



RECREATION FACILITY REHABILITATION ASSESSMENT

**Volume 1:
Public**

**Volume 2:
Non-Internet
Public**

Niagara Power Project FERC No. 2216

Prepared for:

New York Power Authority

Prepared by:

E/PRO Engineering & Environmental Consulting, LLC

Copyright © 2005 New York Power Authority

August 2005

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

TABLE OF CONTENTS

EXECUTIVE SUMMARY ix

GLOSSARY xii

1.0 INTRODUCTION..... 1-1

1.1 Objectives 1-2

1.2 Recreational Resources..... 1-2

1.3 Study Area 1-3

1.4 Inspection and Investigative Methods 1-3

1.4.1 Site Visits 1-4

1.4.2 Basis of Rehabilitation Recommendations 1-5

2.0 RESERVOIR STATE PARK..... 2-1

2.1 Park Description 2-1

2.1.1 General Site and Infrastructure 2-2

2.1.2 Amenities 2-8

2.2 Summary of Recommendations..... 2-18

2.2.1 Main Parking Area 2-18

2.2.2 Ballfield Parking Lot..... 2-18

2.2.3 Soccer/Sled Parking 2-19

2.2.4 Walkway System 2-19

2.2.5 Drainage Repair 2-19

2.2.6 Site Security Lighting 2-20

2.2.7 Picnic Area..... 2-20

2.2.8 Basketball, Roller Hockey and Tennis Courts 2-20

2.2.9 Playground 2-21

2.2.10 Softball Fields 2-21

2.2.11 Soccer Fields 2-21

2.2.12 Sledding 2-21

2.2.13 Open Space 2-22

2.2.14 Restroom Rework to Maintenance Use..... 2-22

2.2.15 Maintenance Building 2-22

3.0 ARTPARK STATE PARK..... 3-1

3.1 Park Description 3-1

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

3.1.1	General Site.....	3-2
3.1.2	Amenities	3-2
3.2	Summary of Recommendations.....	3-7
3.2.1	Lewiston Branch Gorge Trail and Fishing Access Trail.....	3-7
3.2.2	Staircases 1, 2 and 3	3-7
4.0	DEVIL’S HOLE STATE PARK.....	4-1
4.1	Park Description	4-1
4.1.1	General Site and Infrastructure	4-3
4.1.2	Amenities	4-8
4.2	Summary of Recommendations.....	4-19
4.2.1	Main Parking Lot	4-19
4.2.2	Secondary Parking Lot.....	4-19
4.2.3	Walkways.....	4-19
4.2.4	Barriers: Gorge Fencing.....	4-20
4.2.5	Picnic Area: Main Park Area	4-20
4.2.6	Picnic Area: Secondary Parking Area.....	4-20
4.2.7	Fishing Access: Gorge Stairs	4-20
4.2.8	Site Lighting.....	4-20
4.2.9	Trail Condition: Initial Inspection and Maintenance	4-21
4.2.10	Restroom Rehabilitation	4-21
5.0	WHIRLPOOL STATE PARK.....	5-1
5.1	Park Description	5-1
5.1.1	General Site and Infrastructure	5-2
5.1.2	Amenities	5-7
5.2	Summary of Recommendations.....	5-12
5.2.1	Parking Area	5-12
5.2.2	Walkways.....	5-12
5.2.3	Gorge Railings and Foundations.....	5-12
5.2.4	Picnic Area.....	5-13
5.2.5	Play Area.....	5-13
5.2.6	Fishing Access Stairs	5-13
5.2.7	Trail Condition: Initial Inspection and Maintenance	5-13
6.0	NIAGARA FALLS STATE PARK	6-1
6.1	Park Description	6-1
6.1.1	General Site and Infrastructure and Amenities	6-2

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

7.0	DISCOVERY CENTER PARK.....	7-1
7.1	Park Description	7-2
7.1.1	General Site.....	7-2
7.2	Summary of Recommendations.....	7-3
7.2.1	Entrance Driveway Curbing.....	7-3
8.0	UPPER NIAGARA RIVER OBSERVATION SITE.....	8-1
8.1	Park Description	8-1
8.1.1	General Site and Infrastructure	8-2
8.2	Summary of Recommendations.....	8-7
8.2.1	Acceleration and Deceleration Driveways.....	8-7
8.2.2	Perpendicular Driveway.....	8-7
8.2.3	Parking Area	8-7
8.2.4	Eastern Gate Tower Access Walkways.....	8-7
8.2.5	Riverfront Walkway.....	8-8

FIGURES

(Following Tables)

Figure 2.1-1.....	2-23
Reservoir State Park Existing Site Plan.....	2-23
Figure 2.1.1.1-1.....	2-24
Main and Ballfield Parking Lots, Reservoir State Park.....	2-24
Figure 2.1.1.3-1.....	2-25
Soccer/Sledding Parking Area, Reservoir State Park	2-25
Figure 2.1.1.5-1.....	2-26
Emergency Access Road and Site Drainage, Reservoir State Park	2-26
Figure 2.1.1.7-1.....	2-27
Basketball Court and Picnic Area, Reservoir State Park	2-27

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Figure 2.1-2 **2-28**
 Recommended Reservoir State Park Redevelopment Plan 2-28

Figure 2.1.2.1-1 **2-29**
 Reservoir State Park Pavilion Floor and elevation Plan 2-29

Figure 2.1.2.2-1 **2-30**
 Basketball/Tennis Courts and Playground, Reservoir State Park 2-30

Figure 2.1.2.3-1 **2-31**
 Playground and Softball Field, Reservoir State Park 2-31

Figure 2.1.2.4-1 **2-32**
 Reservoir State Park Restroom Floor and elevation Plan 2-32

Figure 2.1.2.5-1 **2-33**
 Soccer Fields and Sledding Hill, Reservoir State Park 2-33

Figure 2.1.2.10-1 **2-34**
 Reservoir State Park Maintenance Garage Floor Plan 2-34

Figure 3.1.1-1 **3-8**
 Artpark Existing Site Plan 3-8

Figure 3.1.2.1-1 **3-9**
 Views of Artpark 3-9

Figure 3.1.2.1-2 **3-10**
 Views of Lewiston Branch Gorge Trail, Artpark 3-10

Figure 3.1.2.1-3 **3-11**
 Timber Bridge and El, Artpark 3-11

Figure 3.1.2.2-1 **3-12**
 Views of Staircase 1, Artpark 3-12

Figure 3.1.2.2-2 **3-13**
 Views of Staircase 2, Artpark 3-13

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Figure 3.1.2.2-3 3-14
Views of Staircases 2 and 3, Artpark..... 3-14

Figure 3.1.2.2-4 3-15
Views of Staircase 3, Artpark..... 3-15

Figure 3.1.2.2-5 3-16
Foot of Staircase 3, Artpark..... 3-16

Figure 3.1.2.3-1 3-17
Plan and Elevation, Artpark El 3-17

Figure 3.1.2.3-2 3-18
Floor Plan, Artpark El..... 3-18

Figure 3.1.2.3-3 3-19
Views of the El, Artpark 3-19

Figure 3.1.2.3-4 3-20
Details of El Construction I, Artpark..... 3-20

Figure 3.1.2.3-5 3-21
Details of El Construction II, Artpark 3-21

Figure 4.0-1 4-22
Devil’s Hole State Park Existing Site Plan 4-22

Figure 4.1.1.1-1 4-23
Mechanical Room and Exit Driveway, Devil’s Hole State Park 4-23

Figure 4.1.1.1-2 4-24
Parking Areas, Devil’s Hole State Park..... 4-24

Figure 4.1.1.3.1-1 4-25
Views of Gorge Rim, Devil’s Hole State Park 4-25

Figure 4.1.2.2-1 4-26
Views of Fishing Access Stairs, Devil’s Hole State Park..... 4-26

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Figure 4.1.2.4-1 4-27
Two Views of Restroom Building, Devil’s Hole State Park4-27

Figure 4.1.2.4-2 4-28
Restroom Entrances, Devil’s Hole State Park4-28

Figure 4.1.2.4-3 4-29
Restroom Construction Drawings, Devil’s Hole State Park4-29

Figure 4.1.2.4-4 4-30
Exterior and Interior Views, Restrooms, Devil’s Hole State Park4-30

Figure 4.1.2.4-5 4-31
Details of Exterior, Restroom Building, Devil’s Hole State Park4-31

Figure 4.1.2.5-2 4-32
Lavatories, Devil’s Hole State Park4-32

Figure 4.1.2.5-3 4-33
Restroom Partitions, Devil’s Hole State Park4-33

Figure 4.1.2.5-4 4-34
Restroom Mechanical Room, Devil’s Hole State Park4-34

Figure 4.1.2.5-5 4-35
Mechanical Room and Men’s Room, Devil’s Hole State Park4-35

Figure 4.1.2.5-6 4-36
Interior of Men’s Room, Devil’s Hole State Park4-36

Figure 4.1.2.5-7 4-37
Views of Men’s Room Interior, Devil’s Hole State Park4-37

Figure 4.1.2.5-8 4-38
Devil’s Hole State Park Proposed Restroom Floor Plan4-38

Figure 5.1-1 5-14
Whirlpool State Park, Existing Site Plan5-14

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Figure 5.1.1.1-1 **5-15**
 Gorge Rail Fencing and Parking, Whirlpool State Park 5-15

Figure 5.1.1.1-2 **5-16**
 Exterior Views, Whirlpool State Park 5-16

Figure 5.1.1.3-1 **5-17**
 Fishing Access Stairs and Rail Fencing, Whirlpool State Park 5-17

Figure 5.1.2.2-1 **5-18**
 Children’s Play Area, Whirlpool State Park 5-18

Figure 5.1.2.3-1 **5-19**
 Fishing Access Stairs, Whirlpool State Park 5-19

Figure 5.1.2.5-1 **5-20**
 East and West Views of Restroom Building, Whirlpool State Park 5-20

Figure 5.1.2.5-2 **5-21**
 North View of Restroom Building, Whirlpool State Park 5-21

Figure 5.1.2.5-3 **5-22**
 Renovations to the Whirlpool Park Shelter I 5-22

Figure 5.1.2.5-4 **5-23**
 Renovations to the Whirlpool Park Shelter II 5-23

Figure 5.1.2.6-1 **5-24**
 Views of Restroom Interior, Whirlpool State Park 5-24

Figure 5.1.2.6-2 **5-25**
 Men’s Room Interior, Picnic Shelter, Whirlpool State Park 5-25

Figure 7.1-1 **7-4**
 Discovery Center Museum Building 7-4

Figure 8.1.1.1-1 **8-9**
 Entrance and Parking Area, Upper Niagara River Observation Site 8-9

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Figure 8.1.1.1-2 **8-10**
Driveway and Trail, Upper Niagara River Observation Site 8-10

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

EXECUTIVE SUMMARY

This assessment was performed to determine the current physical condition of recreation facilities within the project boundary, and at project-related Office of Parks, Recreation and Historic Preservation (OPRHP) facilities.

Assessments at each facility were performed at one of two levels of detail based on circumstances and need as determined by park management. The first level of assessment involved inspection; this entailed the visual assessment of an amenity or an element thereof for the purpose of making observations and forming opinions on condition. The second level of assessment involved investigation; this entailed the provisions of inspection, with additional extensive data collection.

Parks that were generally subject to investigation include Reservoir, Earle W. Brydges Artpark, Devil's Hole, and Whirlpool State Parks. Parks that were generally subject to inspection include Niagara Falls State Park, Discovery Center, and the Upper Niagara River Observation Site (NYPA Intake Structures).

Site assessments and subsequent recommendations were performed by a registered professional engineer, Pamela Kelley, P.E., and a licensed plumber, Emery Doughty. The objective of recommendations is for each subject of assessment to comply with building codes and ADA regulations, and to achieve a 30-year life.

Investigation of Reservoir State Park was performed with a group of OPRHP representatives. Their opinions were considered when making recommendations for the site. A Redevelopment Plan has been created for the rehabilitation of this park. It is recommended within this report that the surface of the main, ballfield, and soccer/sledding parking lots be removed and replaced. The latter should be expanded and all should include grading for drainage, striping, ADA parking, and signage. Ditching and culvert repair/installation along Witmer road is suggested to achieve better site drainage. The walkways should be reconstructed to achieve ADA compliance. Site lighting should be installed at parking areas, along walkways, and near some amenities. Landscaping measures are recommended to enhance open space

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

throughout the park. Several rehabilitation measures are suggested to improve the picnic area, basketball/roller-hockey/tennis courts, playground, softball fields, soccer fields, and sledding hill. Three new restroom installations are suggested in association with the picnic, softball field and soccer field areas, respectively; the existing restroom should be reworked to serve as a maintenance building. The existing maintenance building should be demolished and replaced.

Assessment of the Earle W. Brydges Artpark State Park (Artpark) was limited to investigation of river access trails and three river access stairways. Also, an inspection of the “EI”, an elevated walkway, was performed. The assessment of the EI determined that it needs to be replaced, but provisions for its replacement are outside the scope of this assessment, therefore no recommendations regarding the EI are presented. It is recommended within this report that the three river access stairways be removed and replaced. Erosion along the Lewiston Branch Gorge Trail and fishing access trail should be repaired.

Investigation of Devil’s Hole State Park was performed with a group of OPRHP representatives. Their opinions were considered when making recommendations for the site. It is recommended within this report that the surface and curbing of the main and secondary parking lots, and the entrance and exit driveways be removed and replaced. The lots should be striped, including delineations for ADA parking. ADA signage should be installed. Site lighting should be installed at each parking lot and at the restroom. Existing walkways should be repaired to achieve ADA compliance; walkways should be installed to access the men’s restroom and the viewing area. The stone piers of the gorge fencing should be repaired, and the railing should be removed and replaced. Each picnic area should be furnished with new tables and grills. The fishing access stairs should be repaired and handrails should be installed. The Ongiara trail within the park boundary should be inspected and maintained. The restroom should be subject to substantial rehabilitation measures.

Investigation of Whirlpool State Park was performed with a group of OPRHP representatives. Their opinions were considered when making recommendations for the site. It is recommended within this report that the parking area be stripped, re-graded and resurfaced. Erosion areas around the park should be repaired. Existing walkways should be altered, and some new walkways should be installed for the purpose of achieving ADA compliance. The gorge railing should be removed and replaced; erosion near the railing should be repaired. The picnic shelter should be repaired, and a second shelter should be

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

installed. New swing-sets and an ADA compliant hard-surface transfer area should be installed at the play area. The fishing access stairs should be repaired, cleaned and maintained. The Ongiara trail within the park boundary should be inspected and maintained. The restroom was recently renovated and no recommendations were formed as a result of this assessment.

Inspection of Niagara Falls State Park was performed with a group of OPRHP representatives. This park is subject to ongoing assessment and rehabilitation by OPRHP. This report presents general observations of some site amenities, and refers to OPRHP rehabilitation measures performed or planned. The only recommendation for this park is in reference to the railing and walkway associated with Terrapin Point, on Goat Island. It is recommended that the railing be removed and replaced, and that the walkway be replaced to achieve ADA compliance.

Discovery Center is currently in the midst of a rehabilitation program by OPRHP. Assessment at this site for the purpose of this report was limited to inspection of the curbing along the entrance driveway. The radius of the existing curb is too sharp to allow busses to turn into the driveway without running over the curb. It is recommended in this report that the curb be removed and reconstructed at a larger radius to accommodate bus turning.

The Upper Niagara River Observation Site was subject to inspection of recreation-related site infrastructure. It is recommended in this report that the surface and curbing of the access driveways, the riverfront walkway, and the parking lot be removed and replaced. The new parking surface should be striped, with delineations and signage for ADA parking. The cobblestone walkways to the eastern gate tower should be repaired.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

GLOSSARY

<u>Amenity</u>	An area or structure that serves and/or enhances public attraction and use.
<u>Accessible/accessibility</u>	Relating to ADA compliance.
<u>Inspection</u>	Includes visitation to visually assess an amenity or element thereof. Overall opinions are formed, but detailed data is not collected. Comments from Park Officials are noted.
<u>Investigation</u>	Includes inspection activities <i>and</i> extensive data collection (materials, measurements, observations, condition, etc).
<u>Element</u>	A singular component, or collection of components representing part of an amenity.
<u>Fair Condition</u>	The amenity or element thereof shows visible wear and/or minor damage. No distress is visible. The amenity or element thereof is serving the intended purpose and could be repaired to good condition.
<u>Good Condition</u>	The amenity or element thereof has little visible wear, distress or damage and is serving its intended purpose.
<u>Infrastructure</u>	For the purposes of this report, this refers to parking areas, driveways, roadways, walkways, bridges, drainage and lighting.
<u>Installation</u>	The construction of a new amenity where none currently exists.
<u>Poor Condition</u>	The amenity or element thereof is in a degraded state: worn, distressed or deteriorated. It may or may not serve its intended purpose, but cannot reasonably be repaired to good condition.
<u>Repairs</u>	Patching or restoration of materials, elements, equipment or fixtures for the purpose of maintaining good condition.
<u>Renovations</u>	Reconfiguration, removal and replacement, or covering of existing materials, elements, equipment or fixtures using new materials that serve the same purpose.
<u>Reconstruction</u>	The complete replacement of an amenity or element thereof, or work where any of the following occurs: <ul style="list-style-type: none">• Reconfiguration of space which affects the means of egress shared with adjacent spaces.• The total work area exceeds two-thirds of the amenity area.• The work area affects 100 percent of the occupancy.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

<u>Rehabilitate</u>	To improve the condition of an existing amenity or element thereof to improve its benefits, and/or to provide a 30-year life cycle.
<u>Sight Distance</u>	The distance of visibility at the entrance/egress of an access road onto the main road.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

1.0 INTRODUCTION

The New York Power Authority (NYPA) is engaged in the relicensing of the Niagara Power Project in Lewiston, Niagara County, New York. The present operating license of the plant expires in August 2007. As part of its preparation for the relicensing of the Niagara Project, NYPA is developing information related to the ecological, engineering, recreational, cultural, and socioeconomic aspects of the Project.

The 1,880-MW (firm capacity) Niagara Power Project (NPP) is one of the largest non-federal hydroelectric facilities in North America. The Project was licensed to the Power Authority of the State of New York (now the New York Power Authority) in 1957. Construction of the Project began in 1958, and electricity was first produced in 1961.

The Project has several components. Twin intakes are located approximately 2.6 miles above Niagara Falls. Water entering these intakes is routed around the Falls via two large low-head conduits to a 1.8-billion-gallon forebay, lying on an east-west axis about 4 miles downstream of the Falls. The forebay is located on the east bank of the Niagara River. At the west end of the forebay, between the forebay itself and the river, is the Robert Moses Niagara Power Plant (RMNPP), NYPA's main generating plant at Niagara. This plant has 13 turbines that generate electricity from water stored in the forebay. Head is approximately 300 feet. At the east end of the forebay is the Lewiston Pump Generating Plant (LPGP). Under non-peak-usage conditions (i.e., at night and on weekends), water is pumped from the forebay via the plant's 12 pumps into the 22-billion-gallon Lewiston Reservoir, which lies east of the plant. During peak usage conditions (i.e., daytime Monday through Friday), the pumps are reversed for use as generators, and water is allowed to flow back through the plant, producing electricity. The forebay therefore serves as headwater for the RMNPP and tailwater from the LPGP. South of the forebay is a switchyard, which serves as the electrical interface between the Project and its service area.

Project related lands and waters provide many recreational opportunities including picnicking, hiking, sightseeing, fishing, and field sports. NYPA constructed several recreational facilities when the

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Niagara Power Project was built. By agreements, these facilities are operated and maintained by New York State Office of Parks, Recreation and Historic Preservation (OPRHP) or municipalities.

The Recreational Facility Rehabilitation Assessment was undertaken to evaluate existing facilities for infrastructure condition and adequacy for continued facility usage. NYPA engaged E/PRO Engineering & Environmental Consulting, LLC to assess recreational facilities, present findings, and recommend improvements.

1.1 Objectives

This assessment was to determine the current physical condition of recreation facilities in the project boundary and project-related OPRHP facilities.

This assessment includes a current physical condition inventory of the amenities and elements at each facility investigated, and it identifies specific amenities and elements that in the opinion of the engineer conducting the assessment require rehabilitation. Recommendations are made as needed, and are based on an intent to provide a thirty year life for all amenities.

1.2 Recreational Resources

Several recreational resources are made available by NYPA and OPRHP in the vicinity of the Niagara Power Project. For the purposes of this assessment, only certain facilities were selected for assessment. These facilities were selected in cooperation with OPRHP representatives. Recreational facilities selected for assessment are those where rehabilitation measures would be of maximum public benefit. The recreational facilities that were ultimately assessed include:

- Reservoir State Park,
- Earl W. Brydges Artpark State Park,
- Devil's Hole State Park,
- Whirlpool State Park,

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

- Niagara Falls State Park,
- Discovery Center, and
- Upper Niagara River Observation Site (NYPA Intake Structures)

1.3 Study Area

The study area for this assessment included - recreation facilities in the FERC project boundary and other project-related OPRHP facilities on the American side of the Niagara River from the Peace Bridge to the mouth at Lake Ontario.

1.4 Inspection and Investigative Methods

There were two degrees of assessment defined: facilities either underwent inspection or investigation. Inspections required site visitation and general observation without the collection of extensive data. Sites selected for inspections were visited with NYPA and OPRHP personnel; observations, comments, concerns and suggestions were the primary product of these inspections. Investigations required site inspection as well as the collection of extensive engineering data. Numerous photos were taken at all sites to document current conditions.

A registered professional engineer and a licensed plumber, performed all site assessments and subsequent recommendations.

Structural quality, serviceability, and life expectancy of facility infrastructure, amenities and elements were evaluated using several considerations. Among these were standards defined by Building Code of New York State (building code) compliance, and the Americans with Disabilities Act (ADA). Assessments were based on a visual evaluation of amenities and did not involve destructive testing, sampling, or exposure of concealed elements.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Site assessments considered the condition of site infrastructure (roads, walkways), amenities, mechanical systems and electrical services. Amenities were considered for usability, condition and access. ADA compliance was evaluated for major site amenities.

Following site visits, the collected notes and data were evaluated. Based on these materials, and code requirements that prescribe the extent compliance must be met, rehabilitative measures for each site were recommended.

1.4.1 Site Visits

Reservoir, Devil's Hole, Whirlpool and Niagara State Parks, and the Discovery Center were each visited with OPRHP officials. The purpose of their inclusion was to gain a better understanding of how the facilities were used and to acquire infrastructure condition data. Earl W. Brydges Artpark State Park and the Upper Niagara River Observation Site were visited without accompaniment from OPRHP officials.

It was found that some facilities require major rehabilitation of some elements, or that new amenities may be necessary to enhance facility usage. Other facilities require only minor work to achieve code compliance and greater usability.

During a thirty year facility life, repair, replacement and maintenance of some amenities or elements are expected. Some site amenities are newly renovated and have a substantial life though possibly not a full thirty years. In such instances, recommendations for renovations have not been made. Some elements, such as pavement, some shingle roofs and paint do not have a thirty year life and should be evaluated on a regular maintenance program schedule.

Niagara Falls State Park and Discovery Center Park were subject to inspections: they were each toured with OPRHP officials. OPRHP officials did not request further investigations at these facilities. Observations, notes and photos were gathered, but no detailed data collection was performed.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

1.4.2 Basis of Rehabilitation Recommendations

Rehabilitation recommendations provided herein are offered as the opinions of the authors of this report: they are based on a goal of achieving code compliance, good engineering practice, and functionality of the recreational facilities and associated amenities.

Items are identified which do not meet current building or accessibility codes, however, such identification of deficiencies does not suggest that addressing the issue is required by law. The use of existing structures that pre-date code adoption is permitted.

Proposed work on structures is classified by the building code as repair, renovation, or reconstruction; each classification is associated with discrete code conformance requirements.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

2.0 RESERVOIR STATE PARK

Reservoir State Park was developed during the construction of the Niagara Power Project. The park is located south of the Lewiston Reservoir in the towns of Lewiston and Niagara. It encompasses 133 acres and is bounded by the Lewiston Reservoir, Witmer Road and I-190. Military Road bisects the park. The area around the park is dense mixed-use development.

The park is operated and maintained by OPRHP. The park was viewed with three OPRHP employees. Their comments noted herein are attributed to "Park Officials".

OPRHP data indicate attendance at the park for the 2002-2003 season was 97,945 visitors. The site is open dawn to dusk year-round. There is no fee for use. Though the park is a State Park, it functions mostly as a municipal park for area residents. Park Officials state that most visitors arrive by car.

2.1 Park Description

Reservoir State Park is a 133-acre park consisting of open grassy flat lawn area with occasional mature overstory coniferous and deciduous trees. It provides a generous open space for many activities, such as running, golfing, model plane flying, and dog walking. In addition to this open space, the park offers a variety of amenities that attract and/or enhance public use at the site. These amenities include:

- Eight softball fields,
- A picnic area with ten grills and one shelter,
- Two paved basketball courts,
- Two paved roller hockey courts,
- Two paved tennis courts,
- Fourteen soccer fields,
- A sledding hill,
- Restroom facilities,
- A maintenance building,

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

- Three parking lots, and
- A playground

The existing site plan for the park is presented in [Figure 2.1-1](#) of this report.

Most of the park amenities are accessed by short driveways that originate from Witmer Road and extend, respectively, to two parking areas on the south side of the park. Sledding and soccer field entrances are off Military Road, a public two-lane highway which bisects the park. They are accessed via a NYPA-owned driveway that leads into a parking area at the northwest corner of the park. There are several paved emergency roadways that access the southeast end of the park.

A suggested Redevelopment Plan to rehabilitate Reservoir State Park is shown on [Figure 2.1-2](#). The plan addresses many of the weakest aspects of this site, including lack of visual appeal, outdated amenities, lack of ADA compliance, insufficient site lighting and insufficient restroom facilities. Recommendations are based on the rehabilitation or installation of amenities or elements as prescribed within the recommended Redevelopment Plan.

2.1.1 General Site and Infrastructure

The park site consists of a large open flat mown grass area with occasional mature overstory trees. Areas of infrastructure that are evaluated in this assessment are the main parking area, ballfield and soccer parking areas, walkways, roadways, drainage and lighting.

Overall, the park has received good day-to-day maintenance such as mowing, cleaning and repairs. Due to the inherent effects of time and use, the original park infrastructure and amenities show visible deterioration, despite diligent maintenance efforts by OPRHP. The park atmosphere and usability would be greatly improved by implementing each of the rehabilitation measures described in this report.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

2.1.1.1 Main Parking Area

The main parking area is a 375- by 450-foot lot located in the southeast corner of the park. At first glance, the parking lot appears to have a gravel surface, but upon closer inspection old pavement/aggregate matrix is visible in some areas. The pavement is in poor condition with some large pot holes and cracking ([Figure 2.1.1.1-1](#)).

The main access to the parking area is a 20-foot wide paved driveway off Witmer Road. Sight distance to the right on Witmer Road is good; at the time of assessment, construction equipment blocked the left side, but sight distance appeared to be satisfactory. A secondary maintenance driveway is located off Military Road near the maintenance building.

The parking lot is essentially flat with no subsurface drainage system. Surface drainage flows across the lot and discharges to a drainage ditch near the entrance driveway along Witmer Road.

A paved walkway on the northwest side leads to the picnic area, ball courts and restroom. There are no ADA (Americans with Disabilities Act) curb cuts in the walkway or designated parking spaces in the parking lot. The main parking lot area has no security lighting.

It is recommended that the access driveway, secondary driveway, parking area and walkway be reconstructed. Reconstruction should include analysis of the existing base soils for frost activity, re-grading for surface drainage, crowning the access driveways, landscaping, installation of catch basins and drainage system, designated ADA parking, signage, curb cuts, walkways, repaving and striping.

2.1.1.2 Ballfield Parking Area

The ballfield parking area is a 120- by 225-foot lot located in the south-center of the park. The pavement surface appears to be 5 to 7 years old and in fair condition ([Figure 2.1.1.1-1](#)). The pavement is a coarse stone asphalt binder material from which most of the asphalt has evaporated exposing the aggregate.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

Access to the lot is a 20-foot wide paved driveway off Witmer Road. Sight distance is good in each direction at the entrance driveway. The parking lot is not curbed and does not connect to the park walkways. The parking lot has no security lighting. No ADA parking is designated as none of the lot is striped.

The parking area slopes downward approximately two feet towards the entrance. No subsurface drainage is evident. Surface drainage flows down the lot and discharges to a drainage ditch near the driveway entrance along Witmer Road.

Park Officials stated the parking lot is heavily used for adult town softball leagues. The lot size is inadequate and cars park along Witmer Road and on the grass adjacent to the lot during softball season. If the parking lot were striped, it could accommodate about 60 vehicles with a single center row.

It is recommended that the parking lot size be increased to 225- by 225 feet to accommodate about 120 vehicles. Reconstruction and expansion should include re-grading for surface drainage, additional pavement surface for increased lot capacity, an additional driveway for traffic circulation, lot striping, and security lighting.

2.1.1.3 Soccer/Sled Parking

The Soccer/Sledding parking area is a 60- by 200-foot paved lot located at the toe of the Lewiston Reservoir Dike in the northwest corner of the park ([Figure 2.1.1.3-1](#)). The main access to the parking area is a 20-foot wide paved driveway off a road that originates at Military Road. Sight distance is adequate at the intersection of this road and Military Road.

The parking lot is essentially flat with no subsurface drainage system. Surface drainage flows southward across the lot and discharges to a drainage ditch that crosses the access road.

The parking lot is bounded by granite curbing except on the southerly end. A paved walkway on the easterly side of the lot connects to the sledding hill access road. Pavement surface on the entrance

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

driveway, parking lot and walkway appears to be 15 to 20 years old with extensive surface cracking. No heaving of pavement in the parking lot is evident, suggesting that the gravel base is not frost-active.

There are no ADA curb cuts along the paved walkway. Also, no ADA parking is designated as none of the lot is striped. If the lot were striped, it would accommodate about 50 vehicles. The parking area has no security lighting.

OPRHP officials stated that the soccer fields are used by children's summer evening leagues. The parking area is not adequate. People park along Military Road and the dirt road to the east of the soccer fields. Buses drop students off and turn around in the adjacent cemetery driveway. The existing parking area is not laid out to easily accommodate expansion, bus turning or safe student drop-off.

It is recommended that the access driveway, parking area and walkway be reconstructed. Reconstruction should include analysis of the existing base soils for frost activity, re-grading for surface drainage, crowning the access driveways, designated ADA parking, signage, curb cuts, repaving and striping. The paved walkway should be removed and replaced with new gravel base and thicker pavement.

Installation of a new 140- by 170-foot parking lot for 50 cars and a bus drop-off is recommended on the east end of the soccer fields. The proposed driveway would be accessed via a short unnamed road, off of Military Road.

2.1.1.4 Walkways

Paved walkways lead from the main parking lot to the restroom, and from the soccer/sledding parking lot to the sledding hill. Neither walkway is ADA accessible due to lack of curb cuts from the parking lot.

The walkway from the main parking lot to the restroom varies from 5 feet to 6 feet wide. It is approximately 1100 feet long, and it is in good condition. The slope is reasonably flat, but was not field-determined for ADA slope compliance along its length.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

ADA compliant hard surface walkways are not provided to most of the site amenities throughout the park. ADA regulations require "At least one accessible route shall connect accessible buildings, facilities, elements and spaces that are on the same site" ([USDOJ and USDOT 1994](#)).

The Recommended Redevelopment Plan includes suggestions for construction of an ADA compliant pathway that loops the park and connects major amenities. The pathway could be used for walking, running and roller-blading. The loop walkway would have seating and planting areas in several locations. In addition, it is recommended that the proposed walkways be of adequate width to pass vehicles for maintenance and emergency purposes.

2.1.1.5 Roadways

An emergency/maintenance roadway connects Witmer Road and the restroom; it then continues on to the main parking lot ([Figure 2.1.1.5-1](#)). It is six feet wide and about 1,200 feet long and it is in fair condition. Part of it is used as a walkway from the main parking lot to the restroom.

A 750-foot long road, for NYPA access to the top of the Reservoir, is located at the north end of the soccer/sledding parking lot. It runs diagonally up the Dike, through the sledding spectator area, and continues eastward to the top of the reservoir. The pavement is in poor condition and has extensive cracking.

It is recommended that a pipe gate be installed at the base of the access road to the top of the reservoir; the purpose of this gate would be to restrict unauthorized vehicles from using this road. Also, the road should be resurfaced with new pavement.

It is recommended that the new pathway system prescribed by the Redevelopment Plan be of adequate width to pass vehicles. This would allow the walkways to be used as maintenance and emergency roads if necessary. Existing roads would be incorporated into the new walkways.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

2.1.1.6 Drainage

At the Reservoir State Park site, the grade of the park rises upward several feet from Witmer Road to the restroom and ballfields. Along Witmer Road, there is an open ditch and culvert that directs water across Witmer Road to the south. The culvert/ditch contains water and cattails: it appears to be blocked ([Figure 2.1.1.5-1](#)). The balance of the site has very little provision for subsurface or surface drainage.

Discussion in this section is limited specifically to drainage for parking lots, walkways, and driveways.

The main and ballfield parking lots only drain toward their respective entrances, encouraging icing conditions. There is no positive drainage around the ball courts, ball fields or restroom.

Lack of drainage can lead to a variety of problems such as excessive surface water limiting usability, a raised water table, soil heaving, and icing. It is advantageous to remove water rapidly and drop the water table where water, ice and frost activity would limit usage or increase maintenance.

All ditches associated with the park should be cleaned, and culverts should be repaired or replaced to increase site drainage. This would create positive water flow, encourage soil dewatering under the parking areas to protect pavement, and limit sedimentation and ponding of water. When the parking areas are rebuilt, provision for quickly removing surface water via catch basins is recommended to limit icing and pavement damage from water. Walkways should be pitched to the side to drain. Driveways should be crowned and ditched on each side.

2.1.1.7 Lighting

There is no working lighting at the Reservoir State Park facility. Several types of obsolete street lamps are installed around the tennis/basketball courts but - are no longer functional ([Figure 2.1.1.7-1](#)). Lighting is often associated with safety. The park is within a highly urbanized setting and it is heavily

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

used for numerous activities. Some of these activities extend into evening hours. Though problems have not been mentioned by Park Officials, it was noted that policing the area is difficult at night.

The recommended Redevelopment Plan for the site includes suggestions for security lighting adjacent to parking lots and restroom buildings, major walkways and other areas of public usage or safety concerns. Site lighting increases security and safety by discouraging mischief. Night visibility would allow for better site policing. Lighting design considerations include uniform illumination, light trespass, glare and light pollution. Lighting would be provided by a variety of fixtures including parking lot lighting, attractive street lamps and exterior lighting. All lighting would be selected to enhance the theme of the park.

2.1.2 Amenities

Reservoir State Park offers several amenities for structured activities requiring facilities, fields or reserved spaces. These amenities include a picnic area and shelter, children's playground, tennis, roller hockey and basketball courts, eight softball fields, fourteen soccer fields and a sledding hill.

2.1.2.1 Picnic Area

The picnic area is located northwest of the main parking area on a well-kept lawn with mature shade trees ([Figure 2.1.1.7-1](#)). It contains a wooden picnic shelter, sixteen picnic tables, and ten (nine small and one large) steel charcoal grills.

The shelter is a rather plain open wood framed structure with a wood truss roof and asphalt shingles. The structure is in fair condition, but the wood column bases are rotted due to direct contact with flat concrete piers that collect water. The picnic shelter is not equipped with electricity or lighting.

The picnic tables are in poor condition due to decay and poor coatings. The small charcoal grills are rusted and in poor condition. There are no ADA compliant curb cuts or walkways to the area, nor ADA-accessible picnic tables.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Park Officials stated that electrical outlets are desirable in the shelter. They stated that there is visitor demand for a second picnic shelter, more tables and grills.

In the Redevelopment Plan, the picnic area has been envisioned as an important area to visit and enjoy the park. It is recommended that the existing picnic shelter be demolished and replaced by two new 28- by 32-foot picnic pavilions with electricity and lighting (see [Figure 2.1.2.1-1](#)). These new installations are architecturally designed to compliment the theme of the Redevelopment Plan. The Redevelopment Plan also provides for 32 ADA compliant picnic tables and 20 galvanized steel charcoal grills. It is recommended that security lighting be installed throughout the area.

2.1.2.2 Basketball, Roller Hockey and Tennis Courts.

Two basketball, two roller hockey and two tennis courts are located to the northeast of the main parking lot ([Figure 2.1.2.2-1](#)). Originally, there were six tennis courts, but as other sports have increased in popularity, the courts' usage has changed. An overgrown hedge row separates the courts from the main parking lot.

The paved surface underlying these courts is essentially flat. The slope and storm water discharge point was not determined at the time of assessment. The pavement appears to be 10 to 15 years old and in fair condition. No heaving of pavement is evident, suggesting that the gravel base is not frost-active.

A high chain link fence bounds the courts along Military Road and adjacent to the main parking lot. A low chain link fence delineates the individual courts. The high chain link fence framework is bent, but is otherwise in fair condition. The fence fabric is in poor condition; it is separating from the framework and starting to rust.

Concrete spectator benches are located on a paved walk near the tennis courts. Basketball lighting consists of flood-lights mounted on wood poles located along Military Road. These lights are in poor condition and are non-operational.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

It is recommended that the courts and the walkway be reconstructed. Reconstruction should include removal of existing pavement, re-grading base gravel and installing new pavement, constructing a new green vinyl coated chain link fence, and installing court lighting. Landscaping and planting areas along Military Road would screen the courts from the street but allow for security monitoring. A landscaped garden area with a walkway and benches that tie the picnic area to the urban garden is proposed; this would provide visual appeal from the main parking lot and draw attention from the court fencing.

2.1.2.3 Playground

The playground is located west of the picnic area, across a slightly sloped lawn ([Figure 2.1.2.3-1](#)). It appears to be well drained. There is an older steel pipe swing set with rubber sling seats, an older steel pipe swing set with rubber toddler seats, and a new packaged play structure ([Figure 2.1.2.2-1](#) and [2.1.2.3-1](#)). The play structure is in good condition. All play equipment is underlain by bark mulch.

There is no accessible route or firm surface area adjacent to the play area. There is no area lighting. The swing sets, while in fair condition, are nearing the end of their useful life.

In order to provide a code-compliant area, which has a thirty-year life, it is recommended that the existing swing sets be replaced with well-designed, heavy-duty swings. The packaged play structure area could be retained. A play area for small children should be added. Accessible routes from the parking lot to the play area should be installed. Likewise, firm surfacing for wheelchair transfer at play events should be installed. An inspection and maintenance program should be implemented to repair broken, worn, or missing components for child safety.

2.1.2.4 Softball Fields

There are eight softball fields located in the center of the Park ([Figure 2.1.2.3-1](#)). Each field has a dirt infield, chain link fence backstop and one or two bleachers. In addition, there are several dimension-lumber team benches scattered about. Most of the backstops are in fair condition, but fence fabric is beginning to rust. Some of the bleachers are new aluminum; some are old painted steel and dimension

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

lumber. The infields are a poorly drained silty soil material (mud) with holes and low spots that retain water.

There is no lighting for evening games or security, there are no restroom facilities directly related with this amenity, and there is no ADA access via hard surface pathway to the fields.

Park Officials noted that adult town leagues are very popular. Teams use these fields constantly in season; attendance is high and often includes picnics and grilling. Ball field space was not mentioned as an area of concern.

Park Officials noted several areas of concern. They stated that they would like lighting for night games. They noted that there is insufficient parking for softball field users (See [Section 2.1.1.2](#)). Park Officials also noted that lack of restroom facilities near the ball fields is a problem. Cars full of people drive across open space in the park to go to the restroom. The existing restrooms are inadequately sized to meet demand when the fields are heavily used.

It is recommended that this amenity be rehabilitated to enhance user enjoyment and convenience. Rehabilitation and installation measures described in the recommended Redevelopment Plan include:

- Installation of a restroom building with porch (see [Figure 2.1.2.4-1](#)),
- relocation of all fields
- walkways that access all fields and join the loop walkway,
- attractive backstops,
- landscaping,
- reconstruction of all fields and surfacing with calcine/clay conditioner,
- new aluminum bleachers and team benches,
- site security lighting, and
- event lighting for one of the fields.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

2.1.2.5 Soccer Fields

Fourteen soccer fields are outlined in a flat grassed area at the toe of the Lewiston Reservoir Dike ([Figure 2.1.2.5-1](#)). Military Road bounds this area on the south side. The soccer fields are not formally delineated and may move over time. Desktop analysis indicates that six to eight regulation size (165- by 300-foot, to 225- by 360-foot) soccer fields fit in this area. The turf surface is in good condition. Drainage is poor. Low and ponded areas are evident.

There is no ADA access to the soccer fields via hard-surfaced pathway from the parking lot. There is no curb cut in the parking lot walkway. There is no security or event lighting. There are no team benches or spectator facilities. There is no restroom on this side of Military Road.

The Redevelopment Plan calls for the creation of a graded sloped soccer area which can be delineated to meet player needs. It also recommends perimeter ditching, and the installation of portable team benches and a restroom (see [Figure 2.1.2.4-1](#)) located near the parking area. An ADA compliant walkway should be installed to the parking and restroom areas.

2.1.2.6 Sledding

The sledding slope is located on the south Dike of the Lewiston Reservoir north of the soccer fields ([Figure 2.1.2.5-1](#)). There is a flat paved area at the top of the Dike, and there is a steep, paved road (see [Section 2.1.1.5](#)) from the parking lot to the top: both are in poor condition. The road is used by sledders to get to the top of the slope. The slope surface is grass and light brush. No surface erosion is apparent. The site also has five wood and steel pipe benches that are in poor condition.

Park Officials stated that sledding is popular. There is some concern because sledders tend to create dangerous, steep runs off to the sides of the main run, and accidents are numerous. Park Officials are encouraging non-woody plant growth in areas where sledding is not desired since snow fences do not deter sledders and are quickly broken or removed. Growing vegetation is a relatively new channelizing effort so results are not conclusive.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

Recreational use on the Dike must be compatible with Dike safety and erosion considerations. Sledding does seem compatible here since it is a winter sport, which usually doesn't disturb the turf. Vegetation growth should be limited to non-woody plant since the deep roots of woody plants encourage water travel and uprooted trees cause erosion. Well-maintained grass is the optimum surface vegetation.

Recommendations for maintaining the sledding slope for a thirty-year expected life would include channelizing sledding by continuing the use of temporary fencing, increasing the visibility of public safety enforcement personnel, additional signage, repaving the top of the Dike, and replacing benches.

2.1.2.7 Open Space

Reservoir State Park is comprised of roughly one third level grass or field open space. This area is not assigned to specific activities and provides for a variety of recreational opportunities. Park users walk dogs, jog, fly kites and model planes, cross country ski and golf. The turf is in good condition and did not appear wet or poorly drained at the time of assessment.

There is no paved access, lighting, restroom or parking area for this portion of the park. There are two drinking fountains: one located near ballfield #2 and the other near the picnic area. The drinking fountains are site built masonry with a pre-cast concrete basin, and they are not ADA compliant. They are disconnected during winter months.

It is recommended that a hard surface ADA accessible loop path in and around this portion of the park be installed. To enhance the open space, several planting and hard surface seating areas are recommended throughout the loop. A restroom installation near the ballfields would serve this area. ADA compliant drinking fountains are incorporated in plans for each restroom and the seating area near the proposed maintenance building. A parking area is proposed at the northwest end of the park to improve access. Site security lighting is recommended around the entire loop path since it will enhance safety and visibility for evening users.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

2.1.2.8 Restroom Exterior

A men's and women's restroom is centrally located in the park between the playground and ball fields. It is a twenty-foot by twenty-foot split masonry block building with a wood-framed, asphalt shingle, sloped roof. The exterior construction appears to be original to the park. The block work is in good condition except one infill in the maintenance room where a single leaf door replaced a double door. That masonry does not match, and doesn't appear to be properly affixed to the substrate or set on a solid foundation.

All exterior doors are flush painted steel; they are in fair to poor condition with peeling paint or rust. The frames are in similar condition. Lintels are rusted. Windows are aluminum fixed/hopper windows with plastic glazing and wire fabric in frames installed on the outside to discourage vandalism. They are in very poor condition.

The roof is approximately 4/12 pitch. Asphalt shingles appear to be fairly new. One was missing at the time of assessment. Roof penetration flashing condition was not determined. No roof ventilation was evident. Eave flashing was in fair condition. Wood soffit and fascia trim was in poor condition. Cut ends were rotten and some paint was peeling.

The building is surrounded by pre-cast concrete pavers directly under the eave drip line. There are evergreen shrubs growing on three sides. The concrete pavers have shifted and settled due to water washing soils away and freezing. Roof water runs onto them and is directed into the building foundation. The shrubs limit possible drainage routes. Where pavement ramps up to the doorways, water is further trapped to create ponding around the building.

The paved ramps are ADA compliant, but the concrete door lips are in excess of one-half-inch vertical, making the exterior route non-ADA compliant. Another consideration is the restroom location. There is no ADA access from a parking lot and the closest parking lot is about 800 feet away. There is no security system or lighting.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

In order to achieve a thirty-year life for the exterior of this building, the surrounding area would have to be re-graded to drain water away from the structure. Doors and windows should be replaced with heavy gauge industrial quality materials. Steel lintels should be cleaned, sealed, primed and painted to protect them from further damage: the wood trim should be replaced concurrently. Door thresholds should be ADA compliant. An asphalt roof will be required in about fifteen years since it appears to be new and should be part of a routine maintenance program.

This location of this restroom does not serve the current demands associated with some specific park amenities. The Redevelopment Plan includes a recommendation for the installation of more restrooms (see [Figure 2.1.2.4-1](#)) located near major amenities. This building could be retained to serve as a maintenance and storage building if the previous maintenance items are addressed. However, its usefulness as a restroom facility may no longer be feasible.

2.1.2.9 Restroom Interior

The restroom structure described above houses a men's restroom, a women's restroom, and a maintenance room. The women's restroom has a stainless steel lavatory and two wall-mount water closets, while the men's room has a stainless steel lavatory, a wall hung urinal and a wall-mount water closet. The restrooms are not ADA compliant. The maintenance/utility room has an electrical service panel, a slop sink, parts of a non-functioning heating system, a roof hatch, and crawl space hatch.

Common to each restroom is a quarry tile floor in fair to poor condition, "subway" glazed tile walls in good to fair condition, gypsum board ceiling, and stainless steel toilet partitions. Each room has a paper towel dispenser, soap dispenser and free-standing waste can. The maintenance room has a concrete slab floor and concrete block walls. There is a very damp crawlspace basement with a dirt floor under the building.

The interior roof structure appeared to be adequately framed using 3x8 hip rafters and 2x8 jack rafters. No evidence of staining or mold growth was apparent on framing members or plywood sheathing. Likewise, no leakage of roof penetrations was evident. There is no roof insulation, and there is no roof ventilation.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

The mechanical system for the restroom building includes a water supply system, a waste disposal system, a non-functional hot air heating system, and discontinued gas service.

The water main is a ductile iron pipe that enters the building crawl space through the dirt floor. The building supply system transitions from the ductile iron pipe to threaded brass pipe in the crawl space and changes to all copper after penetrating the mechanical room floor. No water meter was evident but the service was assumed to be from a municipal water supply. Park Officials did not know the source.

The interior waste disposal system consists of cast iron bell and spigot piping with lead joints. Waste piping is supported from the underside of the structural floor slab with clevis hangers and threaded rod. The disposal system cleanout is through a cast iron house trap located on the east side of the building. The waste system is back-vented with galvanized steel piping. There is a 4" main vent through the roof.

The subsurface waste disposal system consists of an underground septic tank and leach field. The disposal system is located east of the restroom beyond the paved building walkway. Park Officials said they have had problems with the system in the past and that it was in excess of 25 years old.

The restroom at one time had a gas hot air heating system. The gas furnace has been removed and duct work and appurtenances are abandoned in-place. Remaining components include hot air ductwork, gas piping and hot air circulator motor. The gas piping is carbon steel pipe penetrating the foundation wall on the south westerly side of the crawl space. Immediately adjacent to the foundation wall penetration, the gas piping appeared to be severely corroded. The gas service is capped off above the floor in the mechanical room. The remaining galvanized sheet metal duct work in the mechanical room is covered with an insulation material. Duct expansion joints should be tested because they may contain asbestos.

The electrical service is underground to a meter on the northwest side of the restroom near the mechanical room door. The meter is connected to a main disconnect switch on the opposite side of the wall in the mechanical room. The main disconnect switch feeds a 100 amp circuit breaker type panel on the northeast wall. The building wiring is run through rigid galvanized and rigid steel conduits. Receptacles are grounded but do not have ground fault protection.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Restroom and mechanical room lighting consists of 2-foot square covered incandescent light fixtures. The men's and women's room have one each, and the mechanical room has one at each end of the building.

This building was originally well-built and it is in good structural condition, however it is not ADA compliant and the internal elements are in need of rehabilitation. As the only restroom at the park, it is not sufficient to support current user demands. The solid masonry and concrete construction make this a durable building, but difficult to rehabilitate. Its small size does not readily allow for increased toilet areas or 5-foot turning circles as required by the ADA.

Instead, it is recommended that new restrooms (see [Figure 2.1.2.4-1](#)) be installed near the most active amenity areas and parking lots. Given the amount of costly renovations that would be required, it is not feasible to rehabilitate this building to ADA compliant restroom usage in this location.

2.1.2.10 Maintenance Building

The maintenance building for Reservoir State Park is located on the east end of the park at the intersection of Military and Witmer Roads. The building was subject to inspection only. Inspection was performed with Park Officials present; they determined the building to be acceptable as is.

The building is a prefabricated metal structure that is approximately thirty years old. From the exterior, the building is utilitarian but not run down in appearance: it is in fair condition. There is minor damage to the metal exterior. The building harbors a garage with overhead doors, a meeting room, locker and washroom, and an office. The interior is rundown and in poor condition; it appears to be near the end of its useful life. The finishes are worn out and the bathroom fixtures are in very poor condition.

A metal building is not generally considered to have a long lifespan. Since this building is thirty years old or older, expecting it to serve well for another thirty years is unrealistic. The Redevelopment Plan recommends installation of a new maintenance building (see [Figure 2.1.2.10-1](#)) in a less visible location on the northwest corner of the park. The new building would be constructed of high quality

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

materials which compliment the theme selected for the park rehabilitation. The area around the building would be landscaped. The parking area would accommodate personnel needs and provide an adjacent visitor parking area for open space activities.

2.2 Summary of Recommendations

Recommendations for the rehabilitation of amenities and infrastructure at Reservoir State Park are summarized below.

2.2.1 Main Parking Area

It is recommended that the surface material of this 450- by 375-foot parking area be removed and replaced. This work should include 18 inches of excavation, followed by backfill with 12 inches of gravel. Four catch basins with appropriate piping should be installed.

Three-inch pavement should be installed over 3 inches of stone on the parking lot surface. Four-inch pavement should be laid over 3 inches of stone on the two driveways. The lot should include screening and landscaped islands. Granite curbing should be installed around the perimeter of the lot. The lot should be striped to accommodate 360 vehicles, with 8 delineated ADA compliant parking spaces. Appropriate signage should be posted at necessary locations.

2.2.2 Ballfield Parking Lot

It is recommended that the surface material of this 225- by 225-foot parking area be removed and replaced. This work should include 18 inches of excavation, followed by backfill with 12 inches of gravel. Two catch basins with appropriate piping should be installed.

Three-inch pavement should be installed over 3 inches of stone on the parking lot surface. Four-inch pavement should be laid over 3 inches of stone on the two driveways. The lot should include screening and landscaped islands. Granite curbing should be installed around the perimeter of the lot. The lot

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

should be striped to accommodate 120 vehicles, with 5 delineated ADA compliant parking spaces. Appropriate signage should be posted at necessary locations.

2.2.3 Soccer/Sled Parking

It is recommended that the existing parking lot for the sledding and soccer field areas be resurfaced and extended in area. The existing 60- by 280-foot lot should be expanded to a 140- by 170-foot area.

The existing pavement should be stripped, and the area of the new, extended lot should be graded to achieve proper drainage. Three-inch pavement should be installed over the existing base gravel. The lot should be striped to accommodate 50 vehicles, with 3 delineated ADA compliant parking spaces. Signage should be posted as appropriate.

2.2.4 Walkway System

It is recommended that the walkway system, which totals about 12,650 linear feet, should be reconstructed to achieve ADA compliance. All walkways should be constructed on an 18-inch gravel base, and should be surfaced with 3-inch pavement. All walkways should have a minimum width of 6 ½-feet. ADA curb cuts should be constructed in all areas where curbing hinders access to the walkways.

2.2.5 Drainage Repair

For the purposes of general site drainage, it is recommended that ditching be installed along Witmer Road. As part of this effort, two existing culverts should be replaced, and one additional culvert should be installed.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

2.2.6 Site Security Lighting

It is recommended that a total of 26 lighting fixtures be installed in association with site parking lots. In addition, a total of 65 lighting fixtures should be installed along walkways, at the picnic area, and near proposed gardens. Underground electrical feed should be installed to all lighting installations.

2.2.7 Picnic Area

It is recommended that the picnic area be furnished with 32 new ADA compliant picnic tables, and 20 new grills. Also, two picnic pavilions should be installed. These pavilions should be 28 feet by 32 feet in size, and should be wired for electricity.

It is recommended that a new restroom facility be installed near the picnic area. The proposed plan for this building suggests dimensions of 24 feet by 38 feet, and includes provisions for a porch.

2.2.8 Basketball, Roller Hockey and Tennis Courts

It is recommended that the roller hockey and tennis courts be completely rehabilitated. The existing pavement should be removed, and the gravel base should be graded to achieve proper drainage. The courts should be resurfaced with 3-inch pavement.

The fence surrounding the courts should be replaced, and it should be extended where appropriate. New lighting should be installed around the courts, and new benches should be provided. Walkways to the area should be reconstructed. A landscape screen should be planted between the courts and the parking lot, and plantings should be installed along the Military Road.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

2.2.9 Playground

It is recommended that the swings at the playground be replaced, and a toddler play area should be installed. ADA compliant hard-surface transfer areas should be installed near the play area. Also, spectator benches should be provided.

2.2.10 Softball Fields

It is recommended that the ballfield area be completely rehabilitated. The ballfields should be regrouped, and all fields should be upgraded with graded infields, backstops and bleachers. At least one of the fields should be furnished with event lighting.

It is also recommended that a 24- by 38-foot restroom building be installed near the ballfields. Proposed plans for this building include provisions for a porch.

2.2.11 Soccer Fields

It is recommended that the 20 acre field that harbors the soccer fields should be re-graded, surfaced with loam and seeded. Twenty team benches and four spectator benches should be provided. Also, a 24- by 38-foot restroom building should be constructed near the soccer fields.

2.2.12 Sledding

It is recommended that OPRHP continue the use of temporary fencing for the purpose of channelizing sledding runs. An increase in the presence of public safety enforcement personnel, and the addition of appropriate signage are also recommended. The spectator area and the road to the top of the reservoir should be re-paved. A pipe gate should be installed at the base of the road to restrict vehicle access. Also, benches in the spectator area should be replaced.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

2.2.13 Open Space

It is recommended that the existing maintenance building and its foundation be demolished, and the area where it stands should be landscaped to create an urban garden. This area should be improved with the installation of two garden seating areas with four benches, pavers, and landscaping. Landscape plantings and trees should be installed in several areas along park walkways.

2.2.14 Restroom Rework to Maintenance Use

It is recommended that the existing restroom building be renovated to serve as a maintenance building. Rework should include replacement of the doors, windows and roof: new elements should match the new buildings throughout the park. The exterior trim should be repaired and wrapped in aluminum. The exterior masonry should also be repaired. Surface drainage around the building should be repaired to direct water away from the structure. Toilet fixtures and old mechanical equipment inside the building should be removed.

2.2.15 Maintenance Building

It is recommended that a new maintenance building be installed at the west end of the park. It is proposed that this building should be 48 feet wide and 80 feet long. It should be metal-clad, steel-frame construction with masonry trim.

The new maintenance building should be accessed via a driveway off the Military Road. A paved employee and visitor parking area should be installed in association with the maintenance building. The area around the building should be furnished with landscaped screening and plantings.

Non-Internet Public (NIP) information has been removed from the following page(s).

This material is contained in:

Volume 2

Section: Recreation Facility Rehabilitation Assessment

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1-1
RESERVOIR STATE PARK EXISTING SITE PLAN**

[NIP – General location Maps]

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1.1.1-1
MAIN AND BALLFIELD PARKING LOTS, RESERVOIR STATE PARK**



Main Parking Lot



Ballfield Parking Lot

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1.1.3-1
SOCCER/SLEDDING PARKING AREA, RESERVOIR STATE PARK**



Soccer/Sledding Parking Area



Soccer/Sledding Parking Area

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 2.1.1.5-1

EMERGENCY ACCESS ROAD AND SITE DRAINAGE, RESERVOIR STATE PARK



Emergency Access Road



Site Drainage

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1.1.7-1
BASKETBALL COURT AND PICNIC AREA, RESERVOIR STATE PARK**



Basketball Court Lighting



Picnic Area

Non-Internet Public (NIP) information has been removed from the following page(s).

This material is contained in:

Volume 2

Section: Recreation Facility Rehabilitation Assessment

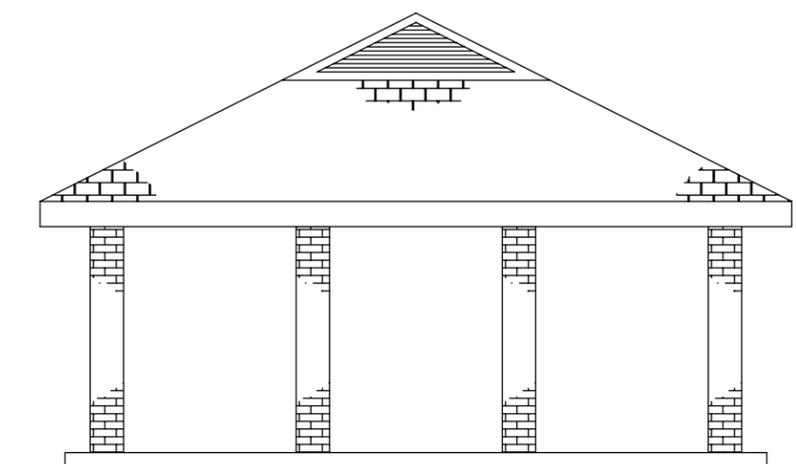
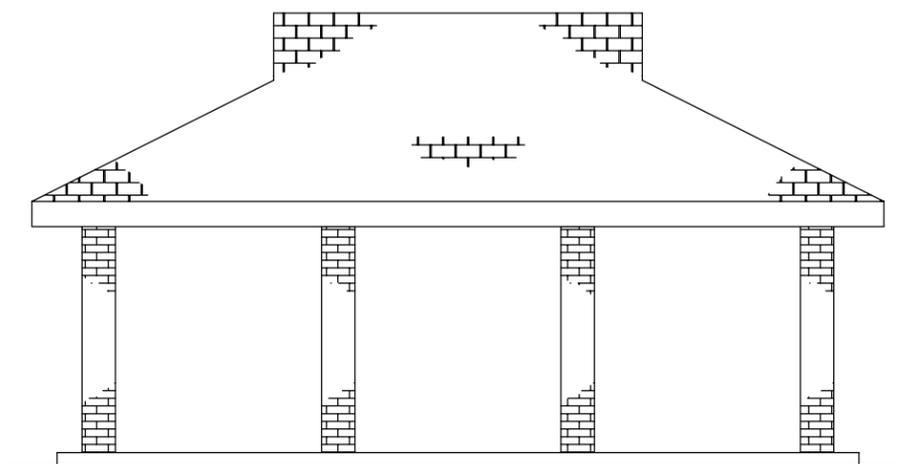
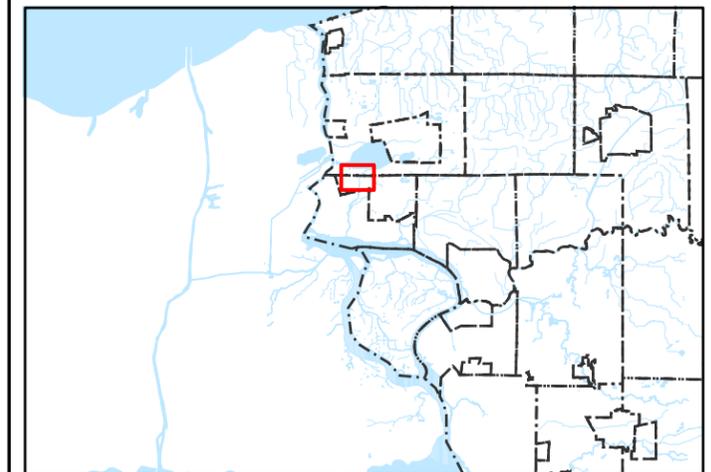
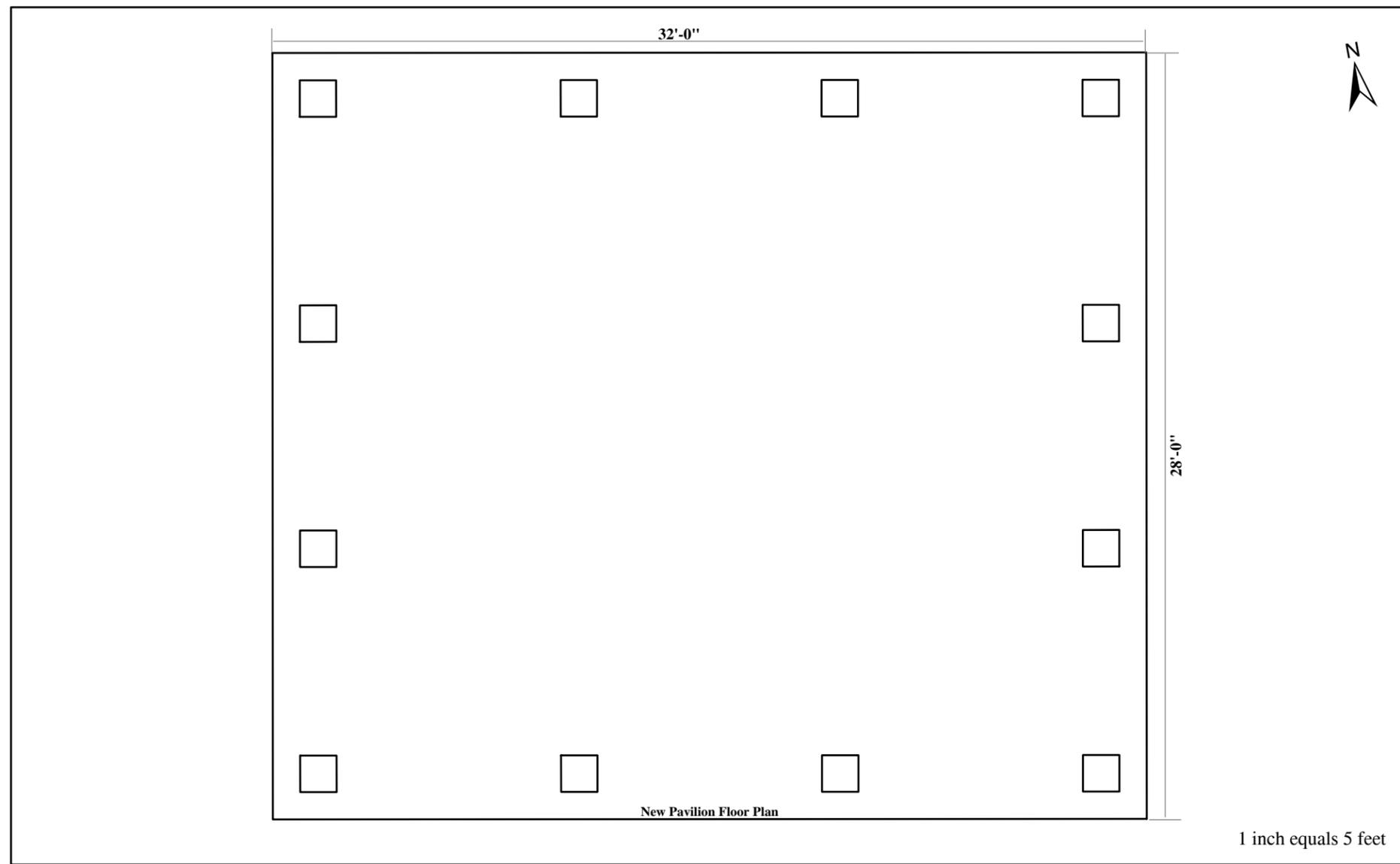
**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1-2
RECOMMENDED RESERVOIR STATE PARK REDEVELOPMENT PLAN**

[NIP – General location Maps]

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT**

**Reservoir State Park
New Pavilion Floor and Elevation Plan**



1 inch equals 5 feet

FIGURE 2.1.2.1-1



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 2.1.2.2-1

BASKETBALL/TENNIS COURTS AND PLAYGROUND, RESERVOIR STATE PARK



Basketball/Tennis Courts



Playground - Swingset

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1.2.3-1
PLAYGROUND AND SOFTBALL FIELD, RESERVOIR STATE PARK**



Playground – Play Area



Softball Field

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT

Reservoir State Park
New Restroom Floor and Elevation Plan

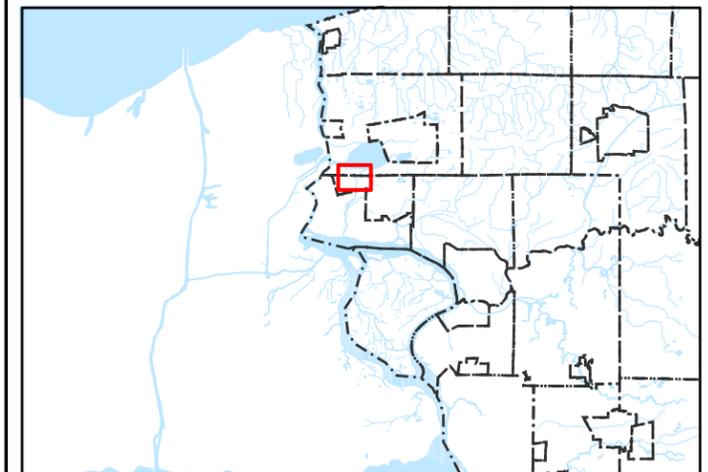
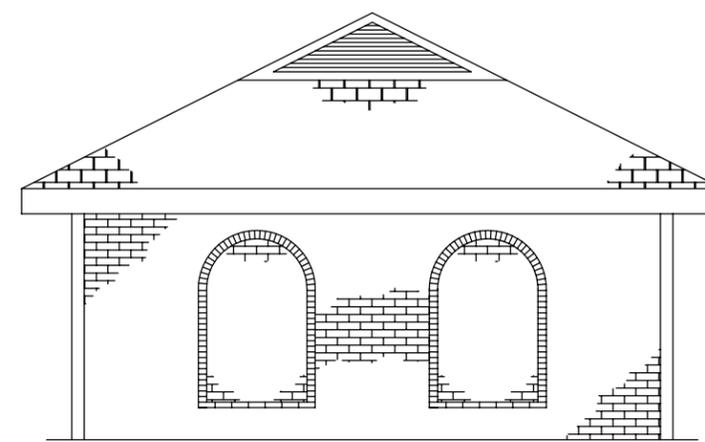
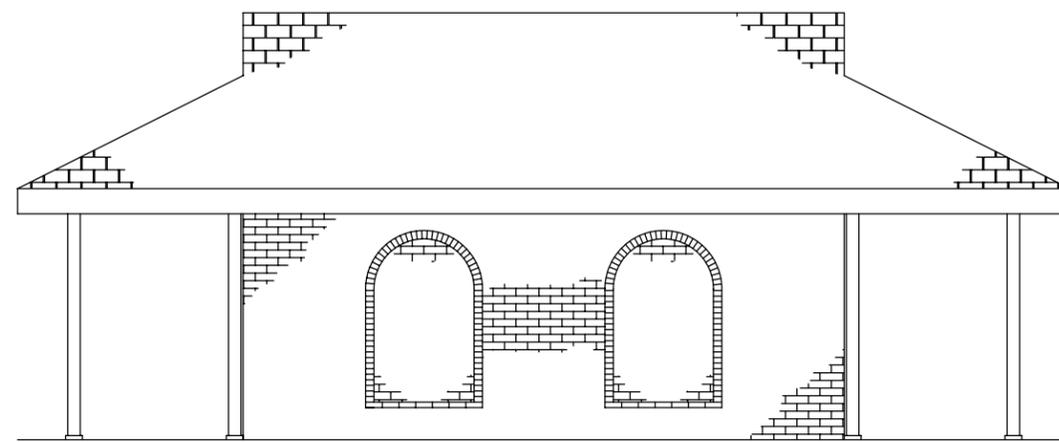
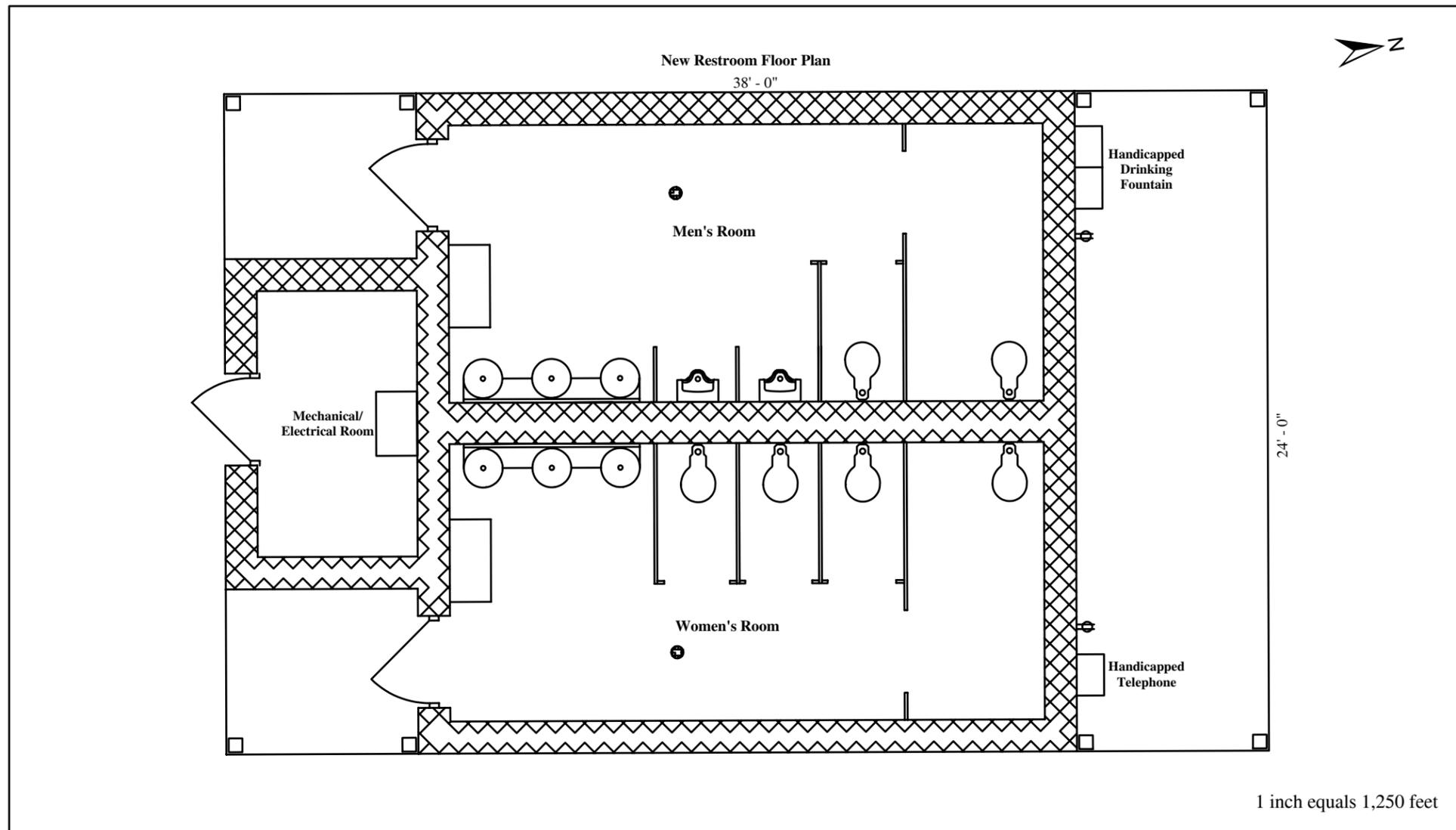


FIGURE 2.1.2.4-1



1 inch equals 5 feet

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 2.1.2.5-1
SOCCER FIELDS AND SLEDDING HILL, RESERVOIR STATE PARK**



Soccer Fields



Sledding Hill

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT

Reservoir State Park
New Maintenance Garage Floor Plan

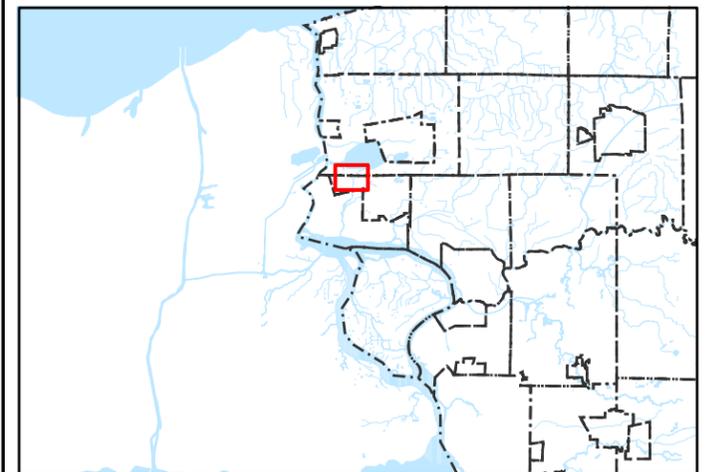
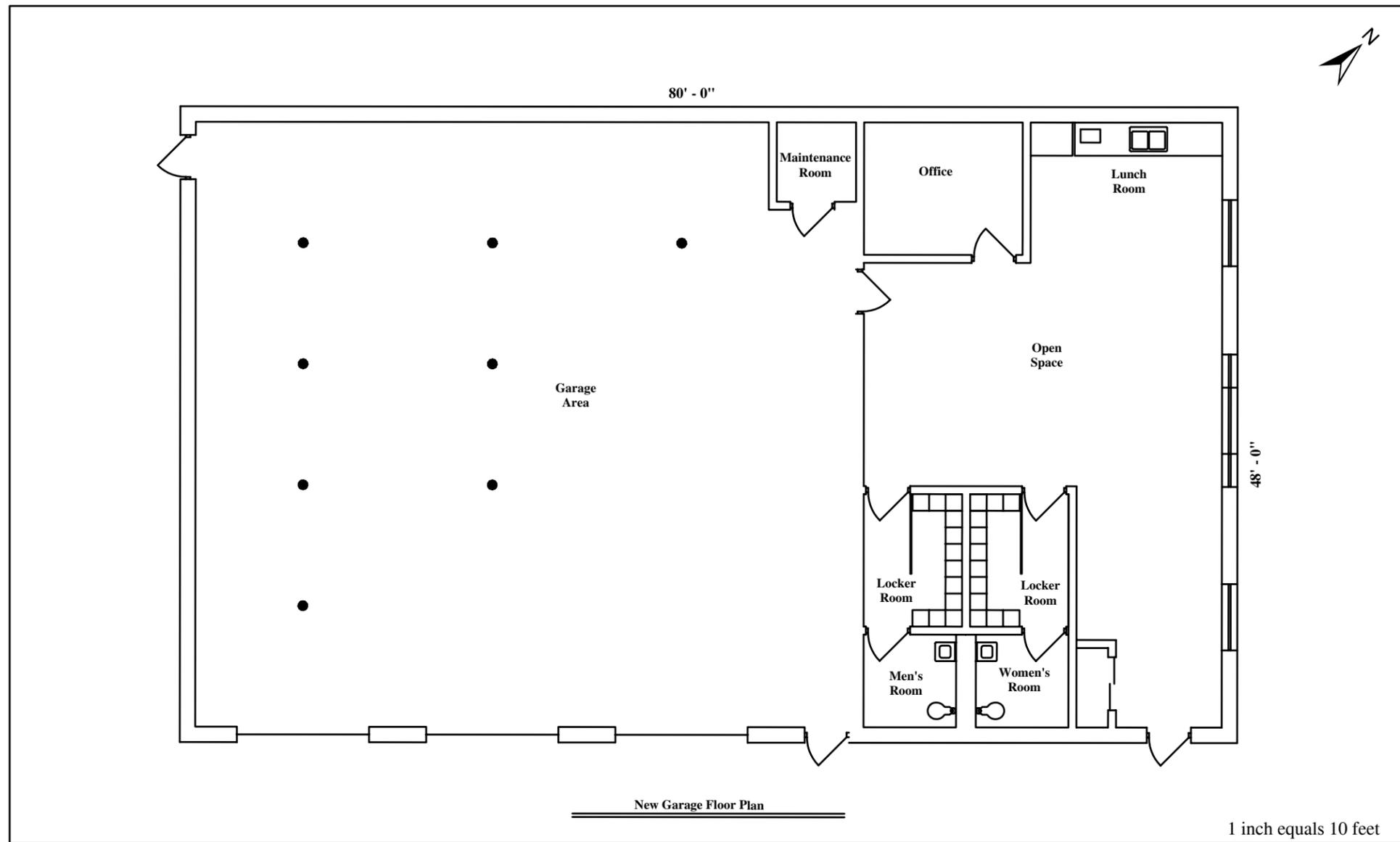
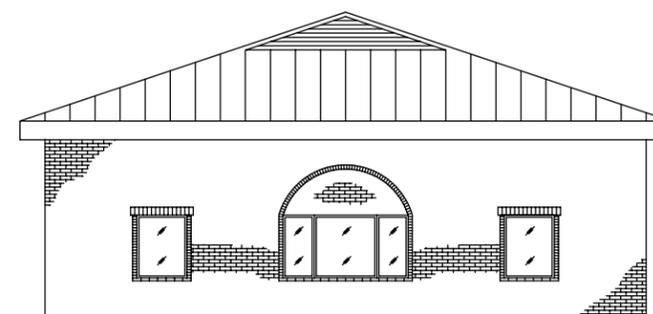
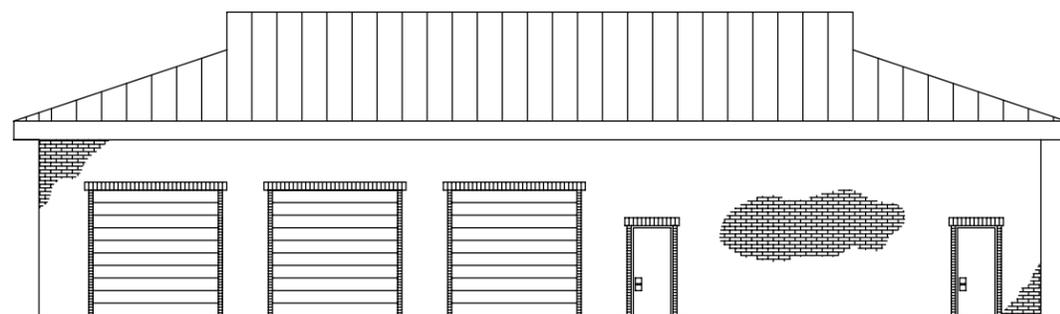


FIGURE 2.1.2.10-1



1 inch equals 10 feet



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

3.0 ARTPARK STATE PARK

The Earl W. Brydges Artpark State Park (Artpark) occupies about 197 acres of land in the Town of Lewiston and the Village of Lewiston. Park Officials state that it is the only state park in the nation that is dedicated entirely to the visual and performing arts. It has a large theater which hosts concerts and events year-round, and the park offers several workshops and programs during the summer.

In addition to art-focused activities, visitors can enjoy more traditional park activities. The park provides trails for hiking, and open areas for walking, picnicking and cross-country skiing. Bird-watching is popular throughout the park. Also, picnic and restroom facilities are provided on a seasonal basis.

The park is open year-round and there is a fee charged for parking during peak seasons. OPRHP data estimates that about 90,419 people visited the park from the spring of 2002 to the spring of 2003.

The park is managed and maintained by the OPRHP. No OPRHP representatives were present during the site assessment for this park.

For the purposes of this report, only three amenities were assessed: the river access trails, the river access stairways, and the Artpark El. No park infrastructure was included in the assessment. As with previous studies, water access facilities were the focus of the investigation at Artpark. OPRHP officials requested that the Artpark El also be included in the assessment. OPRHP officials requested no further investigations for Artpark.

3.1 Park Description

The Artpark grounds are characterized by manicured lawns with scattered mature trees. Sloped areas of the park remain forested. The park is highly developed with structures dedicated to the performing arts. These include classrooms, kilns, the open-air El, an amphitheater, and a large performing arts center. Walkways and a decorative brick road provide pedestrian travel routes through the park and a forested hiking trail runs along the river at the base of the gorge.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

3.1.1 General Site

The general site condition was not determined as part of this assessment. Likewise, site infrastructure was not inspected or assessed. [Figure 3.1.1-1](#) illustrates the park layout and amenities.

3.1.2 Amenities

Artpark State Park provides a long list of amenities, from a large theater for performing arts, to rustic hiking trails. For the purposes of this report, the assessment of Artpark was limited to the Artpark El, and water-related facilities which include the Lewiston Branch Gorge Trail, a fishing access trail, and three stairways as will be discussed below.

3.1.2.1 Lewiston Branch Gorge Trail and Fishing Access Trail

The Lewiston Branch Gorge Trail departs from a gravel parking lot at the south end of the park and runs southward along a steep side slope on the east-side of the Niagara River gorge ([Figure 3.1.2.1-1](#)). NYPA constructed the parking lot, installed the stairs and improved the trail in the 1990's. The trail is over 4,000 feet long, and it formally ends at the Lewiston-Queenstown bridge ([Figure 3.1.2.1-2](#)).

The trailhead at Artpark is starting to erode where runoff crosses the trail and carries soil.

After the trailhead descends, the trail is fairly level. The trail averages about 6 feet in width and its substrate is flat, compacted gravel. There are shrubs and deciduous tree-cover lining the trail. There is minor erosion occurring on side-slopes along the trail, otherwise the trail is in good condition ([Figure 3.1.2.1-2](#)).

There is one bridge incorporated in the trail ([Figure 3.1.2.1-3](#)). It is a substantial wood timber bridge with laminated wood beam framing and concrete buttresses. This bridge functions to overpass a swale that carries stream flow and storm water runoff.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

There are two staircases that descend off the west side of the Lewiston Branch Gorge Trail to access fishing areas on the river. These elements were inspected separately from the trail and are discussed below.

In addition, a fishing access switchback trail descends from the west side of Lewiston Branch Gorge Trail to the river below. This trail is located to the south of the two staircases. It is in good condition.

It is recommended that the Lewiston Branch Gorge Trail and the fishing access switchback trail be subject to an annual inspection and maintenance program. This maintenance should include annual erosion repair. Also, erosion at the trailhead of the Lewiston Branch Gorge Trail should be repaired, and a drainage swale should be installed to direct water away from the walkway.

3.1.2.2 Staircases 1, 2 and 3

Three separate staircases were investigated as part of this assessment. Staircases 1 and 2 are integrated into the fishing access trail. Staircase 3 is separate and provides river access from the park. For the purposes of this report, they shall be referred to as staircases 1, 2, and 3, respectively.

Staircases 1 and 2

Staircase 1 is the northernmost staircase that departs from the Lewiston Branch Gorge Trail. It incorporates several flights of stairs with intermediate landings ([Figure 3.1.2.2-1](#)). The stairs are composed of pressure-treated dimension lumber with gravel infill. They have a 7-inch rise to an 11-inch run, and they are 48 inches in width. There are no toe-kicks on the intermediate landings. The stairs appear to be 5-7 years old, and are in fair condition.

A 40-inch-high railing, with a 24-inch-high intermediate rail, runs alongside the stairway. The openings between the railings exceed the dimensions allowed by the building code. The railings appear to be inadequate to satisfy code load rating requirements, but this was not field verified.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Staircase 2 is located about 650 feet south of staircase 1 off of the Lewiston Branch Gorge Trail ([Figure 3.1.2.2-2](#)). Its construction and condition are comparable to staircase 1. Staircase 2 also has a railing that is constructed in the same fashion as the railing along staircase 1. The railing along staircase 2 is broken in several places. A stone retaining wall adjacent to one of the landings of this staircase has pushed inward, displacing the handrails. [Figure 3.1.2.2-3](#) has a photograph of the foot of staircase 2.

The following recommendations apply to both staircases 1 and 2. The wood construction of the staircases is inherently subject to deterioration and decay. For this reason, the staircases cannot be expected to serve a 30-year life. However, they are in sufficient condition to serve for a few more years if they are properly maintained. Immediate measures should include painting or sealing, and repair of the handrails.

For a 30-year life, the stairs should be replaced with hot-dip galvanized stairs. Also code compliant railings should be installed.

Staircase 3

Staircase 3, which provides access from the gorge rim to the riverbank below ([Figure 3.1.2.2-3](#)), is located to the west of the Artpark Performing Arts Building. It is not associated with, or connected to, the fishing access trail. The staircase is comprised of several flights of stairs with intermediate landings ([Figure 3.1.2.2-4](#)). They appear to be approximately 25-30 years old.

This staircase is constructed of 10-inch steel channel stringers with grating treads, checker plate nosings, and a pipe handrail. The stairs are 30 inches wide, with a 7 to 7 ½-inch rise and a highly variable run. The tread dimensions are not code compliant. Some treads are bent and several nosings are displaced. Some flights rise over 15 feet without a landing; this exceeds the tolerance for code compliance.

The intermediate landings connecting the flights of stairs are constructed of either concrete slabs, or welded steel grating. They vary in size and shape. There are no railings or toe kicks at some of the landings. None of the landings are code compliant. A concrete pad at the base of the stairs has a 13-inch drop to grade, which does not satisfy code compliance ([Figure 3.1.2.2-5](#)).

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

The top rail of the handrail is 30 inches high and is constructed of 1 and ½-inch schedule 40 steel pipe. The intermediate rail is 15 inches high and is constructed of 1-inch steel pipe. Some of the handrail is missing, some is in poor condition, and the rest is fair.

The stairs and handrail are painted, but the paint is in very poor condition. Overall, the stairs and landings are in poor condition.

It is recommended that the staircase 3 be removed and replaced with hot-dip galvanized stairs. The new stairs should be furnished with code compliant railings.

3.1.2.3 The Artpark El

The “El” is located to the south of the performing arts building ([Figures 3.1.2.1-1](#) and [3.1.2.1-3](#)). It was constructed in the mid-1970’s to harbor seasonal activities such as children’s theater presentations and art instruction workshops. A snack bar is also located in the El. See [Figures 3.1.2.3-1](#) and [3.1.2.3-2](#) for original building drawings.

The El is an open-sided wood-framed structure with a partial plastic-sheathed roof, and *elevated* (thus the name “El”) decks ([Figures 3.1.2.1-3](#) and [3.1.2.3-3](#)). The building is comprised of two perpendicular, sections: one is 40 feet wide and 279 feet long, the other is 40 feet wide and 232 feet long. The east-west oriented section adjoins the north-south oriented section near the south end. The building, overall, is in fair to poor condition.

The El is accessed at its southeast and northwest ends, or by staircases on its south and west sides ([Figure 3.1.2.3-3](#)). The staircases are constructed of dimension lumber. They have 10-inch treads, with 7 ½-inch risers. The risers are closed and there are no nosings. Intermediate landings in the staircases are framed with 2- by 12-inch lumber, and are decked with wood planks. The railing along the staircases is similar to the deck railing described below. The stairs are in poor condition.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

The EI is ADA accessible, with ramps provided at elevation changes. All ramps have acceptable pitch (1/12), and intermediate landings to satisfy ADA requirements.

The roof of the EI is composed of arched trusses spaced at 15 ½ feet on-center to form bays. Several bays have no roofing, while others are covered by translucent, corrugated plastic roofing. The roofing is supported by purlins that span from truss to truss ([Figure 3.1.2.3-4](#)). The trusses are each supported by two 2- by 12-inch columns to the deck, which transfer load to concrete footings via double 2- by 8-inch wood columns. Roof trusses and purlins appear to be in fair condition. It should be noted that wood can rot from the inside, leaving a seemingly solid exterior. Wood sampling of roof trusses may reveal rot that is not visible.

The deck of the EI is supported by 3- by 12-inch joists which are spaced 16 to 20 inches on-center. The deck joists are supported by three 3- by 10-inch carrying timbers at each bay; load is transferred to the double 2- by 8-inch wood columns that are fastened to concrete piers ([Figure 3.1.2.3-3](#)). Many of the column bases are rotten where they are fastened to the concrete piers ([Figure 3.1.2.3-5](#)). There are some repairs apparent on the joists and bracing under the deck.

Two by 12-inch planking covers the deck joists. Some planks have been replaced as needed, but some are rotten. Rot is particularly evident at the cut ends of some of the planks ([Figure 3.1.2.3-5](#)).

The railing around the deck of the EI is constructed of pressure treated lumber, and it is in fair to poor condition ([Figure 3.1.2.3-5](#)). It consists of three 2- by 8-inch rails, and a 2- by 8-inch cap. The low rail is centered 12 inches off the deck and the middle rail is centered 28 inches off the deck. The railing cap lies on top of the highest rail, and is 3 feet and 11 inches off the deck. The railing spans between bay columns, with intermediate 4- by 4-inch support posts; it spans 7 feet 9 inches between supports. The openings between the rails are too large to satisfy building code compliance.

The Artpark EI was originally constructed to serve a 30-year lifespan, and it has met this expectation. The structure is currently in fair to poor condition, and rehabilitation is not structurally or economically feasible. Therefore, it is recommended that the structure be replaced.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

The construction type used for the existing EI can not be expected to serve long-term uses, therefore other construction techniques should be considered for the replacement. Usage of the EI may have changed since it was first designed, and new construction should consider current needs. Detailed evaluation is necessary to determine what type of design and construction will be best for the new installation. This evaluation should take into account current use, expected future use, and a number of site considerations.

3.2 Summary of Recommendations

3.2.1 Lewiston Branch Gorge Trail and Fishing Access Trail

It is recommended that side slope erosion along the Lewiston Branch Gorge Trail be repaired using mulch and seeding. Also, erosion at the head of the trail should be repaired, and a ditch should be installed to direct water away from the trail.

3.2.2 Staircases 1, 2 and 3

It is recommended that all three existing stairways be removed and replaced with galvanized steel stairs. Likewise, the landings between flights of stairs should be replaced. Code compliant railings should be installed alongside each of the new staircases. Prior to the new installations, each stairway area should be re-graded to accommodate the new stairs. Erosion near each stairway area should be repaired.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT**

**Earl W. Brydges Artpark State Park
Existing Site Plan**

LEGEND

Existing Park Features

- ① Gravel Parking
- ② Fishing Access Trail
- ③ Stair #1
- ④ Stair #2
- ⑤ Stair #3
- ⑥ Artpark "EI" Structure
- ⑦ Paved Parking
- ⑧ Areas of Erosion

Proposed Park Features

- △ Erosion Repair
- △ Access Stair #1
- △ Access Stair #2
- △ Access Stair #3

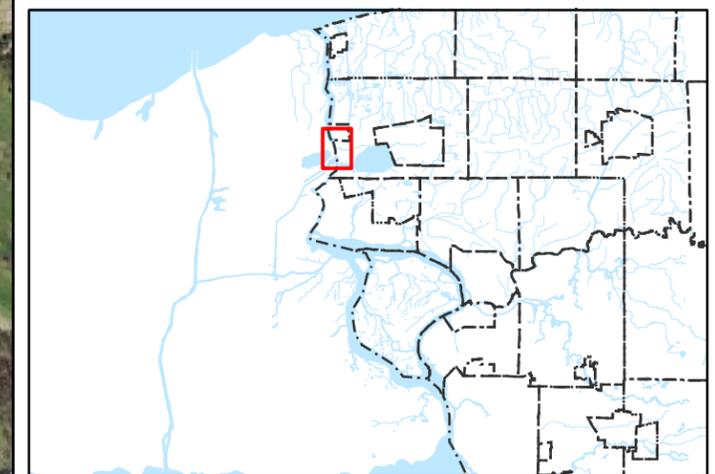


FIGURE 3.1.1-1



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.1-1
VIEWS OF ARTPARK**



Southeast End of the El, looking West



Railing and Surface Erosion at Lewiston Branch Gorge Trail Trailhead

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 3.1.2.1-2

VIEWS OF LEWISTON BRANCH GORGE TRAIL, ARTPARK



Lewiston Branch Gorge Trail



Erosion alongside Lewiston Branch Gorge Trail

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.1-3
TIMBER BRIDGE AND EL, ARTPARK**



Timber Bridge



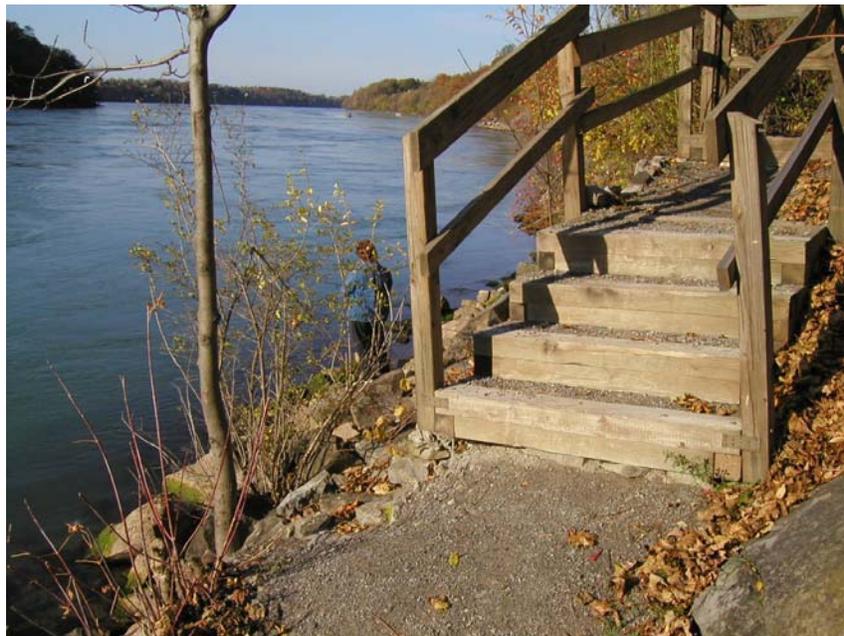
The El from the South

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.2-1
VIEWS OF STAIRCASE 1, ARTPARK**



Portion of Staircase 1



Base of Staircase 1

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.2-2
VIEWS OF STAIRCASE 2, ARTPARK**



Portion of Staircase 2



Portion of Staircase 2 Showing Damaged Railing

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.2-3
VIEWS OF STAIRCASES 2 AND 3, ARTPARK**



Foot of Staircase 2



Head of Staircase 3

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.2-4
VIEWS OF STAIRCASE 3, ARTPARK**



Portion of Staircase 3



Staircase 3 Showing Series of Landings

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.2-5
FOOT OF STAIRCASE 3, ARTPARK**



Foot of Staircase 3 Showing Concrete Base

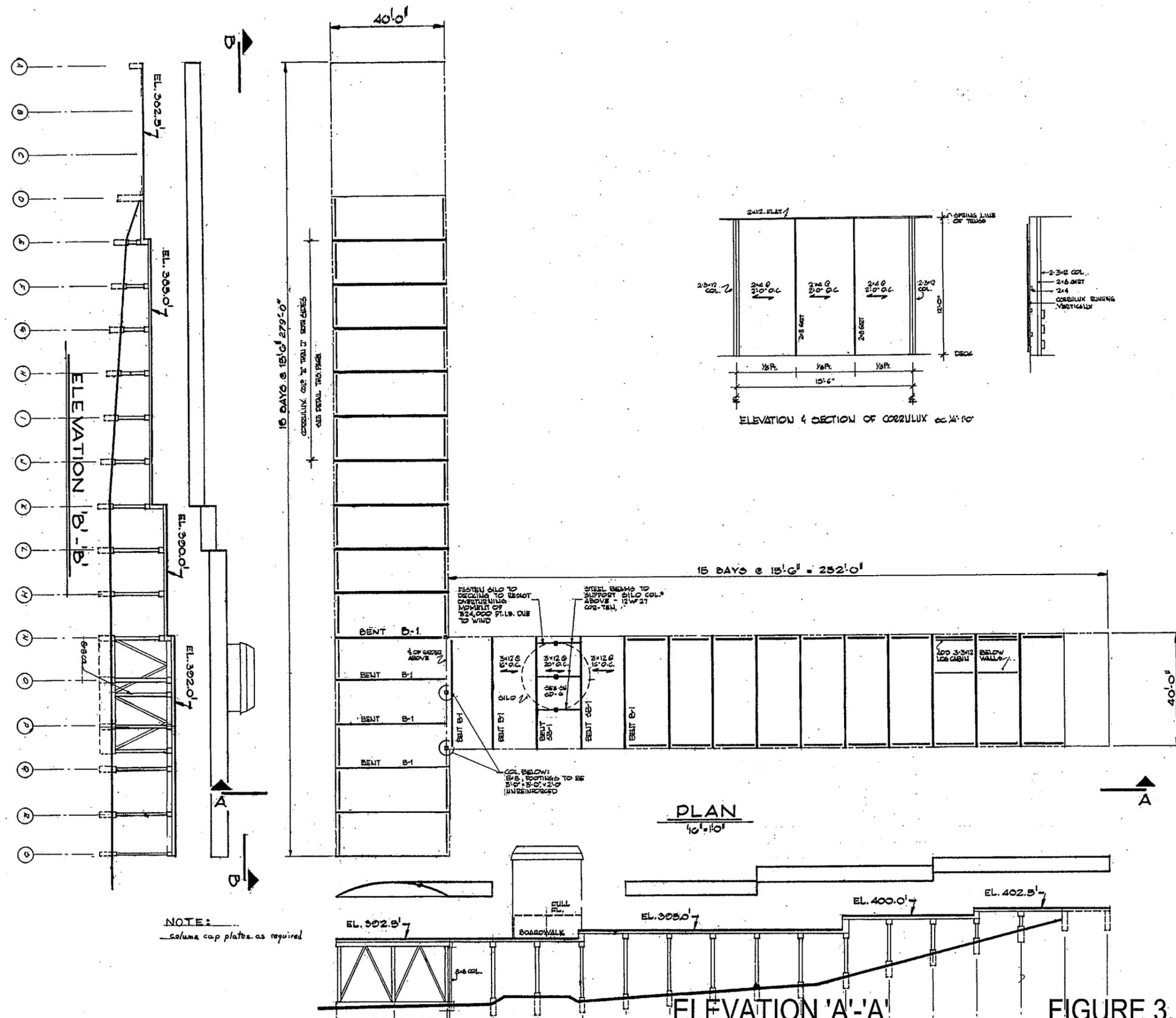
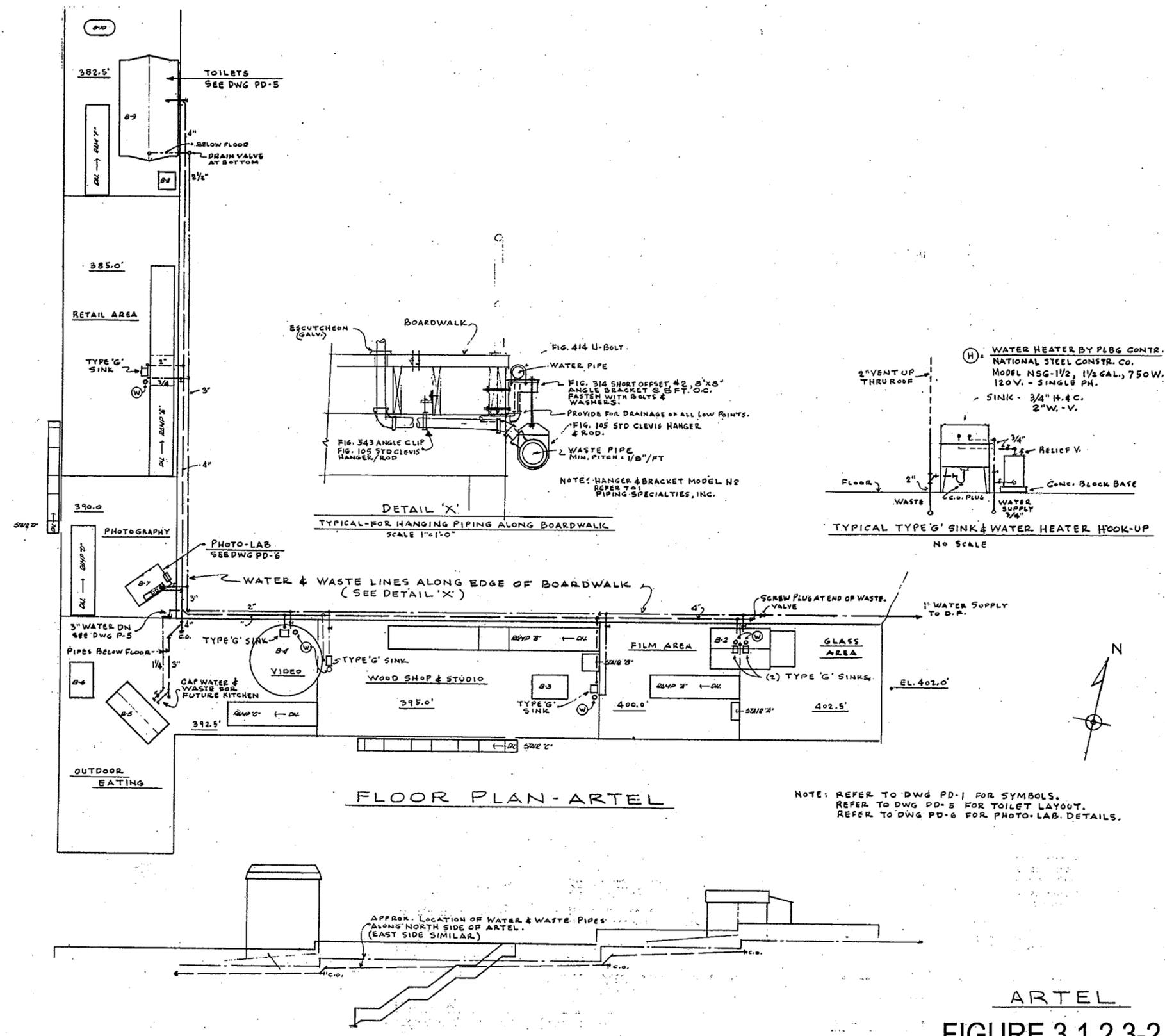


FIGURE 3.1.2.3-1

ST1

1	APPENDIX	FEB. 17/04
NO.	REVISION	DATE
ARTPARK NEW YORK STATE OFFICE OF PARKS & RECREATION HARDY HOLZMAN PFEIFFER ASSOC. LEMESSURIER ASSOC. IRVING FISHERMAN ASSOC.		



ARTEL
FIGURE 3.1.2.3-2

1	APPENDUM	FEB. 1974
NO.	REVISION	DATE

ARTPARK
NEW YORK STATE
OFFICE OF PARKS & RECREATION
HARDY HOLZMAN PFEIFFER ASSOC.
LEMESSURIER ASSOC.

9562-C72

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.3-3
VIEWS OF THE EL, ARTPARK**



The West Stairway of the El



Support Columns under the El

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.3-4
DETAILS OF EL CONSTRUCTION I, ARTPARK**



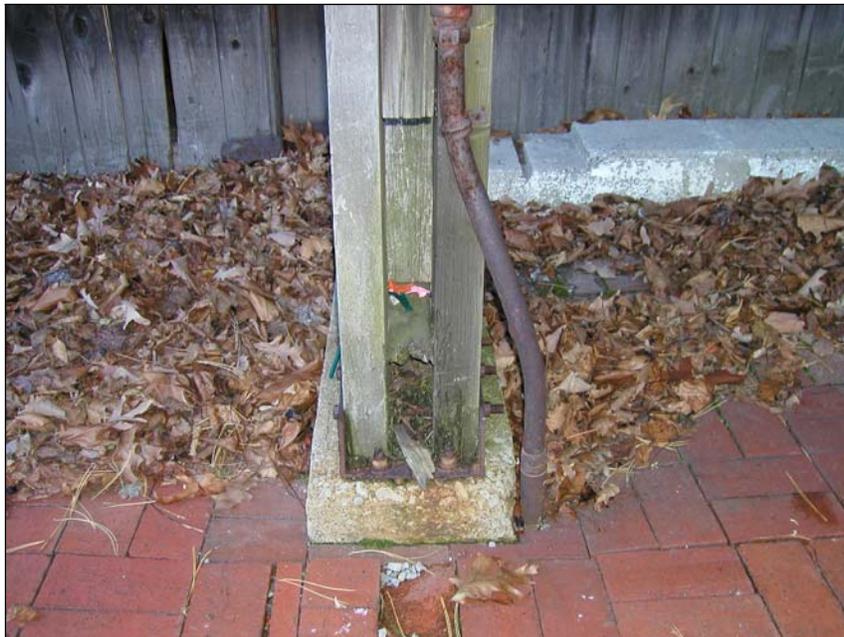
Roof Support in the El



Deck Truss under the El, Showing Deterioration

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 3.1.2.3-5
DETAILS OF EL CONSTRUCTION II, ARTPARK**



Base of a Support Column under the El



Railings Along the Deck of the El

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

4.0 DEVIL'S HOLE STATE PARK

Devil's Hole State Park is situated near the Devil's Hole Rapids, on the lower Niagara River. It is located between Niagara Falls and the Robert Moses Niagara Power Project (RMNPP) powerhouse in the Town of Lewiston. This 42-acre park is bounded on the northwest by the Niagara River. The Project access road defines the park's northeast border, and the Niagara RMNPP lies to the north. The Robert Moses Parkway bounds the park along its southeast border. A small parking area associated with the park lies to the southeast of the Robert Moses Parkway. Route 104 defines the southeast border of this lot.

Access to the main parking lot of the park is gained via ramps to and from the southbound lanes of the Robert Moses Parkway. In the northbound lanes, there are ramps that provide access to and from the secondary parking lot, which is separated from the park by the Robert Moses Parkway. The secondary parking lot can also be accessed via Route 104. A pedestrian bridge overpasses the highway, joining the secondary lot to the rest of the park. The existing site plan for the park is presented in [Figure 4.0-1](#).

The park is open dawn to dusk year round. There is no fee for use. It is estimated that about 23,700 people visit the park each year.

The park is owned by the State of New York and operated by OPRHP. During the site visit for the purpose of this study, the park was viewed with three OPRHP employees.

Full investigations were performed on all park facilities with one exception: the pedestrian bridge was subject to inspection only, because it is an NYSDOT-owned structure.

4.1 Park Description

Devil's Hole State Park encompasses 42 acres. Much of the developed area is flat lawn with mature, deciduous, over-story tree cover. The bank of the lower Niagara River defines the northwest border of the park. The upper rim of the gorge runs at a southwest to northeast angle, topographically bisecting the park. The area northwest of this rim is the sloped gorge embankment, which drops about

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

300 vertical feet from the gorge rim to the riverbank. This slope covers roughly ½ of the total acreage of the park. The RMNPP powerhouse is visible to the north of the park.

The park harbors rich aesthetic resources, such as dramatic views of the Niagara River Gorge and its rapids 300 feet below. Winding concrete and stone steps wrap around the visually stunning gorge to the river's edge. These steps also serve to access a trailhead, and fishing areas on the Niagara River below.

This park also has historic value, it is the site of a battle between the Seneca Indians and British soldiers that occurred in 1763. In 1927, the gorge area was established as a state park.

Devil's Hole State Park includes access to the Great Gorge Railroad Right-of-Way trail system. The Ongiara portion of this trail joins Devil's Hole State Park to Whirlpool State Park, which lies 1.1 miles to the south.

In addition to its natural aesthetic appeal, Devil's Hole State Park has some infrastructure, and several amenities to improve its appeal and usability. Site infrastructure and amenities include:

- Two parking lots
- A scenic walkway and overlook
- A trailhead to the Great Gorge Railroad Right-of-Way trail system
- Picnic tables in a lawn area
- Fishing access
- Restroom facilities (open mid-April to mid-October)

Day-to-day maintenance and repair at the park have been well done. The lawn area, trees and stone masonry work are visually appealing. The restroom is a Romanesque Revival style stone masonry building that is well-sited in the landscape.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

During the site visit, signs of vandalism were frequently encountered. Park Officials stated that vandalism is a persistent problem at this park.

4.1.1 General Site and Infrastructure

The Devil's Hole State Park site is generally well maintained and visually appealing. The park is developed with several elements of infrastructure, including parking areas and walkways. These elements are discussed in detail below.

4.1.1.1 Main Parking Area

The main parking lot is 72 feet wide by 210 feet long and is located on the west side of Robert Moses Parkway, adjacent to the Niagara Gorge. Access to the parking area is gained via a one-way, 20-foot wide, paved driveway: it is a southbound exit off the Robert Moses Parkway. Egress from the parking lot is gained via a one-way, 20-foot wide, paved driveway which exits at the south end of the lot. The exit driveway is an on-ramp to the southbound lane of the Robert Moses Parkway. Sight distance is good at both the parking lot entrance and exit ([Figure 4.1.1.1-1](#)).

The parking lot is striped to accommodate 40 vehicles. These delineations include defined ADA parking spaces ([Figure 4.1.1.1-2](#)).

The parking lot is crowned in the center; surface drainage flows to a curb line on the west side of the lot and is directed to a subsurface drainage system. Pavement surface appears to be 10 to 15 years old with moderate surface cracking; it is in fair condition. No heaving of the pavement in the parking area was evident at the time of assessment, suggesting that the gravel base is not frost active.

The parking lot is bounded by concrete curbing in fair condition. A paved walkway on the west side of the parking lot leads to the gorge overlook. There is a white painted wood barrier in fair condition between the walkway and lawn.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

There are no ADA curb cuts to the walkway, and the parking area has no security lighting.

It is recommended that the main parking area, as well as the entrance and exit driveways be reconstructed. The parking lot pavement should be removed and replaced with 3-inch pavement. Driveways should be repaved with 4-inch pavement. The new surface should be graded to drain to existing catch basins. Walkway pavement and curbing should be replaced. ADA curb cuts, appropriate striping and security lighting should be incorporated in this reconstruction. In addition, the wood barrier bordering the walkway has no apparent function and may be removed.

4.1.1.2 Secondary Parking Area

The secondary parking lot is 60 feet wide and 160 feet long ([Figure 4.1.1.1-2](#)). It is located on the east side of the side of Robert Moses Parkway, and is separated by this highway from the rest of the park. The park is reached from this lot via a pedestrian bridge which overpasses the highway.

Access to the secondary lot is gained via a single lane exit off the northbound side of the Robert Moses Parkway, or via a turn off from either lane of Route 104. These access routes lead to a two-way parking lot access driveway. This driveway has good sight distance from both directions.

Pavement surface in the parking area appears to be 10 to 15 years old with moderate surface cracking; it is in fair condition. No heaving of the pavement in the parking area is evident, suggesting that the gravel base is not frost active. Surface drainage flows across the lot to a subsurface drainage system located in the southwest corner of the lot.

The parking lot is striped to accommodate 40 vehicles. These delineations include defined ADA parking spaces.

A paved walkway on the west side of the lot leads to a NYSDOT pedestrian bridge which connects this area to the main lot. The parking lot is bounded by concrete curbing which is in fair condition.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

There are no ADA curb cuts to the walkway, and the parking area has no security lighting.

It is recommended that the secondary parking lot be reconstructed. The parking lot pavement should be removed and replaced with new 3-inch pavement. The entrance driveway should be repaved with 4-inch pavement. Curbing and walkway pavement should be replaced. ADA curb cuts and appropriate striping should be incorporated. Security lighting should be installed.

4.1.1.3 Walkways

4.1.1.3.1 Main Walkway

The main walkway system runs from the secondary parking lot, across the pedestrian bridge, to connect with the main parking lot. It then continues along the gorge rim ([Figure 4.1.1.3.1-1](#)) to the restroom and the stone-paved overlook at the northern end of the Park. Total walkway length exceeds 3,000 feet.

The walkway width varies, but it is generally 8-foot wide. It is paved with asphalt and is in good to fair condition. Ramped areas to the NYSDOT pedestrian bridge are in poor condition due to a delaminating skim coat of asphalt.

The park site is generally flat, and likewise the walkways are essentially flat. They appear to be ADA compliant, but this was not field verified via measurements during the site visit. ADA access to the men's restroom and the stone-paved viewing area is thwarted by stairs in each respective access path.

The existing walkways do not have an expected 30-year life remaining. However, they are not currently in need of replacement and may serve for several more years with proper maintenance.

It is recommended that the walkway system be rehabilitated to achieve ADA accessibility to major site amenities and facilities from either parking lot. An ADA-compliant walkway should be installed to access the stone-paved viewing area, and the men's restroom. Some degraded areas in the

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

walkways should be removed and replaced with new three-inch pavement. Much of the pavement is still in good condition, which could be maintained by application of crack sealants and coatings. Such treatments should be applied as necessary, based on the findings of maintenance inspections.

Recommendations for the pedestrian bridge are considered separately from the walkways. A discussion specific to the bridge, its condition, and appropriate recommendations for rehabilitation are presented in the following pages of this report.

4.1.1.3.2 Pedestrian Bridge

The pedestrian bridge is owned and maintained by NYSDOT. It overpasses the Robert Moses Parkway, connecting the main and secondary parking lots. The bridge accesses each respective lot at the south end.

The bridge is steel framed, with a structural concrete deck; it appears to be in good condition. Recent bridge deck patches are of fair quality. The bridge deck is crowned in the center, and surface drainage discharges to a subsurface drainage system in the northerly corner at each end. Bridge deck safety railings are 3-foot high aluminum pipe rails.

There are concrete access ramps on each side of the bridge. Each ramp is composed of two runs with an intermediate landing separating them. The runs each slope at a 1 to 12 pitch and each is approximately 60 feet in length. The intermediate landing is 6 feet deep on each side of the bridge. The slope of the ramps meets ADA requirements (no more than 6 inches/6 feet), but the runs exceed the 30-foot maximum distance that is allowable without a landing.

The concrete access ramps have stone masonry walls on each side, with a top-mount, 2-inch diameter aluminum handrail. The stone masonry of these walls is in good condition.

The NYSDOT-owned pedestrian bridge is an existing structure. It is in good condition and, if properly maintained, can be expected to serve 30 more years. The deck and concrete slab require

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

inspection and maintenance, typical of any slab structure, to protect against water intrusion. The stone masonry walls should be inspected on a regular basis, and repaired as necessary.

4.1.1.4 Barriers

There are two barrier structures present at the Devil's Hole State Park site that were inspected as part of this assessment: these structures are the gorge fencing ([Figure 4.1.1.3.1-1](#)), and the gorge stone wall.

The gorge fencing runs from the stone wall near the restroom stairs, southward within the park boundary along Niagara Gorge rim; overall, it is approximately 1000' long. The fencing is composed of 3-foot high, three-rail aluminum piping that runs between stone masonry piers. The piers, which date to the 1930's, are 2- by 2-foot square, and are 4 feet high. There is evidence of the old steel pipe rails remaining in the stone masonry piers.

The fencing is in good condition, but is not building code compliant. Park Officials stated that the aluminum rail portion of the fencing, installed in the 1960's, looks dated and does not sustain the historic look they would like at the park. The aluminum portion of the fence is nearing 50 years old., Park Officials would like to replace it with fencing which would blend with the historic stone piers, and other park features.

It is recommended that the aluminum portion of the gorge fencing be replaced with a barrier that meets building code regulations, and reflects the historic theme desired by Park Officials. To meet code, the proposed fence should be no less than 42 inches high. Balusters, up to 34 inches high, should be arranged to prevent passage of a 4-inch diameter sphere between them; from 34 inches and upward, the balusters should be arranged to prevent passage of an 8-inch diameter sphere. Although it is not required by code, it is recommended that the new fence should not be climbable; the main purpose of this recommendation is to enhance safety for small children.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

The gorge stone wall circles the northern end of the park, which overlooks the gorge and the RMNPP powerhouse. It is a mortared, rough stone wall with natural, angular stones grouted into the top, jutting upward. It is approximately 2 feet thick, 4 feet high, and 600 feet long.

With the exception of minor mortar deterioration, the gorge stone wall is in good to fair condition. There is no evidence of major cracking, indicating that the foundation is stable. The wall's height is sufficient to meet current code compliance. If properly maintained, this wall can be expected to last for 30 more years.

It is recommended that the stone masonry of this structure be inspected on a regular basis, and maintained as needed. Special care should be taken to protect the wall from water intrusion (which will damage the structure), particularly on the top of the wall, and at mortar joints.

4.1.2 Amenities

4.1.2.1 Picnic Area

Designated picnic areas are not evident at the park. Three picnic tables, one large painted charcoal grill and a bench are located adjacent to the main parking lot on a well-kept lawn with mature shade trees.

The picnic tables are in poor condition due to decay, poor coatings, and vandalism. The picnic table that is located beside the secondary parking lot was broken at the time of assessment. Historically, there were more picnic tables at this park, but Park Officials indicate that their numbers have diminished over time due to vandalism.

There are no ADA accessible picnic tables at the park, and there is no ADA-compliant access to the picnic areas.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Picnic areas are potentially the most publicly attractive amenities for this park. It is recommended that new picnic tables and grills be installed in two established picnic areas, one on each side of Robert Moses Parkway. Specifically, the picnic area on the gorge side of the park should be furnished with 8 tables and 4 grills; the picnic area near the secondary parking lot should be furnished with 4 tables and 2 grills. Each picnic area should include at least one ADA-accessible picnic table. ADA-compliant picnic tables should be located directly adjacent to hard-surface pathways. All picnic tables should be constructed of pre-cast concrete, and they should be secured to concrete slabs or anchors.

4.1.2.2 Fishing Access

Fishing access to the Niagara River near Devil's Hole Rapids is gained by descending approximately 300 vertical feet from the gorge rim to the river below ([Figure 4.1.2.2-1](#)). To facilitate this descent, a flight of access stairs begins at the northwest corner of Devil's Hole State Park and winds down through the gorge. These stairs access the Ongiara Trail portion of the Great Gorge Railroad Right-of-Way trail system, and fishing areas along the bank of the Niagara River.

The gorge trail access stairs are comprised of two stair types. The first flight of stairs at the gorge rim is constructed of concrete and the rest of the stairs to the gorge bottom are constructed of mortared stone.

There are three flights of concrete stairs. Concrete stairs are 4 feet wide, with a 7 ½-inch rise, 11-inch tread, and a ½-inch nosing. The concrete stair treads have some spalling and chipped nosings; they are in fair condition.

A stone masonry guard wall runs alongside the concrete stairs, and in it is mounted a 1 ½-inch diameter carbon steel handrail. This rail is mounted 2 feet and 8 inches above the stair treads. The handrail on the second flight of concrete stairs is missing. The existing steel handrails are too low to meet current code requirements, but are otherwise in fair condition.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

The stone masonry stairs range in width from 4 to 8 feet. Stair tread risers are 6 to 7 inches, and tread width ranges from 11 inches to 1 foot and 9 inches. The stone masonry stairs have a small masonry guard wall (less than 2 feet high) with no handrails. The stairs switchback down the gorge to the bottom; they are solidly in place, and are in fair condition.

It should be noted that there are some areas, adjacent to the stairs, where people have created informal foot-trails. These trails could lead to erosion near stair treads, which could affect their structural integrity.

It is recommended that the concrete stairs be furnished with new handrails on each side. These rails should be constructed to meet current building code requirements: they must be a minimum of 34 inches, to a maximum 38 inches high in order to be in compliance with the Building Code State of New York. The concrete steps should be subject to a routine inspection and maintenance program. This should include the repair of spalled treads and nosings, removal of vegetation, and clean up of accrued leaf-matter. The stone stairs should be maintained to prevent degradation from their existing condition; mortar should be repaired as needed, and trailside erosion should be addressed where necessary. Erosion issues associated specifically with informal trails should also be addressed; this should include patching and seeding of areas that may undermine the integrity of stone treads.

4.1.2.3 Trail Condition

The Ongiara Trail (a portion of the Great Gorge Railroad Right-of-Way trail system) follows the base of the Niagara gorge between Devil's Hole and Whirlpool parks. This discussion covers the section of this trail that lies within the boundaries of Devil's Hole State Park.

The trail follows an abandoned railroad bed, from which the tracks have been removed. It has a soil substrate and is in good condition. There are some erosion issues along the trail; erosion of the gorge wall above the trail occasionally leads to slides that partially block the trail. To date, there are no incidents of down-slope erosion causing washouts of the trail itself.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

It is recommended that the trail be inspected, and that maintenance and repair needs identified during this inspection be addressed. After this initial inspection and maintenance, the trail should be subject to annual or biennial inspection and maintenance. The trail should be cleared of debris and encroaching vegetation as needed. Erosion issues should be assessed and repairs should be made as needed.

4.1.2.4 Restroom Exterior

A 20'x 20' stone masonry building, housing maintenance and restroom facilities, is located near the northeast corner of the park ([Figure 4.1.2.4-1](#)). There is a women's restroom at the street level of this building; there is a men's restroom and a mechanical room on the basement floor ([Figure 4.1.2.4-2](#)). The structure was built in 1950; an original construction drawing is shown on [Figure 4.1.2.4-3](#).

The steep hip roof is covered with slate shingles and has a slight "kick" at the eaves. Several roof slates are missing. The balance of the roof covering appears to be in good condition. No roof ventilation is evident. Roof penetration flashing condition was not determined at the time of assessment. Eave and soffit trim paint is nearly worn off, but the wood trim itself is in good condition. Roof drainage is directed to the ground.

The stone masonry walls of the building are in good condition. Minor mortar deterioration was noted at the time of assessment. There is no wall cracking to indicate foundation or soil problems. Foundation construction is unknown.

The southwest side of the building wall extends to a mortared stone retaining wall ([Figure 4.1.2.4-4](#)) that is in good condition. Also on the southwest side, mortared stone stairs and ramps abut the building, providing passage from the first floor to the basement level ([Figure 4.1.2.4-5](#)). The handrail for these stairs and ramps is missing.

This building has no windows, only masonry openings to provide light and ventilation ([Figure 4.1.2.4-5](#)). Exterior doors are painted steel and in good condition. The paint is chalked. Each door swings out, has an exterior pull handle and is 3 feet wide. Park Officials noted that the doors were recently installed to correct for vandalism of the previous doors.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

At the women's restroom, a paved walkway ramps up to a concrete sill; this sill is 1 ½ inches higher than the pavement, creating a non-ADA-compliant entrance. At the men's room, the concrete threshold is 3 inches higher than the stone pavers. This lip causes this route to be non-ADA compliant.

Aside from an impassable entrance, there is no ADA-compliant access to the men's room because there are stairs incorporated in each path of approach. The paved walkway to the ladies' room appears to be ADA compliant (excluding lack of curb cut), but this was not verified for its entire length during the site visit.

There is a drinking fountain located on the east side of the building adjacent to the paved walkway to the women's room. The fountain is composed of site-constructed stone masonry with a pre-cast concrete top. It appears to be fairly new and it is in good condition. At the time of assessment, the fountain's water source had been disconnected for the winter. The drinking fountain is not ADA compliant.

There is no security system or lighting near this building. There is evidence that such lighting once existed, but has been removed. Park Officials stated that the building is routinely vandalized.

Since the exterior of the building is in good condition, a thirty-year useful life could be achieved by performing maintenance, and bringing appropriate elements into compliance with ADA standards. Inspection and maintenance of mortared stone walls, pavers and stairs should be performed on an annual basis.

A slate roof, such as the one on this building, has a life expectancy of 100 years or more. Proper maintenance such as inspection and replacement of slate shingles and roof penetration flashing is recommended. Wood trim should be painted regularly, and it should be replaced when rotted. It is recommended that the exterior doors of this building should be painted. The paved walkway to the ladies' room should be shimmed to the elevation of the threshold to achieve ADA compliance. ADA-compliant entry to the men's room should be similarly achieved. A walkway extension should be installed across the park lawn to provide ADA access to the men's restroom. An ADA-compliant drinking fountain should also be installed. Handrails should be installed on each side of the exterior stone staircase.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Security lighting should be installed around the building to discourage vandals. Scrub vegetation should be removed from the northeast side of the building, and the area should be seeded or planted with vegetation that will discourage soil erosion from roof drainage.

4.1.2.5 Restroom Interior

General Description: Street Level

The street-level floor of the restroom building contains a women's restroom and an electrical service closet ([Figure 4.1.2.4-4](#)). The women's restroom is furnished with two stainless steel, floor-mount, flushometer valve water closets and one stainless steel, wall-mount lavatory ([Figure 4.1.2.5-2](#)). The electrical closet encloses an air duct and an electrical disconnect switch.

The floor at this level is a concrete slab that has some cracking to the central floor drain; the floor is in fair condition. It is notably discolored due to age and wear, but may be restored somewhat by an industrial cleaning.

Tan glazed ceramic tiles cover the 9-foot 9-inch high wall: aside from discoloration and holes remaining from past installations, the tiles are in good condition.

The ceiling is white and smooth finished; it may be plaster, but this was not verified during the assessment. The ceiling follows the roof-line, at approximately a 12 on 12 pitch, from the top of the wall to a point 12 feet and 10 inches above the floor. There it angles to horizontal, forming a coved ceiling. Roof construction method is not visible but may be wood timber, which is typical to the age and type of this structure. The ceiling shows no signs of cracking.

There is a grate mounted in a framed ceiling opening. There is no apparent roof ventilation from the building's exterior, and it is assumed that this grate ventilates the attic space.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

There are no windows at this level of the building. Instead, there are three large square precast-concrete masonry inserts with several holes arranged in an elliptical pattern; these provide ventilation. From outside the building, they are framed with masonry to give an elliptical appearance. They are in good condition.

The door to the electrical room is a flush wood-veneer door with a "Danger" sign affixed to it. It has a deadbolt-keyed lockset. The door is in very poor condition and is insufficient to secure potentially dangerous equipment in an area that is subject to vandalism.

The women's restroom lavatory is a stainless steel, wall-mount with a metered type cold water faucet. The lavatory is in good condition, partially attributable to the fact that it was recently installed to correct for damage due to vandalism. The lavatory area is furnished with soap and towel dispensers. The towel dispenser is not ADA compliant.

The stainless steel water closets are in good condition. Like the lavatory, they were recently replaced to correct for damage due to vandalism. The water closets are not ADA compliant. Each toilet partition area is 36 inches by 60 inches, which does not satisfy ADA compliance, and no grab bars are provided.

A painted steel, floor-mount vision screen blocks the view between the exterior door and the two toilet partitions. It is in very poor condition, showing coating failure and rust. Toilet partitions are similarly constructed and are also in very poor condition ([Figure 4.1.2.5-3](#)).

There is no heat or hot water service to the women's restroom. A single ceiling-mounted fluorescent fixture provides lighting.

General Description: Basement Level

On the basement level of the restroom building, there is a men's washroom and a mechanical room ([Figures 4.1.2.5-2](#), [4.1.2.5-3](#), [4.1.2.5-4](#), [4.1.2.5-5](#) and [4.1.2.5-6](#)). The washroom includes a floor-mount, stainless steel, flush valve water closet; two floor-mount vitreous china urinals; and one stainless

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

steel wall-mount lavatory. The mechanical room ([Figure 4.1.2.5-4](#)) encloses an electrical panel ([Figure 4.1.1.1-1](#)), a service sink ([Figure 4.1.2.5-5](#)), a pressure booster pump for the flush valves, and a sewage holding-tank and ejector pump ([Figure 4.1.2.5-4](#)).

The floor at the basement level is a concrete slab on grade: it is in fair condition. Cracks radiate from the urinals, but no vertical movement is evident at the cracks. The floor is notably discolored from age and wear, but may be restored somewhat by cleaning.

The walls in the men's restroom are covered with tan glazed ceramic tiles. Aside from discoloration, they are in good condition. They may be restored to their original color by an industrial cleaning.

The ceiling in the men's room is 8 ½ feet high: it is the underside of the slab above and is painted white. Some paint is peeling.

There is exposed plumbing along the walls and ceiling at this level ([Figure 4.1.2.5-7](#)). Some is painted white, and some is unpainted. Of those pipes that are painted, some are peeling.

The door to the mechanical room is 30 inches wide. It is a flush wood-veneer door with a padlock on a surface-mount strap. The door is in poor condition, and Park Officials noted that it is constantly vandalized. The door is insufficient to secure potentially dangerous equipment in an area that is subject to vandalism.

There are no windows in this portion of the building. Ventilation is provided by small, clay, louvered masonry inserts ([Figure 4.1.2.5-7](#)). Some of the louvers are broken. Park Officials stated that these openings are a nuisance because visitors stuff trash into them.

The men's lavatory is stainless steel, wall-mount with a metered type cold water faucet. The lavatory was recently replaced to correct for damage due to vandalism. It is in good condition. The

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

lavatory area is furnished with soap and towel dispensers. The towel dispensers are mounted too high to satisfy ADA compliance.

The stainless steel water closet was recently replaced, due to vandalism, and is in good condition. However, it is not ADA compliant. Also, no grab bars are present.

The toilet partition is a painted-steel, floor-mount model ([Figure 4.1.2.5-3](#)). It is in poor condition, showing rust and paint failure. The toilet area is 36 inches by 60 inches, which is not large enough to meet ADA compliance. A vision screen, such as the one that exists in the women's restroom, was once present but has been torn out by vandals.

There is no heat or hot water service to this portion of the building. Lighting is provided by a 4-foot long fluorescent strip, which is mounted on the ceiling.

The mechanical room occupies one-third of the basement area. Interior walls of this room are constructed of 8-inch concrete block. The exterior walls are the concrete building foundation walls. The walls of the mechanical room are in good condition. The floor slab is in fair condition, but is covered with rust staining which may be the result of long-term water leakage.

Water Service

External water service to the restroom building is from the public system. Service to the building is located on the northeast side of the structure. Exterior water service material was not determined at the time of assessment.

The internal water service main is a 2-inch copper pipe located in the northeast corner of the mechanical room. This soldered copper pipe is in fair condition. Associated elements include a water meter, isolation valves, and back flow prevention. According to Park Officials, a booster pump was added to the system to provide sufficient pressure to operate the flushometer valves on the water closets and urinals. Soldered copper pipe is in good condition. Internal piping ranges in size from ½ to 2 inches in diameter. Pipe spacing is good, and pipe support is adequate.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

There is a hot water system located in the mechanical room, but it has been disconnected. The hot water system is a Dayton 30-gallon electric hot water tank. This tank is over 10 years old and is in fair condition.

Internal Waste Disposal

The waste disposal system consists of cast iron bell and spigot piping with lead joints. Street-level waste piping is suspended from the underside of the structural floor slab with clevis hangers and threaded rod. Basement-level waste piping is underground, below the concrete floor slab; therefore it is not accessible for inspection. The disposal system cleanout is located in the basement-level floor slab. The waste system is common-vented via two 3-inch carbon-steel vent pipes.

External Waste Disposal

The waste disposal system consists of a sewage holding tank and a sewage ejector pump to the public sewer system. The holding tank is located below the basement-level floor slab, on the easterly side of the mechanical room. The sewage is pumped from the holding tank to a sewer manhole, located on the east side of the restroom building.

Electrical Service

Electrical service to the restroom building originates from an electrical handhole that is located east of the building, near the paved walkway. The service runs underground and enters the building at the street-level electrical service closet where it connects to a main disconnect switch. The main disconnect switch feeds a 100A circuit breaker type panel which is located on the north wall of the mechanical room. The building wiring runs through rigid galvanized and rigid steel surface-mount conduits. Receptacles are grounded, but do not have ground fault protection.

Restroom interior lighting consists of 2-foot by 4-foot fluorescent light fixtures: the men's restroom, the women's restroom, and the mechanical room each have one fixture.

Summary and Recommendations

Age, wear and vandalism have degraded the interior of the restroom. Therefore, it is recommended that the interior of the building be renovated. These renovations should employ high

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

quality materials such as heavy-duty, stainless-steel plumbing fixtures and toilet partitions. These, and other materials, should be chosen with intentions to discourage vandalism. Proposed reconfiguration of the building's interior is presented on [Figure 4.1.2.5-8](#).

As part of the recommended renovations of the building interior, all interior plumbing fixtures, and piping in public areas should be removed and replaced. Likewise, partitions and interior doors should be replaced. Exterior doors may be retained and replaced as needed, as a maintenance item.

The new layout for each restroom should comply with ADA standards, and should include infant changing areas. Hot water service should be installed to the entire building, and new lighting should be installed in each restroom.

Installations specific to the women's room should include three floor-mount water closets (one of which should be ADA compliant), two lavatories in a vanity, and stainless steel toilet partitions. A quarry tile floor should be installed (dependent on slab cracking). Also, the electrical room door should be replaced with one of high quality, which will resist vandalism and help to insure user safety.

Installations specific to the men's room should include one ADA-compliant water closet with stainless steel toilet partitions, two wall-mount urinals (one of which should be ADA compliant), and a wash fountain. The existing slab should be removed and replaced, and a quarry tile floor should be installed. Screening should be installed on wall openings, and louvers should be repaired. The ceiling of the men's room should be finished to conceal piping. Metal stud walls with tile backer board should be installed to conceal piping to the wash fountain and tile should be installed. This tile should match the existing tile, which should be preserved to the extent possible.

Installations specific to the mechanical room should include a new hot water heater, a service sink, and a new electrical panel with GFCI circuits.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

4.2 Summary of Recommendations

4.2.1 Main Parking Lot

It is recommended that the 72- by 210-foot surface of the main parking lot be removed and replaced with 3-inch pavement. The walkway surfaces should also be stripped and resurfaced with 3-inch pavement; there should be ADA curb cuts to allow access to the walkways. The entrance and exit driveways should be stripped and resurfaced with 4-inch pavement. All associated curbing should be replaced with granite curb. New pavement should be striped appropriately, and ADA signage should be installed as necessary.

4.2.2 Secondary Parking Lot

It is recommended that the 60- by 160-foot surface of the secondary parking lot be removed and replaced with 3-inch pavement. The walkway surfaces should also be stripped and resurfaced with 3-inch pavement; there should be ADA curb cuts to allow access to the walkways. The entrance and exit driveways should be stripped and resurfaced with 4-inch pavement. All associated curbing should be replaced with granite curb. New pavement should be striped appropriately, and ADA signage should be installed as necessary.

4.2.3 Walkways

It is recommended that minor repairs be made to the walkways as needed. ADA compliant walkways to the men's restroom and viewing areas should be installed. The asphalt ramped areas of the walkway leading to the pedestrian bridge should be repaired.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

4.2.4 Barriers: Gorge Fencing

It is recommended that the stone masonry piers of the gorge fencing be repaired. The existing aluminum railing should be removed and new railing should be installed. The new railing should be building code compliant, and should match the historic theme of the park.

4.2.5 Picnic Area: Main Park Area

It is recommended that eight new picnic tables be installed at the main picnic area. These tables should be constructed of pre-cast concrete and should be anchored in place. Four heavy-duty grills should also be installed.

4.2.6 Picnic Area: Secondary Parking Area

It is recommended that four new picnic tables be installed at the secondary picnic area. These tables should be constructed of pre-cast concrete and should be anchored in place. Two heavy-duty grills should also be installed.

4.2.7 Fishing Access: Gorge Stairs

It is recommended that the mortar and mortared stone treads on the stone stairs be repaired where needed. Handrails should be installed along both sides of the concrete stairs. All stairs should be cleaned. All erosion along the staircase should be repaired, including erosion near stone treads associated with informal trails.

4.2.8 Site Lighting

It is recommended that lighting be installed at the main and secondary parking lots. Also, site lighting should be installed at the restroom building.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

4.2.9 Trail Condition: Initial Inspection and Maintenance

It is recommended that the portion of the Ongiara Trail that is within the boundaries of Devil's Hole State Park be subject to an initial inspection to identify areas in need of repair and or maintenance. Repair and maintenance needs identified in the initial inspection should be addressed.

4.2.10 Restroom Rehabilitation

It is recommended that the restroom be subject to substantial rehabilitation. The mortared masonry and the roof of the structure should be inspected and repaired accordingly. Wood trim should be replaced if necessary. Shrubs around the building should be removed, and plantings should be installed for the purpose of preventing erosion as a result of roof runoff. Exterior doors should be painted. Security lighting should be installed on the building.

The building's entrances should be altered to achieve ADA accessibility. Also, handrails should be installed along the exterior stairs.

All restroom fixtures and appurtenances should be removed and replaced. All interior doors should also be replaced. The ceramic tile walls should be cleaned and restored. The electrical system and all interior lighting should be upgraded. Also, hot water service should be provided throughout the building.

The men's room floor slab should be removed and replaced. Cracks in the women's room floor slab should be repaired with epoxy grout. Quarry tile floors should be installed. Screening should be installed over the masonry openings in the men's room, and the louvers should be repaired. The men's room ceiling should be covered with sheetrock and painted. Exposed plumbing should be replaced and then concealed in tiled chases.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT**

**Devil's Hole State Park
Existing Site Plan**

LEGEND

Existing Park Features

- ① Main Parking Lot
- ② Secondary Parking Lot
- ③ Pedestrian Bridge
- ④ Paved Walkway
- ⑤ Gorge Fencing
- ⑥ Gorge Stone Barrier
- ⑦ Gorge Outlook
- ⑧ Gorge Stairs
- ⑨ Restroom Building
- ⑩ Drinking Fountain

Proposed Park Features

- △ Picnic Area
- △ ADA Access Ramp
- △ ADA Curb Cut
- △ Drinking Fountain
- △ Ramp Repair
- △ Fence
- △ Stair Repair
- △ Restroom Restoration
- △ New Pavement

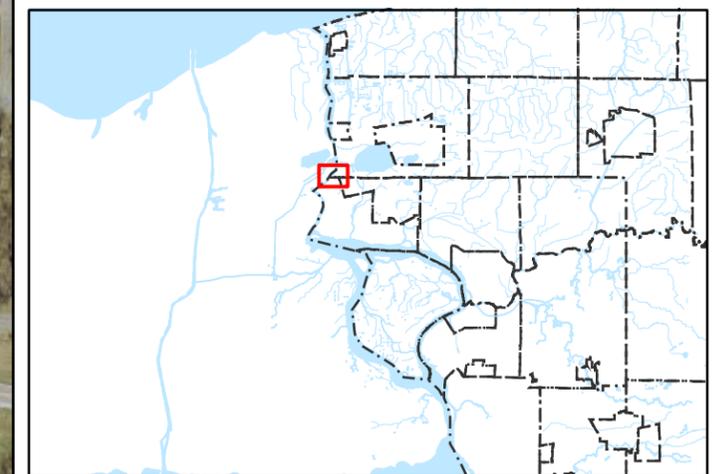


FIGURE 4.0-1



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.1.1-1

MECHANICAL ROOM AND EXIT DRIVEWAY, DEVIL'S HOLE STATE PARK



Mechanical Room Breaker Panel



Parking Area Exit Driveway

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.1.1-2
PARKING AREAS, DEVIL'S HOLE STATE PARK**



ADA Parking Space



Secondary Parking Area

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.1.3.1-1
VIEWS OF GORGE RIM, DEVIL'S HOLE STATE PARK**



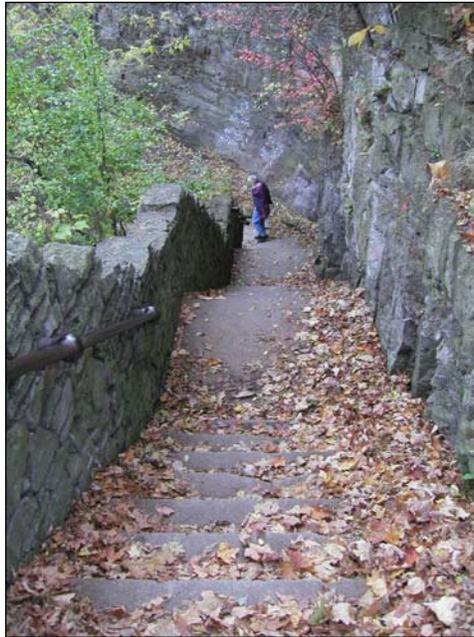
Gorge Rim Fencing



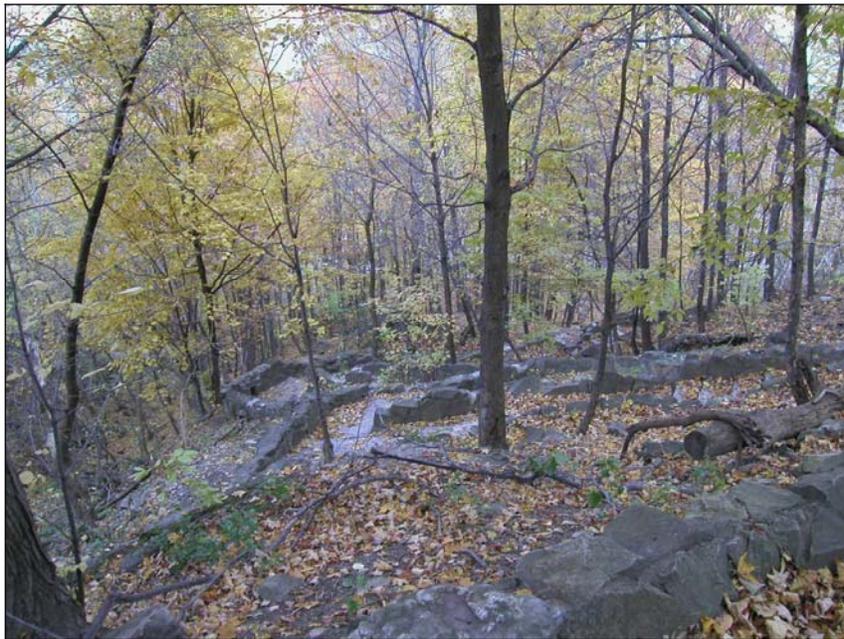
Gorge Rim Walkway

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.2.2-1
VIEWS OF FISHING ACCESS STAIRS, DEVIL'S HOLE STATE PARK**



Fishing Access Stairs



Switchbacks on Fishing Access Stairs

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.4-1

TWO VIEWS OF RESTROOM BUILDING, DEVIL'S HOLE STATE PARK



Restroom Building



Restroom Building

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.2.4-2
RESTROOM ENTRANCES, DEVIL'S HOLE STATE PARK**



Restroom: Street-Level Entrance (to Women's Room)



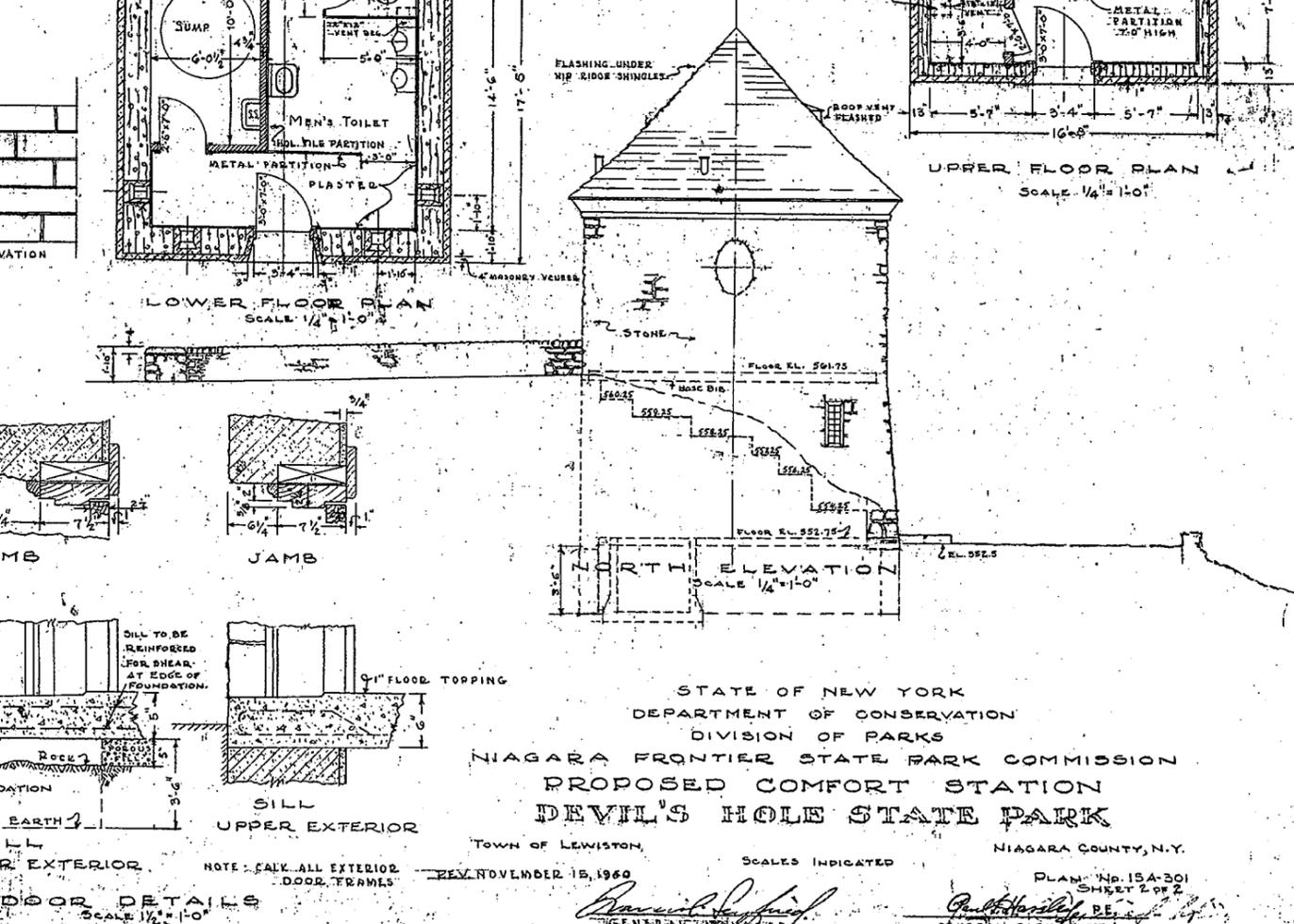
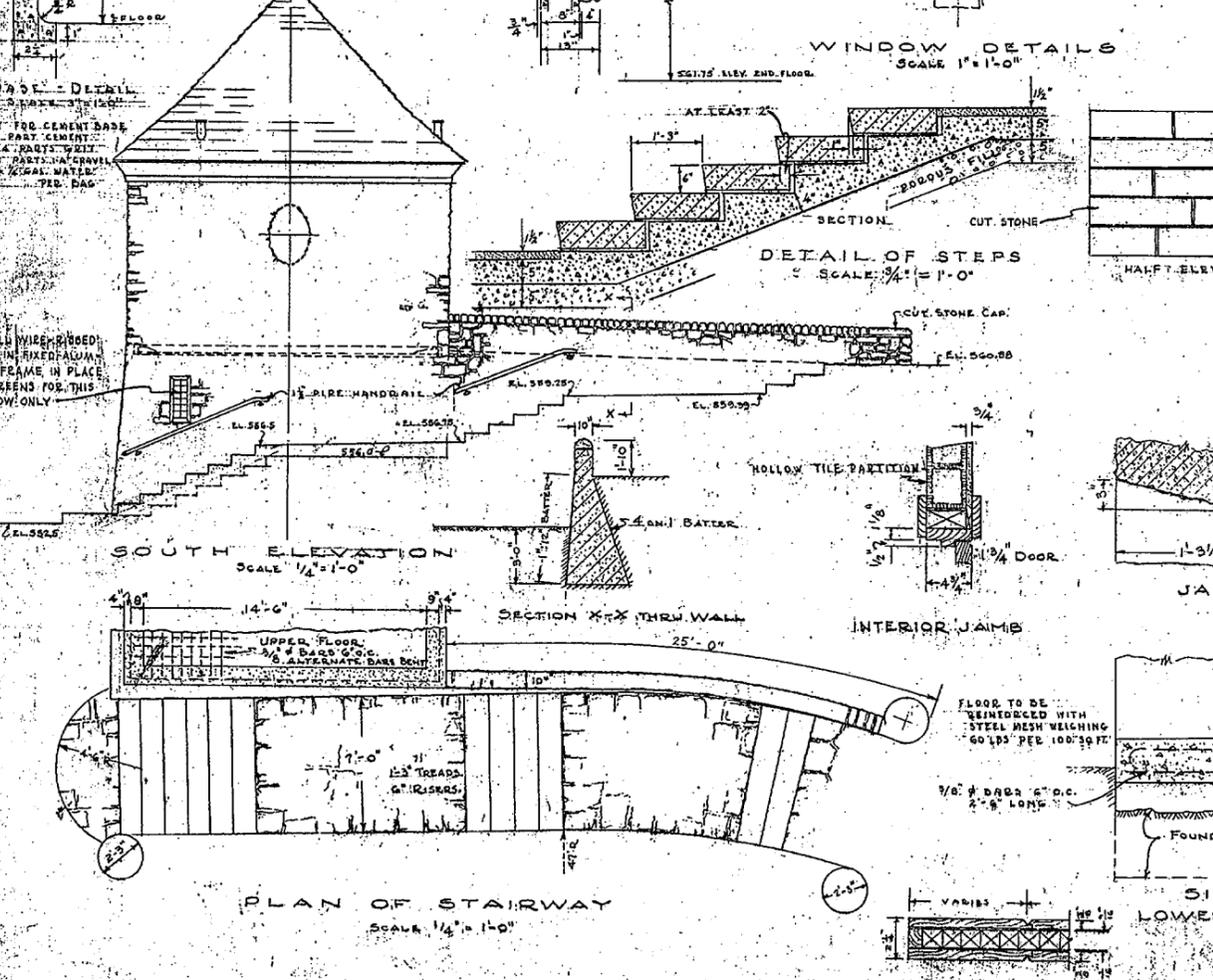
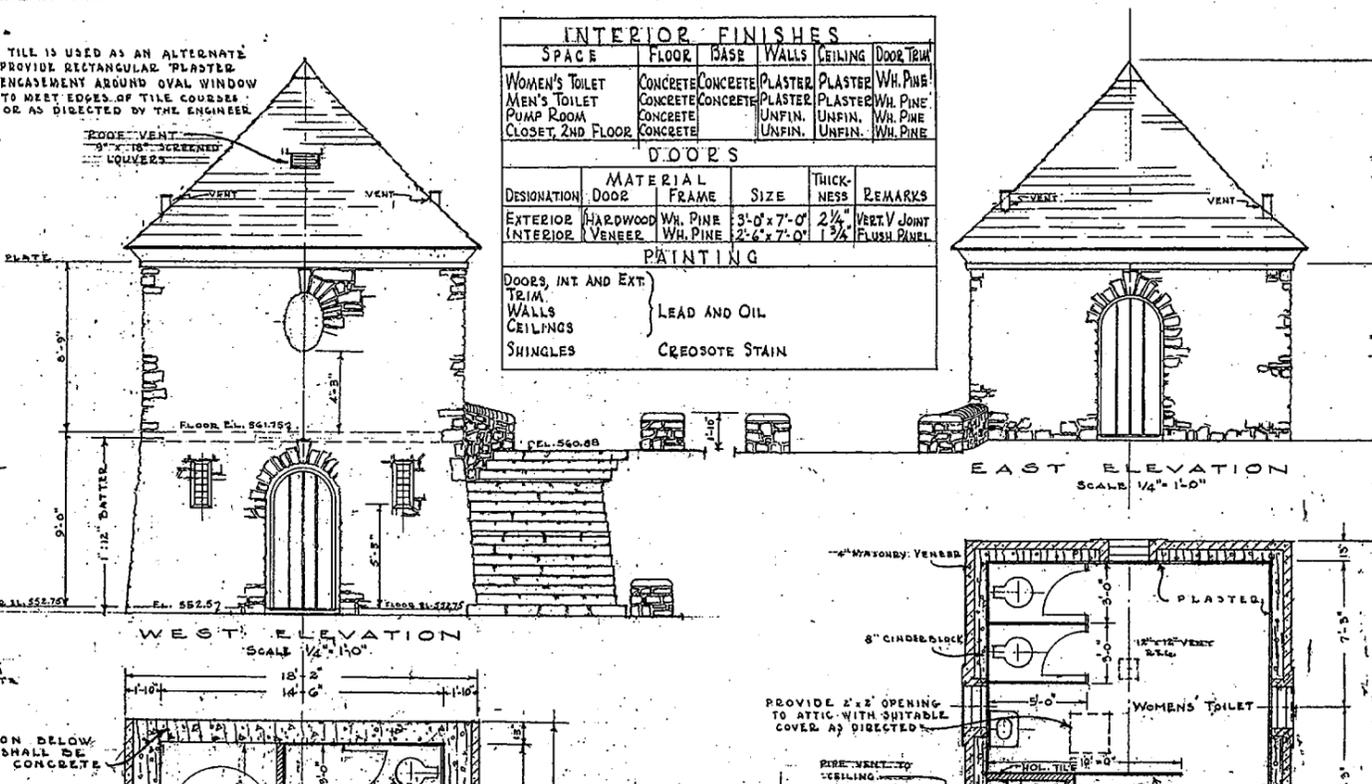
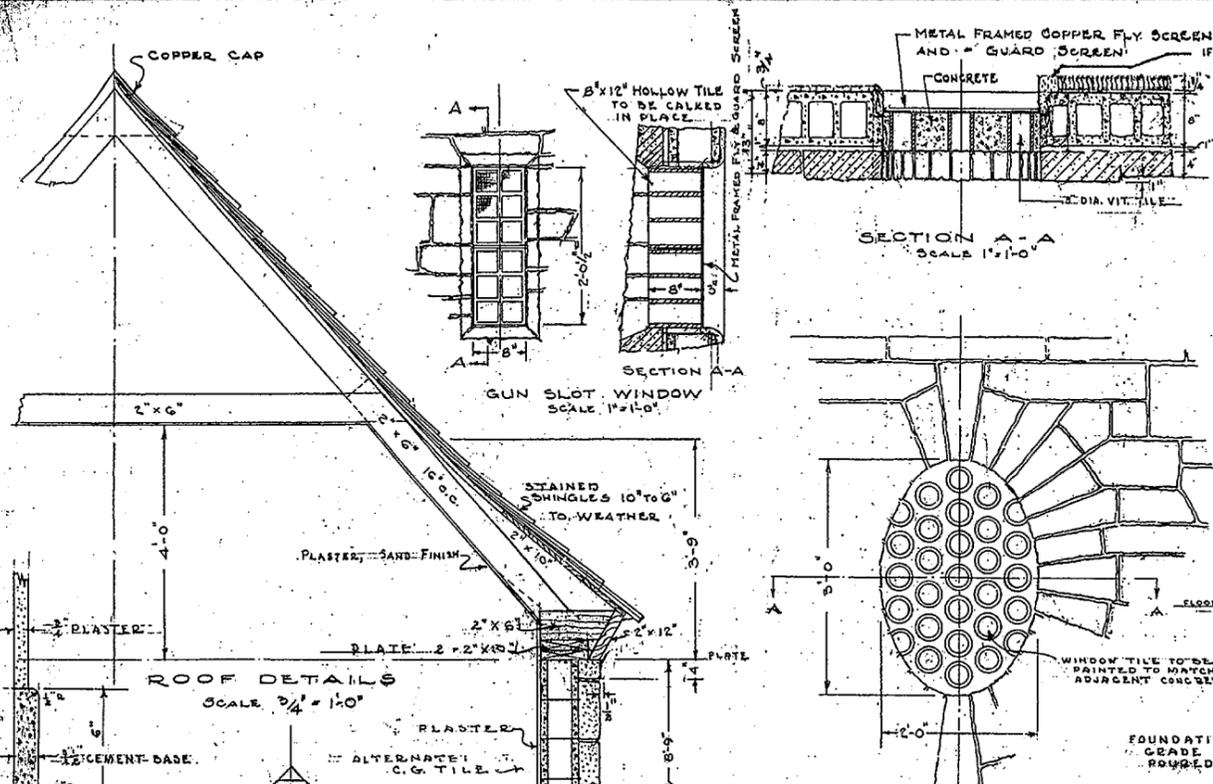
Restroom: Basement Level Entrance (to Men's Room)

9562-C33

INTERIOR FINISHES					
SPACE	FLOOR	BASE	WALLS	CEILING	DOOR TRIM
WOMEN'S TOILET	CONCRETE	CONCRETE	PLASTER	PLASTER	WH. PINE
MEN'S TOILET	CONCRETE	CONCRETE	PLASTER	PLASTER	WH. PINE
PUMP ROOM	CONCRETE	CONCRETE	UNFIN.	UNFIN.	WH. PINE
CLOSET, 2ND FLOOR	CONCRETE	CONCRETE	UNFIN.	UNFIN.	WH. PINE

DOORS				
DESIGNATION	MATERIAL	FRAME	SIZE	THICKNESS
EXTERIOR	HARDWOOD	WH. PINE	3'-0" x 7'-0"	2 1/4"
INTERIOR	VENEER	WH. PINE	2'-6" x 7'-0"	1 3/4"

PAINTING	
DOORS, INT AND EXT. TRIM	LEAD AND OIL
WALLS	CREOSOTE STAIN
CEILING	
SHINGLES	



STATE OF NEW YORK
 DEPARTMENT OF CONSERVATION
 DIVISION OF PARKS
 NIAGARA FRONTIER STATE PARK COMMISSION
 PROPOSED COMFORT STATION
 DEVIL'S HOLE STATE PARK
 TOWN OF LEWISTON, NIAGARA COUNTY, N.Y.

REV. NOVEMBER 15, 1960

GENERAL PARK SUP'T.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.4-4

EXTERIOR AND INTERIOR VIEWS, RESTROOMS, DEVIL'S HOLE STATE PARK



Stone Wall



Electrical Room Door in Women's Room

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.4-5

DETAILS OF EXTERIOR, RESTROOM BUILDING, DEVIL'S HOLE STATE PARK



Louvered Opening to Men's Room from Exterior



Access Stair to Basement Level of Restroom Building

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.2.5-2
LAVATORIES, DEVIL'S HOLE STATE PARK**



Men's Room Lavatory



Women's Room Lavatory

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.5-3

RESTROOM PARTITIONS, DEVIL'S HOLE STATE PARK



Men's Room Partitions



Women's Room Partitions

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.2.5-4
RESTROOM MECHANICAL ROOM, DEVIL'S HOLE STATE PARK**



Mechanical Room Plumbing



Mechanical Room

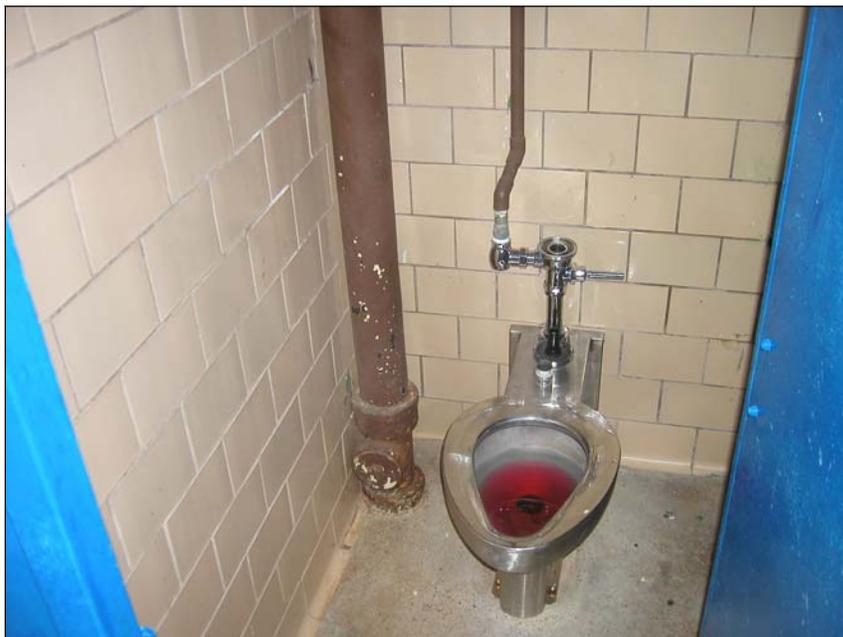
**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.5-5

MECHANICAL ROOM AND MEN'S ROOM, DEVIL'S HOLE STATE PARK



Mechanical Room Sink



Men's Room Water Closet

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 4.1.2.5-6
INTERIOR OF MEN'S ROOM, DEVIL'S HOLE STATE PARK**



Mechanical Room Door in Men's Room

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 4.1.2.5-7

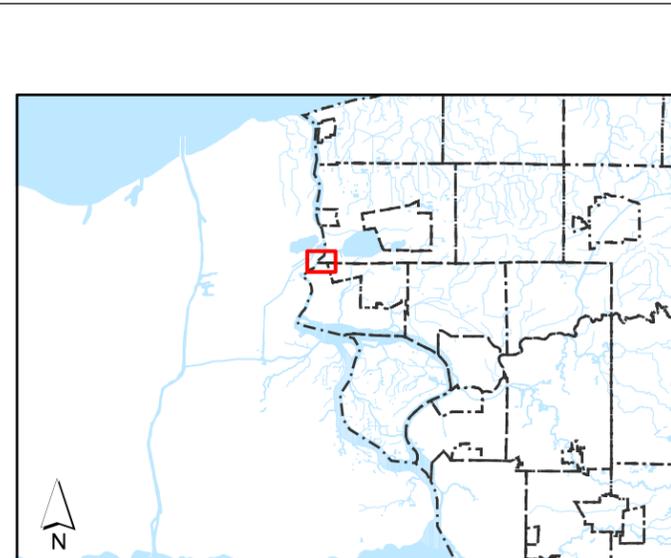
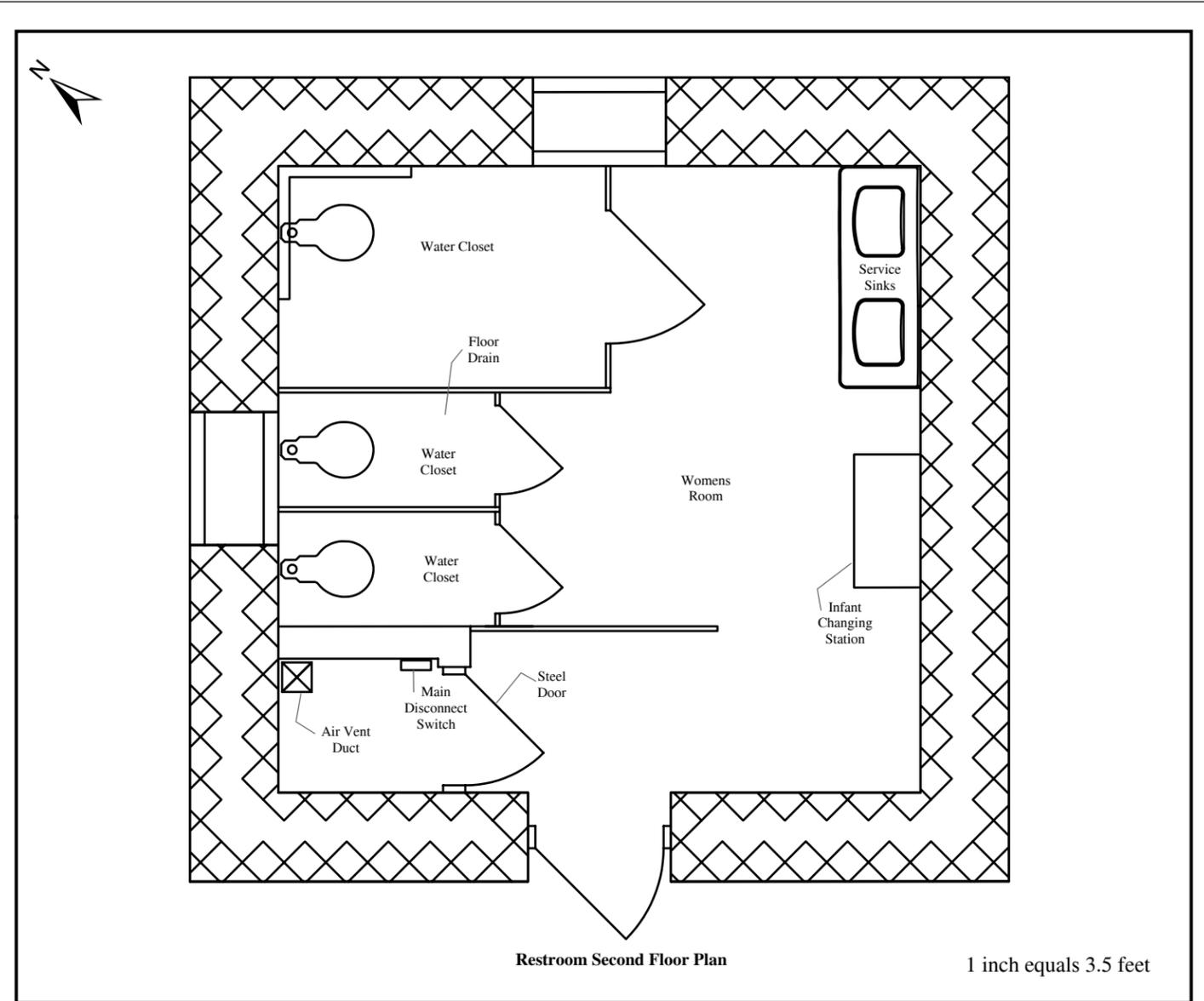
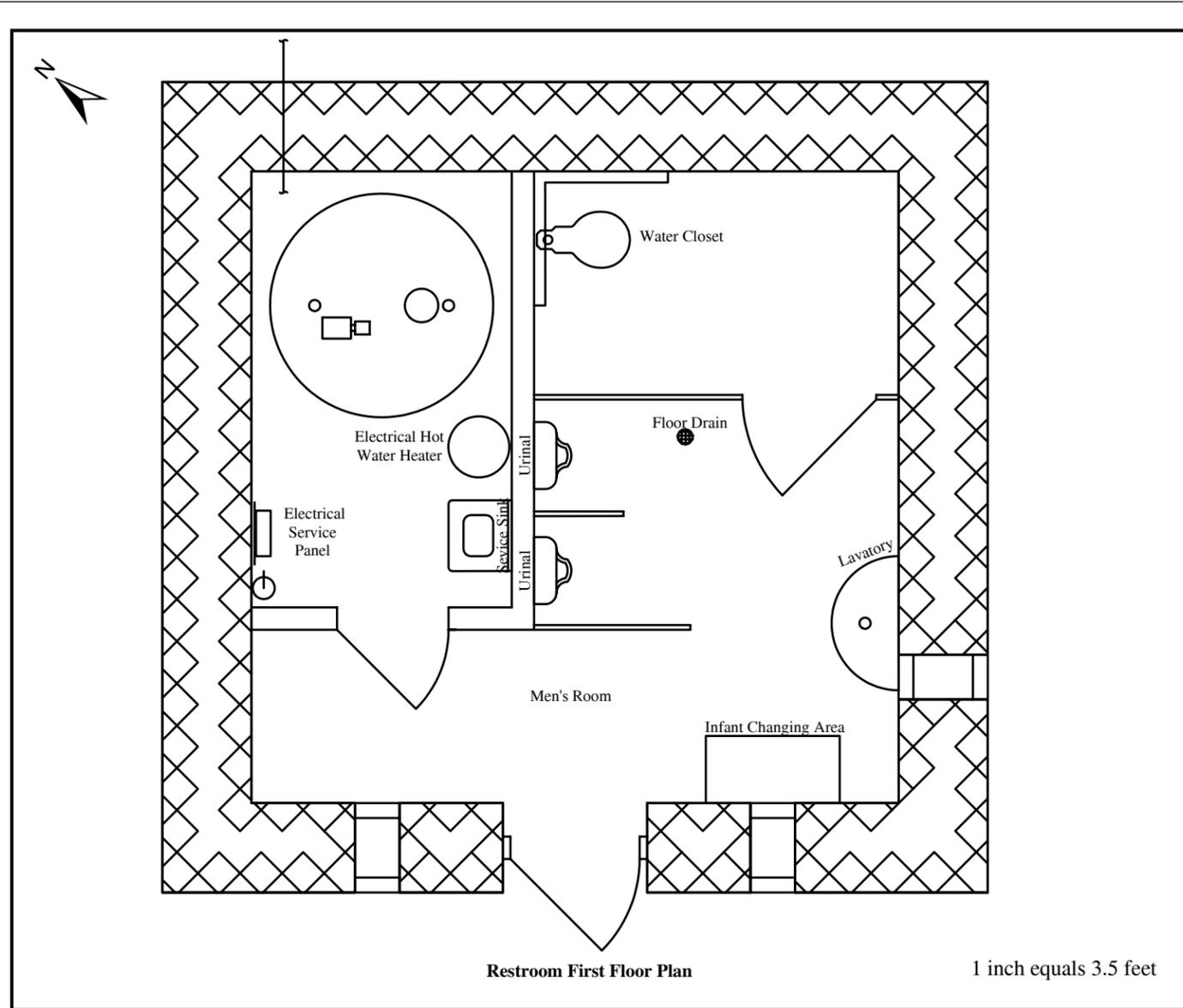
VIEWS OF MEN'S ROOM INTERIOR, DEVIL'S HOLE STATE PARK



Louvered Opening in Men's Room



Exposed Plumbing in Men's Room



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT**

**Devil's Hole State Park
Proposed Restroom Floor Plan**

FIGURE 4.1.2.5-8



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

5.0 WHIRLPOOL STATE PARK

Whirlpool State Park occupies a 109-acre sliver of land in the City of Niagara Falls. This long, narrow, boomerang-shaped parcel is sandwiched between the Robert Moses parkway to the east, and the Niagara River to the west. From its midpoint, the park runs southeast to a point just north of the Whirlpool Rapids Bridge, and northeast to an area below whirlpool rapids, where it abuts Devil’s Hole State Park.

The north and south “wings” of the park area are undeveloped. Most of the park infrastructure and amenities are located on a point of land that juts westward from the latitudinal center-line of the park toward the whirlpool formation on the Niagara River. To the east of the park is the Robert Moses Parkway, beyond which is an area of heavy residential development.

Whirlpool State Park is open year-round and there is no fee for use. It is estimated that approximately 46,100 people visit the park each year.

Whirlpool State Park is operated and maintained by the OPRHP. The site visit for the purposes of this report was performed with three OPRHP representatives.

5.1 Park Description

Whirlpool State Park is developed on two levels. The upper level is located on the plateau of a point of land located in the center of the park area. The lower level, 300 feet below the upper plateau, runs along the river’s edge at the base of the gorge. The upper rim of the gorge runs down the centerline of the park and around the point of land that comprises the upper level plateau area. The park site plan with features is shown on [Figure 5.1-1](#).

The upper level plateau is characterized by areas of open, mowed lawn with scattered mature, over-story deciduous trees. Park access is gained at this level via an access road from the Robert Moses

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

Parkway. This area includes a parking area, picnic facilities, and a playground. In addition, there are several overlooks from this point of land that offer views of the Niagara River Gorge, and the Whirlpool Rapids on the Niagara River below.

A flight of stone stairs descends the gorge to access the lower level of the park. On the lower level, visitors can enjoy hiking trails and fishing access. The Great Gorge Railroad Right-of-Way trail is accessed at this level, as is the Ongiara Trail that follows the bottom of the gorge northeast to Devil's Hole.

Visitors to the park enjoy activities such as hiking, biking, picnicking, cross-country skiing, snowshoeing and bird watching. Infrastructure at the park includes parking and walkways; amenities include hiking trails, fishing access, a playground, a picnic area with a shelter, and restroom facilities.

5.1.1 General Site and Infrastructure

The open lawn areas of the upper level of the park are well maintained and in good condition. The mature maple groves are also nicely maintained and apparently healthy.

There are several issues with site erosion. There is some erosion around the picnic area due to foot traffic. An area of erosion near the south end of the parking lot appears to have been instigated by vehicle traffic, and compounded by runoff; water is beginning to cut rivulets and carry soil from this location. Erosion along the gorge rim is creating deep cuts in the embankment, and is exposing the foundations of the gorge rim fencing.

It is recommended that erosion issues be addressed at all appropriate locations throughout the park. These issues are described, and recommendations are made, on a site-specific basis in the following discussions.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

General site infrastructure includes an access road, a parking lot, gorge perimeter fencing, a retaining wall and several walkways. Each of these, their current condition, and recommendations for rehabilitation are discussed below.

5.1.1.1 Parking Lot

The parking lot for Whirlpool State Park is 480 feet long by 137 feet wide and it can accommodate 150 vehicles ([Figure 5.1.1.1-1](#)).

The parking lot is surfaced with asphalt pavement that is over 15 years old and is in fair to poor condition. It has extensive cracking, but there is no evidence of vertical movement.

Subsurface drainage consists of one catch basin, located at the park entrance, which drains only the inside corners of the access road. Storm water runoff flows, from a high point, eastward and westward across the lot. It then flows toward the north and south ends of the lot where it discharges as surface flow. The lot is fairly flat (1% slope) and there is no curbing around the perimeter to direct runoff. Runoff, compounded by vehicle traffic, has caused soil erosion in the lawn area to the south of parking lot.

The lot is striped, but the paint is fading and in poor condition. The striping delineates 150 parking spaces, 8 of which are designated ADA spaces.

There are bumpers lining the east and west sides, and part of the north side of the parking lot. The bumpers are constructed of wood timbers mounted on concrete piers ([Figure 5.1.1.1-2](#)). They are painted white, and they are in fair condition. The area in front of the restroom building, which lies directly adjacent to the west side of the parking lot, has wood timbers mounted between stone pillars in lieu of the bumpers; these structures are in good condition.

The parking lot is reached, at its south end, via an access road. This 2-way road is 20 feet wide, and about 100 feet long. It is accessed from the Robert Moses Parkway. The road is surfaced with

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

asphalt pavement that is fairly new. The pavement has minor cracking but is in good condition. It has concrete curbing on each side that is in good condition. The road has no subsurface drainage; water runs westward along the southerly curb line of the road and discharges at the south end of the parking lot.

The parking lot and access road are furnished with lighting. There are five lights associated with the parking lot, and one associated with the access road. They are cobra-head, high pressure sodium vapor lights mounted on aluminum poles with concrete pier foundations. The lights are in good condition; the poles and piers are in fair condition. Lighting levels were not evaluated due to the fact that site visits were performed during daylight hours. The lighting structures can be expected to serve for 30 more years with proper maintenance.

It is recommended that the parking lot be stripped and resurfaced with 3-inch pavement. The parking lot surface should be pitched for appropriate drainage. The access driveway may be expected to serve 30 more years with appropriate inspection and maintenance; currently it should be sealed for protection. The wood and concrete bumpers could be painted brown to match the rustic theme of the park. These bumpers cannot be expected to serve a 30-year life, but they may be removed when they are no longer serviceable. Work on the bumpers is optional. Erosion at the south end of the parking lot should be repaired; this repair should include tilling and seeding.

5.1.1.2 Walkways

A wide walkway connects the parking area and the restroom. There are two main walkways that connect the restroom to the gorge rim walkway. The gorge rim walkway follows the gorge rim to the north and south from the developed area of the park. In addition, there are two walkways leading from the parking area to the picnic area; these walkways are discussed in association with the picnic area.

The main walkway from the parking lot to the east side of the restroom building is constructed of concrete. Two main walkways, leading westward to the gorge rim, depart from a patio on the west side of the restroom building. The northern walkway is accessed from the north side of the patio, via a small flight of stairs. The southern walkway is accessed from the south side of the patio and it also incorporates a small flight of stairs. These stairs render both main walkways to the gorge rim non-ADA compliant.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

For this reason, there is no ADA compliant access to the gorge rim walkway. The main walkways themselves appear to be ADA compliant, but this was not field verified. If the main walkways were made accessible, it would provide an ADA compliant travel route to the gorge rim walkway.

The main walkway is surfaced with asphalt pavement that is 10 to 15 years old. The pavement is in fair condition with some cracking. The walkway averages about 5 feet in width and is cross-sloped to provide drainage.

The gorge rim walkway runs along the top of the gorge rim for the length of the park, offering viewing opportunities of the gorge and the Whirlpool Rapids. It averages about 5 feet in width and is surfaced with asphalt pavement that is in fair condition. The access stairs to the bottom of the gorge are reached by following this path northward from either intersection with the main walkways. There are several viewing opportunities along its length.

The gorge rim walkway incorporates sloped areas and scattered staircases that render it non-ADA compliant. However, it is wheelchair-passable for some distance from each intersection with the main walkways.

It is recommended that the flight of steps in the southern main walkway be removed, re-graded, and replaced with an ADA-compliant, asphalt-surfaced ramp to allow ADA access to the gorge rim walkway and views to the south of the park. A paved, 6-foot wide walkway should be installed to connect the south main walkway to the north main walkway to provide ADA access to the views of the north and west of the park. The balance of the paved walkways can continue to serve a useful life with proper routine maintenance.

5.1.1.3 Gorge Railings and Foundations

Over 3,600 linear feet of railing follows the top of the gorge rim, alongside the gorge rim walkway ([Figure 5.1.1.1-1](#)). This railing is constructed of aluminum pipe-rail mounted to aluminum

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

posts. It was installed in the 1960's, and it does not satisfy the current building code. The railing is in good to fair condition, with some separation of the posts from their foundations .

Some of the rail posts are affixed to concrete piers in the soil. The soil around the base of some of the piers has eroded, on the gorge side, exposing their foundations ([Figure 5.1.1.3-1](#)). The concrete of some of the piers is in very poor condition.

Some of the rail footings are affixed to the top of retaining walls. These retaining walls were installed in the 1940's to build up and stabilize substrate for the gorge rim walkway. The railings are attached to the retaining walls by anchor bolts cast in concrete piers. In some areas, the railing base-plates have separated from their concrete foundations. Although this could be a result of stress to the railing itself, it is more likely attributable to the shifting and rotation of the retaining walls, and the associated movement of the concrete piers.

Assessment of the construction details and stability of the retaining walls was not performed for the purposes of this report. Detailed geotechnical data is required to determine the condition of the retaining walls, the amount of rotation, and their long-term stability.

It is recommended that a geotechnical analysis of the retaining walls be performed to determine their condition, rotation and stability.

It is recommended that the aluminum gorge railing be replaced with a barrier that meets building code regulations, and reflects the historic theme desired by Park Officials. To meet code, the proposed fence should be no less than 42 inches high. Balusters, up to 34" high, should be arranged to prevent passage of a 4" diameter sphere between them; from 34" and upward, the balusters should be arranged to prevent passage of an 8" diameter sphere. Although it is not required by code, it is recommended that the new fence should not be climbable; the main purpose of this recommendation is to enhance safety for small children. Areas of erosion along the base of the fence should be repaired.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

5.1.2 Amenities

Amenities at Whirlpool State Park include a picnic area with a shelter, a playground, several hiking trails, a staircase to access the gorge bottom and associated fishing access and trails, and restroom facilities. Each of these amenities, their current condition, and recommendations for rehabilitation are discussed below.

5.1.2.1 Picnic Area

The picnic area is located off the north and east sides of the parking lot, on a grassy lawn with scattered mature maple trees. The picnic area is open, and contains one open-sided shelter.

The picnic area is furnished with 50 picnic tables; 36 of them are scattered throughout the open area, and 14 of them are under the shelter. They are constructed of metal and dimension lumber. The tables are in good to poor condition; this is due to the fact that they vary significantly in age.

There are also 18 small, steel charcoal grills available for visitor use. Sixteen of them are scattered throughout the open area, and two are associated with the shelter. The grills are in fair condition.

The shelter is approximately 16 by 24 feet in size; it is an open wood-framed structure with a 4- to 12-inch pitched, shingled, truss roof. The structure is in fair condition, but the wood column bases are rotted due to direct contact with flat concrete piers which collect water. The shelter is wired for electricity: wiring is run through conduit, and there are 2 GFCI receptacles without covers. There is some erosion occurring around the structure.

The open portion of the picnic area is accessed via two walkways that begin from the east side of the parking lot. These walkways each incorporate a ramped stretch near the parking lot end. The ramp on the southern walkway is sloped to meet ADA compliance (6 inches/6 feet), but the ramp on the northern walkway is too steep (9 inches/6 feet). There is no walkway to the shelter. For these reasons,

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

neither portion of the picnic area is ADA accessible. The picnic area access walkways are in good condition. There is an area of erosion, due to wear from pedestrian use, on the picnic area lawn to the north of the restroom building.

Park Officials stated that picnic shelters are popular. For this reason, it is recommended that a second shelter be installed. It is recommended that the columns of the existing picnic shelter be repaired. The area surrounding the structure(s) should be re-graded to direct water away from the foundations.

The area of erosion to the north of the restroom building should be tilled and seeded ([Figure 5.1.1.1-2](#)).

In the future, when old picnic tables are replaced at the park, the new tables should be ADA compliant.

An ADA-compliant walkway should be installed to access the picnic shelter(s) from the picnic area. The steep slope of the northern access walkway to the picnic area should be re-graded to achieve ADA compliance.

5.1.2.2 Play Area

The children's play area is directly adjacent to the picnic area ([Figure 5.1.2.2-1](#)). It has a fairly new play structure, constructed of metal and plastic, which is in good condition. It also has two galvanized metal swing-sets: one with 4 rubber toddler seats, and one with 2 rubber sling seats (a 3rd seat is missing). The swing-sets are approximately 10 years old and are in fair condition.

The areas around the play structure and the swing-sets are landscaped with a wood-shaving material; the rest of the area is flat lawn. There is no hard-surface walkway leading to the play area; it is therefore non-ADA accessible.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

The play structure is new, and can be expected to serve 30 more years with appropriate maintenance. However, to achieve a 30-year life for the swing-sets, it is recommended that they be replaced.

An ADA compliant walkway to access the play area should be installed. Also, ADA-compliant hard-surface transfer platforms should be installed at the play area. An inspection and maintenance program should be implemented to repair broken, worn, or missing components for child safety.

5.1.2.3 Fishing Access Stairs

Fishing areas along the Niagara River are accessed via a stone staircase from the upper level of the park. This staircase, with over 300 steps, descends more than 300 feet from the gorge rim to the river below. The top of the staircase is located about 1/3 of the way up the northeast wing of the park area.

At the top of the stairs, there are two mortared stone pillars: one on each side ([Figure 5.1.2.3-1](#)). They appear to have been constructed in the 1930's. The pillars are in poor condition with some mortar deterioration and stones missing.

The first descent of stairs is constructed of cast concrete ([Figure 5.1.2.3-1](#)). The concrete steps stairs have a 7-inch rise to an 11-inch run, and they are 3 feet and 2 inches in width. The stairs are in fair condition with minor spalling on the nosings. There are stone masonry sidewalls alongside the concrete stairs. These sidewalls are 34 inches high, and are in fair condition. There are no handrails mounted on the sidewalls.

After this initial flight of concrete steps, the stairs are constructed of rustic dressed mortared stone, or stone-nosed rubble fill. These stairs have an average 6-inch rise; runs range from 11 inches to 1-foot 9 inches. They vary in width from 3 feet 2 inches to 8 feet. They are in fair to poor condition with some missing mortar and structural shifting. There is a low stone masonry wall bordering each side of the stairs; it varies in height, but is never greater than 24 inches high. There are no handrails for the stone masonry stairs.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

It should be noted that there are some areas, adjacent to the stairs, where people have created informal foot trails. These trails could lead to erosion that may affect the integrity of some stair treads.

It is recommended that the concrete stairs be subject to a routine inspection and maintenance program. This should include the repair of spalled treads and nosings, removal of vegetation, and clean up of accrued leaf matter. The stone stairs should be maintained to prevent degradation from their existing condition; mortar should be repaired as needed, and trailside erosion should be addressed where necessary. Erosion issues associated specifically with informal trails should also be addressed; this would include patching and seeding areas of erosion near stone stair treads.

5.1.2.4 Trail Condition

The Ongiara Trail (a portion of the Great Gorge Railroad Right-of-Way trail system) follows the base of the Niagara gorge between Whirlpool and Devil's Hole State Parks. This trail is reached, from Whirlpool State Park, via the stone staircase that descends the gorge. This discussion covers the section of this trail that lies within the boundaries of Whirlpool State Park.

The trail follows an abandoned railroad bed, from which the tracks have been removed. It has a soil substrate and is in good condition. There are some erosion issues along the trail; erosion of the gorge wall above the trail occasionally leads to slides that partially block the trail. To date, there are no incidents of down-slope erosion causing washouts of the trail itself.

It is recommended that the trail be inspected, and that maintenance and repair needs identified during this inspection be addressed. After this initial inspection and maintenance, the trail should be subject to annual or biennial inspection and maintenance. The trail should be cleared of debris and encroaching vegetation as needed. Erosion issues should be assessed and repairs should be made as needed.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

5.1.2.5 Restroom Exterior

The restroom building is located to the west of the parking lot ([Figure 5.1.2.5-1](#)). The center of the building is an open-sided public area that connects the two enclosed ends of the structure ([Figure 5.1.2.5-2](#)). It was originally built in 1946, but has been recently refurbished. It is a stone masonry structure with gables clad in rustic wood siding. It has a timber-framed truss roof with an approximate 9 to 12 pitch and slate shingles. Drawings that were created during refurbishing are included as [Figures 5.1.2.5-3](#) and [5.1.2.5-4](#).

On the west side of the restroom building is an open stone patio. A ramped walkway to the south side of this patio provides ADA access to the building. Also, both main walkways to the gorge rim walkway depart from this patio.

The building is visually appealing, and it is well sited in the landscape. Park Officials are very happy with the building and do not desire any exterior rehabilitation.

The exterior of the building is in good condition; there is no cracking, water damage, or peeling paint. It can be expected to serve 30 more years with routine inspection and maintenance. Such routine procedures should include inspections of the roof, mortar and wood elements for shingle damage/loss, mortar degradation and rot, respectively. Repairs should be made as needed.

5.1.2.6 Restroom Interior

The restroom building houses men's and women's restrooms, an office, an electrical/mechanical room, and an open public area ([Figures 5.1.1.1-2](#), [5.1.2.5-1](#), [5.1.2.6-1](#), [5.1.2.6-2](#)). The public area is furnished with four picnic tables, an open stone fireplace, and drinking fountains.

The interior elements of the restroom building were recently renovated. All elements are in good condition, and appear to meet ADA compliance ([Figure 5.1.2.6-1](#)). OPRHP is satisfied with the current

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

condition of the restroom. For these reasons, this facility was subject only to inspection during this assessment.

With proper maintenance, the interior elements of this building can be expected to serve a 30-year life. Therefore, routine maintenance is the only recommendation extended as a result of this assessment.

5.2 Summary of Recommendations

5.2.1 Parking Area

It is recommended that the existing pavement of the parking area be stripped and a new gravel base should be laid. The area should be graded to drain appropriately, and 3-inch pavement should be installed. New parking delineations should be striped, including designated ADA parking spaces. Signage should be installed as necessary. Also, erosion on the lawn at the south end of the lot should be repaired.

5.2.2 Walkways

It is recommended that walkways be altered and added to achieve ADA compliance. To achieve the latter, stairs in the southern main walkways should be removed. Steep areas in the northern picnic area access walkway should be replaced with a ramp that satisfies ADA slope requirements. ADA compliant walkways should be installed to access the picnic shelters and the play area. Also, a walkway should be installed which connects the north and south main walkways.

5.2.3 Gorge Railings and Foundations

A preliminary geotechnical analysis of the retaining walls is recommended to determine their structural integrity.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

It is recommended that the existing railing and foundations should be removed and replaced. Also, erosion around foundations should be repaired.

5.2.4 Picnic Area

It is recommended that the existing picnic shelter be repaired, and a second picnic shelter should be installed. The area around the shelters should be re-graded for proper drainage. Also, erosion on the lawn to the north of the restroom should be repaired; this should include tilling and reseeding of the area.

5.2.5 Play Area

It is recommended that the swing sets at the play area be replaced. Also, ADA compliant hard-surface transfer areas should be installed at the play area.

5.2.6 Fishing Access Stairs

It is recommended that the concrete stairs be patched, and that the stone mortared treads be repaired. All stairs should be cleaned, and erosion associated with informal trails should be repaired. Also, the stone pillars at the head of the stairs should be repaired.

5.2.7 Trail Condition: Initial Inspection and Maintenance

It is recommended that the portion of the Ongiara Trail that is within the boundaries of Whirlpool State Park be subject to an initial inspection to identify areas in need of repair and or maintenance. Repair and maintenance needs identified in the initial inspection should be addressed.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY
REHABILITATION ASSESSMENT**

**Whirlpool State Park
Existing Site Plan**

LEGEND

Existing Park Features

- ① Parking Lot
- ② Paved Walkway
- ③ Gorge Fencing
- ④ Restroom Building
- ⑤ Children's Play Structure
- ⑥ Swings
- ⑦ Picnic Shelter
- ⑧ Picnic Area
- ⑨ Gorge Stairs

Proposed Park Features

- △ Paved Walkway
- △ ADA Access Modification
- △ Erosion Repair
- △ Retaining Wall Evaluation
- △ Picnic Shelter
- △ Ramp Repair
- △ Fence Replacement
- △ Pier/Stair Replacement

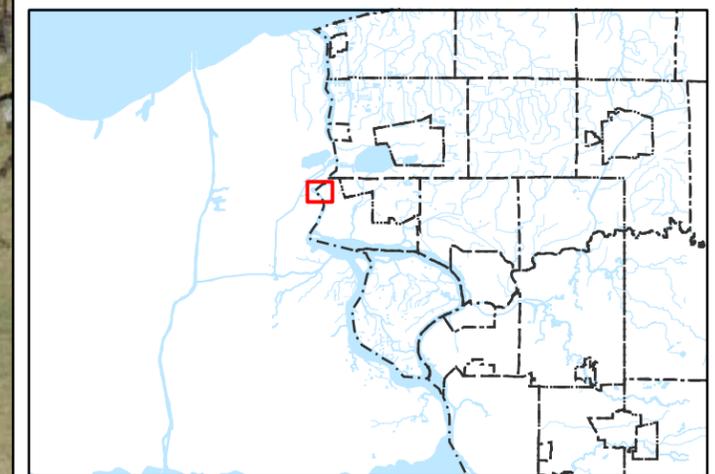


FIGURE 5.1-1



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 5.1.1.1-1
GORGE RAIL FENCING AND PARKING, WHIRLPOOL STATE PARK**



Gorge Rail Fencing



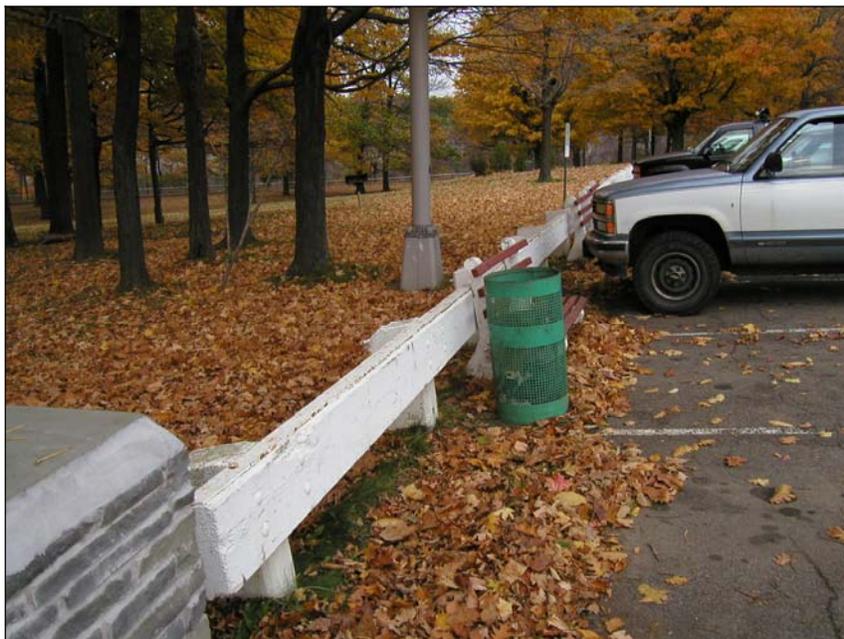
Parking Area

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 5.1.1.1-2
EXTERIOR VIEWS, WHIRLPOOL STATE PARK**



Erosion on Lawn to North of Restroom Building



Wood Barrier around Parking Lot

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 5.1.1.3-1

FISHING ACCESS STAIRS AND RAIL FENCING, WHIRLPOOL STATE PARK



Portion of Concrete Fishing Access Stairs



Erosion around Base of Gorge Rail Fencing

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 5.1.2.2-1
CHILDREN'S PLAY AREA, WHIRLPOOL STATE PARK**



Play Area



Purchased Play Structure

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 5.1.2.3-1
FISHING ACCESS STAIRS, WHIRLPOOL STATE PARK**



Stone Piers at Head of Staircase

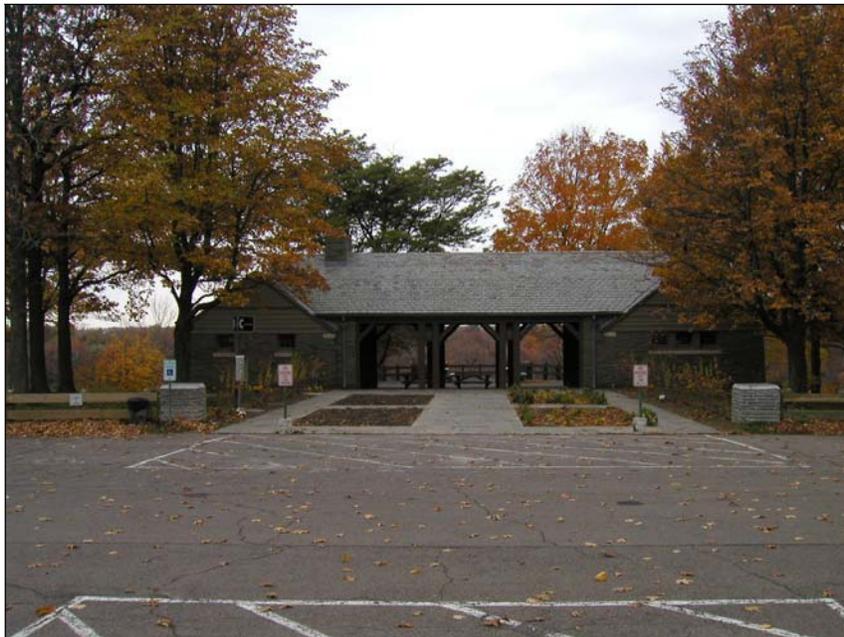


Head of Fishing Access Stairs

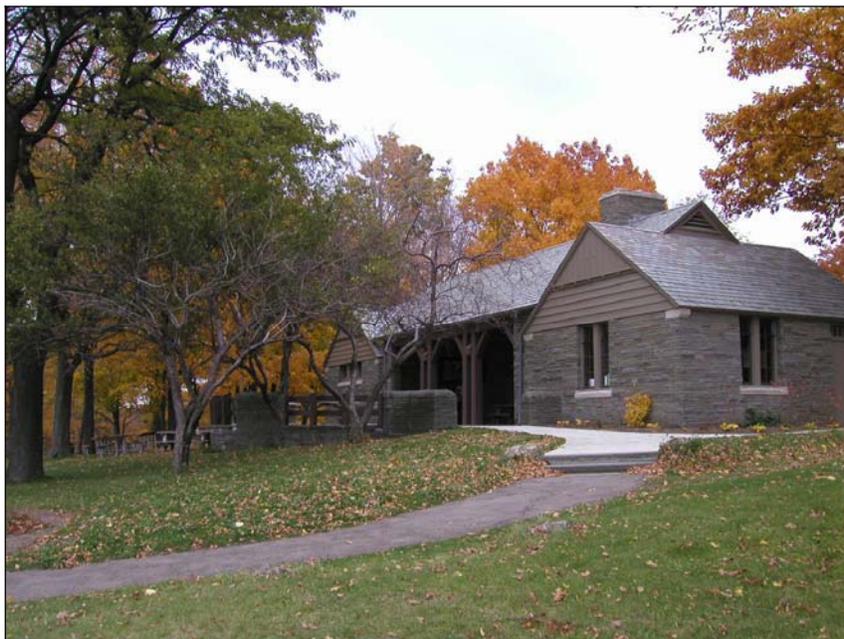
**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 5.1.2.5-1

EAST AND WEST VIEWS OF RESTROOM BUILDING, WHIRLPOOL STATE PARK



East Side of Restroom Building



West Side of Restroom Building and Head of Southern Main Walkway

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

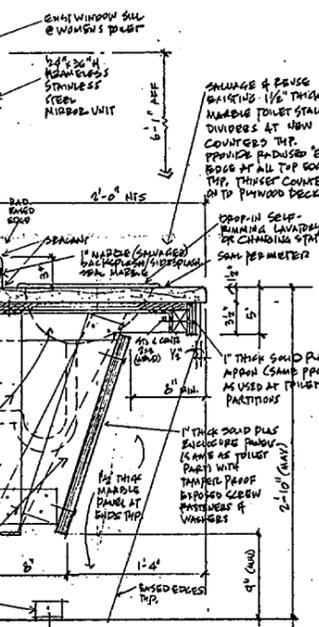
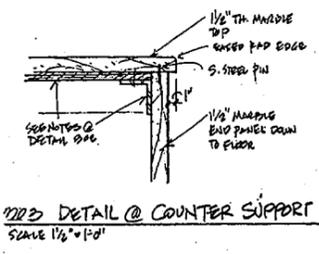
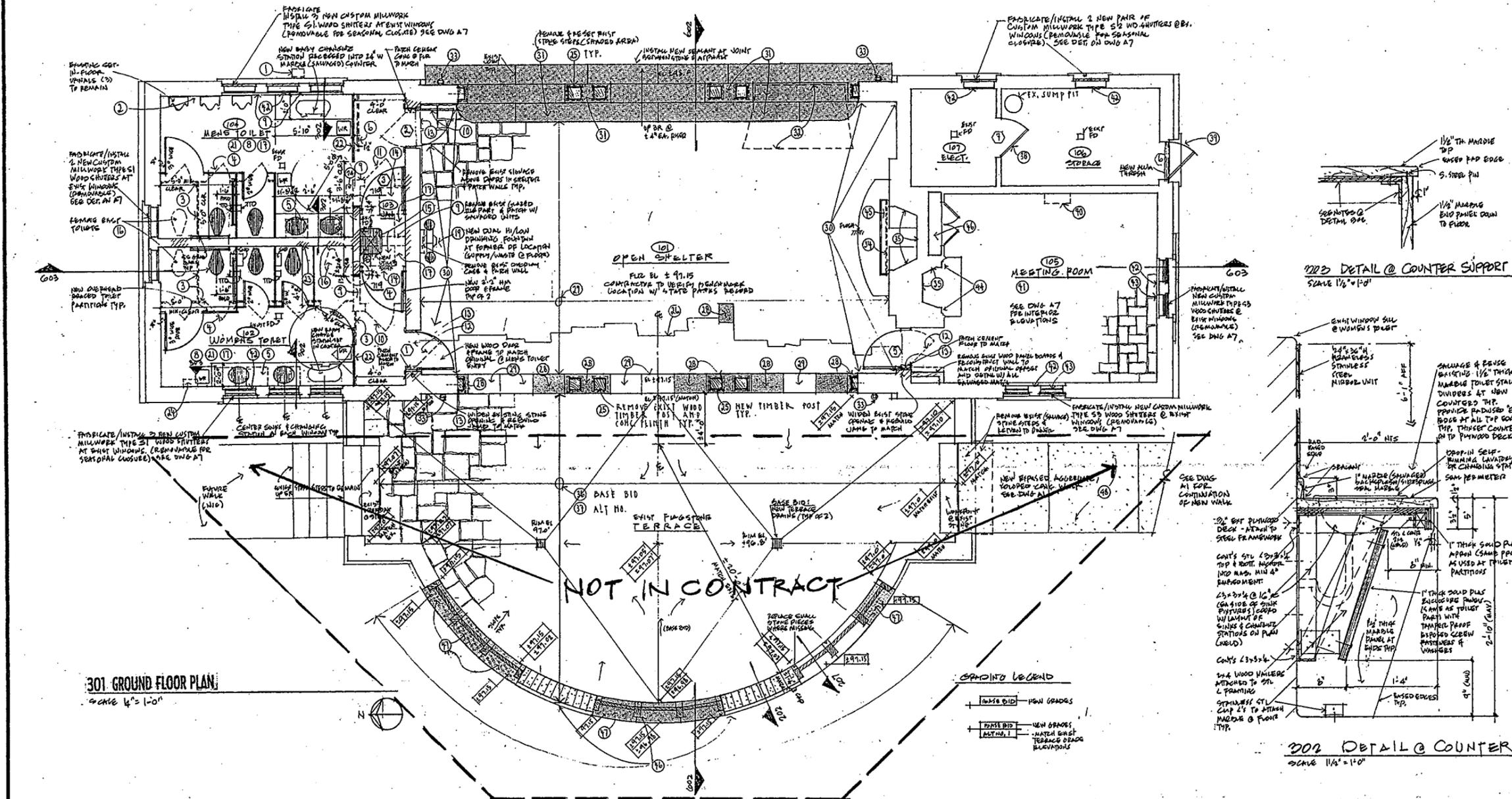
FIGURE 5.1.2.5-2

NORTH VIEW OF RESTROOM BUILDING, WHIRLPOOL STATE PARK



North Side of Restroom Building and Head of Northern Main Walkway

9562-C51



- Plan Reference Notes - See (No.) on Plan**
1. Remove existing drinking fountain complete. See Dwg. ME-1 for work, including hose bib replacement.
 2. See Dwg. ME-1 for replacement of existing exposed plumbing piping at urinals.
 3. Remove existing marble toilet partitions typical at toilet rooms. Salvage for reuse as counter tops as detailed on drawings. Reassemble all unused marble slabs and pieces to Owner. Carefully remove all metal clip attachments to glazed wall tile and patch fastener holes as detailed. Patch grout at fastener holes to match existing.
 4. Remove existing wood toilet partition doors and hardware complete and dispose of. Return electric hand dryers to Owner.
 5. See Dwg. ME-1 for removal/replacement of existing wall mounted sinks. Patch fastener holes in glazed wall tile at areas exposed to view, as detailed.
 6. Remove existing partition and posts complete and dispose of.
 7. Replace existing damaged wood/multion trim board with new to match existing. Match existing chestnut species.
 8. Remove existing toilet accessible complete and dispose of. Return electric hand dryers to Owner.
 9. Carefully remove existing two-way glazed tile facing and glazed tile backsplash. Salvage units for reuse at miscellaneous patch areas as called out on drawings. Patch all areas affected by removals to match existing, including grout.
 10. Remove existing door and frame complete and dispose of. Salvage existing hinges and door handle hardware for restoration and reinstallation as described by Door Schedule notes.
 11. Same as note 10 except hinges only shall be restored/reinstalled as described by Door Schedule notes.
 12. Remove existing door and frame complete and dispose of.
 13. At removed door and frame, alter existing masonry/stone opening (width) as indicated. Reconstruct stone jamb at one side and at head with rough cut stone to match original condition (no sawcuts at exposed edges). Reinstall salvaged stone pieces where possible. New stone, as required, shall match existing. Sawcut existing glazed tile wall at interior of room as required for new wood casing to overlap cut edge. Carefully remove, salvage and reinstall existing wood door frame jambs and head as shown on drawings. Kerf piece sections of new wood frames where shown to match existing chestnut species and profile. Install new wood door and casing as detailed. Install three (3) new hot dipped galvanized steel angle lintels above door opening, each 4 x 3 x 5/16" to match existing.
 14. Infill wall opening from floor to ceiling with new wood door, transom and frame as detailed on drawings.
 15. Remove existing utility sink and dispose of. Install new fixture as shown. Remove existing built in shelf for HW tank. Patch walls to match existing with salvaged glazed wall tiles.
 16. Remove existing toilet fixture. Cap piping below floor and patch floor with concrete to match existing color, texture and finish. Patch existing glazed wall tile with salvaged units as required (fitter removals). See ME-1 for new fixtures to be installed at existing locations.
 17. See Room Finish Schedule notes for work to restore finish of existing concrete floor.
 18. See RCP for ceiling patch at removed attic eucite opening.
 19. See ME-1 for new drinking fountain at former (original) location.
 20. Repair, refinish and restore all existing woodwork (frames, sash, trim, casings, etc.) at existing wood windows as detailed on drawings.

21. Clean existing glazed wall tile throughout, including removal of graffiti, fasteners, hardware, anchors, etc. Remove existing paint/stain finishes on tile, particularly around windows. Clean all window glass. Refer to Room Finish Schedule notes.
 22. New 1-1/2" thick marble slab partition (2 pieces wide), installed from floor to ceiling to match existing marble. Anchor the wood ceiling to existing ceiling joist framing and floor with stainless steel clips. Seal all marble faces and edges.
 23. Patch existing damaged glazed tile facing at wall where plumbing originates with salvaged units, to match existing.
 24. Remove existing hand dryer and associated wiring completely. Return electric dryer unit to Owner.
 25. Shore existing roof structure as required to remove existing wood timber posts and half-posts at stone masonry jambs. Remove all concrete pin/bases at bottoms of columns. Remove necessary fastening hardware (bolts, dowels, nuts, pins, etc.) and replace with new to match existing and as detailed on drawings. New "ratchet" timber posts shall be oak to match existing in size and appearance. Reinstall/reconnect timber posts to foundations, beams and brackets as detailed on drawings. Remove the existing stone pavers on terrace as required to install posts. Reset and repair masonry after work is complete.
 26. Rake out and remove (by hand) cracked/spalling mortar and repoint with new mortar to match existing at step-cracks in flagstone for length of crack (indicated). See note 27 below for description.
 27. Rake out and remove (by hand) cracked/spalling mortar and repoint approximately 50% of entire random rectangular flagstone paved floor area with new mortar to match existing in color, texture, etc. No power tools permitted.
 28. Replace existing damaged/cracked-through flagstone paver and replace with new to match existing in size, color, texture, and appearance.
 29. Remove, prepare and reset existing flagstone pavers in full mortar bed, in original locations.
 30. Rake out and remove existing (non-original) mortar at joints of entire stone wall surface (under shelter roof) as required. Repoint with new mortar to match existing exterior wall stonework. All work shall be performed by hand. Use of power tools (saws, etc.) is not permitted.
 31. Remove and reset in full mortar bed, existing shifted stone slab steps (make level). Mortar shall match existing mortar in stone flagging joints. Refer to details on drawings.
 32. Remove existing asphalt ramp completely. Prepare and clean existing flagstone slab steps as required to match existing.
 33. Remove existing roof leaders (downspouts) and replace with new lead-coated copper leaders. See Roof Plan and details (AT 10).
 34. Remove existing fixed iron grate grate completely, including all stone masonry fasteners and dispose of. Patch holes in existing stone joints resulting from removals with mortar to match. Install new decorative wire mesh and iron fireplace screen as detailed.
 35. Clean refaced unit of fireplace firebox and wipe clean. Rake out and repoint (by hand) fire brick at walls inside firebox, where mortar is loose or missing, to match existing.
- Allowance No. & C-1:**
Contractor shall engage a reputable, experienced chimney sweep company to clean out chimney flues thoroughly and inspect (photographically or with video) for breaks/leaks in flue lining. Install new animal screening at top of flues, set within flue line. See note 27 for details on animal screening and mortar wash for weather resistance and uniform.

- 36. Base Bid:**
Remove existing random rectangular size 2" nom. thick flagstone pavers, mark/identify (number) and store accordingly for future reinstallation in same locations as previous. Break out and remove existing 1/2" thick concrete slab base completely, within perimeter of terrace foundation walls. Prepare existing subbase and install new concrete base slab for stone flagging set in mortar bed as detailed on drawings. Clean off all mortar and prepare existing stone flagging for reinstallation. Match original joint/stone paver layout of terrace without exception.
Note: Approximately 30 slabs are through-cracked or broken and will not be reused. Return all unused stone pieces to Owner. Provide new random rectangular flagstones in different color, etc. to match existing. Contractor shall produce a shop drawing indicating layout of stone pavers and identification of each by number for Architect/Owner record, before removing any stone.
- 37. Alternate No. 1:**
Similar to note 36 above, except stone flagging shall be set on pea gravel and crushed stone subbase over drainage filter fabric in lieu of concrete slab. See details on drawings.
- 38.** Provide new hardware at existing wood door as scheduled. Patch all existing obsolete or unused mortises in door and frame with matching wood (chestnut) dutchman/plugs, etc.
- 39.** Patch sections of existing rotted or damaged door frame as indicated on drawings. Remove existing door and replace with new as detailed and scheduled. Install restored hinges and new door hardware as scheduled.
- 40.** See electrical for removal of existing wall mounted cabinet heater. Patch wall to match as required.
- 41.** See Room Finish Schedule notes for restoration/repair of all existing woodwork at walls and ceiling.
- 42.** See Room Finish Schedule notes for restoration/repair of all existing woodwork at windows.
- 43.** Prepare existing steel frame and sash casement windows for repainting and as per Room Finish Schedule notes. Provide new crank-style operators at all windows where missing, sash as approved by Architect. Re-secure existing steel framed screens which are currently stored in room with black aluminum mesh insect screening, and reinstall.
- 44.** Clean/restore existing marble facing at fireplace to remove soot residue and seal marble.
- 45.** Clean existing protecting stone mantle to remove graffiti and other visible markings.
- 46.** See details on drawings for removal and reconstruction of existing stone-faced perimeter terrace wall and wood post-and-railing assembly.
- 47.** Remove and replace existing broken 1-1/2" thick marble base at toilet room. Match existing with new to match existing (see shaded areas). Capstones shall be reinstalled shall be numbered/marked for reinstallation at original locations.
- 48.** See Dwg. AT for new exposed aggregate concrete walks set on grade.

Renovations To:
Whirlpool Park Shelter
Whirlpool Park
Lewisiston, New York

HAMILTON
HOUSTON
LOWNIE

172 Allen Street
Buffalo, NY 14201

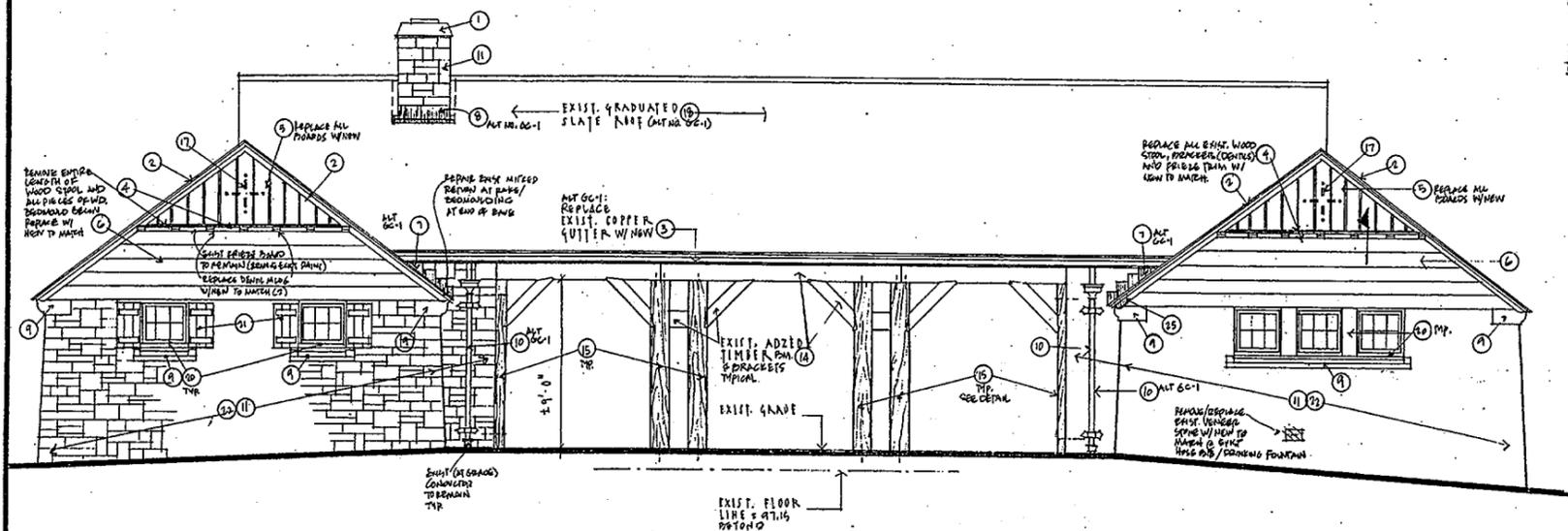
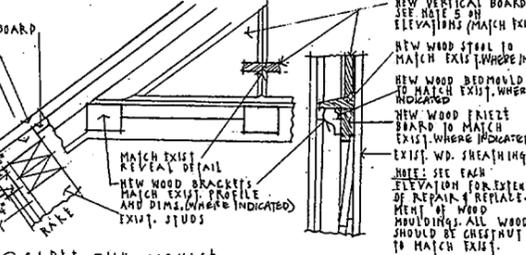
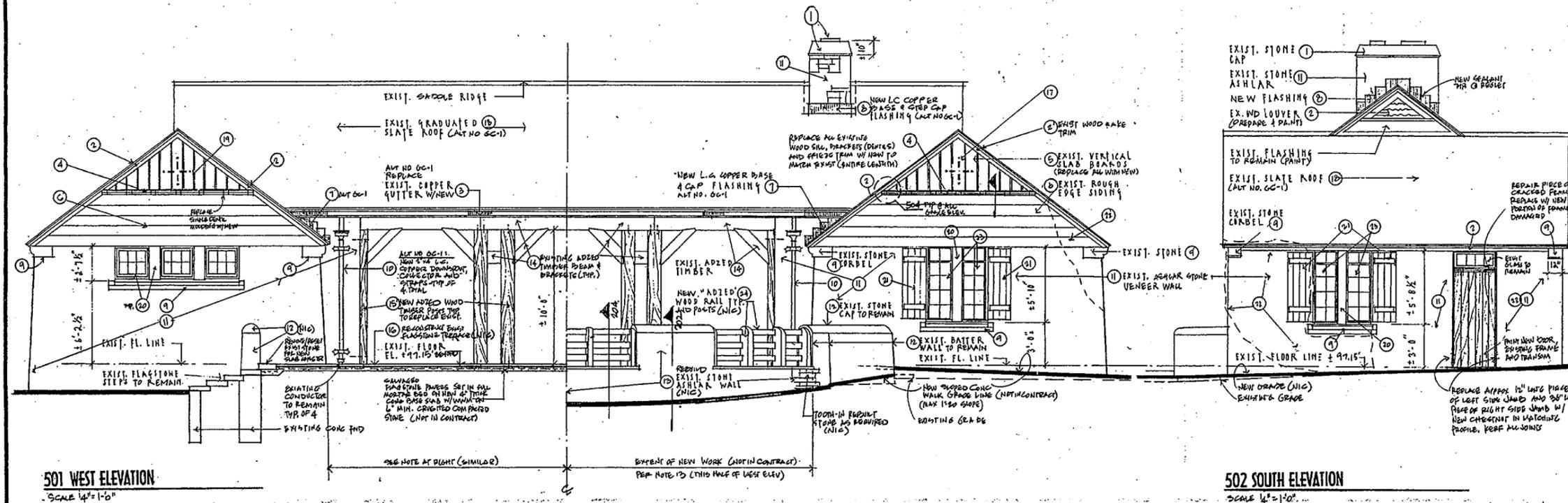
ARCHITECTS P C

Drawing Title:
GROUND FLOOR PLAN & REFERENCE NOTES

Scale: AS NOTED Date: JUNE 21, 2001
Proj No: 0046

FIGURE 5.1.2.5-3

A3



- Elevation Reference Notes - See (No) on Elevation**
- Refer to Note 35 on drawing A3 for Allowance GC-1 work to inspect existing chimney cap, mortar wash, flue linings and install new bed/mortar screen.
 - Existing profiled wood eave fascia and bedmould, rake trim and fascia boards at gable ends and gable tower ends shall remain except where otherwise indicated. Completely remove all paint finish to expose bare wood. Prime and finish paint all wood surfaces as specified in Section 09912.
 - Existing lead-coated copper gutter and brackets to be removed and replaced with new 16 oz. lead-coated copper hung gutter in matching size, profile etc. Decorative brackets shall match existing. Refer to details. (ALTERNATE GC-1)
 - Remove existing missing, damaged or rotted wood sill, profiled wood brackets and frieze trim in quantity indicated on elevation drawings. Remove all vertical, lapped wood slab boards above to facilitate removals. Reinstall new wood (chestnut) moldings to match existing in all respects and prime and finish paint all wood surfaces as specified in Section 09912.
 - Remove existing damaged or rotted vertical, lapped wood slab boards in quantity indicated on elevation drawings. Reinstall new wood (chestnut) boards to match existing in all respects and prime and finish paint all wood surfaces as specified in Section 09912. All boards indicated to remain, completely remove all paint finish to expose bare wood.
 - Existing scalloped edge rough wood siding to remain. Completely remove all paint finish to expose bare wood. Prime and finish paint all wood surfaces as specified in Section 09912.
 - Existing lead-coated copper base and wall cap/strap flashings to be removed and replaced with new 16 oz. lead-coated copper to match existing, utilizing all original stone joint/reglet locations. Remove, salvage and reinstall existing slate shingles to facilitate this work. Refer to details. (ALTERNATE GC-1)
 - Existing lead-coated copper base and wall cap/strap flashings (including sealants) at chimney to be removed and replaced with new 16 oz. lead-coated copper to match existing, utilizing all original stone joint/reglet locations. Install sealant at all flashing/reglet joints in stone. Remove, salvage and reinstall existing slate shingles to facilitate this work. Refer to details. (ALTERNATE GC-1)
 - Clean existing cut stone at locations indicated.
 - Existing galvanized steel roof (downspouts) to be removed and replaced with new 16 oz. lead-coated copper as detailed on drawings. Attach to stone masonry with decorative LC copper straps as indicated. (ALTERNATE GC-1)
 - Existing Ashlar stone veneer building, chimney and terrace walls/cap to remain. Clean entire (100%) stone wall and wall cap surfaces to remove graffiti, plant/vine growth and vegetation growth. Do not damage or loosen existing mortar joints or stone.
 - Remove existing stone cap surfaces to remove graffiti, plant/vine growth and vegetation growth. Do not damage or loosen existing mortar joints or stone.
 - Existing Ashlar stone terrace wall to be taken apart and reconstructed as detailed on Drawing A2. Clean entire exterior wall surface to remove graffiti, plant/vine growth and vegetation growth. Do not damage or loosen existing mortar joints or stone. (NIC)
 - Existing 'Adzed' heavy timber (oak) construction to remain. Prepare existing previously painted surfaces of wood members, including eave fascia, soffits, fasteners etc. to receive new prime/paint finish as specified in Section 09912. Exposed surfaces of new fasteners resulting from replacement of existing timber posts shall be finish painted.
 - Replace existing 'Adzed' heavy timber (oak) posts with new as detailed on Drawing A2. New posts shall match existing in size, texture and appearance and shall be prime/finish painted.
 - Remove existing stone cap surfaces to remove graffiti, plant/vine growth and vegetation growth. Do not damage or loosen existing mortar joints or stone. (NIC)
 - Cut in cross-shaped slots/holes in wood boards for venting to match existing. Install insect screening at attic side. See Drawing A4 for roofing scope of work. (ALTERNATE GC-1)
 - Existing vertical, lapped wood slab boards to remain. Completely remove all paint finish to expose bare wood and prime/finish paint all wood surfaces as specified in Section 09912. Report any findings of rotted or damaged wood to Architect. Repair/putty fill all cracks in wood boards to make weathertight.
 - Completely remove all paint finish to expose bare wood at existing wood windows, wood mullion covers and trim. Cut out and remove all existing sealant at perimeter of window frames and install new sealant. Prime and finish paint all wood surfaces as specified in Section 09912.
 - Provide new custom millwork operable wood shutters and attachment hardware (removable) as detailed on drawings. Prime and finish paint all wood surfaces as specified in Section 09912.
 - Remove existing plant growth clinging to face of building complete. Methods for removal shall not damage mortar joints or stone.
 - Prepare existing steel frame/sash casement windows to receive prime and finish paint at all surfaces as specified in Section 09912. Cut out and remove all existing sealant at perimeter of window frames and install new sealant.
 - Remove approximately 12\"/>

NOTE: FOR DRAWING PURPOSES, WOOD SHUTTERS ARE SHOWN ON ELEVATIONS TO INDICATE CORRESPONDING GUTTER TYPE FOR EACH WINDOW. SHUTTERS DO NOT MOUNT TO EXTERIOR SIDS AS CORNERS. SHUTTERS ARE REMOVABLE FOR SEASONAL CLOSURE PURPOSES ONLY.

Renovations To:
Whirlpool Park Shelter
 Whirlpool Park
 Lewistown, New York

HAMILTON
 HOUSTON
 LOWNIE
 ARCHITECTS PC
 172 Allen Street
 Buffalo, NY 14201

Drawing Title:
EXTERIOR ELEVATIONS

Scale: AS NOTED Date: JUNE 21, 2001

Proj No: 0046
A5

FIGURE 5 1 2 5.1

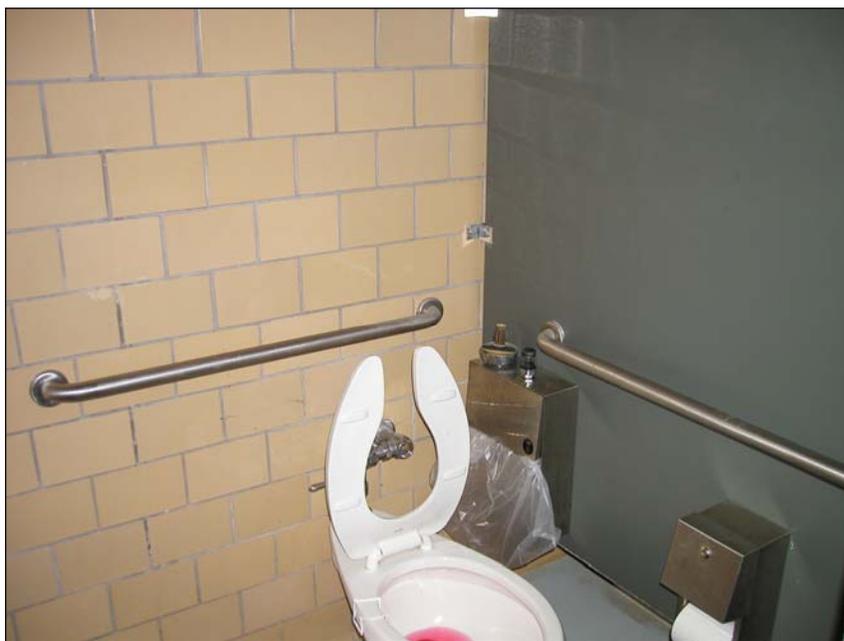
**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 5.1.2.6-1

VIEWS OF RESTROOM INTERIOR, WHIRLPOOL STATE PARK



Restroom Interior



Restroom ADA Water Closet Compartment

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 5.1.2.6-2

MEN'S ROOM INTERIOR, PICNIC SHELTER, WHIRLPOOL STATE PARK



Men's Room Interior



Picnic Shelter

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

6.0 NIAGARA FALLS STATE PARK

Niagara Falls State Park is a popular tourist destination. It is estimated that about 7,585,475 people visit the park each year (data provided by OPRHP). It is open year round, and there is no admission fee, but there is a fee for parking. The park itself offers such public attractions as gardens, picnic areas, a visitor’s center, numerous trails, and overlooks of Niagara Falls. In addition, several activities and attractions (some of which are privately operated) are available within the boundaries of the park. These include the Maid of the Mist boat tours, the Cave of the Winds tours, trolley tours, the Niagara Falls Overlook Tower, and several gift shops and restaurants.

The park is operated and maintained by OPRHP. During site visits for the purpose of this study, the park was viewed with three OPRHP employees.

This park has been the subject of ongoing assessment and rehabilitation by OPHRP. Plans have been (or are being) developed for several park-associated amenities and areas of infrastructure; many of these improvements are discussed below. For this reason, the park and its associated infrastructure and amenities were subject only to inspection for the purposes of this report.

The only elements at Niagara Falls State Park for which recommendations have been made as a result of this assessment are the Terrapin Point railing and walkway. The remaining infrastructure, amenities, and associated elements that were reviewed are discussed briefly below.

6.1 Park Description

Niagara Falls State Park, also called “Niagara Reservation State Park” is the oldest state park in the nation, and the park itself is listed on the National Historic Register. It encompasses 435 acres of land in the City of Niagara Falls. The mainland portion of the park occupies a crescent of land on the north side of the Niagara River, northeast of the American side of the Niagara Falls. The park also occupies Goat Island, which borders the south end of the American Falls, and the north end of the Horseshoe Falls.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

There are several small islands, such as the Three Sisters Islands and Luna Island, which are associated with the park as well.

The park is characterized by awe-inspiring views of the Niagara Falls. The grounds consist of well maintained lawns with mature trees and some landscaping. Walkways and bridges interconnect the mainland and island attractions of the park.

6.1.1 General Site and Infrastructure and Amenities

The Niagara Falls State Park is developed with substantial infrastructure to accommodate pedestrian and vehicular traffic. It also harbors significant commercial attractions, such as restaurants, shops and museums for visitor use. Infrastructure, attractions and amenities are available on both the Mainland and Goat Island portions of the Park. These areas are discussed below.

6.1.1.1 Mainland

There is one parking area for the mainland portion of the park; it is located near the visitor center and the American Falls and there is a fee for parking.

The mainland is characterized by a mostly natural landscape, with scattered mature trees, and landscaped gardens near the visitor center. In addition to the visitor center, there are several amenities available on the mainland portion of the park. These include a trolley which transports visitors from the mainland to several attractions associated with the park, an observation tower, and a paved walking trail.

The observation tower provides ADA access to the gorge bottom where the Maid of the Mist boat tours depart. The tower also provides a viewing platform that overlooks the American Falls and Horseshoe Falls. The observation tower was recently rehabilitated by OPRHP. Improvements included ADA access and high-speed elevators.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

The paved walking trail runs alongside the Upper Niagara River. The trail, which is eroding and sloping toward the water, is in need of repair. This issue and others that may be of concern on the mainland are being assessed by OPRHP.

6.1.1.2 Goat Island

Goat Island is reached via a motor bridge, or a pedestrian bridge from the mainland portion of the park. The motor bridge was repaired in 2002 and is in good condition. The pedestrian bridge is comprised of two spans: one to Green Island, and one to Goat Island. The pedestrian bridge is in poor condition and OPRHP is currently assembling plans to repair it.

There are roads, walking trails, restaurants, shops, and numerous other amenities and activities available on Goat Island. Some of the park's major attractions are also located on, or are accessed from, Goat Island; these include: Three Sisters Islands, Terrapin Point, Cave of the Winds, and Luna Island.

Many of the areas and amenities associated with Goat Island are currently being assessed by OPRHP. The only elements for which recommendations have been made within this report are the walkway to, and the railing at Terrapin Point. The other areas listed above are discussed below, but no recommendations are presented.

6.1.1.2.1 Terrapin Point

Terrapin Point is located at the southwest tip of Goat Island. It juts westward, overlooking the north end of the Horseshoe Falls. The area is accessed via a walkway, and the point is bordered by a railing that separates the overlook from the rushing waters of the falls.

The Terrapin Point railing and access walkway were subject to inspection for the purposes of this report. No detailed data was collected, and the following discussion reflects overall observations and opinions regarding these elements.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

The Terrapin Point railing is constructed of aluminum pipe in the same style that is common throughout the park system. The railing is frequently covered with up to 7 feet of ice during the winter, the weight of which buckles and bends the aluminum. Some runs include supports, constructed of 2"x 4" lumber, which are intended to keep the railing from bending under the weight of the ice.

The railing is in poor condition, and it is not building code compliant. It is climbable and does not provide adequate safety for small children.

The walkway that accesses Terrapin Point is too steep to satisfy ADA compliance.

It is recommended that the railing be removed and replaced. The new railing should be constructed to achieve building code compliance, and to withstand extreme ice loading. It is also recommended that an ADA compliant pathway be installed to access the Point. These recommendations are based on a visual inspection as was required at this site for the purposes of this assessment.

6.1.1.2.2 Luna Island

Luna Island is located just off the west end, and to the north of Goat Island; it is accessed via a foot bridge. The island is situated between Bridal Veil Falls and the American Falls, and it offers spectacular views of the falls and the river.

Luna Island is very small. Its surface is mostly exposed earth and pavement, and there are a few mature trees. The island receives heavy foot-traffic and vegetation has been trampled to the point where little to no vegetation remains. An aluminum guardrail lines the perimeter of the island.

OPRHP is currently drafting plans to rehabilitate the whole island with vegetative plantings and an overlook area.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

6.1.1.2.3 Three Sisters Islands

The Three Sisters Islands are, as the name suggests, a complex of three small islands that lie off the south shore of Goat Island, toward its east end. Their names, Asenath, Angeline, and Celinda-Eliza (nearest to furthest from shore, respectively) are for the daughters of General Parkhurst Whitney.

The Islands are vegetated with a few mature trees. They offer dramatic views of the upstream rapids. OPRHP is planning to restore vegetation on the islands.

The Three Sisters Islands are accessed via three respective footbridges. OPRHP has created designs and is planning to replace the second and third bridges to achieve a historic quality that is consistent with the first bridge from Goat Island to Asenath Island.

6.1.1.2.4 Cave of the Winds

Cave of the Winds is an attraction at the south end of the American Falls. It is accessed by an elevator which is located at the northwest tip of Goat Island.

There are two buildings associated with Cave of the Winds; they include Cave of the Winds building, and an elevator building.

The elevator building is over 50 years old. It was last rehabilitated five years ago. The elevators transport visitors to the gorge bottom for the Cave of the Winds Tour. The elevators are slow and small, and there is no backup generator for the facility.

The Cave of the Winds building was constructed in 1900, and therefore is considered to be of historic value. It has some roof-leakage issues, particularly in the area of the electrical box. The building is in need of a new roof. It houses a snack bar, restrooms, and a venue to purchase tickets and rain-wear for the Cave of the Winds tour.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

Rehabilitation issues related to the Cave of the Winds and associated structures are being assessed by OPRHP.

6.1.1.2.5 Restrooms

There are several restrooms available for public use throughout the park. Two of the restrooms were investigated during the site inspection.

Both restrooms that were investigated were located on Goat Island, and both were associated with gift shops. The facilities appear to be adequate to meet ADA compliance, and approach paths appear to be ADA accessible. The restrooms that were investigated are in good condition.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

7.0 DISCOVERY CENTER PARK

The Niagara Gorge Discovery Center (“Discovery Center”) occupies what was once the Schoellkopf Geological Museum. The Discovery Center museum is focused on the geological history of the Niagara region, with special attention to the 12,000-year history of the formation of the Niagara Gorge and the Niagara Falls.

The Discovery Center is open seasonally (closed November through March), and there is an admission charge.

Also associated with the Discovery Center Museum, there is a parking lot, a geological rock garden, a scenic overlook of the Niagara River and falls, an outdoor climbing wall (new in 2003), and the trailhead to the Niagara Gorge Trail System (the Great Gorge Railroad Right-of-Way).

The Discovery Center is in the midst of a rehabilitation program by OPRHP. Several improvements have been made, and several more are planned. OPRHP has developed concept plans for improvements in and near the Discovery Center. These concept plans are included in the following documents: Discovery Center area site improvement plan, Discovery Center access/intersection – improvements, Discovery Center Phase II plan, Whirlpool Bridges access stairs plan, and the Niagara Gorge Trail System Master Plan. For this reason, the majority of the Discovery Center and its associated infrastructure and amenities were not reviewed for the purposes of this report. However, at this time one element of the development’s infrastructure was of interest to OPRHP as a subject of assessment: the access driveway curbing. This element was subject to inspection only.

The Discovery Center is operated by OPRHP. During site inspections for the purpose of this study, the curbing was viewed with four OPRHP employees.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

7.1 Park Description

The Discovery Center is accessed via a two-way driveway off of the Robert Moses Parkway ([Figure 7.1-1](#)). It is located in the City of Niagara Falls, on the site of the old Schoellkopf power facility which was destroyed in a landslide in 1956. Some portions of the destroyed power facility are still visible at the site.

The museum building itself is a unique structure. It was constructed by OPRHP in 1969 to 1970. The exterior is artistic in style, with bowed stone towers and a sweeping roofline.

The area surrounding the Center is urban. The center itself has a grassy picnic area, a trailhead, a rock garden, and a climbing wall. The trolley that circulates tourists through the Niagara Falls State Park makes a stop at the Discovery Center.

7.1.1 General Site

The only element of the Discovery Center that was inspected for the purposes of this report was the curbing along the entrance of the center's access driveway.

7.1.1.1 Entrance of Access Driveway

The inspection of the entrance driveway was limited to one specific concern: the radius of the curbing at the entrance of the driveway is too sharp, making it impossible for busses to make the corner from the north without running over the curb.

The curbing is constructed of concrete and is in good condition. Nonetheless, it impedes bus access to the Discovery Center and must be replaced.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

It is recommended that the existing curbing be removed, and new curbing should be installed at a 35- to 40-foot radius to allow sufficient room for busses to turn.

7.2 Summary of Recommendations

7.2.1 Entrance Driveway Curbing

It is recommended that the entrance driveway curbing be removed. A new curbing should be installed at a 35- to 40-foot radius to accommodate bus turning.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 7.1-1
DISCOVERY CENTER MUSEUM BUILDING**



**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

8.0 UPPER NIAGARA RIVER OBSERVATION SITE

The Upper Niagara River Observation Site is a small park located at the Project intakes, about 2.6 miles upstream of Niagara Falls. The park is open year-round, and is accessed via the Robert Moses Parkway. There is no fee for use.

Visitors to the site have access to a parking area, an open lawn area, a system of paved walkways that cross through the site, and a 1,800-foot long retaining wall at the river's edge with a concrete walkway and a paved access roadway/walkway/biking path along it. This riverfront walkway serves as an overlook and a fishing platform and is continuous with the Upper Niagara River Trail. In addition, the park location is just upstream of where Fort Schlosser, a British French-and-Indian war stockade, stood until 1812.

The area surrounding the gate towers is owned and maintained by NYPA. The immediately adjacent areas are maintained by the NYDOT.

For the purposes of this report, this site was subject to inspection of recreation-related site infrastructure. The gate towers were not considered.

8.1 Park Description

The Upper Niagara River Observation Site is a flat, open, wind-swept area with little vegetation except for grass and a few small trees. The site is dominated by the Niagara Power Project intake gate towers which each stand approximately 55-feet wide and 100 feet tall. The gate towers stand at the east and west ends of the park area, respectively, and there is open lawn between them.

The site can be accessed via acceleration and deceleration lanes which connect to the southbound lane of the Robert Moses Parkway. From the northbound lane of the Robert Moses Parkway, a perpendicular driveway crosses the median and southbound lanes to access the park.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

Intersecting paved walkways cross the lawn area between the gate towers, connecting the parking lot to the riverfront walkway. The Upper Niagara River Trail runs through the park via the riverfront walkway.

8.1.1 General Site and Infrastructure

Recreation-related infrastructure that was assessed for the purposes of this report includes access driveways, a paved parking lot, paved walkways, railings, and the riverfront walkway.

8.1.1.1 Access Driveways

There are three driveways associated with the park. There is a deceleration lane from the southbound lanes of the Robert Moses Parkway to the parking lot, and an acceleration lane from the lot back to the Parkway ([Figure 8.1.1.1-1](#)). Also, there is a driveway that runs perpendicular from the northbound lanes of the Robert Moses Parkway, across the median and southbound lanes, to access the north side of the parking lot. Each of these driveways is discussed below.

Acceleration and Deceleration lanes

The acceleration and deceleration lanes are surfaced with concrete slabs. The slabs are in poor condition. They have some cracking, and significant spalling; the concrete is spalled down to its reinforcements in some areas. Little vertical movement is evident, indicating that the soils under the slabs are non-frost susceptible.

Concrete curbing alongside these driveways is in fair condition.

A fiber optic line runs diagonally under the acceleration lane driveway, about midway along it. There is a small hand-hole associated with this line in the middle of the driveway.

NIAGARA POWER PROJECT (FERC NO. 2216) RECREATION FACILITY REHABILITATION ASSESSMENT

It is recommended that the existing surface be removed and replaced with 4-inch asphalt pavement. The curbing should also be removed and replaced with granite curbing along each side of the entrance and exit lanes.

Perpendicular Driveway

The portion of the perpendicular driveway that lies between the northbound and southbound lanes of the Robert Moses Parkway is constructed of dry laid cobblestone with granite curbing. The surface is in poor condition, and the curbing is in fair condition. At the time of inspection, this segment of road was covered in snow. Traffic from the northbound lanes of the Robert Moses Parkway was being directed to use an asphalt-paved turn-around located to the west of the park. From this turn-around, the park is accessed from the southbound lanes of the Parkway via the deceleration driveway, or the section of the perpendicular driveway that is described below.

The portion of the driveway which extends from the southbound lanes of the Parkway to the north side of the parking lot has two surface types. The northern portion of the driveway is surfaced with asphalt; the rest is surfaced with cobblestones. The asphalt portion is in poor condition with some cracking. The cobblestone portion is also in poor condition. Near the transition from asphalt to cobblestone, there is a depression where several cobblestones are missing, and others have shifted out of place ([Figure 8.1.1.1-2](#)). Water ponds in this depression and continues to damage the cobblestone surface of the driveway.

There is low granite curbing across the entrance to the parking lot; it is in fair condition. At the base of the curb, there is a strip of exposed soil before the pavement of the parking lot begins.

The surface texture of the perpendicular driveway is significantly different from the surface texture of the approaching road; this constitutes an unexpected rough surface for the driver, which is contrary to good engineering practice. Therefore, it is recommended the surface of the perpendicular driveway be removed and replaced with 4-inch pavement. The curbing should also be removed and replaced with new granite curbing.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

8.1.1.2 Parking Area

The asphalt surface of the parking area is in poor condition with extensive surface cracking ([Figure 8.1.1.1-1](#)). There is no evidence of vertical movement, indicating that the soils under the parking lot are not frost-active.

A concrete curb runs around the perimeter of the lot; it is in fair condition. There are no ADA curb cuts to allow access to the walkways from the south side of the parking lot. The parking lot drainage consists of surface runoff which flows toward the south side of the lot.

The parking area is striped to occupy 40 vehicles, but there are no ADA parking spaces delineated. The parking stripes are faded and need to be repainted.

It is recommended that the parking lot be resurfaced with 3-inch pavement. The existing curbing should be removed and replaced with new concrete curbs. The resurfaced lot should be painted to indicate parking spaces. New delineations should include designated ADA parking spaces. Curb cuts should be made to allow ADA access to the park walkways. Signage should be installed where appropriate.

8.1.1.3 Walkways

There are six walkways that cross the park lawn from the parking lot. In addition, there are two cobblestone access road/walkways that run from the acceleration driveway to converge near the eastern gate tower. The riverfront walkway is considered separately, below ([Figure 8.1.1.1-2](#)).

Park Lawn Walkways

The western-most walkway is very short; it runs from the southwest corner of the parking lot to the cul-de-sac of the western gate tower. Similarly, the easternmost walkway runs from the southeast corner of the parking lot to the cul-de-sac of the eastern gate tower.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

The remaining four walkways are spaced along the south side of the parking lot. From west to east, the first and third walkways run southeast; the second and fourth walkways run southwest. This results in a double “X” configuration of walkways across the lawn area. These four walkways provide access to the riverfront walkway.

The walkways were covered in snow at the time of inspection; therefore, only exposed portions were inspected and overall condition could not be assessed. The portions that were exposed at the time of inspection are constructed of asphalt and are in fair condition. The walkways appear to be flat, and of adequate width to satisfy ADA compliance standards.

There are no curb cuts to allow ADA access from the parking area onto these walkways.

It is recommended that curb cuts be made to allow ADA access from the parking area to the walkways. This recommendation is addressed in association with the parking area.

Eastern Gate Tower Access Road/Walkways

Two access road/walkways lead from the acceleration driveway and converge at the eastern gate tower cul-de-sac. They are surfaced with dry-laid cobblestone and are in fair condition. This cobblestone surface is not ADA compliant, as the gaps between the cobblestones are too large to allow passage of wheelchairs. Water tends to pond on the cobblestones where they abut the concrete apron of the eastern gate tower.

It is recommended that these cobblestone walkways be preserved. The joints between the cobblestones should be filled with material similar to that which is already used. Displaced stones should be replaced immediately to prevent shifting of adjacent stones. After these initial repairs, the cobblestone walkways should be subject to routine inspection and maintenance.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

8.1.1.4 Riverfront Walkway

The riverfront walkway runs along a man-made waterfront which consists of a vertical-face, concrete retaining wall. The top of the wall forms a concrete walkway. An aluminum railing runs along the rim of the retaining wall at the water's edge, and an asphalt-paved access road parallels the walkway on its north side. The access road is two lanes wide and is used primarily for biking and walking; it is also continuous with the Upper Niagara River Trail.

The concrete walking surface along the top of the retaining wall is in good condition. The asphalt surface of the walking/biking trail is also in good condition, with some minor cracking.

The paved access roadway is in fair condition with some surface cracking. No vertical movement is evident, suggesting that the soils underlying the roadway are non-frost active. The majority of the concrete curbing along the north side of the roadway was covered in snow at the time of the site visit; therefore, its condition could not be assessed.

The railing along the top of the retaining wall is the three-rail style that is common throughout the State park system. It consists of three aluminum pipe-rails with aluminum support posts spaced at approximately 12-feet on-center. The posts are mounted to the top of the concrete retaining wall. There is chain-link fence fabric, attached from the base to the height of the second rail, along the face of the entire railing. The railing is an existing installation, and it is in good condition. However, it does not meet current building code requirements for height or opening size. The chain-link installation somewhat mitigates for the latter, but height is still of concern.

Regardless of its non-compliance with the current building code, the aluminum railing is an existing structure and may be retained. It is recommended that the asphalt pavement of the access roadway be removed and replaced with 3-inch pavement. The curbing on the north side of the roadway should also be removed and replaced with new concrete curbing.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

8.2 Summary of Recommendations

8.2.1 Acceleration and Deceleration Driveways

It is recommended that the existing surface of the driveways be removed and replaced with 4-inch asphalt pavement. The curbing should also be removed and replaced with granite curbing along each side of the entrance and exit lanes.

8.2.2 Perpendicular Driveway

It is recommended the surface of the perpendicular driveway be removed and replaced with 4-inch pavement. The curbing should also be removed and replaced with new granite curbing.

8.2.3 Parking Area

It is recommended that the parking lot be resurfaced with 3-inch pavement. The existing curbing should be removed and replaced with new concrete curbs. The resurfaced lot should be painted to indicate parking spaces. New delineations should include designated ADA parking spaces. Curb cuts should be made to allow ADA access to the park walkways. Signage should be installed where appropriate.

8.2.4 Eastern Gate Tower Access Walkways

It is recommended that the cobblestone walkways to the eastern gate tower be repaired. Joints should be filled with stone dust, and missing cobblestones should be replaced.

NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT

8.2.5 Riverfront Walkway

It is recommended that the asphalt pavement of the access roadway along the riverfront walkway be removed and replaced with 3-inch pavement. The curbing on the north side of the roadway should also be removed and replaced with new concrete curbing.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

FIGURE 8.1.1.1-1

ENTRANCE AND PARKING AREA, UPPER NIAGARA RIVER OBSERVATION SITE



Entrance Driveway



Parking Area

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

**FIGURE 8.1.1.1-2
DRIVEWAY AND TRAIL, UPPER NIAGARA RIVER OBSERVATION SITE**



Cobblestones on Perpendicular Driveway



Riverfront Walkway and Access Roadway/Walking/Biking Trail

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

REFERENCES

International Code Council. 2001. American National Standards: Accessible and Usable Buildings and Facilities. p. 84.

Means, R.S. 2003. Site Work and Landscape Cost Data 2003, 22nd edition. Construction Publishers and Consultants.

Means, R.S. 2003. Building Construction Cost Data 2003, 61st edition. Construction Publishers and Consultants.

National Fire Protection Association. 2002. National Electrical Code. p. 1161.

National Fire Protection Association. 2003. 101 Life Safety Code.

New York State Department of State. 2002. Fire Code of New York State.

New York State Department of State. 2002. Property Maintenance Code of New York State. p. 29.

New York State Department of State. 2002. Plumbing Code of New York State. p. 119.

New York State Department of State. 2002. Mechanical Code of New York State. p. 108.

New York State Department of State. 2001. Official Compilation Codes, Rules and Regulations of the State of New York, Title 9 Executive (B).

New York State Department of State. 2002. Building Code of New York State.

**NIAGARA POWER PROJECT (FERC NO. 2216)
RECREATION FACILITY REHABILITATION ASSESSMENT**

U.S. Architectural and Transportation Barriers Compliance Board. 1991. ADA Accessibility Guidelines Checklist for Buildings and Facilities.

U.S. Department of Justice and U.S. Department of Transportation. 1994. ADA Accessibility Guidelines for Buildings and Facilities (28 CFR Part 36, Appendix A), updated September 2002.