

EASTERN MASSASAUGA  
CONSERVATION PLAN

GATEWAY REGIONAL WATER COMPANY  
RAW WATER INTAKE AND PUMP STATION  
CLINTON COUNTY

October, 2003

Prepared by: Gary Carruthers, P.E.  
Heneghan and Associates, P.C.

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SECTION 1080.10 CONSERVATION PLAN

Conservation Plan for the Illinois Eastern Massasauga snake (*Sistrurus catenatus* - Rafinesque) location  
- legal description

1. Description of the impact likely to result from the proposed taking.
  - a Legal description,

Gateway Water Company (GWC) seeks to construct a raw water intake facility on the eastern shore of Carlyle Lake for the purpose of providing potable water to several of the surrounding communities. More specifically, the tract of land is described as:

An **EASEMENT** to Construct, Install, Operate, Maintain, and Repair a Water Intake and Pumping Station, along with all the Required and Necessary Utilities and Facilities deemed appropriate by **GRANTEE**, on, over, under, and across a part of the following lands described as TRACT I and TRACT II, including all that/those part or parts thereof inundated by or submerged beneath the waters of Carlyle Lake:

TRACT I:

A part of the southeast quarter of the southeast quarter of section 25, township 3 north, range 2 west of the 3<sup>rd</sup> principal meridian, and being more particularly described as follows, all bearings being referred to grid north:

From a corner common to sections 25, 30, 31, and 36, measure northwardly, 331.6 feet along a line common to sections 25 and 30, thence measure south 89°57' west, 350.6 feet to the point of beginning; thence

South 89°57' west, 633.8 feet; thence

South 01°35' east, 246.4 feet; thence

South 89°57' west, 17.7 feet; thence

North 32°15' west, 390.0 feet; thence

North 64°28' east, 425.5 feet; thence

South 44°24' east, 250.0 feet; thence

North 45°36' east, 146.9 feet; thence

South 44°24' east, to the point of beginning, containing 3.48 acres, more or less (formerly part of Tract 517E) ,

Said **EASEMENT** being more particularly described as follows:

Commencing at a corner common to sections 25, 30, 31 and 36, measure northwardly, 331.6 feet along a line common to sections 25 and 30,

Thence measure South 89°57' West on a bearing reference grid north, 350.6 feet to the point of beginning, said point being on the easternmost southwesterly line of a 2.41 acre tract of land described in Warranty Deed conveying said tract from Henry Speiser and Clara Speiser to the City of Salem Illinois, a

Municipal Corporation, recorded January 24, 1964 in Deed Record 123, at Page 376 in the Office of the Recorder of Deeds of Clinton County, Illinois;

Thence continue South 89°57' West, 274.90 feet;

Thence North 44°24' 08" West, 340.43 feet, along a line parallel to and 50.00 feet southwesterly from, measured at right angles, the westernmost southwesterly line of the herein referenced 2.41 acre tract, to a point in the northerly line of the previously described 3.48 acre tract;

Thence North 64°28' East, 52.59 feet, along the northerly line of the previously described 3.48 acre tract to the northernmost corner of said 3.48 acre tract, also being the northwest corner of the herein referenced 2.41 acre tract;

Thence South 44°24' 08" East, 250.00 feet, along the westernmost southwesterly line of the herein referenced 2.41 acre tract;

Thence North 45°35' 52" East, 146.80 feet, along the westernmost southeasterly line of the herein referenced 2.41 acre tract;

Thence South 44°24' 08" East, 266.05 feet, along the easternmost southwesterly line of the herein referenced 2.41 acre tract, also being the easternmost line of the previously described 3.48 acre tract, to the point of beginning, enclosing an area of 1.06 acres, more or less;

**AND ALSO,**

**TRACT II:**

Said **EASEMENT** being a part of the Southeast Quarter of Section 25, Township 3 South, Range 2 West of the Third Principal Meridian, lying adjacent to and contiguous with **TRACT I** previously described above, and being more particularly described as follows, all bearings being referenced to grid north:

Commencing at a corner common to sections 25, 30, 31 and 36, measure northwardly, 331.6 feet along a line common to sections 25 and 30;

Thence measure South 89°57' West, 350.6 feet to a point on the easternmost southwesterly line of a certain 2.41 acre tract of land described in Warranty Deed conveying said tract from Henry Speiser and Clara Speiser to the City of Salem Illinois, a Municipal Corporation, recorded January 24, 1964 in Deed Record 123, at Page 376, in the Office of the Recorder of Deeds of Clinton County, Illinois, said point also being the southeasterly corner of a certain 3.48 acre tract previously described herein (formerly part of Tract 517E), and said point also being the southeasterly corner of the easement described as Tract I above containing 1.06 acres, more or less;

Thence North 44°24' 08" West, 266.05 feet, along the easternmost southwesterly line of the herein referenced 2.41 acre tract;

Thence South 45°35' 52" West, 146.80 feet, along the westernmost southeasterly line of the herein referenced 2.41 acre tract;

Thence North 44°24' 08" West, 250.00 feet, along the westernmost southwesterly line of the herein referenced 2.41 acre tract, to the point of beginning of said **TRACT II**, said point also being the northerly corner of the previously described 3.48 acre tract, and the northwest corner of the herein referenced 2.41 acre tract, and the northernmost corner of the **EASEMENT AREA** described as **TRACT I**;

Thence South 64°28' West, 52.59 feet;  
Thence North 44°24' 08" West, 633.70 feet;  
Thence North 45°35' 52" East, 50.00 feet;  
Thence South 44°24' 08" East, 650.00 feet to the point of beginning, enclosing an area of 0.74 acres, more or less.

An additional 1 acre of adjoining property could potentially be disturbed by the Contractor during construction. The parcel is located to the southeast well away from the shoreline. If utilization of this area is necessary a temporary construction easement will be secured. It is intended that this area be included in this plan with regards to pre and post construction activities and requirements. The area is outlined in red on the enclosed plat sheet.

b Biological data on the affected species

The current land use for the site is mixed, with brushy "scrub" ground interspersed with open and sloping areas. GWC has reached an agreement to lease the site from the U.S. Corp of Engineers.

The Eastern Massasauga rattle snake is an endangered species that is known to occur in 6 - 8 localities in Illinois, in areas considered wet prairie, bogs, swamps and rarely dry woodland. They breed in the spring and give birth to 5-24 live young. Diets of mature adults consists primarily of small mammals (voles, mice, shrews). The Eastern Massasauga has been known to den in crawfish holes.

c Description of the activities that will result in taking of an endangered or threatened species

Raw Water Intake & Pump Station

Propose activities will involve operation of buried pipelines, a pump station located on the brushy ground at elevation 466, a small building at elev 470 near the Salem driveway, and a driveway access between the pump station, building, and driveway. Piping will typical cover of 42" over the top of the pipe.

The pump station wetwell will be deep, with a floor of approximate elevation 430. The influent line to the pump station will be bored between the pump station and the raw water intake screen in the lake, all at approximate elevation 430. The wet shoreline surface will not be disturbed during construction.

Construction of the bored line will involve a small barge in the water, approximately 500 ft from shore, where the intake screen will be installed. The construction will also involve boring equipment and other construction equipment stringing and pushing the 24" diameter pipe in the area generally SE of the pump station. While this area of

ground will see significant temporary construction activity it is higher elevation than the brushy ground.

d Explanation of the anticipated adverse effects on listed species

The primary threat to the Eastern Massasauga is the closing off of their borrows by construction while the snakes are in them. Elimination of habitat represents more of a long term threat.

Based on the criteria referenced above the entire site could be categorized as being Eastern Massasauga habitat. However the site being adjacent to the existing water intake facility for the Village of Salem, should reduce the likelihood that the Eastern Massasauga are present in the same concentration as would be expected in more remote areas.

There should be little threat to the Eastern Massasauga due to increased vehicle traffic as the facility shall have minimal staffing requirements due to the level of anticipated automation. Its anticipated that there will be 1 man / vehicle visiting the pump station and building daily to spot check operations. Long term habitat reduction shall be limited to the footprint of the building, driveway and detention well areas, totally approximately 2,700 sq ft.

2. Measures the applicant will take to minimize and mitigate that impact.

a Plans to minimize the area affected by the proposed action

The construction limits as shown on the plans will be clearly marked in the field and the contractor will be required to keep their activities within areas marked. All excavation areas will be bordered with erosion control measures adequate to ensure that adjoining areas remain undisturbed.

While the total area encompassed is approximately 1.80 acres, only tract I (1.06) acres is above the water line and considered to be Eastern Massasauga habitat. Where areas are to be disturbed to a depth greater than 18 inches, the topsoil shall be removed, stockpiled and replaced after final grading. The minimization measures included in the plan make it reasonable to assume that no more than two snakes will be taken.

b Plans for management of the area affected by the proposed action

Post construction areas not hard surfaced shall be graded to their original contour and allowed to return to their original state. Additional seeding and plantings will be performed as directed by IDNR staff.

c Description of all measures to be implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species

- A controlled burn shall be used to remove existing vegetation from the site after October the year prior to construction activities commencing. "Site" is to include all areas that will be used for material storage or traffic across, whether such areas are provided by the owner or easements secured by the Contractor for their convenience.
- Silt fences shall be erected and maintained around perimeter of the entire site for the duration of the project. Silt fences shall extend a minimum of 10 feet into the water. After construction is complete and final grading and seeding are finished the silt fences shall be removed. Its is the intent that the silt fences act as a functional barrier preventing the Eastern Massasauga from re-entering the silt during construction.
- Gateway Water Company shall contract with the IDNR or a designee of the IDNR to have a Eastern Massasauga site survey performed.

Gateway Water Company shall sign a letter acknowledging their intent to avoid injury to any snakes found on the site and their agreement to contact IDNR personnel should any Eastern Massasauga be found. Gateway Water Company shall include language in all contracts and work orders requiring construction contractors entering the site to conform to the above requirements.

d Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on endangered or threatened species.

In order to ensure that the impacts and effects of the project are minimized and adequately mitigated, Gateway Regional Water Company will allow ongoing access to the site for the purposes of continuing the monitoring process. Access will be regulated with regards to the building and other facilities on the site. Annual renewable passes will be issued authorizing access to the site.

e Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on endangered or threatened species

The project contractor will be required to meet with the owner's construction observer when Eastern Massasauga are encountered on the construction site or minimally on a weekly basis to review the plan and existing conditions to determine if modifications are necessary. If modifications to the plan are necessary, the proposed modifications will be reviewed and approved by IDNR prior to implementation.

- f Verification that adequate funding exists to support and implement all mitigation activities described in the conservation plan.

Agencies contributing funding to the project include: USDA Rural Development, State of Illinois and Gateway Water Company. The agencies providing grants and loans for the project are governmental entities which derive their funding through the taxing authority of the state and federal government. The owner will have access to these dedicated funds for the purpose of completing all work associated with placing the facility in operation. Said work to include implementation of the conservation plan.

The cost of that portion of the plan associated with the construction phase will also be backed by the performance bond posted by the contractor. The project will have a item in their bid schedule for implementing the plan during construction.

### 3 Alternative actions that would not result in the taking of Eastern Massasauga.

Alternative actions considered that would avoid any potential of taking Eastern Massasauga was limited to no action. This alternative would result in placing a hardship upon the local communities who need a dependable source of economical safe water. Other alternatives were limited to different siting locations for the facility. The current siting offers benefits over other locations:

The current siting will allow joint use of the existing entrance road to the adjoining Salem facility. Other siting would have resulted in additional new roadways being constructed which would increase the long term road crossing hazzard to the Eastern Massasauga and other species of snake. The current location will minimize loss of habitat.

New roadways to other sites might provide venues for other additional development in those areas. This would increase the risk to the Eastern Massasauga beyond the activities of this project.

Employing a site adjacent to the existing Salem facility is allowing a cross connect to be included into the project. This will allow water to be shared between the facilities should one of them experience an outage.



The overall suitability and desirability of the site is illustrated by Salem's selection of the adjoining parcel for the location of their intake facility.

There is currently no record of a Eastern Massasauga at the planned facility site. The nearest known occurrence is 0.5 kilometer from the site. Selection of a different site could result in increased risk to Eastern Massasauga.

- 4 Data and information to assure that the proposed taking will not reduce the likelihood of the survival of the species.

In recent years the Eastern Massasaugas' range has been reduced to nine counties, with the Carlyle Lake area being considered vulnerable (highest ranking reported). Only one other area Plum Creek (Cook/Will Counties) has a ranking of vulnerable. All other counties with populations have lower rankings.

The Carlyle Lake population represents a significant resource. As such the loss of an individual is less likely to impact the viability of the overall population. Results of a recent tagging / monitoring program indicate that the nearest approach of a tagged individual to the site was approximately 1/4 mile. This serves as an indication that the adjacent areas represent viable habitat for a continued sustainable population. Using site as a raw water intake facility will prevent its possible use for activities more deleterious to the Eastern Massasauga and its habitat

- 5 An implementing agreement, which shall include, but not be limited to:

- a the names and signatures of all participants in the execution of the conversation plan

Christopher Phillips  
Herpetologist  
Illinois Natural History Survey  
607 East Peabody Drive  
Champaign, IL 61820

Keith Ritter, President  
Gateway Regional Water Company Inc.  
P. O. Box 711  
Sandoval, IL 62882

Heneghan and Associates, P. C.  
838 East McCord

Centralia, IL 62801

- b the obligations and responsibilities of each of the identified participants with schedules and deadlines for the completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the Department

Chris Phillips is responsible for completing a survey for threatened or endangered snakes for the site and making the necessary recommendations and adjustments to the conservation plan.

Gateway Water Company is responsible for all biological clearance coordination and recommendations related to the project and addresses those items listed under the Incidental Take Notice.

Heneghan and Associates is the consultant that is responsible for surveying and engineering plans.

- c certification that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan

The Gateway Water Company is authorized by the State of Illinois to produce finished water and supply same to their clients. Funding for ongoing operations will be secured from fees for water supplied to clients. The Gateway Water Company Board of Directors is responsible for all legal contracts and the actions of its employees.

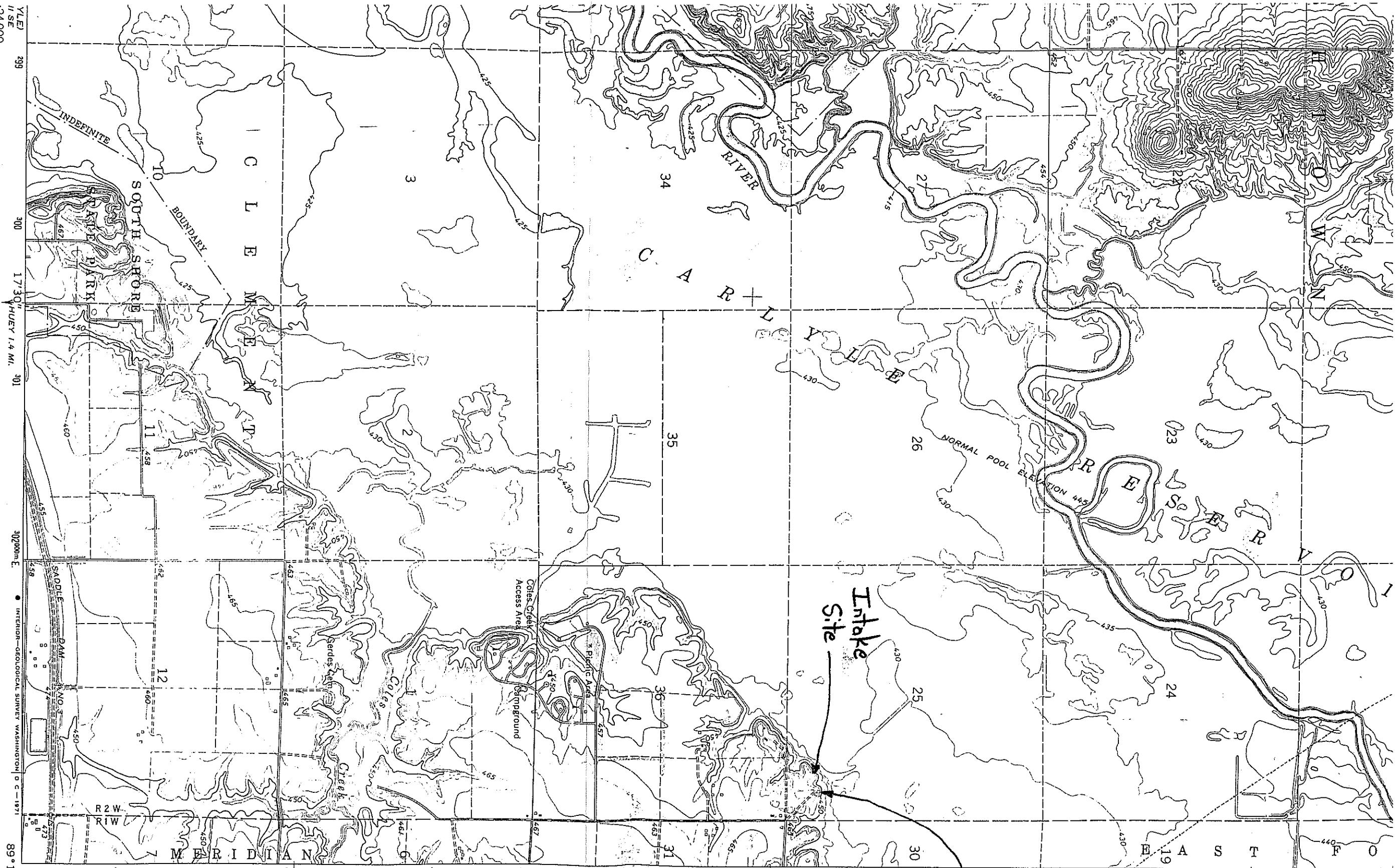
- d assurance of compliance with all other federal, State, and local regulations pertinent to the proposed action and to execution of the conservation plan

The Gateway Water Company abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive production of water.

- e copies of any final federal authorization for a taking already issued to the applicant if any

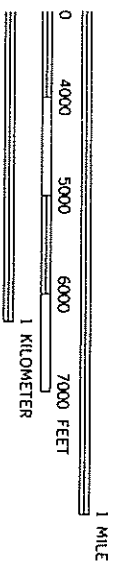
Not Applicable since the Eastern Massasauga is not on the federal list of endangered or threatened species.

Prepared by: Gary Carruthers, P.E.  
Heneghan and Associates, P.C.



City of Salem  
Raw Water  
Intake  
Pump Sts.

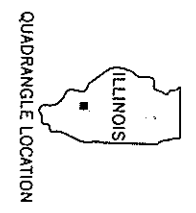
Y/E 299 300 17°30" HUEY 1.4 MI. 301 30200m E 30200m E 38°37'30" 89°15'



SCALE 5 FEET  
TO SEA LEVEL

ROAD CLASSIFICATION

- Primary highway, all weather, Light-duty road, all weather,
- hard surface \_\_\_\_\_ Improved surface \_\_\_\_\_
- Secondary highway, all weather, Unimproved road, fair or dry
- hard surface \_\_\_\_\_ weather \_\_\_\_\_
- State Route



QUADRANGLE LOCATION

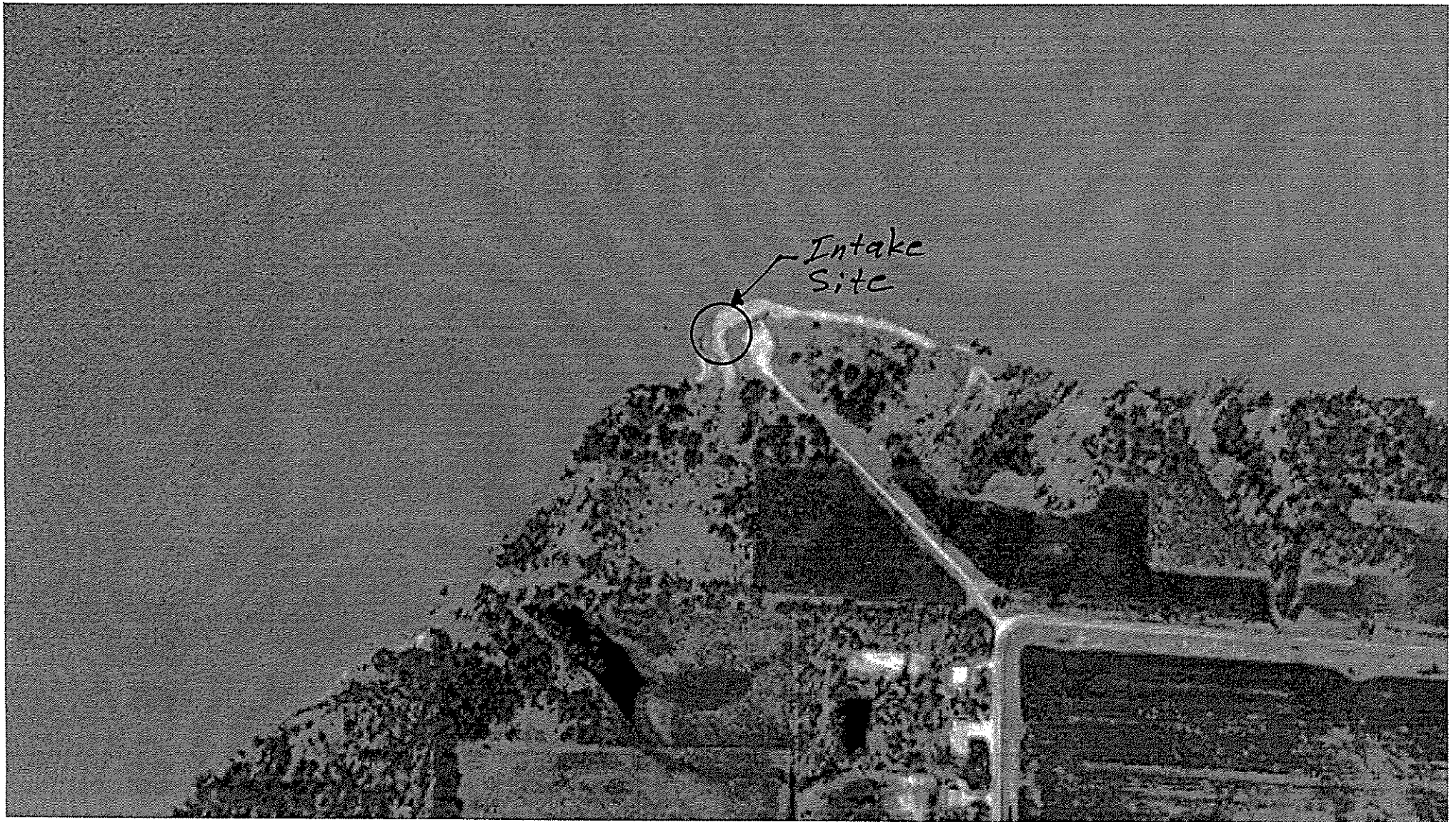
MAP ACCURACY STANDARDS  
SURVEY, WASHINGTON, D. C. 20242  
SURVEY, URBANA, ILLINOIS 61801  
AND SYMBOLS IS AVAILABLE ON REQUEST

KEYESPORT, ILL.  
NE/4 CARLYLE 15' QUADRANGLE  
N3837.5—W8915/7.5

1969

CENTRALIA WEST  
3161 II SW

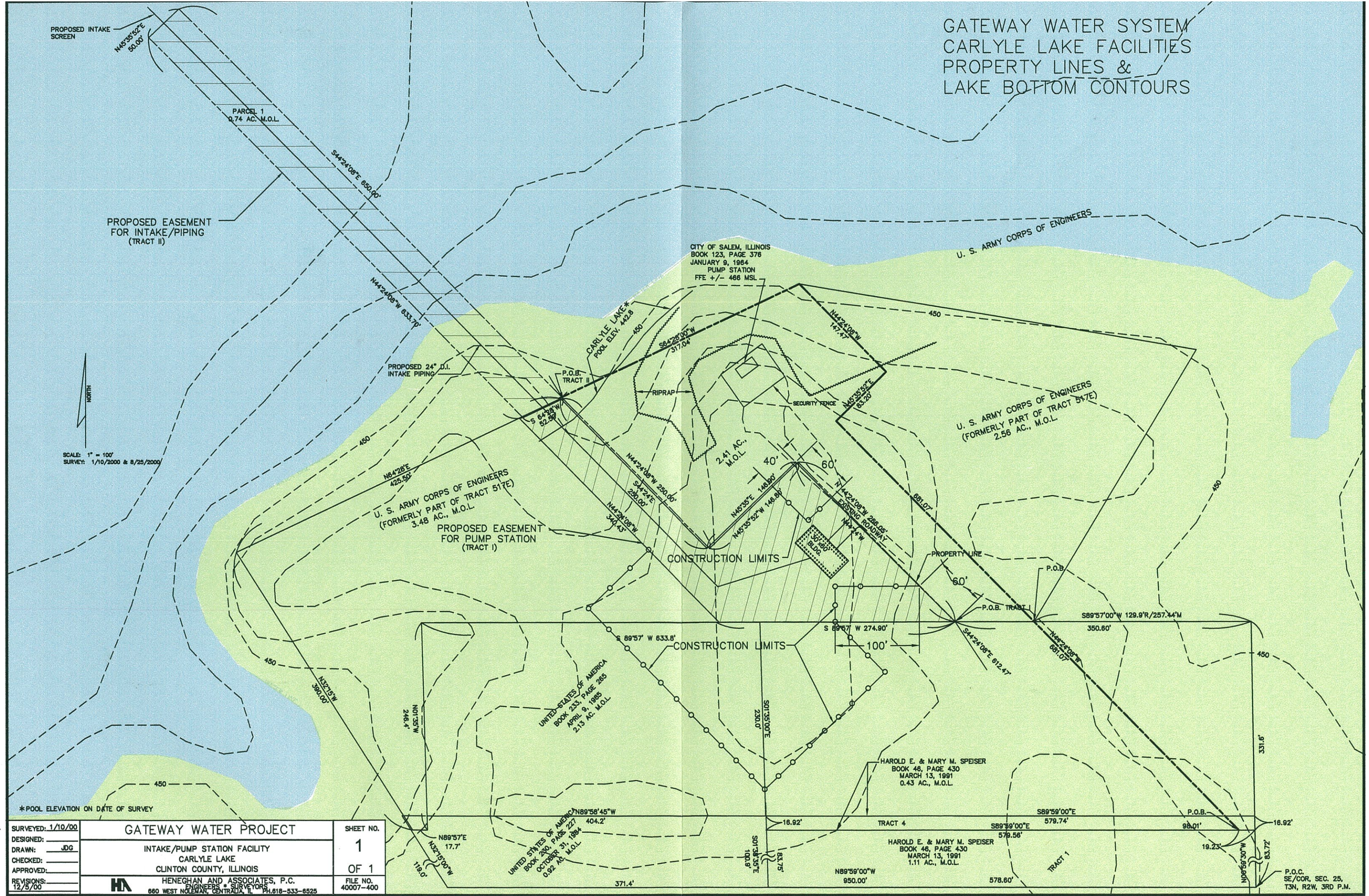
# 38089F33



Scale 1:3875



GATEWAY WATER SYSTEM  
 CARLYLE LAKE FACILITIES  
 PROPERTY LINES &  
 LAKE BOTTOM CONTOURS



CITY OF SALEM, ILLINOIS  
 BOOK 123, PAGE 376  
 JANUARY 9, 1984  
 PUMP STATION  
 FFE +/- 466 MSL

U. S. ARMY CORPS OF ENGINEERS

U. S. ARMY CORPS OF ENGINEERS  
 (FORMERLY PART OF TRACT 517E)  
 2.56 AC., M.O.L.

U. S. ARMY CORPS OF ENGINEERS  
 (FORMERLY PART OF TRACT 517E)  
 3.48 AC., M.O.L.

UNITED STATES OF AMERICA  
 BOOK 223, PAGE 285  
 APRIL 9, 1985  
 2.13 AC. M.O.L.

HAROLD E. & MARY M. SPEISER  
 BOOK 46, PAGE 430  
 MARCH 13, 1991  
 0.43 AC., M.O.L.

HAROLD E. & MARY M. SPEISER  
 BOOK 46, PAGE 430  
 MARCH 13, 1991  
 1.11 AC., M.O.L.

UNITED STATES OF AMERICA  
 BOOK 200, PAGES 221  
 OCTOBER 31, 1984  
 0.92 AC. M.O.L.

P.O.C.  
 SE/COR. SEC. 25,  
 T3N, R2W, 3RD P.M.

SCALE: 1" = 100'  
 SURVEY: 1/10/2000 & 8/25/2000

\* POOL ELEVATION ON DATE OF SURVEY

|                    |  |           |
|--------------------|--|-----------|
| SURVEYED: 1/10/00  | <b>GATEWAY WATER PROJECT</b>                   | SHEET NO. |
| DESIGNED: _____    | INTAKE/PUMP STATION FACILITY                   | <b>1</b>  |
| DRAWN: JDG         | CARLYLE LAKE                                   | OF 1      |
| CHECKED: _____     | CLINTON COUNTY, ILLINOIS                       | FILE NO.  |
| APPROVED: _____    | <b>HENEGHAN AND ASSOCIATES, P.C.</b>           | 40007-400 |
| REVISIONS: 12/5/00 | ENGINEERS & SURVEYORS                          |           |
|                    | 680 WEST NOLEMAN, CENTRALIA, IL 61818-533-6525 |           |