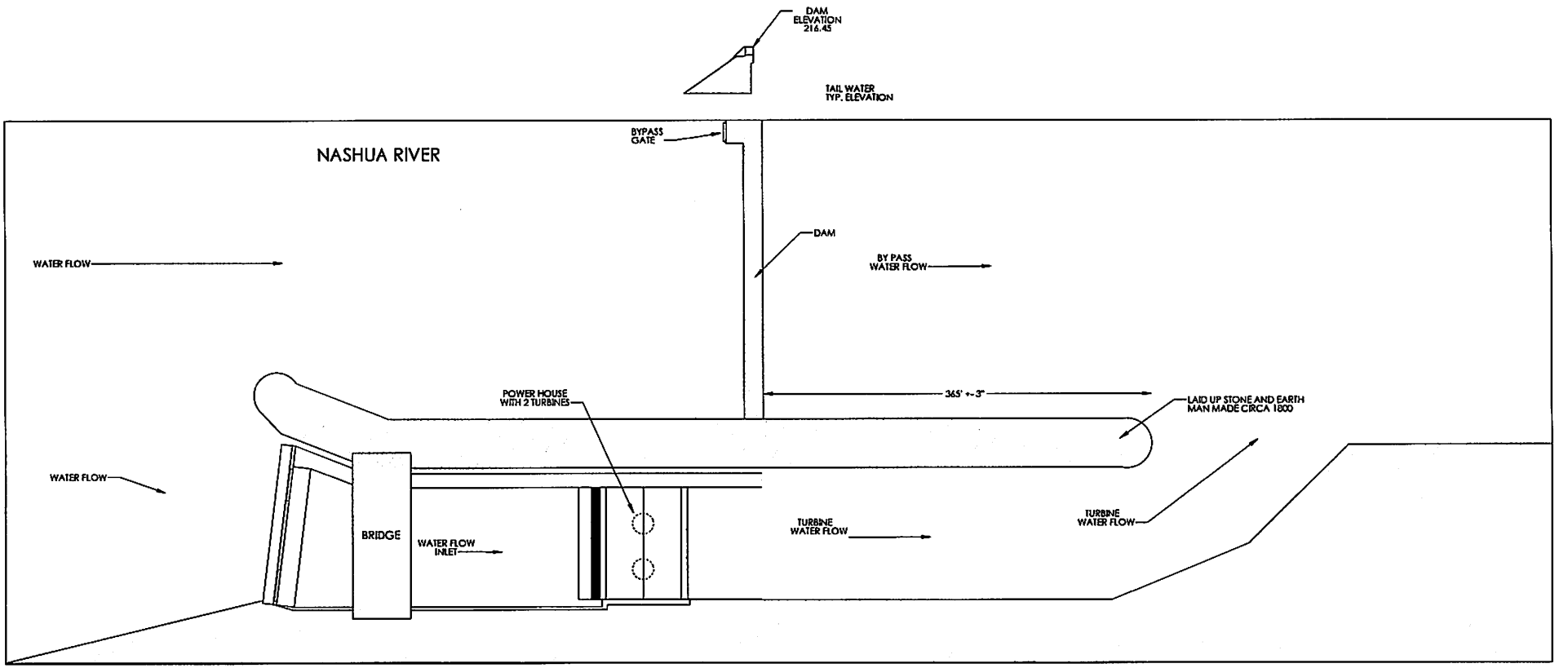
4. Spinning turbines* drive electric generators capable of producing TK watts.

5. Water runs out of the turbines at level of river below the dam.

*Cutaway drawing shows only one of the two turbines installed.

SOURCES: Ice House Partners; USGS; Foundation for Water and Energy Education

DAVID BUTLER/GLOBE STAFF

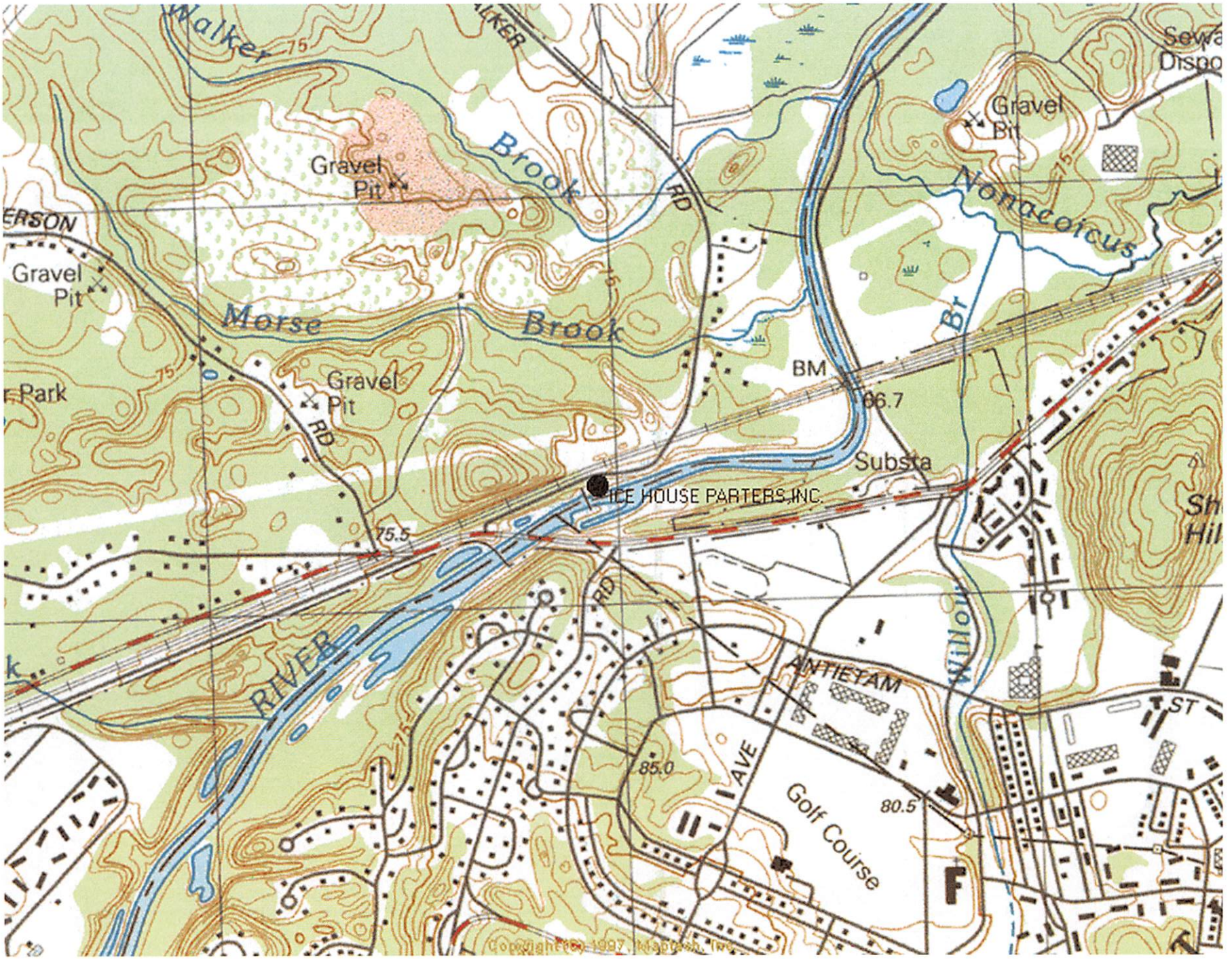


FLOW SCHEMATIC

grady research, inc.

FLOW SCHEMATIC

ICE HOUSE PARTNERS


Walker
Brook
Gravel Pit
Gravel Pit
Morse
Brook
Gravel Pit
Park
RD
75
75.5
BM
66.7
Substa
ICE HOUSE PARTERS,INC.
Noracoicus
Br
Gravel Pit
RIVER
RD
ANTIETAM
AVE
85.0
80.5
Golf Course
ST
Willow