Document Accession #: 20131105-5152 Filed Date: 11/05/2013

BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION
NOTICE OF INTENT TO CONSTRUCT QUALIFYING CONDUIT HYDROPOWER FACILITY

The Massachusetts Water Resources Authority (MWRA) applies to the Federal Energy Regulatory Commission for a determination that the Chicopee Valley Aqueduct (CVA)-Fish Hatchery Pipeline Hydroelectric Facility is a Qualifying Conduit Hydropower Facility, meeting the requirements of section 30(a) of the Federal Power Act, as amended by section 4 of the Hydropower Regulatory Efficiency Act of 2013 (HREA).

The location of the facility is:

State or Territory:	Commonwealth of Massachusetts
County:	Hampshire County
Township or nearby town:	Ware
Water source:	Chicopee Valley Aqueduct – MWRA Water Supply

The exact name and business address of the applicant(s) is:

Applicant's Name:	Massachusetts Water Resources Authority
Address:	100 First Ave, Charlestown Navy Yard Boston, MA 02129
Telephone Number:	617-242-6000
Email Address:	www.mwra.com

The exact name and business address of each person authorized to act as agent for the applicant(s) in this notice of intent is:

Name of Agent:	Pamela Heidell
Address:	MWRA, 100 First Ave Boston, MA 02129
Telephone Number:	617-788-1102
Email Address:	Pamela.Heidell@mwra.com

NON-FEDERAL CONDUIT

The Chicopee Valley Aqueduct - Fish Hatchery Pipeline Hydroelectric Project will not use the hydroelectric potential of a federally owned conduit.

[According to section 30(a)(3)(C)(i) of the FPA, as amended by HREA, a qualifying conduit hydropower facility may not use the hydroelectric potential of a federally owned conduit.]

ORIGINAL PROJECT

The Chicopee Valley Aqueduct-Fish Hatchery Pipeline Hydroelectric Project has not been licensed or exempted from the licensing requirements of Part I of the FPA, prior to the enactment of the Hydropower Regulatory Efficiency Act on August 9, 2013.

Project Information

(1) A detailed description of any conduits and associated consumptive water supply facilities, intake facilities, powerhouses, and any other structures associated with the facility.

[Including, but not limited to: (1) the name of the conduit(s)or consumptive water supply facilities; (2)where the conduit(s)or consumptive water supply facilities begin (including the town, river, or reservoir); (3) the length and width or diameter (if enclosed) of the conduit; (4) the dimensions of the proposed hydroelectric structure and any other facilities needed for hydropower operation (i.e. intake pipes, powerhouse, turbine generating units, discharge pipes); and (5) how, where, and into what the water will discharge from the proposed power structure. If your project discharges into a natural water body, please explain how the hydroelectric project does not alter the primary purpose of the conduit.]

The proposed hydroelectric facility will tap water from the MWRA's existing Chicopee Valley Aqueduct (CVA). The Chicopee Valley Aqueduct is a large diameter water supply transmission main that is approximately 15 miles long and is a 48-inch diameter pipe in its upper section in Ware and 36-inches in its lower sections. It is a reinforced concrete pipe with an embedded steel cylinder. It was constructed in 1949.

The CVA water supply transmission line begins at the CVA Intake (an eight foot tall by 13 foot wide structure) at MWRA's Quabbin Reservoir and travels in a southerly direction for almost a mile to the MWRA's Ware Disinfection Facility site, where the proposed hydroelectric facility would be located. After the Ware Disinfection Facility (the proposed location of the conduit hydroelectric facility), the CVA continues in a southwesterly direction to supply water to three communities now comprising the Chicopee Valley Aqueduct water system. Another 48 MWRA communities are supplied with water from Quabbin Reservoir via other aqueducts. The MWRA is a public instrumentality and a Commonwealth of Massachusetts authority, charged with providing water and sewer services.

To supply the Hatchery, the upper section of the CVA where it is 48" in diameter would convey an extra 6 mgd in addition to the CVA communities' demands.

A connection off of the CVA, or off existing ductile iron yard piping at the Ware Disinfection Facility, would be made for the hydroelectric facility and pipeline that would supply water to the McLaughlin Fish Hatchery downstream. The connection would be immediately upstream of flow control throttling valves and the WDF. The connection is upstream because at the WDF, chlorination is used and the Hatchery cannot use chlorinated water for its fish production purposes. The "tee" from the CVA or from an existing 48" ductile iron suction line will connect to an approximately 20 inch pipe and underground vault chamber/powerhouse that would include a shut-off valve at the take-of, a vacuum release valve downstream of the shut-off valve, a flow control device and appurtenances. The powerhouse vault would house the proposed turbine/generator and associated equipment plus the bypass valve. The vault would be approximately 21 feet by 38 feet long, and would largely be underground and located within the MWRA Disinfection Facility property easement, which consists of a approximately three acres occupied by water supply infrastructure. The exact location is currently under analysis as part of the detailed project design. Based on preliminary design, the turbine would have an installed capacity of approximately 59 KW utilizing the approximately 85 feet of hydraulic head contained in the water supplied to the hatchery via the pipeline. A bypass line will also be constructed to supply water to the hatchery when the turbine is not operating. After the powerhouse/vault, an approximately 4000 foot long 20 inch diameter pipe would convey water to the McLaughlin hatchery.

The proposed CVA-Hatchery pipeline will terminate at the McLaughlin Hatchery's process supply distribution system. More specifically, the pipeline discharge point consists of a concrete tank where water would be mixed with water withdrawn from the Hatchery's four on-site wells and any water that the Hatchery may pump from the Swift River. After the water is homogenized in the mixing box, it is distributed to the various raceways. The Hatchery borders the Swift River less than a mile downstream of the WDF.

(2) The purposes for which the conduit is used:

[Section 30(a)(3)(C)(i) of the FPA, as amended by HREA, requires a qualifying conduit hydropower facility to use the hydroelectric potential of a non-federally owned conduit. Such a conduit means any tunnel, canal, pipeline, aqueduct, flume, ditch, or similar manmade water conveyance that is operated for the distribution of water for agricultural, municipal, or industrial consumption and is not primarily for the generation of electricity. Specify the use of your conduit, such as irrigation, water supply, or industrial uses. The primary purpose of the conduit cannot be for power production.]

The CVA is a water supply transmission main that currently provides water to three CVA communities, with capacity to serve additional communities and state and federal facilities, such as the Hatchery. The proposed delivery of 6 MGD via the proposed pipeline would address the hatchery's water needs and as a secondary benefit, generate power as flow is conveyed from MWRA to the Hatchery.

The hydroelectric facility will also serve to dissipate energy (85 Feet) in the proposed delivery conduit in place of a PRV valve. The project would discharge to a pipeline which will carry flow to the mixing tank which is part of the existing process water system of the McLaughlin Fish Hatchery. From the mixing tank, the water is distributed to the a the hatchery's fish rearing facilities, which include a series of linear raceway channels which required a continuous supply of water to maintain water quality characteristics, including dissolved oxygen and proper temperature. There are 20 outdoor concrete raceways and 10 pools in each raceway section where fish are raised. After the raceways, there is a treatment system to settle and remove solids. Ultimately, water is discharged to the Swift River.

The Hatchery is regulated as Concentrated Aquatic Animal Production Facility. It is the largest of Massachusetts Department of Fish and Wildlife's hatcheries, and accounts for half of the brook, brown, rainbow and tiger trout that are produced in DFW's hatcheries annually. The fish are stocked in approximately 500 lakes, rivers, streams, and reservoirs throughout Massachusetts.

Based on current operation without the additional water supply from MWRA, the Hatchery relies on both groundwater and surface water withdrawals that are pumped into the mixing tank. With the current water supply, the number of exchanges in the water raceways is not ideal and is constrained by river withdrawal limits. The Hatchery would like to see a higher rate of water exchange to promote larger and healthier fish. In addition, water from the CVA and a pipeline branch from the CVA will be colder in the summer months than the Hatchery's current river withdrawals. Warmer water stresses the fish at the Hatchery; flow delivered from the CVA will address eliminate this concern.

(3) The number, type, capacity, and estimated average annual generation of the generating units you are proposing, including plans, if any, for future units:

[*The installed generating capacity cannot exceed 5 MW.*]

The intent is to supply a constant volume of water to the hatchery 24 hours a day, except during periods of drought, minus downtime for maintenance and repairs. On this basis, a single turbine/generator unit with an approximate installed capacity of 59 KW is proposed.. There will be no auxiliary units or provisions for future units. Based on the preliminary design by GZA, the average annual generation will be approximately 447,000 kWH. The operating net head will be 75-85 feet after experiencing friction and other head losses at 9.3 cfs (6 mgd). Maximum flow through the hydropower plant is 9.3 cfs (6 mgd). At this time, it is anticipated the turbine will be a Francis unit.

(4) Your project must use the hydroelectric potential conduit to generate power; however, if your project is associated with any dam or impoundment, please provide a description of the nature and extent of the dam or impoundment, including a statement of the normal maximum surface area and normal maximum surface elevation of any existing impoundment before and after the hydroelectric facilities are installed. If your project involves a dam or impoundment, you must provide a profile drawing showing the hydropower potential is created by the conduit and not the dam. You must also provide

evidence that the dam or impoundment would be constructed or continue to exist for agricultural, municipal, or industrial consumptive purposes even if the hydroelectric generating facilities were not installed:

The hydroelectric facility would receive flow from the CVA in the vicinity of MWRA's Ware Disinfection Facility. Withdrawals from the CVA to provide a source of continuous water to the Hatchery for their fish rearing industry are less than two percent of MWRA's approved water supply withdrawals. The surface elevations of MWRA's Quabbin Reservoir approximately 4000 feet upstream will be unaffected by the operation of the hydroelectric facility, which is incidental to the operation and objectives of the MWRA's CVA and the water distribution pipeline from the CVA to the Hatchery. MWRA's Quabbin Reservoir has a capacity of 412 billion gallons: the Quabbin Reservoir, plus the Wachusett Reservoir with a capacity of 65 gallons, are the water supply sources for the MWRA, which serves more than two million people.

Drawings, Maps, Diagrams

Include a set of drawings/maps/diagrams clearly showing the structures and equipment of the hydroelectric facility in relation to the existing conduit. Project drawings of the project must include:

- *A Plan View (overhead view) drawing of the proposed hydropower facilities. The drawing must include the following:*
  - *The hydroelectric facilities, including all intake and discharge pipes, and how those pipes connect to the conduit*
  - *The portion of the conduit in proximity to the facilities on which the hydroelectric facilities will be located*
  - *Identification of facilities as either existing or proposed*
- *A Location Map showing the facilities and their relationship to the nearest town. The map must include the following:*
  - *The powerhouse location labeled along with its latitude and longitude*
  - *The nearest town, if possible, or other permanent monuments or objects, such as roads or other structures, that can be easily noted on the map and identified in the field*

Please see Figures 1-4 as follows:

Figure 1: USGS Topographic Map showing Project Area/Location Map with Lat/Lon, roads, and Town

Figure 2: Orthophoto showing Project Area/Location

Figure 3: Plan View of Proposed Hydropower Facilities (Vault Detail)

Figure 4: Plan View of Proposed Hydropower Vault Location in Relation to Conduit (CVA, Existing Yard Piping) and other existing and proposed facilities.

VERIFICATION

You must provide Verification in one of the following forms:

Either a sworn, notarized statement, which states:

1. As to any facts alleged in the application or other materials filed, be subscribed and verified under oath in the form set forth below by the person filing, an officer thereof, or other person having knowledge of the matters set forth. If the subscription and verification is by anyone other than the person filing or an officer thereof, it shall include a statement of the reasons therefore.

This (application, etc.) is executed in the:

State of: Commonwealth of Massachusetts
County of: Suffolk County

by: (Name) Michael J. Hornbrook, MWRA Chief Operating Officer
(Address)MWRA, 100 First Ave, Building 39, Boston MA 02129

being duly sworn, depose(s) and say(s) that the contents of this (application, etc.) are true to the best of (his or her) knowledge or belief. The undersigned applicant(s) has (have) signed the (application, etc.) this _____ day of _____, 20____.

By:_____

Subscribed and sworn to before me, a _____ [*Notary Public, or title of other official authorized by the state to notarize documents, as appropriate]* of the State of _____ this day of _____, 20____.

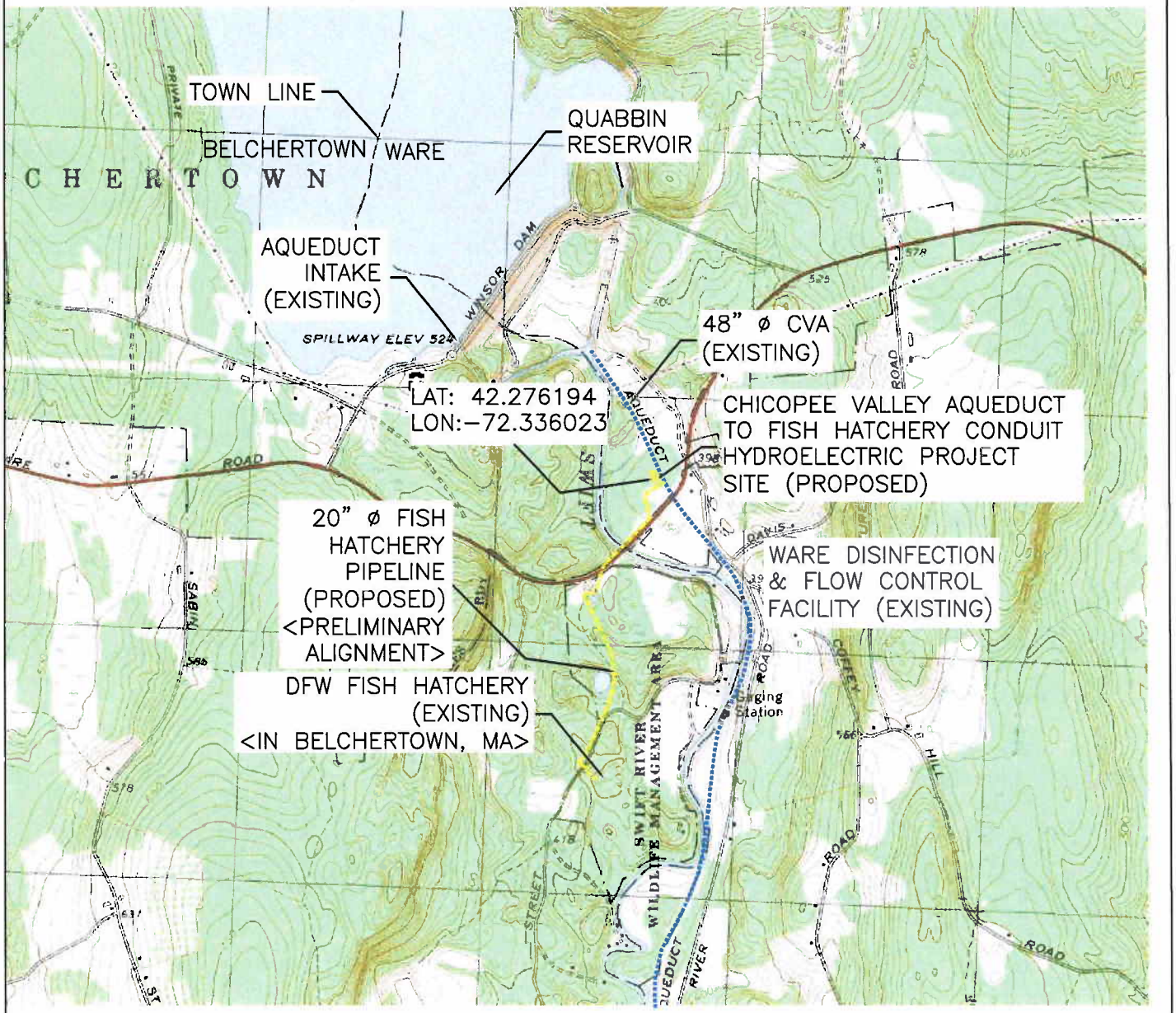
/SEAL/ [if any]

_____
(Notary Public, or other authorized official)

Or an unsworn declaration in the following form:

2. "I declare (or certify, verify, or state) under penalty of perjury that the foregoing is true and correct. Executed on October 29, 2013 [date]."

_____
(Signature)



SCALE APPROXIMATELY: 1 INCH = 2000 FEET

0 1000' 2000' 4000'

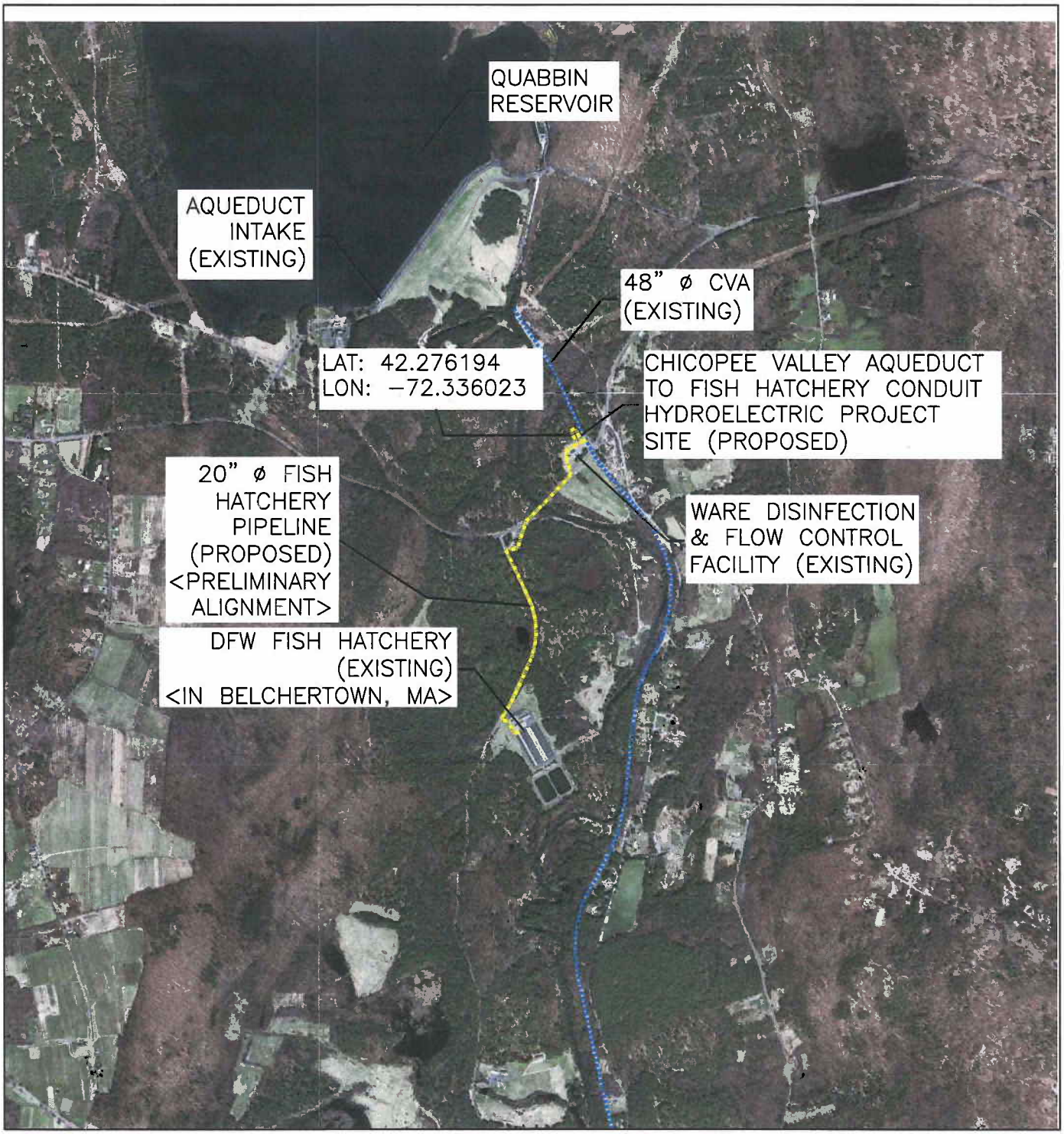
MASSACHUSETTS WATER RESOURCES AUTHORITY
CHICOPEE VALLEY AQUEDUCT TO FISH HATCHERY
PROPOSED CONDUIT HYDROELECTRIC PROJECT

USGS TOPOGRAPHIC MAP

Approximate Scale:	Date:	Project No.:	Drawing No.:
As Noted (WHEN PRINTED AT 8.5"X11")	10-16-2013	170723.02	1

GZA GeoEnvironmental, Inc.
Engineers and Scientists
ONE EDGEWATER DRIVE
NORWOOD, MASSACHUSETTS 02062
(781) 278-3700

PROJ MGR: KDE REVIEWED BY: CWC
DESIGNED BY: KDE OPERATOR: CHS



SCALE APPROXIMATELY: 1 INCH = 2000 FEET

0 1000' 2000' 4000'

MASSACHUSETTS WATER RESOURCES AUTHORITY
CHICOPEE VALLEY AQUEDUCT TO FISH HATCHERY
PROPOSED CONDUIT HYDROELECTRIC PROJECT

ORTHOPHOTO MAP

Approximate Scale: (WHEN PRINTED AT 8.5"X11")	Date:	Project No.:	Drawing No.:
As Noted	10-16-2013	170723.02	2

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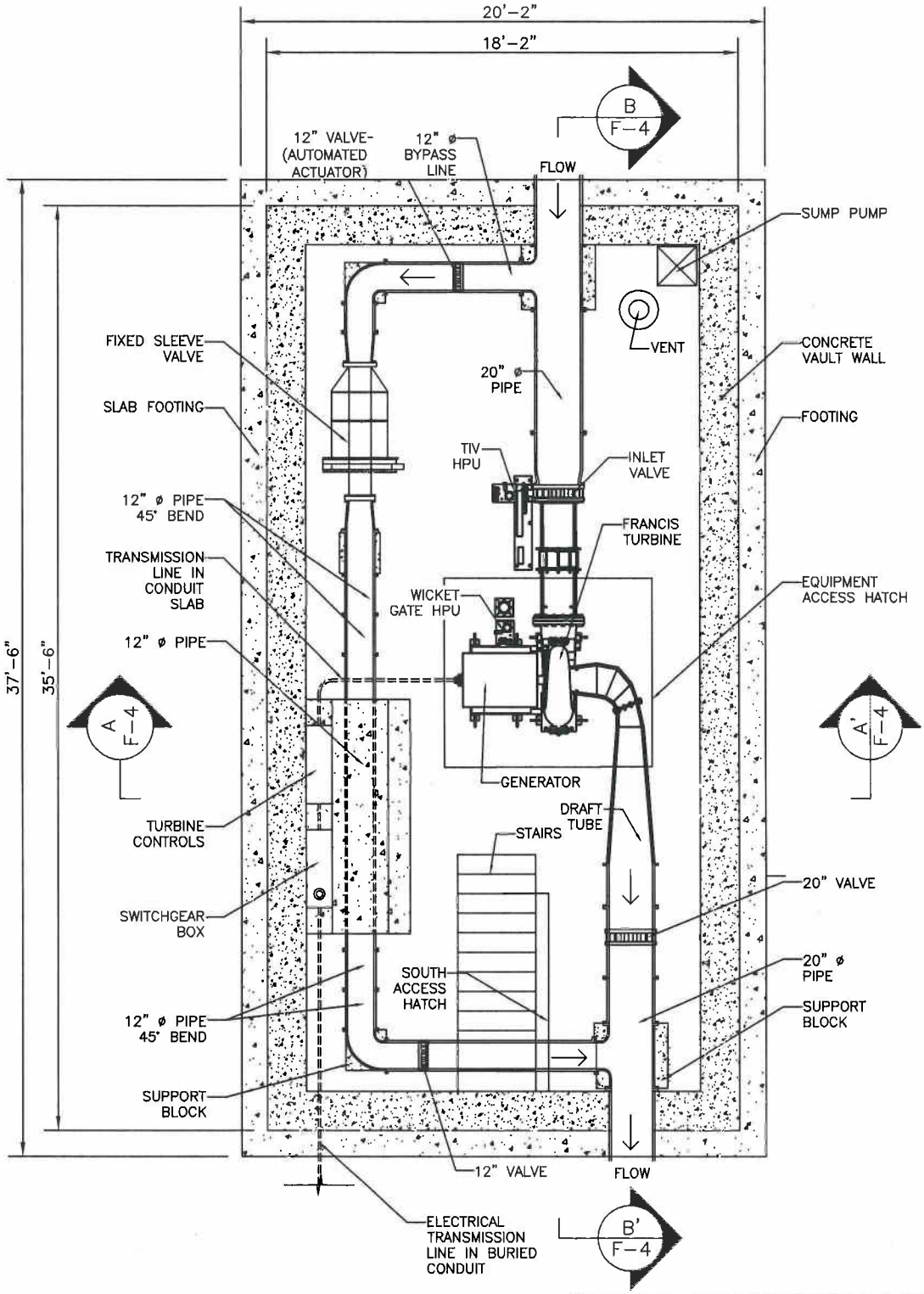

SCALE APPROXIMATELY: 1 INCH = 6 FEET

0 3' 6 12'

MASSACHUSETTS WATER RESOURCES AUTHORITY
CHICOPEE VALLEY AQUEDUCT TO FISH HATCHERY
PROPOSED CONDUIT HYDROELECTRIC PROJECT

POWERHOUSE VAULT PLANS
PLAN VIEW

Approximate Scale:	Date:	Project No.:	Drawing No.:
As Noted (WHEN PRINTED AT 8.5"X11")	10-16-2013	170723.02	3

DRAFT

PRELIMINARY LAYOUT
NOT FOR CONSTRUCTION

GZA GeoEnvironmental, Inc.
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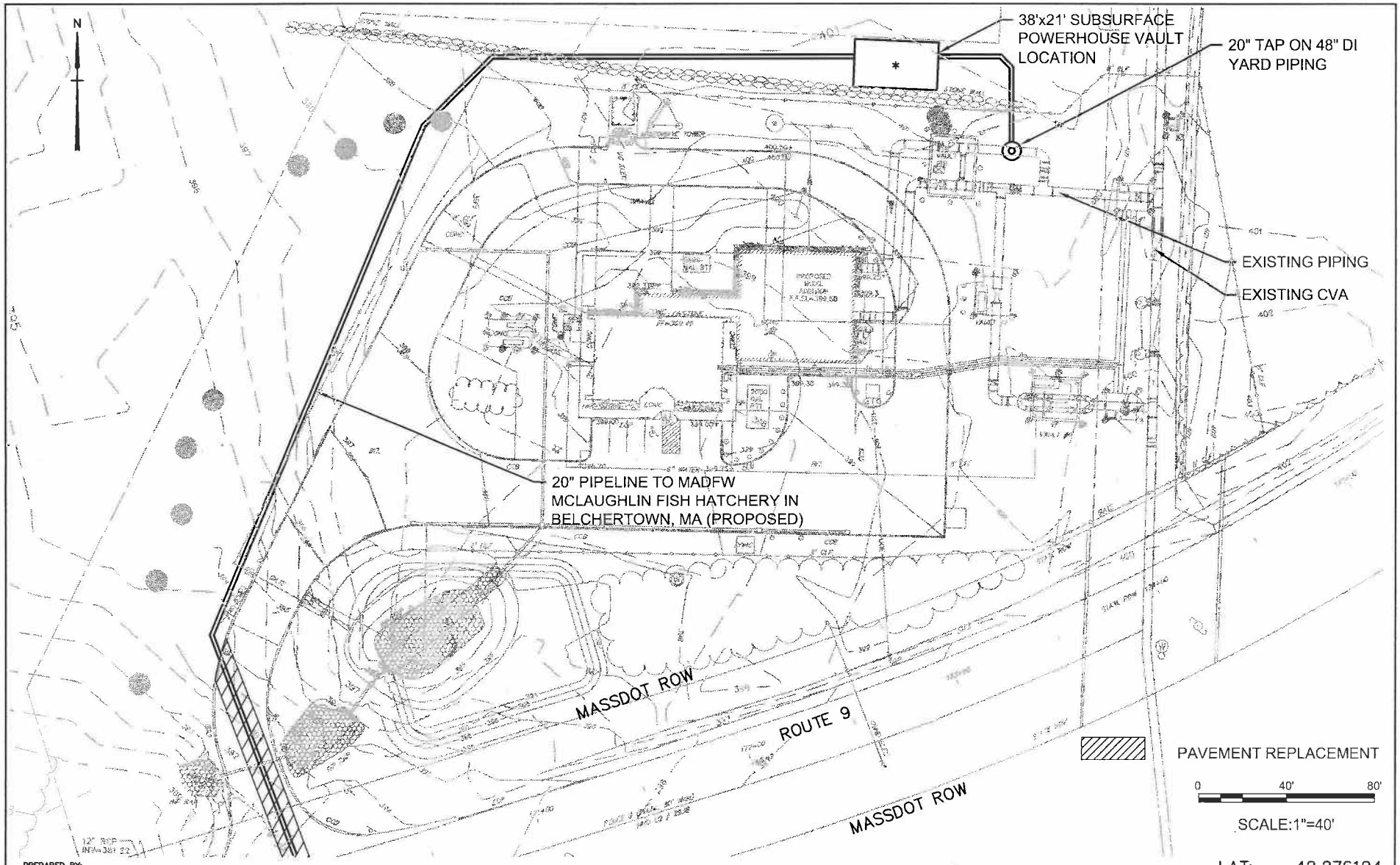

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5 BURLINGTON WOODS, BURLINGTON, MA 01803

MASSACHUSETTS WATER RESOURCES AUTHORITY
CVA – HATCHERY PIPELINE HYDROPOWER
SUBSURFACE POWERHOUSE VAULT

* LAT: 42.276194
LONG: –72.336023

FIGURE NO. 4

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MASSACHUSETTS WATER RESOURCES AUTHORITY
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November 5, 2013

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Notice of Intent to Construct the Chicopee Valley Aqueduct (CVA)-Fish Hatchery Pipeline Qualifying Conduit Hydropower Facility

Dear Secretary Bose:

Pursuant to the Federal Power Act, as amended by Section 4 of the Hydropower Regulatory Efficiency Act of 2013, the Massachusetts Water Resources Authority (MWRA) is filing this Notice of Intent to Construct a Conduit Hydropower Facility off of the Chicopee Valley Aqueduct at MWRA's Ware Disinfection Facility site.

The Chicopee Valley Aqueduct is an existing large diameter water supply transmission main that is 15 miles long and 48-inch in its upper section in Ware where the hydroelectric facility would be constructed. A connection off of the CVA/or water supply piping off of the CVA at the Ware Disinfection Facility would be made for the hydroelectric facility and pipeline, that would supply water to the McLaughlin Fish Hatchery downstream. Water supplied to the Hatchery would be used in the Hatchery's fish rearing facilities. The hydroelectric facility will have a capacity of approximately 59 kilowatts. The project fulfills the eligibility criteria defined in the Hydropower Regulatory Efficiency Act.

Should you have any questions, please don't hesitate to contact me at (617) 788-1102.

Sincerely,

Pamela Heidell,
Policy and Planning Manager

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Document Content(s)