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JAFP-15-0036
March 12, 2015

U.S. Nuclear Regulatory Commission
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Washington, DC 20555-0001

Subject: Flood Hazard Reevaluation Report - Response NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident

James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
License No. DPR-059

Reference:
1. NRC letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, ML12053A340, dated March 12, 2012
2. NRC letter, Prioritization of Response Due Dates for Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident, ML12097A509, dated May 11, 2012
3. Entergy letter, Entergy Nuclear Operations Inc., Response to NRC Request for Information (RFI) Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendations 2.1 and 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, JAFP-12-0063, dated June 8, 2012

Dear Sir or Madam:

On March 12, 2012, the NRC issued Reference 1 to all power reactor licensees. Enclosure 2 of Reference 1 contain specific requested actions, requested information, and required responses associated with Recommendation 2.1 including a requirement to submit a Flood Hazard Reevaluation Report. The NRC assigned a priority category level 3 for James A. FitzPatrick Nuclear Power Plant (JAF) [Reference 2]. This letter submits the completed Flood Hazard Reevaluation Report.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Chris M. Adner, Regulatory Assurance Manager, at 315-349-6766.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 12th day of March, 2015.

Sincerely,

Brian R. Sullivan
Site Vice President

BRS/CMA/mh

Enclosure: James A. Fitzpatrick Flooding Hazard Re-Evaluation Report, JAF-RPT-15-00004 Revision 0

cc: NRC Regional Administrator
NRC Resident Inspector
Mr. Douglas Pickett, Senior Project Manager
Ms. Bridget Frymire, NYSPSC
Mr. John B. Rhodes, President NYSERDA

JAFP-15-0036

Enclosure

James A. Fitzpatrick Flooding Hazard Re-Evaluation Report, JAF-RPT-15-00004 Revision 0

Entergy

ENTERGY NUCLEAR
Engineering Report Cover Sheet

Engineering Report Title:
James A. FitzPatrick Flooding Hazard Re-Evaluation Report

Engineering Report Type:

New ☒ Revision ☐ Cancelled ☐ Superseded ☐
Superseded by: _____

Applicable Site(s)

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ANO1	☐	ANO2	☐	ECH	☐	GGNS	☐	RBS	☐	WF3	☐	PLP	☐

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Prepared by: AREVA, Inc. Date: 2/25/15
Responsible Engineer (Print Name/Sign)

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Reviewed by: AG Porch/ A G Porch Date: 3,9,15
Reviewer (Print Name/Sign)

Approved by: Guy Foster/ Guy Foster Date: 3/10/15
Supervisor / ~~Manager~~ (Print Name/Sign)

AREVA Inc.

Engineering Information Record

Document No.: 51 - 9227066 - 001

James A. Fitzpatrick Flooding Hazard Re-Evaluation Report

Safety Related? ☒ YES ☐ NO

Does this document establish design or technical requirements? ☐ YES ☒ NO

Does this document contain assumptions requiring verification? ☐ YES ☒ NO

Does this document contain Customer Required Format? ☐ YES ☒ NO

Signature Block

Name and Title/Discipline	Signature	P/LP, R/LR, A-CRF, A	Date	Pages/Sections Prepared/Reviewed/ Approved or Comments
D.T. Brown Scientist IV, Environmental Analysis		LP	2/25/15	All, Editorial and formatting only to Sections 3.1, 3.2, 3.4, 3.5, 3.9, and Appendices A and B.
Christine Stonier GZA Civil Engineer		P	2/25/15	Sections 3.1, 3.2, 3.4, 3.5, 3.9, and Appendices A and B
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Note: P/LP designates Preparer (P), Lead Preparer (LP)
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A-CRF designates Project Manager Approver of Customer Required Format (A-CRF)
A designates Approver/RTM – Verification of Reviewer Independence

Project Manager Approval of Customer References (N/A if not applicable)

Name (printed or typed)	Title (printed or typed)	Signature	Date
J. Carrington Dillon Cynthia Fasano for	Project Manager	Cynthia Fasano	2-25-15

Record of Revision

Revision No.	Pages/Sections/ Paragraphs Changed	Brief Description / Change Authorization
000	All	Initial release.
001	All	This revision is to make minor editorial changes and to correct a typo error identified in Section 5. This is not a technical revision.
	Section 2.3.1.2	Clarifying language added to Current Licensing Basis flood parameters. Minor editorial changes.
	Page 3-2	Missing period added.
	Page 3-22	Missing period added.
	Page 3-47	Font correction.
	Page 3-72	End parantheses added.
	Page 5-3	Typo “210, 00 gallons” corrected to “210,000 gallons”.
	Page A-1	Electronic file pathway and zip file name changed.
	Page B-1	Electronic file pathway and zip file name changed.

Overview

This report describes the approach, methods, and results from the re-evaluation of flood hazards at the James A. Fitzpatrick Nuclear Power Plant (JAF). It provides the information, in part, requested by the U.S. Nuclear Regulatory Commission (NRC) to support the evaluation of the NRC staff recommendations for the Near-Term Task Force (NTTF) review of the accident at the Fukushima Dai-ichi nuclear facility.

Section 1.0 provides introductory information related to the flood hazard. The section includes background regulatory information, scope, general method used for the re-evaluation, assumptions, the elevation datum used throughout the report, and a conversion table to determine elevations in other common datum.

Section 2.0 describes detailed JAF site information, including present-day site layout, topography, and current licensing basis flood protection and mitigation features. The section also identifies relevant changes since license issuance to the local area and watershed as well as flood protections.

Section 3.0 presents the results of the flood hazard re-evaluation. It addresses each of the eight flood-causing mechanisms required by the NRC as well as a combined effect flood. In cases where a mechanism does not apply to the JAF site, a justification is included. The section also provides a basis for inputs and assumptions, methods, and models used.

Section 4.0 compares the current and re-evaluated flood-causing mechanisms. It provides an assessment of the current licensing and design basis flood elevation to the re-evaluated flood elevation for each applicable flood-causing mechanism evaluated in Section 3.0.

Section 5.0 presents an interim evaluation and actions taken, or planned, to address those higher flooding hazards identified in Section 4.0 relative to the current licensing and design basis.

Section 6.0 describes the additional actions taken to support the interim actions described in Section 5.0. Note that no additional actions were identified as necessary.

The report also contains two appendices. Appendix A provides large scale drawings of the Local Intense Precipitation model setup and results, as well as relevant input/output files for review of the simulation. Appendix B provides large scale drawings of the Local Unnamed Stream Probable Maximum Flood model setup and results, as well as relevant input/output files for review of the simulation.

Executive Summary

This report satisfies the "Hazard Reevaluation Report" Request for Information pursuant to 10 Code of Federal Regulations (CFR) 50.54(f) by the NRC dated November 12, 2012, NTTF Recommendation 2.1 Flooding Enclosure 2.

The report describes the approach, methods and results from the re-evaluation of flood hazards at James A. Fitzpatrick Nuclear Power Plant (JAF). This report addresses the eight flood-causing mechanisms and a combined effect flood, identified in Attachment 1 to Enclosure 2 of the NRC information request. No additional flood causing mechanisms were identified for JAF.

Each of the re-evaluated flood causing mechanisms and the potential effects on the JAF site are described in Sections 3.0 and 4.0 of this report.

The methodology of the flood hazard reevaluation documented in this report follows the Hierarchical Hazard Assessment approach, as described in NUREG/CR-7046, "Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America", NRC Interim Staff Guidance, as appropriate, and their supporting reference documents.

Screened mechanisms have been evaluated at a high level and determined to not be applicable to the flooding hazard for JAF.

Flooding due to Local Intense Precipitation and the Probable Maximum Flood on the local unnamed stream adjacent to the site are the only flood mechanisms to result in inundation in the vicinity of plant structures important to safety. Impacts of inundation due to those two flood mechanisms are addressed in Section 5.0.

In response to the flood elevations at the site resulting from the Local Intense Precipitation and the Probable Maximum Flood on the local unnamed stream flood events, an evaluation was performed to determine the impact of inundation at the affected exterior doors identified. The results of this evaluation indicate that there are no impacts to equipment important to safety as a result of the re-evaluated flood elevations.

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Acronyms and Abbreviations

Acronym/Abbreviation	Description
10CFR50.54(f)	Title 10 of the Code of Federal Regulations, Section 50.54(f)
ANS	American Nuclear Society
ANSI	American National Standards Institute
ARC	Antecedent Runoff Condition
ASPRS	American Society for Photogrammetry and Remote Sensing
CEM	Coastal Engineering Manual
cfs	cubic feet per second
CLB	Current License Basis
CN	Curve Number
COL	Combined License Application
DIM	Direct Integration Method
DTM	Digital Terrain Model
DUT	Delft University of Technology
FEMA	Federal Emergency Management Agency
FFT	Fast Fourier Transform
fps	feet per second
FSAR	Final Safety Analysis Report
GIS	Geographic Information Systems
GLERL	Great Lakes Environmental Research Laboratory
HEC-HMS	Hydrologic Engineering Center Hydrologic Modeling System
HHA	Hierarchical Hazard Assessment
HMR	Hydrometeorological Report
HURDAT	Hurricane Database

Acronym/Abbreviation	Description
IGLD55	International Great Lakes Datum of 1955
IGLD85	International Great Lakes Datum of 1985
IJC	International Joint Commission
IPEEE	Individual Plant Examination for External Events
ISFSI	Independent Spent Fuel Storage Installation
ISG	Interim Staff Guidance (NRC)
ISLRBC	International St. Lawrence River Board of Control
JAF	James A. Fitzpatrick Nuclear Power Plant
L	Lag Time
LiDAR	Light Detection and Ranging
LIP	Local Intense Precipitation
mbar	millibars
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NCDC	National Climatic Data Center
NGDC	National Geophysical Data Center
NGVD29	National Geodetic Vertical Datum of 1929
NMP	Nine Mile Point
NMP3NPP	Nine Mile Point Unit 3 Nuclear Power Plant
NOAA	National Oceanic and Atmospheric Administration
NOMADS	National Model Archive and Distribution System
NRC	U.S. Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NTTF	Near-Term Task Force

Acronym/Abbreviation	Description
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
PMS	Probable Maximum Seiche
PMSS	Probable Maximum Storm Surge
PMT	Probable Maximum Tsunami
PMWS	Probable Maximum Wind Storm
RMSe	Root Mean Square Error
ROC	Rochester Airport
SCS	Soil Conservation Service
SSCs	Structures, Systems and Components
SSPP	Storm Surge Planning Program
SWAN	Simulating Waves Nearshore
USACE	U.S. Army Corps of Engineers
USLS35	U.S. Lake Survey of 1935
VBS	Vehicle Barrier System
WIS	Wave Information Studies

1.0 INTRODUCTION

Following the Fukushima Dai-ichi accident on March 11, 2011, which resulted from an earthquake and subsequent tsunami, the U.S. Nuclear Regulatory Commission (NRC) established the Near-Term Task Force (NTTF) to review the accident. The NTTF subsequently prepared a report with a comprehensive set of recommendations.

In response to the NTTF recommendations, and pursuant to Title 10 of the Code of Federal Regulations, Section 50.54(f), the NRC has requested information from all operating power licensees (NRC, 2012). The purpose of the request is to gather information to re-evaluate seismic and flooding hazards at U.S. operating reactor sites.

The James A. Fitzpatrick Nuclear Power Plant (JAF), southeast shore of Lake Ontario, Oswego County, New York, approximately seven miles northeast of the City of Oswego., is one of the sites required to submit information.

The NRC information request to flooding hazards requires licensees to re-evaluate their sites using updated flooding hazard information and present-day regulatory guidance and methodologies and then compare the results against the site's current licensing basis (CLB) for protection and mitigation from external flood events.

1.1 Purpose

This report satisfies the "Hazard Reevaluation Report" Request for Information pursuant to 10 Code of Federal Regulations (CFR) 50.54(f) by the NRC dated November 12, 2012, NTTF Recommendation 2.1 Flooding Enclosure 2.

The report describes the approach, methods and results from the re-evaluation of flood hazards at JAF.

1.2 Scope

This report addresses the eight flood-causing mechanisms and a combined effect flood, identified in Attachment 1 to Enclosure 2 of the NRC information request (NRC, 2012). No additional flood causing mechanisms were identified for JAF.

Each of the re-evaluated flood causing mechanisms and the potential effects on the JAF site are described in Sections 3.0 and 4.0 of this report.

1.3 Method

This report follows the Hierarchical Hazard Assessment (HHA) approach, as described in NUREG/CR-7046, "Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America" (NRC, 2011), NRC Interim Staff Guidance (ISG), as appropriate, and their supporting reference documents.

A HHA consists of a series of stepwise, progressively more refined analyses to evaluate the hazard resulting from phenomena at a given nuclear power plant site to structures, systems and components (SSCs) important to safety with the most conservative plausible assumptions consistent with the available data. The HHA starts with the most conservative, simplifying assumptions that maximize the hazards from the maximum probable event. If the assessed hazards result in an adverse effect or exposure to any SSCs important to safety, a more site-specific hazard assessment is performed for the probable maximum event.

The HHA approach was carried out for each flood-causing mechanism, with the controlling flood being the event that resulted in the most severe hazard to the SSCs important to safety at JAF. The steps involved to estimate the design-basis flood typically included the following:

1. Identify flood-causing phenomena or mechanisms by reviewing historical data and assessing the geohydrological, geoseismic and structural failure phenomena in the vicinity of the site and region.

2. For each flood-causing phenomena, develop a conservative estimate of the flood from the corresponding probable maximum event using conservative simplifying assumptions.
3. If any SSCs important to safety are adversely affected by flood hazards, use site-specific data and/or more refined analyses to provide more realistic conditions and flood analysis, while ensuring that these conditions are consistent with those used by Federal agencies in similar design considerations.
4. Repeat Step 2 until all SSCs important to safety are unaffected by the estimated flood, or if all feasible site-specific data and model refinement options have been used.

Section 3.0 of this report provides additional HHA detail for each of the flood-causing mechanisms evaluated.

Due to use of the HHA approach, the results (water elevation) for any given flood hazard mechanism may be significantly higher than results that could be obtained using more refined approaches. Where initial, overly conservative assumptions and inputs result in water elevations bounded by the CLB or water elevations that pose no credible hazard to the site, no subsequent refined analyses are required to develop flood elevations that are more realistic or reflect a certain level of probability.

1.4 Assumptions

Assumptions used to support the flood re-evaluation are described in Section 3.0 and its subsections, and depend on the mechanism being evaluated. Details relating to assumption justifications are discussed further in referenced, supporting documentation. None of the assumptions require verification, i.e., need to be confirmed prior to use of the results.

1.5 Elevation Values

The JAF Final Safety Analysis Report (FSAR) reports elevations in the U.S. Lake Survey of 1935 (USLS35) vertical datum. USLS35 is 1.227 feet (NOAA, 1979) higher than the International Great Lakes Datum of 1955 (IGLD55) at the Oswego Station. IGLD55 is 0.518 feet lower than the International Great Lakes Datum of 1985 (IGLD85) at the Oswego Station (NOAA, 1995). NAVD88 is equivalent to the IGLD85 vertical datum (NOAA, 1995). Discussion of results in Section 4 of this report uses USLS35 consistent with the JAF CLB.

Conversion factors for the vertical datums used in this flood reevaluation are provided below.

		To:			
	Vertical Datum	USLS35	IGLD55	IGLD85	NAVD88
From:	USLS35	-	-1.227 ft	-0.709 ft	-0.709 ft
	IGLD55	+1.227 ft	-	+0.518 ft	+0.518 ft
	IGLD85	+0.709 ft	-0.518 ft	-	0.0 ft
	NAVD88	+0.709 ft	-0.518 ft	0.0	-

1.6 References

NOAA, 1979. "Establishment of International Great Lakes Datum (1955)", (http://tidesandcurrents.noaa.gov/publications/Establishment_of_International_Great_Lakes_Datum_1955.pdf), The Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, December 1979. See AREVA Document 32-9227045-000.

NOAA, 1995. "Establishment of International Great Lakes Datum (1985)", (http://tidesandcurrents.noaa.gov/publications/Establishment_of_International_Great_Lakes_Datum_1985.pdf), The Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, December 1995. See AREVA Document 32-9227045-000.

NRC, 2011. NUREG/CR-7046, Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America – NUREG/CR-7046, U.S. Nuclear Regulatory Commission, November 2011. (ADAMS Accession No. ML11321A195)

NRC, 2012. Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3 and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident, U.S. Nuclear Regulatory Commission, March 2012. (ADAMS Accession No. ML12053A340)

2.0 INFORMATION RELATED TO THE FLOOD HAZARD

2.1 Detailed Site Information

The JAF site is situated on the southeast shore of Lake Ontario, Oswego County, New York, approximately seven miles northeast of the City of Oswego. See Figure 2-1, Site Location Map. The JAF site grade elevation is approximately 272 feet USLS35 (JAF, 2014). The shoreline frontage of the JAF site consists principally of near-vertical bedrock cliffs which extend from an elevation of about 240 ft USLS35 to near the plant grade elevation. Plant structures are located a minimum of 150 ft away from the vertical bedrock cliffs. There is a minor, unnamed perennial stream located along the western boundary of the JAF site (See Figure 2-1). The streambed elevation where the stream meets Lake Ontario is approximately 248 feet USLS35 (AREVA, 2014).

2.1.1 Site Layout

Figure 2-2, Site Topography and Layout, shows the JAF site layout and topography, including important features and locations related to flood hazards (AREVA, 2014).

2.1.2 Site Topography

The JAF site grade elevation is approximately 272 feet USLS35 (JAF, 2014). The shoreline frontage of the JAF site consists principally of near-vertical bedrock cliffs which extend from an elevation of about 240 ft USLS35 to near the plant grade elevation. Plant structures are located a minimum of 150 ft away from the vertical bedrock cliffs.

Significant shoreline erosion is considered unlikely due to the bedrock substrate at the site, and is discussed in Section 3.8 of this report.

2.2 Current Design Basis Flood Elevation

The current design basis and related flood elevation from natural sources is described in the JAF Final Safety Analysis Report (FSAR) (JAF 2014, Section 2.4.3.7) and in the James A. Fitzpatrick Nuclear Power Station Walkdown Submittal Report for resolution of Fukushima Near-Term Task Force Recommendation 2.3 (JAF, 2012) required as part of the response to the 10 CFR 50.54(f) letter.

The JAF design basis flood level is 260 ft USLS35, which is postulated to occur coincident with the maximum recorded lake level (248 ft USLS35), maximum precipitation induced increase to lake level (+0.35 ft), maximum wind setup (+4.1 ft), and maximum wave runup (+7.5 ft). The CLB also includes a postulated flood elevation assuming a higher regulated lake level of 250 ft USLS35. The resulting peak flood level is 262 ft USLS35. The probable maximum flood elevation inside the Screenwell Building (hydraulically connected to Lake Ontario) was postulated to be approximately 255 ft USLS35 assuming the higher assumed lake level of 250 ft USLS35. Flood levels in the Screenwell Building are not considered to be affected by waves (JAF, 2014, Section 2.4.3.7).

Probable Maximum Precipitation (PMP) induced inundation of JAF roofs was evaluation during the Individual Plant Examination for External Events (IPEEE) (JAF, 2012). The Reactor Building roof has a designed load capacity of 50 lb/ft^2 which represents 9.6 inches of water. It was determined that as long as roof drains remained effective, this water level would not be exceeded. The rainfall intensities used for this evaluation were: 4.6 in/hour for a 6-hour duration, 16 in/hour for a 1-hour duration, 24.3 in/hour for a 30-minute duration, 34.2 in/hour for a 15-minute duration, and 65.3 in/hour for a 5-minute duration (JAF, 2012).

2.2.1 Elevation of Safety Structures, Systems and Components

Exterior doors potentially impacted by flooding are identified in Table 3-1 and are generally near the general plant grade elevation of 272.0 ft USLS35 (AREVA, 2014). The Screenwell Building floor slab is at elevation 255.0 ft USLS35 (JAF, 2012).

Conduits located at exterior manholes are sealed from leakage, and were evaluated as part of the flood walkdown (JAF, 2012).

2.3 Current Licensing Basis Flood Protection and Mitigation Features

Flood protection features credited in the CLB consist of the conduit seals at eight (8) exterior manholes which contain conduits connecting to the Reactor Building. Additionally, roof drains on the Reactor Building roof are credited to mitigate the IPEEE PMP event. (JAF, 2012)

2.3.1 CLB Flood Causing Mechanisms

The following is a summary of the flood causing mechanisms that are part of the CLB or mitigation due to IPEEE.

2.3.1.1 Probable Maximum Precipitation Induced Roof Loading

PMP induced inundation of JAF roofs was evaluated during the IPEEE (JAF, 2012). The Reactor Building roof has a designed load capacity of 50 lb/ft^2 which represents 9.6 inches of water. It was determined that as long as roof drains remained effective, this water level would not be exceeded. The rainfall intensities used for this evaluation were: 4.6 in/hour for a 6-hour duration, 16 in/hour for a 1-hour duration, 24.3 in/hour for a 30-minute duration, 34.2 in/hour for a 15-minute duration, and 65.3 in/hour for a 5-minute duration (JAF, 2012).

2.3.1.2 Lake Ontario Flooding

The CLB evaluation of Lake Ontario flooding postulated a controlling flood scenario consisting of the combined effects of a probable maximum wind storm (PMWS) induced probable maximum storm surge (PMSS), PMP increases to the lake level, wind-generated waves, and the maximum regulated lake level (JAF, 2014, Section 2.4.3).

- The controlling CLB stillwater lake level (PMSS event) is 252.5 ft USLS35.
  - The CLB maximum regulated level for Lake Ontario is 248.0 ft USLS35.
  - The CLB PMWS induced PMSS for Lake Ontario adds 4.1 ft to the stillwater lake level.
  - The CLB PMP event over the Lake Ontario watershed adds 0.35 ft to the stillwater lake level.
- An alternate evaluation assuming a higher maximum lake level of 250 ft USLS35 results in a CLB peak flood elevation of 262.0 ft USLS35 (PMSS with wind generated waves).
  - The maximum postulated flood level in the Screenwell Building (using the assumed higher lake level of 250 ft USLS35) is 255 ft USLS35 (PMSS level).
  - Maximum wave runup was calculated to be 7.5 ft above the maximum stillwater lake level, up to 260 ft USLS35.

The duration of the wind storm causing this flooding is 23 hours (JAF, 2014, Section 2.4.3.4).

2.4 Licensing Basis Flood-Related and Flood Protection Changes

The IPEEE for JAF identified a potential issue with roof ponding during a PMP event exceeding the design roof load capacity. As a result, an evaluation was performed to demonstrate the capability of the roof drains to accommodate the rainfall event, see discussion in Section 2.3.1.1 (JAF, 2012).

2.5 Watershed and Local Area Changes

2.5.1 Watershed Changes

There have been no significant changes to the JAF watershed (JAF, 2012; JAF, 2014).

2.5.2 Local Area Changes

Additions and relocation of security barriers have a potential impact on localized surface water drainage. The impact of the JAF vehicle barrier system (VBS) is evaluated as part of the Local Intense Precipitation evaluation documented in Section 3.1.

2.6 Additional Site Details – Walkdown Results

The James A. Fitzpatrick Nuclear Power Station Walkdown Submittal Report for resolution of Fukushima Near-Term Task Force Recommendation 2.3 required as part of the response to the 10 CFR 50.54(f) letter identified 29 passive incorporated features, and two active incorporated features. Identified deficiencies in the flood protection features were documented by condition reports and a work order was assigned to resolve each identified condition. (JAF, 2012)

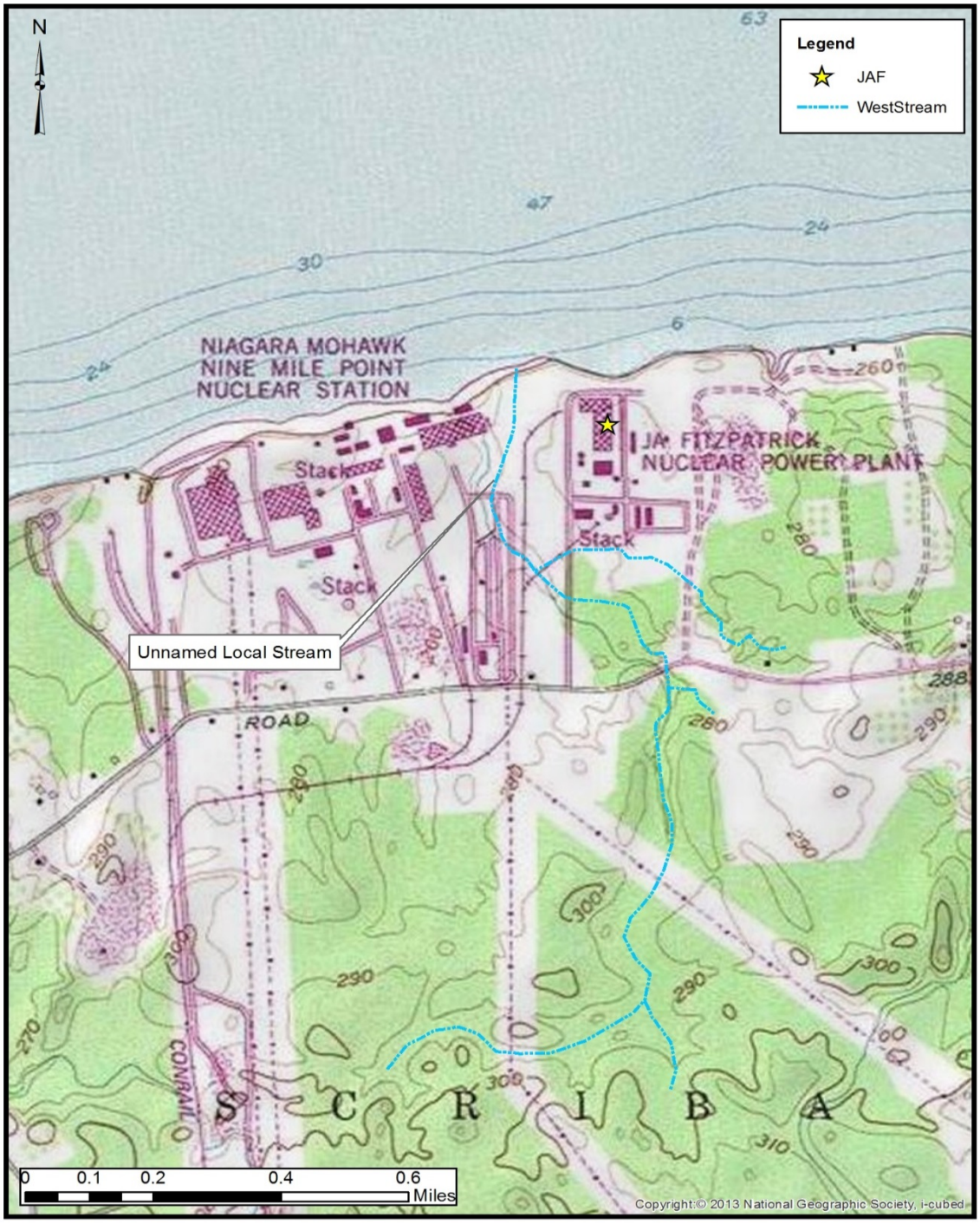
2.7 References

AREVA, 2014. "James A. Fitzpatrick Topographic Survey Deliverables", 2014, See AREVA Document No. 38-9227043-000.

JAF, 2012. "Flooding Walkdown Report - Entergy's Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident", James A. Fitzpatrick Nuclear Power Plant, JAFP-12-0135, 2012. See Project Manager Approval of Client References on Page 2.

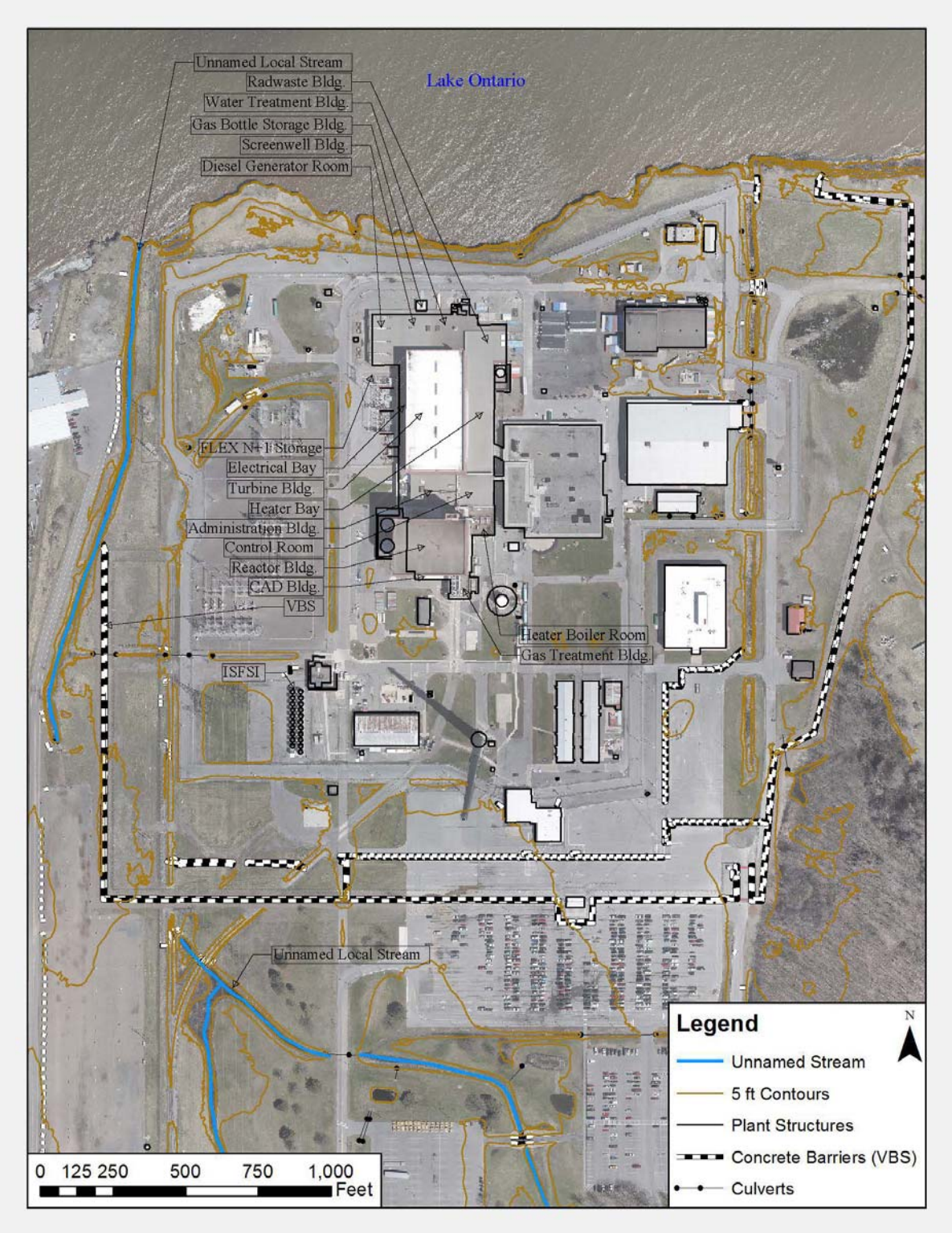
JAF, 2014. "James A. Fitzpatrick Safety Analysis Report", Entergy Nuclear, 2014. See Project Manager Approval of Client References on Page 2.

Figure 2-1: Site Location Map



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 2-2: Site Topography and Layout



Any illegible text or features are not pertinent to the technical purposes of this document. Site topography, orthoimagery, and plant structure delineation from AREVA, 2014.

3.0 FLOOD HAZARD RE-EVALUATION

This section details the evaluation of the eight flood causing mechanisms and combined effects for JAF as detailed in Attachment 1 to Enclosure 2 of the NRC information request. No additional flood causing mechanisms were identified for JAF. Flooding due to Local Intense Precipitation (LIP) and flooding due to the Probable Maximum Flood (PMF) on the small unnamed local stream are the only scenarios that results in standing water in the vicinity of SSCs important to safety at JAF. Debris loading and transportation during the LIP or PMF scenario are not considered a hazard for SSCs important to safety at JAF (See Section 3.1.3).

3.1 Local Intense Precipitation

This section addresses the potential for flooding at JAF due to the LIP event. The LIP event is a distinct flooding mechanism that consists of a short-duration, locally heavy rainfall centered upon the plant site itself.

This section summarizes the LIP evaluation performed in AREVA Calculation No. 32-9227045-000 (AREVA, 2014a).

3.1.1 Method

3.1.1.1 Local Intense Precipitation

The HHA approach described in NUREG/CR-7046 (NRC, 2011, Section 2) was used for the evaluation of the LIP and resultant water surface elevations at JAF.

With respect to LIP, the HHA used the following steps:

1. Define FLO-2D model limits for LIP analysis.
2. Develop the FLO-2D computer model with site features.
3. Develop LIP/PMP inputs.
4. Perform flood simulations in FLO-2D and estimate maximum water surface elevations at JAF.

3.1.2 Results

3.1.2.1 Local Intense Precipitation

3.1.2.1.1 FLO-2D Model Limits for LIP Analysis

Due to anticipated unconfined flow characteristics, a two-dimensional hydrodynamic computer model, FLO-2D, was used for the LIP analysis. FLO-2D is a physical process model that routes flood hydrographs and rainfall-runoff over unconfined flow surfaces or in channels using the dynamic wave approximation to the momentum equation (FLO-2D, 2013). The watershed applicable for the LIP Analysis was computed internally within FLO-2D based on the digital terrain model (DTM) limits input into FLO-2D (AREVA, 2014b). The project computational boundary includes portions of the local watershed associated with the small unnamed stream to the west of JAF (shown in Figure 3-1) and was delineated based on the JAF topographic survey (AREVA, 2014b). Offsite portions of the watershed attributed to the small unnamed stream were not included in the FLO-2D model. The runoff from the offsite portion of the watershed was incorporated into the FLO-2D model as an inflow hygrograph. The hydrograph was calculated using a modified version of the Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) model developed as part of the PMF hydrology calculation (AREVA, 2014c).

The FLO-2D model includes topography, site location, and building structures. Grid elements along the model computational boundary where the apparent direction of flow is away from JAF were selected as outflow grid elements.

3.1.2.1.2 FLO-2D Computer Model with Site Features

The FLO-2D model developed for the LIP analysis was based on JAF site features including: topography, site location, VBS layout, channels and culverts, and structures. Figure 3-2 illustrates the FLO-2D model features. The selected grid element size for the project was 10 feet by 10 feet. The elevation data used to develop the FLO-2D model consist of 2014 DTM data (AREVA, 2014b) for JAF. Flow obstructions due to buildings were also included in the model. Culverts were considered to be blocked, and storm sewers were not considered. The main input parameters for the JAF FLO-2D model include:

Elevation: The elevation data used to develop the FLO-2D model were prepared by Light Detection and Ranging (LiDAR) methods using aerial acquisition. The surveyed topographic data of the site were provided in AutoCAD format (AREVA, 2014b). The surveyed topographic map is in North American Datum of 1983 (NAD83)New York Central State Plane (horizontal) datum and elevations are in NAVD88. The unit of the survey is U.S. ft. The site-specific survey data was supplemented with publically available regional LiDAR data (NOAA, 2011). The elevations in the regional LiDAR data are also referenced to NAVD88.

The topographic data for JAF were developed based on a site-specific aerial survey using methodology consistent with the need for first-order level of accuracy. The topographic survey performed in 2014 at JAF was required to meet the American Society for Photogrammetry and Remote Sensing (ASPRS) Class I Accuracy Standard for 1in = 100 ft planimetrics and 1-foot contour intervals, with +/- 1 ft horizontal accuracy, +/- 0.33 ft Root Mean Square Error (RMSe) vertical accuracy for 1 ft contours and +/- 0.17 ft RMSe vertical accuracy for spot elevations, at well-defined points. The methodology of the topographic survey was aerial LiDAR mapping of the site with sufficient control points for calibration meeting the mapping standard, and conventional ground survey loops for the critical structures and locations (AREVA, 2014b).

Model grid elevations cannot be more accurate than the survey they are based upon. Therefore, model grid elevations have a minimum level of uncertainty of +/- 0.17 ft. A minimum of the two closest DTM points within the vicinity of a grid element was used in computing grid elevations. The density of spot elevations on the DTM provided for adequate coverage for each grid element. Interpolated grid elevations near critical points were spot checked against the survey elevations. Model interpolation errors are therefore believed to be minimal.

Uncertainty regarding onsite flood elevations is generally limited to the level of accuracy of the site survey. The nature of the two dimensional flow model is such that the impact of potential inaccuracy in the elevation of any single grid element is generally mitigated by the surrounding grid elements.

Buildings and Roof Tops: Buildings at JAF were incorporated into the FLO-2D model based on the surveyed topographic site plan (AREVA, 2014b) by manually adjusting (increasing) grid element elevations. Building locations were identified by importing the "Plan_Buildings" layer from the site survey (AREVA, 2014b) into FLO-2D. Buildings were represented by grid elements with ground elevation at least five (5) ft higher than surrounding areas to ensure that runoff from the roofs freely flows to adjacent ground grid elements, and flows around the building footprint (i.e. not through the building). Buildings that appeared to have flat roofs based on the surveyed DTM (AREVA, 2014b) were assigned uniform elevations to grid elements representing a single building to ensure that runoff from rooftops are uniformly distributed to the surrounding areas. For buildings with different rooftop elevations adjacent to each other based on the surveyed DTM (AREVA, 2014b), the relative change in rooftop elevations were represented as a minimum two (2) ft relative difference in building grid element elevations. The peak 1-hr duration LIP depth of 15.9 in is less than the relative change in elevation of at least two (2) ft. Therefore, water is not expected to build-up high enough to drive flow from rooftops with lower elevations to adjacent rooftops with higher elevations. This ensures that general flow directions of runoff from rooftops are considered.

Shipping containers located along the east and west side of the Interim Waste Storage Facility Building and along the west side of the Turbine Building were modeled as buildings, with an arbitrary model elevation at least five (5) ft higher than the surrounding topography. Transformers located on the west side of the Turbine Building

were modeled as buildings, with an arbitrary model elevation of approximately five (5) ft higher than the surrounding topography.

Water Surface Elevation at Lake Ontario: As a conservative approach, the higher of the 100-year return period or maximum controlled lake level of Lake Ontario (as determined in the Probable Maximum Storm Surge Calculation, AREVA, 2014d) was used to model Lake Ontario as a boundary condition in the FLO-2D model. The maximum controlled water level is elevation 248 ft USLS35 and the 100-year water level is elevation 249 ft USLS35 (AREVA, 2014d). The 100-year water level was conservatively selected as the ambient water level for Lake Ontario. Grid elements representing Lake Ontario were assigned a water surface elevation of 249 ft USLS35 (248.3 ft NAVD88).

Vehicle Barrier System (VBS): A sensitivity analysis was performed to determine the impact caused by modeling the VBS at JAF on the flood elevations within the site. The VBS was modeled in FLO-2D using the levee structures component of the model. The layout of the VBS was determined based on high resolution orthoimagery (AREVA, 2014b). The top elevation of the modelled portions of the VBS was set at an elevation 4 feet (JAF, 2004) above the underlying grid element elevation. A sensitivity analysis on the inclusion of the VBS was performed. Two FLO-2D model runs were executed, one with VBS (levee components) in the model and one without VBS in the model. Based on examination of the flood depths inclusion of the VBS does not affect water depths at grid locations near critical structures, but does slightly reduce flood depths within the power block. Therefore the VBS was not included in the model.

Runoff from Offsite Areas: The offsite portion of the watershed contributing to the small unnamed stream (located generally south and west of JAF) was not modeled directly in the FLO-2D model. Runoff from the local watershed beyond the limits of the FLO-2D model was incorporated into the FLO-2D model as an inflow hydrograph. The inflow hydrograph was input at the point where the stream enters the immediate site area, near the upstream boundary of the FLO-2D model (see Figure 3-2). The flood hydrograph for the 6-hour LIP, illustrated in Figure 3-3, was calculated using a modified version of the HEC-HMS model developed in another calculation (AREVA, 2014c). The inflow hydrograph includes adjustment for non-linearity as described in the NUREG/CR-7046 document (NRC, 2011). This flood hydrograph integrates runoff from the offsite watershed area into the FLO-2D model. The approach allows for the consideration of any backwater effects on site caused by flow in the local stream during the short duration LIP.

Calculate Manning's Roughness Coefficients: Manning's n-values used in FLO-2D are composite values that represent flow resistance. An "apparent land cover" Geographic Information Systems (GIS) shape file was created based on visual assessment of high resolution orthoimagery (AREVA, 2014b). Grid element Manning's n-values were conservatively assigned based on the land cover at the site and the recommended upper end of the range of Manning's roughness coefficients contained in the FLO-2D Reference Manual (FLO-2D, 2013, Table 1). The Manning's roughness coefficient values for the grid elements generally range from 0.05 for concrete or paved areas to 0.4 for wooded areas.

Rainfall-Runoff Translation Parameters: Rainfall was directly transformed into runoff for the site area modeled within FLO-2D. No initial abstractions and/or infiltration were used within FLO-2D.

Runoff from the local watershed beyond the limits of the FLO-2D model was incorporated into the FLO-2D model as an inflow hydrograph. A HEC-HMS hydrologic model (AREVA, 2014c) was used to calculate the flood hydrograph for the offsite portion of the local unnamed stream in response to the 6-hour LIP. This model was a modified version of the one used to generate the PMF hydrograph in the local unnamed stream at its confluence with the Lake Ontario. The primary modification to the hydrologic model was the re-delineation of the watershed at the point where it is incorporated into the FLO-2D model. The area for the re-delineated watershed was calculated to be 0.42 square miles, and is shown in Figure 3-1. The methodology used to calculate the rainfall-runoff translation parameters for the offsite portions of the local watershed follows the methodologies

used in the PMF hydrology calculation (AREVA, 2014c). The method of analysis used to modify the HEC-HMS model is summarized in general terms below and in detail in the PMF calculation (AREVA, 2014c):

1. Re-delineate the watershed to only account for portions of the watershed not modeled in FLO-2D.
2. Calculate the Lag Time for the re-delineated watershed
3. Derive a Unit Hydrograph for the re-delineated watershed
4. Verify the Unit Hydrograph
5. Apply Non-linearity Adjustment to the Unit Hydrograph

Conservatively, no initial losses or soil abstractions were modeled during the LIP.

The resulting flood hydrograph (with non-linearity adjustment) has a peak flow rate of approximately 1,500 cubic feet per second (cfs) and is shown in Figure 3-3.

3.1.2.1.3 LIP/PMP Inputs

The LIP parameters were defined using National Oceanic and Atmospheric Administration (NOAA) Hydrometeorological Reports (HMR) HMR-51 and HMR-52; (NOAA, 1978 and NOAA, 1982, respectively) as prescribed in NUREG/CR-7046 (NRC, 2011, Section 3.2). The total rainfall depth for the 1-hour, 1-mi^2 PMP is 15.9 inches, with peak intensity of 5.4 inches during the first five (5) minutes of the event. The total rainfall depth for the six (6) hour PMP is 23.3 inches. The six (6) hour PMP hyetograph was constructed using the one (1) hour PMP for the first hour and equal rainfall increments for the next five (5) hours (Figure 3-4) (AREVA, 2014c). The rainfall hyetograph distribution used as input into the model for the LIP simulation is based on Figure B-5 of NUREG/CR-7046 (NRC, 2011).

3.1.2.1.4 LIP Simulation Results

Reporting locations are shown on Figure 3-5 and described in Table 3-1. Not all reporting locations are associated with SSCs important to safety at JAF. Results of the JAF FLO-2D LIP model are summarized in Table 3-2. Grid element elevations near the power block area are shown in Figure 3-6. Note that aerial photos used in the figures illustrating model results are for reference only, as it shows buildings at an oblique angle. The building boundaries are for reference to actual reporting location. Based on the LIP model simulation, maximum LIP flood elevations at the reporting grid locations which are located near critical plant structures range from 272.1 ft USLS35 to 272.8 ft USLS35 (271.4 ft NAVD88 to 272.1 ft NAVD88), with corresponding flow depths approximately 0.1 ft to as high as 1.2 ft. LIP flood elevations and flood depths are shown in Figure 3-7 and Figure 3-8, respectively.

Generally the maximum LIP flood elevations throughout the power block area are similar to the flood elevations at the reporting locations. The following areas of localized greater depths were identified (AREVA, 2014a):

- Flood depth between the Turbine Building and the Administration Buildings range from 1.5 to 1.7 ft. Flood depths in this area are higher due to the contribution of runoff from the roofs of the Turbine Building and Administration Building into this partially enclosed area.
- Flood depths to the west of the Reactor Building range from 1.5 ft to 2.1 ft. Flood depths in this area are relatively high due to runoff from the surrounding impervious area into a locally low area.
- Flood depths between the transformers to the west of the Turbine Building and the Turbine Building range from 1.5 ft to 1.8 ft. Flood depths in this area are higher due to the contribution of runoff from the Turbine Building into the partially enclosed area.

- Flood depths to the south and southwest of the Reactor Building range from 1.5 ft to 1.9 ft. Flood depths in this area are higher due to runoff from the Reactor Building roof and from the surrounding impervious areas into a locally low area.

Flood depths in the unnamed stream range from 3.1ft to 12.8 ft in the portion of the local unnamed stream to the west of JAF. Flood depths in the portion of the unnamed stream to the southwest of JAF range from 6.3 ft to 12.1 ft. Flood depths in these areas are high due to runoff being conveyed into and within the low lying stream, including the portion of the watershed which is to the south of the site. (AREVA, 2014c)

Flood depths in the southwest corner of the main parking lot range from 4.2 ft to 10.8 ft. Flood depths in the main parking lot are high due to flooding from the unnamed stream southwest of JAF backing up the drainage ditch to the parking lot. (AREVA, 2014c)

Flood depths in the drainage ditches to the east of JAF range from 6.2 ft to 13.5 ft. Flood depths in this area are high due to runoff being conveyed into and within the low lying drainage ditches. (AREVA, 2014c)

Flood durations above grid element elevations at the reporting locations range from 0 to 19.8 hrs (see Table 3-3). See Appendix A.1 for time series hydrographs at grid elements at the reporting locations. (AREVA, 2014c)

Maximum velocities at the reporting locations range from 0.03 feet per second (fps) to 3.3 fps, as shown in Figure 3-9. These velocities are occurring within a paved area. The permissible velocity when conservatively using rough asphalt is 12 feet per second (USACE, 1984). Erosion in this area is not anticipated because the calculated velocity is lower than the U.S. Army Corps of Engineers (USACE) permissible velocity. Maximum velocities throughout the model domain range from 0.01 fps to 7.6 fps, with the highest velocities occurring on the south side of Lake Road near the inflow grid element and at the southwest corner of the main parking lot.

FLO-2D does not simulate supercritical flow conditions (FLO-2D, 2013). The SUPER.OUT file (see Appendix A.2) reports grid elements that are supercritical. Review of the SUPER.OUT file indicated that supercritical flow is occurring in several localized areas mainly outside of the power block. Several grid elements representing rooftops are reported as having supercritical flow. Two of these grid elements are near a location of interest (Door G and Flex N+1 DG Pre-staged area). The FLO-2D model results in conservative estimates for flow depth, because supercritical flow is shallower, and the program limits supercritical flow by reducing the velocity which increases the flow depth.

The FLO-2D reference manual (FLO-2D, 2013) provides three keys to a successful project application. These include volume conservation, area of inundation, and maximum velocities and numerical surging.

- Volume Conservation: Reviews of the "SUMMARY.OUT" files (included in Appendix A.2) indicate volume conservation errors of 0.000010 percent for the FLO-2D runs. This value is well below the threshold of 0.001 percent specified in the FLO-2D Data Input Manual (FLO-2D, 2013) for a successful project application.
- Area of Inundation: Reviews of the "SUMMARY.OUT" files (included in Appendix A.2) indicate maximum inundated areas of 250.09 acres. The FLO-2D model is made up of 108,938 grid elements (see "FPLAIN.DAT" file included in Appendix A.2), each 10 feet by 10 feet in dimension. The LIP was simulated within the entire computational domain of the model. The maximum inundation area should therefore be equal to the area of the computational domain of 250.09 acres ((10 x 10 x 108,938) x (1 acre / 43,560 feet). The FLO-2D calculated maximum inundation area of 250.09 acres is accurate. Visual inspection of flood depth results also is consistent with expected results; areas of high flood depth were noted and discussed above. This information indicates a successful project application.

- Maximum Velocities and Numerical Surging: Numerical surging, if it exists, would be evident in unreasonably high velocities in the "VELTIMEFP" (floodplain) file (FLO-2D, 2013). A review of the "VELTIMEFP.OUT" file (included in Appendix A.2) does not indicate unreasonably high velocities (greater than 10 feet per second) in the model runs and indicates a successful project application.

3.1.3 Conclusions

The maximum water surface elevations due to the LIP flood mechanism at JAF result from a PMP depth of 15.9 inches in 1 hour and 23.3 inches within 6 hours. Maximum LIP flood elevations at the reporting grid locations near critical plant structures range from 271.4 feet NAVD88 to 272.1 feet NAVD88 (272.1 feet USLS35 to 272.8 feet USLS35), with corresponding flow depths approximately 0.1 feet to as high as 1.2 feet.

Based on the maximum water surface elevations at reporting grid locations, the LIP is the controlling flood mechanism PMP at 13 of the 23 grid locations identified in Table 3-2.

3.1.4 References

AREVA, 2014a. "James A. Fitzpatrick Flooding Hazard Re-Evaluation –Local Intense Precipitation", Revision 0, 2014, See AREVA Document No. 32-9227045-000.

AREVA, 2014b. "James A. Fitzpatrick Topographic Survey Deliverables", 2014, See AREVA Document No. 38-9227043-000.

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Table 3-1: LIP Reporting Grid Locations

Feature ID	Grid Element Number	Notes
A	20091	Door of East Side of Heater Bay
B	11873	Door on Northeast Side of Water Treatment Building
C	11866	Door on Northwest Side of Water Treatment Building
D	10982	Door Located on North Side of Gas Bottle Storage Building
E1	12436	Northern most Diesel Generator Room Hatch D
E2	13624	Diesel Generator Room Hatch B
F1	14223	Diesel Generator Room Hatch C
F2	15429	Southern most Diesel Generator Room Hatch A
G	16348	Door Located at Turbine Building Track Bay
H	24926	Rollup Door Located on Northwest face of Administrative Building
I	24262	Rollup Door Located on Southwest Face of the Electrical Bay
J	27629	Door Located on Southwest Face of Administrative Building
K	33641	Door Located on South Side of CAD Building
L	33643	Door Located on South Side of CAD Building
M	35482	Door Located at Reactor Building Track Bay
N	35118	Near Southeast corner of Gas Treatment Building *Note Surveyor unable to get door elevation
O	25259	Personnel Door Located on Northwest face of Administrative Building near Rollup Door H.
N+1 DG Prestaged	16038	N+1 DG Prestaged Area South of Diesel Generator Room
Hatch 1 (H1)	30060	Hatch Located on West Side of Reactor Building
Manhole 1 (M1)	32550	Manhole Located of Southwest Corner of Reactor Building
Hatch 2 (H2)	30077	Hatch Located on East Side of Reactor Building
Manhole 2 (M2)	29727	Manhole Located on South Side on Heating Boiler Room
Manhole 3 (M3)	32912	Manhole Located near Southwest Corner of Reactor Building / Northwest Corner of CAD Building

Table 3-2: LIP FLO-2D Results for Reporting Grid Locations

Feature ID	Door Sill Elevation (feet, NAVD88)[13]	Maximum Water Surface Elevation (feet, NAVD88)[1]	Maximum Water Depth at Door (feet)[4]	Grid Element Number	Grid Element Elevation (feet, NAVD88)[1]	Maximum Water Depth of Grid (feet)[2]
A	271.5	272.0	0.5	20091	271.3	0.7
B	271.5	271.4	-0.1	11873	270.9	0.5
C	271.5	271.7	0.2	11866	271.1	0.6
D	271.6	271.6	0.0	10982	271.5	0.1
E1	-	271.5	-	12436	270.5	1.0
E2	-	271.5	-	13624	270.5	1.0
F1	-	271.6	-	14223	270.4	1.1
F2	-	271.6	-	15429	270.6	1.0
G	271.5	272.0	0.5	16348	271.5	0.5
H	271.5	271.7	0.3	24926	271.4	0.4
I	271.5	271.8	0.3	24262	271.5	0.3
J	271.6	271.7	0.1	27629	271.3	0.4
K	271.2	271.9	0.7	33641	271.2	0.7
L	271.2	271.9	0.6	33643	271.1	0.8
M	271.5	271.9	0.5	35482	271.5	0.5
N	271.5	272.0	0.5	35118	270.8	1.2
O	-	271.7	-	25259	271.4	0.4
N+1 DG	-	271.7	-	16038	271.3	0.4
Hatch 1 (H1)	-	271.7	-	30060	271.0	0.7
Manhole 1 (M1)	-	271.8	-	32550	271.0	0.8
Hatch 2 (H2)	-	272.1	-	30077	271.4	0.6
Manhole 2 (M2)	-	272.1	-	29727	271.1	1.0
Manhole 3 (M3)	-	271.8	-	32912	271.2	0.7

Notes:

1. Add 0.709 feet to NAVD88 to convert to USLS35
2. Maximum Water Depth of Grid is the difference between LIP maximum water surface elevation and grid element ground elevation.
3. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.
4. Maximum Water Depth at Door is the difference between LIP maximum water surface elevation and the door sill elevation; negative numbers indicate water elevation is below the door sill.
5. Due to rounding, flood depths added to ground surface elevation may not be exactly equal to the maximum water surface elevation as reported above. The variance is within 0.1 ft.

Table 3-3: Flood Durations for 6-hour LIP at Reporting Grid Locations

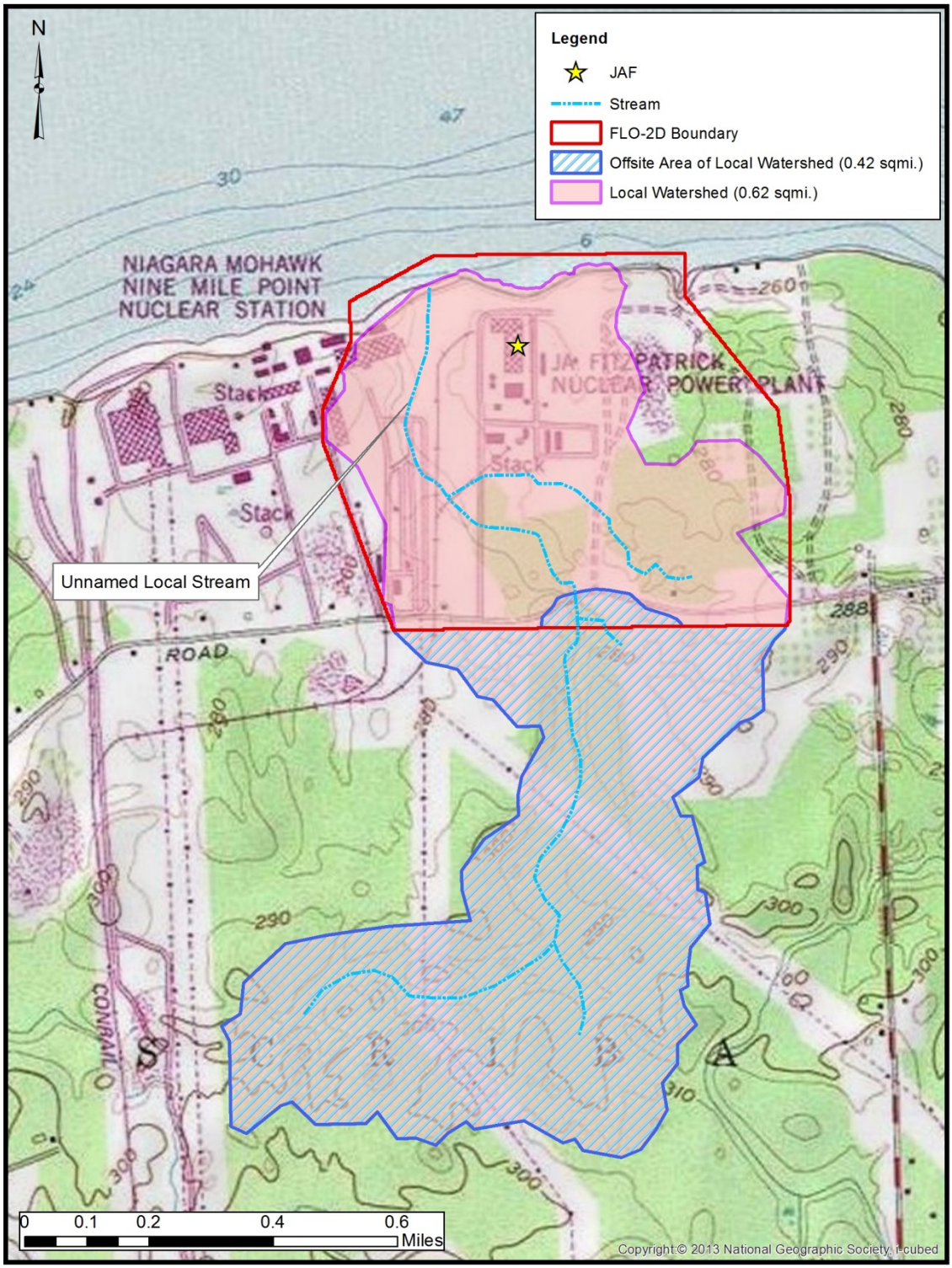
Feature ID	Grid Element Number	Door Sill Elevation (feet NAVD88)[12]	Grid Element Elevation (feet, NAVD88)[2]	Duration Above Door Sill (hours)	Duration Above Ground (hours)
A	20091	271.5	271.3	1.3	6.8
B	11873	271.5	270.9	0.0	8.7
C	11866	271.5	271.1	0.3	20.0
D	10982	271.6	271.5	0.0	0.0
E1	12436	-	270.5	-	20.0
E2	13624	-	270.5	-	20.0
F1	14223	-	270.4	-	20.0
F2	15429	-	270.6	-	20.0
G	16348	271.5	271.5	6.1	6.1
H	24926	271.5	271.4	4.9	6.3
I	24262	271.5	271.5	4.4	4.4
J	27629	271.6	271.3	4.4	6.8
K	33641	271.2	271.2	8.8	8.8
L	33643	271.2	271.1	8.2	10.8
M	35482	271.5	271.5	6.5	6.5
N	35118	271.5	270.8	6.8	20.0
O	25259	-	271.4	-	6.2
N+1 DG	16038	-	271.3	-	6.1
Hatch 1 (H1)	30060	-	271.0	-	20.0
Manhole 1 (M1)	32550	-	271.0	-	17.2
Hatch 2 (H2)	30077	-	271.4	-	7.6
Manhole 2 (M2)	29727	-	271.1	-	20.0
Manhole 3 (M3)	32912	-	271.2	-	8.5

Notes:

1. Add 0.709 feet to NAVD88 to convert to USLS35

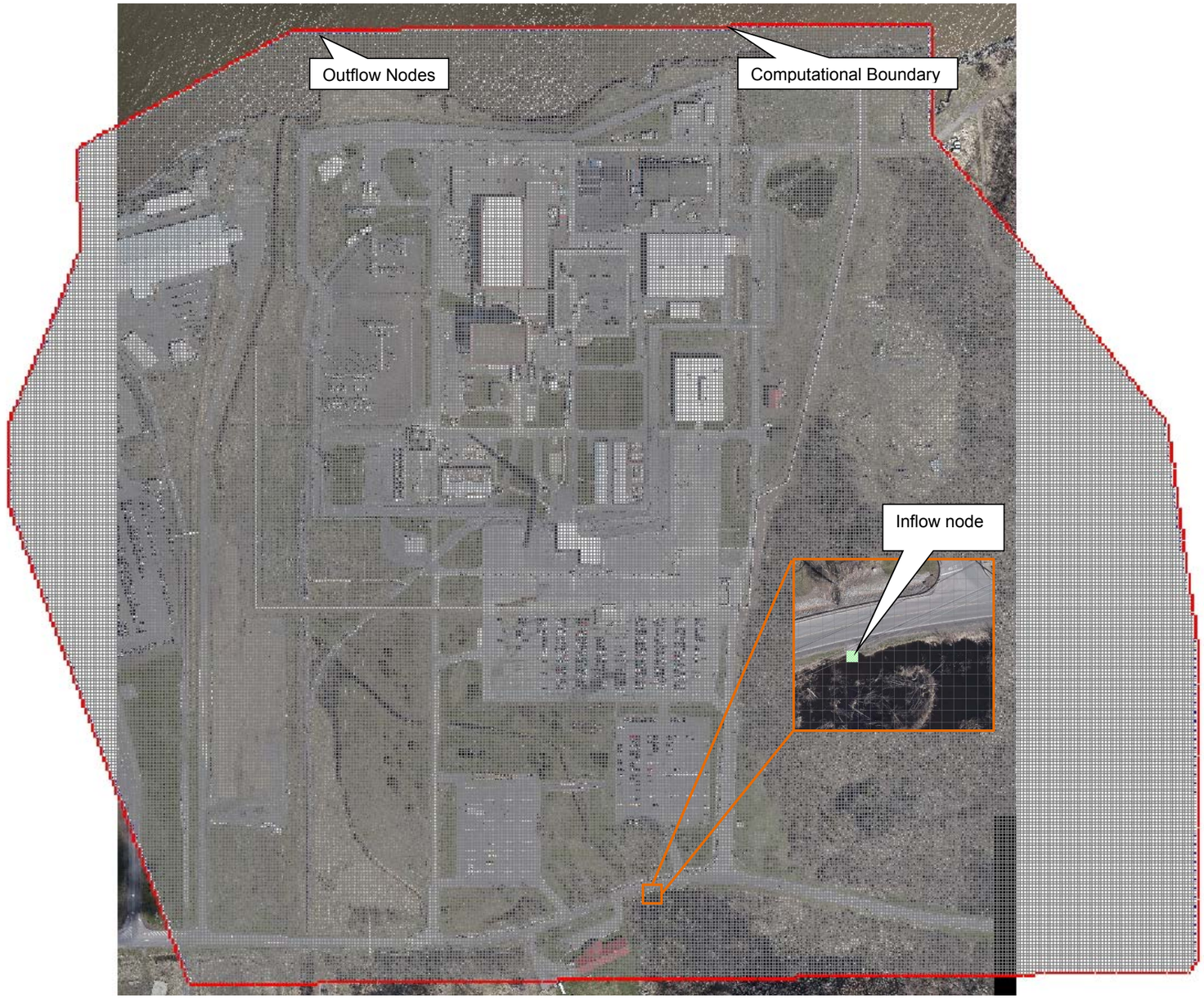
2. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.

Figure 3-1: FLO-2D Computational Boundary and Local Watershed



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-2: FLO-2D Modeled Site Features



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-3: 6-Hour LIP Full Watershed Hydrograph

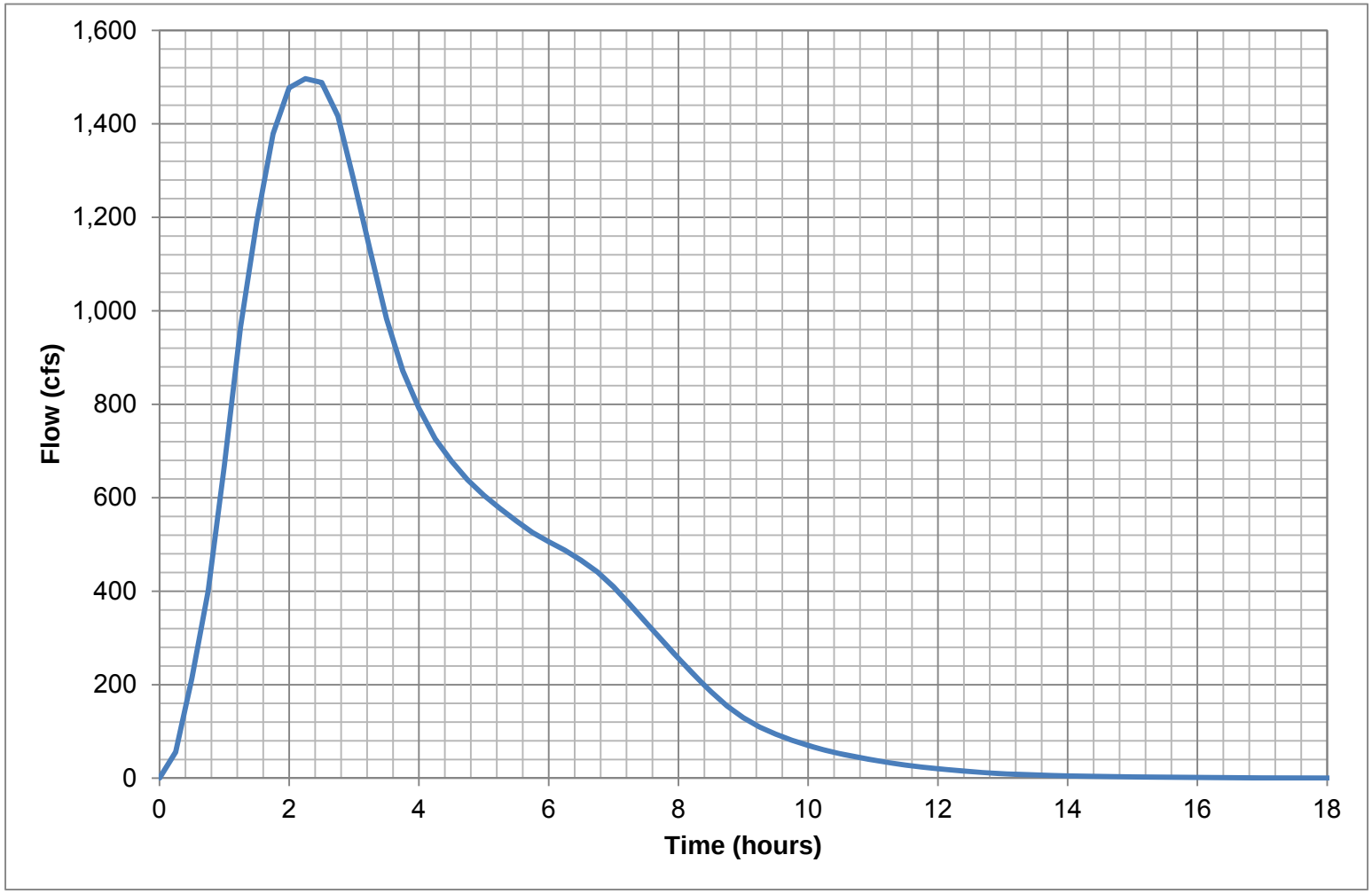


Figure 3-4: LIP Hyetograph

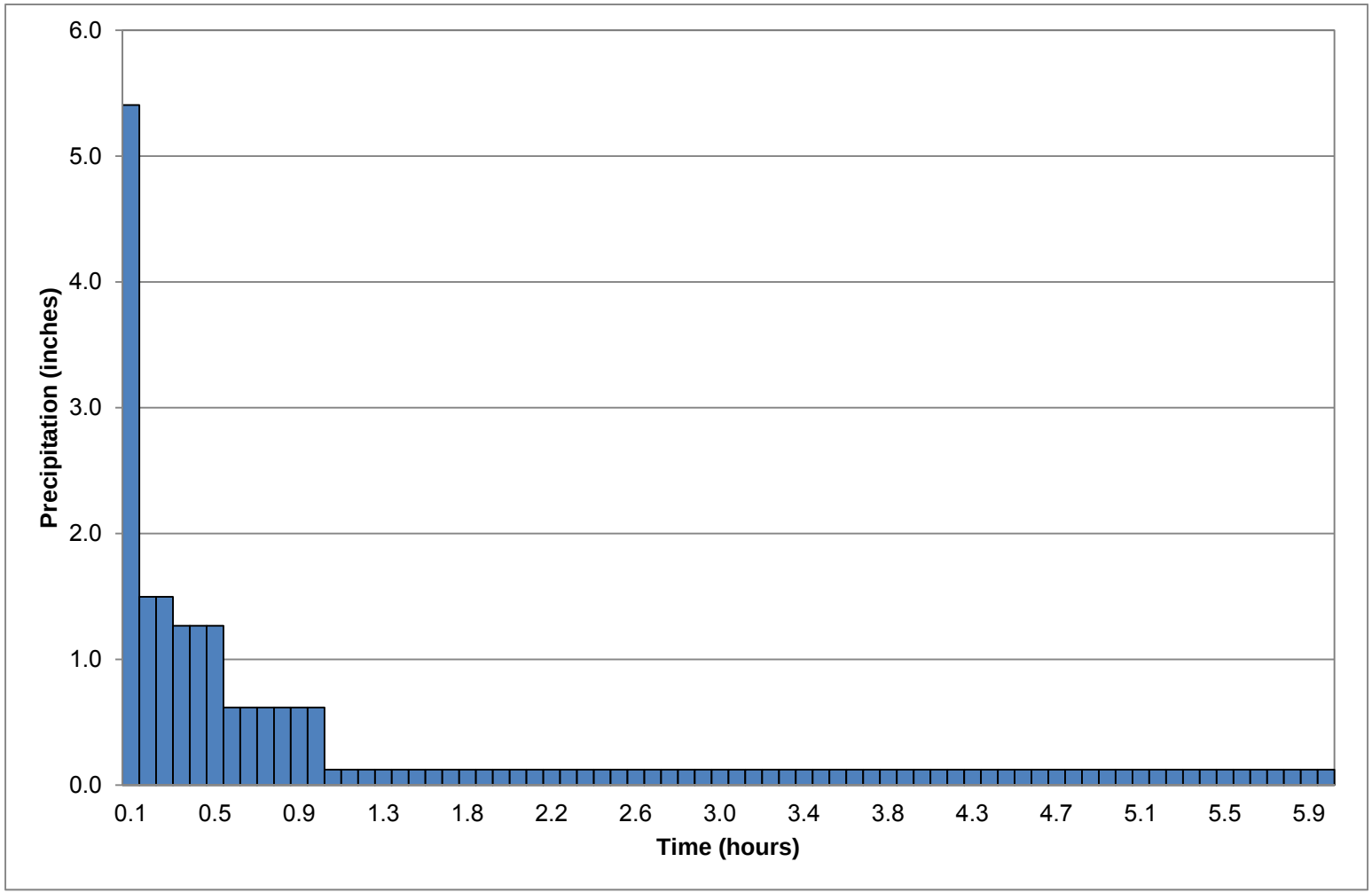
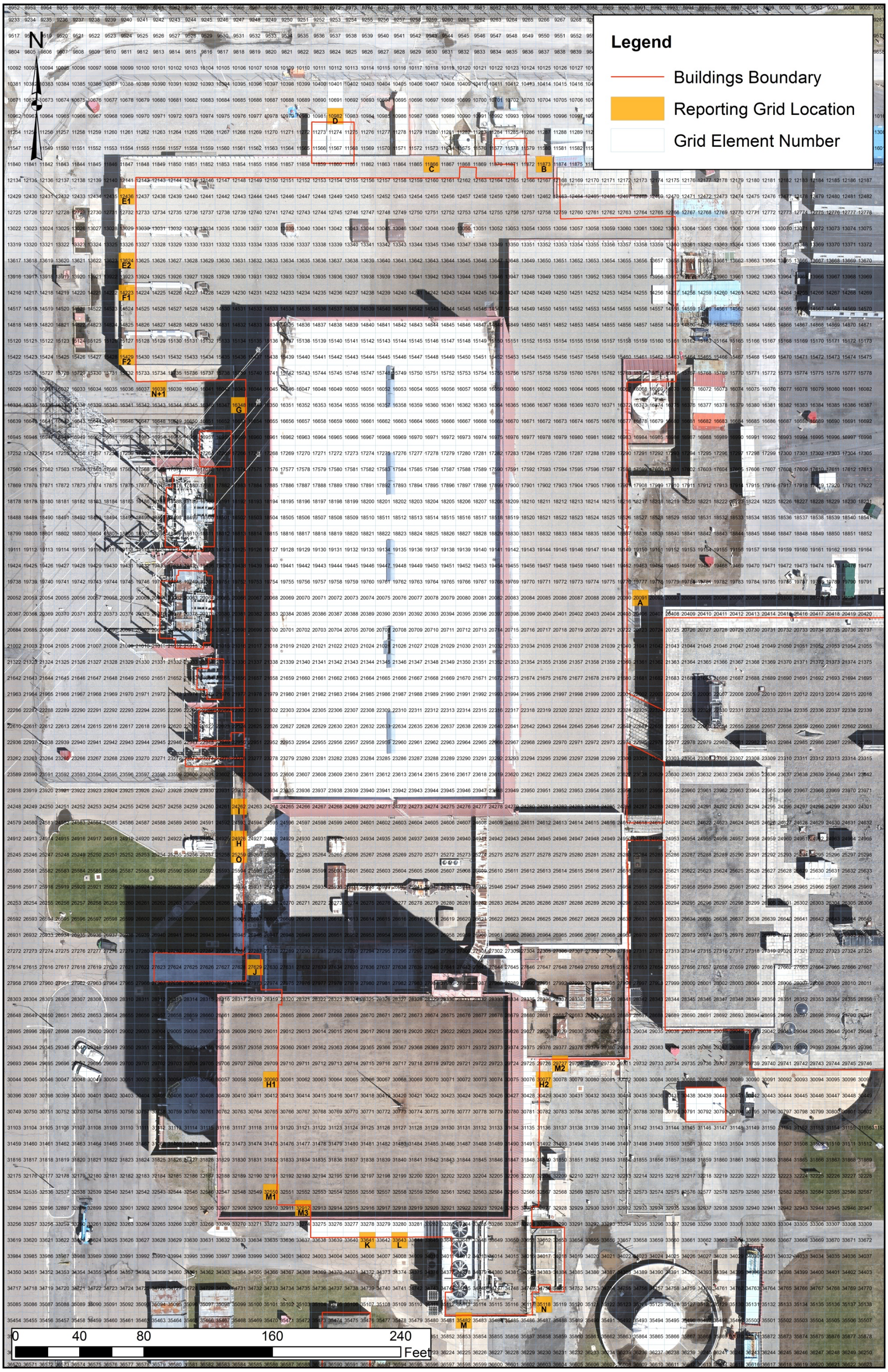


Figure 3-5: Grid Locations for Reporting Results



Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note that a larger version of this figure is available as Appendix A.3.

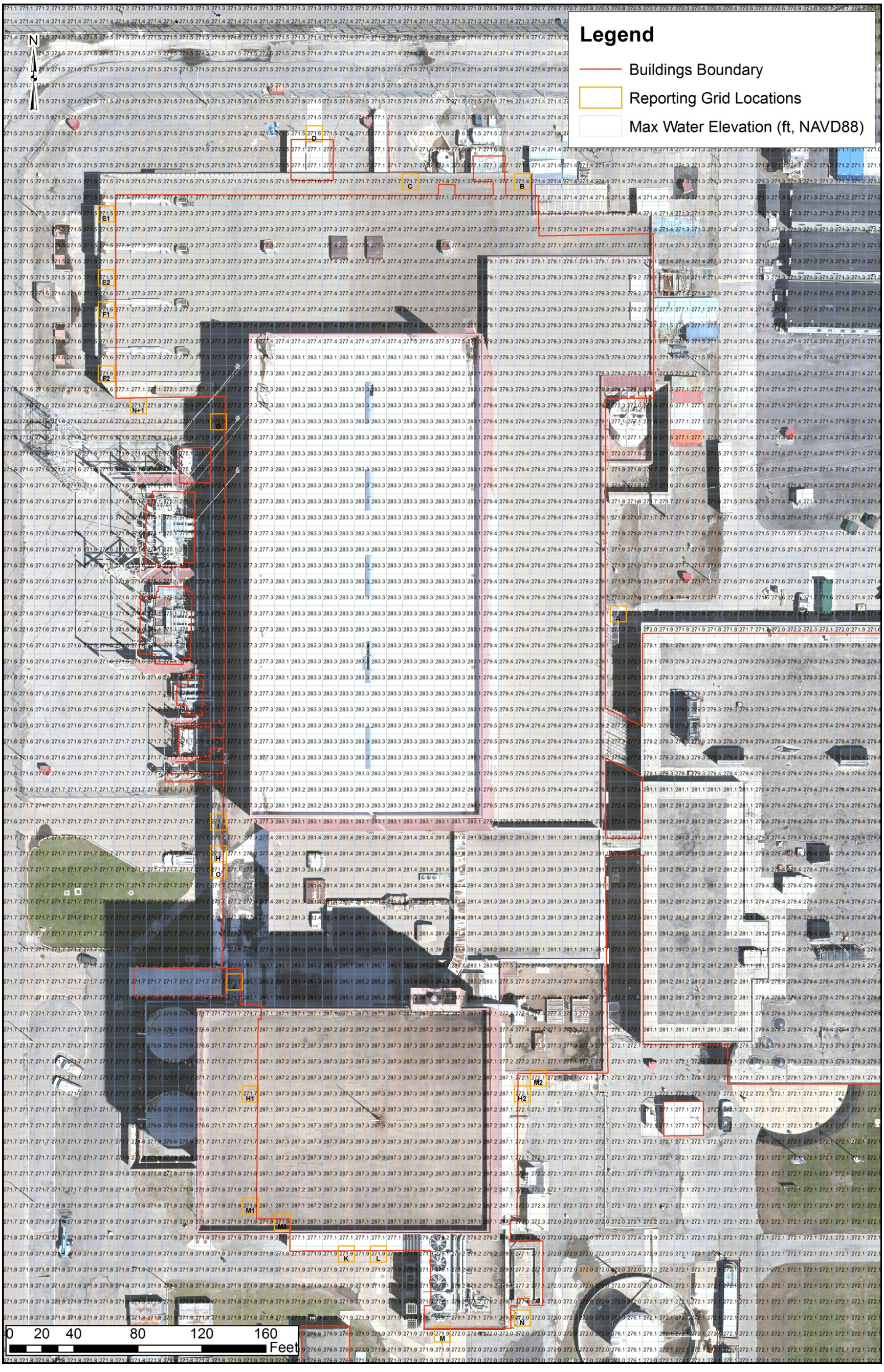
Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-6: Grid Element Ground Elevations (ft, NAVD88) near Power Block Area

Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix A.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-7: LIP Simulation - Maximum Water Surface Elevation (feet, NAVD88) near Power Block Area



Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix A.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-8: LIP Simulation - Maximum Flow Depth (feet) near Power Block Area

Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix A.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-9: LIP Simulation - Maximum Velocities (feet per second) near Power Block Area

Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix A.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

3.2 Flooding in Rivers and Streams

This section addresses the potential for flooding at JAF due to the PMF on the unnamed local stream. The PMF is the hypothetical flood (peak discharge, volume, and hydrograph shape) that is considered to be the most severe reasonably possible, based on comprehensive hydrometeorological application of the Probable Maximum Precipitation (PMP) and other hydrologic factors favorable for maximum flood runoff such as sequential storms and snowmelt (NRC, 2011).

The local stream is an unnamed perennial stream generally south and west of JAF. The stream reaches its confluence with Lake Ontario between JAF and the neighboring Nile Mile Point (NMP) Nuclear Station. This unnamed local stream is the only water body that is subject to PMF flooding with the potential to impact the site based on the topography in the vicinity of JAF.

This section summarizes the evaluation of the PMF in Streams performed in AREVA Calculation Nos. 32-9227050-000 (AREVA, 2014a) and 32-9227045-000 (AREVA, 2014b).

3.2.1 Method

The HHA approach described in NUREG/CR-7046 (NRC, 2011) was used for the evaluation of the PMF on the small local unnamed stream and resultant water surface elevation at JAF.

The methodology used to develop the PMF on the small local unnamed stream used the following steps:

1. Delineate the watershed
2. Calculate the PMP based on methods presented in HMR-51 and HMR-52 (NOAA, 1978 and NOAA, 1982) using the BOSS HMR52 v1.10 computer program. Perform analyses for the three alternatives that include precipitation events as described in Section H.1 in Appendix H – Combined-Effect Floods of NUREG/CR-7046 (NRC, 2011):
   A. Alternative 1 - Combination of:
      - Median monthly base flow
      - Median soil moisture
      - Antecedent or subsequent rain: the lesser of 1) rainfall equal to 40% PMP and 2) a 500-year rainfall
      - The PMP
   B. Alternative 2 - Combination of:
      - Mean monthly base flow
      - Probable maximum snowpack
      - A 100-year, snow-season rainfall
   C. Alternative 3 - Combination of:
      - Mean monthly base flow
      - A 100-year snowpack
      - Snow-season (i.e. cool-season) PMP
3. Perform PMF simulation using the HEC-HMS rainfall-runoff computer program. Because the local unnamed stream does not have historical stream gage data, calibration and verification of the HEC-HMS model is not possible. The Soil Conservation Service (SCS, now known as the Natural Resources Conservation Service, NRCS) Method was used to simulate the hydrology of the watershed.
4. Calculate the Probable Maximum Flood Elevation on the local unnamed stream near JAF.

a. Use the FLO-2D hydrodynamic model developed for the LIP analysis (AREVA, 2014b) to calculate water surface elevations near JAF.

3.2.2 PMF Results

3.2.2.1 Watershed Delineation and Area Determination

There is a small unnamed stream in the vicinity of JAF which, based on the topography of the area, has the potential to contribute to site flooding. The watershed was delineated at its discharge point to Lake Ontario. The watershed boundary was verified using topographic high points for the watershed. The delineated watershed is shown in Figure 3-10. The watershed area was calculated to be 0.62 square miles.

3.2.2.2 Estimate the PMP for the Unnamed Local Stream

Three alternatives that include precipitation events described in Section H.1 in Appendix H – Combined-Effect Floods of the CR-7046 (NRC, 2011) were analyzed to develop precipitation inputs as described above in Section 3.2.1.

The PMP was calculated for the 0.62-square-mile unnamed local watershed (Figure 3-10) using the methodology of HMR-51 and HMR-52 (NOAA, 1978 and NOAA, 1982). The BOSS HMR52 computer program was used to calculate the PMP.

Alternative 1, the all-season PMP average depth corresponding to the 72-hour duration for the watershed at JAF is 32.9 inches. Alternative 2, the 100-year rainfall and snowmelt value from an "unlimited" snowpack for the watershed at JAF is 20.6 inches. Alternative 3, the cool-season PMP and snowmelt from the 100-year snowpack for the watershed at JAF is 32.6 inches. (AREVA, 2014b)

The controlling PMP for the JAF watershed is the 72- hour all-season PMP with an average depth of 32.9 inches. The difference in the 72-hour totals for Alternative 1 and Alternative 3 is only 0.3 inches; however based on the temporal distribution of the rainfall, the all-season PMP (Alternative 1) is the controlling PMP. As illustrated in Figure 3-11 and Figure 3-12, Alterative 1 yields more intense rainfall. The rainfall and snowmelt in Alterative 3 is more evenly distributed over the 72-hour storm representing the steady slow snowmelt component.

In accordance with NUREG/CR-7046, the input hyetograph to the PMF was constructed using an antecedent storm consisting of 40 percent of the PMP depths during the first 72 hours, (i.e. antecedent conditions) followed by a dry 72-hour period, and finally followed by the full 72-hour PMP storm (NRC, 2011).

3.2.2.3 Estimate the PMF flow on the Unnamed Local Stream

The watershed does not contain a stream gage, and as a result observed flood flow and flood stage information is not available. Therefore, the SCS method was used and conservatively applied in this calculation to develop the curve number (CN) and lag time (L). The Antecedent Runoff Condition III (ARC III) CN (i.e., wet antecedent moisture conditions) for the watershed was calculated as 94.1. The calculated lag time for the watershed was 2.5 hrs.

A HEC-HMS computer model was developed using watershed input parameters calculated above and the all-season PMP. The HEC-HMS results indicate that the calculated peak discharge is 2,060 cfs (Figure 3-13). A sensitivity analysis performed with no precipitation losses (impervious watershed) found that the calculated peak discharge was also 2,060 cfs under this condition. Therefore, a condition of no losses was conservatively used to model the PMF. Non-linearity adjustments were then applied to the input unit hydrograph as per NUREG/CR-7046 (NRC, 2011): the peak discharge of the unit hydrograph was increased by one-fifth and the time-to-peak was decreased by one third. The combined PMF peak discharge calculated using HEC-HMS and incorporating non-linearity adjustments is 2,340 cfs (Figure 3-14).

3.2.2.4 Estimate Water Surface Elevations for the Unnamed Local Stream

The FLO-2D hydrodynamic model developed for the LIP analysis (AREVA, 2014b) was used to calculate the water surface elevations near JAF resulting from the all-season PMF occurring in the local unnamed stream. FLO-2D is a physical process model that routes flood hydrographs and rainfall-runoff over unconfined flow surfaces or in channels using the dynamic wave approximation to the momentum equation (FLO-2D, 2013). The two-dimensional hydrodynamic model (FLO-2D) provides more detailed modeling of the overbank flow and subsequent site flooding than would a one-dimension model traditionally used in PMF calculations. Because of the assumption that all culverts will be fully blocked, flooding caused by flow in the stream is conveyed primarily via overland flow across the site and then ultimately into Lake Ontario.

Grid elevations for the area surrounding the JAF facility were computed internally within FLO-2D based on the digital terrain model (DTM) limits input into FLO-2D (AREVA, 2014c). The project computational boundary includes portions of the local watershed associated with the small unnamed stream to the west of JAF (shown in Figure 3-15). The local watershed was delineated as described in Section 3.2.2.1. Offsite portions of the watershed were not included in the FLO-2D model. Runoff from full local watershed (including onsite) was incorporated into the FLO-2D model as an inflow hydrograph. The 72-hour PMP was not modeled in FLO-2D directly using the rainfall routine in order to avoid "double counting" the contributory local watershed area and to differentiate between flood mechanisms.

The FLO-2D model includes topography, site location, and building structures. Grid elements along the model computational boundary where the apparent direction of flow is away from JAF were selected as outflow grid elements.

3.2.2.4.1 FLO-2D Computer Model with Site Features

The FLO-2D model developed for the LIP analysis (AREVA, 2014b) was based on JAF site features including: topography, site location, VBS layout, channels and culverts, and structures. Figure 3-16 illustrates the FLO-2D model features. The selected grid element size for the project was 10 feet by 10 feet. The elevation data used to develop the FLO-2D model consist of 2014 DTM data (AREVA, 2014c) for JAF. Flow obstructions due to buildings were also included in the model. Culverts were considered to be blocked, and storm sewers were not considered. The main input parameters for the JAF FLO-2D model include:

Elevation: The elevation data used to develop the FLO-2D model were prepared by LiDAR methods using aerial acquisition. The elevation data is described in Section 3.1.2.1.2 of this report.

Buildings and Roof Tops: Buildings at JAF were incorporated into the FLO-2D model based on the surveyed topographic site plan (AREVA, 2014c) by manually adjusting (increasing) grid element elevations. These manual adjustments are described in Section 3.1.2.1.2 of this report.

Water Surface Elevation at Lake Ontario: Grid elements representing Lake Ontario were assigned a water surface elevation of 248.3 feet NAVD88 (249 ft USLS35), as described in Section 3.1.2.1.2 of this report.

Vehicle Barrier System (VBS): The VBS was conservatively not included in the model as described in Section 3.1.2.1.2 of this report.

Streamflow: Rainfall-runoff translation parameters for the 72-hour PMP over the local watershed (including the site area and portions of the watershed offsite) were not directly modeled in FLO-2D. The rainfall-runoff translation was performed in using the PMF hydrology HEC-HMS model (AREVA, 2014a). Conservatively, no losses were modeled during the PMF. Nonlinearity adjustments were applied to the 72-hour PMF in the PMF hydrology HEC-HMS model (AREVA, 2014a). Runoff from full local watershed (including onsite) was incorporated into the FLO-2D model as an inflow hydrograph. The hydrograph was input at the point where the stream enters the immediate site area near the upstream boundary of the FLO-2D model (see Figure 3-16). The PMF hydrograph includes runoff from the full local watershed, including onsite areas.

Calculate Manning's Roughness Coefficients: Manning's n-values used in FLO-2D are composite values that represent flow resistance. Grid element Manning's n-values were conservatively assigned based on the land cover at the site, and the recommended upper end of the range of Manning's roughness coefficients contained in the FLO-2D Reference Manual (FLO-2D, 2013, Table 1). The Manning's roughness coefficient values for the grid elements generally range from 0.05 for concrete or paved areas to 0.4 for wooded areas.

Rainfall-Runoff Translation Parameters:

Conservatively, no rainfall-runoff losses were modeled during the PMF event.

3.2.2.4.2 PMF Simulation Results

Reporting locations are shown on Figure 3-17 and described in Table 3-4. Not all reporting locations are associated with SSCs important to safety at JAF. Results of the JAF FLO-2D PMF model are summarized in Table 3-5. Grid element elevations near the power block area are shown in Figure 3-18. Based on the PMF model simulation, maximum PMF flood elevations at the reporting grid locations, which are located near critical plant structures, range from 271.1 feet NAVD88 to 272.1 feet NAVD88 (271.8 feet USLS35 to 272.8 feet USLS35) with corresponding flow depths approximately 0.0 feet to as high as 1.3 feet. PMF flood elevations and flood depths are shown in Figure 3-19 and Figure 3-20, respectively.

Generally the maximum PMF flood elevations throughout the power block area are similar to the flood elevations at the reporting locations. The following areas of localized greater depths were identified:

- Flood depths between the Turbine Building and the Administration Buildings range from 1.3 to 1.4 feet. Flood depths in this area are relatively higher due to overflow from the stream into this partially enclosed area.
- Flood depths to the west of the Reactor Building range from 1.3 to 2.1 feet. Flood depths in this area are relatively high due to overflow from the steam into a locally low area.
- Note that no flooding occurs between the transformers to the west of the Turbine Building and the Turbine Building.
- Flood depths to the south and southwest of the Reactor Building range from 1.3 to 2.2 feet. Flood depths in this area are higher due overflow from the steam into a localized topographically low area.

Flood depths in the unnamed stream range from 2.9 to 13.0 feet in the portion of the stream to the west of JAF. Flood depths in the portion of the unnamed stream to the southwest of JAF range from 7.2 to 12.4 feet. Flood depths in these areas are locally high in relatively deep portions of the stream (e.g., pools).

Flood depths in the southwest corner of the main parking lot range from 4.0 to 10.8 feet. Flood depths in the main parking lot are high due to flooding from the unnamed stream southwest of JAF backing up the drainage ditch to the parking lot.

Flood depths in the drainage ditches to the east of JAF range from 1.8 to 12.2 feet. Flood depths in this area are locally high due to relatively low lying areas of the ditches.

Flood durations above door sill elevations at the reporting locations range from 0 to 5.5 hours (see Table 3-6). See Appendix B.1 for time series hydrographs at the reporting locations. Flood durations above the grid element ground elevation range from 0.0 hours to 49.5 hours. Long inundation periods may be the result of localized topographic low areas with no drainage mechanisms (i.e., storm drains, culverts, infiltration, etc.) included in the model simulation. Note that the time series hydrographs are for only the 72-hour PMF and do not include the 40-percent antecedent storm. Based on examination of the flood depths, the flood flow resulting from the 40-percent antecedent storm fully recedes prior to the onset of the flood flow resulting from the full PMF.

Maximum velocities at the reporting locations range from 0.02 fps to 1.2 fps, and are shown in Figure 3-21. These velocities are occurring within a paved area. The permissible velocity when conservatively using rough asphalt is 12 fps (USACE, 1984). Erosion in this area is not anticipated because the calculated velocity is lower than the USACE permissible velocity. Maximum velocities throughout the model area range from 0.01 fps to 8.7 fps, with the highest velocities occurring on the south side of Lake Road near the inflow grid element.

FLO-2D does not simulate supercritical flow conditions (FLO-2D, 2013). The SUPER.OUT file (see Appendix B.2) reports grid elements that are supercritical. Review of the SUPER.OUT file indicated that supercritical flow is occurring in several localized areas outside of the power block. The FLO-2D model results in conservative estimates for flow depth, because supercritical flow is shallower, and the program limits supercritical flow by reducing the velocity which increases the flow depth.

The FLO-2D reference manual (FLO-2D, 2013) provides three keys to a successful project application. These include volume conservation, area of inundation, and maximum velocities and numerical surging.

- Volume Conservation: Reviews of the "SUMMARY.OUT" files (included in Appendix B.2) indicate volume conservation errors of 0.000002 percent for the FLO-2D runs. This value is well below the threshold of 0.001 percent specified in the FLO-2D Data Input manual (FLO-2D, 2013) for a successful project application.
- Area of Inundation: Reviews of the "SUMMARY.OUT" files (included in Appendix B.2) indicates maximum inundated area of 140.19 acres. The PMF was simulated using an inflow hydrograph (not as rainfall over the entire computation domain of the model), therefore the maximum inundation area may not be equal to the computational domain area of 250.1 acres. The FLO-2D calculated maximum inundation area of 140.19 acres is reasonable. No flooding occurred in the area of high ground to the east of JAF. Visual inspection determined that flood depth results are consistent with expected results, areas of high flood depth were noted and discussed above. This information indicates a successful project application.
- Maximum Velocities and Numerical Surging: Numerical surging, if it exists, would be evident in unreasonably high velocities in the "VELTIMEFP" (floodplain) files (FLO-2D, 2013). A review of the "VELTIMEFP.OUT" file (included in Appendix B.2) does not indicate unreasonably high velocities (greater than 10 feet per second) in the model runs and indicates a successful project application.

3.2.3 Conclusions

The controlling PMP for the JAF watershed is the 72- hour all-season PMP with an average depth of 32.9 inches. The resulting peak PMF flow rate from the local stream at JAF with non-linearity adjustments, is 2,340 cfs.

Maximum PMF flood elevations at the reporting grid locations near critical plant structures range from 271.1 feet NAVD88 to 272.1 feet NAVD88 (271.8 feet USLS35 to 272.8 feet USLS35), with corresponding flow depths approximately 0.0 ft to as high as 1.3 feet.

3.2.4 References

AREVA, 2014a. "James A. Fitzpatrick Flooding Hazard Re-Evaluation –Probable Maximum Flood on Streams", Revision 0, 2014, See AREVA Document No. 32-9227050-000.

AREVA, 2014b. "James A. Fitzpatrick Flooding Hazard Re-Evaluation –Local Intense Precipitation", Revision 0, 2014, See AREVA Document No. 32-9227045-000.

AREVA, 2014c. "James A. Fitzpatrick Topographic Survey Deliverables", 2014, See AREVA Document No. 38-9227043-000.

AREVA, 2014d. "James A. Fitzpatrick Flooding Hazard Re-Evaluation –Probable Maximum Storm Surge – Lake Ontario", Revision 0, 2014, See AREVA Document No. 32-9227056-000.

FLO-2D, 2013. "FLO-2D® Pro Reference Manual", FLO-2D Software, Inc., 2013.

JAF, 2004. "JAF-04-23609 Vehicle Barrier System", Entergy, July 2004. See Project Manager Approval of Client References on Page 2.

NOAA, 1978. "Probable Maximum Precipitation Estimates – United States East of the 105th Meridian", Hydrometeorological Report No.51 (HMR-51), US Department of Commerce & USACE, National Oceanic and Atmospheric Administration, June 1978, See AREVA Document No. 32-9227045-000.

NOAA, 1982. "Application of Probable Maximum Precipitation Estimates – United States East of the 105th Meridian", NOAA Hydrometeorological Report No.52 (HMR-52), US Department of Commerce & USACE, National Oceanic and Atmospheric Administration, August 1982, See AREVA Document No. 32-9227045-000.

NOAA, 2011. Digital Coast, NOAA Coastal Services Center, "2011 USACE Topobathy Lidar: Lake Superior (MI) & Lake Erie (NY)", (http://www.csc.noaa.gov/dataviewer/#app=482c&bda3-selectedIndex=1). Date Accessed: 5/7/2014. Date Last Modified: 6/6/2011, See AREVA Document No. 32-9227045-000.

NRC, 2011. NUREG/CR-7046: Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America", U.S. Nuclear Regulatory Commission, Springfield, VA, National Technical Information Service, November 2011.

USACE, 1984. Drainage and Erosion Control Mobilization Construction", U.S. Army Corps of Engineers, EM 1110-3-136, April 1984.

Table 3-4: PMF Reporting Grid Locations

Feature ID	Grid Element Number	Notes
A	20091	Door of East Side of Heater Bay
B	11873	Door on Northeast Side of Water Treatment Building
C	11866	Door on Northwest Side of Water Treatment Building
D	10982	Door Located on North Side of Gas Bottle Storage Building
E1	12436	Northern most Diesel Generator Room Hatch D
E2	13624	Diesel Generator Room Hatch B
F1	14223	Diesel Generator Room Hatch C
F2	15429	Southern most Diesel Generator Room Hatch A
G	16348	Door Located at Turbine Building Track Bay
H	24926	Rollup Door Located on Northwest face of Administrative Building
I	24262	Rollup Door Located on Southwest Face of the Electrical Bay
J	27629	Door Located on Southwest Face of Administrative Building
K	33641	Door Located on South Side of CAD Building
L	33643	Door Located on South Side of CAD Building
M	35482	Door Located at Reactor Building Track Bay
N	35118	Near Southeast corner of Gas Treatment Building *Note Surveyor unable to get door elevation
O	25259	Personnel Door Located on Northwest face of Administrative Building near Rollup Door H.
N+1 DG Prestaged	16038	N+1 DG Prestaged Area South of Diesel Generator Room
Hatch 1 (H1)	30060	Hatch Located on West Side of Reactor Building
Manhole 1 (M1)	32550	Manhole Located of Southwest Corner of Reactor Building
Hatch 2 (H2)	30077	Hatch Located on East Side of Reactor Building
Manhole 2 (M2)	29727	Manhole Located on South Side on Heating Boiler Room
Manhole 3 (M3)	32912	Manhole Located near Southwest Corner of Reactor Building / Northwest Corner of CAD Building

Table 3-5: PMF FLO-2D Results for Reporting Grid Locations

Feature ID	Door Sill Elevation (ft, NAVD88)[13]	Maximum Water Surface Elevation (ft, NAVD88)[1]	Maximum Water Depth at Door (ft)[4]	Grid Element Number	Grid Element Elevation (ft, NAVD88)[1]	Maximum Water Depth[2] (ft)
A	271.5	-	None	20091	271.3	-
B	271.5	271.1	-0.4	11873	270.9	0.2
C	271.5	271.3	-0.2	11866	271.1	0.3
D	271.6	-	None	10982	271.5	-
E1	-	271.4	-	12436	270.5	0.9
E2	-	271.4	-	13624	270.5	0.9
F1	-	271.4	-	14223	270.4	1.0
F2	-	271.5	-	15429	270.6	0.9
G	271.5	-	None	16348	271.5	-
H	271.5	271.7	0.2	24926	271.4	0.3
I	271.5	271.7	0.2	24262	271.5	0.2
J	271.6	271.8	0.2	27629	271.3	0.5
K	271.2	272.0	0.8	33641	271.2	0.8
L	271.2	272.0	0.8	33643	271.1	0.9
M	271.5	272.1	0.6	35482	271.5	0.6
N	271.5	272.1	0.6	35118	270.8	1.3
O	-	271.7	-	25259	271.4	0.3
N+1 DG	-	271.5	-	16038	271.3	0.2
Hatch 1 (H1)	-	271.8	-	30060	271.0	0.8
Manhole 1 (M1)	-	271.9	-	32550	271.0	0.9
Hatch 2 (H2)	-	272.1	-	30077	271.4	0.7
Manhole 2 (M2)	-	272.1	-	29727	271.1	1.0
Manhole 3 (M3)	-	271.9	-	32912	271.2	0.8

Notes:

1. Add 0.709 feet to NAVD88 to convert to USLS35
2. Maximum Water Depth is the difference between PMF maximum water surface elevation and grid element ground elevation.
3. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.
4. Maximum Water Depth at Door is the difference between PMF maximum water surface elevation and the door sill elevation; negative numbers indicate water elevation is below the door sill.
5. Due to rounding, flood depths added to ground surface elevation may not be exactly equal to the maximum water surface elevation as reported above. The variance is within 0.1 ft.

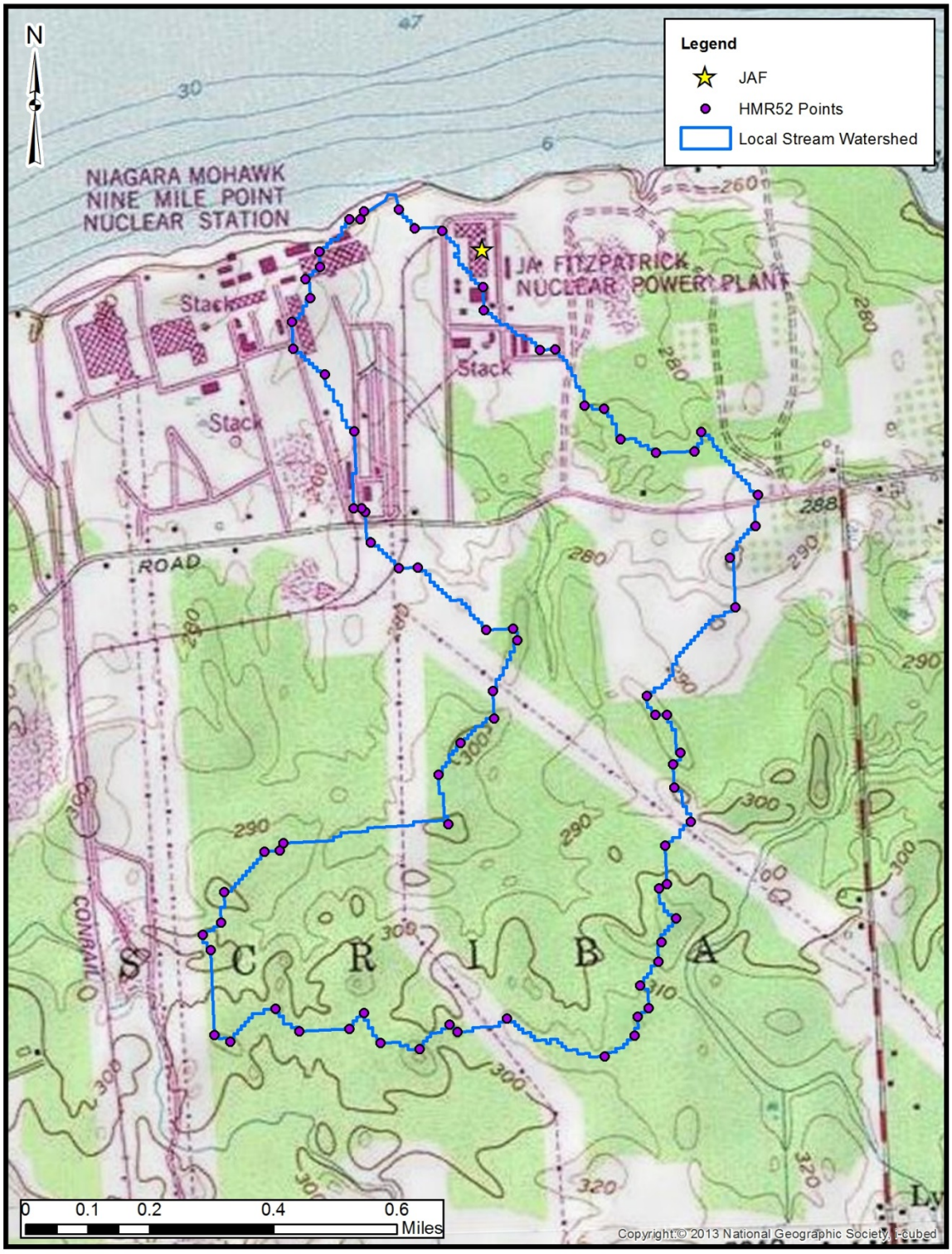
Table 3-6: Flood Duration for PMF at Reporting Grid Locations

Feature ID	Grid Element Number	Door Sill Elevation (ft, NAVD88)[12]	Grid Element Elevation (ft, NAVD88)[1]	Duration Above Door Sill (hours)	Duration Above Ground (hours)
A	20091	271.5	271.3	0.0	0.0
B	11873	271.5	270.9	0.0	4.5
C	11866	271.5	271.1	0.0	48.0
D	10982	271.6	271.5	0.0	0.0
E1	12436	-	270.5	-	48.5
E2	13624	-	270.5	-	48.5
F1	14223	-	270.4	-	48.5
F2	15429	-	270.6	-	48.5
G	16348	271.5	271.5	0.0	0.0
H	24926	271.5	271.4	3.0	3.0
I	24262	271.5	271.5	2.5	2.5
J	27629	271.6	271.3	3.0	4.5
K	33641	271.2	271.2	5.5	5.5
L	33643	271.2	271.1	5.5	6.5
M	35482	271.5	271.5	4.0	4.0
N	35118	271.5	270.8	4.0	49.5
O	25259	-	271.4	-	3.0
N+1 DG	16038	-	271.3	-	2.0
Hatch 1 (H1)	30060	-	271.0	-	49.5
Manhole 1 (M1)	32550	-	271.0	-	10.0
Hatch 2 (H2)	30077	-	271.4	-	4.0
Manhole 2 (M2)	29727	-	271.1	-	49.0
Manhole 3 (M3)	32912	-	271.2	-	5.5

Notes:

1. Add 0.709 feet to NAVD88 to convert to USLS35
2. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.

Figure 3-10: Watershed Delineation



Any illegible text or features in this figure are not pertinent to the technical purposes of this document

Figure 3-11: All-Season PMP Hyetograph

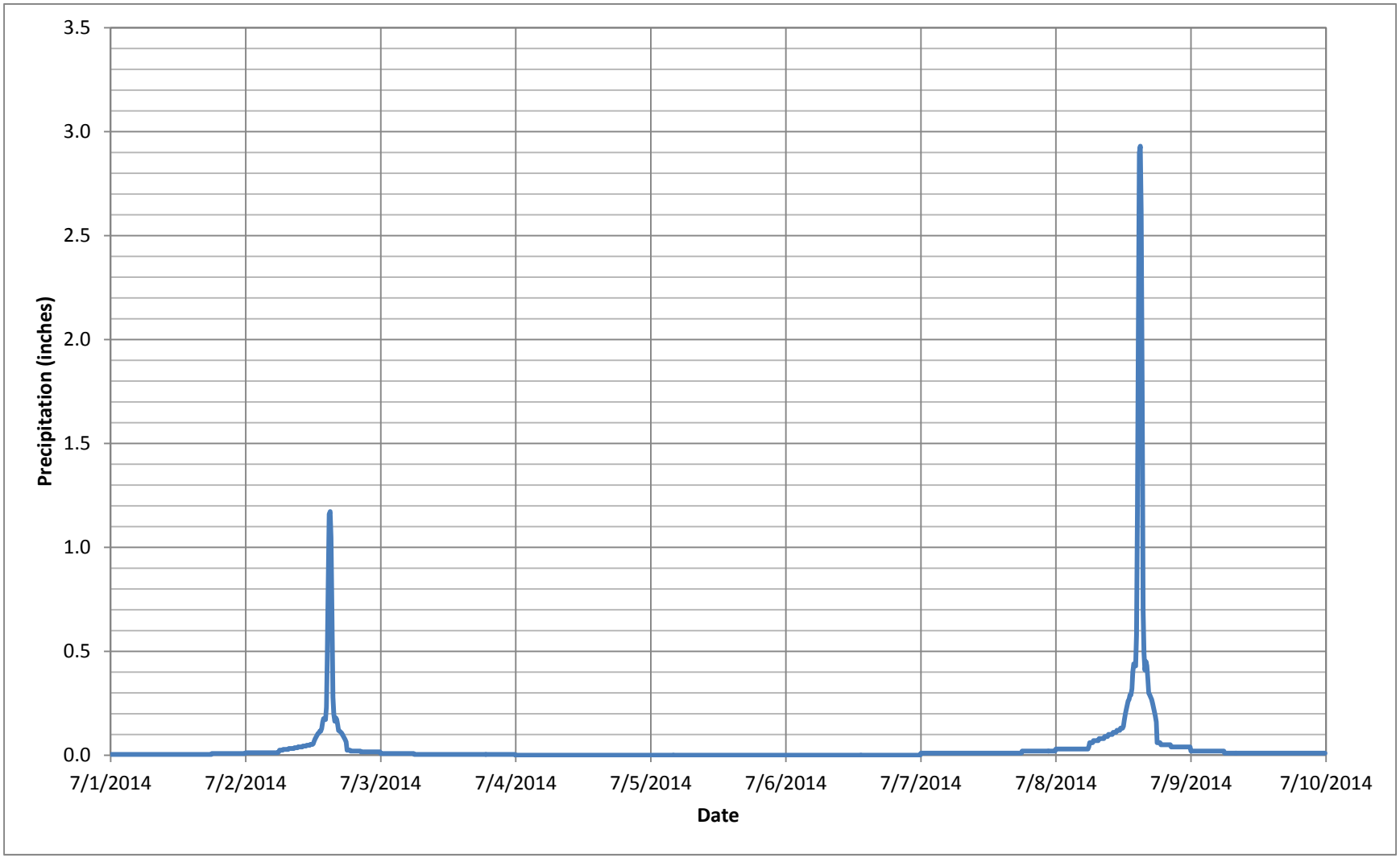


Figure 3-12: Cool-Season PMP+ 100-Year Snowmelt Hyetograph

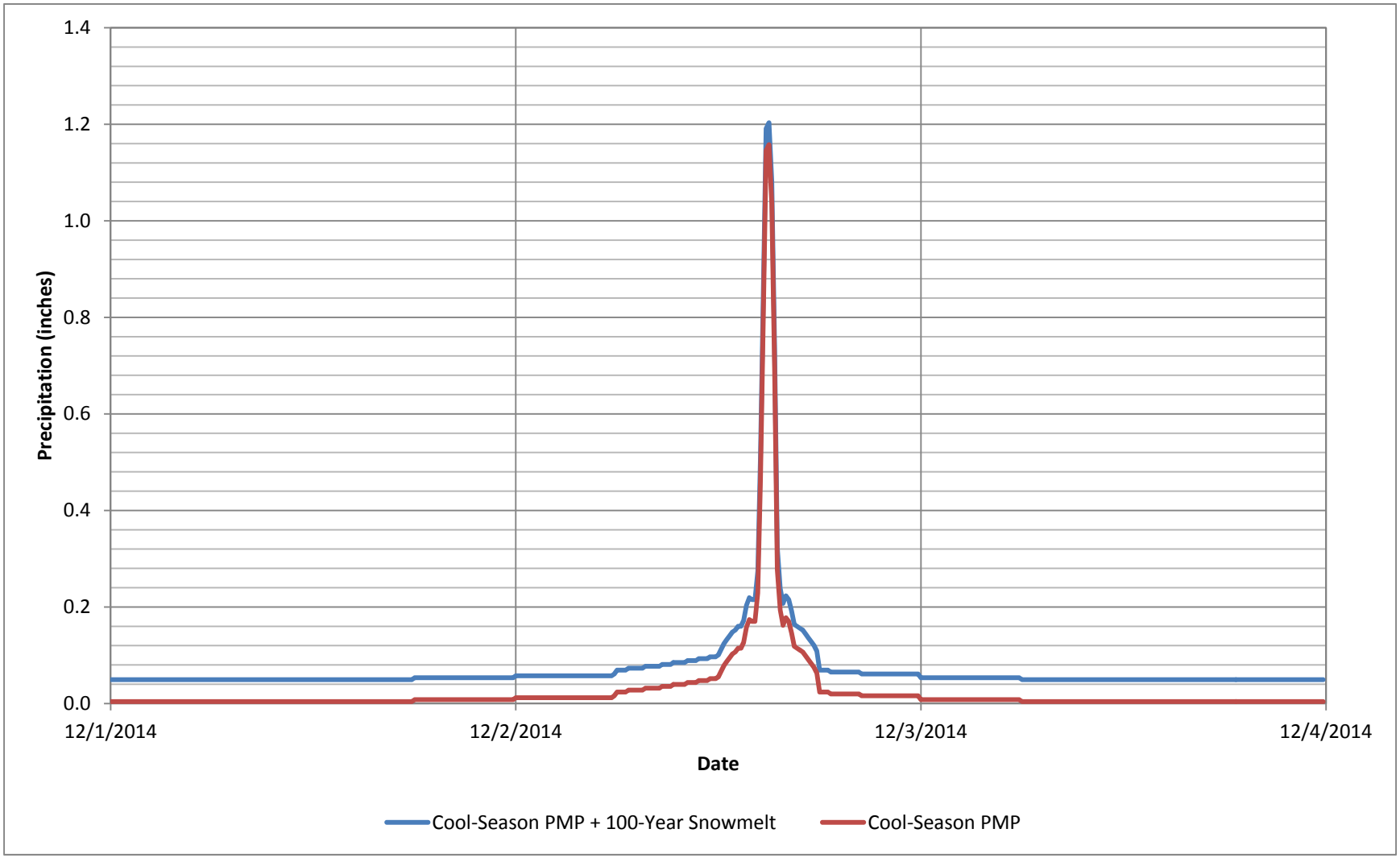


Figure 3-13: Controlling All-Season PMF Hygrograph

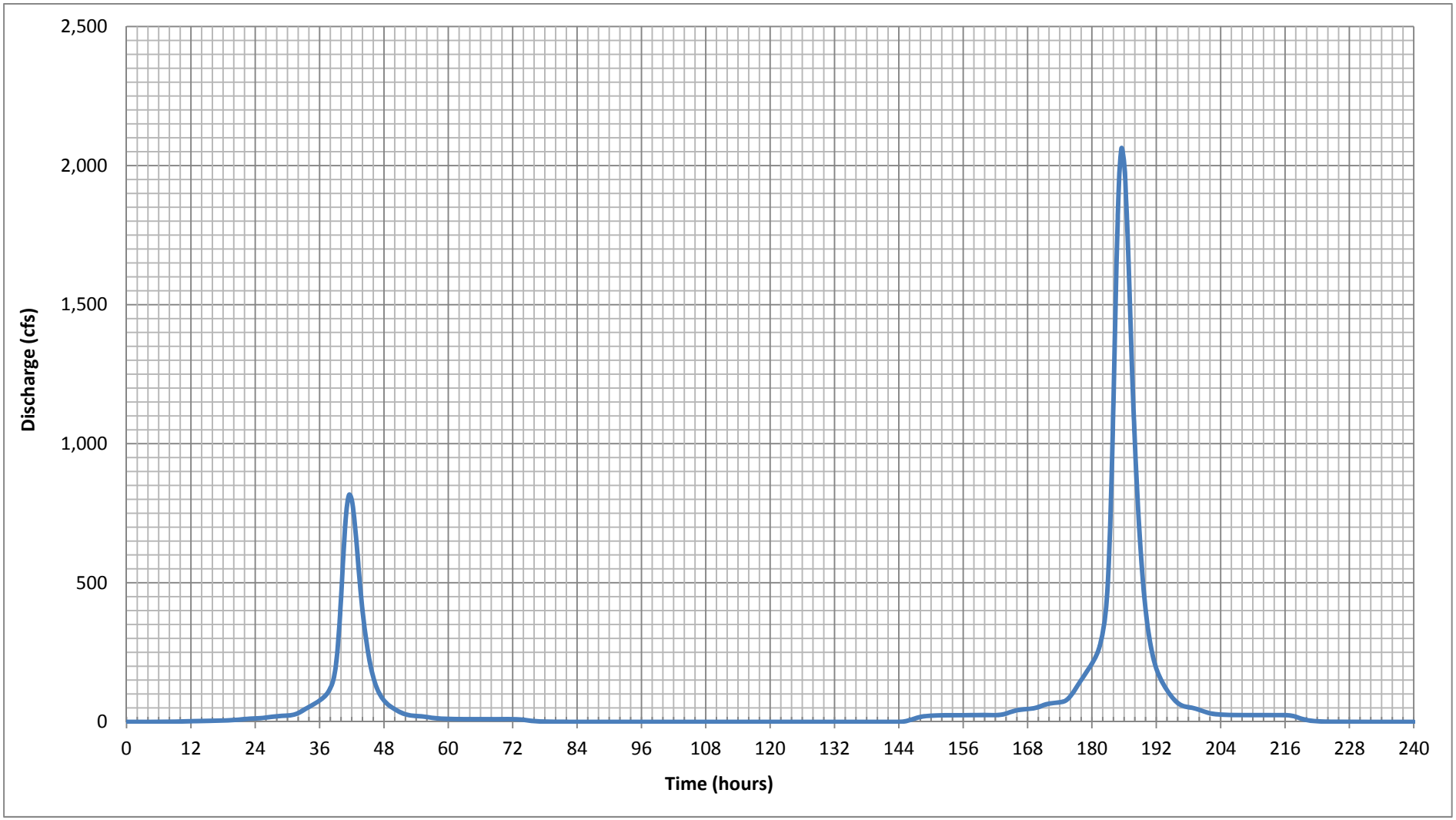


Figure 3-14: Controlling All-Season PMF Hygrograph with Nonlinearity Adjustment

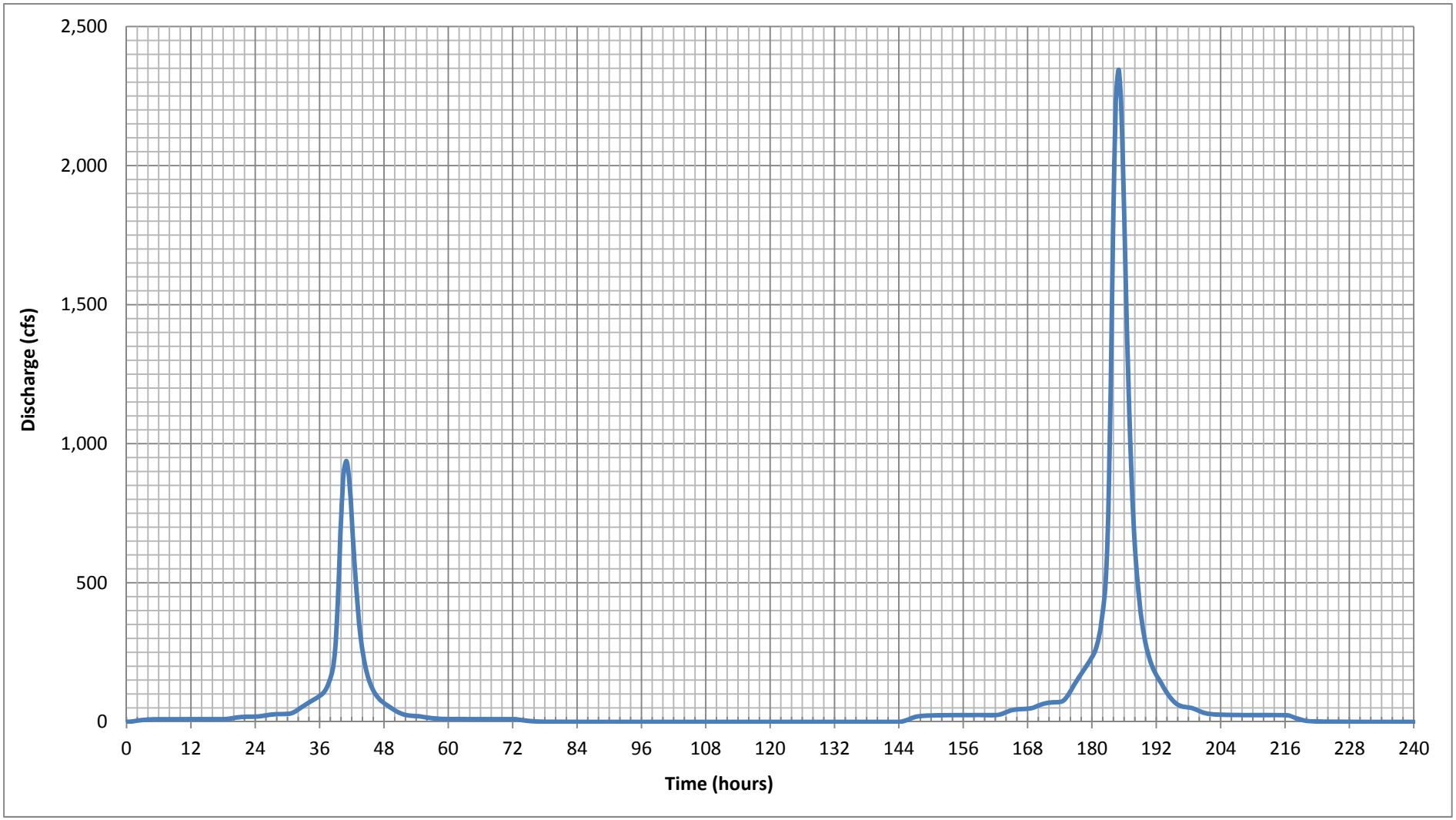
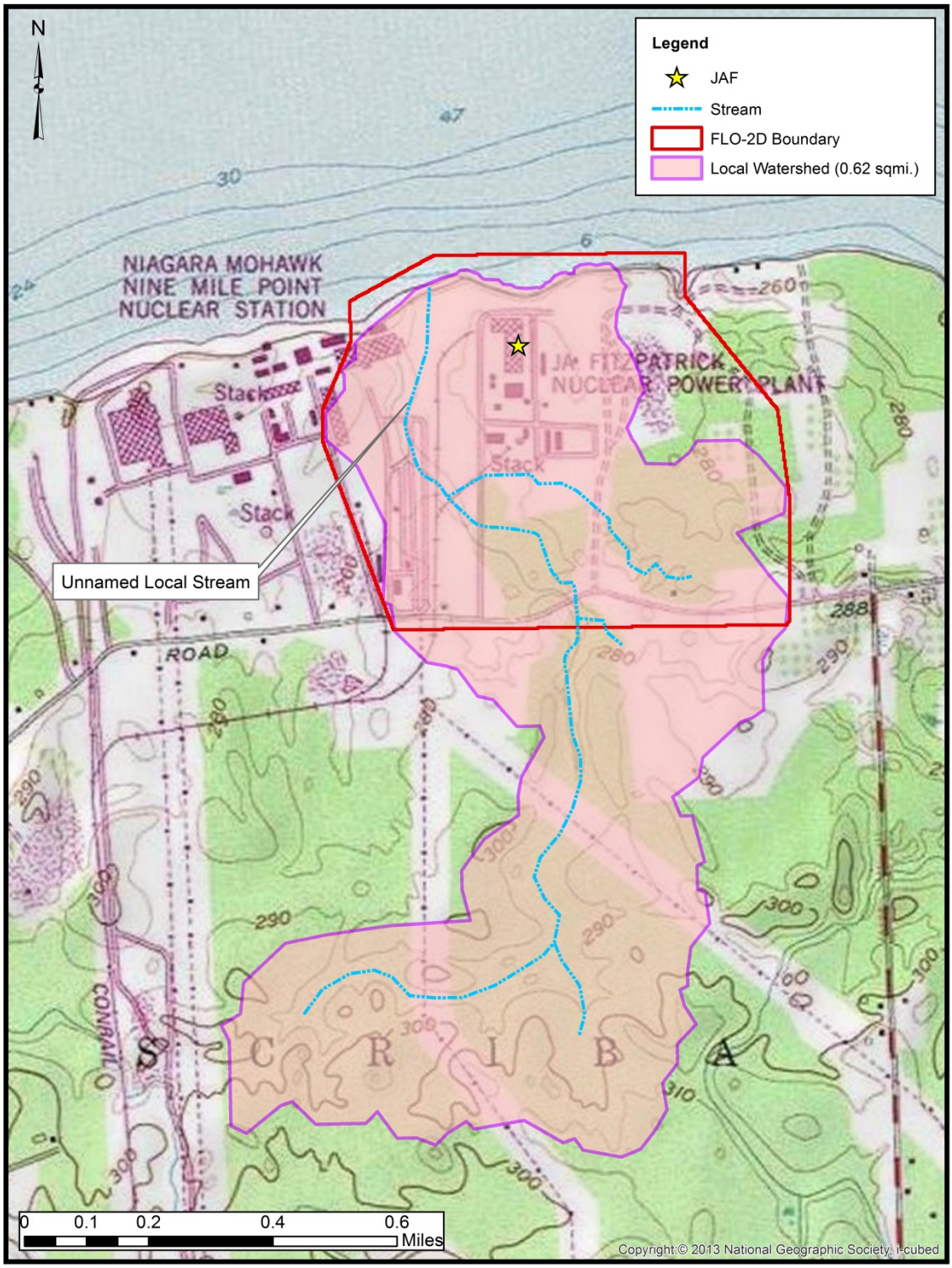
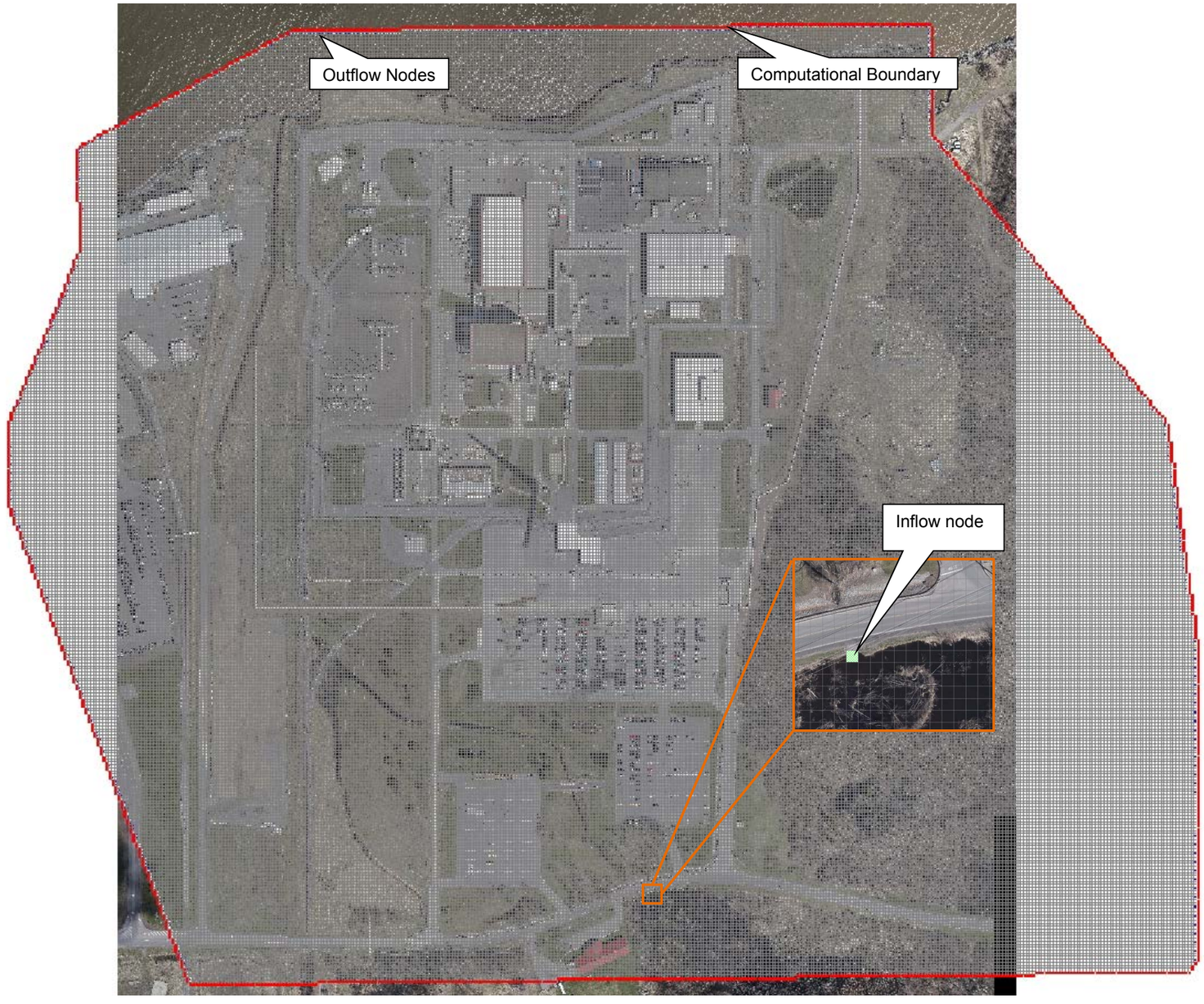


Figure 3-15: FLO-2D Computational Boundary and Local Watershed



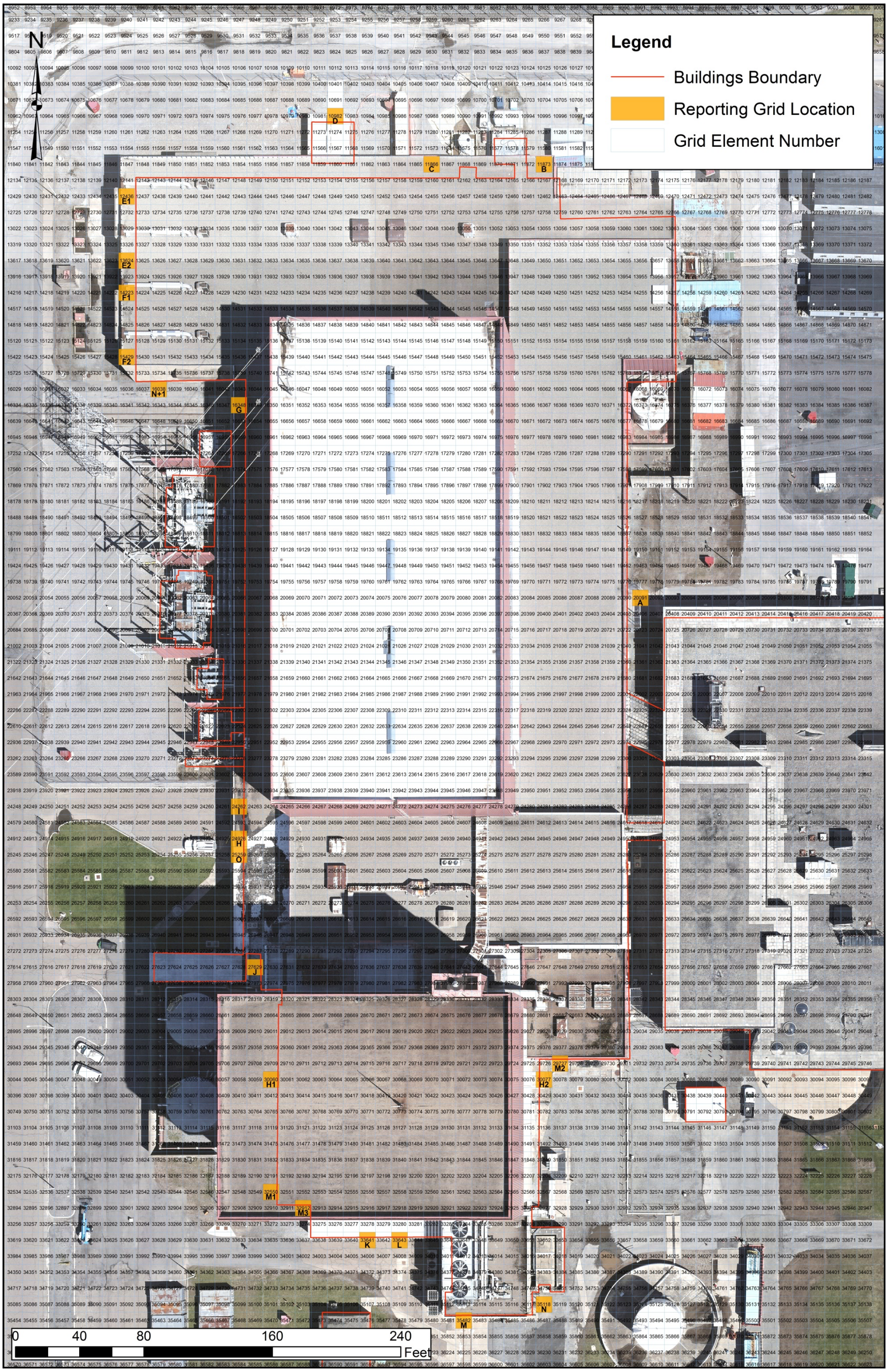
Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-16: FLO-2D Modeled Site Features



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-17: Grid Locations for Reporting Results



Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note that a larger version of this figure is available as Appendix B.3.

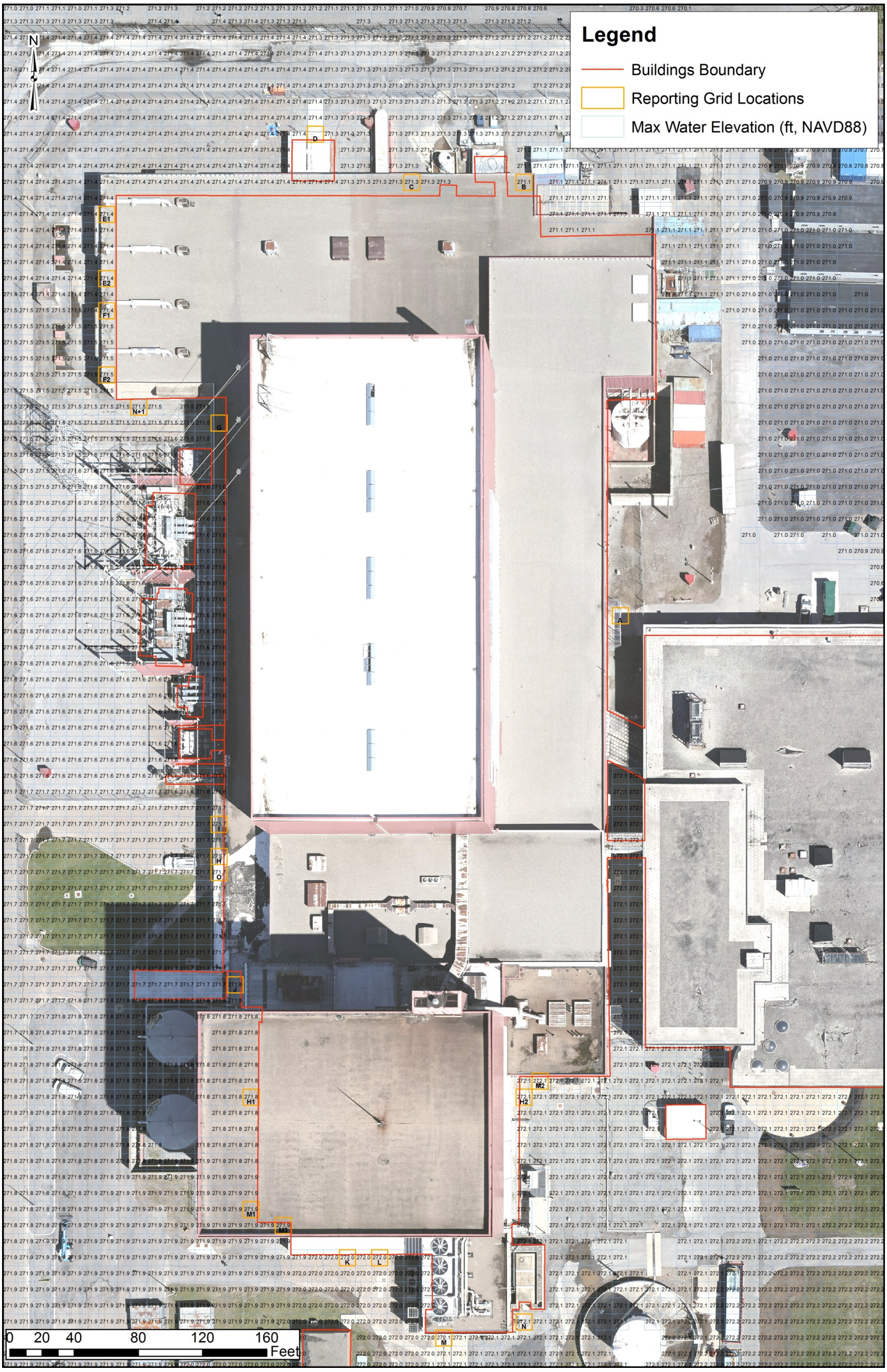
Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-18: Grid Element Ground Elevations (ft, NAVD88) near Power Block Area

Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix B.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-19: PMF Simulation - Maximum Water Surface Elevation (ft, NAVD88) near Power Block Area



Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix B.3.

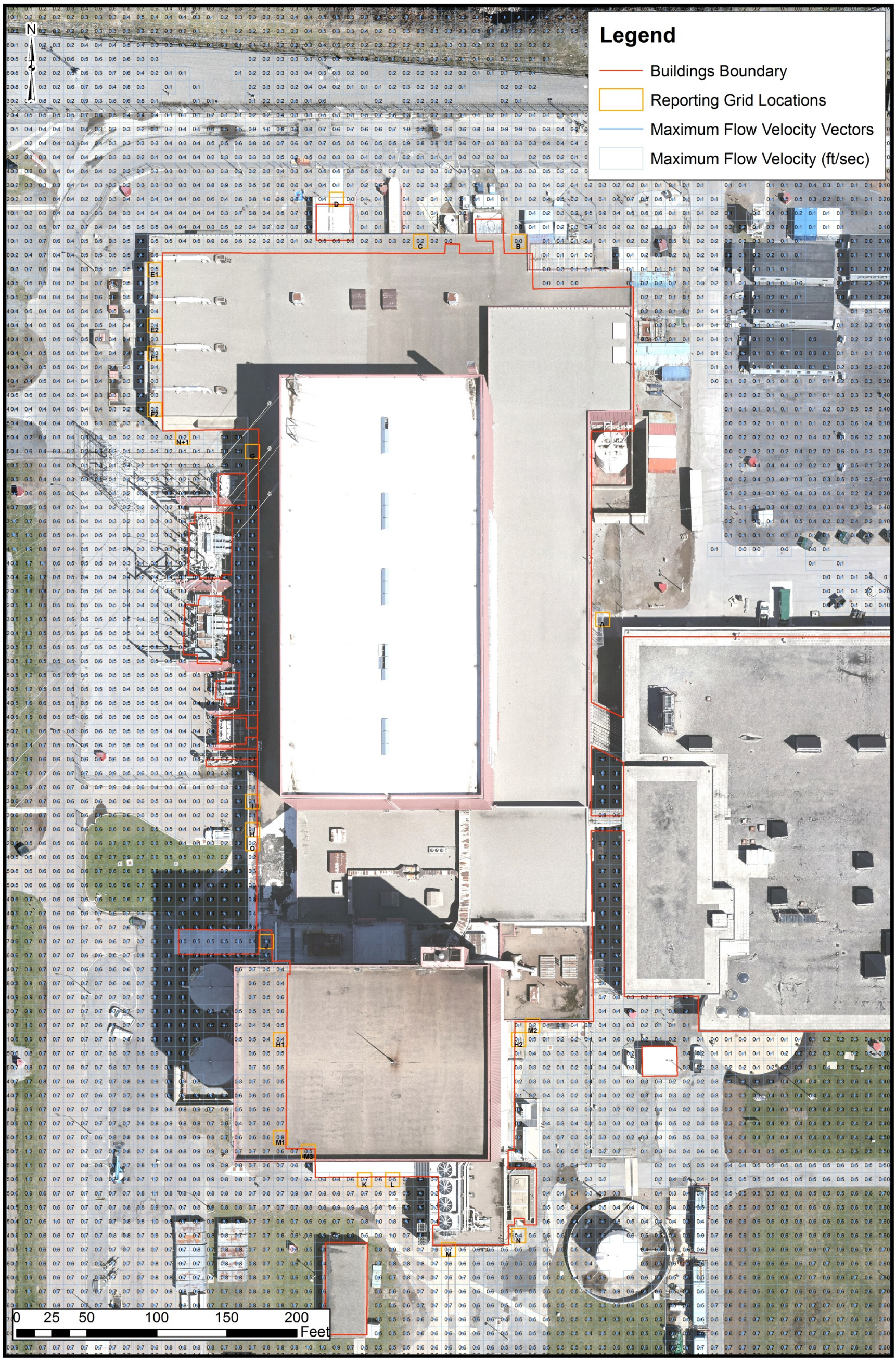
Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-20: PMF Simulation - Maximum Flow Depth (ft) near Power Block Area

Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix B.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-21: PMF Simulation - Maximum Velocities (ft per second) near Power Block Area



Basemap Source: High resolution orthoimagery (AREVA, 2014b). Note: A larger version of this figure is available in Appendix B.3.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

3.3 Dam Breaches and Failures

This section addresses the potential for the Dam Breaches and Failures hazard to impact the JAF site.

This evaluation is detailed in AREVA Document No. 51-9226881-000 (AREVA, 2014).

3.3.1 Methodology

With respect to dam breaches or failures, the HHA is considered in two steps:

1. Investigate the failures of a subset of all the upstream dams while assuming that peak discharges of individual dam-failure induced floods reach the site at the same time.
2. Investigate the most severe cascading failure combination.

The proposed Nine Mile Point Nuclear Power Plant Unit 3 (NMP3NPP) project is located less than 1 mile to the west of the JAF site, adjacent to the Lake Ontario shoreline. As such, NMP3NPP represents the same hydrological setting as JAF and is characterized by the same dam breach or failure induced flooding mechanisms. Therefore, the potential dam failure flooding analysis performed at NMP3NPP applies to JAF as well (NMP3NPP 2009, Section 2.4.4).

3.3.2 Results

From the NMP3NPP Combined License Application (COL) (NMP3NPP, 2009, Section 2.4.4.1), the nearest dams to the JAF site that may affect Lake Ontario are a series of six dams/locks on the Oswego River.

The Oswego River is used for navigational purposes and drains approximately 5,100 square miles into Lake Ontario. The drainage area does not include any portion of the contributory drainage area of JAF. The closest point of the river mouth to the JAF site is about seven miles.

There are no on-site basins that could contribute to flooding of SSCs important to safety via a breach or failure (JAF, 2014).

The effects resulting from failure of the six dams/locks in the Oswego River have been analyzed in the NMP3NPP COL (NMP3NPP, 2009, Section 2.4.4.1).

The combined maximum storage for the six dams/locks is approximately 91,500 acre-ft. Lake Ontario has a surface area of 4.7 million acres. If the total volume of the six reservoirs were to be instantly added to Lake Ontario without consideration of flow attenuation, the water level increase in the lake would be approximately 0.2 inches. Therefore, the JAF site would not be affected by the insignificant increase in the water level on Lake Ontario produced by the hypothetical failure of the dams simultaneously on the Oswego River (NMP3NPP, 2009, Sections 2.4.4.1 and 2.4.4.3).

3.3.3 Conclusions

The effects resulting from the instantaneous failure of the six dams/locks in the Oswego River would produce an insignificant increase in the water level on Lake Ontario of approximately 0.2 inches. There are no on-site basins that would contribute to the potential flooding at the JAF site. As a result, the Dam Breaches and Failures flood mechanism does not result in any significant flooding hazard for the JAF site, and is considered screened out.

3.3.4 References

AREVA, 2014. "James A. Fitzpatrick Flooding Hazard Re-Evaluation – Screening for Dam Failure, Tsunami, Ice-Induced Flooding, and Channel Migration", 2014, see AREVA Document No. 51-9226881-000.

JAF, 2014. **"**James A. Fitzpatrick Safety Analysis Report", Entergy Nuclear, 2014. See Project Manager Approval of Client References on Page 2.

NMP3NPP, 2009. Nine Mile Point 3 Nuclear Power Plant, Final Safety Analysis Report, Rev. 1, 2009. (ADAMS Accession No. ML090970449)

3.4 Storm Surge

This section addresses the potential for flooding at JAF due to the probable maximum storm surge (PMSS). Storm surge is the rise in offshore water elevation caused principally by the force of high velocity winds acting on the surface. A secondary rise in water surface is also caused by the lowering of the air pressure within a low pressure weather system. The most significant storm surges on Lake Ontario occur due to strong extra-tropical cyclones, which move principally in a west to east direction; which is coincident with the orientation of Lake Ontario. The storm which results in the PMSS is referred to as the probable maximum wind storm (PMWS). Storm surges are caused primarily due to the shear stress of high winds pushing on the lake surface, causing the water to pile up locally to elevations higher than the ambient water level. The processes involved in lake surges include: the direct wind effect, the pressure effect of the Earth's rotation, the effect of waves, the effect of water depth, and the rainfall effect (FEMA, 2014). Storm surges can occur in Lake Ontario, resulting in elevated still water elevations in the vicinity of JAF.

This section summarizes the PMWS and PMSS evaluation performed in AREVA Calculation No. 32-9227053-000 and AREVA Calculation No. 32-9227056-000, respectively (AREVA, 2014a and AREVA, 2014b).

3.4.1 Methodology

The HHA approach described in NUREG/CR-7046 (NRC, 2011) was used for calculation of the PMSS at JAF. In accordance with the HHA approach, historic data was used to assess the controlling storm type and the PMWS wind velocity and direction were developed deterministically. The Great Lakes Storm Surge Planning Program (SSPP) software program developed by the NOAA Great Lakes Environmental Research Laboratory (GLERL) (Schwab et al., 1987) was then used to conservatively compute the PMSS at JAF.

The methodology used to determine the PMSS at JAF includes the following steps as defined in American National Standards Institute (ANSI) American Nuclear Society (ANS) ANSI/ANS 2.8 (ANSI, 1992), NUREG/CR-7046 (NRC, 2011), and JLD-ISG-2012-06 (NRC, 2013):

- Evaluation of historic storm surge and meteorological data to identify the storm event resulting in the PMSS, based on review of the NOAA Hurricane Database (HURDAT) data (NOAA, 2014a), NOAA National Climatic Data Center (NCDC) surface analysis maps (NOAA, 2014d), and analysis of water level data from nearby NOAA Tides and Currents stations (NOAA, 2014c), as well as review of technical references for the Great Lakes region. The storm types evaluated included tropical cyclones (hurricanes), moving squall lines, and extra-tropical cyclones.
- Selection of the design storm by performance of a statistical analysis of NOAA one hour and six minute water level data to: a) eliminate long term water level fluctuations; b) identify the short term water level fluctuations; and c) identify the historical storm and storm type resulting in the highest recorded wind speeds and storm surges.
- Review of available historic meteorological data to validate deterministic storm parameters. JLD-ISG-2012-06 indicates that the ANSI/ANS-2.8 assumptions should be verified to reflect the most severe meteorological parameters (NRC, 2013).
- Development of the PMWS meteorological parameters by modification of the historical storm parameters in accordance with ANSI/ANS-2.8-1992.
- Development of the antecedent water level by comparing the maximum controlled water level elevation on Lake Ontario to the 100-year high water level, and selecting the lesser water elevation.
- Calculation of the PMSS still water elevation using the SSPP software program.

3.4.2 Results

3.4.2.1 Evaluation of Potential Design Storms

The physical characteristics of Lake Ontario are indicated on Figure 3-22. Lake Ontario has a length of about 193 miles and an average width of about 53 miles (GLIN, 2014). The lake is oriented with its long dimension trending in a northeast-southwest direction. The lake depth varies from about 500 feet to 800 feet. JAF is located at the eastern end of the lake. The bathymetry of the lake offshore in the vicinity of JAF is characterized by a deep basin, with a lake bottom depth of about 800 feet.

Water-level fluctuations due to storm surges on the Great Lakes are generally caused by one of several types of strong storms, including: 1) extra-tropical storms that include a) non-convective storms[1] that originate in Canada and move to the east through the lakes region; b) non-convective storms that originate in the southern and central Rockies and move east through the lakes region; 2) tropical cyclones that move north from the Gulf Region (i.e. hurricanes and tropical storms); and 3) convective storms[2] or thunderstorm frontal passages (i.e. moving squall lines) (FEMA, 2014).

3.4.2.1.1 Tropical Cyclones (Hurricanes, Tropical Storms, Tropical Depressions)

The NOAA HURDAT was evaluated relative to tropical systems originating in the southern latitudes and moving into the Great Lakes region. The review of historic HURDAT data for Lake Ontario identified 21 tropical cyclones or extra-tropical cyclones which originated as tropical that have tracked over or near Lake Ontario (NOAA, 2014a). The query of storms indicates that no cyclones of hurricane intensity have passed through the region of Lake Ontario. The storms are summarized on Table 3-7. Storm tracks were typically in an approximate north-south direction. Storm forward speeds ranged from 9 to 58 miles per hour and averaged 28 miles per hour. Wind speeds ranged from 25 to 70 miles per hour and averaged 42 miles per hour.

Seventeen of the 21 storms had transitioned into extra-tropical storms before reaching Lake Ontario. The others remained tropical depressions or storms. Five of the storms are of note for Lake Ontario due to observed flooding, wind or rainfall, including Hurricane Hazel, Hurricane Isabelle, Hurricane Audrey, Hurricane Francis, and Hurricane Fran (EC, 2014a; EC, 2014b; EC, 2014c; and EC, 2014d). Rainfall from Hurricane Fran (September 1996) caused flooding in the western portion of the lake, however water level records from the southern and eastern portion of the lake show no significant surges (EC, 2014d). While Hurricane Katrina (August 2005) was not present in the HURDAT database as passing over Lake Ontario (as it became a tropical depression over Tennessee), it was reported to have caused extreme rainfall around the lake (EC, 2014b).

Table 3-8 presents the top 20 recorded water levels on Lake Ontario for the hourly water level data and Table 3-9 presents the top 20 recorded water levels for the six-minute data. Storms from Table 3-7 are not present in either of the tables which display peak water levels, therefore it is concluded that hurricanes do not cause significant surges on Lake Ontario, and are thus not considered as the design storm for JAF.

3.4.2.1.2 Moving Squall Lines

Squall lines are also a consideration in the Great Lakes region, particularly along the shores of Lake Michigan. ANSI/ANS-2.8-1992 states that "A moving squall line should be considered for the locations along Lake Michigan where significant surges have been observed because of such a meteorological event" and notes the possible occurrence of squall lines within the other Great Lakes (ANSI, 1992).

Review of the literature indicates that moving squall lines are not the controlling storm event relative to storm surge in Lake Ontario. Specifically:

[1] Non-convective storms occur in the absence of thunderstorms, tornadoes, and tropical cyclones. Most non-convective high wind events develop in association with extra-tropical cyclones in mid-latitude regions.
[2] Convective storms are associated with localized, fast moving storm fronts or squall lines created by large thunderstorms (FEMA, 2014).

- FEMA publications indicate that while moving squall lines are possible in Lake Ontario, it is generally accepted that these local, fast-moving events can be neglected when assessing extreme water levels as their inclusion has negligible influence on water level statistics (FEMA, 2014).
- Analyses indicate that, in general, neglecting convective events (i.e., moving squall lines) has minimal influence on extreme water-level statistics (Nadal-Caraballo et al, 2012).

3.4.2.1.3 Extra-Tropical Cyclones

Most of the strong storms in the Great Lakes are extra-tropical, low-pressure non-convective systems (Lacke et al. 2007, Niziol and Paone 2000). These non-convective, extra-tropical storms typically originate in Canada or the southern or central Rocky Mountains and move to the east. Low-pressure systems spin counter-clockwise, while high-pressure systems spin in the clockwise direction. Winds on the eastern side or leading edge of a low-pressure system are typically in the northerly direction, while winds on the eastern side of a high-pressure system are in the southerly direction (FEMA, 2014). High winds and large atmospheric pressure variations are commonly associated with low pressure events, and they can cause elevated water levels, or storm surge, along the lake shoreline (FEMA, 2014). The highest winds during the PMWS will occur when the storm is centered northeast of the site along the storm track, thus the wind directions will be in a southern direction towards JAF. This is consistent with Danard (Danard et al, 2003) who concludes that the occurrence of storm surges is mainly due to extra-tropical cyclones. The results of a 2003 joint IJC/USACE Lake Ontario Waves study (IJC, 2003) indicate that that waves generated by extra-tropical events are more intense than those generated by convective events (squall lines). The winter season is characterized by the most severe extra-tropical cyclones. The principal storm track of winter storms in the Erie-Ontario region is to the northeast (Angel, 1996).

3.4.2.2 Selection of the Design Storm

Hurricanes and moving squall lines have been screened out as storms which would result in the PMSS. The controlling storm generating the PMSS is therefore an extra-tropical cyclone. A statistical analysis of water level data was performed to determine the specific design storm used to develop the PMWS. In accordance with the procedures presented in ANSI/ANS-2.8-1992, an analysis of available, historic synoptic cyclonic windstorms was performed. Long-term Lake Ontario wind and water level records were compiled from the NOAA NCDC Storm Events Database (NOAA 2014b) and the Tides and Currents Great Lakes Water Level Data (NOAA 2014c). Lake Ontario has four NOAA Tides and Currents Stations (see Figure 3-24): Station 9052076, Olcott, New York; Station 9052058, Rochester, New York Station 9052030, Oswego, New York (nearest to the site); and Station 905200, Cape Vincent, New York. Hourly water level data is available for the period of 1961 to 2014 (NOAA, 2014a). Six-minute water level data is available for the period of about 1994 to 2012 (NOAA, 2014a) and wind data for the Lake Ontario region is available for the period of about 1950 to 2014 (NOAA, 2014b).

Statistical analyses of available hourly and six-minute water level data (as two separate data sets) from all four NOAA stations (NOAA, 2014c) was performed. The NOAA water level data was processed into frequency domains using a Fast Fourier Transform (FFT) filter technique and a cutoff of 120 hours (Walters et al, 1982) in order to attenuate signals from high frequency events such as lake water level fluctuations associated with the annual hydrologic cycle and to identify water levels associated with major storms.

Table 3-8 identifies the storms that resulted in the twenty highest water levels identified by the statistical analysis of the hourly water levels (NOAA, 2014c). The highest surge identified was 1.78 feet at Cape Vincent, NY on November 13, 1992. Wind data is not available for this storm event because this event is not present in the NOAA Storm Events Database (NOAA, 2014b). The second highest surge identified was 1.74 feet at Cape Vincent, NY on February 17, 2006. This extra-tropical storm had the highest recorded wind speed (98 mph, measured gust) of surge-causing events. The storms that resulted in the highest water levels identified by the statistical analysis of the six-minute water levels are shown in Table 3-9. The top 10 surge heights ranged from 1.09 feet to 1.86 feet, all of these were caused by events occurring in the fall and winter months. The highest surge recorded was 1.86 feet at Cape Vincent, NY on February 17, 2006.

The development of the synthetic storm model requires surface analysis maps which are not available for the November 13, 1992 storm. However, surface analysis maps are available for the February 17, 2006 storm, which was the highest surge recorded from the six-minute water level data and resulted in the highest recorded wind gusts.

To evaluate the correlation between storm surge and wave events, the top storm surges from the NOAA hourly water level data at Cape Vincent, NY (see Table 3-8) and the top 20 wave height events for Wave Information Studies (WIS) wave hindcast data (from 1979 to 2012, see Table 3-10) (Station 91037) on Lake Ontario were compared. Station 91037 is located just offshore of JAF, see Figure 3-23, in approximately 174 feet of water (USACE, 2014). All twenty wave events have wind directions originating from the west and northwest directions. Of the top ten wave events, six of the events are included in the top twenty surge events in Table 3-8. The largest wave event corresponds to the fifth highest surge. Similar to the top surge events, all 20 extreme wave events occurred in the winter months which are inferred to be primarily associated with non-convective, extra-tropical storms.

3.4.2.3 Probable Maximum Wind Storm Parameters

The review of the water level, wind, and wave data indicate that the largest observed storm surge and wave events are associated with extra-tropical storm events. The February 17, 2006 storm resulted in the highest observed storm surge from the six-minute data, the highest recorded wind speed, and the fifth highest recorded wave height. Therefore, this storm was considered to be representative of an historic storm for the development of the PMWS parameters, and was selected as the controlling design storm.

Review of the NOAA Storm Database indicates that a wind speed of 100 mph has not been exceeded within the study area (NOAA, 2014b). Review of the NOAA HURDAT database and available surface analysis maps indicate that within the vicinity of JAF, no tropical or extra-tropical cyclones have had a central pressure less than 950 millibars (mbar) (NOAA, 2014a and NOAA 2014,d). Therefore, the use of ANSI/ANS-2.8 assumptions reflects the most severe meteorological parameters for Lake Ontario, including JAF.

Three-hour pressure maps for the February 17, 2006 storm were obtained from the NOAA National Model Archive and Distribution System (NOMADS) (NOAA, 2014d). The 15:00 GMT pressure fields were identified as the most critical based on the observed isobars and resultant pressure gradient. The surface analysis map for 15:00 GMT on February 17, 2006 is shown in Figure 3-25. The pressure map was geo-referenced in ArcMap™ to calculate the isobars, distance between isobars, and wind angles affecting the lake. Geo-referencing was used to establish a relationship between the pressure maps and a geographic coordinate system in order to determine storm speed. The isobars from hour 15:00 GMT were then traced and moved along each hourly point on the track to form a quasi-steady state windstorm.

PMWS Storm Track and Speed

The February 17, 2006 storm travelled southwest to the northeast. The storm track of the PMWS follows the primary tracks constructed from the historic extra-tropical cyclone climatology for the fall and winter seasons (Angel, 1996). The February 2006 storm recorded translational speed was between 40 and 50 mph. The path of the February 17, 2006 storm was smoothed to develop the PMWS storm track and the storm's translational speed was conservatively maintained at a constant steady-state speed of 40 mph, corresponding to the lower range of the recorded storm speed. The PMWS storm track is presented in Figure 3-26. The PMWS track was compared to the tracks of the other storms that generated significant surges at the site which have three (3) hour surface pressure maps available. The storm tracks for the February 1, 2002, December 24, 2004, February 17, 2006 and the January 17, 2012 storms compared well with the PMWS storm track. The March 9-10, 2002 storm track varied significantly from the other storm tracks affecting Lake Ontario. The track for this storm shows that the storm was impacted by a secondary cold front which appears to have steered the storm to the north but also

generated the winds which resulted in the high surge. Based on the storm track data, the PMWS track represents a conservative track for the generation of winds on the lake which is deemed to have a reasonable probability of occurrence.

PMWS Wind Field

Lake Ontario was divided into three zones: Z1–Western, Z2–Central, and Z3–Eastern to develop a spatially varying wind field, see Figure 3-27. The isobar patterns from hour February 17, 2006 15:00 GMT, as the storm moved along the storm path were used to calculate the PMWS time varying pressure, wind speed and wind direction at the eastern and western ends of each zone using the methods presented in the USACE Coastal Engineering Manual (CEM) (Resio et al, 2008). Wind direction in each zone was estimated from the orientation of the isobars. Wind directions[3] were calculated to be at an angle of 10 degrees across the isobars (as specified by ANSI/ANS-2.8-1992 for the Great Lakes region).

The wind speeds were scaled up to reach 100 mph in each zone, by a factor equal to the ratio of 100: maximum wind speed: 1.4 in Zone 1, 1.5 in Zone 2, and 1.3 in Zone 3. The minimum pressure of the storm, 992 mbar, was scaled down to the minimum pressure of 950 mbar, using a linear reduction of 42 mbar for each pressure value. The final results for the PMWS parameters are present in Table 3-11.

3.4.2.4 Development of the Antecedent Water Level

As defined in Appendix H of NUREG/CR-7046 (NRC, 2011) for enclosed bodies of water, the lesser of the 100-year level or the maximum controlled water level should be used for the evaluation of flood levels from storm surges.

Lake Ontario is regulated by the International Joint Commission (IJC) (formerly the International St. Lawrence River Board of Control, ISLRBC) under Plan 1958DD since 1960 (IJC, 2014a). Actual control of the lake elevations started in 1963. The current regulated water level of Lake Ontario under Plan 1958DD is defined as the regulated monthly mean level correspoding to elevation 247.3 feet IGLD85. Proposals Plan 2014 (IJC, 2014b) to modify the regulated water levels are currently under study and review. Plan 2014 includes modifications to Plan Bv7 (originally proposed to reduce the frequency and severity of the most extreme water levels that would happen without regulation) to balance Lake Ontario during low water supply periods (IJC, 2014b). Currently, Lake Ontario is still under plan 1958DD. As part of the evaluation process for the adoption of the lake water regulation plan, the IJC analayzed 101 years of water supply data to estimate lake water levels. The current regulated monthly mean water elevation is exceeded under both plans during the spring and summer months (March through August). While the current regulated monthly mean water level is exceeded during the summer months, the PMWS is an extra-tropical storm which would occur during the winter months when the regulated level is not exceeded. The current regulated monthly mean level is elevation 247.3 feet IGLD85 under Plan 1958DD.

A frequency analysis of the monthly mean water level data from NOAA Station 9052030 at Oswego, NY (NOAA, 2014e), was performed using a Log-Pearson III statistical analysis (USGS, 1982) to calculate the 100-year high water level. The analysis was performed for the period of time corresponding to the period that the Lake Ontario water level has been regulated and controlled (1963 to 2014). The 100-year high water level was calculated to be elevation 248.3 feet IGLD85 (249 ft USLS35).

Because the maximum controlled water level elevation level of 247.3 feet IGLD85 (IJC, 2014a) is less than the 100-year water level elevation of 248.3 feet IGLD85, 247.3 ft IGLD85 (248 ft USLS35) is selected as the ambient water level for the PMSS calculation.

[3] Wind directions are measured clockwise from north. Wind direction is the orientation from which the wind is blowing from (i.e. wind direction of 180 degrees indicates wind blowing from the south).

3.4.2.5 GLERL SSPP Storm Surge Model

The SSPP storm surge model was used to calculate surge heights and elevations within Lake Ontario, including the storm surge still water height and elevation resulting from the PMWS. The SSPP automatically calculates the maximum and minimum water level during the 12 hours following the onset of the wind at 15 defined points (see Figure 3-27) along the southern and eastern shore of Lake Ontario. As shown in Figure 3-28, JAF is represented by point 10, which is approximately 7 miles from JAF. The SSPP model was run for a sustained wind speed of 100 mph. The wind direction[4] was varied in 10 degree increments between 250 and 300 degrees (as this is the general wind direction during the PMWS (AREVA, 2014a) to determine the wind direction which results in the greatest surge elevation at JAF. The results of the sensitivity analysis are presented Table 3-12.

The SSPP model predicted a maximum still water level increase of 4.8 feet at JAF due to the PMSS. The PMSS results from the PMWS (AREVA, 2014a). The PMWS consists of an extra-tropical cyclone with sustained maximum winds of 100 mph from a direction of 280 degrees, and a storm track parallel to the long axis of the lake. This surge height results in a PMSS still water elevation of 252.1 feet IGLD85 (252.8 feet USLS35). The PMSS elevation is approximately 19.2 feet below the nominal site grade at JAF of 271.3 feet IGLD85 (272.0 feet USLS35).

FEMA recommends validation of the storm surge model used, as part of the general approach to storm surge modeling on the Great Lakes using a number of historical extreme storm events on the lake. The storm surges from nine representative, historic storms (AREVA, 2014a) were calculated using the SSPP and the results were compared to the measured surge elevations. Storm surge elevations for the nine historic storms at each of the four NOAA Tides and Currents stations along the south shore of Lake Ontario (Olcott, NY, Rochester, NY, Oswego, NY, and Cape Vincent, NY) were extracted from the six-minute water level data (NOAA, 2014c). These measured water levels were compared with outputs from the SSPP. The locations of these water level stations are shown in Figure 3-24. The water level station and the SSPP output point used for verification are indicated in Table 3-13, and shown in Figure 3-28. Note that the NOAA station at Cape Vincent was not used as part of the SSPP model validation due to the spatial variability between the location of the NOAA station and the SSPP water level response point in the vicinity of Cape Vincent.

Wind data for these storms were extracted from nine NOAA NCDC stations around Lake Ontario, shown in Figure 3-29. The distribution of these stations around the lake provides representative winds around the entire lake. The maximum wind speed, and associated wind direction, from each of the nine station's time-series was determined. These nine wind speeds were then converted to hourly overwater wind speeds in miles per hour (mph) and used to determine a spatially averaged wind speed over the entire lake. For those stations with durations other than 60-minutes, the equations provided in the USACE CEM (Resio et al, 2008) were used to convert to hourly winds. An average wind speed and direction was determined for each storm using the nine representative wind gage stations for input into the SSPP.

The comparison of the calculated to measured water levels for the nine representative extra-tropical storms is presented on Figure 3-30. The results are typically within the 95% confidence intervals (i.e. within 0.2 feet). The results indicate that there is some bias to under predict surge elevation at low surge values and over predict surge elevation at moderate to high surge values. The PMWS-generated PMSS is a conservative flood scenario, and expected to be conservatively over-predicted by the SSPP model.

3.4.3 Conclusions

The following summarizes the results and conclusions relative to the PMWS and PMSS at JAF:

- The controlling storm type is an extra-tropical storm.

[4] Wind direction measured clockwise from North, indicates direction wind is blowing from.

- The February 17, 2006 storm was identified by the statistical analysis to have had the greatest recorded wind speed and was selected and modified (ANSI,1992) to develop the PMWS parameters.
- Review and evaluation of current meteorological data indicated that the maximum wind speed of 100 mph and minimum central pressure of 950 mbars presented in ANSI/ANS-2.8-1992 remains conservative for Lake Ontario for the PMWS. The PMWS storm track was smoothed and the translation speed of the storm was reduced to 40 mph (which was the minimum recorded storm speed) to increase the effect of the pressure gradients and resulting wind speeds.
- Per ANSI/ANS-2.8-1992, the antecedent water level is the regulated lake water level which is 247.3 feet IGLD85.
- The predicted PMSS height is 4.8 feet. The predicted PMSS stillwater elevation is 252.1 feet IGLD85 (252.8 feet USLS35). The surge height is approximately 19.2 feet below the nominal site grade at JAF of 271.3 feet IGLD85 (272.0 feet USLS35).

3.4.4 References

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Table 3-7: Storms from HURDAT Database in the Vicinity of Lake Ontario (NOAA, 2014a)

Name	Year	Month	Day	Longitude	Latitude	Forward Speed [mph]	Wind Speed [mph]	Central Pressure [mb]	Storm Type in Vicinity of Lake Ontario
N/A	1876	September	18	-76.10	43.00	12	50	N/A	Tropical Storm
N/A	1878	September	13	-78.50	44.00	28	50	N/A	Extratropical Storm
N/A	1893	October	14	-77.60	42.70	46	70	N/A	Tropical Storm
N/A	1898	October	5	-80.80	44.50	29	30	N/A	Tropical Depression
N/A	1900	September	12	-79.40	44.30	40	70	N/A	Extratropical Storm
N/A	1901	September	29	-76.50	44.20	25	30	N/A	Extratropical Storm
N/A	1903	September	17	-77.00	43.00	13	45	N/A	Extratropical Storm
N/A	1915	August	22	-79.00	43.50	17	30	N/A	Extratropical Storm
N/A	1923	October	19	-84.00	43.50	27	40	N/A	Extratropical Storm
N/A	1926	August	2	-78.80	44.00	19	30	N/A	Extratropical Storm
N/A	1928	September	20	-79.20	43.50	23	35	N/A	Extratropical Storm
N/A	1933	August	24	-76.30	42.40	20	40	N/A	Tropical Storm
Hazel	1954	October	16	-77.40	41.00	48	80	N/A	Extratropical Storm
Audrey	1957	June	29	-77.10	43.70	58	60	N/A	Extratropical Storm
Hugo	1989	September	23	-80.20	42.20	43	40	988	Extratropical Storm
Opal	1995	October	6	-78.40	43.30	23	40	997	Extratropical Storm
Frances	1996	September	8	-77.70	42.80	32	40	1001	Extratropical Storm
Dennis	1999	September	8	-76.50	43.50	9	25	1006	Extratropical Storm
Frances	2004	September	9	-77.70	42.80	34	35	1000	Extratropical Storm
Arlene	2005	June	14	-77.60	44.80	31	25	1001	Extratropical Storm
Ernesto	2006	September	3	-77.50	43.10	20	25	1014	Extratropical Storm

Table 3-8: Top 20 Events Recorded on Lake Ontario[1] (Hourly Water Level Data) (NOAA, 2014b and NOAA, 2014c)

Date	Wind Speed (mph) [2]	Setup (feet)[3]	Storm Type
11/13/1992	n/a	1.78	n/a
2/17/2006	98	1.74	Extra-tropical
1/18/2012	n/a	1.43	n/a
12/23/2004	60	1.36	Extra-tropical
4/6/1979	n/a	1.28	n/a
2/22/1997	70	1.27	Extra-tropical
2/1/2002	63	1.26	Extra-tropical
12/14/1991	50	1.20	Extra-tropical
1/30/2008	61	1.20	Extra-tropical
3/10/2002	60	1.11	Extra-tropical
2/10/2001	66	1.07	Extra-tropical
12/2/2006	59	1.04	Extra-tropical
11/19/1969	n/a	1.04	n/a
2/16/1967	65	1.02	Extra-tropical
1/29/2012	n/a	1.00	n/a
11/17/1965	n/a	0.99	n/a
11/13/2003	64	0.98	Extra-tropical
10/31/1965	n/a	0.98	n/a
12/11/1971	n/a	0.97	n/a
12/28/2008	65	0.97	Extra-tropical

Note the setup for storms duplicated in both the six-minute and hourly summaries may differ slightly due to differences in the sampling frequency of the raw data.

[1] Due to the path of extra-tropical cyclones, top surges are generated at Cape Vincent, NY. Setup values in this table are from the Cape Vincent, NY gage.
[2] "n/a" indicates event is not present in the NOAA Storm Database
[3] Setup refers to the rise in water level above normal level, whereas setdown refers to the fall of water below the normal level at the upwind side of a basin (Danard, 2003).

Table 3-9: Top 20 Surges Recorded on Lake Ontario[1] (six-minute Water Level Data) (NOAA, 2014b and NOAA, 2014c)

Date	Wind Speed (mph)[2]	Setup(feet)[3]	Storm Type
02/17/06	98	1.86	Extra-tropical
01/18/12	63	1.56	Extra-tropical
02/01/02	63	1.48	Extra-tropical
12/23/04	60	1.36	Extra-tropical
01/09/08	65	1.33	Extra-tropical
09/15/08	57	1.24	Extra-tropical
01/30/08	61	1.22	Extra-tropical
11/26/10	61	1.15	Extra-tropical
03/10/02	60	1.12	Extra-tropical
12/28/08	65	1.09	Extra-tropical
11/27/07	69	1.08	Extra-tropical
12/02/06	59	1.08	Extra-tropical
11/13/03	64	1.05	Extra-tropical
09/29/05	60	1.05	Extra-tropical
01/27/99	n/a	1.03	n/a
02/25/12	n/a	1.01	n/a
01/29/12	n/a	1.00	n/a
11/17/10	78	1.00	Extra-tropical
11/12/98	54	0.93	Extra-tropical
01/06/14	52	0.92	Extra-tropical

Note the setup for storms duplicated in both the six-minute and hourly summaries may differ slightly due to differences in the sampling frequency of the raw data.

[1] Due to the path of extra-tropical cyclones, top surges are generated at Cape Vincent, NY. Setup values in this table are from the Cape Vincent, NY gage.
[2] "n/a" indicates event is not present in the NOAA Storm Database
[3] Setup refers to the rise in water level above normal level, whereas setdown refers to the fall of water below the normal level at the upwind side of a basin (Danard, 2003).

Table 3-10: Top 20 Wave Events at Station 91037 on Lake Ontario (USACE, 2014)

Rank	Date	Max Wave Height (feet)	Wind Speed (MPH)[1]	Wind Direction (Deg.)[2]
1	4/1979	26.74	56.22	270
2	11/2003	26.51	55.10	270
3	12/2000	25.53	59.14	268
4	2/2002	23.95	54.66	280
5	2/2006	23.92	54.21	276
6	10/2003	23.79	55.10	282
7	1/2012	23.13	50.18	276
8	10/1980	23.00	54.43	260
9	2/2012	22.44	49.50	274
10	2/2001	22.25	49.50	266
11	1/1985	21.82	51.07	254
12	11/1990	21.79	47.94	276
13	10/2011	21.13	43.68	261
14	12/1992	21.00	46.82	266
15	12/1985	20.74	47.94	275
16	12/1991	20.60	47.26	266
17	10/2006	20.57	48.38	266
18	3/2002	20.51	49.50	253
19	1/1982	20.44	46.59	267
20	1/2008	20.34	46.37	279

[1] Equivalent Neutral Stable Marine Exposure 10-m Wind Speed (mph)
[2] Wind direction measured clockwise from True North; indicates direction wind is coming from (USACE, 2014)

Table 3-11: Predicted PMWS Pressure, Wind Speed, and Wind Direction on Lake Ontario (Resio et al, 2008)

	Z1				Z2				Z3				
Time (hrs)	P1 (mb)	S1 (mph)	S1 (kph)	D1 (deg)	P2 (mb)	S2 (mph)	S2 (kph)	D2 (deg)	P3 (mb)	S3 (mph)	S3 (kph)	D3 (deg)	P4 (mb)
0	971	50	81	120	973	60	96	130	977	44	72	130	979
1	969	52	84	110	972	49	80	110	975	46	74	110	977
2	967	55	89	100	970	49	79	100	973	46	74	90	975
3	965	51	81	110	968	50	80	110	971	47	75	100	973
4	964	44	71	130	966	50	80	120	969	48	78	120	971
5	962	41	66	130	965	47	75	120	967	45	73	110	969
6	961	43	69	110	963	42	68	110	966	44	70	100	967
7	959	45	73	110	962	42	68	110	964	38	60	100	966
8	958	44	71	110	960	45	73	110	963	37	60	110	964
9	956	44	71	100	958	46	74	110	961	39	62	110	963
10	954	46	74	90	957	47	76	110	960	41	66	110	961
11	953	37	60	120	955	48	77	140	958	40	64	140	960
12	952	29	47	140	954	46	73	140	956	41	66	160	958
13	951	27	43	130	953	39	62	160	955	43	69	160	957
14	951	25	40	210	952	28	44	190	954	36	58	180	955
15	951	34	54	190	951	34	55	185	953	27	43	180	954
16	954	58	94	300	951	36	57	190	953	28	45	190	953
17	958	76	122	290	953	36	58	280	952	30	49	190	953
18	961	100	161	300	956	66	106	300	952	47	76	200	950
19	965	95	152	300	960	100	161	300	954	94	151	290	950
20	968	94	152	300	963	83	134	300	958	100	161	290	954
21	971	89	143	300	966	87	141	300	961	84	135	290	958
22	974	81	130	300	970	90	145	300	964	82	131	300	961
23	976	73	117	300	972	88	142	300	967	83	134	300	964
24	978	64	103	300	975	75	121	300	971	84	136	300	967
25	980	56	90	290	977	67	108	290	973	65	104	290	971
26	982	52	84	290	979	62	100	290	976	62	99	290	973
27	983	44	71	300	981	58	93	290	978	58	94	290	975
28	985	39	62	300	983	49	79	300	980	57	91	300	978
29	986	38	61	300	984	38	61	300	982	52	84	300	980
30	987	34	54	300	986	38	62	300	983	36	58	300	982
31	988	30	49	310	987	37	59	300	985	35	56	300	983
32	989	29	46	330	988	29	47	310	986	36	58	300	985
33	990	28	46	350	989	29	47	325	987	27	43	300	986
34	991	26	41	340	990	28	45	320	988	24	39	300	987

	Z1				Z2				Z3				
Time (hrs)	**P1 (mb)**	**S1 (mph)**	**S1 (kph)**	**D1 (deg)**	**P2 (mb)**	**S2 (mph)**	**S2 (kph)**	**D2 (deg)**	**P3 (mb)**	**S3 (mph)**	**S3 (kph)**	**D3 (deg)**	**P4 (mb)**
35	992	23	38	340	990	28	44	340	989	24	38	320	988
36	992	23	38	340	991	24	39	340	990	22	35	320	989

Key: P = Pressure, S = 10-meter Wind Speed, D = Direction wind is blowing from (degrees). Z1, Z2, and Z3 indicate zone of Lake Ontario in Figure 3-38

Table 3-12: SSPP Surge Sensitivity Results

Wind Direction (degrees)	Wind Speed (mph)	Surge Height at JAF (feet)	Surge Elevation (feet; IGLD85)	Surge Elevation (feet; USLS35)
300	100	4.5	251.8	252.5
290	100	4.7	252.0	252.7
280	100	4.8	252.1	252.8
270	100	4.7	252.0	252.7
260	100	4.7	252.0	252.7
250	100	4.5	251.8	252.5

Table 3-13: SSPP Output Points Used for Verification on Lake Ontario

NOAA Water Level Station	NOAA SSPP Output Point
Station 9052076: Olcott, NY	2
Station 9052058: Rochester, NY	6
Station 9052030: Oswego, NY	10

Figure 3-22: Physical Characteristics of Lake Ontario

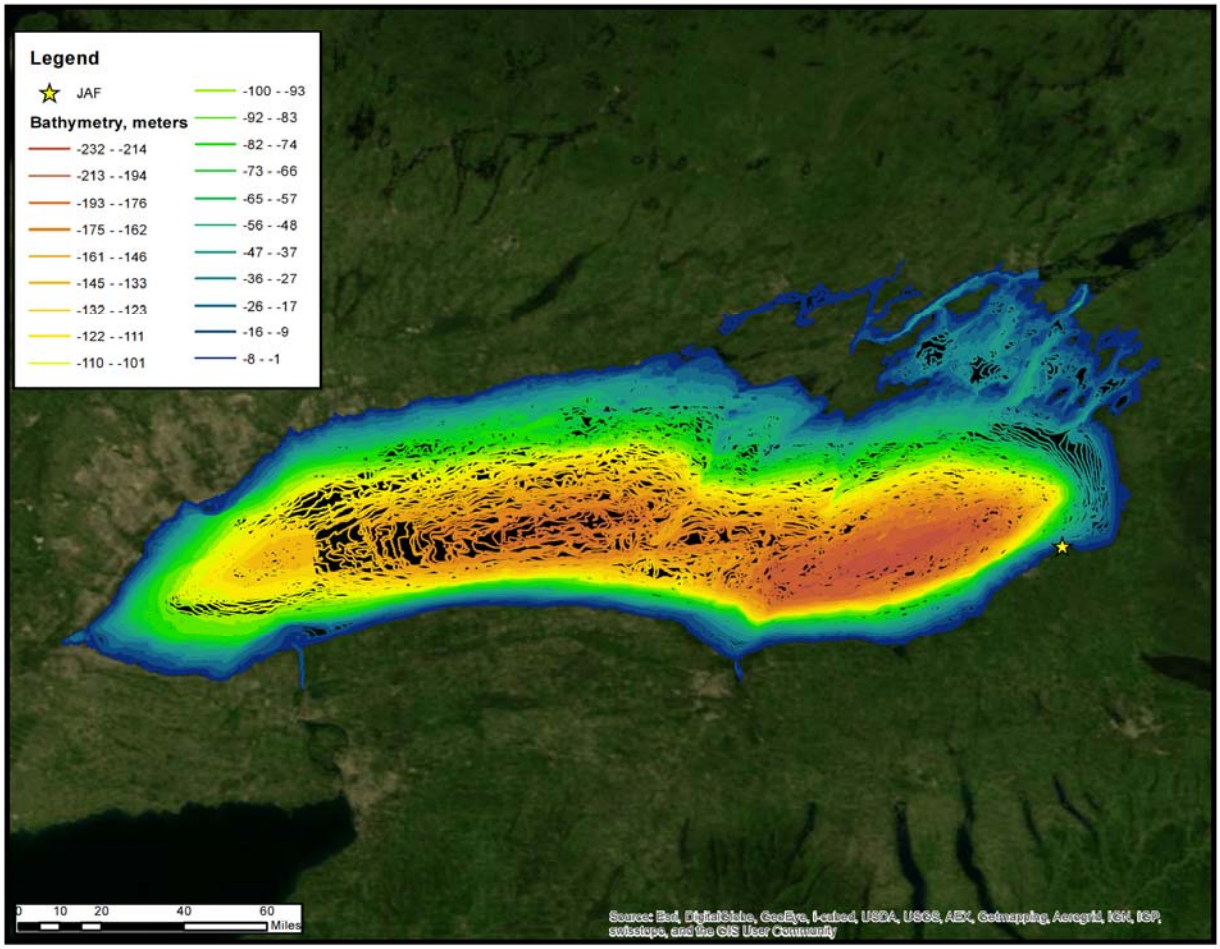


Figure 3-23: Site Locus[1]

[1] Any illegible text in this figure is not pertinent to the technical purposes of this document.

Figure 3-24: NOAA Water Level Stations on Lake Ontario (NOAA, 2014c)

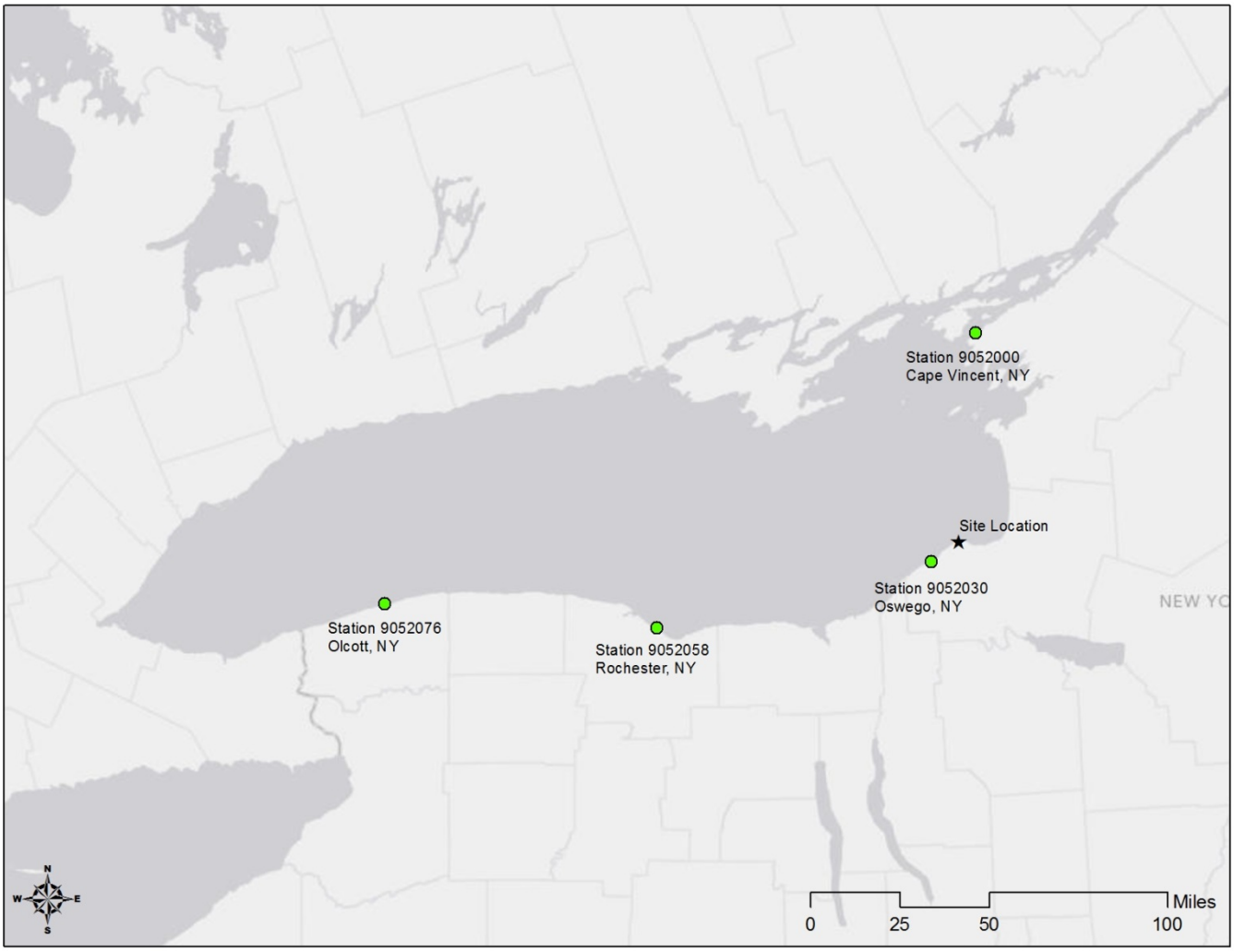
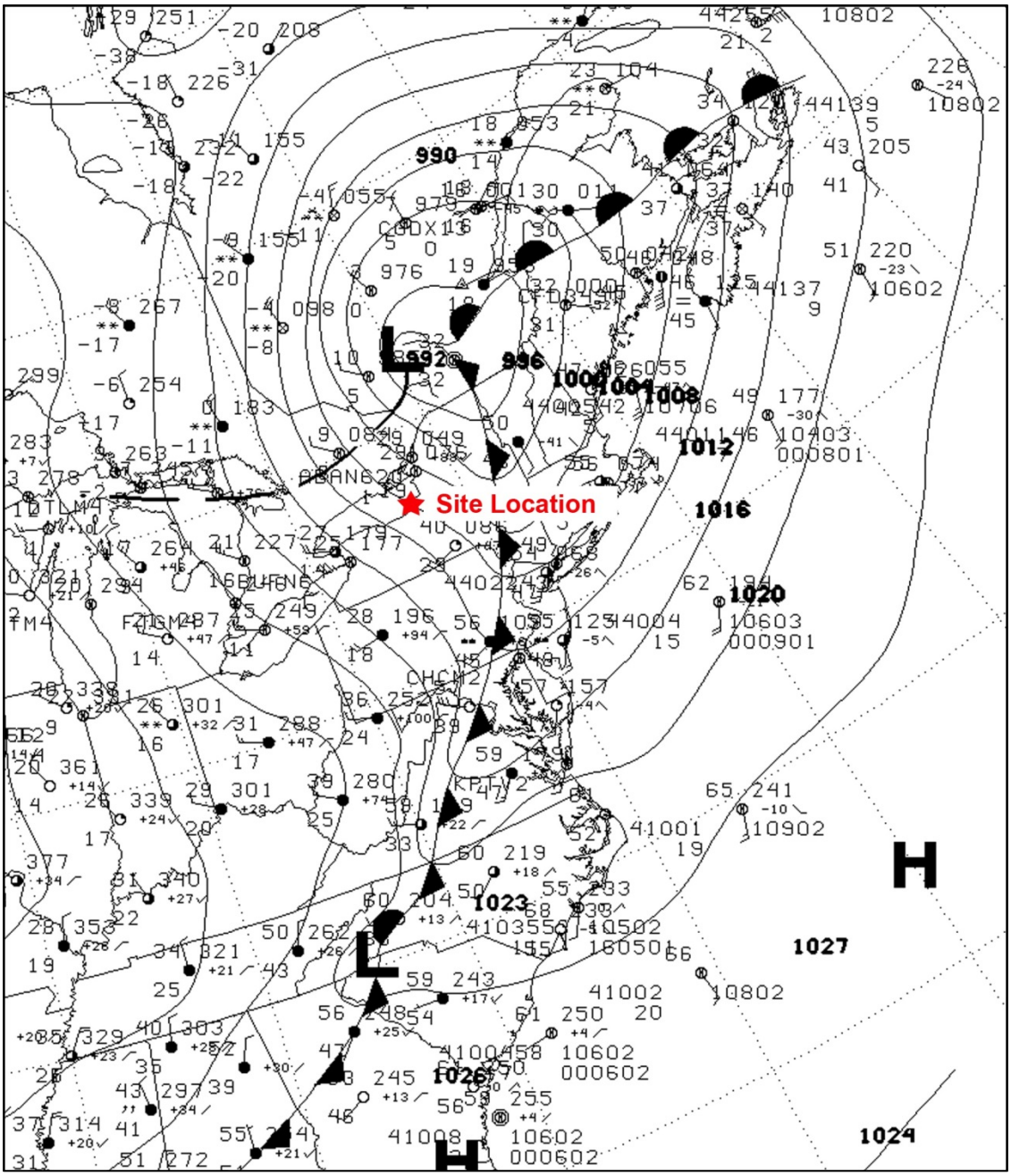


Figure 3-25: Surface Analysis Map for 17 February 2006 at 15:00 GMT (NOAA, 2014d)[1]



[1] Any illegible text in this figure is not pertinent to the technical purposes of this document.

Figure 3-26: Probable Maximum Windstorm Track

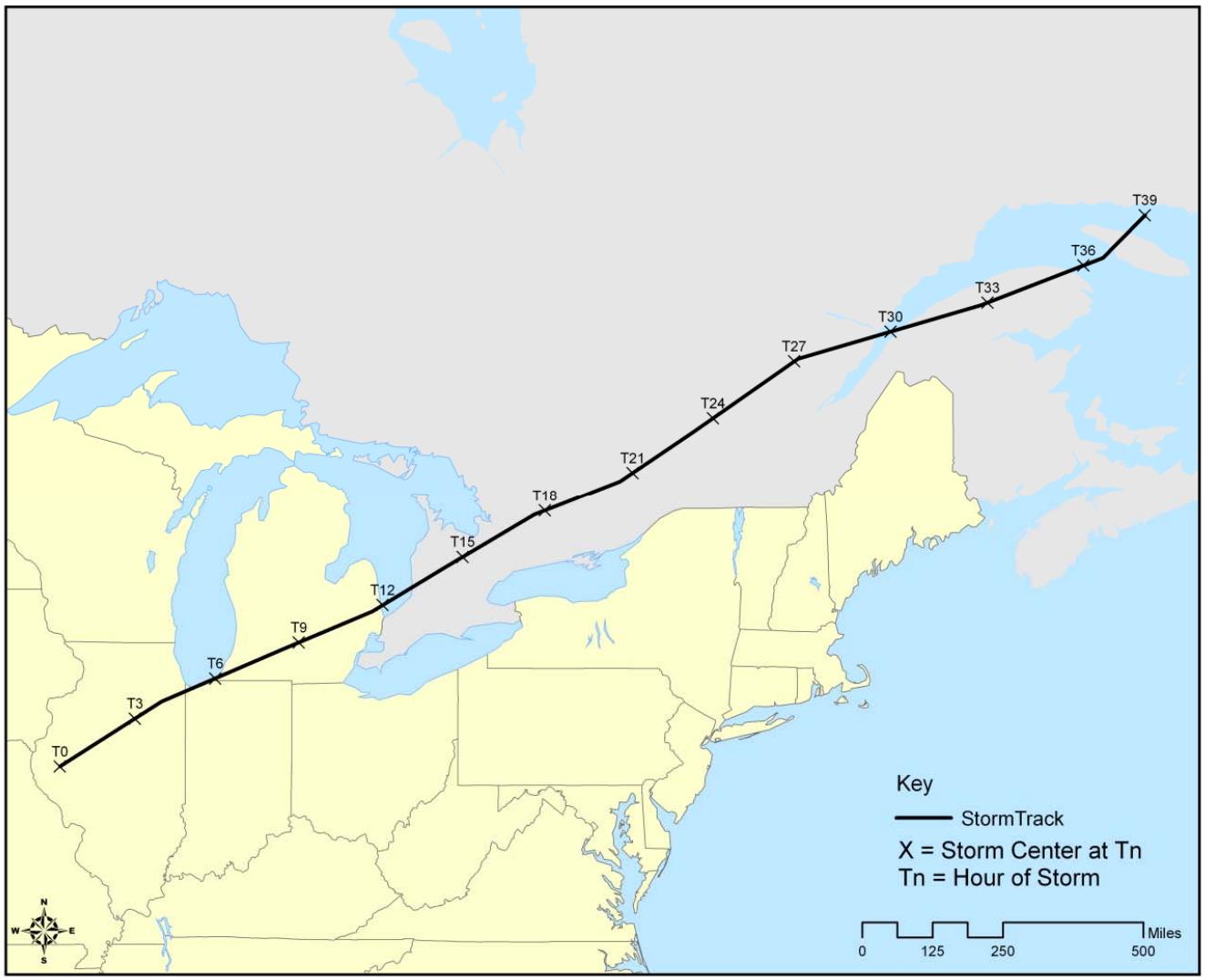


Figure 3-27: Zones for Probable Maximum Wind Storm on Lake Ontario (Resio et al, 2008)

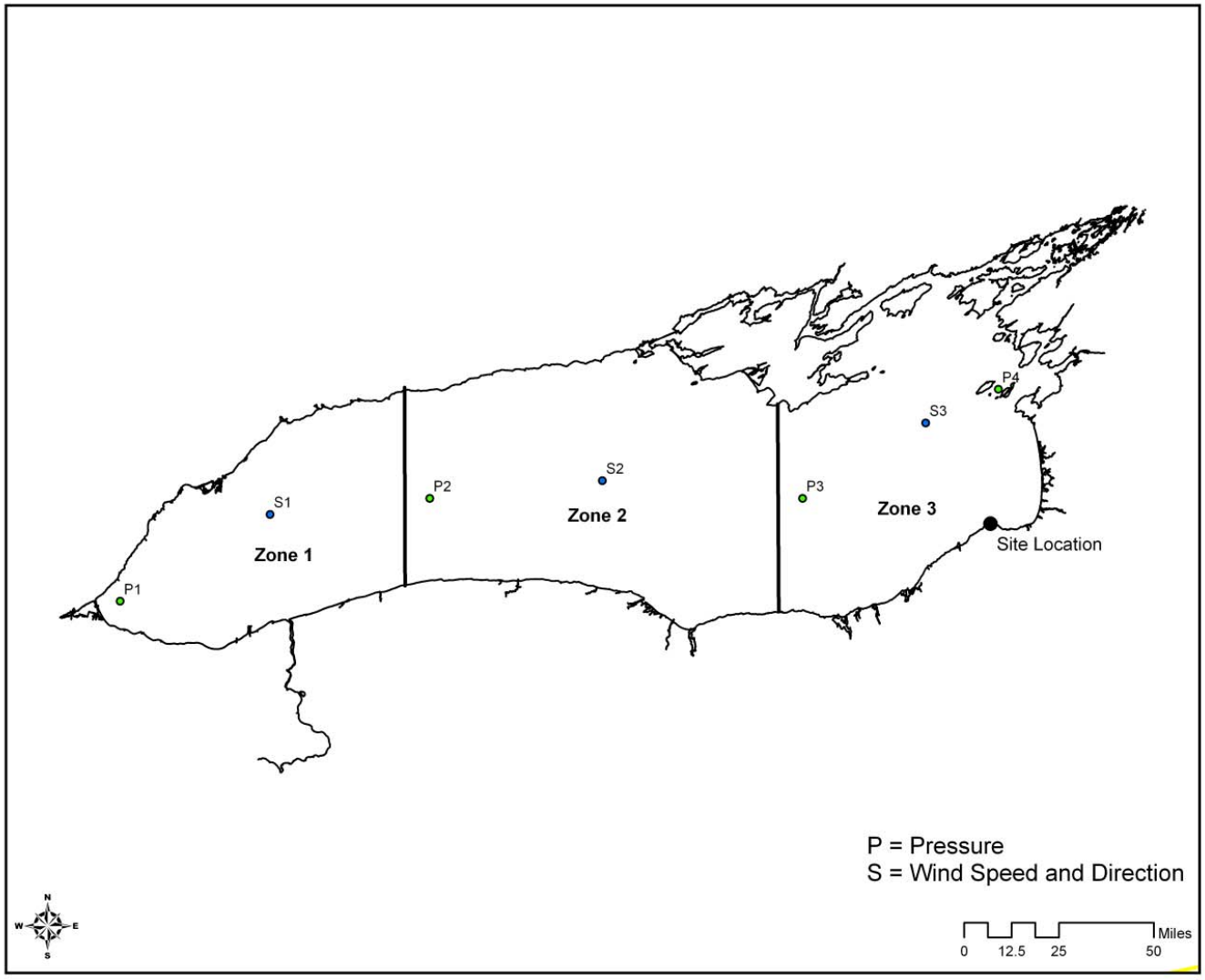
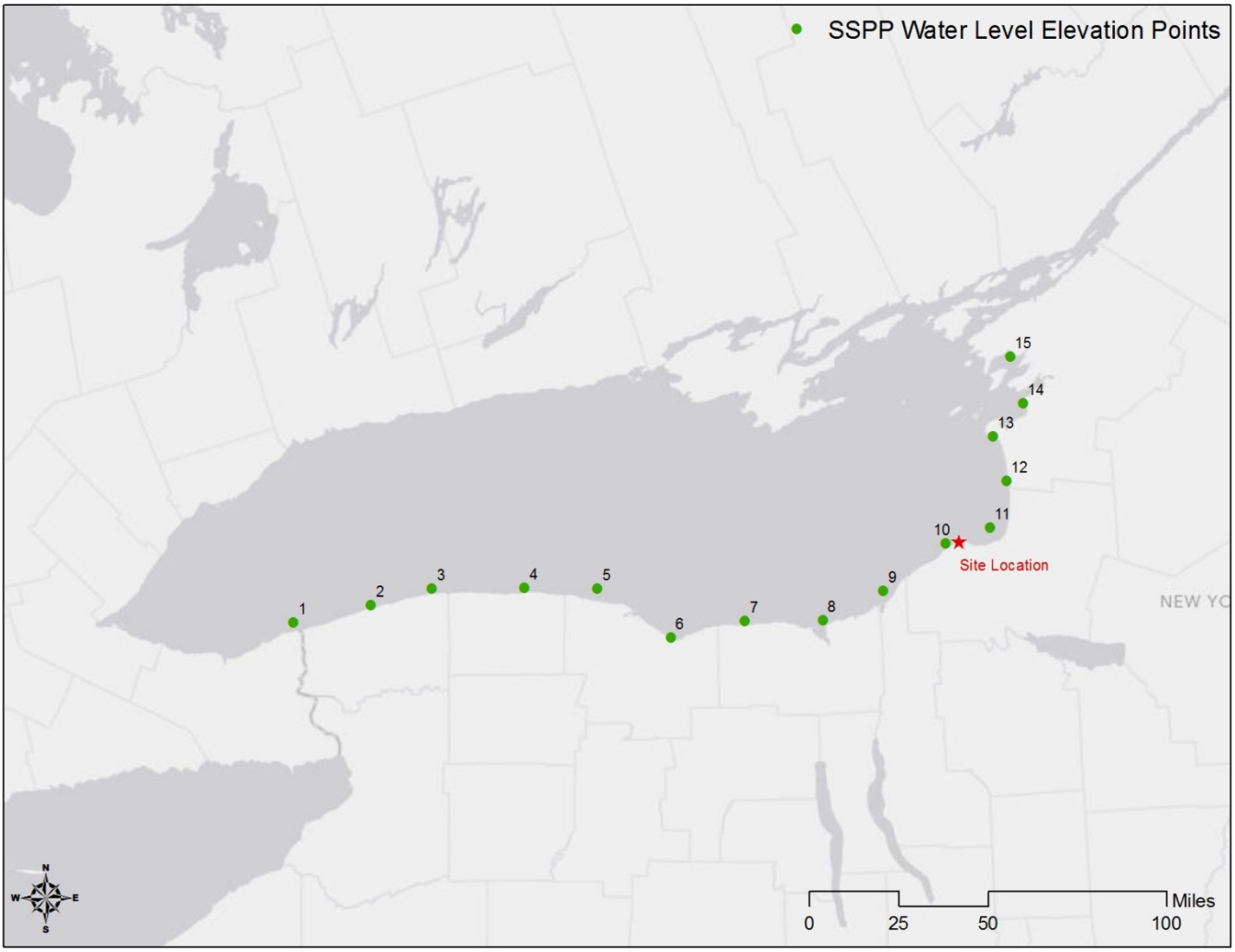
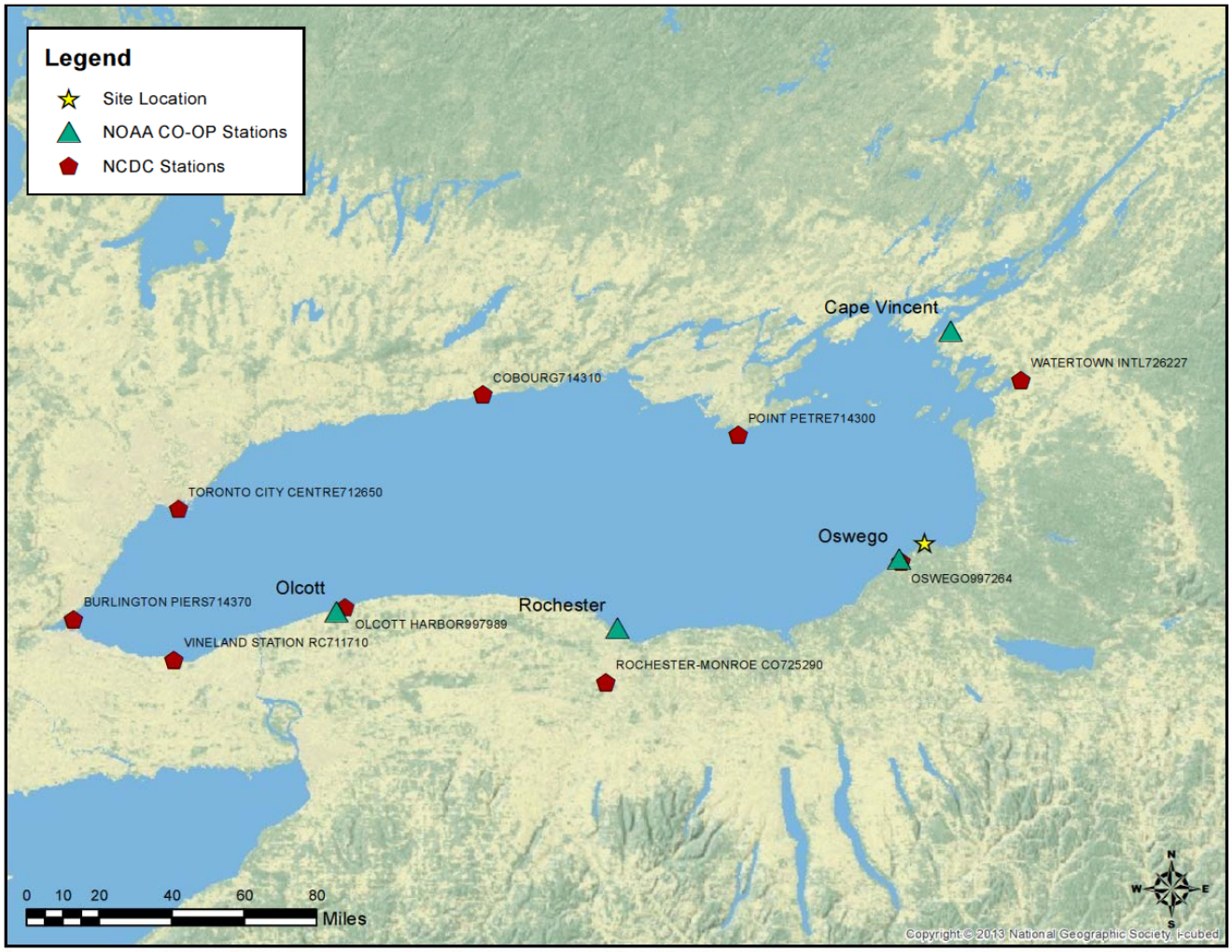


Figure 3-28: NOAA SSPP Water Level Points on Lake Ontario (Schwab et al, 1987)[1]



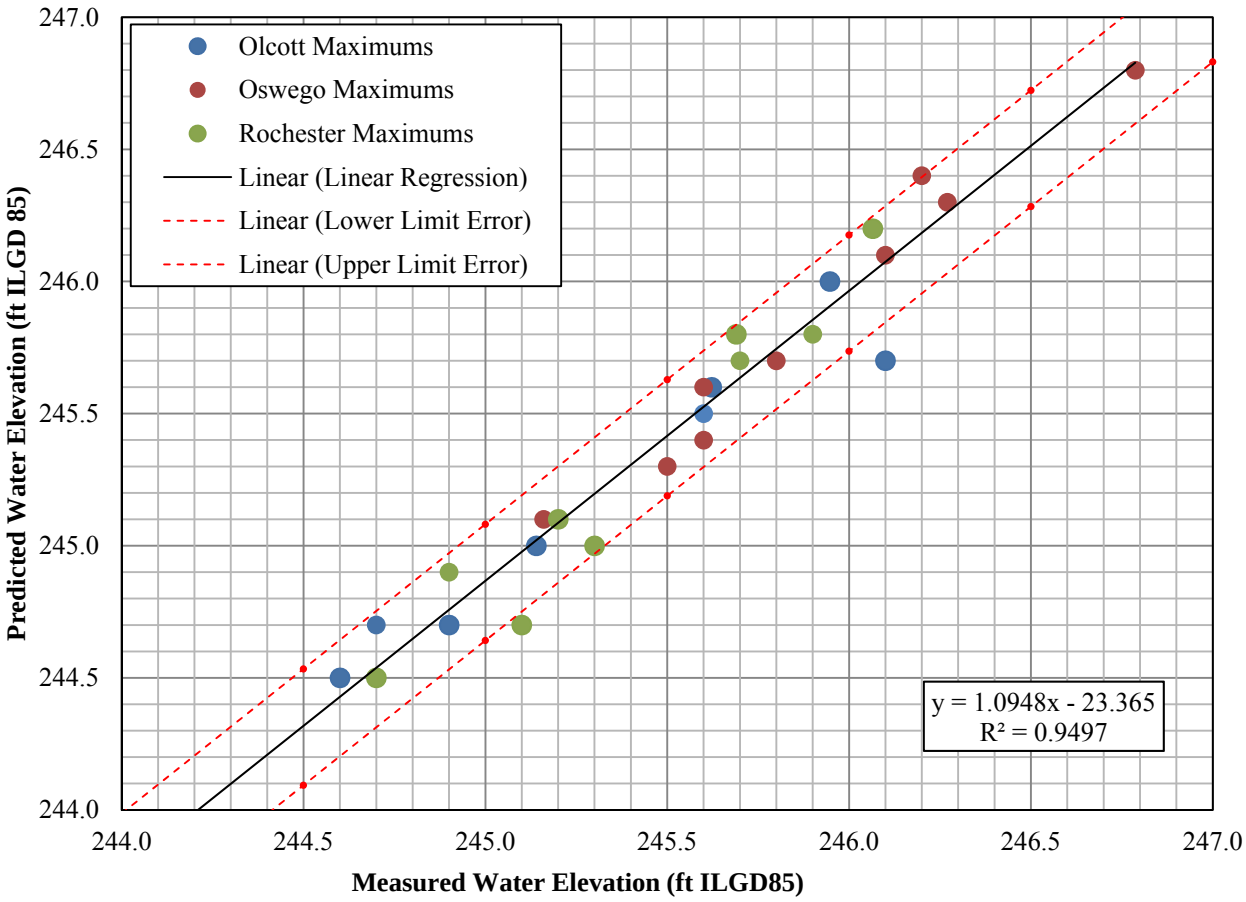
[1] Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-29: Representative NCDC and NOAA Stations for Lake Ontario (NOAA, 2014b and NOAA 2014c)[1]



[1] Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-30: SSPP Model Verification Results



3.5 Seiche

This section addresses the potential for flooding at JAF due to the Probable Maximum Seiche (PMS). Seiches are long period standing waves in enclosed or partially enclosed bodies of water (Scheffner, 2008, Melby et al., 2012 and FEMA, 2014). Seiches are initiated by external forcing, generally of an atmospheric, tsunami, or seismic nature. Cessation of the external force causes periodic water level fluctuations as the standing wave reflects from the ends of the lake (Melby et al., 2012). Seiches can occur in Lake Ontario, resulting in elevated still water elevations in the vicinity of JAF.

This section summarizes the PMS evaluation performed in AREVA Calculation No. 32-9227059-000 (AREVA, 2014a).

3.5.1 Method

A seiche is an oscillation of the water surface in an enclosed or semi-enclosed body of water initiated by some external force (NRC, 2011). Enclosed basins such as cooling reservoirs, ponds or lakes are not present at JAF; therefore, an evaluation of these types of basins is not required. However, due to the coastal setting of JAF on the shore of Lake Ontario, evaluation of seiches occurring on Lake Ontario and their potential impact to JAF was performed. This report section addresses seiches due to meteorological external forcing. Seiches can also result from lake excitations due to earthquakes and landslides. The magnitude (i.e. highest water surface elevation) of seiches caused by landslides cannot exceed that caused by the initial event. Due to the large size of the lake which precludes resonance, the same is true for earthquake induced seiches. Therefore such earthquake and landslide induced seiches are not further discussed in this section (see Section 3.6 Tsunamis for discussion of these types of events).

The HHA approach described in NUREG/CR-7046 (NRC, 2011) was used to determine whether a seiche in Lake Ontario can result in significant flooding at JAF. This approach initially involves the determination of the natural period of the lake, evaluation of the natural oscillation periods of the external forces, such as tropical and extra-tropical storms, comparison of the periods to determine if resonance is possible, and review of water level data to evaluate potential seiche heights. Per the HHA, more detailed analysis (including numerical models) of seiches may be required if resonance is expected and if there is little margin between the site grade and the seiche elevation.

The seiche evaluation methodology includes:

- Determination of the natural period of the Lake Ontario based on a literature review of published statistical and numerical analyses of Lake Ontario;
- Confirmation of the fundamental modes[1] at Oswego by determination of the natural periods of the lake based on a statistical analysis of water level data;
- Comparison of calculated lake periods to observed seiche periods;
- Statistical analysis of wind data to identify the periods of meteorological external forcing events (e.g., extra-tropical storms) and comparison of the external forcing and lake periods to determine if resonance is expected; and
- Evaluation of potential seiche heights at JAF based on review of recorded oscillation water levels and the predicted storm surge heights.

[1] A normal mode of oscillation occurs when the water surface of the lake moves sinusoidally with the same frequency and fixed phase relation. When motion occurs at a normal mode, this can be characterized by resonance (Hamblin, 1982)

3.5.2 Results

3.5.2.1 Determination of the Natural Period of Lake Ontario

The natural period of a lake primarily depends on geometry and depth of the basin. It is independent of the external forcing mechanism. Research by Hamblin, Li and Simpson indicate that the natural period of oscillation for Lake Ontario is approximately five hours (Hamblin, 1982, Li et al., 1975 and Simpson et al., 1964). Modeling results of Rao and Schwab presented in the USACE CEM (Scheffner, 2008) indicates the periods of the six lowest modes in Lake Ontario are 5.11, 3.11, 2.13, 1.87, 1.78 and 1.46 hours for modes 1 through 6, respectively.

3.5.2.2 Confirmation of the Natural Period of Lake Ontario

To confirm the fundamental oscillation period, also known as the fundamental mode, on Lake Ontario near Oswego, a spectral analysis of the NOAA six-minute water level data at Oswego, New York (Station 9052030) was performed. The location of the Oswego gage is shown in Figure 3-31 along with other NOAA water level gage stations. The fundamental mode is the mode with the lowest frequency and thus the longest period (Rabinovich, 2009). The spectral analysis was carried out on the longest continuous portion of the water level data (7153 days). The analysis was performed by applying a discreet FFT with no normalization of the output. The results of the spectral analysis are presented in Figure 3-32 and Figure 3-33. The bottom x-axis shows the frequencies present in the records; the top x-axis shows the corresponding period. The y-axis shows the relative power of each spectral peak. A spectral peak corresponds to a likely fundamental oscillation period. Figure 3-32 illustrates the results of the spectral analysis for periods from 2 hours to 365 days, the four lowest periods (5.11, 3.11, 2.13 and 1.87 hours) are highlighted with vertical bars. Figure 3-33 illustrates the results of the spectral analysis for periods from 0 hours to 24 hours, the four lowest periods (5.11, 3.11, 2.13 and 1.87 hours) are highlighted with vertical bars. Periods below one hour are not of concern, because only the 5.11, 3.11, 2.13 and 1.87 hour periods of oscillation can be confirmed with certainty from field data (Hamblin, 1982).

The annual variation of lake levels, indicated by the spectral peak at 365 days in Figure 3-32, indicates that the annual variation clearly overwhelms short-term variations such as surges and seiches. The annual variation is due to the annual hydrologic cycle and regulatory releases of water to control Lake Ontario water levels, and causes higher water levels in the spring and early summer with the highest water levels typically occurring during June on Lake Ontario (Wilcox et al., 2007).

The approximately 12 and 24 hour periods also have strong spectral peaks as shown in Figure 3-32. While the Great Lakes are considered non-tidal, gravitational forces of the sun and moon do impact the lakes semi-diurnally causing fluctuations of less than two inches at spring (highest) tide (NOAA, 2014a). The 12 and 24 hour periods are likely due to some combination of gravitational forces and daily variations in wind and barometric pressure (Wilcox et al., 2007 and Boegman et al., 2001).

As illustrated in Figure 3-32 and Figure 3-33, the calculated spectral peak at approximately five hours is consistent with the fundamental period presented in the literature.

3.5.2.3 Evaluation Observed Oscillation Periods

External forcing consisting of moving disturbances, such as wind storms and wind squalls, initially cause storm surges (due to wind set-up at one end of the lake and set-down at the other end), followed by a series of oscillations (standing waves) which can be both forced (during the period of strong winds over the lake) and free (once the storm has passed). On Lake Ontario, the recorded seiches with the largest amplitudes are caused by long period, non-convective extra-tropical storms with winds blowing parallel to the long axis of the lake causing a setup at the downwind end of the lake and a corresponding water level setdown at the upwind end of the lake (Scheffner, 2008; FEMA, 2014 and Rabinovich, 2009). These events result in the largest storm surges recorded in the lake. Cessation of the external force causes periodic water level fluctuations as the standing wave reflects from the ends of the lake (Melby et al., 2012).

When the frequency of the disturbance is different than the fundamental frequencies of the lake, the amplitude of the seiches decay fairly rapidly (over a period of a few days) due to bottom friction as the seiche oscillates between opposing shorelines. Water level data associated with storms that have resulted in the largest surges and seiches at Oswego illustrate this behavior.

Water level plots were prepared from the NOAA six-minute water level measurements at the Oswego and Cape Vincent gages (NOAA, 2014b and NOAA, 2014c) for nine storms that caused significant storm surges at the Oswego water level station between 2001 and 2012. The water level plots for two representative storms are presented in Figure 3-34 and Figure 3-35. Figure 3-35 presents water level data for the February 17, 2006 storm which resulted in one of the largest recorded storm surges at Oswego. As shown on this figure, an initial storm surge is observed at the Oswego and St. Vincent stations, which is followed by a series of oscillating waves occurring at the fundamental period of the lake (about every 5 hours). However, the amplitude of the oscillating waves are less than the initial storm surge and decrease over time. The other nine storms exhibit similar behavior.

3.5.2.4 Evaluation of Lake Ontario Forcing Events

The periods of potential seiche forcing events, i.e. wind storms, were further investigated by a frequency analysis of wind data on Lake Ontario. Surface wind data at the Rochester Airport (ROC) were compiled from 1973 to 2014 (NOAA, 2014d). The ROC wind data is the longest and most complete wind record on the south shore of Lake Ontario. The ROC data provides 2-minute duration wind speeds which are sampled at a minimum of 1 hour intervals. A frequency analysis of the wind data was performed by applying a FFT to the wind speed time series data (similar to the frequency analysis of the water levels), to identify the fundamental frequencies in the wind record.

The results of the statistical analysis are presented in Figure 3-36 and Figure 3-37. Peaks in the power spectrum for the wind speed power spectra can be found at approximately 12 and 24 hours which correlate to similar peaks in the water level power spectra at those periods (Figure 3-32 and Figure 3-33). These periods are greater than the higher order seiche periods of Lake Ontario and therefore, are not associated with seiches. Peaks associated with wind forcing at the three highest seiche periods at 5.1, 3.2 and 2.3 hours (Hamblin, 1982) of Lake Ontario are not present in the frequency analysis of the wind speed data (Figure 3-36 and Figure 3-37). The power spectrum analysis of wind data ends at a period of 2 hours, which is the highest frequency that makes up the composition of the signal (i.e. wind speed time series at its associated sampling frequency of one hour), and therefore, comparison to a seiche period less than 2 hours was not performed. The analysis of the data shows that principal wind forcing does not display a spectral peak at either the primary, secondary, or higher order seiche periods, precluding the likelihood that resonance will occur as a result of these wind disturbances.

The recorded seiches with the largest amplitudes on Lake Ontario are caused by long period, non-convective extra-tropical storms that track from west to east (or southwest to northeast) and have strong winds that blow out of the west to northwest, parallel to the long access of the lake and cause a setup at the east end of the lake and a corresponding water level set-down at the west end of the lake. Seiches could also occur in the vicinity of JAF due to storms that do not cause an initial storm surge at JAF (review of the water level data did not identify this condition associated with the highest recorded water levels at the Oswego station). For example, a tropical system tracking in a northerly direction across the lake could result in strong winds blowing from the east across the lake. The initial seiche response to that forcing will occur with a setup of water on the west side of the lake, followed by seiche oscillations travelling to the east, in alignment with the first normal mode of oscillation in Lake Ontario (see Figure 3-38 for orientation of the first normal mode in Lake Ontario). Analyses by Hamblin, including a spectral analysis of water level data and a numerical finite element model (Hamblin, 1982), show that the node of the primary mode is located near the center of the lake and the seiche response near Oswego (at the east end of the lake) is similar to that of Niagara (at the west end of the lake) as shown in Figure 3-38. While the mechanics of a seiche on Lake Ontario are not symmetrical due to variability in the lake bathymetry, the amplitudes at the western and eastern ends of the lake are not substantially different. The similarity between these

amplitudes indicates that forcing opposite to the predominant direction (e.g., from the east) will not cause significantly different seiche impacts than forcing from the predominant direction (e.g. from the west).

3.5.2.5 Evaluation of Potential Seiche Heights

Seiches of significant amplitude are not a dominant coastal hazard on Lake Ontario, because their occurrence is a result of the oscillating response to a storm surge. Resonance between the principal forcing wind events and the lake is not expected. Thus, seiche amplitudes are not expected to be greater than the initial storm surge and, therefore, are not expected to be the controlling flood event at JAF.

Table 3-14 presents the top surges heights on Lake Ontario for the 10 storms analyzed as part of the seiche evaluation. The two representative storms illustrated in Figure 3-34 and Figure 3-35 (February 17, 2006 and September 15, 2008). Surge heights are based on 6-minute water level measurement data from the NOAA water level stations on Lake Ontario.

The direction of the seiche motion (i.e. north to south, west to east) is not apparent from the water level plots because the water level gage is a stationary measurement instrument. However, the water level plots illustrate that the periods of oscillation are approximately 5 hours, as discussed in the literature and verified by the results of the power spectrum analysis. The estimated initial oscillation amplitudes were all less than the initial storm surge, with the subsequent oscillation amplitudes generally decreasing over time.

3.5.3 Conclusions

The following summarizes the results and conclusions:

1. Based on literature review, the fundamental modes of Lake Ontario are 5.11, 3.11, 2.13 and 1.87 hours. Periods below one hour are not of concern; only the 5.11, 3.11, 2.13 and 1.87 hour periods of oscillation can be confirmed with certainty from field data (Hamblin, 1982).

2. Statistical analysis of the 6-minute water level at Oswego, NY validates that the fundamental modes of Lake Ontario identified through literature review are 5.11, 3.11, 2.13 and 1.87 hours.

3. Statistical analysis of the hourly wind data at the Greater Rochester International Airport, NY did not indicate wind forcing that would resonate with the fundamental modes of Lake Ontario.

4. Analysis of 6-minute water level data at both Oswego, NY and Cape Vincent, NY indicates that seiche amplitudes are not expected to be greater than initial storm surge amplitudes.

5. Earthquake and landside induced seiches will not result in resonance and therefore are not expected to be greater than the initial rise in water level generated by the initial events.

No further analysis or modeling is required due to the direct observational evidence that potential seiches Lake Ontario will not be the controlling flooding event at JAF and will not impact SSCs important to safety.

3.5.4 References

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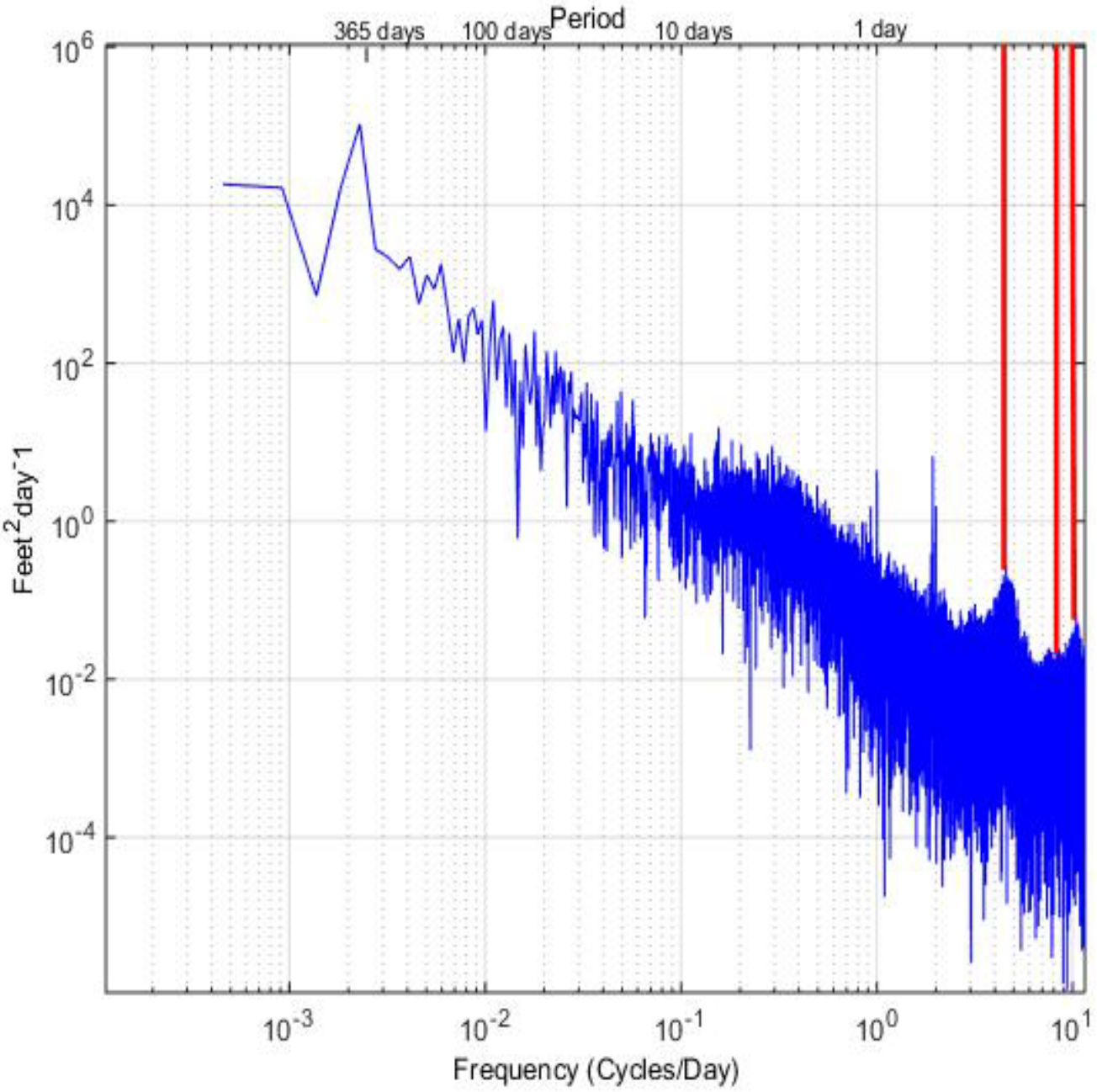
Table 3-14: Top Ten Surge Heights for Storms Recorded on Lake Ontario (6-minute Water Level Data) (AREVA, 2014b)

Date	Setup (feet)[1]
2/17/2006	**1.85**
1/18/2012	1.56
2/17/2000	1.54
2/1/2002	1.48
12/23/2004	1.40
1/9/2008	1.33
9/15/2008	**1.24**
1/30/2008	1.21
11/26/2010	1.15
3/10/2002	1.12

[1] Setup refers to the height above the still water level

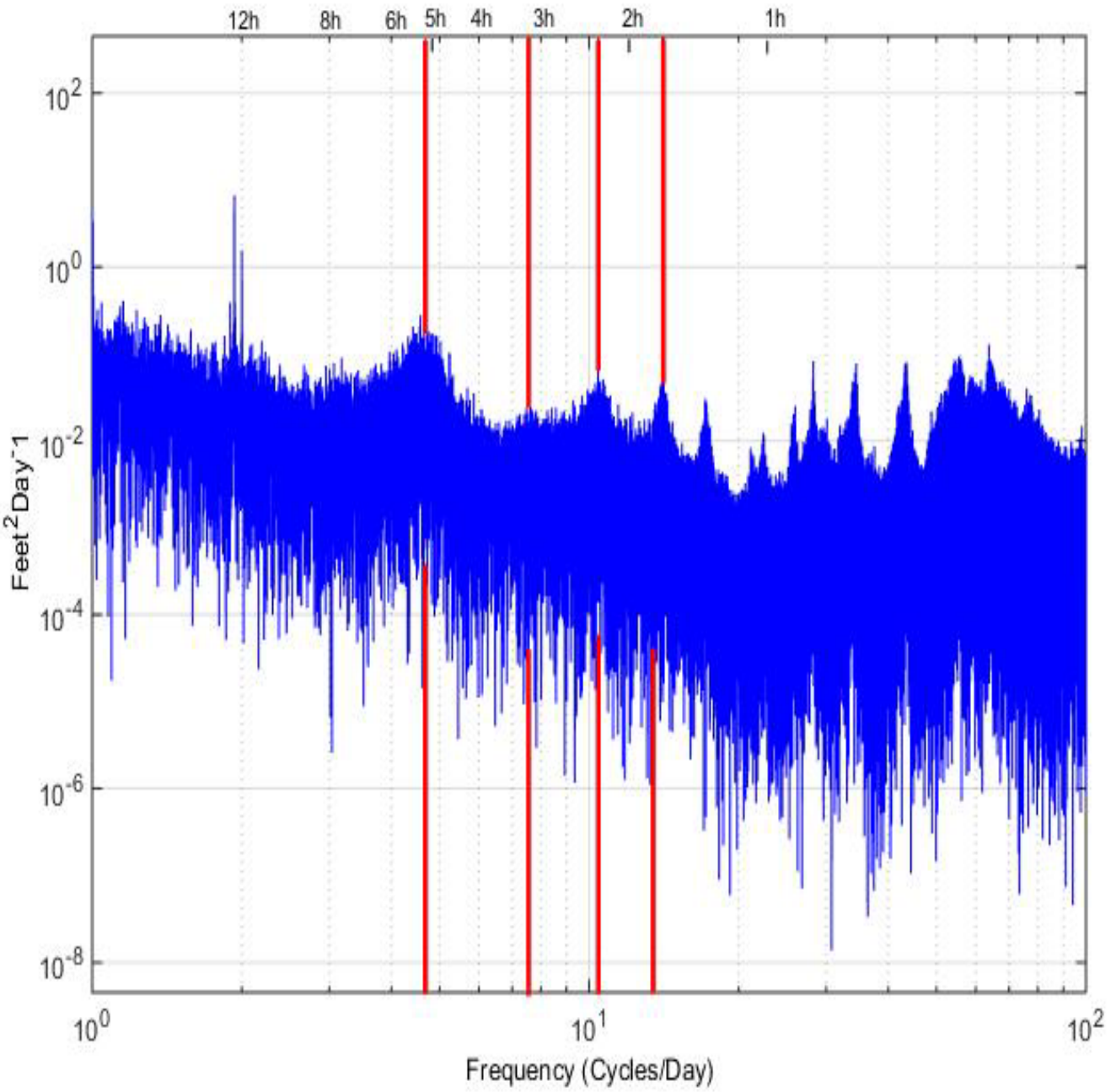
Figure 3-31: Site Location and NOAA Water Level Stations

Figure 3-32: Power Spectrum Analysis of Oswego, NY Water Levels for Periods from 2 Hours to 365 Days[12]



[1] Theoretical calculations performed by Hamblin indicate that seiches are most likely to occur with periods greater than one hour. Peaks below one hour are not of concern, because only the 5.11, 3.11, 2.13 and 1.87 hour periods of oscillation can be confirmed with certainty from field data (Hamblin, 1982).
[2] Red bars indicate fundamental modes of Lake Ontario.

Figure 3-33: Power Spectrum Analysis of Oswego, NY Water Levels for Periods from 0 Hours to 24 Hours[12]



[1] Theoretical calculations performed by Hamblin indicate that seiches are most likely to occur with periods greater than one hour. Peaks below one hour are not of concern, because only the 5.11, 3.11, 2.13 and 1.87 hour periods of oscillation can be confirmed with certainty from field data (Hamblin, 1982).
[2] Red bars indicate fundamental modes of Lake Ontario.

Figure 3-34: February 17, 2006 Storm Water Level Plot

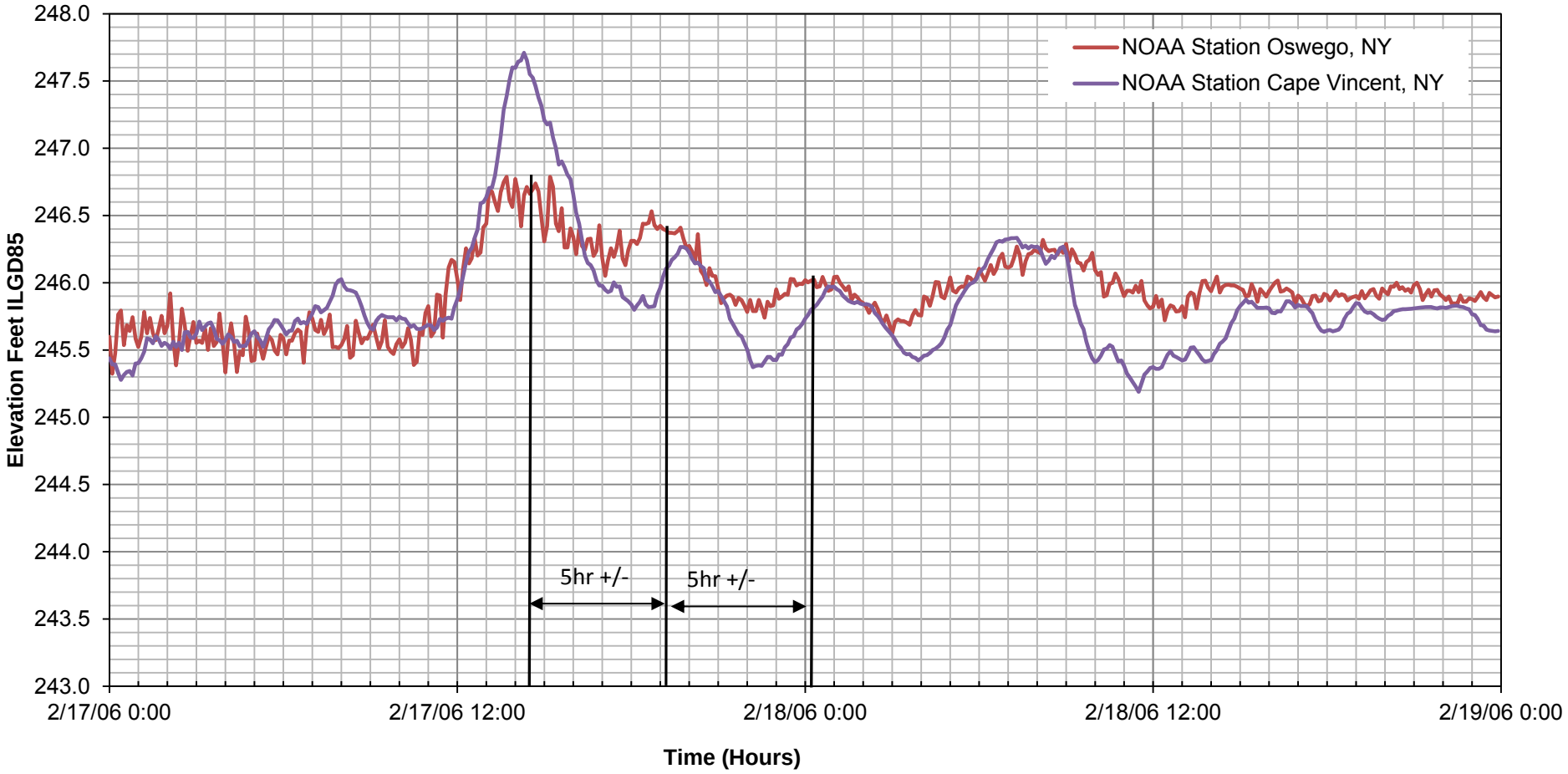


Figure 3-35: September 14-15, 2008 Storm Water Level Plot

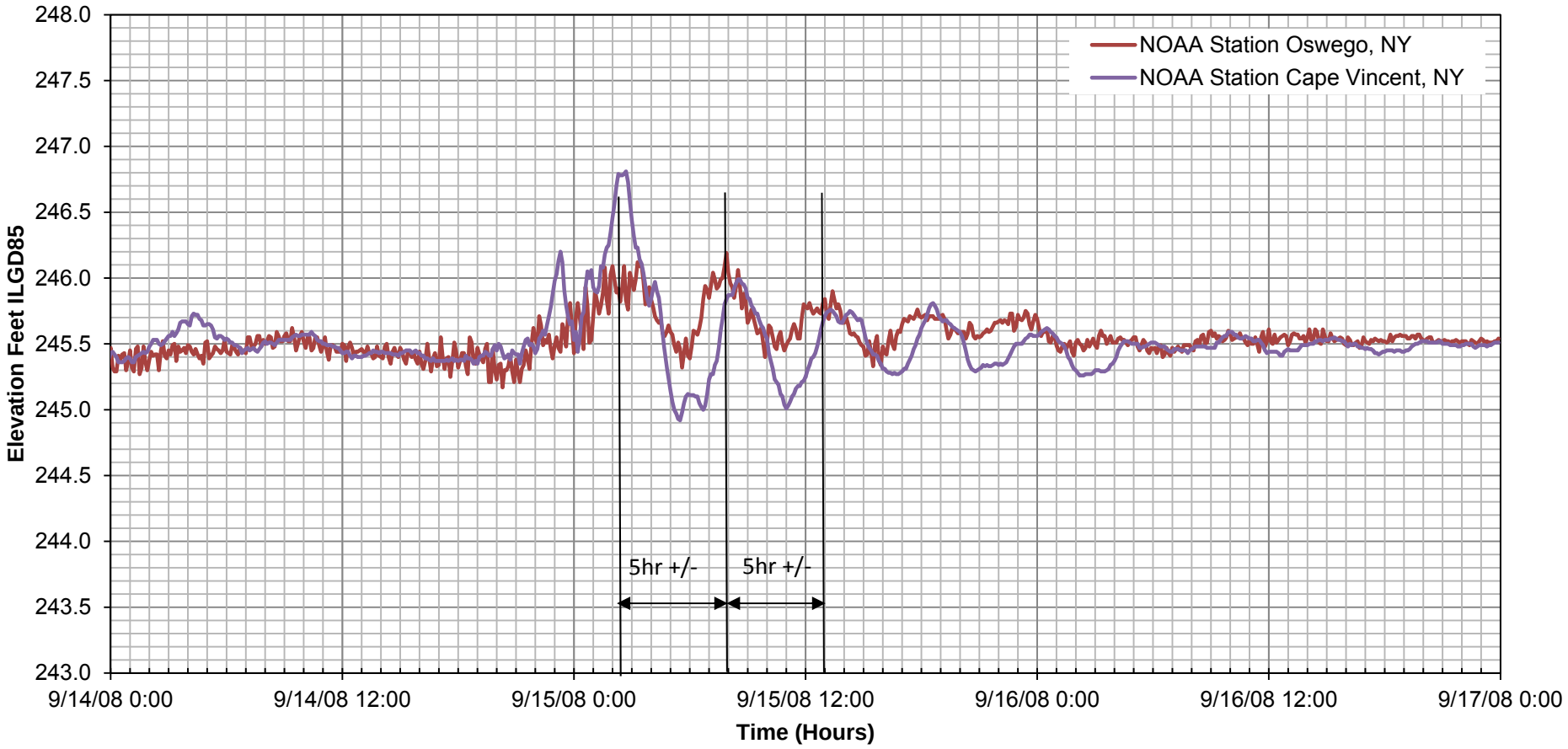
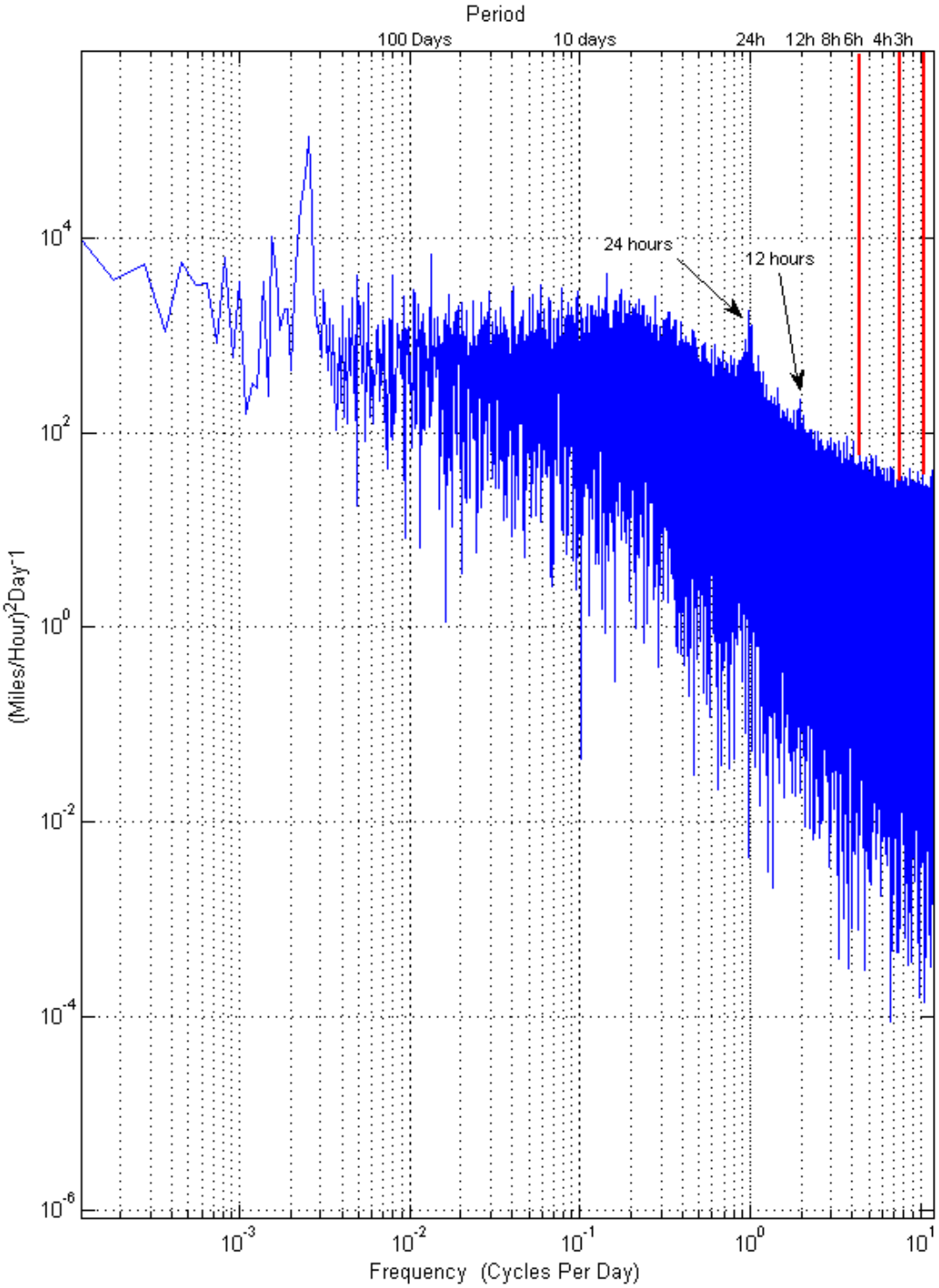
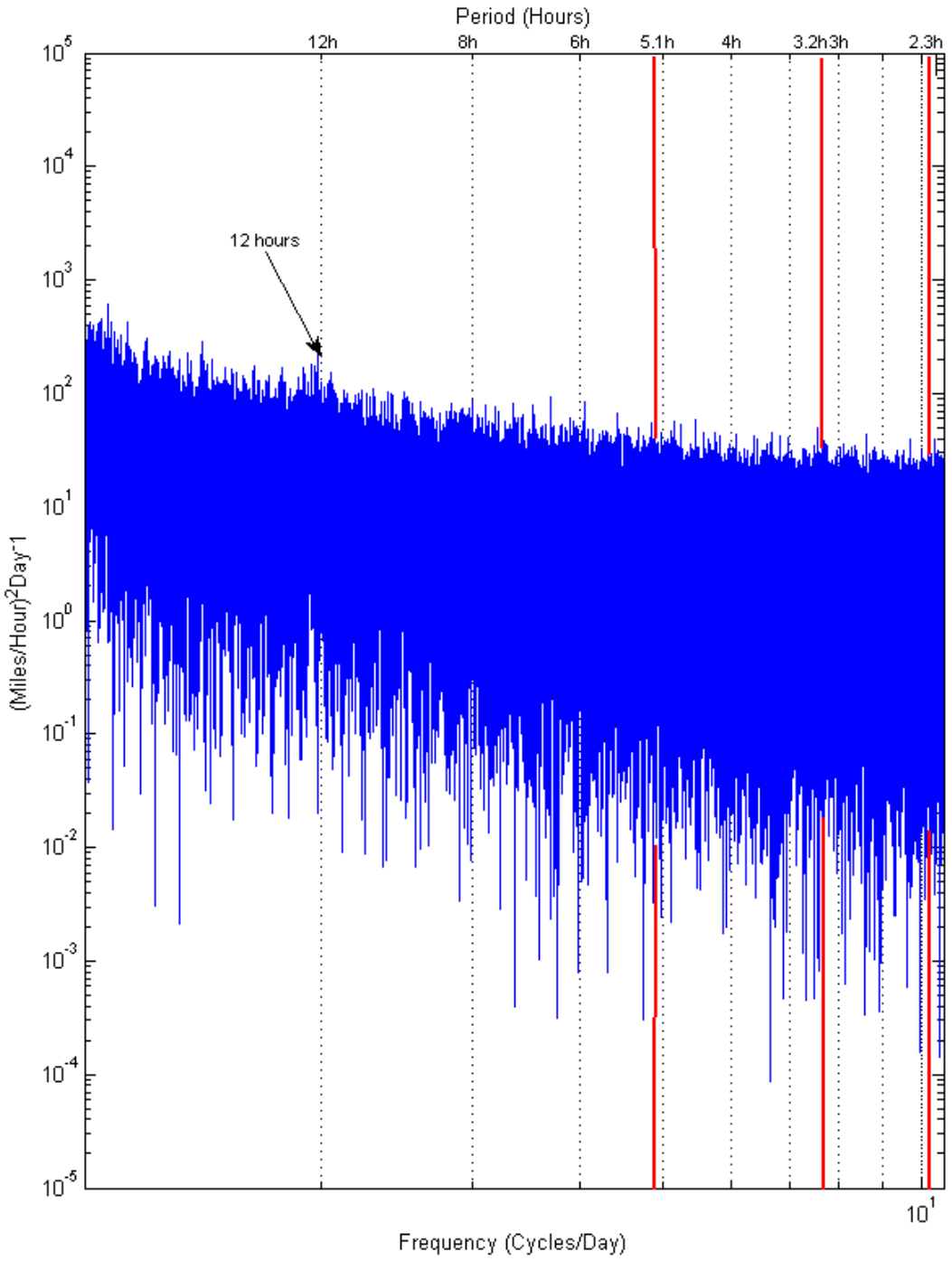


Figure 3-36: Power Spectrum Analysis of Rochester Airport, NY Wind Speeds for Periods from 2 Hours to 365 Days[1]



[1] Red bars indicate fundamental modes of Lake Ontario. Note that these modes are not present in the power spectral analysis of the wind data.

Figure 3-37: Power Spectrum Analysis of Rochester Airport, NY Wind Speeds for Periods from 2 Hours to 24 Hours[1]



[1] Red bars indicate fundamental modes of Lake Ontario. Note that these modes are not present in the power spectral analysis of the wind data.

Figure 3-38: Predicted Lake Ontario Seiche Phases and Amplitudes (Hamblin, 1982)

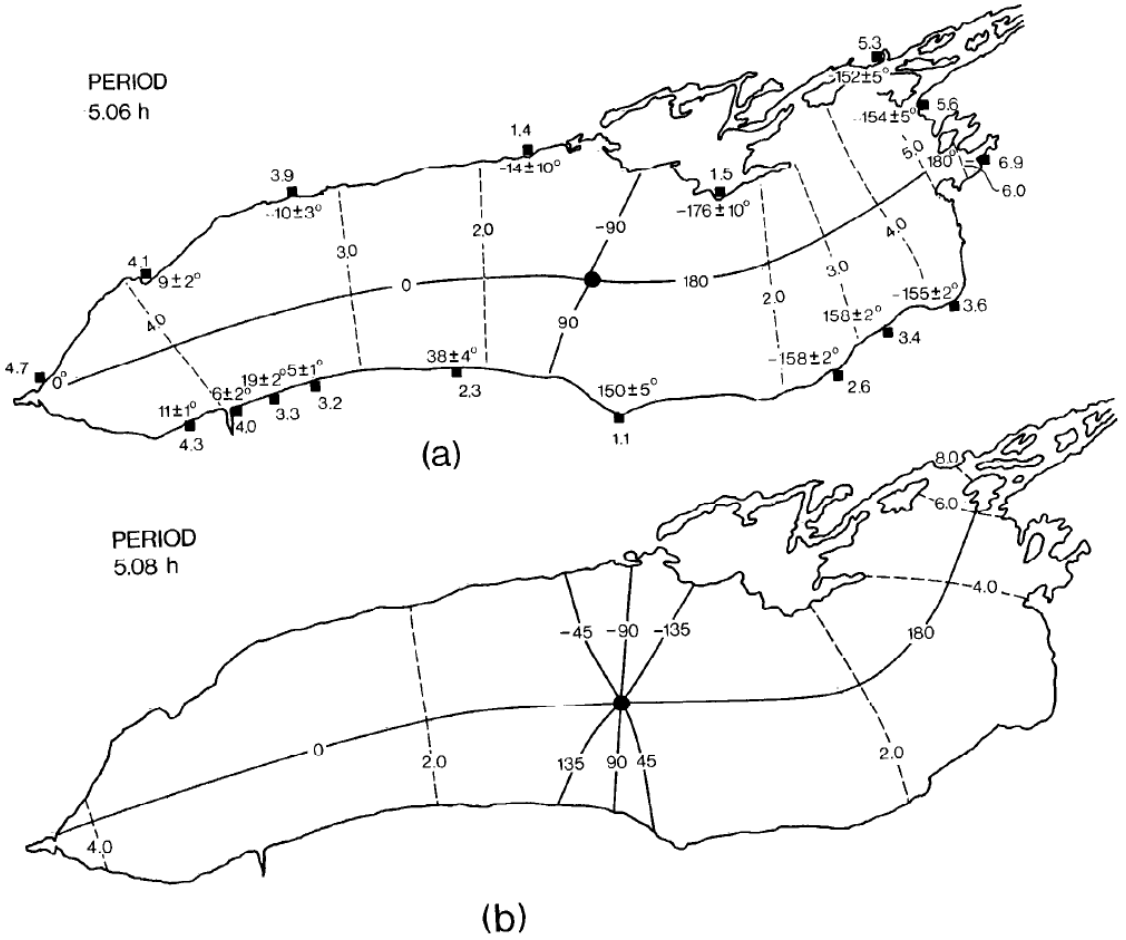


Fig. 5. Comparison of observed (a) and calculated (b) amplitude and phase of first normal mode in Lake Ontario. Solid lines represent phase lag of high water behind Burlington and dashed lines are amplitude (observed amplitudes in centimeters; 95% CI for phase given).

3.6 Tsunamis

The purpose of this section is to describe the evaluation of the impact of the Probable Maximum Tsunami on Lake Ontario as a flood causing mechanism at the JAF site.

This evaluation is detailed in AREVA Document No. 51-9226881-000 (AREVA, 2014).

3.6.1 Methodology

With respect to tsunamis, the HHA is considered as a series of three tests or steps:

1. Is the site region subject to tsunamis?
2. Is the plant site affected by tsunamis?
3. What are the hazards posed to safety of the plant by tsunamis?

The first step is a regional screening test. If the site region is not subject to tsunamis, no further analysis for tsunami hazards is required. If the answer is yes, or undetermined based on available information, an analysis of the tsunami hazard is required in the second step.

The second step is a site screening test. The step determines whether SSCs important to safety of the plant are exposed to hazards from tsunamis. If the answer is no, then no further action is required. If the answer is yes, however, then an additional analysis of the tsunami hazard is required in the third step.

The third step is a refined assessment, in which site-specific analyses are carried out to determine hazards posed by the Probable Maximum Tsunami (PMT) to the SSCs important to safety of the plant and to determine whether any protection is required. The step involves postulation of PMT source mechanisms, estimation of PMT source characteristics, initiation of the PMT wave, propagation of the PMT wave from the source towards the site, and estimation of tsunami hazards at the site.

3.6.2 Tsunami Results

3.6.2.1 Regional Survey

Step 1: Is the site region subject to tsunamis?

Tsunamis are generated by rapid, large-scale disturbance of a body of water. Therefore, only geophysical events that release a large amount of energy in a very short time into a water body generate tsunamis. The most frequent cause of tsunamis is an earthquake. Less frequently, tsunamis are generated by submarine and subaerial landslides and volcanic eruptions. (NRC, 2009, Section 1.3)

A regional survey and assessment of tsunamigenic sources was performed to determine the potential that a tsunami may pose a hazard to the JAF site. The regional survey was performed in four parts and included both near-field and far-field sources and mechanisms that generate tsunamis.

The first part of the regional survey was to review the Global Historical Tsunami Database, maintained by the National Oceanic Atmospheric Administration's National Geophysical Data Center (NGDC), to determine the history of tsunamis. The second, third and fourth parts of the regional survey included an assessment of the mechanisms likely to cause a tsunami: earthquake, landslide, and volcano.

3.6.2.1.1 NGDC Database Review

The NGDC tsunami-source-event database is global in extent with information dating from 2000 B.C. to the present. Since the JAF site is inland (i.e., it's located at a significant distance from the nearest coastline), the regional survey considered tsunamis and tsunami-like waves in water bodies defined by the far-field and near field areas. The far-field area extends from 25° to 55° N Latitude and 65° to 96° W Longitude; the near-field area

includes the immediate region around the Great Lakes and extends from 41° to 49° N Latitude and 76° to 92° W Longitude.

Thirty-five events were identified, mostly along the eastern coastline. Of the 35 events, however, only four are considered to be a probable or definite tsunami. These four events have a tsunami event validity value of 3 or 4, respectively (AREVA, 2014). Two of the tsunamis were caused by an earthquake (1886 and 1889), one by a landslide (1964), and the other by meteorological conditions (2008). None of the four tsunamis occurred in or near the Great Lakes.

Seven events occurred in or near the Great Lakes (AREVA, 2014). Each has a tsunami event validity value of 0 (zero), meaning the event only caused a seiche or disturbance in an inland river.

3.6.2.1.2 Earthquakes

To generate a major tsunami, a substantial amount of slip and a large rupture area is required. Consequently, only large earthquakes with magnitudes greater than 6.5 generate observable tsunamis (NRC 2009, Section 1.3.1).

Based on the geological and seismological information presented in the NMP3NPP FSAR (NMP3NPP, 2009, Section 2.5.1.1), the Lake Ontario region is relatively aseismic. A listing of the seismic events that have occurred within approximately a 300-mile radius of the JAF site between 1732 and 2007 includes only two earthquakes with magnitudes estimated over 5.5. Both earthquakes were magnitude 5.7 and occurred at distances of about 200 and 300 miles from the JAF site. As a result, the required level of seismic activity for development of a tsunami, i.e., an earthquake with a magnitude greater than 6.5, is essentially absent from the region.

3.6.2.1.3 Landslides

Subaqueous Landslide - Lake Ontario Bathymetry

There are two shoreline areas on the perimeter of Lake Ontario with relatively steep gradients that have the potential to produce a subaqueous landslide. They include the Niagara Fan, located on the lake's southwest shoreline at the mouth of the Niagara River, and a ledge line, extending from southwest to northeast of Toronto. The direction of a landslide in either area, if it occurred, would be towards the opposite lake shoreline. For the Niagara Fan, a landslide would be northwest towards Toronto and the resultant tsunami-like wave, if it occurred, would not affect the JAF site. A landslide at the Toronto Ledge, if it occurred, would be southeast towards the Niagara River, which is nearly 200 miles west of the JAF site. In addition, the steepest slope of the Toronto Ledge is about five (5) degrees (AREVA, 2014). Thus, given a landslide, its speed would be limited and judged unlikely to generate an observable tsunami-like wave. As a result, the effect to the JAF site would be minimal, if any.

The floor of the lake has four axial basins separated by three ridges. From west to east, they are the Niagara, Mississauga, Genesee, and Rochester Basins. The deep axis of the lake is about midway between the north and south shores in the Niagara Basin, but farther east, the axial depths of the other three basins lie well toward the southern edge of the lake.

There are three distinct features within these basins that have the potential to produce a subaqueous landslide that could affect the JAF site. The steepest bathymetric slopes found in these basins are less than 10 degrees, limiting the likelihood of significant failure events that might cause submarine landslides.

Subaerial Landslide - Lake Ontario Topography

The geographical areas where subaerial landslides occur are generally limited to areas of steep shoreline topography (NRC, 2009, Section 1.3.2).

Similar to the lake bathymetry, the Lake Ontario shoreline has linear topographic features with uniform gradients around most of the perimeter. The land is either flat or gently rolling. The land on the eastern and northern shorelines also has similar characteristics.

There is, however, one dissimilar feature that has the potential to produce a subaerial landslide due to its steep gradient. The Scarborough Bluffs on the western Lake Ontario shoreline in Toronto is an escarpment that rises nearly 280 ft above the lake and spans a shoreline length of 10 miles (Eyles, 1985). Due to the bluffs general northeast-southwest orientation, the direction of a landslide and resultant wave, if it occurred, would be southeast towards the southeastern lake shoreline north of the Niagara River, located more than 150 miles west of the JAF site. Thus, given a landside, there would be little, if any, effect to the JAF site due to the direction and distance of the wave from the site.

3.6.2.1.4 Volcanoes

The Global Historical Volcano Database, also maintained by the NGDC, was used to conduct a regional survey to determine if volcanic activity could be a mechanism to produce a tsunami or tsunami-like wave. The database survey area reviewed was the same as for the tsunami regional survey. No events were identified in the search area (AREVA, 2014).

3.6.2.2 Site Screening Test

Step 2: Is the plant site affected by tsunamis?

Based on the regional screening test, tsunami-like waves (seiches) have occurred in or near the Great Lakes, including Lake Ontario.

The primary effects of the tsunami-like waves on the JAF site are flooding due to runup from the event.

3.6.2.2.1 Flooding Due to Runup

If not regulated, projected lake levels could reach a maximum of 250.2 ft. (NMP3NPP, 2009, Section 2.4.1.5). The maximum reported tsunami-like wave in any of the Great Lakes, caused by other than a meteorological event, is nine ft and is the result of an 1823 earthquake (AREVA, 2014). Adding a nine ft tsunami-like flood wave to the maximum projected lake level of 250.2 ft yields 259.2 ft, which is significantly below the 272 ft grade elevation of the JAF site (JAF, 2014, Section 2.4.3.7).

3.6.2.3 Detailed Hazard Assessment

Step 3: What are the hazards posed to safety of the plant by tsunamis?

If the site-screening test does not establish the safety of the nuclear power plant site from hazards posed by tsunamis, a detailed assessment of these hazards should be undertaken to ensure that the plant design bases adequately account for these hazards (NRC, 2009, Section 2.4).

The physical margin between site grade and the PMT elevation is sufficient to protect SSCs important to safety at the JAF site from tsunami-like wave runup. The margin is based on the maximum recorded tsunami-like wave resulting from an earthquake in the Great Lakes region occurring coincident with the postulated highest possible unregulated lake level. As a result, step 3 of the flood hazard evaluation was not necessary.

3.6.3 Conclusions

As an inland site, the JAF site is not subject to oceanic tsunamis; however, tsunami-like waves (seiches) have occurred.

Tsunami-like waves generated from:

- an earthquake are limited because the required level of seismic activity for development of a tsunami, i.e., an earthquake with a magnitude greater than 6.5, is essentially absent from the region;
- a subaqueous landslide is unlikely to generate an observable tsunami-like wave due to the limited bathymetric relief of ridges and their respective slopes; and

- a subaerial landslide is unlikely to occur due to limited topographic relief. The one area with sufficient topographic relief, Scarborough Bluffs near Toronto, is oriented such that the direction of a landslide and resultant tsunami-like wave, if it occurred, would be towards the southeastern lake shoreline, more than 150 miles west of the JAF site.

Notwithstanding the occurrence of tsunami-like waves, the potential effects on the JAF site (wave runup) are negligible because there is sufficient margin to protect SSCs important to safety. The margin is based on the maximum recorded tsunami-like wave resulting from an earthquake in the Great Lakes region occurring coincident with the maximum postulated lake level.

3.6.4 References

AREVA, 2014. "James A. Fitzpatrick Flooding Hazard Re-Evaluation – Screening for Dam Failure, Tsunami, Ice-Induced Flooding, and Channel Migration", 2014, see AREVA Document No. 51-9226881-000.

Eyles, 1985. N. Eyles, et al., Applied Sedimentology in an Urban Environment – the Case of Scarborough Bluffs, Ontario; Canada's Most Intractable Erosion Problem, Geoscience Canada, Vol. 12, No. 3, pp. 91-104, 1985.

JAF, 2014. "James A. Fitzpatrick Safety Analysis Report", Entergy Nuclear, 2014. See Project Manager Approval of Client References on Page 2.

NMP3NPP, 2009. Nine Mile Point 3 Nuclear Power Plant, Final Safety Analysis Report, Rev. 1, 2009. (ADAMS Accession No. ML090970449)

NRC, 2009. NUREG/CR-6966, Tsunami Hazard Assessment at Nuclear Power Plant Sites in the United States of America, U.S. Nuclear Regulatory Commission, Springfield, VA, National Technical Information Service, March 2009.

3.7 Ice-Induced Flooding

The purpose of this section is to describe the evaluation of the impact of ice-induced flooding as a flood causing mechanism at the JAF site.

This evaluation is detailed in AREVA Document No. 51-9226881-000 (AREVA, 2014).

3.7.1 Method

With respect to ice effects, the HHA is considered as a series of three steps:

1. Identify flood-causing phenomena or mechanisms by reviewing historical data and assessing the effects of the phenomena in the vicinity of the site and region.
2. Develop a conservative estimate of the effects from the corresponding probable maximum event using conservative simplifying assumptions.
3. Use site-specific data to provide more realistic conditions in the assessment if any SSCs important to safety are adversely affected.

The ice-induced flooding analysis performed at NMP3NPP applies to JAF as well (NMP3NPP, 2009, Section 2.4.7).

3.7.2 Ice-Induced Flooding Results

As noted in NUREG/CR-7046 (NRC, 2011, Section 3.7), the extent of ice-induced flooding is limited to ice jams and ice dams in rivers and streams adjacent to a site that could lead to flooding by two mechanisms:

- Collapse of an ice jam or a dam upstream of the site can result in a dam breach-like flood wave that may propagate to the site, and
- An ice jam or a dam downstream of a site may impound water upstream of itself, thus causing a flood via backwater effects.

NUREG/CR-7046 further notes that at this time it is not possible to predict a probable maximum ice jam or dam accurately and, therefore, recommends that historical records of ice jams and dams be searched to determine the most severe historical event in the vicinity of the site (NRC, 2011, Section 3.7).

3.7.2.1 Potential for Ice Jam or Dam

Historical data characterizing ice conditions near the JAF site have been collected and the effects evaluated as part of the NMP3NPP COL application (NMP3NPP, 2009, Section 2.4.7). These data include ice cover and thickness evaluations in Lake Ontario developed by NOAA, ice jam records from the USACE, and long term air temperature measurements from the nearby Oswego East meteorological station (NCDC Cooperative ID #306314). The Oswego East meteorological station is located about six miles southwest of JAF in the City of Oswego on the same (southern) shore of Lake Ontario as the site.

Although most tributaries to Lake Ontario are prone to ice formation, there has been no ice jam formation or flooding on Lake Ontario due to breaching of ice jams on upstream tributaries or the downstream Saint Lawrence River. The USACE Ice Jam Database maintains records of current and historical ice jams within the United States. The nearest historical ice jams data on record occurred on the Oswego River in January of 1952 and January of 2004 (NMP3NPP, 2009, Section 2.4.7.8). However, the mouth of the Oswego River is about seven miles by water from the JAF site. As a result, any Oswego River ice jam formation or breaching would not have an effect on the JAF site.

There are no records of ice jam formation on the Saint Lawrence River causing flooding on Lake Ontario (NMP3NPP, 2009, Section 2.4.7.8). The IJC, formerly the ISLRBC, regulates Lake Ontario outflow to the Saint

Lawrence River and thereby controls lake levels in Lake Ontario. Following the close of the navigation season, ISLRBC reduces the Lake Ontario outflow to promote the formation of a smooth, stable ice cover on the St. Lawrence River. The stable ice cover formation is beneficial in that it reduces the risk of ice jams on the river (NMP3NPP, 2009, Section 2.4.7.8). Ice jam formation or breaching on the Saint Lawrence River, therefore, would not have an effect on the JAF site.

There are no major streams close to the site that would contribute to the potential of ice induced flooding at the site. Runoff from the site generally drains toward Lake Ontario to the north via overland flow. The small unnamed local stream discussed in Section 3.2 is not expected to produce significant flooding due to ice dams based on the relatively low flow velocities produced by the PMF event (see Section 3.2), and since ice induced flooding would be bound by the all-season precipitation event. A small perennial stream, Lakeview Creek, traverses along the southwestern periphery of the adjacent Nine Mile Point site (not shown in figures in this report). Historical flooding along Lakeview Creek is limited to the downstream portion of the creek around the Hamlet of Lakeview, west of the JAF and Nine Mile Point sites (NMP3NPP, 2009, Section 2.4.1.2).

3.7.3 Conclusions

The ISLRBC reduces the Lake Ontario outflow to promote the formation of a smooth, stable ice cover on the St. Lawrence River, which is beneficial in that it reduces the risk of ice jams on the river. Ice jam formation or breaching on the Saint Lawrence River, therefore, would not have an effect on the JAF site.

The nearest historical ice jams data on record occurred on the Oswego River, which is more than seven miles from the JAF site.

There are no major streams close to the site that would contribute to the potential of ice induced flooding at the JAF site.

3.7.4 References

AREVA, 2014. "James A. Fitzpatrick Flooding Hazard Re-Evaluation – Screening for Dam Failure, Tsunami, Ice-Induced Flooding, and Channel Migration", 2014, see AREVA Document No. 51-9226881-000.

NMP3NPP, 2009. Nine Mile Point 3 Nuclear Power Plant, Final Safety Analysis Report, Rev. 1, 2009. (ADAMS Accession No. ML090970449)

NRC, 2011. NUREG/CR-7046: Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America, U.S. Nuclear Regulatory Commission, Springfield, VA, National Technical Information Service, 2011

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3.8 Channel Migration or Diversion

The purpose of this section is to describe the evaluation of the impact of channel migration or diversion as a flood causing mechanism at the JAF site.

This evaluation is detailed in AREVA Document No. 51-9226881-000 (AREVA, 2014).

3.8.1 Method

With respect to channel migration or diversion, the HHA is considered as a series of three steps:

1. Identify water bodies with potential for migration or diversion to impact the JAF site.
2. Evaluate the flood hazard to the site from the water bodies identified.

Use site-specific data to provide more realistic conditions in the assessment if any SSCs important to safety are adversely affected.

The channel migration analysis performed at NMP3NPP applies to JAF as well (NMP3NPP, 2009, Section 2.4.9).

3.8.2 Results

3.8.2.1 Identification of Water Bodies

There is a small unnamed stream located to the south and west of the JAF site (Figure 2-2). The flow in this stream is generally very low to intermittent, with low flow velocities limiting erosion potential (see Section 3.2). As a result, there is no anticipated erosion due to normal stream conditions. Erosion in the unnamed stream during storm runoff is possible. However, the distance from the stream channel to plant structures would allow for identification of potential impacts to the site due to erosion well in advance. Additionally, shallow bedrock in the JAF site vicinity limits the potential extent of stream channel erosion and migration (JAF, 2014, Section 2.5).

Shoreline migration of Lake Ontario is the only water body with the potential for impacting the JAF site due to this mechanism.

3.8.2.2 Lake Ontario Shoreline Migration

The Lake Ontario shoreline adjacent to the JAF site consists of exposed Oswego Sandstone bedrock which is also the foundation material for JAF SSCs important to safety. Per the JAF FSAR (JAF, 2014), the bedrock is competent and strong. As described in Section 2.4.9 of the NMP3NPP FSAR (NMP3NPP, 2009), the seismic, topographical, geologic, and thermal evidence in the region shows there is very limited potential for upstream diversion or rerouting of Lake Ontario (due to channel migration, river cutoffs, ice jams, or subsidence) to adversely impact safety-related facilities or water supplies.

JAF SSCs important to safety are located a minimum of 150 feet away from the nearest shoreline.

Due to the competency and strength of the shoreline material, and the relatively long distance between the shoreline and JAF structures important to safety, shoreline migration is considered a negligible hazard to the site.

3.8.3 Conclusions

There is limited potential for upstream diversion or rerouting of Lake Ontario (due to channel migration, river cutoffs, ice jams, or subsidence) to adversely impact safety-related facilities or water supplies.

Due to the competency and strength of the shoreline material, and the relatively long distance between the shoreline and JAF structures important to safety, shoreline migration is considered a negligible hazard to the site.

No adverse impacts to JAF are anticipated due to channel migration or diversion associated with the small unnamed stream on the south and west sides of the JAF site.

3.8.4 References

AREVA, 2014. "James A. Fitzpatrick Flooding Hazard Re-Evaluation – Screening for Dam Failure, Tsunami, Ice-Induced Flooding, and Channel Migration", 2014, see AREVA Document No. 51-9226881-000.

JAF, 2014. "James A. Fitzpatrick Safety Analysis Report", Entergy Nuclear, 2014. See Project Manager Approval of Client References on Page 2.

NMP3NPP, 2009. Nine Mile Point 3 Nuclear Power Plant, Final Safety Analysis Report, Rev. 1, 2009. (ADAMS Accession No. ML090970449)

3.9 Combined Event Flood

This section addresses combined event flooding at JAF. This evaluation includes consideration of the impacts of 1) the PMSS on Lake Ontario, which includes the design antecedent water level; and 2) wave effects associated with the PMWS, which include wave set-up and wave run-up. The combined effects of lake surge and flooding on the unnamed stream adjacent to the JAF site were examined. Other combined effects flood scenarios were assessed and screened out as not applicable at JAF.

This section summarizes the Combined Event Flood evaluation performed in AREVA Calculation No. 32-9227062-000 (AREVA, 2014a).

3.9.1 Method

The criteria for assessing combined events are provided in NUREG/CR-7046, Appendix H (NRC, 2011) of the five scenarios presented, two apply to JAF: Floods caused by precipitation events (H.1); and floods along shores of enclosed water bodies (H.4). Other combined event flood scenarios described in NUREG/CR-7046 were screened out as not applicable to JAF. The flooding impacts of Scenario H.1 and the flooding impacts of the Scenario H.4 alternatives were assessed either qualitatively or quantitatively, as described below.

Scenario H.1: A minor, unnamed stream is located to the west of the plant. Scenario H.1 considers the PMF coincident with wave action (due to the 2-year return period wind speed). The full contributory watershed for the stream at its confluence with Lake Ontario is less than one square mile. Flooding of this stream during the PMF was evaluated in the LIP calculation (AREVA, 2014b) and results in shallow overbank flooding. Due to the temporally varying hydrograph, shallow flood water depths, and limited fetches (which are disrupted by structures), no significant wave effects will occur. The H.1 scenario applies to JAF; however, the combined effects waves and stream flooding will not result in substantial changes to the flood depths and/or limits calculated as resulting from the PMF mechanism without waves.

Scenario H.4: In consideration of the site location on the shore of Lake Ontario (an enclosed water body) and with an adjacent stream, the H.4 combined flood event scenarios that are applicable to the site include:

Streamside Location:

1. Alternative 1 – A combination of the lesser of one-half of the PMF or the 500-year flood, surge and seiche from the worst regional hurricane or windstorm with wind-wave activity and the lesser of the 100-year or the maximum controlled water level in the enclosed body of water.

2. Alternative 2 – A combination of the PMF in the stream, a 25-year surge and seiche with wind-wave activity and the lesser of the 100-year or the maximum controlled water level in the enclosed body of water.

3. Alternative 3 – A combination of a 25-year flood in the stream, the probable maximum surge and seiche with wind-wave activity and the lesser of the 100-year or the maximum controlled water level in the enclosed body of water.

The methodology used to evaluate all three of the H.4 – streamside alternatives was to assess the combined events of the PMF and the PMSS, which will bound the most extreme conditions of all three alternatives.

Shore Location:

1. A combination of the probable maximum surge and seiche with wind-wave activity and the lesser of the 100-year or the maximum controlled water level in the enclosed body of water.

The methodology used to evaluate the H.4 - Shoreside combined flood event at JAF consisted of the following steps:

1. The results of preliminary wave simulations were compared to observed wave data at four USACE WIS stations immediately offshore of JAF on Lake Ontario (see Figure 3-39). The PMWS forward speed was then adjusted (reduced) to increase deep water wave effects to within the range of observed storm speeds for the top surge and wave producing historic storms. The adjusted PMWS wind field was then used in the Delft University of Technology's (DUT) Simulating WAves Nearshore (SWAN) model.

   The SWAN model input included: 1) computational domain; 2) definition of the bottom (depth); and 3) either definition of the wave conditions at the deep water model boundaries or definition of the wind field. The SWAN model used a nested model grid consisting of a coarse and fine grid. The coarse grid (0.01 degree by 0.01 degree resolution) covered all of Lake Ontario (Figure 3-40). The nested fine grid (0.002 degree by 0.002 degree resolution) was developed for the area offshore of JAF (Figure 3-41).

   For both the coarse and fine grids, the bottom depths were established using bathymetry data from the NOAA NGDC Great Lakes Bathymetry dataset (Virden, 1999). This data was downloaded in X,Y,Z (latitude, longitude, depth) format with a grid size of three (3) seconds and vertical units of meters. The NGDC Great Lakes Bathymetry dataset was compiled by NOAA from a number of source bathymetric and topographic datasets. Because of the relatively large grid size, NOAA did not correct for a common vertical datum for the compiled data set. The vertical accuracy is on the order of one (1) meter for depths between one (1) and 10 meters (Virden, 1999). The data are in the National Geodetic Vertical Datum of 1929 (NGVD29) (NOAA, 2014). Note that this datum is not defined in Section 2 of this report, however, due to the coarse resolution of the data, no minor adjustments are required.

2. The nearshore waves due to the adjusted PMWS (AREVA, 2014c) were developed using the SWAN model. The PMSS (AREVA, 2014d) stillwater elevation and the adjusted PMWS wind field are used as SWAN input. The maximum wind speed was deterministically established as 100 mph. Wave characteristics were output at five locations (Points 1 through 5) near JAF to characterize nearshore, shallow water waves in the vicinity of the JAF shoreline. Points 1 and 5 are located at the west and east ends of the JAF site, respectively. Points 2, 3, and 4 are located offshore of JAF SSCs important to safety. Three (3) deep water output points were also selected for deep water wave characteristics. Four output locations for the WIS station data were also established on the coarse model grid. WIS station locations are shown on Figure 3-39. Shallow water and deep water output points are presented in Figure 3-42 and Figure 3-43, respectively.

3. Wave setup was calculated at five (5) transect locations (see Figure 3-44) using the Direct Integration Method (DIM), consistent with Federal Emergency Management Agency (FEMA) recommendations (FEMA, 2007). Wave setup is caused when breaking waves transfer energy momentum to the water column, causing wave "setup" that can be ten to twenty percent of the breaking wave height. This is considered "static" wave setup which remains fairly constant for the duration of storm tide and incident waves that remain unchanged (FEMA, 2007). The DIM methodology uses the effective deepwater significant wave height as input. The effective deepwater significant wave height is the unrefracted wave height. The SWAN shallow water significant wave height was converted to effective deepwater significant wave height using an iterative process.

4. Wave runup from nearshore waves was calculated at five transect locations using empirically-based equations. Consideration was given to maximum and depth-limited wave conditions.

3.9.2 Results

3.9.2.1 Potential Streamside Location on Shore of Enclosed Water Body Combined Effects

The streamside on the shore of an enclosed water body combined effects alternatives examine potential combinations of the probable maximum flood in one of the water bodies (Lake Ontario and the unnamed stream west of the site) combined with a lesser intensity event in the other.

The PMSS stillwater elevation was established in the PMSS calculation (AREVA, 2014d) as 252.8 feet USLS35. Because of the large size of Lake Ontario and the small size of the local unnamed stream watershed (0.62 square miles), even floods of up to the PMF will have negligible effects on the maximum surge stillwater flood elevation.

The PMF in the unnamed stream causes flooding on the site due to overbank flow which exceeds the site grade (AREVA, 2014b). The primary source of this overflow onto the site originates from the unnamed stream upstream of the confluence with the lake. As shown by Figure 3-45, the backwater from the maximum storm surge in the lake upstream into the stream channel is limited and therefore would have insignificant effects on the hydraulics of flows during the PMF or lesser floods. Thus, flood elevations during the PMF would not be expected to be higher than those computed for the PMF mechanism alone. Therefore surges in the lake do not affect flooding in the stream.

3.9.2.2 Potential Shoreside Location on Enclosed Waterbody Combined Effects

3.9.2.2.1 Review of Historical Wave Data

Hindcasts of deepwater significant wave heights resulting from historical storms range from 21.6 to 27.7 feet and the range of peak periods is 10.8 to 12.1 seconds for the top 10 wave events reported at the WIS stations (USACE, 2012a through d), see Table 3-15.

3.9.2.2.2 PMWS Adjustment and Course Grid SWAN Wave Results

Based on comparison to the preliminary SWAN simulations, the PMWS forward speed was reduced to 20 mph to maximize deepwater wave effects. The forward speed was conservatively adjusted to fall within the range of observed storm speeds for the top surge and wave producing storms. Review of historical storms from the PMWS indicates that storm speeds vary in the Lake Ontario region. The overall average storm speed was calculated to be 42 mph. The lowest average speed near Lake Ontario was about 22 mph and was observed for the November 2003 storm. For the purposes of calculating wind generated waves at JAF, a storm speed of 20 mph was conservatively selected to optimize wind-generated wave growth during the PMWS.

The corresponding deepwater wave heights returned by the SWAN model for the PMWS with an adjusted storm forward speed of 20 mph at each WIS station location range from 26.2 to 28.8 ft, see Table-3-16. Wave periods produced by SWAN vary from 10.9 to 11.4 seconds which are within the range of WIS hindcast data.

3.9.2.2.3 Nested Grid SWAN Wave Results

Results from the course grid SWAN model were used as boundary condition inputs into the nested fine grid SWAN model to generate wave characteristic results in the immediate vicinity of JAF. Significant deepwater wave heights are used as input to calculate runup on Transects 1 and 5. Using the peak wave periods from the shallow water results, the nested SWAN model was then rerun with output points at appropriate deepwater depths, see Figure 3-43. Table 3-17 presents the deepwater results from the 0.002 degree nested grid. The results indicate about an 18.6 foot significant wave height with a period of 9 seconds.

The shallow water wave results presented in Table 3-17 indicate that the significant wave height varies from 8.6 to 10.0 feet, and the peak period ranges from 9.4 to 9.9 seconds at the five shallow water output locations on the fine resolution nested grid. The shallow water significant wave height results at output points 2 through 4 are used as input for wave effects along Transects 2 through 4.

3.9.2.2.4 Wave Setup

The resultant wave setup at each transect, as calculated using the Direct Integration Method, are presented in Table 3-18, along with the calculated effective deepwater significant wave heights. The maximum setup of 1.7 feet occurs along Transect 2.

3.9.2.2.5 Incident Wave Characteristics

Transects 1 and 5 are located at the narrow "beaches". Transects 2, 3, and 4 are located at several additional representative locations along the bedrock bluff, including in front of the primary JAF plant structures. The elevation profiles (including bathymetry) at the five transect locations are shown in Figure 3-46 through Figure 3-50 (in NAVD88/IGLD85).

Incident wave characteristics including deep water significant wave height and peak period for Transect 1 and 5 were determined from the nested SWAN deep water output points. Incident wave characteristics for Transects 2 through 4 were determined from the nested SWAN shallow water output points at the toe of the shoreline.

Table 3-19 lists SWAN inputs for all transects used to calculate shoreline wave effects.

Maximum wave heights based on the SWAN shallow water points at the JAF shoreline (see Table 3-20) were also computed for reference. Maximum wave heights are equal to 1.67 times the significant wave height (ANSI, 1992). Wave heights and crest elevations for both significant and maximum waves are presented in Table 3-20. Maximum wave crests range from elevation 261.3 to 262.9 ft USLS35.

Table 3-21 provides approximate depths at each transect under PMSS stillwater conditions and corresponding depth limited wave heights. Wave heights range from 8.3 to 10.8 feet, which indicate that SWAN-predicted wave heights are close to the depth-limited wave height.

3.9.2.2.6 Wave Runup at the Beaches

Wave runup due to the winds generated by the PMWS along Transects 1 and 5 at JAF was computed using FEMA guidance for runup on beaches in the Great Lakes (FEMA, 2014). Inputs to the empirical equations include deep water significant wave height, peak wave period, and foreshore slope. The results presented in Table 3-22 indicate two (2) percent runup values of 11.2 feet at Transect 1 and 13.8 feet at Transect 5.

3.9.2.2.7 Wave Effects at the Cliff Face

Approximately vertical cliff faces are indicated on Transects 2 through 4. Based on the SWAN results, most of the waves at the cliff face are expected to be non-breaking and close to the depth-limited wave height. When waves are not breaking in front of a vertical structure located in relatively deep water, the wave "runup" is approximately equal to the wave crest height of the "standing" waves (Goda, 2010). The reflected wave crest height at the cliff faces was calculated using the Sainflou Formula as presented in the USACE CEM (USACE, 2006) for predicting wave forces on a vertical structure. The Sainflou equations estimate the vertical shift (runup) in wave height on a vertical wall, above the stillwater elevation.

The results are presented in Table 3-22 and indicate a maximum wave crest of 12.5 feet above stillwater at Transect 2. While the significant wave height was used as input to the Sainflou formulas, it is recognized that a percentage of waves during the PMWS may exceed these heights. However, because non-breaking waves on a vertical surface will cause an "up-rush" of water which will have a nearly vertical trajectory, the results of this

phenomenon are considered insignificant at JAF. As shown in Figure 3-47 and Figure 3-48, there is a natural berm protecting the site before reaching nominal site grade. Any wave splash above the level of this berm will be contained at this feature and therefore not affect the site. If incidental wave splash were to reach the site grade, the volume of water would be considered insignificant and have no flooding effects at JAF.

3.9.2.2.8 Combined Effect Water Elevations at JAF

The combined effect water surface elevations at each transect are presented in Table 3-22. Adding the PMSS still water elevation of 252.8 ft USLS35 (see Section 3.4 of this report) to the maximum runup value of 13.8 ft and corresponding wave setup of 1.4 ft at Transect 5, the resultant maximum combined events water elevation is 268.0 ft USLS35, which is approximately four (4) ft below site grade.

3.9.3 Conclusions

The following summarizes the results and conclusions relative to combined effects flooding at JAF:

- Combined events flooding was considered at JAF for several potential scenarios referenced in NUREG/CR-7046, Appendix H (NRC, 2011).
- The potential for wave activity on top of the PMF in the local unnamed stream was found to be insignificant, and therefore the maximum PMF water surface elevations are unchanged from the reported stillwater elevations.
- The combination of the PMF with the PMSS was found to have no influence on the water surface elevations generated by either of the flood mechanisms; therefore, the maximum water surface elevations calculated for these mechanisms are not changed by such interactions.
- The primary combined effects flooding mechanism is the combination of the PMSS and the wind-wave activity resulting from the PMWS moving in a manner which produces extreme waves, which is the H.4 scenario (Shoreside location on an enclosed waterbody). The maximum combined effect elevation resulting from this scenario, including wave action, is 268.0 feet USLS35. The combined-effects flood hazard at JAF resulting from the wind-wave activity during the PMSS does not exceed the site grade at JAF, which is at elevation 272.0 feet USLS35. Because wind-wave activity during the PMSS does not exceed site grade, this mechanism does not generate hydrostatic, hydrodynamic, debris, or water-borne projectile loading on site structures. Sediment erosion or deposition at site structures does not result from this flood mechanism.

3.9.4 References

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Table 3-15: Summary of Extreme Wave Conditions Estimated at WIS Stations near JAF (USACE, 2012a through d)

WIS Station	Water Depth (Feet)	Range of Wave Heights, Hmo, for Top 10 Events (Feet)	Range of Peak Wave Periods for Top 10 Events (Seconds)
91036	138	21.6-25.9	10.9-12.1
91037	174	22.2-26.7	10.9-12.1
91038	230	23.0-27.7	10.9-12.1
91039	194	22.5-27.1	10.8-12.1

Table-3-16: Summary Wave Characteristics from the SWAN Model – Coarse Grid

Coarse Grid					
SWAN Output Point	Water Depth (Feet)	Hs (Feet)[1]	Hswell (Feet)	Hmo (Feet)[2]	TP (Seconds)
91036	154	21.7	14.2	26.2	10.9
91037	189	22.7	15.4	27.4	10.9
91038	249	23.6	16.5	28.8	11.4
91039	214.2	23.2	15.9	28.1	11.4

[1] H_s is equal to the significant wave height; equal to the average height of the maximum 1/3 of waves
[2] Hmo is calculated using the equations used by WIS. SWAN calculated Hmo is comparable to the Hmo values in Table 3-15.

Table 3-17: Summary Wave Characteristics from the SWAN Model – Nested Grid

Nested Grid Output Points					
Shallow Water Wave Output Points					
SWAN Output Point	**Water Depth (Feet)**	**Hs (Feet)[1]**	**TP (Seconds)[2]**	**Peak Wave Direction (° counter clockwise from E)**	**PMWS Peak Wave Direction Range ° (counter clockwise from E) [3]**
T1	19.1	9.4	9.9	304.9	304.9 – 312.2
T2	21.2	10.0	9.9	304.9	304.9 – 319.6
T3	18.8	9.3	9.9	304.9	304.9 – 312.2
T4	16.6	8.6	9.9	304.9	289.8 – 312.2
T5	17.8	9.1	9.4	304.9	304.9 – 312.2
Deep Water Wave Output Points					
D1	239	18.5	9.0	356.3	356.3 – 3.7
D2	249	18.6	9.0	3.7	356.3 – 3.7
D3	236	18.6	9.0	3.7	356.3 – 3.7

[1] H_s is equal to the significant wave height; equal to the average height of the maximum 1/3 of waves
[2] T_p is equal to the peak spectral wave period associated with the maximum significant wave height
[3] Ranges are developed from the full SWAN output at each shallow water output point, consisting of the full duration of the PMWS.

Table 3-18: Wave Setup at JAF

Transect	Unrefracted Deep Water Significant Wave Height (Feet)	Wave Setup (Feet)
1	8.8	1.5
2	9.5	1.7
3	8.6	1.5
4	7.8	1.3
5	8.5	1.4

Table 3-19: Wind Wave Input Characteristics From SWAN

Transect	SWAN Significant Wave Height Used (Feet)	SWAN Peak Wave Period (Seconds)
1	18.6 (Deep Water)	9.0
2	10.0 (Shallow Water)	9.9
3	9.3 (Shallow Water)	9.9
4	8.6 (Shallow Water)	9.9
5	18.6 (Deep Water)	9.0

Table 3-20: Wave Heights and Elevations at JAF Shoreline

Transect	Significant Wave Height (Feet)	Significant Wave Crest Elevation (Feet USLS35)	Maximum Wave Height (Feet)[1]	Maximum Wave Crest Elevation (Feet USLS35)[2]
1	9.4	259.1	15.7	262.3
2	10.0	259.5	16.7	262.9
3	9.3	258.9	15.5	261.6
4	8.6	258.4	14.4	261.3
5	9.1	258.9	15.2	262.0

Table 3-21: Depth Limited Non-breaking Wave Crest Elevation Results

Transect	Water Depth at Bedrock Cliff (Feet)	Depth Limited Wave Height (Feet)
1	12.1	9.4
2	13.8	10.8
3	13.0	10.1
4	11.8	9.2
5	10.7	8.3

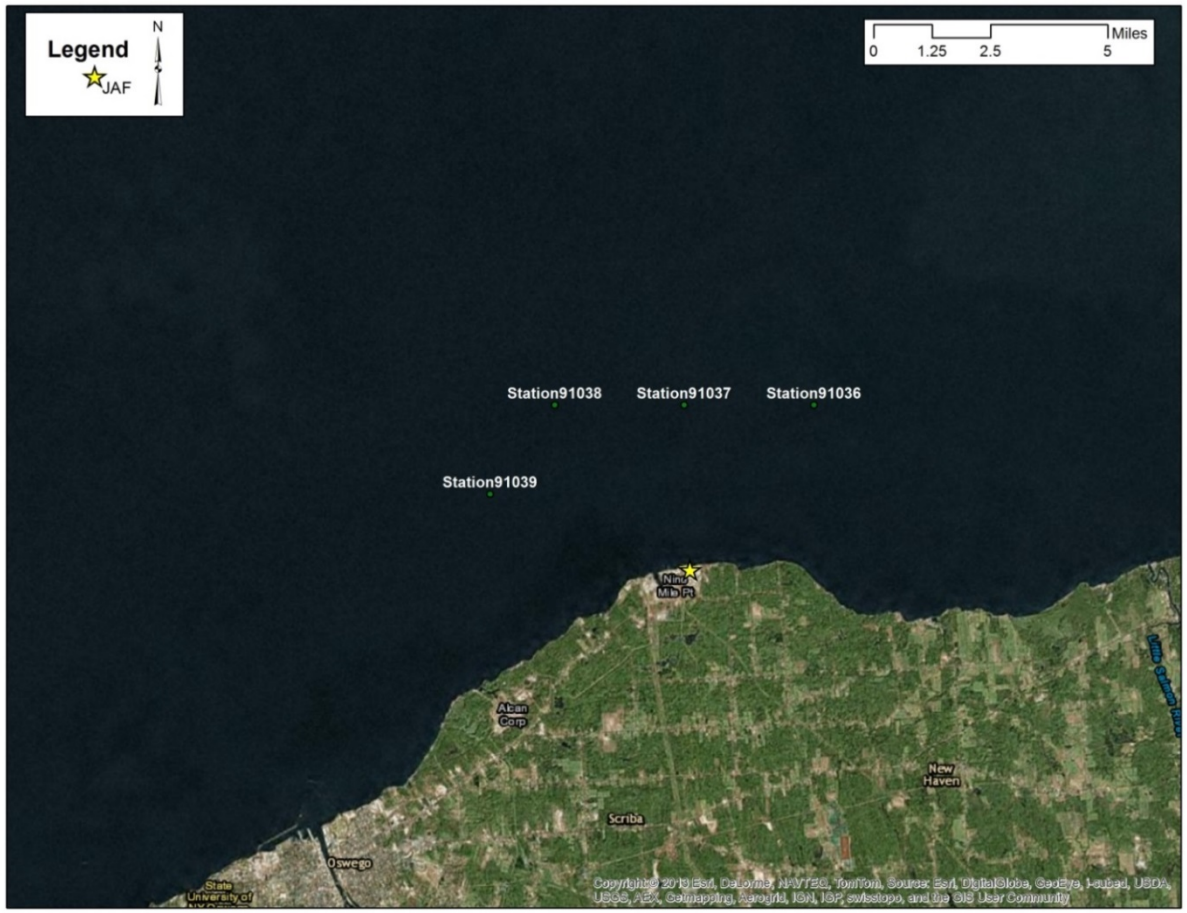
[1] Maximum wave height = 1.67*Hs (ANSI, 1992)
[2] Crest elevation = 0.5*wave height + setup + SWEL.

Table 3-22: Summary of Wind Wave Effects at JAF

Transect	2% Runup (Feet)[1]	Reflected Wave Crest Height (Feet)	Wave Setup (Feet)	Combined Elevation (feet USLS35)
1	11.2	--	1.5	265.5
2	--	12.61	1.7	267.1
3	--	11.78	1.6	266.1
4	--	11.06	1.3	265.2
5	13.8	--	1.4	268.0

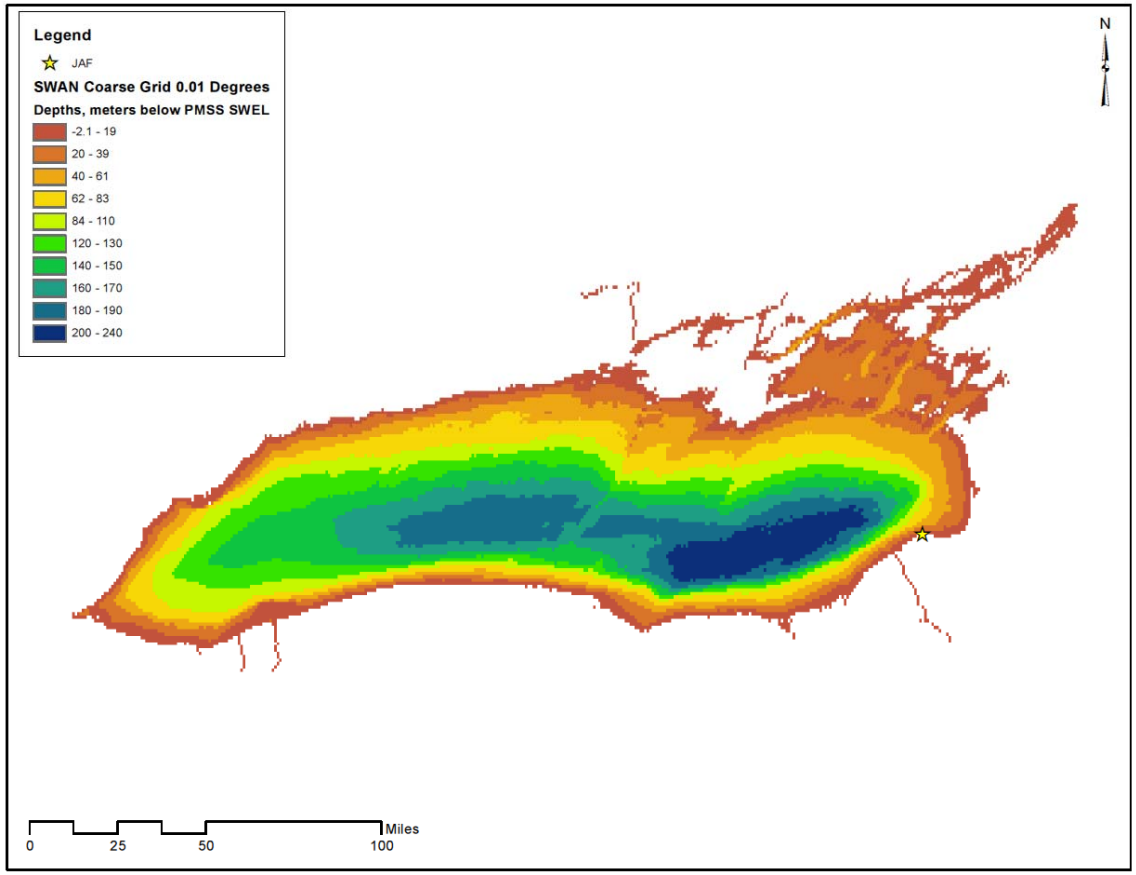
[1] 2% runup is empirically based on the significant wave height.

Figure 3-39: Site Locus and WIS Station Locations[30]



[30] Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-40: Coarse (0.01 Degree) Resolution SWAN Grid Developed from NOAA Lake Ontario Bathymetry[3132]



[31]Depths referenced to elevation 252.8 feet NGVD29.
[32] Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-41: Fine (0.002 Degree) Resolution SWAN Grid Developed from NOAA Lake Ontario Bathymetry[333435]

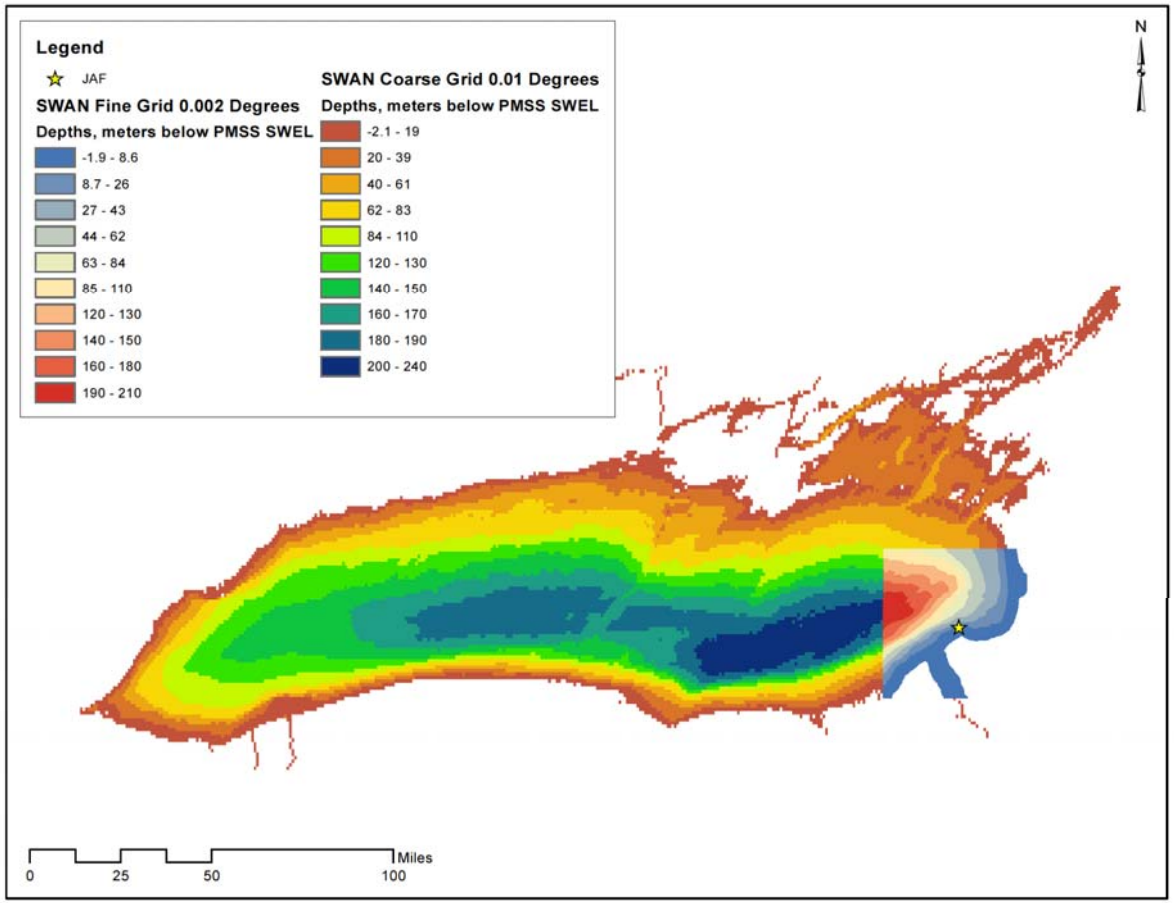
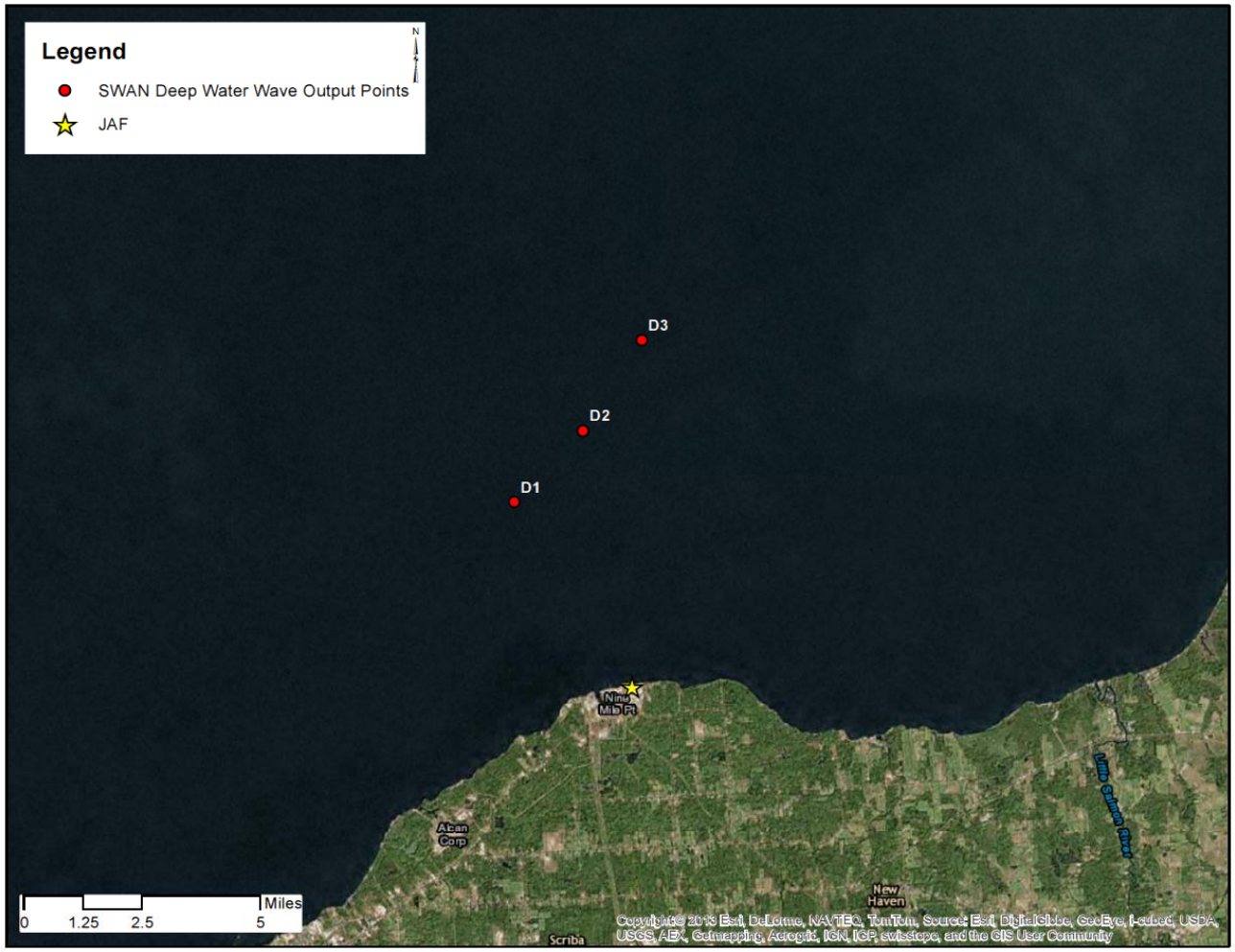


Figure 3-42: Locations of SWAN Shallow Water Wave Output Points

[33] Depths referenced to elevation 252.8 feet NGVD29.
[34] (Virden, 1999)
[35] Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-43: Locations of SWAN Deep Water Wave Output Points



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-44: Wind Wave Effect Transects

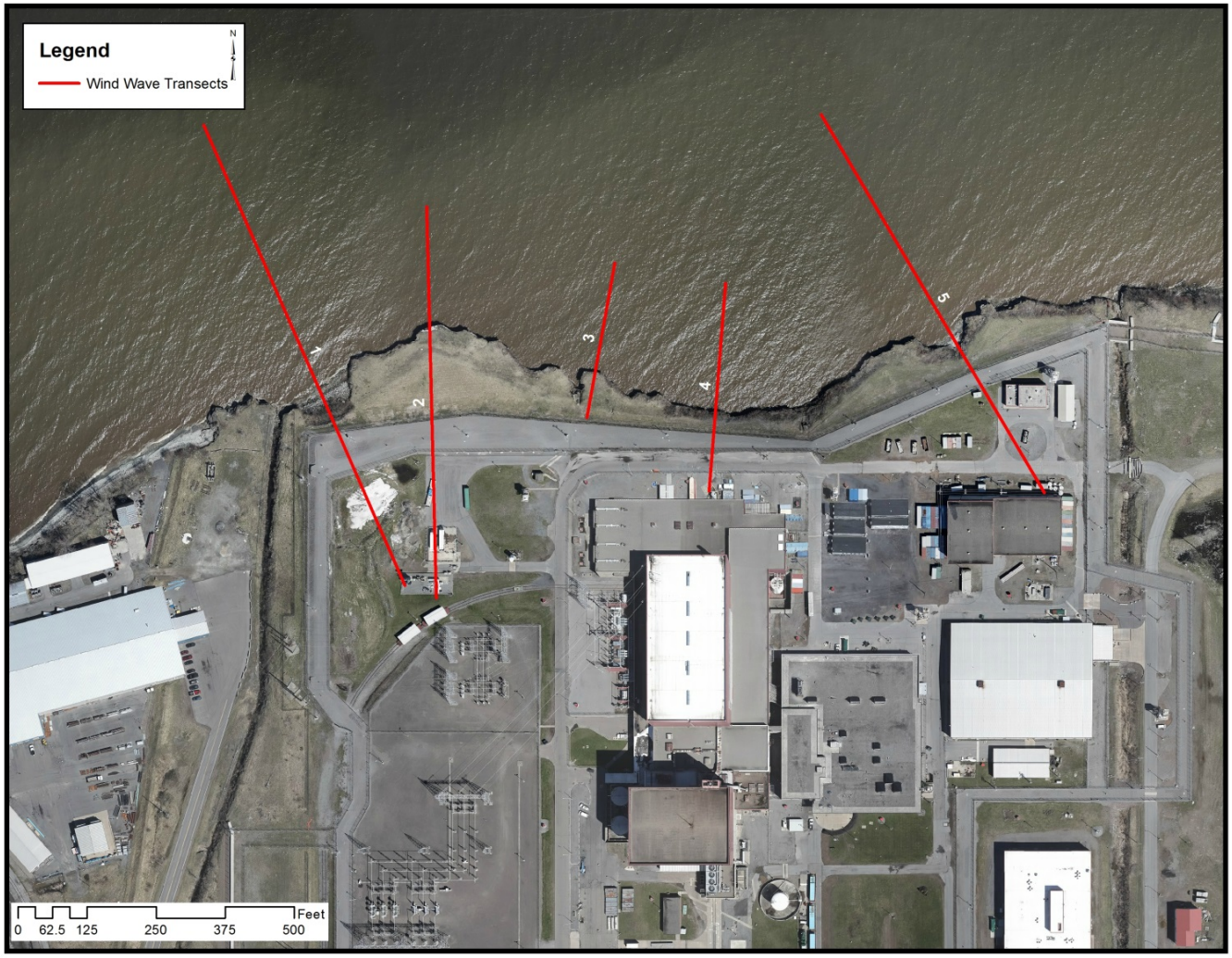
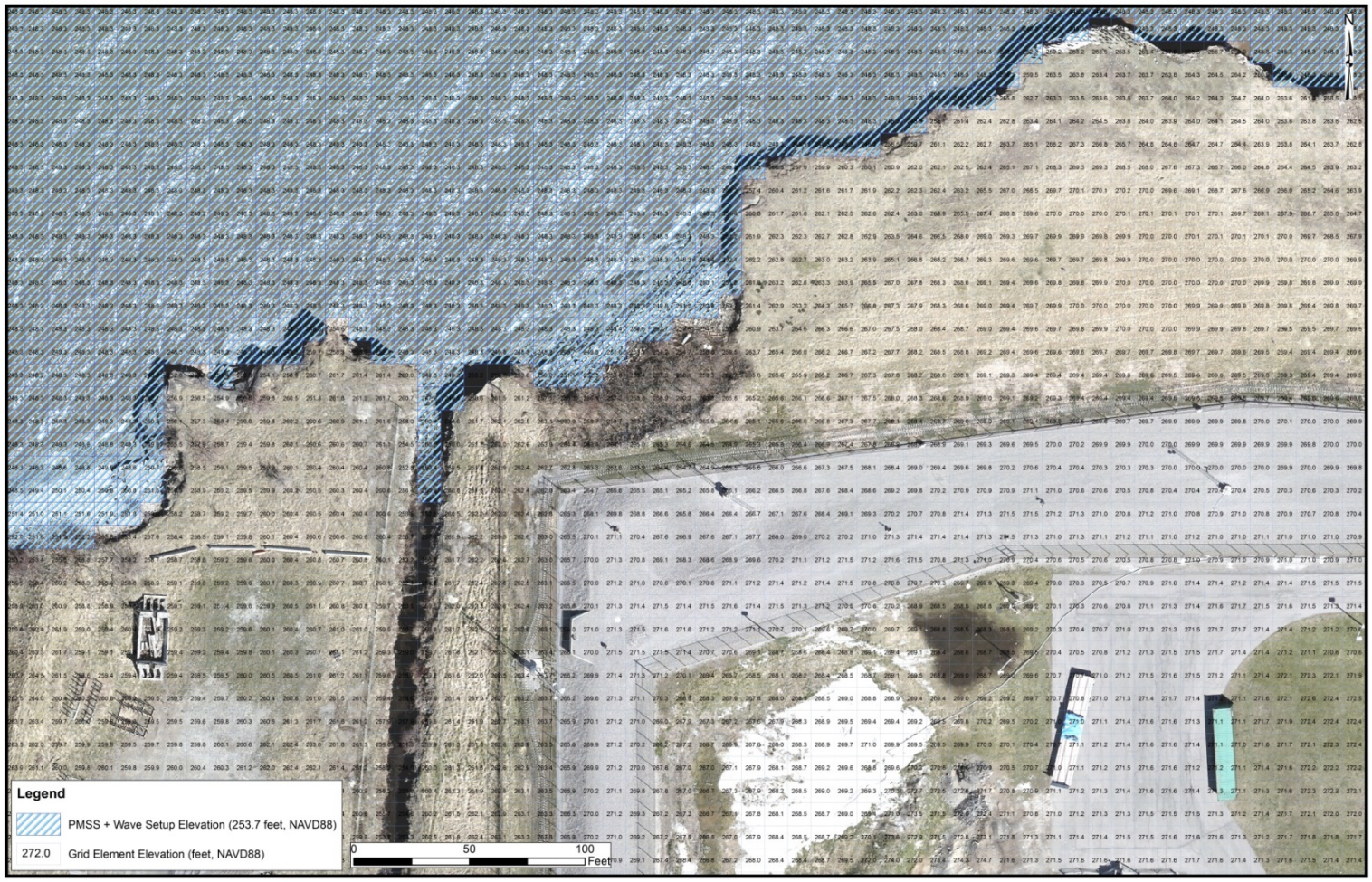


Figure 3-45: PMSS Inundation



Any illegible text or features in this figure are not pertinent to the technical purposes of this document.

Figure 3-46: Transect 1 Profile

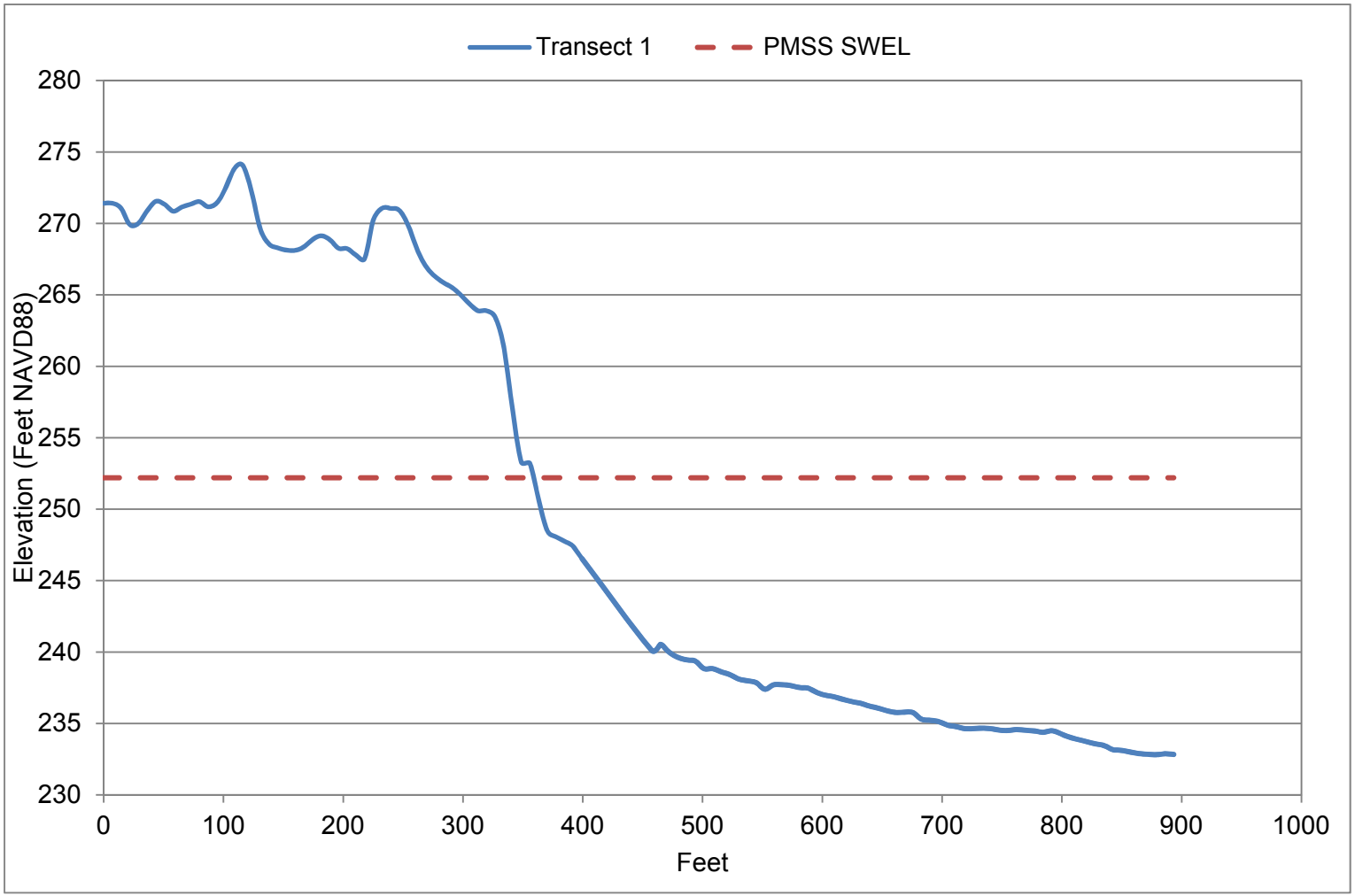


Figure 3-47: Transect 2 Profile

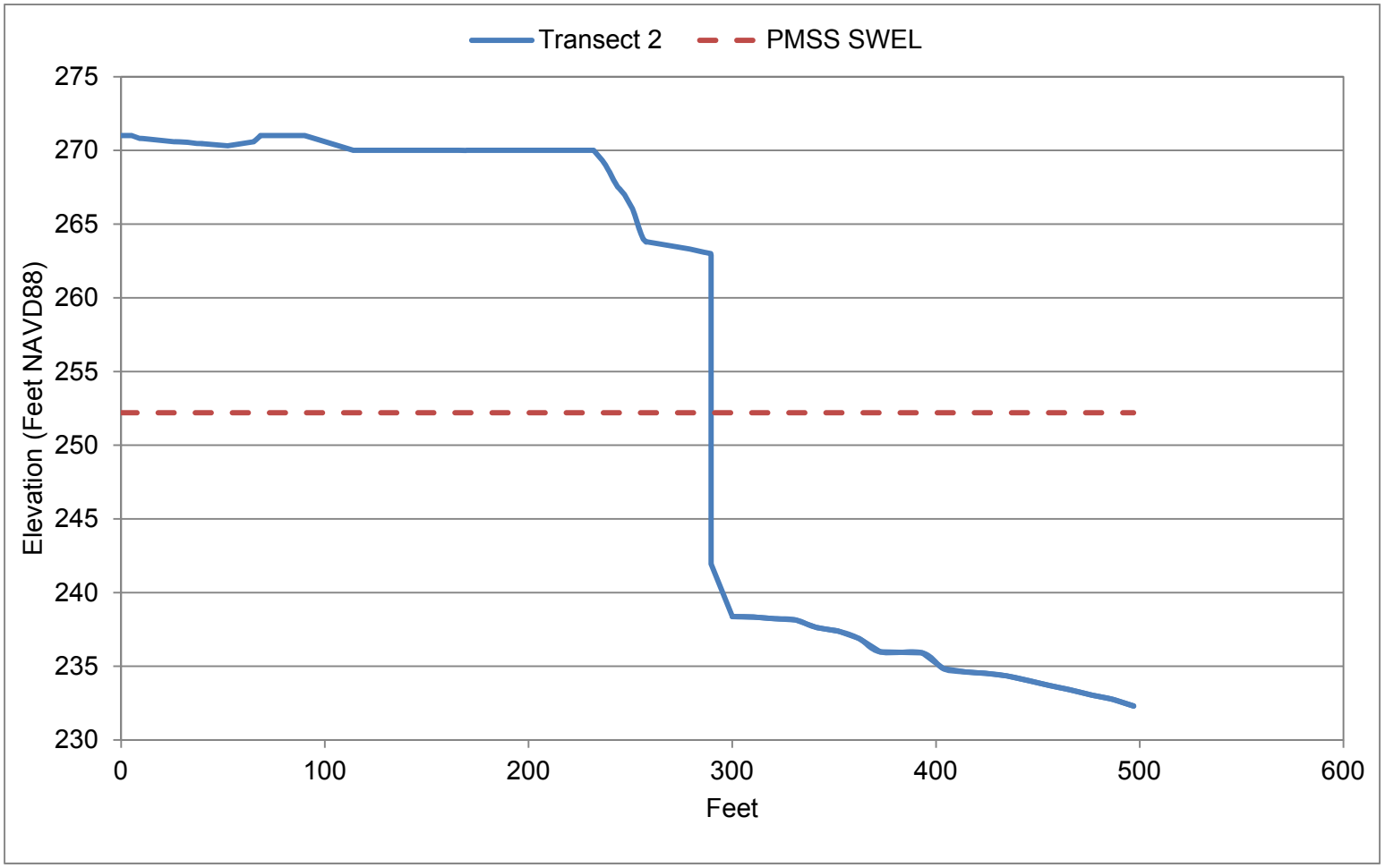


Figure 3-48: Transect 3 Profile

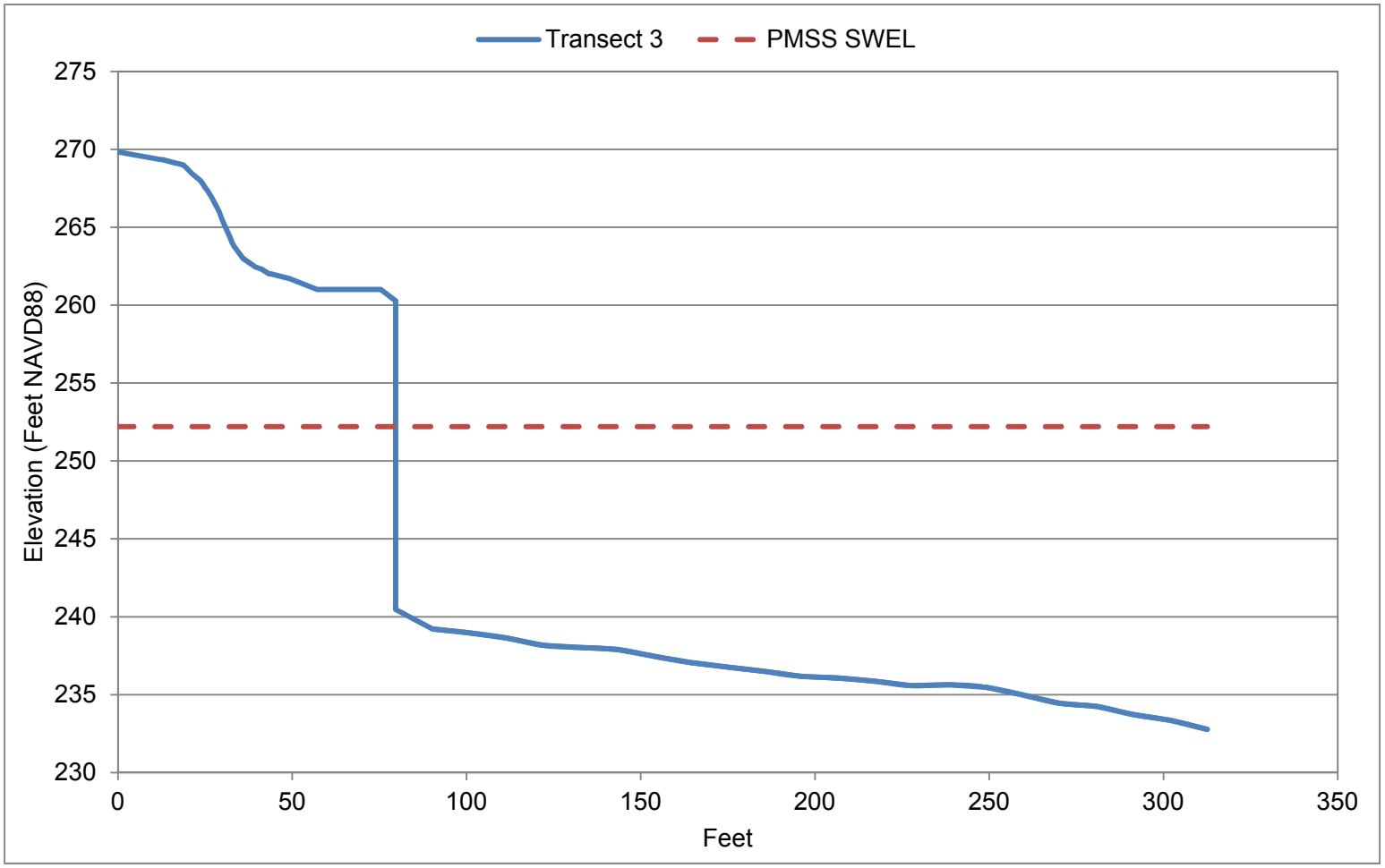


Figure 3-49: Transect 4 Profile

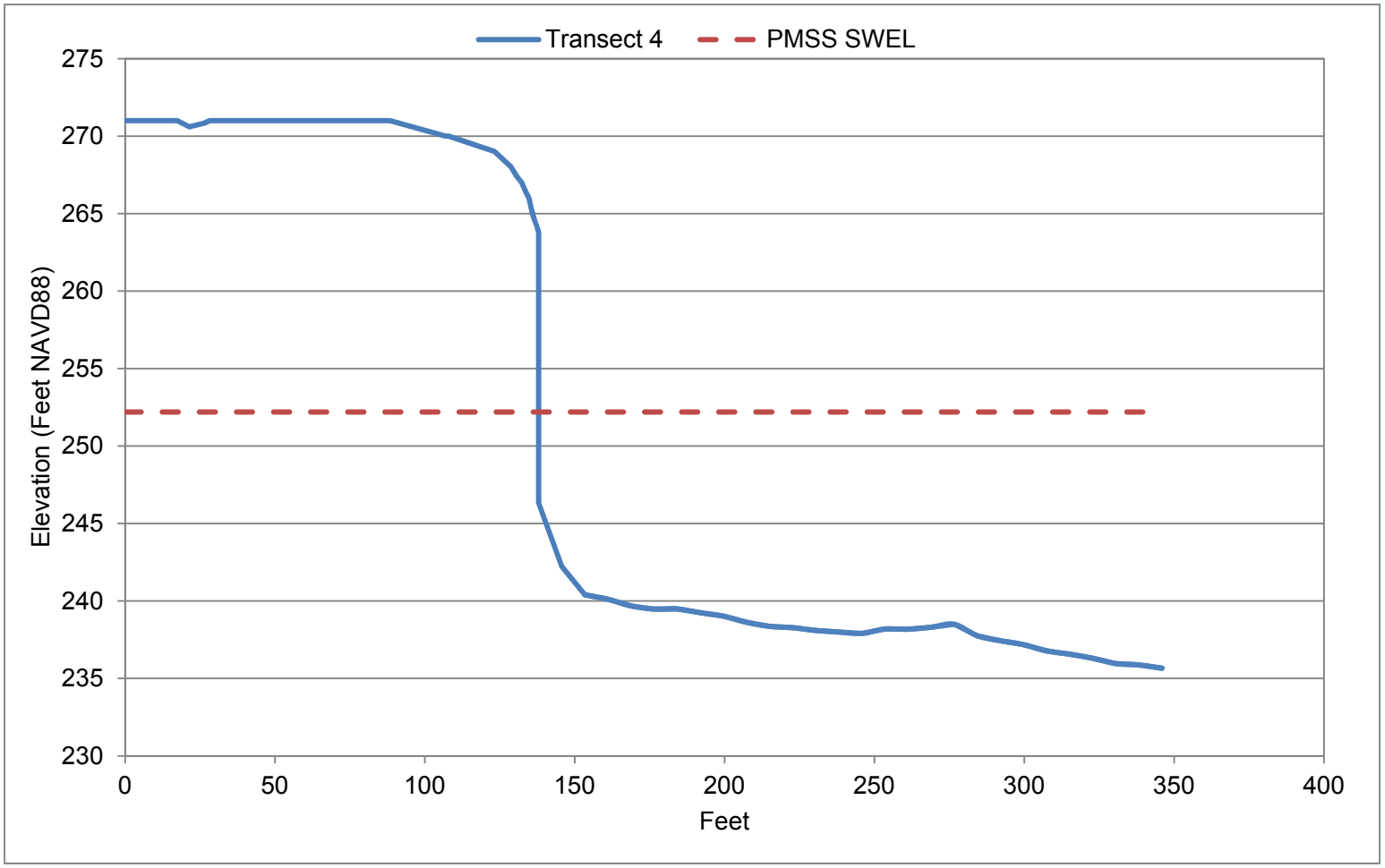
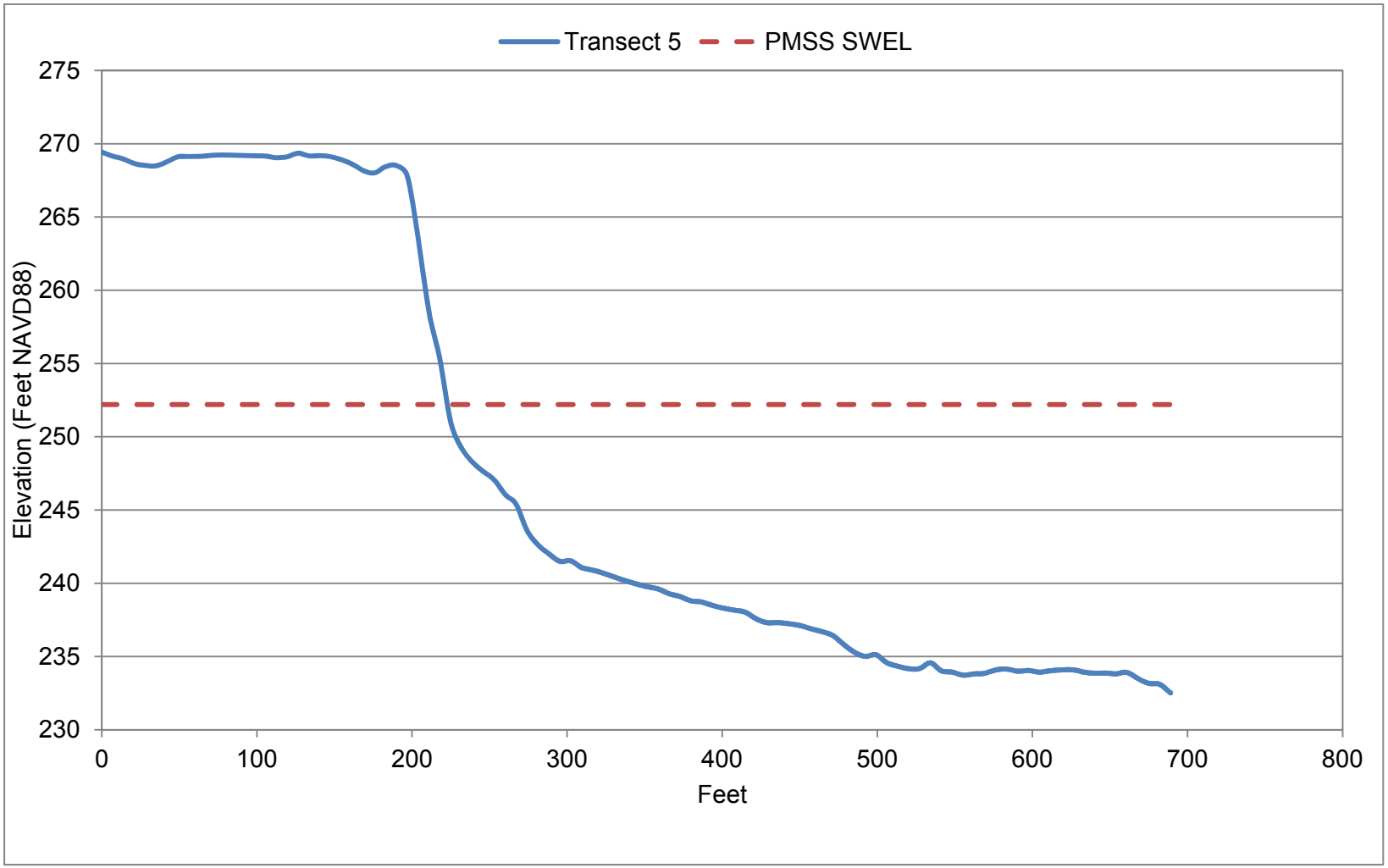


Figure 3-50: Transect 5 Profile



4.0 FLOOD PARAMETERS AND COMPARISON WITH CURRENT LICENSING BASIS

Per the March 12, 2012, 50.54(f) letter (NRC, 2012a), Enclosure 2, the following flood-causing mechanisms were considered in the flood hazard reevaluation for JAF.

1. Local Intense Precipitation;
2. Flooding in Streams and Rivers;
3. Dam Breaches and Failures;
4. Storm Surge;
5. Seiche;
6. Tsunami;
7. Ice Induced Flooding; and
8. Channel Migration or Diversion.

Some of these individual mechanisms are incorporated into alternative 'Combined Effect Flood' scenarios per Appendix H of NUREG/CR-7046 (NRC, 2011).

The March 12, 2012, 50.54(f) letter, Enclosure 2, requests the licensee to perform an integrated assessment of the plant's response to the reevaluated hazard if the reevaluated flood hazard is not bounded by the current licensing basis (NRC, 2012a). This section provides comparisons with the current licensing basis flood hazard and applicable flood scenario parameters per Section 5.2 of JLD-ISG-2012-05 (NRC, 2012b), including:

1. Flood height and associated effects
    a. Stillwater elevation;
    b. Wind waves and run-up effects;
    c. Hydrodynamic loading, including debris;
    d. Effects caused by sediment deposition and erosion (e.g., flow velocities, scour);
    e. Concurrent site conditions, including adverse weather conditions; and
    f. Groundwater ingress.
2. Flood event duration parameters (per Figure 6, below, of JLD-ISG-2012-05 [NRC, 2012b])
    a. Warning time (may include information from relevant forecasting methods (e.g., products from local, regional, or national weather forecasting centers) and ascension time of the flood hydrograph to a point (e.g. intermediate water surface elevations) triggering entry into flood procedures and actions by plant personnel);
    b. Period of site preparation (after entry into flood procedures and before flood waters reach site grade);
    c. Period of inundation; and
    d. Period of recession (when flood waters completely recede from site and plant is in safe and stable state that can be maintained).
3. Plant mode(s) of operation during the flood event duration.
4. Other relevant plant-specific factors (e.g. waterborne projectiles).

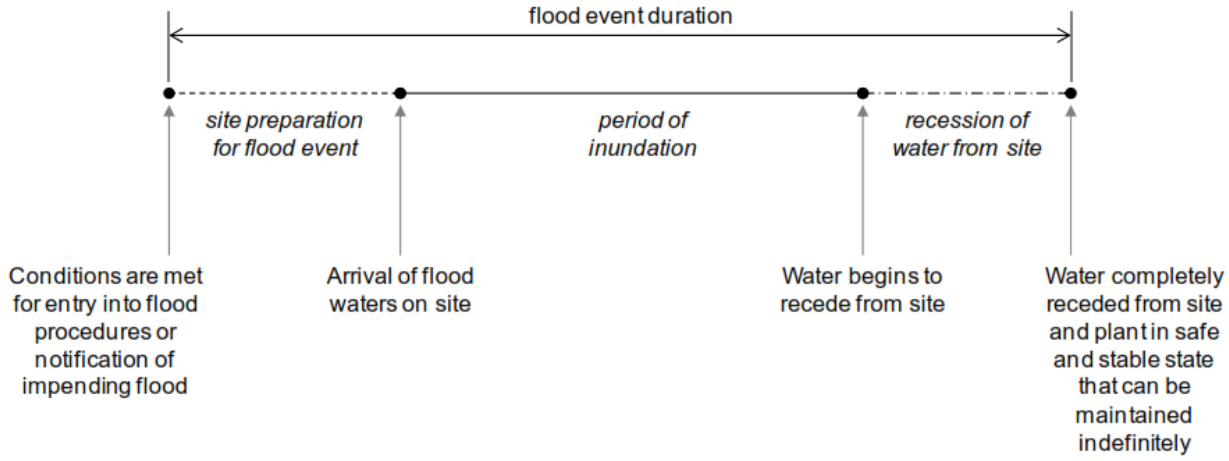


Illustration of Flood Event Duration (from Figure 6 of JLD-ISG-2012-05 NRC, 2012b)

Per Section 5.2 of JLD-ISG-2012-05 (NRC, 2012b), flood hazards do not need to be considered individually as part of the integrated assessment. Instead, the integrated assessment should be performed for a set(s) of flood scenario parameters defined based on the results of the flood hazard reevaluations. In some cases, only one controlling flood hazard may exist for a site. In this case, licensees should define the flood scenario parameters based on this controlling flood hazard. However, sites that have a diversity of flood hazards to which the site may be exposed should define multiple sets of flood scenario parameters to capture the different plant effects from the diverse flood parameters associated with applicable hazards. In addition, sites may use different flood protection systems to protect against or mitigate different flood hazards. In such instances, the integrated assessment should define multiple sets of flood scenario parameters. If appropriate, it is acceptable to develop an enveloping scenario (e.g., the maximum water surface elevation and inundation duration with the minimum warning time generated from different hazard scenarios) instead of considering multiple sets of flood scenario parameters as part of the integrated assessment. For simplicity, the licensee may combine these flood parameters to generate a single bounding set of flood scenario parameters for use in the integrated assessment.

For JAF, the following flood-causing mechanisms were determined to result in no feasible flood hazard at the site:

1. Dam Breaches and Failures;
2. PMS;
3. PMT;
4. Ice-Induced Flooding;
5. Channel Migration or Diversion; and

JAF was considered potentially exposed to the flood hazards listed below. In some instances, an individual flood-causing mechanism (e.g. ‘Flooding in Streams and Rivers’) is addressed in one or more of the combined-effect flood scenarios.

1. LIP;
2. Probable Maximum Flood on the unnamed local stream due to the PMP event;
3. PMSS due to a PMWS on Lake Ontario; and
4. Combined Effect Flood Scenarios consisting of the Probable Maximum Storm Surge with coincident wind-generated waves.

Section 4.1 summarizes the reevaluated flood levels for each flood mechanism and compares the flood elevations to the CLB flood parameters.

4.1 Summary of Current Licensing Basis and Flood Reevaluation Results

This section compares the current and reevaluated flood-causing mechanisms. It provides a comparison of the CLB flood elevation to the reevaluated flood elevation for each applicable flood-causing mechanism. A comparison of the CLB elevations and the reevaluated flood elevations is provided in Table 4-1.

Screened mechanisms have been evaluated at a high level and determined to not be applicable to the flooding hazard for JAF.

Flooding due to LIP and the PMF on the local unnamed stream are the only flood mechanisms to result in inundation in the vicinity of plant structures important to safety. Impacts of inundation due to those two flood mechanisms are addressed in Section 5.0.

4.1.1 Local Intense Precipitation

JAF does not currently include precipitation induced flooding at the plant grade level in the CLB. PMP induced inundation of the Reactor Building roof was evaluated as part of the IPEEE to determine if flood levels would exceed the designed load capacity of the roof of 50 lbs/ft^2. The evaluation indicated that the roof drains would be sufficient to maintain the inundation levels below the 9.6 inches of ponding which would exceed the design loading capacity. The rainfall rates used in this evaluation are: 5.4 inches in the peak 5-minute rainfall, 15.9 in for the peak 1-hour rainfall, and 27.6 in for the peak 6-hour rainfall.

The maximum water surface elevations due to the LIP flood mechanism at JAF result from a PMP depth of 5.4 in in the peak 5-minute rainfall, 15.9 in for the peak 1-hour rainfall, and 23.3 in for the peak 6-hour rainfall. Maximum LIP flood elevations at the reporting grid locations near critical plant structures range from 272.1 ft USLS35 to 272.8 ft USLS35, with corresponding flow depths approximately 0.1 ft to as high as 1.2 ft.

Water ponding on rooftops was not specifically evaluated as part of the Flood Hazard Re-evaluation as rainfall parameters were bound by the CLB.

Inundation durations at the critical plant locations are shown in time-series plots in Appendix A.1.

A comparison of the re-evaluated LIP flood hazard to the CLB is provided in Table 4-2. Flood elevations, depths, and inundation durations at critical plant locations are summarized in Table 4-3.

Impacts of LIP flood elevations at critical plant locations are discussed in Section 5.0.

4.1.2 Probable Maximum Flood on Rivers and Streams

Flood hazard due to probable maximum flooding on local streams and rivers was not specifically addressed in the CLB.

Inundation due to the PMF on the local unnamed stream results in flood elevations at the reporting grid locations near critical plant structures range from 271.8 feet USLS35 to 272.8 feet USLS35. Corresponding flow depths are approximately 0.0 ft to as high as 1.3 ft. Maximum velocities at the reporting locations range from 0.02 feet per second (fps) to 1.2 fps. Erosion in this area is not anticipated because the calculated velocity is lower than the USACE permissible velocity.

Inundation durations at the critical plant locations are shown in time-series plots in Appendix B.1.

A comparison of the re-evaluated PMF flood hazard to the CLB is provided in Table 4-4. Flood elevations, depths, and inundation durations at critical plant locations are summarized in Table 4-5.

Impacts of PMF flood elevations at critical plant locations are discussed in Section 5.0.

4.1.3 Dam Breaches and Failures

Flood hazard due to upstream dam failures was not specifically addressed as part of the CLB and screened out as not impacting the site in the Flood Hazard Reevaluation at JAF.

4.1.4 Storm Surge

The CLB includes an evaluation of water surface elevation variation on Lake Ontario due to a probable maximum wind storm. The model results indicate a 4.1 ft short term increase in lake level due to the probable maximum windstorm, which is analogous to the probable maximum storm surge scenario evaluated in this report. The CLB evaluation of Lake Ontario flooding assumes a potential antecedent lake level of 250 ft USLS35, resulting in a PMSS elevation of 254.1 ft USLS35.

Based on the evaluation summarized in Section 3.4, the predicted PMSS results in a 4.8 ft short term increase in lake level. This result is 0.7 ft higher than the CLB value in terms of increase from the PMSS, but due to the different assumptions regarding antecedent lake level, the CLB storm surge elevation bounds the re-evaluated storm surge flood hazard of 252.8 ft USLS35.

4.1.5 Seiche

Flood hazard due to seiche was not specifically addressed as part of the CLB and screened out as not impacting the site in the Flood Hazard Reevaluation at JAF.

4.1.6 Tsunami

Flood hazard due to tsunami was not specifically addressed as part of the CLB and screened out as not impacting the site in the Flood Hazard Reevaluation at JAF.

4.1.7 Ice-Induced Flooding

Flood hazard due to ice was not specifically addressed as part of the CLB and screened out as not impacting the site in the Flood Hazard Reevaluation at JAF.

4.1.8 Channel Migration or Diversion

Flood hazard due to channel migration or diversion was not specifically addressed as part of the CLB and screened out as not impacting the site in the Flood Hazard Reevaluation at JAF.

4.1.9 Combined Effects

The controlling flood event for the JAF CLB is a combined effect flood consisting of the PMWS-induced PMSS coincident with a maximum lake level including precipitation inputs and wind-generated waves. The results of this analysis were as follows:

Maximum Lake Level (250 ft USLS35) + PMSS (+4.1 ft) + PMP Lake Level Increase (+0.35 ft) + Wave Runp (+7.5 ft) = Maximum flood level of 262 ft USLS35.

Additionally, the flood level inside the screenwell building was evaluated, as the building is hydraulically connected to Lake Ontario. Wave runup was not considered as part of this evaluation, as waves do not result in a significant sustained change in the hydraulic surface (JAF, 2014, Section 2.4.3.7). The CLB bounding flood elevation during the combined effect flood scenario is 255 ft USLS35.

The primary combined effects flooding mechanism from the flood hazard re-evaluation is the combination of the PMSS and the wind-wave activity resulting from the PMWS moving in a manner which produces extreme waves. The maximum combined effect elevation resulting from this scenario, including wave action, is 268.0 feet

USLS35 (252.8 ft USLS35 stillwater, 13.8 ft wave runup, and 1.4 ft wave setup). PMP inputs to Lake Ontario were not considered due to the strict regulation of the Lake Ontario water level by the governing agencies.

The resulting flood elevation is six (6) ft higher than the controlling CLB Lake Ontario flood elevation.

The resulting flood elevation is four (4) ft below general site grade of 272 ft USLS35, and as a result does not impact SSCs important to safety at JAF.

4.2 References

NRC, 2011. "NUREG/CR-7046: Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America", U.S. Nuclear Regulatory Commission, Springfield, VA, National Technical Information Service, 2011.

NRC, 2012a. "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(F) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident", U.S. Nuclear Regulatory Commission, March 2012.

NRC, 2012b. "JLD-ISG-2012-05, Guidance for Performing the Integrated Assessment for External Flooding, Interim Staff Guidance", Revision 0, 2012. (ADAMS Accession No. ML12311A214)

Table 4-1: Flood Elevation Comparison

Mechanism	CLB Flood Height	Reevaluated Flood Height	Difference
Local Intense Precipitation	Not evaluated for surface runoff, Rooftop PMP 9.6 in	272.8 ft USLS35, N/A for rooftops	N/A
PMF on Unnamed Local Stream	Not evaluated	272.8 ft USLS35	N/A
Dam Breaches and Failures	Not evaluated	Screened	N/A
Storm Surge	254.1 ft USLS35	252.8 ft USLS35	-1.3 ft
Seiche	Not evaluated	Screened	N/A
Tsunami	Not evaluated	Screened	N/A
Ice-Induced Flooding	Not evaluated	Screened	N/A
Channel Migration or Diversion	Not evaluated	Screened	N/A
Combined Effect			
PMSS + PMP + Waves	262 ft USLS35	268 ft USLS35 (no PMP input)	+6 ft
Screenwell PMSS + PMP	255 ft USLS35	252.8 ft USLS35 (no PMP input)	-2.2 ft

Notes:
"Not evaluated" indicates that this flood mechanism was not defined or addressed in CLB documents. As a result, no comparison can be made to re-evaluated results.

Table 4-2: Local Intense Precipitation

Flood Scenario Parameter		CLB/IPEEE Flood Hazard	Reevaluated Flood Hazard	Bounded (B) or Not Bounded (NB)
Flood Level and Associated Effects	Max Stillwater Elevation (ft. MSL)	Not evaluated for surface flooding, 9.6 inches for rooftop inundation.	272.8 ft USLS35	NB
	Max Wave Run-up Elevation (ft. MSL)	Not evaluated in the CLB/IPEEE.	Wind/wave interaction was not evaluated coincident with the LIP event.	B
	Max Hydrodynamic/Debris Loading (psf)	Not evaluated in the CLB/IPEEE.	Hydrodynamic loading was not evaluated. Debris loading was not considered a credible hazard due to the relatively low flow velocities/depths and limited debris sources within the protected area.	B
	Effects of Sediment Deposition/Erosion	Not identified in the CLB/IPEEE.	Flow velocities are below USACE standards for paved surfaces.	NB
	Concurrent Site Conditions	Not identified in the CLB/IPEEE.	No antecedent storm was considered with the LIP event.	B
	Effects on Groundwater	Not identified in the CLB/IPEEE.	Effect on groundwater is not evaluated.	B
Flood Event Duration	Warning Time (hours)	Not identified in the CLB/IPEEE.	Not identified.	B
	Period of Site Preparation (hours)	No preparation is indicated in the CLB/IPEEE.	Not identified.	B
	Period of Inundation (hours)	Not identified in the CLB/IPEEE.	<9.0 hours for doors, 20 hours for plant	NB
	Period of Recession (hours)	Not identified in the CLB/IPEEE.	Not identified.	B
Other	Plant Mode of Operations	Not identified in the CLB/IPEEE.	No operational modes assumed or evaluated	B
	Other Factors	N/A	N/A	N/A

Note: B/NB indicates if the re-evaluation parameters or results are bound/not bound by the CLB/IPEEE evaluation parameters or results.

Table 4-3: LIP Flood Depths and Durations at Select Locations

Feature ID	Building	Door Sill Elevation (ft, USLS35)[1]	Ground Elevation (ft, USLS35)	Maximum Water Elevation (ft, USLS35)	Flood Depth Above Door Sill (ft)	Flood Depth Above Ground (ft)	Duration Above Door Sill (hours)	Duration Above Ground (hours)
Door A	Heater Bay	272.2	272.0	272.7	0.5	0.7	1.3	6.8
Door B	Water Treatment Building	272.2	271.6	272.1	-0.1	0.5	0.0	8.7
Door C	Screenwell Building	272.2	271.8	272.4	0.2	0.6	0.3	20.0
Door D	Gas Bottle Storage Building	272.3	272.2	272.3	0.0	0.1	0.0	0.0
Door E1	Diesel Generator Room	-	271.2	272.2	-	1.0	-	20.0
Door E2	Diesel Generator Room	-	271.2	272.2	-	1.0	-	20.0
Door F1	Diesel Generator Room	-	271.1	272.3	-	1.1	-	20.0
Door F2	Diesel Generator Room	-	271.3	272.3	-	1.0	-	20.0
Door G	Turbine Building Track Bay	272.2	272.2	272.7	0.5	0.5	6.1	6.1
Door H	Administration Building	272.2	272.1	272.4	0.3	0.4	4.9	6.3
Door I	Electrical Bay	272.2	272.2	272.5	0.3	0.3	4.4	4.4
Door J	Administration Building	272.3	272.0	272.4	0.1	0.4	4.4	6.8
Door K	CAD Building	271.9	271.9	272.6	0.7	0.7	8.8	8.8
Door L	CAD Building	271.9	271.8	272.6	0.6	0.8	8.2	10.8
Door M	Reactor Building Track Bay	272.2	272.2	272.6	0.5	0.5	6.5	6.5
Door N	Gas Treatment Building	272.2	271.5	272.7	0.5	1.2	6.8	20.0
Door O	Administration Building	-	272.1	272.4	-	0.4	-	6.2
Flex DG	South of Diesel Generator Room	-	272.0	272.4	-	0.4	-	6.1
Hatch 1 (H1)	Reactor Building	-	271.7	272.4	-	0.7	-	20.0
Manhole 1 (M1)	Plant Yard	-	271.7	272.5	-	0.8	-	17.2
Hatch 2 (H2)	Reactor Building	-	272.1	272.8	-	0.6	-	7.6
Manhole 2 (M2)	Plant Yard	-	271.8	272.8	-	1.0	-	20.0
Manhole 3 (M3)	Plant Yard	-	271.9	272.5	-	0.7	-	8.5

1. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.
2. Due to rounding, flood depths added to ground surface elevation may not be exactly equal to the maximum water surface elevation as reported above. The variance is within 0.1 ft.

Table 4-4: Unnamed Stream PMF

Flood Scenario Parameter		CLB Flood Hazard	Reevaluated Flood Hazard	Bounded (B) or Not Bounded (NB)
Flood Level and Associated Effects	Max Stillwater Elevation (ft. MSL)	Not evaluated in the CLB.	272.8 ft USLS35	NB
	Max Wave Run-up Elevation (ft. MSL)	Not evaluated in the CLB.	Screened due to insufficient fetch.	B
	Max Hydrodynamic/Debris Loading (psf)	Not evaluated in the CLB.	Hydrodynamic loading was not evaluated. Debris loading was not considered a credible hazard due to the relatively low flow velocities/depths reducing the likelihood of large entrained debris.	B
	Effects of Sediment Deposition/Erosion	Not evaluated in the CLB.	Flow velocities are below USACE standards for paved surfaces.	B
	Concurrent Site Conditions	Not evaluated in the CLB.	The PMP event driving the PMF is preceded by a 40% PMP antecedent storm.	B
	Effects on Groundwater	Not evaluated in the CLB.	Effect on groundwater is not evaluated.	B
Flood Event Duration	Warning Time (hours)	Not evaluated in the CLB.	Not identified.	B
	Period of Site Preparation (hours)	Not identified in the CLB.	No special site preparation is identified as necessary for this event.	B
	Period of Inundation (hours)	Not identified in the CLB.	≤5.5 hrs for doors, 49.5 hrs for site	NB
	Period of Recession (hours)	Not identified in the CLB.	Not identified.	NB
Other	Plant Mode of Operations	Not identified in the CLB.	No operational modes assumed or evaluated	B
	Other Factors	N/A	N/A	N/A

Note: B/NB indicates if the re-evaluation parameters or results are bound/not bound by the CLB evaluation parameters or results.

Table 4-5: Unnamed Local Stream PMF Flood Depths and Durations at Select Locations

Feature ID	Building	Door Sill Elevation (feet, USLS35)[1]	Ground Elevation (feet, USLS35)	Maximum Water Elevation (ft, USLS35)	Flood Depth Above Door Sill (feet)	Flood Depth Above Ground (feet)	Duration Above Door Sill (hours)	Duration Above Ground (hours)
Door A	Heater Bay	272.2	272.0	-	-	-	0.0	0.0
Door B	Water Treatment Building	272.2	271.6	271.8	-0.4	0.2	0.0	4.5
Door C	Screenwell Building	272.2	271.8	272	-0.2	0.3	0.0	48.0
Door D	Gas Bottle Storage Building	272.3	272.2	-	-	-	0.0	0.0
Door E1	Diesel Generator Room	-	271.2	272.1	-	0.9	-	48.5
Door E2	Diesel Generator Room	-	271.2	272.1	-	0.9	-	48.5
Door F1	Diesel Generator Room	-	271.1	272.1	-	1.0	-	48.5
Door F2	Diesel Generator Room	-	271.3	272.2	-	0.9	-	48.5
Door G	Turbine Building Track Bay	272.2	272.2	-	-	-	0.0	0.0
Door H	Administration Building	272.2	272.1	272.4	0.2	0.3	3.0	3.0
Door I	Electrical Bay	272.2	272.2	272.4	0.2	0.2	2.5	2.5
Door J	Administration Building	272.3	272.0	272.5	0.2	0.5	3.0	4.5
Door K	CAD Building	271.9	271.9	272.7	0.8	0.8	5.5	5.5
Door L	CAD Building	271.9	271.8	272.7	0.8	0.9	5.5	6.5
Door M	Reactor Building Track Bay	272.2	272.2	272.8	0.6	0.6	4.0	4.0
Door N	Gas Treatment Building	272.2	271.5	272.8	0.6	1.3	4.0	49.5
Door O	Administration Building	-	272.1	272.4	-	0.3	-	3.0
Flex DG	South of Diesel Generator Room	-	272.0	272.2	-	0.2	-	2.0
Hatch 1 (H1)	Reactor Building	-	271.7	272.5	-	0.8	-	49.5
Manhole 1 (M1)	Plant Yard	-	271.7	272.6	-	0.9	-	10.0
Hatch 2 (H2)	Reactor Building	-	272.1	272.8	-	0.7	-	4.0
Manhole 2 (M2)	Plant Yard	-	271.8	272.8	-	1.0	-	49.0
Manhole 3 (M3)	Plant Yard	-	271.9	272.6	-	0.8	-	5.5

1. Elevations of door sill are surveyed elevations from the site survey (AREVA, 2014b) and may be different from general grid element ground elevation, which were interpolated from the topographic site survey (AREVA, 2014b). Door sill elevations are the elevations at which water may enter buildings.

2. Due to rounding, flood depths added to ground surface elevation may not be exactly equal to the maximum water surface elevation as reported above. The variance is within 0.1 ft.

5.0 INTERIM EVALUATION AND ACTIONS TAKEN OR PLANNED

Flooding due to LIP and PMF on the local unnamed stream are the only flood mechanisms which cause inundation of the JAF site in the vicinity of SSCs important to safety.

In response to the flood elevations at the site resulting from the LIP and PMF flood events, an evaluation was performed to determine the impact of inundation at the affected exterior doors identified in Section 3.1 (JAF, 2014). The results of this evaluation indicate that there are no impacts to equipment important to safety as a result of the re-evaluated flood elevations.

No additional actions are planned.

5.1 Determination of Risk to Safe Shut Down Equipment from Flooding at Doors

The following results of the evaluation are summarized from Engineering Report No. JAF-RPT-14-00035, Revision 0 (JAF, 2014).

The evaluation investigated JAF exterior features that are subject to flooding resulting from a LIP and/or PMF events; particularly as related to the depth of water at JAF access-ways (i.e. doors, hatches, manholes) (JAF, 2014). The evaluation report documents the potential for the flood waters to enter the plant and potential impact to SSCs important to safety.

The leakage rate through each door identified in Section 3.1 was evaluated as part of the evaluation. The calculated value of Turbine Building inflow would never raise more than a few inches above the Turbine Building 252.0 ft USLS35 elevation (based on the available volume) and therefore, would not rise to the Screenwell Building floor (elevation 255.0 ft USLS35). Under the peak LIP and PMF floods, no equipment important to safety is affected.

The same holds true of the Reactor Building 272.0 ft USLS35 elevation where infiltration would run down the floor drains, the stairwell to the East Crescent (elevation 227.5 ft USLS35), and the hatch to the Torus Room (elevation 227.75 ft USLS35). Again, the volume of space capable of being inundated is vast compared to the in-leakage; thereby limiting the volume and related depth of water to a value well below the level where SSCs important to safety are impacted in an adverse manner.

Each door is assumed to be closed during the severe weather event, as indicated in the JAF evaluation (JAF, 2014, Section 3.3).

Door A - Door on East Side of Heater Bay

Leakage through the doors (3 ft personnel door and 12 ft rollup door) will flow through floor drains and down the staircase. Weather stripping is in good condition. No equipment important to safety is at risk due to flooding at this location.

Door B - Door on Radwaste/Water Treatment Building

Peak flood levels do not exceed door sill elevation. Weather stripping is in good condition.

Door C – Screenwell Building Entrance

Leakage through the door drains directly to Lake Ontario via the intake and discharge tunnels. No equipment important to safety is at risk. Weather stripping is in good condition.

Door D - Scaffold Storage building

Leakage into this separate metal building does not affect any safe shutdown equipment or other operating equipment.

Doors E and E1 –West side of Diesel Generator Rooms

The two openings are vertical bolted hatches with caulking. Leakage is at or near zero, and floor drains maintain dry conditions. The equipment is on pedestals. There is also an interior double door that accesses the interior area from Door G. Leakage from this path would be inconsequential because it would flow to the stairwell and local floor drains prior to passing through two doors before entering the Switchgear and the Diesel Generator Rooms, which have high door sills. Switchgear outside the Diesel Bays is raised above any flooding.

Doors F and F1 - West side of Diesel Generator Rooms

The two openings are vertical bolted hatches with caulking. Leakage is at or near zero, and floor drains maintain dry conditions. The equipment is on pedestals. There is also an interior double door that accesses the interior area from Door G. Leakage from this path would be inconsequential because it would flow to the stairwell and local floor drains prior to passing through two doors before entering the Switchgear and the Diesel Generator Rooms, which have high door sills. Switchgear outside the Diesel Bays is raised above any flooding.

Door G – Door on NW face of the Turbine Building Track Bay

This is a 20 ft rollup door, and there are numerous floor drains in the area and a stairwell to the Turbine Bldg. 252.0 ft USLS35 level. Components are positioned on elevated pedestals. No equipment important to safety is at risk due to flooding.

Door H – Doors on NW face of Admin Building

This is a set of two doors, a 12 ft rollup door and a 3 ft personnel door (Door O), and is part of the Administration Building. There are no floor drains in this part of the building, but the water would flow to an area with floor drains and/or to an area where a stairwells would provide a flow-path to the Turbine Bldg. 252.0 ft USLS35 level (via the overhead door between the Administration and Turbine buildings) and/or the East and West Cable Tunnels where equipment is elevated above the floor level. The weather stripping is in good condition for both doors. No safety-related equipment is at risk.

Door I - Door on SW face of Electrical Bay

This is a 12 ft rollup door. There are numerous floor drains in the area and a stairwell to the Turbine Bldg. 252.0 ft USLS35 level. Components are positioned on elevated pedestals. No equipment important to safety is at risk due to flooding.

Door J - Door on SW face of Admin Building

This door is the 3 ft personnel entrance to the Administration Building, which would flood. The water flows to an area with floor drains. The weather stripping is in good condition. There is no equipment important to safety in the building.

Door K- Door on south side of CAD Building

Equipment is designed for outdoor conditions, and is raised on pedestals. The north wall is the Reactor Building and is sealed. There is no equipment important to safety in the building.

Door L - Door on south side of CAD Building

Equipment is designed for outdoor conditions, and is raised on pedestals. The north wall is the Reactor Building and is sealed. There is no equipment important to safety in the building.

Door M – Exterior Rail bay Door on south side of Reactor Building

The Track-bay entrance is a double steel door. At the north end of the Track-bay is an interior flood-proof door (R272-2). The door seal is sufficient to keep leakage to seepage which will not affect SSCs important to safety. The south end Door M is of a similar design and again is utilized to maintain a secondary containment pressure when the interior RB Track-bay door is opened.

The west side door (R272-10) a 3 ft personnel door goes to the Standby Gas Treatment Area, which door N enters from the east (R272-9). Equipment is on 1 foot high pedestals. The Standby Gas Treatment system is important to safety but is not at risk because the maximum flood level (0.5 ft) is less than the pedestal height. Note, any leakage not captured by the Reactor Building floor drains would utilize a flow path to the basement of the East Crescent at elevation 227.5 ft USLS35, or the bottom of the Torus Room at elevation 227.75 ft USLS35 (via the Torus Room Floor plug). The quantity of water here would only amount to a few inches on the floor and would not jeopardize any SSCs important to safety.

Door N - Near southeast corner of Gas Treatment Area

Equipment is on 12 in high pedestals, above the postulated flood levels.

FLEX Diesel Generator - Prestaged Area south of Diesel Generator Building

Flood height does not reach equipment storage height.

5.2 Determination of Risk to Safe Shut Down Equipment from Flooding at Additional Features

The following results of the evaluation are summarized from Engineering Report No. JAF-RPT-14-00035, Revision 0 (JAF, 2014).

The Floor Drain Tank has a capacity of 8,500 gallons. When the leakage exceeds 8,500 gallons the tank overflows to the floor then to the pipe tunnel. This will not put any safe shutdown equipment at risk.

Total in-leakage from Doors G, H, I, and J is approximately 210,000 gallons. The drain tank will overflow to the floor of the tank area at elevation 250 ft USLS35, then to the East Turbine Building Pipe Tunnel at elevation 252.0 ft USLS35, and ultimately pooling in the general Turbine Building to a height of a few inches. Overflow is not a safety concern because there is no equipment important to safety in this area of the Turbine Building.

Manhole M1 has the RHR pump C cable. RHR Pump C cable penetrations are sealed and the cables are rated for operating submerged in water. Since there are 4 RHR pumps, the failure of one (1) pump does not put the plant at risk. Also RHR is assumed not to run until outside power is available at which time pump A, B or D would be put in service and the flood event would be finished.

Hatches H1 and H2 to the Reactor Building are heavy and sealed hatches. Any leakage would be minor and classified as seepage. The seepage would drain to the crescents. This minor seepage would not put at risk any safety-related equipment.

5.3 References

JAF, 2014. "Fukushima Project Flooding Walkdown ", Engineering Report No. JAF-RPT-14-00035, Revision 0 2014. See Project Manager approval of client references on Page 2.

6.0 ADDITIONAL ACTIONS

No additional actions are necessary.

APPENDIX A: LOCAL INTENSE PRECIPITATION

A.1 LIP Time Series Hydrographs at Reporting Locations

See following pages Appendix A pages.

A.2 FLO-2D Input/Output Files

Due to the large size and formatting of the FLO-2D input/output files, this data is provided as an electronic attachment. The information has been archived in the AREVA file management system, ColdStor. The path to the file is: \cold\General-Access\51\51-9227066-001\official.

Additionally, this information is provided electronically with this report in a zipfile named "51-9227066-001 Electronic Appendices.zip"

A.3 LIP Results – Large Format Figures

Due to the large file size of the large format figures, they are provided as an electronic attachment. The information has been archived in the AREVA file management system, ColdStor. The path to the file is: \cold\General-Access\51\51-9227066-001\official.

Additionally, this information is provided electronically with this report in a zipfile named "51-9227066-001 Electronic Appendices.zip"

LIP FLO-2D CRITICAL GRID ELEMENT TIME SERIES HYDROGRAPHS

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.28
0.10	0.91	0.63	271.91
0.20	0.63	0.50	271.78
0.30	0.52	0.49	271.77
0.40	0.49	0.47	271.75
0.50	0.49	0.47	271.75
0.60	0.39	0.40	271.68
0.70	0.36	0.36	271.64
0.80	0.35	0.35	271.63
0.90	0.35	0.35	271.63
1.00	0.35	0.35	271.63
1.10	0.26	0.27	271.55
1.20	0.21	0.24	271.52
1.30	0.20	0.22	271.50
1.40	0.18	0.21	271.49
1.50	0.17	0.20	271.48
1.60	0.17	0.20	271.48
1.70	0.19	0.20	271.48
1.80	0.14	0.20	271.48
1.90	0.13	0.20	271.48
2.00	0.13	0.20	271.48
2.10	0.13	0.20	271.48
2.20	0.15	0.20	271.48
2.30	0.13	0.20	271.48
2.40	0.13	0.20	271.48
2.50	0.14	0.20	271.48
2.60	0.13	0.20	271.48
2.70	0.13	0.20	271.48
2.80	0.13	0.20	271.48
2.90	0.13	0.20	271.48
3.00	0.13	0.20	271.48
3.10	0.13	0.20	271.48
3.20	0.13	0.20	271.48
3.30	0.13	0.20	271.48
3.40	0.13	0.20	271.48
3.50	0.13	0.20	271.48
3.60	0.13	0.20	271.48
3.70	0.13	0.20	271.48
3.80	0.13	0.20	271.48
3.90	0.13	0.20	271.48
4.00	0.13	0.20	271.48
4.10	0.13	0.20	271.48
4.20	0.13	0.20	271.48
4.30	0.13	0.20	271.48
4.40	0.13	0.20	271.48
4.50	0.13	0.20	271.48
4.60	0.13	0.20	271.48
4.70	0.13	0.20	271.48
4.80	0.13	0.20	271.48
4.90	0.13	0.20	271.48
5.00	0.13	0.20	271.48
5.10	0.13	0.20	271.48
5.20	0.13	0.20	271.48
5.30	0.13	0.20	271.48
5.40	0.13	0.20	271.48
5.50	0.13	0.20	271.48

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.91
0.10	0.22	0.48	271.39
0.20	0.19	0.46	271.37
0.30	0.14	0.45	271.36
0.40	0.11	0.44	271.35
0.50	0.13	0.44	271.35
0.60	0.10	0.40	271.31
0.70	0.07	0.39	271.30
0.80	0.08	0.38	271.29
0.90	0.08	0.38	271.29
1.00	0.08	0.38	271.29
1.10	0.02	0.33	271.24
1.20	0.05	0.30	271.21
1.30	0.05	0.28	271.19
1.40	0.05	0.26	271.17
1.50	0.05	0.25	271.16
1.60	0.05	0.23	271.14
1.70	0.05	0.23	271.14
1.80	0.06	0.22	271.13
1.90	0.05	0.22	271.13
2.00	0.05	0.22	271.13
2.10	0.05	0.22	271.13
2.20	0.05	0.22	271.13
2.30	0.05	0.22	271.13
2.40	0.04	0.22	271.13
2.50	0.05	0.23	271.14
2.60	0.05	0.23	271.14
2.70	0.05	0.23	271.14
2.80	0.05	0.23	271.14
2.90	0.03	0.24	271.15
3.00	0.05	0.24	271.15
3.10	0.05	0.24	271.15
3.20	0.05	0.24	271.15
3.30	0.05	0.25	271.16
3.40	0.00	0.25	271.16
3.50	0.04	0.25	271.16
3.60	0.04	0.25	271.16
3.70	0.06	0.24	271.15
3.80	0.04	0.24	271.15
3.90	0.04	0.24	271.15
4.00	0.05	0.24	271.15
4.10	0.05	0.24	271.15
4.20	0.05	0.23	271.14
4.30	0.06	0.23	271.14
4.40	0.05	0.23	271.14
4.50	0.05	0.23	271.14
4.60	0.05	0.23	271.14
4.70	0.06	0.22	271.13
4.80	0.05	0.22	271.13
4.90	0.04	0.22	271.13
5.00	0.05	0.22	271.13
5.10	0.05	0.22	271.13
5.20	0.04	0.22	271.13
5.30	0.05	0.22	271.13
5.40	0.05	0.22	271.13
5.50	0.05	0.21	271.12

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.13	0.20	271.48
5.70	0.13	0.20	271.48
5.80	0.13	0.20	271.48
5.90	0.13	0.20	271.48
6.00	0.13	0.20	271.48
6.10	0.10	0.18	271.46
6.20	0.09	0.15	271.43
6.30	0.07	0.13	271.41
6.40	0.06	0.11	271.39
6.50	0.06	0.09	271.37
6.60	0.05	0.08	271.36
6.70	0.04	0.06	271.34
6.80	0.02	0.05	271.33
6.90	0.03	0.05	271.33
7.00	0.03	0.05	271.33
7.10	0.03	0.05	271.33
7.20	0.03	0.05	271.33
7.30	0.03	0.05	271.33
7.40	0.03	0.05	271.33
7.50	0.03	0.05	271.33
7.60	0.03	0.05	271.33
7.70	0.03	0.05	271.33
7.80	0.03	0.05	271.33
7.90	0.03	0.05	271.33
8.00	0.03	0.05	271.33
8.10	0.03	0.05	271.33
8.20	0.03	0.05	271.33
8.30	0.03	0.05	271.33
8.40	0.03	0.05	271.33
8.50	0.03	0.05	271.33
8.60	0.03	0.05	271.33
8.70	0.03	0.05	271.33
8.80	0.03	0.05	271.33
8.90	0.03	0.05	271.33
9.00	0.03	0.05	271.33
9.10	0.03	0.05	271.33
9.20	0.03	0.05	271.33
9.30	0.03	0.05	271.33
9.40	0.03	0.05	271.33
9.50	0.03	0.05	271.33
9.60	0.03	0.05	271.33
9.70	0.03	0.05	271.33
9.80	0.03	0.05	271.33
9.90	0.03	0.05	271.33
10.00	0.03	0.05	271.33
10.10	0.03	0.05	271.33
10.20	0.03	0.05	271.33
10.30	0.03	0.05	271.33
10.40	0.03	0.05	271.33
10.50	0.03	0.05	271.33
10.60	0.03	0.05	271.33
10.70	0.03	0.05	271.33
10.80	0.03	0.05	271.33
10.90	0.03	0.05	271.33
11.00	0.03	0.05	271.33
11.10	0.03	0.05	271.33

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.04	0.21	271.12
5.70	0.06	0.21	271.12
5.80	0.03	0.21	271.12
5.90	0.06	0.21	271.12
6.00	0.05	0.21	271.12
6.10	0.02	0.19	271.10
6.20	0.02	0.18	271.09
6.30	0.02	0.16	271.07
6.40	0.02	0.15	271.06
6.50	0.00	0.14	271.05
6.60	0.00	0.14	271.05
6.70	0.00	0.13	271.04
6.80	0.00	0.12	271.03
6.90	0.00	0.12	271.03
7.00	0.00	0.11	271.02
7.10	0.00	0.11	271.02
7.20	0.00	0.10	271.01
7.30	0.00	0.10	271.01
7.40	0.00	0.09	271.00
7.50	0.00	0.09	271.00
7.60	0.00	0.09	271.00
7.70	0.00	0.08	270.99
7.80	0.00	0.08	270.99
7.90	0.00	0.08	270.99
8.00	0.00	0.07	270.98
8.10	0.00	0.07	270.98
8.20	0.00	0.07	270.98
8.30	0.00	0.06	270.97
8.40	0.00	0.06	270.97
8.50	0.00	0.06	270.97
8.60	0.00	0.06	270.97
8.70	0.00	0.05	270.96
8.80	0.00	0.05	270.96
8.90	0.00	0.05	270.96
9.00	0.00	0.05	270.96
9.10	0.00	0.05	270.96
9.20	0.00	0.05	270.96
9.30	0.00	0.05	270.96
9.40	0.00	0.05	270.96
9.50	0.00	0.05	270.96
9.60	0.00	0.05	270.96
9.70	0.00	0.05	270.96
9.80	0.00	0.05	270.96
9.90	0.00	0.05	270.96
10.00	0.00	0.05	270.96
10.10	0.00	0.05	270.96
10.20	0.00	0.05	270.96
10.30	0.00	0.05	270.96
10.40	0.00	0.05	270.96
10.50	0.00	0.05	270.96
10.60	0.00	0.05	270.96
10.70	0.00	0.05	270.96
10.80	0.00	0.05	270.96
10.90	0.00	0.05	270.96
11.00	0.00	0.05	270.96
11.10	0.00	0.05	270.96

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.03	0.05	271.33
11.30	0.03	0.05	271.33
11.40	0.03	0.05	271.33
11.50	0.03	0.05	271.33
11.60	0.03	0.05	271.33
11.70	0.03	0.05	271.33
11.80	0.03	0.05	271.33
11.90	0.03	0.05	271.33
12.00	0.03	0.05	271.33
12.10	0.03	0.05	271.33
12.20	0.03	0.05	271.33
12.30	0.03	0.05	271.33
12.40	0.03	0.05	271.33
12.50	0.03	0.05	271.33
12.60	0.03	0.05	271.33
12.70	0.03	0.05	271.33
12.80	0.03	0.05	271.33
12.90	0.03	0.05	271.33
13.00	0.03	0.05	271.33
13.10	0.03	0.05	271.33
13.20	0.03	0.05	271.33
13.30	0.03	0.05	271.33
13.40	0.03	0.05	271.33
13.50	0.03	0.05	271.33
13.60	0.03	0.05	271.33
13.70	0.03	0.05	271.33
13.80	0.03	0.05	271.33
13.90	0.03	0.05	271.33
14.00	0.03	0.05	271.33
14.10	0.03	0.05	271.33
14.20	0.03	0.05	271.33
14.30	0.03	0.05	271.33
14.40	0.03	0.05	271.33
14.50	0.03	0.05	271.33
14.60	0.03	0.05	271.33
14.70	0.03	0.05	271.33
14.80	0.03	0.05	271.33
14.90	0.03	0.05	271.33
15.00	0.03	0.05	271.33
15.10	0.03	0.05	271.33
15.20	0.03	0.05	271.33
15.30	0.03	0.05	271.33
15.40	0.03	0.05	271.33
15.50	0.03	0.05	271.33
15.60	0.03	0.05	271.33
15.70	0.03	0.05	271.33
15.80	0.03	0.05	271.33
15.90	0.03	0.05	271.33
16.00	0.03	0.05	271.33
16.10	0.03	0.05	271.33
16.20	0.03	0.05	271.33
16.30	0.03	0.05	271.33
16.40	0.03	0.05	271.33
16.50	0.03	0.05	271.33
16.60	0.03	0.05	271.33
16.70	0.03	0.05	271.33

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	270.96
11.30	0.00	0.05	270.96
11.40	0.00	0.05	270.96
11.50	0.00	0.05	270.96
11.60	0.00	0.05	270.96
11.70	0.00	0.05	270.96
11.80	0.00	0.05	270.96
11.90	0.00	0.05	270.96
12.00	0.00	0.05	270.96
12.10	0.00	0.05	270.96
12.20	0.00	0.05	270.96
12.30	0.00	0.05	270.96
12.40	0.00	0.05	270.96
12.50	0.00	0.05	270.96
12.60	0.00	0.05	270.96
12.70	0.00	0.05	270.96
12.80	0.00	0.05	270.96
12.90	0.00	0.05	270.96
13.00	0.00	0.05	270.96
13.10	0.00	0.05	270.96
13.20	0.00	0.05	270.96
13.30	0.00	0.05	270.96
13.40	0.00	0.05	270.96
13.50	0.00	0.05	270.96
13.60	0.00	0.05	270.96
13.70	0.00	0.05	270.96
13.80	0.00	0.05	270.96
13.90	0.00	0.05	270.96
14.00	0.00	0.05	270.96
14.10	0.00	0.05	270.96
14.20	0.00	0.05	270.96
14.30	0.00	0.05	270.96
14.40	0.00	0.05	270.96
14.50	0.00	0.05	270.96
14.60	0.00	0.05	270.96
14.70	0.00	0.05	270.96
14.80	0.00	0.05	270.96
14.90	0.00	0.05	270.96
15.00	0.00	0.05	270.96
15.10	0.00	0.05	270.96
15.20	0.00	0.05	270.96
15.30	0.00	0.05	270.96
15.40	0.00	0.05	270.96
15.50	0.00	0.05	270.96
15.60	0.00	0.05	270.96
15.70	0.00	0.05	270.96
15.80	0.00	0.05	270.96
15.90	0.00	0.05	270.96
16.00	0.00	0.05	270.96
16.10	0.00	0.05	270.96
16.20	0.00	0.05	270.96
16.30	0.00	0.05	270.96
16.40	0.00	0.05	270.96
16.50	0.00	0.05	270.96
16.60	0.00	0.05	270.96
16.70	0.00	0.05	270.96

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.03	0.05	271.33
16.90	0.03	0.05	271.33
17.00	0.03	0.05	271.33
17.10	0.03	0.05	271.33
17.20	0.03	0.05	271.33
17.30	0.03	0.05	271.33
17.40	0.03	0.05	271.33
17.50	0.03	0.05	271.33
17.60	0.03	0.05	271.33
17.70	0.03	0.05	271.33
17.80	0.03	0.05	271.33
17.90	0.03	0.05	271.33
18.00	0.03	0.05	271.33
18.10	0.03	0.05	271.33
18.20	0.03	0.05	271.33
18.30	0.03	0.05	271.33
18.40	0.03	0.05	271.33
18.50	0.03	0.05	271.33
18.60	0.03	0.05	271.33
18.70	0.03	0.05	271.33
18.80	0.03	0.05	271.33
18.90	0.03	0.05	271.33
19.00	0.03	0.05	271.33
19.10	0.03	0.05	271.33
19.20	0.03	0.05	271.33
19.30	0.03	0.05	271.33
19.40	0.03	0.05	271.33
19.50	0.03	0.05	271.33
19.60	0.03	0.05	271.33
19.70	0.03	0.05	271.33
19.80	0.03	0.05	271.33
19.90	0.03	0.05	271.33
20.00	0.03	0.05	271.33

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	270.96
16.90	0.00	0.05	270.96
17.00	0.00	0.05	270.96
17.10	0.00	0.05	270.96
17.20	0.00	0.05	270.96
17.30	0.00	0.05	270.96
17.40	0.00	0.05	270.96
17.50	0.00	0.05	270.96
17.60	0.00	0.05	270.96
17.70	0.00	0.05	270.96
17.80	0.00	0.05	270.96
17.90	0.00	0.05	270.96
18.00	0.00	0.05	270.96
18.10	0.00	0.05	270.96
18.20	0.00	0.05	270.96
18.30	0.00	0.05	270.96
18.40	0.00	0.05	270.96
18.50	0.00	0.05	270.96
18.60	0.00	0.05	270.96
18.70	0.00	0.05	270.96
18.80	0.00	0.05	270.96
18.90	0.00	0.05	270.96
19.00	0.00	0.05	270.96
19.10	0.00	0.05	270.96
19.20	0.00	0.05	270.96
19.30	0.00	0.05	270.96
19.40	0.00	0.05	270.96
19.50	0.00	0.05	270.96
19.60	0.00	0.05	270.96
19.70	0.00	0.05	270.96
19.80	0.00	0.05	270.96
19.90	0.00	0.05	270.96
20.00	0.00	0.05	270.96

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.06
0.10	0.59	0.59	271.65
0.20	0.39	0.48	271.54
0.30	0.37	0.46	271.52
0.40	0.35	0.45	271.51
0.50	0.34	0.46	271.52
0.60	0.25	0.40	271.46
0.70	0.23	0.39	271.45
0.80	0.23	0.38	271.44
0.90	0.23	0.38	271.44
1.00	0.23	0.38	271.44
1.10	0.15	0.32	271.38
1.20	0.12	0.29	271.35
1.30	0.10	0.27	271.33
1.40	0.09	0.26	271.32
1.50	0.09	0.25	271.31
1.60	0.08	0.25	271.31
1.70	0.08	0.24	271.30
1.80	0.08	0.24	271.30
1.90	0.08	0.24	271.30
2.00	0.08	0.24	271.30
2.10	0.08	0.24	271.30
2.20	0.08	0.24	271.30
2.30	0.07	0.24	271.30
2.40	0.07	0.24	271.30
2.50	0.08	0.25	271.31
2.60	0.08	0.25	271.31
2.70	0.08	0.25	271.31
2.80	0.08	0.26	271.32
2.90	0.08	0.26	271.32
3.00	0.08	0.26	271.32
3.10	0.08	0.27	271.33
3.20	0.08	0.27	271.33
3.30	0.08	0.27	271.33
3.40	0.08	0.27	271.33
3.50	0.08	0.27	271.33
3.60	0.08	0.26	271.32
3.70	0.08	0.26	271.32
3.80	0.08	0.26	271.32
3.90	0.08	0.26	271.32
4.00	0.08	0.26	271.32
4.10	0.08	0.25	271.31
4.20	0.08	0.25	271.31
4.30	0.08	0.25	271.31
4.40	0.08	0.25	271.31
4.50	0.08	0.25	271.31
4.60	0.08	0.25	271.31
4.70	0.08	0.24	271.30
4.80	0.08	0.24	271.30
4.90	0.08	0.24	271.30
5.00	0.07	0.24	271.30
5.10	0.08	0.24	271.30
5.20	0.08	0.24	271.30
5.30	0.08	0.24	271.30
5.40	0.08	0.24	271.30
5.50	0.08	0.23	271.29

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.53
0.10	0.00	0.05	271.58
0.20	0.00	0.05	271.58
0.30	0.08	0.05	271.58
0.40	0.00	0.05	271.58
0.50	0.05	0.05	271.58
0.60	0.00	0.05	271.58
0.70	0.00	0.05	271.58
0.80	0.00	0.05	271.58
0.90	0.00	0.05	271.58
1.00	0.00	0.05	271.58
1.10	0.00	0.05	271.58
1.20	0.00	0.05	271.58
1.30	0.00	0.05	271.58
1.40	0.00	0.05	271.58
1.50	0.00	0.05	271.58
1.60	0.00	0.05	271.58
1.70	0.00	0.05	271.58
1.80	0.00	0.05	271.58
1.90	0.00	0.05	271.58
2.00	0.00	0.05	271.58
2.10	0.00	0.05	271.58
2.20	0.00	0.05	271.58
2.30	0.00	0.05	271.58
2.40	0.00	0.05	271.58
2.50	0.00	0.05	271.58
2.60	0.00	0.05	271.58
2.70	0.00	0.05	271.58
2.80	0.00	0.05	271.58
2.90	0.00	0.05	271.58
3.00	0.00	0.05	271.58
3.10	0.00	0.05	271.58
3.20	0.00	0.05	271.58
3.30	0.00	0.05	271.58
3.40	0.00	0.05	271.58
3.50	0.00	0.05	271.58
3.60	0.00	0.05	271.58
3.70	0.00	0.05	271.58
3.80	0.00	0.05	271.58
3.90	0.00	0.05	271.58
4.00	0.00	0.05	271.58
4.10	0.00	0.05	271.58
4.20	0.00	0.05	271.58
4.30	0.00	0.05	271.58
4.40	0.00	0.05	271.58
4.50	0.00	0.05	271.58
4.60	0.00	0.05	271.58
4.70	0.00	0.05	271.58
4.80	0.00	0.05	271.58
4.90	0.00	0.05	271.58
5.00	0.00	0.05	271.58
5.10	0.00	0.05	271.58
5.20	0.00	0.05	271.58
5.30	0.00	0.05	271.58
5.40	0.00	0.05	271.58
5.50	0.00	0.05	271.58

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.08	0.23	271.29
5.70	0.08	0.24	271.30
5.80	0.08	0.23	271.29
5.90	0.08	0.24	271.30
6.00	0.08	0.23	271.29
6.10	0.07	0.22	271.28
6.20	0.05	0.20	271.26
6.30	0.04	0.18	271.24
6.40	0.03	0.16	271.22
6.50	0.03	0.15	271.21
6.60	0.02	0.14	271.20
6.70	0.02	0.12	271.18
6.80	0.02	0.11	271.17
6.90	0.01	0.10	271.16
7.00	0.01	0.10	271.16
7.10	0.00	0.09	271.15
7.20	0.00	0.09	271.15
7.30	0.00	0.08	271.14
7.40	0.00	0.08	271.14
7.50	0.00	0.08	271.14
7.60	0.00	0.08	271.14
7.70	0.00	0.08	271.14
7.80	0.00	0.08	271.14
7.90	0.00	0.08	271.14
8.00	0.00	0.08	271.14
8.10	0.00	0.08	271.14
8.20	0.00	0.08	271.14
8.30	0.00	0.08	271.14
8.40	0.00	0.08	271.14
8.50	0.00	0.08	271.14
8.60	0.00	0.08	271.14
8.70	0.00	0.08	271.14
8.80	0.00	0.08	271.14
8.90	0.00	0.08	271.14
9.00	0.00	0.08	271.14
9.10	0.00	0.08	271.14
9.20	0.00	0.08	271.14
9.30	0.00	0.08	271.14
9.40	0.00	0.08	271.14
9.50	0.00	0.08	271.14
9.60	0.00	0.08	271.14
9.70	0.00	0.08	271.14
9.80	0.00	0.08	271.14
9.90	0.00	0.08	271.14
10.00	0.00	0.08	271.14
10.10	0.00	0.08	271.14
10.20	0.00	0.08	271.14
10.30	0.00	0.08	271.14
10.40	0.00	0.08	271.14
10.50	0.00	0.08	271.14
10.60	0.00	0.08	271.14
10.70	0.00	0.08	271.14
10.80	0.00	0.08	271.14
10.90	0.00	0.08	271.14
11.00	0.00	0.08	271.14
11.10	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.00	0.05	271.58
5.70	0.00	0.05	271.58
5.80	0.00	0.05	271.58
5.90	0.00	0.05	271.58
6.00	0.00	0.05	271.58
6.10	0.00	0.05	271.58
6.20	0.00	0.05	271.58
6.30	0.00	0.05	271.58
6.40	0.00	0.05	271.58
6.50	0.00	0.05	271.58
6.60	0.00	0.05	271.58
6.70	0.00	0.05	271.58
6.80	0.00	0.05	271.58
6.90	0.00	0.05	271.58
7.00	0.00	0.05	271.58
7.10	0.00	0.05	271.58
7.20	0.00	0.05	271.58
7.30	0.00	0.05	271.58
7.40	0.00	0.05	271.58
7.50	0.00	0.05	271.58
7.60	0.00	0.05	271.58
7.70	0.00	0.05	271.58
7.80	0.00	0.05	271.58
7.90	0.00	0.05	271.58
8.00	0.00	0.05	271.58
8.10	0.00	0.05	271.58
8.20	0.00	0.05	271.58
8.30	0.00	0.05	271.58
8.40	0.00	0.05	271.58
8.50	0.00	0.05	271.58
8.60	0.00	0.05	271.58
8.70	0.00	0.05	271.58
8.80	0.00	0.05	271.58
8.90	0.00	0.05	271.58
9.00	0.00	0.05	271.58
9.10	0.00	0.05	271.58
9.20	0.00	0.05	271.58
9.30	0.00	0.05	271.58
9.40	0.00	0.05	271.58
9.50	0.00	0.05	271.58
9.60	0.00	0.05	271.58
9.70	0.00	0.05	271.58
9.80	0.00	0.05	271.58
9.90	0.00	0.05	271.58
10.00	0.00	0.05	271.58
10.10	0.00	0.05	271.58
10.20	0.00	0.05	271.58
10.30	0.00	0.05	271.58
10.40	0.00	0.05	271.58
10.50	0.00	0.05	271.58
10.60	0.00	0.05	271.58
10.70	0.00	0.05	271.58
10.80	0.00	0.05	271.58
10.90	0.00	0.05	271.58
11.00	0.00	0.05	271.58
11.10	0.00	0.05	271.58

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.08	271.14
11.30	0.00	0.08	271.14
11.40	0.00	0.08	271.14
11.50	0.00	0.08	271.14
11.60	0.00	0.08	271.14
11.70	0.00	0.08	271.14
11.80	0.00	0.08	271.14
11.90	0.00	0.08	271.14
12.00	0.00	0.08	271.14
12.10	0.00	0.08	271.14
12.20	0.00	0.08	271.14
12.30	0.00	0.08	271.14
12.40	0.00	0.08	271.14
12.50	0.00	0.08	271.14
12.60	0.00	0.08	271.14
12.70	0.00	0.08	271.14
12.80	0.00	0.08	271.14
12.90	0.00	0.08	271.14
13.00	0.00	0.08	271.14
13.10	0.00	0.08	271.14
13.20	0.00	0.08	271.14
13.30	0.00	0.08	271.14
13.40	0.00	0.08	271.14
13.50	0.00	0.08	271.14
13.60	0.00	0.08	271.14
13.70	0.00	0.08	271.14
13.80	0.00	0.08	271.14
13.90	0.00	0.08	271.14
14.00	0.00	0.08	271.14
14.10	0.00	0.08	271.14
14.20	0.00	0.08	271.14
14.30	0.00	0.08	271.14
14.40	0.00	0.08	271.14
14.50	0.00	0.08	271.14
14.60	0.00	0.08	271.14
14.70	0.00	0.08	271.14
14.80	0.00	0.08	271.14
14.90	0.00	0.08	271.14
15.00	0.00	0.08	271.14
15.10	0.00	0.08	271.14
15.20	0.00	0.08	271.14
15.30	0.00	0.08	271.14
15.40	0.00	0.08	271.14
15.50	0.00	0.08	271.14
15.60	0.00	0.08	271.14
15.70	0.00	0.08	271.14
15.80	0.00	0.08	271.14
15.90	0.00	0.08	271.14
16.00	0.00	0.08	271.14
16.10	0.00	0.08	271.14
16.20	0.00	0.08	271.14
16.30	0.00	0.08	271.14
16.40	0.00	0.08	271.14
16.50	0.00	0.08	271.14
16.60	0.00	0.08	271.14
16.70	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.58
11.30	0.00	0.05	271.58
11.40	0.00	0.05	271.58
11.50	0.00	0.05	271.58
11.60	0.00	0.05	271.58
11.70	0.00	0.05	271.58
11.80	0.00	0.05	271.58
11.90	0.00	0.05	271.58
12.00	0.00	0.05	271.58
12.10	0.00	0.05	271.58
12.20	0.00	0.05	271.58
12.30	0.00	0.05	271.58
12.40	0.00	0.05	271.58
12.50	0.00	0.05	271.58
12.60	0.00	0.05	271.58
12.70	0.00	0.05	271.58
12.80	0.00	0.05	271.58
12.90	0.00	0.05	271.58
13.00	0.00	0.05	271.58
13.10	0.00	0.05	271.58
13.20	0.00	0.05	271.58
13.30	0.00	0.05	271.58
13.40	0.00	0.05	271.58
13.50	0.00	0.05	271.58
13.60	0.00	0.05	271.58
13.70	0.00	0.05	271.58
13.80	0.00	0.05	271.58
13.90	0.00	0.05	271.58
14.00	0.00	0.05	271.58
14.10	0.00	0.05	271.58
14.20	0.00	0.05	271.58
14.30	0.00	0.05	271.58
14.40	0.00	0.05	271.58
14.50	0.00	0.05	271.58
14.60	0.00	0.05	271.58
14.70	0.00	0.05	271.58
14.80	0.00	0.05	271.58
14.90	0.00	0.05	271.58
15.00	0.00	0.05	271.58
15.10	0.00	0.05	271.58
15.20	0.00	0.05	271.58
15.30	0.00	0.05	271.58
15.40	0.00	0.05	271.58
15.50	0.00	0.05	271.58
15.60	0.00	0.05	271.58
15.70	0.00	0.05	271.58
15.80	0.00	0.05	271.58
15.90	0.00	0.05	271.58
16.00	0.00	0.05	271.58
16.10	0.00	0.05	271.58
16.20	0.00	0.05	271.58
16.30	0.00	0.05	271.58
16.40	0.00	0.05	271.58
16.50	0.00	0.05	271.58
16.60	0.00	0.05	271.58
16.70	0.00	0.05	271.58

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.08	271.14
16.90	0.00	0.08	271.14
17.00	0.00	0.08	271.14
17.10	0.00	0.08	271.14
17.20	0.00	0.08	271.14
17.30	0.00	0.08	271.14
17.40	0.00	0.08	271.14
17.50	0.00	0.08	271.14
17.60	0.00	0.08	271.14
17.70	0.00	0.08	271.14
17.80	0.00	0.08	271.14
17.90	0.00	0.08	271.14
18.00	0.00	0.08	271.14
18.10	0.00	0.08	271.14
18.20	0.00	0.08	271.14
18.30	0.00	0.08	271.14
18.40	0.00	0.08	271.14
18.50	0.00	0.08	271.14
18.60	0.00	0.08	271.14
18.70	0.00	0.08	271.14
18.80	0.00	0.08	271.14
18.90	0.00	0.08	271.14
19.00	0.00	0.08	271.14
19.10	0.00	0.08	271.14
19.20	0.00	0.08	271.14
19.30	0.00	0.08	271.14
19.40	0.00	0.08	271.14
19.50	0.00	0.08	271.14
19.60	0.00	0.08	271.14
19.70	0.00	0.08	271.14
19.80	0.00	0.08	271.14
19.90	0.00	0.08	271.14
20.00	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.58
16.90	0.00	0.05	271.58
17.00	0.00	0.05	271.58
17.10	0.00	0.05	271.58
17.20	0.00	0.05	271.58
17.30	0.00	0.05	271.58
17.40	0.00	0.05	271.58
17.50	0.00	0.05	271.58
17.60	0.00	0.05	271.58
17.70	0.00	0.05	271.58
17.80	0.00	0.05	271.58
17.90	0.00	0.05	271.58
18.00	0.00	0.05	271.58
18.10	0.00	0.05	271.58
18.20	0.00	0.05	271.58
18.30	0.00	0.05	271.58
18.40	0.00	0.05	271.58
18.50	0.00	0.05	271.58
18.60	0.00	0.05	271.58
18.70	0.00	0.05	271.58
18.80	0.00	0.05	271.58
18.90	0.00	0.05	271.58
19.00	0.00	0.05	271.58
19.10	0.00	0.05	271.58
19.20	0.00	0.05	271.58
19.30	0.00	0.05	271.58
19.40	0.00	0.05	271.58
19.50	0.00	0.05	271.58
19.60	0.00	0.05	271.58
19.70	0.00	0.05	271.58
19.80	0.00	0.05	271.58
19.90	0.00	0.05	271.58
20.00	0.00	0.05	271.58

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.54
0.10	0.10	0.87	271.41
0.20	0.08	0.89	271.43
0.30	0.04	0.90	271.44
0.40	0.15	0.92	271.46
0.50	0.23	0.97	271.51
0.60	0.14	0.94	271.48
0.70	0.10	0.91	271.45
0.80	0.08	0.90	271.44
0.90	0.21	0.91	271.45
1.00	0.10	0.90	271.44
1.10	0.29	0.85	271.39
1.20	0.04	0.82	271.36
1.30	0.04	0.79	271.33
1.40	0.08	0.78	271.32
1.50	0.04	0.76	271.30
1.60	0.07	0.74	271.28
1.70	0.07	0.74	271.28
1.80	0.05	0.74	271.28
1.90	0.00	0.74	271.28
2.00	0.06	0.74	271.28
2.10	0.08	0.74	271.28
2.20	0.08	0.75	271.29
2.30	0.11	0.76	271.30
2.40	0.09	0.77	271.31
2.50	0.05	0.78	271.32
2.60	0.12	0.79	271.33
2.70	0.07	0.80	271.34
2.80	0.29	0.81	271.35
2.90	0.15	0.81	271.35
3.00	0.15	0.82	271.36
3.10	0.18	0.83	271.37
3.20	0.10	0.83	271.37
3.30	0.19	0.83	271.37
3.40	0.17	0.83	271.37
3.50	0.16	0.82	271.36
3.60	0.15	0.82	271.36
3.70	0.09	0.82	271.36
3.80	0.10	0.81	271.35
3.90	0.11	0.81	271.35
4.00	0.18	0.80	271.34
4.10	0.10	0.80	271.34
4.20	0.23	0.79	271.33
4.30	0.11	0.78	271.32
4.40	0.08	0.78	271.32
4.50	0.12	0.77	271.31
4.60	0.02	0.77	271.31
4.70	0.07	0.76	271.30
4.80	0.04	0.76	271.30
4.90	0.01	0.75	271.29
5.00	0.06	0.74	271.28
5.10	0.10	0.74	271.28
5.20	0.05	0.73	271.27
5.30	0.07	0.74	271.28
5.40	0.06	0.73	271.27
5.50	0.03	0.73	271.27

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.52
0.10	0.03	0.88	271.40
0.20	0.06	0.92	271.44
0.30	0.12	0.93	271.45
0.40	0.10	0.97	271.49
0.50	0.27	1.01	271.53
0.60	0.16	0.98	271.50
0.70	0.17	0.96	271.48
0.80	0.16	0.95	271.47
0.90	0.23	0.95	271.47
1.00	0.19	0.94	271.46
1.10	0.10	0.89	271.41
1.20	0.09	0.86	271.38
1.30	0.09	0.82	271.34
1.40	0.03	0.80	271.32
1.50	0.06	0.79	271.31
1.60	0.04	0.78	271.30
1.70	0.06	0.77	271.29
1.80	0.03	0.76	271.28
1.90	0.03	0.76	271.28
2.00	0.07	0.76	271.28
2.10	0.08	0.77	271.29
2.20	0.10	0.78	271.30
2.30	0.11	0.79	271.31
2.40	0.11	0.80	271.32
2.50	0.09	0.81	271.33
2.60	0.14	0.82	271.34
2.70	0.07	0.84	271.36
2.80	0.14	0.85	271.37
2.90	0.18	0.85	271.37
3.00	0.14	0.86	271.38
3.10	0.14	0.87	271.39
3.20	0.11	0.87	271.39
3.30	0.10	0.86	271.38
3.40	0.16	0.87	271.39
3.50	0.12	0.86	271.38
3.60	0.10	0.86	271.38
3.70	0.12	0.85	271.37
3.80	0.13	0.85	271.37
3.90	0.12	0.85	271.37
4.00	0.10	0.84	271.36
4.10	0.11	0.83	271.35
4.20	0.00	0.83	271.35
4.30	0.09	0.82	271.34
4.40	0.12	0.81	271.33
4.50	0.07	0.80	271.32
4.60	0.08	0.80	271.32
4.70	0.09	0.79	271.31
4.80	0.09	0.79	271.31
4.90	0.08	0.78	271.30
5.00	0.03	0.77	271.29
5.10	0.09	0.77	271.29
5.20	0.08	0.76	271.28
5.30	0.03	0.76	271.28
5.40	0.07	0.76	271.28
5.50	0.06	0.75	271.27

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.04	0.72	271.26
5.70	0.05	0.72	271.26
5.80	0.03	0.72	271.26
5.90	0.07	0.72	271.26
6.00	0.04	0.71	271.25
6.10	0.07	0.69	271.23
6.20	0.08	0.68	271.22
6.30	0.00	0.66	271.20
6.40	0.00	0.65	271.19
6.50	0.03	0.63	271.17
6.60	0.00	0.62	271.16
6.70	0.01	0.61	271.15
6.80	0.00	0.60	271.14
6.90	0.02	0.59	271.13
7.00	0.02	0.58	271.12
7.10	0.00	0.57	271.11
7.20	0.00	0.56	271.10
7.30	0.00	0.55	271.09
7.40	0.02	0.55	271.09
7.50	0.00	0.54	271.08
7.60	0.01	0.53	271.07
7.70	0.00	0.53	271.07
7.80	0.02	0.52	271.06
7.90	0.00	0.51	271.05
8.00	0.00	0.51	271.05
8.10	0.00	0.50	271.04
8.20	0.00	0.50	271.04
8.30	0.00	0.49	271.03
8.40	0.00	0.49	271.03
8.50	0.00	0.49	271.03
8.60	0.00	0.48	271.02
8.70	0.00	0.48	271.02
8.80	0.01	0.47	271.01
8.90	0.00	0.47	271.01
9.00	0.00	0.47	271.01
9.10	0.00	0.46	271.00
9.20	0.00	0.46	271.00
9.30	0.00	0.46	271.00
9.40	0.00	0.46	271.00
9.50	0.00	0.45	270.99
9.60	0.00	0.45	270.99
9.70	0.00	0.45	270.99
9.80	0.00	0.44	270.98
9.90	0.00	0.44	270.98
10.00	0.00	0.44	270.98
10.10	0.00	0.44	270.98
10.20	0.00	0.44	270.98
10.30	0.00	0.43	270.97
10.40	0.00	0.43	270.97
10.50	0.00	0.43	270.97
10.60	0.00	0.43	270.97
10.70	0.00	0.43	270.97
10.80	0.00	0.42	270.96
10.90	0.00	0.42	270.96
11.00	0.00	0.42	270.96
11.10	0.00	0.42	270.96

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.03	0.75	271.27
5.70	0.02	0.75	271.27
5.80	0.04	0.74	271.26
5.90	0.06	0.74	271.26
6.00	0.05	0.73	271.25
6.10	0.04	0.72	271.24
6.20	0.01	0.70	271.22
6.30	0.05	0.68	271.20
6.40	0.00	0.67	271.19
6.50	0.03	0.65	271.17
6.60	0.00	0.64	271.16
6.70	0.02	0.63	271.15
6.80	0.00	0.62	271.14
6.90	0.00	0.61	271.13
7.00	0.02	0.60	271.12
7.10	0.01	0.59	271.11
7.20	0.02	0.58	271.10
7.30	0.00	0.57	271.09
7.40	0.00	0.57	271.09
7.50	0.00	0.56	271.08
7.60	0.01	0.55	271.07
7.70	0.00	0.55	271.07
7.80	0.00	0.54	271.06
7.90	0.00	0.53	271.05
8.00	0.00	0.53	271.05
8.10	0.00	0.52	271.04
8.20	0.00	0.52	271.04
8.30	0.00	0.52	271.04
8.40	0.00	0.51	271.03
8.50	0.00	0.51	271.03
8.60	0.00	0.50	271.02
8.70	0.00	0.50	271.02
8.80	0.00	0.49	271.01
8.90	0.00	0.49	271.01
9.00	0.00	0.49	271.01
9.10	0.00	0.48	271.00
9.20	0.00	0.48	271.00
9.30	0.00	0.48	271.00
9.40	0.00	0.48	271.00
9.50	0.00	0.47	270.99
9.60	0.00	0.47	270.99
9.70	0.00	0.47	270.99
9.80	0.00	0.47	270.99
9.90	0.00	0.46	270.98
10.00	0.00	0.46	270.98
10.10	0.00	0.46	270.98
10.20	0.00	0.46	270.98
10.30	0.00	0.45	270.97
10.40	0.00	0.45	270.97
10.50	0.00	0.45	270.97
10.60	0.00	0.45	270.97
10.70	0.00	0.45	270.97
10.80	0.00	0.45	270.97
10.90	0.00	0.44	270.96
11.00	0.00	0.44	270.96
11.10	0.00	0.44	270.96

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.42	270.96
11.30	0.00	0.42	270.96
11.40	0.00	0.42	270.96
11.50	0.00	0.41	270.95
11.60	0.00	0.41	270.95
11.70	0.00	0.41	270.95
11.80	0.00	0.41	270.95
11.90	0.00	0.41	270.95
12.00	0.00	0.41	270.95
12.10	0.00	0.41	270.95
12.20	0.00	0.41	270.95
12.30	0.00	0.40	270.94
12.40	0.00	0.40	270.94
12.50	0.00	0.40	270.94
12.60	0.00	0.40	270.94
12.70	0.00	0.40	270.94
12.80	0.00	0.40	270.94
12.90	0.00	0.40	270.94
13.00	0.00	0.40	270.94
13.10	0.00	0.39	270.93
13.20	0.00	0.39	270.93
13.30	0.00	0.39	270.93
13.40	0.00	0.39	270.93
13.50	0.00	0.39	270.93
13.60	0.00	0.39	270.93
13.70	0.00	0.39	270.93
13.80	0.00	0.39	270.93
13.90	0.00	0.39	270.93
14.00	0.00	0.39	270.93
14.10	0.00	0.39	270.93
14.20	0.00	0.38	270.92
14.30	0.00	0.38	270.92
14.40	0.00	0.38	270.92
14.50	0.00	0.38	270.92
14.60	0.00	0.38	270.92
14.70	0.00	0.38	270.92
14.80	0.00	0.38	270.92
14.90	0.00	0.38	270.92
15.00	0.00	0.38	270.92
15.10	0.00	0.38	270.92
15.20	0.00	0.38	270.92
15.30	0.00	0.37	270.91
15.40	0.00	0.37	270.91
15.50	0.00	0.37	270.91
15.60	0.00	0.37	270.91
15.70	0.00	0.37	270.91
15.80	0.00	0.37	270.91
15.90	0.00	0.37	270.91
16.00	0.00	0.37	270.91
16.10	0.00	0.37	270.91
16.20	0.00	0.37	270.91
16.30	0.00	0.37	270.91
16.40	0.00	0.37	270.91
16.50	0.00	0.37	270.91
16.60	0.00	0.37	270.91
16.70	0.00	0.36	270.90

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.44	270.96
11.30	0.00	0.44	270.96
11.40	0.00	0.44	270.96
11.50	0.00	0.43	270.95
11.60	0.00	0.43	270.95
11.70	0.00	0.43	270.95
11.80	0.00	0.43	270.95
11.90	0.00	0.43	270.95
12.00	0.00	0.43	270.95
12.10	0.00	0.43	270.95
12.20	0.00	0.43	270.95
12.30	0.00	0.42	270.94
12.40	0.00	0.42	270.94
12.50	0.00	0.42	270.94
12.60	0.00	0.42	270.94
12.70	0.00	0.42	270.94
12.80	0.00	0.42	270.94
12.90	0.00	0.42	270.94
13.00	0.00	0.42	270.94
13.10	0.00	0.41	270.93
13.20	0.00	0.41	270.93
13.30	0.00	0.41	270.93
13.40	0.00	0.41	270.93
13.50	0.00	0.41	270.93
13.60	0.00	0.41	270.93
13.70	0.00	0.41	270.93
13.80	0.00	0.41	270.93
13.90	0.00	0.41	270.93
14.00	0.00	0.41	270.93
14.10	0.00	0.41	270.93
14.20	0.00	0.40	270.92
14.30	0.00	0.40	270.92
14.40	0.00	0.40	270.92
14.50	0.00	0.40	270.92
14.60	0.00	0.40	270.92
14.70	0.00	0.40	270.92
14.80	0.00	0.40	270.92
14.90	0.00	0.40	270.92
15.00	0.00	0.40	270.92
15.10	0.00	0.40	270.92
15.20	0.00	0.40	270.92
15.30	0.00	0.40	270.92
15.40	0.00	0.39	270.91
15.50	0.00	0.39	270.91
15.60	0.00	0.39	270.91
15.70	0.00	0.39	270.91
15.80	0.00	0.39	270.91
15.90	0.00	0.39	270.91
16.00	0.00	0.39	270.91
16.10	0.00	0.39	270.91
16.20	0.00	0.39	270.91
16.30	0.00	0.39	270.91
16.40	0.00	0.39	270.91
16.50	0.00	0.39	270.91
16.60	0.00	0.39	270.91
16.70	0.00	0.38	270.90

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.36	270.90
16.90	0.00	0.36	270.90
17.00	0.00	0.36	270.90
17.10	0.00	0.36	270.90
17.20	0.00	0.36	270.90
17.30	0.00	0.36	270.90
17.40	0.00	0.36	270.90
17.50	0.00	0.36	270.90
17.60	0.00	0.36	270.90
17.70	0.00	0.36	270.90
17.80	0.00	0.36	270.90
17.90	0.00	0.36	270.90
18.00	0.00	0.36	270.90
18.10	0.00	0.35	270.89
18.20	0.00	0.35	270.89
18.30	0.00	0.35	270.89
18.40	0.00	0.35	270.89
18.50	0.00	0.35	270.89
18.60	0.00	0.35	270.89
18.70	0.00	0.35	270.89
18.80	0.00	0.35	270.89
18.90	0.00	0.35	270.89
19.00	0.00	0.35	270.89
19.10	0.00	0.35	270.89
19.20	0.00	0.35	270.89
19.30	0.00	0.35	270.89
19.40	0.00	0.35	270.89
19.50	0.00	0.35	270.89
19.60	0.00	0.35	270.89
19.70	0.00	0.35	270.89
19.80	0.00	0.34	270.88
19.90	0.00	0.34	270.88
20.00	0.00	0.34	270.88

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.38	270.90
16.90	0.00	0.38	270.90
17.00	0.00	0.38	270.90
17.10	0.00	0.38	270.90
17.20	0.00	0.38	270.90
17.30	0.00	0.38	270.90
17.40	0.00	0.38	270.90
17.50	0.00	0.38	270.90
17.60	0.00	0.38	270.90
17.70	0.00	0.38	270.90
17.80	0.00	0.38	270.90
17.90	0.00	0.38	270.90
18.00	0.00	0.38	270.90
18.10	0.00	0.38	270.90
18.20	0.00	0.37	270.89
18.30	0.00	0.37	270.89
18.40	0.00	0.37	270.89
18.50	0.00	0.37	270.89
18.60	0.00	0.37	270.89
18.70	0.00	0.37	270.89
18.80	0.00	0.37	270.89
18.90	0.00	0.37	270.89
19.00	0.00	0.37	270.89
19.10	0.00	0.37	270.89
19.20	0.00	0.37	270.89
19.30	0.00	0.37	270.89
19.40	0.00	0.37	270.89
19.50	0.00	0.37	270.89
19.60	0.00	0.37	270.89
19.70	0.00	0.37	270.89
19.80	0.00	0.37	270.89
19.90	0.00	0.36	270.88
20.00	0.00	0.36	270.88

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.42
0.10	0.07	0.98	271.40
0.20	0.04	1.02	271.44
0.30	0.06	1.03	271.45
0.40	0.07	1.06	271.48
0.50	0.08	1.12	271.54
0.60	0.13	1.08	271.50
0.70	0.12	1.07	271.49
0.80	0.09	1.05	271.47
0.90	0.09	1.05	271.47
1.00	0.10	1.05	271.47
1.10	0.11	0.99	271.41
1.20	0.06	0.96	271.38
1.30	0.07	0.93	271.35
1.40	0.09	0.91	271.33
1.50	0.04	0.89	271.31
1.60	0.02	0.88	271.30
1.70	0.03	0.87	271.29
1.80	0.03	0.86	271.28
1.90	0.03	0.86	271.28
2.00	0.03	0.86	271.28
2.10	0.00	0.88	271.30
2.20	0.06	0.88	271.30
2.30	0.08	0.89	271.31
2.40	0.05	0.90	271.32
2.50	0.00	0.92	271.34
2.60	0.06	0.92	271.34
2.70	0.10	0.94	271.36
2.80	0.07	0.95	271.37
2.90	0.11	0.96	271.38
3.00	0.09	0.96	271.38
3.10	0.08	0.97	271.39
3.20	0.02	0.98	271.40
3.30	0.03	0.97	271.39
3.40	0.10	0.98	271.40
3.50	0.07	0.97	271.39
3.60	0.07	0.97	271.39
3.70	0.08	0.96	271.38
3.80	0.07	0.95	271.37
3.90	0.07	0.95	271.37
4.00	0.06	0.94	271.36
4.10	0.09	0.94	271.36
4.20	0.04	0.93	271.35
4.30	0.07	0.92	271.34
4.40	0.04	0.91	271.33
4.50	0.05	0.91	271.33
4.60	0.03	0.90	271.32
4.70	0.08	0.89	271.31
4.80	0.05	0.89	271.31
4.90	0.03	0.88	271.30
5.00	0.04	0.87	271.29
5.10	0.07	0.87	271.29
5.20	0.04	0.87	271.29
5.30	0.00	0.86	271.28
5.40	0.04	0.86	271.28
5.50	0.04	0.85	271.27

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.55
0.10	0.15	0.86	271.41
0.20	0.07	0.89	271.44
0.30	0.12	0.91	271.46
0.40	0.12	0.95	271.50
0.50	0.19	1.01	271.56
0.60	0.14	0.97	271.52
0.70	0.20	0.95	271.50
0.80	0.14	0.94	271.49
0.90	0.10	0.93	271.48
1.00	0.07	0.93	271.48
1.10	0.06	0.87	271.42
1.20	0.00	0.83	271.38
1.30	0.07	0.80	271.35
1.40	0.07	0.78	271.33
1.50	0.05	0.77	271.32
1.60	0.00	0.75	271.30
1.70	0.02	0.74	271.29
1.80	0.02	0.73	271.28
1.90	0.03	0.74	271.29
2.00	0.02	0.74	271.29
2.10	0.02	0.75	271.30
2.20	0.01	0.76	271.31
2.30	0.02	0.77	271.32
2.40	0.06	0.78	271.33
2.50	0.08	0.79	271.34
2.60	0.04	0.81	271.36
2.70	0.05	0.82	271.37
2.80	0.09	0.83	271.38
2.90	0.08	0.84	271.39
3.00	0.08	0.85	271.40
3.10	0.05	0.86	271.41
3.20	0.07	0.85	271.40
3.30	0.08	0.86	271.41
3.40	0.06	0.85	271.40
3.50	0.08	0.85	271.40
3.60	0.08	0.85	271.40
3.70	0.04	0.84	271.39
3.80	0.02	0.83	271.38
3.90	0.03	0.83	271.38
4.00	0.05	0.82	271.37
4.10	0.07	0.81	271.36
4.20	0.05	0.80	271.35
4.30	0.05	0.80	271.35
4.40	0.04	0.78	271.33
4.50	0.06	0.78	271.33
4.60	0.02	0.77	271.32
4.70	0.03	0.77	271.32
4.80	0.04	0.76	271.31
4.90	0.03	0.75	271.30
5.00	0.03	0.75	271.30
5.10	0.04	0.75	271.30
5.20	0.03	0.74	271.29
5.30	0.02	0.74	271.29
5.40	0.00	0.73	271.28
5.50	0.01	0.72	271.27

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.03	0.85	271.27
5.70	0.05	0.85	271.27
5.80	0.04	0.84	271.26
5.90	0.04	0.84	271.26
6.00	0.07	0.83	271.25
6.10	0.02	0.82	271.24
6.20	0.02	0.80	271.22
6.30	0.03	0.78	271.20
6.40	0.00	0.77	271.19
6.50	0.01	0.76	271.18
6.60	0.02	0.74	271.16
6.70	0.00	0.73	271.15
6.80	0.00	0.72	271.14
6.90	0.02	0.71	271.13
7.00	0.02	0.70	271.12
7.10	0.00	0.69	271.11
7.20	0.00	0.68	271.10
7.30	0.00	0.67	271.09
7.40	0.00	0.67	271.09
7.50	0.00	0.66	271.08
7.60	0.00	0.65	271.07
7.70	0.00	0.65	271.07
7.80	0.00	0.64	271.06
7.90	0.00	0.63	271.05
8.00	0.00	0.63	271.05
8.10	0.00	0.62	271.04
8.20	0.00	0.62	271.04
8.30	0.00	0.62	271.04
8.40	0.00	0.61	271.03
8.50	0.00	0.61	271.03
8.60	0.00	0.60	271.02
8.70	0.00	0.60	271.02
8.80	0.00	0.59	271.01
8.90	0.00	0.59	271.01
9.00	0.00	0.59	271.01
9.10	0.00	0.58	271.00
9.20	0.00	0.58	271.00
9.30	0.00	0.58	271.00
9.40	0.00	0.58	271.00
9.50	0.00	0.57	270.99
9.60	0.00	0.57	270.99
9.70	0.00	0.57	270.99
9.80	0.00	0.57	270.99
9.90	0.00	0.56	270.98
10.00	0.00	0.56	270.98
10.10	0.00	0.56	270.98
10.20	0.00	0.56	270.98
10.30	0.00	0.55	270.97
10.40	0.00	0.55	270.97
10.50	0.00	0.55	270.97
10.60	0.00	0.55	270.97
10.70	0.00	0.55	270.97
10.80	0.00	0.55	270.97
10.90	0.00	0.54	270.96
11.00	0.00	0.54	270.96
11.10	0.00	0.54	270.96

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.03	0.72	271.27
5.70	0.00	0.72	271.27
5.80	0.04	0.72	271.27
5.90	0.04	0.71	271.26
6.00	0.09	0.71	271.26
6.10	0.02	0.69	271.24
6.20	0.00	0.67	271.22
6.30	0.00	0.65	271.20
6.40	0.00	0.64	271.19
6.50	0.00	0.63	271.18
6.60	0.00	0.61	271.16
6.70	0.00	0.60	271.15
6.80	0.00	0.59	271.14
6.90	0.00	0.58	271.13
7.00	0.00	0.57	271.12
7.10	0.00	0.56	271.11
7.20	0.00	0.55	271.10
7.30	0.00	0.54	271.09
7.40	0.00	0.54	271.09
7.50	0.00	0.53	271.08
7.60	0.00	0.52	271.07
7.70	0.00	0.52	271.07
7.80	0.00	0.51	271.06
7.90	0.00	0.51	271.06
8.00	0.00	0.50	271.05
8.10	0.00	0.50	271.05
8.20	0.00	0.49	271.04
8.30	0.00	0.49	271.04
8.40	0.00	0.48	271.03
8.50	0.00	0.48	271.03
8.60	0.00	0.47	271.02
8.70	0.00	0.47	271.02
8.80	0.00	0.47	271.02
8.90	0.00	0.46	271.01
9.00	0.00	0.46	271.01
9.10	0.00	0.46	271.01
9.20	0.00	0.45	271.00
9.30	0.00	0.45	271.00
9.40	0.00	0.45	271.00
9.50	0.00	0.44	270.99
9.60	0.00	0.44	270.99
9.70	0.00	0.44	270.99
9.80	0.00	0.44	270.99
9.90	0.00	0.43	270.98
10.00	0 0.00	0.43	270.98
10.10	0 0.00	0.43	270.98
10.20	0 0.00	0.43	270.98
10.30	0 0.00	0.42	270.97
10.40	0 0.00	0.42	270.97
10.50	0 0.00	0.42	270.97
10.60	0 0.00	0.42	270.97
10.70	0 0.00	0.42	270.97
10.80	0 0.00	0.42	270.97
10.90	0 0.00	0.41	270.96
11.00	0 0.00	0.41	270.96
11.10	0 0.00	0.41	270.96

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.54	270.96
11.30	0.00	0.54	270.96
11.40	0.00	0.54	270.96
11.50	0.00	0.54	270.96
11.60	0.00	0.53	270.95
11.70	0.00	0.53	270.95
11.80	0.00	0.53	270.95
11.90	0.00	0.53	270.95
12.00	0.00	0.53	270.95
12.10	0.00	0.53	270.95
12.20	0.00	0.53	270.95
12.30	0.00	0.52	270.94
12.40	0.00	0.52	270.94
12.50	0.00	0.52	270.94
12.60	0.00	0.52	270.94
12.70	0.00	0.52	270.94
12.80	0.00	0.52	270.94
12.90	0.00	0.52	270.94
13.00	0.00	0.52	270.94
13.10	0.00	0.52	270.94
13.20	0.00	0.51	270.93
13.30	0.00	0.51	270.93
13.40	0.00	0.51	270.93
13.50	0.00	0.51	270.93
13.60	0.00	0.51	270.93
13.70	0.00	0.51	270.93
13.80	0.00	0.51	270.93
13.90	0.00	0.51	270.93
14.00	0.00	0.51	270.93
14.10	0.00	0.51	270.93
14.20	0.00	0.50	270.92
14.30	0.00	0.50	270.92
14.40	0.00	0.50	270.92
14.50	0.00	0.50	270.92
14.60	0.00	0.50	270.92
14.70	0.00	0.50	270.92
14.80	0.00	0.50	270.92
14.90	0.00	0.50	270.92
15.00	0.00	0.50	270.92
15.10	0.00	0.50	270.92
15.20	0.00	0.50	270.92
15.30	0.00	0.50	270.92
15.40	0.00	0.49	270.91
15.50	0.00	0.49	270.91
15.60	0.00	0.49	270.91
15.70	0.00	0.49	270.91
15.80	0.00	0.49	270.91
15.90	0.00	0.49	270.91
16.00	0.00	0.49	270.91
16.10	0.00	0.49	270.91
16.20	0.00	0.49	270.91
16.30	0.00	0.49	270.91
16.40	0.00	0.49	270.91
16.50	0.00	0.49	270.91
16.60	0.00	0.49	270.91
16.70	0.00	0.48	270.90

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0 0.00	0.41	270.96
11.30	0 0.00	0.41	270.96
11.40	0 0.00	0.41	270.96
11.50	0 0.00	0.41	270.96
11.60	0 0.00	0.40	270.95
11.70	0 0.00	0.40	270.95
11.80	0 0.00	0.40	270.95
11.90	0 0.00	0.40	270.95
12.00	0 0.00	0.40	270.95
12.10	0 0.00	0.40	270.95
12.20	0 0.00	0.40	270.95
12.30	0 0.00	0.39	270.94
12.40	0 0.00	0.39	270.94
12.50	0 0.00	0.39	270.94
12.60	0 0.00	0.39	270.94
12.70	0 0.00	0.39	270.94
12.80	0 0.00	0.39	270.94
12.90	0 0.00	0.39	270.94
13.00	0 0.00	0.39	270.94
13.10	0 0.00	0.39	270.94
13.20	0 0.00	0.38	270.93
13.30	0 0.00	0.38	270.93
13.40	0 0.00	0.38	270.93
13.50	0 0.00	0.38	270.93
13.60	0 0.00	0.38	270.93
13.70	0 0.00	0.38	270.93
13.80	0 0.00	0.38	270.93
13.90	0 0.00	0.38	270.93
14.00	0 0.00	0.38	270.93
14.10	0 0.00	0.38	270.93
14.20	0 0.00	0.38	270.93
14.30	0 0.00	0.37	270.92
14.40	0 0.00	0.37	270.92
14.50	0 0.00	0.37	270.92
14.60	0 0.00	0.37	270.92
14.70	0 0.00	0.37	270.92
14.80	0 0.00	0.37	270.92
14.90	0 0.00	0.37	270.92
15.00	0 0.00	0.37	270.92
15.10	0 0.00	0.37	270.92
15.20	0 0.00	0.37	270.92
15.30	0 0.00	0.37	270.92
15.40	0 0.00	0.36	270.91
15.50	0 0.00	0.36	270.91
15.60	0 0.00	0.36	270.91
15.70	0 0.00	0.36	270.91
15.80	0 0.00	0.36	270.91
15.90	0 0.00	0.36	270.91
16.00	0 0.00	0.36	270.91
16.10	0 0.00	0.36	270.91
16.20	0 0.00	0.36	270.91
16.30	0 0.00	0.36	270.91
16.40	0 0.00	0.36	270.91
16.50	0 0.00	0.36	270.91
16.60	0 0.00	0.36	270.91
16.70	0 0.00	0.36	270.91

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.48	270.90
16.90	0.00	0.48	270.90
17.00	0.00	0.48	270.90
17.10	0.00	0.48	270.90
17.20	0.00	0.48	270.90
17.30	0.00	0.48	270.90
17.40	0.00	0.48	270.90
17.50	0.00	0.48	270.90
17.60	0.00	0.48	270.90
17.70	0.00	0.48	270.90
17.80	0.00	0.48	270.90
17.90	0.00	0.48	270.90
18.00	0.00	0.48	270.90
18.10	0.00	0.48	270.90
18.20	0.00	0.47	270.89
18.30	0.00	0.47	270.89
18.40	0.00	0.47	270.89
18.50	0.00	0.47	270.89
18.60	0.00	0.47	270.89
18.70	0.00	0.47	270.89
18.80	0.00	0.47	270.89
18.90	0.00	0.47	270.89
19.00	0.00	0.47	270.89
19.10	0.00	0.47	270.89
19.20	0.00	0.47	270.89
19.30	0.00	0.47	270.89
19.40	0.00	0.47	270.89
19.50	0.00	0.47	270.89
19.60	0.00	0.47	270.89
19.70	0.00	0.47	270.89
19.80	0.00	0.47	270.89
19.90	0.00	0.47	270.89
20.00	0.00	0.46	270.88

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0 0.00	0.35	270.90
16.90	0 0.00	0.35	270.90
17.00	0 0.00	0.35	270.90
17.10	0 0.00	0.35	270.90
17.20	0 0.00	0.35	270.90
17.30	0 0.00	0.35	270.90
17.40	0 0.00	0.35	270.90
17.50	0 0.00	0.35	270.90
17.60	0 0.00	0.35	270.90
17.70	0 0.00	0.35	270.90
17.80	0 0.00	0.35	270.90
17.90	0 0.00	0.35	270.90
18.00	0 0.00	0.35	270.90
18.10	0 0.00	0.35	270.90
18.20	0 0.00	0.35	270.90
18.30	0 0.00	0.34	270.89
18.40	0 0.00	0.34	270.89
18.50	0 0.00	0.34	270.89
18.60	0 0.00	0.34	270.89
18.70	0 0.00	0.34	270.89
18.80	0 0.00	0.34	270.89
18.90	0 0.00	0.34	270.89
19.00	0 0.00	0.34	270.89
19.10	0 0.00	0.34	270.89
19.20	0 0.00	0.34	270.89
19.30	0 0.00	0.34	270.89
19.40	0 0.00	0.34	270.89
19.50	0 0.00	0.34	270.89
19.60	0 0.00	0.34	270.89
19.70	0 0.00	0.34	270.89
19.80	0 0.00	0.34	270.89
19.90	0 0.00	0.34	270.89
20.00	0 0.00	0.33	270.88

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.52
0.10	0.41	0.48	272.00
0.20	0.29	0.36	271.88
0.30	0.27	0.32	271.84
0.40	0.26	0.30	271.82
0.50	0.25	0.31	271.83
0.60	0.20	0.23	271.75
0.70	0.18	0.20	271.72
0.80	0.16	0.20	271.72
0.90	0.14	0.20	271.72
1.00	0.18	0.20	271.72
1.10	0.10	0.16	271.68
1.20	0.08	0.13	271.65
1.30	0.08	0.11	271.63
1.40	0.07	0.09	271.61
1.50	0.07	0.09	271.61
1.60	0.07	0.08	271.60
1.70	0.07	0.08	271.60
1.80	0.07	0.08	271.60
1.90	0.07	0.08	271.60
2.00	0.07	0.08	271.60
2.10	0.07	0.08	271.60
2.20	0.07	0.08	271.60
2.30	0.07	0.08	271.60
2.40	0.07	0.08	271.60
2.50	0.07	0.08	271.60
2.60	0.07	0.08	271.60
2.70	0.07	0.08	271.60
2.80	0.07	0.08	271.60
2.90	0.06	0.08	271.60
3.00	0.06	0.08	271.60
3.10	0.06	0.09	271.61
3.20	0.06	0.08	271.60
3.30	0.07	0.09	271.61
3.40	0.06	0.08	271.60
3.50	0.06	0.08	271.60
3.60	0.06	0.08	271.60
3.70	0.07	0.08	271.60
3.80	0.07	0.08	271.60
3.90	0.07	0.08	271.60
4.00	0.07	0.08	271.60
4.10	0.07	0.08	271.60
4.20	0.07	0.08	271.60
4.30	0.07	0.08	271.60
4.40	0.07	0.08	271.60
4.50	0.07	0.08	271.60
4.60	0.07	0.08	271.60
4.70	0.07	0.08	271.60
4.80	0.07	0.08	271.60
4.90	0.07	0.08	271.60
5.00	0.07	0.08	271.60
5.10	0.07	0.08	271.60
5.20	0.07	0.08	271.60
5.30	0.07	0.08	271.60
5.40	0.07	0.08	271.60
5.50	0.07	0.08	271.60

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.37
0.10	0.31	0.31	271.68
0.20	0.17	0.23	271.60
0.30	0.14	0.25	271.62
0.40	0.12	0.27	271.64
0.50	0.11	0.31	271.68
0.60	0.09	0.28	271.65
0.70	0.08	0.26	271.63
0.80	0.08	0.25	271.62
0.90	0.08	0.25	271.62
1.00	0.08	0.25	271.62
1.10	0.05	0.20	271.57
1.20	0.04	0.16	271.53
1.30	0.04	0.14	271.51
1.40	0.04	0.12	271.49
1.50	0.04	0.11	271.48
1.60	0.04	0.10	271.47
1.70	0.04	0.10	271.47
1.80	0.04	0.10	271.47
1.90	0.04	0.10	271.47
2.00	0.03	0.11	271.48
2.10	0.03	0.12	271.49
2.20	0.03	0.14	271.51
2.30	0.03	0.16	271.53
2.40	0.05	0.18	271.55
2.50	0.05	0.19	271.56
2.60	0.08	0.20	271.57
2.70	0.08	0.22	271.59
2.80	0.08	0.23	271.60
2.90	0.09	0.23	271.60
3.00	0.09	0.24	271.61
3.10	0.09	0.24	271.61
3.20	0.10	0.24	271.61
3.30	0.09	0.24	271.61
3.40	0.09	0.24	271.61
3.50	0.09	0.23	271.60
3.60	0.08	0.22	271.59
3.70	0.08	0.22	271.59
3.80	0.08	0.21	271.58
3.90	0.08	0.20	271.57
4.00	0.05	0.19	271.56
4.10	0.05	0.18	271.55
4.20	0.05	0.17	271.54
4.30	0.03	0.16	271.53
4.40	0.03	0.15	271.52
4.50	0.03	0.14	271.51
4.60	0.03	0.14	271.51
4.70	0.03	0.13	271.50
4.80	0.03	0.12	271.49
4.90	0.03	0.11	271.48
5.00	0.03	0.11	271.48
5.10	0.04	0.10	271.47
5.20	0.04	0.10	271.47
5.30	0.04	0.09	271.46
5.40	0.04	0.09	271.46
5.50	0.04	0.09	271.46

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.07	0.08	271.60
5.70	0.07	0.08	271.60
5.80	0.07	0.08	271.60
5.90	0.07	0.08	271.60
6.00	0.07	0.08	271.60
6.10	0.05	0.05	271.57
6.20	0.05	0.05	271.57
6.30	0.00	0.05	271.57
6.40	0.00	0.05	271.57
6.50	0.00	0.05	271.57
6.60	0.00	0.05	271.57
6.70	0.00	0.05	271.57
6.80	0.00	0.05	271.57
6.90	0.00	0.05	271.57
7.00	0.00	0.05	271.57
7.10	0.00	0.05	271.57
7.20	0.00	0.05	271.57
7.30	0.00	0.05	271.57
7.40	0.00	0.05	271.57
7.50	0.00	0.05	271.57
7.60	0.00	0.05	271.57
7.70	0.00	0.05	271.57
7.80	0.00	0.05	271.57
7.90	0.00	0.05	271.57
8.00	0.00	0.05	271.57
8.10	0.00	0.05	271.57
8.20	0.00	0.05	271.57
8.30	0.00	0.05	271.57
8.40	0.00	0.05	271.57
8.50	0.00	0.05	271.57
8.60	0.00	0.05	271.57
8.70	0.00	0.05	271.57
8.80	0.00	0.05	271.57
8.90	0.00	0.05	271.57
9.00	0.00	0.05	271.57
9.10	0.00	0.05	271.57
9.20	0.00	0.05	271.57
9.30	0.00	0.05	271.57
9.40	0.00	0.05	271.57
9.50	0.00	0.05	271.57
9.60	0.00	0.05	271.57
9.70	0.00	0.05	271.57
9.80	0.00	0.05	271.57
9.90	0.00	0.05	271.57
10.00	0.00	0.05	271.57
10.10	0.00	0.05	271.57
10.20	0.00	0.05	271.57
10.30	0.00	0.05	271.57
10.40	0.00	0.05	271.57
10.50	0.00	0.05	271.57
10.60	0.00	0.05	271.57
10.70	0.00	0.05	271.57
10.80	0.00	0.05	271.57
10.90	0.00	0.05	271.57
11.00	0.00	0.05	271.57
11.10	0.00	0.05	271.57

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.04	0.08	271.45
5.70	0.04	0.08	271.45
5.80	0.04	0.08	271.45
5.90	0.04	0.08	271.45
6.00	0.04	0.08	271.45
6.10	0.03	0.06	271.43
6.20	0.03	0.05	271.42
6.30	0.00	0.05	271.42
6.40	0.00	0.05	271.42
6.50	0.00	0.05	271.42
6.60	0.00	0.05	271.42
6.70	0.00	0.05	271.42
6.80	0.00	0.05	271.42
6.90	0.00	0.05	271.42
7.00	0.00	0.05	271.42
7.10	0.00	0.05	271.42
7.20	0.00	0.05	271.42
7.30	0.00	0.05	271.42
7.40	0.00	0.05	271.42
7.50	0.00	0.05	271.42
7.60	0.00	0.05	271.42
7.70	0.00	0.05	271.42
7.80	0.00	0.05	271.42
7.90	0.00	0.05	271.42
8.00	0.00	0.05	271.42
8.10	0.00	0.05	271.42
8.20	0.00	0.05	271.42
8.30	0.00	0.05	271.42
8.40	0.00	0.05	271.42
8.50	0.00	0.05	271.42
8.60	0.00	0.05	271.42
8.70	0.00	0.05	271.42
8.80	0.00	0.05	271.42
8.90	0.00	0.05	271.42
9.00	0.00	0.05	271.42
9.10	0.00	0.05	271.42
9.20	0.00	0.05	271.42
9.30	0.00	0.05	271.42
9.40	0.00	0.05	271.42
9.50	0.00	0.05	271.42
9.60	0.00	0.05	271.42
9.70	0.00	0.05	271.42
9.80	0.00	0.05	271.42
9.90	0.00	0.05	271.42
10.00	0.00	0.05	271.42
10.10	0.00	0.05	271.42
10.20	0.00	0.05	271.42
10.30	0.00	0.05	271.42
10.40	0.00	0.05	271.42
10.50	0.00	0.05	271.42
10.60	0.00	0.05	271.42
10.70	0.00	0.05	271.42
10.80	0.00	0.05	271.42
10.90	0.00	0.05	271.42
11.00	0.00	0.05	271.42
11.10	0.00	0.05	271.42

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.57
11.30	0.00	0.05	271.57
11.40	0.00	0.05	271.57
11.50	0.00	0.05	271.57
11.60	0.00	0.05	271.57
11.70	0.00	0.05	271.57
11.80	0.00	0.05	271.57
11.90	0.00	0.05	271.57
12.00	0.00	0.05	271.57
12.10	0.00	0.05	271.57
12.20	0.00	0.05	271.57
12.30	0.00	0.05	271.57
12.40	0.00	0.05	271.57
12.50	0.00	0.05	271.57
12.60	0.00	0.05	271.57
12.70	0.00	0.05	271.57
12.80	0.00	0.05	271.57
12.90	0.00	0.05	271.57
13.00	0.00	0.05	271.57
13.10	0.00	0.05	271.57
13.20	0.00	0.05	271.57
13.30	0.00	0.05	271.57
13.40	0.00	0.05	271.57
13.50	0.00	0.05	271.57
13.60	0.00	0.05	271.57
13.70	0.00	0.05	271.57
13.80	0.00	0.05	271.57
13.90	0.00	0.05	271.57
14.00	0.00	0.05	271.57
14.10	0.00	0.05	271.57
14.20	0.00	0.05	271.57
14.30	0.00	0.05	271.57
14.40	0.00	0.05	271.57
14.50	0.00	0.05	271.57
14.60	0.00	0.05	271.57
14.70	0.00	0.05	271.57
14.80	0.00	0.05	271.57
14.90	0.00	0.05	271.57
15.00	0.00	0.05	271.57
15.10	0.00	0.05	271.57
15.20	0.00	0.05	271.57
15.30	0.00	0.05	271.57
15.40	0.00	0.05	271.57
15.50	0.00	0.05	271.57
15.60	0.00	0.05	271.57
15.70	0.00	0.05	271.57
15.80	0.00	0.05	271.57
15.90	0.00	0.05	271.57
16.00	0.00	0.05	271.57
16.10	0.00	0.05	271.57
16.20	0.00	0.05	271.57
16.30	0.00	0.05	271.57
16.40	0.00	0.05	271.57
16.50	0.00	0.05	271.57
16.60	0.00	0.05	271.57
16.70	0.00	0.05	271.57

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.42
11.30	0.00	0.05	271.42
11.40	0.00	0.05	271.42
11.50	0.00	0.05	271.42
11.60	0.00	0.05	271.42
11.70	0.00	0.05	271.42
11.80	0.00	0.05	271.42
11.90	0.00	0.05	271.42
12.00	0.00	0.05	271.42
12.10	0.00	0.05	271.42
12.20	0.00	0.05	271.42
12.30	0.00	0.05	271.42
12.40	0.00	0.05	271.42
12.50	0.00	0.05	271.42
12.60	0.00	0.05	271.42
12.70	0.00	0.05	271.42
12.80	0.00	0.05	271.42
12.90	0.00	0.05	271.42
13.00	0.00	0.05	271.42
13.10	0.00	0.05	271.42
13.20	0.00	0.05	271.42
13.30	0.00	0.05	271.42
13.40	0.00	0.05	271.42
13.50	0.00	0.05	271.42
13.60	0.00	0.05	271.42
13.70	0.00	0.05	271.42
13.80	0.00	0.05	271.42
13.90	0.00	0.05	271.42
14.00	0.00	0.05	271.42
14.10	0.00	0.05	271.42
14.20	0.00	0.05	271.42
14.30	0.00	0.05	271.42
14.40	0.00	0.05	271.42
14.50	0.00	0.05	271.42
14.60	0.00	0.05	271.42
14.70	0.00	0.05	271.42
14.80	0.00	0.05	271.42
14.90	0.00	0.05	271.42
15.00	0.00	0.05	271.42
15.10	0.00	0.05	271.42
15.20	0.00	0.05	271.42
15.30	0.00	0.05	271.42
15.40	0.00	0.05	271.42
15.50	0.00	0.05	271.42
15.60	0.00	0.05	271.42
15.70	0.00	0.05	271.42
15.80	0.00	0.05	271.42
15.90	0.00	0.05	271.42
16.00	0.00	0.05	271.42
16.10	0.00	0.05	271.42
16.20	0.00	0.05	271.42
16.30	0.00	0.05	271.42
16.40	0.00	0.05	271.42
16.50	0.00	0.05	271.42
16.60	0.00	0.05	271.42
16.70	0.00	0.05	271.42

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.57
16.90	0.00	0.05	271.57
17.00	0.00	0.05	271.57
17.10	0.00	0.05	271.57
17.20	0.00	0.05	271.57
17.30	0.00	0.05	271.57
17.40	0.00	0.05	271.57
17.50	0.00	0.05	271.57
17.60	0.00	0.05	271.57
17.70	0.00	0.05	271.57
17.80	0.00	0.05	271.57
17.90	0.00	0.05	271.57
18.00	0.00	0.05	271.57
18.10	0.00	0.05	271.57
18.20	0.00	0.05	271.57
18.30	0.00	0.05	271.57
18.40	0.00	0.05	271.57
18.50	0.00	0.05	271.57
18.60	0.00	0.05	271.57
18.70	0.00	0.05	271.57
18.80	0.00	0.05	271.57
18.90	0.00	0.05	271.57
19.00	0.00	0.05	271.57
19.10	0.00	0.05	271.57
19.20	0.00	0.05	271.57
19.30	0.00	0.05	271.57
19.40	0.00	0.05	271.57
19.50	0.00	0.05	271.57
19.60	0.00	0.05	271.57
19.70	0.00	0.05	271.57
19.80	0.00	0.05	271.57
19.90	0.00	0.05	271.57
20.00	0.00	0.05	271.57

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.42
16.90	0.00	0.05	271.42
17.00	0.00	0.05	271.42
17.10	0.00	0.05	271.42
17.20	0.00	0.05	271.42
17.30	0.00	0.05	271.42
17.40	0.00	0.05	271.42
17.50	0.00	0.05	271.42
17.60	0.00	0.05	271.42
17.70	0.00	0.05	271.42
17.80	0.00	0.05	271.42
17.90	0.00	0.05	271.42
18.00	0.00	0.05	271.42
18.10	0.00	0.05	271.42
18.20	0.00	0.05	271.42
18.30	0.00	0.05	271.42
18.40	0.00	0.05	271.42
18.50	0.00	0.05	271.42
18.60	0.00	0.05	271.42
18.70	0.00	0.05	271.42
18.80	0.00	0.05	271.42
18.90	0.00	0.05	271.42
19.00	0.00	0.05	271.42
19.10	0.00	0.05	271.42
19.20	0.00	0.05	271.42
19.30	0.00	0.05	271.42
19.40	0.00	0.05	271.42
19.50	0.00	0.05	271.42
19.60	0.00	0.05	271.42
19.70	0.00	0.05	271.42
19.80	0.00	0.05	271.42
19.90	0.00	0.05	271.42
20.00	0.00	0.05	271.42

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.50
0.10	0.29	0.21	271.71
0.20	0.18	0.18	271.68
0.30	0.15	0.18	271.68
0.40	0.14	0.18	271.68
0.50	0.13	0.20	271.70
0.60	0.09	0.17	271.67
0.70	0.09	0.15	271.65
0.80	0.09	0.14	271.64
0.90	0.09	0.14	271.64
1.00	0.09	0.14	271.64
1.10	0.07	0.09	271.59
1.20	0.07	0.07	271.57
1.30	0.06	0.06	271.56
1.40	0.06	0.05	271.55
1.50	0.07	0.05	271.55
1.60	0.07	0.05	271.55
1.70	0.06	0.05	271.55
1.80	0.07	0.05	271.55
1.90	0.06	0.05	271.55
2.00	0.05	0.05	271.55
2.10	0.04	0.05	271.55
2.20	0.05	0.05	271.55
2.30	0.05	0.05	271.55
2.40	0.04	0.06	271.56
2.50	0.04	0.07	271.57
2.60	0.03	0.08	271.58
2.70	0.03	0.09	271.59
2.80	0.03	0.10	271.60
2.90	0.03	0.10	271.60
3.00	0.03	0.11	271.61
3.10	0.04	0.11	271.61
3.20	0.04	0.11	271.61
3.30	0.06	0.11	271.61
3.40	0.03	0.11	271.61
3.50	0.03	0.10	271.60
3.60	0.03	0.09	271.59
3.70	0.03	0.09	271.59
3.80	0.03	0.08	271.58
3.90	0.03	0.08	271.58
4.00	0.04	0.07	271.57
4.10	0.04	0.06	271.56
4.20	0.04	0.06	271.56
4.30	0.05	0.06	271.56
4.40	0.05	0.05	271.55
4.50	0.05	0.05	271.55
4.60	0.06	0.05	271.55
4.70	0.06	0.05	271.55
4.80	0.05	0.05	271.55
4.90	0.06	0.05	271.55
5.00	0.06	0.05	271.55
5.10	0.07	0.05	271.55
5.20	0.00	0.05	271.55
5.30	0.07	0.05	271.55
5.40	0.00	0.05	271.55
5.50	0.07	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.26
0.10	0.19	0.24	271.50
0.20	0.08	0.28	271.54
0.30	0.07	0.35	271.61
0.40	0.11	0.38	271.64
0.50	0.03	0.43	271.69
0.60	0.09	0.41	271.67
0.70	0.14	0.39	271.65
0.80	0.12	0.38	271.64
0.90	0.07	0.37	271.63
1.00	0.13	0.38	271.64
1.10	0.10	0.33	271.59
1.20	0.12	0.30	271.56
1.30	0.12	0.27	271.53
1.40	0.08	0.25	271.51
1.50	0.08	0.23	271.49
1.60	0.08	0.23	271.49
1.70	0.08	0.22	271.48
1.80	0.08	0.23	271.49
1.90	0.09	0.24	271.50
2.00	0.10	0.26	271.52
2.10	0.11	0.27	271.53
2.20	0.16	0.29	271.55
2.30	0.15	0.31	271.57
2.40	0.18	0.33	271.59
2.50	0.17	0.34	271.60
2.60	0.15	0.36	271.62
2.70	0.18	0.37	271.63
2.80	0.17	0.38	271.64
2.90	0.19	0.39	271.65
3.00	0.19	0.39	271.65
3.10	0.21	0.40	271.66
3.20	0.18	0.40	271.66
3.30	0.16	0.40	271.66
3.40	0.19	0.39	271.65
3.50	0.20	0.38	271.64
3.60	0.17	0.38	271.64
3.70	0.17	0.37	271.63
3.80	0.13	0.36	271.62
3.90	0.15	0.35	271.61
4.00	0.15	0.34	271.60
4.10	0.16	0.33	271.59
4.20	0.14	0.32	271.58
4.30	0.15	0.31	271.57
4.40	0.15	0.30	271.56
4.50	0.15	0.29	271.55
4.60	0.13	0.28	271.54
4.70	0.12	0.27	271.53
4.80	0.08	0.26	271.52
4.90	0.08	0.25	271.51
5.00	0.09	0.24	271.50
5.10	0.09	0.23	271.49
5.20	0.08	0.23	271.49
5.30	0.08	0.22	271.48
5.40	0.08	0.21	271.47
5.50	0.08	0.20	271.46

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.07	0.05	271.55
5.70	0.06	0.05	271.55
5.80	0.08	0.05	271.55
5.90	0.00	0.05	271.55
6.00	0.07	0.05	271.55
6.10	0.05	0.05	271.55
6.20	0.00	0.05	271.55
6.30	0.00	0.05	271.55
6.40	0.00	0.05	271.55
6.50	0.00	0.05	271.55
6.60	0.00	0.05	271.55
6.70	0.00	0.05	271.55
6.80	0.00	0.05	271.55
6.90	0.00	0.05	271.55
7.00	0.00	0.05	271.55
7.10	0.00	0.05	271.55
7.20	0.00	0.05	271.55
7.30	0.00	0.05	271.55
7.40	0.00	0.05	271.55
7.50	0.00	0.05	271.55
7.60	0.00	0.05	271.55
7.70	0.00	0.05	271.55
7.80	0.00	0.05	271.55
7.90	0.00	0.05	271.55
8.00	0.00	0.05	271.55
8.10	0.00	0.05	271.55
8.20	0.00	0.05	271.55
8.30	0.00	0.05	271.55
8.40	0.00	0.05	271.55
8.50	0.00	0.05	271.55
8.60	0.00	0.05	271.55
8.70	0.00	0.05	271.55
8.80	0.00	0.05	271.55
8.90	0.00	0.05	271.55
9.00	0.00	0.05	271.55
9.10	0.00	0.05	271.55
9.20	0.00	0.05	271.55
9.30	0.00	0.05	271.55
9.40	0.00	0.05	271.55
9.50	0.00	0.05	271.55
9.60	0.00	0.05	271.55
9.70	0.00	0.05	271.55
9.80	0.00	0.05	271.55
9.90	0.00	0.05	271.55
10.00	0.00	0.05	271.55
10.10	0.00	0.05	271.55
10.20	0.00	0.05	271.55
10.30	0.00	0.05	271.55
10.40	0.00	0.05	271.55
10.50	0.00	0.05	271.55
10.60	0.00	0.05	271.55
10.70	0.00	0.05	271.55
10.80	0.00	0.05	271.55
10.90	0.00	0.05	271.55
11.00	0.00	0.05	271.55
11.10	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.06	0.20	271.46
5.70	0.04	0.19	271.45
5.80	0.04	0.19	271.45
5.90	0.04	0.18	271.44
6.00	0.04	0.18	271.44
6.10	0.03	0.15	271.41
6.20	0.02	0.14	271.40
6.30	0.01	0.12	271.38
6.40	0.03	0.11	271.37
6.50	0.02	0.09	271.35
6.60	0.02	0.08	271.34
6.70	0.02	0.07	271.33
6.80	0.02	0.05	271.31
6.90	0.02	0.05	271.31
7.00	0.02	0.05	271.31
7.10	0.02	0.05	271.31
7.20	0.02	0.05	271.31
7.30	0.02	0.05	271.31
7.40	0.02	0.05	271.31
7.50	0.02	0.05	271.31
7.60	0.02	0.05	271.31
7.70	0.02	0.05	271.31
7.80	0.02	0.05	271.31
7.90	0.02	0.05	271.31
8.00	0.02	0.05	271.31
8.10	0.02	0.05	271.31
8.20	0.02	0.05	271.31
8.30	0.02	0.05	271.31
8.40	0.02	0.05	271.31
8.50	0.02	0.05	271.31
8.60	0.02	0.05	271.31
8.70	0.02	0.05	271.31
8.80	0.02	0.05	271.31
8.90	0.02	0.05	271.31
9.00	0.02	0.05	271.31
9.10	0.02	0.05	271.31
9.20	0.02	0.05	271.31
9.30	0.02	0.05	271.31
9.40	0.02	0.05	271.31
9.50	0.02	0.05	271.31
9.60	0.02	0.05	271.31
9.70	0.02	0.05	271.31
9.80	0.02	0.05	271.31
9.90	0.02	0.05	271.31
10.00	0.02	0.05	271.31
10.10	0.02	0.05	271.31
10.20	0.02	0.05	271.31
10.30	0.02	0.05	271.31
10.40	0.02	0.05	271.31
10.50	0.02	0.05	271.31
10.60	0.02	0.05	271.31
10.70	0.02	0.05	271.31
10.80	0.02	0.05	271.31
10.90	0.02	0.05	271.31
11.00	0.02	0.05	271.31
11.10	0.02	0.05	271.31

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.55
11.30	0.00	0.05	271.55
11.40	0.00	0.05	271.55
11.50	0.00	0.05	271.55
11.60	0.00	0.05	271.55
11.70	0.00	0.05	271.55
11.80	0.00	0.05	271.55
11.90	0.00	0.05	271.55
12.00	0.00	0.05	271.55
12.10	0.00	0.05	271.55
12.20	0.00	0.05	271.55
12.30	0.00	0.05	271.55
12.40	0.00	0.05	271.55
12.50	0.00	0.05	271.55
12.60	0.00	0.05	271.55
12.70	0.00	0.05	271.55
12.80	0.00	0.05	271.55
12.90	0.00	0.05	271.55
13.00	0.00	0.05	271.55
13.10	0.00	0.05	271.55
13.20	0.00	0.05	271.55
13.30	0.00	0.05	271.55
13.40	0.00	0.05	271.55
13.50	0.00	0.05	271.55
13.60	0.00	0.05	271.55
13.70	0.00	0.05	271.55
13.80	0.00	0.05	271.55
13.90	0.00	0.05	271.55
14.00	0.00	0.05	271.55
14.10	0.00	0.05	271.55
14.20	0.00	0.05	271.55
14.30	0.00	0.05	271.55
14.40	0.00	0.05	271.55
14.50	0.00	0.05	271.55
14.60	0.00	0.05	271.55
14.70	0.00	0.05	271.55
14.80	0.00	0.05	271.55
14.90	0.00	0.05	271.55
15.00	0.00	0.05	271.55
15.10	0.00	0.05	271.55
15.20	0.00	0.05	271.55
15.30	0.00	0.05	271.55
15.40	0.00	0.05	271.55
15.50	0.00	0.05	271.55
15.60	0.00	0.05	271.55
15.70	0.00	0.05	271.55
15.80	0.00	0.05	271.55
15.90	0.00	0.05	271.55
16.00	0.00	0.05	271.55
16.10	0.00	0.05	271.55
16.20	0.00	0.05	271.55
16.30	0.00	0.05	271.55
16.40	0.00	0.05	271.55
16.50	0.00	0.05	271.55
16.60	0.00	0.05	271.55
16.70	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.02	0.05	271.31
11.30	0.02	0.05	271.31
11.40	0.02	0.05	271.31
11.50	0.02	0.05	271.31
11.60	0.02	0.05	271.31
11.70	0.02	0.05	271.31
11.80	0.02	0.05	271.31
11.90	0.02	0.05	271.31
12.00	0.02	0.05	271.31
12.10	0.02	0.05	271.31
12.20	0.02	0.05	271.31
12.30	0.02	0.05	271.31
12.40	0.02	0.05	271.31
12.50	0.02	0.05	271.31
12.60	0.02	0.05	271.31
12.70	0.02	0.05	271.31
12.80	0.02	0.05	271.31
12.90	0.02	0.05	271.31
13.00	0.02	0.05	271.31
13.10	0.02	0.05	271.31
13.20	0.02	0.05	271.31
13.30	0.02	0.05	271.31
13.40	0.02	0.05	271.31
13.50	0.02	0.05	271.31
13.60	0.02	0.05	271.31
13.70	0.02	0.05	271.31
13.80	0.02	0.05	271.31
13.90	0.02	0.05	271.31
14.00	0.02	0.05	271.31
14.10	0.02	0.05	271.31
14.20	0.02	0.05	271.31
14.30	0.02	0.05	271.31
14.40	0.02	0.05	271.31
14.50	0.02	0.05	271.31
14.60	0.02	0.05	271.31
14.70	0.02	0.05	271.31
14.80	0.02	0.05	271.31
14.90	0.02	0.05	271.31
15.00	0.02	0.05	271.31
15.10	0.02	0.05	271.31
15.20	0.02	0.05	271.31
15.30	0.02	0.05	271.31
15.40	0.02	0.05	271.31
15.50	0.02	0.05	271.31
15.60	0.02	0.05	271.31
15.70	0.02	0.05	271.31
15.80	0.02	0.05	271.31
15.90	0.02	0.05	271.31
16.00	0.02	0.05	271.31
16.10	0.02	0.05	271.31
16.20	0.02	0.05	271.31
16.30	0.02	0.05	271.31
16.40	0.02	0.05	271.31
16.50	0.02	0.05	271.31
16.60	0.02	0.05	271.31
16.70	0.02	0.05	271.31

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.55
16.90	0.00	0.05	271.55
17.00	0.00	0.05	271.55
17.10	0.00	0.05	271.55
17.20	0.00	0.05	271.55
17.30	0.00	0.05	271.55
17.40	0.00	0.05	271.55
17.50	0.00	0.05	271.55
17.60	0.00	0.05	271.55
17.70	0.00	0.05	271.55
17.80	0.00	0.05	271.55
17.90	0.00	0.05	271.55
18.00	0.00	0.05	271.55
18.10	0.00	0.05	271.55
18.20	0.00	0.05	271.55
18.30	0.00	0.05	271.55
18.40	0.00	0.05	271.55
18.50	0.00	0.05	271.55
18.60	0.00	0.05	271.55
18.70	0.00	0.05	271.55
18.80	0.00	0.05	271.55
18.90	0.00	0.05	271.55
19.00	0.00	0.05	271.55
19.10	0.00	0.05	271.55
19.20	0.00	0.05	271.55
19.30	0.00	0.05	271.55
19.40	0.00	0.05	271.55
19.50	0.00	0.05	271.55
19.60	0.00	0.05	271.55
19.70	0.00	0.05	271.55
19.80	0.00	0.05	271.55
19.90	0.00	0.05	271.55
20.00	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.02	0.05	271.31
16.90	0.02	0.05	271.31
17.00	0.02	0.05	271.31
17.10	0.02	0.05	271.31
17.20	0.02	0.05	271.31
17.30	0.02	0.05	271.31
17.40	0.02	0.05	271.31
17.50	0.02	0.05	271.31
17.60	0.02	0.05	271.31
17.70	0.02	0.05	271.31
17.80	0.02	0.05	271.31
17.90	0.02	0.05	271.31
18.00	0.02	0.05	271.31
18.10	0.02	0.05	271.31
18.20	0.02	0.05	271.31
18.30	0.02	0.05	271.31
18.40	0.02	0.05	271.31
18.50	0.02	0.05	271.31
18.60	0.02	0.05	271.31
18.70	0.02	0.05	271.31
18.80	0.02	0.05	271.31
18.90	0.02	0.05	271.31
19.00	0.02	0.05	271.31
19.10	0.02	0.05	271.31
19.20	0.02	0.05	271.31
19.30	0.02	0.05	271.31
19.40	0.02	0.05	271.31
19.50	0.02	0.05	271.31
19.60	0.02	0.05	271.31
19.70	0.02	0.05	271.31
19.80	0.02	0.05	271.31
19.90	0.02	0.05	271.31
20.00	0.02	0.05	271.31

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.15
0.10	0.26	0.28	271.43
0.20	0.11	0.39	271.54
0.30	0.18	0.49	271.64
0.40	0.08	0.54	271.69
0.50	0.25	0.60	271.75
0.60	0.29	0.59	271.74
0.70	0.20	0.58	271.73
0.80	0.29	0.58	271.73
0.90	0.24	0.58	271.73
1.00	0.15	0.60	271.75
1.10	0.24	0.55	271.70
1.20	0.21	0.52	271.67
1.30	0.19	0.50	271.65
1.40	0.21	0.48	271.63
1.50	0.19	0.47	271.62
1.60	0.17	0.45	271.60
1.70	0.18	0.47	271.62
1.80	0.21	0.48	271.63
1.90	0.30	0.50	271.65
2.00	0.31	0.52	271.67
2.10	0.34	0.55	271.70
2.20	0.35	0.58	271.73
2.30	0.36	0.60	271.75
2.40	0.40	0.63	271.78
2.50	0.41	0.65	271.80
2.60	0.39	0.66	271.81
2.70	0.39	0.68	271.83
2.80	0.39	0.70	271.85
2.90	0.37	0.70	271.85
3.00	0.38	0.71	271.86
3.10	0.48	0.71	271.86
3.20	0.46	0.71	271.86
3.30	0.35	0.70	271.85
3.40	0.43	0.69	271.84
3.50	0.20	0.68	271.83
3.60	0.38	0.67	271.82
3.70	0.41	0.66	271.81
3.80	0.32	0.65	271.80
3.90	0.39	0.63	271.78
4.00	0.32	0.61	271.76
4.10	0.34	0.60	271.75
4.20	0.33	0.59	271.74
4.30	0.35	0.57	271.72
4.40	0.29	0.56	271.71
4.50	0.27	0.54	271.69
4.60	0.28	0.53	271.68
4.70	0.29	0.52	271.67
4.80	0.23	0.51	271.66
4.90	0.19	0.49	271.64
5.00	0.17	0.48	271.63
5.10	0.19	0.47	271.62
5.20	0.18	0.46	271.61
5.30	0.12	0.45	271.60
5.40	0.17	0.44	271.59
5.50	0.15	0.43	271.58

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.08
0.10	0.31	0.37	271.45
0.20	0.12	0.46	271.54
0.30	0.08	0.57	271.65
0.40	0.13	0.62	271.70
0.50	0.13	0.68	271.76
0.60	0.13	0.67	271.75
0.70	0.06	0.66	271.74
0.80	0.10	0.66	271.74
0.90	0.10	0.67	271.75
1.00	0.15	0.68	271.76
1.10	0.00	0.63	271.71
1.20	0.13	0.60	271.68
1.30	0.11	0.59	271.67
1.40	0.08	0.56	271.64
1.50	0.13	0.54	271.62
1.60	0.14	0.54	271.62
1.70	0.13	0.54	271.62
1.80	0.15	0.55	271.63
1.90	0.20	0.58	271.66
2.00	0.10	0.60	271.68
2.10	0.22	0.63	271.71
2.20	0.24	0.66	271.74
2.30	0.17	0.68	271.76
2.40	0.16	0.71	271.79
2.50	0.16	0.73	271.81
2.60	0.07	0.75	271.83
2.70	0.28	0.76	271.84
2.80	0.12	0.78	271.86
2.90	0.14	0.78	271.86
3.00	0.20	0.79	271.87
3.10	0.22	0.79	271.87
3.20	0.12	0.79	271.87
3.30	0.12	0.79	271.87
3.40	0.17	0.78	271.86
3.50	0.15	0.76	271.84
3.60	0.10	0.75	271.83
3.70	0.25	0.74	271.82
3.80	0.15	0.73	271.81
3.90	0.23	0.71	271.79
4.00	0.17	0.69	271.77
4.10	0.15	0.68	271.76
4.20	0.20	0.67	271.75
4.30	0.09	0.65	271.73
4.40	0.07	0.63	271.71
4.50	0.16	0.62	271.70
4.60	0.08	0.60	271.68
4.70	0.14	0.59	271.67
4.80	0.12	0.58	271.66
4.90	0.13	0.57	271.65
5.00	0.19	0.55	271.63
5.10	0.11	0.55	271.63
5.20	0.12	0.53	271.61
5.30	0.06	0.52	271.60
5.40	0.12	0.52	271.60
5.50	0.12	0.50	271.58

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.14	0.42	271.57
5.70	0.15	0.41	271.56
5.80	0.13	0.40	271.55
5.90	0.11	0.41	271.56
6.00	0.15	0.39	271.54
6.10	0.12	0.37	271.52
6.20	0.11	0.35	271.50
6.30	0.11	0.33	271.48
6.40	0.09	0.31	271.46
6.50	0.11	0.29	271.44
6.60	0.09	0.27	271.42
6.70	0.09	0.26	271.41
6.80	0.07	0.24	271.39
6.90	0.07	0.23	271.38
7.00	0.07	0.21	271.36
7.10	0.03	0.20	271.35
7.20	0.03	0.18	271.33
7.30	0.02	0.17	271.32
7.40	0.03	0.16	271.31
7.50	0.02	0.15	271.30
7.60	0.02	0.14	271.29
7.70	0.02	0.13	271.28
7.80	0.01	0.12	271.27
7.90	0.02	0.11	271.26
8.00	0.02	0.11	271.26
8.10	0.01	0.10	271.25
8.20	0.01	0.09	271.24
8.30	0.01	0.08	271.23
8.40	0.01	0.08	271.23
8.50	0.01	0.07	271.22
8.60	0.02	0.06	271.21
8.70	0.00	0.06	271.21
8.80	0.00	0.05	271.20
8.90	0.00	0.05	271.20
9.00	0.00	0.05	271.20
9.10	0.00	0.05	271.20
9.20	0.00	0.05	271.20
9.30	0.00	0.05	271.20
9.40	0.00	0.05	271.20
9.50	0.00	0.05	271.20
9.60	0.00	0.05	271.20
9.70	0.00	0.05	271.20
9.80	0.00	0.05	271.20
9.90	0.00	0.05	271.20
10.00	0.00	0.05	271.20
10.10	0.00	0.05	271.20
10.20	0.00	0.05	271.20
10.30	0.00	0.05	271.20
10.40	0.00	0.05	271.20
10.50	0.00	0.05	271.20
10.60	0.00	0.05	271.20
10.70	0.00	0.05	271.20
10.80	0.00	0.05	271.20
10.90	0.00	0.05	271.20
11.00	0.00	0.05	271.20
11.10	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.12	0.49	271.57
5.70	0.10	0.49	271.57
5.80	0.12	0.48	271.56
5.90	0.06	0.47	271.55
6.00	0.10	0.47	271.55
6.10	0.11	0.45	271.53
6.20	0.08	0.42	271.50
6.30	0.06	0.40	271.48
6.40	0.06	0.38	271.46
6.50	0.07	0.37	271.45
6.60	0.05	0.35	271.43
6.70	0.07	0.33	271.41
6.80	0.05	0.31	271.39
6.90	0.05	0.30	271.38
7.00	0.04	0.28	271.36
7.10	0.04	0.27	271.35
7.20	0.03	0.26	271.34
7.30	0.01	0.24	271.32
7.40	0.03	0.23	271.31
7.50	0.00	0.22	271.30
7.60	0.03	0.21	271.29
7.70	0.03	0.20	271.28
7.80	0.01	0.19	271.27
7.90	0.01	0.18	271.26
8.00	0.00	0.18	271.26
8.10	0.02	0.17	271.25
8.20	0.00	0.16	271.24
8.30	0.02	0.15	271.23
8.40	0.02	0.15	271.23
8.50	0.01	0.14	271.22
8.60	0.00	0.14	271.22
8.70	0.00	0.13	271.21
8.80	0.00	0.12	271.20
8.90	0.00	0.12	271.20
9.00	0.00	0.12	271.20
9.10	0.00	0.11	271.19
9.20	0.00	0.11	271.19
9.30	0.00	0.10	271.18
9.40	0.00	0.10	271.18
9.50	0.00	0.09	271.17
9.60	0.00	0.09	271.17
9.70	0.00	0.09	271.17
9.80	0.00	0.08	271.16
9.90	0.00	0.08	271.16
10.00	0.00	0.08	271.16
10.10	0.00	0.07	271.15
10.20	0.00	0.07	271.15
10.30	0.00	0.07	271.15
10.40	0.00	0.06	271.14
10.50	0.00	0.06	271.14
10.60	0.00	0.06	271.14
10.70	0.00	0.06	271.14
10.80	0.00	0.05	271.13
10.90	0.00	0.05	271.13
11.00	0.00	0.05	271.13
11.10	0.00	0.05	271.13

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.20
11.30	0.00	0.05	271.20
11.40	0.00	0.05	271.20
11.50	0.00	0.05	271.20
11.60	0.00	0.05	271.20
11.70	0.00	0.05	271.20
11.80	0.00	0.05	271.20
11.90	0.00	0.05	271.20
12.00	0.00	0.05	271.20
12.10	0.00	0.05	271.20
12.20	0.00	0.05	271.20
12.30	0.00	0.05	271.20
12.40	0.00	0.05	271.20
12.50	0.00	0.05	271.20
12.60	0.00	0.05	271.20
12.70	0.00	0.05	271.20
12.80	0.00	0.05	271.20
12.90	0.00	0.05	271.20
13.00	0.00	0.05	271.20
13.10	0.00	0.05	271.20
13.20	0.00	0.05	271.20
13.30	0.00	0.05	271.20
13.40	0.00	0.05	271.20
13.50	0.00	0.05	271.20
13.60	0.00	0.05	271.20
13.70	0.00	0.05	271.20
13.80	0.00	0.05	271.20
13.90	0.00	0.05	271.20
14.00	0.00	0.05	271.20
14.10	0.00	0.05	271.20
14.20	0.00	0.05	271.20
14.30	0.00	0.05	271.20
14.40	0.00	0.05	271.20
14.50	0.00	0.05	271.20
14.60	0.00	0.05	271.20
14.70	0.00	0.05	271.20
14.80	0.00	0.05	271.20
14.90	0.00	0.05	271.20
15.00	0.00	0.05	271.20
15.10	0.00	0.05	271.20
15.20	0.00	0.05	271.20
15.30	0.00	0.05	271.20
15.40	0.00	0.05	271.20
15.50	0.00	0.05	271.20
15.60	0.00	0.05	271.20
15.70	0.00	0.05	271.20
15.80	0.00	0.05	271.20
15.90	0.00	0.05	271.20
16.00	0.00	0.05	271.20
16.10	0.00	0.05	271.20
16.20	0.00	0.05	271.20
16.30	0.00	0.05	271.20
16.40	0.00	0.05	271.20
16.50	0.00	0.05	271.20
16.60	0.00	0.05	271.20
16.70	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.13
11.30	0.00	0.05	271.13
11.40	0.00	0.05	271.13
11.50	0.00	0.05	271.13
11.60	0.00	0.05	271.13
11.70	0.00	0.05	271.13
11.80	0.00	0.05	271.13
11.90	0.00	0.05	271.13
12.00	0.00	0.05	271.13
12.10	0.00	0.05	271.13
12.20	0.00	0.05	271.13
12.30	0.00	0.05	271.13
12.40	0.00	0.05	271.13
12.50	0.00	0.05	271.13
12.60	0.00	0.05	271.13
12.70	0.00	0.05	271.13
12.80	0.00	0.05	271.13
12.90	0.00	0.05	271.13
13.00	0.00	0.05	271.13
13.10	0.00	0.05	271.13
13.20	0.00	0.05	271.13
13.30	0.00	0.05	271.13
13.40	0.00	0.05	271.13
13.50	0.00	0.05	271.13
13.60	0.00	0.05	271.13
13.70	0.00	0.05	271.13
13.80	0.00	0.05	271.13
13.90	0.00	0.05	271.13
14.00	0.00	0.05	271.13
14.10	0.00	0.05	271.13
14.20	0.00	0.05	271.13
14.30	0.00	0.05	271.13
14.40	0.00	0.05	271.13
14.50	0.00	0.05	271.13
14.60	0.00	0.05	271.13
14.70	0.00	0.05	271.13
14.80	0.00	0.05	271.13
14.90	0.00	0.05	271.13
15.00	0.00	0.05	271.13
15.10	0.00	0.05	271.13
15.20	0.00	0.05	271.13
15.30	0.00	0.05	271.13
15.40	0.00	0.05	271.13
15.50	0.00	0.05	271.13
15.60	0.00	0.05	271.13
15.70	0.00	0.05	271.13
15.80	0.00	0.05	271.13
15.90	0.00	0.05	271.13
16.00	0.00	0.05	271.13
16.10	0.00	0.05	271.13
16.20	0.00	0.05	271.13
16.30	0.00	0.05	271.13
16.40	0.00	0.05	271.13
16.50	0.00	0.05	271.13
16.60	0.00	0.05	271.13
16.70	0.00	0.05	271.13

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.20
16.90	0.00	0.05	271.20
17.00	0.00	0.05	271.20
17.10	0.00	0.05	271.20
17.20	0.00	0.05	271.20
17.30	0.00	0.05	271.20
17.40	0.00	0.05	271.20
17.50	0.00	0.05	271.20
17.60	0.00	0.05	271.20
17.70	0.00	0.05	271.20
17.80	0.00	0.05	271.20
17.90	0.00	0.05	271.20
18.00	0.00	0.05	271.20
18.10	0.00	0.05	271.20
18.20	0.00	0.05	271.20
18.30	0.00	0.05	271.20
18.40	0.00	0.05	271.20
18.50	0.00	0.05	271.20
18.60	0.00	0.05	271.20
18.70	0.00	0.05	271.20
18.80	0.00	0.05	271.20
18.90	0.00	0.05	271.20
19.00	0.00	0.05	271.20
19.10	0.00	0.05	271.20
19.20	0.00	0.05	271.20
19.30	0.00	0.05	271.20
19.40	0.00	0.05	271.20
19.50	0.00	0.05	271.20
19.60	0.00	0.05	271.20
19.70	0.00	0.05	271.20
19.80	0.00	0.05	271.20
19.90	0.00	0.05	271.20
20.00	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.13
16.90	0.00	0.05	271.13
17.00	0.00	0.05	271.13
17.10	0.00	0.05	271.13
17.20	0.00	0.05	271.13
17.30	0.00	0.05	271.13
17.40	0.00	0.05	271.13
17.50	0.00	0.05	271.13
17.60	0.00	0.05	271.13
17.70	0.00	0.05	271.13
17.80	0.00	0.05	271.13
17.90	0.00	0.05	271.13
18.00	0.00	0.05	271.13
18.10	0.00	0.05	271.13
18.20	0.00	0.05	271.13
18.30	0.00	0.05	271.13
18.40	0.00	0.05	271.13
18.50	0.00	0.05	271.13
18.60	0.00	0.05	271.13
18.70	0.00	0.05	271.13
18.80	0.00	0.05	271.13
18.90	0.00	0.05	271.13
19.00	0.00	0.05	271.13
19.10	0.00	0.05	271.13
19.20	0.00	0.05	271.13
19.30	0.00	0.05	271.13
19.40	0.00	0.05	271.13
19.50	0.00	0.05	271.13
19.60	0.00	0.05	271.13
19.70	0.00	0.05	271.13
19.80	0.00	0.05	271.13
19.90	0.00	0.05	271.13
20.00	0.00	0.05	271.13

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.45
0.10	0.11	0.10	271.55
0.20	0.09	0.11	271.56
0.30	0.13	0.21	271.66
0.40	0.18	0.27	271.72
0.50	0.24	0.34	271.79
0.60	0.28	0.34	271.79
0.70	0.30	0.34	271.79
0.80	0.32	0.34	271.79
0.90	0.33	0.35	271.80
1.00	0.33	0.36	271.81
1.10	0.36	0.32	271.77
1.20	0.35	0.30	271.75
1.30	0.33	0.28	271.73
1.40	0.32	0.25	271.70
1.50	0.29	0.24	271.69
1.60	0.27	0.23	271.68
1.70	0.28	0.23	271.68
1.80	0.28	0.25	271.70
1.90	0.29	0.27	271.72
2.00	0.31	0.29	271.74
2.10	0.32	0.32	271.77
2.20	0.33	0.35	271.80
2.30	0.33	0.37	271.82
2.40	0.35	0.39	271.84
2.50	0.33	0.42	271.87
2.60	0.32	0.43	271.88
2.70	0.33	0.45	271.90
2.80	0.31	0.46	271.91
2.90	0.33	0.47	271.92
3.00	0.34	0.47	271.92
3.10	0.31	0.48	271.93
3.20	0.36	0.48	271.93
3.30	0.34	0.48	271.93
3.40	0.31	0.46	271.91
3.50	0.35	0.46	271.91
3.60	0.35	0.44	271.89
3.70	0.32	0.43	271.88
3.80	0.28	0.41	271.86
3.90	0.34	0.40	271.85
4.00	0.33	0.39	271.84
4.10	0.33	0.37	271.82
4.20	0.33	0.36	271.81
4.30	0.30	0.34	271.79
4.40	0.30	0.32	271.77
4.50	0.30	0.31	271.76
4.60	0.29	0.29	271.74
4.70	0.29	0.28	271.73
4.80	0.26	0.26	271.71
4.90	0.25	0.24	271.69
5.00	0.24	0.23	271.68
5.10	0.22	0.23	271.68
5.20	0.22	0.21	271.66
5.30	0.21	0.20	271.65
5.40	0.12	0.20	271.65
5.50	0.11	0.18	271.63

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.77
0.10	0.16	0.71	271.48
0.20	0.09	0.81	271.58
0.30	0.11	0.92	271.69
0.40	0.17	0.99	271.76
0.50	0.29	1.08	271.85
0.60	0.30	1.08	271.85
0.70	0.32	1.08	271.85
0.80	0.29	1.08	271.85
0.90	0.14	1.10	271.87
1.00	0.13	1.11	271.88
1.10	0.29	1.08	271.85
1.20	0.32	1.06	271.83
1.30	0.25	1.04	271.81
1.40	0.09	1.02	271.79
1.50	0.16	1.00	271.77
1.60	0.24	0.98	271.75
1.70	0.19	0.99	271.76
1.80	0.18	0.99	271.76
1.90	0.20	1.02	271.79
2.00	0.08	1.03	271.80
2.10	0.19	1.06	271.83
2.20	0.12	1.08	271.85
2.30	0.19	1.11	271.88
2.40	0.27	1.13	271.90
2.50	0.16	1.15	271.92
2.60	0.09	1.17	271.94
2.70	0.07	1.18	271.95
2.80	0.06	1.20	271.97
2.90	0.24	1.21	271.98
3.00	0.24	1.21	271.98
3.10	0.15	1.20	271.97
3.20	0.16	1.21	271.98
3.30	0.16	1.21	271.98
3.40	0.20	1.20	271.97
3.50	0.20	1.18	271.95
3.60	0.19	1.18	271.95
3.70	0.19	1.16	271.93
3.80	0.32	1.14	271.91
3.90	0.24	1.13	271.90
4.00	0.29	1.12	271.89
4.10	0.09	1.10	271.87
4.20	0.20	1.09	271.86
4.30	0.16	1.07	271.84
4.40	0.19	1.06	271.83
4.50	0.28	1.04	271.81
4.60	0.18	1.03	271.80
4.70	0.21	1.02	271.79
4.80	0.15	1.01	271.78
4.90	0.26	0.99	271.76
5.00	0.21	0.97	271.74
5.10	0.21	0.96	271.73
5.20	0.17	0.95	271.72
5.30	0.12	0.94	271.71
5.40	0.16	0.93	271.70
5.50	0.22	0.93	271.70

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.11	0.18	271.63
5.70	0.09	0.16	271.61
5.80	0.10	0.15	271.60
5.90	0.10	0.15	271.60
6.00	0.11	0.15	271.60
6.10	0.09	0.12	271.57
6.20	0.09	0.10	271.55
6.30	0.08	0.08	271.53
6.40	0.07	0.06	271.51
6.50	0.06	0.05	271.50
6.60	0.00	0.05	271.50
6.70	0.00	0.05	271.50
6.80	0.00	0.05	271.50
6.90	0.00	0.05	271.50
7.00	0.00	0.05	271.50
7.10	0.00	0.05	271.50
7.20	0.00	0.05	271.50
7.30	0.00	0.05	271.50
7.40	0.00	0.05	271.50
7.50	0.00	0.05	271.50
7.60	0.00	0.05	271.50
7.70	0.00	0.05	271.50
7.80	0.00	0.05	271.50
7.90	0.00	0.05	271.50
8.00	0.00	0.05	271.50
8.10	0.00	0.05	271.50
8.20	0.00	0.05	271.50
8.30	0.00	0.05	271.50
8.40	0.00	0.05	271.50
8.50	0.00	0.05	271.50
8.60	0.00	0.05	271.50
8.70	0.00	0.05	271.50
8.80	0.00	0.05	271.50
8.90	0.00	0.05	271.50
9.00	0.00	0.05	271.50
9.10	0.00	0.05	271.50
9.20	0.00	0.05	271.50
9.30	0.00	0.05	271.50
9.40	0.00	0.05	271.50
9.50	0.00	0.05	271.50
9.60	0.00	0.05	271.50
9.70	0.00	0.05	271.50
9.80	0.00	0.05	271.50
9.90	0.00	0.05	271.50
10.00	0.00	0.05	271.50
10.10	0.00	0.05	271.50
10.20	0.00	0.05	271.50
10.30	0.00	0.05	271.50
10.40	0.00	0.05	271.50
10.50	0.00	0.05	271.50
10.60	0.00	0.05	271.50
10.70	0.00	0.05	271.50
10.80	0.00	0.05	271.50
10.90	0.00	0.05	271.50
11.00	0.00	0.05	271.50
11.10	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.17	0.91	271.68
5.70	0.03	0.90	271.67
5.80	0.20	0.90	271.67
5.90	0.17	0.89	271.66
6.00	0.02	0.88	271.65
6.10	0.14	0.86	271.63
6.20	0.18	0.85	271.62
6.30	0.05	0.82	271.59
6.40	0.06	0.81	271.58
6.50	0.09	0.80	271.57
6.60	0.03	0.78	271.55
6.70	0.03	0.76	271.53
6.80	0.03	0.75	271.52
6.90	0.08	0.75	271.52
7.00	0.10	0.73	271.50
7.10	0.03	0.72	271.49
7.20	0.03	0.71	271.48
7.30	0.08	0.69	271.46
7.40	0.04	0.69	271.46
7.50	0.03	0.68	271.45
7.60	0.01	0.67	271.44
7.70	0.05	0.66	271.43
7.80	0.05	0.66	271.43
7.90	0.03	0.64	271.41
8.00	0.03	0.64	271.41
8.10	0.07	0.63	271.40
8.20	0.04	0.62	271.39
8.30	0.02	0.62	271.39
8.40	0.03	0.61	271.38
8.50	0.04	0.61	271.38
8.60	0.03	0.60	271.37
8.70	0.03	0.59	271.36
8.80	0.04	0.59	271.36
8.90	0.07	0.58	271.35
9.00	0.02	0.58	271.35
9.10	0.01	0.57	271.34
9.20	0.02	0.57	271.34
9.30	0.02	0.57	271.34
9.40	0.01	0.56	271.33
9.50	0.00	0.56	271.33
9.60	0.05	0.55	271.32
9.70	0.03	0.55	271.32
9.80	0.03	0.54	271.31
9.90	0.03	0.54	271.31
10.00	0.04	0.54	271.31
10.10	0.02	0.53	271.30
10.20	0.03	0.53	271.30
10.30	0.04	0.52	271.29
10.40	0.02	0.52	271.29
10.50	0.02	0.52	271.29
10.60	0.04	0.52	271.29
10.70	0.03	0.51	271.28
10.80	0.00	0.51	271.28
10.90	0.02	0.51	271.28
11.00	0.00	0.50	271.27
11.10	0.00	0.50	271.27

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.50
11.30	0.00	0.05	271.50
11.40	0.00	0.05	271.50
11.50	0.00	0.05	271.50
11.60	0.00	0.05	271.50
11.70	0.00	0.05	271.50
11.80	0.00	0.05	271.50
11.90	0.00	0.05	271.50
12.00	0.00	0.05	271.50
12.10	0.00	0.05	271.50
12.20	0.00	0.05	271.50
12.30	0.00	0.05	271.50
12.40	0.00	0.05	271.50
12.50	0.00	0.05	271.50
12.60	0.00	0.05	271.50
12.70	0.00	0.05	271.50
12.80	0.00	0.05	271.50
12.90	0.00	0.05	271.50
13.00	0.00	0.05	271.50
13.10	0.00	0.05	271.50
13.20	0.00	0.05	271.50
13.30	0.00	0.05	271.50
13.40	0.00	0.05	271.50
13.50	0.00	0.05	271.50
13.60	0.00	0.05	271.50
13.70	0.00	0.05	271.50
13.80	0.00	0.05	271.50
13.90	0.00	0.05	271.50
14.00	0.00	0.05	271.50
14.10	0.00	0.05	271.50
14.20	0.00	0.05	271.50
14.30	0.00	0.05	271.50
14.40	0.00	0.05	271.50
14.50	0.00	0.05	271.50
14.60	0.00	0.05	271.50
14.70	0.00	0.05	271.50
14.80	0.00	0.05	271.50
14.90	0.00	0.05	271.50
15.00	0.00	0.05	271.50
15.10	0.00	0.05	271.50
15.20	0.00	0.05	271.50
15.30	0.00	0.05	271.50
15.40	0.00	0.05	271.50
15.50	0.00	0.05	271.50
15.60	0.00	0.05	271.50
15.70	0.00	0.05	271.50
15.80	0.00	0.05	271.50
15.90	0.00	0.05	271.50
16.00	0.00	0.05	271.50
16.10	0.00	0.05	271.50
16.20	0.00	0.05	271.50
16.30	0.00	0.05	271.50
16.40	0.00	0.05	271.50
16.50	0.00	0.05	271.50
16.60	0.00	0.05	271.50
16.70	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.50	271.27
11.30	0.01	0.50	271.27
11.40	0.02	0.49	271.26
11.50	0.01	0.49	271.26
11.60	0.00	0.49	271.26
11.70	0.03	0.49	271.26
11.80	0.00	0.48	271.25
11.90	0.01	0.48	271.25
12.00	0.02	0.48	271.25
12.10	0.01	0.48	271.25
12.20	0.00	0.48	271.25
12.30	0.00	0.47	271.24
12.40	0.00	0.47	271.24
12.50	0.00	0.47	271.24
12.60	0.00	0.47	271.24
12.70	0.01	0.46	271.23
12.80	0.00	0.46	271.23
12.90	0.00	0.46	271.23
13.00	0.00	0.46	271.23
13.10	0.00	0.46	271.23
13.20	0.00	0.46	271.23
13.30	0.00	0.45	271.22
13.40	0.00	0.45	271.22
13.50	0.00	0.45	271.22
13.60	0.00	0.45	271.22
13.70	0.00	0.45	271.22
13.80	0.00	0.44	271.21
13.90	0.00	0.44	271.21
14.00	0.00	0.44	271.21
14.10	0.00	0.44	271.21
14.20	0.00	0.44	271.21
14.30	0.00	0.44	271.21
14.40	0.00	0.44	271.21
14.50	0.00	0.43	271.20
14.60	0.00	0.43	271.20
14.70	0.00	0.43	271.20
14.80	0.00	0.43	271.20
14.90	0.00	0.43	271.20
15.00	0.00	0.43	271.20
15.10	0.00	0.43	271.20
15.20	0.00	0.42	271.19
15.30	0.00	0.42	271.19
15.40	0.00	0.42	271.19
15.50	0.00	0.42	271.19
15.60	0.00	0.42	271.19
15.70	0.00	0.42	271.19
15.80	0.00	0.42	271.19
15.90	0.00	0.42	271.19
16.00	0.00	0.42	271.19
16.10	0.00	0.41	271.18
16.20	0.00	0.41	271.18
16.30	0.00	0.41	271.18
16.40	0.00	0.41	271.18
16.50	0.00	0.41	271.18
16.60	0.00	0.41	271.18
16.70	0.00	0.41	271.18

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.50
16.90	0.00	0.05	271.50
17.00	0.00	0.05	271.50
17.10	0.00	0.05	271.50
17.20	0.00	0.05	271.50
17.30	0.00	0.05	271.50
17.40	0.00	0.05	271.50
17.50	0.00	0.05	271.50
17.60	0.00	0.05	271.50
17.70	0.00	0.05	271.50
17.80	0.00	0.05	271.50
17.90	0.00	0.05	271.50
18.00	0.00	0.05	271.50
18.10	0.00	0.05	271.50
18.20	0.00	0.05	271.50
18.30	0.00	0.05	271.50
18.40	0.00	0.05	271.50
18.50	0.00	0.05	271.50
18.60	0.00	0.05	271.50
18.70	0.00	0.05	271.50
18.80	0.00	0.05	271.50
18.90	0.00	0.05	271.50
19.00	0.00	0.05	271.50
19.10	0.00	0.05	271.50
19.20	0.00	0.05	271.50
19.30	0.00	0.05	271.50
19.40	0.00	0.05	271.50
19.50	0.00	0.05	271.50
19.60	0.00	0.05	271.50
19.70	0.00	0.05	271.50
19.80	0.00	0.05	271.50
19.90	0.00	0.05	271.50
20.00	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.41	271.18
16.90	0.00	0.41	271.18
17.00	0.00	0.41	271.18
17.10	0.00	0.41	271.18
17.20	0.00	0.41	271.18
17.30	0.00	0.41	271.18
17.40	0.00	0.41	271.18
17.50	0.00	0.40	271.17
17.60	0.00	0.40	271.17
17.70	0.00	0.40	271.17
17.80	0.00	0.40	271.17
17.90	0.00	0.40	271.17
18.00	0.00	0.40	271.17
18.10	0.00	0.40	271.17
18.20	0.00	0.40	271.17
18.30	0.00	0.40	271.17
18.40	0.00	0.40	271.17
18.50	0.00	0.40	271.17
18.60	0.00	0.40	271.17
18.70	0.00	0.40	271.17
18.80	0.00	0.40	271.17
18.90	0.00	0.39	271.16
19.00	0.00	0.39	271.16
19.10	0.00	0.39	271.16
19.20	0.00	0.39	271.16
19.30	0.00	0.39	271.16
19.40	0.00	0.39	271.16
19.50	0.00	0.39	271.16
19.60	0.00	0.39	271.16
19.70	0.00	0.39	271.16
19.80	0.00	0.39	271.16
19.90	0.00	0.39	271.16
20.00	0.00	0.39	271.16

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.37
0.10	0.32	0.31	271.68
0.20	0.18	0.23	271.60
0.30	0.14	0.25	271.62
0.40	0.12	0.27	271.64
0.50	0.11	0.31	271.68
0.60	0.09	0.28	271.65
0.70	0.09	0.26	271.63
0.80	0.09	0.25	271.62
0.90	0.09	0.25	271.62
1.00	0.09	0.25	271.62
1.10	0.06	0.20	271.57
1.20	0.04	0.16	271.53
1.30	0.05	0.14	271.51
1.40	0.04	0.12	271.49
1.50	0.04	0.11	271.48
1.60	0.04	0.10	271.47
1.70	0.04	0.10	271.47
1.80	0.04	0.10	271.47
1.90	0.04	0.11	271.48
2.00	0.04	0.12	271.49
2.10	0.04	0.13	271.50
2.20	0.04	0.14	271.51
2.30	0.03	0.16	271.53
2.40	0.03	0.18	271.55
2.50	0.05	0.19	271.56
2.60	0.09	0.21	271.58
2.70	0.09	0.22	271.59
2.80	0.10	0.23	271.60
2.90	0.10	0.23	271.60
3.00	0.10	0.24	271.61
3.10	0.10	0.24	271.61
3.20	0.11	0.24	271.61
3.30	0.11	0.24	271.61
3.40	0.10	0.24	271.61
3.50	0.10	0.23	271.60
3.60	0.10	0.23	271.60
3.70	0.09	0.22	271.59
3.80	0.09	0.21	271.58
3.90	0.09	0.20	271.57
4.00	0.05	0.19	271.56
4.10	0.03	0.18	271.55
4.20	0.03	0.18	271.55
4.30	0.03	0.16	271.53
4.40	0.03	0.15	271.52
4.50	0.04	0.15	271.52
4.60	0.04	0.14	271.51
4.70	0.04	0.13	271.50
4.80	0.04	0.12	271.49
4.90	0.04	0.12	271.49
5.00	0.04	0.11	271.48
5.10	0.04	0.10	271.47
5.20	0.04	0.10	271.47
5.30	0.04	0.10	271.47
5.40	0.04	0.09	271.46
5.50	0.04	0.09	271.46

N+1 DG Prestage			
Grid Elevation	271.32	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.32
0.10	0.72	0.37	271.69
0.20	0.60	0.30	271.62
0.30	0.53	0.28	271.60
0.40	0.46	0.28	271.60
0.50	0.41	0.32	271.64
0.60	0.34	0.27	271.59
0.70	0.34	0.25	271.57
0.80	0.33	0.23	271.55
0.90	0.33	0.23	271.55
1.00	0.33	0.22	271.54
1.10	0.16	0.17	271.49
1.20	0.14	0.13	271.45
1.30	0.13	0.11	271.43
1.40	0.12	0.09	271.41
1.50	0.12	0.08	271.40
1.60	0.12	0.08	271.40
1.70	0.12	0.08	271.40
1.80	0.12	0.07	271.39
1.90	0.12	0.08	271.40
2.00	0.12	0.07	271.39
2.10	0.12	0.08	271.40
2.20	0.12	0.08	271.40
2.30	0.11	0.08	271.40
2.40	0.11	0.09	271.41
2.50	0.12	0.10	271.42
2.60	0.12	0.11	271.43
2.70	0.12	0.12	271.44
2.80	0.12	0.13	271.45
2.90	0.12	0.13	271.45
3.00	0.12	0.14	271.46
3.10	0.12	0.14	271.46
3.20	0.12	0.14	271.46
3.30	0.12	0.14	271.46
3.40	0.12	0.14	271.46
3.50	0.12	0.14	271.46
3.60	0.12	0.13	271.45
3.70	0.12	0.13	271.45
3.80	0.12	0.12	271.44
3.90	0.12	0.12	271.44
4.00	0.11	0.11	271.43
4.10	0.11	0.11	271.43
4.20	0.11	0.10	271.42
4.30	0.11	0.09	271.41
4.40	0.11	0.09	271.41
4.50	0.11	0.09	271.41
4.60	0.11	0.08	271.40
4.70	0.11	0.08	271.40
4.80	0.11	0.08	271.40
4.90	0.11	0.08	271.40
5.00	0.11	0.07	271.39
5.10	0.12	0.08	271.40
5.20	0.11	0.07	271.39
5.30	0.12	0.07	271.39
5.40	0.11	0.07	271.39
5.50	0.11	0.07	271.39

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.04	0.08	271.45
5.70	0.04	0.08	271.45
5.80	0.04	0.08	271.45
5.90	0.04	0.08	271.45
6.00	0.04	0.08	271.45
6.10	0.04	0.06	271.43
6.20	0.02	0.05	271.42
6.30	0.03	0.05	271.42
6.40	0.00	0.05	271.42
6.50	0.00	0.05	271.42
6.60	0.00	0.05	271.42
6.70	0.00	0.05	271.42
6.80	0.00	0.05	271.42
6.90	0.00	0.05	271.42
7.00	0.00	0.05	271.42
7.10	0.00	0.05	271.42
7.20	0.00	0.05	271.42
7.30	0.00	0.05	271.42
7.40	0.00	0.05	271.42
7.50	0.00	0.05	271.42
7.60	0.00	0.05	271.42
7.70	0.00	0.05	271.42
7.80	0.00	0.05	271.42
7.90	0.00	0.05	271.42
8.00	0.00	0.05	271.42
8.10	0.00	0.05	271.42
8.20	0.00	0.05	271.42
8.30	0.00	0.05	271.42
8.40	0.00	0.05	271.42
8.50	0.00	0.05	271.42
8.60	0.00	0.05	271.42
8.70	0.00	0.05	271.42
8.80	0.00	0.05	271.42
8.90	0.00	0.05	271.42
9.00	0.00	0.05	271.42
9.10	0.00	0.05	271.42
9.20	0.00	0.05	271.42
9.30	0.00	0.05	271.42
9.40	0.00	0.05	271.42
9.50	0.00	0.05	271.42
9.60	0.00	0.05	271.42
9.70	0.00	0.05	271.42
9.80	0.00	0.05	271.42
9.90	0.00	0.05	271.42
10.00	0.00	0.05	271.42
10.10	0.00	0.05	271.42
10.20	0.00	0.05	271.42
10.30	0.00	0.05	271.42
10.40	0.00	0.05	271.42
10.50	0.00	0.05	271.42
10.60	0.00	0.05	271.42
10.70	0.00	0.05	271.42
10.80	0.00	0.05	271.42
10.90	0.00	0.05	271.42
11.00	0.00	0.05	271.42
11.10	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.32	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.12	0.07	271.39
5.70	0.11	0.07	271.39
5.80	0.11	0.07	271.39
5.90	0.12	0.07	271.39
6.00	0.12	0.07	271.39
6.10	0.08	0.05	271.37
6.20	0.05	0.05	271.37
6.30	0.05	0.05	271.37
6.40	0.00	0.05	271.37
6.50	0.00	0.05	271.37
6.60	0.00	0.05	271.37
6.70	0.00	0.05	271.37
6.80	0.00	0.05	271.37
6.90	0.00	0.05	271.37
7.00	0.00	0.05	271.37
7.10	0.00	0.05	271.37
7.20	0.00	0.05	271.37
7.30	0.00	0.05	271.37
7.40	0.00	0.05	271.37
7.50	0.00	0.05	271.37
7.60	0.00	0.05	271.37
7.70	0.00	0.05	271.37
7.80	0.00	0.05	271.37
7.90	0.00	0.05	271.37
8.00	0.00	0.05	271.37
8.10	0.00	0.05	271.37
8.20	0.00	0.05	271.37
8.30	0.00	0.05	271.37
8.40	0.00	0.05	271.37
8.50	0.00	0.05	271.37
8.60	0.00	0.05	271.37
8.70	0.00	0.05	271.37
8.80	0.00	0.05	271.37
8.90	0.00	0.05	271.37
9.00	0.00	0.05	271.37
9.10	0.00	0.05	271.37
9.20	0.00	0.05	271.37
9.30	0.00	0.05	271.37
9.40	0.00	0.05	271.37
9.50	0.00	0.05	271.37
9.60	0.00	0.05	271.37
9.70	0.00	0.05	271.37
9.80	0.00	0.05	271.37
9.90	0.00	0.05	271.37
10.00	0.00	0.05	271.37
10.10	0.00	0.05	271.37
10.20	0.00	0.05	271.37
10.30	0.00	0.05	271.37
10.40	0.00	0.05	271.37
10.50	0.00	0.05	271.37
10.60	0.00	0.05	271.37
10.70	0.00	0.05	271.37
10.80	0.00	0.05	271.37
10.90	0.00	0.05	271.37
11.00	0.00	0.05	271.37
11.10	0.00	0.05	271.37

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.42
11.30	0.00	0.05	271.42
11.40	0.00	0.05	271.42
11.50	0.00	0.05	271.42
11.60	0.00	0.05	271.42
11.70	0.00	0.05	271.42
11.80	0.00	0.05	271.42
11.90	0.00	0.05	271.42
12.00	0.00	0.05	271.42
12.10	0.00	0.05	271.42
12.20	0.00	0.05	271.42
12.30	0.00	0.05	271.42
12.40	0.00	0.05	271.42
12.50	0.00	0.05	271.42
12.60	0.00	0.05	271.42
12.70	0.00	0.05	271.42
12.80	0.00	0.05	271.42
12.90	0.00	0.05	271.42
13.00	0.00	0.05	271.42
13.10	0.00	0.05	271.42
13.20	0.00	0.05	271.42
13.30	0.00	0.05	271.42
13.40	0.00	0.05	271.42
13.50	0.00	0.05	271.42
13.60	0.00	0.05	271.42
13.70	0.00	0.05	271.42
13.80	0.00	0.05	271.42
13.90	0.00	0.05	271.42
14.00	0.00	0.05	271.42
14.10	0.00	0.05	271.42
14.20	0.00	0.05	271.42
14.30	0.00	0.05	271.42
14.40	0.00	0.05	271.42
14.50	0.00	0.05	271.42
14.60	0.00	0.05	271.42
14.70	0.00	0.05	271.42
14.80	0.00	0.05	271.42
14.90	0.00	0.05	271.42
15.00	0.00	0.05	271.42
15.10	0.00	0.05	271.42
15.20	0.00	0.05	271.42
15.30	0.00	0.05	271.42
15.40	0.00	0.05	271.42
15.50	0.00	0.05	271.42
15.60	0.00	0.05	271.42
15.70	0.00	0.05	271.42
15.80	0.00	0.05	271.42
15.90	0.00	0.05	271.42
16.00	0.00	0.05	271.42
16.10	0.00	0.05	271.42
16.20	0.00	0.05	271.42
16.30	0.00	0.05	271.42
16.40	0.00	0.05	271.42
16.50	0.00	0.05	271.42
16.60	0.00	0.05	271.42
16.70	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.32	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.37
11.30	0.00	0.05	271.37
11.40	0.00	0.05	271.37
11.50	0.00	0.05	271.37
11.60	0.00	0.05	271.37
11.70	0.00	0.05	271.37
11.80	0.00	0.05	271.37
11.90	0.00	0.05	271.37
12.00	0.00	0.05	271.37
12.10	0.00	0.05	271.37
12.20	0.00	0.05	271.37
12.30	0.00	0.05	271.37
12.40	0.00	0.05	271.37
12.50	0.00	0.05	271.37
12.60	0.00	0.05	271.37
12.70	0.00	0.05	271.37
12.80	0.00	0.05	271.37
12.90	0.00	0.05	271.37
13.00	0.00	0.05	271.37
13.10	0.00	0.05	271.37
13.20	0.00	0.05	271.37
13.30	0.00	0.05	271.37
13.40	0.00	0.05	271.37
13.50	0.00	0.05	271.37
13.60	0.00	0.05	271.37
13.70	0.00	0.05	271.37
13.80	0.00	0.05	271.37
13.90	0.00	0.05	271.37
14.00	0.00	0.05	271.37
14.10	0.00	0.05	271.37
14.20	0.00	0.05	271.37
14.30	0.00	0.05	271.37
14.40	0.00	0.05	271.37
14.50	0.00	0.05	271.37
14.60	0.00	0.05	271.37
14.70	0.00	0.05	271.37
14.80	0.00	0.05	271.37
14.90	0.00	0.05	271.37
15.00	0.00	0.05	271.37
15.10	0.00	0.05	271.37
15.20	0.00	0.05	271.37
15.30	0.00	0.05	271.37
15.40	0.00	0.05	271.37
15.50	0.00	0.05	271.37
15.60	0.00	0.05	271.37
15.70	0.00	0.05	271.37
15.80	0.00	0.05	271.37
15.90	0.00	0.05	271.37
16.00	0.00	0.05	271.37
16.10	0.00	0.05	271.37
16.20	0.00	0.05	271.37
16.30	0.00	0.05	271.37
16.40	0.00	0.05	271.37
16.50	0.00	0.05	271.37
16.60	0.00	0.05	271.37
16.70	0.00	0.05	271.37

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.42
16.90	0.00	0.05	271.42
17.00	0.00	0.05	271.42
17.10	0.00	0.05	271.42
17.20	0.00	0.05	271.42
17.30	0.00	0.05	271.42
17.40	0.00	0.05	271.42
17.50	0.00	0.05	271.42
17.60	0.00	0.05	271.42
17.70	0.00	0.05	271.42
17.80	0.00	0.05	271.42
17.90	0.00	0.05	271.42
18.00	0.00	0.05	271.42
18.10	0.00	0.05	271.42
18.20	0.00	0.05	271.42
18.30	0.00	0.05	271.42
18.40	0.00	0.05	271.42
18.50	0.00	0.05	271.42
18.60	0.00	0.05	271.42
18.70	0.00	0.05	271.42
18.80	0.00	0.05	271.42
18.90	0.00	0.05	271.42
19.00	0.00	0.05	271.42
19.10	0.00	0.05	271.42
19.20	0.00	0.05	271.42
19.30	0.00	0.05	271.42
19.40	0.00	0.05	271.42
19.50	0.00	0.05	271.42
19.60	0.00	0.05	271.42
19.70	0.00	0.05	271.42
19.80	0.00	0.05	271.42
19.90	0.00	0.05	271.42
20.00	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.32	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.37
16.90	0.00	0.05	271.37
17.00	0.00	0.05	271.37
17.10	0.00	0.05	271.37
17.20	0.00	0.05	271.37
17.30	0.00	0.05	271.37
17.40	0.00	0.05	271.37
17.50	0.00	0.05	271.37
17.60	0.00	0.05	271.37
17.70	0.00	0.05	271.37
17.80	0.00	0.05	271.37
17.90	0.00	0.05	271.37
18.00	0.00	0.05	271.37
18.10	0.00	0.05	271.37
18.20	0.00	0.05	271.37
18.30	0.00	0.05	271.37
18.40	0.00	0.05	271.37
18.50	0.00	0.05	271.37
18.60	0.00	0.05	271.37
18.70	0.00	0.05	271.37
18.80	0.00	0.05	271.37
18.90	0.00	0.05	271.37
19.00	0.00	0.05	271.37
19.10	0.00	0.05	271.37
19.20	0.00	0.05	271.37
19.30	0.00	0.05	271.37
19.40	0.00	0.05	271.37
19.50	0.00	0.05	271.37
19.60	0.00	0.05	271.37
19.70	0.00	0.05	271.37
19.80	0.00	0.05	271.37
19.90	0.00	0.05	271.37
20.00	0.00	0.05	271.37

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.00
0.10	0.12	0.50	271.50
0.20	0.05	0.54	271.54
0.30	0.06	0.61	271.61
0.40	0.02	0.66	271.66
0.50	0.07	0.71	271.71
0.60	0.14	0.68	271.68
0.70	0.10	0.67	271.67
0.80	0.09	0.66	271.66
0.90	0.00	0.66	271.66
1.00	0.09	0.66	271.66
1.10	0.12	0.62	271.62
1.20	0.12	0.59	271.59
1.30	0.03	0.56	271.56
1.40	0.16	0.55	271.55
1.50	0.12	0.53	271.53
1.60	0.13	0.52	271.52
1.70	0.12	0.52	271.52
1.80	0.14	0.53	271.53
1.90	0.15	0.55	271.55
2.00	0.18	0.57	271.57
2.10	0.21	0.59	271.59
2.20	0.23	0.61	271.61
2.30	0.18	0.63	271.63
2.40	0.21	0.65	271.65
2.50	0.27	0.67	271.67
2.60	0.23	0.68	271.68
2.70	0.23	0.70	271.70
2.80	0.24	0.71	271.71
2.90	0.24	0.71	271.71
3.00	0.29	0.72	271.72
3.10	0.26	0.72	271.72
3.20	0.29	0.72	271.72
3.30	0.24	0.72	271.72
3.40	0.28	0.72	271.72
3.50	0.22	0.71	271.71
3.60	0.22	0.70	271.70
3.70	0.26	0.69	271.69
3.80	0.27	0.67	271.67
3.90	0.19	0.67	271.67
4.00	0.22	0.65	271.65
4.10	0.24	0.64	271.64
4.20	0.25	0.64	271.64
4.30	0.17	0.62	271.62
4.40	0.18	0.61	271.61
4.50	0.17	0.60	271.60
4.60	0.18	0.59	271.59
4.70	0.12	0.57	271.57
4.80	0.18	0.57	271.57
4.90	0.14	0.55	271.55
5.00	0.09	0.54	271.54
5.10	0.13	0.53	271.53
5.20	0.13	0.52	271.52
5.30	0.11	0.52	271.52
5.40	0.11	0.51	271.51
5.50	0.10	0.50	271.50

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.96
0.10	0.28	0.38	271.34
0.20	0.05	0.57	271.53
0.30	0.03	0.65	271.61
0.40	0.08	0.70	271.66
0.50	0.12	0.76	271.72
0.60	0.21	0.74	271.70
0.70	0.20	0.73	271.69
0.80	0.22	0.73	271.69
0.90	0.18	0.73	271.69
1.00	0.29	0.74	271.70
1.10	0.30	0.71	271.67
1.20	0.25	0.67	271.63
1.30	0.17	0.65	271.61
1.40	0.24	0.63	271.59
1.50	0.24	0.62	271.58
1.60	0.22	0.61	271.57
1.70	0.24	0.62	271.58
1.80	0.27	0.63	271.59
1.90	0.20	0.65	271.61
2.00	0.31	0.67	271.63
2.10	0.34	0.69	271.65
2.20	0.37	0.72	271.68
2.30	0.40	0.74	271.70
2.40	0.40	0.76	271.72
2.50	0.44	0.78	271.74
2.60	0.43	0.80	271.76
2.70	0.32	0.81	271.77
2.80	0.28	0.82	271.78
2.90	0.47	0.83	271.79
3.00	0.47	0.83	271.79
3.10	0.48	0.84	271.80
3.20	0.47	0.84	271.80
3.30	0.48	0.83	271.79
3.40	0.44	0.83	271.79
3.50	0.29	0.81	271.77
3.60	0.45	0.81	271.77
3.70	0.42	0.79	271.75
3.80	0.41	0.78	271.74
3.90	0.39	0.77	271.73
4.00	0.38	0.76	271.72
4.10	0.26	0.75	271.71
4.20	0.36	0.74	271.70
4.30	0.35	0.72	271.68
4.40	0.31	0.70	271.66
4.50	0.30	0.69	271.65
4.60	0.27	0.68	271.64
4.70	0.20	0.67	271.63
4.80	0.28	0.66	271.62
4.90	0.24	0.65	271.61
5.00	0.25	0.63	271.59
5.10	0.21	0.62	271.58
5.20	0.20	0.61	271.57
5.30	0.18	0.60	271.56
5.40	0.18	0.59	271.55
5.50	0.21	0.59	271.55

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.09	0.49	271.49
5.70	0.08	0.49	271.49
5.80	0.08	0.48	271.48
5.90	0.09	0.48	271.48
6.00	0.09	0.47	271.47
6.10	0.07	0.46	271.46
6.20	0.06	0.44	271.44
6.30	0.05	0.42	271.42
6.40	0.05	0.41	271.41
6.50	0.04	0.39	271.39
6.60	0.03	0.38	271.38
6.70	0.02	0.36	271.36
6.80	0.02	0.35	271.35
6.90	0.01	0.34	271.34
7.00	0.02	0.33	271.33
7.10	0.00	0.32	271.32
7.20	0.00	0.31	271.31
7.30	0.00	0.30	271.30
7.40	0.00	0.29	271.29
7.50	0.00	0.28	271.28
7.60	0.00	0.27	271.27
7.70	0.00	0.26	271.26
7.80	0.00	0.25	271.25
7.90	0.00	0.25	271.25
8.00	0.00	0.24	271.24
8.10	0.00	0.23	271.23
8.20	0.00	0.23	271.23
8.30	0.00	0.22	271.22
8.40	0.00	0.21	271.21
8.50	0.00	0.21	271.21
8.60	0.00	0.20	271.20
8.70	0.00	0.20	271.20
8.80	0.00	0.19	271.19
8.90	0.00	0.19	271.19
9.00	0.00	0.18	271.18
9.10	0.00	0.18	271.18
9.20	0.00	0.17	271.17
9.30	0.00	0.17	271.17
9.40	0.00	0.17	271.17
9.50	0.00	0.16	271.16
9.60	0.00	0.16	271.16
9.70	0.00	0.16	271.16
9.80	0.00	0.15	271.15
9.90	0.00	0.15	271.15
10.00	0.00	0.15	271.15
10.10	0.00	0.15	271.15
10.20	0.00	0.14	271.14
10.30	0.00	0.14	271.14
10.40	0.00	0.14	271.14
10.50	0.00	0.13	271.13
10.60	0.00	0.13	271.13
10.70	0.00	0.13	271.13
10.80	0.00	0.13	271.13
10.90	0.00	0.13	271.13
11.00	0.00	0.13	271.13
11.10	0.00	0.12	271.12

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.14	0.58	271.54
5.70	0.19	0.57	271.53
5.80	0.18	0.57	271.53
5.90	0.14	0.56	271.52
6.00	0.10	0.55	271.51
6.10	0.09	0.54	271.50
6.20	0.06	0.52	271.48
6.30	0.08	0.50	271.46
6.40	0.05	0.48	271.44
6.50	0.04	0.47	271.43
6.60	0.04	0.45	271.41
6.70	0.02	0.43	271.39
6.80	0.03	0.42	271.38
6.90	0.03	0.40	271.36
7.00	0.02	0.39	271.35
7.10	0.01	0.38	271.34
7.20	0.02	0.37	271.33
7.30	0.03	0.35	271.31
7.40	0.00	0.34	271.30
7.50	0.03	0.33	271.29
7.60	0.00	0.32	271.28
7.70	0.00	0.32	271.28
7.80	0.00	0.31	271.27
7.90	0.01	0.30	271.26
8.00	0.00	0.29	271.25
8.10	0.02	0.28	271.24
8.20	0.00	0.28	271.24
8.30	0.00	0.27	271.23
8.40	0.00	0.26	271.22
8.50	0.00	0.26	271.22
8.60	0.00	0.25	271.21
8.70	0.00	0.24	271.20
8.80	0.02	0.24	271.20
8.90	0.00	0.23	271.19
9.00	0.00	0.23	271.19
9.10	0.00	0.23	271.19
9.20	0.00	0.22	271.18
9.30	0.00	0.22	271.18
9.40	0.00	0.21	271.17
9.50	0.00	0.21	271.17
9.60	0.00	0.21	271.17
9.70	0.00	0.20	271.16
9.80	0.00	0.20	271.16
9.90	0.00	0.19	271.15
10.00	0.00	0.19	271.15
10.10	0.00	0.19	271.15
10.20	0.00	0.19	271.15
10.30	0.00	0.18	271.14
10.40	0.00	0.18	271.14
10.50	0.00	0.18	271.14
10.60	0.00	0.17	271.13
10.70	0.00	0.17	271.13
10.80	0.00	0.17	271.13
10.90	0.00	0.17	271.13
11.00	0.00	0.16	271.12
11.10	0.00	0.16	271.12

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.12	271.12
11.30	0.00	0.12	271.12
11.40	0.00	0.12	271.12
11.50	0.00	0.12	271.12
11.60	0.00	0.12	271.12
11.70	0.00	0.12	271.12
11.80	0.00	0.11	271.11
11.90	0.00	0.11	271.11
12.00	0.00	0.11	271.11
12.10	0.00	0.11	271.11
12.20	0.00	0.11	271.11
12.30	0.00	0.11	271.11
12.40	0.00	0.11	271.11
12.50	0.00	0.11	271.11
12.60	0.00	0.11	271.11
12.70	0.00	0.11	271.11
12.80	0.00	0.11	271.11
12.90	0.00	0.11	271.11
13.00	0.00	0.11	271.11
13.10	0.00	0.11	271.11
13.20	0.00	0.11	271.11
13.30	0.00	0.11	271.11
13.40	0.00	0.11	271.11
13.50	0.00	0.11	271.11
13.60	0.00	0.11	271.11
13.70	0.00	0.11	271.11
13.80	0.00	0.11	271.11
13.90	0.00	0.11	271.11
14.00	0.00	0.11	271.11
14.10	0.00	0.11	271.11
14.20	0.00	0.11	271.11
14.30	0.00	0.11	271.11
14.40	0.00	0.11	271.11
14.50	0.00	0.11	271.11
14.60	0.00	0.11	271.11
14.70	0.00	0.11	271.11
14.80	0.00	0.11	271.11
14.90	0.00	0.11	271.11
15.00	0.00	0.11	271.11
15.10	0.00	0.11	271.11
15.20	0.00	0.11	271.11
15.30	0.00	0.11	271.11
15.40	0.00	0.11	271.11
15.50	0.00	0.11	271.11
15.60	0.00	0.11	271.11
15.70	0.00	0.11	271.11
15.80	0.00	0.11	271.11
15.90	0.00	0.11	271.11
16.00	0.00	0.11	271.11
16.10	0.00	0.11	271.11
16.20	0.00	0.11	271.11
16.30	0.00	0.11	271.11
16.40	0.00	0.11	271.11
16.50	0.00	0.11	271.11
16.60	0.00	0.11	271.11
16.70	0.00	0.11	271.11

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.16	271.12
11.30	0.00	0.15	271.11
11.40	0.00	0.15	271.11
11.50	0.00	0.15	271.11
11.60	0.00	0.15	271.11
11.70	0.00	0.14	271.10
11.80	0.00	0.14	271.10
11.90	0.00	0.14	271.10
12.00	0.00	0.14	271.10
12.10	0.00	0.13	271.09
12.20	0.00	0.13	271.09
12.30	0.00	0.13	271.09
12.40	0.00	0.13	271.09
12.50	0.00	0.12	271.08
12.60	0.00	0.12	271.08
12.70	0.00	0.12	271.08
12.80	0.00	0.12	271.08
12.90	0.00	0.12	271.08
13.00	0.00	0.11	271.07
13.10	0.00	0.11	271.07
13.20	0.00	0.11	271.07
13.30	0.00	0.11	271.07
13.40	0.00	0.11	271.07
13.50	0.00	0.11	271.07
13.60	0.00	0.10	271.06
13.70	0.00	0.10	271.06
13.80	0.00	0.10	271.06
13.90	0.00	0.10	271.06
14.00	0.00	0.10	271.06
14.10	0.00	0.10	271.06
14.20	0.00	0.09	271.05
14.30	0.00	0.09	271.05
14.40	0.00	0.09	271.05
14.50	0.00	0.09	271.05
14.60	0.00	0.09	271.05
14.70	0.00	0.09	271.05
14.80	0.00	0.08	271.04
14.90	0.00	0.08	271.04
15.00	0.00	0.08	271.04
15.10	0.00	0.08	271.04
15.20	0.00	0.08	271.04
15.30	0.00	0.08	271.04
15.40	0.00	0.07	271.03
15.50	0.00	0.07	271.03
15.60	0.00	0.07	271.03
15.70	0.00	0.07	271.03
15.80	0.00	0.07	271.03
15.90	0.00	0.07	271.03
16.00	0.00	0.07	271.03
16.10	0.00	0.06	271.02
16.20	0.00	0.06	271.02
16.30	0.00	0.06	271.02
16.40	0.00	0.06	271.02
16.50	0.00	0.06	271.02
16.60	0.00	0.06	271.02
16.70	0.00	0.06	271.02

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.11	271.11
16.90	0.00	0.11	271.11
17.00	0.00	0.11	271.11
17.10	0.00	0.11	271.11
17.20	0.00	0.11	271.11
17.30	0.00	0.11	271.11
17.40	0.00	0.11	271.11
17.50	0.00	0.11	271.11
17.60	0.00	0.11	271.11
17.70	0.00	0.11	271.11
17.80	0.00	0.11	271.11
17.90	0.00	0.11	271.11
18.00	0.00	0.11	271.11
18.10	0.00	0.11	271.11
18.20	0.00	0.11	271.11
18.30	0.00	0.11	271.11
18.40	0.00	0.11	271.11
18.50	0.00	0.11	271.11
18.60	0.00	0.11	271.11
18.70	0.00	0.11	271.11
18.80	0.00	0.11	271.11
18.90	0.00	0.11	271.11
19.00	0.00	0.11	271.11
19.10	0.00	0.11	271.11
19.20	0.00	0.11	271.11
19.30	0.00	0.11	271.11
19.40	0.00	0.11	271.11
19.50	0.00	0.11	271.11
19.60	0.00	0.11	271.11
19.70	0.00	0.11	271.11
19.80	0.00	0.11	271.11
19.90	0.00	0.11	271.11
20.00	0.00	0.11	271.11

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.06	271.02
16.90	0.00	0.06	271.02
17.00	0.00	0.06	271.02
17.10	0.00	0.06	271.02
17.20	0.00	0.05	271.01
17.30	0.00	0.05	271.01
17.40	0.00	0.05	271.01
17.50	0.00	0.05	271.01
17.60	0.00	0.05	271.01
17.70	0.00	0.05	271.01
17.80	0.00	0.05	271.01
17.90	0.00	0.05	271.01
18.00	0.00	0.05	271.01
18.10	0.00	0.05	271.01
18.20	0.00	0.05	271.01
18.30	0.00	0.05	271.01
18.40	0.00	0.05	271.01
18.50	0.00	0.05	271.01
18.60	0.00	0.05	271.01
18.70	0.00	0.05	271.01
18.80	0.00	0.05	271.01
18.90	0.00	0.05	271.01
19.00	0.00	0.05	271.01
19.10	0.00	0.05	271.01
19.20	0.00	0.05	271.01
19.30	0.00	0.05	271.01
19.40	0.00	0.05	271.01
19.50	0.00	0.05	271.01
19.60	0.00	0.05	271.01
19.70	0.00	0.05	271.01
19.80	0.00	0.05	271.01
19.90	0.00	0.05	271.01
20.00	0.00	0.05	271.01

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.43
0.10	0.23	0.48	271.91
0.20	0.14	0.38	271.81
0.30	0.12	0.40	271.83
0.40	0.16	0.46	271.89
0.50	0.12	0.55	271.98
0.60	0.12	0.53	271.96
0.70	0.14	0.53	271.96
0.80	0.06	0.53	271.96
0.90	0.10	0.55	271.98
1.00	0.11	0.56	271.99
1.10	0.07	0.51	271.94
1.20	0.03	0.48	271.91
1.30	0.06	0.46	271.89
1.40	0.08	0.44	271.87
1.50	0.14	0.41	271.84
1.60	0.07	0.40	271.83
1.70	0.05	0.40	271.83
1.80	0.04	0.40	271.83
1.90	0.07	0.42	271.85
2.00	0.03	0.44	271.87
2.10	0.04	0.46	271.89
2.20	0.06	0.49	271.92
2.30	0.05	0.51	271.94
2.40	0.03	0.53	271.96
2.50	0.03	0.55	271.98
2.60	0.05	0.57	272.00
2.70	0.04	0.59	272.02
2.80	0.02	0.60	272.03
2.90	0.03	0.61	272.04
3.00	0.04	0.61	272.04
3.10	0.03	0.62	272.05
3.20	0.02	0.62	272.05
3.30	0.04	0.61	272.04
3.40	0.02	0.60	272.03
3.50	0.04	0.60	272.03
3.60	0.04	0.59	272.02
3.70	0.08	0.57	272.00
3.80	0.00	0.56	271.99
3.90	0.04	0.55	271.98
4.00	0.01	0.53	271.96
4.10	0.09	0.51	271.94
4.20	0.06	0.49	271.92
4.30	0.04	0.48	271.91
4.40	0.02	0.47	271.90
4.50	0.05	0.45	271.88
4.60	0.09	0.43	271.86
4.70	0.08	0.42	271.85
4.80	0.06	0.40	271.83
4.90	0.04	0.39	271.82
5.00	0.08	0.38	271.81
5.10	0.03	0.37	271.80
5.20	0.03	0.35	271.78
5.30	0.05	0.34	271.77
5.40	0.05	0.33	271.76
5.50	0.06	0.32	271.75

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.08
0.10	0.22	0.84	271.92
0.20	0.16	0.73	271.81
0.30	0.12	0.75	271.83
0.40	0.06	0.82	271.90
0.50	0.08	0.90	271.98
0.60	0.08	0.87	271.95
0.70	0.03	0.87	271.95
0.80	0.07	0.87	271.95
0.90	0.07	0.90	271.98
1.00	0.10	0.91	271.99
1.10	0.04	0.87	271.95
1.20	0.06	0.84	271.92
1.30	0.02	0.81	271.89
1.40	0.02	0.79	271.87
1.50	0.03	0.76	271.84
1.60	0.01	0.75	271.83
1.70	0.00	0.75	271.83
1.80	0.06	0.75	271.83
1.90	0.05	0.77	271.85
2.00	0.03	0.79	271.87
2.10	0.06	0.81	271.89
2.20	0.06	0.84	271.92
2.30	0.02	0.86	271.94
2.40	0.00	0.88	271.96
2.50	0.04	0.90	271.98
2.60	0.03	0.92	272.00
2.70	0.02	0.94	272.02
2.80	0.02	0.95	272.03
2.90	0.06	0.96	272.04
3.00	0.04	0.97	272.05
3.10	0.06	0.97	272.05
3.20	0.05	0.97	272.05
3.30	0.03	0.96	272.04
3.40	0.02	0.96	272.04
3.50	0.05	0.94	272.02
3.60	0.01	0.94	272.02
3.70	0.01	0.92	272.00
3.80	0.01	0.91	271.99
3.90	0.00	0.90	271.98
4.00	0.05	0.88	271.96
4.10	0.02	0.86	271.94
4.20	0.02	0.84	271.92
4.30	0.05	0.83	271.91
4.40	0.02	0.81	271.89
4.50	0.00	0.80	271.88
4.60	0.03	0.78	271.86
4.70	0.03	0.77	271.85
4.80	0.06	0.75	271.83
4.90	0.01	0.74	271.82
5.00	0.06	0.73	271.81
5.10	0.00	0.72	271.80
5.20	0.00	0.70	271.78
5.30	0.04	0.69	271.77
5.40	0.02	0.68	271.76
5.50	0.05	0.68	271.76

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.05	0.32	271.75
5.70	0.04	0.31	271.74
5.80	0.04	0.30	271.73
5.90	0.07	0.29	271.72
6.00	0.04	0.29	271.72
6.10	0.04	0.26	271.69
6.20	0.02	0.24	271.67
6.30	0.02	0.22	271.65
6.40	0.00	0.20	271.63
6.50	0.01	0.19	271.62
6.60	0.01	0.17	271.60
6.70	0.00	0.15	271.58
6.80	0.00	0.14	271.57
6.90	0.00	0.13	271.56
7.00	0.00	0.12	271.55
7.10	0.00	0.10	271.53
7.20	0.00	0.09	271.52
7.30	0.00	0.08	271.51
7.40	0.00	0.07	271.50
7.50	0.00	0.06	271.49
7.60	0.00	0.05	271.48
7.70	0.00	0.05	271.48
7.80	0.00	0.05	271.48
7.90	0.00	0.05	271.48
8.00	0.00	0.05	271.48
8.10	0.00	0.05	271.48
8.20	0.00	0.05	271.48
8.30	0.00	0.05	271.48
8.40	0.00	0.05	271.48
8.50	0.00	0.05	271.48
8.60	0.00	0.05	271.48
8.70	0.00	0.05	271.48
8.80	0.00	0.05	271.48
8.90	0.00	0.05	271.48
9.00	0.00	0.05	271.48
9.10	0.00	0.05	271.48
9.20	0.00	0.05	271.48
9.30	0.00	0.05	271.48
9.40	0.00	0.05	271.48
9.50	0.00	0.05	271.48
9.60	0.00	0.05	271.48
9.70	0.00	0.05	271.48
9.80	0.00	0.05	271.48
9.90	0.00	0.05	271.48
10.00	0.00	0.05	271.48
10.10	0.00	0.05	271.48
10.20	0.00	0.05	271.48
10.30	0.00	0.05	271.48
10.40	0.00	0.05	271.48
10.50	0.00	0.05	271.48
10.60	0.00	0.05	271.48
10.70	0.00	0.05	271.48
10.80	0.00	0.05	271.48
10.90	0.00	0.05	271.48
11.00	0.00	0.05	271.48
11.10	0.00	0.05	271.48

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.02	0.67	271.75
5.70	0.03	0.66	271.74
5.80	0.04	0.65	271.73
5.90	0.03	0.64	271.72
6.00	0.02	0.64	271.72
6.10	0.02	0.62	271.70
6.20	0.02	0.59	271.67
6.30	0.03	0.57	271.65
6.40	0.02	0.55	271.63
6.50	0.00	0.54	271.62
6.60	0.00	0.52	271.60
6.70	0.00	0.50	271.58
6.80	0.00	0.49	271.57
6.90	0.00	0.48	271.56
7.00	0.00	0.47	271.55
7.10	0.00	0.45	271.53
7.20	0.00	0.44	271.52
7.30	0.00	0.43	271.51
7.40	0.00	0.42	271.50
7.50	0.00	0.41	271.49
7.60	0.00	0.40	271.48
7.70	0.00	0.39	271.47
7.80	0.00	0.38	271.46
7.90	0.00	0.37	271.45
8.00	0.00	0.36	271.44
8.10	0.00	0.36	271.44
8.20	0.00	0.35	271.43
8.30	0.00	0.34	271.42
8.40	0.00	0.33	271.41
8.50	0.00	0.33	271.41
8.60	0.00	0.32	271.40
8.70	0.00	0.32	271.40
8.80	0.00	0.31	271.39
8.90	0.00	0.31	271.39
9.00	0.00	0.30	271.38
9.10	0.00	0.30	271.38
9.20	0.00	0.30	271.38
9.30	0.00	0.29	271.37
9.40	0.00	0.29	271.37
9.50	0.00	0.29	271.37
9.60	0.00	0.29	271.37
9.70	0.00	0.29	271.37
9.80	0.00	0.28	271.36
9.90	0.00	0.28	271.36
10.00	0.00	0.28	271.36
10.10	0.00	0.28	271.36
10.20	0.00	0.28	271.36
10.30	0.00	0.28	271.36
10.40	0.00	0.28	271.36
10.50	0.00	0.28	271.36
10.60	0.00	0.28	271.36
10.70	0.00	0.28	271.36
10.80	0.00	0.28	271.36
10.90	0.00	0.28	271.36
11.00	0.00	0.28	271.36
11.10	0.00	0.28	271.36

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.05	271.48
11.30	0.00	0.05	271.48
11.40	0.00	0.05	271.48
11.50	0.00	0.05	271.48
11.60	0.00	0.05	271.48
11.70	0.00	0.05	271.48
11.80	0.00	0.05	271.48
11.90	0.00	0.05	271.48
12.00	0.00	0.05	271.48
12.10	0.00	0.05	271.48
12.20	0.00	0.05	271.48
12.30	0.00	0.05	271.48
12.40	0.00	0.05	271.48
12.50	0.00	0.05	271.48
12.60	0.00	0.05	271.48
12.70	0.00	0.05	271.48
12.80	0.00	0.05	271.48
12.90	0.00	0.05	271.48
13.00	0.00	0.05	271.48
13.10	0.00	0.05	271.48
13.20	0.00	0.05	271.48
13.30	0.00	0.05	271.48
13.40	0.00	0.05	271.48
13.50	0.00	0.05	271.48
13.60	0.00	0.05	271.48
13.70	0.00	0.05	271.48
13.80	0.00	0.05	271.48
13.90	0.00	0.05	271.48
14.00	0.00	0.05	271.48
14.10	0.00	0.05	271.48
14.20	0.00	0.05	271.48
14.30	0.00	0.05	271.48
14.40	0.00	0.05	271.48
14.50	0.00	0.05	271.48
14.60	0.00	0.05	271.48
14.70	0.00	0.05	271.48
14.80	0.00	0.05	271.48
14.90	0.00	0.05	271.48
15.00	0.00	0.05	271.48
15.10	0.00	0.05	271.48
15.20	0.00	0.05	271.48
15.30	0.00	0.05	271.48
15.40	0.00	0.05	271.48
15.50	0.00	0.05	271.48
15.60	0.00	0.05	271.48
15.70	0.00	0.05	271.48
15.80	0.00	0.05	271.48
15.90	0.00	0.05	271.48
16.00	0.00	0.05	271.48
16.10	0.00	0.05	271.48
16.20	0.00	0.05	271.48
16.30	0.00	0.05	271.48
16.40	0.00	0.05	271.48
16.50	0.00	0.05	271.48
16.60	0.00	0.05	271.48
16.70	0.00	0.05	271.48

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.00	0.28	271.36
11.30	0.00	0.28	271.36
11.40	0.00	0.28	271.36
11.50	0.00	0.28	271.36
11.60	0.00	0.28	271.36
11.70	0.00	0.28	271.36
11.80	0.00	0.28	271.36
11.90	0.00	0.28	271.36
12.00	0.00	0.28	271.36
12.10	0.00	0.28	271.36
12.20	0.00	0.28	271.36
12.30	0.00	0.28	271.36
12.40	0.00	0.28	271.36
12.50	0.00	0.28	271.36
12.60	0.00	0.28	271.36
12.70	0.00	0.28	271.36
12.80	0.00	0.28	271.36
12.90	0.00	0.28	271.36
13.00	0.00	0.28	271.36
13.10	0.00	0.28	271.36
13.20	0.00	0.28	271.36
13.30	0.00	0.28	271.36
13.40	0.00	0.28	271.36
13.50	0.00	0.28	271.36
13.60	0.00	0.28	271.36
13.70	0.00	0.28	271.36
13.80	0.00	0.28	271.36
13.90	0.00	0.28	271.36
14.00	0.00	0.28	271.36
14.10	0.00	0.28	271.36
14.20	0.00	0.28	271.36
14.30	0.00	0.28	271.36
14.40	0.00	0.28	271.36
14.50	0.00	0.28	271.36
14.60	0.00	0.28	271.36
14.70	0.00	0.28	271.36
14.80	0.00	0.28	271.36
14.90	0.00	0.28	271.36
15.00	0.00	0.28	271.36
15.10	0.00	0.28	271.36
15.20	0.00	0.28	271.36
15.30	0.00	0.28	271.36
15.40	0.00	0.28	271.36
15.50	0.00	0.28	271.36
15.60	0.00	0.28	271.36
15.70	0.00	0.28	271.36
15.80	0.00	0.28	271.36
15.90	0.00	0.28	271.36
16.00	0.00	0.28	271.36
16.10	0.00	0.28	271.36
16.20	0.00	0.28	271.36
16.30	0.00	0.28	271.36
16.40	0.00	0.28	271.36
16.50	0.00	0.28	271.36
16.60	0.00	0.28	271.36
16.70	0.00	0.28	271.36

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.05	271.48
16.90	0.00	0.05	271.48
17.00	0.00	0.05	271.48
17.10	0.00	0.05	271.48
17.20	0.00	0.05	271.48
17.30	0.00	0.05	271.48
17.40	0.00	0.05	271.48
17.50	0.00	0.05	271.48
17.60	0.00	0.05	271.48
17.70	0.00	0.05	271.48
17.80	0.00	0.05	271.48
17.90	0.00	0.05	271.48
18.00	0.00	0.05	271.48
18.10	0.00	0.05	271.48
18.20	0.00	0.05	271.48
18.30	0.00	0.05	271.48
18.40	0.00	0.05	271.48
18.50	0.00	0.05	271.48
18.60	0.00	0.05	271.48
18.70	0.00	0.05	271.48
18.80	0.00	0.05	271.48
18.90	0.00	0.05	271.48
19.00	0.00	0.05	271.48
19.10	0.00	0.05	271.48
19.20	0.00	0.05	271.48
19.30	0.00	0.05	271.48
19.40	0.00	0.05	271.48
19.50	0.00	0.05	271.48
19.60	0.00	0.05	271.48
19.70	0.00	0.05	271.48
19.80	0.00	0.05	271.48
19.90	0.00	0.05	271.48
20.00	0.00	0.05	271.48

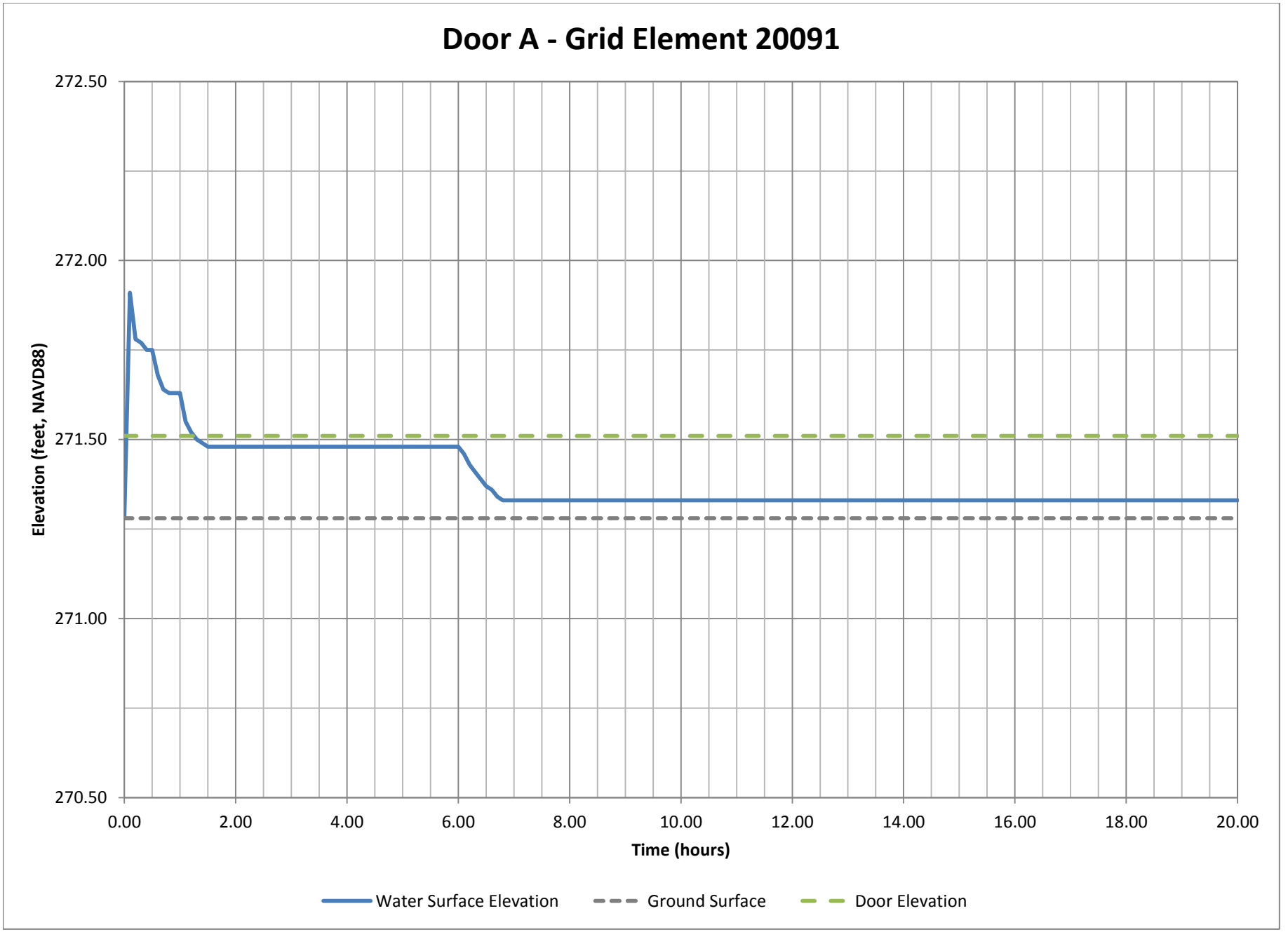
Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.00	0.28	271.36
16.90	0.00	0.28	271.36
17.00	0.00	0.28	271.36
17.10	0.00	0.28	271.36
17.20	0.00	0.28	271.36
17.30	0.00	0.28	271.36
17.40	0.00	0.28	271.36
17.50	0.00	0.28	271.36
17.60	0.00	0.28	271.36
17.70	0.00	0.28	271.36
17.80	0.00	0.28	271.36
17.90	0.00	0.28	271.36
18.00	0.00	0.28	271.36
18.10	0.00	0.28	271.36
18.20	0.00	0.28	271.36
18.30	0.00	0.28	271.36
18.40	0.00	0.28	271.36
18.50	0.00	0.28	271.36
18.60	0.00	0.28	271.36
18.70	0.00	0.28	271.36
18.80	0.00	0.28	271.36
18.90	0.00	0.28	271.36
19.00	0.00	0.28	271.36
19.10	0.00	0.28	271.36
19.20	0.00	0.28	271.36
19.30	0.00	0.28	271.36
19.40	0.00	0.28	271.36
19.50	0.00	0.28	271.36
19.60	0.00	0.28	271.36
19.70	0.00	0.28	271.36
19.80	0.00	0.28	271.36
19.90	0.00	0.28	271.36
20.00	0.00	0.28	271.36

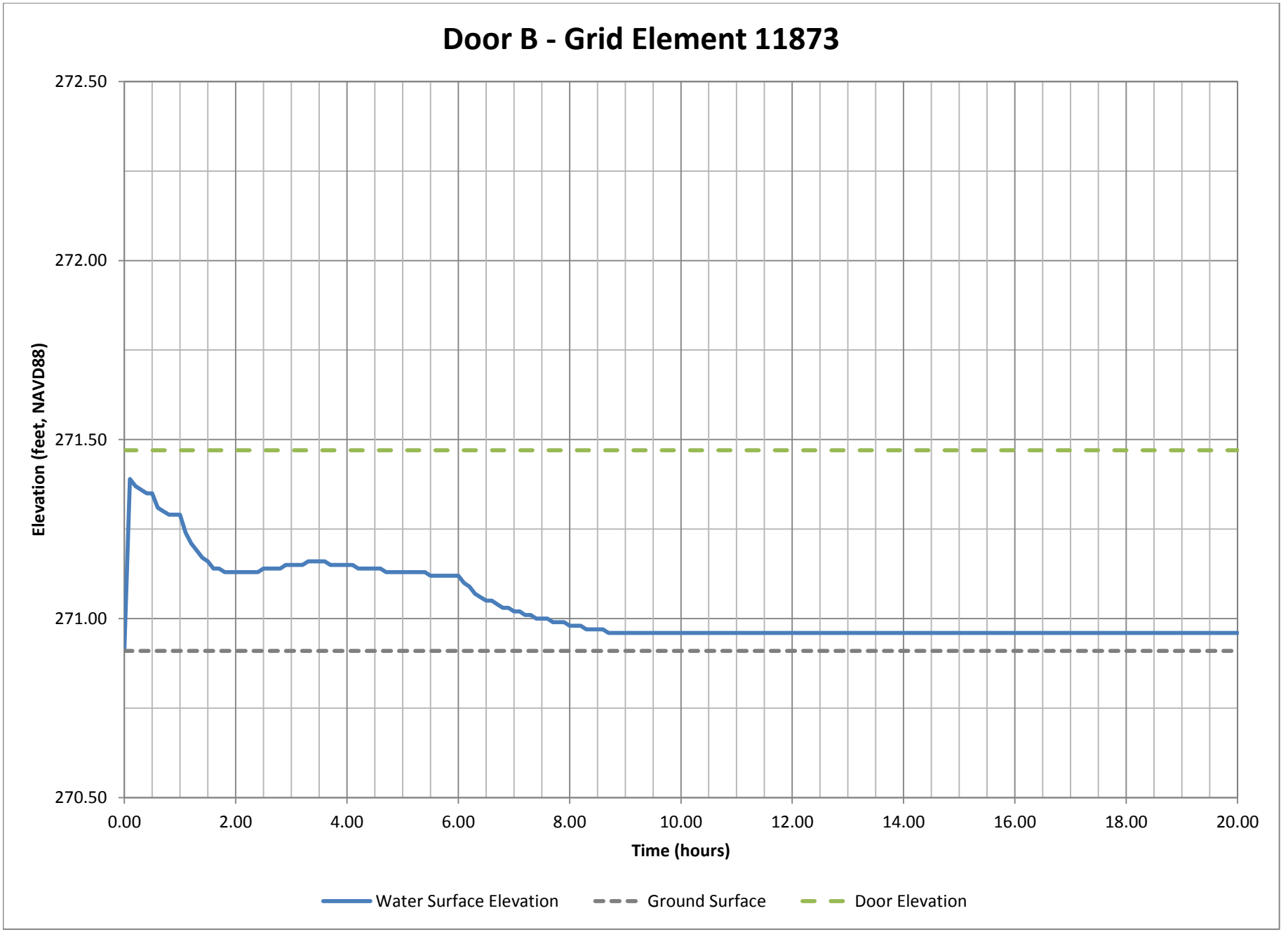
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.17
0.10	0.32	0.23	271.40
0.20	0.12	0.36	271.53
0.30	0.07	0.45	271.62
0.40	0.12	0.50	271.67
0.50	0.08	0.56	271.73
0.60	0.09	0.54	271.71
0.70	0.15	0.53	271.70
0.80	0.05	0.54	271.71
0.90	0.04	0.53	271.70
1.00	0.08	0.54	271.71
1.10	0.13	0.51	271.68
1.20	0.23	0.47	271.64
1.30	0.09	0.45	271.62
1.40	0.17	0.43	271.60
1.50	0.10	0.42	271.59
1.60	0.09	0.41	271.58
1.70	0.15	0.42	271.59
1.80	0.09	0.43	271.60
1.90	0.19	0.45	271.62
2.00	0.02	0.47	271.64
2.10	0.19	0.49	271.66
2.20	0.16	0.52	271.69
2.30	0.32	0.54	271.71
2.40	0.15	0.56	271.73
2.50	0.33	0.59	271.76
2.60	0.30	0.60	271.77
2.70	0.33	0.62	271.79
2.80	0.18	0.63	271.80
2.90	0.35	0.64	271.81
3.00	0.16	0.64	271.81
3.10	0.19	0.64	271.81
3.20	0.35	0.64	271.81
3.30	0.36	0.64	271.81
3.40	0.32	0.63	271.80
3.50	0.15	0.62	271.79
3.60	0.17	0.61	271.78
3.70	0.18	0.60	271.77
3.80	0.18	0.58	271.75
3.90	0.17	0.57	271.74
4.00	0.12	0.56	271.73
4.10	0.18	0.55	271.72
4.20	0.27	0.54	271.71
4.30	0.19	0.52	271.69
4.40	0.26	0.50	271.67
4.50	0.19	0.49	271.66
4.60	0.10	0.48	271.65
4.70	0.13	0.47	271.64
4.80	0.11	0.46	271.63
4.90	0.17	0.44	271.61
5.00	0.10	0.43	271.60
5.10	0.13	0.42	271.59
5.20	0.09	0.41	271.58
5.30	0.15	0.40	271.57
5.40	0.10	0.39	271.56
5.50	0.08	0.39	271.56

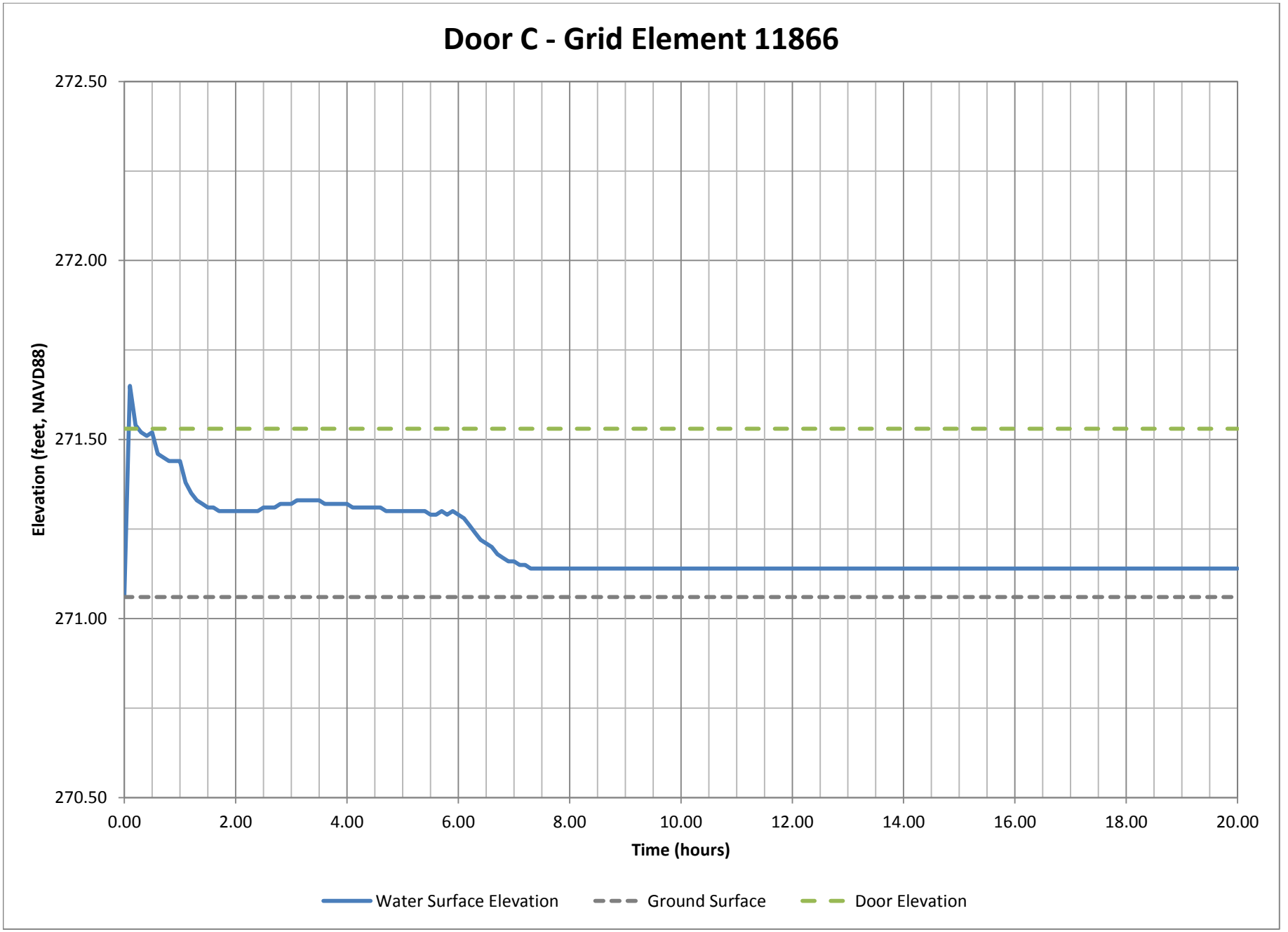
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
5.60	0.15	0.38	271.55
5.70	0.08	0.37	271.54
5.80	0.08	0.36	271.53
5.90	0.08	0.36	271.53
6.00	0.05	0.35	271.52
6.10	0.06	0.33	271.50
6.20	0.06	0.31	271.48
6.30	0.09	0.29	271.46
6.40	0.05	0.28	271.45
6.50	0.05	0.26	271.43
6.60	0.07	0.24	271.41
6.70	0.06	0.23	271.40
6.80	0.06	0.21	271.38
6.90	0.04	0.20	271.37
7.00	0.03	0.18	271.35
7.10	0.03	0.17	271.34
7.20	0.02	0.16	271.33
7.30	0.03	0.15	271.32
7.40	0.02	0.13	271.30
7.50	0.02	0.12	271.29
7.60	0.02	0.12	271.29
7.70	0.02	0.11	271.28
7.80	0.02	0.10	271.27
7.90	0.01	0.09	271.26
8.00	0.01	0.08	271.25
8.10	0.01	0.07	271.24
8.20	0.01	0.07	271.24
8.30	0.01	0.06	271.23
8.40	0.01	0.05	271.22
8.50	0.01	0.05	271.22
8.60	0.01	0.05	271.22
8.70	0.01	0.05	271.22
8.80	0.01	0.05	271.22
8.90	0.01	0.05	271.22
9.00	0.01	0.05	271.22
9.10	0.01	0.05	271.22
9.20	0.01	0.05	271.22
9.30	0.01	0.05	271.22
9.40	0.01	0.05	271.22
9.50	0.01	0.05	271.22
9.60	0.01	0.05	271.22
9.70	0.01	0.05	271.22
9.80	0.01	0.05	271.22
9.90	0.01	0.05	271.22
10.00	0.01	0.05	271.22
10.10	0.01	0.05	271.22
10.20	0.01	0.05	271.22
10.30	0.01	0.05	271.22
10.40	0.01	0.05	271.22
10.50	0.01	0.05	271.22
10.60	0.01	0.05	271.22
10.70	0.01	0.05	271.22
10.80	0.01	0.05	271.22
10.90	0.01	0.05	271.22
11.00	0.01	0.05	271.22
11.10	0.01	0.05	271.22

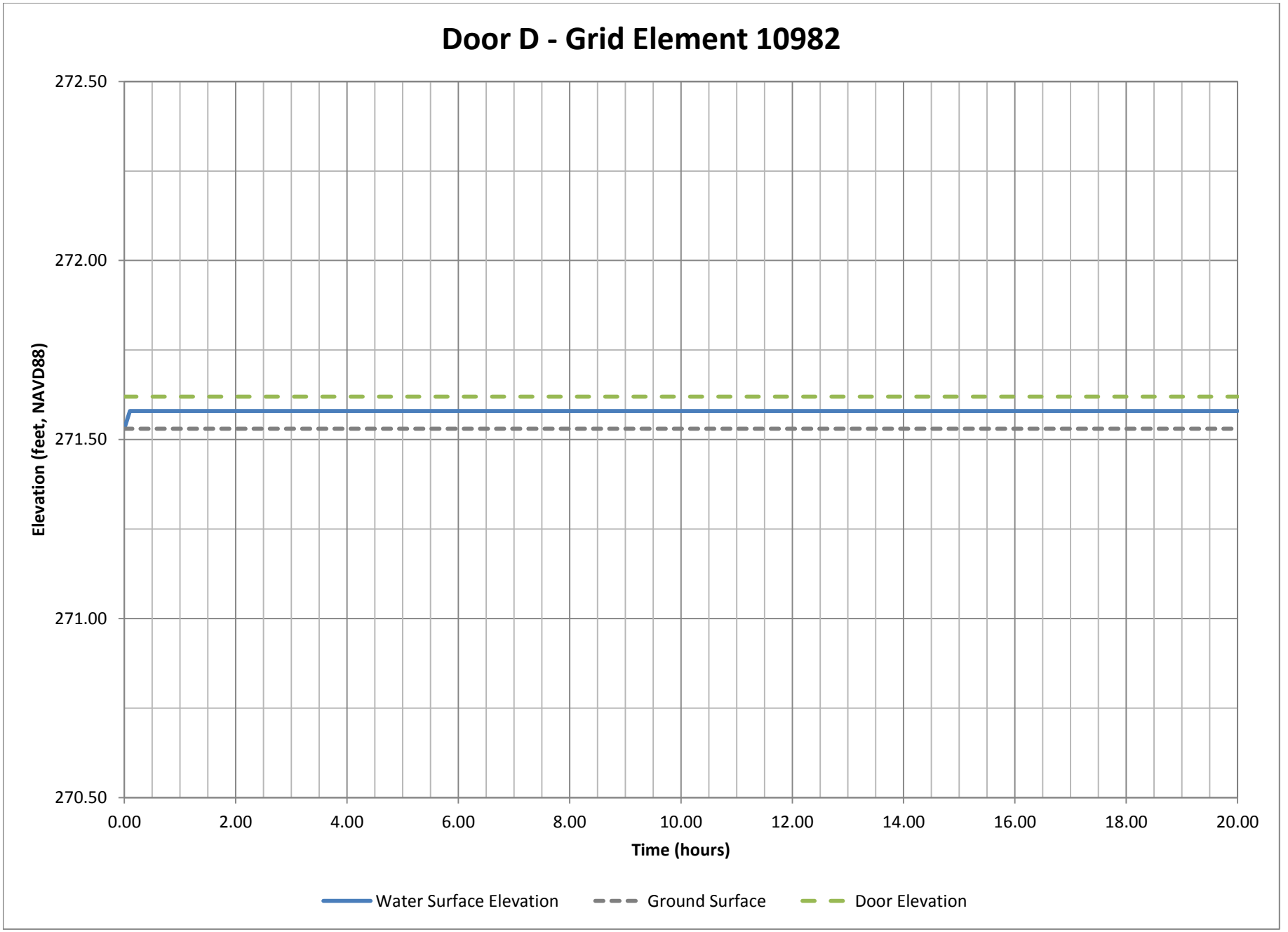
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
11.20	0.01	0.05	271.22
11.30	0.01	0.05	271.22
11.40	0.01	0.05	271.22
11.50	0.01	0.05	271.22
11.60	0.01	0.05	271.22
11.70	0.01	0.05	271.22
11.80	0.01	0.05	271.22
11.90	0.01	0.05	271.22
12.00	0.01	0.05	271.22
12.10	0.01	0.05	271.22
12.20	0.01	0.05	271.22
12.30	0.01	0.05	271.22
12.40	0.01	0.05	271.22
12.50	0.01	0.05	271.22
12.60	0.01	0.05	271.22
12.70	0.01	0.05	271.22
12.80	0.01	0.05	271.22
12.90	0.01	0.05	271.22
13.00	0.01	0.05	271.22
13.10	0.01	0.05	271.22
13.20	0.01	0.05	271.22
13.30	0.01	0.05	271.22
13.40	0.01	0.05	271.22
13.50	0.01	0.05	271.22
13.60	0.01	0.05	271.22
13.70	0.01	0.05	271.22
13.80	0.01	0.05	271.22
13.90	0.01	0.05	271.22
14.00	0.01	0.05	271.22
14.10	0.01	0.05	271.22
14.20	0.01	0.05	271.22
14.30	0.01	0.05	271.22
14.40	0.01	0.05	271.22
14.50	0.01	0.05	271.22
14.60	0.01	0.05	271.22
14.70	0.01	0.05	271.22
14.80	0.01	0.05	271.22
14.90	0.01	0.05	271.22
15.00	0.01	0.05	271.22
15.10	0.01	0.05	271.22
15.20	0.01	0.05	271.22
15.30	0.01	0.05	271.22
15.40	0.01	0.05	271.22
15.50	0.01	0.05	271.22
15.60	0.01	0.05	271.22
15.70	0.01	0.05	271.22
15.80	0.01	0.05	271.22
15.90	0.01	0.05	271.22
16.00	0.01	0.05	271.22
16.10	0.01	0.05	271.22
16.20	0.01	0.05	271.22
16.30	0.01	0.05	271.22
16.40	0.01	0.05	271.22
16.50	0.01	0.05	271.22
16.60	0.01	0.05	271.22
16.70	0.01	0.05	271.22

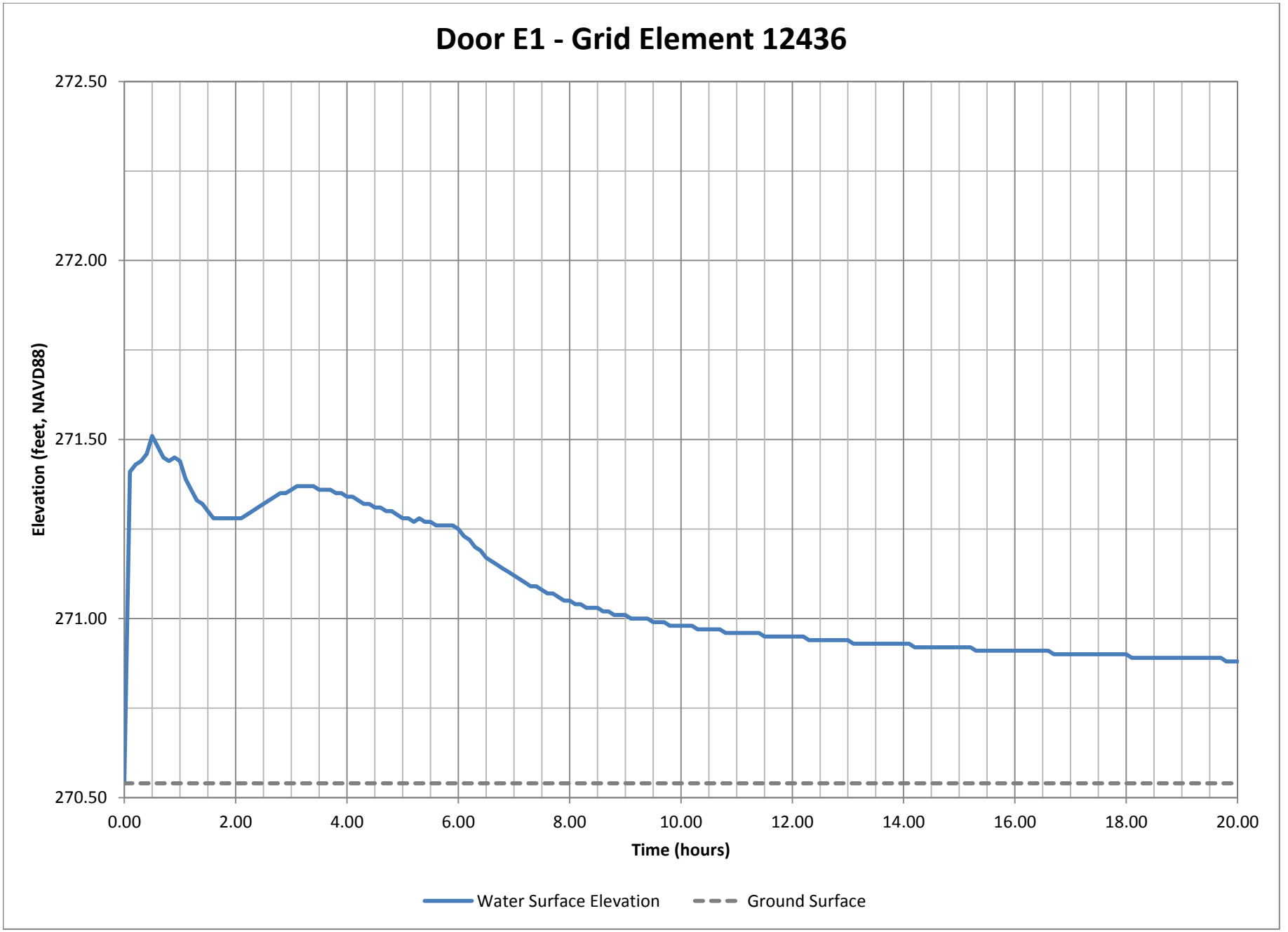
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
16.80	0.01	0.05	271.22
16.90	0.01	0.05	271.22
17.00	0.01	0.05	271.22
17.10	0.01	0.05	271.22
17.20	0.01	0.05	271.22
17.30	0.01	0.05	271.22
17.40	0.01	0.05	271.22
17.50	0.01	0.05	271.22
17.60	0.01	0.05	271.22
17.70	0.01	0.05	271.22
17.80	0.01	0.05	271.22
17.90	0.01	0.05	271.22
18.00	0.01	0.05	271.22
18.10	0.01	0.05	271.22
18.20	0.01	0.05	271.22
18.30	0.01	0.05	271.22
18.40	0.01	0.05	271.22
18.50	0.01	0.05	271.22
18.60	0.01	0.05	271.22
18.70	0.01	0.05	271.22
18.80	0.01	0.05	271.22
18.90	0.01	0.05	271.22
19.00	0.01	0.05	271.22
19.10	0.01	0.05	271.22
19.20	0.01	0.05	271.22
19.30	0.01	0.05	271.22
19.40	0.01	0.05	271.22
19.50	0.01	0.05	271.22
19.60	0.01	0.05	271.22
19.70	0.01	0.05	271.22
19.80	0.01	0.05	271.22
19.90	0.01	0.05	271.22
20.00	0.01	0.05	271.22

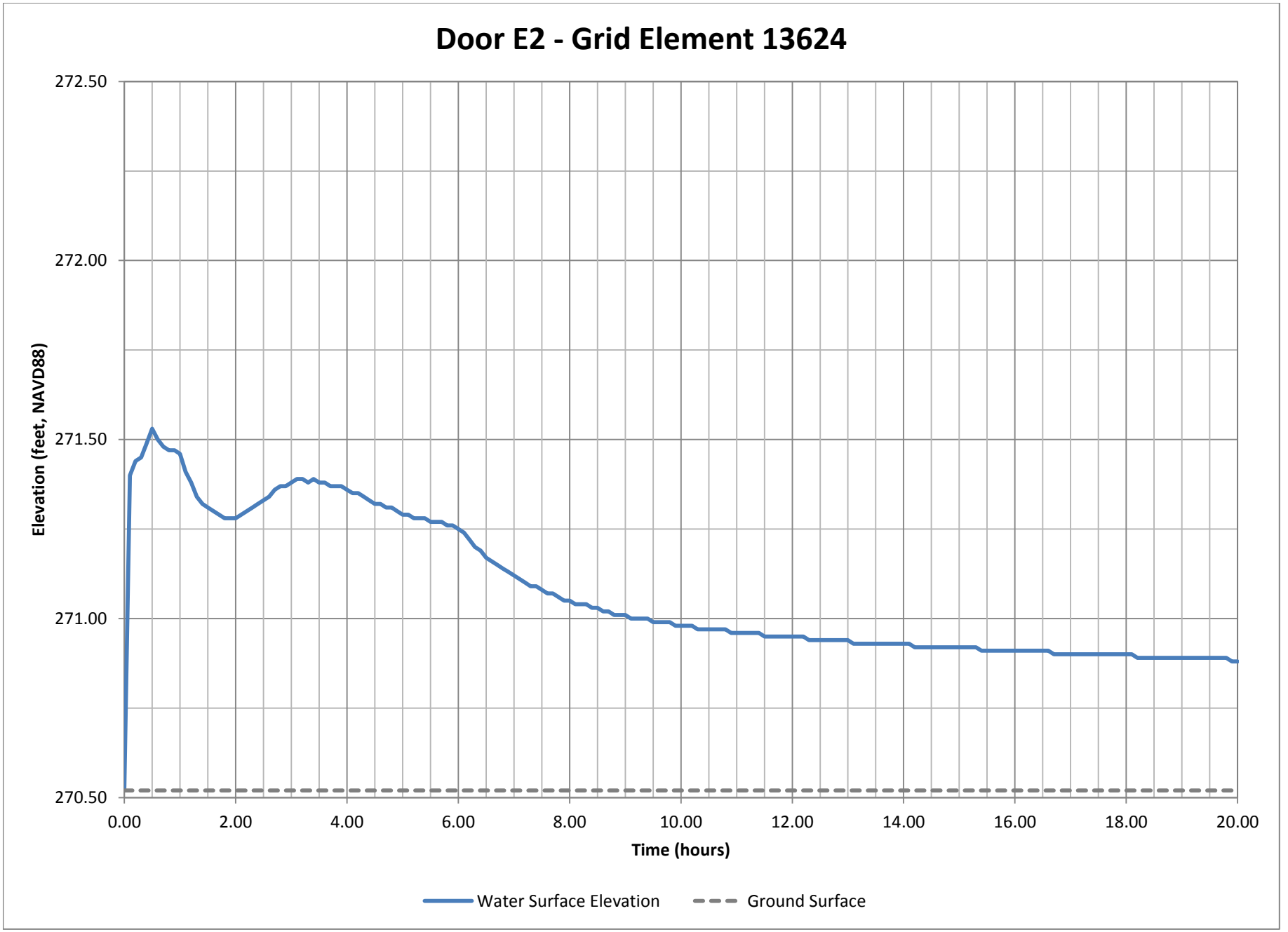

Door A - Grid Element 20091
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

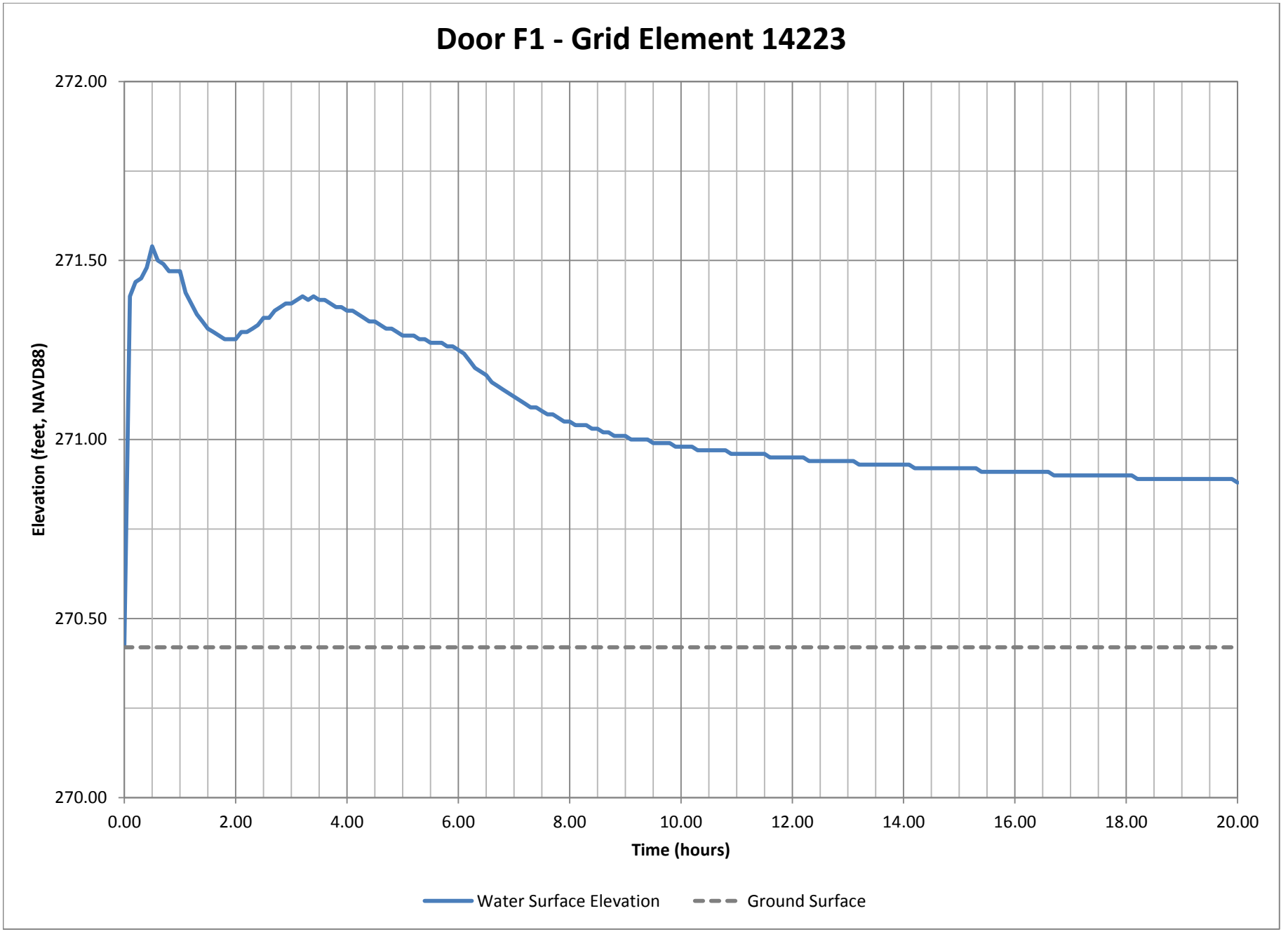

Door B - Grid Element 11873
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

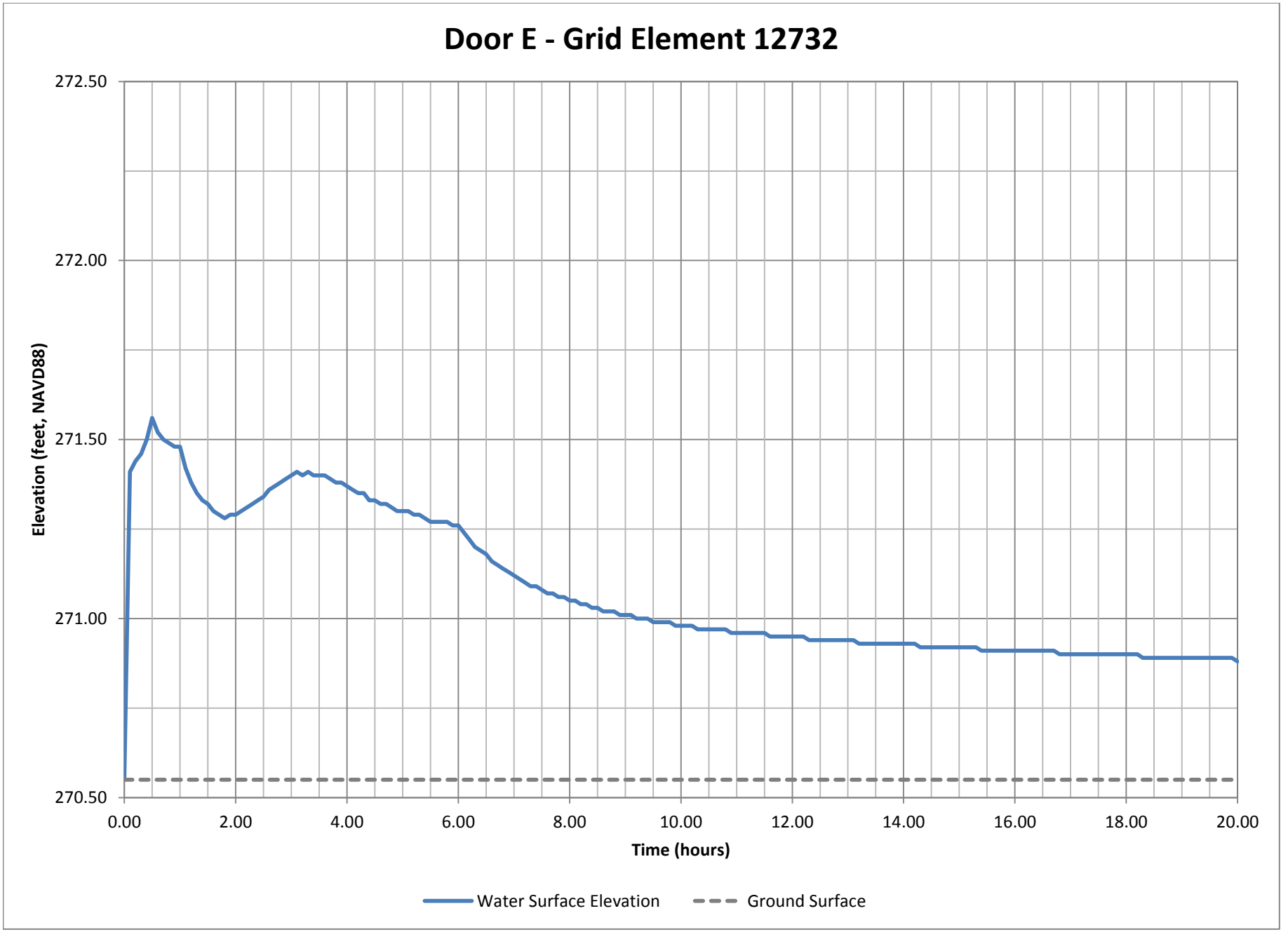

Door C - Grid Element 11866
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

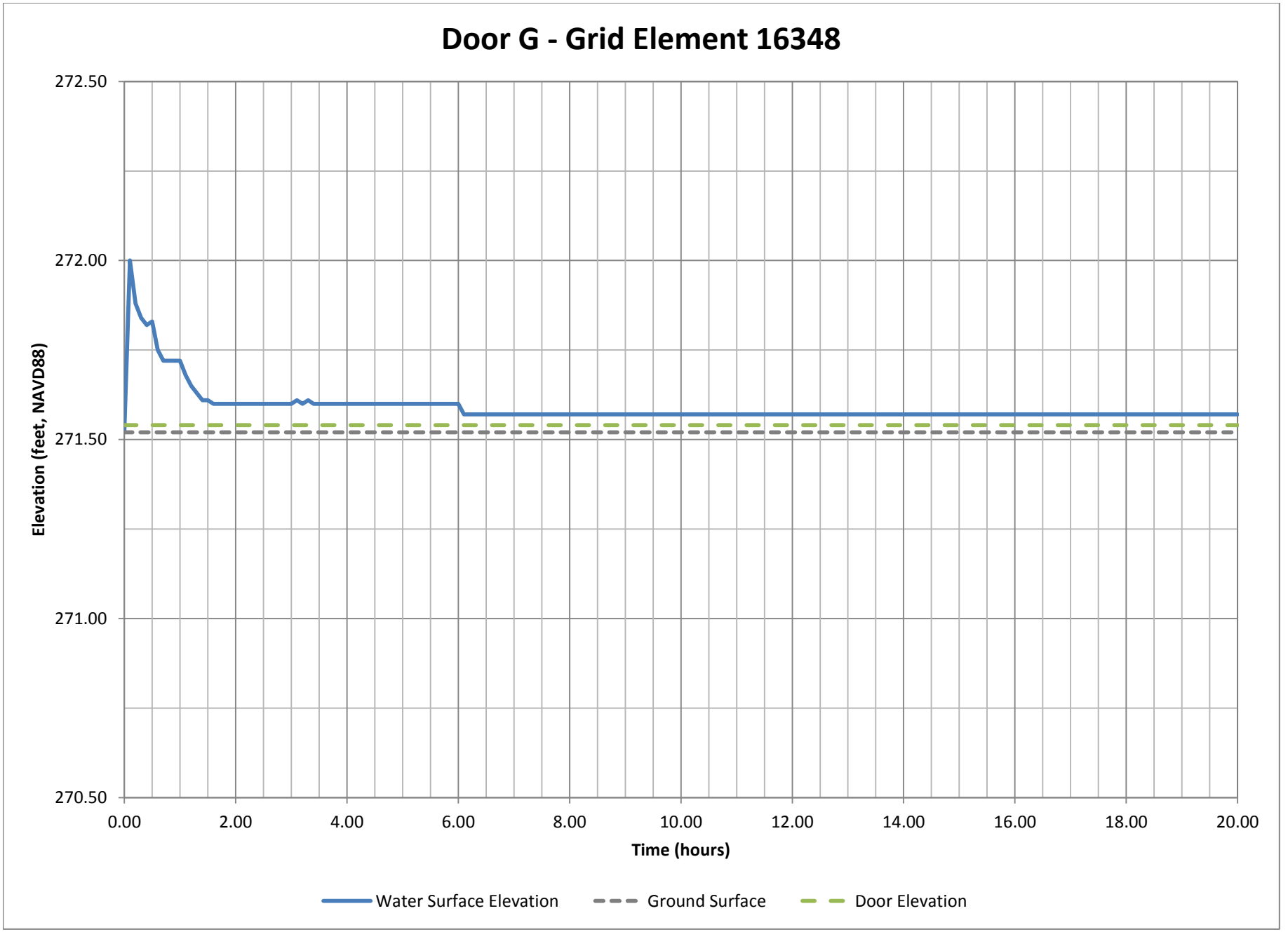

Door D - Grid Element 10982
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

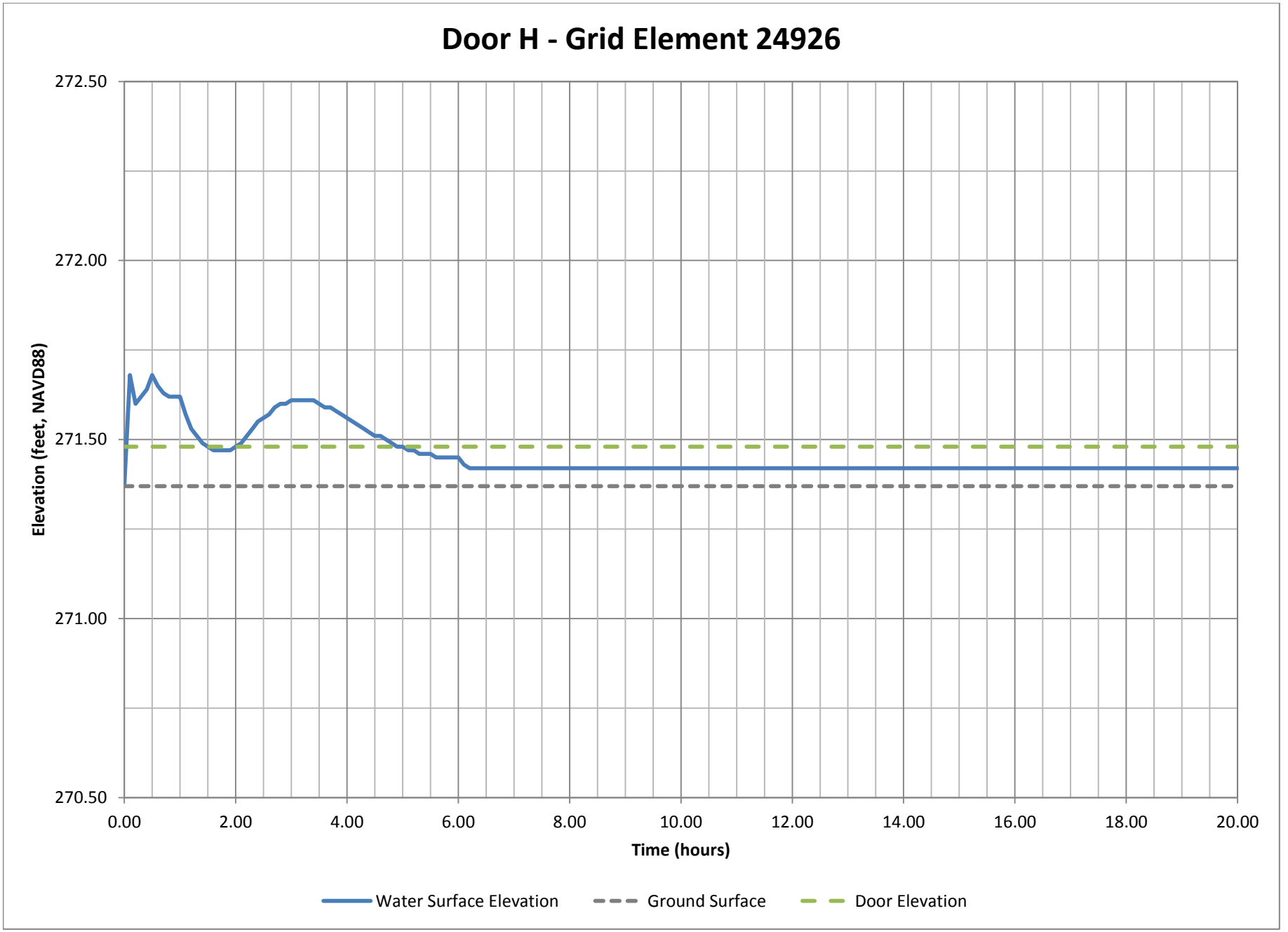

Door E1 - Grid Element 12436
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

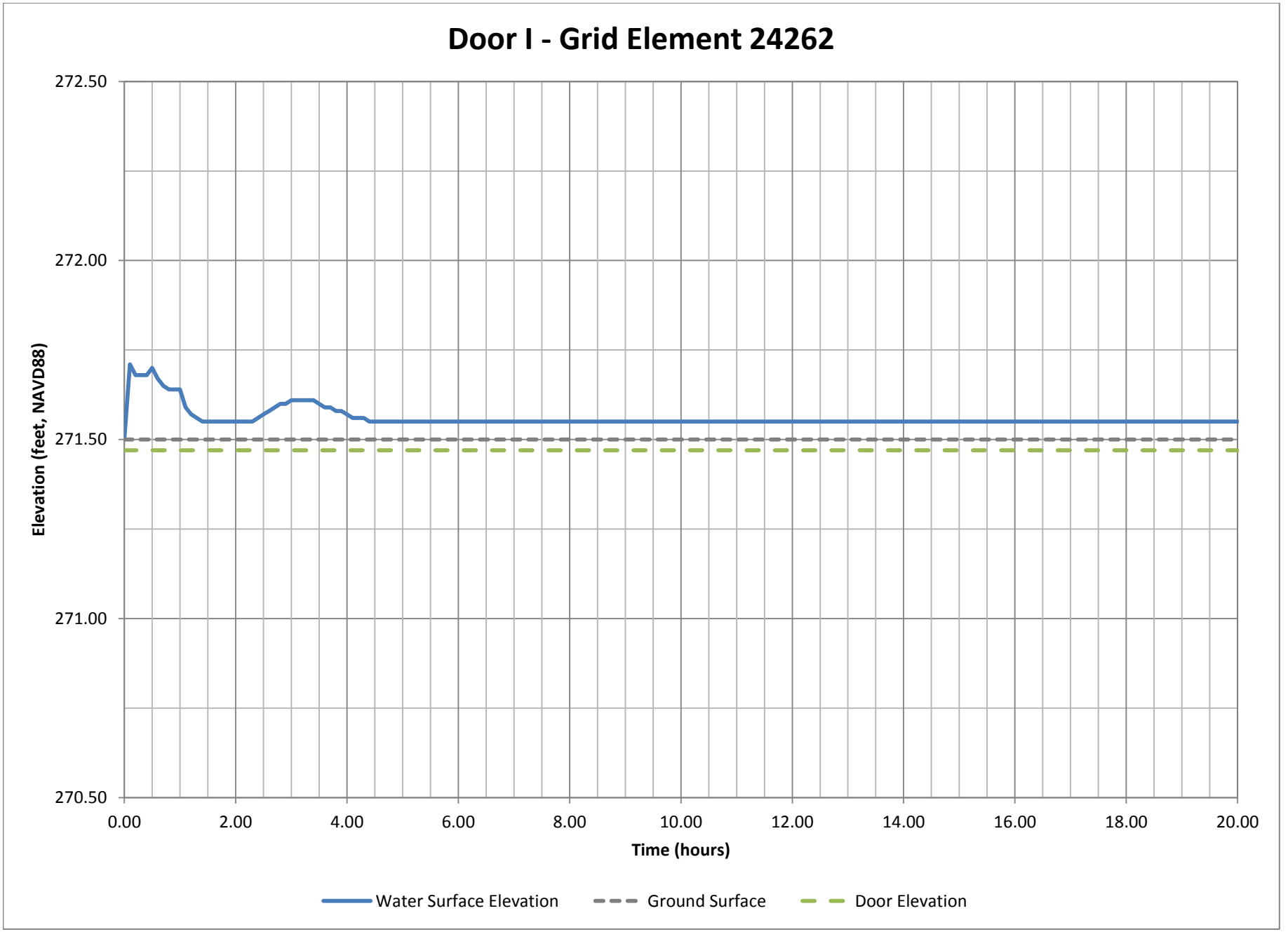

Door E2 - Grid Element 13624
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

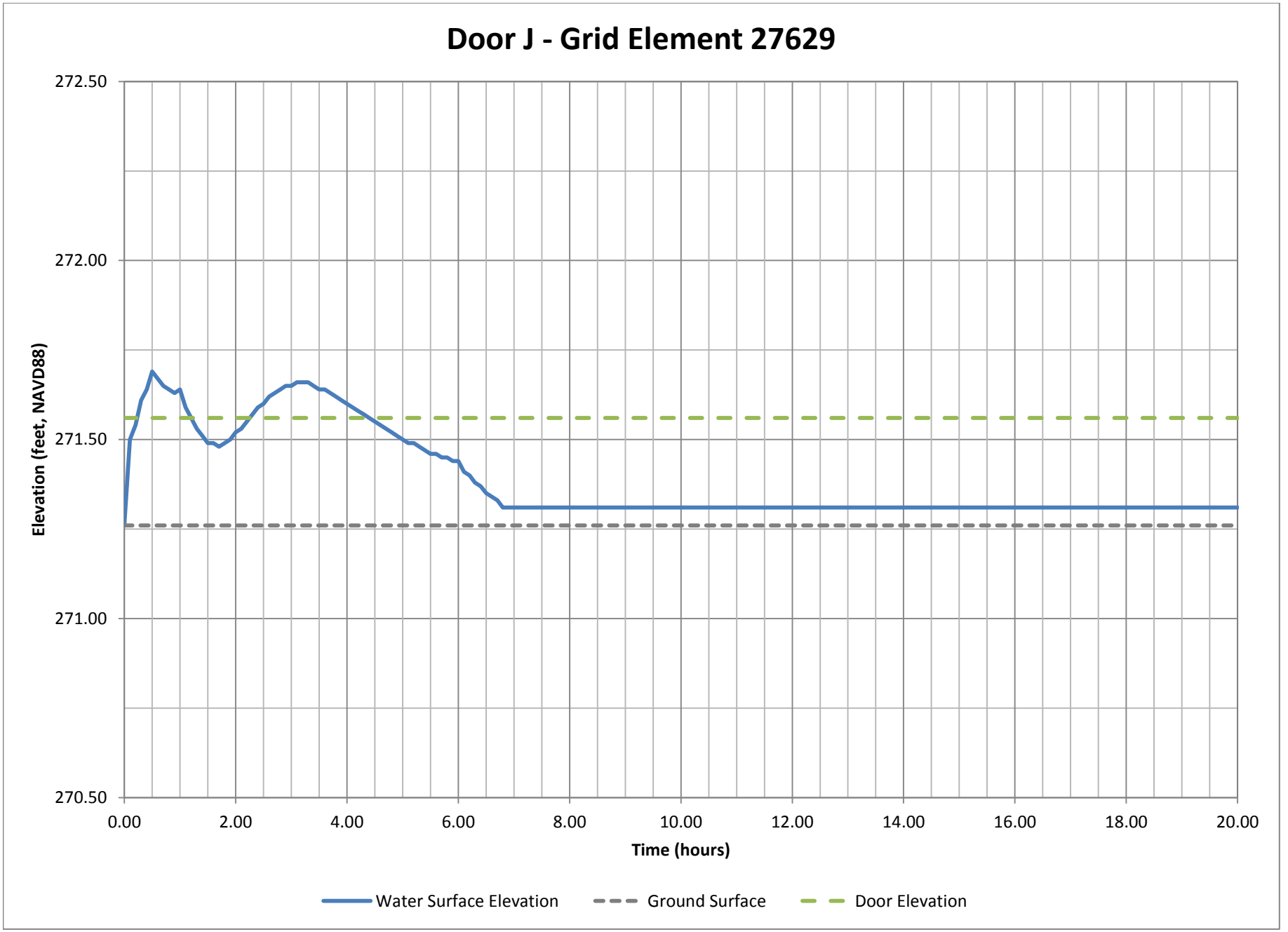

Door F1 - Grid Element 14223
272.00
271.50
271.00
270.50
270.00
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

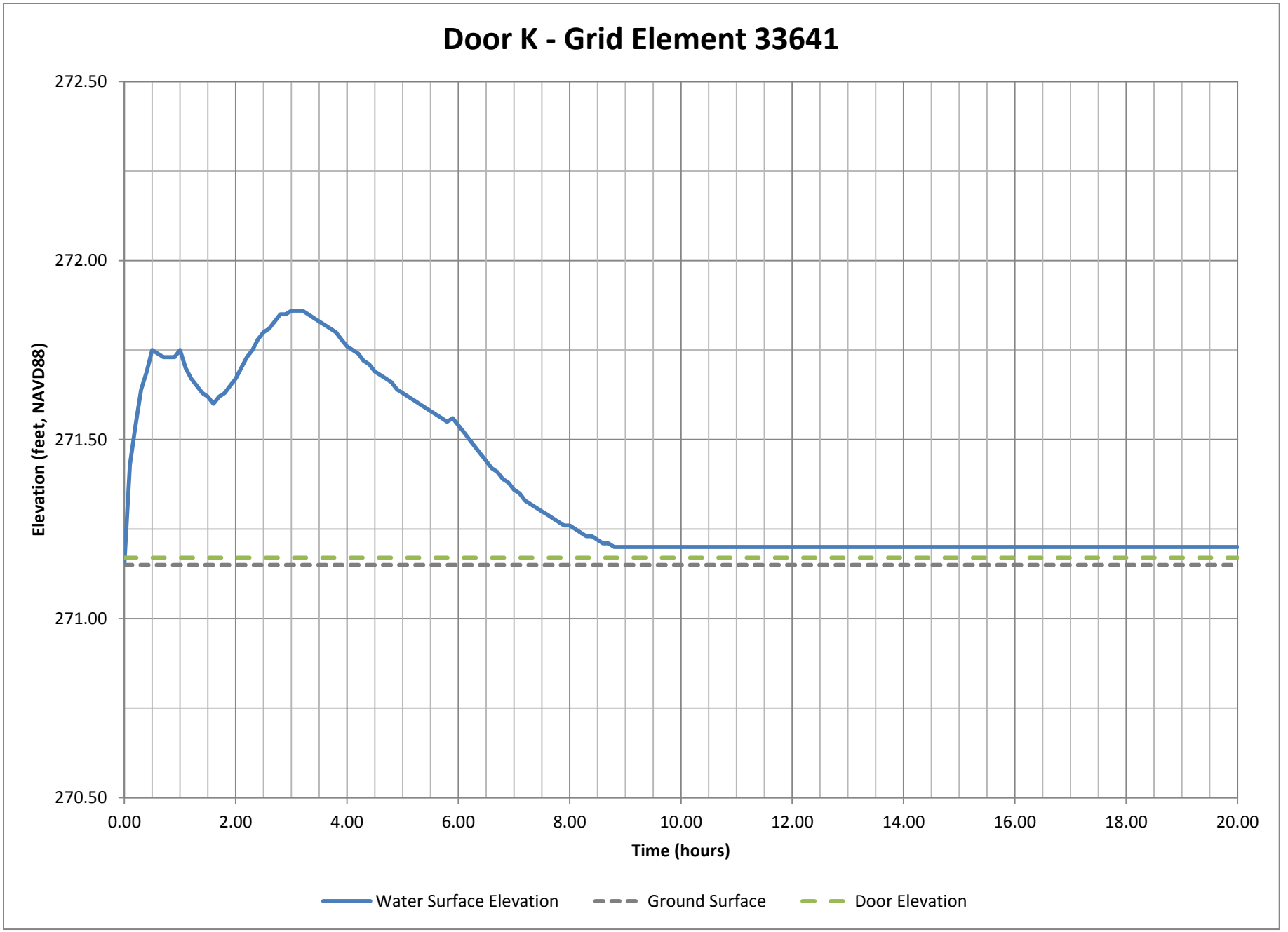

Door E - Grid Element 12732
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

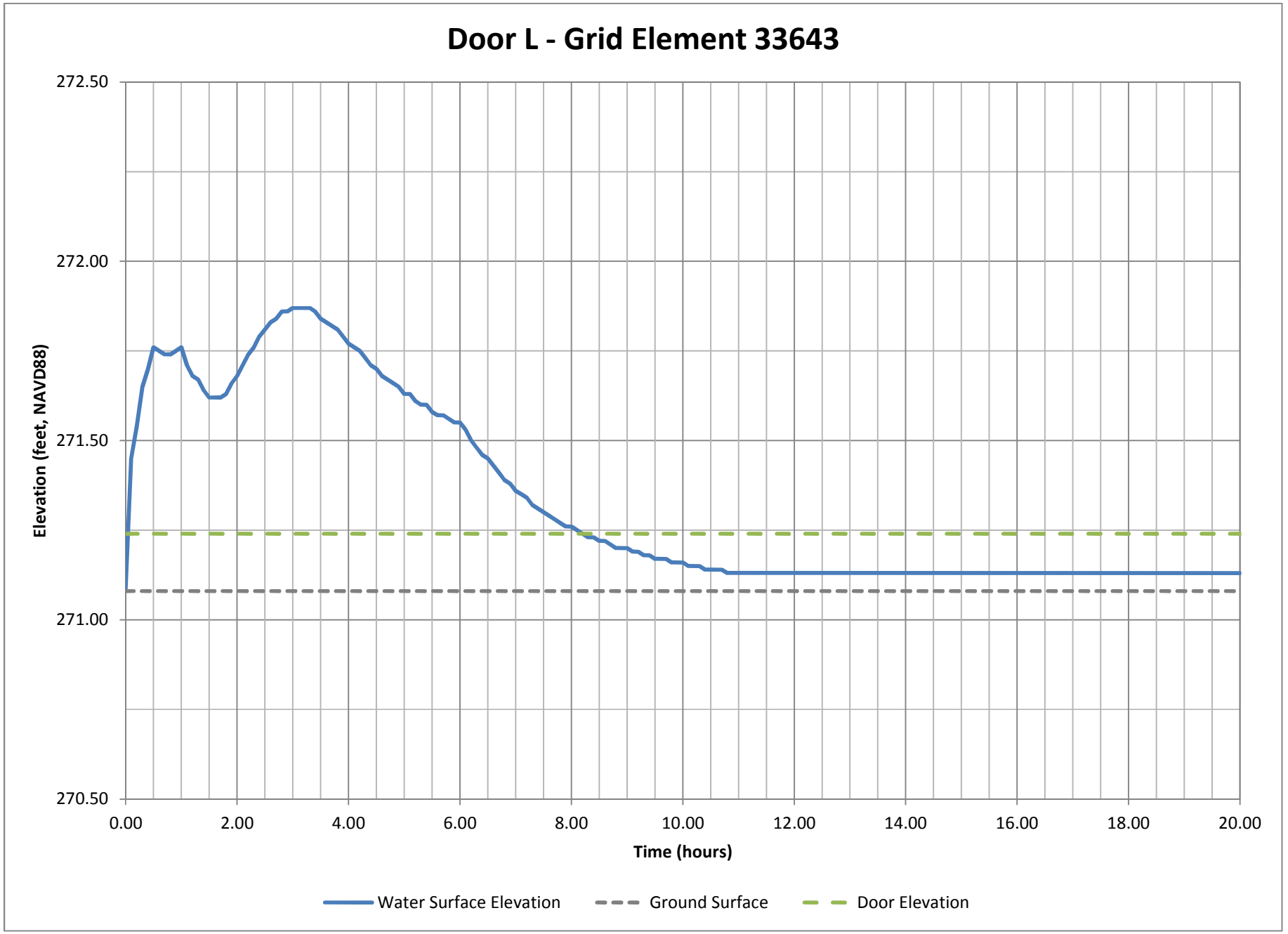

Door G - Grid Element 16348
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

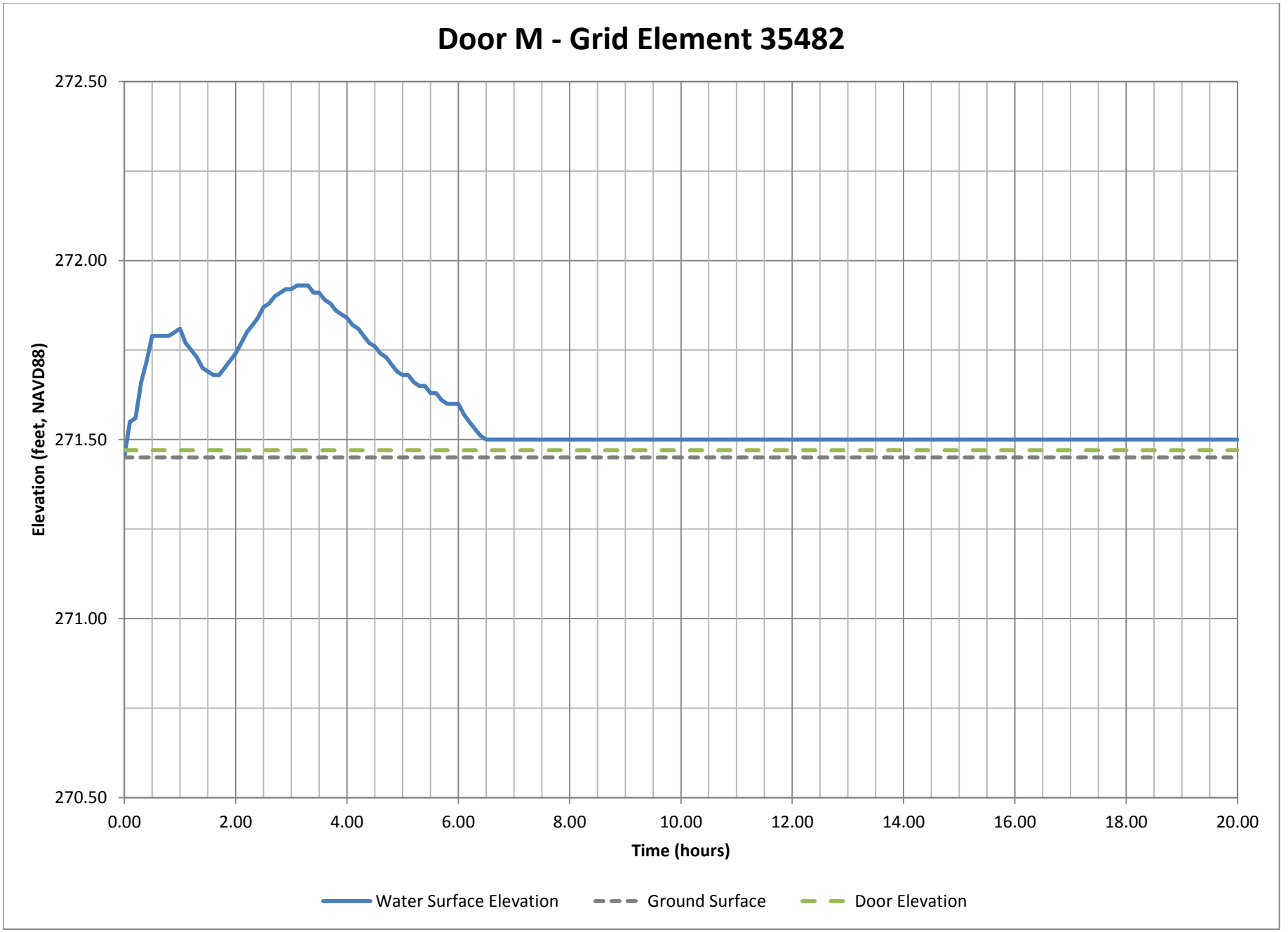

Door H - Grid Element 24926
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

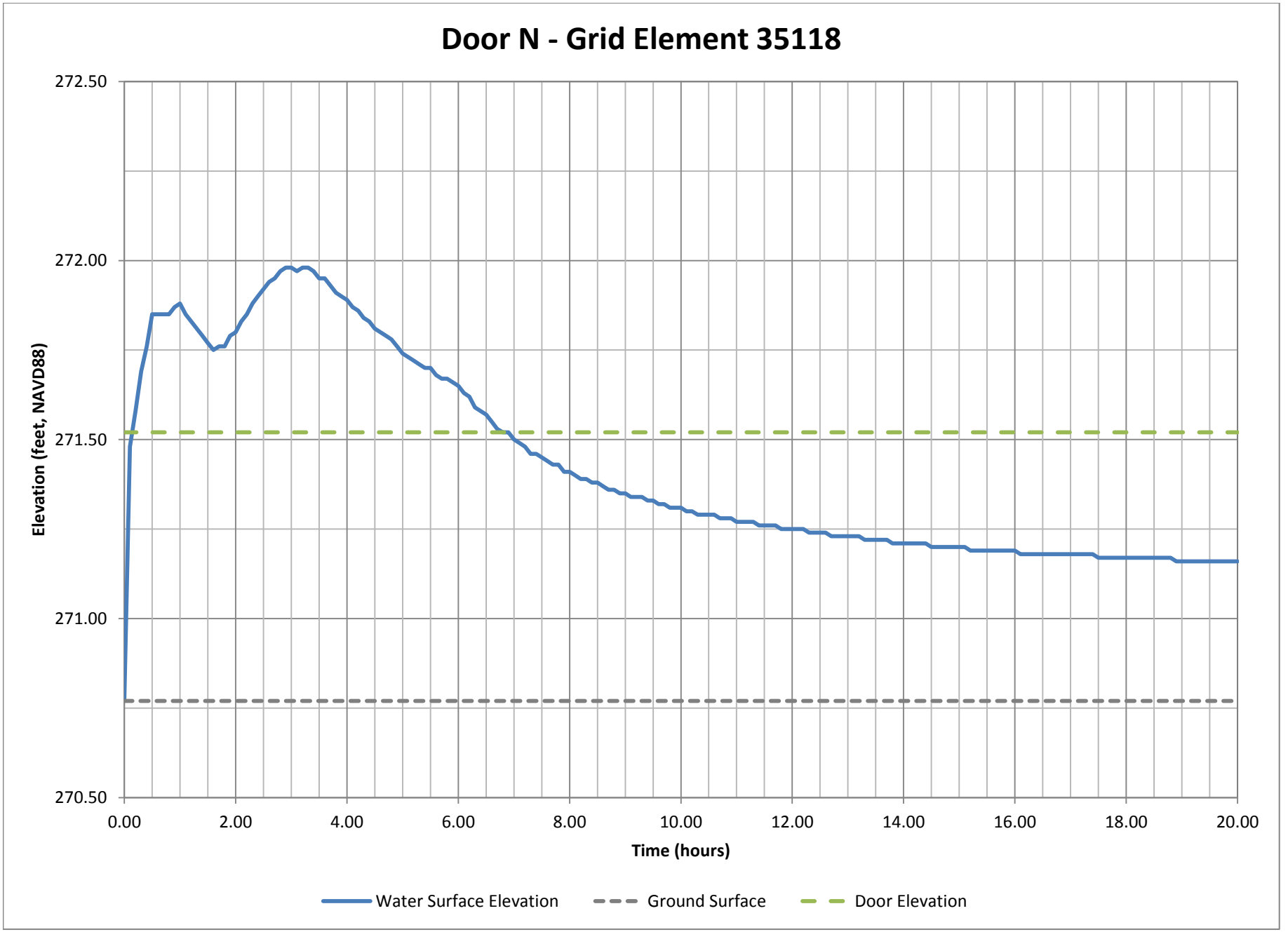

Door I - Grid Element 24262
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

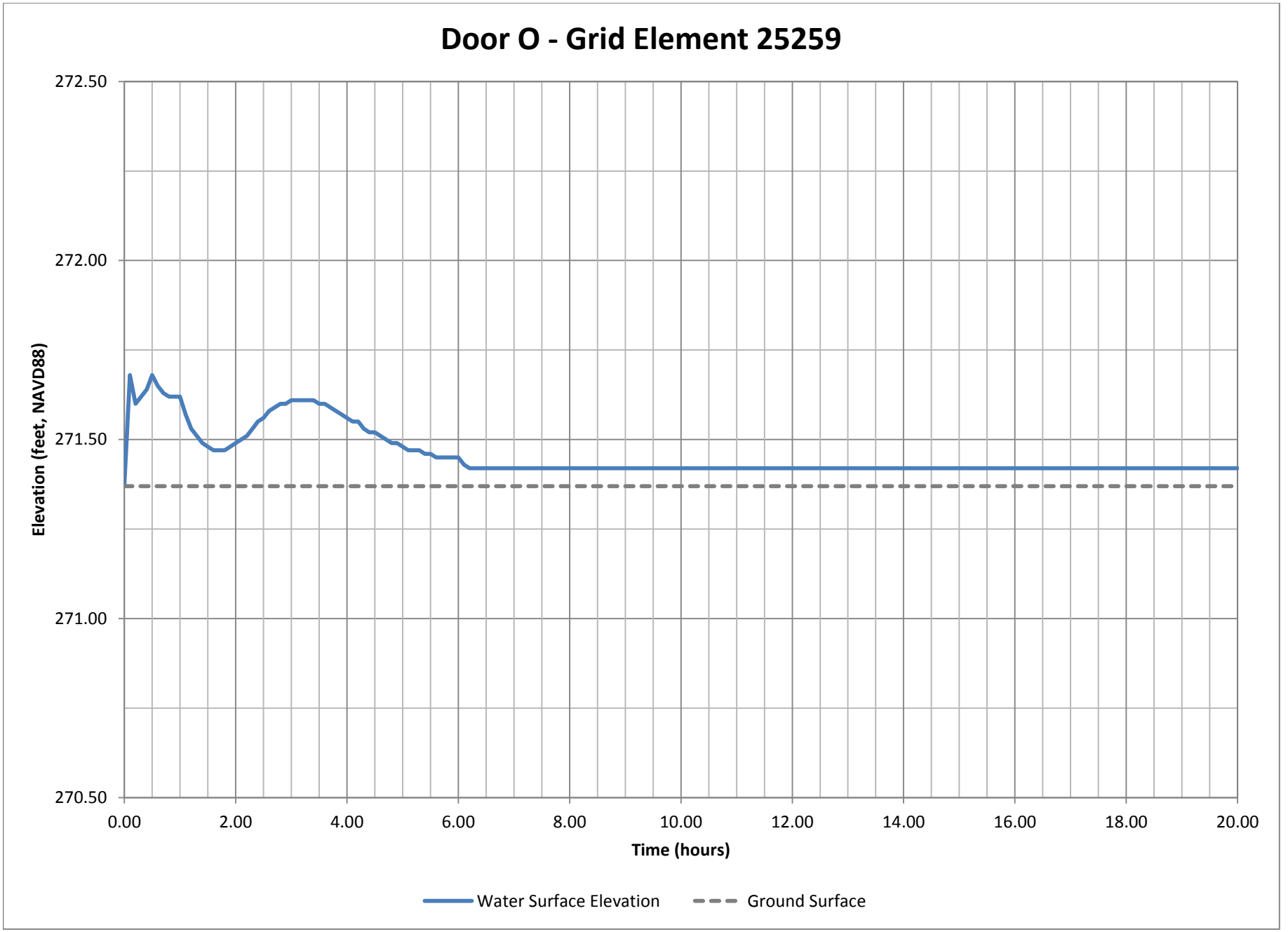

Door J - Grid Element 27629
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

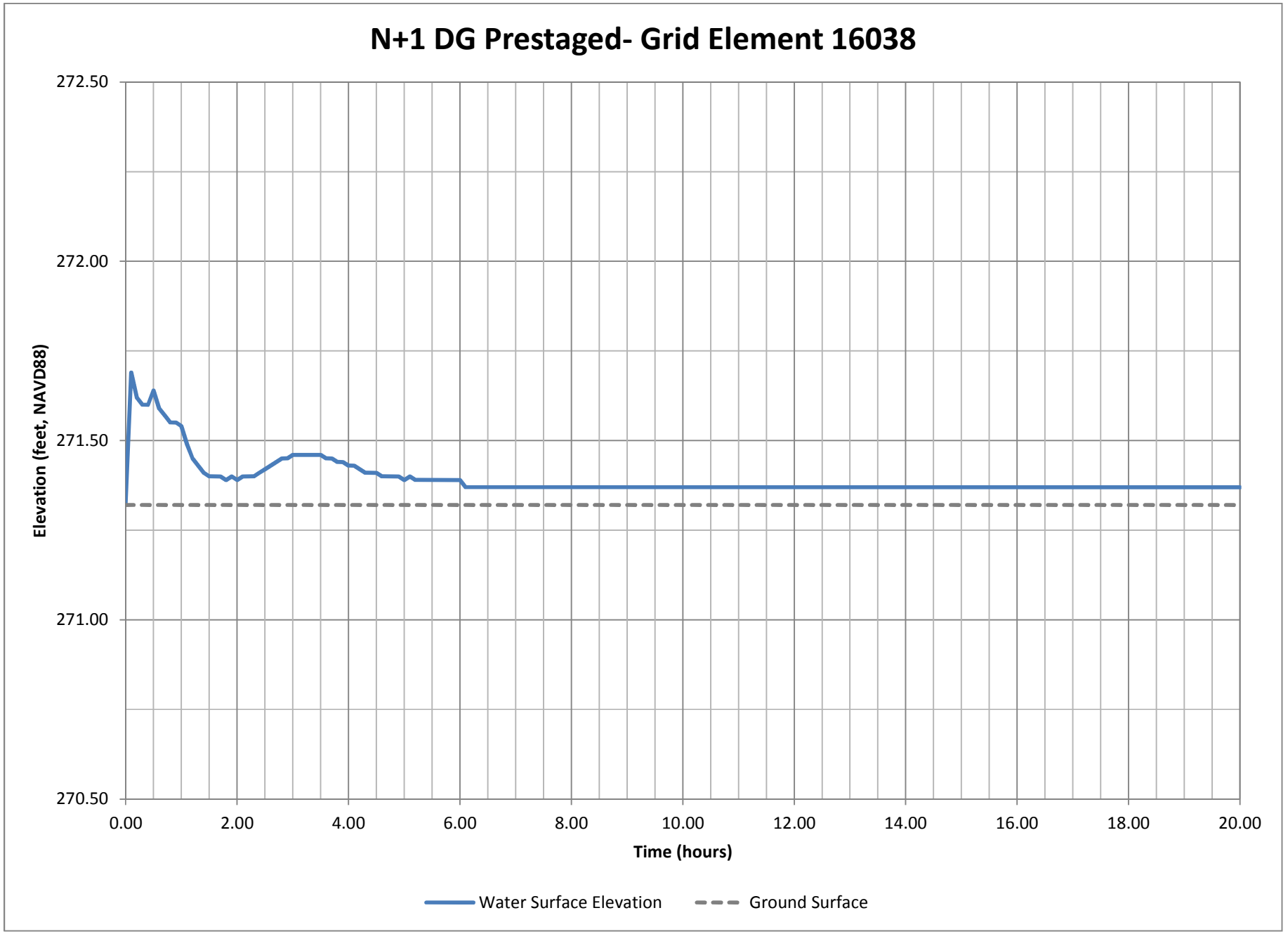

Door K - Grid Element 33641
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

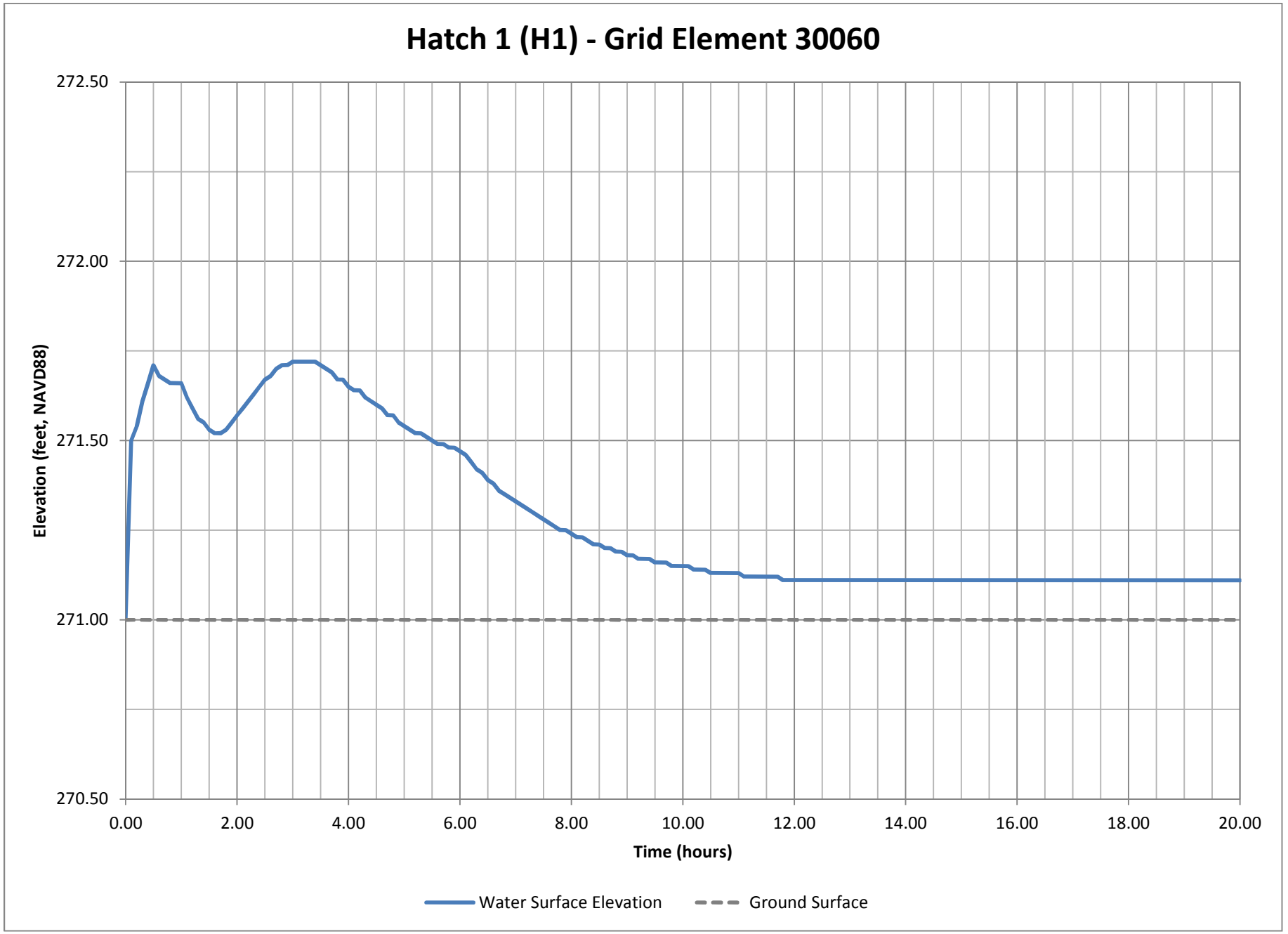

Door L - Grid Element 33643
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

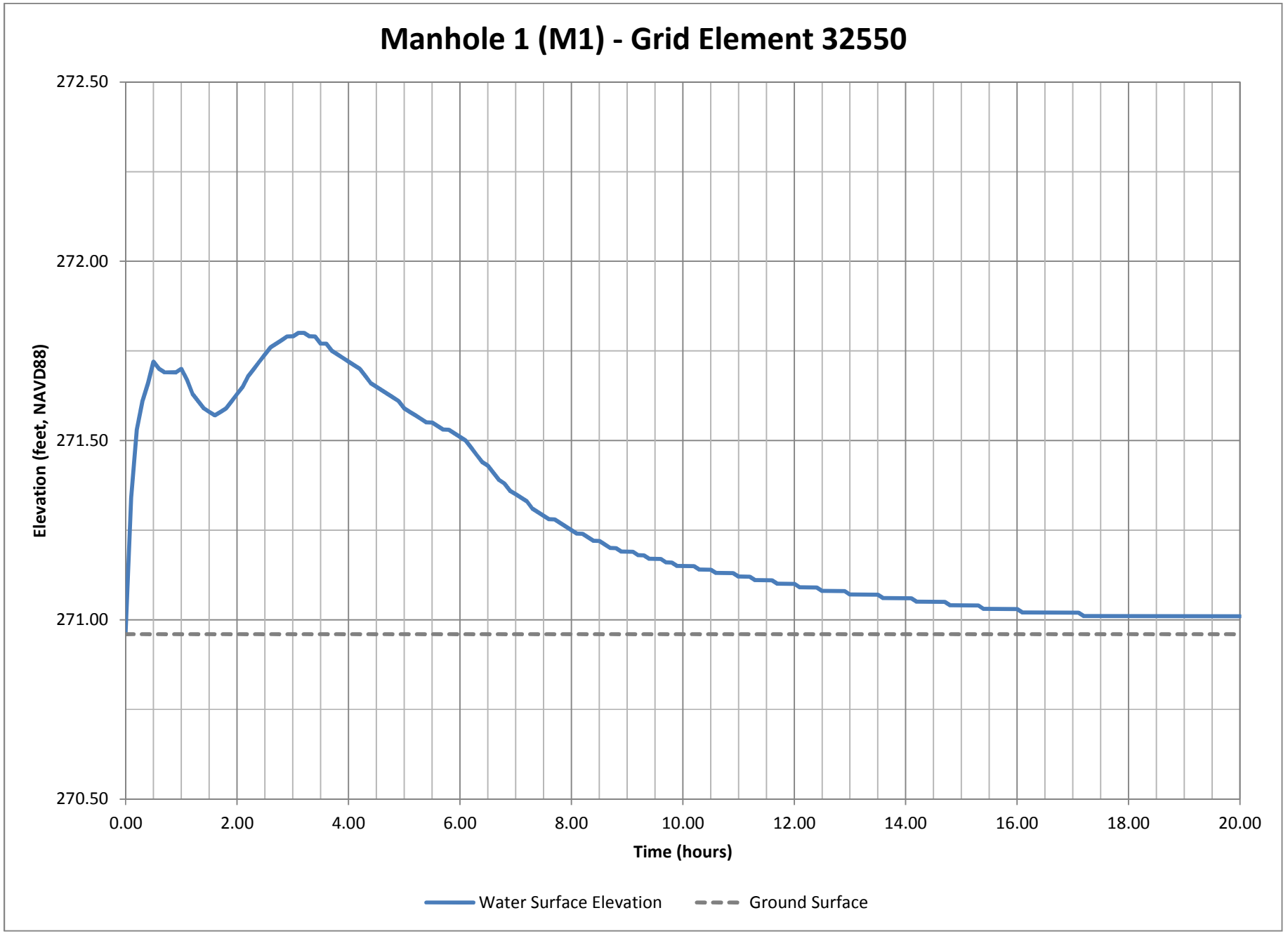

Door M - Grid Element 35482
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

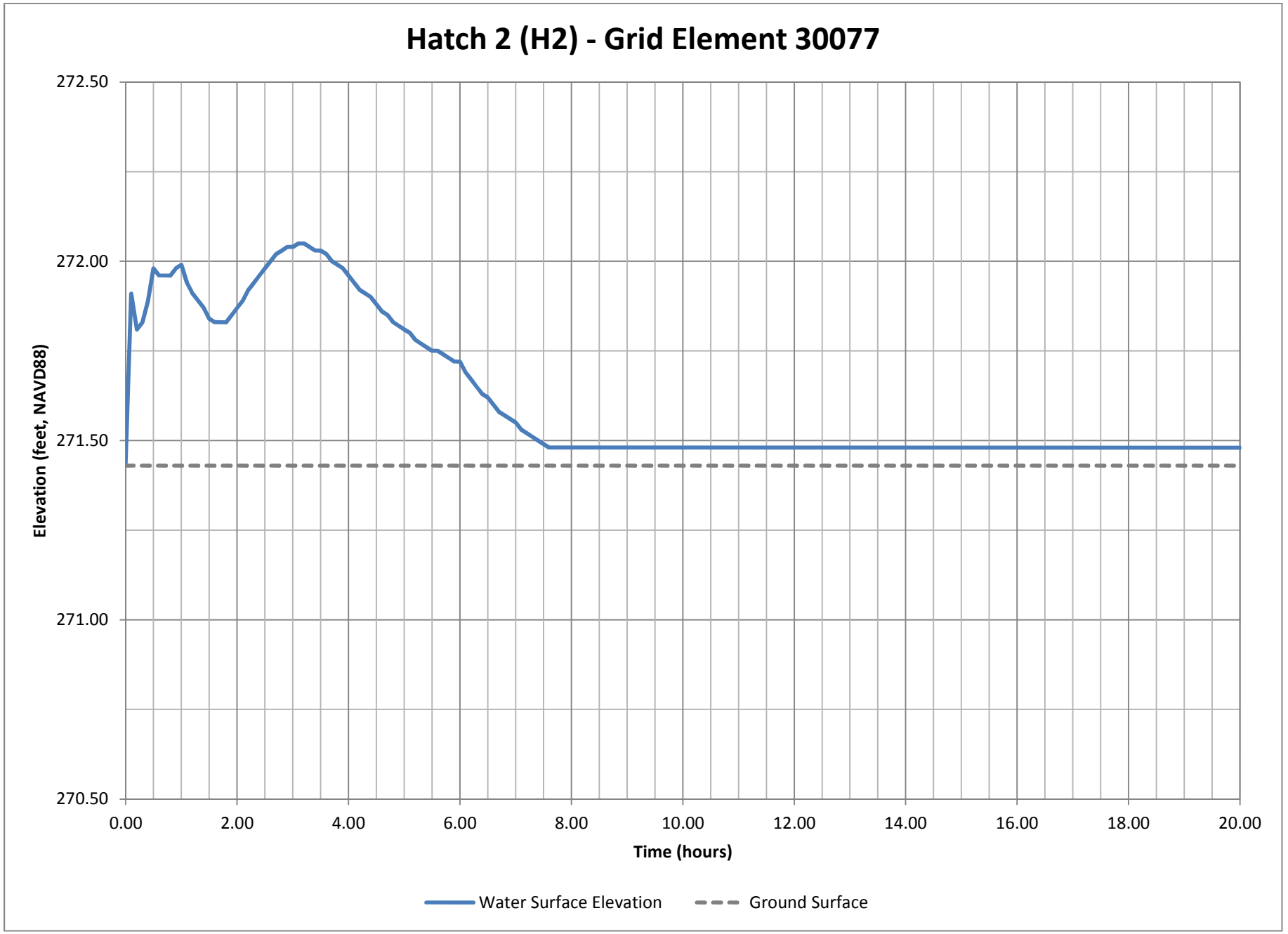

Door N - Grid Element 35118
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

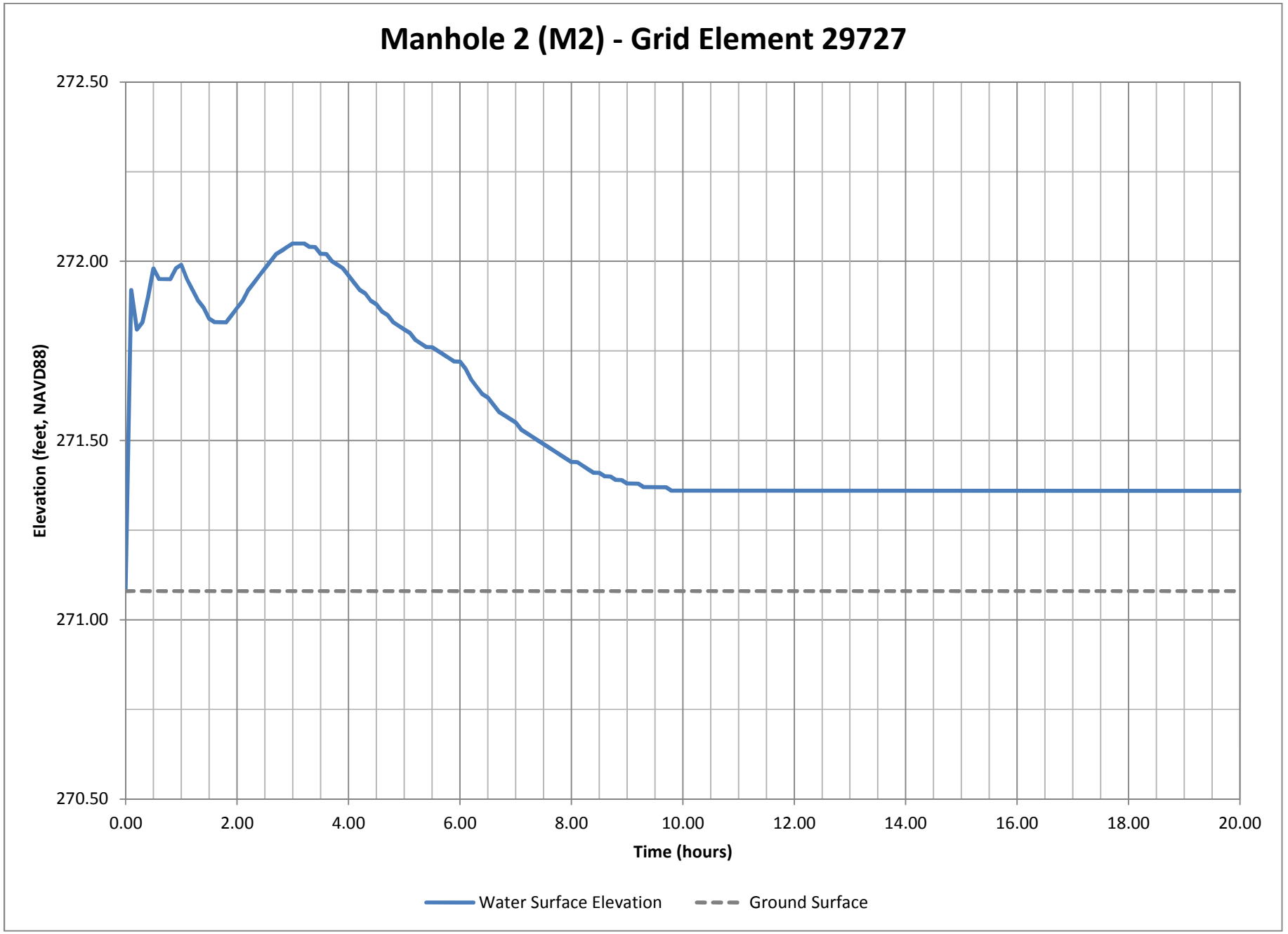

Door O - Grid Element 25259
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

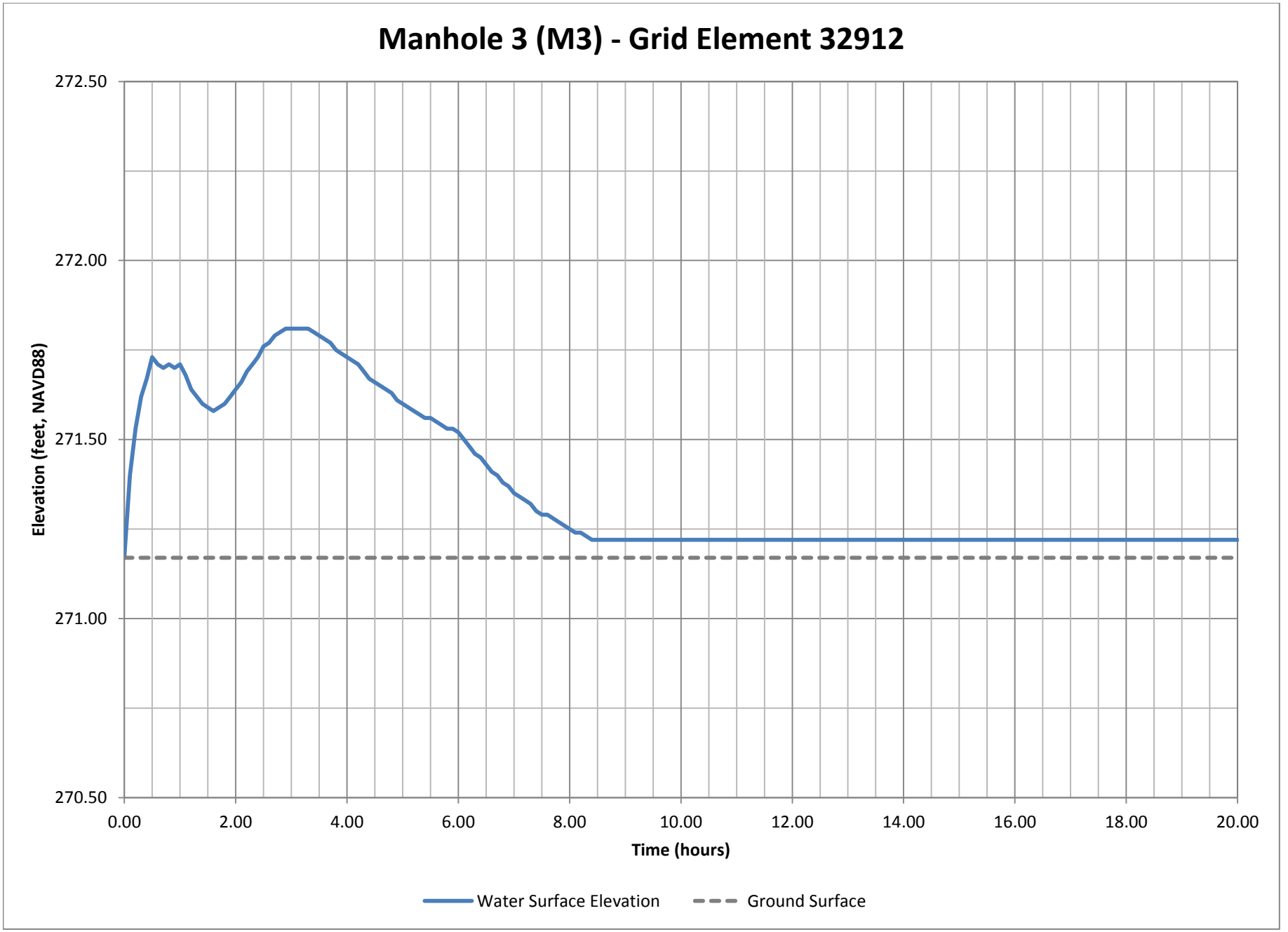

N+1 DG Prestaged- Grid Element 16038
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface


Hatch 1 (H1) - Grid Element 30060
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 1 (M1) - Grid Element 32550
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface


Hatch 2 (H2) - Grid Element 30077
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 2 (M2) - Grid Element 29727
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 3 (M3) - Grid Element 32912
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Time (hours)
Water Surface Elevation
Ground Surface

APPENDIX B: PROBABLE MAXIMUM FLOOD ON LOCAL UNNAMED STREAM

B.1 Unnamed Stream PMF Time Series Hydrographs at Reporting Locations

See following pages Appendix B pages.

B.2 FLO-2D Input/Output Files

Due to the large size and formatting of the FLO-2D input/output files, this data is provided as an electronic attachment. The information has been archived in the AREVA file management system, ColdStor. The path to the file is: \cold\General-Access\51\51-9227066-001\official.

Additionally, this information is provided electronically with this report in a zipfile named "51-9227066-001 Electronic Appendices.zip"

B.3 Unnamed Stream PMF Results – Large Format Figures

Due to the large file size of the large format figures, they are provided as an electronic attachment. The information has been archived in the AREVA file management system, ColdStor. The path to the file is: \cold\General-Access\51\51-9227066-001\official.

Additionally, this information is provided electronically with this report in a zipfile named "51-9227066-001 Electronic Appendices.zip"

PMF FLO-2D CRITICAL GRID ELEMENT TIME SERIES HYDROGRAPHS

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.28
0.50	0.00	0.00	271.28
1.00	0.00	0.00	271.28
1.50	0.00	0.00	271.28
2.00	0.00	0.00	271.28
2.50	0.00	0.00	271.28
3.00	0.00	0.00	271.28
3.50	0.00	0.00	271.28
4.00	0.00	0.00	271.28
4.50	0.00	0.00	271.28
5.00	0.00	0.00	271.28
5.50	0.00	0.00	271.28
6.00	0.00	0.00	271.28
6.50	0.00	0.00	271.28
7.00	0.00	0.00	271.28
7.50	0.00	0.00	271.28
8.00	0.00	0.00	271.28
8.50	0.00	0.00	271.28
9.00	0.00	0.00	271.28
9.50	0.00	0.00	271.28
10.00	0.00	0.00	271.28
10.50	0.00	0.00	271.28
11.00	0.00	0.00	271.28
11.50	0.00	0.00	271.28
12.00	0.00	0.00	271.28
12.50	0.00	0.00	271.28
13.00	0.00	0.00	271.28
13.50	0.00	0.00	271.28
14.00	0.00	0.00	271.28
14.50	0.00	0.00	271.28
15.00	0.00	0.00	271.28
15.50	0.00	0.00	271.28
16.00	0.00	0.00	271.28
16.50	0.00	0.00	271.28
17.00	0.00	0.00	271.28
17.50	0.00	0.00	271.28
18.00	0.00	0.00	271.28
18.50	0.00	0.00	271.28
19.00	0.00	0.00	271.28
19.50	0.00	0.00	271.28
20.00	0.00	0.00	271.28
20.50	0.00	0.00	271.28
21.00	0.00	0.00	271.28
21.50	0.00	0.00	271.28
22.00	0.00	0.00	271.28
22.50	0.00	0.00	271.28
23.00	0.00	0.00	271.28
23.50	0.00	0.00	271.28
24.00	0.00	0.00	271.28
24.50	0.00	0.00	271.28
25.00	0.00	0.00	271.28
25.50	0.00	0.00	271.28
26.00	0.00	0.00	271.28
26.50	0.00	0.00	271.28
27.00	0.00	0.00	271.28
27.50	0.00	0.00	271.28

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.91
0.50	0.00	0.00	270.91
1.00	0.00	0.00	270.91
1.50	0.00	0.00	270.91
2.00	0.00	0.00	270.91
2.50	0.00	0.00	270.91
3.00	0.00	0.00	270.91
3.50	0.00	0.00	270.91
4.00	0.00	0.00	270.91
4.50	0.00	0.00	270.91
5.00	0.00	0.00	270.91
5.50	0.00	0.00	270.91
6.00	0.00	0.00	270.91
6.50	0.00	0.00	270.91
7.00	0.00	0.00	270.91
7.50	0.00	0.00	270.91
8.00	0.00	0.00	270.91
8.50	0.00	0.00	270.91
9.00	0.00	0.00	270.91
9.50	0.00	0.00	270.91
10.00	0.00	0.00	270.91
10.50	0.00	0.00	270.91
11.00	0.00	0.00	270.91
11.50	0.00	0.00	270.91
12.00	0.00	0.00	270.91
12.50	0.00	0.00	270.91
13.00	0.00	0.00	270.91
13.50	0.00	0.00	270.91
14.00	0.00	0.00	270.91
14.50	0.00	0.00	270.91
15.00	0.00	0.00	270.91
15.50	0.00	0.00	270.91
16.00	0.00	0.00	270.91
16.50	0.00	0.00	270.91
17.00	0.00	0.00	270.91
17.50	0.00	0.00	270.91
18.00	0.00	0.00	270.91
18.50	0.00	0.00	270.91
19.00	0.00	0.00	270.91
19.50	0.00	0.00	270.91
20.00	0.00	0.00	270.91
20.50	0.00	0.00	270.91
21.00	0.00	0.00	270.91
21.50	0.00	0.00	270.91
22.00	0.00	0.00	270.91
22.50	0.00	0.00	270.91
23.00	0.00	0.00	270.91
23.50	0.00	0.00	270.91
24.00	0.00	0.00	270.91
24.50	0.00	0.00	270.91
25.00	0.00	0.00	270.91
25.50	0.00	0.00	270.91
26.00	0.00	0.00	270.91
26.50	0.00	0.00	270.91
27.00	0.00	0.00	270.91
27.50	0.00	0.00	270.91

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.28
28.50	0.00	0.00	271.28
29.00	0.00	0.00	271.28
29.50	0.00	0.00	271.28
30.00	0.00	0.00	271.28
30.50	0.00	0.00	271.28
31.00	0.00	0.00	271.28
31.50	0.00	0.00	271.28
32.00	0.00	0.00	271.28
32.50	0.00	0.00	271.28
33.00	0.00	0.00	271.28
33.50	0.00	0.00	271.28
34.00	0.00	0.00	271.28
34.50	0.00	0.00	271.28
35.00	0.00	0.00	271.28
35.50	0.00	0.00	271.28
36.00	0.00	0.00	271.28
36.50	0.00	0.00	271.28
37.00	0.00	0.00	271.28
37.50	0.00	0.00	271.28
38.00	0.00	0.00	271.28
38.50	0.00	0.00	271.28
39.00	0.00	0.00	271.28
39.50	0.00	0.00	271.28
40.10	0.00	0.00	271.28
40.60	0.00	0.00	271.28
41.10	0.00	0.00	271.28
41.60	0.00	0.00	271.28
42.10	0.00	0.00	271.28
42.60	0.00	0.00	271.28
43.10	0.00	0.00	271.28
43.60	0.00	0.00	271.28
44.10	0.00	0.00	271.28
44.60	0.00	0.00	271.28
45.10	0.00	0.00	271.28
45.60	0.00	0.00	271.28
46.10	0.00	0.00	271.28
46.60	0.00	0.00	271.28
47.10	0.00	0.00	271.28
47.60	0.00	0.00	271.28
48.10	0.00	0.00	271.28
48.60	0.00	0.00	271.28
49.10	0.00	0.00	271.28
49.60	0.00	0.00	271.28
50.10	0.00	0.00	271.28
50.60	0.00	0.00	271.28
51.10	0.00	0.00	271.28
51.60	0.00	0.00	271.28
52.10	0.00	0.00	271.28
52.60	0.00	0.00	271.28
53.10	0.00	0.00	271.28
53.60	0.00	0.00	271.28
54.10	0.00	0.00	271.28
54.60	0.00	0.00	271.28
55.10	0.00	0.00	271.28
55.60	0.00	0.00	271.28

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.91
28.50	0.00	0.00	270.91
29.00	0.00	0.00	270.91
29.50	0.00	0.00	270.91
30.00	0.00	0.00	270.91
30.50	0.00	0.00	270.91
31.00	0.00	0.00	270.91
31.50	0.00	0.00	270.91
32.00	0.00	0.00	270.91
32.50	0.00	0.00	270.91
33.00	0.00	0.00	270.91
33.50	0.00	0.00	270.91
34.00	0.00	0.00	270.91
34.50	0.00	0.00	270.91
35.00	0.00	0.00	270.91
35.50	0.00	0.00	270.91
36.00	0.00	0.00	270.91
36.50	0.00	0.00	270.91
37.00	0.00	0.00	270.91
37.50	0.00	0.00	270.91
38.00	0.00	0.00	270.91
38.50	0.00	0.00	270.91
39.00	0.00	0.00	270.91
39.50	0.00	0.00	270.91
40.10	0.00	0.00	270.91
40.60	0.00	0.00	270.91
41.10	0.00	0.00	270.91
41.60	0.00	0.00	270.91
42.10	0.00	0.00	270.91
42.60	0.00	0.16	271.07
43.10	0.00	0.20	271.11
43.60	0.00	0.18	271.09
44.10	0.00	0.16	271.07
44.60	0.00	0.13	271.04
45.10	0.00	0.11	271.02
45.60	0.00	0.09	271.00
46.10	0.00	0.07	270.98
46.60	0.00	0.06	270.97
47.10	0.00	0.05	270.96
47.60	0.00	0.05	270.96
48.10	0.00	0.05	270.96
48.60	0.00	0.05	270.96
49.10	0.00	0.05	270.96
49.60	0.00	0.05	270.96
50.10	0.00	0.05	270.96
50.60	0.00	0.05	270.96
51.10	0.00	0.05	270.96
51.60	0.00	0.05	270.96
52.10	0.00	0.05	270.96
52.60	0.00	0.05	270.96
53.10	0.00	0.05	270.96
53.60	0.00	0.05	270.96
54.10	0.00	0.05	270.96
54.60	0.00	0.05	270.96
55.10	0.00	0.05	270.96
55.60	0.00	0.05	270.96

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.00	271.28
56.60	0.00	0.00	271.28
57.10	0.00	0.00	271.28
57.60	0.00	0.00	271.28
58.10	0.00	0.00	271.28
58.60	0.00	0.00	271.28
59.10	0.00	0.00	271.28
59.60	0.00	0.00	271.28
60.10	0.00	0.00	271.28
60.60	0.00	0.00	271.28
61.10	0.00	0.00	271.28
61.60	0.00	0.00	271.28
62.10	0.00	0.00	271.28
62.60	0.00	0.00	271.28
63.10	0.00	0.00	271.28
63.60	0.00	0.00	271.28
64.10	0.00	0.00	271.28
64.60	0.00	0.00	271.28
65.10	0.00	0.00	271.28
65.60	0.00	0.00	271.28
66.10	0.00	0.00	271.28
66.60	0.00	0.00	271.28
67.10	0.00	0.00	271.28
67.60	0.00	0.00	271.28
68.10	0.00	0.00	271.28
68.60	0.00	0.00	271.28
69.10	0.00	0.00	271.28
69.60	0.00	0.00	271.28
70.10	0.00	0.00	271.28
70.60	0.00	0.00	271.28
71.10	0.00	0.00	271.28
71.60	0.00	0.00	271.28
72.10	0.00	0.00	271.28
72.60	0.00	0.00	271.28
73.10	0.00	0.00	271.28
73.60	0.00	0.00	271.28
74.10	0.00	0.00	271.28
74.60	0.00	0.00	271.28
75.10	0.00	0.00	271.28
75.60	0.00	0.00	271.28
76.10	0.00	0.00	271.28
76.60	0.00	0.00	271.28
77.10	0.00	0.00	271.28
77.60	0.00	0.00	271.28
78.10	0.00	0.00	271.28
78.60	0.00	0.00	271.28
79.10	0.00	0.00	271.28
79.60	0.00	0.00	271.28
80.10	0.00	0.00	271.28
80.60	0.00	0.00	271.28
81.10	0.00	0.00	271.28
81.60	0.00	0.00	271.28
82.10	0.00	0.00	271.28
82.60	0.00	0.00	271.28
83.10	0.00	0.00	271.28
83.60	0.00	0.00	271.28

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	270.96
56.60	0.00	0.05	270.96
57.10	0.00	0.05	270.96
57.60	0.00	0.05	270.96
58.10	0.00	0.05	270.96
58.60	0.00	0.05	270.96
59.10	0.00	0.05	270.96
59.60	0.00	0.05	270.96
60.10	0.00	0.05	270.96
60.60	0.00	0.05	270.96
61.10	0.00	0.05	270.96
61.60	0.00	0.05	270.96
62.10	0.00	0.05	270.96
62.60	0.00	0.05	270.96
63.10	0.00	0.05	270.96
63.60	0.00	0.05	270.96
64.10	0.00	0.05	270.96
64.60	0.00	0.05	270.96
65.10	0.00	0.05	270.96
65.60	0.00	0.05	270.96
66.10	0.00	0.05	270.96
66.60	0.00	0.05	270.96
67.10	0.00	0.05	270.96
67.60	0.00	0.05	270.96
68.10	0.00	0.05	270.96
68.60	0.00	0.05	270.96
69.10	0.00	0.05	270.96
69.60	0.00	0.05	270.96
70.10	0.00	0.05	270.96
70.60	0.00	0.05	270.96
71.10	0.00	0.05	270.96
71.60	0.00	0.05	270.96
72.10	0.00	0.05	270.96
72.60	0.00	0.05	270.96
73.10	0.00	0.05	270.96
73.60	0.00	0.05	270.96
74.10	0.00	0.05	270.96
74.60	0.00	0.05	270.96
75.10	0.00	0.05	270.96
75.60	0.00	0.05	270.96
76.10	0.00	0.05	270.96
76.60	0.00	0.05	270.96
77.10	0.00	0.05	270.96
77.60	0.00	0.05	270.96
78.10	0.00	0.05	270.96
78.60	0.00	0.05	270.96
79.10	0.00	0.05	270.96
79.60	0.00	0.05	270.96
80.10	0.00	0.05	270.96
80.60	0.00	0.05	270.96
81.10	0.00	0.05	270.96
81.60	0.00	0.05	270.96
82.10	0.00	0.05	270.96
82.60	0.00	0.05	270.96
83.10	0.00	0.05	270.96
83.60	0.00	0.05	270.96

Door - A			
Grid Elevation	271.28	(feet, NAVD88)	
Door Elevation	271.51		
Grid	Element: (20091)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.00	271.28
84.60	0.00	0.00	271.28
85.10	0.00	0.00	271.28
85.60	0.00	0.00	271.28
86.10	0.00	0.00	271.28
86.60	0.00	0.00	271.28
87.10	0.00	0.00	271.28
87.60	0.00	0.00	271.28
88.10	0.00	0.00	271.28
88.60	0.00	0.00	271.28
89.10	0.00	0.00	271.28
89.60	0.00	0.00	271.28
90.10	0.00	0.00	271.28

Door - B			
Grid Elevation	270.91	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (11873)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	270.96
84.60	0.00	0.05	270.96
85.10	0.00	0.05	270.96
85.60	0.00	0.05	270.96
86.10	0.00	0.05	270.96
86.60	0.00	0.05	270.96
87.10	0.00	0.05	270.96
87.60	0.00	0.05	270.96
88.10	0.00	0.05	270.96
88.60	0.00	0.05	270.96
89.10	0.00	0.05	270.96
89.60	0.00	0.05	270.96
90.10	0.00	0.05	270.96

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.06
0.50	0.00	0.00	271.06
1.00	0.00	0.00	271.06
1.50	0.00	0.00	271.06
2.00	0.00	0.00	271.06
2.50	0.00	0.00	271.06
3.00	0.00	0.00	271.06
3.50	0.00	0.00	271.06
4.00	0.00	0.00	271.06
4.50	0.00	0.00	271.06
5.00	0.00	0.00	271.06
5.50	0.00	0.00	271.06
6.00	0.00	0.00	271.06
6.50	0.00	0.00	271.06
7.00	0.00	0.00	271.06
7.50	0.00	0.00	271.06
8.00	0.00	0.00	271.06
8.50	0.00	0.00	271.06
9.00	0.00	0.00	271.06
9.50	0.00	0.00	271.06
10.00	0.00	0.00	271.06
10.50	0.00	0.00	271.06
11.00	0.00	0.00	271.06
11.50	0.00	0.00	271.06
12.00	0.00	0.00	271.06
12.50	0.00	0.00	271.06
13.00	0.00	0.00	271.06
13.50	0.00	0.00	271.06
14.00	0.00	0.00	271.06
14.50	0.00	0.00	271.06
15.00	0.00	0.00	271.06
15.50	0.00	0.00	271.06
16.00	0.00	0.00	271.06
16.50	0.00	0.00	271.06
17.00	0.00	0.00	271.06
17.50	0.00	0.00	271.06
18.00	0.00	0.00	271.06
18.50	0.00	0.00	271.06
19.00	0.00	0.00	271.06
19.50	0.00	0.00	271.06
20.00	0.00	0.00	271.06
20.50	0.00	0.00	271.06
21.00	0.00	0.00	271.06
21.50	0.00	0.00	271.06
22.00	0.00	0.00	271.06
22.50	0.00	0.00	271.06
23.00	0.00	0.00	271.06
23.50	0.00	0.00	271.06
24.00	0.00	0.00	271.06
24.50	0.00	0.00	271.06
25.00	0.00	0.00	271.06
25.50	0.00	0.00	271.06
26.00	0.00	0.00	271.06
26.50	0.00	0.00	271.06
27.00	0.00	0.00	271.06
27.50	0.00	0.00	271.06

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.53
0.50	0.00	0.00	271.53
1.00	0.00	0.00	271.53
1.50	0.00	0.00	271.53
2.00	0.00	0.00	271.53
2.50	0.00	0.00	271.53
3.00	0.00	0.00	271.53
3.50	0.00	0.00	271.53
4.00	0.00	0.00	271.53
4.50	0.00	0.00	271.53
5.00	0.00	0.00	271.53
5.50	0.00	0.00	271.53
6.00	0.00	0.00	271.53
6.50	0.00	0.00	271.53
7.00	0.00	0.00	271.53
7.50	0.00	0.00	271.53
8.00	0.00	0.00	271.53
8.50	0.00	0.00	271.53
9.00	0.00	0.00	271.53
9.50	0.00	0.00	271.53
10.00	0.00	0.00	271.53
10.50	0.00	0.00	271.53
11.00	0.00	0.00	271.53
11.50	0.00	0.00	271.53
12.00	0.00	0.00	271.53
12.50	0.00	0.00	271.53
13.00	0.00	0.00	271.53
13.50	0.00	0.00	271.53
14.00	0.00	0.00	271.53
14.50	0.00	0.00	271.53
15.00	0.00	0.00	271.53
15.50	0.00	0.00	271.53
16.00	0.00	0.00	271.53
16.50	0.00	0.00	271.53
17.00	0.00	0.00	271.53
17.50	0.00	0.00	271.53
18.00	0.00	0.00	271.53
18.50	0.00	0.00	271.53
19.00	0.00	0.00	271.53
19.50	0.00	0.00	271.53
20.00	0.00	0.00	271.53
20.50	0.00	0.00	271.53
21.00	0.00	0.00	271.53
21.50	0.00	0.00	271.53
22.00	0.00	0.00	271.53
22.50	0.00	0.00	271.53
23.00	0.00	0.00	271.53
23.50	0.00	0.00	271.53
24.00	0.00	0.00	271.53
24.50	0.00	0.00	271.53
25.00	0.00	0.00	271.53
25.50	0.00	0.00	271.53
26.00	0.00	0.00	271.53
26.50	0.00	0.00	271.53
27.00	0.00	0.00	271.53
27.50	0.00	0.00	271.53

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.06
28.50	0.00	0.00	271.06
29.00	0.00	0.00	271.06
29.50	0.00	0.00	271.06
30.00	0.00	0.00	271.06
30.50	0.00	0.00	271.06
31.00	0.00	0.00	271.06
31.50	0.00	0.00	271.06
32.00	0.00	0.00	271.06
32.50	0.00	0.00	271.06
33.00	0.00	0.00	271.06
33.50	0.00	0.00	271.06
34.00	0.00	0.00	271.06
34.50	0.00	0.00	271.06
35.00	0.00	0.00	271.06
35.50	0.00	0.00	271.06
36.00	0.00	0.00	271.06
36.50	0.00	0.00	271.06
37.00	0.00	0.00	271.06
37.50	0.00	0.00	271.06
38.00	0.00	0.00	271.06
38.50	0.00	0.00	271.06
39.00	0.00	0.00	271.06
39.50	0.00	0.00	271.06
40.10	0.00	0.00	271.06
40.60	0.00	0.00	271.06
41.10	0.00	0.00	271.06
41.60	0.00	0.00	271.06
42.10	0.07	0.07	271.13
42.60	0.05	0.24	271.30
43.10	0.02	0.21	271.27
43.60	0.02	0.19	271.25
44.10	0.01	0.15	271.21
44.60	0.01	0.11	271.17
45.10	0.00	0.09	271.15
45.60	0.00	0.08	271.14
46.10	0.00	0.08	271.14
46.60	0.00	0.08	271.14
47.10	0.00	0.08	271.14
47.60	0.00	0.08	271.14
48.10	0.00	0.08	271.14
48.60	0.00	0.08	271.14
49.10	0.00	0.08	271.14
49.60	0.00	0.08	271.14
50.10	0.00	0.08	271.14
50.60	0.00	0.08	271.14
51.10	0.00	0.08	271.14
51.60	0.00	0.08	271.14
52.10	0.00	0.08	271.14
52.60	0.00	0.08	271.14
53.10	0.00	0.08	271.14
53.60	0.00	0.08	271.14
54.10	0.00	0.08	271.14
54.60	0.00	0.08	271.14
55.10	0.00	0.08	271.14
55.60	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.53
28.50	0.00	0.00	271.53
29.00	0.00	0.00	271.53
29.50	0.00	0.00	271.53
30.00	0.00	0.00	271.53
30.50	0.00	0.00	271.53
31.00	0.00	0.00	271.53
31.50	0.00	0.00	271.53
32.00	0.00	0.00	271.53
32.50	0.00	0.00	271.53
33.00	0.00	0.00	271.53
33.50	0.00	0.00	271.53
34.00	0.00	0.00	271.53
34.50	0.00	0.00	271.53
35.00	0.00	0.00	271.53
35.50	0.00	0.00	271.53
36.00	0.00	0.00	271.53
36.50	0.00	0.00	271.53
37.00	0.00	0.00	271.53
37.50	0.00	0.00	271.53
38.00	0.00	0.00	271.53
38.50	0.00	0.00	271.53
39.00	0.00	0.00	271.53
39.50	0.00	0.00	271.53
40.10	0.00	0.00	271.53
40.60	0.00	0.00	271.53
41.10	0.00	0.00	271.53
41.60	0.00	0.00	271.53
42.10	0.00	0.00	271.53
42.60	0.00	0.00	271.53
43.10	0.00	0.00	271.53
43.60	0.00	0.00	271.53
44.10	0.00	0.00	271.53
44.60	0.00	0.00	271.53
45.10	0.00	0.00	271.53
45.60	0.00	0.00	271.53
46.10	0.00	0.00	271.53
46.60	0.00	0.00	271.53
47.10	0.00	0.00	271.53
47.60	0.00	0.00	271.53
48.10	0.00	0.00	271.53
48.60	0.00	0.00	271.53
49.10	0.00	0.00	271.53
49.60	0.00	0.00	271.53
50.10	0.00	0.00	271.53
50.60	0.00	0.00	271.53
51.10	0.00	0.00	271.53
51.60	0.00	0.00	271.53
52.10	0.00	0.00	271.53
52.60	0.00	0.00	271.53
53.10	0.00	0.00	271.53
53.60	0.00	0.00	271.53
54.10	0.00	0.00	271.53
54.60	0.00	0.00	271.53
55.10	0.00	0.00	271.53
55.60	0.00	0.00	271.53

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.08	271.14
56.60	0.00	0.08	271.14
57.10	0.00	0.08	271.14
57.60	0.00	0.08	271.14
58.10	0.00	0.08	271.14
58.60	0.00	0.08	271.14
59.10	0.00	0.08	271.14
59.60	0.00	0.08	271.14
60.10	0.00	0.08	271.14
60.60	0.00	0.08	271.14
61.10	0.00	0.08	271.14
61.60	0.00	0.08	271.14
62.10	0.00	0.08	271.14
62.60	0.00	0.08	271.14
63.10	0.00	0.08	271.14
63.60	0.00	0.08	271.14
64.10	0.00	0.08	271.14
64.60	0.00	0.08	271.14
65.10	0.00	0.08	271.14
65.60	0.00	0.08	271.14
66.10	0.00	0.08	271.14
66.60	0.00	0.08	271.14
67.10	0.00	0.08	271.14
67.60	0.00	0.08	271.14
68.10	0.00	0.08	271.14
68.60	0.00	0.08	271.14
69.10	0.00	0.08	271.14
69.60	0.00	0.08	271.14
70.10	0.00	0.08	271.14
70.60	0.00	0.08	271.14
71.10	0.00	0.08	271.14
71.60	0.00	0.08	271.14
72.10	0.00	0.08	271.14
72.60	0.00	0.08	271.14
73.10	0.00	0.08	271.14
73.60	0.00	0.08	271.14
74.10	0.00	0.08	271.14
74.60	0.00	0.08	271.14
75.10	0.00	0.08	271.14
75.60	0.00	0.08	271.14
76.10	0.00	0.08	271.14
76.60	0.00	0.08	271.14
77.10	0.00	0.08	271.14
77.60	0.00	0.08	271.14
78.10	0.00	0.08	271.14
78.60	0.00	0.08	271.14
79.10	0.00	0.08	271.14
79.60	0.00	0.08	271.14
80.10	0.00	0.08	271.14
80.60	0.00	0.08	271.14
81.10	0.00	0.08	271.14
81.60	0.00	0.08	271.14
82.10	0.00	0.08	271.14
82.60	0.00	0.08	271.14
83.10	0.00	0.08	271.14
83.60	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.00	271.53
56.60	0.00	0.00	271.53
57.10	0.00	0.00	271.53
57.60	0.00	0.00	271.53
58.10	0.00	0.00	271.53
58.60	0.00	0.00	271.53
59.10	0.00	0.00	271.53
59.60	0.00	0.00	271.53
60.10	0.00	0.00	271.53
60.60	0.00	0.00	271.53
61.10	0.00	0.00	271.53
61.60	0.00	0.00	271.53
62.10	0.00	0.00	271.53
62.60	0.00	0.00	271.53
63.10	0.00	0.00	271.53
63.60	0.00	0.00	271.53
64.10	0.00	0.00	271.53
64.60	0.00	0.00	271.53
65.10	0.00	0.00	271.53
65.60	0.00	0.00	271.53
66.10	0.00	0.00	271.53
66.60	0.00	0.00	271.53
67.10	0.00	0.00	271.53
67.60	0.00	0.00	271.53
68.10	0.00	0.00	271.53
68.60	0.00	0.00	271.53
69.10	0.00	0.00	271.53
69.60	0.00	0.00	271.53
70.10	0.00	0.00	271.53
70.60	0.00	0.00	271.53
71.10	0.00	0.00	271.53
71.60	0.00	0.00	271.53
72.10	0.00	0.00	271.53
72.60	0.00	0.00	271.53
73.10	0.00	0.00	271.53
73.60	0.00	0.00	271.53
74.10	0.00	0.00	271.53
74.60	0.00	0.00	271.53
75.10	0.00	0.00	271.53
75.60	0.00	0.00	271.53
76.10	0.00	0.00	271.53
76.60	0.00	0.00	271.53
77.10	0.00	0.00	271.53
77.60	0.00	0.00	271.53
78.10	0.00	0.00	271.53
78.60	0.00	0.00	271.53
79.10	0.00	0.00	271.53
79.60	0.00	0.00	271.53
80.10	0.00	0.00	271.53
80.60	0.00	0.00	271.53
81.10	0.00	0.00	271.53
81.60	0.00	0.00	271.53
82.10	0.00	0.00	271.53
82.60	0.00	0.00	271.53
83.10	0.00	0.00	271.53
83.60	0.00	0.00	271.53

Door - C			
Grid Elevation	271.06	(feet, NAVD88)	
Door Elevation	271.53		
Grid	Element: (11866)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.08	271.14
84.60	0.00	0.08	271.14
85.10	0.00	0.08	271.14
85.60	0.00	0.08	271.14
86.10	0.00	0.08	271.14
86.60	0.00	0.08	271.14
87.10	0.00	0.08	271.14
87.60	0.00	0.08	271.14
88.10	0.00	0.08	271.14
88.60	0.00	0.08	271.14
89.10	0.00	0.08	271.14
89.60	0.00	0.08	271.14
90.10	0.00	0.08	271.14

Door - D			
Grid Elevation	271.53	(feet, NAVD88)	
Door Elevation	271.62		
Grid	Element: (10982)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.00	271.53
84.60	0.00	0.00	271.53
85.10	0.00	0.00	271.53
85.60	0.00	0.00	271.53
86.10	0.00	0.00	271.53
86.60	0.00	0.00	271.53
87.10	0.00	0.00	271.53
87.60	0.00	0.00	271.53
88.10	0.00	0.00	271.53
88.60	0.00	0.00	271.53
89.10	0.00	0.00	271.53
89.60	0.00	0.00	271.53
90.10	0.00	0.00	271.53

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.54
0.50	0.00	0.00	270.54
1.00	0.00	0.00	270.54
1.50	0.00	0.00	270.54
2.00	0.00	0.00	270.54
2.50	0.00	0.00	270.54
3.00	0.00	0.00	270.54
3.50	0.00	0.00	270.54
4.00	0.00	0.00	270.54
4.50	0.00	0.00	270.54
5.00	0.00	0.00	270.54
5.50	0.00	0.00	270.54
6.00	0.00	0.00	270.54
6.50	0.00	0.00	270.54
7.00	0.00	0.00	270.54
7.50	0.00	0.00	270.54
8.00	0.00	0.00	270.54
8.50	0.00	0.00	270.54
9.00	0.00	0.00	270.54
9.50	0.00	0.00	270.54
10.00	0.00	0.00	270.54
10.50	0.00	0.00	270.54
11.00	0.00	0.00	270.54
11.50	0.00	0.00	270.54
12.00	0.00	0.00	270.54
12.50	0.00	0.00	270.54
13.00	0.00	0.00	270.54
13.50	0.00	0.00	270.54
14.00	0.00	0.00	270.54
14.50	0.00	0.00	270.54
15.00	0.00	0.00	270.54
15.50	0.00	0.00	270.54
16.00	0.00	0.00	270.54
16.50	0.00	0.00	270.54
17.00	0.00	0.00	270.54
17.50	0.00	0.00	270.54
18.00	0.00	0.00	270.54
18.50	0.00	0.00	270.54
19.00	0.00	0.00	270.54
19.50	0.00	0.00	270.54
20.00	0.00	0.00	270.54
20.50	0.00	0.00	270.54
21.00	0.00	0.00	270.54
21.50	0.00	0.00	270.54
22.00	0.00	0.00	270.54
22.50	0.00	0.00	270.54
23.00	0.00	0.00	270.54
23.50	0.00	0.00	270.54
24.00	0.00	0.00	270.54
24.50	0.00	0.00	270.54
25.00	0.00	0.00	270.54
25.50	0.00	0.00	270.54
26.00	0.00	0.00	270.54
26.50	0.00	0.00	270.54
27.00	0.00	0.00	270.54
27.50	0.00	0.00	270.54

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.52
0.50	0.00	0.00	270.52
1.00	0.00	0.00	270.52
1.50	0.00	0.00	270.52
2.00	0.00	0.00	270.52
2.50	0.00	0.00	270.52
3.00	0.00	0.00	270.52
3.50	0.00	0.00	270.52
4.00	0.00	0.00	270.52
4.50	0.00	0.00	270.52
5.00	0.00	0.00	270.52
5.50	0.00	0.00	270.52
6.00	0.00	0.00	270.52
6.50	0.00	0.00	270.52
7.00	0.00	0.00	270.52
7.50	0.00	0.00	270.52
8.00	0.00	0.00	270.52
8.50	0.00	0.00	270.52
9.00	0.00	0.00	270.52
9.50	0.00	0.00	270.52
10.00	0.00	0.00	270.52
10.50	0.00	0.00	270.52
11.00	0.00	0.00	270.52
11.50	0.00	0.00	270.52
12.00	0.00	0.00	270.52
12.50	0.00	0.00	270.52
13.00	0.00	0.00	270.52
13.50	0.00	0.00	270.52
14.00	0.00	0.00	270.52
14.50	0.00	0.00	270.52
15.00	0.00	0.00	270.52
15.50	0.00	0.00	270.52
16.00	0.00	0.00	270.52
16.50	0.00	0.00	270.52
17.00	0.00	0.00	270.52
17.50	0.00	0.00	270.52
18.00	0.00	0.00	270.52
18.50	0.00	0.00	270.52
19.00	0.00	0.00	270.52
19.50	0.00	0.00	270.52
20.00	0.00	0.00	270.52
20.50	0.00	0.00	270.52
21.00	0.00	0.00	270.52
21.50	0.00	0.00	270.52
22.00	0.00	0.00	270.52
22.50	0.00	0.00	270.52
23.00	0.00	0.00	270.52
23.50	0.00	0.00	270.52
24.00	0.00	0.00	270.52
24.50	0.00	0.00	270.52
25.00	0.00	0.00	270.52
25.50	0.00	0.00	270.52
26.00	0.00	0.00	270.52
26.50	0.00	0.00	270.52
27.00	0.00	0.00	270.52
27.50	0.00	0.00	270.52

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.54
28.50	0.00	0.00	270.54
29.00	0.00	0.00	270.54
29.50	0.00	0.00	270.54
30.00	0.00	0.00	270.54
30.50	0.00	0.00	270.54
31.00	0.00	0.00	270.54
31.50	0.00	0.00	270.54
32.00	0.00	0.00	270.54
32.50	0.00	0.00	270.54
33.00	0.00	0.00	270.54
33.50	0.00	0.00	270.54
34.00	0.00	0.00	270.54
34.50	0.00	0.00	270.54
35.00	0.00	0.00	270.54
35.50	0.00	0.00	270.54
36.00	0.00	0.00	270.54
36.50	0.00	0.00	270.54
37.00	0.00	0.00	270.54
37.50	0.00	0.00	270.54
38.00	0.00	0.00	270.54
38.50	0.00	0.00	270.54
39.00	0.00	0.00	270.54
39.50	0.00	0.00	270.54
40.10	0.00	0.00	270.54
40.60	0.00	0.00	270.54
41.10	0.00	0.00	270.54
41.60	0.03	0.36	270.90
42.10	0.25	0.85	271.39
42.60	0.16	0.84	271.38
43.10	0.12	0.80	271.34
43.60	0.06	0.75	271.29
44.10	0.05	0.69	271.23
44.60	0.00	0.63	271.17
45.10	0.00	0.58	271.12
45.60	0.02	0.54	271.08
46.10	0.00	0.51	271.05
46.60	0.00	0.48	271.02
47.10	0.00	0.46	271.00
47.60	0.00	0.45	270.99
48.10	0.00	0.44	270.98
48.60	0.00	0.43	270.97
49.10	0.00	0.42	270.96
49.60	0.00	0.41	270.95
50.10	0.00	0.40	270.94
50.60	0.00	0.40	270.94
51.10	0.00	0.39	270.93
51.60	0.00	0.39	270.93
52.10	0.00	0.38	270.92
52.60	0.00	0.38	270.92
53.10	0.00	0.37	270.91
53.60	0.00	0.37	270.91
54.10	0.00	0.37	270.91
54.60	0.00	0.36	270.90
55.10	0.00	0.36	270.90
55.60	0.00	0.36	270.90

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.52
28.50	0.00	0.00	270.52
29.00	0.00	0.00	270.52
29.50	0.00	0.00	270.52
30.00	0.00	0.00	270.52
30.50	0.00	0.00	270.52
31.00	0.00	0.00	270.52
31.50	0.00	0.00	270.52
32.00	0.00	0.00	270.52
32.50	0.00	0.00	270.52
33.00	0.00	0.00	270.52
33.50	0.00	0.00	270.52
34.00	0.00	0.00	270.52
34.50	0.00	0.00	270.52
35.00	0.00	0.00	270.52
35.50	0.00	0.00	270.52
36.00	0.00	0.00	270.52
36.50	0.00	0.00	270.52
37.00	0.00	0.00	270.52
37.50	0.00	0.00	270.52
38.00	0.00	0.00	270.52
38.50	0.00	0.00	270.52
39.00	0.00	0.00	270.52
39.50	0.00	0.00	270.52
40.10	0.00	0.00	270.52
40.60	0.00	0.00	270.52
41.10	0.00	0.00	270.52
41.60	0.07	0.43	270.95
42.10	0.17	0.89	271.41
42.60	0.22	0.89	271.41
43.10	0.17	0.83	271.35
43.60	0.08	0.77	271.29
44.10	0.07	0.72	271.24
44.60	0.02	0.66	271.18
45.10	0.00	0.60	271.12
45.60	0.00	0.56	271.08
46.10	0.00	0.53	271.05
46.60	0.00	0.50	271.02
47.10	0.00	0.48	271.00
47.60	0.00	0.47	270.99
48.10	0.00	0.46	270.98
48.60	0.00	0.45	270.97
49.10	0.00	0.44	270.96
49.60	0.00	0.43	270.95
50.10	0.00	0.43	270.95
50.60	0.00	0.42	270.94
51.10	0.00	0.41	270.93
51.60	0.00	0.41	270.93
52.10	0.00	0.40	270.92
52.60	0.00	0.40	270.92
53.10	0.00	0.40	270.92
53.60	0.00	0.39	270.91
54.10	0.00	0.39	270.91
54.60	0.00	0.38	270.90
55.10	0.00	0.38	270.90
55.60	0.00	0.38	270.90

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.35	270.89
56.60	0.00	0.35	270.89
57.10	0.00	0.35	270.89
57.60	0.00	0.35	270.89
58.10	0.00	0.34	270.88
58.60	0.00	0.34	270.88
59.10	0.00	0.34	270.88
59.60	0.00	0.34	270.88
60.10	0.00	0.33	270.87
60.60	0.00	0.33	270.87
61.10	0.00	0.33	270.87
61.60	0.00	0.33	270.87
62.10	0.00	0.33	270.87
62.60	0.00	0.32	270.86
63.10	0.00	0.32	270.86
63.60	0.00	0.32	270.86
64.10	0.00	0.32	270.86
64.60	0.00	0.32	270.86
65.10	0.00	0.32	270.86
65.60	0.00	0.31	270.85
66.10	0.00	0.31	270.85
66.60	0.00	0.31	270.85
67.10	0.00	0.31	270.85
67.60	0.00	0.31	270.85
68.10	0.00	0.31	270.85
68.60	0.00	0.31	270.85
69.10	0.00	0.31	270.85
69.60	0.00	0.30	270.84
70.10	0.00	0.30	270.84
70.60	0.00	0.30	270.84
71.10	0.00	0.30	270.84
71.60	0.00	0.30	270.84
72.10	0.00	0.30	270.84
72.60	0.00	0.30	270.84
73.10	0.00	0.30	270.84
73.60	0.00	0.30	270.84
74.10	0.00	0.30	270.84
74.60	0.00	0.30	270.84
75.10	0.00	0.29	270.83
75.60	0.00	0.29	270.83
76.10	0.00	0.29	270.83
76.60	0.00	0.29	270.83
77.10	0.00	0.29	270.83
77.60	0.00	0.29	270.83
78.10	0.00	0.29	270.83
78.60	0.00	0.29	270.83
79.10	0.00	0.29	270.83
79.60	0.00	0.29	270.83
80.10	0.00	0.29	270.83
80.60	0.00	0.29	270.83
81.10	0.00	0.29	270.83
81.60	0.00	0.29	270.83
82.10	0.00	0.29	270.83
82.60	0.00	0.28	270.82
83.10	0.00	0.28	270.82
83.60	0.00	0.28	270.82

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.37	270.89
56.60	0.00	0.37	270.89
57.10	0.00	0.37	270.89
57.60	0.00	0.37	270.89
58.10	0.00	0.36	270.88
58.60	0.00	0.36	270.88
59.10	0.00	0.36	270.88
59.60	0.00	0.36	270.88
60.10	0.00	0.35	270.87
60.60	0.00	0.35	270.87
61.10	0.00	0.35	270.87
61.60	0.00	0.35	270.87
62.10	0.00	0.35	270.87
62.60	0.00	0.34	270.86
63.10	0.00	0.34	270.86
63.60	0.00	0.34	270.86
64.10	0.00	0.34	270.86
64.60	0.00	0.34	270.86
65.10	0.00	0.34	270.86
65.60	0.00	0.33	270.85
66.10	0.00	0.33	270.85
66.60	0.00	0.33	270.85
67.10	0.00	0.33	270.85
67.60	0.00	0.33	270.85
68.10	0.00	0.33	270.85
68.60	0.00	0.33	270.85
69.10	0.00	0.33	270.85
69.60	0.00	0.32	270.84
70.10	0.00	0.32	270.84
70.60	0.00	0.32	270.84
71.10	0.00	0.32	270.84
71.60	0.00	0.32	270.84
72.10	0.00	0.32	270.84
72.60	0.00	0.32	270.84
73.10	0.00	0.32	270.84
73.60	0.00	0.32	270.84
74.10	0.00	0.32	270.84
74.60	0.00	0.32	270.84
75.10	0.00	0.31	270.83
75.60	0.00	0.31	270.83
76.10	0.00	0.31	270.83
76.60	0.00	0.31	270.83
77.10	0.00	0.31	270.83
77.60	0.00	0.31	270.83
78.10	0.00	0.31	270.83
78.60	0.00	0.31	270.83
79.10	0.00	0.31	270.83
79.60	0.00	0.31	270.83
80.10	0.00	0.31	270.83
80.60	0.00	0.31	270.83
81.10	0.00	0.31	270.83
81.60	0.00	0.31	270.83
82.10	0.00	0.31	270.83
82.60	0.00	0.30	270.82
83.10	0.00	0.30	270.82
83.60	0.00	0.30	270.82

Door - E1			
Grid Elevation	270.54	(feet, NAVD88)	
Grid	Element: (12436)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.28	270.82
84.60	0.00	0.28	270.82
85.10	0.00	0.28	270.82
85.60	0.00	0.28	270.82
86.10	0.00	0.28	270.82
86.60	0.00	0.28	270.82
87.10	0.00	0.28	270.82
87.60	0.00	0.28	270.82
88.10	0.00	0.28	270.82
88.60	0.00	0.28	270.82
89.10	0.00	0.28	270.82
89.60	0.00	0.28	270.82
90.10	0.00	0.28	270.82

Door - E2			
Grid Elevation	270.52	(feet, NAVD88)	
Grid	Element: (13624)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.30	270.82
84.60	0.00	0.30	270.82
85.10	0.00	0.30	270.82
85.60	0.00	0.30	270.82
86.10	0.00	0.30	270.82
86.60	0.00	0.30	270.82
87.10	0.00	0.30	270.82
87.60	0.00	0.30	270.82
88.10	0.00	0.30	270.82
88.60	0.00	0.30	270.82
89.10	0.00	0.30	270.82
89.60	0.00	0.30	270.82
90.10	0.00	0.30	270.82

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.42
0.50	0.00	0.00	270.42
1.00	0.00	0.00	270.42
1.50	0.00	0.00	270.42
2.00	0.00	0.00	270.42
2.50	0.00	0.00	270.42
3.00	0.00	0.00	270.42
3.50	0.00	0.00	270.42
4.00	0.00	0.00	270.42
4.50	0.00	0.00	270.42
5.00	0.00	0.00	270.42
5.50	0.00	0.00	270.42
6.00	0.00	0.00	270.42
6.50	0.00	0.00	270.42
7.00	0.00	0.00	270.42
7.50	0.00	0.00	270.42
8.00	0.00	0.00	270.42
8.50	0.00	0.00	270.42
9.00	0.00	0.00	270.42
9.50	0.00	0.00	270.42
10.00	0.00	0.00	270.42
10.50	0.00	0.00	270.42
11.00	0.00	0.00	270.42
11.50	0.00	0.00	270.42
12.00	0.00	0.00	270.42
12.50	0.00	0.00	270.42
13.00	0.00	0.00	270.42
13.50	0.00	0.00	270.42
14.00	0.00	0.00	270.42
14.50	0.00	0.00	270.42
15.00	0.00	0.00	270.42
15.50	0.00	0.00	270.42
16.00	0.00	0.00	270.42
16.50	0.00	0.00	270.42
17.00	0.00	0.00	270.42
17.50	0.00	0.00	270.42
18.00	0.00	0.00	270.42
18.50	0.00	0.00	270.42
19.00	0.00	0.00	270.42
19.50	0.00	0.00	270.42
20.00	0.00	0.00	270.42
20.50	0.00	0.00	270.42
21.00	0.00	0.00	270.42
21.50	0.00	0.00	270.42
22.00	0.00	0.00	270.42
22.50	0.00	0.00	270.42
23.00	0.00	0.00	270.42
23.50	0.00	0.00	270.42
24.00	0.00	0.00	270.42
24.50	0.00	0.00	270.42
25.00	0.00	0.00	270.42
25.50	0.00	0.00	270.42
26.00	0.00	0.00	270.42
26.50	0.00	0.00	270.42
27.00	0.00	0.00	270.42
27.50	0.00	0.00	270.42

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.55
0.50	0.00	0.00	270.55
1.00	0.00	0.00	270.55
1.50	0.00	0.00	270.55
2.00	0.00	0.00	270.55
2.50	0.00	0.00	270.55
3.00	0.00	0.00	270.55
3.50	0.00	0.00	270.55
4.00	0.00	0.00	270.55
4.50	0.00	0.00	270.55
5.00	0.00	0.00	270.55
5.50	0.00	0.00	270.55
6.00	0.00	0.00	270.55
6.50	0.00	0.00	270.55
7.00	0.00	0.00	270.55
7.50	0.00	0.00	270.55
8.00	0.00	0.00	270.55
8.50	0.00	0.00	270.55
9.00	0.00	0.00	270.55
9.50	0.00	0.00	270.55
10.00	0.00	0.00	270.55
10.50	0.00	0.00	270.55
11.00	0.00	0.00	270.55
11.50	0.00	0.00	270.55
12.00	0.00	0.00	270.55
12.50	0.00	0.00	270.55
13.00	0.00	0.00	270.55
13.50	0.00	0.00	270.55
14.00	0.00	0.00	270.55
14.50	0.00	0.00	270.55
15.00	0.00	0.00	270.55
15.50	0.00	0.00	270.55
16.00	0.00	0.00	270.55
16.50	0.00	0.00	270.55
17.00	0.00	0.00	270.55
17.50	0.00	0.00	270.55
18.00	0.00	0.00	270.55
18.50	0.00	0.00	270.55
19.00	0.00	0.00	270.55
19.50	0.00	0.00	270.55
20.00	0.00	0.00	270.55
20.50	0.00	0.00	270.55
21.00	0.00	0.00	270.55
21.50	0.00	0.00	270.55
22.00	0.00	0.00	270.55
22.50	0.00	0.00	270.55
23.00	0.00	0.00	270.55
23.50	0.00	0.00	270.55
24.00	0.00	0.00	270.55
24.50	0.00	0.00	270.55
25.00	0.00	0.00	270.55
25.50	0.00	0.00	270.55
26.00	0.00	0.00	270.55
26.50	0.00	0.00	270.55
27.00	0.00	0.00	270.55
27.50	0.00	0.00	270.55

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.42
28.50	0.00	0.00	270.42
29.00	0.00	0.00	270.42
29.50	0.00	0.00	270.42
30.00	0.00	0.00	270.42
30.50	0.00	0.00	270.42
31.00	0.00	0.00	270.42
31.50	0.00	0.00	270.42
32.00	0.00	0.00	270.42
32.50	0.00	0.00	270.42
33.00	0.00	0.00	270.42
33.50	0.00	0.00	270.42
34.00	0.00	0.00	270.42
34.50	0.00	0.00	270.42
35.00	0.00	0.00	270.42
35.50	0.00	0.00	270.42
36.00	0.00	0.00	270.42
36.50	0.00	0.00	270.42
37.00	0.00	0.00	270.42
37.50	0.00	0.00	270.42
38.00	0.00	0.00	270.42
38.50	0.00	0.00	270.42
39.00	0.00	0.00	270.42
39.50	0.00	0.00	270.42
40.10	0.00	0.00	270.42
40.60	0.00	0.00	270.42
41.10	0.00	0.00	270.42
41.60	0.02	0.54	270.96
42.10	0.06	1.00	271.42
42.60	0.11	0.99	271.41
43.10	0.08	0.94	271.36
43.60	0.03	0.88	271.30
44.10	0.03	0.81	271.23
44.60	0.02	0.76	271.18
45.10	0.00	0.70	271.12
45.60	0.00	0.66	271.08
46.10	0.00	0.63	271.05
46.60	0.00	0.60	271.02
47.10	0.00	0.58	271.00
47.60	0.00	0.57	270.99
48.10	0.00	0.56	270.98
48.60	0.00	0.55	270.97
49.10	0.00	0.54	270.96
49.60	0.00	0.53	270.95
50.10	0.00	0.53	270.95
50.60	0.00	0.52	270.94
51.10	0.00	0.51	270.93
51.60	0.00	0.51	270.93
52.10	0.00	0.50	270.92
52.60	0.00	0.50	270.92
53.10	0.00	0.50	270.92
53.60	0.00	0.49	270.91
54.10	0.00	0.49	270.91
54.60	0.00	0.48	270.90
55.10	0.00	0.48	270.90
55.60	0.00	0.48	270.90

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.55
28.50	0.00	0.00	270.55
29.00	0.00	0.00	270.55
29.50	0.00	0.00	270.55
30.00	0.00	0.00	270.55
30.50	0.00	0.00	270.55
31.00	0.00	0.00	270.55
31.50	0.00	0.00	270.55
32.00	0.00	0.00	270.55
32.50	0.00	0.00	270.55
33.00	0.00	0.00	270.55
33.50	0.00	0.00	270.55
34.00	0.00	0.00	270.55
34.50	0.00	0.00	270.55
35.00	0.00	0.00	270.55
35.50	0.00	0.00	270.55
36.00	0.00	0.00	270.55
36.50	0.00	0.00	270.55
37.00	0.00	0.00	270.55
37.50	0.00	0.00	270.55
38.00	0.00	0.00	270.55
38.50	0.00	0.00	270.55
39.00	0.00	0.00	270.55
39.50	0.00	0.00	270.55
40.10	0.00	0.00	270.55
40.60	0.00	0.00	270.55
41.10	0.00	0.00	270.55
41.60	0.03	0.41	270.96
42.10	0.05	0.88	271.43
42.60	0.08	0.88	271.43
43.10	0.03	0.82	271.37
43.60	0.01	0.75	271.30
44.10	0.03	0.69	271.24
44.60	0.00	0.63	271.18
45.10	0.00	0.57	271.12
45.60	0.00	0.53	271.08
46.10	0.00	0.50	271.05
46.60	0.00	0.47	271.02
47.10	0.00	0.45	271.00
47.60	0.00	0.44	270.99
48.10	0.00	0.43	270.98
48.60	0.00	0.42	270.97
49.10	0.00	0.41	270.96
49.60	0.00	0.40	270.95
50.10	0.00	0.40	270.95
50.60	0.00	0.39	270.94
51.10	0.00	0.38	270.93
51.60	0.00	0.38	270.93
52.10	0.00	0.37	270.92
52.60	0.00	0.37	270.92
53.10	0.00	0.37	270.92
53.60	0.00	0.36	270.91
54.10	0.00	0.36	270.91
54.60	0.00	0.35	270.90
55.10	0.00	0.35	270.90
55.60	0.00	0.35	270.90

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.47	270.89
56.60	0.00	0.47	270.89
57.10	0.00	0.47	270.89
57.60	0.00	0.47	270.89
58.10	0.00	0.46	270.88
58.60	0.00	0.46	270.88
59.10	0.00	0.46	270.88
59.60	0.00	0.46	270.88
60.10	0.00	0.45	270.87
60.60	0.00	0.45	270.87
61.10	0.00	0.45	270.87
61.60	0.00	0.45	270.87
62.10	0.00	0.45	270.87
62.60	0.00	0.44	270.86
63.10	0.00	0.44	270.86
63.60	0.00	0.44	270.86
64.10	0.00	0.44	270.86
64.60	0.00	0.44	270.86
65.10	0.00	0.44	270.86
65.60	0.00	0.43	270.85
66.10	0.00	0.43	270.85
66.60	0.00	0.43	270.85
67.10	0.00	0.43	270.85
67.60	0.00	0.43	270.85
68.10	0.00	0.43	270.85
68.60	0.00	0.43	270.85
69.10	0.00	0.43	270.85
69.60	0.00	0.42	270.84
70.10	0.00	0.42	270.84
70.60	0.00	0.42	270.84
71.10	0.00	0.42	270.84
71.60	0.00	0.42	270.84
72.10	0.00	0.42	270.84
72.60	0.00	0.42	270.84
73.10	0.00	0.42	270.84
73.60	0.00	0.42	270.84
74.10	0.00	0.42	270.84
74.60	0.00	0.42	270.84
75.10	0.00	0.41	270.83
75.60	0.00	0.41	270.83
76.10	0.00	0.41	270.83
76.60	0.00	0.41	270.83
77.10	0.00	0.41	270.83
77.60	0.00	0.41	270.83
78.10	0.00	0.41	270.83
78.60	0.00	0.41	270.83
79.10	0.00	0.41	270.83
79.60	0.00	0.41	270.83
80.10	0.00	0.41	270.83
80.60	0.00	0.41	270.83
81.10	0.00	0.41	270.83
81.60	0.00	0.41	270.83
82.10	0.00	0.41	270.83
82.60	0.00	0.41	270.83
83.10	0.00	0.40	270.82
83.60	0.00	0.40	270.82

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.34	270.89
56.60	0.00	0.34	270.89
57.10	0.00	0.34	270.89
57.60	0.00	0.34	270.89
58.10	0.00	0.33	270.88
58.60	0.00	0.33	270.88
59.10	0.00	0.33	270.88
59.60	0.00	0.33	270.88
60.10	0.00	0.32	270.87
60.60	0.00	0.32	270.87
61.10	0.00	0.32	270.87
61.60	0.00	0.32	270.87
62.10	0.00	0.32	270.87
62.60	0.00	0.31	270.86
63.10	0.00	0.31	270.86
63.60	0.00	0.31	270.86
64.10	0.00	0.31	270.86
64.60	0.00	0.31	270.86
65.10	0.00	0.31	270.86
65.60	0.00	0.30	270.85
66.10	0.00	0.30	270.85
66.60	0.00	0.30	270.85
67.10	0.00	0.30	270.85
67.60	0.00	0.30	270.85
68.10	0.00	0.30	270.85
68.60	0.00	0.30	270.85
69.10	0.00	0.30	270.85
69.60	0.00	0.30	270.85
70.10	0.00	0.29	270.84
70.60	0.00	0.29	270.84
71.10	0.00	0.29	270.84
71.60	0.00	0.29	270.84
72.10	0.00	0.29	270.84
72.60	0.00	0.29	270.84
73.10	0.00	0.29	270.84
73.60	0.00	0.29	270.84
74.10	0.00	0.29	270.84
74.60	0.00	0.29	270.84
75.10	0.00	0.29	270.84
75.60	0.00	0.28	270.83
76.10	0.00	0.28	270.83
76.60	0.00	0.28	270.83
77.10	0.00	0.28	270.83
77.60	0.00	0.28	270.83
78.10	0.00	0.28	270.83
78.60	0.00	0.28	270.83
79.10	0.00	0.28	270.83
79.60	0.00	0.28	270.83
80.10	0.00	0.28	270.83
80.60	0.00	0.28	270.83
81.10	0.00	0.28	270.83
81.60	0.00	0.28	270.83
82.10	0.00	0.28	270.83
82.60	0.00	0.28	270.83
83.10	0.00	0.28	270.83
83.60	0.00	0.27	270.82

Door - F1			
Grid Elevation	270.42	(feet, NAVD88)	
Grid	Element: (14223)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.40	270.82
84.60	0.00	0.40	270.82
85.10	0.00	0.40	270.82
85.60	0.00	0.40	270.82
86.10	0.00	0.40	270.82
86.60	0.00	0.40	270.82
87.10	0.00	0.40	270.82
87.60	0.00	0.40	270.82
88.10	0.00	0.40	270.82
88.60	0.00	0.40	270.82
89.10	0.00	0.40	270.82
89.60	0.00	0.40	270.82
90.10	0.00	0.40	270.82

Door - F2			
Grid Elevation	270.55	(feet, NAVD88)	
Grid	Element: (15429)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.27	270.82
84.60	0.00	0.27	270.82
85.10	0.00	0.27	270.82
85.60	0.00	0.27	270.82
86.10	0.00	0.27	270.82
86.60	0.00	0.27	270.82
87.10	0.00	0.27	270.82
87.60	0.00	0.27	270.82
88.10	0.00	0.27	270.82
88.60	0.00	0.27	270.82
89.10	0.00	0.27	270.82
89.60	0.00	0.27	270.82
90.10	0.00	0.27	270.82

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.52
0.50	0.00	0.00	271.52
1.00	0.00	0.00	271.52
1.50	0.00	0.00	271.52
2.00	0.00	0.00	271.52
2.50	0.00	0.00	271.52
3.00	0.00	0.00	271.52
3.50	0.00	0.00	271.52
4.00	0.00	0.00	271.52
4.50	0.00	0.00	271.52
5.00	0.00	0.00	271.52
5.50	0.00	0.00	271.52
6.00	0.00	0.00	271.52
6.50	0.00	0.00	271.52
7.00	0.00	0.00	271.52
7.50	0.00	0.00	271.52
8.00	0.00	0.00	271.52
8.50	0.00	0.00	271.52
9.00	0.00	0.00	271.52
9.50	0.00	0.00	271.52
10.00	0.00	0.00	271.52
10.50	0.00	0.00	271.52
11.00	0.00	0.00	271.52
11.50	0.00	0.00	271.52
12.00	0.00	0.00	271.52
12.50	0.00	0.00	271.52
13.00	0.00	0.00	271.52
13.50	0.00	0.00	271.52
14.00	0.00	0.00	271.52
14.50	0.00	0.00	271.52
15.00	0.00	0.00	271.52
15.50	0.00	0.00	271.52
16.00	0.00	0.00	271.52
16.50	0.00	0.00	271.52
17.00	0.00	0.00	271.52
17.50	0.00	0.00	271.52
18.00	0.00	0.00	271.52
18.50	0.00	0.00	271.52
19.00	0.00	0.00	271.52
19.50	0.00	0.00	271.52
20.00	0.00	0.00	271.52
20.50	0.00	0.00	271.52
21.00	0.00	0.00	271.52
21.50	0.00	0.00	271.52
22.00	0.00	0.00	271.52
22.50	0.00	0.00	271.52
23.00	0.00	0.00	271.52
23.50	0.00	0.00	271.52
24.00	0.00	0.00	271.52
24.50	0.00	0.00	271.52
25.00	0.00	0.00	271.52
25.50	0.00	0.00	271.52
26.00	0.00	0.00	271.52
26.50	0.00	0.00	271.52
27.00	0.00	0.00	271.52
27.50	0.00	0.00	271.52

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.37
0.50	0.00	0.00	271.37
1.00	0.00	0.00	271.37
1.50	0.00	0.00	271.37
2.00	0.00	0.00	271.37
2.50	0.00	0.00	271.37
3.00	0.00	0.00	271.37
3.50	0.00	0.00	271.37
4.00	0.00	0.00	271.37
4.50	0.00	0.00	271.37
5.00	0.00	0.00	271.37
5.50	0.00	0.00	271.37
6.00	0.00	0.00	271.37
6.50	0.00	0.00	271.37
7.00	0.00	0.00	271.37
7.50	0.00	0.00	271.37
8.00	0.00	0.00	271.37
8.50	0.00	0.00	271.37
9.00	0.00	0.00	271.37
9.50	0.00	0.00	271.37
10.00	0.00	0.00	271.37
10.50	0.00	0.00	271.37
11.00	0.00	0.00	271.37
11.50	0.00	0.00	271.37
12.00	0.00	0.00	271.37
12.50	0.00	0.00	271.37
13.00	0.00	0.00	271.37
13.50	0.00	0.00	271.37
14.00	0.00	0.00	271.37
14.50	0.00	0.00	271.37
15.00	0.00	0.00	271.37
15.50	0.00	0.00	271.37
16.00	0.00	0.00	271.37
16.50	0.00	0.00	271.37
17.00	0.00	0.00	271.37
17.50	0.00	0.00	271.37
18.00	0.00	0.00	271.37
18.50	0.00	0.00	271.37
19.00	0.00	0.00	271.37
19.50	0.00	0.00	271.37
20.00	0.00	0.00	271.37
20.50	0.00	0.00	271.37
21.00	0.00	0.00	271.37
21.50	0.00	0.00	271.37
22.00	0.00	0.00	271.37
22.50	0.00	0.00	271.37
23.00	0.00	0.00	271.37
23.50	0.00	0.00	271.37
24.00	0.00	0.00	271.37
24.50	0.00	0.00	271.37
25.00	0.00	0.00	271.37
25.50	0.00	0.00	271.37
26.00	0.00	0.00	271.37
26.50	0.00	0.00	271.37
27.00	0.00	0.00	271.37
27.50	0.00	0.00	271.37

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.52
28.50	0.00	0.00	271.52
29.00	0.00	0.00	271.52
29.50	0.00	0.00	271.52
30.00	0.00	0.00	271.52
30.50	0.00	0.00	271.52
31.00	0.00	0.00	271.52
31.50	0.00	0.00	271.52
32.00	0.00	0.00	271.52
32.50	0.00	0.00	271.52
33.00	0.00	0.00	271.52
33.50	0.00	0.00	271.52
34.00	0.00	0.00	271.52
34.50	0.00	0.00	271.52
35.00	0.00	0.00	271.52
35.50	0.00	0.00	271.52
36.00	0.00	0.00	271.52
36.50	0.00	0.00	271.52
37.00	0.00	0.00	271.52
37.50	0.00	0.00	271.52
38.00	0.00	0.00	271.52
38.50	0.00	0.00	271.52
39.00	0.00	0.00	271.52
39.50	0.00	0.00	271.52
40.10	0.00	0.00	271.52
40.60	0.00	0.00	271.52
41.10	0.00	0.00	271.52
41.60	0.00	0.00	271.52
42.10	0.00	0.00	271.52
42.60	0.00	0.01	271.53
43.10	0.00	0.01	271.53
43.60	0.00	0.01	271.53
44.10	0.00	0.01	271.53
44.60	0.00	0.01	271.53
45.10	0.00	0.01	271.53
45.60	0.00	0.01	271.53
46.10	0.00	0.01	271.53
46.60	0.00	0.01	271.53
47.10	0.00	0.01	271.53
47.60	0.00	0.01	271.53
48.10	0.00	0.01	271.53
48.60	0.00	0.01	271.53
49.10	0.00	0.01	271.53
49.60	0.00	0.01	271.53
50.10	0.00	0.01	271.53
50.60	0.00	0.01	271.53
51.10	0.00	0.01	271.53
51.60	0.00	0.01	271.53
52.10	0.00	0.01	271.53
52.60	0.00	0.01	271.53
53.10	0.00	0.01	271.53
53.60	0.00	0.01	271.53
54.10	0.00	0.01	271.53
54.60	0.00	0.01	271.53
55.10	0.00	0.01	271.53
55.60	0.00	0.01	271.53

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.37
28.50	0.00	0.00	271.37
29.00	0.00	0.00	271.37
29.50	0.00	0.00	271.37
30.00	0.00	0.00	271.37
30.50	0.00	0.00	271.37
31.00	0.00	0.00	271.37
31.50	0.00	0.00	271.37
32.00	0.00	0.00	271.37
32.50	0.00	0.00	271.37
33.00	0.00	0.00	271.37
33.50	0.00	0.00	271.37
34.00	0.00	0.00	271.37
34.50	0.00	0.00	271.37
35.00	0.00	0.00	271.37
35.50	0.00	0.00	271.37
36.00	0.00	0.00	271.37
36.50	0.00	0.00	271.37
37.00	0.00	0.00	271.37
37.50	0.00	0.00	271.37
38.00	0.00	0.00	271.37
38.50	0.00	0.00	271.37
39.00	0.00	0.00	271.37
39.50	0.00	0.00	271.37
40.10	0.00	0.00	271.37
40.60	0.00	0.00	271.37
41.10	0.03	0.16	271.53
41.60	0.08	0.24	271.61
42.10	0.11	0.30	271.67
42.60	0.10	0.28	271.65
43.10	0.06	0.21	271.58
43.60	0.02	0.12	271.49
44.10	0.00	0.05	271.42
44.60	0.00	0.05	271.42
45.10	0.00	0.05	271.42
45.60	0.00	0.05	271.42
46.10	0.00	0.05	271.42
46.60	0.00	0.05	271.42
47.10	0.00	0.05	271.42
47.60	0.00	0.05	271.42
48.10	0.00	0.05	271.42
48.60	0.00	0.05	271.42
49.10	0.00	0.05	271.42
49.60	0.00	0.05	271.42
50.10	0.00	0.05	271.42
50.60	0.00	0.05	271.42
51.10	0.00	0.05	271.42
51.60	0.00	0.05	271.42
52.10	0.00	0.05	271.42
52.60	0.00	0.05	271.42
53.10	0.00	0.05	271.42
53.60	0.00	0.05	271.42
54.10	0.00	0.05	271.42
54.60	0.00	0.05	271.42
55.10	0.00	0.05	271.42
55.60	0.00	0.05	271.42

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.01	271.53
56.60	0.00	0.01	271.53
57.10	0.00	0.01	271.53
57.60	0.00	0.01	271.53
58.10	0.00	0.01	271.53
58.60	0.00	0.01	271.53
59.10	0.00	0.01	271.53
59.60	0.00	0.01	271.53
60.10	0.00	0.01	271.53
60.60	0.00	0.01	271.53
61.10	0.00	0.01	271.53
61.60	0.00	0.01	271.53
62.10	0.00	0.01	271.53
62.60	0.00	0.01	271.53
63.10	0.00	0.01	271.53
63.60	0.00	0.01	271.53
64.10	0.00	0.01	271.53
64.60	0.00	0.01	271.53
65.10	0.00	0.01	271.53
65.60	0.00	0.01	271.53
66.10	0.00	0.01	271.53
66.60	0.00	0.01	271.53
67.10	0.00	0.01	271.53
67.60	0.00	0.01	271.53
68.10	0.00	0.01	271.53
68.60	0.00	0.01	271.53
69.10	0.00	0.01	271.53
69.60	0.00	0.01	271.53
70.10	0.00	0.01	271.53
70.60	0.00	0.01	271.53
71.10	0.00	0.01	271.53
71.60	0.00	0.01	271.53
72.10	0.00	0.01	271.53
72.60	0.00	0.01	271.53
73.10	0.00	0.01	271.53
73.60	0.00	0.01	271.53
74.10	0.00	0.01	271.53
74.60	0.00	0.01	271.53
75.10	0.00	0.01	271.53
75.60	0.00	0.01	271.53
76.10	0.00	0.01	271.53
76.60	0.00	0.01	271.53
77.10	0.00	0.01	271.53
77.60	0.00	0.01	271.53
78.10	0.00	0.01	271.53
78.60	0.00	0.01	271.53
79.10	0.00	0.01	271.53
79.60	0.00	0.01	271.53
80.10	0.00	0.01	271.53
80.60	0.00	0.01	271.53
81.10	0.00	0.01	271.53
81.60	0.00	0.01	271.53
82.10	0.00	0.01	271.53
82.60	0.00	0.01	271.53
83.10	0.00	0.01	271.53
83.60	0.00	0.01	271.53

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.42
56.60	0.00	0.05	271.42
57.10	0.00	0.05	271.42
57.60	0.00	0.05	271.42
58.10	0.00	0.05	271.42
58.60	0.00	0.05	271.42
59.10	0.00	0.05	271.42
59.60	0.00	0.05	271.42
60.10	0.00	0.05	271.42
60.60	0.00	0.05	271.42
61.10	0.00	0.05	271.42
61.60	0.00	0.05	271.42
62.10	0.00	0.05	271.42
62.60	0.00	0.05	271.42
63.10	0.00	0.05	271.42
63.60	0.00	0.05	271.42
64.10	0.00	0.05	271.42
64.60	0.00	0.05	271.42
65.10	0.00	0.05	271.42
65.60	0.00	0.05	271.42
66.10	0.00	0.05	271.42
66.60	0.00	0.05	271.42
67.10	0.00	0.05	271.42
67.60	0.00	0.05	271.42
68.10	0.00	0.05	271.42
68.60	0.00	0.05	271.42
69.10	0.00	0.05	271.42
69.60	0.00	0.05	271.42
70.10	0.00	0.05	271.42
70.60	0.00	0.05	271.42
71.10	0.00	0.05	271.42
71.60	0.00	0.05	271.42
72.10	0.00	0.05	271.42
72.60	0.00	0.05	271.42
73.10	0.00	0.05	271.42
73.60	0.00	0.05	271.42
74.10	0.00	0.05	271.42
74.60	0.00	0.05	271.42
75.10	0.00	0.05	271.42
75.60	0.00	0.05	271.42
76.10	0.00	0.05	271.42
76.60	0.00	0.05	271.42
77.10	0.00	0.05	271.42
77.60	0.00	0.05	271.42
78.10	0.00	0.05	271.42
78.60	0.00	0.05	271.42
79.10	0.00	0.05	271.42
79.60	0.00	0.05	271.42
80.10	0.00	0.05	271.42
80.60	0.00	0.05	271.42
81.10	0.00	0.05	271.42
81.60	0.00	0.05	271.42
82.10	0.00	0.05	271.42
82.60	0.00	0.05	271.42
83.10	0.00	0.05	271.42
83.60	0.00	0.05	271.42

Door - G			
Grid Elevation	271.52	(feet, NAVD88)	
Door Elevation	271.54		
Grid	Element: (16348)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.01	271.53
84.60	0.00	0.01	271.53
85.10	0.00	0.01	271.53
85.60	0.00	0.01	271.53
86.10	0.00	0.01	271.53
86.60	0.00	0.01	271.53
87.10	0.00	0.01	271.53
87.60	0.00	0.01	271.53
88.10	0.00	0.01	271.53
88.60	0.00	0.01	271.53
89.10	0.00	0.01	271.53
89.60	0.00	0.01	271.53
90.10	0.00	0.01	271.53

Door - H			
Grid Elevation	271.37	(feet, NAVD88)	
Door Elevation	271.48		
Grid	Element: (24926)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.42
84.60	0.00	0.05	271.42
85.10	0.00	0.05	271.42
85.60	0.00	0.05	271.42
86.10	0.00	0.05	271.42
86.60	0.00	0.05	271.42
87.10	0.00	0.05	271.42
87.60	0.00	0.05	271.42
88.10	0.00	0.05	271.42
88.60	0.00	0.05	271.42
89.10	0.00	0.05	271.42
89.60	0.00	0.05	271.42
90.10	0.00	0.05	271.42

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.50
0.50	0.00	0.00	271.50
1.00	0.00	0.00	271.50
1.50	0.00	0.00	271.50
2.00	0.00	0.00	271.50
2.50	0.00	0.00	271.50
3.00	0.00	0.00	271.50
3.50	0.00	0.00	271.50
4.00	0.00	0.00	271.50
4.50	0.00	0.00	271.50
5.00	0.00	0.00	271.50
5.50	0.00	0.00	271.50
6.00	0.00	0.00	271.50
6.50	0.00	0.00	271.50
7.00	0.00	0.00	271.50
7.50	0.00	0.00	271.50
8.00	0.00	0.00	271.50
8.50	0.00	0.00	271.50
9.00	0.00	0.00	271.50
9.50	0.00	0.00	271.50
10.00	0.00	0.00	271.50
10.50	0.00	0.00	271.50
11.00	0.00	0.00	271.50
11.50	0.00	0.00	271.50
12.00	0.00	0.00	271.50
12.50	0.00	0.00	271.50
13.00	0.00	0.00	271.50
13.50	0.00	0.00	271.50
14.00	0.00	0.00	271.50
14.50	0.00	0.00	271.50
15.00	0.00	0.00	271.50
15.50	0.00	0.00	271.50
16.00	0.00	0.00	271.50
16.50	0.00	0.00	271.50
17.00	0.00	0.00	271.50
17.50	0.00	0.00	271.50
18.00	0.00	0.00	271.50
18.50	0.00	0.00	271.50
19.00	0.00	0.00	271.50
19.50	0.00	0.00	271.50
20.00	0.00	0.00	271.50
20.50	0.00	0.00	271.50
21.00	0.00	0.00	271.50
21.50	0.00	0.00	271.50
22.00	0.00	0.00	271.50
22.50	0.00	0.00	271.50
23.00	0.00	0.00	271.50
23.50	0.00	0.00	271.50
24.00	0.00	0.00	271.50
24.50	0.00	0.00	271.50
25.00	0.00	0.00	271.50
25.50	0.00	0.00	271.50
26.00	0.00	0.00	271.50
26.50	0.00	0.00	271.50
27.00	0.00	0.00	271.50
27.50	0.00	0.00	271.50

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.26
0.50	0.00	0.00	271.26
1.00	0.00	0.00	271.26
1.50	0.00	0.00	271.26
2.00	0.00	0.00	271.26
2.50	0.00	0.00	271.26
3.00	0.00	0.00	271.26
3.50	0.00	0.00	271.26
4.00	0.00	0.00	271.26
4.50	0.00	0.00	271.26
5.00	0.00	0.00	271.26
5.50	0.00	0.00	271.26
6.00	0.00	0.00	271.26
6.50	0.00	0.00	271.26
7.00	0.00	0.00	271.26
7.50	0.00	0.00	271.26
8.00	0.00	0.00	271.26
8.50	0.00	0.00	271.26
9.00	0.00	0.00	271.26
9.50	0.00	0.00	271.26
10.00	0.00	0.00	271.26
10.50	0.00	0.00	271.26
11.00	0.00	0.00	271.26
11.50	0.00	0.00	271.26
12.00	0.00	0.00	271.26
12.50	0.00	0.00	271.26
13.00	0.00	0.00	271.26
13.50	0.00	0.00	271.26
14.00	0.00	0.00	271.26
14.50	0.00	0.00	271.26
15.00	0.00	0.00	271.26
15.50	0.00	0.00	271.26
16.00	0.00	0.00	271.26
16.50	0.00	0.00	271.26
17.00	0.00	0.00	271.26
17.50	0.00	0.00	271.26
18.00	0.00	0.00	271.26
18.50	0.00	0.00	271.26
19.00	0.00	0.00	271.26
19.50	0.00	0.00	271.26
20.00	0.00	0.00	271.26
20.50	0.00	0.00	271.26
21.00	0.00	0.00	271.26
21.50	0.00	0.00	271.26
22.00	0.00	0.00	271.26
22.50	0.00	0.00	271.26
23.00	0.00	0.00	271.26
23.50	0.00	0.00	271.26
24.00	0.00	0.00	271.26
24.50	0.00	0.00	271.26
25.00	0.00	0.00	271.26
25.50	0.00	0.00	271.26
26.00	0.00	0.00	271.26
26.50	0.00	0.00	271.26
27.00	0.00	0.00	271.26
27.50	0.00	0.00	271.26

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.50
28.50	0.00	0.00	271.50
29.00	0.00	0.00	271.50
29.50	0.00	0.00	271.50
30.00	0.00	0.00	271.50
30.50	0.00	0.00	271.50
31.00	0.00	0.00	271.50
31.50	0.00	0.00	271.50
32.00	0.00	0.00	271.50
32.50	0.00	0.00	271.50
33.00	0.00	0.00	271.50
33.50	0.00	0.00	271.50
34.00	0.00	0.00	271.50
34.50	0.00	0.00	271.50
35.00	0.00	0.00	271.50
35.50	0.00	0.00	271.50
36.00	0.00	0.00	271.50
36.50	0.00	0.00	271.50
37.00	0.00	0.00	271.50
37.50	0.00	0.00	271.50
38.00	0.00	0.00	271.50
38.50	0.00	0.00	271.50
39.00	0.00	0.00	271.50
39.50	0.00	0.00	271.50
40.10	0.00	0.00	271.50
40.60	0.00	0.00	271.50
41.10	0.00	0.01	271.51
41.60	0.08	0.10	271.60
42.10	0.09	0.16	271.66
42.60	0.07	0.14	271.64
43.10	0.05	0.07	271.57
43.60	0.00	0.05	271.55
44.10	0.00	0.05	271.55
44.60	0.00	0.05	271.55
45.10	0.00	0.05	271.55
45.60	0.00	0.05	271.55
46.10	0.00	0.05	271.55
46.60	0.00	0.05	271.55
47.10	0.00	0.05	271.55
47.60	0.00	0.05	271.55
48.10	0.00	0.05	271.55
48.60	0.00	0.05	271.55
49.10	0.00	0.05	271.55
49.60	0.00	0.05	271.55
50.10	0.00	0.05	271.55
50.60	0.00	0.05	271.55
51.10	0.00	0.05	271.55
51.60	0.00	0.05	271.55
52.10	0.00	0.05	271.55
52.60	0.00	0.05	271.55
53.10	0.00	0.05	271.55
53.60	0.00	0.05	271.55
54.10	0.00	0.05	271.55
54.60	0.00	0.05	271.55
55.10	0.00	0.05	271.55
55.60	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.26
28.50	0.00	0.00	271.26
29.00	0.00	0.00	271.26
29.50	0.00	0.00	271.26
30.00	0.00	0.00	271.26
30.50	0.00	0.00	271.26
31.00	0.00	0.00	271.26
31.50	0.00	0.00	271.26
32.00	0.00	0.00	271.26
32.50	0.00	0.00	271.26
33.00	0.00	0.00	271.26
33.50	0.00	0.00	271.26
34.00	0.00	0.00	271.26
34.50	0.00	0.00	271.26
35.00	0.00	0.00	271.26
35.50	0.00	0.00	271.26
36.00	0.00	0.00	271.26
36.50	0.00	0.00	271.26
37.00	0.00	0.00	271.26
37.50	0.00	0.00	271.26
38.00	0.00	0.00	271.26
38.50	0.00	0.00	271.26
39.00	0.00	0.00	271.26
39.50	0.00	0.00	271.26
40.10	0.00	0.00	271.26
40.60	0.01	0.14	271.40
41.10	0.16	0.32	271.58
41.60	0.20	0.40	271.66
42.10	0.25	0.47	271.73
42.60	0.21	0.44	271.70
43.10	0.15	0.36	271.62
43.60	0.13	0.28	271.54
44.10	0.05	0.19	271.45
44.60	0.03	0.10	271.36
45.10	0.02	0.05	271.31
45.60	0.02	0.05	271.31
46.10	0.02	0.05	271.31
46.60	0.02	0.05	271.31
47.10	0.02	0.05	271.31
47.60	0.02	0.05	271.31
48.10	0.02	0.05	271.31
48.60	0.02	0.05	271.31
49.10	0.02	0.05	271.31
49.60	0.02	0.05	271.31
50.10	0.02	0.05	271.31
50.60	0.02	0.05	271.31
51.10	0.02	0.05	271.31
51.60	0.02	0.05	271.31
52.10	0.02	0.05	271.31
52.60	0.02	0.05	271.31
53.10	0.02	0.05	271.31
53.60	0.02	0.05	271.31
54.10	0.02	0.05	271.31
54.60	0.02	0.05	271.31
55.10	0.02	0.05	271.31
55.60	0.02	0.05	271.31

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.55
56.60	0.00	0.05	271.55
57.10	0.00	0.05	271.55
57.60	0.00	0.05	271.55
58.10	0.00	0.05	271.55
58.60	0.00	0.05	271.55
59.10	0.00	0.05	271.55
59.60	0.00	0.05	271.55
60.10	0.00	0.05	271.55
60.60	0.00	0.05	271.55
61.10	0.00	0.05	271.55
61.60	0.00	0.05	271.55
62.10	0.00	0.05	271.55
62.60	0.00	0.05	271.55
63.10	0.00	0.05	271.55
63.60	0.00	0.05	271.55
64.10	0.00	0.05	271.55
64.60	0.00	0.05	271.55
65.10	0.00	0.05	271.55
65.60	0.00	0.05	271.55
66.10	0.00	0.05	271.55
66.60	0.00	0.05	271.55
67.10	0.00	0.05	271.55
67.60	0.00	0.05	271.55
68.10	0.00	0.05	271.55
68.60	0.00	0.05	271.55
69.10	0.00	0.05	271.55
69.60	0.00	0.05	271.55
70.10	0.00	0.05	271.55
70.60	0.00	0.05	271.55
71.10	0.00	0.05	271.55
71.60	0.00	0.05	271.55
72.10	0.00	0.05	271.55
72.60	0.00	0.05	271.55
73.10	0.00	0.05	271.55
73.60	0.00	0.05	271.55
74.10	0.00	0.05	271.55
74.60	0.00	0.05	271.55
75.10	0.00	0.05	271.55
75.60	0.00	0.05	271.55
76.10	0.00	0.05	271.55
76.60	0.00	0.05	271.55
77.10	0.00	0.05	271.55
77.60	0.00	0.05	271.55
78.10	0.00	0.05	271.55
78.60	0.00	0.05	271.55
79.10	0.00	0.05	271.55
79.60	0.00	0.05	271.55
80.10	0.00	0.05	271.55
80.60	0.00	0.05	271.55
81.10	0.00	0.05	271.55
81.60	0.00	0.05	271.55
82.10	0.00	0.05	271.55
82.60	0.00	0.05	271.55
83.10	0.00	0.05	271.55
83.60	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.02	0.05	271.31
56.60	0.02	0.05	271.31
57.10	0.02	0.05	271.31
57.60	0.02	0.05	271.31
58.10	0.02	0.05	271.31
58.60	0.02	0.05	271.31
59.10	0.02	0.05	271.31
59.60	0.02	0.05	271.31
60.10	0.02	0.05	271.31
60.60	0.02	0.05	271.31
61.10	0.02	0.05	271.31
61.60	0.02	0.05	271.31
62.10	0.02	0.05	271.31
62.60	0.02	0.05	271.31
63.10	0.02	0.05	271.31
63.60	0.02	0.05	271.31
64.10	0.02	0.05	271.31
64.60	0.02	0.05	271.31
65.10	0.02	0.05	271.31
65.60	0.02	0.05	271.31
66.10	0.02	0.05	271.31
66.60	0.02	0.05	271.31
67.10	0.02	0.05	271.31
67.60	0.02	0.05	271.31
68.10	0.02	0.05	271.31
68.60	0.02	0.05	271.31
69.10	0.02	0.05	271.31
69.60	0.02	0.05	271.31
70.10	0.02	0.05	271.31
70.60	0.02	0.05	271.31
71.10	0.02	0.05	271.31
71.60	0.02	0.05	271.31
72.10	0.02	0.05	271.31
72.60	0.02	0.05	271.31
73.10	0.02	0.05	271.31
73.60	0.02	0.05	271.31
74.10	0.02	0.05	271.31
74.60	0.02	0.05	271.31
75.10	0.02	0.05	271.31
75.60	0.02	0.05	271.31
76.10	0.02	0.05	271.31
76.60	0.02	0.05	271.31
77.10	0.02	0.05	271.31
77.60	0.02	0.05	271.31
78.10	0.02	0.05	271.31
78.60	0.02	0.05	271.31
79.10	0.02	0.05	271.31
79.60	0.02	0.05	271.31
80.10	0.02	0.05	271.31
80.60	0.02	0.05	271.31
81.10	0.02	0.05	271.31
81.60	0.02	0.05	271.31
82.10	0.02	0.05	271.31
82.60	0.02	0.05	271.31
83.10	0.02	0.05	271.31
83.60	0.02	0.05	271.31

Door - I			
Grid Elevation	271.50	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (24262)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.55
84.60	0.00	0.05	271.55
85.10	0.00	0.05	271.55
85.60	0.00	0.05	271.55
86.10	0.00	0.05	271.55
86.60	0.00	0.05	271.55
87.10	0.00	0.05	271.55
87.60	0.00	0.05	271.55
88.10	0.00	0.05	271.55
88.60	0.00	0.05	271.55
89.10	0.00	0.05	271.55
89.60	0.00	0.05	271.55
90.10	0.00	0.05	271.55

Door - J			
Grid Elevation	271.26	(feet, NAVD88)	
Door Elevation	271.56		
Grid	Element: (27629)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.02	0.05	271.31
84.60	0.02	0.05	271.31
85.10	0.02	0.05	271.31
85.60	0.02	0.05	271.31
86.10	0.02	0.05	271.31
86.60	0.02	0.05	271.31
87.10	0.02	0.05	271.31
87.60	0.02	0.05	271.31
88.10	0.02	0.05	271.31
88.60	0.02	0.05	271.31
89.10	0.02	0.05	271.31
89.60	0.02	0.05	271.31
90.10	0.02	0.05	271.31

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.15
0.50	0.00	0.00	271.15
1.00	0.00	0.00	271.15
1.50	0.00	0.00	271.15
2.00	0.00	0.00	271.15
2.50	0.00	0.00	271.15
3.00	0.00	0.00	271.15
3.50	0.00	0.00	271.15
4.00	0.00	0.00	271.15
4.50	0.00	0.00	271.15
5.00	0.00	0.00	271.15
5.50	0.00	0.00	271.15
6.00	0.00	0.00	271.15
6.50	0.00	0.00	271.15
7.00	0.00	0.00	271.15
7.50	0.00	0.00	271.15
8.00	0.00	0.00	271.15
8.50	0.00	0.00	271.15
9.00	0.00	0.00	271.15
9.50	0.00	0.00	271.15
10.00	0.00	0.00	271.15
10.50	0.00	0.00	271.15
11.00	0.00	0.00	271.15
11.50	0.00	0.00	271.15
12.00	0.00	0.00	271.15
12.50	0.00	0.00	271.15
13.00	0.00	0.00	271.15
13.50	0.00	0.00	271.15
14.00	0.00	0.00	271.15
14.50	0.00	0.00	271.15
15.00	0.00	0.00	271.15
15.50	0.00	0.00	271.15
16.00	0.00	0.00	271.15
16.50	0.00	0.00	271.15
17.00	0.00	0.00	271.15
17.50	0.00	0.00	271.15
18.00	0.00	0.00	271.15
18.50	0.00	0.00	271.15
19.00	0.00	0.00	271.15
19.50	0.00	0.00	271.15
20.00	0.00	0.00	271.15
20.50	0.00	0.00	271.15
21.00	0.00	0.00	271.15
21.50	0.00	0.00	271.15
22.00	0.00	0.00	271.15
22.50	0.00	0.00	271.15
23.00	0.00	0.00	271.15
23.50	0.00	0.00	271.15
24.00	0.00	0.00	271.15
24.50	0.00	0.00	271.15
25.00	0.00	0.00	271.15
25.50	0.00	0.00	271.15
26.00	0.00	0.00	271.15
26.50	0.00	0.00	271.15
27.00	0.00	0.00	271.15
27.50	0.00	0.00	271.15

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.08
0.50	0.00	0.00	271.08
1.00	0.00	0.00	271.08
1.50	0.00	0.00	271.08
2.00	0.00	0.00	271.08
2.50	0.00	0.00	271.08
3.00	0.00	0.00	271.08
3.50	0.00	0.00	271.08
4.00	0.00	0.00	271.08
4.50	0.00	0.00	271.08
5.00	0.00	0.00	271.08
5.50	0.00	0.00	271.08
6.00	0.00	0.00	271.08
6.50	0.00	0.00	271.08
7.00	0.00	0.00	271.08
7.50	0.00	0.00	271.08
8.00	0.00	0.00	271.08
8.50	0.00	0.00	271.08
9.00	0.00	0.00	271.08
9.50	0.00	0.00	271.08
10.00	0.00	0.00	271.08
10.50	0.00	0.00	271.08
11.00	0.00	0.00	271.08
11.50	0.00	0.00	271.08
12.00	0.00	0.00	271.08
12.50	0.00	0.00	271.08
13.00	0.00	0.00	271.08
13.50	0.00	0.00	271.08
14.00	0.00	0.00	271.08
14.50	0.00	0.00	271.08
15.00	0.00	0.00	271.08
15.50	0.00	0.00	271.08
16.00	0.00	0.00	271.08
16.50	0.00	0.00	271.08
17.00	0.00	0.00	271.08
17.50	0.00	0.00	271.08
18.00	0.00	0.00	271.08
18.50	0.00	0.00	271.08
19.00	0.00	0.00	271.08
19.50	0.00	0.00	271.08
20.00	0.00	0.00	271.08
20.50	0.00	0.00	271.08
21.00	0.00	0.00	271.08
21.50	0.00	0.00	271.08
22.00	0.00	0.00	271.08
22.50	0.00	0.00	271.08
23.00	0.00	0.00	271.08
23.50	0.00	0.00	271.08
24.00	0.00	0.00	271.08
24.50	0.00	0.00	271.08
25.00	0.00	0.00	271.08
25.50	0.00	0.00	271.08
26.00	0.00	0.00	271.08
26.50	0.00	0.00	271.08
27.00	0.00	0.00	271.08
27.50	0.00	0.00	271.08

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.15
28.50	0.00	0.00	271.15
29.00	0.00	0.00	271.15
29.50	0.00	0.00	271.15
30.00	0.00	0.00	271.15
30.50	0.00	0.00	271.15
31.00	0.00	0.00	271.15
31.50	0.00	0.00	271.15
32.00	0.00	0.00	271.15
32.50	0.00	0.00	271.15
33.00	0.00	0.00	271.15
33.50	0.00	0.00	271.15
34.00	0.00	0.00	271.15
34.50	0.00	0.00	271.15
35.00	0.00	0.00	271.15
35.50	0.00	0.00	271.15
36.00	0.00	0.00	271.15
36.50	0.00	0.00	271.15
37.00	0.00	0.00	271.15
37.50	0.00	0.00	271.15
38.00	0.00	0.00	271.15
38.50	0.00	0.00	271.15
39.00	0.00	0.00	271.15
39.50	0.00	0.00	271.15
40.10	0.00	0.00	271.15
40.60	0.17	0.41	271.56
41.10	0.35	0.62	271.77
41.60	0.37	0.74	271.89
42.10	0.49	0.81	271.96
42.60	0.38	0.75	271.90
43.10	0.33	0.65	271.80
43.60	0.24	0.53	271.68
44.10	0.13	0.42	271.57
44.60	0.12	0.30	271.45
45.10	0.03	0.20	271.35
45.60	0.01	0.11	271.26
46.10	0.02	0.05	271.20
46.60	0.00	0.05	271.20
47.10	0.00	0.05	271.20
47.60	0.00	0.05	271.20
48.10	0.00	0.05	271.20
48.60	0.00	0.05	271.20
49.10	0.00	0.05	271.20
49.60	0.00	0.05	271.20
50.10	0.00	0.05	271.20
50.60	0.00	0.05	271.20
51.10	0.00	0.05	271.20
51.60	0.00	0.05	271.20
52.10	0.00	0.05	271.20
52.60	0.00	0.05	271.20
53.10	0.00	0.05	271.20
53.60	0.00	0.05	271.20
54.10	0.00	0.05	271.20
54.60	0.00	0.05	271.20
55.10	0.00	0.05	271.20
55.60	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.08
28.50	0.00	0.00	271.08
29.00	0.00	0.00	271.08
29.50	0.00	0.00	271.08
30.00	0.00	0.00	271.08
30.50	0.00	0.00	271.08
31.00	0.00	0.00	271.08
31.50	0.00	0.00	271.08
32.00	0.00	0.00	271.08
32.50	0.00	0.00	271.08
33.00	0.00	0.00	271.08
33.50	0.00	0.00	271.08
34.00	0.00	0.00	271.08
34.50	0.00	0.00	271.08
35.00	0.00	0.00	271.08
35.50	0.00	0.00	271.08
36.00	0.00	0.00	271.08
36.50	0.00	0.00	271.08
37.00	0.00	0.00	271.08
37.50	0.00	0.00	271.08
38.00	0.00	0.00	271.08
38.50	0.00	0.00	271.08
39.00	0.00	0.00	271.08
39.50	0.00	0.00	271.08
40.10	0.00	0.00	271.08
40.60	0.09	0.49	271.57
41.10	0.24	0.70	271.78
41.60	0.02	0.82	271.90
42.10	0.10	0.89	271.97
42.60	0.09	0.84	271.92
43.10	0.09	0.73	271.81
43.60	0.04	0.61	271.69
44.10	0.09	0.50	271.58
44.60	0.08	0.38	271.46
45.10	0.02	0.27	271.35
45.60	0.02	0.18	271.26
46.10	0.00	0.12	271.20
46.60	0.00	0.08	271.16
47.10	0.00	0.05	271.13
47.60	0.00	0.05	271.13
48.10	0.00	0.05	271.13
48.60	0.00	0.05	271.13
49.10	0.00	0.05	271.13
49.60	0.00	0.05	271.13
50.10	0.00	0.05	271.13
50.60	0.00	0.05	271.13
51.10	0.00	0.05	271.13
51.60	0.00	0.05	271.13
52.10	0.00	0.05	271.13
52.60	0.00	0.05	271.13
53.10	0.00	0.05	271.13
53.60	0.00	0.05	271.13
54.10	0.00	0.05	271.13
54.60	0.00	0.05	271.13
55.10	0.00	0.05	271.13
55.60	0.00	0.05	271.13

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.20
56.60	0.00	0.05	271.20
57.10	0.00	0.05	271.20
57.60	0.00	0.05	271.20
58.10	0.00	0.05	271.20
58.60	0.00	0.05	271.20
59.10	0.00	0.05	271.20
59.60	0.00	0.05	271.20
60.10	0.00	0.05	271.20
60.60	0.00	0.05	271.20
61.10	0.00	0.05	271.20
61.60	0.00	0.05	271.20
62.10	0.00	0.05	271.20
62.60	0.00	0.05	271.20
63.10	0.00	0.05	271.20
63.60	0.00	0.05	271.20
64.10	0.00	0.05	271.20
64.60	0.00	0.05	271.20
65.10	0.00	0.05	271.20
65.60	0.00	0.05	271.20
66.10	0.00	0.05	271.20
66.60	0.00	0.05	271.20
67.10	0.00	0.05	271.20
67.60	0.00	0.05	271.20
68.10	0.00	0.05	271.20
68.60	0.00	0.05	271.20
69.10	0.00	0.05	271.20
69.60	0.00	0.05	271.20
70.10	0.00	0.05	271.20
70.60	0.00	0.05	271.20
71.10	0.00	0.05	271.20
71.60	0.00	0.05	271.20
72.10	0.00	0.05	271.20
72.60	0.00	0.05	271.20
73.10	0.00	0.05	271.20
73.60	0.00	0.05	271.20
74.10	0.00	0.05	271.20
74.60	0.00	0.05	271.20
75.10	0.00	0.05	271.20
75.60	0.00	0.05	271.20
76.10	0.00	0.05	271.20
76.60	0.00	0.05	271.20
77.10	0.00	0.05	271.20
77.60	0.00	0.05	271.20
78.10	0.00	0.05	271.20
78.60	0.00	0.05	271.20
79.10	0.00	0.05	271.20
79.60	0.00	0.05	271.20
80.10	0.00	0.05	271.20
80.60	0.00	0.05	271.20
81.10	0.00	0.05	271.20
81.60	0.00	0.05	271.20
82.10	0.00	0.05	271.20
82.60	0.00	0.05	271.20
83.10	0.00	0.05	271.20
83.60	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.13
56.60	0.00	0.05	271.13
57.10	0.00	0.05	271.13
57.60	0.00	0.05	271.13
58.10	0.00	0.05	271.13
58.60	0.00	0.05	271.13
59.10	0.00	0.05	271.13
59.60	0.00	0.05	271.13
60.10	0.00	0.05	271.13
60.60	0.00	0.05	271.13
61.10	0.00	0.05	271.13
61.60	0.00	0.05	271.13
62.10	0.00	0.05	271.13
62.60	0.00	0.05	271.13
63.10	0.00	0.05	271.13
63.60	0.00	0.05	271.13
64.10	0.00	0.05	271.13
64.60	0.00	0.05	271.13
65.10	0.00	0.05	271.13
65.60	0.00	0.05	271.13
66.10	0.00	0.05	271.13
66.60	0.00	0.05	271.13
67.10	0.00	0.05	271.13
67.60	0.00	0.05	271.13
68.10	0.00	0.05	271.13
68.60	0.00	0.05	271.13
69.10	0.00	0.05	271.13
69.60	0.00	0.05	271.13
70.10	0.00	0.05	271.13
70.60	0.00	0.05	271.13
71.10	0.00	0.05	271.13
71.60	0.00	0.05	271.13
72.10	0.00	0.05	271.13
72.60	0.00	0.05	271.13
73.10	0.00	0.05	271.13
73.60	0.00	0.05	271.13
74.10	0.00	0.05	271.13
74.60	0.00	0.05	271.13
75.10	0.00	0.05	271.13
75.60	0.00	0.05	271.13
76.10	0.00	0.05	271.13
76.60	0.00	0.05	271.13
77.10	0.00	0.05	271.13
77.60	0.00	0.05	271.13
78.10	0.00	0.05	271.13
78.60	0.00	0.05	271.13
79.10	0.00	0.05	271.13
79.60	0.00	0.05	271.13
80.10	0.00	0.05	271.13
80.60	0.00	0.05	271.13
81.10	0.00	0.05	271.13
81.60	0.00	0.05	271.13
82.10	0.00	0.05	271.13
82.60	0.00	0.05	271.13
83.10	0.00	0.05	271.13
83.60	0.00	0.05	271.13

Door - K			
Grid Elevation	271.15	(feet, NAVD88)	
Door Elevation	271.17		
Grid	Element: (33641)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.20
84.60	0.00	0.05	271.20
85.10	0.00	0.05	271.20
85.60	0.00	0.05	271.20
86.10	0.00	0.05	271.20
86.60	0.00	0.05	271.20
87.10	0.00	0.05	271.20
87.60	0.00	0.05	271.20
88.10	0.00	0.05	271.20
88.60	0.00	0.05	271.20
89.10	0.00	0.05	271.20
89.60	0.00	0.05	271.20
90.10	0.00	0.05	271.20

Door - L			
Grid Elevation	271.08	(feet, NAVD88)	
Door Elevation	271.24		
Grid	Element: (33643)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.13
84.60	0.00	0.05	271.13
85.10	0.00	0.05	271.13
85.60	0.00	0.05	271.13
86.10	0.00	0.05	271.13
86.60	0.00	0.05	271.13
87.10	0.00	0.05	271.13
87.60	0.00	0.05	271.13
88.10	0.00	0.05	271.13
88.60	0.00	0.05	271.13
89.10	0.00	0.05	271.13
89.60	0.00	0.05	271.13
90.10	0.00	0.05	271.13

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.45
0.50	0.00	0.00	271.45
1.00	0.00	0.00	271.45
1.50	0.00	0.00	271.45
2.00	0.00	0.00	271.45
2.50	0.00	0.00	271.45
3.00	0.00	0.00	271.45
3.50	0.00	0.00	271.45
4.00	0.00	0.00	271.45
4.50	0.00	0.00	271.45
5.00	0.00	0.00	271.45
5.50	0.00	0.00	271.45
6.00	0.00	0.00	271.45
6.50	0.00	0.00	271.45
7.00	0.00	0.00	271.45
7.50	0.00	0.00	271.45
8.00	0.00	0.00	271.45
8.50	0.00	0.00	271.45
9.00	0.00	0.00	271.45
9.50	0.00	0.00	271.45
10.00	0.00	0.00	271.45
10.50	0.00	0.00	271.45
11.00	0.00	0.00	271.45
11.50	0.00	0.00	271.45
12.00	0.00	0.00	271.45
12.50	0.00	0.00	271.45
13.00	0.00	0.00	271.45
13.50	0.00	0.00	271.45
14.00	0.00	0.00	271.45
14.50	0.00	0.00	271.45
15.00	0.00	0.00	271.45
15.50	0.00	0.00	271.45
16.00	0.00	0.00	271.45
16.50	0.00	0.00	271.45
17.00	0.00	0.00	271.45
17.50	0.00	0.00	271.45
18.00	0.00	0.00	271.45
18.50	0.00	0.00	271.45
19.00	0.00	0.00	271.45
19.50	0.00	0.00	271.45
20.00	0.00	0.00	271.45
20.50	0.00	0.00	271.45
21.00	0.00	0.00	271.45
21.50	0.00	0.00	271.45
22.00	0.00	0.00	271.45
22.50	0.00	0.00	271.45
23.00	0.00	0.00	271.45
23.50	0.00	0.00	271.45
24.00	0.00	0.00	271.45
24.50	0.00	0.00	271.45
25.00	0.00	0.00	271.45
25.50	0.00	0.00	271.45
26.00	0.00	0.00	271.45
26.50	0.00	0.00	271.45
27.00	0.00	0.00	271.45
27.50	0.00	0.00	271.45

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.77
0.50	0.00	0.00	270.77
1.00	0.00	0.00	270.77
1.50	0.00	0.00	270.77
2.00	0.00	0.00	270.77
2.50	0.00	0.00	270.77
3.00	0.00	0.00	270.77
3.50	0.00	0.00	270.77
4.00	0.00	0.00	270.77
4.50	0.00	0.00	270.77
5.00	0.00	0.00	270.77
5.50	0.00	0.00	270.77
6.00	0.00	0.00	270.77
6.50	0.00	0.00	270.77
7.00	0.00	0.00	270.77
7.50	0.00	0.00	270.77
8.00	0.00	0.00	270.77
8.50	0.00	0.00	270.77
9.00	0.00	0.00	270.77
9.50	0.00	0.00	270.77
10.00	0.00	0.00	270.77
10.50	0.00	0.00	270.77
11.00	0.00	0.00	270.77
11.50	0.00	0.00	270.77
12.00	0.00	0.00	270.77
12.50	0.00	0.00	270.77
13.00	0.00	0.00	270.77
13.50	0.00	0.00	270.77
14.00	0.00	0.00	270.77
14.50	0.00	0.00	270.77
15.00	0.00	0.00	270.77
15.50	0.00	0.00	270.77
16.00	0.00	0.00	270.77
16.50	0.00	0.00	270.77
17.00	0.00	0.00	270.77
17.50	0.00	0.00	270.77
18.00	0.00	0.00	270.77
18.50	0.00	0.00	270.77
19.00	0.00	0.00	270.77
19.50	0.00	0.00	270.77
20.00	0.00	0.00	270.77
20.50	0.00	0.00	270.77
21.00	0.00	0.00	270.77
21.50	0.00	0.00	270.77
22.00	0.00	0.00	270.77
22.50	0.00	0.00	270.77
23.00	0.00	0.00	270.77
23.50	0.00	0.00	270.77
24.00	0.00	0.00	270.77
24.50	0.00	0.00	270.77
25.00	0.00	0.00	270.77
25.50	0.00	0.00	270.77
26.00	0.00	0.00	270.77
26.50	0.00	0.00	270.77
27.00	0.00	0.00	270.77
27.50	0.00	0.00	270.77

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.45
28.50	0.00	0.00	271.45
29.00	0.00	0.00	271.45
29.50	0.00	0.00	271.45
30.00	0.00	0.00	271.45
30.50	0.00	0.00	271.45
31.00	0.00	0.00	271.45
31.50	0.00	0.00	271.45
32.00	0.00	0.00	271.45
32.50	0.00	0.00	271.45
33.00	0.00	0.00	271.45
33.50	0.00	0.00	271.45
34.00	0.00	0.00	271.45
34.50	0.00	0.00	271.45
35.00	0.00	0.00	271.45
35.50	0.00	0.00	271.45
36.00	0.00	0.00	271.45
36.50	0.00	0.00	271.45
37.00	0.00	0.00	271.45
37.50	0.00	0.00	271.45
38.00	0.00	0.00	271.45
38.50	0.00	0.00	271.45
39.00	0.00	0.00	271.45
39.50	0.00	0.00	271.45
40.10	0.00	0.00	271.45
40.60	0.06	0.11	271.56
41.10	0.18	0.37	271.82
41.60	0.23	0.49	271.94
42.10	0.45	0.58	272.03
42.60	0.47	0.53	271.98
43.10	0.29	0.41	271.86
43.60	0.25	0.29	271.74
44.10	0.08	0.16	271.61
44.60	0.03	0.05	271.50
45.10	0.00	0.05	271.50
45.60	0.00	0.05	271.50
46.10	0.00	0.05	271.50
46.60	0.00	0.05	271.50
47.10	0.00	0.05	271.50
47.60	0.00	0.05	271.50
48.10	0.00	0.05	271.50
48.60	0.00	0.05	271.50
49.10	0.00	0.05	271.50
49.60	0.00	0.05	271.50
50.10	0.00	0.05	271.50
50.60	0.00	0.05	271.50
51.10	0.00	0.05	271.50
51.60	0.00	0.05	271.50
52.10	0.00	0.05	271.50
52.60	0.00	0.05	271.50
53.10	0.00	0.05	271.50
53.60	0.00	0.05	271.50
54.10	0.00	0.05	271.50
54.60	0.00	0.05	271.50
55.10	0.00	0.05	271.50
55.60	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.77
28.50	0.00	0.00	270.77
29.00	0.00	0.00	270.77
29.50	0.00	0.00	270.77
30.00	0.00	0.00	270.77
30.50	0.00	0.00	270.77
31.00	0.00	0.00	270.77
31.50	0.00	0.00	270.77
32.00	0.00	0.00	270.77
32.50	0.00	0.00	270.77
33.00	0.00	0.00	270.77
33.50	0.00	0.00	270.77
34.00	0.00	0.00	270.77
34.50	0.00	0.00	270.77
35.00	0.00	0.00	270.77
35.50	0.00	0.00	270.77
36.00	0.00	0.00	270.77
36.50	0.00	0.00	270.77
37.00	0.00	0.00	270.77
37.50	0.00	0.00	270.77
38.00	0.00	0.00	270.77
38.50	0.00	0.00	270.77
39.00	0.00	0.00	270.77
39.50	0.00	0.00	270.77
40.10	0.00	0.00	270.77
40.60	0.15	0.74	271.51
41.10	0.03	1.05	271.82
41.60	0.04	1.19	271.96
42.10	0.13	1.31	272.08
42.60	0.18	1.25	272.02
43.10	0.13	1.15	271.92
43.60	0.05	1.02	271.79
44.10	0.12	0.88	271.65
44.60	0.03	0.77	271.54
45.10	0.04	0.67	271.44
45.60	0.03	0.59	271.36
46.10	0.02	0.54	271.31
46.60	0.03	0.50	271.27
47.10	0.02	0.48	271.25
47.60	0.00	0.45	271.22
48.10	0.00	0.44	271.21
48.60	0.00	0.42	271.19
49.10	0.00	0.41	271.18
49.60	0.00	0.40	271.17
50.10	0.00	0.39	271.16
50.60	0.00	0.38	271.15
51.10	0.00	0.37	271.14
51.60	0.00	0.37	271.14
52.10	0.00	0.36	271.13
52.60	0.00	0.36	271.13
53.10	0.00	0.35	271.12
53.60	0.00	0.35	271.12
54.10	0.00	0.34	271.11
54.60	0.00	0.34	271.11
55.10	0.00	0.33	271.10
55.60	0.00	0.33	271.10

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.50
56.60	0.00	0.05	271.50
57.10	0.00	0.05	271.50
57.60	0.00	0.05	271.50
58.10	0.00	0.05	271.50
58.60	0.00	0.05	271.50
59.10	0.00	0.05	271.50
59.60	0.00	0.05	271.50
60.10	0.00	0.05	271.50
60.60	0.00	0.05	271.50
61.10	0.00	0.05	271.50
61.60	0.00	0.05	271.50
62.10	0.00	0.05	271.50
62.60	0.00	0.05	271.50
63.10	0.00	0.05	271.50
63.60	0.00	0.05	271.50
64.10	0.00	0.05	271.50
64.60	0.00	0.05	271.50
65.10	0.00	0.05	271.50
65.60	0.00	0.05	271.50
66.10	0.00	0.05	271.50
66.60	0.00	0.05	271.50
67.10	0.00	0.05	271.50
67.60	0.00	0.05	271.50
68.10	0.00	0.05	271.50
68.60	0.00	0.05	271.50
69.10	0.00	0.05	271.50
69.60	0.00	0.05	271.50
70.10	0.00	0.05	271.50
70.60	0.00	0.05	271.50
71.10	0.00	0.05	271.50
71.60	0.00	0.05	271.50
72.10	0.00	0.05	271.50
72.60	0.00	0.05	271.50
73.10	0.00	0.05	271.50
73.60	0.00	0.05	271.50
74.10	0.00	0.05	271.50
74.60	0.00	0.05	271.50
75.10	0.00	0.05	271.50
75.60	0.00	0.05	271.50
76.10	0.00	0.05	271.50
76.60	0.00	0.05	271.50
77.10	0.00	0.05	271.50
77.60	0.00	0.05	271.50
78.10	0.00	0.05	271.50
78.60	0.00	0.05	271.50
79.10	0.00	0.05	271.50
79.60	0.00	0.05	271.50
80.10	0.00	0.05	271.50
80.60	0.00	0.05	271.50
81.10	0.00	0.05	271.50
81.60	0.00	0.05	271.50
82.10	0.00	0.05	271.50
82.60	0.00	0.05	271.50
83.10	0.00	0.05	271.50
83.60	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.33	271.10
56.60	0.00	0.32	271.09
57.10	0.00	0.32	271.09
57.60	0.00	0.32	271.09
58.10	0.00	0.32	271.09
58.60	0.00	0.31	271.08
59.10	0.00	0.31	271.08
59.60	0.00	0.31	271.08
60.10	0.00	0.31	271.08
60.60	0.00	0.30	271.07
61.10	0.00	0.30	271.07
61.60	0.00	0.30	271.07
62.10	0.00	0.30	271.07
62.60	0.00	0.30	271.07
63.10	0.00	0.29	271.06
63.60	0.00	0.29	271.06
64.10	0.00	0.29	271.06
64.60	0.00	0.29	271.06
65.10	0.00	0.29	271.06
65.60	0.00	0.29	271.06
66.10	0.00	0.28	271.05
66.60	0.00	0.28	271.05
67.10	0.00	0.28	271.05
67.60	0.00	0.28	271.05
68.10	0.00	0.28	271.05
68.60	0.00	0.28	271.05
69.10	0.00	0.28	271.05
69.60	0.00	0.27	271.04
70.10	0.00	0.27	271.04
70.60	0.00	0.27	271.04
71.10	0.00	0.27	271.04
71.60	0.00	0.27	271.04
72.10	0.00	0.27	271.04
72.60	0.00	0.27	271.04
73.10	0.00	0.27	271.04
73.60	0.00	0.27	271.04
74.10	0.00	0.26	271.03
74.60	0.00	0.26	271.03
75.10	0.00	0.26	271.03
75.60	0.00	0.26	271.03
76.10	0.00	0.26	271.03
76.60	0.00	0.26	271.03
77.10	0.00	0.26	271.03
77.60	0.00	0.26	271.03
78.10	0.00	0.26	271.03
78.60	0.00	0.26	271.03
79.10	0.00	0.26	271.03
79.60	0.00	0.26	271.03
80.10	0.00	0.25	271.02
80.60	0.00	0.25	271.02
81.10	0.00	0.25	271.02
81.60	0.00	0.25	271.02
82.10	0.00	0.25	271.02
82.60	0.00	0.25	271.02
83.10	0.00	0.25	271.02
83.60	0.00	0.25	271.02

Door - M			
Grid Elevation	271.45	(feet, NAVD88)	
Door Elevation	271.47		
Grid	Element: (35482)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.50
84.60	0.00	0.05	271.50
85.10	0.00	0.05	271.50
85.60	0.00	0.05	271.50
86.10	0.00	0.05	271.50
86.60	0.00	0.05	271.50
87.10	0.00	0.05	271.50
87.60	0.00	0.05	271.50
88.10	0.00	0.05	271.50
88.60	0.00	0.05	271.50
89.10	0.00	0.05	271.50
89.60	0.00	0.05	271.50
90.10	0.00	0.05	271.50

Door - N			
Grid Elevation	270.77	(feet, NAVD88)	
Door Elevation	271.52		
Grid	Element: (35118)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.25	271.02
84.60	0.00	0.25	271.02
85.10	0.00	0.25	271.02
85.60	0.00	0.25	271.02
86.10	0.00	0.25	271.02
86.60	0.00	0.25	271.02
87.10	0.00	0.25	271.02
87.60	0.00	0.25	271.02
88.10	0.00	0.25	271.02
88.60	0.00	0.25	271.02
89.10	0.00	0.24	271.01
89.60	0.00	0.24	271.01
90.10	0.00	0.24	271.01

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.37
0.50	0.00	0.00	271.37
1.00	0.00	0.00	271.37
1.50	0.00	0.00	271.37
2.00	0.00	0.00	271.37
2.50	0.00	0.00	271.37
3.00	0.00	0.00	271.37
3.50	0.00	0.00	271.37
4.00	0.00	0.00	271.37
4.50	0.00	0.00	271.37
5.00	0.00	0.00	271.37
5.50	0.00	0.00	271.37
6.00	0.00	0.00	271.37
6.50	0.00	0.00	271.37
7.00	0.00	0.00	271.37
7.50	0.00	0.00	271.37
8.00	0.00	0.00	271.37
8.50	0.00	0.00	271.37
9.00	0.00	0.00	271.37
9.50	0.00	0.00	271.37
10.00	0.00	0.00	271.37
10.50	0.00	0.00	271.37
11.00	0.00	0.00	271.37
11.50	0.00	0.00	271.37
12.00	0.00	0.00	271.37
12.50	0.00	0.00	271.37
13.00	0.00	0.00	271.37
13.50	0.00	0.00	271.37
14.00	0.00	0.00	271.37
14.50	0.00	0.00	271.37
15.00	0.00	0.00	271.37
15.50	0.00	0.00	271.37
16.00	0.00	0.00	271.37
16.50	0.00	0.00	271.37
17.00	0.00	0.00	271.37
17.50	0.00	0.00	271.37
18.00	0.00	0.00	271.37
18.50	0.00	0.00	271.37
19.00	0.00	0.00	271.37
19.50	0.00	0.00	271.37
20.00	0.00	0.00	271.37
20.50	0.00	0.00	271.37
21.00	0.00	0.00	271.37
21.50	0.00	0.00	271.37
22.00	0.00	0.00	271.37
22.50	0.00	0.00	271.37
23.00	0.00	0.00	271.37
23.50	0.00	0.00	271.37
24.00	0.00	0.00	271.37
24.50	0.00	0.00	271.37
25.00	0.00	0.00	271.37
25.50	0.00	0.00	271.37
26.00	0.00	0.00	271.37
26.50	0.00	0.00	271.37
27.00	0.00	0.00	271.37
27.50	0.00	0.00	271.37

N+1 DG Prestage			
Grid Elevation	271.36	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.36
0.50	0.00	0.00	271.36
1.00	0.00	0.00	271.36
1.50	0.00	0.00	271.36
2.00	0.00	0.00	271.36
2.50	0.00	0.00	271.36
3.00	0.00	0.00	271.36
3.50	0.00	0.00	271.36
4.00	0.00	0.00	271.36
4.50	0.00	0.00	271.36
5.00	0.00	0.00	271.36
5.50	0.00	0.00	271.36
6.00	0.00	0.00	271.36
6.50	0.00	0.00	271.36
7.00	0.00	0.00	271.36
7.50	0.00	0.00	271.36
8.00	0.00	0.00	271.36
8.50	0.00	0.00	271.36
9.00	0.00	0.00	271.36
9.50	0.00	0.00	271.36
10.00	0.00	0.00	271.36
10.50	0.00	0.00	271.36
11.00	0.00	0.00	271.36
11.50	0.00	0.00	271.36
12.00	0.00	0.00	271.36
12.50	0.00	0.00	271.36
13.00	0.00	0.00	271.36
13.50	0.00	0.00	271.36
14.00	0.00	0.00	271.36
14.50	0.00	0.00	271.36
15.00	0.00	0.00	271.36
15.50	0.00	0.00	271.36
16.00	0.00	0.00	271.36
16.50	0.00	0.00	271.36
17.00	0.00	0.00	271.36
17.50	0.00	0.00	271.36
18.00	0.00	0.00	271.36
18.50	0.00	0.00	271.36
19.00	0.00	0.00	271.36
19.50	0.00	0.00	271.36
20.00	0.00	0.00	271.36
20.50	0.00	0.00	271.36
21.00	0.00	0.00	271.36
21.50	0.00	0.00	271.36
22.00	0.00	0.00	271.36
22.50	0.00	0.00	271.36
23.00	0.00	0.00	271.36
23.50	0.00	0.00	271.36
24.00	0.00	0.00	271.36
24.50	0.00	0.00	271.36
25.00	0.00	0.00	271.36
25.50	0.00	0.00	271.36
26.00	0.00	0.00	271.36
26.50	0.00	0.00	271.36
27.00	0.00	0.00	271.36
27.50	0.00	0.00	271.36

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.37
28.50	0.00	0.00	271.37
29.00	0.00	0.00	271.37
29.50	0.00	0.00	271.37
30.00	0.00	0.00	271.37
30.50	0.00	0.00	271.37
31.00	0.00	0.00	271.37
31.50	0.00	0.00	271.37
32.00	0.00	0.00	271.37
32.50	0.00	0.00	271.37
33.00	0.00	0.00	271.37
33.50	0.00	0.00	271.37
34.00	0.00	0.00	271.37
34.50	0.00	0.00	271.37
35.00	0.00	0.00	271.37
35.50	0.00	0.00	271.37
36.00	0.00	0.00	271.37
36.50	0.00	0.00	271.37
37.00	0.00	0.00	271.37
37.50	0.00	0.00	271.37
38.00	0.00	0.00	271.37
38.50	0.00	0.00	271.37
39.00	0.00	0.00	271.37
39.50	0.00	0.00	271.37
40.10	0.00	0.00	271.37
40.60	0.00	0.00	271.37
41.10	0.03	0.16	271.53
41.60	0.09	0.24	271.61
42.10	0.15	0.31	271.68
42.60	0.11	0.28	271.65
43.10	0.08	0.21	271.58
43.60	0.02	0.12	271.49
44.10	0.00	0.05	271.42
44.60	0.00	0.05	271.42
45.10	0.00	0.05	271.42
45.60	0.00	0.05	271.42
46.10	0.00	0.05	271.42
46.60	0.00	0.05	271.42
47.10	0.00	0.05	271.42
47.60	0.00	0.05	271.42
48.10	0.00	0.05	271.42
48.60	0.00	0.05	271.42
49.10	0.00	0.05	271.42
49.60	0.00	0.05	271.42
50.10	0.00	0.05	271.42
50.60	0.00	0.05	271.42
51.10	0.00	0.05	271.42
51.60	0.00	0.05	271.42
52.10	0.00	0.05	271.42
52.60	0.00	0.05	271.42
53.10	0.00	0.05	271.42
53.60	0.00	0.05	271.42
54.10	0.00	0.05	271.42
54.60	0.00	0.05	271.42
55.10	0.00	0.05	271.42
55.60	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.36	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.36
28.50	0.00	0.00	271.36
29.00	0.00	0.00	271.36
29.50	0.00	0.00	271.36
30.00	0.00	0.00	271.36
30.50	0.00	0.00	271.36
31.00	0.00	0.00	271.36
31.50	0.00	0.00	271.36
32.00	0.00	0.00	271.36
32.50	0.00	0.00	271.36
33.00	0.00	0.00	271.36
33.50	0.00	0.00	271.36
34.00	0.00	0.00	271.36
34.50	0.00	0.00	271.36
35.00	0.00	0.00	271.36
35.50	0.00	0.00	271.36
36.00	0.00	0.00	271.36
36.50	0.00	0.00	271.36
37.00	0.00	0.00	271.36
37.50	0.00	0.00	271.36
38.00	0.00	0.00	271.36
38.50	0.00	0.00	271.36
39.00	0.00	0.00	271.36
39.50	0.00	0.00	271.36
40.10	0.00	0.00	271.36
40.60	0.00	0.00	271.36
41.10	0.00	0.00	271.36
41.60	0.12	0.06	271.42
42.10	0.13	0.17	271.53
42.60	0.12	0.16	271.52
43.10	0.09	0.10	271.46
43.60	0.00	0.05	271.41
44.10	0.00	0.05	271.41
44.60	0.00	0.05	271.41
45.10	0.00	0.05	271.41
45.60	0.00	0.05	271.41
46.10	0.00	0.05	271.41
46.60	0.00	0.05	271.41
47.10	0.00	0.05	271.41
47.60	0.00	0.05	271.41
48.10	0.00	0.05	271.41
48.60	0.00	0.05	271.41
49.10	0.00	0.05	271.41
49.60	0.00	0.05	271.41
50.10	0.00	0.05	271.41
50.60	0.00	0.05	271.41
51.10	0.00	0.05	271.41
51.60	0.00	0.05	271.41
52.10	0.00	0.05	271.41
52.60	0.00	0.05	271.41
53.10	0.00	0.05	271.41
53.60	0.00	0.05	271.41
54.10	0.00	0.05	271.41
54.60	0.00	0.05	271.41
55.10	0.00	0.05	271.41
55.60	0.00	0.05	271.41

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.42
56.60	0.00	0.05	271.42
57.10	0.00	0.05	271.42
57.60	0.00	0.05	271.42
58.10	0.00	0.05	271.42
58.60	0.00	0.05	271.42
59.10	0.00	0.05	271.42
59.60	0.00	0.05	271.42
60.10	0.00	0.05	271.42
60.60	0.00	0.05	271.42
61.10	0.00	0.05	271.42
61.60	0.00	0.05	271.42
62.10	0.00	0.05	271.42
62.60	0.00	0.05	271.42
63.10	0.00	0.05	271.42
63.60	0.00	0.05	271.42
64.10	0.00	0.05	271.42
64.60	0.00	0.05	271.42
65.10	0.00	0.05	271.42
65.60	0.00	0.05	271.42
66.10	0.00	0.05	271.42
66.60	0.00	0.05	271.42
67.10	0.00	0.05	271.42
67.60	0.00	0.05	271.42
68.10	0.00	0.05	271.42
68.60	0.00	0.05	271.42
69.10	0.00	0.05	271.42
69.60	0.00	0.05	271.42
70.10	0.00	0.05	271.42
70.60	0.00	0.05	271.42
71.10	0.00	0.05	271.42
71.60	0.00	0.05	271.42
72.10	0.00	0.05	271.42
72.60	0.00	0.05	271.42
73.10	0.00	0.05	271.42
73.60	0.00	0.05	271.42
74.10	0.00	0.05	271.42
74.60	0.00	0.05	271.42
75.10	0.00	0.05	271.42
75.60	0.00	0.05	271.42
76.10	0.00	0.05	271.42
76.60	0.00	0.05	271.42
77.10	0.00	0.05	271.42
77.60	0.00	0.05	271.42
78.10	0.00	0.05	271.42
78.60	0.00	0.05	271.42
79.10	0.00	0.05	271.42
79.60	0.00	0.05	271.42
80.10	0.00	0.05	271.42
80.60	0.00	0.05	271.42
81.10	0.00	0.05	271.42
81.60	0.00	0.05	271.42
82.10	0.00	0.05	271.42
82.60	0.00	0.05	271.42
83.10	0.00	0.05	271.42
83.60	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.36	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.41
56.60	0.00	0.05	271.41
57.10	0.00	0.05	271.41
57.60	0.00	0.05	271.41
58.10	0.00	0.05	271.41
58.60	0.00	0.05	271.41
59.10	0.00	0.05	271.41
59.60	0.00	0.05	271.41
60.10	0.00	0.05	271.41
60.60	0.00	0.05	271.41
61.10	0.00	0.05	271.41
61.60	0.00	0.05	271.41
62.10	0.00	0.05	271.41
62.60	0.00	0.05	271.41
63.10	0.00	0.05	271.41
63.60	0.00	0.05	271.41
64.10	0.00	0.05	271.41
64.60	0.00	0.05	271.41
65.10	0.00	0.05	271.41
65.60	0.00	0.05	271.41
66.10	0.00	0.05	271.41
66.60	0.00	0.05	271.41
67.10	0.00	0.05	271.41
67.60	0.00	0.05	271.41
68.10	0.00	0.05	271.41
68.60	0.00	0.05	271.41
69.10	0.00	0.05	271.41
69.60	0.00	0.05	271.41
70.10	0.00	0.05	271.41
70.60	0.00	0.05	271.41
71.10	0.00	0.05	271.41
71.60	0.00	0.05	271.41
72.10	0.00	0.05	271.41
72.60	0.00	0.05	271.41
73.10	0.00	0.05	271.41
73.60	0.00	0.05	271.41
74.10	0.00	0.05	271.41
74.60	0.00	0.05	271.41
75.10	0.00	0.05	271.41
75.60	0.00	0.05	271.41
76.10	0.00	0.05	271.41
76.60	0.00	0.05	271.41
77.10	0.00	0.05	271.41
77.60	0.00	0.05	271.41
78.10	0.00	0.05	271.41
78.60	0.00	0.05	271.41
79.10	0.00	0.05	271.41
79.60	0.00	0.05	271.41
80.10	0.00	0.05	271.41
80.60	0.00	0.05	271.41
81.10	0.00	0.05	271.41
81.60	0.00	0.05	271.41
82.10	0.00	0.05	271.41
82.60	0.00	0.05	271.41
83.10	0.00	0.05	271.41
83.60	0.00	0.05	271.41

Door - O			
Grid Elevation	271.37	(feet, NAVD88)	
Grid	Element: (25259)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.42
84.60	0.00	0.05	271.42
85.10	0.00	0.05	271.42
85.60	0.00	0.05	271.42
86.10	0.00	0.05	271.42
86.60	0.00	0.05	271.42
87.10	0.00	0.05	271.42
87.60	0.00	0.05	271.42
88.10	0.00	0.05	271.42
88.60	0.00	0.05	271.42
89.10	0.00	0.05	271.42
89.60	0.00	0.05	271.42
90.10	0.00	0.05	271.42

N+1 DG Prestage			
Grid Elevation	271.36	(feet, NAVD88)	
Grid	Element: (16038)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.41
84.60	0.00	0.05	271.41
85.10	0.00	0.05	271.41
85.60	0.00	0.05	271.41
86.10	0.00	0.05	271.41
86.60	0.00	0.05	271.41
87.10	0.00	0.05	271.41
87.60	0.00	0.05	271.41
88.10	0.00	0.05	271.41
88.60	0.00	0.05	271.41
89.10	0.00	0.05	271.41
89.60	0.00	0.05	271.41
90.10	0.00	0.05	271.41

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.00
0.50	0.00	0.00	271.00
1.00	0.00	0.00	271.00
1.50	0.00	0.00	271.00
2.00	0.00	0.00	271.00
2.50	0.00	0.00	271.00
3.00	0.00	0.00	271.00
3.50	0.00	0.00	271.00
4.00	0.00	0.00	271.00
4.50	0.00	0.00	271.00
5.00	0.00	0.00	271.00
5.50	0.00	0.00	271.00
6.00	0.00	0.00	271.00
6.50	0.00	0.00	271.00
7.00	0.00	0.00	271.00
7.50	0.00	0.00	271.00
8.00	0.00	0.00	271.00
8.50	0.00	0.00	271.00
9.00	0.00	0.00	271.00
9.50	0.00	0.00	271.00
10.00	0.00	0.00	271.00
10.50	0.00	0.00	271.00
11.00	0.00	0.00	271.00
11.50	0.00	0.00	271.00
12.00	0.00	0.00	271.00
12.50	0.00	0.00	271.00
13.00	0.00	0.00	271.00
13.50	0.00	0.00	271.00
14.00	0.00	0.00	271.00
14.50	0.00	0.00	271.00
15.00	0.00	0.00	271.00
15.50	0.00	0.00	271.00
16.00	0.00	0.00	271.00
16.50	0.00	0.00	271.00
17.00	0.00	0.00	271.00
17.50	0.00	0.00	271.00
18.00	0.00	0.00	271.00
18.50	0.00	0.00	271.00
19.00	0.00	0.00	271.00
19.50	0.00	0.00	271.00
20.00	0.00	0.00	271.00
20.50	0.00	0.00	271.00
21.00	0.00	0.00	271.00
21.50	0.00	0.00	271.00
22.00	0.00	0.00	271.00
22.50	0.00	0.00	271.00
23.00	0.00	0.00	271.00
23.50	0.00	0.00	271.00
24.00	0.00	0.00	271.00
24.50	0.00	0.00	271.00
25.00	0.00	0.00	271.00
25.50	0.00	0.00	271.00
26.00	0.00	0.00	271.00
26.50	0.00	0.00	271.00
27.00	0.00	0.00	271.00
27.50	0.00	0.00	271.00

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	270.96
0.50	0.00	0.00	270.96
1.00	0.00	0.00	270.96
1.50	0.00	0.00	270.96
2.00	0.00	0.00	270.96
2.50	0.00	0.00	270.96
3.00	0.00	0.00	270.96
3.50	0.00	0.00	270.96
4.00	0.00	0.00	270.96
4.50	0.00	0.00	270.96
5.00	0.00	0.00	270.96
5.50	0.00	0.00	270.96
6.00	0.00	0.00	270.96
6.50	0.00	0.00	270.96
7.00	0.00	0.00	270.96
7.50	0.00	0.00	270.96
8.00	0.00	0.00	270.96
8.50	0.00	0.00	270.96
9.00	0.00	0.00	270.96
9.50	0.00	0.00	270.96
10.00	0.00	0.00	270.96
10.50	0.00	0.00	270.96
11.00	0.00	0.00	270.96
11.50	0.00	0.00	270.96
12.00	0.00	0.00	270.96
12.50	0.00	0.00	270.96
13.00	0.00	0.00	270.96
13.50	0.00	0.00	270.96
14.00	0.00	0.00	270.96
14.50	0.00	0.00	270.96
15.00	0.00	0.00	270.96
15.50	0.00	0.00	270.96
16.00	0.00	0.00	270.96
16.50	0.00	0.00	270.96
17.00	0.00	0.00	270.96
17.50	0.00	0.00	270.96
18.00	0.00	0.00	270.96
18.50	0.00	0.00	270.96
19.00	0.00	0.00	270.96
19.50	0.00	0.00	270.96
20.00	0.00	0.00	270.96
20.50	0.00	0.00	270.96
21.00	0.00	0.00	270.96
21.50	0.00	0.00	270.96
22.00	0.00	0.00	270.96
22.50	0.00	0.00	270.96
23.00	0.00	0.00	270.96
23.50	0.00	0.00	270.96
24.00	0.00	0.00	270.96
24.50	0.00	0.00	270.96
25.00	0.00	0.00	270.96
25.50	0.00	0.00	270.96
26.00	0.00	0.00	270.96
26.50	0.00	0.00	270.96
27.00	0.00	0.00	270.96
27.50	0.00	0.00	270.96

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.00
28.50	0.00	0.00	271.00
29.00	0.00	0.00	271.00
29.50	0.00	0.00	271.00
30.00	0.00	0.00	271.00
30.50	0.00	0.00	271.00
31.00	0.00	0.00	271.00
31.50	0.00	0.00	271.00
32.00	0.00	0.00	271.00
32.50	0.00	0.00	271.00
33.00	0.00	0.00	271.00
33.50	0.00	0.00	271.00
34.00	0.00	0.00	271.00
34.50	0.00	0.00	271.00
35.00	0.00	0.00	271.00
35.50	0.00	0.00	271.00
36.00	0.00	0.00	271.00
36.50	0.00	0.00	271.00
37.00	0.00	0.00	271.00
37.50	0.00	0.00	271.00
38.00	0.00	0.00	271.00
38.50	0.00	0.00	271.00
39.00	0.00	0.00	271.00
39.50	0.00	0.00	271.00
40.10	0.00	0.00	271.00
40.60	0.08	0.46	271.46
41.10	0.25	0.65	271.65
41.60	0.29	0.74	271.74
42.10	0.33	0.80	271.80
42.60	0.28	0.76	271.76
43.10	0.22	0.68	271.68
43.60	0.16	0.59	271.59
44.10	0.09	0.49	271.49
44.60	0.05	0.40	271.40
45.10	0.00	0.32	271.32
45.60	0.00	0.25	271.25
46.10	0.00	0.20	271.20
46.60	0.00	0.16	271.16
47.10	0.00	0.14	271.14
47.60	0.00	0.12	271.12
48.10	0.00	0.12	271.12
48.60	0.00	0.11	271.11
49.10	0.00	0.11	271.11
49.60	0.00	0.11	271.11
50.10	0.00	0.11	271.11
50.60	0.00	0.11	271.11
51.10	0.00	0.11	271.11
51.60	0.00	0.11	271.11
52.10	0.00	0.11	271.11
52.60	0.00	0.11	271.11
53.10	0.00	0.11	271.11
53.60	0.00	0.11	271.11
54.10	0.00	0.11	271.11
54.60	0.00	0.11	271.11
55.10	0.00	0.11	271.11
55.60	0.00	0.11	271.11

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	270.96
28.50	0.00	0.00	270.96
29.00	0.00	0.00	270.96
29.50	0.00	0.00	270.96
30.00	0.00	0.00	270.96
30.50	0.00	0.00	270.96
31.00	0.00	0.00	270.96
31.50	0.00	0.00	270.96
32.00	0.00	0.00	270.96
32.50	0.00	0.00	270.96
33.00	0.00	0.00	270.96
33.50	0.00	0.00	270.96
34.00	0.00	0.00	270.96
34.50	0.00	0.00	270.96
35.00	0.00	0.00	270.96
35.50	0.00	0.00	270.96
36.00	0.00	0.00	270.96
36.50	0.00	0.00	270.96
37.00	0.00	0.00	270.96
37.50	0.00	0.00	270.96
38.00	0.00	0.00	270.96
38.50	0.00	0.00	270.96
39.00	0.00	0.00	270.96
39.50	0.00	0.00	270.96
40.10	0.00	0.00	270.96
40.60	0.20	0.57	271.53
41.10	0.43	0.76	271.72
41.60	0.57	0.86	271.82
42.10	0.71	0.92	271.88
42.60	0.55	0.88	271.84
43.10	0.44	0.79	271.75
43.60	0.32	0.69	271.65
44.10	0.18	0.58	271.54
44.60	0.04	0.47	271.43
45.10	0.02	0.38	271.34
45.60	0.00	0.30	271.26
46.10	0.00	0.24	271.20
46.60	0.00	0.20	271.16
47.10	0.00	0.17	271.13
47.60	0.00	0.14	271.10
48.10	0.00	0.12	271.08
48.60	0.00	0.10	271.06
49.10	0.00	0.08	271.04
49.60	0.00	0.07	271.03
50.10	0.00	0.06	271.02
50.60	0.00	0.05	271.01
51.10	0.00	0.05	271.01
51.60	0.00	0.05	271.01
52.10	0.00	0.05	271.01
52.60	0.00	0.05	271.01
53.10	0.00	0.05	271.01
53.60	0.00	0.05	271.01
54.10	0.00	0.05	271.01
54.60	0.00	0.05	271.01
55.10	0.00	0.05	271.01
55.60	0.00	0.05	271.01

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.11	271.11
56.60	0.00	0.11	271.11
57.10	0.00	0.11	271.11
57.60	0.00	0.11	271.11
58.10	0.00	0.11	271.11
58.60	0.00	0.11	271.11
59.10	0.00	0.11	271.11
59.60	0.00	0.11	271.11
60.10	0.00	0.11	271.11
60.60	0.00	0.11	271.11
61.10	0.00	0.11	271.11
61.60	0.00	0.11	271.11
62.10	0.00	0.11	271.11
62.60	0.00	0.11	271.11
63.10	0.00	0.11	271.11
63.60	0.00	0.11	271.11
64.10	0.00	0.11	271.11
64.60	0.00	0.11	271.11
65.10	0.00	0.11	271.11
65.60	0.00	0.11	271.11
66.10	0.00	0.11	271.11
66.60	0.00	0.11	271.11
67.10	0.00	0.11	271.11
67.60	0.00	0.11	271.11
68.10	0.00	0.11	271.11
68.60	0.00	0.11	271.11
69.10	0.00	0.11	271.11
69.60	0.00	0.11	271.11
70.10	0.00	0.11	271.11
70.60	0.00	0.11	271.11
71.10	0.00	0.11	271.11
71.60	0.00	0.11	271.11
72.10	0.00	0.11	271.11
72.60	0.00	0.11	271.11
73.10	0.00	0.11	271.11
73.60	0.00	0.11	271.11
74.10	0.00	0.11	271.11
74.60	0.00	0.11	271.11
75.10	0.00	0.11	271.11
75.60	0.00	0.11	271.11
76.10	0.00	0.11	271.11
76.60	0.00	0.11	271.11
77.10	0.00	0.11	271.11
77.60	0.00	0.11	271.11
78.10	0.00	0.11	271.11
78.60	0.00	0.11	271.11
79.10	0.00	0.11	271.11
79.60	0.00	0.11	271.11
80.10	0.00	0.11	271.11
80.60	0.00	0.11	271.11
81.10	0.00	0.11	271.11
81.60	0.00	0.11	271.11
82.10	0.00	0.11	271.11
82.60	0.00	0.11	271.11
83.10	0.00	0.11	271.11
83.60	0.00	0.11	271.11

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.01
56.60	0.00	0.05	271.01
57.10	0.00	0.05	271.01
57.60	0.00	0.05	271.01
58.10	0.00	0.05	271.01
58.60	0.00	0.05	271.01
59.10	0.00	0.05	271.01
59.60	0.00	0.05	271.01
60.10	0.00	0.05	271.01
60.60	0.00	0.05	271.01
61.10	0.00	0.05	271.01
61.60	0.00	0.05	271.01
62.10	0.00	0.05	271.01
62.60	0.00	0.05	271.01
63.10	0.00	0.05	271.01
63.60	0.00	0.05	271.01
64.10	0.00	0.05	271.01
64.60	0.00	0.05	271.01
65.10	0.00	0.05	271.01
65.60	0.00	0.05	271.01
66.10	0.00	0.05	271.01
66.60	0.00	0.05	271.01
67.10	0.00	0.05	271.01
67.60	0.00	0.05	271.01
68.10	0.00	0.05	271.01
68.60	0.00	0.05	271.01
69.10	0.00	0.05	271.01
69.60	0.00	0.05	271.01
70.10	0.00	0.05	271.01
70.60	0.00	0.05	271.01
71.10	0.00	0.05	271.01
71.60	0.00	0.05	271.01
72.10	0.00	0.05	271.01
72.60	0.00	0.05	271.01
73.10	0.00	0.05	271.01
73.60	0.00	0.05	271.01
74.10	0.00	0.05	271.01
74.60	0.00	0.05	271.01
75.10	0.00	0.05	271.01
75.60	0.00	0.05	271.01
76.10	0.00	0.05	271.01
76.60	0.00	0.05	271.01
77.10	0.00	0.05	271.01
77.60	0.00	0.05	271.01
78.10	0.00	0.05	271.01
78.60	0.00	0.05	271.01
79.10	0.00	0.05	271.01
79.60	0.00	0.05	271.01
80.10	0.00	0.05	271.01
80.60	0.00	0.05	271.01
81.10	0.00	0.05	271.01
81.60	0.00	0.05	271.01
82.10	0.00	0.05	271.01
82.60	0.00	0.05	271.01
83.10	0.00	0.05	271.01
83.60	0.00	0.05	271.01

Hatch 1 (H1)			
Grid Elevation	271.00	(feet, NAVD88)	
Grid	Element: (30060)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.11	271.11
84.60	0.00	0.11	271.11
85.10	0.00	0.11	271.11
85.60	0.00	0.11	271.11
86.10	0.00	0.11	271.11
86.60	0.00	0.11	271.11
87.10	0.00	0.11	271.11
87.60	0.00	0.11	271.11
88.10	0.00	0.11	271.11
88.60	0.00	0.11	271.11
89.10	0.00	0.11	271.11
89.60	0.00	0.11	271.11
90.10	0.00	0.11	271.11

Manhole 1 (M1)			
Grid Elevation	270.96	(feet, NAVD88)	
Grid	Element: (32550)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.01
84.60	0.00	0.05	271.01
85.10	0.00	0.05	271.01
85.60	0.00	0.05	271.01
86.10	0.00	0.05	271.01
86.60	0.00	0.05	271.01
87.10	0.00	0.05	271.01
87.60	0.00	0.05	271.01
88.10	0.00	0.05	271.01
88.60	0.00	0.05	271.01
89.10	0.00	0.05	271.01
89.60	0.00	0.05	271.01
90.10	0.00	0.05	271.01

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.43
0.50	0.00	0.00	271.43
1.00	0.00	0.00	271.43
1.50	0.00	0.00	271.43
2.00	0.00	0.00	271.43
2.50	0.00	0.00	271.43
3.00	0.00	0.00	271.43
3.50	0.00	0.00	271.43
4.00	0.00	0.00	271.43
4.50	0.00	0.00	271.43
5.00	0.00	0.00	271.43
5.50	0.00	0.00	271.43
6.00	0.00	0.00	271.43
6.50	0.00	0.00	271.43
7.00	0.00	0.00	271.43
7.50	0.00	0.00	271.43
8.00	0.00	0.00	271.43
8.50	0.00	0.00	271.43
9.00	0.00	0.00	271.43
9.50	0.00	0.00	271.43
10.00	0.00	0.00	271.43
10.50	0.00	0.00	271.43
11.00	0.00	0.00	271.43
11.50	0.00	0.00	271.43
12.00	0.00	0.00	271.43
12.50	0.00	0.00	271.43
13.00	0.00	0.00	271.43
13.50	0.00	0.00	271.43
14.00	0.00	0.00	271.43
14.50	0.00	0.00	271.43
15.00	0.00	0.00	271.43
15.50	0.00	0.00	271.43
16.00	0.00	0.00	271.43
16.50	0.00	0.00	271.43
17.00	0.00	0.00	271.43
17.50	0.00	0.00	271.43
18.00	0.00	0.00	271.43
18.50	0.00	0.00	271.43
19.00	0.00	0.00	271.43
19.50	0.00	0.00	271.43
20.00	0.00	0.00	271.43
20.50	0.00	0.00	271.43
21.00	0.00	0.00	271.43
21.50	0.00	0.00	271.43
22.00	0.00	0.00	271.43
22.50	0.00	0.00	271.43
23.00	0.00	0.00	271.43
23.50	0.00	0.00	271.43
24.00	0.00	0.00	271.43
24.50	0.00	0.00	271.43
25.00	0.00	0.00	271.43
25.50	0.00	0.00	271.43
26.00	0.00	0.00	271.43
26.50	0.00	0.00	271.43
27.00	0.00	0.00	271.43
27.50	0.00	0.00	271.43

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.08
0.50	0.00	0.00	271.08
1.00	0.00	0.00	271.08
1.50	0.00	0.00	271.08
2.00	0.00	0.00	271.08
2.50	0.00	0.00	271.08
3.00	0.00	0.00	271.08
3.50	0.00	0.00	271.08
4.00	0.00	0.00	271.08
4.50	0.00	0.00	271.08
5.00	0.00	0.00	271.08
5.50	0.00	0.00	271.08
6.00	0.00	0.00	271.08
6.50	0.00	0.00	271.08
7.00	0.00	0.00	271.08
7.50	0.00	0.00	271.08
8.00	0.00	0.00	271.08
8.50	0.00	0.00	271.08
9.00	0.00	0.00	271.08
9.50	0.00	0.00	271.08
10.00	0.00	0.00	271.08
10.50	0.00	0.00	271.08
11.00	0.00	0.00	271.08
11.50	0.00	0.00	271.08
12.00	0.00	0.00	271.08
12.50	0.00	0.00	271.08
13.00	0.00	0.00	271.08
13.50	0.00	0.00	271.08
14.00	0.00	0.00	271.08
14.50	0.00	0.00	271.08
15.00	0.00	0.00	271.08
15.50	0.00	0.00	271.08
16.00	0.00	0.00	271.08
16.50	0.00	0.00	271.08
17.00	0.00	0.00	271.08
17.50	0.00	0.00	271.08
18.00	0.00	0.00	271.08
18.50	0.00	0.00	271.08
19.00	0.00	0.00	271.08
19.50	0.00	0.00	271.08
20.00	0.00	0.00	271.08
20.50	0.00	0.00	271.08
21.00	0.00	0.00	271.08
21.50	0.00	0.00	271.08
22.00	0.00	0.00	271.08
22.50	0.00	0.00	271.08
23.00	0.00	0.00	271.08
23.50	0.00	0.00	271.08
24.00	0.00	0.00	271.08
24.50	0.00	0.00	271.08
25.00	0.00	0.00	271.08
25.50	0.00	0.00	271.08
26.00	0.00	0.00	271.08
26.50	0.00	0.00	271.08
27.00	0.00	0.00	271.08
27.50	0.00	0.00	271.08

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.43
28.50	0.00	0.00	271.43
29.00	0.00	0.00	271.43
29.50	0.00	0.00	271.43
30.00	0.00	0.00	271.43
30.50	0.00	0.00	271.43
31.00	0.00	0.00	271.43
31.50	0.00	0.00	271.43
32.00	0.00	0.00	271.43
32.50	0.00	0.00	271.43
33.00	0.00	0.00	271.43
33.50	0.00	0.00	271.43
34.00	0.00	0.00	271.43
34.50	0.00	0.00	271.43
35.00	0.00	0.00	271.43
35.50	0.00	0.00	271.43
36.00	0.00	0.00	271.43
36.50	0.00	0.00	271.43
37.00	0.00	0.00	271.43
37.50	0.00	0.00	271.43
38.00	0.00	0.00	271.43
38.50	0.00	0.00	271.43
39.00	0.00	0.00	271.43
39.50	0.00	0.00	271.43
40.10	0.00	0.00	271.43
40.60	0.00	0.00	271.43
41.10	0.03	0.32	271.75
41.60	0.02	0.51	271.94
42.10	0.00	0.69	272.12
42.60	0.00	0.64	272.07
43.10	0.05	0.53	271.96
43.60	0.04	0.39	271.82
44.10	0.00	0.26	271.69
44.60	0.00	0.14	271.57
45.10	0.00	0.05	271.48
45.60	0.00	0.05	271.48
46.10	0.00	0.05	271.48
46.60	0.00	0.05	271.48
47.10	0.00	0.05	271.48
47.60	0.00	0.05	271.48
48.10	0.00	0.05	271.48
48.60	0.00	0.05	271.48
49.10	0.00	0.05	271.48
49.60	0.00	0.05	271.48
50.10	0.00	0.05	271.48
50.60	0.00	0.05	271.48
51.10	0.00	0.05	271.48
51.60	0.00	0.05	271.48
52.10	0.00	0.05	271.48
52.60	0.00	0.05	271.48
53.10	0.00	0.05	271.48
53.60	0.00	0.05	271.48
54.10	0.00	0.05	271.48
54.60	0.00	0.05	271.48
55.10	0.00	0.05	271.48
55.60	0.00	0.05	271.48

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.08
28.50	0.00	0.00	271.08
29.00	0.00	0.00	271.08
29.50	0.00	0.00	271.08
30.00	0.00	0.00	271.08
30.50	0.00	0.00	271.08
31.00	0.00	0.00	271.08
31.50	0.00	0.00	271.08
32.00	0.00	0.00	271.08
32.50	0.00	0.00	271.08
33.00	0.00	0.00	271.08
33.50	0.00	0.00	271.08
34.00	0.00	0.00	271.08
34.50	0.00	0.00	271.08
35.00	0.00	0.00	271.08
35.50	0.00	0.00	271.08
36.00	0.00	0.00	271.08
36.50	0.00	0.00	271.08
37.00	0.00	0.00	271.08
37.50	0.00	0.00	271.08
38.00	0.00	0.00	271.08
38.50	0.00	0.00	271.08
39.00	0.00	0.00	271.08
39.50	0.00	0.00	271.08
40.10	0.00	0.00	271.08
40.60	0.00	0.00	271.08
41.10	0.02	0.67	271.75
41.60	0.00	0.86	271.94
42.10	0.00	1.04	272.12
42.60	0.00	0.99	272.07
43.10	0.02	0.88	271.96
43.60	0.03	0.74	271.82
44.10	0.00	0.61	271.69
44.60	0.00	0.49	271.57
45.10	0.00	0.39	271.47
45.60	0.00	0.32	271.40
46.10	0.00	0.29	271.37
46.60	0.00	0.28	271.36
47.10	0.00	0.28	271.36
47.60	0.00	0.28	271.36
48.10	0.00	0.28	271.36
48.60	0.00	0.28	271.36
49.10	0.00	0.28	271.36
49.60	0.00	0.28	271.36
50.10	0.00	0.28	271.36
50.60	0.00	0.28	271.36
51.10	0.00	0.28	271.36
51.60	0.00	0.28	271.36
52.10	0.00	0.28	271.36
52.60	0.00	0.28	271.36
53.10	0.00	0.28	271.36
53.60	0.00	0.28	271.36
54.10	0.00	0.28	271.36
54.60	0.00	0.28	271.36
55.10	0.00	0.28	271.36
55.60	0.00	0.28	271.36

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.05	271.48
56.60	0.00	0.05	271.48
57.10	0.00	0.05	271.48
57.60	0.00	0.05	271.48
58.10	0.00	0.05	271.48
58.60	0.00	0.05	271.48
59.10	0.00	0.05	271.48
59.60	0.00	0.05	271.48
60.10	0.00	0.05	271.48
60.60	0.00	0.05	271.48
61.10	0.00	0.05	271.48
61.60	0.00	0.05	271.48
62.10	0.00	0.05	271.48
62.60	0.00	0.05	271.48
63.10	0.00	0.05	271.48
63.60	0.00	0.05	271.48
64.10	0.00	0.05	271.48
64.60	0.00	0.05	271.48
65.10	0.00	0.05	271.48
65.60	0.00	0.05	271.48
66.10	0.00	0.05	271.48
66.60	0.00	0.05	271.48
67.10	0.00	0.05	271.48
67.60	0.00	0.05	271.48
68.10	0.00	0.05	271.48
68.60	0.00	0.05	271.48
69.10	0.00	0.05	271.48
69.60	0.00	0.05	271.48
70.10	0.00	0.05	271.48
70.60	0.00	0.05	271.48
71.10	0.00	0.05	271.48
71.60	0.00	0.05	271.48
72.10	0.00	0.05	271.48
72.60	0.00	0.05	271.48
73.10	0.00	0.05	271.48
73.60	0.00	0.05	271.48
74.10	0.00	0.05	271.48
74.60	0.00	0.05	271.48
75.10	0.00	0.05	271.48
75.60	0.00	0.05	271.48
76.10	0.00	0.05	271.48
76.60	0.00	0.05	271.48
77.10	0.00	0.05	271.48
77.60	0.00	0.05	271.48
78.10	0.00	0.05	271.48
78.60	0.00	0.05	271.48
79.10	0.00	0.05	271.48
79.60	0.00	0.05	271.48
80.10	0.00	0.05	271.48
80.60	0.00	0.05	271.48
81.10	0.00	0.05	271.48
81.60	0.00	0.05	271.48
82.10	0.00	0.05	271.48
82.60	0.00	0.05	271.48
83.10	0.00	0.05	271.48
83.60	0.00	0.05	271.48

Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.00	0.28	271.36
56.60	0.00	0.28	271.36
57.10	0.00	0.28	271.36
57.60	0.00	0.28	271.36
58.10	0.00	0.28	271.36
58.60	0.00	0.28	271.36
59.10	0.00	0.28	271.36
59.60	0.00	0.28	271.36
60.10	0.00	0.28	271.36
60.60	0.00	0.28	271.36
61.10	0.00	0.28	271.36
61.60	0.00	0.28	271.36
62.10	0.00	0.28	271.36
62.60	0.00	0.28	271.36
63.10	0.00	0.28	271.36
63.60	0.00	0.28	271.36
64.10	0.00	0.28	271.36
64.60	0.00	0.28	271.36
65.10	0.00	0.28	271.36
65.60	0.00	0.28	271.36
66.10	0.00	0.28	271.36
66.60	0.00	0.28	271.36
67.10	0.00	0.28	271.36
67.60	0.00	0.28	271.36
68.10	0.00	0.28	271.36
68.60	0.00	0.28	271.36
69.10	0.00	0.28	271.36
69.60	0.00	0.28	271.36
70.10	0.00	0.28	271.36
70.60	0.00	0.28	271.36
71.10	0.00	0.28	271.36
71.60	0.00	0.28	271.36
72.10	0.00	0.28	271.36
72.60	0.00	0.28	271.36
73.10	0.00	0.28	271.36
73.60	0.00	0.28	271.36
74.10	0.00	0.28	271.36
74.60	0.00	0.28	271.36
75.10	0.00	0.28	271.36
75.60	0.00	0.28	271.36
76.10	0.00	0.28	271.36
76.60	0.00	0.28	271.36
77.10	0.00	0.28	271.36
77.60	0.00	0.28	271.36
78.10	0.00	0.28	271.36
78.60	0.00	0.28	271.36
79.10	0.00	0.28	271.36
79.60	0.00	0.28	271.36
80.10	0.00	0.28	271.36
80.60	0.00	0.28	271.36
81.10	0.00	0.28	271.36
81.60	0.00	0.28	271.36
82.10	0.00	0.28	271.36
82.60	0.00	0.28	271.36
83.10	0.00	0.28	271.36
83.60	0.00	0.28	271.36

Hatch 2 (H2)			
Grid Elevation	271.43	(feet, NAVD88)	
Grid	Element: (30077)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.05	271.48
84.60	0.00	0.05	271.48
85.10	0.00	0.05	271.48
85.60	0.00	0.05	271.48
86.10	0.00	0.05	271.48
86.60	0.00	0.05	271.48
87.10	0.00	0.05	271.48
87.60	0.00	0.05	271.48
88.10	0.00	0.05	271.48
88.60	0.00	0.05	271.48
89.10	0.00	0.05	271.48
89.60	0.00	0.05	271.48
90.10	0.00	0.05	271.48

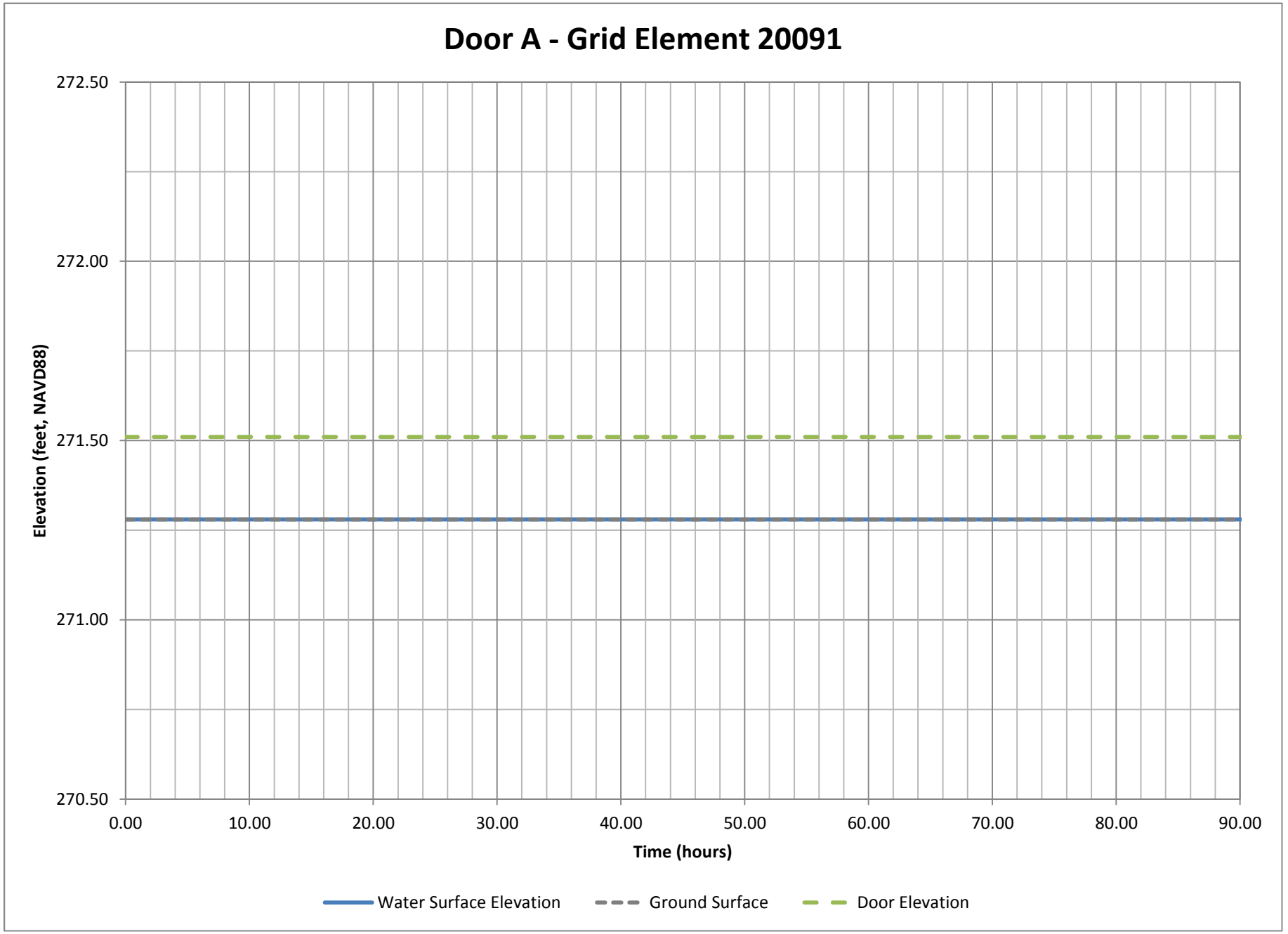
Manhole 2 (M2)			
Grid Elevation	271.08	(feet, NAVD88)	
Grid	Element: (29727)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.00	0.28	271.36
84.60	0.00	0.28	271.36
85.10	0.00	0.28	271.36
85.60	0.00	0.28	271.36
86.10	0.00	0.28	271.36
86.60	0.00	0.28	271.36
87.10	0.00	0.28	271.36
87.60	0.00	0.28	271.36
88.10	0.00	0.28	271.36
88.60	0.00	0.28	271.36
89.10	0.00	0.28	271.36
89.60	0.00	0.28	271.36
90.10	0.00	0.28	271.36

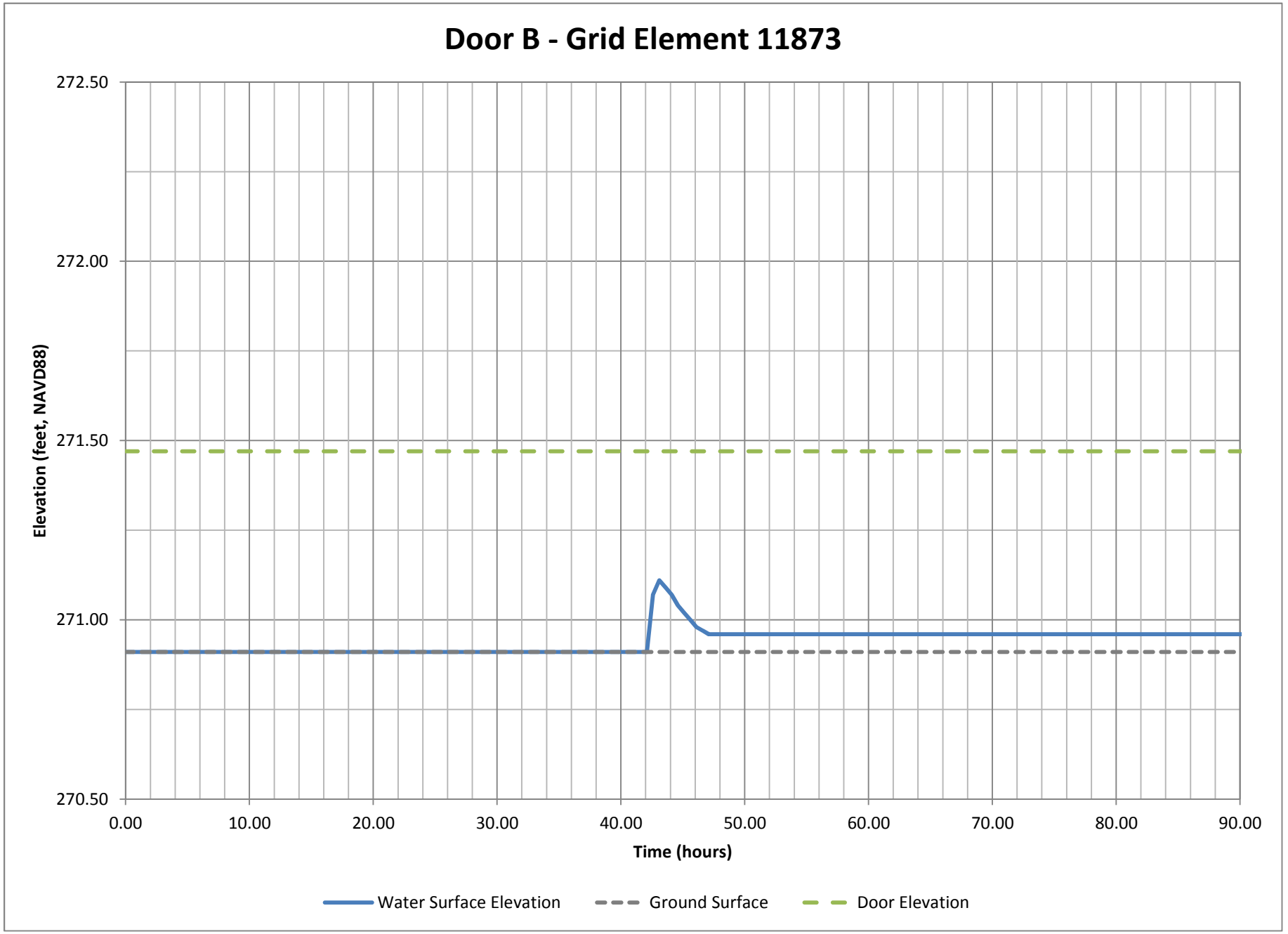
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
0.00	0.00	0.00	271.17
0.50	0.00	0.00	271.17
1.00	0.00	0.00	271.17
1.50	0.00	0.00	271.17
2.00	0.00	0.00	271.17
2.50	0.00	0.00	271.17
3.00	0.00	0.00	271.17
3.50	0.00	0.00	271.17
4.00	0.00	0.00	271.17
4.50	0.00	0.00	271.17
5.00	0.00	0.00	271.17
5.50	0.00	0.00	271.17
6.00	0.00	0.00	271.17
6.50	0.00	0.00	271.17
7.00	0.00	0.00	271.17
7.50	0.00	0.00	271.17
8.00	0.00	0.00	271.17
8.50	0.00	0.00	271.17
9.00	0.00	0.00	271.17
9.50	0.00	0.00	271.17
10.00	0.00	0.00	271.17
10.50	0.00	0.00	271.17
11.00	0.00	0.00	271.17
11.50	0.00	0.00	271.17
12.00	0.00	0.00	271.17
12.50	0.00	0.00	271.17
13.00	0.00	0.00	271.17
13.50	0.00	0.00	271.17
14.00	0.00	0.00	271.17
14.50	0.00	0.00	271.17
15.00	0.00	0.00	271.17
15.50	0.00	0.00	271.17
16.00	0.00	0.00	271.17
16.50	0.00	0.00	271.17
17.00	0.00	0.00	271.17
17.50	0.00	0.00	271.17
18.00	0.00	0.00	271.17
18.50	0.00	0.00	271.17
19.00	0.00	0.00	271.17
19.50	0.00	0.00	271.17
20.00	0.00	0.00	271.17
20.50	0.00	0.00	271.17
21.00	0.00	0.00	271.17
21.50	0.00	0.00	271.17
22.00	0.00	0.00	271.17
22.50	0.00	0.00	271.17
23.00	0.00	0.00	271.17
23.50	0.00	0.00	271.17
24.00	0.00	0.00	271.17
24.50	0.00	0.00	271.17
25.00	0.00	0.00	271.17
25.50	0.00	0.00	271.17
26.00	0.00	0.00	271.17
26.50	0.00	0.00	271.17
27.00	0.00	0.00	271.17
27.50	0.00	0.00	271.17

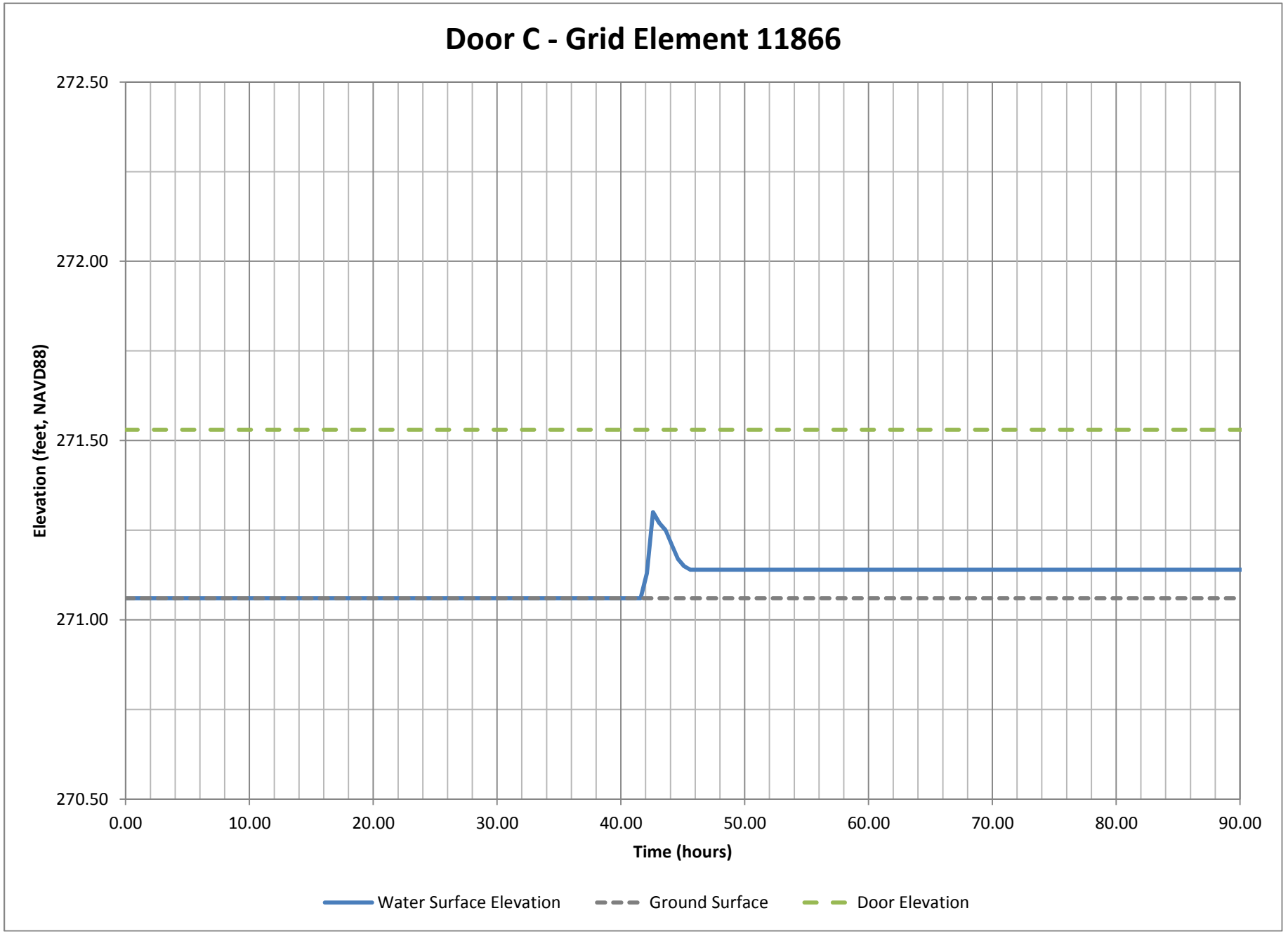
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
28.00	0.00	0.00	271.17
28.50	0.00	0.00	271.17
29.00	0.00	0.00	271.17
29.50	0.00	0.00	271.17
30.00	0.00	0.00	271.17
30.50	0.00	0.00	271.17
31.00	0.00	0.00	271.17
31.50	0.00	0.00	271.17
32.00	0.00	0.00	271.17
32.50	0.00	0.00	271.17
33.00	0.00	0.00	271.17
33.50	0.00	0.00	271.17
34.00	0.00	0.00	271.17
34.50	0.00	0.00	271.17
35.00	0.00	0.00	271.17
35.50	0.00	0.00	271.17
36.00	0.00	0.00	271.17
36.50	0.00	0.00	271.17
37.00	0.00	0.00	271.17
37.50	0.00	0.00	271.17
38.00	0.00	0.00	271.17
38.50	0.00	0.00	271.17
39.00	0.00	0.00	271.17
39.50	0.00	0.00	271.17
40.10	0.00	0.00	271.17
40.60	0.12	0.37	271.54
41.10	0.18	0.57	271.74
41.60	0.21	0.67	271.84
42.10	0.37	0.73	271.90
42.60	0.18	0.69	271.86
43.10	0.28	0.60	271.77
43.60	0.09	0.49	271.66
44.10	0.04	0.37	271.54
44.60	0.09	0.27	271.44
45.10	0.03	0.17	271.34
45.60	0.01	0.09	271.26
46.10	0.01	0.05	271.22
46.60	0.01	0.05	271.22
47.10	0.01	0.05	271.22
47.60	0.01	0.05	271.22
48.10	0.01	0.05	271.22
48.60	0.01	0.05	271.22
49.10	0.01	0.05	271.22
49.60	0.01	0.05	271.22
50.10	0.01	0.05	271.22
50.60	0.01	0.05	271.22
51.10	0.01	0.05	271.22
51.60	0.01	0.05	271.22
52.10	0.01	0.05	271.22
52.60	0.01	0.05	271.22
53.10	0.01	0.05	271.22
53.60	0.01	0.05	271.22
54.10	0.01	0.05	271.22
54.60	0.01	0.05	271.22
55.10	0.01	0.05	271.22
55.60	0.01	0.05	271.22

Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
56.10	0.01	0.05	271.22
56.60	0.01	0.05	271.22
57.10	0.01	0.05	271.22
57.60	0.01	0.05	271.22
58.10	0.01	0.05	271.22
58.60	0.01	0.05	271.22
59.10	0.01	0.05	271.22
59.60	0.01	0.05	271.22
60.10	0.01	0.05	271.22
60.60	0.01	0.05	271.22
61.10	0.01	0.05	271.22
61.60	0.01	0.05	271.22
62.10	0.01	0.05	271.22
62.60	0.01	0.05	271.22
63.10	0.01	0.05	271.22
63.60	0.01	0.05	271.22
64.10	0.01	0.05	271.22
64.60	0.01	0.05	271.22
65.10	0.01	0.05	271.22
65.60	0.01	0.05	271.22
66.10	0.01	0.05	271.22
66.60	0.01	0.05	271.22
67.10	0.01	0.05	271.22
67.60	0.01	0.05	271.22
68.10	0.01	0.05	271.22
68.60	0.01	0.05	271.22
69.10	0.01	0.05	271.22
69.60	0.01	0.05	271.22
70.10	0.01	0.05	271.22
70.60	0.01	0.05	271.22
71.10	0.01	0.05	271.22
71.60	0.01	0.05	271.22
72.10	0.01	0.05	271.22
72.60	0.01	0.05	271.22
73.10	0.01	0.05	271.22
73.60	0.01	0.05	271.22
74.10	0.01	0.05	271.22
74.60	0.01	0.05	271.22
75.10	0.01	0.05	271.22
75.60	0.01	0.05	271.22
76.10	0.01	0.05	271.22
76.60	0.01	0.05	271.22
77.10	0.01	0.05	271.22
77.60	0.01	0.05	271.22
78.10	0.01	0.05	271.22
78.60	0.01	0.05	271.22
79.10	0.01	0.05	271.22
79.60	0.01	0.05	271.22
80.10	0.01	0.05	271.22
80.60	0.01	0.05	271.22
81.10	0.01	0.05	271.22
81.60	0.01	0.05	271.22
82.10	0.01	0.05	271.22
82.60	0.01	0.05	271.22
83.10	0.01	0.05	271.22
83.60	0.01	0.05	271.22

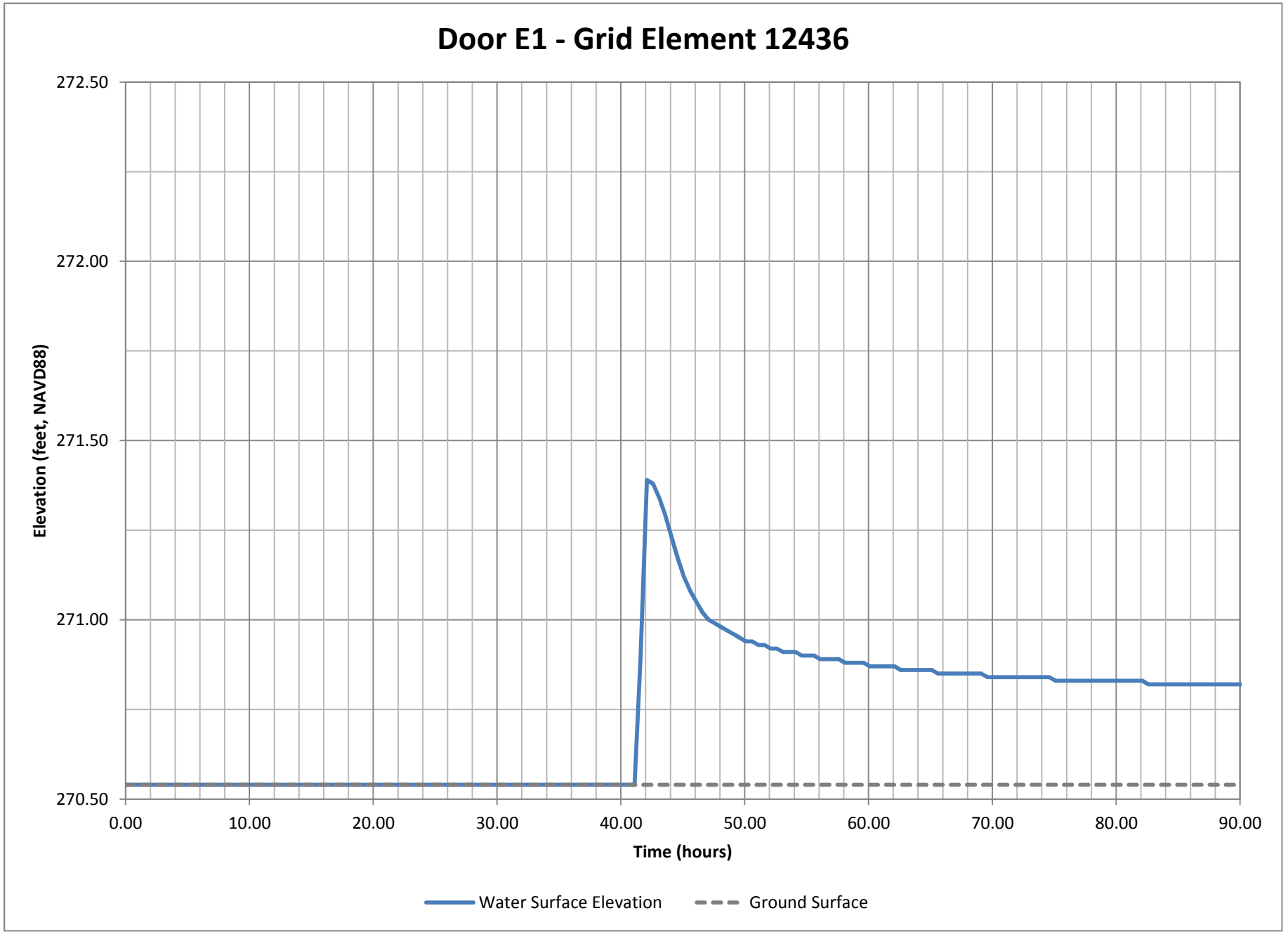
Manhole 3 (M3)			
Grid Elevation	271.17	(feet, NAVD88)	
Grid	Element: (32912)		
Time (hours)	Velocity (feet/second)	Flow Depths (feet)	Flood Elevation (feet, NAVD88)
84.10	0.01	0.05	271.22
84.60	0.01	0.05	271.22
85.10	0.01	0.05	271.22
85.60	0.01	0.05	271.22
86.10	0.01	0.05	271.22
86.60	0.01	0.05	271.22
87.10	0.01	0.05	271.22
87.60	0.01	0.05	271.22
88.10	0.01	0.05	271.22
88.60	0.01	0.05	271.22
89.10	0.01	0.05	271.22
89.60	0.01	0.05	271.22
90.10	0.01	0.05	271.22

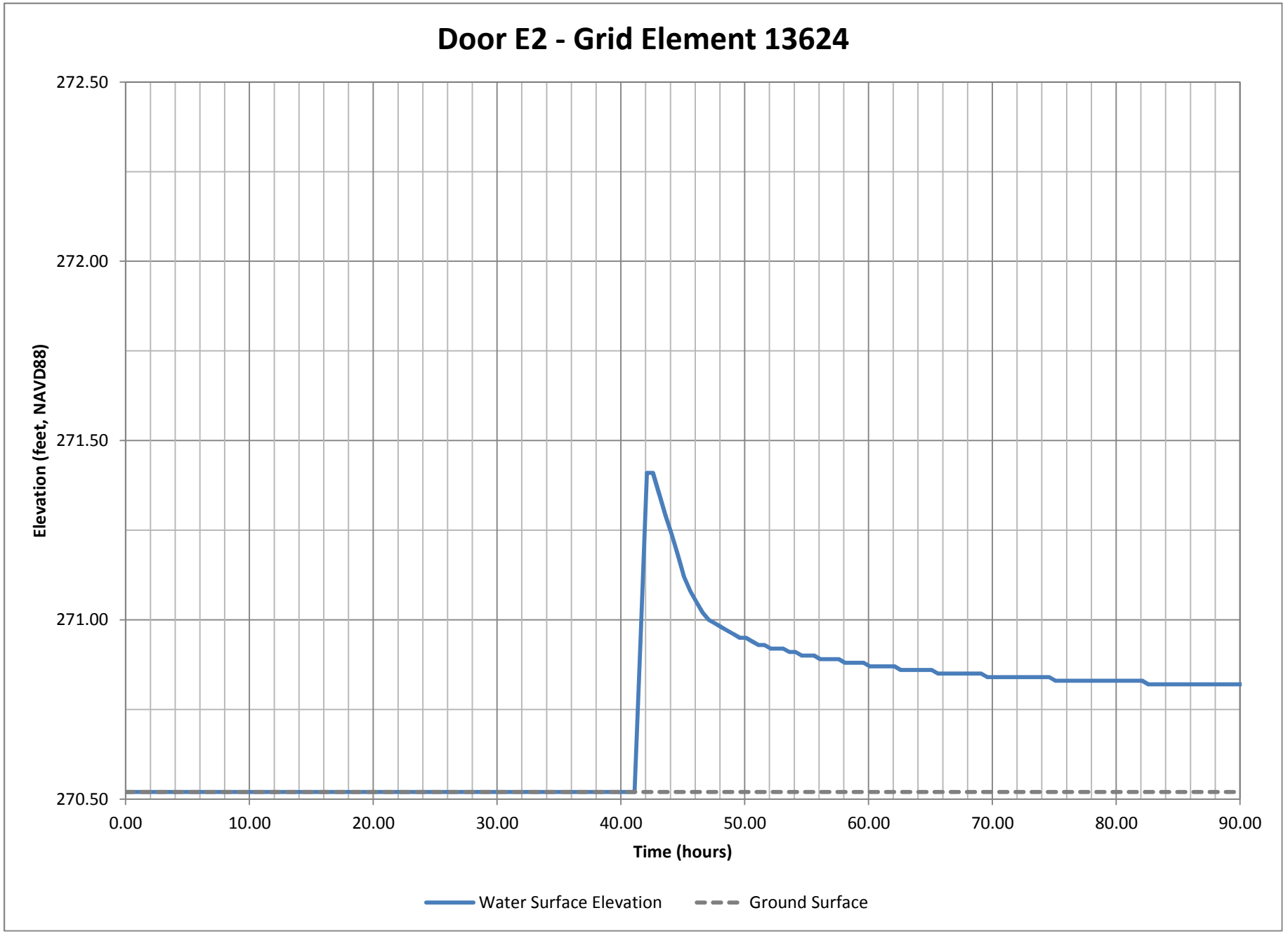

Door A - Grid Element 20091
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

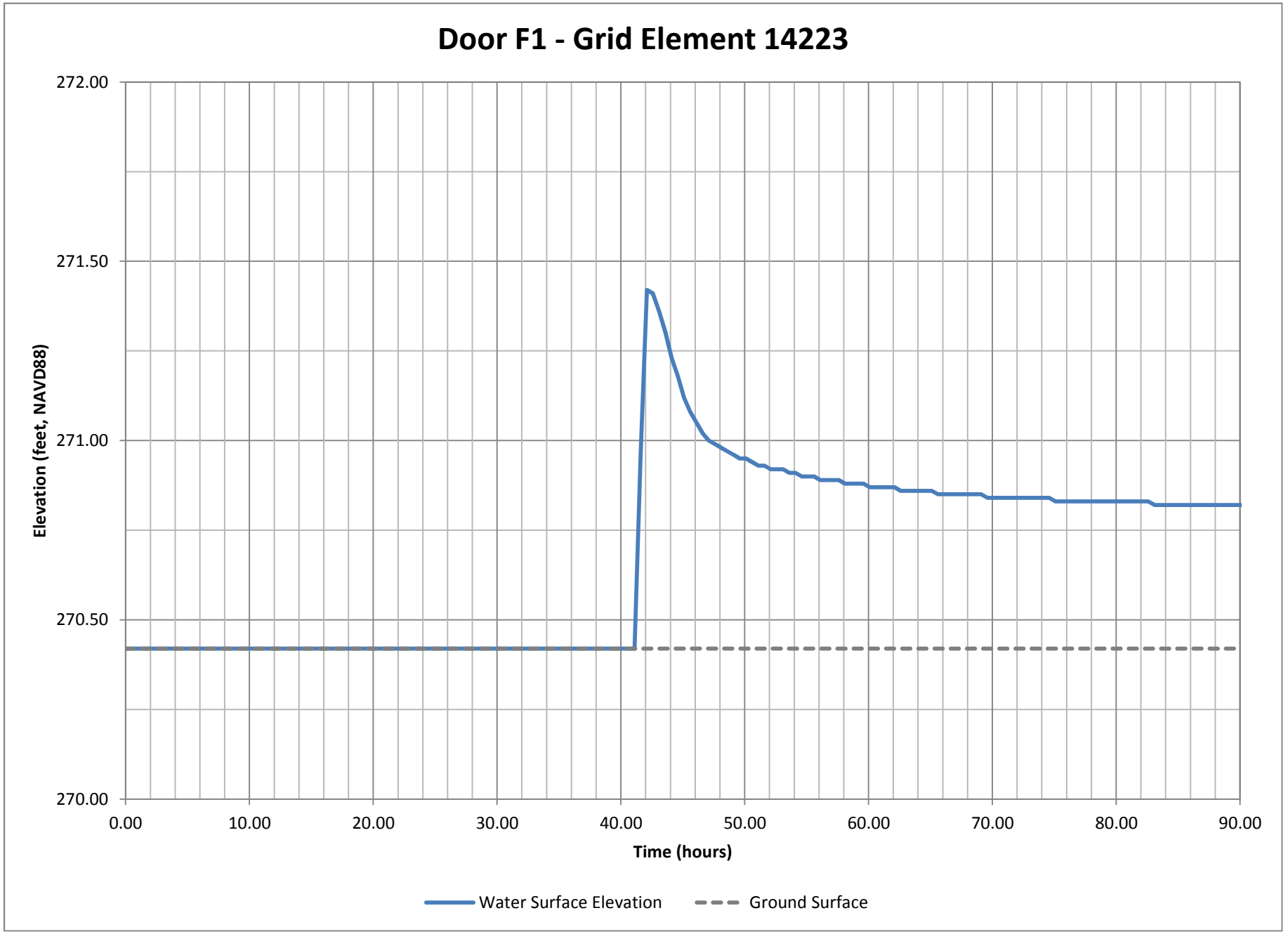

Door B - Grid Element 11873
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

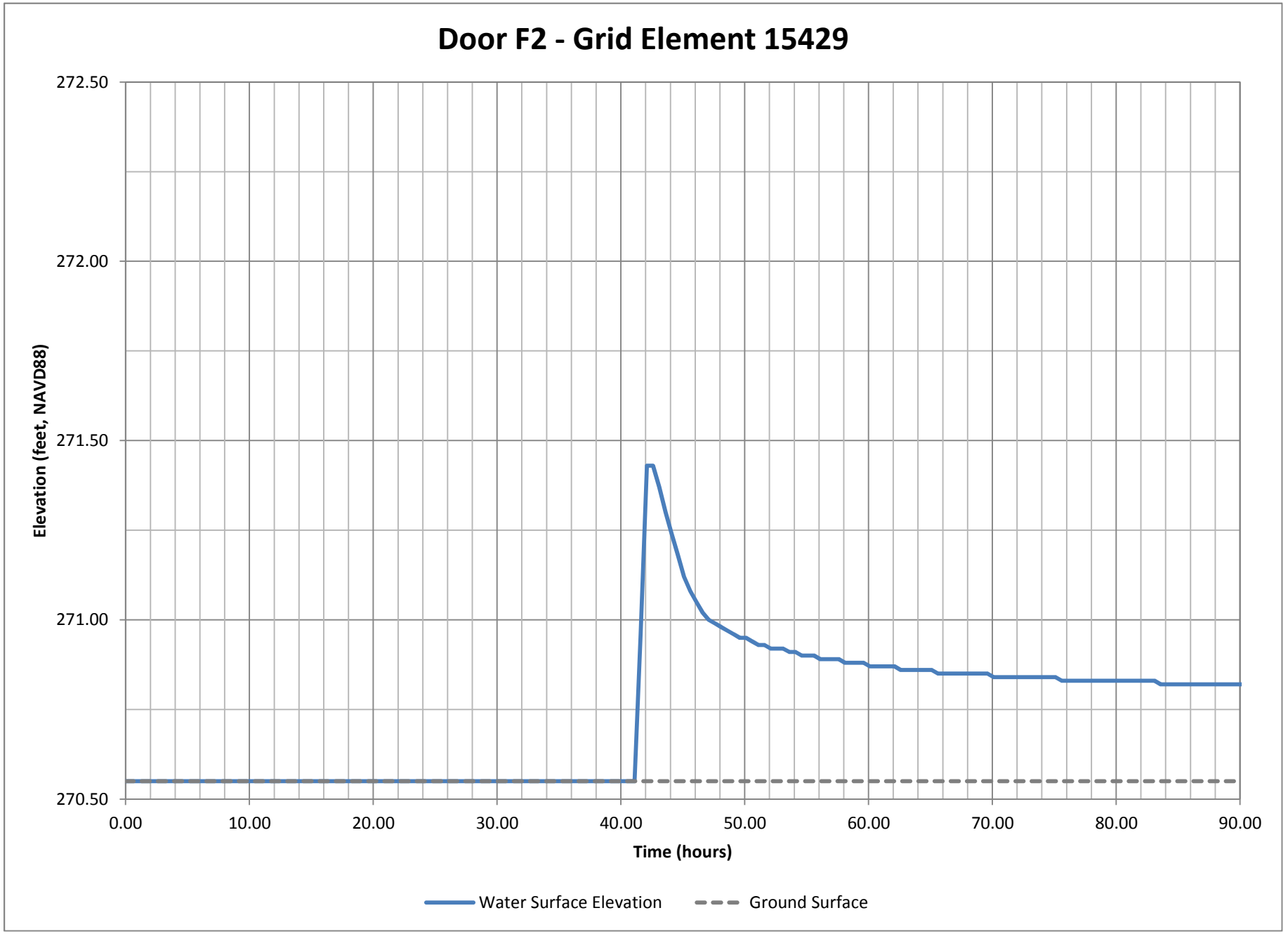

Door C - Grid Element 11866
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

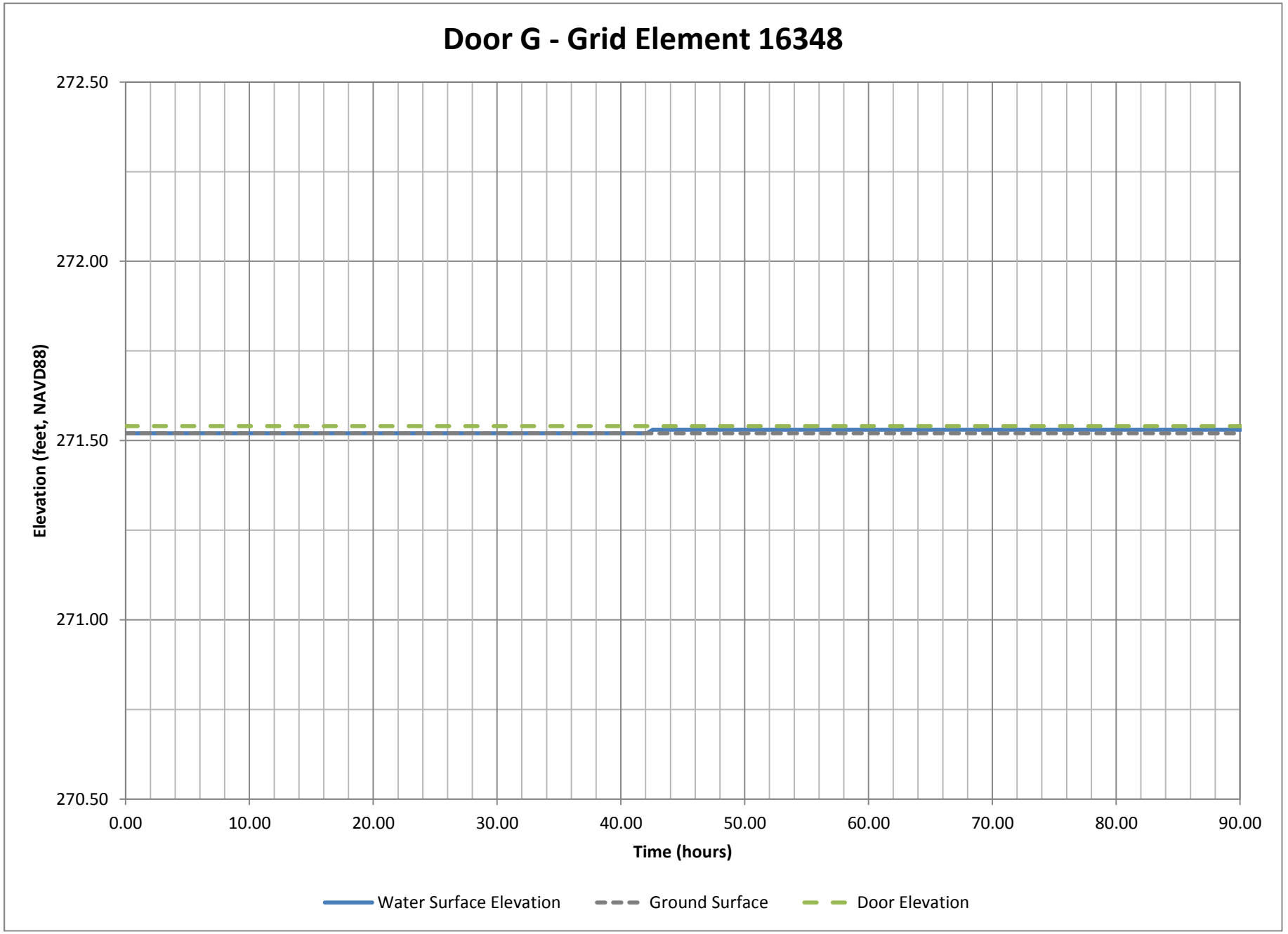

Door D - Grid Element 10982
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

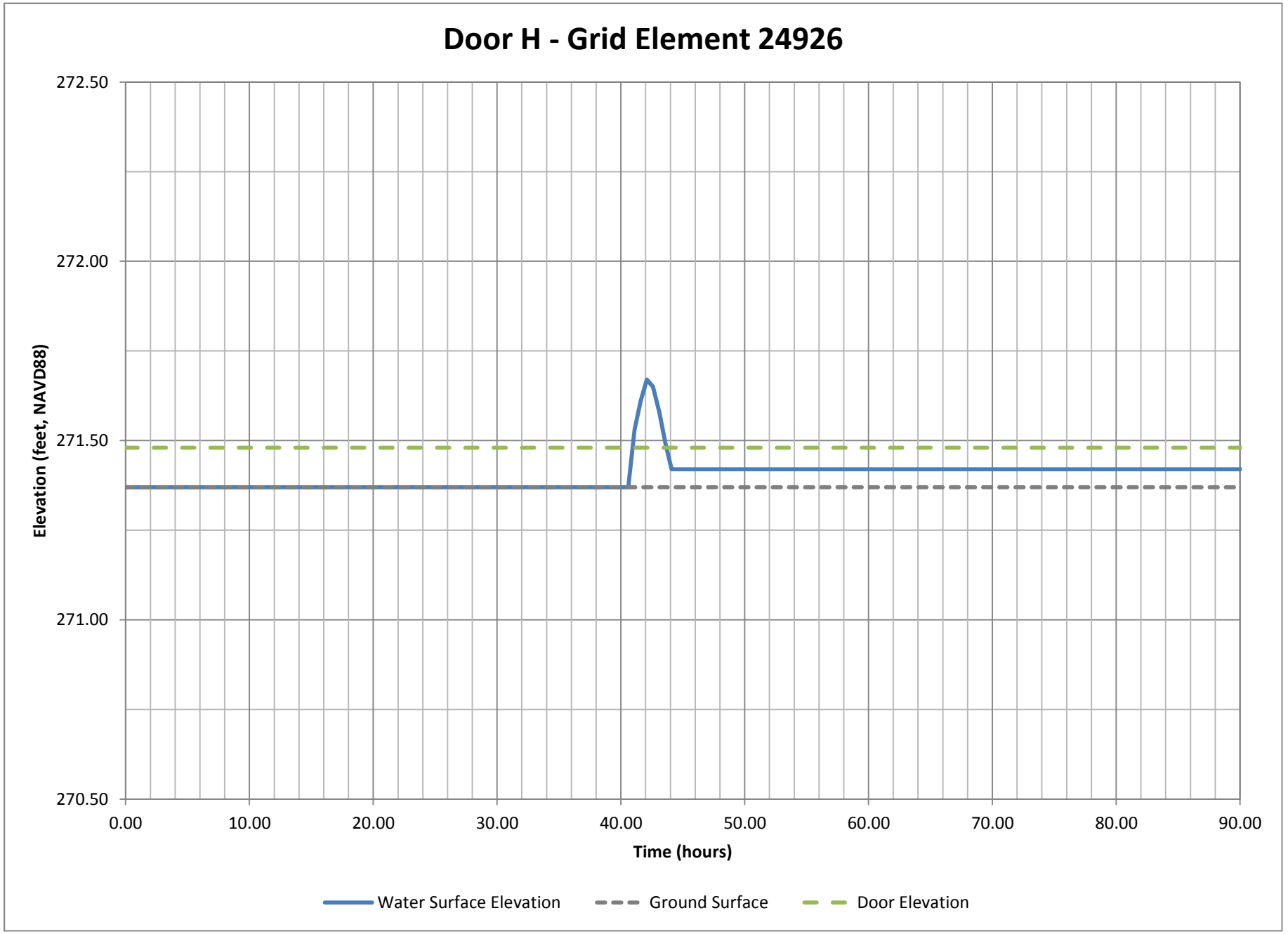

Door E1 - Grid Element 12436
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface

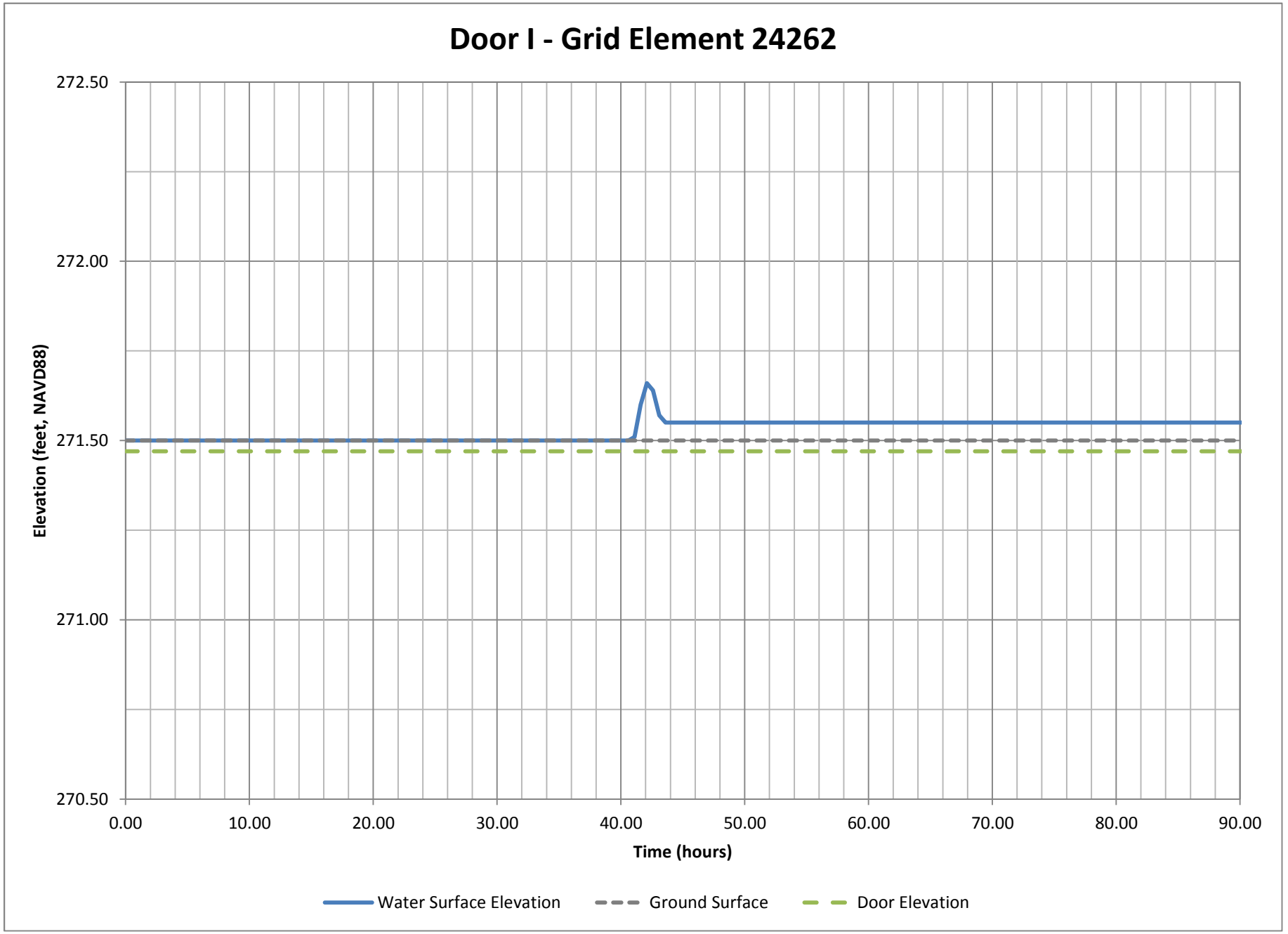

Door E2 - Grid Element 13624
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Door F1 - Grid Element 14223
272.00
271.50
271.00
270.50
270.00
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface

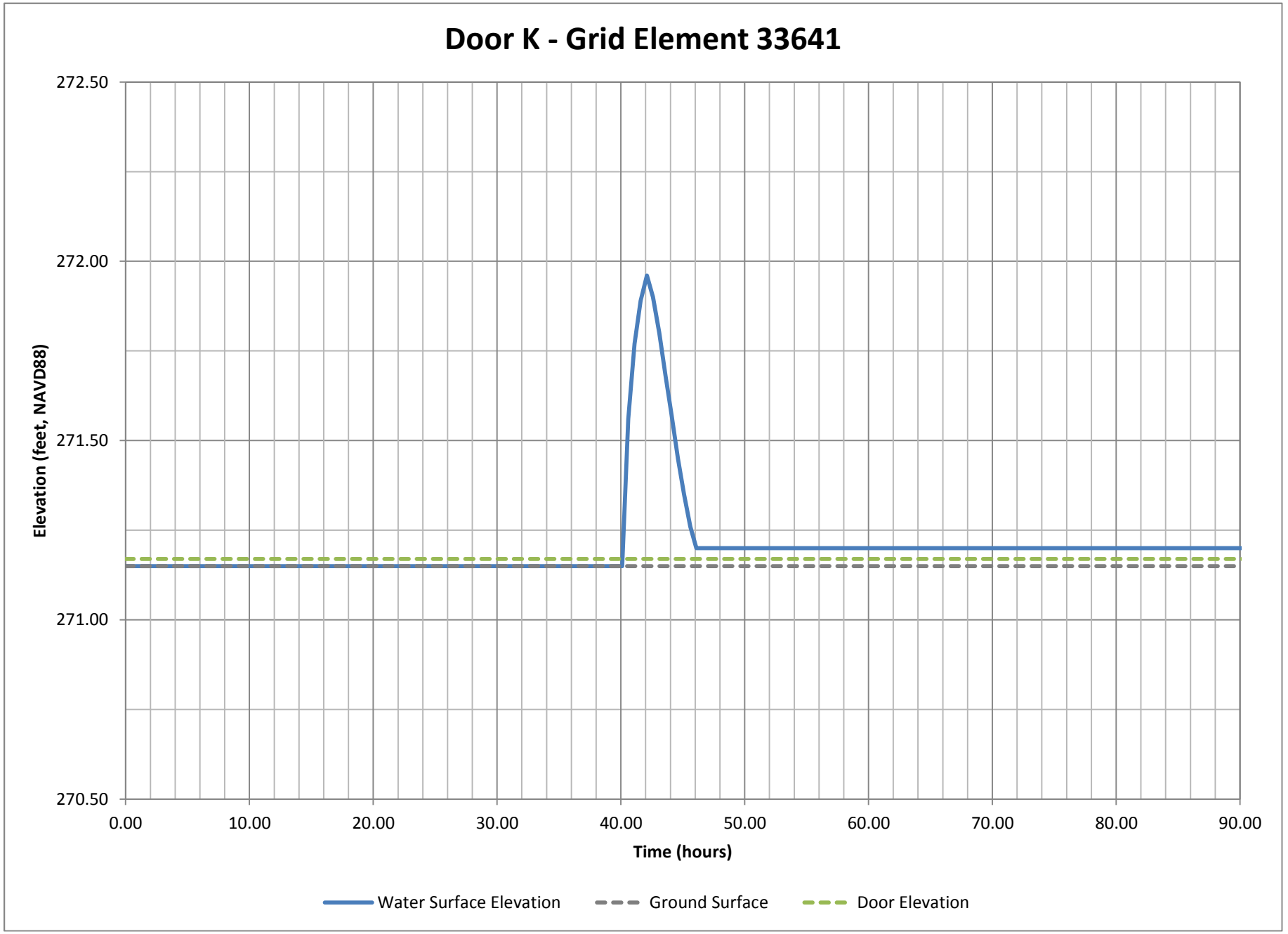

Door F2 - Grid Element 15429
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface

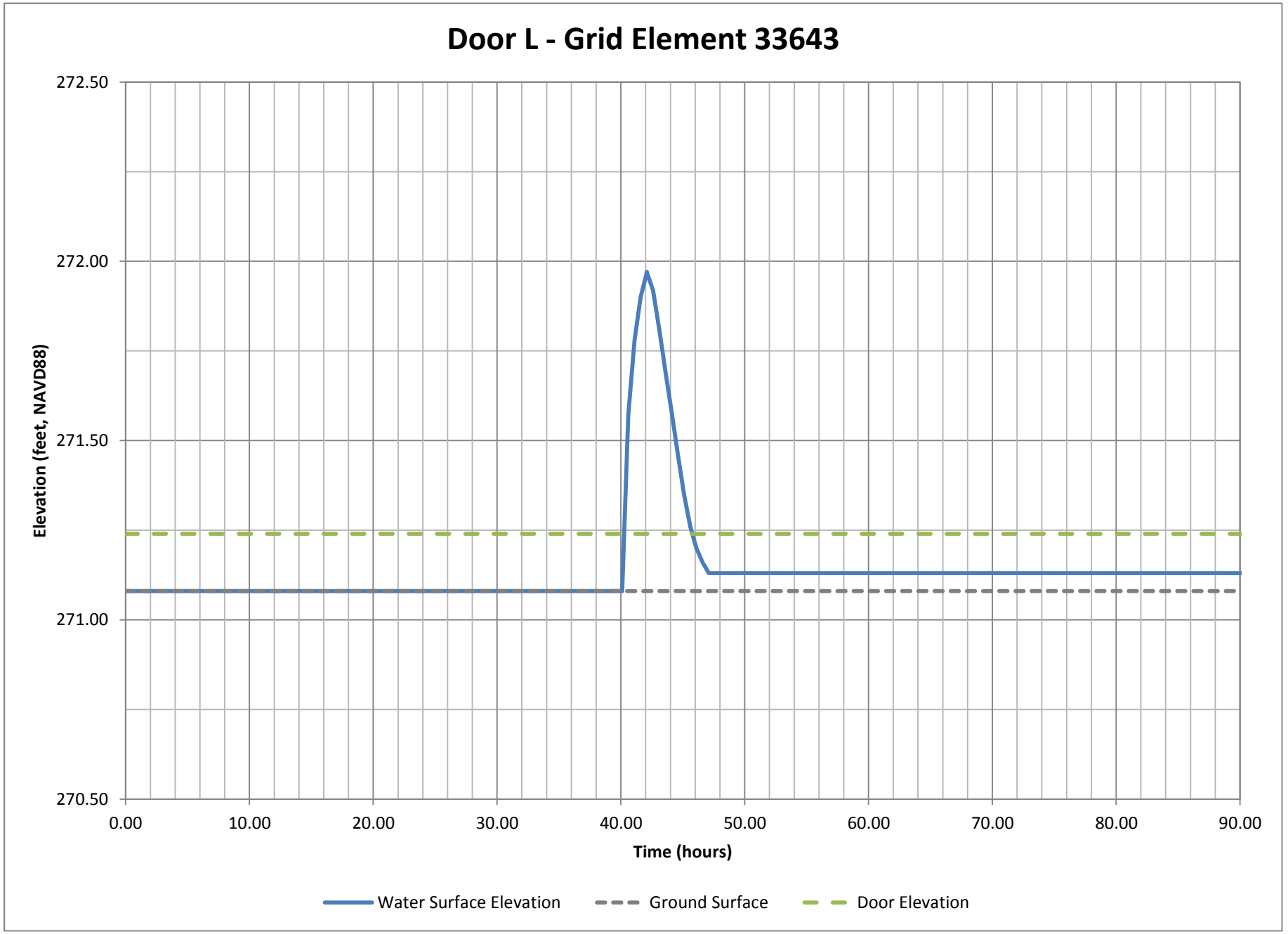

Door G - Grid Element 16348
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

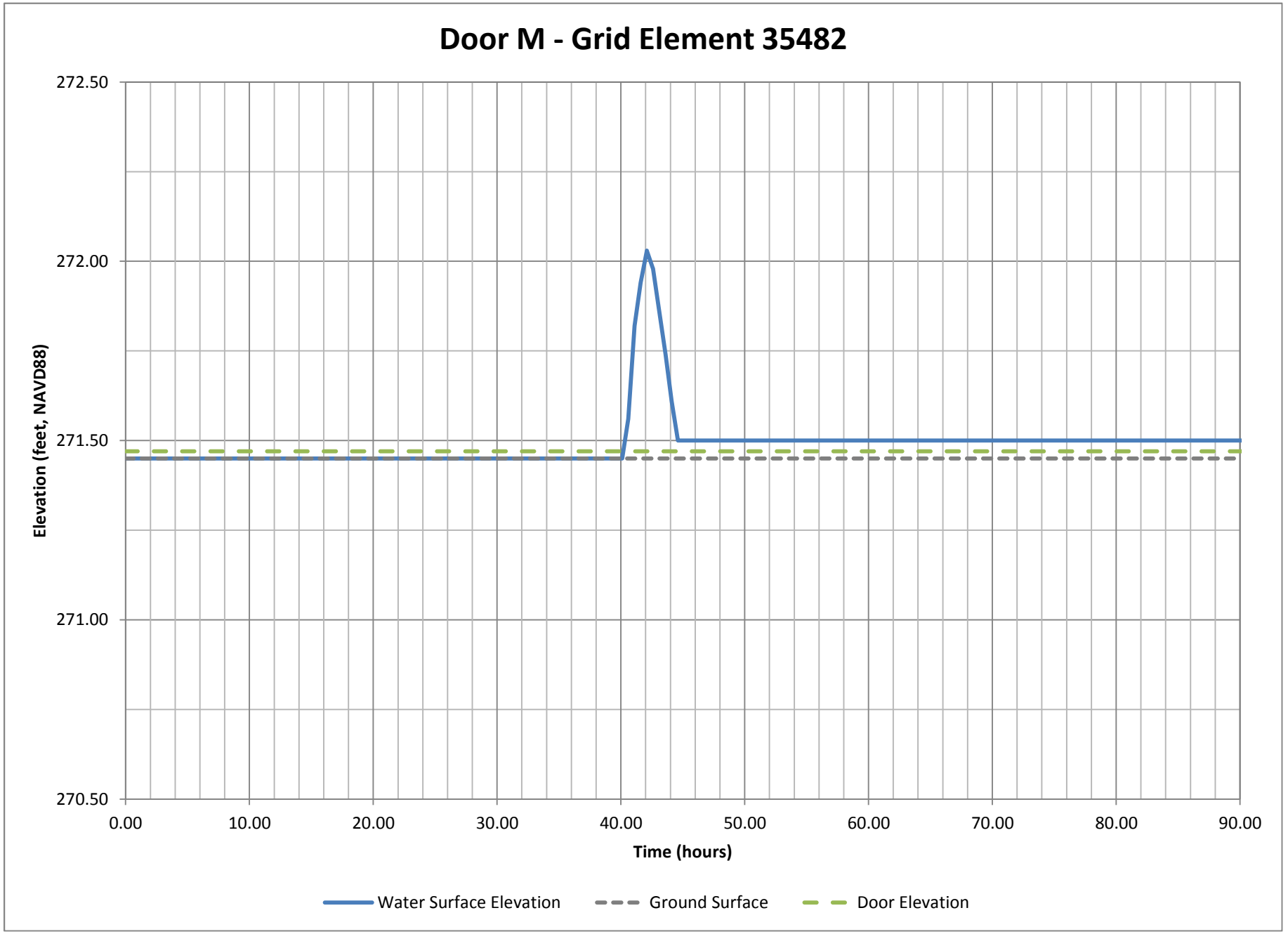

Door H - Grid Element 24926
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

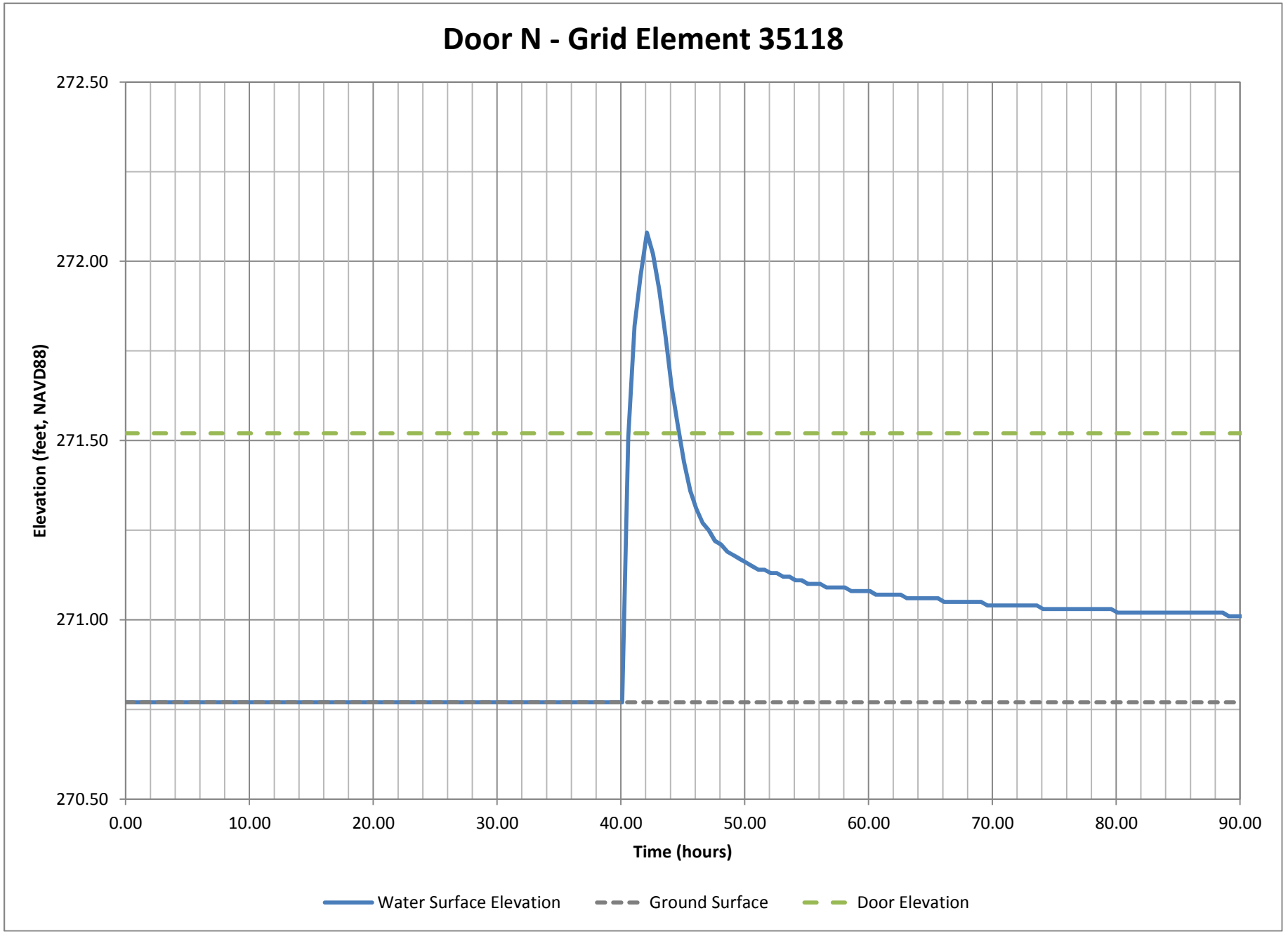

Door I - Grid Element 24262
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

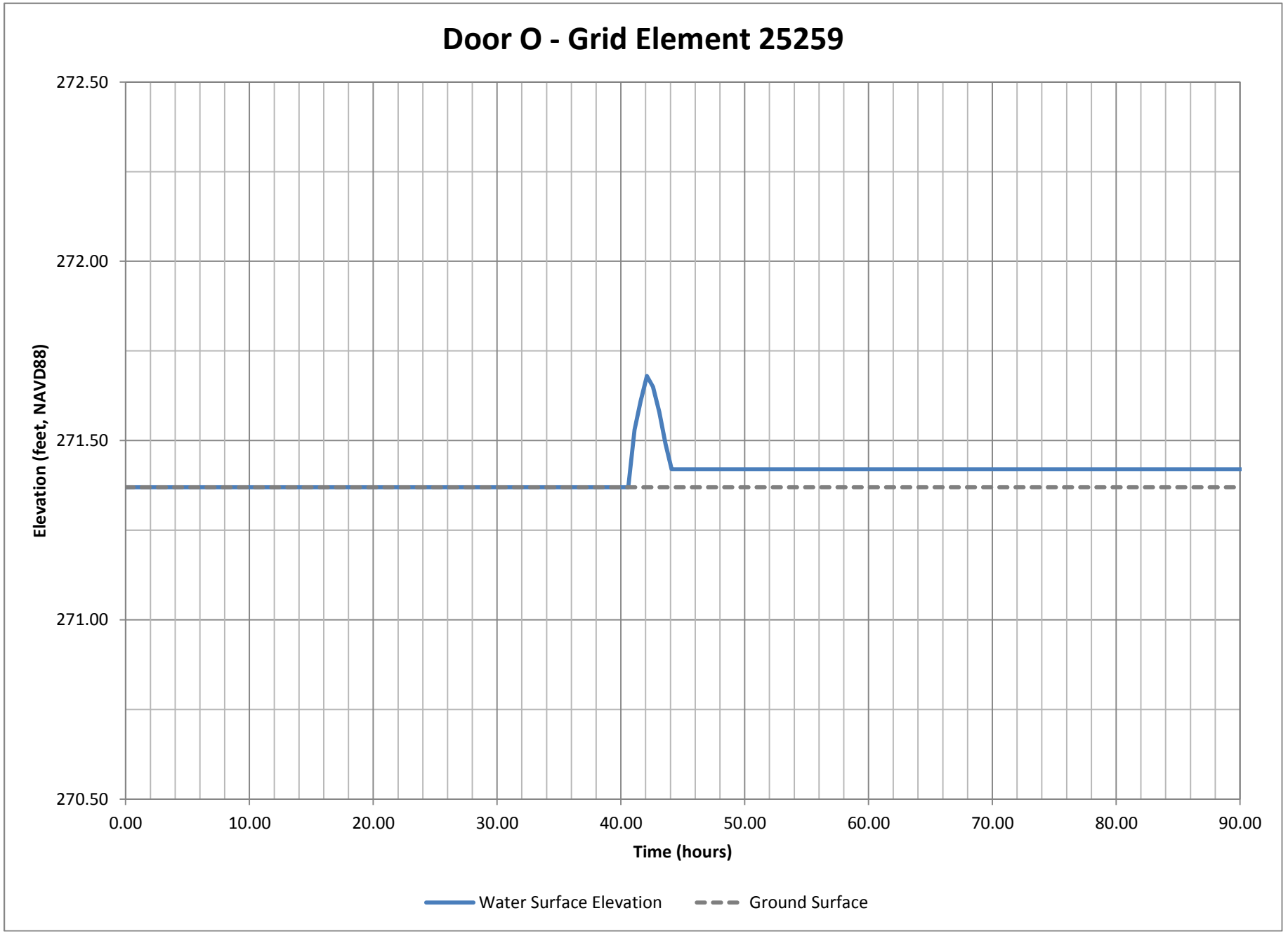

Door J - Grid Element 27629
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

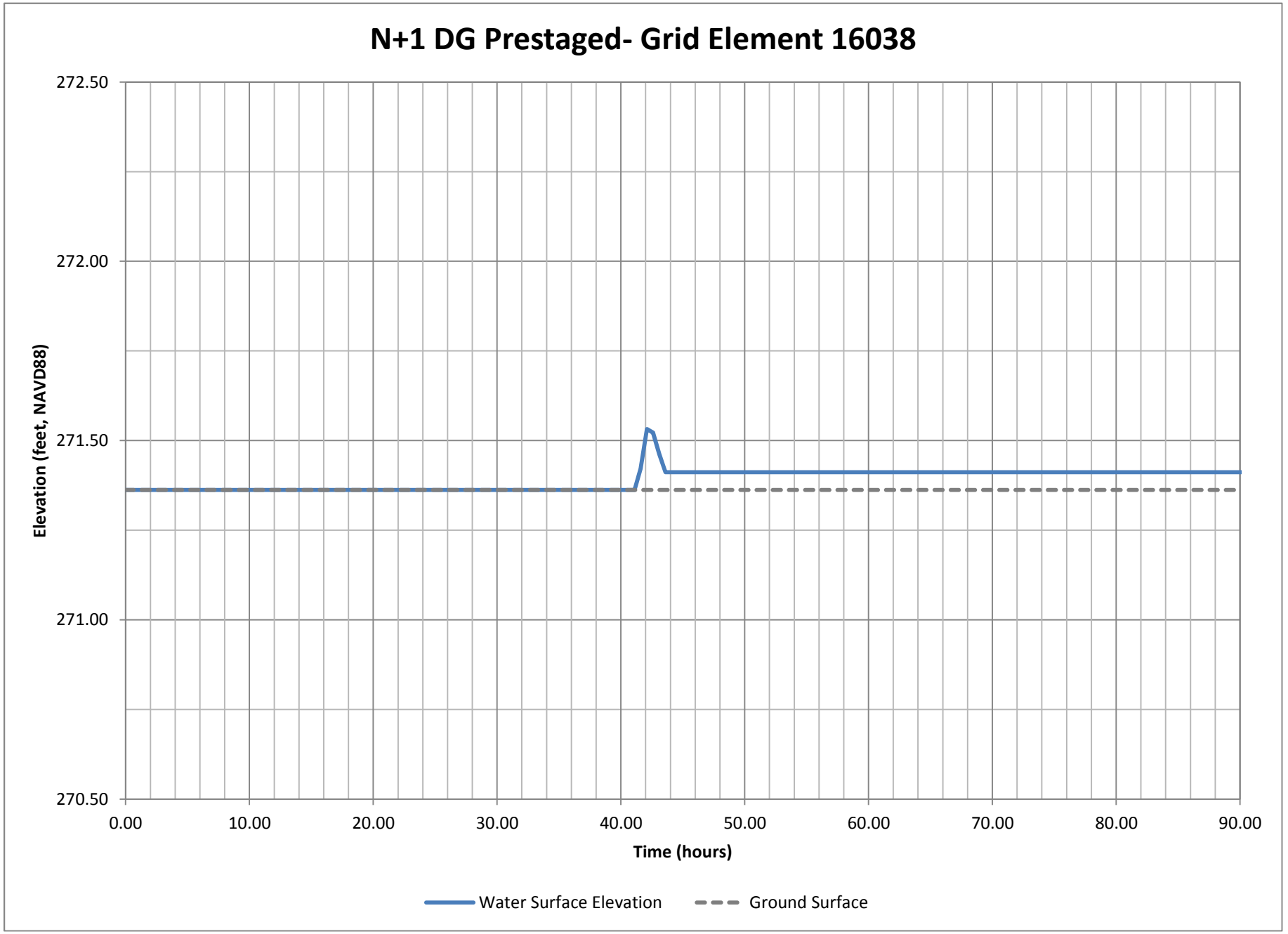

Door K - Grid Element 33641
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

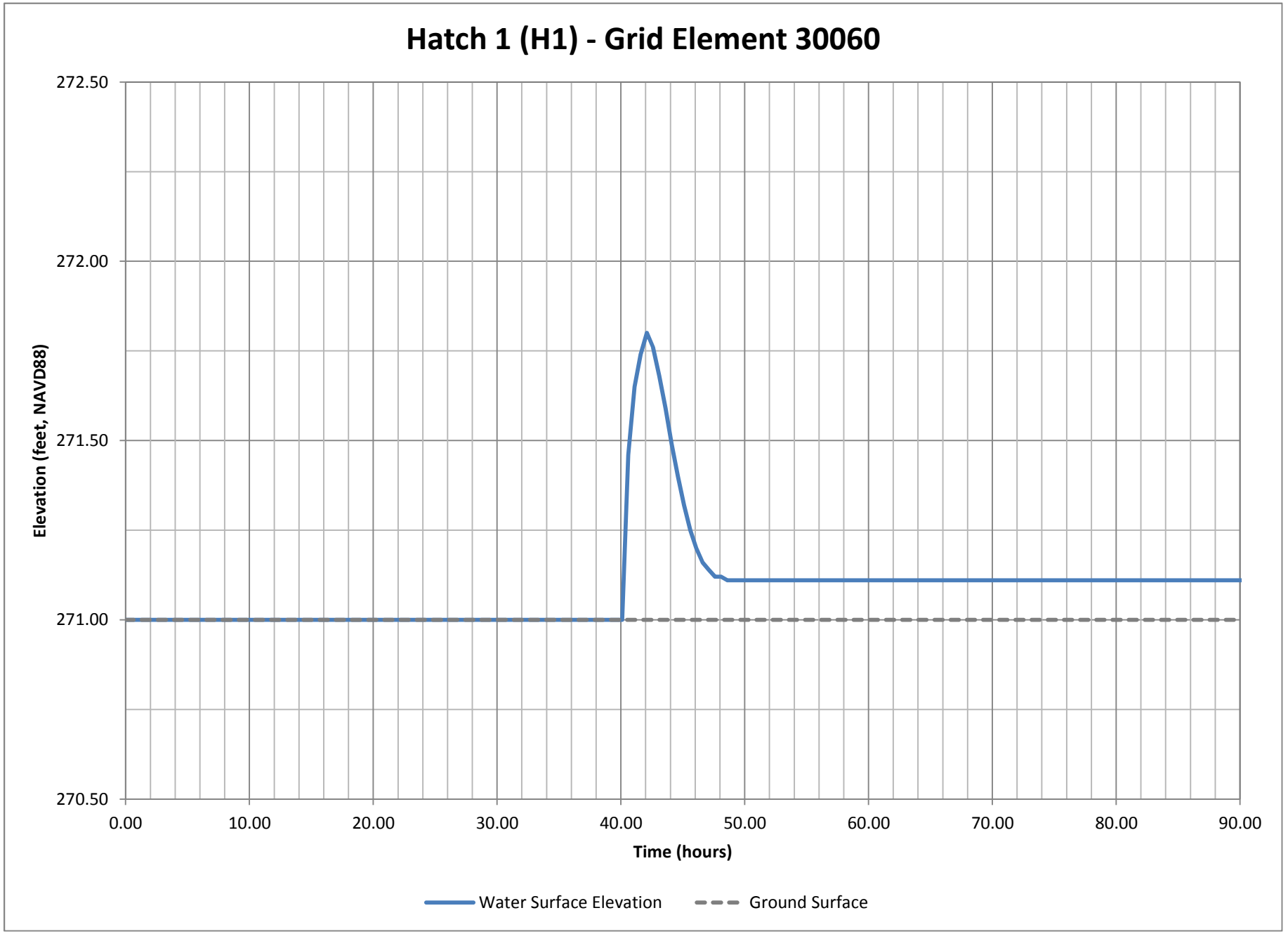

Door L - Grid Element 33643
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

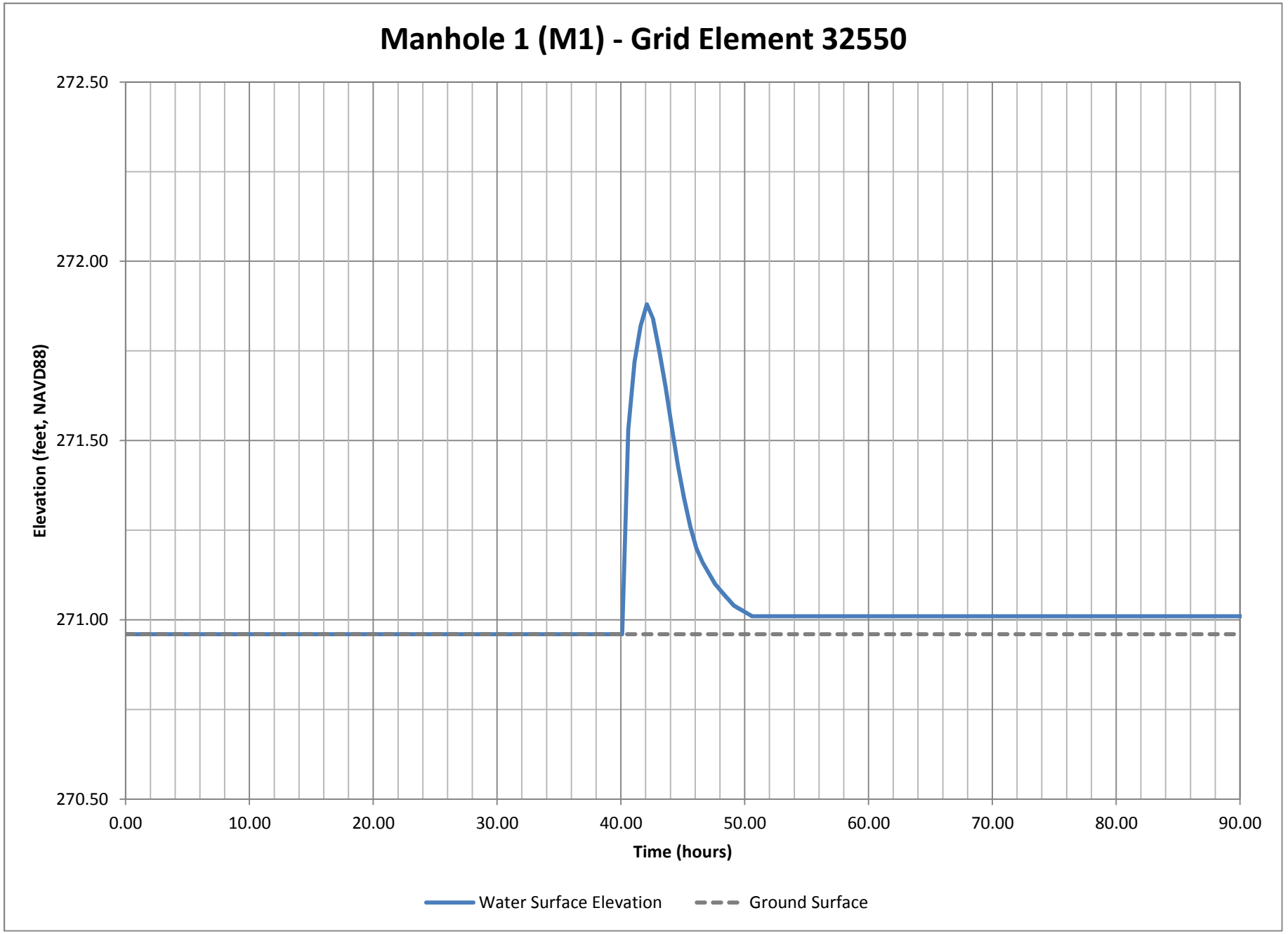

Door M - Grid Element 35482
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

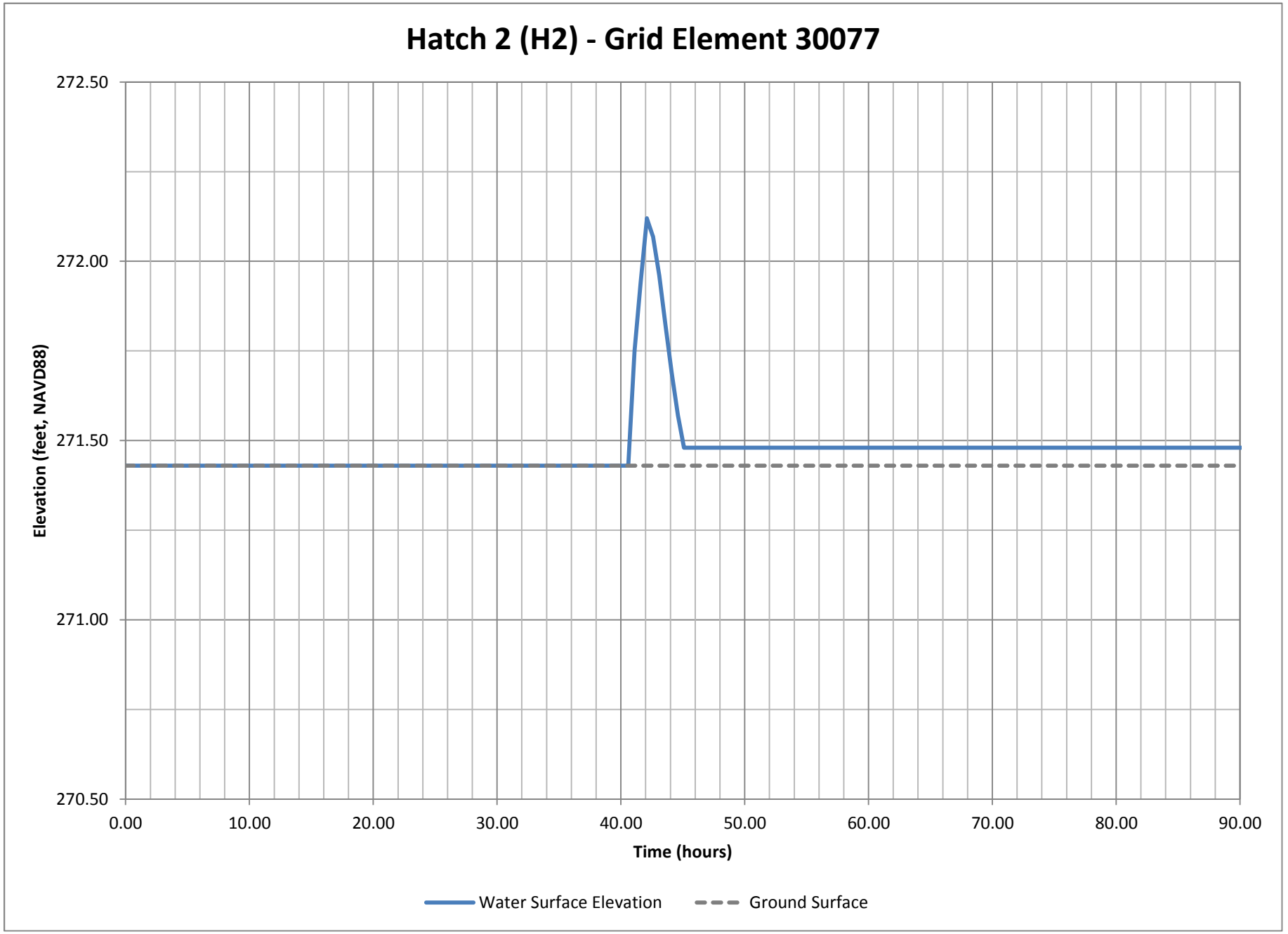

Door N - Grid Element 35118
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface
Door Elevation

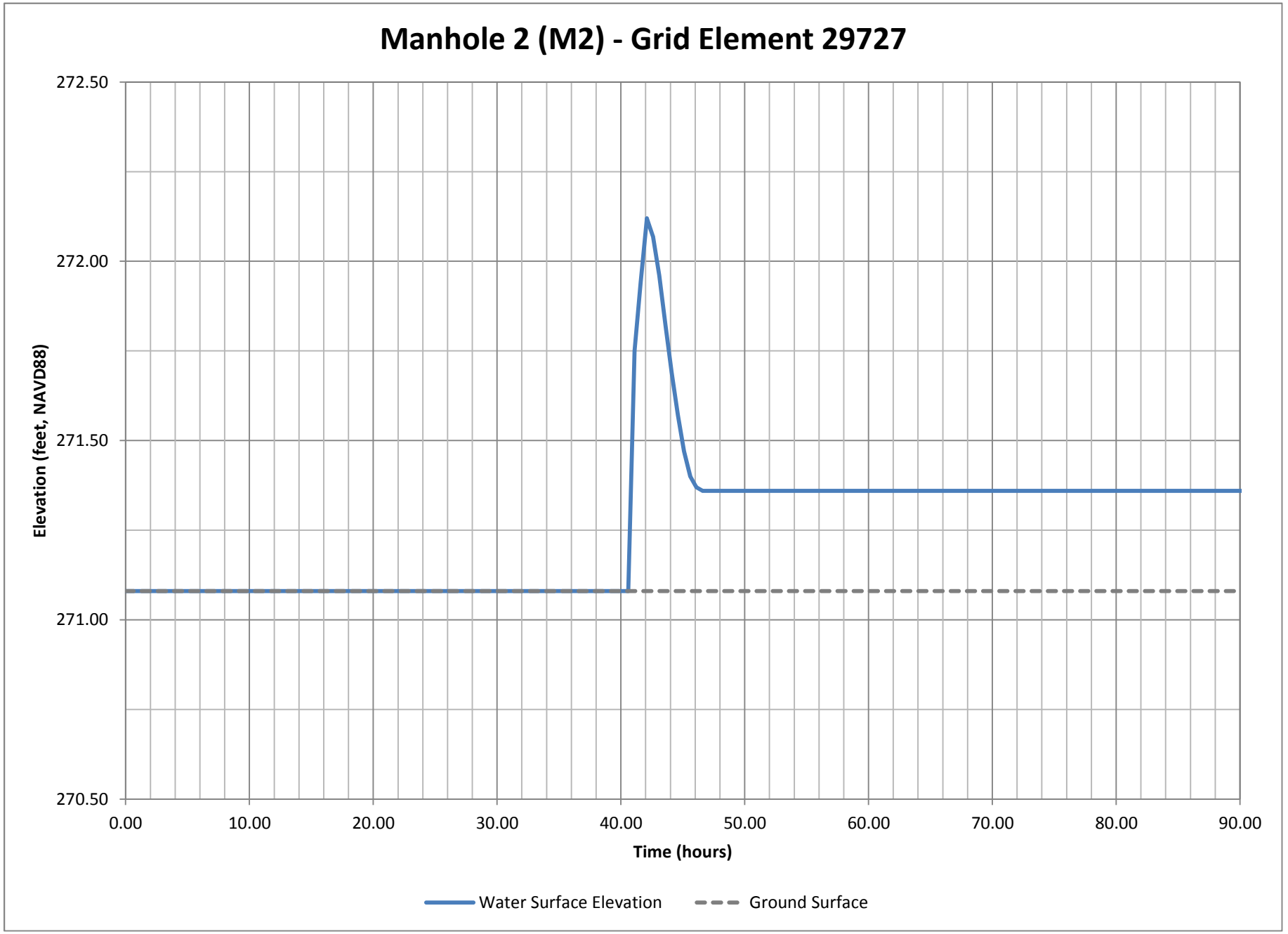

Door O - Grid Element 25259
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface

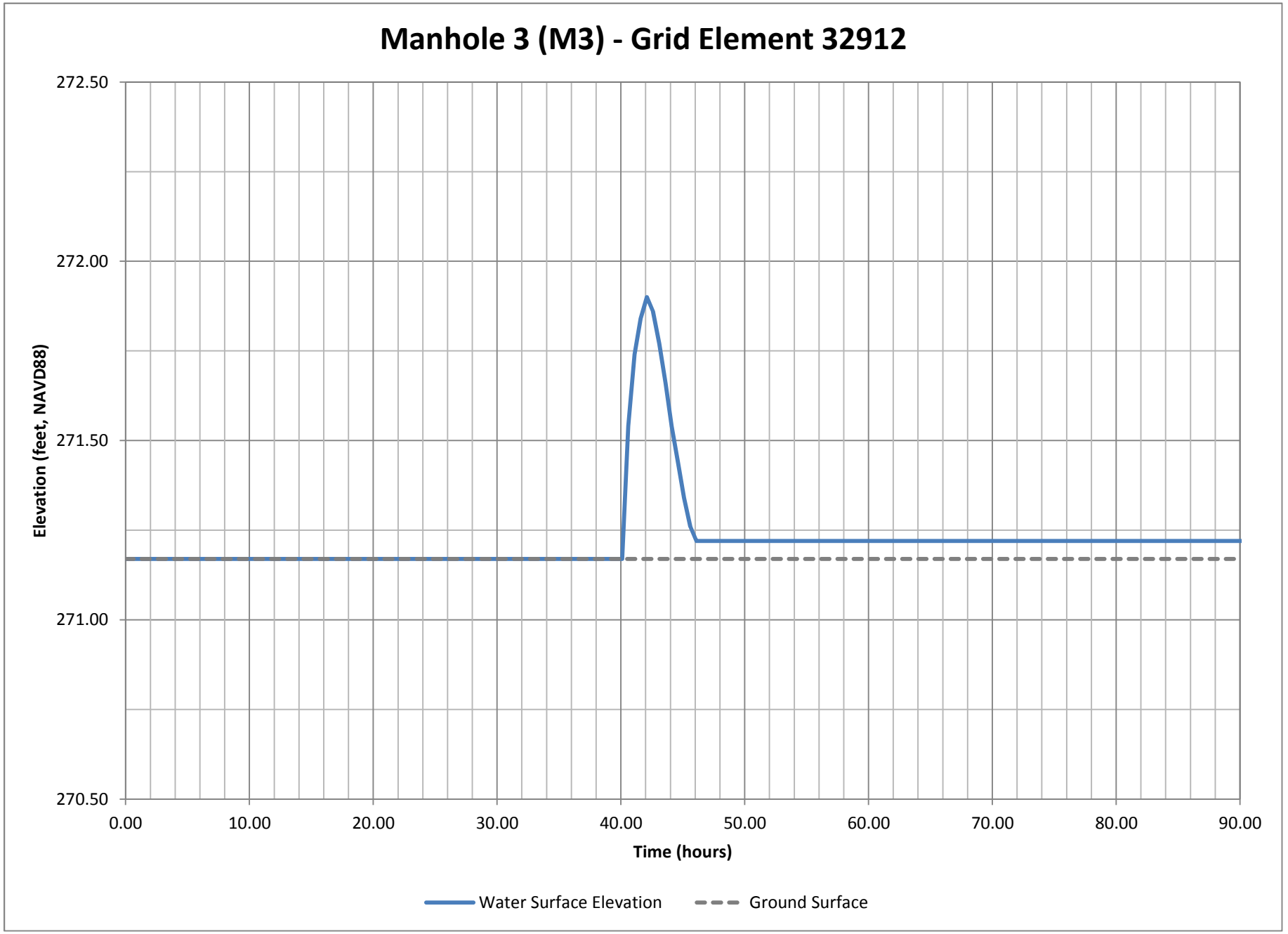

N+1 DG Prestaged- Grid Element 16038
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Hatch 1 (H1) - Grid Element 30060
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 1 (M1) - Grid Element 32550
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Hatch 2 (H2) - Grid Element 30077
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 2 (M2) - Grid Element 29727
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface


Manhole 3 (M3) - Grid Element 32912
272.50
272.00
271.50
271.00
270.50
Elevation (feet, NAVD88)
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
Time (hours)
Water Surface Elevation
Ground Surface