

**First Update of
Run-on and Run-off Control System Plan for Cell 1
Orlando Utilities Commission
Stanton Energy Center
Orange County, Florida**

October 15, 2021



Ardaman & Associates, Inc.

Geotechnical, Environmental, and
Materials Consultants
A Tetra Tech Company

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Materials Consultants

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October 15, 2021
File Number 21-13-0058

Orlando Utilities Commission
P.O. Box 3193
Orlando, FL 32802-2723

Attention: Mr. Charles W. Doud, P.E.
Senior Environmental Engineer

Subject: First Update of Run-on and Run-off Control System Plan for Cell 1, Orlando Utilities
Commission, Stanton Energy Center, Orange County, Florida

Gentlemen/Ladies:

As requested by Orlando Utilities Commission (OUC), Ardaman & Associates, Inc., a Tetra Tech Company (TT-AAI), has prepared this report to provide the first update of the run-on and run-off control system plan for Cell 1 at the Stanton Energy Center (SEC) located in Orange County, Florida. The update was necessitated by regulatory requirements and changes in site condition. Cell 1 is currently the only active coal combustion residuals (CCR) landfill unit at the SEC.

40 CFR Part 257, Subpart D, which was promulgated by the Environmental Protection Agency (EPA) on April 17, 2015, requires all landfills that receive CCR on or after October 19, 2015 to have run-on and run-off control system plans. 40 CFR §257.81(c)(4) further requires facility owners to update the run-on and run-off control system plans every five years. The initial run-on and run-off control system plan for Cell 1 was prepared by TT-AAI and submitted to OUC on October 14, 2016.

Regulatory Requirements

The CCR Rule defines run-on as *“any rainwater, leachate, or other liquid that drains over land onto any part of a CCR landfill or lateral expansion of a CCR landfill,”* and run-off as *“any rainwater, leachate, or other liquid that drains over land from any part of a CCR landfill or lateral expansion of a CCR landfill.”*

For landfills that receive CCR on or after October 19, 2015, the CCR Rule requires run-on control systems be designed, constructed, operated, and maintained to prevent flow from entering active CCR units during the peak discharge from a 25-year, 24-hour design storm event. The rule also requires active CCR units to have run-off control systems to collect and control at least the water volume resulting from a 25-year, 24-hour design storm event.

The SEC lies within the St. Johns River Water Management District (SJRWMD). Based on the 24-hour isohyetal maps published by the SJRWMD, the total rainfall depth from a 25-year, 24-hour design storm event at the SEC is 8.8 inches. In Florida, the 24-hour rainfall distribution for

computation of peak discharge from a design storm event is based on the Soil Conservation Service (SCS) Type II Florida-modified rainfall distribution.

CCR Landfill Units

The area that has been designated for disposal or storage of CCR generated at the SEC is located on the west side of the facility. The designated boundary of the entire combustion waste storage area (CWSA) initially encompassed approximately 312 acres. However, construction of Innovation Way to the west of the SEC and development of a solar energy facility in the northern part of the CWSA have reduced the footprint of the CWSA to approximately 250 acres. Waste materials that have been landfilled within the CWSA since commencement of commercial operation of the first coal-fired generating unit in 1987 consist primarily of fixated flue gas desulfurization (FGD) sludge (ProMat), unsold bottom ash, fly ash, and miscellaneous power plant wastes.

An annotated 2021 aerial photograph that shows the existing and planned CCR landfill units within the entire 250-acre CWSA is presented in Figure 1. As shown, the CCR landfill units consist of the 90-acre closed original combustion waste storage area (original CWSA), the closed vertical expansion above the original CWSA (vertical expansion), and the 90-acre horizontal expansion to the west of the original CWSA (horizontal expansion). The horizontal expansion consists of three adjoining landfill units designated, from south to north, Cells 1, 2, and 3, with each cell having a footprint area of approximately 30 acres. Cell 1, which was activated in 2015, is currently the only active CCR landfill unit at the SEC. Construction of Cell 2 was completed near the end of 2020, but this landfill unit has not yet been activated (i.e., waste materials have not yet been placed into Cell 2). Cell 3 was planned as part of the horizontal expansion, but its construction schedule remains uncertain. The northern portion of the 250-acre CWSA is undeveloped.

The 90-acre closed original CWSA, which was placed in service in 1987 when the SEC began commercial operation, was lined with a layer of ProMat with a thickness of greater than 18 inches and a hydraulic conductivity of less than 1×10^{-7} cm/sec. It was designed to have a top elevation of approximately +150 feet (NAVD88). In 2010, OUC decided to construct a lined horizontal expansion to the west of the original CWSA. To ensure uninterrupted waste disposal operation during planning, design, and permitting of the 90-acre horizontal expansion and construction of the 30-acre Cell 1, OUC sought permission from the Florida Department of Environmental Protection (FDEP) and constructed a vertical expansion on top of the original CWSA, essentially raising the original CWSA by approximately 25 feet to a top elevation of approximately +175 feet (NAVD88). The vertical expansion has a base area (i.e., the top area of the original CWSA) of approximately 34 acres and a top area of approximately 16 acres. The vertical expansion ceased to receive wastes on August 28, 2015. Final closure of the original CWSA and vertical expansion was completed in January 2016 and was approved by the FDEP in a letter dated April 18, 2016. Because the original CWSA and vertical expansion ceased to receive CCR prior to October 19, 2015, these landfill units are exempt from the CCR Rule requirements.

Cells 1, 2, and 3 each has a base area of approximately 30 acres and piggyback on the closed west slopes of the original CWSA and vertical expansion (i.e., the horizontal expansion will eventually combine with the original CWSA and vertical expansion). The original designs for Cells 1, 2, and 3, which were approved by the FDEP on March 16, 2012, incorporated a double geomembrane liner system at the base and a single geomembrane liner system on the west slope of the original CWSA. The bottom and slope liner systems comply with applicable requirements of Chapter 62-

701, F.A.C., which governs the design, construction, operation, and closure of solid waste management facilities in Florida.

Construction of Cell 1, which was based on the FDEP-approved design, was completed near the end of 2012. Cell 1 began to receive waste materials on May 28, 2015. This landfill unit was divided into four sub-cells, each with its own leachate collection and removal system. The leachate collection system drains to four leachate collection sumps (i.e., one for each sub-cell) located on the west side of Cell 1. The leachate in the sumps is pumped into an 8-inch diameter force main that discharges into the double-lined CWSA Runoff Pond located east of the 250-acre CWSA. An annotated 2021 aerial photograph of Cell 1 is shown in Figure 2. The latest topographic survey for Cell 1, which was performed by Wood Environmental & Infrastructure Solutions, Inc., (Wood) on April 23, 2021, is presented in Figure 3.

To comply with the CCR Rule requirements, Cell 2 was re-designed with a double-composite liner system at the base. However, the design of the single geomembrane liner system on the west slope of the original CWSA remained the same as the FDEP-approved design. The double-composite liner comprises two components, with the top component consisting of a single geomembrane liner, and the bottom component consisting of a composite liner with a geomembrane liner on top of a 12-inch thick compacted soil liner. Also, the low point of each subcell (i.e., the bottom elevation of the compacted soil liner beneath the leachate collection sump) was raised to the seasonal high groundwater elevation to comply with the CCR Rule requirements. The bottom liner and slope liner systems for Cell 2 were connected to the bottom and slope liner systems for Cell 1 to form a continuous bottom and slope liner systems for the two adjoining landfill units. Like Cell 1, Cell 2 was divided into four sub-cells, each with its own leachate collection system. Construction of Cell 2 was completed near the end of 2020, but this landfill unit has not yet been activated. A 2021 aerial photograph that depicts the boundary of Cell 2 and its four sub-cells is shown in Figure 4.

Since October 19, 2015 (i.e., the effective date of the CCR Rule), Cell 1 has been the only active CCR landfill unit at the SEC. Accordingly, Cell 1 is the only landfill unit that is subject to the run-on and run-off control requirements in the CCR Rule.

Current Condition of Cell 1

According to the April 23, 2021 topographic survey in Figure 3, the entire base area of Cell 1 has been covered with waste materials and the waste surface has reached a maximum elevation of approximately +166 feet (NAVD88) near the center of the landfill unit. Along the west side of Cell 1, an approximately 120-foot wide setback was constructed at an elevation of approximately +136 feet (NAVD88) and an approximately 80-foot wide low area was constructed inside the containment dike to contain contact stormwater run-off that does not infiltrate or infiltrates slowly through the waste materials into the leachate collection system. Along the east side of Cell 1 that piggyback on the west slope of the original CWSA and vertical expansion, the waste materials have reached an elevation of approximately +160 feet (NAVD88), corresponding to approximately 10 feet above the top elevation of the original CWSA or the base elevation of the vertical expansion. The west slope of the original CWSA and vertical expansion that lies at higher elevations above the waste surface in Cell 1 has an area of less than two acres.

A site visit to observe the current condition of Cell 1 was performed by Messrs. Francis K. Cheung, P.E., and Jeyisanker Mathiyaparanam, P.E., of TT-AAI on September 16, 2021. Based on our site observations, there should not be any run-on from the top area of the vertical expansion into

the designated boundary of Cell 1. A small berm that was constructed along the northern slope boundary of Cell 1 should also preclude any run-on from the west slope of the original CWSA that lies outside and upslope of the diagonal slope boundary of Cell 1 (which is now part of the Cell 2 watershed). Our observations also indicated that contact stormwater run-off that does not readily infiltrate through the waste materials into the leachate collection system either flows down the slopes into the swales constructed inside the containment dike along the north and south sides and eventually to the low area on the west side or flows directly down the slope to the low area. On the date of our site visit, four auxiliary trailer-mounted diesel pumps were placed near the leachate collection pump stations on the west side of Cell 1 for leachate removal, with their intakes placed on top of the low area above the leachate collection sumps.

Run-On Control

There are two watershed areas located upstream (i.e., areas at higher elevations) of the Cell 1 boundary that could potentially contribute run-on into the active landfill unit. The first watershed area is the top area of the vertical expansion. The second watershed area is the small trapezoidal area on the west slope of the original CWSA that lies upslope of the northern slope boundary of Cell 1.

The top area of the vertical expansion was developed into a photovoltaic solar station, which has been in operation since December 2017. It has an area of approximately 16 acres and a grade of approximately 1 percent. Under a 25-year, 24-hour design stormwater event, run-off from the top area of the vertical expansion, as well as from other closed areas of the original CWSA and vertical expansion, is diverted to the wet detention pond located south of the 250-acre CWSA. The closure plan for the original CWSA and vertical expansion is included in Appendix 1. Results of the hydrologic modeling for the CWSA under buildout condition, including the closed original CWSA and vertical expansion, are provided in Appendix 2.

The small trapezoidal area located upslope of the northern slope boundary of Cell 1 is now part of the Cell 2 slope area on the east side. It has an area of less than one acre. As indicated previously, a small berm that was constructed along the northern slope boundary of Cell 1 should preclude run-on from this small trapezoidal area that lies upslope of the diagonal slope boundary of Cell 1. OUC should monitor and, if necessary, maintain or improve this berm to make sure that it remains effective in precluding run-on into Cell 1.

Run-Off Control

Rainfall that has come in contact with waste materials or leachate is considered leachate. Under the CCR Rule, the leachate from Cell 1 is required to be contained within the landfill unit or the process water system without resulting in run-off discharging into the stormwater management system or nearby natural drainageways under the 25-year, 24-hour design storm event.

Rainfall that readily infiltrates through the waste materials in Cell 1 percolates into the leachate collection and removal system above the bottom liner system, and eventually enters the four leachate collection sumps where the collected leachate is removed and discharged into the CWSA Runoff Pond via an 8-inch diameter force main. Proper operation of the leachate collection and removal system, including periodic removals of the collected leachate in the sumps, is important for run-off control of the infiltrated leachate.

Rainfall that has come in contact with the waste materials or leachate but does not infiltrate or infiltrates slowly into the leachate collection system will eventually accumulate in the low area along the west side of Cell 1. OUC should continue to deploy auxiliary pumps, whenever necessary, to convey the leachate into the force main that discharges to the CWSA Runoff Pond.

As proposed in the sequencing plan for landfill operation, the following procedures should be observed to preclude discharge of leachate run-off outside Cell 1 or the process water system:

- At the start of each waste lift, an approximately 10-foot high ProMat berm with an outside slope of 3H:1V and an inside slope of 6H:1V should be constructed along the outside edge of the north, south, and west sides of the lift. The interior of the bermed area should have sufficient storage capacity to contain the volume of water from the 25-year, 24-hour design storm event.
- When the area enclosed by the berm has been filled to within 3 feet of the top of the berm surrounding the lift, landfilling should proceed to construction of the berm for the next lift, so that adequate storage for run-off can be maintained on top of the lift.
- Along the north, south, and west sides of Cell 1, a sufficient setback should be maintained between the toe of the waste slope and the containment dike to create a toe swale to allow containment and collection of leachate run-off. The run-off collected in the toe swale should be maintained below the liner anchor trench elevation in the containment dike at all times, either by allowing it to infiltrate into the leachate collection and removal system, or by pumping it into the force main or directly to the CWSA Runoff Pond.
- The access ramps inside Cell 1 should have a low point and drainage improvements inside the lined containment dike at the north and south entry points to Cell 1 so that run-off that flows down the access ramps can be contained within the landfill unit and directed to the low area on the west side of Cell 1.

Because waste materials have not yet been placed inside Cell 2, non-contact stormwater run-off that collects in the leachate collection sumps in Cell 2 may be pumped to a perimeter ditch that discharges to the wet detention pond located south of the CWSA. Under emergency conditions (e.g., rainfall that exceeds the 25-year 24-hour storm event, pumps failure) leachate run-off collected in Cell 1 may be discharged to the lined Cell 2 to prevent discharge of leachate run-off into the stormwater management system or natural drainageways. However, in such situation, the leachate run-off discharged into Cell 2 and any non-contact stormwater run-off that has commingled with the leachate run-off would have to be handled as leachate and retained in the process water system.

According to the Landfill Operation and Maintenance Plan, once the outside waste slope has been covered with at least 18 inches of soil cover and there is no leachate run-off from upslope areas, any run-off may be managed as non-contact stormwater runoff and discharged to the wet detention pond, either by gravity drainage or by pumping.

Closure

In our professional opinion, the run-on and run-off control system plans for Cell 1, as described above, meets the requirements of 40 CFR § 257.81.

OUC should be cognizant of the following CCR Rule requirements: (i) The periodic run-on and run-off control system plan updates must be placed in the written operating record at the facility as stipulated in by 40 CFR § 257.105(g)(3); (ii) the State Director¹ must be notified of the availability of the report as stipulated in 40 CFR § 257.106(g)(3); and (iii) the plan must be posted on the OUC website, as stipulated in 40 CFR § 257.107(g)(3). Furthermore, OUC should review the landfilling operation and site condition periodically and, if needed, update the run-on and run-off control system plan.

We trust that the above information satisfies your need. If you have any questions or need additional information, please contact us.

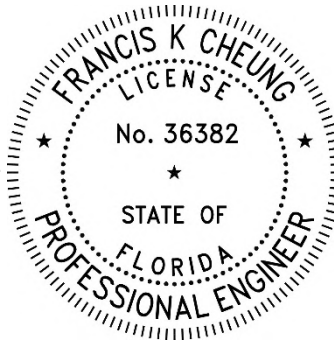
Very truly yours,
ARDAMAN & ASSOCIATES, INC. – A Tetra Tech Company
Certificate of Authorization No. 5950

M. Jeyisanker

Jeyisanker Mathiyaparanam, P.E.
Senior Project Engineer

Francis K. Cheung, P.E.
Principal Engineer
Florida License Number 36382

10/15/21



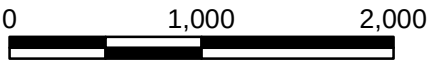
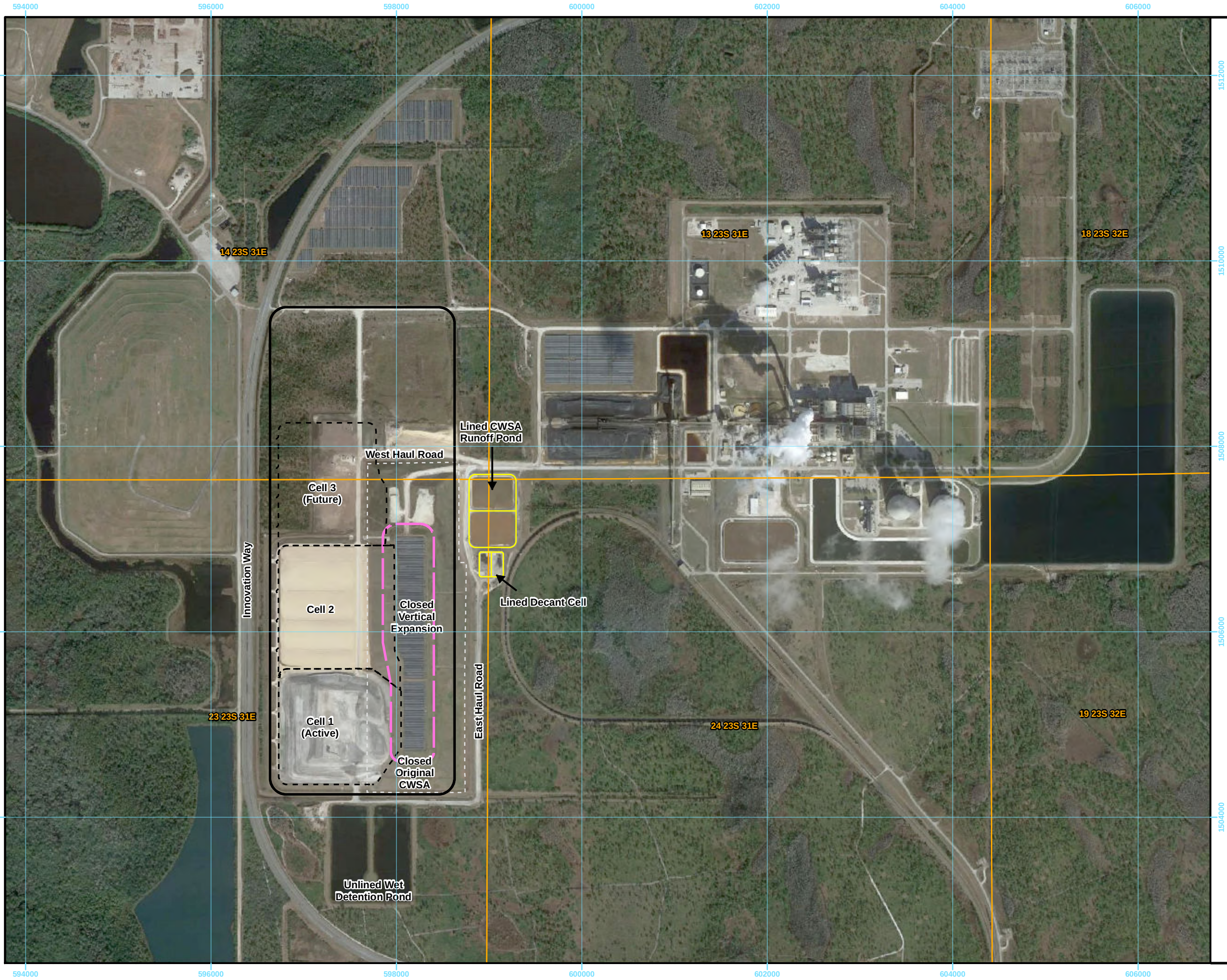
Enclosures

This item has been digitally signed and sealed by Francis K. Cheung on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

¹ In the CCR Rule, the State Director refers to "the chief administrative officer of the lead state agency responsible for implementing the state program regulating disposal in CCR landfills, CCR surface impoundments, and all lateral expansions of a CCR unit."

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Scale: 1" = 1,000'

SOURCE: AERIAL IMAGERY FLOWN
JANUARY 9, 2021
BY GOOGLE EARTH.

Legend

- - - Cell Boundary
- 250-Acre Area
- Closed Vertical Expansion
- Original CWSA Limits
- PLSS



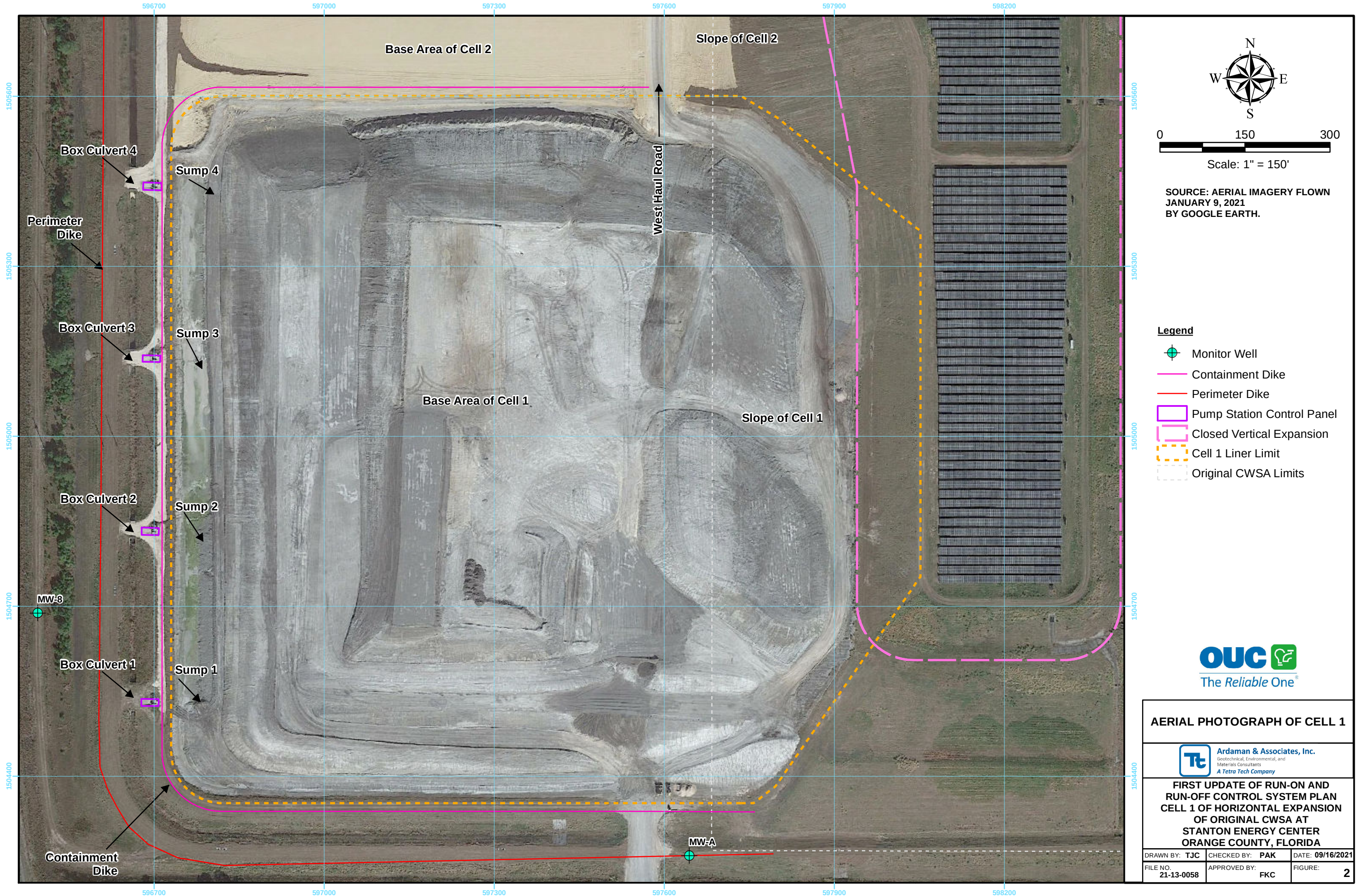
SITE PLAN



FIRST UPDATE OF RUN-ON AND
RUN-OFF CONTROL SYSTEM PLAN
CELL 1 OF HORIZONTAL EXPANSION
OF ORIGINAL CWSA AT
STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA

DRAWN BY: TJC	CHECKED BY: PAK	DATE: 09/16/2021
FILE NO. 21-13-0058	APPROVED BY: FKC	FIGURE: 1

W:\Projects\2021\21-13-0058-OUC\ArcGIS\Arclayouts\20210913\Annotated Aerial Photograph.mxd



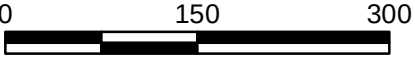
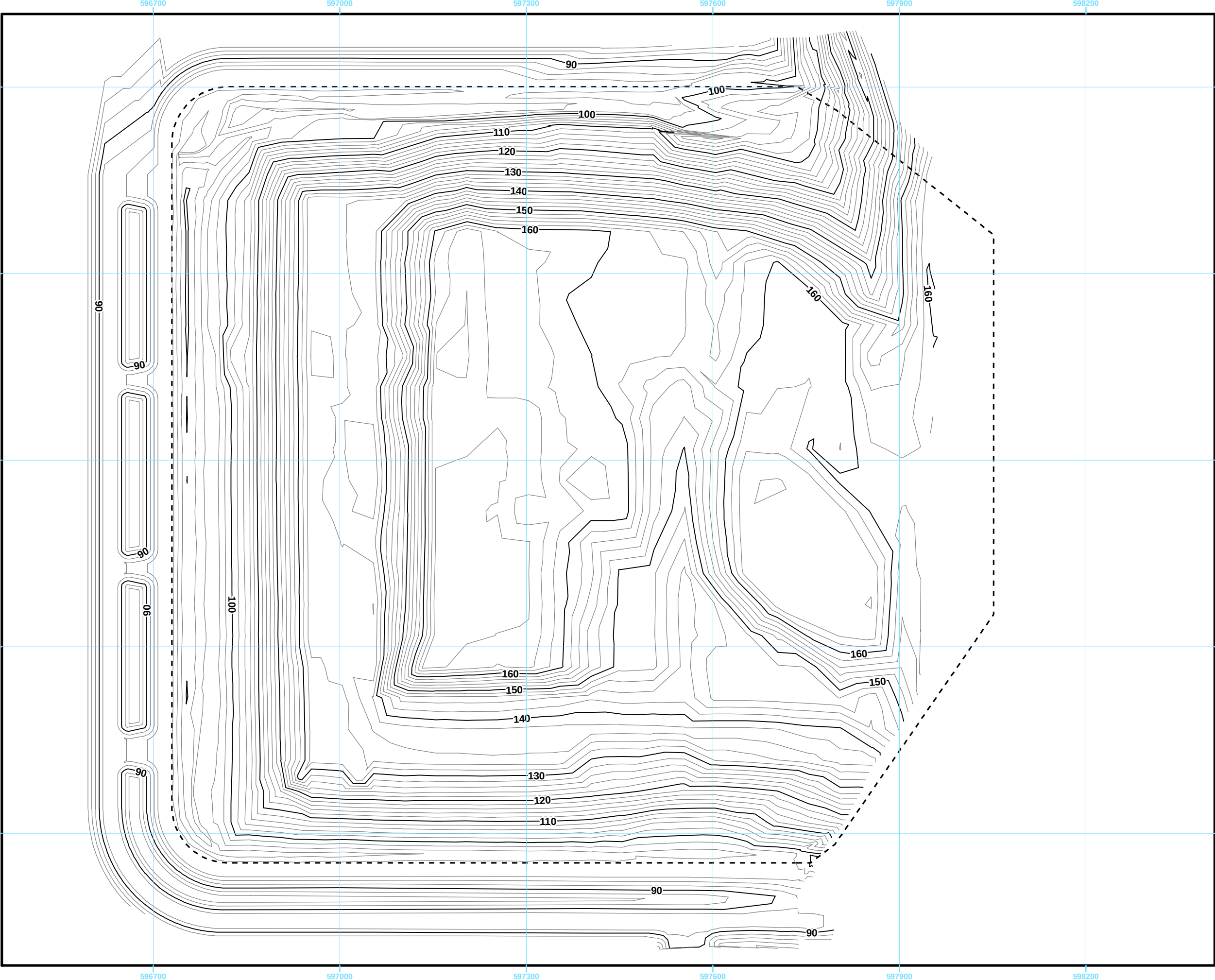
AERIAL PHOTOGRAPH OF CELL 1

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FIRST UPDATE OF RUN-ON AND
RUN-OFF CONTROL SYSTEM PLAN
CELL 1 OF HORIZONTAL EXPANSION
OF ORIGINAL CWSA AT
STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA

DRAWN BY: TJC	CHECKED BY: PAK	DATE: 09/16/2021
FILE NO. 21-13-0058	APPROVED BY: FKC	FIGURE: 2

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Scale: 1" = 150'

SOURCE: TOPOGRAPHIC SURVEY
BY WOOD ENVIRONMENT &
INFRASTRUCTURE SOLUTIONS,
INC., APRIL 23, 2021.

Legend

- 2' Contour
- 10' Contour
- - - Cell 1 Liner Limit



**04/23/2021 TOPOGRAPHIC
SURVEY OF CELL 1**

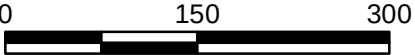
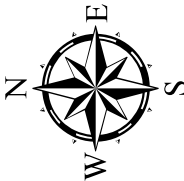


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**FIRST UPDATE OF RUN-ON AND
RUN-OFF CONTROL SYSTEM PLAN
CELL 1 OF HORIZONTAL EXPANSION
OF ORIGINAL CWSA AT
STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA**

DRAWN BY: TJC	CHECKED BY: PAK	DATE: 09/16/2021
FILE NO. 21-13-0058	APPROVED BY: FKC	FIGURE: 3

W:\Projects\2021\21-13-0058-OUC\ArcGIS\Aerial\layouts\20210913\Aerial Cell 2 20210109.mxd



Scale: 1" = 150'

SOURCE: AERIAL IMAGERY FLOWN
JANUARY 9, 2021
BY GOOGLE EARTH.

Legend

----- Cell 2 Boundary



**01/09/2021 AERIAL
PHOTOGRAPH OF CELL 2**



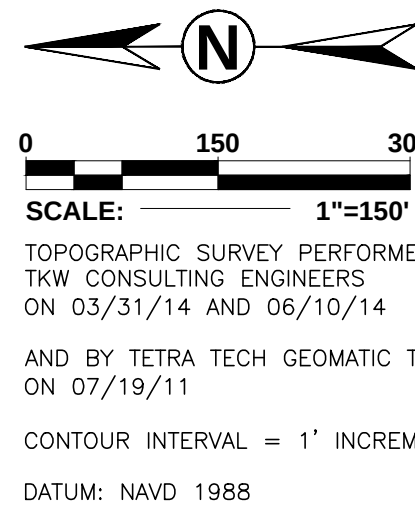
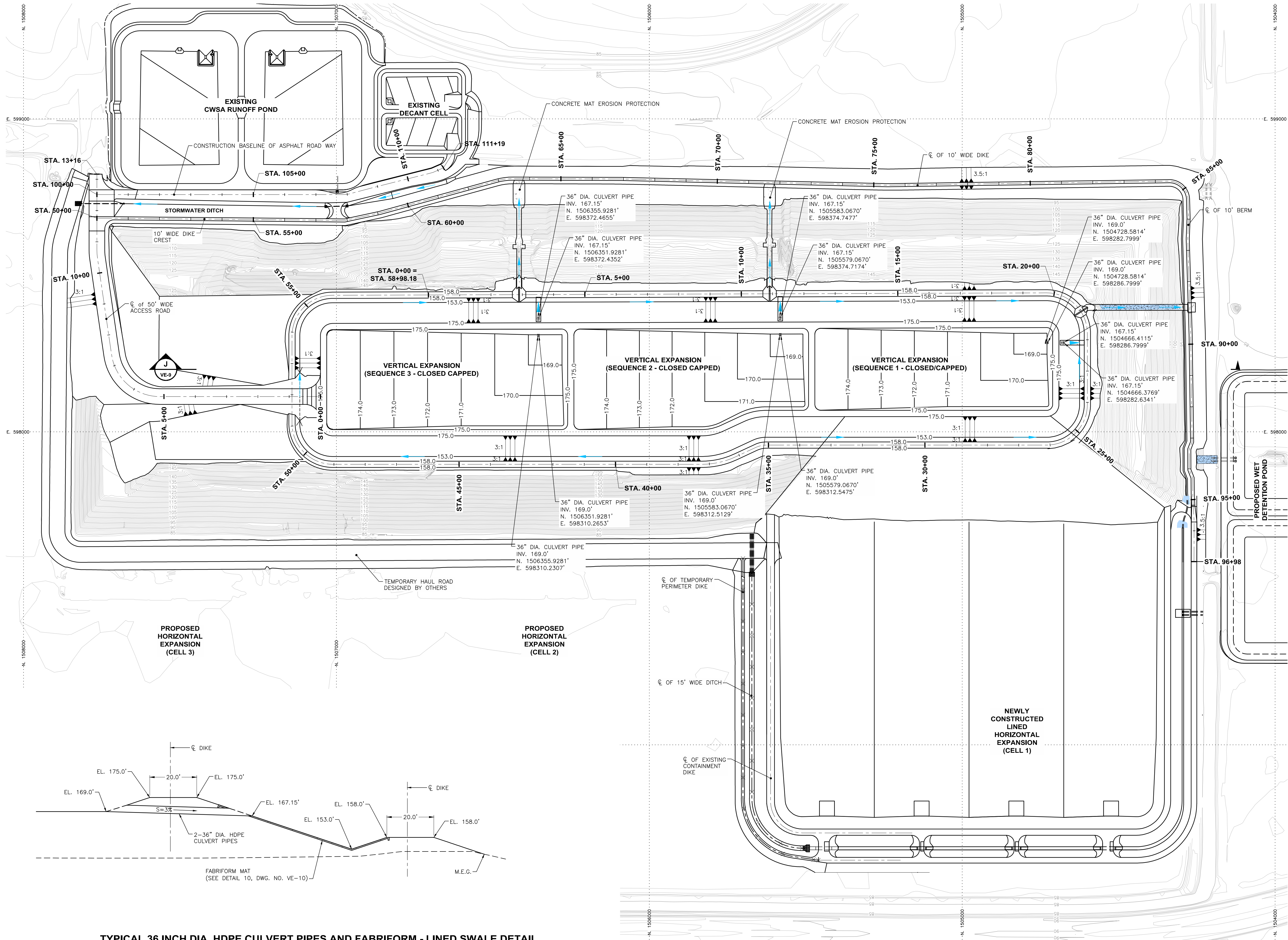
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**FIRST UPDATE OF RUN-ON AND
RUN-OFF CONTROL SYSTEM PLAN
CELL 1 OF HORIZONTAL EXPANSION
OF ORIGINAL CWSA AT
STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA**

DRAWN BY: TJC	CHECKED BY: PAK	DATE: 09/16/2021
FILE NO. 21-13-0058	APPROVED BY: FKC	FIGURE: 4

Appendix 1

Closure Plan for Original CWSA and Vertical Expansion



FINAL CLOSURE CONFIGURATION

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**CERTIFICATION OF CLOSURE
CONSTRUCTION COMPLETION FOR ORIGINAL
COMBUSTION WASTE STORAGE AREA AT
THE ORLANDO UTILITIES COMMISSION,
STANTON ENERGY CENTER**

DRAWN BY: PS	CHECKED BY: JM	DATE: 02/09/16
FILE NO. 15-13-0249	APPROVED BY:	FIGURE: 2

Appendix 2

Results of Hydrologic Modeling

**HYDROLOGIC AND HYDRAULIC REPORT
PROPOSED HORIZONTAL EXPANSION OF
COAL COMBUSTION WASTE LANDFILL**

FILE NUMBER: 10-13-0249

Prepared for:



**ORLANDO UTILITIES COMMISSION
STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA**

November 03, 2011

Prepared by:



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**Hydrologic and Hydraulic Modeling
and Stormwater Management Design Report**

**Proposed Horizontal Expansion of
Coal Combustion Waste Landfill**



Ardaman & Associates, Inc.

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A Tetra Tech Company

November 03, 2011
File Number: 10-13-0249

Florida Department of Environmental Protection
Central District
3319 Maguire Blvd, Suite 232
Orlando, Florida 32803-3767

Attention: Debra Laisure, P.E.
Stormwater Permitting Manager
Submerged Lands and Environmental Resource Permitting

Subject: Hydrologic and Hydraulic Analyses in Support of the Proposed Horizontal
Expansion for the Orlando Utilities Commission (OUC) Coal Combustion Waste
Landfill Project, Orange County, Florida.

Dear Ms. Laisure:

Enclosed please find the hydrologic and hydraulic modeling and stormwater management
design for the proposed horizontal expansion of the coal combustion waste landfill located in
southeastern Orange County.

If you have any questions or comments regarding this report, or if we may be of further
assistance in expediting your review, please feel free to contact one of the undersigned.

Very truly yours,
ARDAMAN & ASSOCIATES, INC. - A Tetra Tech Company
Certificate of Authorization No. 5950



11/3/2011

Mohamad Al-hawaree, P.E.
Senior Project Manager

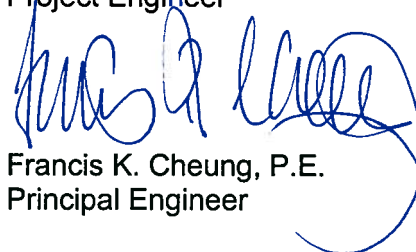


Nestor Aceituno, P.E.
Project Engineer



11/3/11

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Senior Consultant
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Francis K. Cheung, P.E.
Principal Engineer

cc: Mr. Thomas Lubozynski, P.E. (FDEP)
Mr. Charles W. Doud, P.E. (OUC)
Mr. Garfield Blair (OUC)

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1.0 INTRODUCTION

Orlando Utilities Commission (OUC) plans to expand the Coal Combustion Waste (CCW) landfill at the Stanton Energy Center (SEC), also known as Combustion Waste Storage Area (CWSA), located in southeastern Orange County, Florida. A stormwater management plan is proposed to provide stormwater treatment and attenuation for the interim phases and the final landfill configuration. The final landfill footprint will consist of 250 acres, including the existing 90-acre CCW. This report presents a technical discussion of hydrologic and hydraulic analyses that were undertaken to support management, planning, and design associated with the proposed work.

1.1 Site Location

The Orlando Utilities Commission SEC is located in southeastern Orange County, Florida in the vicinity of the Econlockhatchee River, about 12 miles southeast of downtown Orlando and 6 miles northeast of Orlando International Airport. The location of the SEC site is shown in Figure 1. The site is located within Sections 13, 14, 23, and 24 of Township 23 South, Range 31 East, and Sections 7, 18, and 19 of Township 23 South, Range 32 East. The address of the facility is 5100 South Alafaya Trail, Orlando, Florida. Alafaya Trail ends at the site entrance. The site is north of the Beach Line Expressway (State Road 528) and east of Innovation Way, which provides access from Alafaya Trail to State Road 528.

1.2 Project Description and Background

The existing CCW at the SEC has been in operation since 1987 under Conditions of Certification approved by the Florida Department of Environmental Protection (FDEP) Siting Coordination Office. Fly ash and dewatered flue gas desulfurization (FGD) sludge from the SEC, and high lime-content fly ash from two other Florida power plants, are processed on site to produce a fixated material, which is called ProMat. The ProMat is delivered to the CCW already mixed, properly cured, and ready for placement. In addition to ProMat, unsold bottom ash, brine concentrator/crystallizer solids from the onsite wastewater treatment facility, and approved miscellaneous power plant solid wastes are also placed in the CCW landfill. Approximately 90 acres of the originally proposed CCW have been used to-date and waste is currently being landfilled in an approved vertical expansion.

The existing CCW landfill does not have a bottom liner and leachate collection system or a low permeability cap. The Conditions of Certification allow fixated wastes that achieve a specified maximum permeability to be placed in the unlined facility. Conditions of Certification (COC), which govern construction and operation of the existing SEC facility, require one of the following mitigative measures be adopted by OUC to reduce the potential for groundwater impacts: a) use of an adequate chemical fixation process on the solid wastes to achieve a uniform layer at least 18 inches thick across the cell bottom with a permeability of 1×10^{-7} cm/sec or less; b) use of an adequate chemical fixation process on the solid wastes to achieve a permeability of 5×10^{-6} cm/sec or less.

The current proposed project consists of an approximately 91.5-acre lined horizontal expansion located west of and contiguous with the existing 90-acre unlined CCW. The horizontal expansion area is divided into three lined cells, which will be constructed sequentially. The ultimate footprint of the CCW is approximately 250 acres, including the existing 90-acre CCW, the proposed lined horizontal expansion, and future areas north of the existing area. The

existing 90-acre CCW, the lined horizontal expansion area and ultimate footprint are shown on Figure 2.

Currently, stormwater runoff that comes into contact with the waste is collected in the existing CCW and ditches lined with at least 3 feet of fixated waste and discharged to the CCW Runoff Pond, which is lined with an HDPE geomembrane. Stormwater runoff from side slope areas that have received soil cover is allowed to be discharged to the natural drainage system without treatment. Current plans are for stormwater runoff from the properly closed portions of the existing CCW, vertical expansion and the horizontal expansion areas to be collected and treated in the proposed stormwater detention pond to be located south of the landfill (Figure 2).

2.0 SCOPE OF HYDROLOGIC AND HYDRAULIC REPORT

The primary objective of the hydrologic study is to develop a stormwater management plan for the future 250-acre CCW landfill. The plan provides for stormwater runoff treatment and attenuation utilizing a wet detention pond as the most suitable method since groundwater levels in the area are close to land surface. The wet detention pond is proposed south of the 250-acre landfill expansion (see Figure 2).

The stormwater management system and its various components were evaluated using Interconnected Channel and Pond Routing (ICPR) model version 3.10 Service Pack 7. The hydrologic and hydraulic analyses, which are described in detail throughout the remainder of this report, generally include the following work elements.

2.1 Data Collection

This task included compilation and review of existing available information ranging from 2006 and 2011 topographic maps and aerial photography, land use, soils information, 2009 revised FEMA flood hazard maps, national wetland inventory (NWI), USGS maps, and 2011 surveys.

2.2 Pre-Development Condition Model

Collected data were compiled and used to develop a model representing the pre-development condition. In previous meetings with FDEP, it was established that the pre-development scenario is the current 2011 condition. The model database was assembled, tested, and refined to provide a reliable tool for prediction of the system's response to a design storm event rainfall.

2.3 Post-Development Condition Model

In support of the final 250-acre landfill expansion, a model was developed and tested to represent the designed post-development conditions. This hydrologic and hydraulic (H&H) model was assembled to demonstrate compliance with regulatory criteria.

2.4 Documentation of Results

This report summarizes data collected and methodologies used to evaluate hydrologic and hydraulic conditions, under both pre-development and post-development conditions. It also describes the performance criteria used in the design of the proposed stormwater management system.

3.0 PROJECTION AND DATUM

The horizontal datum used in this evaluation is the North America Datum 83 (NAD83). The vertical datum is the North American Vertical Datum of 1988 (NAVD88) and the horizontal projection is State Plane Florida East.

4.0 REGULATORY REQUIREMENTS

The site lies within the St. Johns River Water Management District (SJRMWD) within the Econlockhatchee River Basin and, as delegated by the Florida Department of Environmental Protection (FDEP), the Site is subject to the stormwater management rules developed by the SJRMWD.

Per the criteria, the post-development peak rate of discharge must not exceed the pre-development peak rate of discharge. To be consistent with applicable requirements, the following 24-hour duration events were simulated: the mean annual storm (2.33-year return) with a total rainfall depth of 4.4 inches and the 25-year storm with a total rainfall depth of 8.8 inches. Total rainfall depths were derived from the SJRWMD rainfall maps. The Florida Modified Type II distribution was used for these simulations.

Wet detention system design requirements:

(a) For a wet detention system, the design treatment volume is the greater of the following: one inch of runoff over the drainage area or 2.5 inches over the impervious area (excluding water bodies). FDEP believes that the proposed wet detention system directly discharges into Outstanding Florida Waters (OFWs) and, therefore, requested that an additional 50 percent water quality treatment volume be considered. Additionally per FDEP, landfill areas with an impermeable liner and two feet of soil cover are considered impervious; Refer to Appendix A for calculations.

(b) The outfall structure should be designed to drawdown one-half the required treatment volume within 24 and 30 hours following a storm event; refer to Appendix A for calculations.

(c) The permanent pool should be sized to provide at least a 14-day residence time for stormwater runoff during the wet season, which occurs from June to October. Because FDEP considers the wet detention pond system discharges to Outstanding Florida Waters, an additional 50 percent permanent pool volume is required; refer to Appendix A for calculations.

(d) At least 30 percent of the wet detention pond surface area shall consist of a littoral zone. As an alternative to a littoral zone, either an additional 50 percent of the appropriate permanent pool volume or pre-treatment of the stormwater prior to entering the wet detention pond may be used. An additional 50 percent of permanent pool was used in this evaluation (i.e., a 21-day residence time was used); refer to Appendix A for calculations.

(e) A maximum pond depth of 12 feet and a mean depth between 2 and 8 feet. An estimated pond depth of 12 feet will be used in this design and the mean depth was calculated to be 3.09 feet; refer to Appendix A and B for calculations and design elevations.

(f) The average pond ratio must be at least 2:1; under these design conditions, short circuiting is minimized and pollutant removal efficiency and mixing is maximized. A square shape with a

partition dike was used in this design to maximize mixing; refer to Drawings 16, 17, and 18 in Appendix M.

(g) To minimize groundwater contributions which may lower treatment efficiencies, the control elevation should be set at or above the normal on-site ground water table elevation. The normal water level (NWL) was estimated to be +81.5 feet (NAVD88) based on groundwater elevation in a nearby monitor well with 22 years of groundwater elevation records, and a battery of 5 piezometers installed in August 2011 within the proposed pond location; refer to Appendix L.

(h) Pond side slopes must be no steeper than 3:1 (horizontal: vertical) between the control elevation and two feet below. A constant slope of 3:1 was used from the top of dike to pond bottom. Note that the pond is located in an industrial site, thus no public access is expected; refer to Drawings 16, 17, and 18 in Appendix M.

5.0 PRE-DEVELOPMENT CONDITIONS

As previously described, the pre-development scenario represents the current 2011 conditions. The pre-development model was assembled, tested and refined to provide a reliable tool for prediction of the system response to a storm event rainfall.

Under existing conditions, runoff from the existing 90-acre CCW flows into the CCW runoff pond as well as two man-made ditches located east, and west at the toe of the landfill; refer to Figure 3 for basin delineation and flow direction. Currently, 49 acres flows into the CCW runoff pond, 22 acres flows into the east ditch, and 19 acres into the west ditch. Discharges from the CCW runoff pond are routed via pipe into the Recycle Pond. Discharges from the east ditch continue eastward into a man-made ditch that connects to a wetland system, which ultimately discharges into the Econlockhatchee River. Runoff in the western ditch remains in a low-laying area with a potential discharge into the area north of the existing CCW. For the area between Innovation Way and west of the existing CCW, runoff is routed into the western ditch. For areas north of the existing CCW, surface water runoff flows toward the northeast into a wetland area across Innovation Way. For the remaining areas east and south of the existing CCW, flow is generally east through a man-made ditch and into a series of wetlands flowing towards the Green Branch tributary of the Econlockhatchee River.

6.0 POST-DEVELOPMENT CONDITIONS

A wet detention system was selected to treat runoff from the 250-acre proposed landfill expansion area. As previously mentioned, the 250-acre area encompasses the existing 90-acre CCW. Runoff from the expanded area will be collected in a perimeter toe ditch which is connected to the proposed wet detention pond through two drop inlets. For the horizontal expansion, the designed trapezoidal perimeter ditch is 10.0 feet wide at the invert, 8.0 feet deep with an invert elevation of 85.0 feet (NAVD). On the existing 90-acre CCW, the designed triangular perimeter ditch invert elevation is at 90.0 feet (NAVD) and is 6.0 feet deep. Each drop inlet consists of one FDOT Type D structure with one 36-inch HDPE pipe. The top of each riser is flush with the trapezoidal ditch at elevation 85.0 feet (NAVD) and the culvert invert elevation is set at elevation 75.5 feet (NAVD). The culverts are designed to cross beneath and perpendicular to the existing man-made ditch; refer to Appendix M, Design Drawings.

Excess runoff from the wet detention pond will be discharged into the existing man-made ditch through two riser structures. The proposed wet detention pond is located south of the landfill

expansion; refer to Figures 2 and 4. Elements involved in the design of the stormwater management system include a pair of riser structures sized to treat and attenuate runoff from the 250-acre expansion area, a set of bleed-down devices to restore the treatment volume, and a pair of pipes to effectively convey the excess runoff in to the existing man-made ditch. The wet detention pond has a total contributing area of 250 acres with a required treatment volume of 60.0 acre-feet; refer to design calculations in Appendix A. The bottom surface area of the pond will be 15.6 acres at elevation 69.5 feet; the pond area at the control elevation of 81.5 feet (NAVD) was determined to be 20.0 acres; the design elevation of the treatment volume is at 84.5 feet (NAVD) with a total area of 21.1 acres. The top of dike is at elevation 88.0 feet (NAVD) with a total area of 22.5 acres. Each drop structure consists of one FDOT Type D outlet with one 36-inch HDPE pipe. Also, each drop structure will have a pair of 10.0-inch diameter bleed down devices at elevation 81.5 feet (NAVD) to recover the treatment volume and one rectangular notch with a width of 4 feet and an invert elevation of 84.5 feet (NAVD) to limit peak discharges. The required permanent pool volume is 61.76 acre-ft with a mean depth of 3.09 feet; however, the pond will likely be excavated to an even greater depth to provide fill material for landfill construction. Refer to Appendix A and B for design calculations and wet detention pond design parameters. Also, typical details of the proposed wet detention pond are presented in Drawings 16, 17, and 18 in Appendix M.

7.0 METHODOLOGY AND MODEL DEVELOPMENT

Hydrologic analyses typically employ specialized mathematical models to define the response of a drainage system to design storm events. A model, in this context, is a computer implemented mathematical representation of the physical and behavioral characteristics of a system. With this mathematical representation, storm event conditions are simulated and results are analyzed to evaluate drainage system performance.

7.1 Model Selection

A hydro-meteorological, hydrodynamic modeling approach was selected for use in defining design flow rates, peak discharges, and water surface elevations. The approach involves computation of runoff, storage, and conveyance in response to a rainfall event that is uniformly distributed over the contributing drainage area. Frequency of the rainfall event (in this case, a synthetic design storm) is assumed to be the same as the frequency of its resulting flood in terms of flows and stages.

Numerous computer programs are available for use in hydro-meteorological simulation. ICPR for Windows was selected for use in this study. ICPR is a storm event modeling system that generates runoff hydrographs for basins and performs hydrodynamic routings of that runoff through a surface water conveyance system comprised of lakes, ponds, channels, and drainage structures.

7.2 Model Network Layout

ICPR operates with a model network comprised of a series of node and link elements. These connections provide a framework for dynamic storage and routing of flows throughout a drainage system. Nodes, located at critical points of interest within the drainage system, have storage and elevation characteristics and are used as locations for delivery of runoff to the drainage system. Model node elements typically represent lakes, ponds and points of interest in open channels. Nodes are also used to assign downstream boundary conditions for the

modeled system, where a known water surface elevation (called a "time-stage") must be defined.

Link elements have specific hydraulic characteristics and are used to convey flow between nodes. Model link elements typically represent open channels and drainage structures (culverts, bridges, weirs, etc.) that provide conveyance through the surface water drainage system.

7.3 Basin Delineation

Basins represent local drainage areas delineated so that they contribute runoff to a single point, a node, in the model network. The 2006 1-foot contours obtained from Orange County in combination with the 2011 1-foot topographic contours (produced for this project by Geometric Technologies) were used to determine drainage divides in support of the existing scenario; refer to Figure 3. Design drawings in conjunction with 1-foot contours were used to define proposed conditions; refer to Figure 4.

7.4 Land Use and Cover

Land use categories were used along with soil types to define runoff potential. Categories used to describe land use and cover for the project site and offsite areas are based upon the Florida Land Use, Cover and Forms Classification System (FLUCFCS). Generalized land use conditions were evaluated for the site based on GIS coverage files available from SJRWMD. This information was then updated and used to evaluate existing conditions; refer to Figure 5. Similarly, post-development land use conditions were evaluated and updated to represent the future condition. Land uses for the proposed scenario are presented in Figure 6.

7.5 Hydrologic Soil Groups

Soils are classified into hydrologic soil groups, depending on their infiltration rate and rate of water transmission that relate to runoff potential. Classification of soils, their hydrologic soil groups and their respective areas of coverage across the site were obtained from Natural Resources Conservation Service (NRCS). Hydrologic soil groups were used along with land use to define runoff potential, as discussed later in this report: Refer to Figure 7.

A general description of Hydrologic Soil Groups (HSG) is presented below:

- Class A: High infiltration rates. Soils are deep well drained to excessively drained sands and gravels.
- Class B: Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
- Class C: Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
- Class D: Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Some soils are classified as belonging to two hydrologic soil groups, such as A/D, B/D, and C/D. These ratings mean that, under natural conditions, the soil is classified as belonging to hydrologic soil group D, but by artificial methods (e.g. ditching) the water table could be lowered sufficiently so that the soil would fit into a lower runoff potential category.

7.6 Runoff Curve Number

Hydrologic losses from each sub-basin were computed using the SCS curve number option available in ICPR. This option in ICPR uses SCS curve numbers to compute runoff excess from rainfall as described in the National Resource Conservation Service (NRCS), formerly the Soil Conservation Service (SCS) publication, TR-55.

The curve number (CN) for each sub-basin was assigned based on the land use and soil type information for both the pre-development and post-development conditions. Runoff curve numbers used in this analysis are representative of average antecedent moisture conditions (AMC-II). For overall weighted curve numbers and breakdown of curve numbers per basin for the pre-development and post-development conditions, please refer to Appendices C and D.

7.7 Time of Concentration

Time of Concentration is generally defined as the amount of time it takes for a drop of water to travel from the most hydrologically distant point in a basin to the point where that basin discharges to a receiving water body. This parameter is then used in the computation of a runoff hydrograph, when using the SCS Unit Hydrograph Method for hydrograph generation.

The computation is made according to techniques recommended in TR-55 by the NRCS. Travel segment data for this study was developed using contours and aerial photographs. The flow path along the surface of the basins was broken into two main components; sheet flow and shallow concentrated flow. Since some of the basins rendered times of concentration smaller than 6 minutes, a minimum value of 6 minutes was used. For TC calculations, please refer to Appendix E for pre-development conditions and Appendix F for post-development conditions. Please note Appendix F only includes TC calculations for post-development areas impacted by the expansion; for post-development areas not impacted by the expansion, please refer to Appendix E.

7.8 Surface Storage

ICPR is capable of modeling lakes, wetlands, and floodplains with varying surface areas (and therefore storage volumes) as water levels rise and recede within the system. In order to make these possible, surface areas at successively higher elevations must be described for every water body in the model.

Design plans were used to define a stage area relationship for the proposed storm water management facility. Comprehensive modeling input data can be retrieved from the model input files in Appendices G and H of this report.

7.9 Boundary Conditions

The receiving water feature from the wet detention treatment facility is an existing manmade ditch; refer to Figure 2. The manmade ditch generally runs parallel to Innovation Way, north and south. On the south side, the ditch flows towards the east for ultimate discharge into a series of wetlands southeast of the proposed landfill. These series of wetlands ultimately discharge in to the Econlockhatchee River. On the north side, the ditch flows east into to a wetland system which eventually discharges under Innovation Way for ultimately discharge into the Econlockhatchee River. The ditch and all its hydraulic and hydrologic components were evaluated in the ICRP model to assess fluctuations and potential impacts during the storm event

since this ditch was used as the receiving feature (i.e., variable tailwater node). Refer to Appendixes G and H for model input and output data.

7.10 Model Testing

A thorough review of model input data was undertaken and a qualitative assessment of preliminary model results was made. Input data were reviewed, to yield consistent and defensible use of parameter values. Commonly accepted values for parameters (runoff curve number, time of concentration, peak rate factor, and structure discharge coefficients) were carefully and thoughtfully employed.

Model testing was performed to identify and account for overflows and to generally evaluate model performance. Modifications to input data were made until the model yielded reasonably reliable results and could be used as a reasonable predictor of watershed response to rainfall.

8.0 RESULTS OF HYDROLOGIC AND HYDRAULIC ANALYSES

The results of storm event simulations were used to establish pre-development conditions, to evaluate the effectiveness of the proposed stormwater management system, and to demonstrate that regulatory requirements were met. The following discussion of simulation results is limited to those comparisons that are necessary to describe the effectiveness of the proposed stormwater management system.

8.1 Pre-Development Condition Simulation Results

Results of storm event simulations from the pre-development model were used to provide a baseline when defining the design peak stages and discharge rates. Model results of the 2.33y/24h and 25y/24h storm events are shown in tables 1, 2, 3, and 4. These locations were selected along the existing man-made ditch since they better represent probable impacted areas. Also, hydrographs (discharge and stage) of reaches RPRE140 and RPRE160 are provided in Appendixes I and J. Additional model results information can be found in Appendix G; Refer to Figure 3.

8.2 Post-Development Condition Simulation Results

The results of the storm event simulation, using the post-development conditions model network, were evaluated to demonstrate that the peak discharge rates and stages from the proposed stormwater management systems were not greater than the peak discharge rates of pre-development conditions, and that the required treatment volume was met. Refer to tables 1, 2, 3, and 4 for model results. Also, hydrographs (discharge and stage) of reaches RPRE140 and RPRE160 are provided in Appendixes I and J. Additional model results information can be found in Appendix H; Refer to Figure 4.

The landfill will be constructed in several phases (e.g., Phases I, II, III, and IV). Each phase has a different contributing area, therefore different treatment volume depths. The proposed pond will be constructed to serve each phase as well as the final configuration or phase IV. Under this condition, the drawdown mechanism consists of two 10-inch orifices per drop structure, for a total of four 10-inch orifices at elevation 81.5 feet (NAVD88).

9.0 SUMMARY

The proposed stormwater management system was designed to treat and attenuate the 250-acre landfill expansion. Analyses of the pre-development and post-development hydrologic and hydraulic conditions were performed using a hydro- meteorological, hydrodynamic modeling approach to provide a level of understanding of the existing and proposed systems response to a storm event.

Based on comparisons of existing and proposed conditions simulation results of the system response, the proposed scenarios will not cause an increase in peak discharge rates and/or stages, resulting in no adverse impacts to downstream adjacent land areas. Also, the system has been shown to provide sufficient treatment storage and allows for recovery of that storage volume according to regulatory requirements. Refer to Tables 1 and 2 below for pre/post discharge comparison for the mean annual and 25 year storm events.

Table 1: Pre and Post Discharge Comparison, Mean Annual Storm Event

Reach Name	Pre Max Discharge (cfs)	Post Max Discharge (cfs)
RPRE350	25.25	24.89
RPRE340	23.12	22.74
RPRE330	21.28	20.87
RPRE300	9.5	8.21
RPRE100A	9.07	7.3
RPRE100	12.38	10.89
RPRE105	11.95	10.37
RPRE115	5.24	3.46
RPRE120	4.82	2.92
RPRE130	44.33	4.48
RPRE140	34.27	13.8
RPRE160	45.73	15.45
RPRE170	54.5	43.91
RPRE180	44.88	28.36
RPRE190	54.78	44.2
RPRE200	54.99	44.39

Table 2: Pre and Post Stage Comparison, Mean Annual Storm Event

Node Name	Pre Max Stage (feet)	Post Max Stage (feet)
NPRES350	76.21	76.15
NPRES340	76.27	76.21
NPRES330	76.59	76.56
NPRES300	79.08	79.06
NPRES100	81.02	81.2
NPRES105	81.83	81.8
NPRES115	82.14	82.08
NPRES120	82.13	82.07
NPRES130	80.62	80.27
NPRES140	80.60	80.12
NPRES160	79.97	79.99
NPRES170	79.92	79.96
NPRES180	79.86	79.92
NPRES190	77.51	77.39
NPRES200	77.18	77.14

Table 3: Pre and Post Discharge Comparison, 25-Year Storm Event

Reach Name	Pre Max Discharge (cfs)	Post Max Discharge (cfs)
RPRES350	53.76	52.23
RPRES340	50.14	48.49
RPRES330	46.87	45.17
RPRES300	21.3	19.41
RPRES100A	17	12.81
RPRES100	52.34	51.98
RPRES105	38.91	30.82
RPRES115	9.21	6.25
RPRES120	9.72	6.29
RPRES130	44.88	41.39
RPRES140	67.07	54.4
RPRES160	89.89	54.65
RPRES170	162.67	129.07
RPRES180	47.5	30.21
RPRES190	163.56	129.89
RPRES200	164	130.3

Table 4: Pre and Post Stage Comparison, 25-Year Storm Event

Node Name	Pre Max Stage (feet)	Post Max Stage (feet)
NPRES350	76.61	76.43
NPRES340	76.69	76.53
NPRES330	77.58	77.51
NPRES300	79.27	79.25
NPRES100	82.73	82.63
NPRES105	82.74	82.64
NPRES115	82.98	82.79
NPRES120	82.97	82.79
NPRES130	82.63	81.78
NPRES140	82.62	81.78
NPRES160	81.80	80.83
NPRES170	80.87	80.64
NPRES180	80.61	80.45
NPRES190	78.54	78.26
NPRES200	77.53	77.45

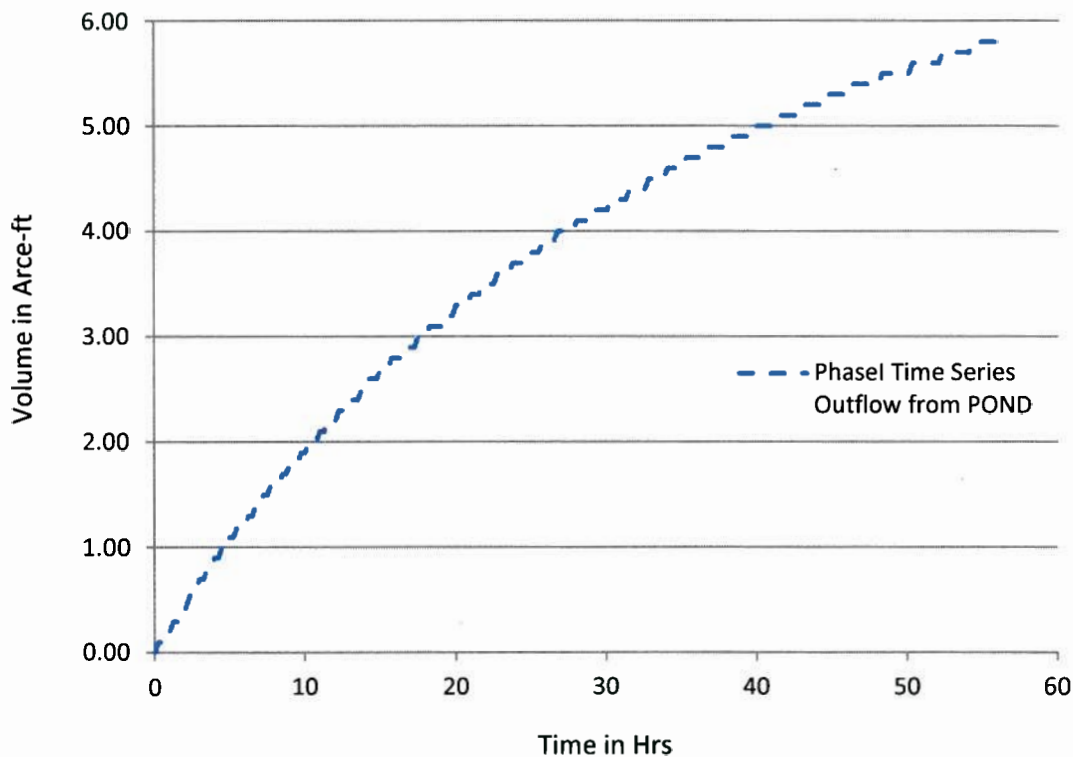
Summary tables of design parameters for the post-development condition are provided in Appendix B - Summary of Wet Detention Pond Design Parameters. Also, hydrographs comparison results (at selected locations) of pre-development and post-development analyses are presented in Appendices I and J. Similarly, input and output data are provided in Appendices G and H.

10.0 FINAL POND CONFIGURATION AND PROJECT PHASES

The landfill will be constructed in several phases (e.g., Phases I, II, III, and IV). Each phase has a different contributing area, therefore different treatment volume depths. The proposed pond will be constructed to serve the final configuration or phase IV. Under this condition, the drawdown mechanism consists of two 10-inch orifices per drop structure, for a total of four 10-inch orifices at elevation 81.5 feet (NAVD88).

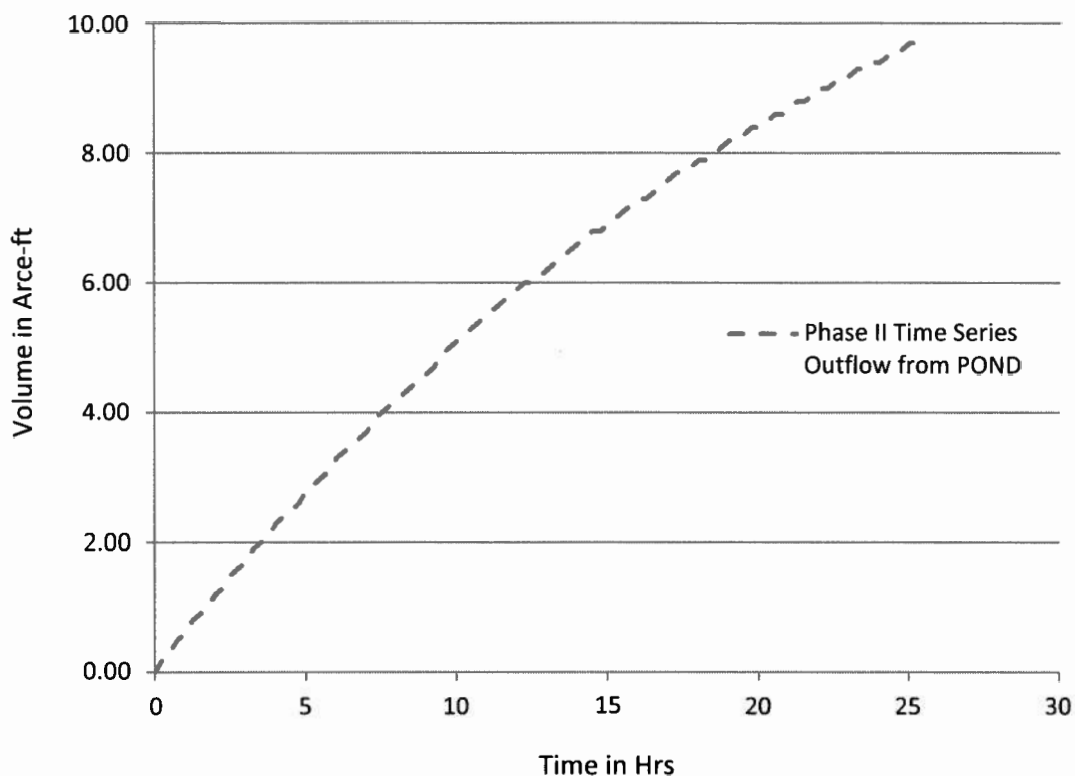
For Phase I, the total impervious area is approximately 37 acres. The required treatment volume is $2.5 \text{ inch} \times 37 \text{ acre} \times 1.5 \text{ (additional)} \div 12 \frac{\text{inch}}{\text{feet}} = 11.56 \text{ acre} - \text{ft}$. The treatment depth is $11.56 \text{ acre} - \text{ft} \div 20 \text{ acre} = 0.57 \text{ ft}$. Under this condition, it is required that one half of the treatment volume ($5.78 \text{ acre} - \text{ft}$) be released between 24-30 hours. As shown in the graph below, half of the treatment volume is discharged in 55 hrs. This extended time is due to the small hydrostatic head available in this scenario. No additional orifices are proposed to recover the treatment volume within 24-30 hours since additional storage is available in the pond for the next storm.

Phase_I Time Series Outflow from POND



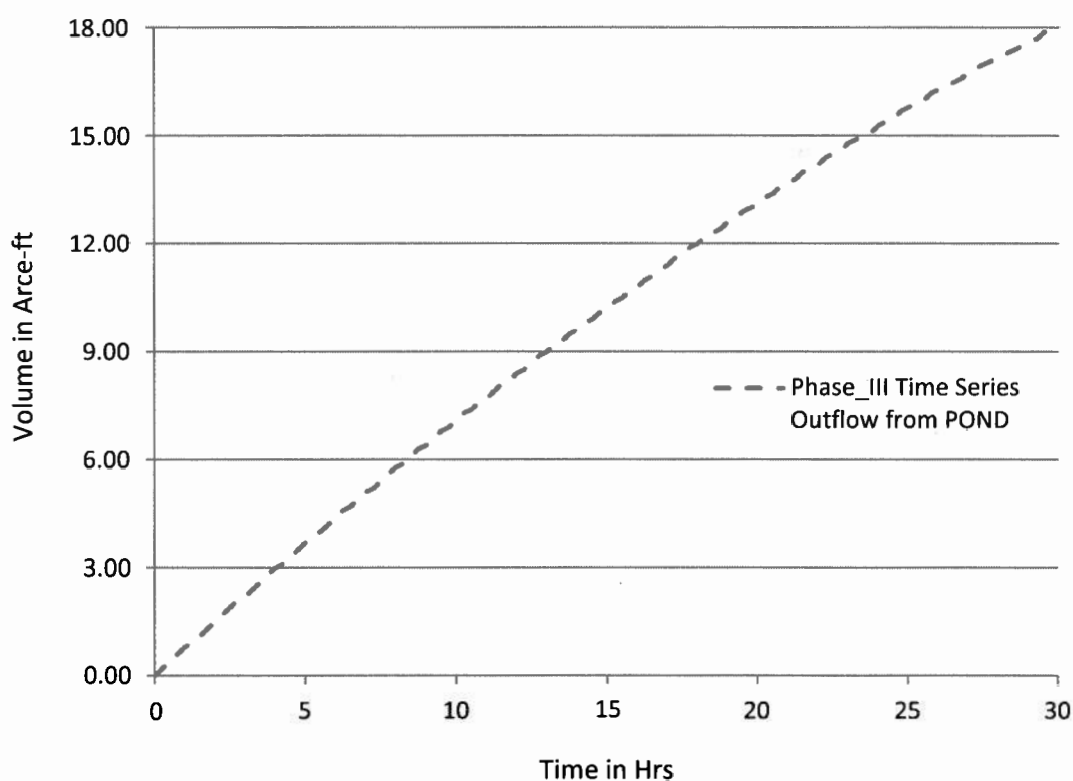
For phase II, the total impervious area is approximately 62 acres. The required treatment volume is $2.5 \text{ inch} \times 62 \text{ acre} \times 1.5(\text{additional}) \div 12 \frac{\text{inch}}{\text{feet}} = 19.37 \text{ acre} - \text{ft}$. The treatment depth is $19.37 \text{ acre} - \text{ft} \div 20 \text{ acre} = 0.97 \text{ ft}$. For this condition, it is required that one half of the treatment volume (9.68 acre.ft) be released between 24-30 hours. As demonstrated in the graph below, half of the treatment volume is discharged in 25 hrs.

Phase_II Time Series Outflow from POND



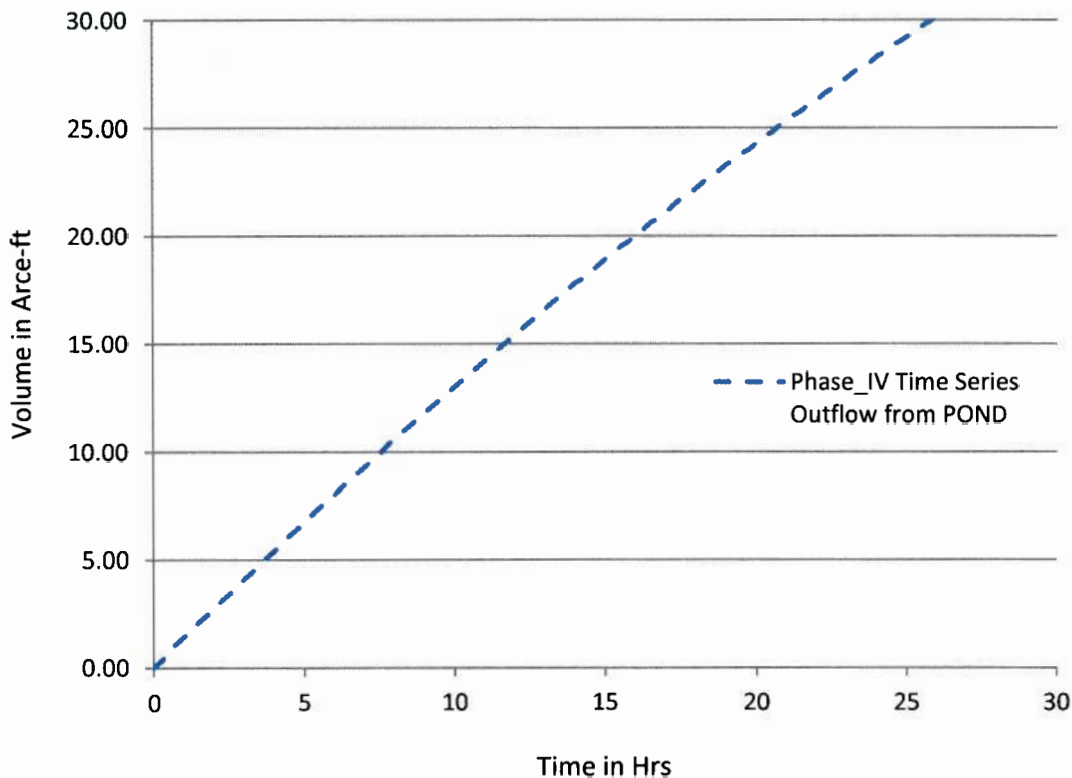
For phase III, the total impervious area is approximately 114 acres. The required treatment volume is $2.5 \text{ inch} \times 114 \text{ acre} \times 1.5 \div 12 \frac{\text{inch}}{\text{feet}} = 35.62 \text{ acre} - \text{ft}$. The treatment depth is $35.62 \text{ acre} - \text{ft} \div 20 \text{ acre} = 1.78 \text{ ft}$. For this condition, it is required that one half of the treatment volume (17.81 acre - ft) be released between 24-30 hours, but not early than 24 hrs. In this case, the treatment volume is being released in 22 hrs. Since the time is shorter than required, it is proposed to close one orifice. Under this condition (one orifice closed), the discharge time equals 29 hours. As shown in graph below, half of the treatment volume is discharged in 29 hrs.

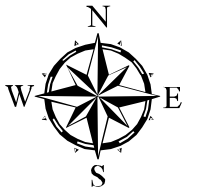
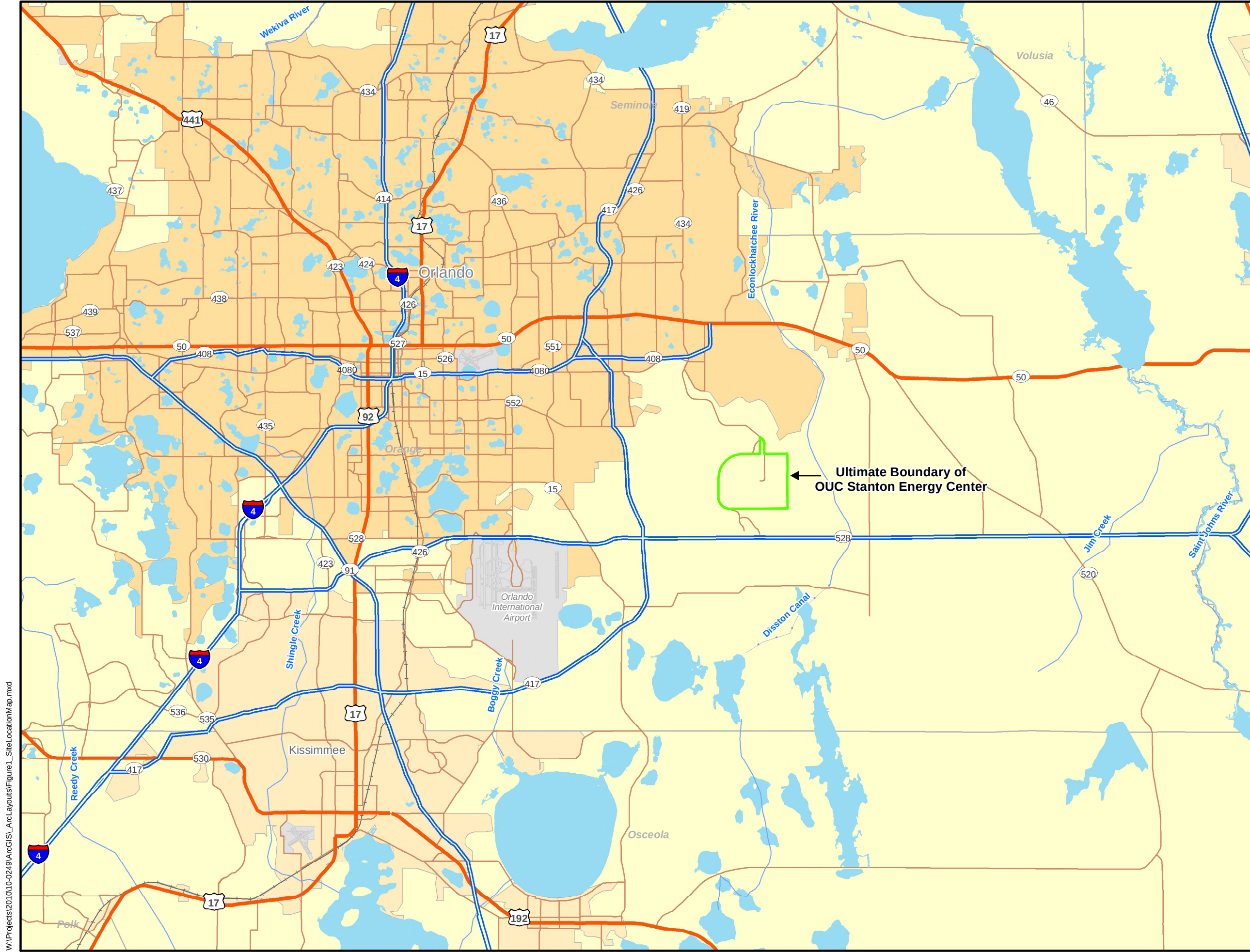
Phase_III Time Series Outflow from POND



For phase IV, the total impervious area is approximately 190 acres. The required treatment volume is $2.5 \text{ inch} \times 190 \text{ acre} \times 1.5 \div 12 \frac{\text{inch}}{\text{feet}} = 59.37 \text{ acre} - \text{ft}$. The treatment depth is $60.0 \text{ acre} - \text{ft} \div 20 \text{ acre} = 3.0 \text{ ft}$. For this condition, it is required that one half of the treatment volume ($30.0 \text{ acre} - \text{ft}$) be released between 24-30 hours. As demonstrated in graph below, half of the treatment volume is discharged in 26 hrs.

Phase_IV Time Series Outflow from POND





0 9,000 18,000

Scale: 1" = 18,000'

Source: ESRI

Legend

 Site Boundary

SITE LOCATION MAP



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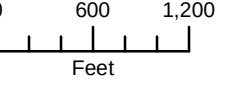
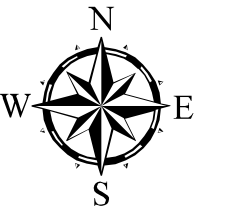
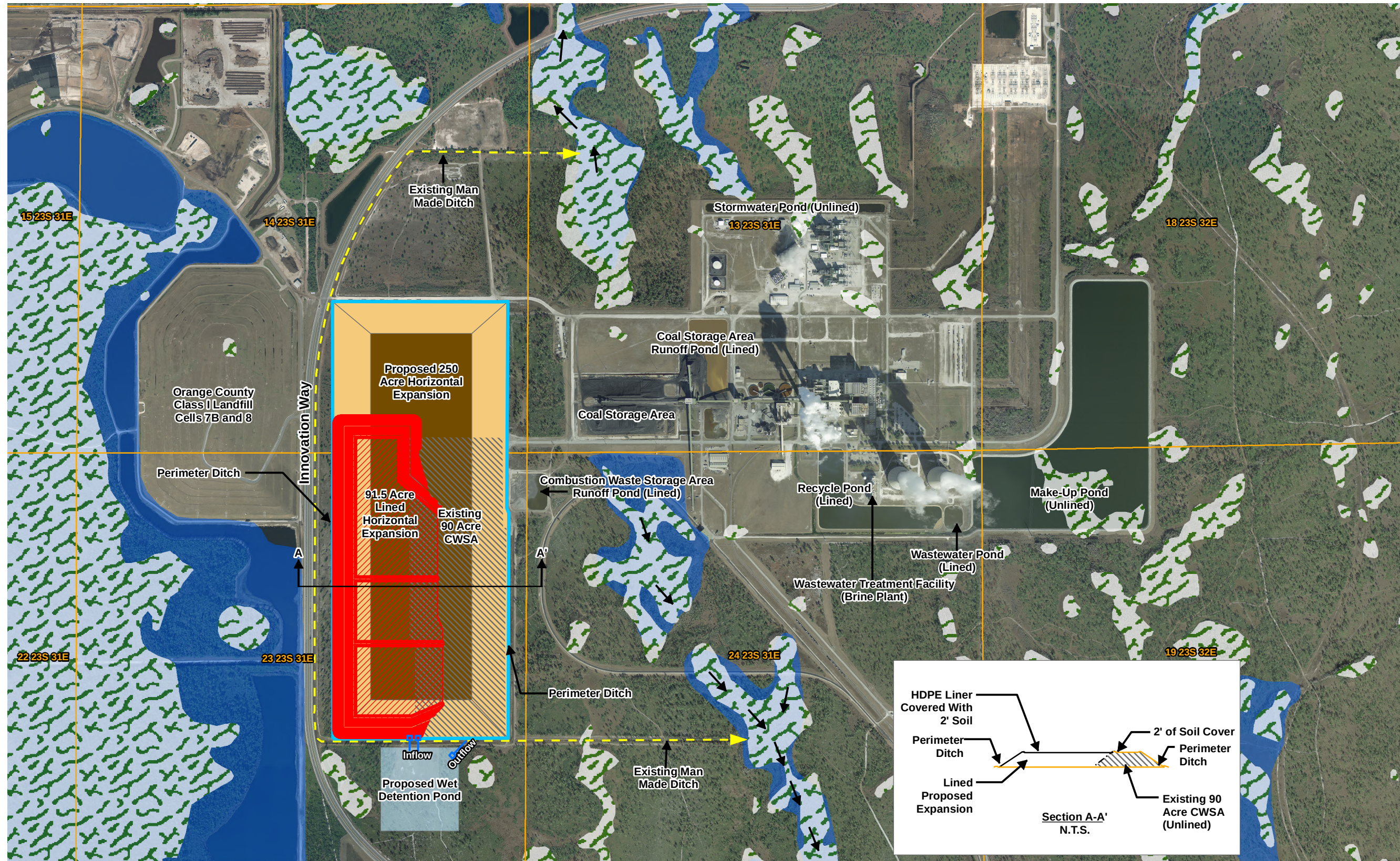


The Reliable One

OUC STANTON ENERGY CENTER
ORANGE COUNTY, FLORIDA

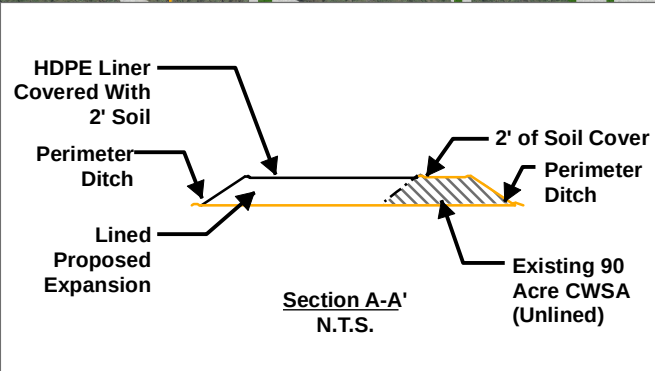
**HORIZONTAL EXPANSION OF COAL
COMBUSTION WASTE LANDFILL**

DRAWN BY: RMC	CHECKED BY:	DATE: 10-24-11
FILE NO. 10-0249	APPROVED BY:	FIGURE: 1



Scale: 1" = 1,200'

- Proposed Landfill Ditch
- ▨ Existing CWSA
- Side Slopes
- Top of Landfill
- PLSS
- ~ National Wetlands Inventory
- FEMA Flood Zone A



Imagery: Orange County Property Appraiser, Jan 2011
 FEMA: Orange County, 2009



Figure 2

Project: 10-13-0249	Projection: State Plane Florida East	
Prepared: 09-15-11	Horizontal Datum: NAD83	Vertical Datum: N/A
Prepared by: RMC	Modified by: TJC	Modified: 10-21-11
File: \\2010\10-0249\ArcGIS\ArcLayouts\20110915\NW\FEMA_Map.mxd		

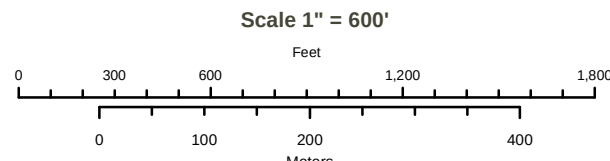
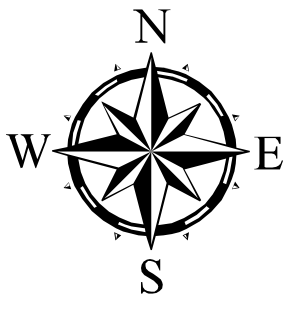
STORMWATER CONCEPTUAL DESIGN **OUC STANTON ENERGY CENTER CCW LANDFILL**



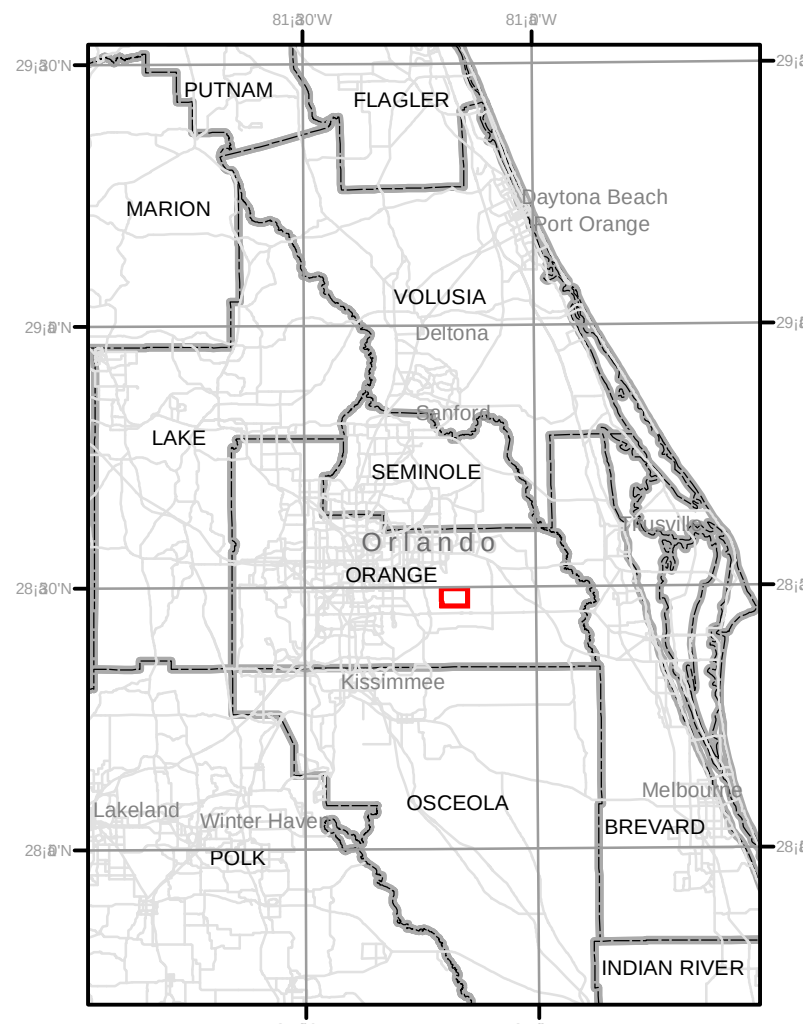
Ardaman & Associates, Inc.
 Geotechnical, Environmental, and
 Materials Consultants
A Tetra Tech Company
 8008 S. Orange Ave. Orlando, FL 32809
 TEL 407/855-3860 FAX 407/859-8121 C.A.N. 5950



FIGURE 4



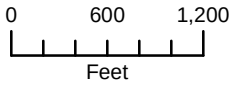
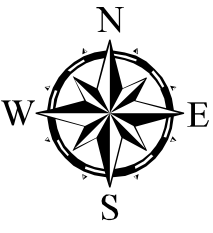
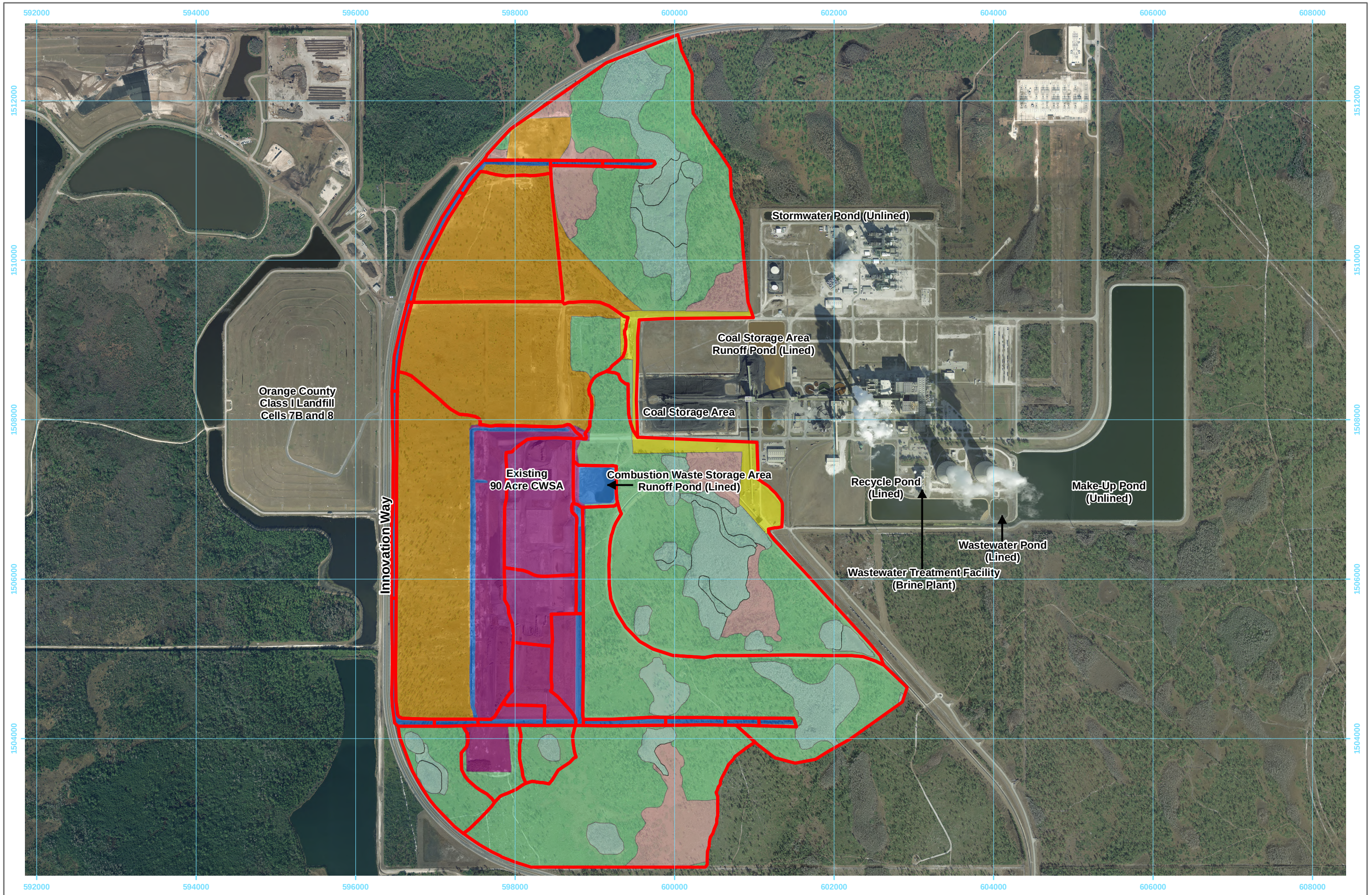
- Proposed Node
- Proposed Reach
- Proposed Basin
- Proposed Wet Detention Pond
- National Wetland Inventory
- FEMA Flood Zone A
- 5' Contour
- 1' Contour



Project: 10-0249	Projection: State Plane Florida East
Prepared: 09-21-11	Horizontal Datum: NAD83 Vertical Datum:
Prepared by: XL	Revised by:
File: W:\Projects\2010\10-0249\ArcGIS\ArcLayouts\2011\1007\Proposed.mxd	

POST-DEVELOPMENT NETWORK LAYOUT

OUC STANTON ENERGY CENTER COAL COMBUSTION WASTE LANDFILL



Scale: 1" = 1,200'

- Existing Basin
- Landuse
 - OPEN LAND
 - RANGELAND
 - UPLAND FORESTS
 - STREAMS AND WATERWAYS
 - WETLANDS
 - TRANS, COMM, & UTIL
 - SOLID WASTE DISPOSAL

Imagery Orange County Property Appraiser 2011
Landuse SJRWMD 2004



Figure 5

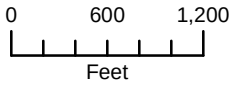
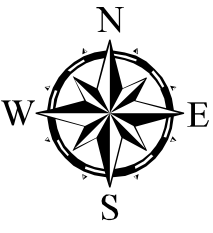
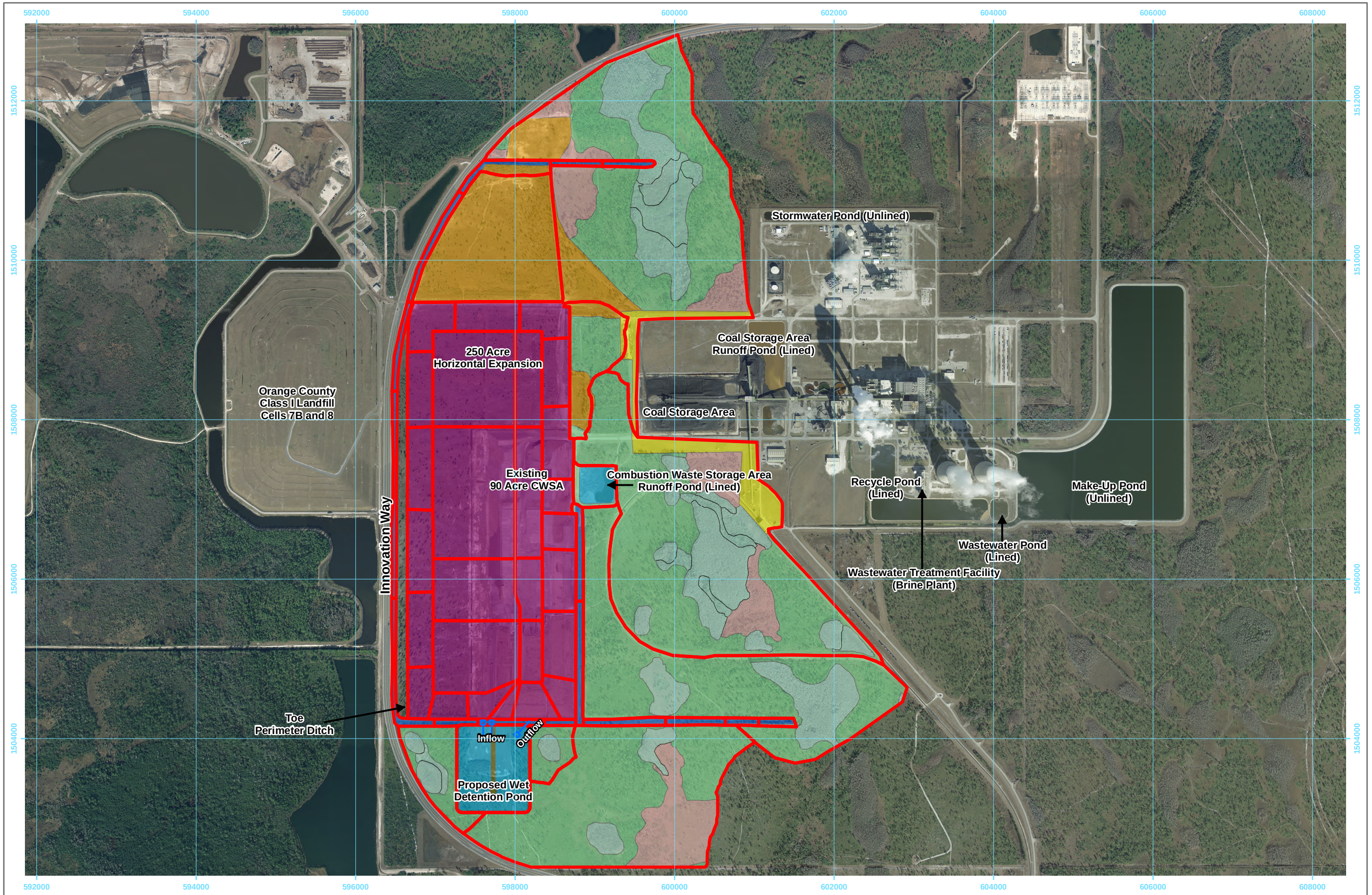
Project: 10-13-0024	Projection: State Plane Florida East	
Prepared: 10-20-11	Horizontal Datum: NAD83	Vertical Datum: N/A
Prepared by: RMC	Modified by:	Modified:
File: W:\Projects\2010\10-0249\ArcGIS\ArcLayouts\Figure5_Pre Landuse.mxd		

PRE-DEVELOPMENT LAND USE

OUC STANTON ENERGY CENTER COAL COMBUSTION WASTE LANDFILL



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Scale: 1" = 1,200'

- Proposed Basin
- Landuse**
- OPEN LAND
- RANGELAND
- UPLAND FORESTS
- STREAMS AND WATERWAYS
- RESERVOIRS
- WETLANDS
- TRANS, COMM, & UTIL
- SOLID WASTE DISPOSAL
- PRIMITIVE/TRAILS

Imagery Orange County 2011
 Property Appraiser
Landuse SJRWMD 2004



Figure 6

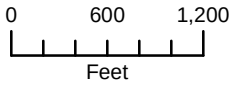
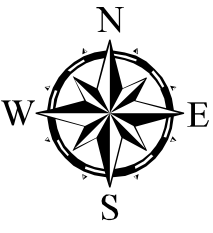
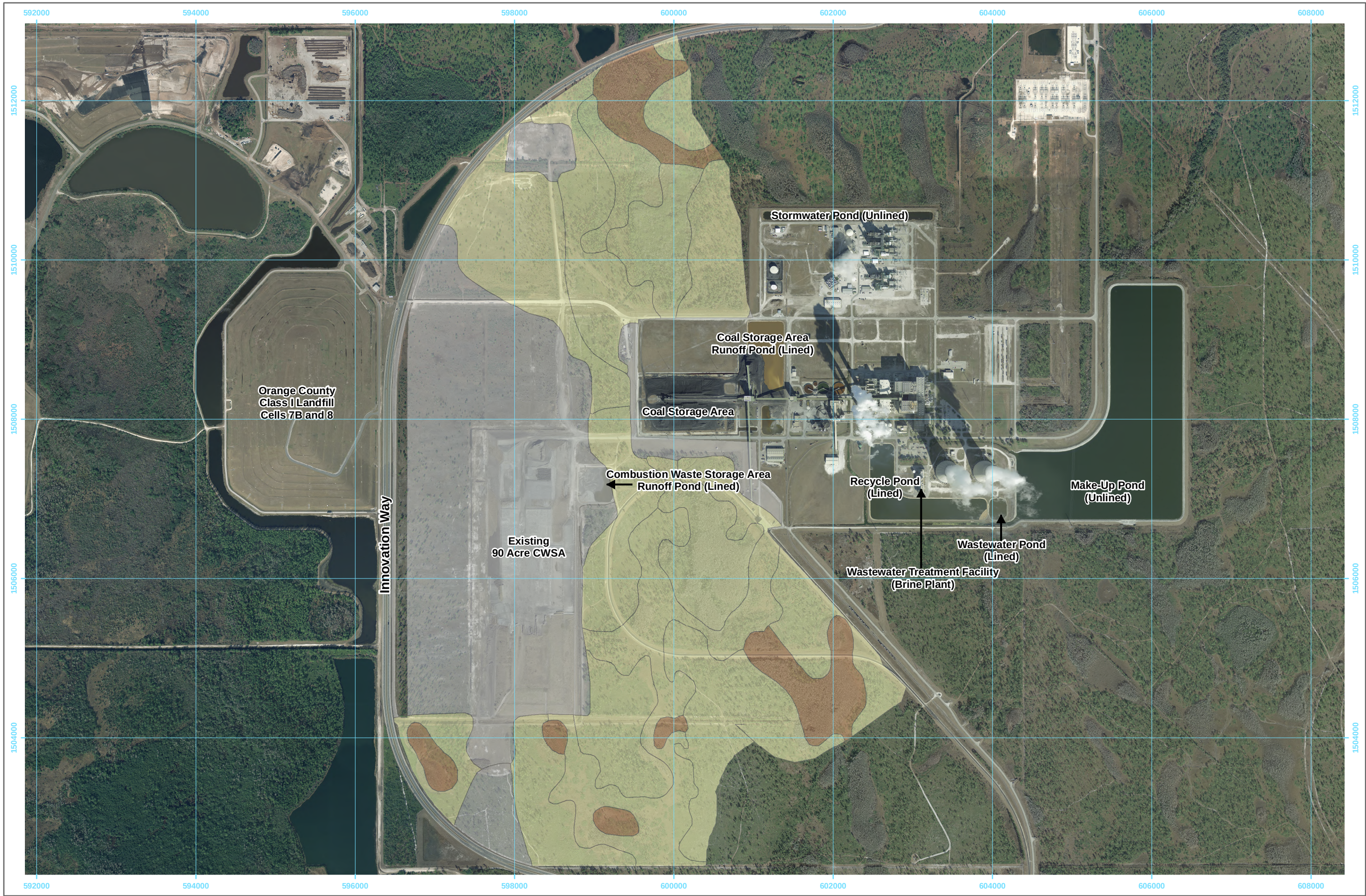
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Prepared by: XL	Modified by:	Modified:
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POST-DEVELOPMENT LAND USE

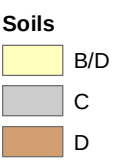
OUC STANTON ENERGY CENTER COAL COMBUSTION WASTE LANDFILL



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Scale: 1" = 1,200'



Imagery Orange County Property Appraiser 2011
Soils SJRWMD 2001



Figure 7

Project: 10-13-0024	Projection: State Plane Florida East	
Prepared: 10-20-11	Horizontal Datum: NAD83	Vertical Datum: N/A
Prepared by: XL	Modified by:	Modified:
File: W:\Projects\2010\10-0249\ArcGIS\ArcLayouts\Figure7_Soils_Map.mxd		

SOIL HYDROLOGIC GROUP

OUC STANTON ENERGY CENTER COAL COMBUSTION WASTE LANDFILL

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Appendix A: Design Calculations

Treatment volume:

Total contributing area: 250-acre

Total impervious area (liner with two feet of soil cover): 190-acre

Total previous area (two feet of soil cover): 60 acres

The required treatment volume should be the greater of the following:

$$\text{Treatment volume: } \frac{1 \text{ inch} \times 250 \text{ acre}}{\frac{12 \text{ inch}}{\text{ft}}} = 20.83 \text{ acre.ft}$$

or

$$\text{Treatment volume: } \frac{2.5 \text{ inch} \times 190 \text{ acre}}{12 \text{ inch/ft}} = 39.58 \text{ acre.ft}$$

Additional 50 percent due to OFW: $39.58 \text{ acre.ft} \times 50 \text{ percent} = 19.79 \text{ acre.ft}$

Total treatment volume: $39.58 \text{ acre.ft} + 19.79 \text{ acre.ft} = 59.37 \text{ acre.ft} \approx 60.0 \text{ acre.ft}$

Pond Normal Water Level (NWL): 81.5' NAVD88

Orifice invert elevation: 81.5' NAVD88

Pond Area at NWL: 20 acres

$$\text{Treatment volume depth: } \frac{60 \text{ acre.ft}}{20 \text{ acre}} = 3.0 \text{ feet}$$

$$\text{Weir elevation: } 81.5 \text{ ft} + 3.0 \text{ ft} = 84.5 \text{ feet}$$

Required Permanent Pool Volume:

Since the system is considered (by FDEP) to be directly connected to outstanding Florida Waters, an additional fifty percent of permanent pool volume is required.

Where: DA: 250 Acre - Drainage area to pond.

C: 0.45 - Runoff coefficient.

R: 32 inches - Wet season rainfall, from SJWMD (Wet Season Normal Rainfall from June - October)

RT: 21 days - Residence time, 14 days required plus 50% as an alternative to replace the littoral zone.

WS: 153 days - length of the wet season (June – October)

Additional 50% (1.5) is provided due to OFW

$$PPV = \frac{250 \text{ acre} \times 0.45 \times 32 \text{ inch} \times 21 \text{ days} \times (1.5)}{153 \text{ days} \times 12 \text{ inch/ft}} = 61.76 \text{ acre.ft}$$

Mean Depth:

$$MD = \frac{61.76 \text{ acre.ft}}{20 \text{ acres}} = 3.09 \text{ ft}$$

Mean depth is within the required range, between 2 and 8 feet.

Recovery time:

Half of the treatment volume (30.0 acre.ft) should be discharged within the first 24 hrs to 30 hrs after the storm event.

$$Q = \frac{30.0 \text{ acre.ft} \times 43560 \frac{\text{sqft}}{\text{acre}}}{24 \text{ hrs} \times 3600 \text{ sec/hrs}} = 15.13 \text{ cfs}$$

Design 4 orifices: $Q = \frac{15.13 \text{ cfs}}{4} = 3.78 \text{ cfs each}$

Treatment volume depth $h1 = 81.5 \text{ ft} - 84.5 \text{ ft} = 3 \text{ ft}$

Stage at half the treatment volume = $\frac{30 \text{ acre.ft} \times (84.5 - 81.5)}{278.85 \text{ acre.ft} - 217.2 \text{ acre.ft}} + 81.5 \text{ ft} = 82.96 \text{ ft}$

$$h2 = 82.96 \text{ ft} - 81.5 \text{ ft} = 1.46 \text{ ft}$$

$$h = \frac{3 \text{ ft} + 1.46 \text{ ft}}{2 \text{ ft}} = 2.23 \text{ ft}$$

Then, area of each orifice $A = \frac{3.78 \text{ cfs}}{0.6 \times 2 \frac{32.2 \text{ ft}}{\text{sec}^2} \times 2.23 \text{ ft}} = 0.53 \text{ sqft}$

The diameter of each orifice $D = \frac{4 \times 0.53 \text{ sqft}}{\pi} = 0.82 \text{ feet or } 9.82 \text{ inch each orifice}$

(4) 10 inch diameter orifices were use to drawdown the treatment volume. Refer to Appendix K for recovery analysis resulting from the H&H ICPR model. Also, refer to Appendix B for Summary of Wet Detention Pond Design Parameters.

Appendix B: Summary of Wet Detention Pond Design Parameters

Table 1: Wet Detention Pond Design Parameters

Wet Detention Pond	Contributing Area	Treatment Volume
	250 acres	60.0 acre-ft
Pond Geometry (Required Permanent Pool and Treatment Volume)	Pond Bottom Elevation	Area
	69.5 feet	15.58 acres
	Normal Water Level (NWL)	Area
	81.5 feet	20.0 acres
	Treatment Volume Elevation	Area
	84.5 feet	21.1 acres
	Pond Crest Elevation	Area
	88.0 feet	22.5 acres
Designed Water Control Structure (Overflow Elevation) <u>(two required)</u>	Type	Sharp Weir
	Geometry	Rectangular
	Total Length	4.0 feet
	Overflow Weir Elevation	84.5 feet
	Emergency overflow	85.9 feet
(Outfall Pipe) (two required)	Geometry	Circular
	Diameter (nominal)	36 Inches
	Material	HDPE SRD 21
	Upstream Invert	80.0 feet
	Downstream Invert	80.0 feet
	Length	110.0 feet
Designed Bleed-Down Device (Control Elevation) (two required per structure)	Type	Orifice
	Geometry	Circular
	Material	PVC SCH 40
	Diameter (ID)	10.0 Inches
	Invert	181.5 feet
Skimmer	Top	85.90 feet
	Bottom	84.16 feet

Appendix C: Pre-Development CN Calculations

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE100	1900	C	0.037132	74	
PRE100	5100	C	1.554868	100	99.8
PRE105	5100	C	3.215	100	100.0
PRE110	1900	B/D	1.025557	80	
PRE110	1900	C	85.74487	74	
PRE110	8350	C	36.510328	86	
PRE110	5100	C	0.10413	100	
PRE110	5100	C	6.074817	100	78.7
PRE115	5100	C	1.663	100	
PRE115	5100	B/D	0.956	100	
PRE115	5100	C	0.098	100	100.0
PRE120	4110	B/D	0.091821	80	
PRE120	5100	B/D	0.837279	100	
PRE120	5100	C	0.089498	100	
PRE120	8350	B/D	0.028091	89	
PRE120	8350	C	0.006875	86	98.8
PRE130	4110	B/D	0.044329	80	
PRE130	4110	C	0.012179	74	
PRE130	4110	D	0.000395	80	
PRE130	8350	B/D	0.320986	89	
PRE130	8350	C	2.139991	86	
PRE130	5100	B/D	0.580065	100	
PRE130	5100	C	0.710775	100	
PRE130	5100	D	0.005419	100	
PRE130	8350	C	0.049878	86	90.8
PRE140	4110	D	0.00023	80	
PRE140	8350	B/D	0.064413	89	
PRE140	8350	C	10.291724	86	
PRE140	8350	B/D	0.375189	89	
PRE140	8350	B/D	0.011166	89	
PRE140	5100	B/D	0.047615	100	
PRE140	5100	B/D	0.356993	100	
PRE140	5100	B/D	0.0184	100	
PRE140	5100	D	0.269565	100	87.0
PRE150	8350	C	0.159023	86	
PRE150	8350	C	0.011536	86	
PRE150	5100	C	2.104812	100	
PRE150	5100	B/D	0.104816	100	
PRE150	5100	C	0.498684	100	99.2
PRE160	4110	B/D	0.002599	80	
PRE160	8350	C	7.868982	86	
PRE160	8350	B/D	0.006594	89	
PRE160	8350	B/D	0.003257	89	
PRE160	8350	B/D	0.010618	89	
PRE160	5100	B/D	0.000922	100	
PRE160	5100	C	2.650268	100	
PRE160	5100	B/D	0.049926	100	
PRE160	5100	B/D	0.001666	100	

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE160	5100	B/D	0.261482	100	89.8
PRE170	4110	B/D	0.095312	80	
PRE170	4110	B/D	0.326829	80	
PRE170	4110	D	0.055461	80	
PRE170	5100	B/D	0.281765	100	
PRE170	5100	B/D	1.21353	100	
PRE170	5100	D	0.101706	100	
PRE170	5100	B/D	0.012147	100	95.4
PRE180	4110	B/D	0.193044	80	
PRE180	4110	D	0.133674	80	
PRE180	5100	B/D	0.826913	100	
PRE180	5100	B/D	0.041122	100	
PRE180	5100	D	0.409406	100	95.9
PRE190	4110	B/D	0.248185	80	
PRE190	5100	B/D	0.655091	100	94.5
PRE200	4110	B/D	0.40816	80	
PRE200	5100	B/D	0.650805	100	92.3
PRE210	4110	C	0.381274	74	
PRE210	4110	B/D	0.290291	80	
PRE210	4110	C	0.238126	74	
PRE210	8350	C	0.940562	86	
PRE210	8350	C	0.011317	86	
PRE210	5100	C	0.002589	100	
PRE210	5300	C	4.0978	100	
PRE210	5300	B/D	0.437523	100	94.5
PRE220	6210	B/D	0.145362	100	
PRE220	6210	D	1.25056	100	
PRE220	6430	B/D	0.831225	100	
PRE220	6430	D	1.113553	100	
PRE220	6210	B/D	0.742034	100	
PRE220	6210	D	1.316215	100	
PRE220	6210	B/D	0.013526	100	
PRE220	6210	B/D	1.537251	100	
PRE220	6460	B/D	1.345059	100	
PRE220	6460	B/D	0.097223	100	
PRE220	6460	B/D	1.230597	100	
PRE220	3100	B/D	7.716539	80	
PRE220	3100	B/D	0.472656	80	
PRE220	3100	B/D	0.364512	80	
PRE220	3100	D	0.394386	80	
PRE220	6300	B/D	0.234956	100	
PRE220	6300	B/D	1.090514	100	
PRE220	6430	B/D	1.932468	100	
PRE220	6430	B/D	1.704443	100	
PRE220	6210	B/D	0.474674	100	
PRE220	6210	B/D	17.483602	100	
PRE220	6460	B/D	0.338867	100	
PRE220	6460	B/D	2.159466	100	

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE220	6210	B/D	0.279476	100	
PRE220	6210	B/D	0.937282	100	
PRE220	6170	B/D	0.018637	100	
PRE220	6170	B/D	0.836738	100	
PRE220	6170	C	0.254667	100	
PRE220	6170	B/D	0.425502	100	
PRE220	6170	B/D	0.61999	100	
PRE220	3300	C	1.677442	74	
PRE220	3300	B/D	6.075224	80	
PRE220	3300	B/D	0.379558	80	
PRE220	8310	C	11.058445	74	
PRE220	8310	B/D	0.012081	80	
PRE220	8310	B/D	2.292828	80	
PRE220	8310	B/D	0.080083	80	
PRE220	1900	B/D	0.16061	80	
PRE220	1900	C	0.117637	74	
PRE220	1900	B/D	0.087804	80	
PRE220	4110	B/D	4.183328	80	
PRE220	4110	C	0.684923	74	
PRE220	4110	B/D	4.747539	80	
PRE220	4110	C	1.487466	74	
PRE220	4110	B/D	25.821548	80	
PRE220	4110	B/D	23.706858	80	
PRE220	4110	B/D	6.951773	80	
PRE220	4110	B/D	16.247047	80	
PRE220	4110	D	2.098403	80	
PRE220	8350	C	0.577273	86	
PRE220	8350	B/D	0.018894	89	85.9
PRE230	6460	B/D	0.167522	100	
PRE230	6210	B/D	1.53049	100	
PRE230	6210	B/D	0.017514	100	
PRE230	6210	D	14.469979	100	
PRE230	6430	B/D	0.199564	100	
PRE230	6430	B/D	4.560241	100	
PRE230	6430	B/D	1.392544	100	
PRE230	4110	B/D	27.489871	80	
PRE230	4110	C	1.427966	74	
PRE230	4110	B/D	9.499157	80	
PRE230	4110	B/D	9.241766	80	
PRE230	4110	C	3.37031	74	
PRE230	4110	B/D	10.105858	80	
PRE230	4110	D	6.141751	80	
PRE230	4110	B/D	11.279254	80	
PRE230	4110	D	0.018489	80	
PRE230	8350	C	0.128886	86	
PRE230	8350	B/D	0.200702	89	
PRE230	8350	B/D	0.016499	89	
PRE230	8350	C	0.22801	86	

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE230	5100	B/D	0.006631	100	
PRE230	5100	B/D	0.004221	100	
PRE230	5100	B/D	0.168379	100	
PRE230	5100	D	0.000598	100	
PRE230	5100	C	0.062706	100	
PRE230	5100	B/D	0.030862	100	
PRE230	5100	C	0.173193	100	
PRE230	5100	B/D	0.001726	100	84.2
PRE250	6210	B/D	0.818877	100	
PRE250	6210	D	1.42636	100	
PRE250	6430	B/D	0.132427	100	
PRE250	6430	D	1.250698	100	
PRE250	6210	B/D	0.280175	100	
PRE250	6210	D	0.910395	100	
PRE250	1900	B/D	0.000239	80	
PRE250	4110	B/D	8.482755	80	
PRE250	4110	D	2.852905	80	
PRE250	4110	C	3.543163	74	
PRE250	5100	B/D	0.000001	100	
PRE250	8350	B/D	0.112199	89	
PRE250	8350	C	0.003002	86	83.8
PRE260	4110	B/D	2.466644	80	
PRE260	4110	C	0.729992	74	
PRE260	4110	C	3.081241	74	
PRE260	8350	B/D	0.770809	89	
PRE260	8350	C	5.813974	86	
PRE260	8350	C	0.651586	86	81.7
PRE270	6460	B/D	1.001899	100	
PRE270	6460	D	0.693555	100	
PRE270	4110	B/D	5.685619	80	
PRE270	4110	B/D	0.950966	80	
PRE270	4110	D	1.396429	80	
PRE270	5100	B/D	0.010891	100	
PRE270	5100	D	0.010296	100	83.5
PRE280	6170	B/D	0.567363	100	
PRE280	6170	B/D	1.960225	100	
PRE280	6170	D	0.82291	100	
PRE280	3100	B/D	6.105088	80	
PRE280	3100	B/D	14.15638	80	
PRE280	3100	B/D	0.880307	80	
PRE280	3100	D	0.148558	80	
PRE280	3100	D	0.021103	80	
PRE280	6210	B/D	1.268319	100	
PRE280	6210	B/D	0.984599	100	
PRE280	6210	D	0.928723	100	
PRE280	4110	B/D	29.906616	80	
PRE280	4110	B/D	17.230913	80	
PRE280	4110	B/D	15.005179	80	

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE280	4110	D	0.504605	80	
PRE280	4110	C	9.117664	74	
PRE280	4110	D	3.025305	80	
PRE280	5100	B/D	0.00035	100	
PRE280	5100	B/D	0.004806	100	80.7
PRE300	1900	B/D	0.127341	80	
PRE300	1900	C	0.166797	74	
PRE300	1900	C	0.014126	74	
PRE300	5100	B/D	0.686288	100	
PRE300	5100	C	1.428148	100	
PRE300	5100	C	0.044248	100	97.1
PRE310	1900	B/D	42.294649	80	
PRE310	1900	C	0.112293	74	
PRE310	1900	C	10.532688	74	
PRE310	1900	C	0.709774	74	78.7
PRE330	1900	B/D	1.33104	80	
PRE330	1900	C	1.134972	74	
PRE330	5100	B/D	1.049279	100	
PRE330	5100	C	0.776558	100	86.9
PRE340	3300	B/D	0.003223	80	
PRE340	3300	C	0.006058	74	
PRE340	1900	C	0.000684	74	
PRE340	5100	B/D	0.518814	100	
PRE340	5100	C	0.477023	100	99.8
PRE350	3300	B/D	0.000016	80	
PRE350	5100	B/D	0.081174	100	
PRE350	5100	B/D	1.045734	100	100.0
PRE360	8310	B/D	0.329709	80	
PRE360	8310	C	0.494502	74	
PRE360	1900	B/D	2.254673	80	
PRE360	1900	B/D	3.983389	80	
PRE360	1900	C	67.487482	74	
PRE360	1900	B/D	0.048588	80	
PRE360	4110	B/D	5.567058	80	
PRE360	4110	B/D	3.137986	80	
PRE360	4110	C	0.059266	74	
PRE360	4110	C	0.820267	74	
PRE360	8350	C	0.339947	86	
PRE360	5100	C	0.004283	100	75.3
PRE370	3200	B/D	6.456361	80	
PRE370	6300	B/D	9.012078	100	
PRE370	6460	B/D	0.747893	100	
PRE370	6460	B/D	7.806455	100	
PRE370	6300	D	0.306625	100	
PRE370	6300	B/D	0.037585	100	
PRE370	6300	B/D	1.023945	100	
PRE370	6430	D	0.438032	100	
PRE370	6430	B/D	1.682946	100	

Pre-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE370	6430	B/D	1.509079	100	
PRE370	3200	B/D	0.592852	80	
PRE370	3300	B/D	7.967304	80	
PRE370	3300	B/D	1.057921	80	
PRE370	3300	B/D	0.424103	80	
PRE370	3300	C	1.512823	74	
PRE370	8310	B/D	1.272921	80	
PRE370	8310	B/D	1.845307	80	
PRE370	8310	B/D	0.496748	80	
PRE370	8310	C	2.967504	74	
PRE370	6210	B/D	0.195636	100	
PRE370	6210	D	15.041142	100	
PRE370	6210	B/D	2.079943	100	
PRE370	6210	B/D	0.101035	100	
PRE370	4110	B/D	27.572287	80	
PRE370	4110	D	7.542032	80	
PRE370	4110	B/D	12.366098	80	
PRE370	4110	C	0.047729	74	
PRE370	4110	B/D	19.844442	80	
PRE370	4110	B/D	8.604476	80	
PRE370	1900	B/D	9.563784	80	
PRE370	1900	B/D	2.684083	80	
PRE370	1900	C	7.822557	74	
PRE370	4110	B/D	0.587388	80	
PRE370	4110	C	0.007554	74	
PRE370	3200	B/D	2.494013	80	
PRE370	3200	B/D	0.031449	80	
PRE370	4110	B/D	0.432261	80	
PRE370	4110	B/D	0.793089	80	
PRE370	4110	C	0.590869	74	
PRE370	4110	B/D	0.098364	80	
PRE370	5100	B/D	0.00146	100	
PRE370	5100	B/D	0.005091	100	
PRE370	5100	C	0.002357	100	85.0
PRE400	8350	C	14.665931	86	
PRE400	5100	C	0.010031	100	86.0
PRE410	8350	C	33.110624	86	
PRE410	5100	C	0.012866	100	86.0

Appendix D: Post-Development CN Calculations

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
A05	Landfill Side Slopes	C	3.781593	85	85.0
A10	Landfill Side Slopes	C	7.845837	85	85.0
A100	Landfill Side Slopes	B/D	0.251647	85	
A100	Landfill Side Slopes	C	4.327166	85	85.0
A110	Landfill Side Slopes	B/D	0.680144	85	
A110	Landfill Side Slopes	C	2.793269	85	85.0
A120	Landfill Side Slopes	B/D	0.058565	85	
A120	Landfill Side Slopes	C	3.432542	85	85.0
A20	Landfill Side Slopes	B/D	0.150895	85	
A20	Landfill Side Slopes	C	6.677039	85	85.0
A30	Landfill Side Slopes	B/D	3.308166	85	
A30	Landfill Side Slopes	C	2.682273	85	85.0
A40	Landfill Side Slopes	B/D	0.160496	85	
A40	Landfill Side Slopes	C	6.750515	85	85.0
A50	Landfill Side Slopes	C	6.589191	85	85.0
A60	Landfill Side Slopes	C	6.9778	85	85.0
A70	Landfill Side Slopes	C	7.567817	85	85.0
A80	Landfill Side Slopes	C	7.668058	85	85.0
A90	Landfill Side Slopes	C	6.889174	85	85.0
B10	Landfill Side Slopes	C	4.472431	85	85.0
B20	Landfill Side Slopes	C	7.598812	85	85.0
B30	Landfill Side Slopes	C	8.040879	85	85.0
B40	Landfill Side Slopes	C	3.619675	85	
B40	Landfill Side Slopes	B/D	0.220024	85	85.0
B50	Landfill Side Slopes	C	4.126115	85	
B50	Landfill Side Slopes	B/D	0.562347	85	85.0
B60	Landfill Side Slopes	C	1.819863	85	85.0
POND	4110	B/D	0.00007	80	
POND	5300	B/D	7.713351	100	
POND	5300	C	5.769296	100	
POND	5300	C	6.514761	100	
POND	8140	B/D	1.423447	93	
POND	8140	C	0.840142	92	
POND	8140	D	0.05846	93	
POND	8140	C	0.841883	92	99.0
PRE100	5100	C	1.554868	100	
PRE100	1900	C	0.037132	74	99.8
PRE105	5100	C	3.215	100	100.0
PRE115	5100	C	1.663	100	
PRE115	5100	B/D	0.956	100	
PRE115	5100	D	0.098	100	100.0
PRE120	4110	B/D	0.091821	80	
PRE120	5100	B/D	0.837279	100	
PRE120	5100	C	0.089498	100	
PRE120	8350	B/D	0.028091	89	
PRE120	8350	C	0.006875	86	98.9
PRE130	4110	B/D	0.017745	80	
PRE130	4110	D	0.000395	80	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE130	5100	B/D	0.580065	100	
PRE130	5100	C	0.710775	100	
PRE130	5100	D	0.005419	100	
PRE130	8140	B/D	0.000029	93	
PRE130	8140	C	0.00642	92	99.7
PRE140	4110	D	0.00023	80	
PRE140	5100	B/D	0.047615	100	
PRE140	5100	B/D	0.356994	100	
PRE140	5100	B/D	0.0184	100	
PRE140	5100	D	0.269565	100	100.0
PRE150	4110	C	0.139058	74	
PRE150	4110	C	0.011536	74	
PRE150	5100	C	1.842373	100	
PRE150	5100	B/D	0.054362	100	
PRE150	5100	C	0.498685	100	98.5
PRE160	4110	C	0.026748	74	
PRE160	4110	B/D	0.006594	80	
PRE160	4110	B/D	0.003257	80	
PRE160	4110	B/D	0.002588	80	
PRE160	5100	C	2.935605	100	
PRE160	5100	B/D	0.100382	100	
PRE160	5100	B/D	0.001666	100	
PRE160	5100	B/D	0.261453	100	
PRE160	5100	B/D	0.000922	100	99.7
PRE170	4110	B/D	0.095313	80	
PRE170	4110	B/D	0.32681	80	
PRE170	4110	D	0.055461	80	
PRE170	5100	B/D	0.012147	100	
PRE170	5100	B/D	0.281765	100	
PRE170	5100	B/D	1.21326	100	
PRE170	5100	D	0.101707	100	95.4
PRE180	4110	B/D	0.193044	80	
PRE180	4110	D	0.133674	80	
PRE180	5100	B/D	0.826913	100	
PRE180	5100	B/D	0.041122	100	
PRE180	5100	D	0.409406	100	95.9
PRE190	4110	B/D	0.247279	80	
PRE190	5100	B/D	0.653073	100	94.5
PRE200	4110	B/D	0.409063	80	
PRE200	5100	B/D	0.652822	100	92.3
PRE210	5300	C	4.0978	100	
PRE210	5300	B/D	0.437523	100	
PRE210	4110	C	1.321836	74	
PRE210	4110	B/D	0.295305	80	
PRE210	4110	C	0.249443	74	
PRE210	5100	C	0.002589	100	92.7
PRE220	6210	B/D	0.145363	100	
PRE220	6210	D	1.25056	100	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE220	6430	B/D	0.831226	100	
PRE220	6430	D	1.113553	100	
PRE220	6210	B/D	0.742034	100	
PRE220	6210	D	1.316216	100	
PRE220	6210	B/D	0.013526	100	
PRE220	6210	B/D	1.53725	100	
PRE220	6460	B/D	1.345059	100	
PRE220	6460	B/D	0.097223	100	
PRE220	6460	B/D	1.230597	100	
PRE220	3100	B/D	7.716539	80	
PRE220	3100	B/D	0.472656	80	
PRE220	3100	B/D	0.364512	80	
PRE220	3100	D	0.394386	80	
PRE220	6300	B/D	0.234956	100	
PRE220	6300	B/D	1.090514	100	
PRE220	6430	B/D	1.932467	100	
PRE220	6430	B/D	1.704442	100	
PRE220	6210	B/D	0.474674	100	
PRE220	6210	B/D	17.483604	100	
PRE220	6460	B/D	0.338867	100	
PRE220	6460	B/D	2.159467	100	
PRE220	6210	B/D	0.279476	100	
PRE220	6210	B/D	0.937281	100	
PRE220	6170	B/D	0.018637	100	
PRE220	6170	B/D	0.836737	100	
PRE220	6170	C	0.254667	100	
PRE220	6170	B/D	0.425502	100	
PRE220	6170	B/D	0.619989	100	
PRE220	3300	C	1.677443	74	
PRE220	3300	B/D	6.075223	80	
PRE220	3300	B/D	0.379558	80	
PRE220	8310	C	11.063427	74	
PRE220	8310	B/D	0.012081	80	
PRE220	8310	B/D	2.292829	80	
PRE220	8310	B/D	0.080084	80	
PRE220	4110	B/D	4.183286	80	
PRE220	4110	C	0.686575	74	
PRE220	4110	B/D	4.74754	80	
PRE220	4110	C	2.050677	74	
PRE220	4110	B/D	25.819382	80	
PRE220	4110	B/D	23.70686	80	
PRE220	4110	B/D	6.951774	80	
PRE220	4110	B/D	16.247048	80	
PRE220	4110	D	2.098404	80	
PRE220	1900	B/D	0.16061	80	
PRE220	1900	C	0.115251	74	
PRE220	1900	B/D	0.087605	80	85.9
PRE230	6460	B/D	0.167522	100	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE230	6210	B/D	1.53049	100	
PRE230	6210	B/D	0.017514	100	
PRE230	6210	D	14.46998	100	
PRE230	6430	B/D	0.199565	100	
PRE230	6430	B/D	4.560241	100	
PRE230	6430	B/D	1.392544	100	
PRE230	4110	B/D	27.487809	80	
PRE230	4110	C	1.55685	74	
PRE230	4110	B/D	9.722754	80	
PRE230	4110	B/D	9.258262	80	
PRE230	4110	C	3.598319	74	
PRE230	4110	B/D	10.105857	80	
PRE230	4110	D	6.14175	80	
PRE230	4110	B/D	11.279286	80	
PRE230	4110	D	0.018489	80	
PRE230	5100	C	0.062704	100	
PRE230	5100	B/D	0.030861	100	
PRE230	5100	C	0.173192	100	
PRE230	5100	B/D	0.001755	100	
PRE230	5100	B/D	0.006631	100	
PRE230	5100	B/D	0.00422	100	
PRE230	5100	B/D	0.16865	100	
PRE230	5100	D	0.000598	100	84.2
PRE250	6210	B/D	0.818877	100	
PRE250	6210	D	1.42636	100	
PRE250	6430	B/D	0.132426	100	
PRE250	6430	D	1.250698	100	
PRE250	6210	B/D	0.280176	100	
PRE250	6210	D	0.910395	100	
PRE250	1900	B/D	0.000014	80	
PRE250	4110	B/D	6.082398	80	
PRE250	4110	D	2.794445	80	
PRE250	4110	C	1.375389	74	
PRE250	5100	B/D	0.000001	100	
PRE250	8140	B/D	0.000121	93	
PRE250	8140	C	0.000025	92	85.8
PRE270	6460	B/D	1.001899	100	
PRE270	6460	D	0.693555	100	
PRE270	4110	B/D	3.813632	80	
PRE270	4110	B/D	0.95102	80	
PRE270	4110	D	1.39643	80	
PRE270	5100	B/D	0.011067	100	
PRE270	5100	D	0.010296	100	
PRE270	8140	B/D	0.000133	93	84.4
PRE280	6170	B/D	0.567363	100	
PRE280	6170	B/D	1.960225	100	
PRE280	6170	D	0.822909	100	
PRE280	3100	B/D	6.105088	80	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE280	3100	B/D	14.156381	80	
PRE280	3100	B/D	0.880307	80	
PRE280	3100	D	0.148558	80	
PRE280	3100	D	0.021103	80	
PRE280	6210	B/D	1.268319	100	
PRE280	6210	B/D	0.984599	100	
PRE280	6210	D	0.928723	100	
PRE280	4110	B/D	28.455122	80	
PRE280	4110	B/D	17.230858	80	
PRE280	4110	B/D	15.005178	80	
PRE280	4110	D	0.504604	80	
PRE280	4110	C	7.661669	74	
PRE280	4110	D	3.025306	80	
PRE280	5100	B/D	0.000174	100	
PRE280	5100	B/D	0.004806	100	80.9
PRE300	5100	B/D	0.686288	100	
PRE300	5100	C	1.428149	100	
PRE300	5100	C	0.044248	100	
PRE300	1900	C	0.03101	74	
PRE300	1900	C	0.003923	74	
PRE300	1900	B/D	0.127342	80	
PRE300	1900	C	0.119189	74	97.3
PRE310	1900	C	0.016598	74	
PRE310	1900	C	0.012781	74	
PRE310	1900	B/D	42.294649	80	
PRE310	1900	C	0.112293	74	
PRE310	1900	C	10.532688	74	
PRE310	1900	C	0.702775	74	78.7
PRE330	5100	B/D	1.049279	100	
PRE330	5100	C	0.776556	100	
PRE330	1900	B/D	1.331041	80	
PRE330	1900	C	1.134972	74	86.9
PRE340	3300	C	0	74	
PRE340	1900	C	0.000413	74	
PRE340	5100	B/D	0.518815	100	
PRE340	5100	C	0.477022	100	
PRE340	3300	B/D	0.003223	80	
PRE340	3300	C	0.006058	74	
PRE340	1900	C	0.00027	74	99.8
PRE350	5100	B/D	0.081174	100	
PRE350	5100	B/D	1.045736	100	
PRE350	3300	B/D	0.000016	80	100.0
PRE360	8310	B/D	0.3299	80	
PRE360	8310	C	0.494502	74	
PRE360	4110	B/D	5.567059	80	
PRE360	4110	B/D	3.138027	80	
PRE360	4110	C	0.059266	74	
PRE360	4110	C	1.460942	74	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE360	1900	B/D	2.254673	80	
PRE360	1900	B/D	0.363834	80	
PRE360	1900	C	4.233731	74	
PRE360	1900	B/D	0.048786	80	78.7
PRE370	3200	B/D	6.456364	80	
PRE370	6300	B/D	9.012077	100	
PRE370	6460	B/D	0.747893	100	
PRE370	6460	B/D	7.806455	100	
PRE370	6300	D	0.306626	100	
PRE370	6300	B/D	0.037585	100	
PRE370	6300	B/D	1.023945	100	
PRE370	6430	D	0.438032	100	
PRE370	6430	B/D	1.682946	100	
PRE370	6430	B/D	1.509079	100	
PRE370	3200	B/D	0.592852	80	
PRE370	3300	B/D	6.963976	80	
PRE370	3300	B/D	1.057921	80	
PRE370	3300	B/D	0.065531	80	
PRE370	3300	C	0.744436	74	
PRE370	8310	B/D	1.27273	80	
PRE370	8310	B/D	1.845303	80	
PRE370	8310	B/D	0.496747	80	
PRE370	8310	C	2.96493	74	
PRE370	6210	B/D	0.195637	100	
PRE370	6210	D	15.041142	100	
PRE370	6210	B/D	2.079943	100	
PRE370	6210	B/D	0.101035	100	
PRE370	4110	B/D	23.628359	80	
PRE370	4110	D	4.497538	80	
PRE370	4110	B/D	6.401515	80	
PRE370	4110	B/D	19.844445	80	
PRE370	4110	B/D	8.604477	80	
PRE370	1900	B/D	0.897224	80	
PRE370	1900	B/D	0.336319	80	
PRE370	1900	C	7.751868	74	
PRE370	4110	B/D	0.587387	80	
PRE370	4110	C	0.007554	74	
PRE370	3200	B/D	2.494009	80	
PRE370	3200	B/D	0.031449	80	
PRE370	4110	B/D	0.432261	80	
PRE370	4110	B/D	0.793089	80	
PRE370	4110	C	0.589217	74	
PRE370	4110	B/D	0.091517	80	
PRE370	5100	B/D	0.00146	100	
PRE370	5100	B/D	0.00509	100	
PRE370	5100	C	0.002357	100	
PRE370	4110	B/D	3.943928	80	
PRE370	4110	D	3.044492	80	

Post-Development CN Calculations

BASINS_ID	LAND_USE	SOIL_TYPE	AREA	CN	Wght CN
PRE370	4110	B/D	5.964583	80	
PRE370	4110	C	0.047729	74	
PRE370	3300	B/D	1.003328	80	
PRE370	3300	B/D	0.358572	80	
PRE370	3300	C	0.768387	74	
PRE370	1900	B/D	8.66656	80	
PRE370	1900	B/D	2.347762	80	
PRE370	1900	C	0.07069	74	85.0
TOP10	Landfill Top	C	9.297894	80	80.0
TOP20	Landfill Top	C	28.353395	80	80.0
TOP30	Landfill Top	C	12.777302	80	80.0
TOP40	Landfill Top	C	39.132328	80	80.0
TOP50	Landfill Top	C	5.772421	80	80.0
TOP60	Landfill Top	C	18.686543	80	80.0
TOP70	Landfill Top	C	5.058031	80	80.0
TOP80	Landfill Top	C	21.78639	80	80.0

Appendix E: Pre-Development TC Calculations

Project
10-0249

Water Resources Engineer
SG

Date
November 1, 2011

Revision

CASE #	PRE110	PRE140	PRE220	PRE230	PRE250	PRE260	PRE270	PRE280	PRE310	PRE360	PRE370	PRE400	PRE410
SHEET FLOW CALCULATIONS (LEN <= 300-FT)													
Surface Description	ss-Range S	ss-Range S	Woods Ligh	Woods Ligh	Woods Ligh	Woods Ligh	Woods Ligh	Woods Ligh	ss-Range S	ss-Range S	Woods Dens	ss-Range S	ss-Range S
Manning's Roughness Coefficient	0.15	0.15	0.4	0.4	0.4	0.4	0.4	0.4	0.15	0.15	0.8	0.15	0.15
Upstream Invert Elevation, ft	83.15	150.50	85.80	88.50	89.97	89.20	88.00	90.05	82.30	83.00	81.00	150.50	149.50
Downstream Invert Elevation, ft	83.00	148.00	85.00	88.00	88.90	89.00	87.00	89.97	82.20	82.80	80.00	148.00	146.00
Flow Length, ft	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2-yr Rain	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40
Sheet Flow Travel Time, min	23.55	7.64	26.42	31.88	23.52	46.00	24.16	66.36	27.69	20.99	42.07	7.64	6.68
SHALLOW CONCENTRATED FLOW CALCULATIONS													
Surface Description	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved
Upstream Invert Elevation, ft	83.00	148.00	85.00	88.00	88.90	89.00	87.00	89.97	82.20	82.80	80.00	148.00	146.00
Downstream Invert Elevation, ft	82.00	89.00	77.00	76.00	87.00	87.00	84.00	82.30	79.00	79.00	74.00	89.00	89.00
Flow Length, ft	1905.00	633.00	1261.00	3623.00	470.00	470.00	265.00	2302.00	2086.00	2613.00	1307.00	633.00	531.00
Shallow Concentrated Flow Travel Time, min	85.89	2.14	16.35	65.03	7.64	7.44	2.57	41.20	55.02	70.78	19.93	2.14	1.67
CHANNEL FLOW CALCULATIONS													
Manning's Roughness Coefficient													
Upstream Invert Elevation, ft													
Downstream Invert Elevation, ft													
Flow Length, ft													
Channel Side Slopes, ft/ft													
Channel Bottom Width, ft													
Depth of Flow, ft													
Channel Flow Travel Time, min													
TOTAL FLOW TRAVEL TIME													
Total Flow Travel Time, min	109.44	9.78	42.77	96.91	31.15	53.44	26.74	107.56	82.71	91.77	62.00	9.78	8.35

Appendix F: Post-Development TC Calculations

Ardaman Associates, Inc.

Project
10-0249

Water Resources Engineer
SG

Date
November 1, 2011

Revision

CASE #	TOP10	TOP20	TOP30	TOP40	TOP50	TOP60	TOP70	TOP80		
SHEET FLOW CALCULATIONS (LEN <= 300-FT)										
Surface Description	ss-Range S	ss-Range S	ss-Range S	ss-Range S	ss-Range S	ss-Range S	ss-Range S	ss-Range S	ss-Range Short	
Manning's Roughness Coefficient	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Upstream Invert Elevation, ft	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	175.00	
Downstream Invert Elevation, ft	174.00	174.00	174.00	174.00	174.00	174.00	174.00	174.00	174.00	
Flow Length, ft	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
2-yr Rain	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.40	
Sheet Flow Travel Time, min	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	
SHALLOW CONCENTRATED FLOW CALCULATIONS										
Surface Description	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	Unpaved	
Upstream Invert Elevation, ft	174.00	174.00	174.00	174.00	174.00	174.00	174.00	174.00	174.00	
Downstream Invert Elevation, ft	169.00	169.00	169.00	169.00	169.00	169.00	169.00	169.00	169.00	
Flow Length, ft	900.00	1300.00	1350.00	1650.00	500.00	1000.00	500.00	1150.00		
Shallow Concentrated Flow Travel Time, min	12.47	21.65	22.91	30.96	5.16	14.61	5.16	18.02		
CHANNEL FLOW CALCULATIONS										
Manning's Roughness Coefficient										
Upstream Invert Elevation, ft										
Downstream Invert Elevation, ft										
Flow Length, ft										
Channel Side Slopes, ft/ft										
Channel Bottom Width, ft										
Depth of Flow, ft										
Channel Flow Travel Time, min										
TOTAL FLOW TRAVEL TIME										
Total Flow Travel Time, min	23.50	32.68	33.94	41.99	16.19	25.63	16.19	29.04		

Ardaman Associates, Inc.

Project
10-0249

Water Resources Engineer
JD

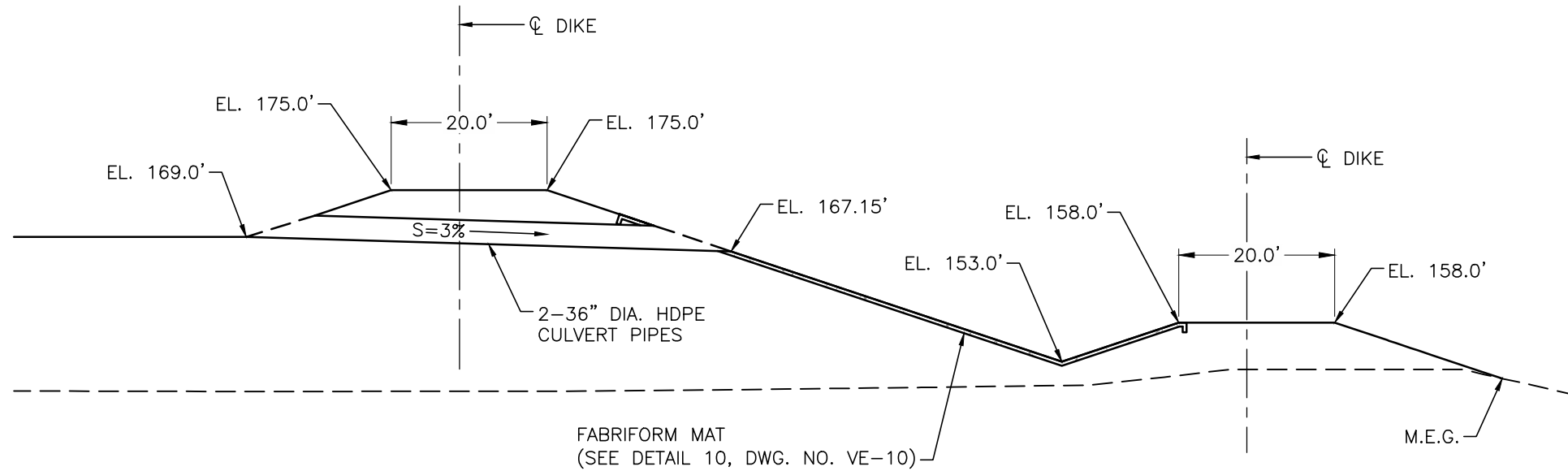
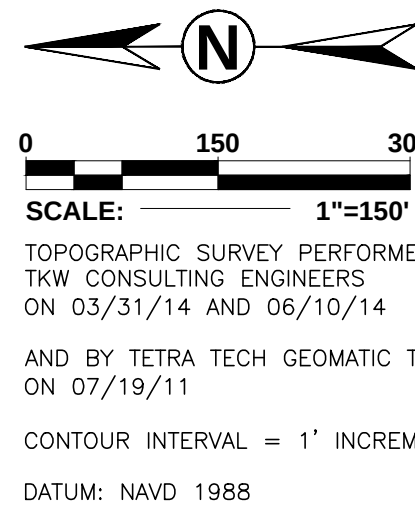
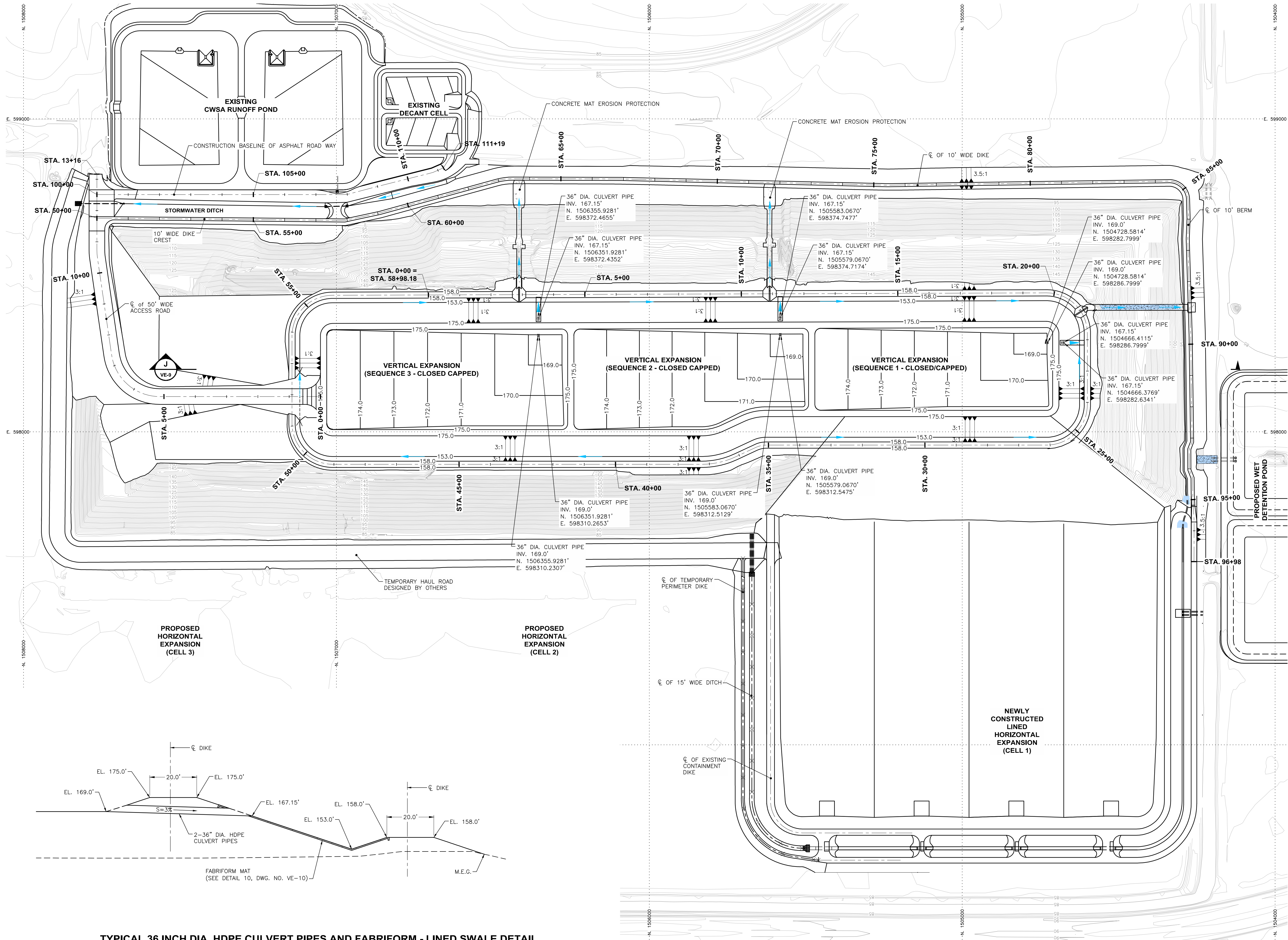
Date
November 1, 2011

Revision

CASE #	PRE110	PRE220	PRE230	PRE250	PRE260	PRE270	PRE280	PRE310	PRE360	PRE370
SHEET FLOW CALCULATIONS (LEN <= 300-FT)										
Surface Description		Woods Light	Woods Light	Woods Light		Woods Light	Woods Light	ss-Range S	ss-Range S	Woods Dense
Manning's Roughness Coefficient		0.4	0.4	0.4		0.4	0.4	0.15	0.15	0.8
Upstream Invert Elevation, ft		85.80	88.50	89.97		86.85	90.05	82.30	89.96	81.00
Downstream Invert Elevation, ft		85.00	88.00	88.90		86.06	89.97	82.20	89.00	80.00
Flow Length, ft		100.00	100.00	100.00		100.00	100.00	100.00	100.00	100.00
2-yr Rain		4.40	4.40	4.40		4.40	4.40	4.40	4.40	4.40
Sheet Flow Travel Time, min		26.42	31.88	23.52		26.55	66.36	27.69	11.21	42.07
SHALLOW CONCENTRATED FLOW CALCULATIONS										
Surface Description		Unpaved	Unpaved	Unpaved		Unpaved	Unpaved	Unpaved	Unpaved	Unpaved
Upstream Invert Elevation, ft		85.00	88.00	88.90		86.06	89.97	82.20	89.00	80.00
Downstream Invert Elevation, ft		77.00	76.00	87.00		85.00	82.30	79.00	79.00	74.00
Flow Length, ft		1261.00	3623.00	470.00		164.00	2302.00	2086.00	1520.00	1307.00
Shallow Concentrated Flow Travel Time, min		16.35	65.03	7.64		2.11	41.20	55.02	19.36	19.93
CHANNEL FLOW CALCULATIONS										
Manning's Roughness Coefficient										
Upstream Invert Elevation, ft										
Downstream Invert Elevation, ft										
Flow Length, ft										
Channel Side Slopes, ft/ft										
Channel Bottom Width, ft										
Depth of Flow, ft										
Channel Flow Travel Time, min										
TOTAL FLOW TRAVEL TIME										
Total Flow Travel Time, min		42.77	96.91	31.15		28.66	107.56	82.71	30.56	62.00

Appendix 2

Closure Plan for Original CWSA



TYPICAL 36 INCH DIA. HDPE CULVERT PIPES AND FABRIFORM - LINED SWALE DETAIL

SCALE: 1" = 20'

FINAL CLOSURE CONFIGURATION



Ardaman & Associates, Inc.
Geotechnical, Environmental, and
Materials Consultants
A Tetra Tech Company
8008 S. Orange Ave. Orlando, FL 32809
TEL 407/855-3860 FAX 407/859-8121 C.A.N. 5950



**CERTIFICATION OF CLOSURE
CONSTRUCTION COMPLETION FOR ORIGINAL
COMBUSTION WASTE STORAGE AREA AT
THE ORLANDO UTILITIES COMMISSION,
STANTON ENERGY CENTER**

DRAWN BY: PS	CHECKED BY: JM	DATE: 02/09/16
FILE NO. 15-13-0249	APPROVED BY:	FIGURE: 2

Appendix G: ICPR Input and Output Files, Pre-Development

=====

Basins

=====

Name: PRE100	Node: NPRE100	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.592	Time Shift(hrs): 0.00	
Curve Number: 99.79	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE105	Node: NPRE105	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.216	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PRE110	Node: NPRE110	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 109.00	
Area(ac): 129.460	Time Shift(hrs): 0.00	
Curve Number: 78.67	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE115	Node: NPRE115	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.717	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PRE120	Node: NPRE120	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.054	Time Shift(hrs): 0.00	
Curve Number: 98.78	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE130	Node: NPRE130	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.864	Time Shift(hrs): 0.00	
Curve Number: 90.84	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE140	Node: NPRE140	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 11.435	Time Shift(hrs): 0.00	
Curve Number: 86.97	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE150	Node: NPRE150	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.879	Time Shift(hrs): 0.00	
Curve Number: 99.17	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE160	Node: NPRE160	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 10.856	Time Shift(hrs): 0.00	
Curve Number: 89.83	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE170	Node: NPRE170	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.087	Time Shift(hrs): 0.00	
Curve Number: 95.42	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE180	Node: NPRE180	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.604	Time Shift(hrs): 0.00	
Curve Number: 95.93	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE190	Node: NPRE190	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 0.903	Time Shift(hrs): 0.00	
Curve Number: 94.50	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE200	Node: NPRE200	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.059	Time Shift(hrs): 0.00	
Curve Number: 92.29	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE210	Node: NPRE210	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.399	Time Shift(hrs): 0.00	
Curve Number: 94.49	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE220	Node: NPRE220	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 43.00	
Area(ac): 155.829	Time Shift(hrs): 0.00	
Curve Number: 85.92	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE230	Node: NPRE230	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 97.00	
Area(ac): 101.935	Time Shift(hrs): 0.00	
Curve Number: 84.23	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE250	Node: NPRE250	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 31.00	
Area(ac): 19.813	Time Shift(hrs): 0.00	
Curve Number: 83.84	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE260	Node: NPRE260	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 53.00	
Area(ac): 13.514	Time Shift(hrs): 0.00	
Curve Number: 81.69	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE270	Node: NPRE270	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 27.00	
Area(ac): 9.750	Time Shift(hrs): 0.00	
Curve Number: 83.52	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE280	Node: NPRE280	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 107.00	
Area(ac): 102.639	Time Shift(hrs): 0.00	
Curve Number: 80.74	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE300	Node: NPRE300	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.467	Time Shift(hrs): 0.00	
Curve Number: 97.06	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE310	Node: NPRE310	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 83.00	
Area(ac): 53.649	Time Shift(hrs): 0.00	
Curve Number: 78.73	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE330	Node: NPRE330	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 4.292	Time Shift(hrs): 0.00	
Curve Number: 86.92	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE340	Node: NPRE340	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.006	Time Shift(hrs): 0.00	
Curve Number: 99.76	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE350	Node: NPRE350	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.127	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE360	Node: NPRES360	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 92.00	
Area(ac): 84.527	Time Shift(hrs): 0.00	
Curve Number: 75.30	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE370	Node: NPRES370	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 62.00	
Area(ac): 165.668	Time Shift(hrs): 0.00	
Curve Number: 85.01	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE400	Node: NPRES400	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 14.676	Time Shift(hrs): 0.00	
Curve Number: 86.01	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE410	Node: NPRES410	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 8.00	
Area(ac): 33.123	Time Shift(hrs): 0.00	
Curve Number: 86.01	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

```
=====
=== Nodes =====
=====
```

Name: NPRES100	Base Flow(cfs): 0.000	Init Stage(ft): 78.870
Group: BASE		Warn Stage(ft): 85.600
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE105	Base Flow(cfs): 0.000	Init Stage(ft): 81.500
Group: BASE		Warn Stage(ft): 85.800
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE110	Base Flow(cfs): 0.000	Init Stage(ft): 80.300
Group: BASE		Warn Stage(ft): 81.500
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

80.300	1.0500
81.000	1.5800
82.000	17.4800
83.000	96.0300
84.000	105.8200
85.000	107.3900
86.000	108.2600
87.000	109.1300
88.000	109.6400
89.000	110.0300
90.000	110.4100
91.000	110.7700
92.000	111.1300
93.000	111.4700
94.000	111.8100
95.000	112.1600
96.000	112.4900
97.000	112.8100
98.000	113.1300
99.000	113.4500
100.000	113.7800
101.000	114.0900
102.000	114.3800
103.000	114.6900
104.000	115.0600
105.000	115.4000
106.000	115.6900
107.000	115.9800
108.000	116.2500
109.000	116.5100
110.000	116.7800
111.000	117.0400
112.000	117.3000
113.000	117.5600
114.000	117.8200
115.000	118.0800
116.000	118.3400
117.000	118.6000
118.000	118.9200
119.000	119.3100
120.000	119.5900
121.000	119.8200

122.000	120.0600
123.000	120.2900
124.000	120.5300
125.000	120.7600
126.000	121.0000
127.000	121.2300
128.000	121.4700
129.000	121.7000
130.000	121.9300
131.000	122.1600
132.000	122.3800
133.000	122.6000
134.000	122.8200
135.000	123.0500
136.000	123.2700
137.000	123.5000
138.000	123.7300
139.000	123.9500
140.000	124.1800
141.000	124.4200
142.000	124.6600
143.000	124.9100
144.000	125.1700
145.000	125.5200
146.000	126.0800
147.000	126.4800
148.000	126.7400
149.000	127.0000
150.000	127.2900
151.000	127.4900
152.000	127.5600
153.000	127.6400
154.000	127.6900
155.000	127.7600
155.090	127.7800

Name: NPRE115 Base Flow(cfs): 0.000 Init Stage(ft): 80.650
Group: BASE Warn Stage(ft): 86.000
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE120 Base Flow(cfs): 0.000 Init Stage(ft): 80.910
Group: BASE Warn Stage(ft): 85.700
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE130 Base Flow(cfs): 0.000 Init Stage(ft): 80.100
Group: BASE Warn Stage(ft): 85.000
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE140	Base Flow(cfs): 0.000	Init Stage(ft): 77.830
Group: BASE		Warn Stage(ft): 85.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE150	Base Flow(cfs): 0.000	Init Stage(ft): 82.600
Group: BASE		Warn Stage(ft): 86.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE160	Base Flow(cfs): 0.000	Init Stage(ft): 77.050
Group: BASE		Warn Stage(ft): 83.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE170	Base Flow(cfs): 0.000	Init Stage(ft): 77.440
Group: BASE		Warn Stage(ft): 81.400
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE180	Base Flow(cfs): 0.000	Init Stage(ft): 77.000
Group: BASE		Warn Stage(ft): 80.200
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE190	Base Flow(cfs): 0.000	Init Stage(ft): 77.000
Group: BASE		Warn Stage(ft): 79.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE200	Base Flow(cfs): 0.000	Init Stage(ft): 77.000
Group: BASE		Warn Stage(ft): 77.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

Name: NPRED10	Base Flow(cfs): 0.000	Init Stage(ft): 78.500
Group: BASE		Warn Stage(ft): 83.500
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

78.480	0.0100
81.580	3.9900
82.000	4.4000
83.000	4.5400
83.500	4.8000
84.000	4.8000

Name: NPRED20	Base Flow(cfs): 0.000	Init Stage(ft): 77.000
Group: BASE		Warn Stage(ft): 86.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

75.390	0.0100
76.000	5.2300
77.000	27.9300
78.000	64.2400
79.000	83.2400
80.000	107.7800
81.000	120.5900
82.000	129.3000
83.000	135.4500
84.000	141.7500
85.000	146.0900
86.000	149.3000
87.000	152.0600
88.000	154.5500
89.000	155.6900
90.000	155.7400
91.000	155.7800
92.000	155.8300
93.000	155.8300

Name: NPRED30	Base Flow(cfs): 0.000	Init Stage(ft): 77.000
Group: BASE		Warn Stage(ft): 77.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-----------	----------

74.170	0.0100
75.000	0.4300
76.000	7.4400
77.000	19.2300
78.000	33.0400

Stage(ft)	Area(ac)
86.000	1.2000
87.000	4.7700
88.000	7.7900
89.000	14.7200
90.000	18.2500
90.970	19.8100

Stage(ft)	Area(ac)
87.000	0.2300
88.000	4.0500
89.000	10.6400
90.000	12.6200
91.000	12.7700
92.000	13.2000
93.000	13.4900
94.000	13.5000
95.000	13.5100
96.000	13.5100

Stage(ft)	Area(ac)
84.310	0.0100
85.000	5.6300
86.000	7.2600
87.000	9.0000
88.000	9.7400
89.000	9.7500
90.000	9.7500
91.000	9.7500

92.000 9.7500

Name: NPRE280 Base Flow(cfs): 0.000 Init Stage(ft): 81.400
Group: BASE Warn Stage(ft): 81.400
Type: Stage/Area

Stage(ft)	Area(ac)
80.000	0.0100
81.000	1.8700
82.000	17.8300
83.000	43.9300
84.000	72.9400
85.000	81.6900
86.000	84.5200
87.000	86.9900
88.000	89.6800
89.000	93.5400
90.000	97.6000
90.990	102.6400

Name: NPRE300 Base Flow(cfs): 0.000 Init Stage(ft): 78.810
Group: BASE Warn Stage(ft): 83.000
Type: Stage/Area

Stage(ft)	Area(ac)
-----------	----------

Name: NPRE310 Base Flow(cfs): 0.000 Init Stage(ft): 76.590
Group: BASE Warn Stage(ft): 80.900
Type: Stage/Area

Stage(ft)	Area(ac)
77.660	0.0100
78.000	0.0200
79.000	1.2600
80.000	7.4200
81.000	17.3900
82.000	33.0500
83.000	49.4100
84.000	51.7100
85.000	52.1900
86.000	52.6200
87.000	52.8000
88.000	53.1000
89.000	53.6000
90.000	53.6200
91.000	53.6300
92.000	53.6300
93.000	53.6300
94.000	53.6300
94.950	53.6500

Name: NPRE330 Base Flow(cfs): 0.000 Init Stage(ft): 76.000

Group: BASE Warn Stage(ft): 80.000
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE340 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 78.000
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE350 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 76.000
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRE360 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 79.600
Type: Stage/Area

Stage(ft) Area(ac)

77.000	0.0100
78.000	0.1000
79.000	1.0700
80.000	4.7000
81.000	22.5700
82.000	49.8500
83.000	71.0500
84.000	76.6700
85.000	79.4900
86.000	82.5500
87.000	83.0500
88.000	83.5500
89.000	83.9400
90.000	83.9900
91.000	84.0300
92.000	84.0800

Name: NPRE370 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 76.000
Type: Stage/Area

Stage(ft) Area(ac)

72.650	0.0100
73.000	1.1800

74.000	40.2600
75.000	74.6300
76.000	93.7100
77.000	110.8100
78.000	127.3500
79.000	139.7100
80.000	148.5900
81.000	157.6700
82.000	162.9500
83.000	164.9000
84.000	165.6200
85.000	165.6400
86.000	165.6500
87.000	165.6600
88.000	165.6700
89.000	165.6700
90.000	165.6700

```

-----
Name: NPRE400      Base Flow(cfs): 0.000      Init Stage(ft): 87.000
Group: BASE        Warn Stage(ft): 88.000
Type: Stage/Area

```

```

Stage(ft)      Area(ac)
-----

```

```

-----
Name: NPRE410      Base Flow(cfs): 0.000      Init Stage(ft): 79.000
Group: BASE        Warn Stage(ft): 88.000
Type: Stage/Area

```

```

Stage(ft)      Area(ac)
-----

```

```

-----
Name: TPRES240     Base Flow(cfs): 0.000      Init Stage(ft): 77.000
Group: BASE        Warn Stage(ft): 77.000
Type: Time/Stage

```

```

Time(hrs)      Stage(ft)
-----
0.00           77.000
999.00         77.000

```

```

-----
Name: TPRES380     Base Flow(cfs): 0.000      Init Stage(ft): 76.000
Group: BASE        Warn Stage(ft): 76.000
Type: Time/Stage

```

```

Time(hrs)      Stage(ft)
-----
0.00           76.000
999.00         76.000

```

```

-----
Name: TW           Base Flow(cfs): 0.000      Init Stage(ft): 71.000
Group: BASE        Warn Stage(ft): 71.000

```


Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	71.000
999.00	71.000

==== Cross Sections =====

Name: XPRE230 Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	78.500	0.000000
430.000	78.500	0.000000
430.000	77.500	0.000000
485.000	77.500	0.000000
485.000	78.500	0.000000
920.000	78.500	0.000000

==== Pipes =====

Name: RPRE100A	From Node: NPRES100	Length(ft): 75.00
Group: BASE	To Node: NPRES300	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 78.970	78.970	Exit Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: RPRE120	From Node: NPRES120	Length(ft): 42.00
Group: BASE	To Node: NPRES130	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 80.910	80.910	Exit Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

```
-----
      Name: RPRE140      From Node: NPRES140      Length(ft): 50.00
      Group: BASE        To Node: NPRES160        Count: 2
                                          Friction Equation: Automatic
                                          Solution Algorithm: Most Restrictive
                                          Flow: Both
      UPSTREAM           DOWNSTREAM
      Geometry: Circular Circular
      Span(in): 36.00     36.00
      Rise(in): 36.00     36.00
      Invert(ft): 78.520  78.520
      Manning's N: 0.024000 0.024000
      Top Clip(in): 0.000  0.000
      Bot Clip(in): 0.000  0.000
      Entrance Loss Coef: 0.90
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dn
      Stabilizer Option: None
-----
```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

```
-----
      Name: RPRE160      From Node: NPRES160      Length(ft): 40.00
      Group: BASE        To Node: NPRES170        Count: 2
                                          Friction Equation: Automatic
                                          Solution Algorithm: Most Restrictive
                                          Flow: Both
      UPSTREAM           DOWNSTREAM
      Geometry: Circular Circular
      Span(in): 36.00     36.00
      Rise(in): 36.00     36.00
      Invert(ft): 77.220  77.220
      Manning's N: 0.024000 0.024000
      Top Clip(in): 0.000  0.000
      Bot Clip(in): 0.000  0.000
      Entrance Loss Coef: 0.90
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dn
      Stabilizer Option: None
-----
```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

```
-----
      Name: RPRE180      From Node: NPRES180      Length(ft): 16.00
      Group: BASE        To Node: NPRES190        Count: 1
                                          Friction Equation: Automatic
                                          Solution Algorithm: Most Restrictive
                                          Flow: Both
      UPSTREAM           DOWNSTREAM
      Geometry: Circular Circular
      Span(in): 24.00     24.00
      Rise(in): 24.00     24.00
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 0.00
-----
```

Invert(ft): 75.770	75.770	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Name: RPRE210	From Node: NPRE210	Length(ft): 4230.00
Group: BASE	To Node: TW	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 1.00
Span(in): 24.00	24.00	Bend Loss Coef: 0.00
Rise(in): 24.00	24.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 78.500	71.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From old model

Name: RPRE220	From Node: NPRE220	Length(ft): 80.00
Group: BASE	To Node: NPRE230	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Rectangular	Rectangular	Exit Loss Coef: 0.00
Span(in): 360.00	360.00	Bend Loss Coef: 0.00
Rise(in): 60.00	60.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 76.000	76.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Name: RPRE310	From Node: NPRE310	Length(ft): 80.00
Group: BASE	To Node: NPRE330	Count: 1
		Friction Equation: Automatic

UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.90
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 76.590	76.590	Bend Loss Coef: 0.00
Manning's N: 0.024000	0.024000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Name: RPRE330	From Node: NPRE330	Length(ft): 25.00
Group: BASE	To Node: NPRE340	Count: 2
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.90
Invert(ft): 74.780	74.780	Exit Loss Coef: 0.00
Manning's N: 0.024000	0.024000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Name: RPRE360	From Node: NPRE360	Length(ft): 55.00
Group: BASE	To Node: NPRE370	Count: 3
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.50
Invert(ft): 75.980	75.980	Exit Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting


```

-----
Name: RPRE370      From Node: NPRES70      Length(ft): 120.00
Group: BASE        To Node: TPRES80        Count: 3
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Rectangular Rectangular
Span(in): 96.00     96.00
Rise(in): 36.00     36.00
Invert(ft): 74.250  74.250
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

```

-----
Name: RPRE410A     From Node: NPRES10      Length(ft): 108.00
Group: BASE        To Node: NPRES210     Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 30.00     30.00
Rise(in): 30.00     30.00
Invert(ft): 79.090  78.480
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 1.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

-----
Name: RPRE410B     From Node: NPRES10      Length(ft): 108.00
Group: BASE        To Node: NPRES210     Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 30.00     30.00
Rise(in): 30.00     30.00
Invert(ft): 79.210  78.310
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 1.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

```

=====
==== Channels =====
=====
Name: RPRE100      From Node: NPRES100      Length(ft): 2161.00
Group: BASE        To Node: NPRES105      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
Invert(ft): 78.870  81.500      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000 0.000 Exit Loss Coef: 0.000
Main XSec: Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft): Inlet Ctrl Spec: Use dn
Aux XSec1: Stabilizer Option: None
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000 20.000
LtSdSlp(h/v): 3.00 3.00
RtSdSlp(h/v): 3.00 3.00

```

```

-----
Name: RPRE105      From Node: NPRES105      Length(ft): 3076.00
Group: BASE        To Node: NPRES115      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Automatic
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
Invert(ft): 81.500  80.650      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000 0.000 Exit Loss Coef: 0.000
Main XSec: Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft): Inlet Ctrl Spec: Use dc
Aux XSec1: Stabilizer Option: None
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000 20.000
LtSdSlp(h/v): 3.00 3.00
RtSdSlp(h/v): 3.00 3.00

```

```

-----
Name: RPRE115      From Node: NPRES115      Length(ft): 935.00
Group: BASE        To Node: NPRES120      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Automatic
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
Invert(ft): 80.650  80.910      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000

```


Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dc
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RPRE130	From Node: NPRES130	Length(ft): 1134.00
Group: BASE	To Node: NPRES140	Count: 1
UPSTREAM	DOWNSSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 80.100	77.830	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 20.000	20.000	
LtSdSlp(h/v): 3.00	3.00	
RtSdSlp(h/v): 3.00	3.00	

Name: RPRE150	From Node: NPRES150	Length(ft): 2615.00
Group: BASE	To Node: NPRES160	Count: 1
UPSTREAM	DOWNSSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 82.600	77.050	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 20.000	20.000	
LtSdSlp(h/v): 3.00	3.00	
RtSdSlp(h/v): 3.00	3.00	

Name: RPRE170	From Node: NPRES170	Length(ft): 1705.00
Group: BASE	To Node: NPRES180	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	77.440	75.600	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RPRES190	From Node: NPRES190	Length(ft): 774.00
Group: BASE	To Node: NPRES200	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	75.100	75.900	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RPRES300	From Node: NPRES300	Length(ft): 805.00
Group: BASE	To Node: NPRES330	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	78.810	74.510	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	

RtSdSlp(h/v): 3.00 3.00

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Name: RPRE340      From Node: NPRES40      Length(ft): 1206.00
Group: BASE        To Node: NPRES50        Count: 1

      UPSTREAM      DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 75.000   73.900
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000   20.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

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-----
Name: RPRE400      From Node: NPRES400      Length(ft): 1603.00
Group: BASE        To Node: NPRES410        Count: 1

      UPSTREAM      DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 87.000   79.000
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 15.000   15.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

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Channel xsection estimated based on DEM

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==== Weirs =====
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Name: Overflow2      From Node: NPRES400
Group: BASE          To Node: NPRES160
Flow: Both           Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 170.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 88.300

```

Control Elevation(ft): 88.300
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: Overflow3 From Node: NPRES110
Group: BASE To Node: NPRES360
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 81.500
Control Elevation(ft): 81.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE200 From Node: NPRES200
Group: BASE To Node: NPRES230
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 55.00
Left Side Slope(h/v): 11.00
Right Side Slope(h/v): 11.00
Invert(ft): 76.000
Control Elevation(ft): 76.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE230 From Node: NPRES230
Group: BASE To Node: TPRES240
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 55.00
Left Side Slope(h/v): 280.00
Right Side Slope(h/v): 280.00
Invert(ft): 76.500
Control Elevation(ft): 76.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000

Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE250 From Node: NPRES250
Group: BASE To Node: NPRES115
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 86.000
Control Elevation(ft): 86.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE260 From Node: NPRES260
Group: BASE To Node: NPRES130
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 88.000
Control Elevation(ft): 88.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE270 From Node: NPRES270
Group: BASE To Node: NPRES140
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 84.800
Control Elevation(ft): 84.800
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRES280 From Node: NPRES280
Group: BASE To Node: NPRES170
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 81.400
Control Elevation(ft): 81.400
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRES350 From Node: NPRES350
Group: BASE To Node: NPRES370
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 20.00
Left Side Slope(h/v): 5.00
Right Side Slope(h/v): 5.00
Invert(ft): 74.000
Control Elevation(ft): 74.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: WPRE180 From Node: NPRES180
Group: BASE To Node: NPRES190
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 60.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 79.700
Control Elevation(ft): 79.700
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: WPRE210 From Node: NPRES210
Group: BASE To Node: TW
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 50.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 83.500
Control Elevation(ft): 83.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

==== Hydrology Simulations =====

Name: 25Yr
Filename: W:\Projects\2010\10-0249\ICPR\PRE\20111031_PRE\25Yr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.80

Time(hrs)	Print Inc(min)
60.000	5.00

Name: Mean
Filename: W:\Projects\2010\10-0249\ICPR\PRE\20111031_PRE\Mean.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 4.40

Time(hrs)	Print Inc(min)
60.000	5.00

==== Routing Simulations =====

Name: 25Yr Hydrology Sim: 25Yr
Filename: W:\Projects\2010\10-0249\ICPR\PRE\20111031_PRE\25Yr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 35.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 1.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	5.000

Group	Run

BASE	Yes

Name: Mean	Hydrology Sim: Mean
Filename: W:\Projects\2010\10-0249\ICPR\PRE\20111031_PRE\Mean.I32	
Execute: Yes	Restart: No
Alternative: No	Patch: No
Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 35.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 1.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)

60.000	5.000

Group	Run

BASE	Yes

ICPR Output File
PRE, Mean Annual 24-Hour

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
NPRE100	BASE	Mean	14.2	81.0	85.6	0.0	32622.0	12.0	4.8	15.8	3.11
NPRE105	BASE	Mean	13.2	81.8	85.8	0.0	62656.0	11.9	5.4	12.0	0.35
NPRE110	BASE	Mean	15.0	81.8	81.5	0.0	597638.0	13.3	51.4	15.0	35.17
NPRE115	BASE	Mean	12.9	82.1	86.0	0.0	55275.0	12.1	19.9	12.5	5.24
NPRE120	BASE	Mean	13.0	82.1	85.7	0.0	13107.0	12.4	6.2	13.0	4.82
NPRE130	BASE	Mean	12.1	80.6	85.0	0.0	15151.0	12.0	14.4	12.1	44.33
NPRE140	BASE	Mean	12.2	80.6	85.0	0.0	19083.0	12.1	69.6	12.2	34.27
NPRE150	BASE	Mean	12.1	82.8	86.0	0.0	32212.0	12.0	8.7	12.1	6.75
NPRE160	BASE	Mean	14.4	80.0	83.0	0.0	43725.0	12.0	67.2	12.4	45.73
NPRE170	BASE	Mean	14.4	79.9	81.4	0.0	32200.0	14.2	55.1	14.3	54.5
NPRE180	BASE	Mean	14.4	79.9	80.2	0.0	36671.0	14.3	54.8	14.4	54.63
NPRE190	BASE	Mean	14.4	77.5	79.0	0.0	12808.0	14.4	54.8	14.5	54.8
NPRE200	BASE	Mean	14.2	77.2	77.0	0.0	11485.0	14.5	55.0	14.5	55.03
NPRE210	BASE	Mean	14.1	81.6	83.5	0.0	177375.0	12.1	91.5	14.1	9.05
NPRE220	BASE	Mean	13.4	77.2	86.0	0.0	1564629.0	12.4	153.5	13.2	87.01
NPRE230	BASE	Mean	13.6	77.1	77.0	0.0	920388.0	13.3	181.6	13.6	178.68
NPRE250	BASE	Mean	12.5	86.2	86.0	0.0	81156.0	12.3	21.9	12.5	20.81
NPRE260	BASE	Mean	13.1	88.1	88.0	0.0	204651.0	12.6	10.1	13.1	8.02
NPRE270	BASE	Mean	12.7	84.9	84.8	0.0	209506.0	12.3	11.6	12.7	8.13
NPRE280	BASE	Mean	14.2	81.7	81.4	0.0	549171.0	13.3	45.0	14.2	37.04
NPRE300	BASE	Mean	14.2	79.1	83.0	0.0	9885.0	14.1	9.5	14.2	9.5
NPRE310	BASE	Mean	15.4	79.5	80.9	0.0	194959.0	13.0	26.2	15.4	12.76
NPRE330	BASE	Mean	14.5	76.5	80.0	0.0	12035.0	12.0	24.4	12.1	22.8
NPRE340	BASE	Mean	14.7	76.3	78.0	0.0	17667.0	12.1	25.2	12.1	24.71
NPRE350	BASE	Mean	15.1	76.2	76.0	0.0	19419.0	12.1	27.2	12.1	26.97
NPRE360	BASE	Mean	14.7	78.4	79.6	0.0	21125.0	14.6	56.6	14.7	56.4
NPRE370	BASE	Mean	15.2	76.1	76.0	0.0	4177699.0	12.8	171.7	15.2	125.32
NPRE400	BASE	Mean	12.1	87.8	88.0	0.0	19849.0	12.0	37.3	12.1	33.19
NPRE410	BASE	Mean	12.2	83.3	88.0	0.0	28294.0	12.0	118.4	12.2	77.8
TPRE240	BASE	Mean	0.0	77.0	77.0	0.0	0.0	13.6	178.7	0.0	0
TPRE380	BASE	Mean	0.0	76.0	76.0	0.0	1440.0	15.2	125.3	0.0	0
TW	BASE	Mean	0.0	71.0	71.0	0.0	212.0	14.1	9.1	0.0	0

ICPR Output File
PRE, 25-Year 24-Hour

			Max Time	Max	Warning	Max Delta	Max Surf	Max Time	Max	Max Time	Max
Name	Group	Simulation	Stage	Stage	Stage	Stage	Area	Inflow	Inflow	Outflow	Outflow
			hrs	ft	ft	ft	ft2	hrs	cfs	hrs	cfs
NPRE100	BASE	25Yr	13.8	82.7	85.6	0.0	42499.0	12.0	9.7	17.3	13.78
NPRE105	BASE	25Yr	13.8	82.7	85.8	0.0	78417.0	11.9	2.3	7.6	0.07
NPRE110	BASE	25Yr	14.2	82.1	81.5	0.0	1063711.0	13.3	145.1	14.2	117.33
NPRE115	BASE	25Yr	12.9	83.0	86.0	0.0	64840.0	12.1	31.4	12.3	9.21
NPRE120	BASE	25Yr	12.9	83.0	85.7	0.0	15436.0	12.2	12.8	13.8	9.72
NPRE130	BASE	25Yr	12.8	82.6	85.0	0.0	21975.0	12.0	36.4	11.7	44.88
NPRE140	BASE	25Yr	12.8	82.6	85.0	0.0	25828.0	12.0	91.5	12.1	67.07
NPRE150	BASE	25Yr	12.1	83.0	86.0	0.0	36575.0	12.0	17.5	12.1	14.09
NPRE160	BASE	25Yr	12.6	81.8	83.0	0.0	54665.0	12.0	160.9	12.1	89.89
NPRE170	BASE	25Yr	13.9	80.9	81.4	0.0	36748.0	13.8	162.9	13.9	162.67
NPRE180	BASE	25Yr	13.9	80.6	80.2	0.0	40770.0	13.9	163.3	13.9	163.23
NPRE190	BASE	25Yr	14.0	78.5	79.0	0.0	14800.0	13.9	163.6	14.0	163.56
NPRE200	BASE	25Yr	13.9	77.6	77.0	0.0	12720.0	14.0	164.0	14.0	164.03
NPRE210	BASE	25Yr	13.6	83.8	83.5	0.0	210305.0	12.1	151.7	13.6	31.22
NPRE220	BASE	25Yr	13.7	77.6	86.0	0.0	2159944.0	12.4	369.1	13.6	173.01
NPRE230	BASE	25Yr	13.7	77.4	77.0	0.0	1061689.0	13.5	457.7	13.7	453.38
NPRE250	BASE	25Yr	12.4	86.3	86.0	0.0	105505.0	12.3	54.7	12.4	52.07
NPRE260	BASE	25Yr	13.0	88.2	88.0	0.0	232420.0	12.6	26.4	13.0	22.4
NPRE270	BASE	25Yr	12.6	85.0	84.8	0.0	242669.0	12.3	28.9	12.6	22
NPRE280	BASE	25Yr	14.0	81.9	81.4	0.0	733701.0	13.2	121.3	14.0	102.65
NPRE300	BASE	25Yr	12.1	79.3	83.0	0.0	10656.0	12.0	22.0	12.1	21.31
NPRE310	BASE	25Yr	17.9	80.7	80.9	0.0	615793.0	12.9	73.5	17.9	18
NPRE330	BASE	25Yr	12.1	77.2	80.0	0.0	13458.0	12.0	54.2	12.1	50.04
NPRE340	BASE	25Yr	16.0	76.6	78.0	0.0	19030.0	12.1	55.0	12.2	53.47
NPRE350	BASE	25Yr	16.2	76.5	76.0	0.0	20746.0	12.1	58.4	12.1	57.56
NPRE360	BASE	25Yr	16.2	80.9	79.6	0.0	939817.0	13.6	197.5	16.2	127.28
NPRE370	BASE	25Yr	16.2	76.5	76.0	0.0	4438411.0	12.7	430.7	16.2	238.72
NPRE400	BASE	25Yr	12.1	88.4	88.0	0.0	27200.0	12.0	87.0	12.0	79.34
NPRE410	BASE	25Yr	12.3	87.7	88.0	0.0	44848.0	12.0	264.2	12.2	120.98
TPRE240	BASE	25Yr	0.0	77.0	77.0	0.0	0.0	13.7	453.4	0.0	0
TPRE380	BASE	25Yr	0.0	76.0	76.0	0.0	1440.0	16.2	238.7	0.0	0
TW	BASE	25Yr	0.0	71.0	71.0	0.0	212.0	13.6	31.2	0.0	0

Pre Mass Balance Report

25 Yr 24 HR Storm Event

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	0	0	0	0	0	0
25Yr	0.08	38	0	38	0	0
25Yr	0.17	156.1	0	156.1	0	0
25Yr	0.25	344.6	12.4	332.2	0	0
25Yr	0.33	583.3	55.9	527.5	0	0
25Yr	0.42	862.3	107.1	755.2	0	0
25Yr	0.5	1172.9	164.1	1008.8	0	0
25Yr	0.58	1506.5	225	1281.5	0	0
25Yr	0.67	1856.8	288.2	1568.6	0	0
25Yr	0.75	2220.7	352.6	1868.1	0	0
25Yr	0.83	2596.9	417.8	2179.1	0	0
25Yr	0.92	2984.2	484.1	2500.1	0	0
25Yr	1	3382.2	552.3	2830	0	0
25Yr	1.08	3797	623.3	3173.7	0	0
25Yr	1.17	4234.7	700.4	3534.2	0	0
25Yr	1.25	4694	783.9	3910.1	0	0
25Yr	1.33	5173.2	873.4	4299.8	0	0
25Yr	1.42	5671.2	969.7	4701.5	0	0
25Yr	1.5	6186.8	1071.8	5114.9	0	0
25Yr	1.58	6718.7	1179.8	5538.8	0	0
25Yr	1.67	7265.8	1293.6	5972.1	0	0
25Yr	1.75	7827.3	1413.7	6413.7	0	0
25Yr	1.83	8402.8	1539.7	6863	0	0
25Yr	1.92	8991.6	1671.8	7319.8	0	0
25Yr	2	9594.2	1810.2	7784.1	0	0
25Yr	2.08	10218.3	1955.3	8263	0	0
25Yr	2.17	10872.4	2108.4	8764	0	0
25Yr	2.25	11555.9	2270.2	9285.8	0	0
25Yr	2.33	12265.3	2439.7	9825.6	0	0
25Yr	2.42	12998	2616.2	10381.8	0	0
25Yr	2.5	13752.1	2800.7	10951.4	0	0
25Yr	2.58	14525.9	2992.1	11533.7	0	0
25Yr	2.67	15317.9	3190.8	12127.2	0	0
25Yr	2.75	16127.9	3395.8	12732.1	0	0
25Yr	2.83	16957.5	3606.9	13350.7	0	0
25Yr	2.92	17809.2	3824.6	13984.6	0	0
25Yr	3	18688.9	4049.6	14639.3	0	0
25Yr	3.08	19620.1	4284	15336.1	0	0
25Yr	3.17	20627.2	4531	16096.2	0	0
25Yr	3.25	21710.5	4792.9	16917.7	0	0
25Yr	3.33	22864.7	5068.5	17796.2	0	0
25Yr	3.42	24091.3	5363.9	18727.3	0	0
25Yr	3.5	25394.4	5688.1	19706.4	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	3.58	26779.5	6046	20733.5	0	0
25Yr	3.67	28253	6444.9	21808.1	0	0
25Yr	3.75	29822.6	6891.8	22930.8	0	0
25Yr	3.83	31495.9	7388.6	24107.3	0	0
25Yr	3.92	33280.3	7945.8	25334.5	0	0
25Yr	4	35182.3	8569.9	26612.5	0	0
25Yr	4.08	37246.3	9268.7	27977.6	0	0
25Yr	4.17	39518.1	10053.5	29464.6	0	0
25Yr	4.25	41987.3	10934.1	31053.2	0	0
25Yr	4.33	44636.3	11917.3	32719	0	0
25Yr	4.42	47464.8	13009.7	34455.1	0	0
25Yr	4.5	50476.2	14218.3	36257.9	0	0
25Yr	4.58	53673.8	15549.7	38124.1	0	0
25Yr	4.67	57061.4	17010.4	40051	0	0
25Yr	4.75	60642.8	18605.7	42037.1	0	0
25Yr	4.83	64422.5	20340.8	44081.7	0	0
25Yr	4.92	68404.6	22220.4	46184.1	0	0
25Yr	5	72592.9	24248.6	48344.2	0	0
25Yr	5.08	77017.5	26429.8	50587.7	0	0
25Yr	5.17	81710.3	28770.1	52940.2	0	0
25Yr	5.25	86664	31277.6	55386.3	0	0
25Yr	5.33	91866	33961	57905	0	0
25Yr	5.42	97317.3	36828.4	60488.9	0	0
25Yr	5.5	103021.2	39887.2	63134	0	0
25Yr	5.58	108981.3	43144.1	65837.3	0	0
25Yr	5.67	115200.9	46604.1	68596.7	0	0
25Yr	5.75	121683	50271.6	71411.4	0	0
25Yr	5.83	128431	54149.9	74281.1	0	0
25Yr	5.92	135447.5	58241.5	77206	0	0
25Yr	6	142735.4	62548.5	80186.9	0	0
25Yr	6.08	150390.5	67073.3	83317.2	0	0
25Yr	6.17	158516.8	71823.9	86692.9	0	0
25Yr	6.25	167076.7	76809.7	90267	0	0
25Yr	6.33	176014	82038.8	93975.2	0	0
25Yr	6.42	185321.8	87518.4	97803.3	0	0
25Yr	6.5	195002.8	93257	101745.9	0	0
25Yr	6.58	205059.9	99262.3	105797.6	0	0
25Yr	6.67	215494.6	105541.4	109953.2	0	0
25Yr	6.75	226308.4	112100.1	114208.4	0	0
25Yr	6.83	237503.1	118943	118560.1	0	0
25Yr	6.92	249079.2	126073.9	123005.3	0	0
25Yr	7	261036.6	133495	127541.5	0	0
25Yr	7.08	273481.5	141209.8	132271.7	0	0
25Yr	7.17	286533.4	149225.5	137307.9	0	0
25Yr	7.25	300146.9	157551.3	142595.5	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	7.33	314251.7	166196.8	148054.8	0	0
25Yr	7.42	328836.8	175171.1	153665.7	0	0
25Yr	7.5	343903.5	184483.4	159420.1	0	0
25Yr	7.58	359452.6	194143.3	165309.2	0	0
25Yr	7.67	375483.4	204159.8	171323.6	0	0
25Yr	7.75	391994.6	214540.2	177454.4	0	0
25Yr	7.83	408984.8	225290.7	183694.1	0	0
25Yr	7.92	426451.8	236415.8	190036	0	0
25Yr	8	444391.9	247918.7	196473.2	0	0
25Yr	8.08	462958.9	259802.5	203156.4	0	0
25Yr	8.17	482323.1	272074.5	210248.7	0	0
25Yr	8.25	502414	284744.2	217669.8	0	0
25Yr	8.33	523128.6	297821.2	225307.4	0	0
25Yr	8.42	544450.8	311315.2	233135.6	0	0
25Yr	8.5	566383.4	325236.5	241146.9	0	0
25Yr	8.58	589092.3	339596.9	249495.4	0	0
25Yr	8.67	612760.3	354411.4	258348.8	0	0
25Yr	8.75	637316.8	369696.4	267620.4	0	0
25Yr	8.83	662655.7	385466.9	277188.8	0	0
25Yr	8.92	688761.6	401737.3	287024.4	0	0
25Yr	9	715635.9	418521.5	297114.4	0	0
25Yr	9.08	743363.7	435832.7	307531	0	0
25Yr	9.17	772036.9	453684.1	318352.9	0	0
25Yr	9.25	801614.3	472088	329526.3	0	0
25Yr	9.33	832035.4	491054.9	340980.5	0	0
25Yr	9.42	863285.9	510594	352691.9	0	0
25Yr	9.5	895361.3	530712.2	364649	0	0
25Yr	9.58	928519.5	551416.7	377102.8	0	0
25Yr	9.67	963049.5	572718.7	390330.8	0	0
25Yr	9.75	998832.4	594631.8	404200.6	0	0
25Yr	9.83	1035691	617168.4	418522.3	0	0
25Yr	9.92	1073596	640343.1	433253.1	0	0
25Yr	10	1112551	664177.6	448373.7	0	0
25Yr	10.08	1153017	688692.6	464324.7	0	0
25Yr	10.17	1195511	713916	481594.6	0	0
25Yr	10.25	1239836	739887	499948.9	0	0
25Yr	10.33	1285695	766646.1	519049	0	0
25Yr	10.42	1333050	794188.9	538860.9	0	0
25Yr	10.5	1381915	822505	559410.4	0	0
25Yr	10.58	1432962	851605.1	581356.6	0	0
25Yr	10.67	1486939	881520.9	605417.7	0	0
25Yr	10.75	1543571	912297.1	631274	0	0
25Yr	10.83	1602432	943979.8	658451.7	0	0
25Yr	10.92	1663468	976611.7	686856.1	0	0
25Yr	11	1726694	1010233	716461.4	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	11.08	1792311	1044880	747430.4	0	0
25Yr	11.17	1860529	1080590	779939.2	0	0
25Yr	11.25	1931274	1117390	813884.2	0	0
25Yr	11.33	2007605	1155304	852301.5	0	0
25Yr	11.42	2093134	1194347	898786.5	0	0
25Yr	11.5	2186719	1234629	952089.9	0	0
25Yr	11.58	2302600	1276358	1026242.5	0	0
25Yr	11.67	2459517	1319871	1139646.2	0	0
25Yr	11.75	2651966	1365627	1286338.3	0	0
25Yr	11.83	2886461	1414145	1472316	0	0
25Yr	11.92	3181429	1466139	1715289.6	0	0
25Yr	12	3532344	1522426	2009917.9	0	0
25Yr	12.08	3905699	1583804	2321894.4	0	0
25Yr	12.17	4273089	1651455	2621634.3	0	0
25Yr	12.25	4645386	1727114	2918271.2	0	0
25Yr	12.33	5029456	1811620	3217836.8	0	0
25Yr	12.42	5415910	1905461	3510449.1	0	0
25Yr	12.5	5806347	2008559	3797787.8	0	0
25Yr	12.58	6201427	2120556	4080871	0	0
25Yr	12.67	6596182	2240991	4355190.7	0	0
25Yr	12.75	6989373	2369336	4620037	0	0
25Yr	12.83	7379508	2504995	4874513.2	0	0
25Yr	12.92	7763716	2647311	5116404.5	0	0
25Yr	13	8140794	2795937	5344856.9	0	0
25Yr	13.08	8509393	2951146	5558247.2	0	0
25Yr	13.17	8867921	3112431	5755490	0	0
25Yr	13.25	9216114	3278965	5937149.1	0	0
25Yr	13.33	9554210	3449836	6104374	0	0
25Yr	13.42	9882295	3624170	6258124.5	0	0
25Yr	13.5	10200474	3801193	6399280.2	0	0
25Yr	13.58	10508244	3980245	6527999	0	0
25Yr	13.67	10805099	4160756	6644342.5	0	0
25Yr	13.75	11091722	4342233	6749489.4	0	0
25Yr	13.83	11369045	4524262	6844782	0	0
25Yr	13.92	11637576	4706512	6931064.4	0	0
25Yr	14	11897737	4888718	7009019.3	0	0
25Yr	14.08	12149607	5070672	7078934.6	0	0
25Yr	14.17	12393189	5252199	7140990.6	0	0
25Yr	14.25	12629018	5433140	7195877.9	0	0
25Yr	14.33	12857735	5613362	7244373.2	0	0
25Yr	14.42	13079774	5792753	7287021.7	0	0
25Yr	14.5	13295502	5971222	7324280.3	0	0
25Yr	14.58	13504952	6148681	7356270.9	0	0
25Yr	14.67	13708112	6325035	7383077.2	0	0
25Yr	14.75	13905426	6500184	7405242.5	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	14.83	14097341	6674040	7423301.3	0	0
25Yr	14.92	14284072	6846532	7437540.3	0	0
25Yr	15	14465806	7017607	7448199	0	0
25Yr	15.08	14642629	7187224	7455405.3	0	0
25Yr	15.17	14814608	7355348	7459259.8	0	0
25Yr	15.25	14981979	7521942	7460036.4	0	0
25Yr	15.33	15145012	7686980	7458031.8	0	0
25Yr	15.42	15303917	7850441	7453476.8	0	0
25Yr	15.5	15458879	8012309	7446569.8	0	0
25Yr	15.58	15609826	8172574	7437252.1	0	0
25Yr	15.67	15756650	8331220	7425429.8	0	0
25Yr	15.75	15899574	8488230	7411344.6	0	0
25Yr	15.83	16038857	8643591	7395265.9	0	0
25Yr	15.92	16174652	8797304	7377348.3	0	0
25Yr	16	16307096	8949377	7357718.5	0	0
25Yr	16.08	16436209	9099835	7336374.6	0	0
25Yr	16.17	16562027	9248702	7313324.6	0	0
25Yr	16.25	16684787	9396001	7288785.5	0	0
25Yr	16.33	16804764	9541753	7263010.3	0	0
25Yr	16.42	16922129	9685981	7236148	0	0
25Yr	16.5	17037021	9828707	7208314.9	0	0
25Yr	16.58	17149480	9969970	7179510.6	0	0
25Yr	16.67	17259513	10109806	7149706.4	0	0
25Yr	16.75	17367289	10248209	7119079.2	0	0
25Yr	16.83	17473008	10385163	7087844.6	0	0
25Yr	16.92	17576792	10520661	7056131.2	0	0
25Yr	17	17678729	10654708	7024020.8	0	0
25Yr	17.08	17778892	10787327	6991565.2	0	0
25Yr	17.17	17877343	10918543	6958799.9	0	0
25Yr	17.25	17974140	11048383	6925756.6	0	0
25Yr	17.33	18069337	11176877	6892459.7	0	0
25Yr	17.42	18162976	11304115	6858860.9	0	0
25Yr	17.5	18255096	11430231	6824865.2	0	0
25Yr	17.58	18345512	11555321	6790191.3	0	0
25Yr	17.67	18433992	11679443	6754549.1	0	0
25Yr	17.75	18520653	11802598	6718055	0	0
25Yr	17.83	18605681	11924648	6681032.9	0	0
25Yr	17.92	18689122	12045461	6643660.2	0	0
25Yr	18	18771000	12164975	6606025	0	0
25Yr	18.08	18851477	12283170	6568306.5	0	0
25Yr	18.17	18930753	12400055	6530698.2	0	0
25Yr	18.25	19008857	12515655	6493201.9	0	0
25Yr	18.33	19085767	12630002	6455764.3	0	0
25Yr	18.42	19161524	12743129	6418394.9	0	0
25Yr	18.5	19236184	12855067	6381116.1	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	18.58	19309568	12965848	6343719.8	0	0
25Yr	18.67	19381461	13075494	6305966.3	0	0
25Yr	18.75	19451988	13184022	6267966.7	0	0
25Yr	18.83	19521326	13291445	6229881.2	0	0
25Yr	18.92	19589513	13397780	6191732.9	0	0
25Yr	19	19656560	13503045	6153515.1	0	0
25Yr	19.08	19722590	13607256	6115334	0	0
25Yr	19.17	19787750	13710433	6077317.1	0	0
25Yr	19.25	19852018	13812600	6039418	0	0
25Yr	19.33	19915346	13913781	6001564.8	0	0
25Yr	19.42	19977755	14013995	5963760	0	0
25Yr	19.5	20039281	14113261	5926020.1	0	0
25Yr	19.58	20099849	14211598	5888251.6	0	0
25Yr	19.67	20159366	14309025	5850341.2	0	0
25Yr	19.75	20217909	14405561	5812347.6	0	0
25Yr	19.83	20275578	14501225	5774353.1	0	0
25Yr	19.92	20332405	14596035	5736370.5	0	0
25Yr	20	20388403	14690007	5698396.2	0	0
25Yr	20.08	20443471	14783159	5660312.3	0	0
25Yr	20.17	20497497	14875504	5621993.1	0	0
25Yr	20.25	20550554	14967056	5583498.2	0	0
25Yr	20.33	20602741	15057827	5544913.3	0	0
25Yr	20.42	20654087	15147830	5506256.7	0	0
25Yr	20.5	20704614	15237079	5467534.9	0	0
25Yr	20.58	20754347	15325592	5428755.5	0	0
25Yr	20.67	20803310	15413393	5389917.3	0	0
25Yr	20.75	20851526	15500512	5351014.1	0	0
25Yr	20.83	20899017	15586970	5312046.6	0	0
25Yr	20.92	20945802	15672783	5273018.5	0	0
25Yr	21	20991904	15757964	5233939.5	0	0
25Yr	21.08	21037350	15842524	5194826.2	0	0
25Yr	21.17	21082168	15926470	5155698.3	0	0
25Yr	21.25	21126387	16009811	5116575	0	0
25Yr	21.33	21170030	16092557	5077472.7	0	0
25Yr	21.42	21213122	16174717	5038404.6	0	0
25Yr	21.5	21255686	16256302	4999384.5	0	0
25Yr	21.58	21297752	16337323	4960428.7	0	0
25Yr	21.67	21339352	16417798	4921554.2	0	0
25Yr	21.75	21380517	16497746	4882771.4	0	0
25Yr	21.83	21421270	16577185	4844085	0	0
25Yr	21.92	21461630	16656131	4805498.6	0	0
25Yr	22	21501614	16734603	4767011.5	0	0
25Yr	22.08	21541235	16812613	4728621.3	0	0
25Yr	22.17	21580502	16890177	4690324.9	0	0
25Yr	22.25	21619424	16967306	4652118.2	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	22.33	21658008	17044012	4613996.5	0	0
25Yr	22.42	21696261	17120305	4575956.5	0	0
25Yr	22.5	21734194	17196195	4537998.8	0	0
25Yr	22.58	21771713	17271692	4500021.3	0	0
25Yr	22.67	21808712	17346801	4461911.6	0	0
25Yr	22.75	21845263	17421528	4423735.5	0	0
25Yr	22.83	21881464	17495877	4385586.7	0	0
25Yr	22.92	21917346	17569853	4347492.4	0	0
25Yr	23	21952919	17643458	4309461.4	0	0
25Yr	23.08	21988190	17716691	4271498.7	0	0
25Yr	23.17	22023166	17789554	4233611.8	0	0
25Yr	23.25	22057856	17862044	4195811.5	0	0
25Yr	23.33	22092269	17934162	4158106.4	0	0
25Yr	23.42	22126413	18005908	4120505.2	0	0
25Yr	23.5	22160298	18077281	4083016.8	0	0
25Yr	23.58	22193823	18148284	4045539	0	0
25Yr	23.67	22226869	18218915	4007953.4	0	0
25Yr	23.75	22259490	18289176	3970314.9	0	0
25Yr	23.83	22291770	18359066	3932704	0	0
25Yr	23.92	22323721	18428584	3895136.5	0	0
25Yr	24	22355343	18497728	3857614.5	0	0
25Yr	24.08	22386060	18566495	3819565.2	0	0
25Yr	24.17	22415224	18634871	3780352.8	0	0
25Yr	24.25	22443074	18702842	3740232	0	0
25Yr	24.33	22469967	18770387	3699580	0	0
25Yr	24.42	22495936	18837485	3658451.3	0	0
25Yr	24.5	22520948	18904104	3616844.5	0	0
25Yr	24.58	22544980	18970209	3574770.9	0	0
25Yr	24.67	22568024	19035765	3532258.9	0	0
25Yr	24.75	22590083	19100739	3489344.1	0	0
25Yr	24.83	22611161	19165098	3446062.8	0	0
25Yr	24.92	22631274	19228815	3402459	0	0
25Yr	25	22650450	19291865	3358584.6	0	0
25Yr	25.08	22668723	19354232	3314490.9	0	0
25Yr	25.17	22686128	19415902	3270226.3	0	0
25Yr	25.25	22702705	19476866	3225838.4	0	0
25Yr	25.33	22718493	19537116	3181376.8	0	0
25Yr	25.42	22733534	19596645	3136888.3	0	0
25Yr	25.5	22747865	19655450	3092414.8	0	0
25Yr	25.58	22761523	19713524	3047998.4	0	0
25Yr	25.67	22774541	19770857	3003683.2	0	0
25Yr	25.75	22786952	19827438	2959514.6	0	0
25Yr	25.83	22798793	19883253	2915539.1	0	0
25Yr	25.92	22810093	19938281	2871811.8	0	0
25Yr	26	22820881	19992501	2828379.7	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	26.08	22831183	20045919	2785263.9	0	0
25Yr	26.17	22841024	20098548	2742476.7	0	0
25Yr	26.25	22850428	20150399	2700028.3	0	0
25Yr	26.33	22859415	20201486	2657928.8	0	0
25Yr	26.42	22868007	20251818	2616188.7	0	0
25Yr	26.5	22876223	20301407	2574816.1	0	0
25Yr	26.58	22884080	20350262	2533818.2	0	0
25Yr	26.67	22891598	20398396	2493202	0	0
25Yr	26.75	22898791	20445820	2452971.1	0	0
25Yr	26.83	22905674	20492546	2413127.7	0	0
25Yr	26.92	22912260	20538588	2373672.7	0	0
25Yr	27	22918562	20583949	2334613.1	0	0
25Yr	27.08	22924593	20628593	2295999.6	0	0
25Yr	27.17	22930364	20672508	2257856.2	0	0
25Yr	27.25	22935888	20715706	2220182.3	0	0
25Yr	27.33	22941176	20758200	2182975.8	0	0
25Yr	27.42	22946238	20800000	2146237.3	0	0
25Yr	27.5	22951084	20841115	2109969.5	0	0
25Yr	27.58	22955724	20881549	2074174.9	0	0
25Yr	27.67	22960167	20921310	2038856.9	0	0
25Yr	27.75	22964421	20960402	2004019.4	0	0
25Yr	27.83	22968495	20998829	1969666.5	0	0
25Yr	27.92	22972397	21036596	1935800.2	0	0
25Yr	28	22976133	21073711	1902421.9	0	0
25Yr	28.08	22979713	21110179	1869533.3	0	0
25Yr	28.17	22983142	21146006	1837136.3	0	0
25Yr	28.25	22986430	21181198	1805231.1	0	0
25Yr	28.33	22989581	21215764	1773817.1	0	0
25Yr	28.42	22992604	21249711	1742892.8	0	0
25Yr	28.5	22995502	21283044	1712457.6	0	0
25Yr	28.58	22998280	21315771	1682509.5	0	0
25Yr	28.67	23000944	21347898	1653045.6	0	0
25Yr	28.75	23003496	21379432	1624064.1	0	0
25Yr	28.83	23005942	21410377	1595564.4	0	0
25Yr	28.92	23008284	21440739	1567544.6	0	0
25Yr	29	23010527	21470525	1540001.8	0	0
25Yr	29.08	23012673	21499739	1512933.6	0	0
25Yr	29.17	23014726	21528387	1486338.8	0	0
25Yr	29.25	23016688	21556472	1460216.3	0	0
25Yr	29.33	23018563	21583999	1434563.8	0	0
25Yr	29.42	23020353	21610974	1409379.6	0	0
25Yr	29.5	23022062	21637399	1384662.8	0	0
25Yr	29.58	23023691	21663278	1360412.9	0	0
25Yr	29.67	23025245	21688616	1336628.4	0	0
25Yr	29.75	23026724	21713417	1313307.6	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	29.83	23028133	21737683	1290449.8	0	0
25Yr	29.92	23029473	21761418	1268054.8	0	0
25Yr	30	23030747	21784626	1246121	0	0
25Yr	30.08	23031958	21807311	1224646.8	0	0
25Yr	30.17	23033109	21829477	1203631.6	0	0
25Yr	30.25	23034202	21851127	1183075.3	0	0
25Yr	30.33	23035240	21872264	1162976	0	0
25Yr	30.42	23036225	21892895	1143330.6	0	0
25Yr	30.5	23037159	21913022	1124136.9	0	0
25Yr	30.58	23038042	21932649	1105393.5	0	0
25Yr	30.67	23038878	21951781	1087097.6	0	0
25Yr	30.75	23039669	21970423	1069245.3	0	0
25Yr	30.83	23040415	21988581	1051833.6	0	0
25Yr	30.92	23041119	22006258	1034860.2	0	0
25Yr	31	23041782	22023460	1018321.3	0	0
25Yr	31.08	23042405	22040194	1002211.8	0	0
25Yr	31.17	23042992	22056464	986527.5	0	0
25Yr	31.25	23043542	22072278	971264.8	0	0
25Yr	31.33	23044059	22087640	956418.7	0	0
25Yr	31.42	23044542	22102559	941982.8	0	0
25Yr	31.5	23044994	22117043	927951.3	0	0
25Yr	31.58	23045417	22131098	914318.9	0	0
25Yr	31.67	23045810	22144731	901079.1	0	0
25Yr	31.75	23046177	22157953	888224.1	0	0
25Yr	31.83	23046518	22170772	875746	0	0
25Yr	31.92	23046835	22183197	863637.6	0	0
25Yr	32	23047128	22195237	851890.7	0	0
25Yr	32.08	23047399	22206904	840495.1	0	0
25Yr	32.17	23047650	22218208	829441.4	0	0
25Yr	32.25	23047881	22229161	818720.1	0	0
25Yr	32.33	23048094	22239773	808321.2	0	0
25Yr	32.42	23048289	22250057	798232.4	0	0
25Yr	32.5	23048469	22260027	788441.9	0	0
25Yr	32.58	23048633	22269695	778938.3	0	0
25Yr	32.67	23048784	22279075	769709	0	0
25Yr	32.75	23048920	22288180	760740.4	0	0
25Yr	32.83	23049045	22297026	752018.5	0	0
25Yr	32.92	23049157	22305627	743530.3	0	0
25Yr	33	23049259	22313996	735262.4	0	0
25Yr	33.08	23049350	22322150	727200.1	0	0
25Yr	33.17	23049432	22330102	719329.6	0	0
25Yr	33.25	23049505	22337866	711638.3	0	0
25Yr	33.33	23049570	22345457	704113.3	0	0
25Yr	33.42	23049628	22352887	696740.9	0	0
25Yr	33.5	23049679	22360170	689508.9	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	33.58	23049723	22367316	682406.8	0	0
25Yr	33.67	23049762	22374338	675424.2	0	0
25Yr	33.75	23049796	22381246	668550.5	0	0
25Yr	33.83	23049825	22388049	661776.6	0	0
25Yr	33.92	23049850	22394755	655095.4	0	0
25Yr	34	23049871	22401371	648499.8	0	0
25Yr	34.08	23049888	22407905	641982.6	0	0
25Yr	34.17	23049902	22414363	635538.6	0	0
25Yr	34.25	23049913	22420748	629164.2	0	0
25Yr	34.33	23049921	22427066	622855.2	0	0
25Yr	34.42	23049927	22433319	616607.8	0	0
25Yr	34.5	23049931	22439511	610419.9	0	0
25Yr	34.58	23049933	22445643	604290.4	0	0
25Yr	34.67	23049934	22451717	598217.8	0	0
25Yr	34.75	23049935	22457734	592200.8	0	0
25Yr	34.83	23049935	22463695	586240.3	0	0
25Yr	34.92	23049935	22469598	580337.6	0	0
25Yr	35	23049935	22475422	574512.9	0	0

Appendix H: ICPR Input and Output Files, Post-Development

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Basins

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Name: A05	Node: NA05	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.779	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A10	Node: NA10	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 7.840	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A100	Node: NA100	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 4.576	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A110	Node: NA110	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.471	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A120	Node: NA120	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.489	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: A20	Node: NA20	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.823	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A30	Node: NA30	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 5.986	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A40	Node: NA40	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.906	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A50	Node: NA50	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.585	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A60	Node: NA60	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.973	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: A70	Node: NA70	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 7.563	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A80	Node: NA80	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 7.663	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: A90	Node: NA90	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.884	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: B10	Node: NB10	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 4.469	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: B20	Node: NB20	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 7.594	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: B30	Node: NB30	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 8.035	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: B40	Node: NB40	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.837	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: B50	Node: NB50	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 4.685	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: B60	Node: NB60	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh484	Peaking Factor: 484.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.819	Time Shift(hrs): 0.00	
Curve Number: 85.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: POND	Node: NPOND	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 23.146	Time Shift(hrs): 0.00	
Curve Number: 98.97	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE100	Node: NPRE100	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.592	Time Shift(hrs): 0.00	
Curve Number: 99.79	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE105	Node: NPRE105	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.216	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PRE115	Node: NPRE115	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.717	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PRE120	Node: NPRE120	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.054	Time Shift(hrs): 0.00	
Curve Number: 98.93	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE130	Node: NPRE130	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.320	Time Shift(hrs): 0.00	
Curve Number: 99.69	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE140	Node: NPRE140	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 0.692	Time Shift(hrs): 0.00	
Curve Number: 99.99	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE150	Node: NPRE150	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.544	Time Shift(hrs): 0.00	
Curve Number: 98.46	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE160	Node: NPRE160	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 3.337	Time Shift(hrs): 0.00	
Curve Number: 99.72	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE170	Node: NPRE170	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.085	Time Shift(hrs): 0.00	
Curve Number: 95.42	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE180	Node: NPRE180	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.603	Time Shift(hrs): 0.00	
Curve Number: 95.93	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE190	Node: NPRE190	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 0.900	Time Shift(hrs): 0.00	
Curve Number: 94.51	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE200	Node: NPRE200	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.061	Time Shift(hrs): 0.00	
Curve Number: 92.30	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE210	Node: NPRE210	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 6.400	Time Shift(hrs): 0.00	
Curve Number: 92.70	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PRE220	Node: NPRE220	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 43.00	
Area(ac): 155.691	Time Shift(hrs): 0.00	
Curve Number: 85.88	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE230	Node: NPRE230	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 97.00	
Area(ac): 101.886	Time Shift(hrs): 0.00	
Curve Number: 84.17	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE250	Node: NPRE250	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 31.10	
Area(ac): 15.061	Time Shift(hrs): 0.00	
Curve Number: 85.85	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE270	Node: NPRE270	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 28.66	
Area(ac): 7.873	Time Shift(hrs): 0.00	
Curve Number: 84.36	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE280	Node: NPRE280	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 107.00	
Area(ac): 99.663	Time Shift(hrs): 0.00	
Curve Number: 80.85	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE300	Node: NPRE300	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 2.438	Time Shift(hrs): 0.00	
Curve Number: 97.31	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE310	Node: NPRE310	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 83.00	
Area(ac): 53.635	Time Shift(hrs): 0.00	
Curve Number: 78.73	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: PRE330	Node: NPRE330	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 4.289	Time Shift(hrs): 0.00	
Curve Number: 86.92	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE340	Node: NPRE340	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.005	Time Shift(hrs): 0.00	
Curve Number: 99.76	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE350	Node: NPRE350	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 6.00	
Area(ac): 1.126	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE360	Node: NPRE360	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 31.00	
Area(ac): 17.938	Time Shift(hrs): 0.00	
Curve Number: 78.69	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: PRE370	Node: NPRE370	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 62.00	
Area(ac): 165.543	Time Shift(hrs): 0.00	
Curve Number: 85.01	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: TOP10	Node: NTOP10	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 23.50	
Area(ac): 9.292	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP20	Node: NTOP20	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 32.68	
Area(ac): 28.334	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP30	Node: NTOP30	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 33.94	
Area(ac): 12.769	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP40	Node: NTOP40	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 41.99	
Area(ac): 39.106	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP50	Node: NTOP50	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 16.19	
Area(ac): 5.768	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	

DCIA(%): 0.00

Name: TOP60	Node: NTOP60	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 25.63	
Area(ac): 18.674	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP70	Node: NTOP70	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 16.19	
Area(ac): 5.055	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

Name: TOP80	Node: NTOP80	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 29.04	
Area(ac): 21.772	Time Shift(hrs): 0.00	
Curve Number: 80.00	Max Allowable Q(cfs): 0.000	
DCIA(%): 0.00		

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=== Nodes =====

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Name: NA05	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA10	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA100	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA110	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA120	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA121A	Base Flow(cfs): 0.000	Init Stage(ft): 81.500
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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76.000	0.0010
93.000	0.0010

Name: NA121B	Base Flow(cfs): 0.000	Init Stage(ft): 81.500
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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76.000	0.0010
93.000	0.0010

Name: NA20	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA30	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA40	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA50	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA60	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA70	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA80	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NA90	Base Flow(cfs): 0.000	Init Stage(ft): 85.000
Group: BASE		Warn Stage(ft): 93.000
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NB10	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NB20	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NB30	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NB40	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NB50	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NB60	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 90.000
Type: Stage/Area	Warn Stage(ft): 95.000

Name: NPOND	Base Flow(cfs): 0.000	Init Stage(ft): 81.500
Group: BASE		Warn Stage(ft): 88.000
Type: Stage/Area		

Stage(ft)	Area(ac)
69.500	15.5800
81.500	20.0000
88.000	22.4700

Name: NPRE100	Base Flow(cfs): 0.000	Init Stage(ft): 78.870
Group: BASE		Warn Stage(ft): 85.600
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NPRE105	Base Flow(cfs): 0.000	Init Stage(ft): 81.500
Group: BASE		Warn Stage(ft): 85.800
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NPRE115	Base Flow(cfs): 0.000	Init Stage(ft): 80.650
Group: BASE		Warn Stage(ft): 86.000
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NPRE120	Base Flow(cfs): 0.000	Init Stage(ft): 80.800
Group: BASE		Warn Stage(ft): 85.700
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NPRE130	Base Flow(cfs): 0.000	Init Stage(ft): 80.100
Group: BASE		Warn Stage(ft): 87.100
Type: Stage/Area		

Stage(ft)	Area(ac)

Name: NPRE140	Base Flow(cfs): 0.000	Init Stage(ft): 77.830
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Group: BASE
Type: Stage/Area

Warn Stage(ft): 85.000

Stage(ft) Area(ac)

Name: NPRES150 Base Flow(cfs): 0.000 Init Stage(ft): 82.600
Group: BASE Warn Stage(ft): 87.500
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRES160 Base Flow(cfs): 0.000 Init Stage(ft): 77.050
Group: BASE Warn Stage(ft): 84.300
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRES170 Base Flow(cfs): 0.000 Init Stage(ft): 77.440
Group: BASE Warn Stage(ft): 83.900
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRES180 Base Flow(cfs): 0.000 Init Stage(ft): 75.800
Group: BASE Warn Stage(ft): 80.200
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRES190 Base Flow(cfs): 0.000 Init Stage(ft): 77.000
Group: BASE Warn Stage(ft): 79.900
Type: Stage/Area

Stage(ft) Area(ac)

Name: NPRES200 Base Flow(cfs): 0.000 Init Stage(ft): 77.000
Group: BASE Warn Stage(ft): 77.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: NPRES210	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 78.500
Type: Stage/Area	Warn Stage(ft): 84.000

Stage(ft)	Area(ac)
78.480	0.0100
81.580	3.9900
82.000	4.4000
83.000	4.5400
83.500	4.8000
84.000	4.8000

Name: NPRES220	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 77.000
Type: Stage/Area	Warn Stage(ft): 86.000

Stage(ft)	Area(ac)
75.390	0.0100
76.000	5.2300
77.000	27.9300
78.000	64.2400
79.000	83.2400
80.000	107.7800
81.000	120.5900
82.000	129.3000
83.000	135.4500
84.000	141.7500
85.000	146.0900
86.000	149.3000
87.000	152.0600
88.000	154.5500
89.000	155.6900
90.000	155.7400
91.000	155.7800
92.000	155.8300
93.000	155.8300

Name: NPRES230	Base Flow(cfs): 0.000
Group: BASE	Init Stage(ft): 77.000
Type: Stage/Area	Warn Stage(ft): 77.000

Stage(ft)	Area(ac)
74.170	0.0100
75.000	0.4300
76.000	7.4400
77.000	19.2000
78.000	33.0400
79.000	45.3200
80.000	50.1900
81.000	58.2600

82.000	72.6300
83.000	81.0700
84.000	89.3200
85.000	92.5900
86.000	95.0100
87.000	98.9700
88.000	101.3000
89.000	101.8600
90.000	101.8800
90.510	101.8800

Name: NPRE250 Base Flow(cfs): 0.000 Init Stage(ft): 86.000
Group: BASE Warn Stage(ft): 86.000
Type: Stage/Area

Stage(ft)	Area(ac)
86.000	1.2000
87.000	4.7700
88.000	7.7000
89.000	12.3800
90.000	13.7300
90.970	15.0700

Name: NPRE270 Base Flow(cfs): 0.000 Init Stage(ft): 84.800
Group: BASE Warn Stage(ft): 84.800
Type: Stage/Area

Stage(ft)	Area(ac)
84.310	0.0100
85.000	5.6300
86.000	7.1400
87.000	7.8700
88.000	7.8700
89.000	7.8700
90.000	7.8800
91.000	7.8800
92.000	7.8800

Name: NPRE280 Base Flow(cfs): 0.000 Init Stage(ft): 81.400
Group: BASE Warn Stage(ft): 81.400
Type: Stage/Area

Stage(ft)	Area(ac)
80.000	0.0100
81.000	1.8700
82.000	17.8300
83.000	43.9300
84.000	72.9400
85.000	81.6900
86.000	84.5200
87.000	86.9800
88.000	89.0600
89.000	91.7900

90.000	94.6900
90.990	99.7300

Name: NPRE300	Base Flow(cfs): 0.000	Init Stage(ft): 78.810
Group: BASE		Warn Stage(ft): 86.000
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NPRE310	Base Flow(cfs): 0.000	Init Stage(ft): 76.590
Group: BASE		Warn Stage(ft): 80.900
Type: Stage/Area		

Stage(ft)	Area(ac)
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76.400	0.0100
77.660	0.0100
78.000	0.0200
79.000	1.2600
80.000	7.4200
81.000	17.3800
82.000	32.7500
83.000	49.2400
84.000	51.3700
85.000	51.8600
86.000	52.3000
87.000	52.6400
88.000	53.0000
89.000	53.4000
90.000	53.6200
91.000	53.6300
92.000	53.6300
93.000	53.6300
94.000	53.6300
94.950	53.6500

Name: NPRE330	Base Flow(cfs): 0.000	Init Stage(ft): 76.000
Group: BASE		Warn Stage(ft): 80.900
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NPRE340	Base Flow(cfs): 0.000	Init Stage(ft): 76.000
Group: BASE		Warn Stage(ft): 79.500
Type: Stage/Area		

Stage(ft)	Area(ac)
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Name: NPRE350	Base Flow(cfs): 0.000	Init Stage(ft): 76.000
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Group: BASE
Type: Stage/Area

Warn Stage(ft): 77.000

Stage(ft) Area(ac)

Name: NPRE360 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 79.600
Type: Stage/Area

Stage(ft) Area(ac)

75.980	0.0100
77.000	0.0100
78.000	0.1000
79.000	1.0700
80.000	2.8800
81.000	7.0500
82.000	8.9700
83.000	10.6900
84.000	12.3200
85.000	14.5500
86.000	17.3000
87.000	17.5700
88.000	17.7100
89.000	17.7800
90.000	17.8600
91.000	17.9000
92.000	17.9500

Name: NPRE370 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 78.000
Type: Stage/Area

Stage(ft) Area(ac)

72.000	0.0100
73.000	1.1800
74.000	40.2600
75.000	74.6600
76.000	93.7200
77.000	110.8100
78.000	127.3600
79.000	139.3900
80.000	147.1500
81.000	153.3400
82.000	158.3600
83.000	160.0300
84.000	160.6200
85.000	160.6800
86.000	160.7200
87.000	160.7400
88.000	160.7400
89.000	160.7400
90.000	160.7400

175.000 39.1300

Name: NTOP50 Base Flow(cfs): 0.000 Init Stage(ft): 169.100
Group: BASE Warn Stage(ft): 175.000
Type: Stage/Area

Stage(ft)	Area(ac)
169.000	0.1000
170.000	0.7100
171.000	1.7300
172.000	2.4700
173.000	3.1500
174.000	3.8500
175.000	4.5700

Name: NTOP60 Base Flow(cfs): 0.000 Init Stage(ft): 169.100
Group: BASE Warn Stage(ft): 175.000
Type: Stage/Area

Stage(ft)	Area(ac)
169.000	0.1000
170.000	3.4600
171.000	7.9700
172.000	10.4700
173.000	13.1100
174.000	15.8500
175.000	18.6900

Name: NTOP70 Base Flow(cfs): 0.000 Init Stage(ft): 169.100
Group: BASE Warn Stage(ft): 175.000
Type: Stage/Area

Stage(ft)	Area(ac)
169.000	0.1000
170.000	0.7200
171.000	1.6600
172.000	2.1800
173.000	2.7300
174.000	3.3000
175.000	3.8900

Name: NTOP80 Base Flow(cfs): 0.000 Init Stage(ft): 169.100
Group: BASE Warn Stage(ft): 175.000
Type: Stage/Area

Stage(ft)	Area(ac)
169.000	0.1000
170.000	4.0300
171.000	9.3000

172.000	12.2100
173.000	15.2900
174.000	18.4800
175.000	21.7900

Name: OUTBOXA Base Flow(cfs): 0.000 Init Stage(ft): 80.000
Group: BASE Warn Stage(ft): 88.000
Type: Stage/Area

Stage(ft)	Area(ac)
80.000	0.0010
88.000	0.0010

Name: OUTBOXB Base Flow(cfs): 0.000 Init Stage(ft): 80.000
Group: BASE Warn Stage(ft): 88.000
Type: Stage/Area

Stage(ft)	Area(ac)
80.000	0.0010
88.000	0.0010

Name: TPRES240 Base Flow(cfs): 0.000 Init Stage(ft): 77.000
Group: BASE Warn Stage(ft): 77.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	77.000
999.00	77.000

Name: TPRES380 Base Flow(cfs): 0.000 Init Stage(ft): 76.000
Group: BASE Warn Stage(ft): 76.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	76.000
999.00	76.000

Name: TW Base Flow(cfs): 0.000 Init Stage(ft): 71.000
Group: BASE Warn Stage(ft): 71.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	71.000
999.00	71.000

Station(ft)	Elevation(ft)	Manning's N
-------------	---------------	-------------

```
==== Pipes =====
```


UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 32.57	32.57	Entrance Loss Coef: 0.50
Rise(in): 32.57	32.57	Exit Loss Coef: 1.00
Invert(ft): 75.500	75.500	Bend Loss Coef: 0.00
Manning's N: 0.010000	0.010000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RA121B	From Node: NA121B	Length(ft): 165.00
Group: BASE	To Node: NPOND	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 32.57	32.57	Flow: Both
Rise(in): 32.57	32.57	Entrance Loss Coef: 0.50
Invert(ft): 75.500	75.500	Exit Loss Coef: 1.00
Manning's N: 0.010000	0.010000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RPRE100A	From Node: NPRE100	Length(ft): 75.00
Group: BASE	To Node: NPRE300	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 78.970	78.970	Exit Loss Coef: 1.00
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

```

-----
Name: RPRE120      From Node: NPRE120      Length(ft): 42.00
Group: BASE        To Node: NPRE130        Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 18.00     18.00
Rise(in): 18.00     18.00
Invert(ft): 80.910  80.910
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

```

-----
Name: RPRE140      From Node: NPRE140      Length(ft): 50.00
Group: BASE        To Node: NPRE160        Count: 2
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 36.00     36.00
Rise(in): 36.00     36.00
Invert(ft): 78.520  78.520
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.90
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

```

-----
Name: RPRE160      From Node: NPRE160      Length(ft): 40.00
Group: BASE        To Node: NPRE170        Count: 2
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 36.00     36.00
Rise(in): 36.00     36.00
Invert(ft): 77.220  77.220
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.90
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:

Circular CMP: Projecting

```

-----
Name: RPRE180      From Node: NPRES180      Length(ft): 16.00
Group: BASE        To Node: NPRES190      Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 24.00     24.00
Rise(in): 24.00     24.00
Invert(ft): 75.770  75.770
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

```

-----
Name: RPRE210      From Node: NPRES210      Length(ft): 4230.00
Group: BASE        To Node: TW              Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 24.00     24.00
Rise(in): 24.00     24.00
Invert(ft): 78.500  71.000
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

-----
Name: RPRE220      From Node: NPRES220      Length(ft): 80.00
Group: BASE        To Node: NPRES230      Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Rectangular Rectangular
Span(in): 360.00     360.00
Rise(in): 60.00      60.00
Invert(ft): 76.000  76.000
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

```


Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

```
-----
Name: RPRE310      From Node: NPRE310      Length(ft): 80.00
Group: BASE        To Node: NPRE330        Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
UPSTREAM           DOWNSTREAM
Geometry: Circular Circular
Span(in): 24.00    24.00
Rise(in): 24.00    24.00
Invert(ft): 76.590 76.590
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000 0.000
Bot Clip(in): 0.000 0.000
Entrance Loss Coef: 0.90
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

```
-----
Name: RPRE330      From Node: NPRE330      Length(ft): 25.00
Group: BASE        To Node: NPRE340        Count: 2
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
UPSTREAM           DOWNSTREAM
Geometry: Circular Circular
Span(in): 36.00    36.00
Rise(in): 36.00    36.00
Invert(ft): 74.780 74.780
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000 0.000
Bot Clip(in): 0.000 0.000
Entrance Loss Coef: 0.90
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None
```

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

```
-----
Name: RPRE360      From Node: NPRE360      Length(ft): 55.00
Group: BASE        To Node: NPRE370        Count: 3
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
UPSTREAM           DOWNSTREAM
Geometry: Circular Circular
Span(in): 24.00    24.00
Rise(in): 24.00    24.00
Invert(ft): 75.980 75.980
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000 0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
```

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

```

-----
Name: RPRE370      From Node: NPRE370      Length(ft): 120.00
Group: BASE        To Node: TPRES380      Count: 3
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Rectangular Rectangular
Span(in): 96.00     96.00
Rise(in): 36.00     36.00
Invert(ft): 74.250  74.250
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 0.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

```

-----
Name: RTOP10      From Node: NTOP10      Length(ft): 50.00
Group: BASE        To Node: NA10        Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular   Circular
Span(in): 36.00      36.00
Rise(in): 36.00      36.00
Invert(ft): 169.100  168.000
Manning's N: 0.010000 0.010000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 0.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

-----
Name: RTOP20      From Node: NTOP20      Length(ft): 50.00
Group: BASE        To Node: NA60        Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
      UPSTREAM      DOWNSTREAM
Geometry: Circular   Circular
Span(in): 36.00      36.00
                                     Entrance Loss Coef: 0.50

```

Rise(in): 36.00	36.00	Exit Loss Coef: 0.00
Invert(ft): 169.100	168.000	Bend Loss Coef: 0.00
Manning's N: 0.010000	0.010000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RTOP30	From Node: NTOP30	Length(ft): 50.00
Group: BASE	To Node: NB20	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 169.100	168.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.010000	0.010000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RTOP40	From Node: NTOP40	Length(ft): 50.00
Group: BASE	To Node: NA80	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 169.100	168.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.010000	0.010000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RTOP50	From Node: NTOP50	Length(ft): 50.00
Group: BASE	To Node: NB30	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	36.00	36.00	Flow: Both
Rise(in):	36.00	36.00	Entrance Loss Coef: 0.50
Invert(ft):	169.100	168.000	Exit Loss Coef: 0.00
Manning's N:	0.010000	0.010000	Bend Loss Coef: 0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
			Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RTOP60	From Node: NTOP60	Length(ft): 50.00
Group: BASE	To Node: NA90	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 169.100	168.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.010000	0.010000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: RTOP70	From Node: NTOP70	Length(ft): 50.00
Group: BASE	To Node: NB50	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 169.100	168.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.010000	0.010000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

-----
Name: RTOP80          From Node: NTOP80          Length(ft): 50.00
Group: BASE           To Node: NA110             Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 36.00       36.00
Rise(in): 36.00       36.00
Invert(ft): 169.100   168.000
Manning's N: 0.010000 0.010000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

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=== Channels =====
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```

Name: RA05          From Node: NA05          Length(ft): 908.00
Group: BASE         To Node: NA10           Count: 1
                                         Friction Equation: Average Conveyance
                                         Solution Algorithm: Automatic
                                         Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 85.000    85.000
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 10.000   10.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

```

-----
Name: RA10          From Node: NA10          Length(ft): 908.00
Group: BASE         To Node: NA20           Count: 1
                                         Friction Equation: Average Conveyance
                                         Solution Algorithm: Automatic
                                         Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 85.000    85.000
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

```

AuxElev2(ft):
 Aux XSec2:
 Top Width(ft):
 Depth(ft):
 Bot Width(ft): 10.000 10.000
 LtSdSlp(h/v): 3.00 3.00
 RtSdSlp(h/v): 3.00 3.00

```

-----
      Name: RA100      From Node: NA100      Length(ft): 500.00
      Group: BASE      To Node: NA110      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 85.000      85.000      Flow: Both
      TClpInitZ(ft): 9999.000      9999.000      Contraction Coef: 0.000
      Manning's N: 0.035000      0.035000      Expansion Coef: 0.000
      Top Clip(ft): 0.000      0.000      Entrance Loss Coef: 0.000
      Bot Clip(ft): 0.000      0.000      Exit Loss Coef: 0.000
      Main XSec:      Outlet Ctrl Spec: Use dc or tw
      AuxElev1(ft):      Inlet Ctrl Spec: Use dn
      Aux XSec1:      Stabilizer Option: None
      AuxElev2(ft):
      Aux XSec2:
      Top Width(ft):
      Depth(ft):
      Bot Width(ft): 5.000      5.000
      LtSdSlp(h/v): 3.00      3.00
      RtSdSlp(h/v): 3.00      3.00
  
```

```

-----
      Name: RA110      From Node: NA110      Length(ft): 500.00
      Group: BASE      To Node: NA120      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 85.000      85.000      Flow: Both
      TClpInitZ(ft): 9999.000      9999.000      Contraction Coef: 0.000
      Manning's N: 0.035000      0.035000      Expansion Coef: 0.000
      Top Clip(ft): 0.000      0.000      Entrance Loss Coef: 0.000
      Bot Clip(ft): 0.000      0.000      Exit Loss Coef: 0.000
      Main XSec:      Outlet Ctrl Spec: Use dc or tw
      AuxElev1(ft):      Inlet Ctrl Spec: Use dn
      Aux XSec1:      Stabilizer Option: None
      AuxElev2(ft):
      Aux XSec2:
      Top Width(ft):
      Depth(ft):
      Bot Width(ft): 5.000      5.000
      LtSdSlp(h/v): 3.00      3.00
      RtSdSlp(h/v): 3.00      3.00
  
```

```

-----
      Name: RA20      From Node: NA20      Length(ft): 908.00
      Group: BASE      To Node: NA30      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 85.000      85.000      Flow: Both
  
```


TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	10.000	10.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RA30	From Node: NA30	Length(ft): 908.00
Group: BASE	To Node: NA40	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 85.000	85.000	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	10.000	10.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Name: RA40	From Node: NA40	Length(ft): 908.00
Group: BASE	To Node: NA50	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 85.000	85.000	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	10.000	10.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

```

-----
Name: RA50          From Node: NA50          Length(ft): 1036.00
Group: BASE         To Node: NA60          Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
  Invert(ft): 85.000 85.000      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000 0.000 Exit Loss Coef: 0.000
Main XSec: Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft): Inlet Ctrl Spec: Use dn
Aux XSec1: Stabilizer Option: None
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 10.000 10.000
LtSdSlp(h/v): 3.00 3.00
RtSdSlp(h/v): 3.00 3.00

```

```

-----
Name: RA60          From Node: NA60          Length(ft): 1036.00
Group: BASE         To Node: NA70          Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
  Invert(ft): 85.000 85.000      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000 0.000 Exit Loss Coef: 0.000
Main XSec: Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft): Inlet Ctrl Spec: Use dn
Aux XSec1: Stabilizer Option: None
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 10.000 10.000
LtSdSlp(h/v): 3.00 3.00
RtSdSlp(h/v): 3.00 3.00

```

```

-----
Name: RA70          From Node: NA70          Length(ft): 1036.00
Group: BASE         To Node: NA80          Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
Geometry: Trapezoidal Trapezoidal Solution Algorithm: Automatic
  Invert(ft): 85.000 85.000      Flow: Both
TClpInitZ(ft): 9999.000 9999.000 Contraction Coef: 0.000
Manning's N: 0.035000 0.035000 Expansion Coef: 0.000
Top Clip(ft): 0.000 0.000 Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000 0.000 Exit Loss Coef: 0.000
Main XSec: Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft): Inlet Ctrl Spec: Use dn
Aux XSec1: Stabilizer Option: None
AuxElev2(ft):
Aux XSec2:
Top Width(ft):

```

Depth(ft):
 Bot Width(ft): 10.000 10.000
 LtSdSlp(h/v): 3.00 3.00
 RtSdSlp(h/v): 3.00 3.00

```

-----
      Name: RA80      From Node: NA80      Length(ft): 1036.00
      Group: BASE      To Node: NA90      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 85.000      85.000      Flow: Both
      TClpInitZ(ft): 9999.000      9999.000      Contraction Coef: 0.000
      Manning's N: 0.035000      0.035000      Expansion Coef: 0.000
      Top Clip(ft): 0.000      0.000      Entrance Loss Coef: 0.000
      Bot Clip(ft): 0.000      0.000      Exit Loss Coef: 0.000
      Main XSec:      Outlet Ctrl Spec: Use dc or tw
      AuxElev1(ft):      Inlet Ctrl Spec: Use dn
      Aux XSec1:      Stabilizer Option: None
      AuxElev2(ft):
      Aux XSec2:
      Top Width(ft):
      Depth(ft):
      Bot Width(ft): 10.000      10.000
      LtSdSlp(h/v): 3.00      3.00
      RtSdSlp(h/v): 3.00      3.00
  
```

```

-----
      Name: RA90      From Node: NA90      Length(ft): 1036.00
      Group: BASE      To Node: NA100      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 85.000      85.000      Flow: Both
      TClpInitZ(ft): 9999.000      9999.000      Contraction Coef: 0.000
      Manning's N: 0.035000      0.035000      Expansion Coef: 0.000
      Top Clip(ft): 0.000      0.000      Entrance Loss Coef: 0.000
      Bot Clip(ft): 0.000      0.000      Exit Loss Coef: 0.000
      Main XSec:      Outlet Ctrl Spec: Use dc or tw
      AuxElev1(ft):      Inlet Ctrl Spec: Use dn
      Aux XSec1:      Stabilizer Option: None
      AuxElev2(ft):
      Aux XSec2:
      Top Width(ft):
      Depth(ft):
      Bot Width(ft): 10.000      10.000
      LtSdSlp(h/v): 3.00      3.00
      RtSdSlp(h/v): 3.00      3.00
  
```

```

-----
      Name: RB10      From Node: NB10      Length(ft): 850.00
      Group: BASE      To Node: NB20      Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Average Conveyance
      Geometry: Trapezoidal      Trapezoidal      Solution Algorithm: Automatic
      Invert(ft): 90.000      90.000      Flow: Both
      TClpInitZ(ft): 9999.000      9999.000      Contraction Coef: 0.000
      Manning's N: 0.035000      0.035000      Expansion Coef: 0.000
      Top Clip(ft): 0.000      0.000      Entrance Loss Coef: 0.000
  
```


Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 0.100	0.100	
LtSdSlp(h/v): 1.50	1.50	
RtSdSlp(h/v): 1.50	1.50	

Name: RB20	From Node: NB20	Length(ft): 850.00
Group: BASE	To Node: NB30	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 90.000	90.000	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 0.100	0.100	
LtSdSlp(h/v): 1.50	1.50	
RtSdSlp(h/v): 1.50	1.50	

Name: RB30	From Node: NB30	Length(ft): 850.00
Group: BASE	To Node: NB40	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 90.000	90.000	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 0.100	0.100	
LtSdSlp(h/v): 1.50	1.50	
RtSdSlp(h/v): 1.50	1.50	

Name: RB40	From Node: NB40	Length(ft): 540.00
Group: BASE	To Node: NB50	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	90.000	90.000	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	0.100	0.100	
LtSdSlp(h/v):	1.50	1.50	
RtSdSlp(h/v):	1.50	1.50	

Name: RB50	From Node: NB50	Length(ft): 552.00
Group: BASE	To Node: NB60	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	90.000	90.000	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	0.100	0.100	
LtSdSlp(h/v):	1.50	1.50	
RtSdSlp(h/v):	1.50	1.50	

Name: RPRES100	From Node: NPRES100	Length(ft): 2161.00
Group: BASE	To Node: NPRES105	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft):	78.870	81.500	Flow: Both
TClpInitZ(ft):	9999.000	9999.000	Contraction Coef: 0.000
Manning's N:	0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft):	0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft):	0.000	0.000	Exit Loss Coef: 0.000
Main XSec:			Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):			Inlet Ctrl Spec: Use dn
Aux XSec1:			Stabilizer Option: None
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	

RtSdSlp(h/v): 3.00 3.00

```

-----
Name: RPRE105      From Node: NPRES105      Length(ft): 3076.00
Group: BASE        To Node: NPRES115        Count: 1

      UPSTREAM      DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 81.500   80.650
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000   20.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

```

```

-----
Name: RPRE115      From Node: NPRES115      Length(ft): 935.00
Group: BASE        To Node: NPRES120        Count: 1

      UPSTREAM      DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 80.650   80.800
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000   20.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

```

```

-----
Name: RPRE130      From Node: NPRES130      Length(ft): 1134.00
Group: BASE        To Node: NPRES140        Count: 1

      UPSTREAM      DOWNSTREAM
Geometry: Trapezoidal Trapezoidal
Invert(ft): 80.100   77.830
TClpInitZ(ft): 9999.000 9999.000
Manning's N: 0.035000 0.035000
Top Clip(ft): 0.000   0.000
Bot Clip(ft): 0.000   0.000
Main XSec:
AuxElev1(ft):
Aux XSec1:
AuxElev2(ft):
Aux XSec2:
Top Width(ft):
Depth(ft):
Bot Width(ft): 20.000   20.000
LtSdSlp(h/v): 3.00     3.00
RtSdSlp(h/v): 3.00     3.00

Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.000
Expansion Coef: 0.000
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn

```


Aux XSec1:	Stabilizer Option: None	
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	20.000	20.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Name: RPRES150		From Node: NPRES150	Length(ft): 2615.00
Group: BASE		To Node: NPRES160	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance	
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic	
Invert(ft): 82.600	77.050	Flow: Both	
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000	
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000	
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000	
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000	
Main XSec:		Outlet Ctrl Spec: Use dc or tw	
AuxElev1(ft):		Inlet Ctrl Spec: Use dn	
Aux XSec1:		Stabilizer Option: None	
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RPRES170		From Node: NPRES170	Length(ft): 1705.00
Group: BASE		To Node: NPRES180	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance	
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic	
Invert(ft): 77.440	75.600	Flow: Both	
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000	
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000	
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000	
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000	
Main XSec:		Outlet Ctrl Spec: Use dc or tw	
AuxElev1(ft):		Inlet Ctrl Spec: Use dn	
Aux XSec1:		Stabilizer Option: None	
AuxElev2(ft):			
Aux XSec2:			
Top Width(ft):			
Depth(ft):			
Bot Width(ft):	20.000	20.000	
LtSdSlp(h/v):	3.00	3.00	
RtSdSlp(h/v):	3.00	3.00	

Name: RPRES190		From Node: NPRES190	Length(ft): 774.00
Group: BASE		To Node: NPRES200	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance	
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic	

Invert(ft): 75.100	75.900	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 20.000	20.000	
LtSdSlp(h/v): 3.00	3.00	
RtSdSlp(h/v): 3.00	3.00	

Name: RPRE300	From Node: NPRES00	Length(ft): 805.00
Group: BASE	To Node: NPRES30	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 78.810	74.510	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 20.000	20.000	
LtSdSlp(h/v): 3.00	3.00	
RtSdSlp(h/v): 3.00	3.00	

Name: RPRE340	From Node: NPRES40	Length(ft): 1206.00
Group: BASE	To Node: NPRES50	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Trapezoidal	Trapezoidal	Solution Algorithm: Automatic
Invert(ft): 75.000	73.900	Flow: Both
TClpInitZ(ft): 9999.000	9999.000	Contraction Coef: 0.000
Manning's N: 0.035000	0.035000	Expansion Coef: 0.000
Top Clip(ft): 0.000	0.000	Entrance Loss Coef: 0.000
Bot Clip(ft): 0.000	0.000	Exit Loss Coef: 0.000
Main XSec:		Outlet Ctrl Spec: Use dc or tw
AuxElev1(ft):		Inlet Ctrl Spec: Use dn
Aux XSec1:		Stabilizer Option: None
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft): 20.000	20.000	
LtSdSlp(h/v): 3.00	3.00	
RtSdSlp(h/v): 3.00	3.00	

=====

===== Weirs =====

=====

Name: ORIF_A From Node: NPOND
Group: BASE To Node: OUTBOXA
Flow: Both Count: 2
Type: Vertical: Mavis Geometry: Circular

Span(in): 10.00
Rise(in): 10.00
Invert(ft): 81.500
Control Elevation(ft): 81.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: ORIF_B From Node: NPOND
Group: BASE To Node: OUTBOXB
Flow: Both Count: 2
Type: Vertical: Mavis Geometry: Circular

Span(in): 10.00
Rise(in): 10.00
Invert(ft): 81.500
Control Elevation(ft): 81.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: RA120A From Node: NA120
Group: BASE To Node: NA121A
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 24.00
Rise(in): 36.00
Invert(ft): 85.000
Control Elevation(ft): 85.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: RA120B From Node: NA120
Group: BASE To Node: NA121B
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 24.00

Rise(in): 36.00
Invert(ft): 85.000
Control Elevation(ft): 85.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: RB10W From Node: NB10
Group: BASE To Node: NA05
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 0.10
Left Side Slope(h/v): 1.50
Right Side Slope(h/v): 1.50
Invert(ft): 90.000
Control Elevation(ft): 90.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.500
Orifice Discharge Coef: 0.600

Name: RB60 From Node: NB60
Group: BASE To Node: NA120
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 0.10
Left Side Slope(h/v): 1.50
Right Side Slope(h/v): 1.50
Invert(ft): 90.000
Control Elevation(ft): 90.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.500
Orifice Discharge Coef: 0.600

Name: RPONDA From Node: NPOND
Group: BASE To Node: OUTBOXA
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 4.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 84.500
Control Elevation(ft): 84.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000

Top Clip(ft): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: RPONDB From Node: NPOND
Group: BASE To Node: OUTBOXB
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 4.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 84.500
Control Elevation(ft): 84.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.000
Orifice Discharge Coef: 0.600

Name: RPRE200 From Node: NPRES200
Group: BASE To Node: NPRES230
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 55.00
Left Side Slope(h/v): 11.00
Right Side Slope(h/v): 11.00
Invert(ft): 76.000
Control Elevation(ft): 76.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE230 From Node: NPRES230
Group: BASE To Node: TPRES240
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 55.00
Left Side Slope(h/v): 280.00
Right Side Slope(h/v): 280.00
Invert(ft): 76.500
Control Elevation(ft): 76.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE250 From Node: NPRES250
Group: BASE To Node: NPRES115
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 86.000
Control Elevation(ft): 86.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE270 From Node: NPRES270
Group: BASE To Node: NPRES140
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 84.800
Control Elevation(ft): 84.800
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE280 From Node: NPRES280
Group: BASE To Node: NPRES170
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 100.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 81.400
Control Elevation(ft): 81.400
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: RPRE350 From Node: NPRES350
Group: BASE To Node: NPRES370
Flow: Both Count: 1

Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 20.00
Left Side Slope(h/v): 5.00
Right Side Slope(h/v): 5.00
Invert(ft): 74.000
Control Elevation(ft): 74.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

Name: WPRE180 From Node: NPRE180
Group: BASE To Node: NPRE190
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Trapezoidal

Bottom Width(ft): 60.00
Left Side Slope(h/v): 0.00
Right Side Slope(h/v): 0.00
Invert(ft): 79.700
Control Elevation(ft): 79.700
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 2.600
Orifice Discharge Coef: 0.600

=====
==== Hydrology Simulations =====
=====

Name: 100Yr
Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\100Yr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 11.40

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 25Yr
Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\25Yr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.80

Time(hrs)	Print Inc(min)
60.000	5.00

Name: Mean
Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\Mean.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 4.40

Time(hrs)	Print Inc(min)
60.000	5.00

==== Routing Simulations =====
=====

Name: 100Yr Hydrology Sim: 100Yr
Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\100Yr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 100.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 1.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
999.000	15.000

Group	Run
BASE	Yes

Name: 25Yr Hydrology Sim: 25Yr
Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\25Yr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 100.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 1.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
100.000	5.000

Group	Run
BASE	Yes

Name: Mean Hydrology Sim: Mean
 Filename: W:\Projects\2010\10-0249\ICPR\POST\20111101_POST\Mean.I32

 Execute: Yes Restart: No Patch: No
 Alternative: No

 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 60.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 1.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
60.000	5.000

Group	Run
BASE	Yes

ICPR Output File
POST, Mean Annual 24-Hour

			Max Time	Max	Warning	Max Delta	Max Surf	Max Time	Max	Max Time	Max
Name	Group	Simulation	Stage	Stage	Stage	Stage	Area	Inflow	Inflow	Outflow	Outflow
			hrs	ft	ft	ft	ft2	hrs	cfs	hrs	cfs
NA05	BASE	Mean	13.7	88.0	93.0	0.0	12891.0	12.0	39.9	12.1	31.13
NA10	BASE	Mean	13.7	88.0	93.0	0.0	25697.0	12.0	49.5	12.1	31.8
NA100	BASE	Mean	14.4	87.6	93.0	0.0	18654.0	14.0	36.8	14.4	36.76
NA110	BASE	Mean	14.4	87.4	93.0	0.0	9441.0	14.4	42.2	14.4	42.22
NA120	BASE	Mean	12.1	85.9	93.0	0.0	3094.0	12.1	54.2	12.1	54.22
NA121A	BASE	Mean	24.1	83.4	93.0	0.0	120.0	12.1	27.1	12.1	27.1
NA121B	BASE	Mean	24.1	83.4	93.0	0.0	120.0	12.1	27.1	12.1	27.1
NA20	BASE	Mean	14.0	88.0	93.0	0.0	25590.0	12.0	44.3	12.2	29.72
NA30	BASE	Mean	14.0	88.0	93.0	0.0	25523.0	12.0	37.8	12.3	27.51
NA40	BASE	Mean	14.1	88.0	93.0	0.0	25446.0	12.3	34.9	12.4	26.35
NA50	BASE	Mean	14.1	88.0	93.0	0.0	27131.0	12.3	32.5	12.5	24.86
NA60	BASE	Mean	14.1	88.0	93.0	0.0	28820.0	12.3	31.4	12.6	26.57
NA70	BASE	Mean	14.2	87.9	93.0	0.0	28511.0	12.5	30.1	12.7	26.06
NA80	BASE	Mean	14.3	87.9	93.0	0.0	28238.0	12.8	31.4	14.2	30.39
NA90	BASE	Mean	14.3	87.8	93.0	0.0	27683.0	14.0	36.3	14.2	36.1
NB10	BASE	Mean	12.1	92.5	95.0	0.0	3671.0	12.0	11.6	12.0	9.49
NB20	BASE	Mean	12.1	93.4	95.0	0.0	8727.0	11.8	4.6	26.0	0.09
NB30	BASE	Mean	12.1	93.5	95.0	0.0	9108.0	11.9	15.9	12.0	8.68
NB40	BASE	Mean	12.1	93.4	95.0	0.0	7331.0	12.0	18.5	12.1	14.56
NB50	BASE	Mean	12.1	93.3	95.0	0.0	5456.0	12.0	26.1	12.1	24.24
NB60	BASE	Mean	12.1	92.4	95.0	0.0	2313.0	12.1	27.6	12.1	27.44
NPOND	BASE	Mean	27.5	83.4	88.0	0.0	902348.0	12.0	119.7	27.5	12.7
NPRE100	BASE	Mean	14.2	80.8	85.6	0.0	31494.0	12.0	4.8	16.0	2.79
NPRE105	BASE	Mean	13.1	81.8	85.8	0.0	61747.0	11.9	5.5	12.0	0.4
NPRE115	BASE	Mean	13.0	82.0	86.0	0.0	54329.0	12.1	18.1	12.5	4.44
NPRE120	BASE	Mean	13.0	82.0	85.7	0.0	13073.0	12.3	5.5	13.0	4.17
NPRE130	BASE	Mean	12.1	80.3	87.1	0.0	13253.0	12.0	5.3	12.1	4.92
NPRE140	BASE	Mean	24.1	79.9	85.0	0.0	17082.0	13.0	14.4	24.1	14.12
NPRE150	BASE	Mean	12.1	82.8	87.5	0.0	29779.0	12.0	7.7	12.1	5.97
NPRE160	BASE	Mean	16.0	79.6	84.3	0.0	41573.0	12.1	19.2	19.6	15.56
NPRE170	BASE	Mean	15.9	79.6	83.9	0.0	30445.0	14.3	45.0	14.9	42.02
NPRE180	BASE	Mean	15.9	79.5	80.2	0.0	34917.0	14.9	42.3	15.9	41.18
NPRE190	BASE	Mean	15.3	77.4	79.9	0.0	12503.0	15.9	41.3	16.0	41.33

ICPR Output File
POST, Mean Annual 24-Hour

			Max Time	Max	Warning	Max Delta	Max Surf	Max Time	Max	Max Time	Max
Name	Group	Simulation	Stage	Stage	Stage	Stage	Area	Inflow	Inflow	Outflow	Outflow
			hrs	ft	ft	ft	ft2	hrs	cfs	hrs	cfs
NPRES200	BASE	Mean	13.8	77.2	77.0	0.0	11316.0	16.0	41.5	15.9	41.53
NPRES210	BASE	Mean	12.5	79.5	84.0	0.0	64000.0	12.0	17.9	12.5	4.39
NPRES220	BASE	Mean	13.4	77.2	86.0	0.0	1552781.0	12.4	153.2	13.1	88.82
NPRES230	BASE	Mean	13.6	77.1	77.0	0.0	912039.0	13.3	169.2	13.6	166.6
NPRES250	BASE	Mean	12.5	86.2	86.0	0.0	77338.0	12.3	17.8	12.5	16.83
NPRES270	BASE	Mean	12.8	84.9	84.8	0.0	204576.0	12.3	9.3	12.8	6.49
NPRES280	BASE	Mean	14.2	81.7	81.4	0.0	545902.0	13.3	43.8	14.2	36.08
NPRES300	BASE	Mean	12.1	79.1	86.0	0.0	9843.0	12.0	9.1	12.1	8.6
NPRES310	BASE	Mean	15.4	79.5	80.9	0.0	194871.0	13.0	26.1	15.4	12.76
NPRES330	BASE	Mean	12.1	76.5	80.9	0.0	11978.0	12.0	24.4	12.1	22.73
NPRES340	BASE	Mean	14.2	76.2	79.5	0.0	17512.0	12.1	25.2	12.1	24.64
NPRES350	BASE	Mean	13.9	76.1	77.0	0.0	19269.0	12.1	27.2	12.1	26.88
NPRES360	BASE	Mean	12.3	77.2	79.6	0.0	1202.0	12.3	16.5	12.3	16.44
NPRES370	BASE	Mean	13.8	76.1	78.0	0.0	4148539.0	12.6	157.4	13.8	104.17
NTOP10	BASE	Mean	13.4	169.9	175.0	0.0	66416.0	12.2	10.4	13.4	3.69
NTOP20	BASE	Mean	14.8	170.1	175.0	0.0	243524.0	12.3	26.6	14.7	5.3
NTOP30	BASE	Mean	14.1	169.9	175.0	0.0	93943.0	12.3	11.7	14.0	3.96
NTOP40	BASE	Mean	15.8	170.1	175.0	0.0	351774.0	12.4	31.6	15.7	5.7
NTOP50	BASE	Mean	12.7	169.9	175.0	0.0	28455.0	12.1	7.7	12.7	3.92
NTOP60	BASE	Mean	14.0	170.0	175.0	0.0	150087.0	12.3	20.0	13.9	4.76
NTOP70	BASE	Mean	12.7	169.8	175.0	0.0	27180.0	12.1	6.8	12.7	3.38
NTOP80	BASE	Mean	14.3	170.0	175.0	0.0	178861.0	12.3	21.8	14.2	4.95
OUTBOXA	BASE	Mean	27.5	81.2	88.0	0.0	258.0	27.5	6.4	27.5	6.35
OUTBOXB	BASE	Mean	27.5	81.2	88.0	0.0	258.0	27.5	6.4	27.5	6.35
TPRES240	BASE	Mean	0.0	77.0	77.0	0.0	0.0	13.6	166.6	0.0	0
TPRES380	BASE	Mean	0.0	76.0	76.0	0.0	1440.0	13.8	104.2	0.0	0
TW	BASE	Mean	0.0	71.0	71.0	0.0	212.0	12.5	4.4	0.0	0

**ICPR Output File
POST, 25-Year 24-Hour**

			Max Time	Max	Warning	Max Delta	Max Surf	Max Time	Max	Max Time	Max
Name	Group	Simulation	Stage	Stage	Stage	Stage	Area	Inflow	Inflow	Outflow	Outflow
			hrs	ft	ft	ft	ft2	hrs	cfs	hrs	cfs
NA05	BASE	25Yr	14.6	90.6	93.0	0.0	19908.0	12.0	106.4	12.1	86.3
NA10	BASE	25Yr	14.6	90.6	93.0	0.0	39757.0	12.0	133.9	12.1	92.94
NA100	BASE	25Yr	14.6	90.5	93.0	0.0	31825.0	14.5	84.6	15.0	84.85
NA110	BASE	25Yr	14.6	90.5	93.0	0.0	19018.0	14.8	98.4	14.8	98.53
NA120	BASE	25Yr	14.6	90.4	93.0	0.0	9482.0	12.0	124.1	12.6	118.09
NA121A	BASE	25Yr	19.7	87.1	93.0	0.0	120.0	12.6	59.0	12.6	59.02
NA121B	BASE	25Yr	19.7	87.1	93.0	0.0	120.0	12.6	59.0	12.6	59.02
NA20	BASE	25Yr	14.6	90.6	93.0	0.0	39679.0	12.0	127.9	12.1	90.02
NA30	BASE	25Yr	14.6	90.6	93.0	0.0	39658.0	12.0	117.5	12.1	83.35
NA40	BASE	25Yr	14.6	90.6	93.0	0.0	39634.0	12.0	112.7	12.1	79.11
NA50	BASE	25Yr	14.6	90.6	93.0	0.0	42390.0	12.0	106.9	12.2	70.92
NA60	BASE	25Yr	14.6	90.6	93.0	0.0	45195.0	12.0	105.1	12.2	67.23
NA70	BASE	25Yr	14.6	90.6	93.0	0.0	45049.0	12.0	100.8	12.3	60.69
NA80	BASE	25Yr	14.6	90.6	93.0	0.0	45014.0	12.0	100.6	15.0	69.23
NA90	BASE	25Yr	14.6	90.5	93.0	0.0	44850.0	12.0	95.3	14.8	83.28
NB10	BASE	25Yr	12.0	93.8	95.0	0.0	5326.0	12.0	27.2	12.0	23.67
NB20	BASE	25Yr	12.1	94.8	95.0	0.0	12276.0	11.6	6.9	16.8	0.68
NB30	BASE	25Yr	12.1	94.9	95.0	0.0	12721.0	11.9	35.4	12.0	23.51
NB40	BASE	25Yr	12.1	94.8	95.0	0.0	10249.0	12.0	46.7	12.1	40.6
NB50	BASE	25Yr	12.1	94.7	95.0	0.0	7684.0	12.0	71.1	12.1	67.98
NB60	BASE	25Yr	12.1	93.6	95.0	0.0	3363.0	12.0	77.1	12.1	76.66
NPOND	BASE	25Yr	25.0	85.9	88.0	0.0	943271.0	12.0	251.5	25.0	56.36
NPRE100	BASE	25Yr	13.7	82.4	85.6	0.0	40329.0	12.0	9.7	16.2	13.78
NPRE105	BASE	25Yr	13.7	82.4	85.8	0.0	73280.0	11.9	3.6	8.8	0.07
NPRE115	BASE	25Yr	12.7	82.7	86.0	0.0	61708.0	12.0	26.9	12.4	8.72
NPRE120	BASE	25Yr	12.7	82.7	85.7	0.0	14940.0	12.3	11.4	12.7	8.84
NPRE130	BASE	25Yr	24.9	81.4	87.1	0.0	17846.0	12.0	13.1	12.6	44.13
NPRE140	BASE	25Yr	24.9	81.4	85.0	0.0	21973.0	12.6	71.3	25.0	58.24
NPRE150	BASE	25Yr	12.1	82.9	87.5	0.0	32411.0	12.0	15.4	12.1	12.6
NPRE160	BASE	25Yr	14.3	80.8	84.3	0.0	48842.0	24.9	58.3	25.3	58.51
NPRE170	BASE	25Yr	14.2	80.7	83.9	0.0	35672.0	14.1	129.7	14.2	129.45
NPRE180	BASE	25Yr	14.2	80.5	80.2	0.0	39867.0	14.1	130.0	14.2	129.95
NPRE190	BASE	25Yr	14.2	78.3	79.9	0.0	14287.0	14.2	130.3	14.2	130.26

ICPR Output File
POST, 25-Year 24-Hour

			Max Time	Max	Warning	Max Delta	Max Surf	Max Time	Max	Max Time	Max
Name	Group	Simulation	Stage	Stage	Stage	Stage	Area	Inflow	Inflow	Outflow	Outflow
			hrs	ft	ft	ft	ft2	hrs	cfs	hrs	cfs
NPRES200	BASE	25Yr	14.1	77.5	77.0	0.0	12428.0	14.2	130.6	14.2	130.71
NPRES210	BASE	25Yr	12.6	80.1	84.0	0.0	94194.0	12.0	37.9	12.6	7.92
NPRES220	BASE	25Yr	13.6	77.6	86.0	0.0	2135726.0	12.4	368.6	13.5	174.53
NPRES230	BASE	25Yr	13.9	77.3	77.0	0.0	1042472.0	13.6	416.6	13.9	412.27
NPRES250	BASE	25Yr	12.4	86.3	86.0	0.0	97383.0	12.3	42.7	12.4	40.62
NPRES270	BASE	25Yr	12.7	85.0	84.8	0.0	232684.0	12.3	22.8	12.7	17.36
NPRES280	BASE	25Yr	14.0	81.9	81.4	0.0	726877.0	13.2	118.0	14.0	99.86
NPRES300	BASE	25Yr	12.1	79.3	86.0	0.0	10626.0	12.0	21.3	12.1	20.56
NPRES310	BASE	25Yr	17.9	80.7	80.9	0.0	615394.0	12.9	73.5	17.9	18
NPRES330	BASE	25Yr	12.1	77.2	80.9	0.0	13416.0	12.0	53.5	12.1	49.31
NPRES340	BASE	25Yr	12.2	76.6	79.5	0.0	18516.0	12.1	54.3	12.2	52.75
NPRES350	BASE	25Yr	14.3	76.4	77.0	0.0	20191.0	12.1	57.7	12.1	56.85
NPRES360	BASE	25Yr	12.4	78.1	79.6	0.0	7835.0	12.3	45.4	12.4	45.05
NPRES370	BASE	25Yr	14.3	76.3	78.0	0.0	4315116.0	12.6	385.4	14.3	193.93
NTOP10	BASE	25Yr	13.3	170.5	175.0	0.0	118758.0	12.2	28.0	13.3	9.93
NTOP20	BASE	25Yr	14.7	170.7	175.0	0.0	442576.0	12.3	71.3	14.6	13.63
NTOP30	BASE	25Yr	13.9	170.5	175.0	0.0	169459.0	12.3	31.5	13.9	10.56
NTOP40	BASE	25Yr	15.6	170.8	175.0	0.0	634663.0	12.4	85.5	15.5	14.47
NTOP50	BASE	25Yr	12.7	170.5	175.0	0.0	52495.0	12.1	20.8	12.7	10.42
NTOP60	BASE	25Yr	13.9	170.6	175.0	0.0	275084.0	12.3	53.5	13.9	12.44
NTOP70	BASE	25Yr	12.7	170.4	175.0	0.0	47469.0	12.1	18.2	12.7	9.23
NTOP80	BASE	25Yr	14.2	170.7	175.0	0.0	327478.0	12.3	58.7	14.2	12.84
OUTBOXA	BASE	25Yr	25.0	82.7	88.0	0.0	154.0	25.0	28.2	25.0	28.18
OUTBOXB	BASE	25Yr	25.0	82.7	88.0	0.0	154.0	25.0	28.2	25.0	28.18
TPRES240	BASE	25Yr	0.0	77.0	77.0	0.0	0.0	13.9	412.3	0.0	0
TPRES380	BASE	25Yr	0.0	76.0	76.0	0.0	1440.0	14.3	193.9	0.0	0
TW	BASE	25Yr	0.0	71.0	71.0	0.0	212.0	12.6	7.9	0.0	0

Post Mass Balance Report

25Yr 24 Hr Storm Event

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	0	0	0	0	0	0
25Yr	0.08	41.5	-223.9	265.4	0	0
25Yr	0.17	178.8	-772.8	951.5	0	0
25Yr	0.25	415.3	-1523	1938.2	0	0
25Yr	0.33	749.2	-2391	3140.3	0	0
25Yr	0.42	1194.2	-3356.9	4551.1	0	0
25Yr	0.5	1750.2	-4389.1	6139.3	0	0
25Yr	0.58	2405.8	-5466.1	7871.9	0	0
25Yr	0.67	3148	-6573.6	9721.7	0	0
25Yr	0.75	3965.1	-7702.8	11667.8	0	0
25Yr	0.83	4846.4	-8859.2	13705.7	0	0
25Yr	0.92	5782.6	-10053.2	15835.9	0	0
25Yr	1	6766.1	-11277.4	18043.6	0	0
25Yr	1.08	7806.7	-12506.8	20313.6	0	0
25Yr	1.17	8915.3	-13699.1	22614.4	0	0
25Yr	1.25	10081.4	-14810.7	24892.1	0	0
25Yr	1.33	11292.4	-15778.1	27070.4	0	0
25Yr	1.42	12540.7	-16538.8	29079.5	0	0
25Yr	1.5	13821	-17053.6	30874.6	0	0
25Yr	1.58	15129.2	-17368	32497.3	0	0
25Yr	1.67	16463.3	-17540.7	34004	0	0
25Yr	1.75	17822	-17612.3	35434.3	0	0
25Yr	1.83	19204	-17613.3	36817.3	0	0
25Yr	1.92	20608.1	-17566	38174.2	0	0
25Yr	2	22032.9	-17484.8	39517.7	0	0
25Yr	2.08	23494	-17378.6	40872.6	0	0
25Yr	2.17	25006.3	-17252.1	42258.3	0	0
25Yr	2.25	26560.4	-17110.1	43670.5	0	0
25Yr	2.33	28144.7	-16955.4	45100.2	0	0
25Yr	2.42	29753.4	-16790.5	46543.9	0	0
25Yr	2.5	31382.6	-16617.1	47999.7	0	0
25Yr	2.58	33028.8	-16436.4	49465.2	0	0
25Yr	2.67	34689.7	-16249.1	50938.8	0	0
25Yr	2.75	36364.2	-16055.7	52419.9	0	0
25Yr	2.83	38051.9	-15855.9	53907.7	0	0
25Yr	2.92	39752.9	-15649.4	55402.3	0	0
25Yr	3	41467.2	-15436	56903.2	0	0
25Yr	3.08	43217.8	-15213.7	58431.5	0	0
25Yr	3.17	45039.9	-14979.3	60019.2	0	0
25Yr	3.25	46951.5	-14731.4	61682.9	0	0
25Yr	3.33	48959.3	-14471.1	63430.4	0	0
25Yr	3.42	51065.6	-14193.5	65259.1	0	0
25Yr	3.5	53272.5	-13889.3	67161.8	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	3.58	55583.4	-13552	69135.4	0	0
25Yr	3.67	58002.9	-13175	71177.9	0	0
25Yr	3.75	60537.2	-12751.6	73288.8	0	0
25Yr	3.83	63193	-12279.5	75472.5	0	0
25Yr	3.92	65976.8	-11748.5	77725.3	0	0
25Yr	4	68894.4	-11152.7	80047	0	0
25Yr	4.08	72016.7	-10484.5	82501.2	0	0
25Yr	4.17	75407.7	-9732.9	85140.5	0	0
25Yr	4.25	79038.7	-8888.7	87927.4	0	0
25Yr	4.33	82881.5	-7945.4	90826.9	0	0
25Yr	4.42	86933.6	-6897	93830.6	0	0
25Yr	4.5	91198.8	-5737.3	96936.1	0	0
25Yr	4.58	95681.8	-4460.6	100142.3	0	0
25Yr	4.67	100388.9	-3061.3	103450.3	0	0
25Yr	4.75	105327.6	-1534.6	106862.2	0	0
25Yr	4.83	110505.8	125.7	110380.1	0	0
25Yr	4.92	115930.7	1926.1	114004.6	0	0
25Yr	5	121608.6	3872.3	117736.4	0	0
25Yr	5.08	127592.7	5969.7	121623	0	0
25Yr	5.17	133927.3	8225.2	125702.1	0	0
25Yr	5.25	140590.7	10645.1	129945.6	0	0
25Yr	5.33	147564.8	13234.2	134330.6	0	0
25Yr	5.42	154849.2	15997	138852.2	0	0
25Yr	5.5	162445.4	18937.3	143508.1	0	0
25Yr	5.58	170354.3	22058.4	148295.9	0	0
25Yr	5.67	178576.8	25363.7	153213.2	0	0
25Yr	5.75	187114.1	28856	158258.1	0	0
25Yr	5.83	195967.5	32537.7	163429.8	0	0
25Yr	5.92	205137.9	36410.3	168727.5	0	0
25Yr	6	214625.8	40474.8	174151	0	0
25Yr	6.08	224606	44732.6	179873.3	0	0
25Yr	6.17	235218	49190	186027.9	0	0
25Yr	6.25	246361.3	53854.9	192506.4	0	0
25Yr	6.33	257961.3	58734.2	199227.1	0	0
25Yr	6.42	270000.6	63831.7	206168.9	0	0
25Yr	6.5	282493.4	69161.9	213331.5	0	0
25Yr	6.58	295408.5	74720.7	220687.8	0	0
25Yr	6.67	308764.9	80524.6	228240.3	0	0
25Yr	6.75	322540.4	86570.4	235970.1	0	0
25Yr	6.83	336737.9	92863.6	243874.4	0	0
25Yr	6.92	351328.4	99395	251933.5	0	0
25Yr	7	366383.3	106199.6	260183.7	0	0
25Yr	7.08	382025.3	113243.1	268782.1	0	0
25Yr	7.17	398442.5	120544	277898.6	0	0
25Yr	7.25	415512.3	128108.8	287403.5	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	7.33	433142.5	135943.6	297198.9	0	0
25Yr	7.42	451319.4	144054.4	307265	0	0
25Yr	7.5	470036.6	152447.9	317588.7	0	0
25Yr	7.58	489284.8	161130.7	328154.1	0	0
25Yr	7.67	509054	170108.7	338945.3	0	0
25Yr	7.75	529335.7	179386.6	349949.1	0	0
25Yr	7.83	550123	188967.7	361155.3	0	0
25Yr	7.92	571408.6	198854.4	372554.2	0	0
25Yr	8	593184.9	209047.7	384137.2	0	0
25Yr	8.08	615752.6	219548.6	396204	0	0
25Yr	8.17	639337.7	230362.6	408975.1	0	0
25Yr	8.25	663750.8	241497	422253.9	0	0
25Yr	8.33	688861.7	252958.4	435903.3	0	0
25Yr	8.42	714653	264754.5	449898.5	0	0
25Yr	8.5	741119.2	276893.9	464225.2	0	0
25Yr	8.58	768571.7	289386.5	479185.1	0	0
25Yr	8.67	797242.5	302246.3	494996.2	0	0
25Yr	8.75	826927.8	315488.1	511439.7	0	0
25Yr	8.83	857486.8	329124.9	528361.9	0	0
25Yr	8.92	888899.3	343169.7	545729.6	0	0
25Yr	9	921152.5	357634.8	563517.7	0	0
25Yr	9.08	954398.7	372532.2	581866.5	0	0
25Yr	9.17	988745.9	387874.5	600871.4	0	0
25Yr	9.25	1024073	403673.2	620399.5	0	0
25Yr	9.33	1060295	419937.8	640357.1	0	0
25Yr	9.42	1097391	436676.9	660713.8	0	0
25Yr	9.5	1135346	453897	681448.6	0	0
25Yr	9.58	1174671	471605.1	703066.3	0	0
25Yr	9.67	1215746	489812.6	725933.1	0	0
25Yr	9.75	1258234	508532.1	749701.3	0	0
25Yr	9.83	1301909	527774.6	774134.1	0	0
25Yr	9.92	1346742	547550.6	799191	0	0
25Yr	10	1392717	567871.7	824845.1	0	0
25Yr	10.08	1440743	588751.5	851991.1	0	0
25Yr	10.17	1491487	610212.2	881274.6	0	0
25Yr	10.25	1544365	632278.3	912086.4	0	0
25Yr	10.33	1598994	654972.2	944022.2	0	0
25Yr	10.42	1655334	678317.1	977016.8	0	0
25Yr	10.5	1713370	702335.4	1011034.9	0	0
25Yr	10.58	1774413	727052.3	1047360.6	0	0
25Yr	10.67	1839421	752502.3	1086919	0	0
25Yr	10.75	1907549	778732.7	1128816.5	0	0
25Yr	10.83	1978239	805805.3	1172433.8	0	0
25Yr	10.92	2051431	833740.2	1217690.3	0	0
25Yr	11	2127084	862545	1264538.7	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	11.08	2205530	892241.2	1313289.2	0	0
25Yr	11.17	2286985	922860	1364125.5	0	0
25Yr	11.25	2371176	954432.1	1416744.3	0	0
25Yr	11.33	2464486	986996.3	1477489.7	0	0
25Yr	11.42	2571742	1020639	1551103.8	0	0
25Yr	11.5	2689325	1055459	1633866.5	0	0
25Yr	11.58	2848348	1091603	1756745	0	0
25Yr	11.67	3074405	1129461	1944944.8	0	0
25Yr	11.75	3348917	1169515	2179402	0	0
25Yr	11.83	3693417	1212280	2481137.4	0	0
25Yr	11.92	4133475	1258487	2874988.5	0	0
25Yr	12	4649972	1308941	3341031.4	0	0
25Yr	12.08	5177649	1364342	3813307.5	0	0
25Yr	12.17	5676752	1425104	4251647.8	0	0
25Yr	12.25	6176758	1491569	4685189.1	0	0
25Yr	12.33	6674349	1564112	5110237.3	0	0
25Yr	12.42	7152637	1643010	5509627	0	0
25Yr	12.5	7620264	1728471	5891793.6	0	0
25Yr	12.58	8076195	1820993	6255201.9	0	0
25Yr	12.67	8514885	1921116	6593769.2	0	0
25Yr	12.75	8939311	2029028	6910282.7	0	0
25Yr	12.83	9349256	2144568	7204687.3	0	0
25Yr	12.92	9743175	2267300	7475874.9	0	0
25Yr	13	10122390	2396598	7725792.1	0	0
25Yr	13.08	10486504	2531756	7954747.7	0	0
25Yr	13.17	10834898	2672036	8162862.4	0	0
25Yr	13.25	11169063	2816725	8352337.2	0	0
25Yr	13.33	11490313	2965162	8525150.7	0	0
25Yr	13.42	11799467	3116732	8682735.1	0	0
25Yr	13.5	12097273	3270883	8826390.1	0	0
25Yr	13.58	12382973	3427113	8955860.3	0	0
25Yr	13.67	12656195	3584972	9071222.5	0	0
25Yr	13.75	12918545	3744054	9174490.9	0	0
25Yr	13.83	13171268	3903998	9267269.5	0	0
25Yr	13.92	13414986	4064489	9350497.5	0	0
25Yr	14	13650236	4225252	9424983.7	0	0
25Yr	14.08	13876810	4386061	9490749	0	0
25Yr	14.17	14094662	4546722	9547940.3	0	0
25Yr	14.25	14304681	4707070	9597610.5	0	0
25Yr	14.33	14507585	4866966	9640619.4	0	0
25Yr	14.42	14703829	5026288	9677541.7	0	0
25Yr	14.5	14893819	5184927	9708891.5	0	0
25Yr	14.58	15077269	5342783	9734486	0	0
25Yr	14.67	15254070	5499758	9754311.7	0	0
25Yr	14.75	15425002	5655763	9769238.8	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	14.83	15590625	5810719	9779906	0	0
25Yr	14.92	15751210	5964562	9786647.2	0	0
25Yr	15	15907008	6117233	9789775.9	0	0
25Yr	15.08	16058053	6268678	9789375	0	0
25Yr	15.17	16204444	6418852	9785591.8	0	0
25Yr	15.25	16346606	6567717	9778888.9	0	0
25Yr	15.33	16484899	6715236	9769663.3	0	0
25Yr	15.42	16619583	6861378	9758205	0	0
25Yr	15.5	16750868	7006114	9744753.5	0	0
25Yr	15.58	16878450	7149421	9729028.8	0	0
25Yr	15.67	17002134	7291273	9710861.3	0	0
25Yr	15.75	17122341	7431650	9690691.2	0	0
25Yr	15.83	17239356	7570535	9668820.9	0	0
25Yr	15.92	17353312	7707916	9645395.8	0	0
25Yr	16	17464348	7843790	9620557.7	0	0
25Yr	16.08	17572374	7978158	9594215.8	0	0
25Yr	16.17	17677403	8111024	9566379.4	0	0
25Yr	16.25	17779800	8242395	9537404.2	0	0
25Yr	16.33	17879861	8372282	9507579.3	0	0
25Yr	16.42	17977755	8500694	9477061.7	0	0
25Yr	16.5	18073616	8627641	9445974.9	0	0
25Yr	16.58	18167346	8753133	9414213.3	0	0
25Yr	16.67	18258898	8877177	9381720.7	0	0
25Yr	16.75	18348530	8999781	9348749.7	0	0
25Yr	16.83	18436447	9120951	9315495.3	0	0
25Yr	16.92	18522751	9240697	9282054.8	0	0
25Yr	17	18607535	9359026	9248509.5	0	0
25Yr	17.08	18690875	9475948	9214926.1	0	0
25Yr	17.17	18772835	9591475	9181360.5	0	0
25Yr	17.25	18853480	9705616	9147864.4	0	0
25Yr	17.33	18932862	9818382	9114479.8	0	0
25Yr	17.42	19011026	9929788	9081238.7	0	0
25Yr	17.5	19088010	10039846	9048164.6	0	0
25Yr	17.58	19163372	10148570	9014802.1	0	0
25Yr	17.67	19236791	10255976	8980815.5	0	0
25Yr	17.75	19308582	10362074	8946507.9	0	0
25Yr	17.83	19378962	10466880	8912082.7	0	0
25Yr	17.92	19447969	10570404	8877565.1	0	0
25Yr	18	19515641	10672661	8842979.1	0	0
25Yr	18.08	19582288	10773665	8808622.7	0	0
25Yr	18.17	19648182	10873431	8774751.5	0	0
25Yr	18.25	19713270	10971976	8741294.1	0	0
25Yr	18.33	19777529	11069317	8708211.6	0	0
25Yr	18.42	19841018	11165472	8675546	0	0
25Yr	18.5	19903792	11260456	8643336	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	18.58	19965411	11354286	8611125.3	0	0
25Yr	18.67	20025560	11446977	8578583.1	0	0
25Yr	18.75	20084558	11538542	8546015.8	0	0
25Yr	18.83	20142604	11628993	8513610.4	0	0
25Yr	18.92	20199722	11718345	8481376.4	0	0
25Yr	19	20255927	11806611	8449316.4	0	0
25Yr	19.08	20311489	11893802	8417687.6	0	0
25Yr	19.17	20366617	11979931	8386685.6	0	0
25Yr	19.25	20421196	12065012	8356183.3	0	0
25Yr	19.33	20475169	12149059	8326110.1	0	0
25Yr	19.42	20528568	12232086	8296482	0	0
25Yr	19.5	20581424	12314109	8267314.2	0	0
25Yr	19.58	20633523	12395147	8238376.1	0	0
25Yr	19.67	20684716	12475218	8209498.6	0	0
25Yr	19.75	20735171	12554342	8180829.4	0	0
25Yr	19.83	20784996	12632540	8152456.4	0	0
25Yr	19.92	20834211	12709833	8124378.2	0	0
25Yr	20	20882828	12786239	8096588.7	0	0
25Yr	20.08	20930622	12861777	8068845.1	0	0
25Yr	20.17	20977445	12936462	8040983.9	0	0
25Yr	20.25	21023477	13010306	8013171	0	0
25Yr	20.33	21068833	13083322	7985510.3	0	0
25Yr	20.42	21113540	13155522	7958017.5	0	0
25Yr	20.5	21157623	13226916	7930707.4	0	0
25Yr	20.58	21201116	13297515	7903600.8	0	0
25Yr	20.67	21244048	13367330	7876718.1	0	0
25Yr	20.75	21286446	13436371	7850075.1	0	0
25Yr	20.83	21328335	13504650	7823685.4	0	0
25Yr	20.92	21369738	13572177	7797560.3	0	0
25Yr	21	21410675	13638965	7771710	0	0
25Yr	21.08	21451165	13705024	7746141.1	0	0
25Yr	21.17	21491224	13770367	7720857	0	0
25Yr	21.25	21530868	13835006	7695862	0	0
25Yr	21.33	21570115	13898954	7671161.1	0	0
25Yr	21.42	21608982	13962225	7646757	0	0
25Yr	21.5	21647486	14024832	7622653.6	0	0
25Yr	21.58	21685652	14086794	7598858.6	0	0
25Yr	21.67	21723509	14148129	7575380.7	0	0
25Yr	21.75	21761083	14208859	7552224.5	0	0
25Yr	21.83	21798395	14269006	7529389.2	0	0
25Yr	21.92	21835461	14328589	7506871.5	0	0
25Yr	22	21872294	14387629	7484665.7	0	0
25Yr	22.08	21908906	14446142	7462764.2	0	0
25Yr	22.17	21945305	14504146	7441158.6	0	0
25Yr	22.25	21981497	14561657	7419840.4	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	22.33	22017491	14618688	7398803.1	0	0
25Yr	22.42	22053294	14675253	7378041.8	0	0
25Yr	22.5	22088916	14731363	7357552.6	0	0
25Yr	22.58	22124132	14787032	7337100.5	0	0
25Yr	22.67	22158790	14842270	7316520.3	0	0
25Yr	22.75	22193049	14897087	7295962.1	0	0
25Yr	22.83	22227007	14951492	7275515.4	0	0
25Yr	22.92	22260674	15005492	7255182.7	0	0
25Yr	23	22294058	15059093	7234964.7	0	0
25Yr	23.08	22327164	15112301	7214863.8	0	0
25Yr	23.17	22360006	15165118	7194887.6	0	0
25Yr	23.25	22392600	15217549	7175050.2	0	0
25Yr	23.33	22424959	15269597	7155362.2	0	0
25Yr	23.42	22457096	15321264	7135832.2	0	0
25Yr	23.5	22489023	15372556	7116466.8	0	0
25Yr	23.58	22520512	15423476	7097035.6	0	0
25Yr	23.67	22551402	15474030	7077372.5	0	0
25Yr	23.75	22581848	15524220	7057628.5	0	0
25Yr	23.83	22611946	15574049	7037897.4	0	0
25Yr	23.92	22641706	15623519	7018186.6	0	0
25Yr	24	22671125	15672634	6998490.1	0	0
25Yr	24.08	22698971	15721393	6977578	0	0
25Yr	24.17	22724372	15769787	6954585.1	0	0
25Yr	24.25	22748085	15817800	6930284.9	0	0
25Yr	24.33	22770573	15865415	6905158.4	0	0
25Yr	24.42	22791874	15912608	6879265.3	0	0
25Yr	24.5	22812002	15959355	6852646.9	0	0
25Yr	24.58	22831002	16005626	6825375.4	0	0
25Yr	24.67	22848928	16051390	6797537.9	0	0
25Yr	24.75	22865836	16096617	6769219.5	0	0
25Yr	24.83	22881775	16141281	6740494.5	0	0
25Yr	24.92	22896794	16185357	6711436.5	0	0
25Yr	25	22910948	16228828	6682120.1	0	0
25Yr	25.08	22924292	16271679	6652612.6	0	0
25Yr	25.17	22936873	16313901	6622972.1	0	0
25Yr	25.25	22948738	16355486	6593252.5	0	0
25Yr	25.33	22959935	16396431	6563504.3	0	0
25Yr	25.42	22970508	16436736	6533772.1	0	0
25Yr	25.5	22980496	16476403	6504093.7	0	0
25Yr	25.58	22989935	16515435	6474499.9	0	0
25Yr	25.67	22998855	16553837	6445018.1	0	0
25Yr	25.75	23007291	16591618	6415673.7	0	0
25Yr	25.83	23015275	16628784	6386490.5	0	0
25Yr	25.92	23022834	16665346	6357487.7	0	0
25Yr	26	23029994	16701314	6328679.9	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	26.08	23036778	16736699	6300079.2	0	0
25Yr	26.17	23043208	16771512	6271695.6	0	0
25Yr	26.25	23049303	16805766	6243537.4	0	0
25Yr	26.33	23055083	16839471	6215611.9	0	0
25Yr	26.42	23060567	16872641	6187925.7	0	0
25Yr	26.5	23065772	16905288	6160483.7	0	0
25Yr	26.58	23070713	16937423	6133289.8	0	0
25Yr	26.67	23075406	16969059	6106346.9	0	0
25Yr	26.75	23079866	17000210	6079656.4	0	0
25Yr	26.83	23084105	17030886	6053218.5	0	0
25Yr	26.92	23088134	17061102	6027031.7	0	0
25Yr	27	23091964	17090870	6001094	0	0
25Yr	27.08	23095605	17120202	5975403	0	0
25Yr	27.17	23099069	17149113	5949956.4	0	0
25Yr	27.25	23102364	17177613	5924751.1	0	0
25Yr	27.33	23105499	17205716	5899783.6	0	0
25Yr	27.42	23108484	17233434	5875049.8	0	0
25Yr	27.5	23111326	17260781	5850544.9	0	0
25Yr	27.58	23114031	17287767	5826263.8	0	0
25Yr	27.67	23116607	17314406	5802200.8	0	0
25Yr	27.75	23119059	17340708	5778350.6	0	0
25Yr	27.83	23121393	17366686	5754707.7	0	0
25Yr	27.92	23123616	17392349	5731266.9	0	0
25Yr	28	23125734	17417711	5708022.8	0	0
25Yr	28.08	23127751	17442781	5684970.3	0	0
25Yr	28.17	23129674	17467570	5662104.5	0	0
25Yr	28.25	23131509	17492088	5639420.8	0	0
25Yr	28.33	23133260	17516345	5616914.7	0	0
25Yr	28.42	23134933	17540352	5594580.4	0	0
25Yr	28.5	23136529	17564117	5572411.9	0	0
25Yr	28.58	23138054	17587650	5550403.5	0	0
25Yr	28.67	23139508	17610958	5528549.9	0	0
25Yr	28.75	23140896	17634050	5506845.8	0	0
25Yr	28.83	23142220	17656933	5485286.4	0	0
25Yr	28.92	23143482	17679615	5463866.7	0	0
25Yr	29	23144685	17702103	5442582.2	0	0
25Yr	29.08	23145832	17724404	5421428	0	0
25Yr	29.17	23146924	17746524	5400399.6	0	0
25Yr	29.25	23147963	17768470	5379492.6	0	0
25Yr	29.33	23148951	17790248	5358703.3	0	0
25Yr	29.42	23149890	17811862	5338028.3	0	0
25Yr	29.5	23150782	17833317	5317464.8	0	0
25Yr	29.58	23151629	17854619	5297010	0	0
25Yr	29.67	23152432	17875770	5276662.2	0	0
25Yr	29.75	23153194	17896774	5256419.3	0	0

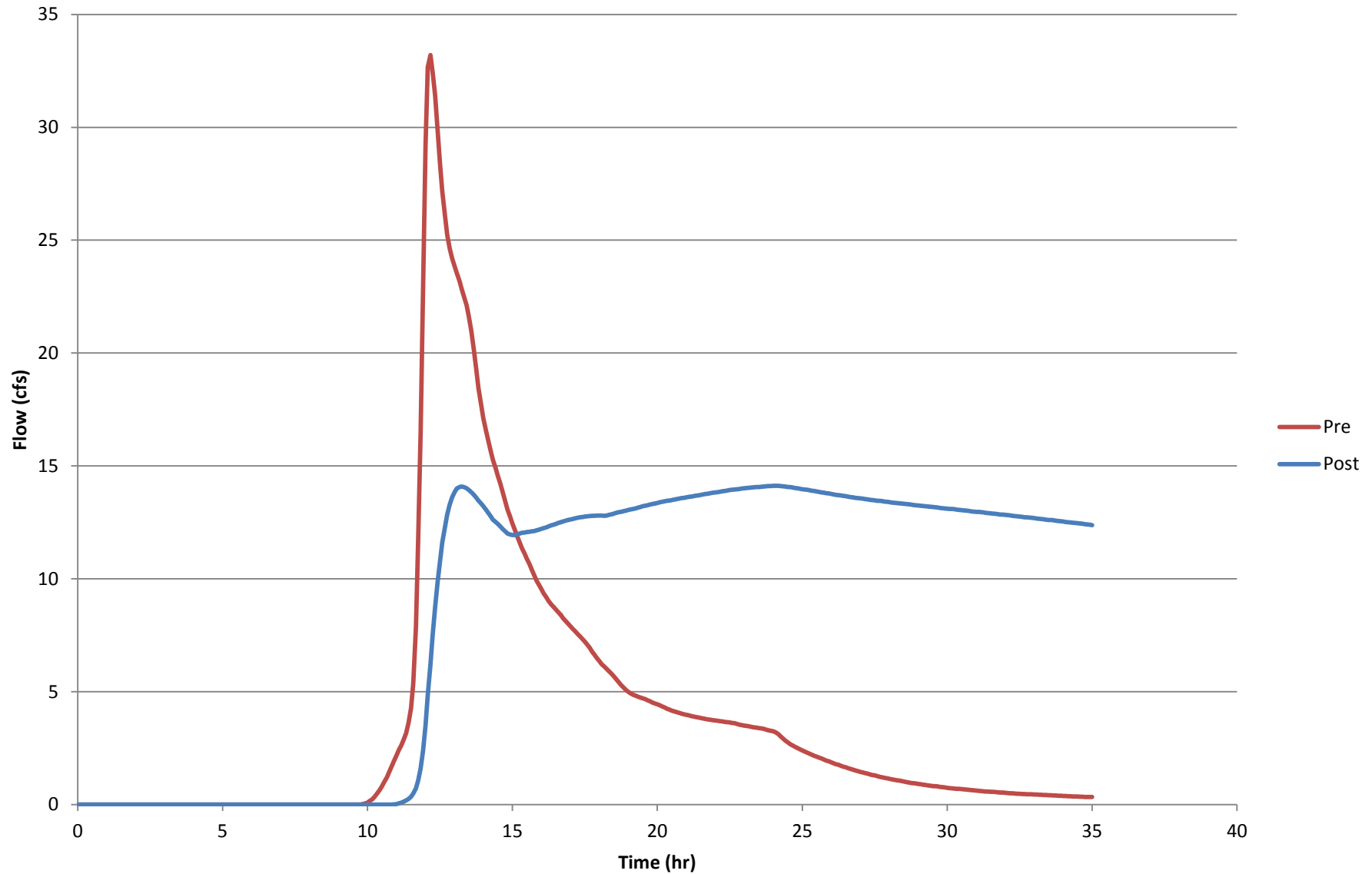
Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	29.83	23153916	17917636	5236279.5	0	0
25Yr	29.92	23154600	17938359	5216240.7	0	0
25Yr	30	23155248	17958947	5196301.3	0	0
25Yr	30.08	23155861	17979401	5176460.4	0	0
25Yr	30.17	23156443	17999724	5156718.2	0	0
25Yr	30.25	23156993	18019919	5137074.9	0	0
25Yr	30.33	23157515	18039985	5117530.6	0	0
25Yr	30.42	23158009	18059924	5098085.8	0	0
25Yr	30.5	23158476	18079735	5078741.2	0	0
25Yr	30.58	23158918	18099420	5059497.9	0	0
25Yr	30.67	23159334	18118977	5040356.8	0	0
25Yr	30.75	23159727	18138407	5021319	0	0
25Yr	30.83	23160096	18157710	5002385.8	0	0
25Yr	30.92	23160444	18176885	4983558.2	0	0
25Yr	31	23160770	18195933	4964837.2	0	0
25Yr	31.08	23161076	18214852	4946224	0	0
25Yr	31.17	23161363	18233643	4927719.7	0	0
25Yr	31.25	23161631	18252306	4909325	0	0
25Yr	31.33	23161882	18270841	4891041	0	0
25Yr	31.42	23162115	18289247	4872868.2	0	0
25Yr	31.5	23162333	18307525	4854807.3	0	0
25Yr	31.58	23162535	18325676	4836859.2	0	0
25Yr	31.67	23162722	18343698	4819024.3	0	0
25Yr	31.75	23162897	18361593	4801303.3	0	0
25Yr	31.83	23163058	18379361	4783696.8	0	0
25Yr	31.92	23163207	18397002	4766204.9	0	0
25Yr	32	23163345	18414517	4748827.7	0	0
25Yr	32.08	23163472	18431906	4731565.6	0	0
25Yr	32.17	23163588	18449170	4714418.6	0	0
25Yr	32.25	23163695	18466308	4697386.9	0	0
25Yr	32.33	23163794	18483323	4680470.5	0	0
25Yr	32.42	23163884	18500215	4663669.1	0	0
25Yr	32.5	23163966	18516984	4646982.4	0	0
25Yr	32.58	23164042	18533631	4630410.2	0	0
25Yr	32.67	23164110	18550158	4613952	0	0
25Yr	32.75	23164172	18566564	4597607.4	0	0
25Yr	32.83	23164227	18582852	4581375.7	0	0
25Yr	32.92	23164277	18599021	4565256.3	0	0
25Yr	33	23164321	18615073	4549248.8	0	0
25Yr	33.08	23164361	18631008	4533352.5	0	0
25Yr	33.17	23164395	18646828	4517567.1	0	0
25Yr	33.25	23164426	18662534	4501891.9	0	0
25Yr	33.33	23164452	18678126	4486326.4	0	0
25Yr	33.42	23164475	18693605	4470870	0	0
25Yr	33.5	23164495	18708973	4455522.2	0	0

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	33.58	23164512	18724229	4440282.5	0	0
25Yr	33.67	23164526	18739375	4425150.9	0	0
25Yr	33.75	23164538	18754411	4410126.7	0	0
25Yr	33.83	23164548	18769339	4395209.3	0	0
25Yr	33.92	23164557	18784159	4380397.8	0	0
25Yr	34	23164564	18798872	4365691.2	0	0
25Yr	34.08	23164569	18813481	4351088.3	0	0
25Yr	34.17	23164573	18827985	4336588.7	0	0
25Yr	34.25	23164577	18842384	4322192.2	0	0
25Yr	34.33	23164579	18856680	4307898.8	0	0
25Yr	34.42	23164580	18870871	4293709.3	0	0
25Yr	34.5	23164581	18884956	4279624.6	0	0
25Yr	34.58	23164581	18898936	4265645.6	0	0
25Yr	34.67	23164581	18912808	4251773.5	0	0
25Yr	34.75	23164581	18926572	4238009.5	0	0
25Yr	34.83	23164581	18940227	4224354.6	0	0
25Yr	34.92	23164581	18953770	4210810.9	0	0
25Yr	35	23164581	18967200	4197380.9	0	0
25Yr	35.08	23164581	18980514	4184067.6	0	0
25Yr	35.17	23164581	18993707	4170874.1	0	0
25Yr	35.25	23164581	19006778	4157803.4	0	0
25Yr	35.33	23164581	19019723	4144858	0	0
25Yr	35.42	23164581	19032540	4132040.8	0	0
25Yr	35.5	23164581	19045227	4119354.6	0	0
25Yr	35.58	23164581	19057779	4106802.2	0	0
25Yr	35.67	23164581	19070198	4094383.4	0	0
25Yr	35.75	23164581	19082484	4082096.8	0	0
25Yr	35.83	23164581	19094634	4069947	0	0
25Yr	35.92	23164581	19106637	4057944.6	0	0
25Yr	36	23164581	19118474	4046107.2	0	0
25Yr	36.08	23164581	19130094	4034487.3	0	0
25Yr	36.17	23164581	19141266	4023315	0	0
25Yr	36.25	23164581	19151825	4012756.5	0	0
25Yr	36.33	23164581	19161774	4002807.2	0	0
25Yr	36.42	23164581	19171398	3993183.3	0	0
25Yr	36.5	23164581	19180956	3983625	0	0
25Yr	36.58	23164581	19190452	3974129.1	0	0
25Yr	36.67	23164581	19199888	3964693.2	0	0
25Yr	36.75	23164581	19209264	3955316.8	0	0
25Yr	36.83	23164581	19218583	3945998.6	0	0
25Yr	36.92	23164581	19227843	3936737.8	0	0
25Yr	37	23164581	19237048	3927533.4	0	0
25Yr	37.08	23164581	19246197	3918384.1	0	0
25Yr	37.17	23164581	19255292	3909289.7	0	0
25Yr	37.25	23164581	19264332	3900249.7	0	0

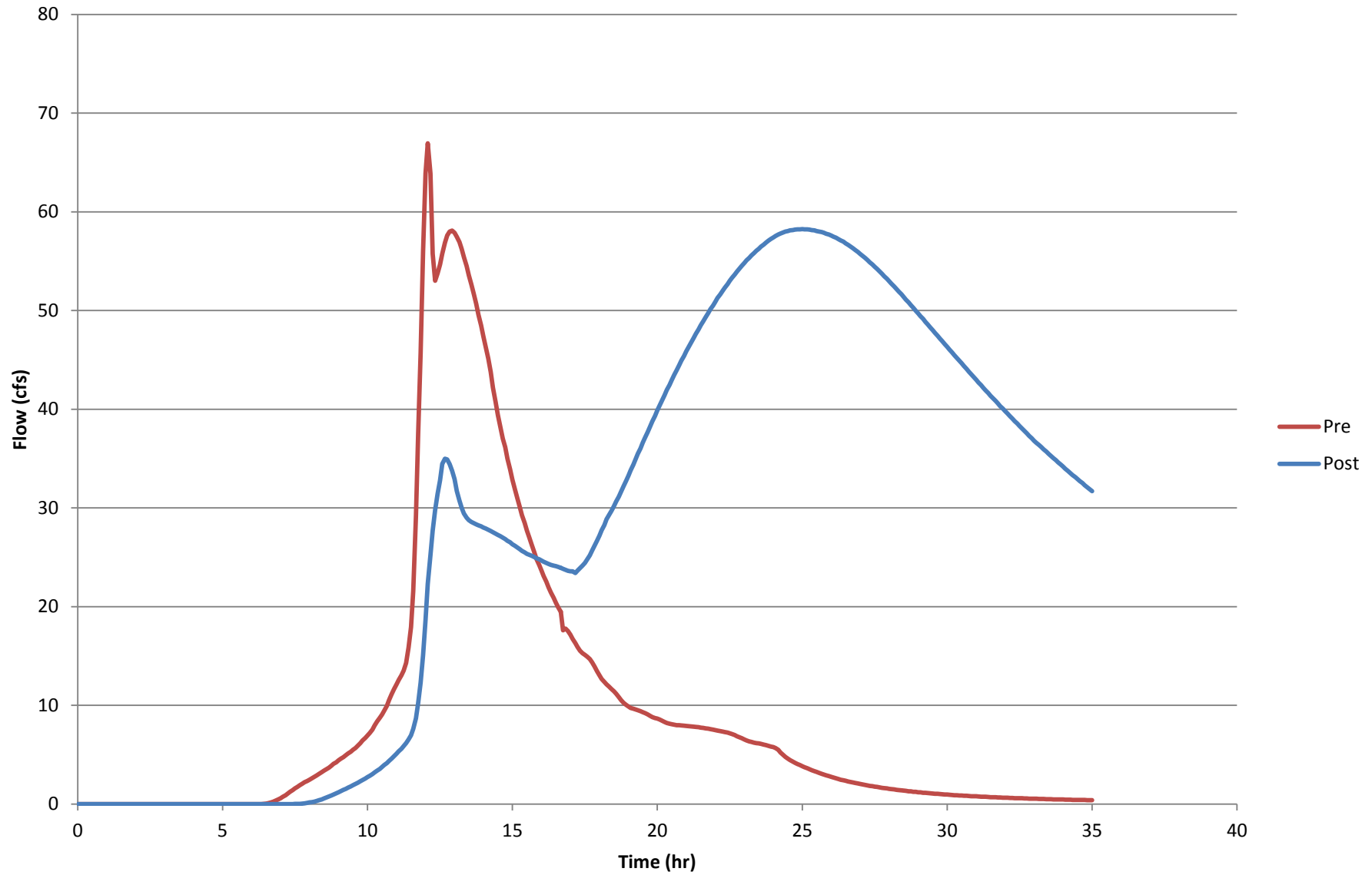
Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25Yr	37.33	23164581	19273319	3891262.6	0	0
25Yr	37.42	23164581	19282253	3882328	0	0
25Yr	37.5	23164581	19291137	3873444.7	0	0
25Yr	37.58	23164581	19299969	3864612.5	0	0
25Yr	37.67	23164581	19308751	3855830.7	0	0
25Yr	37.75	23164581	19317483	3847098.4	0	0
25Yr	37.83	23164581	19326167	3838414.6	0	0
25Yr	37.92	23164581	19334803	3829778.7	0	0
25Yr	38	23164581	19343392	3821189.5	0	0
25Yr	38.08	23164581	19351934	3812646.9	0	0
25Yr	38.17	23164581	19360432	3804149.5	0	0
25Yr	38.25	23164581	19368885	3795696.4	0	0
25Yr	38.33	23164581	19377295	3787286.3	0	0
25Yr	38.42	23164581	19385662	3778918.9	0	0
25Yr	38.5	23164581	19393989	3770592.1	0	0
25Yr	38.58	23164581	19402277	3762304.6	0	0
25Yr	38.67	23164581	19410527	3754054.7	0	0
25Yr	38.75	23164581	19418741	3745840.1	0	0
25Yr	38.83	23164581	19426924	3737657	0	0
25Yr	38.92	23164581	19435081	3729500.1	0	0
25Yr	39	23164581	19443216	3721365.5	0	0
25Yr	39.08	23164581	19451331	3713250.6	0	0
25Yr	39.17	23164581	19459428	3705153.4	0	0
25Yr	39.25	23164581	19467509	3697072.3	0	0
25Yr	39.33	23164581	19475574	3689006.8	0	0
25Yr	39.42	23164581	19483625	3680956.2	0	0
25Yr	39.5	23164581	19491661	3672920.7	0	0
25Yr	39.58	23164581	19499682	3664899.6	0	0
25Yr	39.67	23164581	19507687	3656894.2	0	0
25Yr	39.75	23164581	19515678	3648903.5	0	0
25Yr	39.83	23164581	19523653	3640928.8	0	0
25Yr	39.92	23164581	19531611	3632970	0	0
25Yr	40	23164581	19539527	3625054.1	0	0

Appendix I: Pre and Post Hydrographs at Reach RPRE140

RPRE140 - PRE-DEVELOPMENT VS POST-DEVELOPMENT MEAN ANNUAL 24-HR STORM EVENT

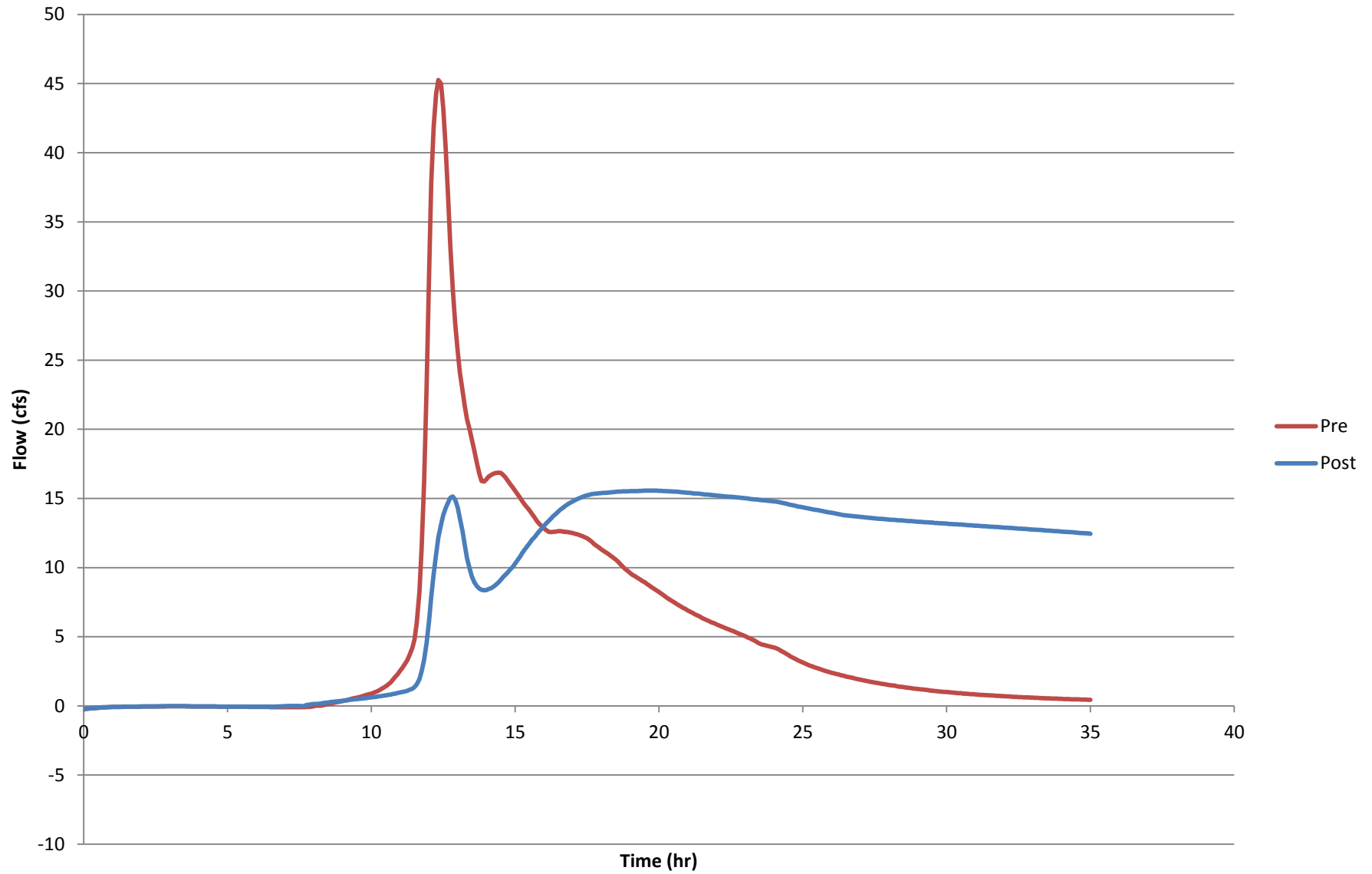


RPRE140 - PRE-DEVELOPMENT VS POST-DEVELOPMENT 25-YR 24-HR STORM EVENT

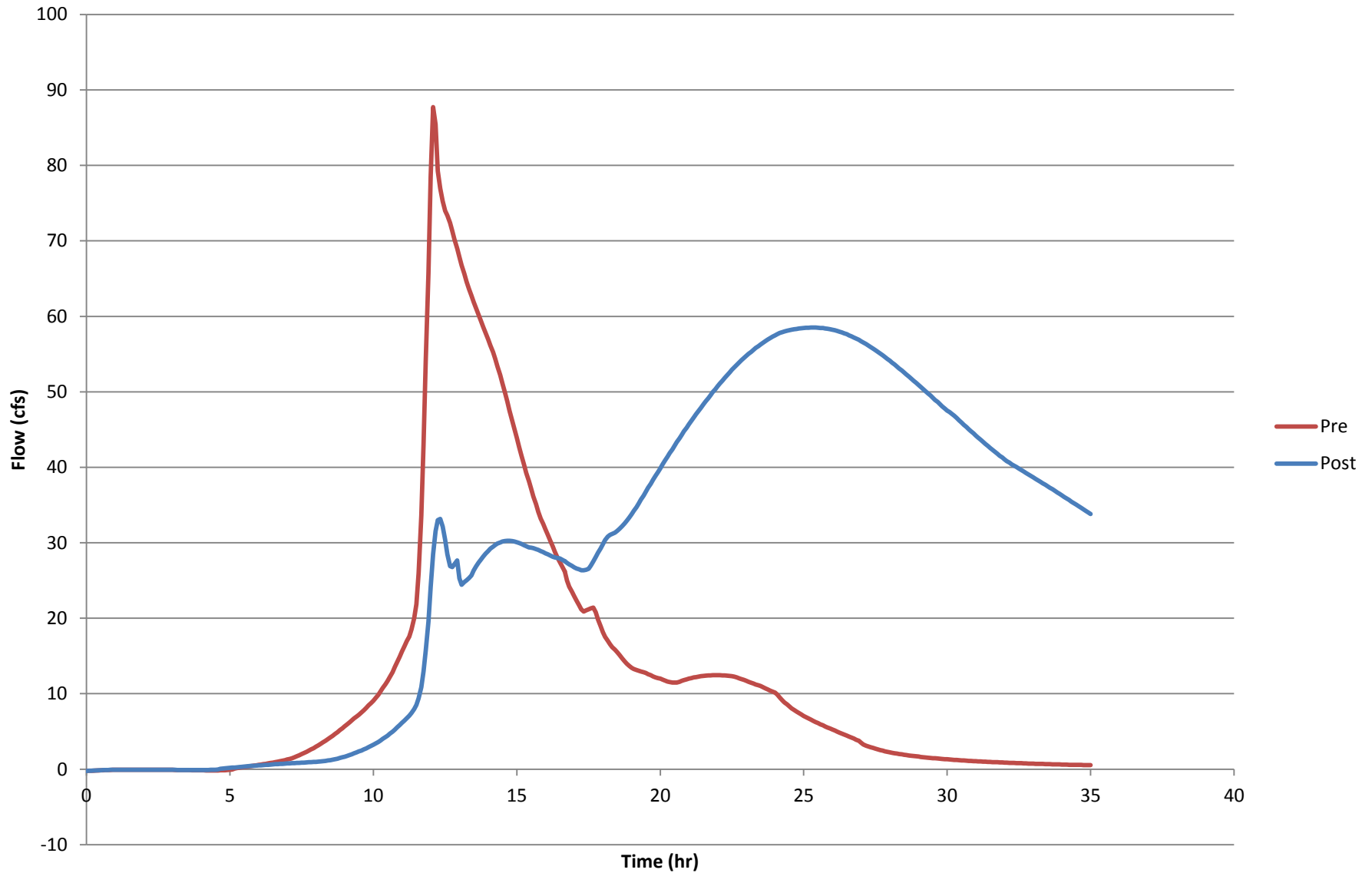


Appendix J: Pre and Post Hydrographs at Reach RPRE160

RPRE160 - PRE-DEVELOPMENT VS POST-DEVELOPMENT MEAN ANNUAL 24-HR STORM EVENT

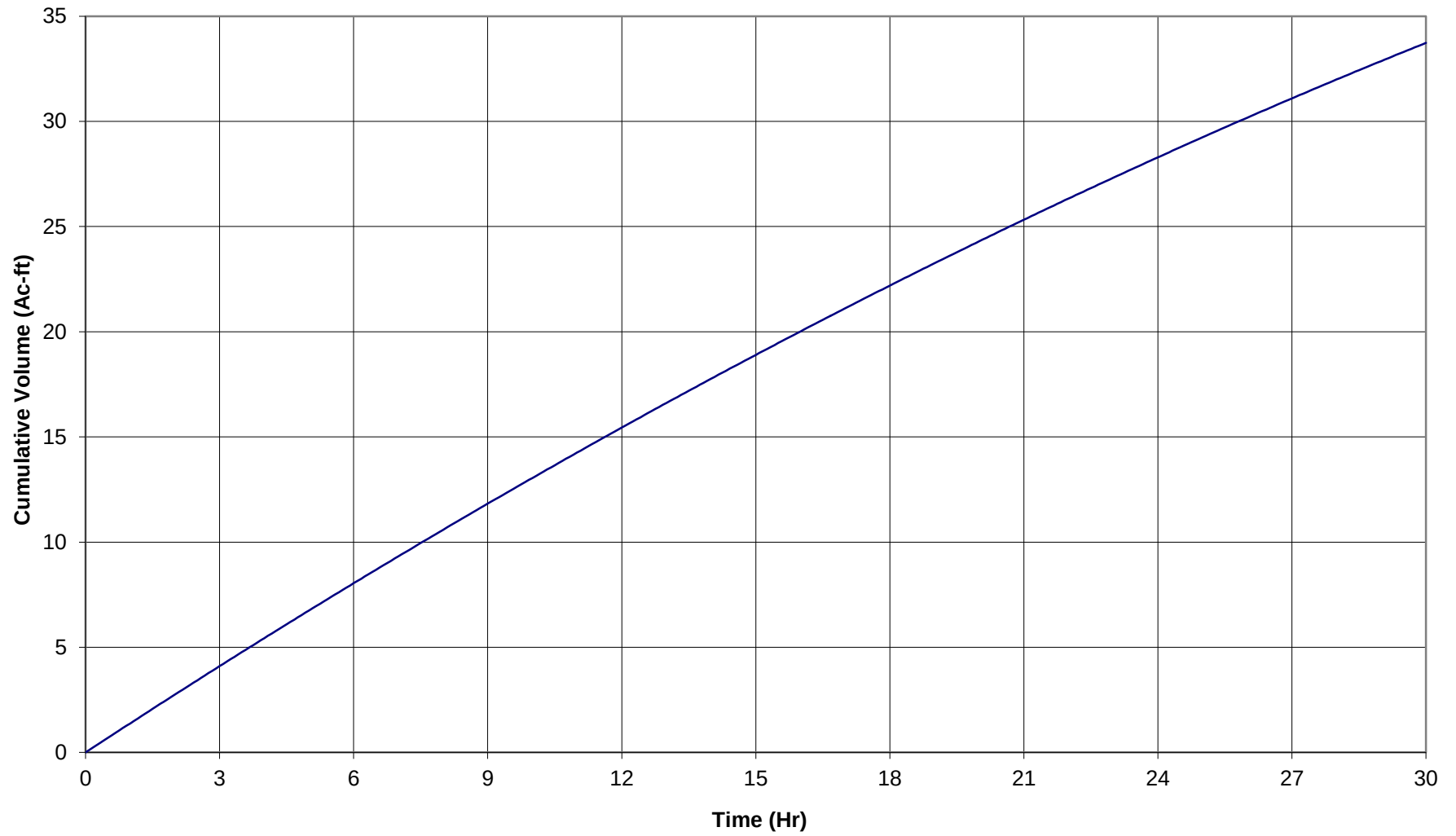


RPRE160 - PRE-DEVELOPMENT VS POST-DEVELOPMENT 25-YR 24-HR STORM EVENT



Appendix K: Treatment Volume Recovery Analysis

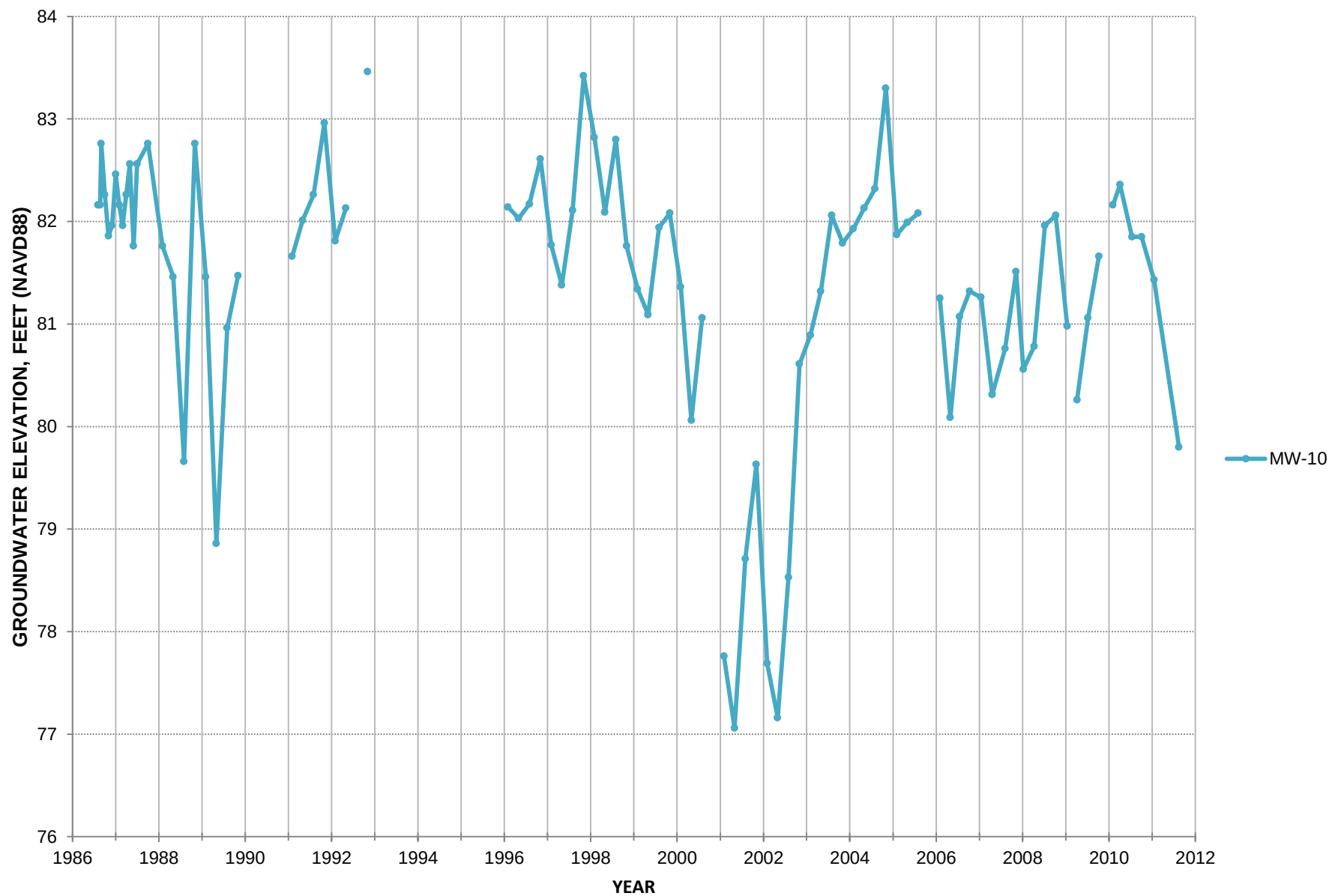
Computed Cumulative Discharge Volume



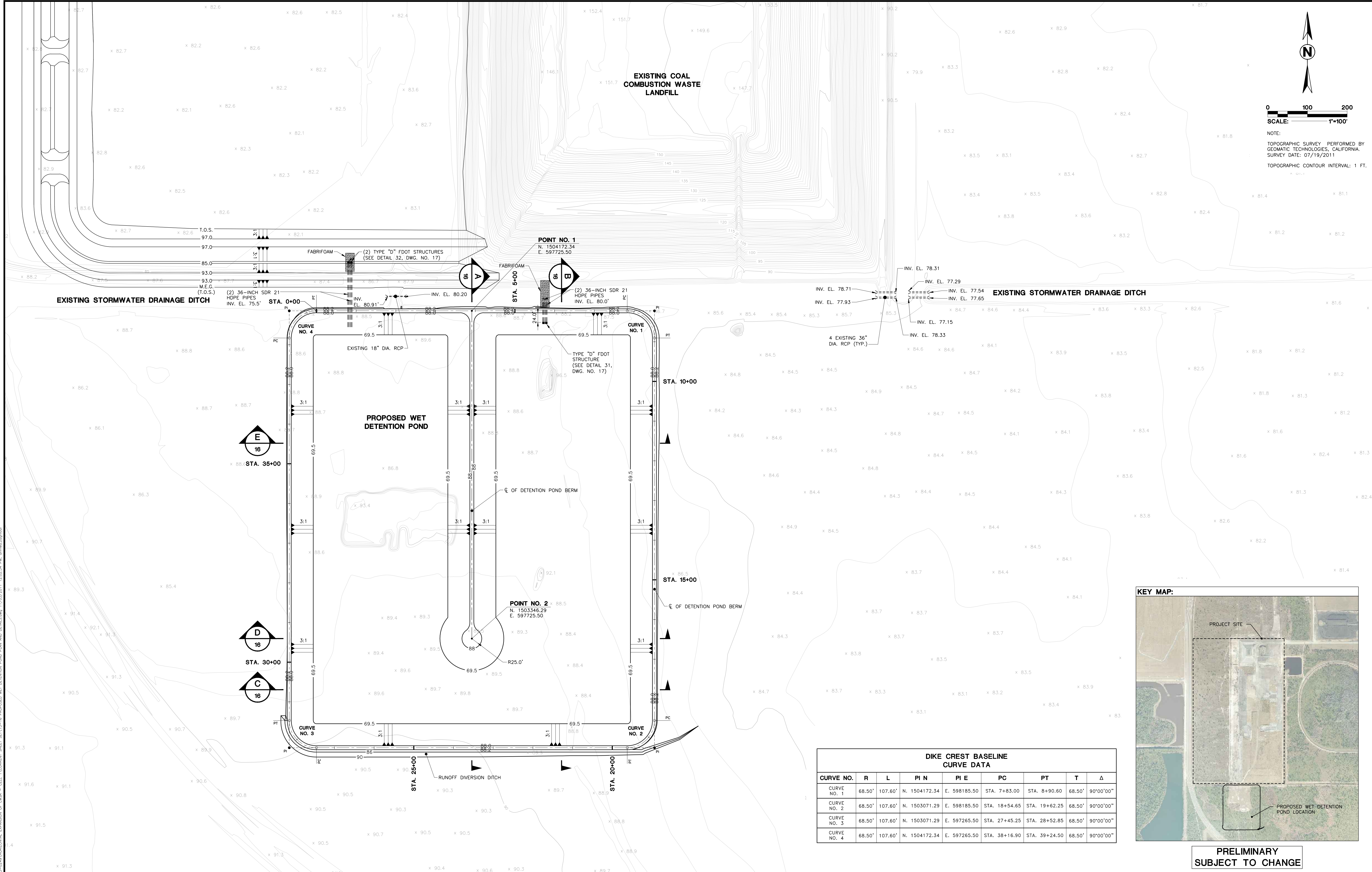
Appendix L: Monitoring Well (MW-10) Groundwater Data and Piezometers

MW-10								
Summary of Groundwater Elevation from 1986 through First Quarter 2011								
MAX	MIN	MEAN	STDEV	MEDIAN	COUNT	SKEW	95th Percentile	SHWT
83.46	77.06	81.43281	1.299264	81.81	89	-1.57821	82.812	82.82

Groundwater Elevation at MW-10



Appendix M: Design Drawings



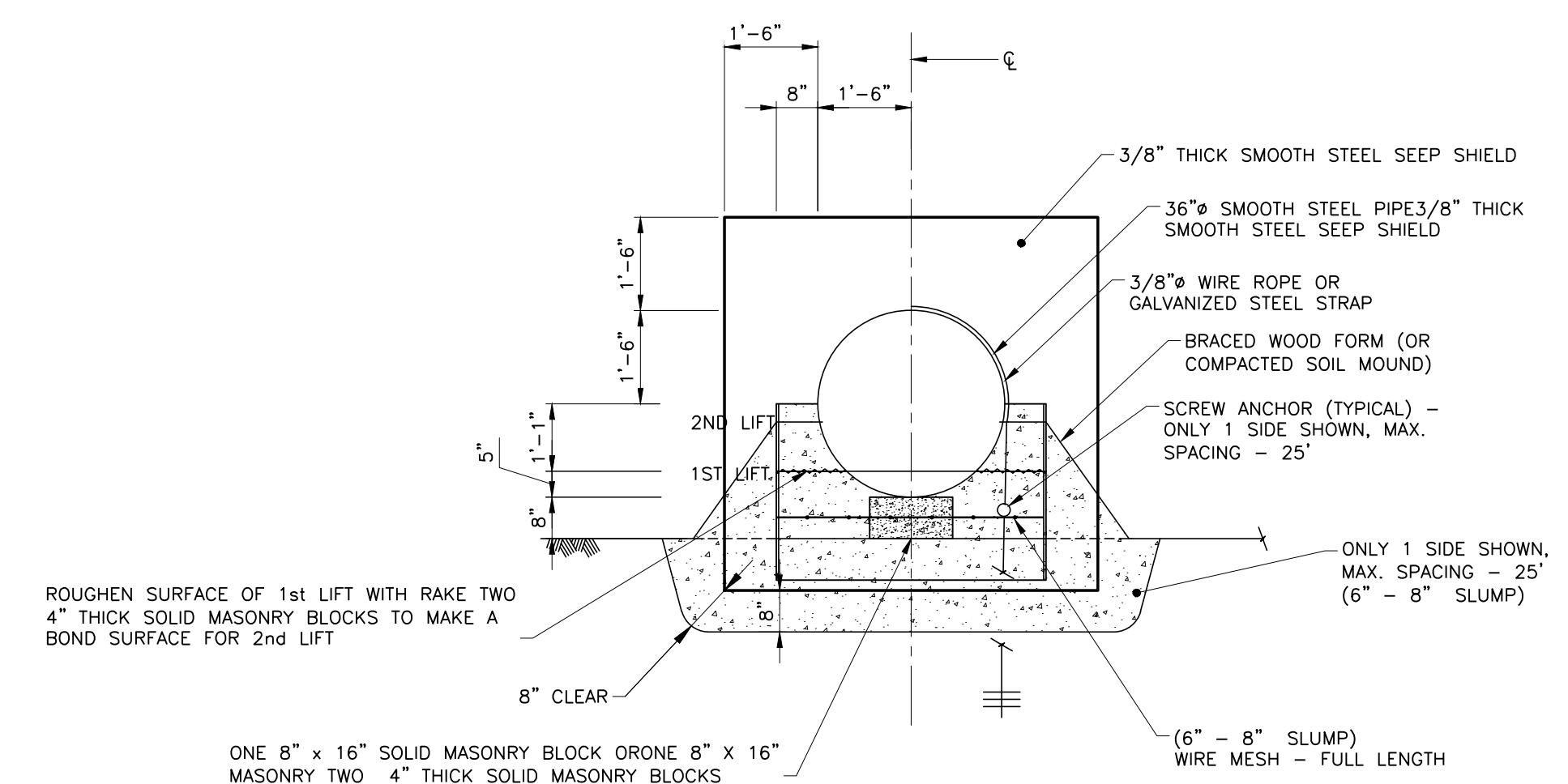
0 100 200
SCALE: 1"=100'

NOTE:
TOPOGRAPHIC SURVEY PERFORMED BY
GEOMATIC TECHNOLOGIES, CALIFORNIA.
SURVEY DATE: 07/19/2011
TOPOGRAPHIC CONTOUR INTERVAL: 1 FT.



DIKE CREST BASELINE CURVE DATA							
CURVE NO.	R	L	PI N	PI E	PC	PT	T Δ
CURVE NO. 1	68.50'	107.60'	N. 1504172.34	E. 598185.50	STA. 7+83.00	STA. 8+90.60	68.50' 90°00'00"
CURVE NO. 2	68.50'	107.60'	N. 1503071.29	E. 598185.50	STA. 18+54.65	STA. 19+62.25	68.50' 90°00'00"
CURVE NO. 3	68.50'	107.60'	N. 1503071.29	E. 597265.50	STA. 27+45.25	STA. 28+52.85	68.50' 90°00'00"
CURVE NO. 4	68.50'	107.60'	N. 1504172.34	E. 597265.50	STA. 38+16.90	STA. 39+24.50	68.50' 90°00'00"

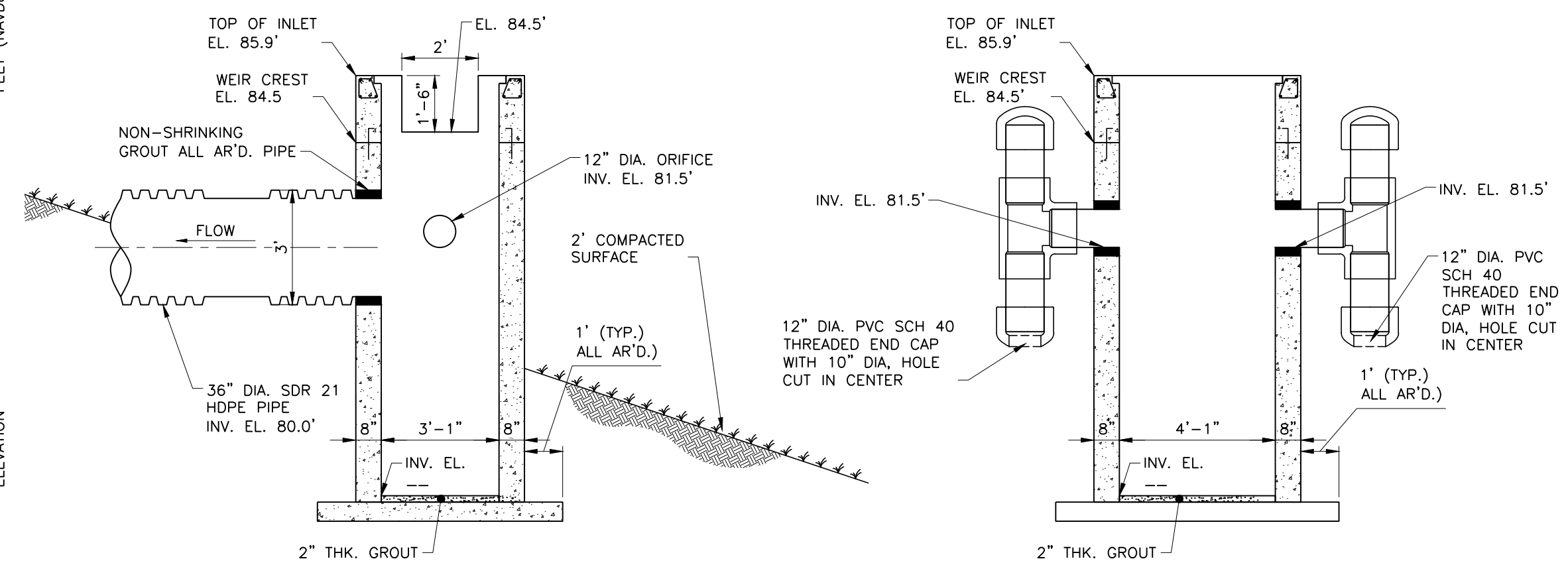
PRELIMINARY
SUBJECT TO CHANGE



SCALE: 1" = 30'

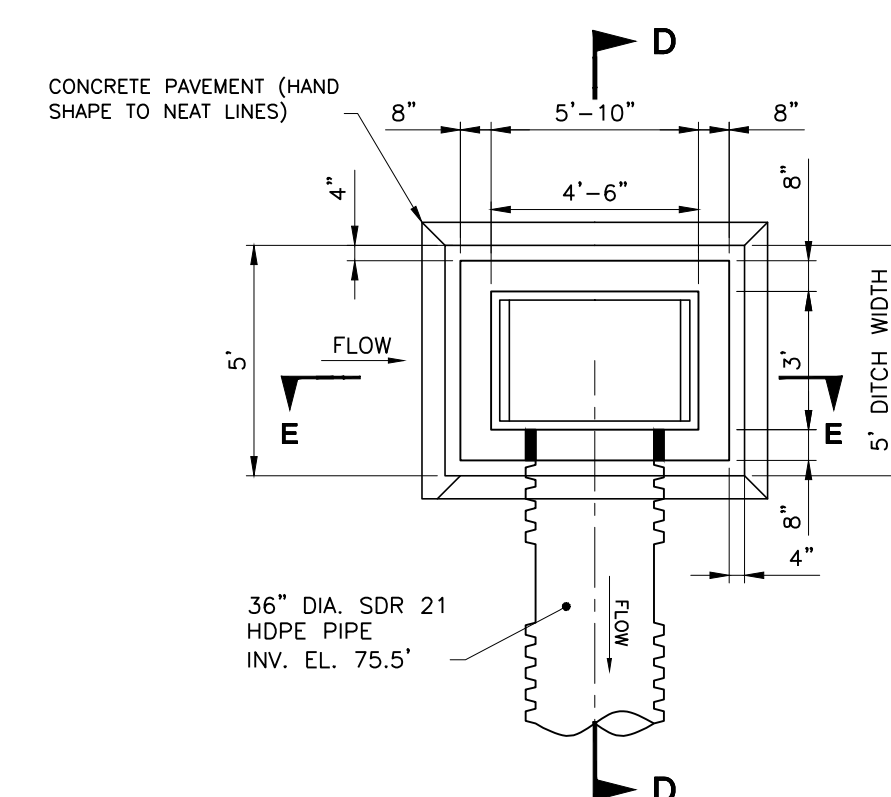


SCALE: 1" = 40'

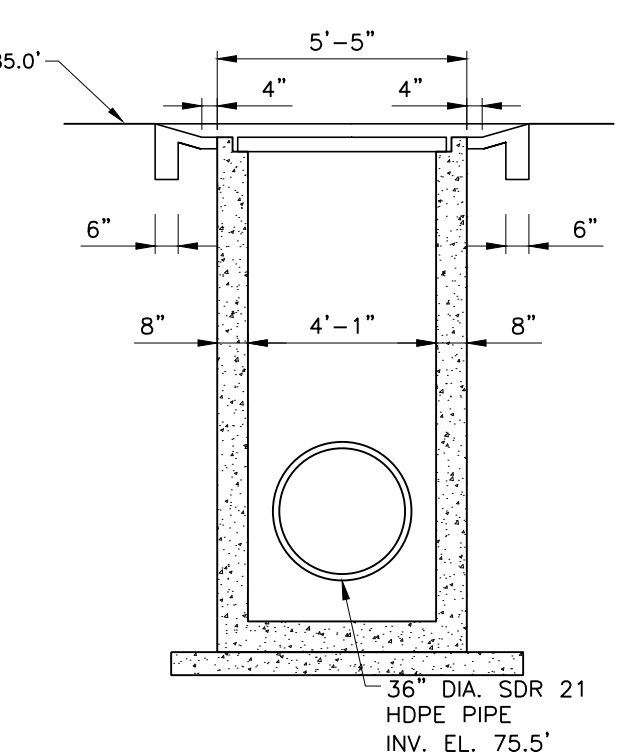


SCALE: 1" = 40'

SCALE: 1" = 40'



SCALE: 1" = 50'



SCALE: 1" = 50'

SCALE: 1" = 50'

DRAWING NO.

Ardam & Associates, Inc.
Geotechnical, Environmental, and
Materials Consultants
A Tetra Tech Company
8008 S. Orange Ave. Orlando, FL 32809
TEL 407/855-3860 FAX 407/859-8121 C.A.N. 5950

HORIZONTAL EXPANSION OF COAL COMBUSTION WASTE LANDFILL - CELL 1	
OUC STANTON ENERGY CENTER ORANGE COUNTY, FLORIDA	

PROPOSED WET DETENTION POND CULVERT STRUCTURES PLAN AND CROSS SECTIONS

