LOCATION HYDRAULICS REPORT

Florida Department of Transportation

District 5

Neptune Road Widening

Limits of Project: From Partin Settlement Road To U.S. Highway 192 (13th Street)

Osceola County, Florida

Financial Management Number: 445415-1

ETDM Number: N/A

02/07/2020

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT

CERTIFICATION
BY A REGISTERED PROFESSIONAL ENGINEER

PROJECT NAME: **Neptune Road Widening – Location Hydraulics Report**

I HEREBY CERTIFY THAT THE MATERIAL AND DATA CONTAINED IN THIS DOCUMENT WAS PREPARED UNDER THE SUPERVISION AND DIRECTION OF THE UNDERSIGNED, WHOSE SEAL AS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA IS AFFIXED BELOW.

NAME (PLEASE PRINT): **JOHN ERIC MOODY, P.E.**

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DATE: ____ / ____ / ____

SIGNATURE OF PROFESSIONAL: _____

FLORIDA REGISTRATION NUMBER: **48927**

NEPTUNE ROAD WIDENING
LOCATION HYDRAULICS REPORT
JANUARY 2020
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7.0 APPENDICES.....

Neptune Road Widening
Location Hydraulics Report

EXECUTIVE SUMMARY

Osceola County proposes to improve Neptune Road between Partin Settlement Road and U.S. Highway 192 (13th Street). The purpose of the project is to enhance the ability of the roadway to meet current and projected traffic demands as it provides a direct connection between the cities of St. Cloud and Kissimmee.

The Location Hydraulics Report has been prepared to document any floodplain impacts resulting from the roadway widening project and to provide recommendations regarding minimization and compensation. Floodplain impacts can be classified as minimal for this project.

Portion of the roadway widening project are located within the 100-year floodplain. Encroachments are proposed to be mitigated by providing compensating storage within the proposed stormwater ponds to serve the project.

1.0 INTRODUCTION

Neptune Road is an east-west roadway that begins at Broadway Street in downtown Kissimmee and continues easterly, as a 4-lane urban roadway, to Partin Settlement Road. At Partin Settlement Road, the roadway continues easterly as a 2-lane rural roadway ending at U.S. Highway 192 (13th Street) in St. Cloud. The existing 2-lane section is proposed to be widened to provide a continuous 4-lane roadway between Kissimmee and St. Cloud. Refer to **Figure 1** for the project location and limits.

Image of existing roadway typical section

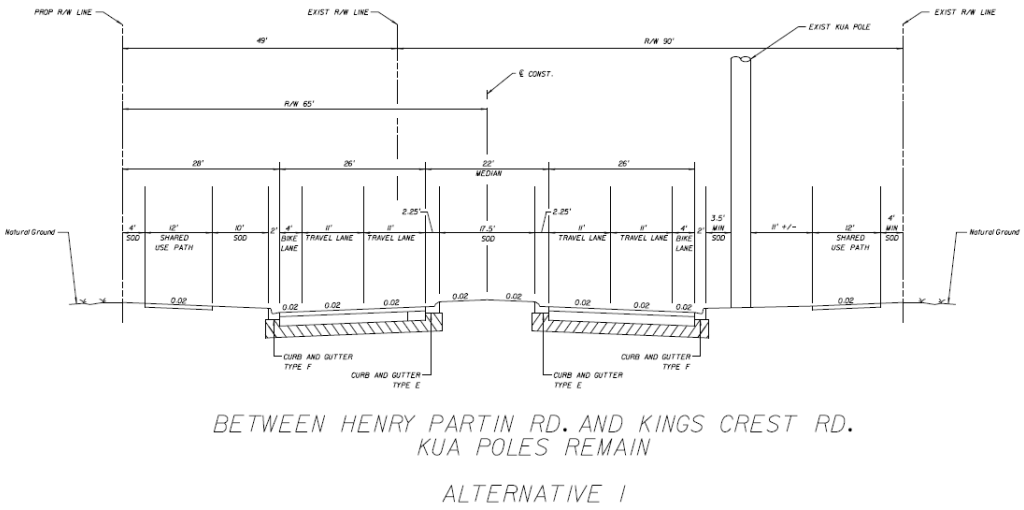


Image of proposed roadway typical section

A Location Hydraulics Report is necessary to support and summarize the findings and conclusions concerning base floodplain and regulatory floodway extents and stages. This analysis ensures that all floodplains/floodways are identified, and any encroachments are quantified, and evaluated. As a result of this process, a preliminary determination of impact is made as to the level of significance of the encroachment. The Florida Department of Transportation (FDOT) drainage design standards, as well as the South Florida Water Management District (SFWMD) Volume IV Environmental Resource Permit Information Manual, will be followed and applied to demonstrate that all efforts have been made to minimize encroachments as not to cause an increase in 100-year flood stages.

2.0 PROJECT DESCRIPTION

Neptune Road is an east-west major arterial roadway that begins at Broadway in downtown Kissimmee and continues easterly, as a 4-lane urban roadway, to Partin Settlement Road. At Partin Settlement Road, the roadway continues easterly as a 2-lane rural roadway to U.S. Highway 192 (13th Street) in St. Cloud. The project consists of widening the 2-lane section of roadway to 4-lanes.

3.0 EXISTING ROADWAY DRAINAGE

The project corridor is drained by roadside ditches to one of four (4) outfalls. These outfalls are the Partin Canal, Fish Lake, Canal C-31 and Peg Horn Slough. Only a small portion of the existing roadway, at the Old Canoe Creek Road intersection, drains to a permitted stormwater management facility.

All four (4) outfalls connect to Lake Tohopekaliga. Lake Tohopekaliga is part of the upper Kissimmee Chain of Lakes which are connected to Lake Okeechobee via the Kissimmee River. Lake Okeechobee is connected to the Atlantic Ocean, via the St. Lucie Canal, and the Gulf of Mexico, via the Caloosahatchee River, providing a positive outfall for the project.

Refer to Sections 3.1, 3.2, 3.3 and 3.4 below for description of the four (4) outfalls and the portion of their overall drainage basins associated with the Neptune Road Widening Project. Also refer to **Figure 5** for the Project Drainage Map.

3.1 Partin Canal Basin

The section of Neptune Road located between Partin Settlement Road and Kings Crest Blvd. is located with the Partin Canal Basin. Stormwater runoff from the existing roadway is drained by roadside ditches that outfall to the Partin Canal. The total basin area is estimated at 37.3 acres which includes the area within the right of way and adjacent, offsite areas draining into the right of way.

The stormwater management ponds serving the Kings Crest and Canebrake residential subdivisions outfall to the south roadside ditch along the section of Neptune Road located within the Partin Canal Basin.

The Partin Canal is the outfall for Fish Lake. A weir structure, located in the canal just north of Neptune Road, controls outflow from Fish Lake. Just downstream of the weir, the Partin Canal crosses under Neptune Road via triple 8'x9' RCBC.

The Partin Canal then continues for another 7,800 feet, crossing under Kings Highway and Aultman Road, prior to its confluence with Lake Tohopekaliga.

3.2 Fish Lake Basin

The portion of existing Neptune Road located within the Fish Lake Basin drains directly to Fish Lake via a minor outfall ditch, running along the west side of G and H Mobile Home Park, within a 25-foot wide drainage easement. The total basin area is estimated at 56.2 acres which includes the area within the right of way and adjacent, offsite areas draining into the right of way.

In addition to the roadway drainage, there is offsite area adjacent to the roadway right of way which drains directly to the roadside swales. Also, the pond located at the southwest corner of the Neptune Middle School Campus, discharges to the north roadside swale along Neptune Road.

3.3 Canal C-31 Basin

The portion of existing Neptune Road located within the Canal C-31 basin drains directly to Canal C-31, or indirectly via the roadside ditches located along Florida's Turnpike. The total basin area is estimated at 21.7 acres which includes the area within the right of way and adjacent, offsite areas draining into the right of way.

3.4 Peg Horn Slough Basin

The majority of existing Neptune Road located in the Peg Horn Slough Basin drains directly to Peg Horn Slough via roadside ditches and closed stormsewer. The total basin

area is estimated at 27.2 acres which include the area within the right of way and adjacent, offsite areas draining into the right of way.

A portion of the existing roadway was improved as part of the Kissimmee Park Road Widening Project as outlined in SFWMD Permit No. 49-01399-P, Application No. 040130-38). The stormwater management requirements were provided for that project area in the pond located at the northeast corner of the Old Canoe Creek (fka Kissimmee Park Road)/Neptune Road intersection.

In the addition, the ponds serving the commercial uses located at the southwest corner of the Neptune Road/13th Street intersection also outfall to the Neptune Road secondary stormsewer system.

3.5 Existing Cross Drains

There are two (2) major and one (1) minor drains located along the project corridor. These cross drains are identified in Figure 6. Cross Drain 1 is 3-8'x9' box culverts and convey flows in the Partin Canal under Neptune Road west to Lake Tohopekaliga.

Cross Drain 2 is a single 8'x12' box culvert and conveys flow in Peg Horn Slough under Neptune Road west to Canal C-31. Refer below to Table 1 which summarizes the existing major cross drains. Also refer to the photographs below of the major cross drains.

Table 1
Existing Cross-Drains

Cross Drain No.	Location	Size	Performance During Design Storm	Structural Integrity	Extension or Replacement Needed?
1	Partin Canal	3-8'x9' RCBC	Acceptable	Unknown*	Yes
2	Peg Horn Slough	1-8'x12' RCBC	Acceptable	Unknown*	Yes

*Structural integrity of crossings would have to be evaluated by structural engineer during design

Partin Canal - Major Cross 1 Looking SW

Partin Canal - Major Cross 1 Looking NE

Peg Horn Slough - Major Cross 2 Looking SE

Peg Horn Slough - Major Cross 2 Looking NW

A minor cross drain exists that conveys flows from the south roadside ditch in the Fish Lake Basin, to the south side, and eventually to Fish Lake via the Fish Lake Outfall Ditch. The existing cross drain is a 24" diameter RCP. Refer below to the photograph of the downstream headwall associated with the cross drain located in the north roadside ditch.

Minor Cross Drain Looking NE

There are also existing bridge structures at the crossing of Neptune Road over Canal C-31. The structures consist of separate roadway and pedestrian beam bridges supported by capped concrete pile bents. Refer to the following photographs of the existing bridge structures.

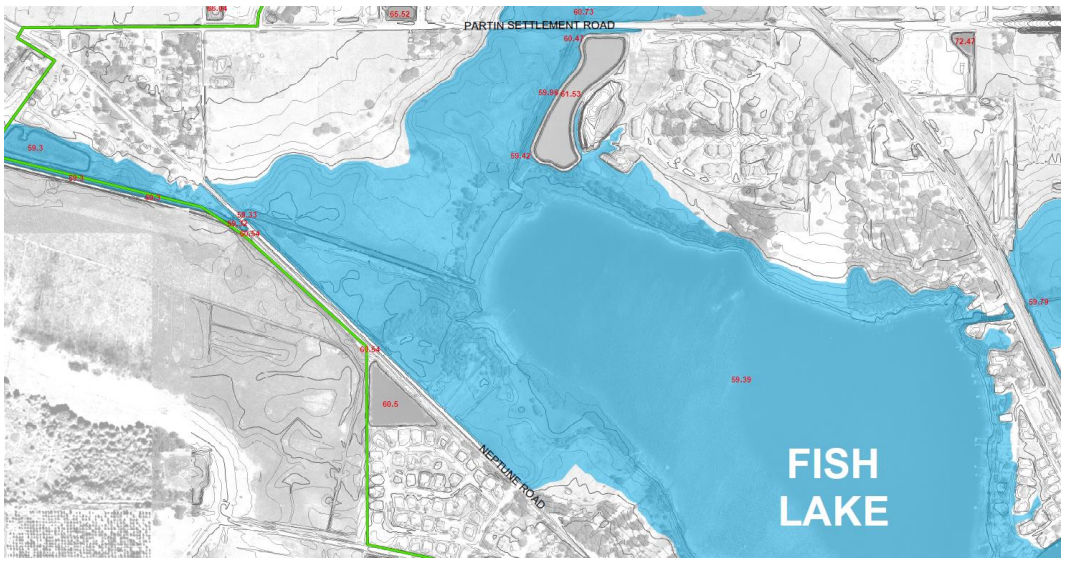
Canal C-31 – Looking SW from Highway Bridge Structure

Canal C-31 – Looking N from Highway Bridge Structure at Pedestrian Bridge Structure

3.6 Flooding History & Maintenance Concerns

In 2003 a study of the Bass Slough drainage basin was prepared by Inwood Consulting Engineers for Osceola County. This study includes a detailed analysis of the area surrounding Neptune Road near Fish lake. Below is an image of the FEMA flood insurance rate map (FIRM) showing that area. Neptune Road is shown to not be inundated during the 100-year storm. There is no known flooding history to note for this basin. Maintenance of the current roadside swale rural stormwater system does not appear to be a concern.

The 24” minor cross drain located just west of the entrance to G and H mobile home community is connected to fish lake by an outfall ditch. This outfall ditch route to Fish Lake is not readily defined and has been rumored to cross under existing mobile homes. Further investigation concerning the outfall ditch should be performed as part of final design.



3.7 100-Year Floodplain

The Federal Emergency Management Agency (FEMA) has designated the area in which the majority of the project falls as Zone X or areas outside of the 100-year flood zone. There is one (1) location however where the proposed roadway will impact regulatory floodplains and two (2) locations where new or modified bridge structures, and box culvert replacements, will impact regulatory floodways. **Figure 3** shows the project area overlaid on FEMA's Flood Insurance Rate Map (FIRM) (FEMA Panel Nos. 12097C0090G, 12097C0252G and 12097C0256G all effective 6/18/2013). Also refer to **Figure 6** for the location of the expected impacts to regulatory floodplains and floodways.

3.8 Soils & Groundwater Features

Soils throughout the project corridor are predominately classified by the USDA Natural Resource Conservation Service (NRCS) Web Soil Survey as hydrologic soil group B/D. This classification is given to soils that exhibit good percolation properties when in a drained condition. When saturated the soil becomes poorly drained. This soil type is generally estimated to have seasonal high-water table depth of 6 to 18 inches. Please refer to **Figure 4** for a soils map of the project corridor.

4.0 PROPOSED ROADWAY DRAINAGE

Proposed drainage basins were delineated for the project and are depicted in **Figure 5**. Drainage divides occur at major outfall locations such as major culvert and canal crossings. The proposed roadway alternatives will all require that a piped urban collection system be utilized in order to convey stormwater runoff to the proposed stormwater management ponds for treatment and attenuation. It is also assumed that contributing, offsite drainage areas will be captured by a bypass collection system and not routed to the proposed stormwater management facilities in order to minimize their area requirements. The bypass collection systems will preserve the flow path and discharge location and characteristics of their associated offsite drainage areas. A detailed analysis of stormwater management requirements to support the proposed improvements is included in the Pond Siting Report (PSR) prepared for this project.

The proposed widening will impact the existing Partin Canal, Canal C-31 and Peg Horn Slough. All proposed new bridge structures and culvert extensions/replacements will be required to be designed to exhibit the same hydraulic conveyance capabilities as exhibited in the existing condition.

4.1 Cross Drains

The proposed Neptune Road Widening Project will require the existing minor and major cross drains to be extended or replaced. Preliminary computer modeling of the major crossings has been performed to determine if the existing culverts can be extended without causing increases in upstream stages. If a “net rise” in upstream stages are identified culvert upgrades will be required, as well as additional improvements.

As mentioned in Section 3.6, the outfall ditch connecting the minor cross drain located at to Fish Lake meanders through ditch the G and H mobile home community with its exact route unknown (refer to the image below).

Outfall Ditch Through G and H Mobile Home Park

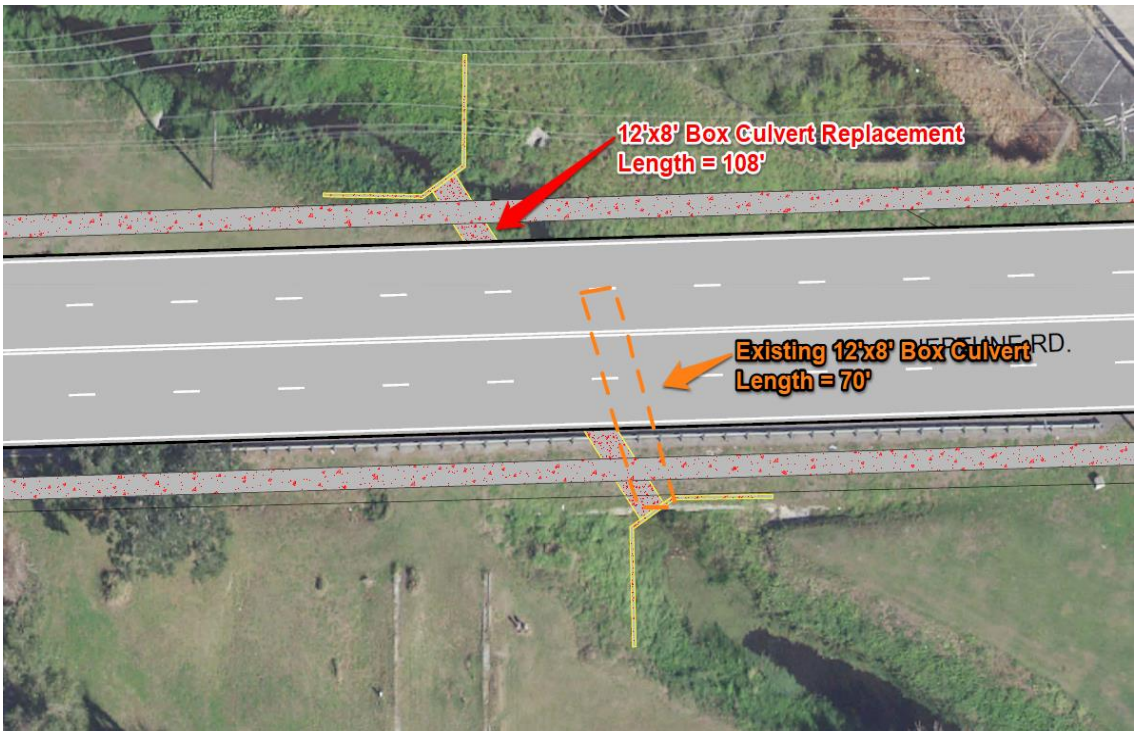
The LIDAR contours shown on the image above provide a general alignment for the outfall ditch. Additional investigation should be performed in Final Design to determine the exact route of the ditch, if drainage easements exist and the ditch is located within the easement, and if the ditch has the capacity to convey stormwater runoff from Neptune Road and the adjacent lands draining to it.

Per Chapter 4 – Site Design and Development Standards of the Osceola County Land Development Code, the “Design Storm Minimum Standards” for cross drains serving boulevards/multimodal facilities is the 50-year. Per the FDOT Culvert Design Handbook, the 50-year frequency is the design flood, the 100-year frequency is the base flood and 500-year is the greatest flood. Preliminary flood routing models were prepared for the

major cross drains. Refer below for detailed explanations of the analyses and results for the Peghorn Slough and Partin Canal major cross drains.

Peghorn Slough

HY-8 was selected to model the Peghorn Slough crossing utilizing input date from the 2013 FEMA Flood Insurance Rate Study for Osceola County (i.e. flows, tailwater, headwater, etc.). This software was selected as it is an accepted modeling software based upon section 4.8 of the drainage manual in reference to the content within FHWA Hydraulic Design Series 5. Refer to the image below showing the configuration of the existing and proposed cross drain. A simple extension was considered but the alignment of a straight line extension would be compatible with the geometry of the existing slough.



Peghorn Slough Major Cross Drain

The results of the HY-8 existing and proposed (extended) condition analyses are summarized in Tables 2 and 3 below.

Table 2
Summary of Results for Existing Peghorn Slough 8' x 12' CBC

Storm Event	Q (cfs)	Tailwater Elevation (ft)	Headwater from FEMA FIS (ft)	Headwater (ft) HY-8	Outlet Flow Velocity (ft/s)
50-year	840	62.75	64.7	64.64	8.75
100-year	896	63.00	65.3	65.15	9.33
500-year	1,008	63.45	66.2	66.17	10.50

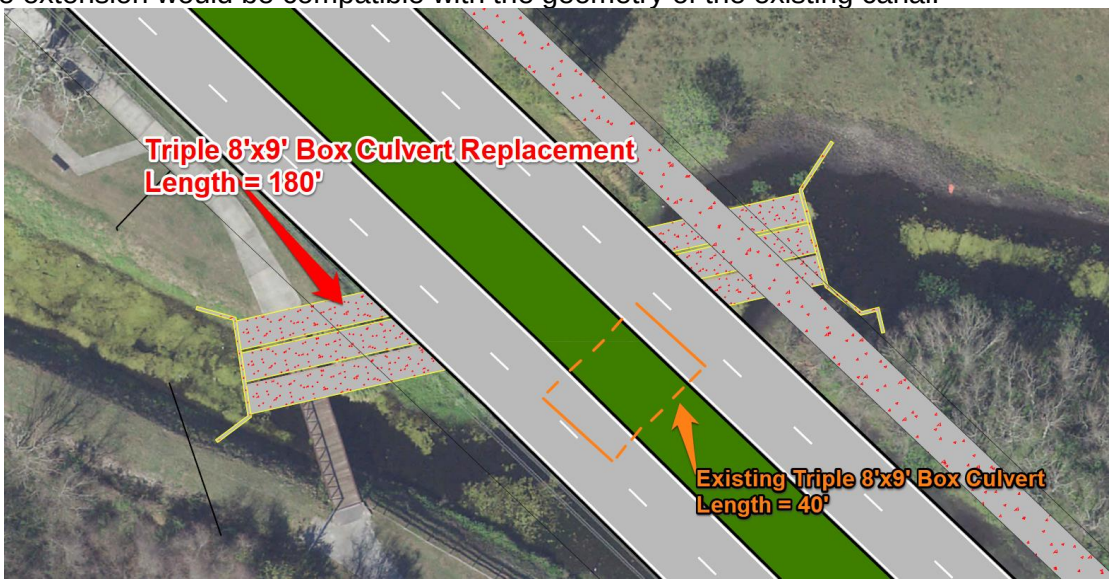
Table 3
Summary of Results for Extended Peghorn Slough 8' x 12' CBC

Storm Event	Q (cfs)	Tailwater Elevation (ft)	Headwater from FEMA FIS (ft)	Headwater (ft) HY-8	Outlet Flow Velocity (ft/s)
50-year	840	62.75	64.7	64.58	8.75
100-year	896	63.00	65.3	65.08	9.33
500-year	1,008	63.45	66.2	66.09	10.50

As can be seen from Tables 2 and 3 above, the extended culvert does not increase headwater stages from existing to extended conditions. This was accomplished by utilizing skewed wingwalls to improve end treatment inflow/outflow efficiencies.

Partin Canal

adICPR Version 4 was used to model the Partin Canal major cross drain using data from the adICPR model prepared by Boyd & Associates for the Shady Lane Extension (SFWMD Permit No. 49-01518-P, Application No. 170411-3). It should be noted that this crossing is not included in the 2013 FEMA Flood Insurance Study for Osceola County and has a Zone A designation on the FIRM. adICPR was selected as the modeling software as because the existing model for the area is in this software and is an acceptable software for FEMA. Refer to the image below showing the configuration of the existing and proposed cross drain. A simple extension was considered but the alignment of a straight line extension would be compatible with the geometry of the existing canal.



Partin Canal Major Cross Drain

The results of the adICPR existing and proposed (extended) condition analyses are summarized in Tables 4 and 5 below.

Table 4
Summary of Results for Existing Partin Canal 3- 8' x 9' CBC

Storm Event	Q (cfs)	Tailwater Elevation (ft)	Headwater (ft) adICPR	Outlet Flow Velocity (ft/s)
50-year	218	58.09	58.12	1.0
100-year	227	58.38	58.42	1.1
500-year	366	59.24	59.28	1.7

Table 5
Summary of Results for Extended Partin Canal 3 - 8' x 9' CBC

Storm Event	Q (cfs)	Tailwater Elevation (ft)	Headwater (ft) adICPR	Outlet Flow Velocity (ft/s)
50-year	218	58.09	58.12	1.0
100-year	227	58.38	58.41	1.1
500-year	365	59.23	59.27	1.6

As can be seen from Tables 4 and 5 above, the extended culverts do not increase headwater stages from existing to extended conditions. This was accomplished by utilizing skewed wingwalls to improve end treatment inflow/outflow efficiencies.

An additional consideration associated with the Partin Canal crossing of Neptune Road is the weir that controls initial stages and outflow from Fish Lake. The weir is currently located on the north side of Neptune Road and will be impacted by the roadway widening and will need to be replaced. Osceola County owns land on the south side of Neptune Road at the Partin Canal. Relocation of the weir to the south side should be considered in final design as it appears that doing so will eliminate the need to acquire addition land for relocation on the north.

Although based on the preliminary computer modeling it was determined that the existing major cross drains could be extended utilizing the same size, material and number of barrels, an alternatives analysis should be performed as part of final design to determine the most cost effective culvert extension/replacement option(s) taking into account estimated length of roadway closure required for construction and the anticipated effects on traffic flow patterns.

Additional modeling of the downstream conveyance systems should also be performed in final engineering design to show that any increase in flows and discharge rates will not affect downstream property interests.

4.2 Bridge Structures

New highway and pedestrian bridges will be required over Canal C-31, as well as improvements or replacement of the existing bridge. New bridges over Florida's Turnpike will impact existing Neptune Middle School pond.

A Bridge Hydraulics Report will be prepared to determine the bent configuration for the new bridge(s), as well as any modifications to the existing bridge that may be required to not impact upstream stages, as part of Final Engineering.

It is important to note that a bridge hydraulic report will also be required for the culvert crossing of the Partin Canal.

5.0 FLOODPLAINS

Floodplain Statements: Project on existing alignment involving replacement of existing drainage structures with no record of drainage problems. It has been determined, through consultation with local, state, and federal water resources and floodplain management agencies that there is no regulatory floodway impact anticipated although there will be work conducted in the floodplain. A “no rise” certificate will be needed for work within the floodplain to prove compatibility with existing floodplain management programs.

As stated in Section 3.6, there is one (1) location where the proposed roadway widening will encroach into the 100-year floodplain as shown on **Figure 6**. This area is designated as Zone A which are areas of 100-year flooding where the flood elevation has not been federally established. Roadway improvements within this segment will include elevating the roadway section to a level at, or above, the existing roadway resulting in impacts to the storage capacity of the floodplain. This can be categorized as a transverse encroachment. Flood elevations although not federally regulated have been identified by a local flood study and overtopping of the existing road is not anticipated in the 100-year 24 hour storm event. This project is not anticipated to have any impact on the base flood elevation, or the likelihood of flood risk.

The Shady Lane Widening and Extension Project, which is currently under construction, included a box culvert crossing of the Partin Canal just upstream of the subject project. Review of the calculations included with SFWMD Permit No. 49-01518-P, Application No. 170411-3 show establishment of a 100-year flood stage. Coordination with calculations, to include expansions of the modeling downstream, will be required to determine floodplain encroachment volumes and box culvert extension or upgrade requirements. The Partin Canal is not a regulatory floodway.

There are two crossings of regulatory floodways. These are the crossings of Peghorn Slough and the C-31 Canal. “No Rise” analyses will need to be performed for these crossings to verify that the proposed crossings do not cause a rise in the floodway elevations. This will have to undergo the proper permitting per FEMA’s National Flood Insurance Program.

Summary Floodplain Statement: Modifications to existing drainage structures (Peghorn Slough box culvert, Partin canal box culvert, and the bridge crossing of the C-31 canal) included in this project will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of modifications to existing drainage structures. Therefore, it has been determined that this encroachment is not significant.

5.1 Floodplain Compensation

It is proposed to compensate for the encroachment within the 100-year floodplain within the proposed stormwater management facilities. This compensation will be provided by either the dynamic approach within the pond itself or by the “cup for cup” approach outside of the pond. The Pond Siting Report (PSR) describes that a 20% pond size contingency to account for “cup for cup” compensation or dynamic storage.

The Pond Siting Report (PSR) prepared for the project includes several pond site alternatives as shown on **Figure 6**. A detailed analysis will need to be performed with Final Engineering to determine if the pond sizes required to satisfy project treatment and attenuation requirements will be adequate to also meet compensating storage requirements, of if the ponds will be required to be expanded further.

5.2 Risk Evaluation & Impacts of Minimal Encroachments

The floodplain impacts associated with the roadway widening are minimal. These encroachments can be better quantified during the design process. The volumetric impact, even if left uncompensated, would have negligible impact on flood stages. It is important to note that compensating storage will be provided for these impacts. The risk associated with the encroachments are therefore minimal. The focal point regarding floodplain impacts should be associated with the floodway crossings. These crossings will need to be designed to demonstrate “no net rise” in the floodway. The risk of installing new crossings is low due to the design constraint of providing “no net rise” in the floodway. Impacts on natural and beneficial floodplain values and measures to restore and preserve these values will be discussed in the wetland impact evaluation report.

5.3 Adherence to Local Floodplain Development Plan

This project will adhere to and is consistent with both the Federal and local floodplain development requirements and plan. This project involves the widening of an existing corridor and is not anticipated to encourage development in the base floodplain.

6.0 EMERGENCY SERVICES

The risk to emergency services and evacuation will not be increased due to this project. The hydraulic performance of culvert crossings and bridges will be unaffected or will be more favorable for emergency services and evacuations.

7.0 CONCLUSION

The Neptune Road widening project with the proper use of industry standard best management practices is not expected to have a significant hydraulic impact on the local waterways. The two (2) major cross drains located at the Partin Canal and Peg Horn Slough crossings will be required to be extended or reconstructed as a part of this project. Stormwater treatment and attenuation will be needed and will be provided in multiple stormwater detention ponds. This project will be subject to permitting through Osceola County, South Florida Water Management District, the Florida Department of Transportation, the Florida Department of Environmental Protection, and Toho Water Authority.

There are several agencies that will have the review rights over this project. Osceola County is the local agency with jurisdiction. Osceola County will review preliminary and final design. Stormwater design will be subject to the rules and regulations outlines in the Osceola County Land Development Code.

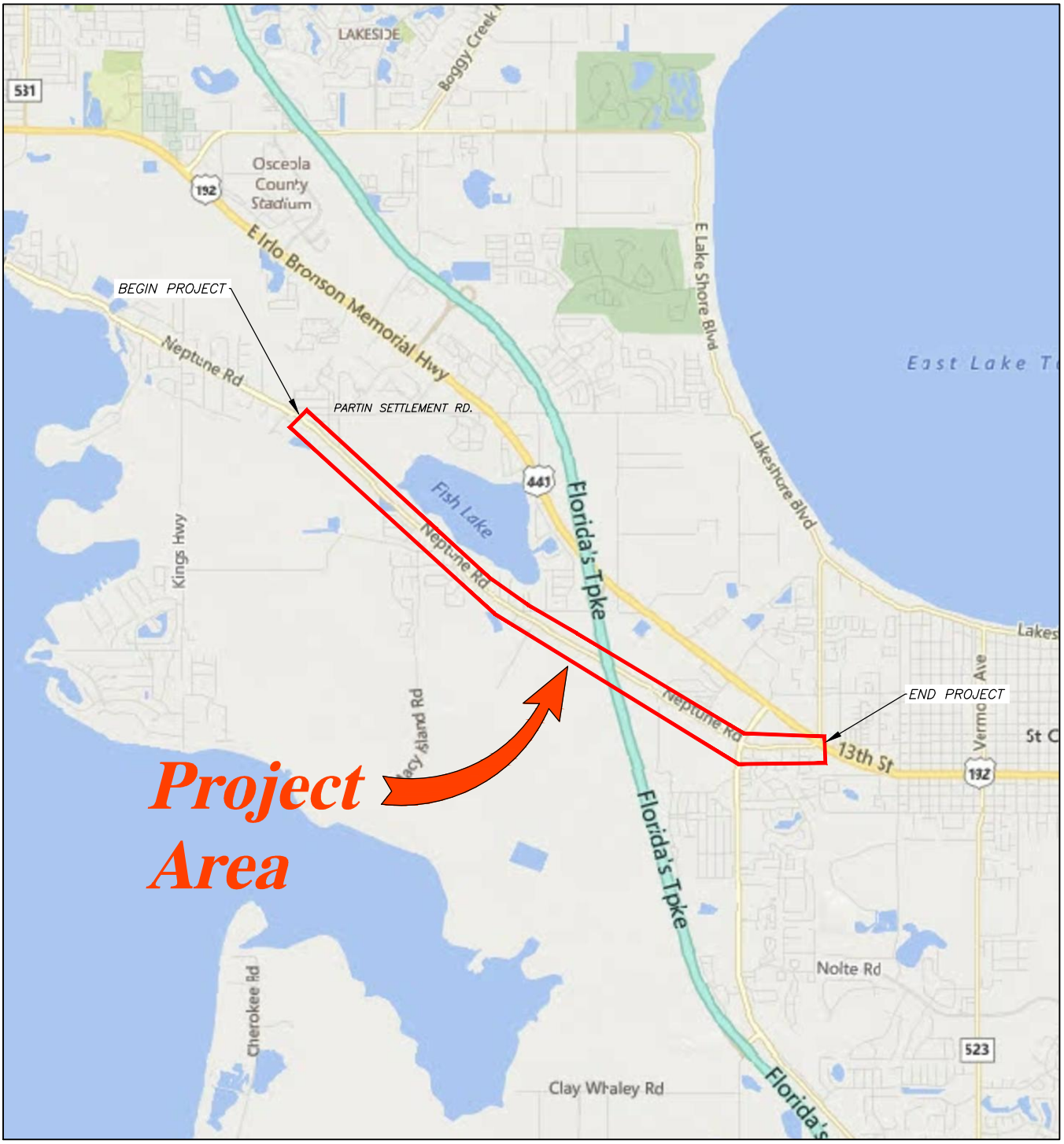
The Florida Department of Transportation (FDOT) Turnpike Authority will review any improvements that encroach into the right of way of Florida's Turnpike.

An Environmental Resource Permit will be required by the South Florida Water Management District (SFWMD) for any stormwater improvements. A water use permit will also be required for the dewatering necessary to excavate any proposed stormwater ponds and pipe installations. The stormwater design will be subject to the rules and regulations of the SFWMD. In addition, a Works of the District Permit will be required for the work performed within Canal C-31 for modification of the existing and any new bridge structures.

The Florida Department of Environmental Protection (FDEP) will require a NPDES Permit for stormwater discharge from construction sites as a result of dewatering activities.

As defined in Part 2, Chapter 13 of the FDOT PD&E Manual the project floodplain encroachment is "Minimal" as the drainage features will be designed in accordance with the ***FDOT Drainage Manual, Topic No. 625-040-002***, and no adverse impacts to floodplains are anticipated as a result of the project.

Impacts to the 100-year floodplain (Zone A), and the impacts to the regulatory floodways associated with new Canal C-31 bridge structure and Peg Horn Slough box culvert replacement, will need to be coordinated with the County Drainage Engineer and FEMA to ensure the project will be developed consistent with local floodway plans and floodplain management programs.



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(407) 891-0452
Fax: (407) 891-9173

Neptune Road Widening

Sections 04, 05, 25, 26, 31, 32
Township 26 S, Range 30 E.
Osceola County, Florida

SCALE: not to scale

LOCATION MAP

FIGURE 1

OSCEOLA ENGINEERING INCORPORATED

Civil Engineers

Environmental Engineers

Landscape Architects

Land Planners &

Transportation Engineers

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Osceola Engineering Incorporated
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City of Saint Cloud
Florida 34769
telephone: (407) 891-0452
facsimile: (407) 891-9173

project:

Neptune Road Widening

drawing:

USGS Quadrangle Map

location:

Sec 04, 05, 25, 26, 31, 32
Twp 26 S., Rng 30 E.
Osceola County, Florida

North

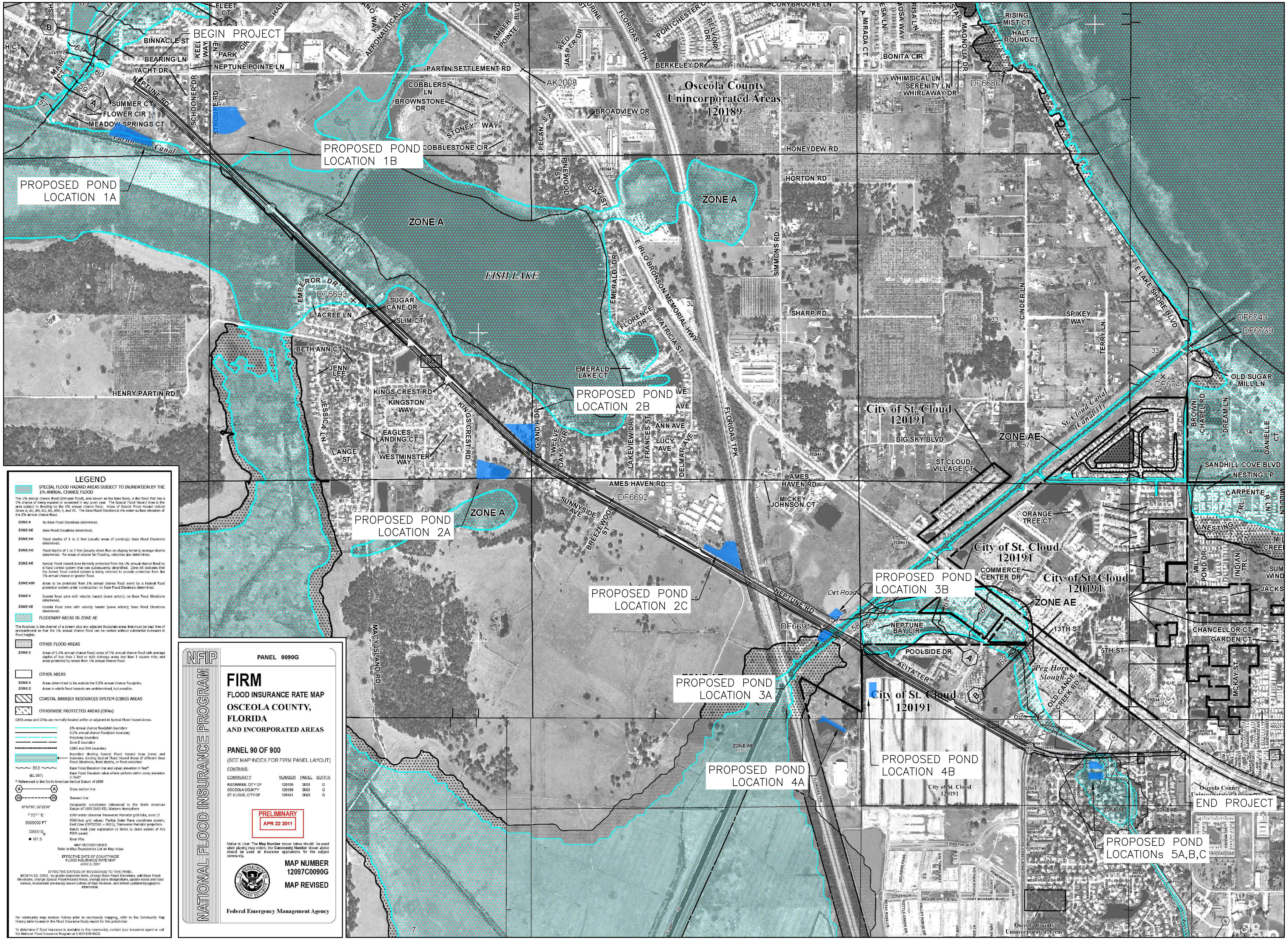
0 750' 1500'

Scale: 1" = 1500'

Date: February 15, 2019

FIGURE 2

OEI NO. 18-021



OSCEOLA ENGINEERING INCORPORATED

Civil Engineers

Environmental Engineers

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project:

Neptune Road Widening

drawing:

FEMA Flood Map

location:

Sec 04, 05, 25, 26, 31, 32
Twp 26 S., Rng 30 E.
Osceola County, Florida

North

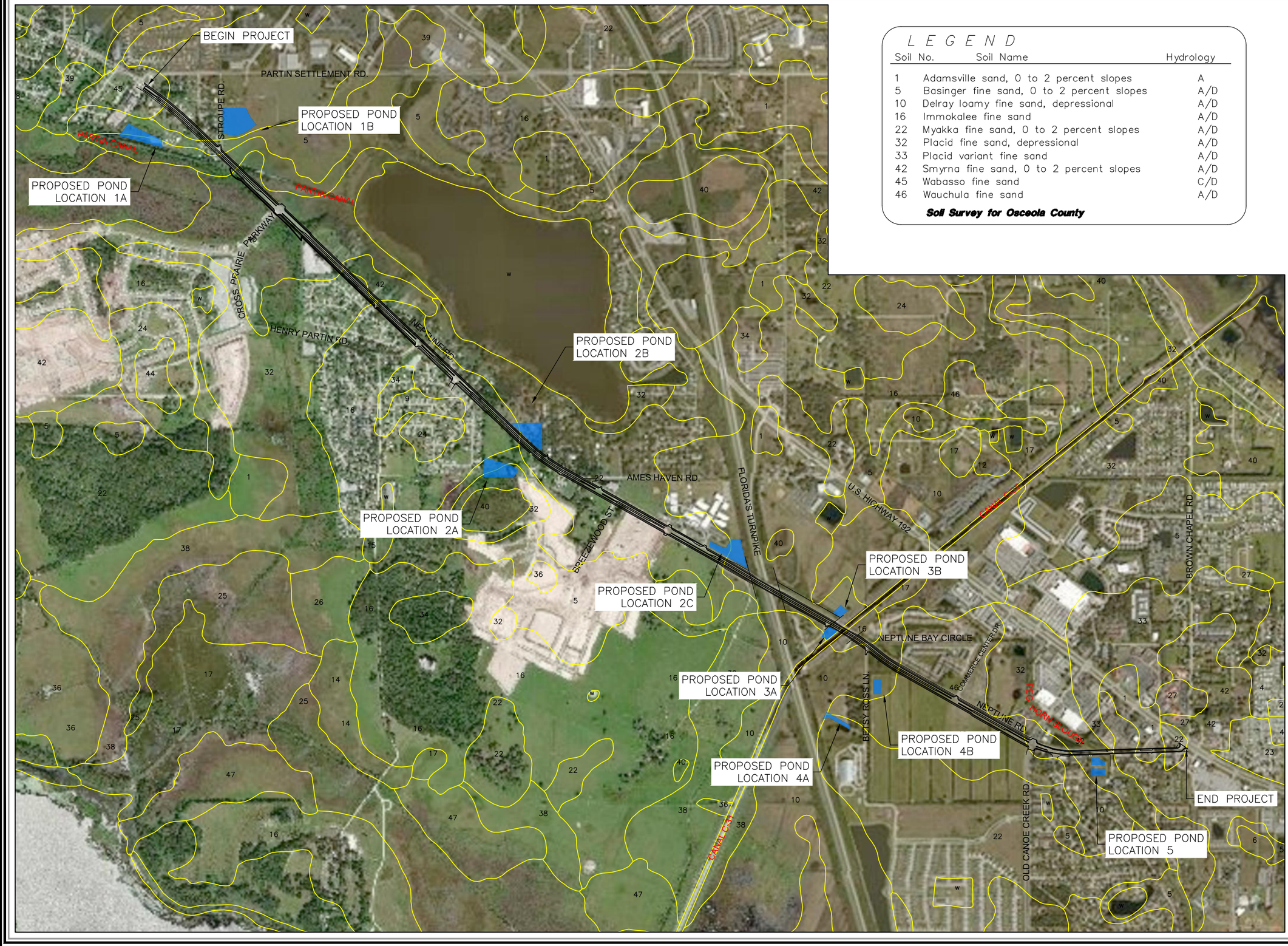
0 750' 1500'

Scale: 1" = 1500'

Date: February 15, 2019

FIGURE 3

OEI NO. 18-021



L E G E N D

Soil No.	Soil Name	Hydrology
1	Adamsville sand, 0 to 2 percent slopes	A
5	Basinger fine sand, 0 to 2 percent slopes	A/D
10	Delray loamy fine sand, depressional	A/D
16	Immokalee fine sand	A/D
22	Myakka fine sand, 0 to 2 percent slopes	A/D
32	Placid fine sand, depressional	A/D
33	Placid variant fine sand	A/D
42	Smyrna fine sand, 0 to 2 percent slopes	A/D
45	Wabasso fine sand	C/D
46	Wauchula fine sand	A/D

Soil Survey for Osceola County

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Civil Engineers

Environmental Engineers

Landscape Architects

Land Planners &

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facsimile: (407) 891-9173

project:

Neptune Road Widening

drawing:

Soils Classification Map

location:

Sec 04, 05, 25, 26, 31, 32
Twp 26 S., Rng 30 E.
Osceola County, Florida

North

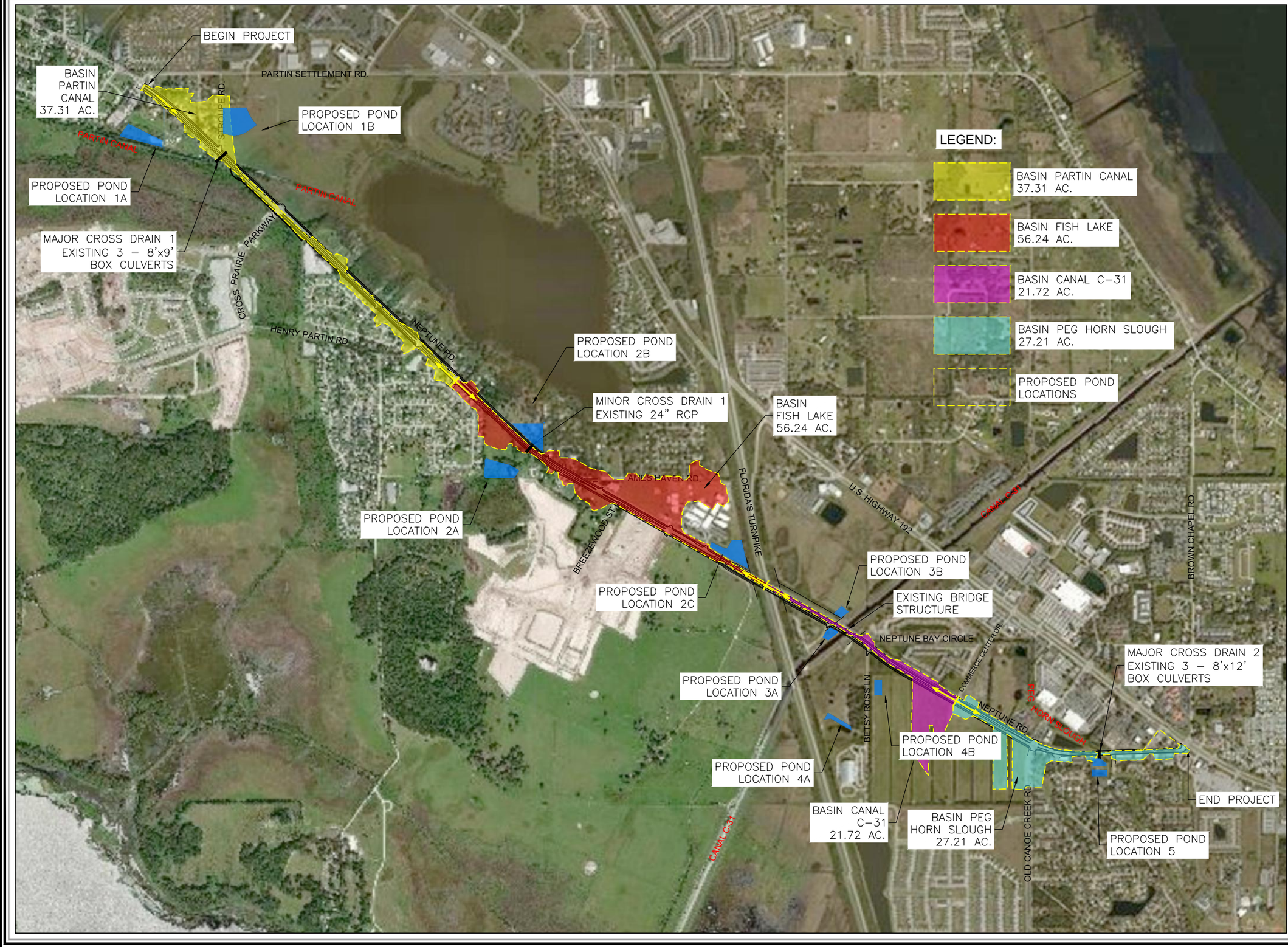
0 750' 1500'

Scale: 1" = 1500'

Date: February 15, 2019

FIGURE 4

OEI NO. 18-021



OSCEOLA ENGINEERING INCORPORATED

Civil Engineers

Environmental Engineers

Landscape Architects

Land Planners &

Transportation Engineers

address:

Osceola Engineering Incorporated
Certificate of Authorization
number# 00026265
1003 Florida Avenue
City of Saint Cloud
Florida 34769
telephone: (407) 891-0452
facsimile: (407) 891-9173

project:

Neptune Road Widening

drawing:

Project Drainage Map

location:

Sec 04, 05, 25, 26, 31, 32
Twp 26 S., Rng 30 E.
Osceola County, Florida

North

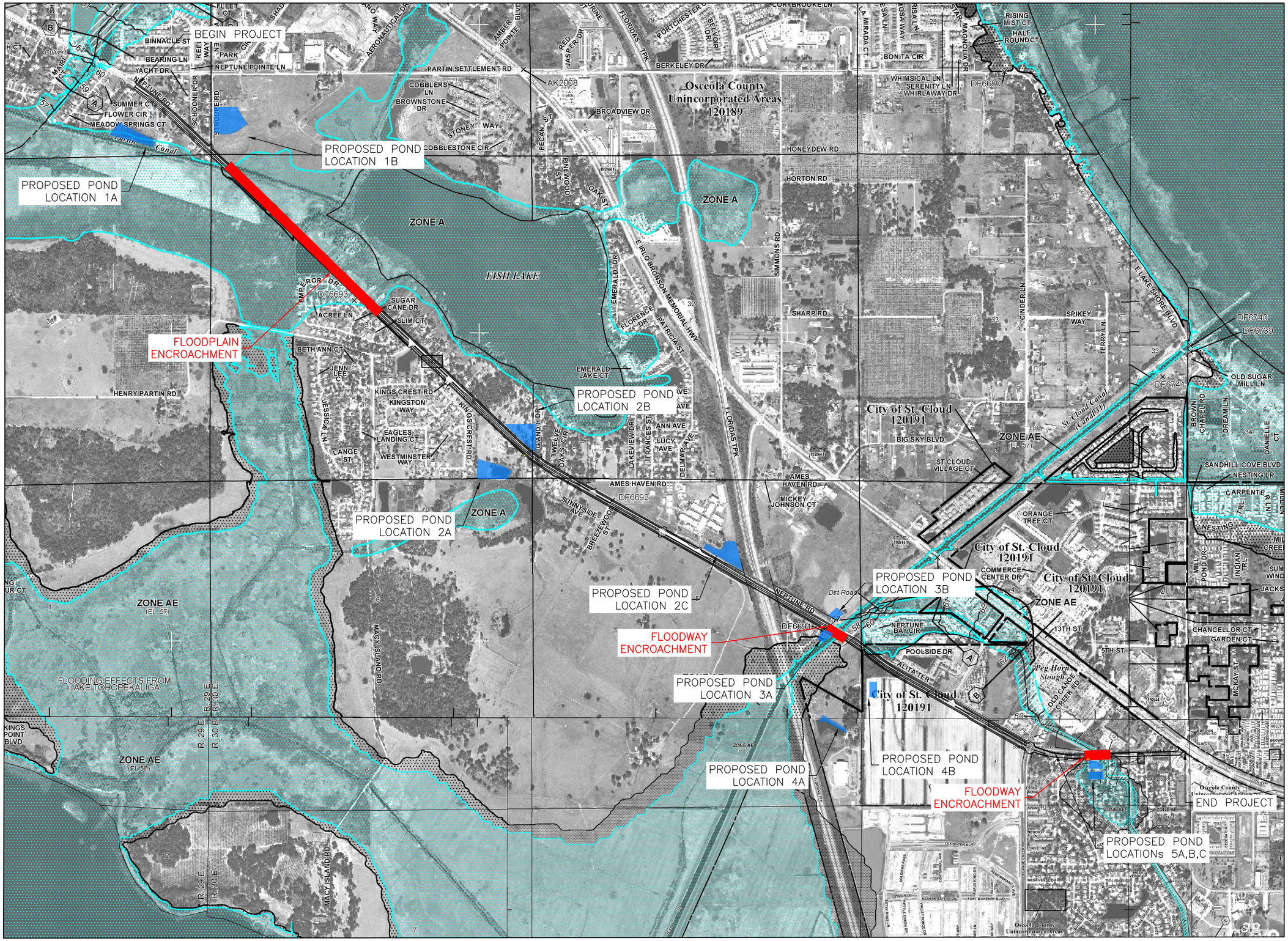
0 750' 1500'

Scale: 1" = 1500'

Date: February 15, 2019

FIGURE 5

OEI NO. 18-021



OSCEOLA ENGINEERING INCORPORATED

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1003 Florida Avenue
City of Saint Cloud
Florida 34769
telephone: (407) 891-0452
facsimile: (407) 891-9173

project:

Neptune Road Widening

drawing:

Floodplain Compensation Areas

location:

Sec 04, 05, 25, 26, 31, 32
Twp 26 S, Rng 30 E.
Osceola County, Florida

North

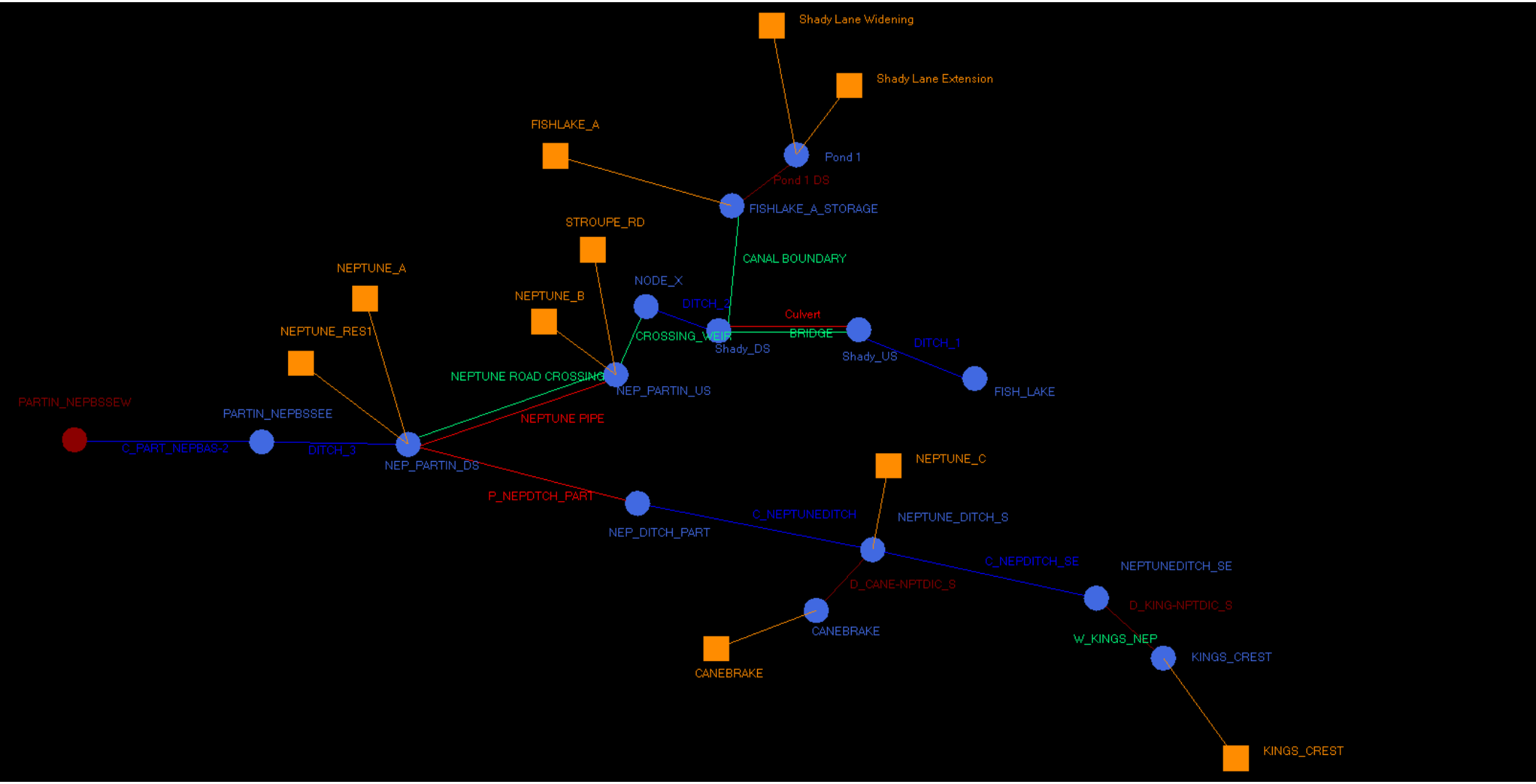
0 750' 1500'

Scale: 1" = 1500'

Date: February 15, 2019

FIGURE 6

OEI NO. 18-021


Shady Lane Widening
Shady Lane Extension
FISHLAKE_A
Pond 1
Pond 1 DS
FISHLAKE_A_STORAGE
STROUPE_RD
CANAL BOUNDARY
NEPTUNE_A
NODE_X
NEPTUNE_B
DITCH_2
Culvert
NEPTUNE_RES1
CROSSING_WEIR
BRIDGE
Shady_DS
Shady_US
DITCH_1
NEPTUNE ROAD CROSSING
NEP_PARTIN_US
FISH_LAKE
PARTIN_NEPBSSEW
PARTIN_NEPBSSEE
NEPTUNE PIPE
C_PART_NEPBAS-2
DITCH_3
NEP_PARTIN_DS
NEPTUNE_C
P_NEPDTCH_PART
C_NEPTUNEDITCH
NEPTUNE_DITCH_S
NEP_DITCH_PART
C_NEPDITCH_SE
NEPTUNEDITCH_SE
D_CANE-NPTDIC_S
D_KING-NPTDIC_S
CANEBRAKE
W_KINGS_NEP
KINGS_CREST
CANEBRAKE
KINGS_CREST

Manual Basin: CANEBRAKE

Scenario: Icpr3
Node: CANEBRAKE
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 35.6000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 35.9800 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
35.9800	CANEBRAKE	CANEBRAKE	

Comment:

Manual Basin: FISHLAKE_A

Scenario: Icpr3
Node: FISHLAKE_A_STORAGE
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 60.4000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 21.8500 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
21.8500	FISHLAKE_A	FISHLAKE_A	

Comment:

Manual Basin: KINGS_CREST

Scenario: Icpr3
Node: KINGS_CREST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 20.1000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 35.8900 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
35.8900	KINGS_CREST	KINGS_CREST	

Comment:

Manual Basin: NEPTUNE_A

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 31.9000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 2.4300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
2.4300	NEPTUNE_A	NEPTUNE_A	

Comment:

Manual Basin: NEPTUNE_B

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 64.9000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 8.4800 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
8.4800	NEPTUNE_B	NEPTUNE_B	

Comment:

Manual Basin: NEPTUNE_C

Scenario: Icpr3
Node: NEPTUNE_DITCH_S
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 45.0000 min
Max Allowable Q: 999999.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 12.5000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
12.5000	NEPTUNE_C	NEPTUNE_C	

Comment:

Manual Basin: NEPTUNE_RES1

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 43.5000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh323
Peaking Factor: 323.0
Area: 9.4000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.4000	NEPTUNE_RES1	NEPTUNE_RES1	

Comment:

Manual Basin: STROUPE_RD

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 35.5000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh323
Peaking Factor: 323.0
Area: 17.5200 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
17.5200	STROUPE_RD	STROUPE_RD	

Comment:

Manual Basin: Shady Lane Extension

Scenario: Icpr3
Node: Pond 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 15.2000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 9.4900 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.4900	Shady Lane Extension	Shady Lane Extension	

Comment:

Manual Basin: Shady Lane Widening

Scenario: Icpr3
Node: Pond 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 26.5000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 9.7000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.7000	Shady Lane Widening	Shady Lane Widening	

Comment:

Node: CANEBRAKE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.04 ft
Warning Stage: 58.50 ft

Stage [ft]	Area [ac]	Area [ft2]
43.00	2.0300	88427
53.00	3.3900	147668
56.50	4.0400	175982
58.50	5.1100	222592

Comment: INCOMPLETE AS-BUILTS

SOME DATA ASSUMED BASED ON CONTOURS
STAGE DATA BASED ON CONTOUR DATA

Node: FISHLAKE_A_STORAGE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 55.00 ft
Warning Stage: 68.50 ft

Stage [ft]	Area [ac]	Area [ft2]
55.00	0.3113	13560
55.50	1.3400	58370
56.00	2.9518	128581
56.50	3.2353	140929
57.00	3.5951	156603
57.50	3.8283	166761
58.00	4.0913	178219
58.50	4.3670	190225
59.00	4.7205	205626
59.50	5.1648	224980
60.00	5.7510	250515
60.50	6.3458	276424
61.00	7.0590	307488
61.50	7.7005	335433
62.00	8.5034	370406
62.50	9.3249	406192
63.00	10.2792	447762
63.50	11.2234	488891
64.00	13.1977	574893
64.50	13.8417	602945
65.00	14.7655	643184
65.50	16.2732	708862
66.00	18.3443	799077
66.50	18.5363	807440
67.00	18.7765	817903
67.50	18.9060	823547
68.00	18.9077	823619
68.50	18.9077	823619

Comment:

Node: FISH_LAKE

Scenario: Icpr3
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 58.37 ft

External Hydrograph
FISH_LAKE

Comment:

Node: KINGS_CREST

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 62.00 ft
Warning Stage: 68.00 ft

Stage [ft]	Area [ac]	Area [ft2]
62.00	1.4500	63162
68.00	2.1000	91476
69.00	4.3000	187308

Comment: STAGE DATA BASED ON CONTOUR DATA
SUPPLEMENTED WITH CONSTRUCTION / AS-BUILT DATA WHERE AVAILABLE

Node: NEPTUNEDITCH_SE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 62.00 ft
Warning Stage: 66.00 ft

Comment:

Node: NEPTUNE_DITCH_S

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft

Comment:

Node: NEP_DITCH_PART

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Comment:

Node: NEP_PARTIN_DS

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Stage [ft]	Area [ac]	Area [ft2]
53.09	0.4000	17424
70.00	0.4000	17424

Comment:

Node: NEP_PARTIN_US

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Stage [ft]	Area [ac]	Area [ft2]
53.09	0.4000	17424
70.00	0.4000	17424

Comment:

Node: PARTIN_NEPBSSEE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft

Stage [ft]	Area [ac]	Area [ft2]
52.00	0.1000	4356
56.00	0.1000	4356
57.00	1.1200	48787
58.00	1.9300	84071
59.00	2.7600	120226

Comment: STAGE DATA BASED ON CONTOUR DATA
NO STORAGE DEFINED - NODE FOR STAGE DATA ONLY

Node: PARTIN_NEPBSSEW

Scenario: Icpr3
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft
Boundary Stage: TOHO

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	53.09
0	0	0	0.2500	53.09
0	0	0	0.5000	53.09
0	0	0	0.7500	53.09
0	0	0	1.0000	53.09
0	0	0	1.2500	53.09
0	0	0	1.5000	53.09
0	0	0	1.7500	53.10
0	0	0	2.0000	53.10
0	0	0	2.2500	53.10
0	0	0	2.5000	53.11
0	0	0	2.7500	53.12
0	0	0	3.0000	53.12
0	0	0	3.2500	53.13
0	0	0	3.5000	53.14
0	0	0	3.7500	53.15
0	0	0	4.0000	53.16
0	0	0	4.2500	53.17
0	0	0	4.5000	53.18
0	0	0	4.7500	53.20
0	0	0	5.0000	53.21
0	0	0	5.2500	53.23

Year	Month	Day	Hour	Stage [ft]
0	0	0	5.5000	53.25
0	0	0	5.7500	53.27
0	0	0	6.0000	53.29
0	0	0	6.2500	53.31
0	0	0	6.5000	53.33
0	0	0	6.7500	53.36
0	0	0	7.0000	53.39
0	0	0	7.2500	53.41
0	0	0	7.5000	53.44
0	0	0	7.7500	53.47
0	0	0	8.0000	53.49
0	0	0	8.2500	53.52
0	0	0	8.5000	53.55
0	0	0	8.7500	53.58
0	0	0	9.0000	53.62
0	0	0	9.2500	53.66
0	0	0	9.5000	53.70
0	0	0	9.7500	53.75
0	0	0	10.0000	53.80
0	0	0	10.2500	53.86
0	0	0	10.5000	53.94
0	0	0	10.7500	54.02
0	0	0	11.0000	54.13
0	0	0	11.2500	54.25
0	0	0	11.5000	54.39
0	0	0	11.7500	54.58
0	0	0	12.0000	54.99
0	0	0	12.2500	55.64
0	0	0	12.5000	56.18
0	0	0	12.7500	56.30
0	0	0	13.0000	56.42
0	0	0	13.2500	56.79
0	0	0	13.5000	56.98
0	0	0	13.7500	57.08
0	0	0	14.0000	57.15
0	0	0	14.2500	57.18
0	0	0	14.5000	57.20
0	0	0	14.7500	57.22
0	0	0	15.0000	57.23
0	0	0	15.2500	57.25
0	0	0	15.5000	57.26
0	0	0	15.7500	57.28
0	0	0	16.0000	57.30
0	0	0	16.2500	57.33
0	0	0	16.5000	57.36
0	0	0	16.7500	57.39
0	0	0	17.0000	57.42
0	0	0	17.2500	57.45
0	0	0	17.5000	57.48

Year	Month	Day	Hour	Stage [ft]
0	0	0	17.7500	57.51
0	0	0	18.0000	57.54
0	0	0	18.2500	57.57
0	0	0	18.5000	57.60
0	0	0	18.7500	57.63
0	0	0	19.0000	57.65
0	0	0	19.2500	57.68
0	0	0	19.5000	57.71
0	0	0	19.7500	57.73
0	0	0	20.0000	57.76
0	0	0	20.2500	57.78
0	0	0	20.5000	57.81
0	0	0	20.7500	57.83
0	0	0	21.0000	57.85
0	0	0	21.2500	57.87
0	0	0	21.5000	57.90
0	0	0	21.7500	57.92
0	0	0	22.0000	57.94
0	0	0	22.2500	57.95
0	0	0	22.5000	57.97
0	0	0	22.7500	57.99
0	0	0	23.0000	58.00
0	0	0	23.2500	58.02
0	0	0	23.5000	58.03
0	0	0	23.7500	58.05
0	0	0	24.0000	58.06
0	0	0	24.2500	58.06
0	0	0	24.5000	58.07
0	0	0	24.7500	58.07
0	0	0	25.0000	58.07
0	0	0	25.2500	58.08
0	0	0	25.5000	58.08
0	0	0	25.7500	58.08
0	0	0	26.0000	58.08
0	0	0	26.2500	58.08
0	0	0	26.5000	58.08
0	0	0	26.7500	58.08
0	0	0	27.0000	58.08
0	0	0	27.2500	58.08
0	0	0	27.5000	58.08
0	0	0	27.7500	58.07
0	0	0	28.0000	58.07
0	0	0	28.2500	58.07
0	0	0	28.5000	58.06
0	0	0	28.7500	58.06
0	0	0	29.0000	58.05
0	0	0	29.2500	58.05
0	0	0	29.5000	58.04
0	0	0	29.7500	58.03

Year	Month	Day	Hour	Stage [ft]
0	0	0	30.0000	58.03
0	0	0	30.2500	58.02
0	0	0	30.5000	58.01
0	0	0	30.7500	58.00
0	0	0	31.0000	57.99
0	0	0	31.2500	57.99
0	0	0	31.5000	57.98
0	0	0	31.7500	57.96
0	0	0	32.0000	57.95
0	0	0	32.2500	57.94
0	0	0	32.5000	57.93
0	0	0	32.7500	57.92
0	0	0	33.0000	57.90
0	0	0	33.2500	57.89
0	0	0	33.5000	57.88
0	0	0	33.7500	57.86
0	0	0	34.0000	57.85
0	0	0	34.2500	57.83
0	0	0	34.5000	57.82
0	0	0	34.7500	57.80
0	0	0	35.0000	57.79
0	0	0	35.2500	57.78
0	0	0	35.5000	57.76
0	0	0	35.7500	57.75
0	0	0	36.0000	57.73
0	0	0	36.2500	57.72
0	0	0	37.2500	57.67
0	0	0	38.2500	57.62
0	0	0	39.2500	57.58
0	0	0	40.2500	57.55
0	0	0	41.2500	57.51
0	0	0	42.2500	57.48
0	0	0	43.2500	57.45
0	0	0	44.2500	57.42
0	0	0	45.2500	57.39
0	0	0	46.2500	57.36
0	0	0	47.2500	57.33
0	0	0	48.2500	57.30
0	0	0	49.2500	57.27
0	0	0	50.2500	57.24
0	0	0	51.2500	57.21
0	0	0	52.2500	57.19
0	0	0	53.2500	57.17
0	0	0	54.2500	57.14
0	0	0	55.2500	57.12
0	0	0	56.2500	57.10
0	0	0	57.2500	57.07
0	0	0	58.2500	57.05
0	0	0	59.2500	57.04

Year	Month	Day	Hour	Stage [ft]
0	0	0	60.2500	57.02
0	0	0	61.2500	57.01
0	0	0	62.2500	56.99
0	0	0	63.2500	56.98
0	0	0	64.2500	56.97
0	0	0	65.2500	56.96
0	0	0	66.2500	56.96
0	0	0	67.2500	56.95
0	0	0	68.2500	56.94
0	0	0	69.2500	56.94
0	0	0	70.2500	56.93
0	0	0	71.2500	56.92
0	0	0	72.2500	56.91
0	0	0	73.2500	56.91
0	0	0	74.2500	56.90
0	0	0	75.2500	56.90
0	0	0	76.2500	56.89
0	0	0	77.2500	56.89
0	0	0	78.2500	56.88
0	0	0	79.2500	56.87
0	0	0	80.2500	56.86
0	0	0	81.2500	56.85
0	0	0	82.2500	56.84
0	0	0	83.2500	56.84
0	0	0	84.2500	56.83
0	0	0	85.2500	56.82
0	0	0	86.2500	56.82
0	0	0	87.2500	56.81
0	0	0	88.2500	56.81
0	0	0	89.2500	56.80
0	0	0	90.2500	56.80
0	0	0	91.2500	56.79
0	0	0	92.2500	56.79
0	0	0	93.2500	56.79
0	0	0	94.2500	56.78
0	0	0	95.2500	56.78
0	0	0	96.2500	56.78
0	0	0	97.2500	56.78
0	0	0	98.2500	56.78
0	0	0	99.2500	56.78
0	0	0	100.2500	56.78
0	0	0	101.2500	56.78
0	0	0	102.2500	56.78
0	0	0	103.2500	56.78
0	0	0	104.2500	56.78
0	0	0	105.0000	56.78

Comment:

Node: Pond 1

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 56.50 ft
Warning Stage: 59.00 ft

Stage [ft]	Area [ac]	Area [ft2]
56.50	2.0300	88427
57.00	2.0900	91040
58.00	2.2000	95832
59.00	2.3100	100624

Comment:

Node: Shady_DS

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 59.50 ft

Stage [ft]	Area [ac]	Area [ft2]
53.65	0.4000	17424
70.00	0.4000	17424

Comment:

Node: Shady_US

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 56.74 ft

Stage [ft]	Area [ac]	Area [ft2]
56.00	0.0027	116
56.50	0.0849	3700
57.00	0.4111	17909
57.50	0.8390	36548
58.00	2.2019	95916
58.50	3.3578	146266
59.00	4.6878	204201
59.50	5.3306	232200
60.00	6.0257	262481

Stage [ft]	Area [ac]	Area [ft2]
60.50	6.3114	274924
61.00	6.7841	295514
61.50	7.2115	314134
62.00	7.6357	332610
62.50	8.2485	359304
63.00	9.1989	400704
63.50	9.7582	425065
64.00	10.7691	469103
64.50	11.6087	505676
65.00	13.9668	608395
65.50	14.6673	638908
66.00	16.4217	715329
66.50	16.4217	715329

Comment:

Weir Link: BRIDGE

Scenario:	Icpr3
From Node:	Shady_US
To Node:	Shady_DS
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	59.14 ft
Control Elevation:	59.14 ft
Cross Section:	Bridge Cross

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: CANAL BOUNDARY

Scenario:	Icpr3
From Node:	FISHLAKE_A_STORAGE
To Node:	Shady_DS
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	55.90 ft
Control Elevation:	55.90 ft
Cross Section:	X-0150W

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Channel Link: C_NEPDITCH_SE		Upstream		Downstream	
Scenario:	Icpr3	Invert:	62.00 ft	Invert:	53.00 ft
From Node:	NEPTUNEDITCH_SE	Manning's N:	0.0500	Manning's N:	0.0500
		Geometry: Trapezoidal		Geometry: Trapezoidal	
To Node:	NEPTUNE_DITCH_S	Max Depth:	9999.00 ft	Max Depth:	9999.00 ft
		Extrapolation:	Normal	Extrapolation:	Normal
Link Count:	1	Bottom Width:	5.00 ft	Bottom Width:	5.00 ft
Flow Direction:	Both	Left Slope:	2.000 (h:v)	Left Slope:	2.000 (h:v)
Damping:	0.0000 ft	Right Slope:	2.000 (h:v)	Right Slope:	2.000 (h:v)
Length:	2500.00 ft	Bottom Clip			
Contraction Coef:	0.10	Default:	0.00 ft	Default:	0.00 ft
Expansion Coef:	0.30	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0500	Manning's N:	0.0500
Bend Loss Coef:	0.00	Top Clip			
Bend Location:	0.00 ft	Default:	0.00 ft	Default:	0.00 ft
Energy Switch:	Energy	Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0500	Manning's N:	0.0500

Comment: ASSUMED CROSS-SECTION AS TYPICAL ROADSIDE DITCH

Channel Link: C_NEPTUNEDITCH		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.00 ft	Invert:	51.00 ft
From Node:	NEPTUNE_DITCH_S	Manning's N:	0.0000	Manning's N:	0.0000
		Geometry: Irregular		Geometry: Irregular	
To Node:	NEP_DITCH_PART	Cross Section:	X_NEPTUNEDITCH	Cross Section:	X_NEPTUNEDITCH
Link Count:	1				
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	1485.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Comment: DATA SOURCE: ESTIMATED BASED ON CONTOUR DATA

Channel Link: C_PART_NEPBAS-2		Upstream		Downstream	
Scenario:	Icpr3	Invert:	48.85 ft	Invert:	50.80 ft
From Node:	PARTIN_NEPBSSEE	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	PARTIN_NEPBSSE	Geometry:	Irregular	Geometry:	Irregular
	W	Cross Section:	DITCH_3_DS	Cross Section:	X_PART_NEPBAS-2
Link Count:	1				
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	640.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Pipe Link: Culvert		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.60 ft	Invert:	52.60 ft
From Node:	Shady_US	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Shady_DS	Geometry:	Rectangular	Geometry:	Rectangular
Link Count:	4	Max Depth:	8.00 ft	Max Depth:	8.00 ft
Flow Direction:	Both	Max Width:	5.00 ft	Max Width:	5.00 ft
Damping:	0.0000 ft	Fillet:	0.00 ft	Fillet:	0.00 ft
Length:	114.00 ft	Bottom Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 ft	Top Clip			
Energy Switch:	Energy	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Drop Structure Link: D-Neptune Road		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	48.80 ft	Invert:	49.00 ft
From Node:	NEP_PARTIN_US	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NEP_PARTIN_DS	Geometry:	Rectangular	Geometry:	Rectangular
Link Count:	1	Max Depth:	8.00 ft	Max Depth:	8.00 ft
Flow Direction:	Both	Max Width:	9.00 ft	Max Width:	9.00 ft
Solution:	Combine	Fillet:	0.00 ft	Fillet:	0.00 ft
Increments:	10	Bottom Clip			

Pipe Count:	3	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	40.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 ft	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Irregular	Default:	0.00 ft
Invert:	53.65 ft	Op Table:	
Control Elevation:	53.65 ft	Ref Node:	
Cross Section:	W_CS	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Trapezoidal	Default:	0.00 ft
Invert:	56.99 ft	Op Table:	
Control Elevation:	56.99 ft	Ref Node:	
Max Depth:	11.70 ft	Discharge Coefficients	
Extrapolation Method:	Normal Projection	Weir Default:	3.200
Bottom Width:	20.00 ft	Weir Table:	
Left Slope:	1.000 (h:v)	Orifice Default:	0.600
Right Slope:	1.000 (h:v)	Orifice Table:	

Weir Comment:

Drop Structure Comment:

Channel Link: DITCH_1		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.70 ft	Invert:	52.70 ft

From Node:	FISH_LAKE	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	Shady_US	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	CROSS_US	Cross Section:	CROSS_US
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	973.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Channel Link: DITCH_2		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.70 ft	Invert:	51.90 ft
From Node:	Shady_DS	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	NEP_PARTIN_US	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	CROSS_US_2	Cross Section:	CROSS_DS_2
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	875.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Channel Link: DITCH_3		Upstream		Downstream	
Scenario:	Icpr3	Invert:	49.85 ft	Invert:	48.85 ft
From Node:	NEP_PARTIN_DS	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	PARTIN_NEPBSSEE	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	DITCH_3_US	Cross Section:	DITCH_3_DS
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	750.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				

Bend Location:	0.00 ft
Energy Switch:	Energy

Comment: DATA SOURCE: ESTIMATED BASED ON CONTOUR DATA AND SUPPLEMENTED WITH FIELD SURVEY DATA WHERE AVAILAIBLE

Drop Structure Link: D_CANE-NPTDIC_S		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	52.90 ft
From Node:	CANEBRAKE	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NEPTUNE_DITCH_S	Geometry: Circular		Geometry: Circular	
		Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0120	Manning's N:	0.0120
Damping:	0.0000 ft	Top Clip			
Length:	80.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0120	Manning's N:	0.0120
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	53.00 ft	Ref Node:	
Control Elevation:	53.00 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	1.83 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal		

Geometry Type:	Rectangular
Invert:	56.00 ft
Control Elevation:	56.00 ft
Max Depth:	1.92 ft
Max Width:	3.08 ft
Fillet:	0.00 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.000
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment: DATA SOURCE: INFORMATION OBTAINED FROM CONSTRUCTION / AS-BUILT PLANS

Drop Structure Link: D_KING-NPTDIC_S		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	62.00 ft	Invert:	61.70 ft
From Node:	KINGS_CREST	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NEPTUNEDITCH_S	Geometry: Circular		Geometry: Circular	
	E	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0120	Manning's N:	0.0120
Damping:	0.0000 ft	Top Clip			
Length:	75.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0120	Manning's N:	0.0120
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	63.70 ft
Control Elevation:	63.70 ft
Max Depth:	3.42 ft
Max Width:	1.50 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	62.00 ft	Ref Node:	
Control Elevation:	62.00 ft	Discharge Coefficients	
Max Depth:	0.33 ft	Weir Default:	0.600
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.10 ft	Ref Node:	
Control Elevation:	67.10 ft	Discharge Coefficients	
Max Depth:	1.92 ft	Weir Default:	3.000
Max Width:	3.08 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment: DATA SOURCE: INFORMATION OBTAINED FROM CONSTRUCTION / AS-BUILT PLANS
ASSUMED 1929 DATUM

Weir Link: NEPTUNE ROAD CROSSING		Bottom Clip	
Scenario:	Icpr3	Default:	0.00 ft
From Node:	NEP_PARTIN_US	Op Table:	
To Node:	NEP_PARTIN_DS	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Broad Crested Vertical	Ref Node:	
Geometry Type:	Irregular	Discharge Coefficients	
Invert:	60.15 ft		

Control Elevation:	60.15 ft		
Cross Section:	X-0170W	Weir Default:	2.800
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: P_NEPDTCH_PART		Upstream		Downstream	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	53.00 ft
From Node:	NEP_DITCH_PART	Manning's N:	0.0240	Manning's N:	0.0240
To Node:	NEP_PARTIN_DS	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	30.00 ft	Op Table:		Op Table:	
FHWA Code:	6	Ref Node:		Ref Node:	
Entr Loss Coef:	0.70	Manning's N:	0.0240	Manning's N:	0.0240
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 ft	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0240	Manning's N:	0.0240

Comment: ASSUMED INVERTS AND PIPE SIZE BASED ON FIELD OBSERVATION AND CONTOURS

Drop Structure Link: Pond 1 DS		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	50.50 ft
From Node:	Pond 1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	FISHLAKE_A_STOR	Geometry: Circular		Geometry: Circular	
	AGE	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	27.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	57.52 ft
Control Elevation:	57.52 ft
Max Depth:	3.00 ft
Max Width:	8.75 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	56.50 ft
Control Elevation:	56.50 ft
Max Depth:	0.29 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: W_KINGS_NEP

Scenario:	Icpr3
From Node:	KINGS_CREST
To Node:	NEPTUNEDITCH_SE
Link Count:	1
Flow Direction:	None
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	68.00 ft
Control Elevation:	68.00 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.600
Weir Table:	
Orifice Default:	0.600

Bottom Width: 50.00 ft
Left Slope: 10.000 (h:v)
Right Slope: 10.000 (h:v)

Orifice Table:

Comment: OVERTOPPING POND TO DITCH

Simulation: 100/24

Scenario: Icpr3
Run Date/Time: 11/7/2019 10:50:12 AM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3
Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 100/24
Extern Hydrograph Set: 100/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:

Impervious Set: Icpr3

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	0.5000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 50/24

Scenario: Icpr3
Run Date/Time: 11/7/2019 10:51:19 AM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3

Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 50/24
Extern Hydrograph Set: 50/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Icpr3

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 0.5000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 8.10 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 500/24

Scenario: Icpr3
Run Date/Time: 11/7/2019 1:20:24 PM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3

Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 500/24
Extern Hydrograph Set: 500/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Icpr3

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 0.5000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 11.20 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft

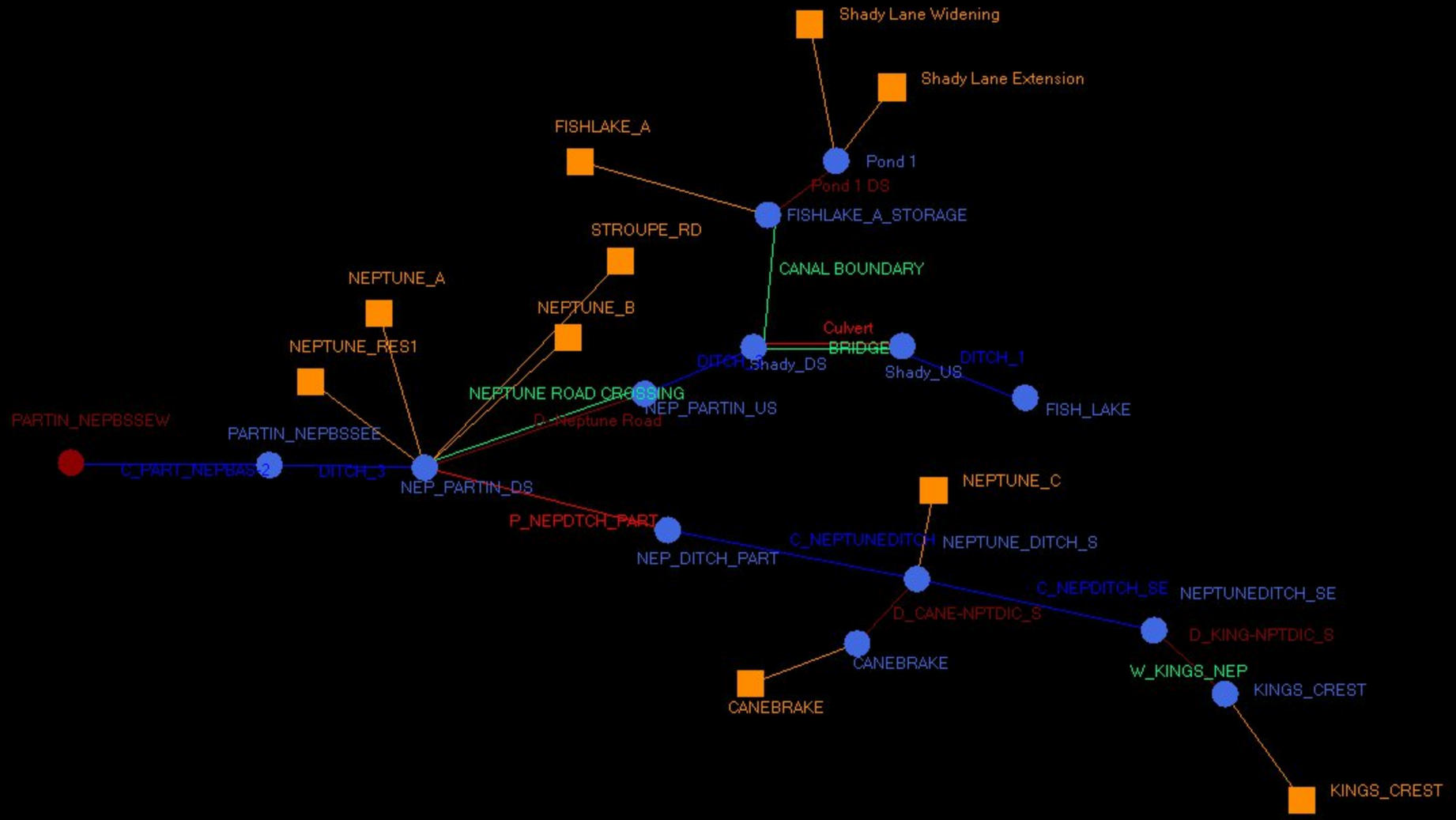
Min Node Srf Area (1D):	100 ft2
Energy Switch (1D):	Energy

Comment:

Node Max Conditions [Icpr3]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
CANEBRAKE	100/24	58.50	58.90	0.0010	199.50	5.06	222592
FISHLAKE_A_STORAGE	100/24	68.50	58.42	0.0010	108.53	104.89	188311
FISH_LAKE	100/24	58.37	58.43	0.0010	214.23	240.33	409633
KINGS_CREST	100/24	68.00	68.34	0.0010	244.44	34.97	124229
NEPTUNEDITCH_SE	100/24	66.00	63.80	0.0005	34.97	34.38	19753
NEPTUNE_DITCH_S	100/24	58.00	58.85	0.0010	86.78	49.05	65095
NEP_DITCH_PART	100/24	60.00	58.84	0.0010	33.80	19.97	44544
NEP_PARTIN_DS	100/24	60.00	58.38	0.0010	233.27	237.98	39404
NEP_PARTIN_US	100/24	60.00	58.42	0.0010	226.78	229.10	111213
PARTIN_NEPBSSEE	100/24	58.00	58.38	0.0010	237.98	234.39	192645
PARTIN_NEPBSSEW	100/24	58.00	58.37	0.0010	234.39	157.48	0
Pond 1	100/24	59.00	58.45	0.0007	93.46	68.33	98008
Shady_DS	100/24	59.50	58.42	0.0010	226.96	226.78	164744
Shady_US	100/24	56.74	58.43	0.0010	240.33	223.05	549578
CANEBRAKE	50/24	58.50	58.35	0.0010	177.06	4.12	219185
FISHLAKE_A_STORAGE	50/24	68.50	58.13	0.0009	94.63	93.96	181241
FISH_LAKE	50/24	58.37	58.13	0.0009	206.36	209.65	409633
KINGS_CREST	50/24	68.00	67.73	0.0010	214.71	31.88	90186
NEPTUNEDITCH_SE	50/24	66.00	63.68	0.0005	31.88	31.38	18386
NEPTUNE_DITCH_S	50/24	58.00	58.31	0.0010	74.33	43.02	51393
NEP_DITCH_PART	50/24	60.00	58.31	0.0010	27.95	18.47	35301
NEP_PARTIN_DS	50/24	60.00	58.09	0.0010	222.54	223.05	38140
NEP_PARTIN_US	50/24	60.00	58.12	0.0010	217.49	218.83	111213
PARTIN_NEPBSSEE	50/24	58.00	58.09	0.0010	223.05	224.89	180470
PARTIN_NEPBSSEW	50/24	58.00	58.08	0.0014	224.89	120.73	0
Pond 1	50/24	59.00	58.37	0.0006	83.71	59.02	97590
Shady_DS	50/24	59.50	58.13	0.0010	216.12	217.49	164744
Shady_US	50/24	56.74	58.13	0.0010	209.65	213.71	519826

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
CANEBRAKE	500/24	58.50	60.27	0.0010	254.18	6.99	222592
FISHLAKE_A_STORAGE	500/24	68.50	59.28	0.0009	141.05	110.47	216442
FISH_LAKE	500/24	58.37	59.29	0.0010	311.69	424.81	409633
KINGS_CREST	500/24	68.00	69.34	0.0010	317.10	38.18	187308
NEPTUNEDITCH_SE	500/24	66.00	63.96	0.0006	38.18	37.60	22090
NEPTUNE_DITCH_S	500/24	58.00	60.21	0.0009	108.06	59.68	82422
NEP_DITCH_PART	500/24	60.00	60.21	0.0010	47.31	22.91	50546
NEP_PARTIN_DS	500/24	60.00	59.24	0.0010	369.01	366.46	46686
NEP_PARTIN_US	500/24	60.00	59.28	0.0010	366.46	358.14	111213
PARTIN_NEPBSSEE	500/24	58.00	59.22	0.0010	343.93	331.50	218962
PARTIN_NEPBSSEW	500/24	58.00	59.22	0.0011	308.09	343.93	0
Pond 1	500/24	59.00	59.28	0.0006	117.21	89.17	100624
Shady_DS	500/24	59.50	59.28	0.0010	372.39	354.37	164744
Shady_US	500/24	56.74	59.29	0.0010	424.81	311.69	631013


Shady Lane Widening
Shady Lane Extension
FISHLAKE_A
Pond 1
Pond 1 DS
FISHLAKE_A_STORAGE
STROUPE_RD
CANAL BOUNDARY
NEPTUNE_A
NEPTUNE_B
Culvert
BRIDGE
NEPTUNE_RES1
DITCH_S
Shady_DS
Shady_US
DITCH_1
NEPTUNE ROAD CROSSING
NEP_PARTIN_US
FISH_LAKE
D_Neptune Road
PARTIN_NEPBSSEW
PARTIN_NEPBSSEE
C_PART_NEPBAS2
DITCH_3
NEP_PARTIN_DS
NEPTUNE_C
P_NEPDTCH_PART
C_NEPTUNEDITCH
NEPTUNE_DITCH_S
NEP_DITCH_PART
C_NEPDITCH_SE
NEPTUNEDITCH_SE
D_CANE-NPTDIC_S
D_KING-NPTDIC_S
CANEBRAKE
W_KINGS_NEP
KINGS_CREST
CANEBRAKE
KINGS_CREST

Manual Basin: CANEBRAKE

Scenario: Icpr3
Node: CANEBRAKE
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 35.6000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 35.9800 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
35.9800	CANEBRAKE	CANEBRAKE	

Comment:

Manual Basin: FISHLAKE_A

Scenario: Icpr3
Node: FISHLAKE_A_STORAGE
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 60.4000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 21.8500 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
21.8500	FISHLAKE_A	FISHLAKE_A	

Comment:

Manual Basin: KINGS_CREST

Scenario: Icpr3
Node: KINGS_CREST
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 20.1000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 35.8900 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
35.8900	KINGS_CREST	KINGS_CREST	

Comment:

Manual Basin: NEPTUNE_A

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 31.9000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 2.4300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
2.4300	NEPTUNE_A	NEPTUNE_A	

Comment:

Manual Basin: NEPTUNE_B

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 64.9000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 8.4800 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
8.4800	NEPTUNE_B	NEPTUNE_B	

Comment:

Manual Basin: NEPTUNE_C

Scenario: Icpr3
Node: NEPTUNE_DITCH_S
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 45.0000 min
Max Allowable Q: 999999.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: Uh484
Peaking Factor: 484.0
Area: 12.5000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
12.5000	NEPTUNE_C	NEPTUNE_C	

Comment:

Manual Basin: NEPTUNE_RES1

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 43.5000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh323
Peaking Factor: 323.0
Area: 9.4000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.4000	NEPTUNE_RES1	NEPTUNE_RES1	

Comment:

Manual Basin: STROUPE_RD

Scenario: Icpr3
Node: NEP_PARTIN_DS
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 35.5000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh323
Peaking Factor: 323.0
Area: 17.5200 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
17.5200	STROUPE_RD	STROUPE_RD	

Comment:

Manual Basin: Shady Lane Extension

Scenario: Icpr3
Node: Pond 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 15.2000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 9.4900 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.4900	Shady Lane Extension	Shady Lane Extension	

Comment:

Manual Basin: Shady Lane Widening

Scenario: Icpr3
Node: Pond 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 26.5000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 9.7000 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
9.7000	Shady Lane Widening	Shady Lane Widening	

Comment:

Node: CANEBRAKE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.04 ft
Warning Stage: 58.50 ft

Stage [ft]	Area [ac]	Area [ft2]
43.00	2.0300	88427
53.00	3.3900	147668
56.50	4.0400	175982
58.50	5.1100	222592

Comment: INCOMPLETE AS-BUILTS

SOME DATA ASSUMED BASED ON CONTOURS
STAGE DATA BASED ON CONTOUR DATA

Node: FISHLAKE_A_STORAGE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 55.00 ft
Warning Stage: 68.50 ft

Stage [ft]	Area [ac]	Area [ft2]
55.00	0.3113	13560
55.50	1.3400	58370
56.00	2.9518	128581
56.50	3.2353	140929
57.00	3.5951	156603
57.50	3.8283	166761
58.00	4.0913	178219
58.50	4.3670	190225
59.00	4.7205	205626
59.50	5.1648	224980
60.00	5.7510	250515
60.50	6.3458	276424
61.00	7.0590	307488
61.50	7.7005	335433
62.00	8.5034	370406
62.50	9.3249	406192
63.00	10.2792	447762
63.50	11.2234	488891
64.00	13.1977	574893
64.50	13.8417	602945
65.00	14.7655	643184
65.50	16.2732	708862
66.00	18.3443	799077
66.50	18.5363	807440
67.00	18.7765	817903
67.50	18.9060	823547
68.00	18.9077	823619
68.50	18.9077	823619

Comment:

Node: FISH_LAKE

Scenario: Icpr3
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 58.37 ft

External Hydrograph
FISH_LAKE

Comment:

Node: KINGS_CREST

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 62.00 ft
Warning Stage: 68.00 ft

Stage [ft]	Area [ac]	Area [ft2]
62.00	1.4500	63162
68.00	2.1000	91476
69.00	4.3000	187308

Comment: STAGE DATA BASED ON CONTOUR DATA
SUPPLEMENTED WITH CONSTRUCTION / AS-BUILT DATA WHERE AVAILABLE

Node: NEPTUNEDITCH_SE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 62.00 ft
Warning Stage: 66.00 ft

Comment:

Node: NEPTUNE_DITCH_S

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft

Comment:

Node: NEP_DITCH_PART

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Comment:

Node: NEP_PARTIN_DS

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Stage [ft]	Area [ac]	Area [ft2]
53.09	0.1000	4356
70.00	0.1000	4356

Comment:

Node: NEP_PARTIN_US

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 60.00 ft

Stage [ft]	Area [ac]	Area [ft2]
53.09	0.1000	4356
70.00	0.1000	4356

Comment:

Node: PARTIN_NEPBSSEE

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft

Stage [ft]	Area [ac]	Area [ft2]
52.00	0.1000	4356
56.00	0.1000	4356
57.00	1.1200	48787
58.00	1.9300	84071
59.00	2.7600	120226

Comment: STAGE DATA BASED ON CONTOUR DATA
NO STORAGE DEFINED - NODE FOR STAGE DATA ONLY

Node: PARTIN_NEPBSSEW

Scenario: Icpr3
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 53.09 ft
Warning Stage: 58.00 ft
Boundary Stage: TOHO

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	53.09
0	0	0	0.2500	53.09
0	0	0	0.5000	53.09
0	0	0	0.7500	53.09
0	0	0	1.0000	53.09
0	0	0	1.2500	53.09
0	0	0	1.5000	53.09
0	0	0	1.7500	53.10
0	0	0	2.0000	53.10
0	0	0	2.2500	53.10
0	0	0	2.5000	53.11
0	0	0	2.7500	53.12
0	0	0	3.0000	53.12
0	0	0	3.2500	53.13
0	0	0	3.5000	53.14
0	0	0	3.7500	53.15
0	0	0	4.0000	53.16
0	0	0	4.2500	53.17
0	0	0	4.5000	53.18
0	0	0	4.7500	53.20
0	0	0	5.0000	53.21
0	0	0	5.2500	53.23

Year	Month	Day	Hour	Stage [ft]
0	0	0	5.5000	53.25
0	0	0	5.7500	53.27
0	0	0	6.0000	53.29
0	0	0	6.2500	53.31
0	0	0	6.5000	53.33
0	0	0	6.7500	53.36
0	0	0	7.0000	53.39
0	0	0	7.2500	53.41
0	0	0	7.5000	53.44
0	0	0	7.7500	53.47
0	0	0	8.0000	53.49
0	0	0	8.2500	53.52
0	0	0	8.5000	53.55
0	0	0	8.7500	53.58
0	0	0	9.0000	53.62
0	0	0	9.2500	53.66
0	0	0	9.5000	53.70
0	0	0	9.7500	53.75
0	0	0	10.0000	53.80
0	0	0	10.2500	53.86
0	0	0	10.5000	53.94
0	0	0	10.7500	54.02
0	0	0	11.0000	54.13
0	0	0	11.2500	54.25
0	0	0	11.5000	54.39
0	0	0	11.7500	54.58
0	0	0	12.0000	54.99
0	0	0	12.2500	55.64
0	0	0	12.5000	56.18
0	0	0	12.7500	56.30
0	0	0	13.0000	56.42
0	0	0	13.2500	56.79
0	0	0	13.5000	56.98
0	0	0	13.7500	57.08
0	0	0	14.0000	57.15
0	0	0	14.2500	57.18
0	0	0	14.5000	57.20
0	0	0	14.7500	57.22
0	0	0	15.0000	57.23
0	0	0	15.2500	57.25
0	0	0	15.5000	57.26
0	0	0	15.7500	57.28
0	0	0	16.0000	57.30
0	0	0	16.2500	57.33
0	0	0	16.5000	57.36
0	0	0	16.7500	57.39
0	0	0	17.0000	57.42
0	0	0	17.2500	57.45
0	0	0	17.5000	57.48

Year	Month	Day	Hour	Stage [ft]
0	0	0	17.7500	57.51
0	0	0	18.0000	57.54
0	0	0	18.2500	57.57
0	0	0	18.5000	57.60
0	0	0	18.7500	57.63
0	0	0	19.0000	57.65
0	0	0	19.2500	57.68
0	0	0	19.5000	57.71
0	0	0	19.7500	57.73
0	0	0	20.0000	57.76
0	0	0	20.2500	57.78
0	0	0	20.5000	57.81
0	0	0	20.7500	57.83
0	0	0	21.0000	57.85
0	0	0	21.2500	57.87
0	0	0	21.5000	57.90
0	0	0	21.7500	57.92
0	0	0	22.0000	57.94
0	0	0	22.2500	57.95
0	0	0	22.5000	57.97
0	0	0	22.7500	57.99
0	0	0	23.0000	58.00
0	0	0	23.2500	58.02
0	0	0	23.5000	58.03
0	0	0	23.7500	58.05
0	0	0	24.0000	58.06
0	0	0	24.2500	58.06
0	0	0	24.5000	58.07
0	0	0	24.7500	58.07
0	0	0	25.0000	58.07
0	0	0	25.2500	58.08
0	0	0	25.5000	58.08
0	0	0	25.7500	58.08
0	0	0	26.0000	58.08
0	0	0	26.2500	58.08
0	0	0	26.5000	58.08
0	0	0	26.7500	58.08
0	0	0	27.0000	58.08
0	0	0	27.2500	58.08
0	0	0	27.5000	58.08
0	0	0	27.7500	58.07
0	0	0	28.0000	58.07
0	0	0	28.2500	58.07
0	0	0	28.5000	58.06
0	0	0	28.7500	58.06
0	0	0	29.0000	58.05
0	0	0	29.2500	58.05
0	0	0	29.5000	58.04
0	0	0	29.7500	58.03

Year	Month	Day	Hour	Stage [ft]
0	0	0	30.0000	58.03
0	0	0	30.2500	58.02
0	0	0	30.5000	58.01
0	0	0	30.7500	58.00
0	0	0	31.0000	57.99
0	0	0	31.2500	57.99
0	0	0	31.5000	57.98
0	0	0	31.7500	57.96
0	0	0	32.0000	57.95
0	0	0	32.2500	57.94
0	0	0	32.5000	57.93
0	0	0	32.7500	57.92
0	0	0	33.0000	57.90
0	0	0	33.2500	57.89
0	0	0	33.5000	57.88
0	0	0	33.7500	57.86
0	0	0	34.0000	57.85
0	0	0	34.2500	57.83
0	0	0	34.5000	57.82
0	0	0	34.7500	57.80
0	0	0	35.0000	57.79
0	0	0	35.2500	57.78
0	0	0	35.5000	57.76
0	0	0	35.7500	57.75
0	0	0	36.0000	57.73
0	0	0	36.2500	57.72
0	0	0	37.2500	57.67
0	0	0	38.2500	57.62
0	0	0	39.2500	57.58
0	0	0	40.2500	57.55
0	0	0	41.2500	57.51
0	0	0	42.2500	57.48
0	0	0	43.2500	57.45
0	0	0	44.2500	57.42
0	0	0	45.2500	57.39
0	0	0	46.2500	57.36
0	0	0	47.2500	57.33
0	0	0	48.2500	57.30
0	0	0	49.2500	57.27
0	0	0	50.2500	57.24
0	0	0	51.2500	57.21
0	0	0	52.2500	57.19
0	0	0	53.2500	57.17
0	0	0	54.2500	57.14
0	0	0	55.2500	57.12
0	0	0	56.2500	57.10
0	0	0	57.2500	57.07
0	0	0	58.2500	57.05
0	0	0	59.2500	57.04

Year	Month	Day	Hour	Stage [ft]
0	0	0	60.2500	57.02
0	0	0	61.2500	57.01
0	0	0	62.2500	56.99
0	0	0	63.2500	56.98
0	0	0	64.2500	56.97
0	0	0	65.2500	56.96
0	0	0	66.2500	56.96
0	0	0	67.2500	56.95
0	0	0	68.2500	56.94
0	0	0	69.2500	56.94
0	0	0	70.2500	56.93
0	0	0	71.2500	56.92
0	0	0	72.2500	56.91
0	0	0	73.2500	56.91
0	0	0	74.2500	56.90
0	0	0	75.2500	56.90
0	0	0	76.2500	56.89
0	0	0	77.2500	56.89
0	0	0	78.2500	56.88
0	0	0	79.2500	56.87
0	0	0	80.2500	56.86
0	0	0	81.2500	56.85
0	0	0	82.2500	56.84
0	0	0	83.2500	56.84
0	0	0	84.2500	56.83
0	0	0	85.2500	56.82
0	0	0	86.2500	56.82
0	0	0	87.2500	56.81
0	0	0	88.2500	56.81
0	0	0	89.2500	56.80
0	0	0	90.2500	56.80
0	0	0	91.2500	56.79
0	0	0	92.2500	56.79
0	0	0	93.2500	56.79
0	0	0	94.2500	56.78
0	0	0	95.2500	56.78
0	0	0	96.2500	56.78
0	0	0	97.2500	56.78
0	0	0	98.2500	56.78
0	0	0	99.2500	56.78
0	0	0	100.2500	56.78
0	0	0	101.2500	56.78
0	0	0	102.2500	56.78
0	0	0	103.2500	56.78
0	0	0	104.2500	56.78
0	0	0	105.0000	56.78

Comment:

Node: Pond 1

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 56.50 ft
Warning Stage: 59.00 ft

Stage [ft]	Area [ac]	Area [ft2]
56.50	2.0300	88427
57.00	2.0900	91040
58.00	2.2000	95832
59.00	2.3100	100624

Comment:

Node: Shady_DS

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 59.50 ft

Stage [ft]	Area [ac]	Area [ft2]
53.65	0.4000	17424
70.00	0.4000	17424

Comment:

Node: Shady_US

Scenario: Icpr3
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 53.65 ft
Warning Stage: 56.74 ft

Stage [ft]	Area [ac]	Area [ft2]
56.00	0.0027	116
56.50	0.0849	3700
57.00	0.4111	17909
57.50	0.8390	36548
58.00	2.2019	95916
58.50	3.3578	146266
59.00	4.6878	204201
59.50	5.3306	232200
60.00	6.0257	262481

Stage [ft]	Area [ac]	Area [ft2]
60.50	6.3114	274924
61.00	6.7841	295514
61.50	7.2115	314134
62.00	7.6357	332610
62.50	8.2485	359304
63.00	9.1989	400704
63.50	9.7582	425065
64.00	10.7691	469103
64.50	11.6087	505676
65.00	13.9668	608395
65.50	14.6673	638908
66.00	16.4217	715329
66.50	16.4217	715329
53.65	0.0010	44

Comment:

Weir Link: BRIDGE

Scenario:	Icpr3
From Node:	Shady_US
To Node:	Shady_DS
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	59.14 ft
Control Elevation:	59.14 ft
Cross Section:	Bridge Cross

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: CANAL BOUNDARY

Scenario:	Icpr3
From Node:	FISHLAKE_A_STORAGE
To Node:	Shady_DS
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	55.90 ft
Control Elevation:	55.90 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800

Cross Section:	X-0150W	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Channel Link: C_NEPDITCH_SE		Upstream		Downstream	
Scenario:	Icpr3	Invert:	62.00 ft	Invert:	53.00 ft
From Node:	NEPTUNEDITCH_SE	Manning's N:	0.0500	Manning's N:	0.0500
		Geometry: Trapezoidal		Geometry: Trapezoidal	
To Node:	NEPTUNE_DITCH_S	Max Depth:	9999.00 ft	Max Depth:	9999.00 ft
		Extrapolation:	Normal	Extrapolation:	Normal
Link Count:	1	Bottom Width:	5.00 ft	Bottom Width:	5.00 ft
Flow Direction:	Both	Left Slope:	2.000 (h:v)	Left Slope:	2.000 (h:v)
Damping:	0.0000 ft	Right Slope:	2.000 (h:v)	Right Slope:	2.000 (h:v)
Length:	2500.00 ft	Bottom Clip			
Contraction Coef:	0.10	Default:	0.00 ft	Default:	0.00 ft
Expansion Coef:	0.30	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0500	Manning's N:	0.0500
Bend Loss Coef:	0.00	Top Clip			
Bend Location:	0.00 ft	Default:	0.00 ft	Default:	0.00 ft
Energy Switch:	Energy	Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0500	Manning's N:	0.0500

Comment: ASSUMED CROSS-SECTION AS TYPICAL ROADSIDE DITCH

Channel Link: C_NEPTUNEDITCH		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.00 ft	Invert:	51.00 ft
From Node:	NEPTUNE_DITCH_S	Manning's N:	0.0000	Manning's N:	0.0000
		Geometry: Irregular		Geometry: Irregular	
To Node:	NEP_DITCH_PART	Cross Section:	X_NEPTUNEDITCH	Cross Section:	X_NEPTUNEDITCH
Link Count:	1				
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	1485.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Comment: DATA SOURCE: ESTIMATED BASED ON CONTOUR DATA

Channel Link: C_PART_NEPBAS-2		Upstream		Downstream	
Scenario:	Icpr3	Invert:	48.85 ft	Invert:	50.80 ft
From Node:	PARTIN_NEPBSSEE	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	PARTIN_NEPBSSE	Geometry:	Irregular	Geometry:	Irregular
	W	Cross Section:	DITCH_3_DS	Cross Section:	X_PART_NEPBAS-2
Link Count:	1				
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	640.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Pipe Link: Culvert		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.60 ft	Invert:	52.60 ft
From Node:	Shady_US	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	Shady_DS	Geometry:	Rectangular	Geometry:	Rectangular
Link Count:	4	Max Depth:	8.00 ft	Max Depth:	8.00 ft
Flow Direction:	Both	Max Width:	5.00 ft	Max Width:	5.00 ft
Damping:	0.0000 ft	Fillet:	0.00 ft	Fillet:	0.00 ft
Length:	114.00 ft	Bottom Clip			
FHWA Code:	0	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 ft	Top Clip			
Energy Switch:	Energy	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Drop Structure Link: D- Neptune Road		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	48.80 ft	Invert:	49.00 ft
From Node:	NEP_PARTIN_US	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NEP_PARTIN_DS	Geometry:	Rectangular	Geometry:	Rectangular
Link Count:	1	Max Depth:	8.00 ft	Max Depth:	8.00 ft
Flow Direction:	Both	Max Width:	9.00 ft	Max Width:	9.00 ft
Solution:	Combine	Fillet:	0.00 ft	Fillet:	0.00 ft
Increments:	10	Bottom Clip			

Pipe Count:	3	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	182.00 ft	Ref Node:		Ref Node:	
FHWA Code:	12	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.20	Top Clip			
Exit Loss Coef:	0.20	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 ft	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Irregular	Default:	0.00 ft
Invert:	53.65 ft	Op Table:	
Control Elevation:	53.65 ft	Ref Node:	
Cross Section:	W_CS	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Trapezoidal	Default:	0.00 ft
Invert:	56.99 ft	Op Table:	
Control Elevation:	56.99 ft	Ref Node:	
Max Depth:	11.70 ft	Discharge Coefficients	
Extrapolation Method:	Normal Projection	Weir Default:	3.200
Bottom Width:	20.00 ft	Weir Table:	
Left Slope:	1.000 (h:v)	Orifice Default:	0.600
Right Slope:	1.000 (h:v)	Orifice Table:	

Weir Comment:

Drop Structure Comment:

Channel Link: DITCH_1		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.70 ft	Invert:	52.70 ft

From Node:	FISH_LAKE	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	Shady_US	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	CROSS_US	Cross Section:	CROSS_US
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	973.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Channel Link: DITCH_2		Upstream		Downstream	
Scenario:	Icpr3	Invert:	52.70 ft	Invert:	51.90 ft
From Node:	Shady_DS	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	NEP_PARTIN_US	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	CROSS_US_2	Cross Section:	CROSS_DS_2
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	837.00 ft				
Contraction Coef:	0.00				
Expansion Coef:	0.00				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				
Comment:					

Channel Link: DITCH_3		Upstream		Downstream	
Scenario:	Icpr3	Invert:	49.85 ft	Invert:	48.85 ft
From Node:	NEP_PARTIN_DS	Manning's N:	0.0000	Manning's N:	0.0000
To Node:	PARTIN_NEPBSSEE	Geometry:	Irregular	Geometry:	Irregular
Link Count:	1	Cross Section:	DITCH_3_US	Cross Section:	DITCH_3_DS
Flow Direction:	Both				
Damping:	0.0000 ft				
Length:	630.00 ft				
Contraction Coef:	0.10				
Expansion Coef:	0.30				
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				

Bend Location:	0.00 ft
Energy Switch:	Energy

Comment: DATA SOURCE: ESTIMATED BASED ON CONTOUR DATA AND SUPPLEMENTED WITH FIELD SURVEY DATA WHERE AVAILAIBLE

Drop Structure Link: D_CANE-NPTDIC_S		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	52.90 ft
From Node:	CANEBRAKE	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NEPTUNE_DITCH_S	Geometry: Circular		Geometry: Circular	
		Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0120	Manning's N:	0.0120
Damping:	0.0000 ft	Top Clip			
Length:	80.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0120	Manning's N:	0.0120
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	53.00 ft	Op Table:	
Control Elevation:	53.00 ft	Ref Node:	
Max Depth:	3.00 ft	Discharge Coefficients	
Max Width:	1.83 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	

Geometry Type:	Rectangular
Invert:	56.00 ft
Control Elevation:	56.00 ft
Max Depth:	1.92 ft
Max Width:	3.08 ft
Fillet:	0.00 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.000
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment: DATA SOURCE: INFORMATION OBTAINED FROM CONSTRUCTION / AS-BUILT PLANS

Drop Structure Link: D_KING-NPTDIC_S		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	62.00 ft	Invert:	61.70 ft
From Node:	KINGS_CREST	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NEPTUNEDITCH_S	Geometry: Circular		Geometry: Circular	
	E	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0120	Manning's N:	0.0120
Damping:	0.0000 ft	Top Clip			
Length:	75.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0120	Manning's N:	0.0120
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	63.70 ft
Control Elevation:	63.70 ft
Max Depth:	3.42 ft
Max Width:	1.50 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	62.00 ft	Ref Node:	
Control Elevation:	62.00 ft	Discharge Coefficients	
Max Depth:	0.33 ft	Weir Default:	0.600
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	67.10 ft	Ref Node:	
Control Elevation:	67.10 ft	Discharge Coefficients	
Max Depth:	1.92 ft	Weir Default:	3.000
Max Width:	3.08 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment: DATA SOURCE: INFORMATION OBTAINED FROM CONSTRUCTION / AS-BUILT PLANS
ASSUMED 1929 DATUM

Weir Link: NEPTUNE ROAD CROSSING		Bottom Clip	
Scenario:	Icpr3	Default:	0.00 ft
From Node:	NEP_PARTIN_US	Op Table:	
To Node:	NEP_PARTIN_DS	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Broad Crested Vertical	Ref Node:	
Geometry Type:	Irregular	Discharge Coefficients	
Invert:	60.15 ft		

Control Elevation:	60.15 ft		
Cross Section:	X-0170W	Weir Default:	2.800
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: P_NEPDTCH_PART		Upstream		Downstream	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	53.00 ft
From Node:	NEP_DITCH_PART	Manning's N:	0.0240	Manning's N:	0.0240
To Node:	NEP_PARTIN_DS	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	30.00 ft	Op Table:		Op Table:	
FHWA Code:	6	Ref Node:		Ref Node:	
Entr Loss Coef:	0.70	Manning's N:	0.0240	Manning's N:	0.0240
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 ft	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0240	Manning's N:	0.0240

Comment: ASSUMED INVERTS AND PIPE SIZE BASED ON FIELD OBSERVATION AND CONTOURS

Drop Structure Link: Pond 1 DS		Upstream Pipe		Downstream Pipe	
Scenario:	Icpr3	Invert:	53.00 ft	Invert:	50.50 ft
From Node:	Pond 1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	FISHLAKE_A_STOR	Geometry: Circular		Geometry: Circular	
	AGE	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	10	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	27.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 ft				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	57.52 ft
Control Elevation:	57.52 ft
Max Depth:	3.00 ft
Max Width:	8.75 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	56.50 ft
Control Elevation:	56.50 ft
Max Depth:	0.29 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: W_KINGS_NEP

Scenario:	Icpr3
From Node:	KINGS_CREST
To Node:	NEPTUNEDITCH_SE
Link Count:	1
Flow Direction:	None
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	68.00 ft
Control Elevation:	68.00 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.600
Weir Table:	
Orifice Default:	0.600

Bottom Width: 50.00 ft
Left Slope: 10.000 (h:v)
Right Slope: 10.000 (h:v)

Orifice Table:

Comment: OVERTOPPING POND TO DITCH

Simulation: 100/24

Scenario: Icpr3
Run Date/Time: 2/25/2020 3:52:52 PM
Program Version: ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3
Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 100/24
Extern Hydrograph Set: 100/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:

Impervious Set:	Icpr3

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	0.5000 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SCSII-24
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 50/24

Scenario:	Icpr3
Run Date/Time:	2/25/2020 3:54:27 PM
Program Version:	ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3

Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 50/24
Extern Hydrograph Set: 50/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Icpr3

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 0.5000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 8.10 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 500/24

Scenario: Icpr3
Run Date/Time: 2/25/2020 3:55:29 PM
Program Version: ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	105.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		30.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	36.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: Icpr3

Unit Hydrograph Folder: Icpr3

Lookup Tables

Boundary Stage Set: 500/24
Extern Hydrograph Set: 500/24
Curve Number Set: Icpr3
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Icpr3

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 0.5000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SCSII-24
Rainfall Amount: 11.20 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft

Min Node Srf Area (1D):	100 ft2
Energy Switch (1D):	Energy

Comment:

Node Max Conditions [Icpr3]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
CANEBRAKE	100/24	58.50	58.90	0.0010	199.53	5.06	222592
FISHLAKE_A_STORAGE	100/24	68.50	58.42	0.0008	108.54	103.41	188233
FISH_LAKE	100/24	58.37	58.42	0.0010	214.23	223.98	409633
KINGS_CREST	100/24	68.00	68.34	0.0010	244.44	34.97	124230
NEPTUNEDITCH_SE	100/24	66.00	63.80	0.0006	34.97	34.38	19755
NEPTUNE_DITCH_S	100/24	58.00	58.85	0.0010	86.77	49.07	65111
NEP_DITCH_PART	100/24	60.00	58.85	0.0010	33.79	19.97	44547
NEP_PARTIN_DS	100/24	60.00	58.38	0.0010	233.66	242.40	22815
NEP_PARTIN_US	100/24	60.00	58.41	0.0010	226.77	229.03	94072
PARTIN_NEPBSSEE	100/24	58.00	58.38	0.0010	242.40	233.48	187206
PARTIN_NEPBSSEW	100/24	58.00	58.37	0.0011	233.48	154.96	0
Pond 1	100/24	59.00	58.45	0.0006	93.46	68.33	98008
Shady_DS	100/24	59.50	58.42	0.0010	225.34	226.77	158395
Shady_US	100/24	56.74	58.42	0.0010	223.98	222.28	549076
CANEBRAKE	50/24	58.50	58.35	0.0010	177.09	4.12	219209
FISHLAKE_A_STORAGE	50/24	68.50	58.12	0.0005	94.64	93.83	181186
FISH_LAKE	50/24	58.37	58.13	0.0007	206.36	209.65	409633
KINGS_CREST	50/24	68.00	67.73	0.0010	214.71	31.88	90186
NEPTUNEDITCH_SE	50/24	66.00	63.68	0.0005	31.88	31.38	18388
NEPTUNE_DITCH_S	50/24	58.00	58.31	0.0010	74.33	43.04	51409
NEP_DITCH_PART	50/24	60.00	58.31	0.0010	27.92	18.48	35307
NEP_PARTIN_DS	50/24	60.00	58.09	0.0010	224.61	233.04	21757
NEP_PARTIN_US	50/24	60.00	58.12	0.0010	217.92	219.77	94072
PARTIN_NEPBSSEE	50/24	58.00	58.09	0.0010	233.04	225.27	175230
PARTIN_NEPBSSEW	50/24	58.00	58.08	0.0014	225.27	120.20	0
Pond 1	50/24	59.00	58.37	0.0005	83.71	59.02	97590
Shady_DS	50/24	59.50	58.12	0.0010	216.74	217.92	158395
Shady_US	50/24	56.74	58.13	0.0010	209.65	213.80	519486

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
CANEBRAKE	500/24	58.50	60.28	0.0010	254.20	7.01	222592
FISHLAKE_A_STORAGE	500/24	68.50	59.27	0.0009	141.05	111.12	216246
FISH_LAKE	500/24	58.37	59.28	0.0010	314.13	429.53	409633
KINGS_CREST	500/24	68.00	69.34	0.0010	317.10	38.18	187308
NEPTUNEDITCH_SE	500/24	66.00	63.96	0.0005	38.18	37.60	22094
NEPTUNE_DITCH_S	500/24	58.00	60.22	0.0010	108.06	59.70	82446
NEP_DITCH_PART	500/24	60.00	60.21	0.0010	47.32	22.86	50558
NEP_PARTIN_DS	500/24	60.00	59.23	0.0010	366.47	365.02	28935
NEP_PARTIN_US	500/24	60.00	59.27	0.0010	365.02	357.94	94072
PARTIN_NEPBSSEE	500/24	58.00	59.22	0.0010	341.10	329.01	213150
PARTIN_NEPBSSEW	500/24	58.00	59.22	0.0011	308.46	341.10	0
Pond 1	500/24	59.00	59.27	0.0006	117.21	89.17	100624
Shady_DS	500/24	59.50	59.27	0.0010	376.81	358.72	158395
Shady_US	500/24	56.74	59.28	0.0010	429.53	314.13	630699

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 840 cfs

Maximum Flow: 1500 cfs

Existing Condition
Peghorn Slough
50 Year

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Crossing Existing

Headwater Elevation (ft)	Total Discharge (cfs)	Peghorn Existing Discharge (cfs)	Roadway Discharge (cfs)	Iterations
62.75	0.00	0.00	0.00	1
62.81	150.00	150.00	0.00	1
62.99	300.00	300.00	0.00	1
63.29	450.00	450.00	0.00	1
63.72	600.00	600.00	0.00	1
64.26	750.00	750.00	0.00	1
64.64	840.00	840.00	0.00	1
65.71	1050.00	1050.00	0.00	1
66.61	1200.00	1200.00	0.00	1
67.61	1350.00	1347.06	2.07	5
67.92	1500.00	1388.12	111.45	7
67.76	1329.75	1329.75	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Crossing Existing

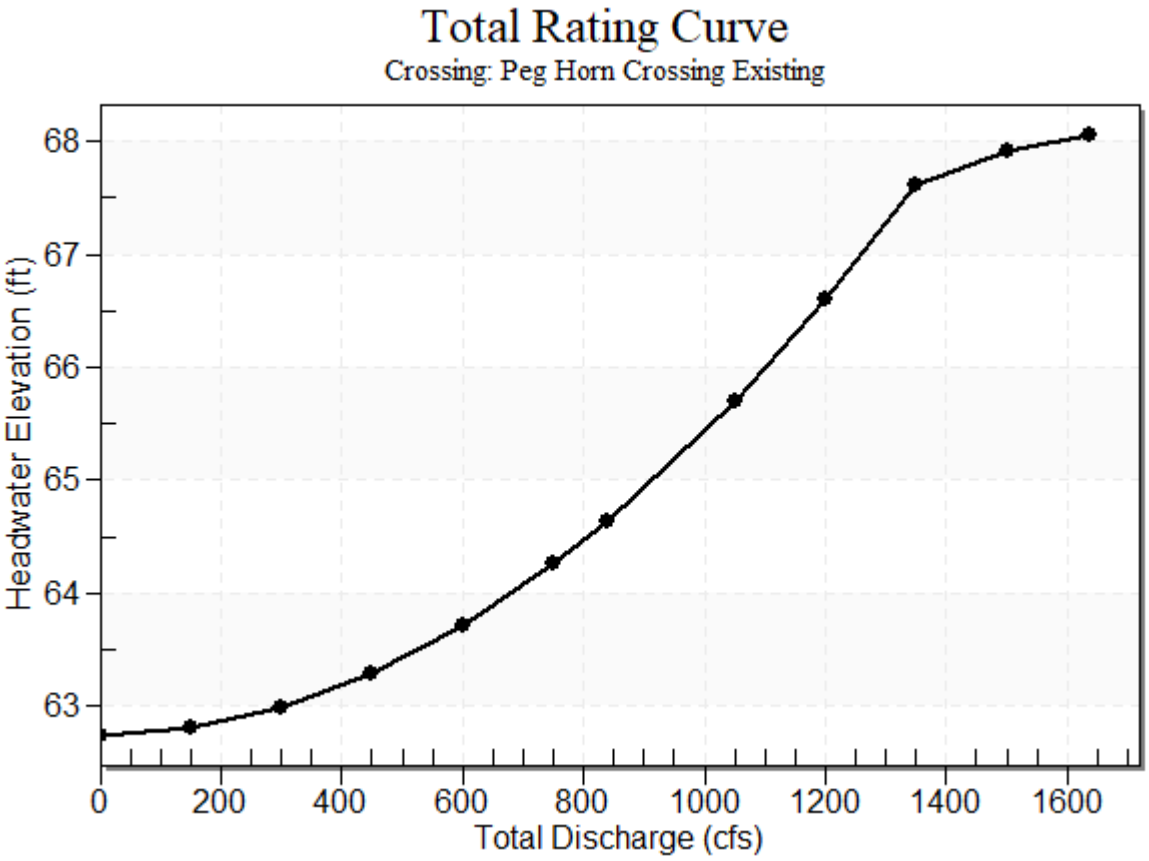


Table 2 - Culvert Summary Table: Peghorn Existing

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	62.75	0.000	11.860	0-NF	0.000	0.000	8.000	9.750	0.000	0.000
150.00	150.00	62.81	2.913	11.920	4-FFf	-1.000	1.693	8.000	9.750	1.563	0.000
300.00	300.00	62.99	4.599	12.101	4-FFf	-1.000	2.687	8.000	9.750	3.125	0.000
450.00	450.00	63.29	5.977	12.403	4-FFf	-1.000	3.522	8.000	9.750	4.688	0.000
600.00	600.00	63.72	7.225	12.825	4-FFf	-1.000	4.266	8.000	9.750	6.250	0.000
750.00	750.00	64.26	8.437	13.368	4-FFf	-1.000	4.950	8.000	9.750	7.813	0.000
840.00	840.00	64.64	9.179	13.751	4-FFf	-1.000	5.339	8.000	9.750	8.750	0.000
1050.00	1050.00	65.71	11.038	14.815	4-FFf	-1.000	6.195	8.000	9.750	10.938	0.000
1200.00	1200.00	66.61	12.533	15.720	4-FFf	-1.000	6.772	8.000	9.750	12.500	0.000
1350.00	1347.06	67.61	14.171	16.724	4-FFf	-1.000	7.315	8.000	9.750	14.032	0.000
1500.00	1388.12	67.92	14.661	17.025	4-FFf	-1.000	7.462	8.000	9.750	14.460	0.000

****

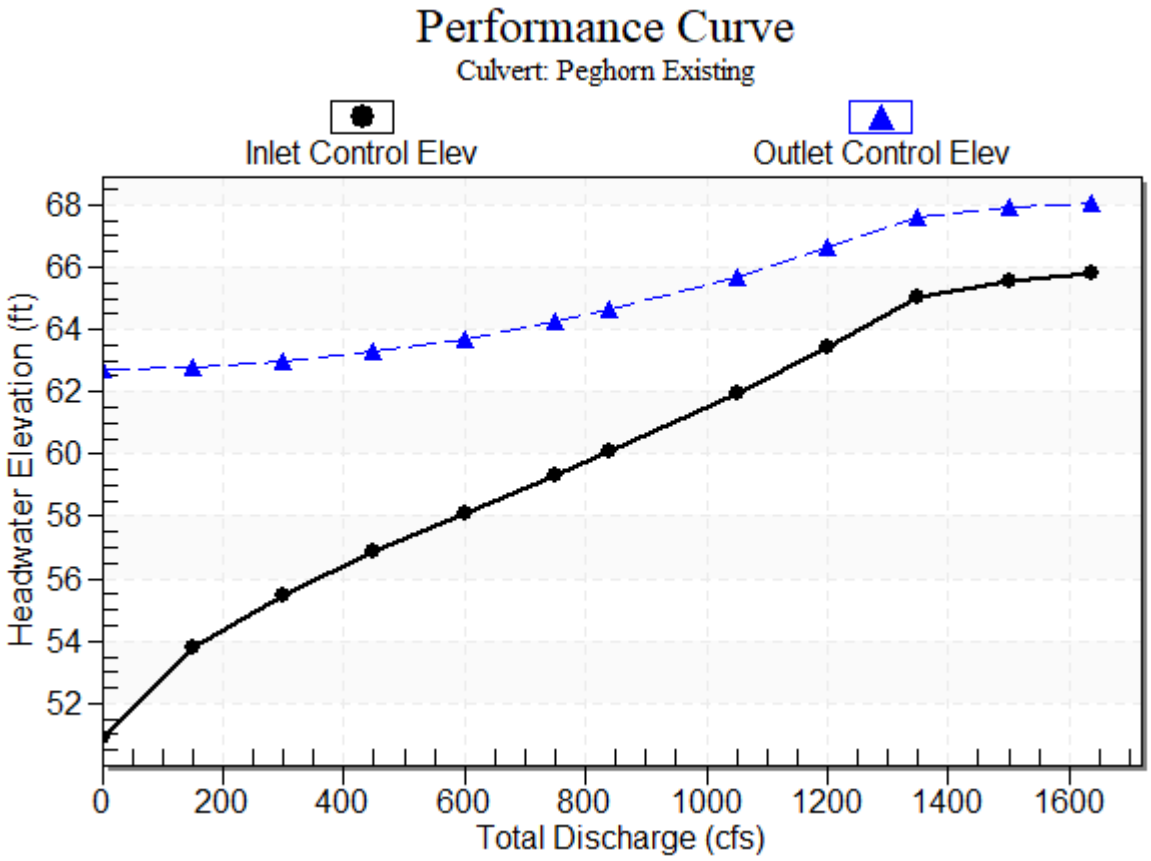
Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

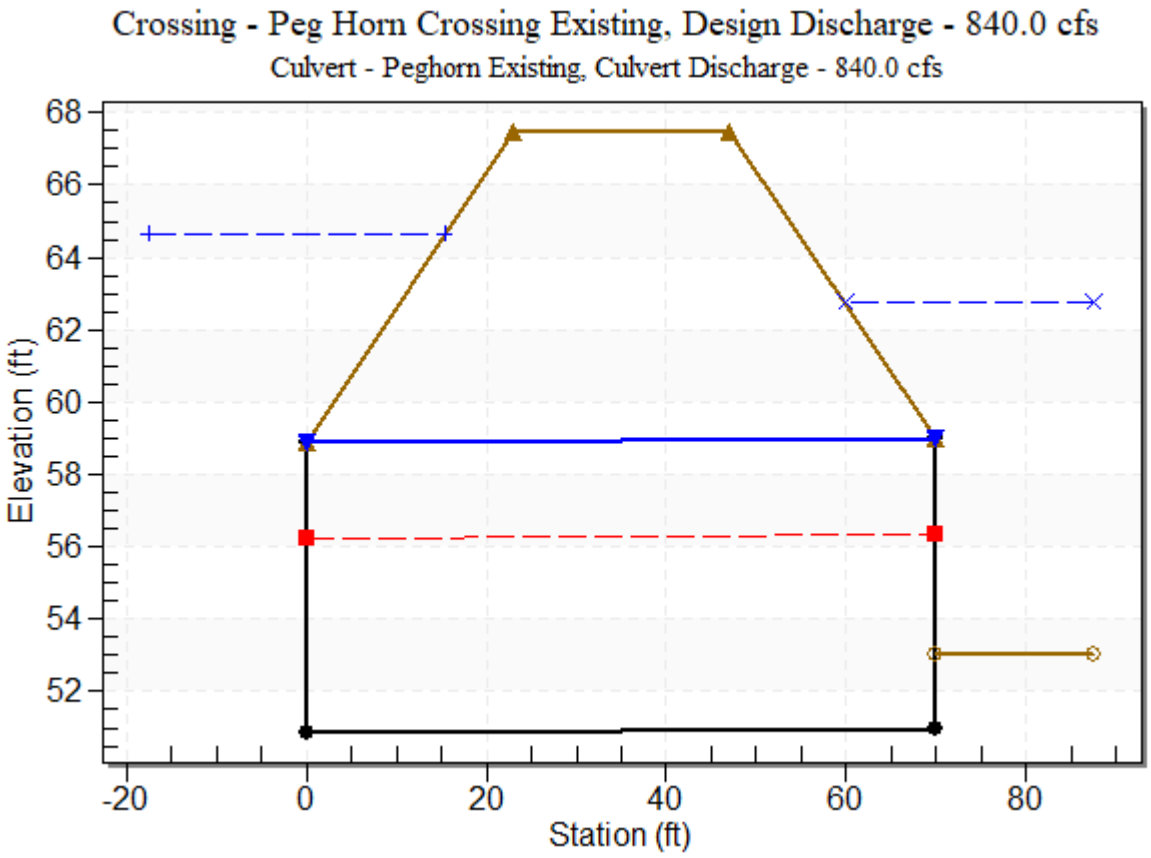
Culvert Length: 70.00 ft, Culvert Slope: -0.0016

****

Culvert Performance Curve Plot: Peghorn Existing



Water Surface Profile Plot for Culvert: Peghorn Existing



Site Data - Peghorn Existing

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 70.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peghorn Existing

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (90º) Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Crossing Existing)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	62.75	9.75
150.00	62.75	9.75
300.00	62.75	9.75
450.00	62.75	9.75
600.00	62.75	9.75
750.00	62.75	9.75
840.00	62.75	9.75
1050.00	62.75	9.75
1200.00	62.75	9.75
1350.00	62.75	9.75
1500.00	62.75	9.75

Tailwater Channel Data - Peg Horn Crossing Existing

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 62.75 ft

Roadway Data for Crossing: Peg Horn Crossing Existing

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Roadway Surface: Paved

Roadway Top Width: 24.00 ft

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 896 cfs

Maximum Flow: 1500 cfs

Existing Condition
Peghorn Slough
100 Year

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Crossing Existing

Headwater Elevation (ft)	Total Discharge (cfs)	Peghorn Existing Discharge (cfs)	Roadway Discharge (cfs)	Iterations
63.00	0.00	0.00	0.00	1
63.06	150.00	150.00	0.00	1
63.24	300.00	300.00	0.00	1
63.54	450.00	450.00	0.00	1
63.97	600.00	600.00	0.00	1
64.51	750.00	750.00	0.00	1
65.15	896.00	896.00	0.00	1
65.96	1050.00	1050.00	0.00	1
66.86	1200.00	1200.00	0.00	1
67.74	1350.00	1329.75	20.00	7
67.96	1500.00	1359.65	139.68	6
67.76	1294.21	1294.21	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Crossing Existing

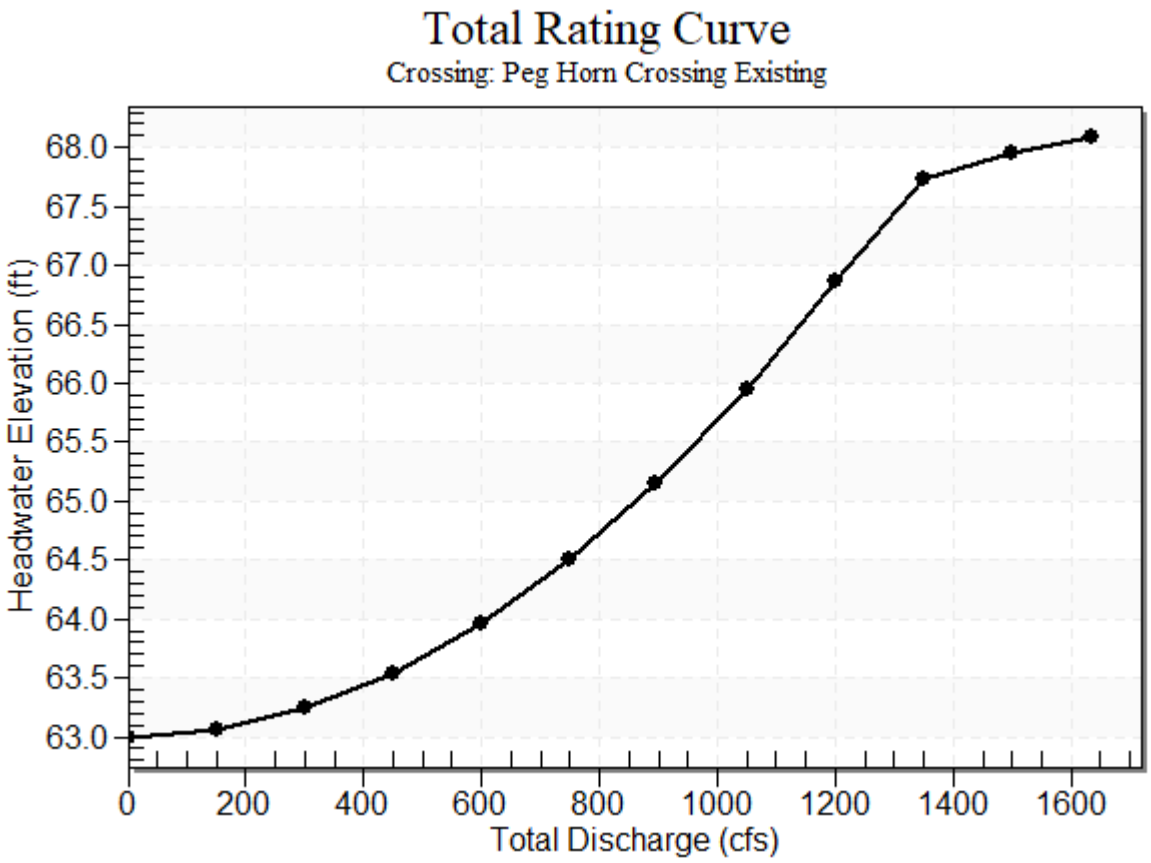


Table 2 - Culvert Summary Table: Peghorn Existing

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	63.00	0.000	12.110	0-NF	0.000	0.000	8.000	10.000	0.000	0.000
150.00	150.00	63.06	2.913	12.170	4-FFf	-1.000	1.693	8.000	10.000	1.563	0.000
300.00	300.00	63.24	4.599	12.351	4-FFf	-1.000	2.687	8.000	10.000	3.125	0.000
450.00	450.00	63.54	5.977	12.653	4-FFf	-1.000	3.522	8.000	10.000	4.688	0.000
600.00	600.00	63.97	7.225	13.075	4-FFf	-1.000	4.266	8.000	10.000	6.250	0.000
750.00	750.00	64.51	8.437	13.618	4-FFf	-1.000	4.950	8.000	10.000	7.813	0.000
896.00	896.00	65.15	9.654	14.262	4-FFf	-1.000	5.574	8.000	10.000	9.333	0.000
1050.00	1050.00	65.96	11.038	15.065	4-FFf	-1.000	6.195	8.000	10.000	10.938	0.000
1200.00	1200.00	66.86	12.533	15.970	4-FFf	-1.000	6.772	8.000	10.000	12.500	0.000
1350.00	1329.75	67.74	13.968	16.850	4-FFf	-1.000	7.252	8.000	10.000	13.852	0.000
1500.00	1359.65	67.96	14.319	17.066	4-FFf	-1.000	7.360	8.000	10.000	14.163	0.000

****

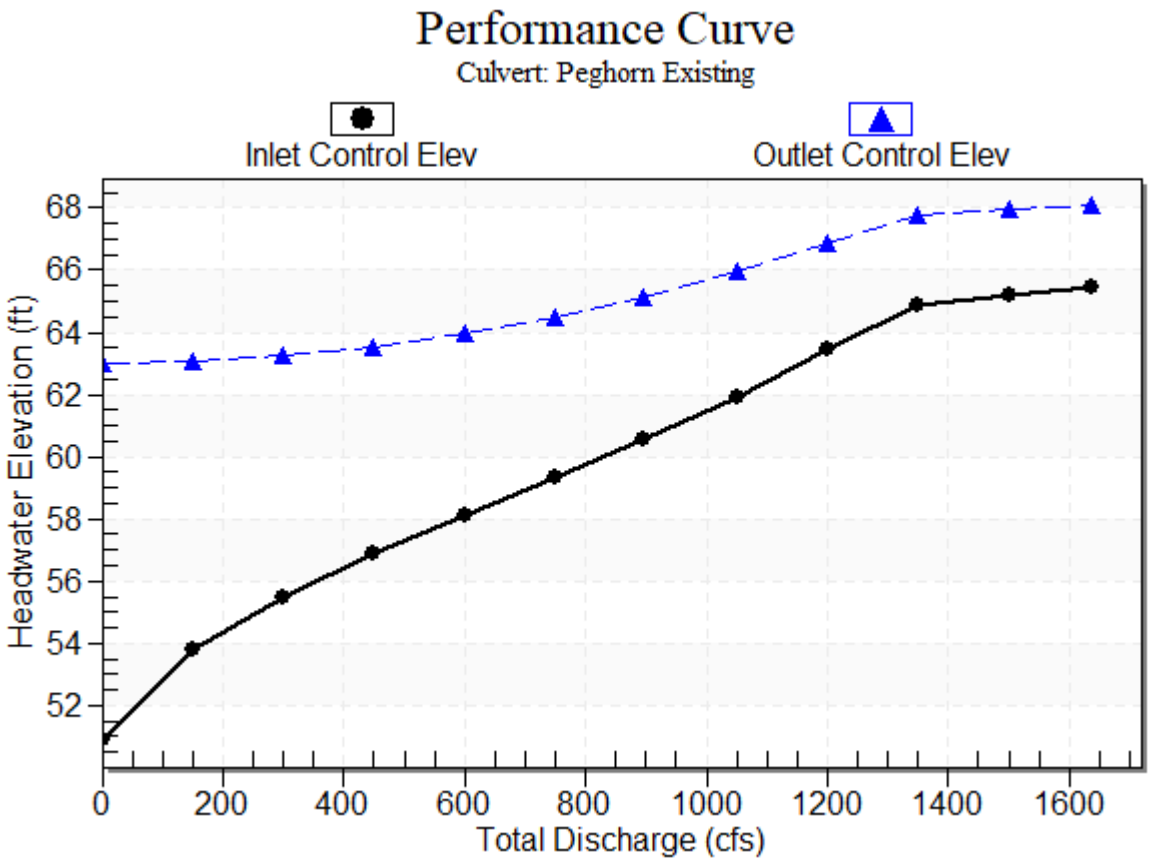
Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

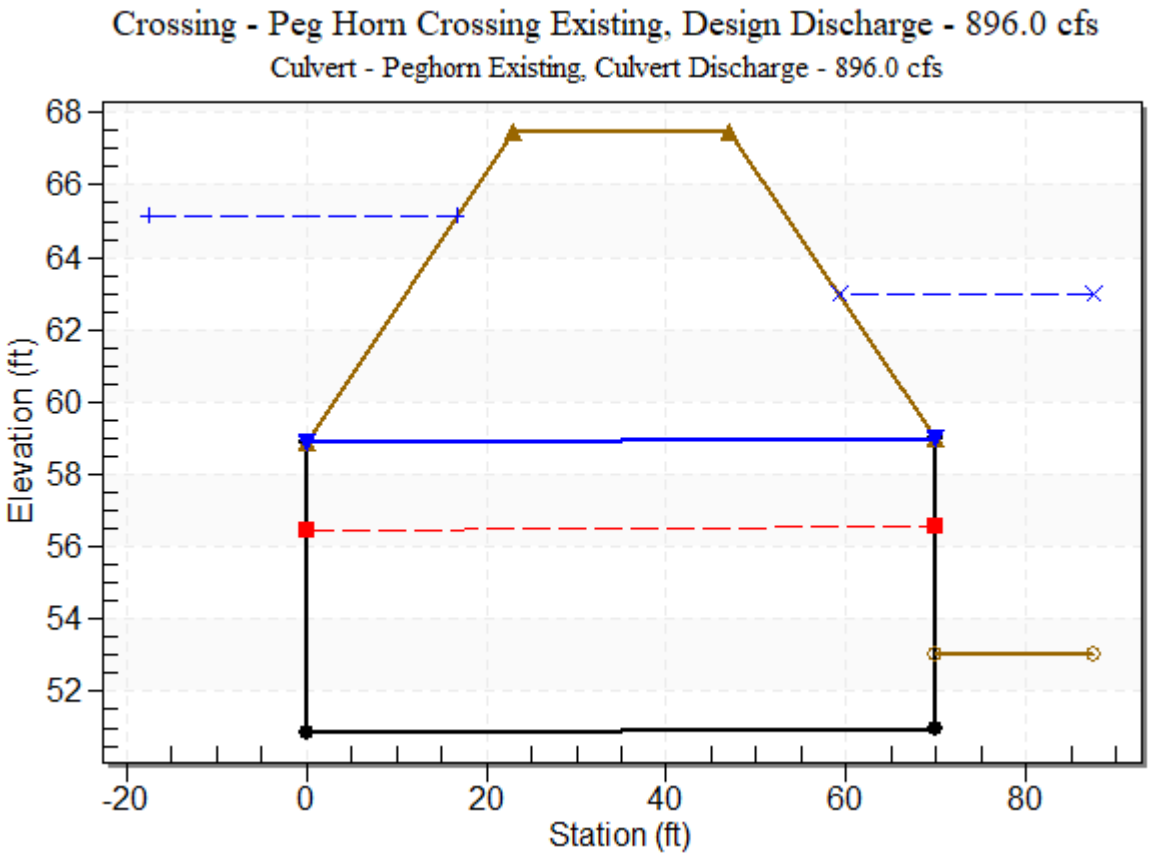
Culvert Length: 70.00 ft, Culvert Slope: -0.0016

****

Culvert Performance Curve Plot: Peghorn Existing



Water Surface Profile Plot for Culvert: Peghorn Existing



Site Data - Peghorn Existing

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 70.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peghorn Existing

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (90º) Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Crossing Existing)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	63.00	10.00
150.00	63.00	10.00
300.00	63.00	10.00
450.00	63.00	10.00
600.00	63.00	10.00
750.00	63.00	10.00
896.00	63.00	10.00
1050.00	63.00	10.00
1200.00	63.00	10.00
1350.00	63.00	10.00
1500.00	63.00	10.00

Tailwater Channel Data - Peg Horn Crossing Existing

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 63.00 ft

Roadway Data for Crossing: Peg Horn Crossing Existing

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Roadway Surface: Paved

Roadway Top Width: 24.00 ft

HY-8 Culvert Analysis Report

Peghorn 500 year - Existing Conditions

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 1008 cfs

Maximum Flow: 1500 cfs

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Crossing Existing

Headwater Elevation (ft)	Total Discharge (cfs)	Peghorn Existing Discharge (cfs)	Roadway Discharge (cfs)	Iterations
63.45	0.00	0.00	0.00	1
63.51	150.00	150.00	0.00	1
63.69	300.00	300.00	0.00	1
63.99	450.00	450.00	0.00	1
64.42	600.00	600.00	0.00	1
64.96	750.00	750.00	0.00	1
65.62	900.00	900.00	0.00	1
66.17	1008.00	1008.00	0.00	1
67.31	1200.00	1200.00	0.00	1
67.85	1350.00	1280.75	68.92	8
68.02	1500.00	1306.20	192.65	5
67.76	1227.63	1227.63	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Crossing Existing

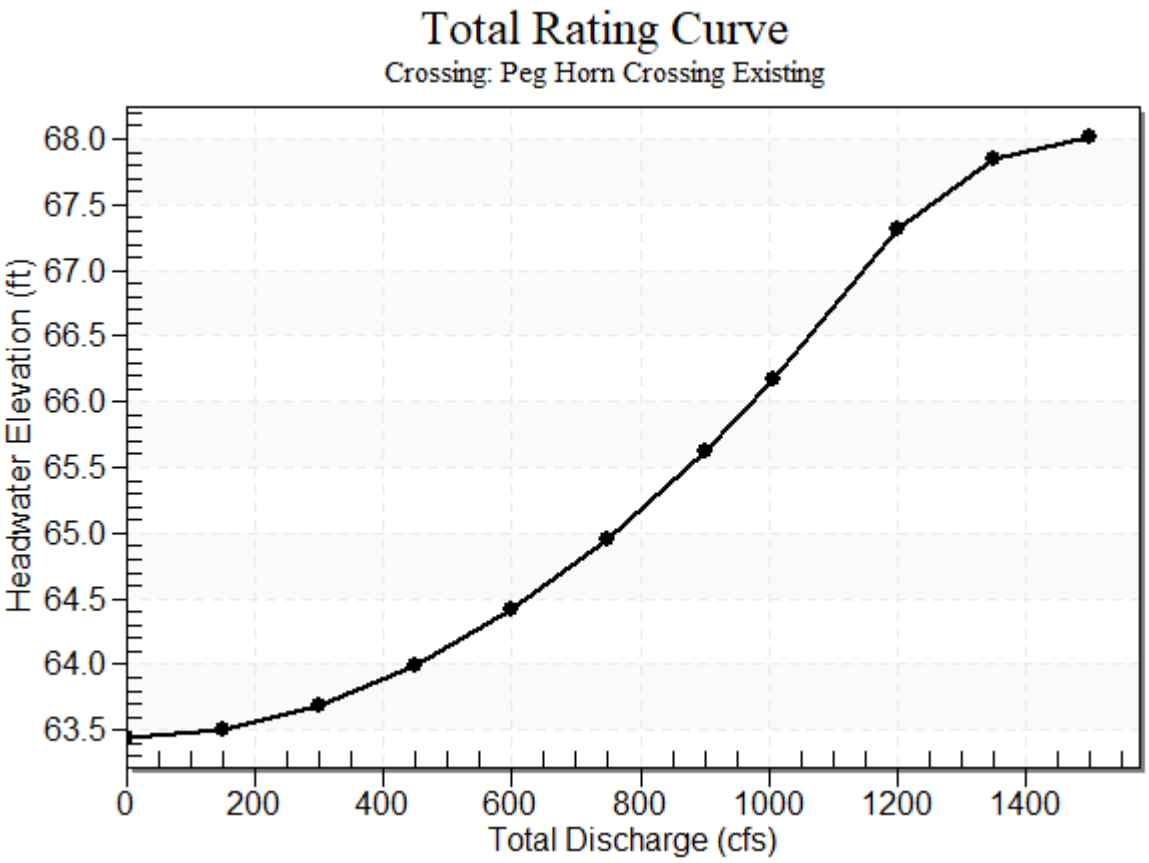


Table 2 - Culvert Summary Table: Peghorn Existing

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	63.45	0.000	12.560	0-NF	0.000	0.000	8.000	10.450	0.000	0.000
150.00	150.00	63.51	2.913	12.620	4-FFf	-1.000	1.693	8.000	10.450	1.563	0.000
300.00	300.00	63.69	4.599	12.801	4-FFf	-1.000	2.687	8.000	10.450	3.125	0.000
450.00	450.00	63.99	5.977	13.103	4-FFf	-1.000	3.522	8.000	10.450	4.688	0.000
600.00	600.00	64.42	7.225	13.525	4-FFf	-1.000	4.266	8.000	10.450	6.250	0.000
750.00	750.00	64.96	8.437	14.068	4-FFf	-1.000	4.950	8.000	10.450	7.813	0.000
900.00	900.00	65.62	9.688	14.731	4-FFf	-1.000	5.590	8.000	10.450	9.375	0.000
1008.00	1008.00	66.17	10.647	15.284	4-FFf	-1.000	6.029	8.000	10.450	10.500	0.000
1200.00	1200.00	67.31	12.533	16.420	4-FFf	-1.000	6.772	8.000	10.450	12.500	0.000
1350.00	1280.75	67.85	13.410	16.957	4-FFf	-1.000	7.072	8.000	10.450	13.341	0.000
1500.00	1306.20	68.02	13.697	17.134	4-FFf	-1.000	7.166	8.000	10.450	13.606	0.000

****

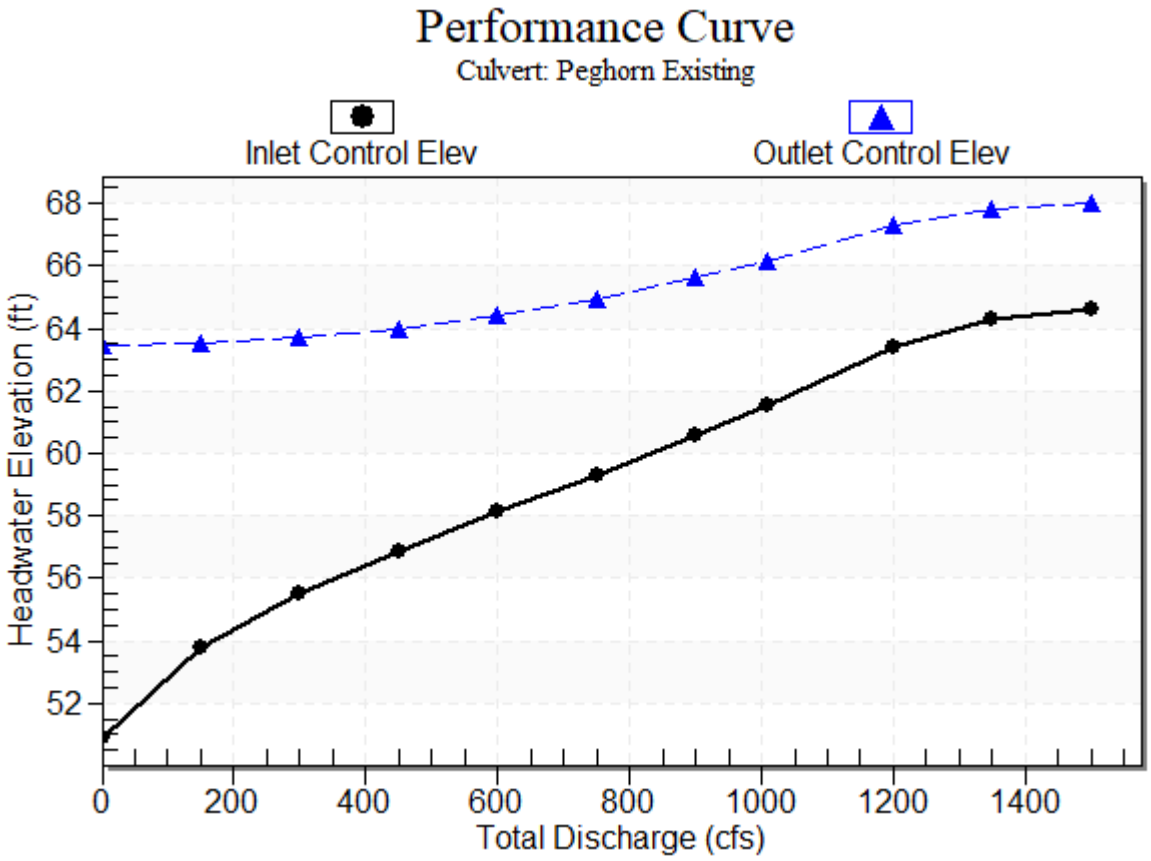
Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

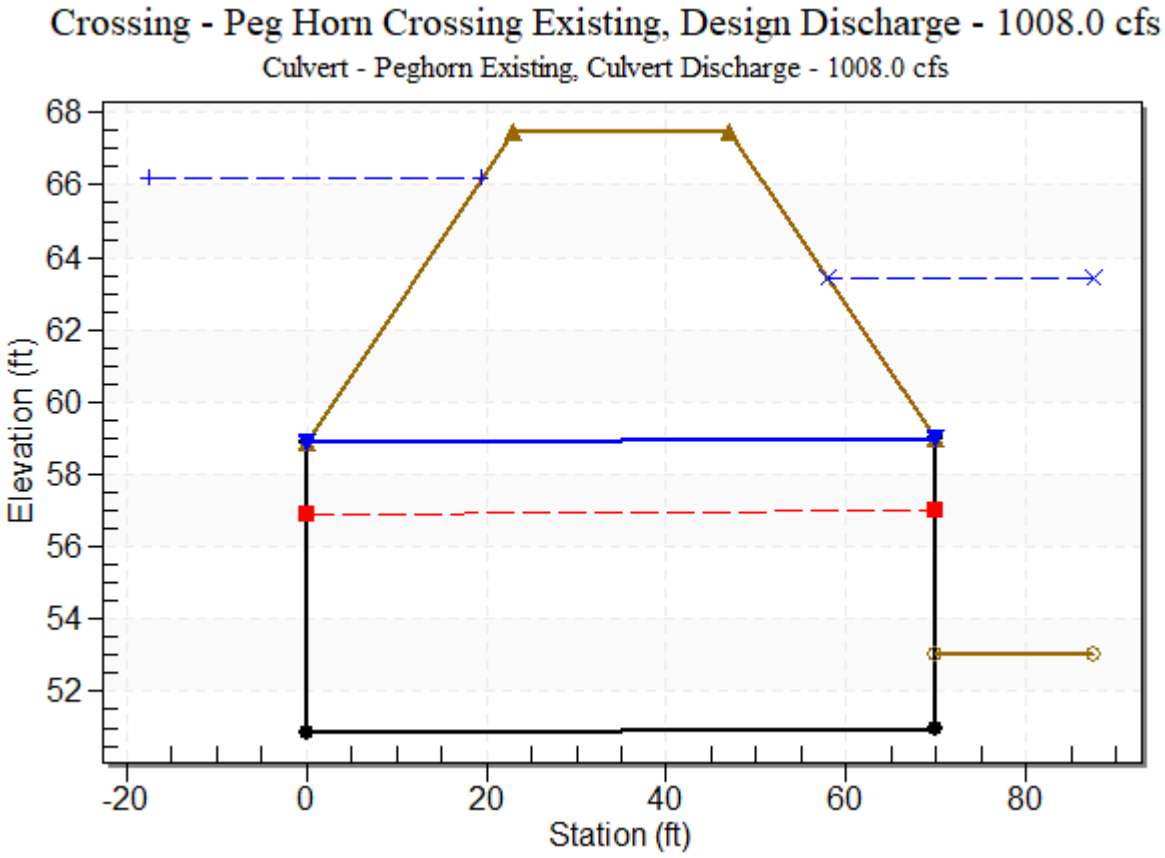
Culvert Length: 70.00 ft, Culvert Slope: -0.0016

****

Culvert Performance Curve Plot: Peghorn Existing



Water Surface Profile Plot for Culvert: Peghorn Existing



Site Data - Peghorn Existing

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 70.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peghorn Existing

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (90º) Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Crossing Existing)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	63.45	10.45
150.00	63.45	10.45
300.00	63.45	10.45
450.00	63.45	10.45
600.00	63.45	10.45
750.00	63.45	10.45
900.00	63.45	10.45
1008.00	63.45	10.45
1200.00	63.45	10.45
1350.00	63.45	10.45
1500.00	63.45	10.45

Tailwater Channel Data - Peg Horn Crossing Existing

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 63.45 ft

Roadway Data for Crossing: Peg Horn Crossing Existing

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

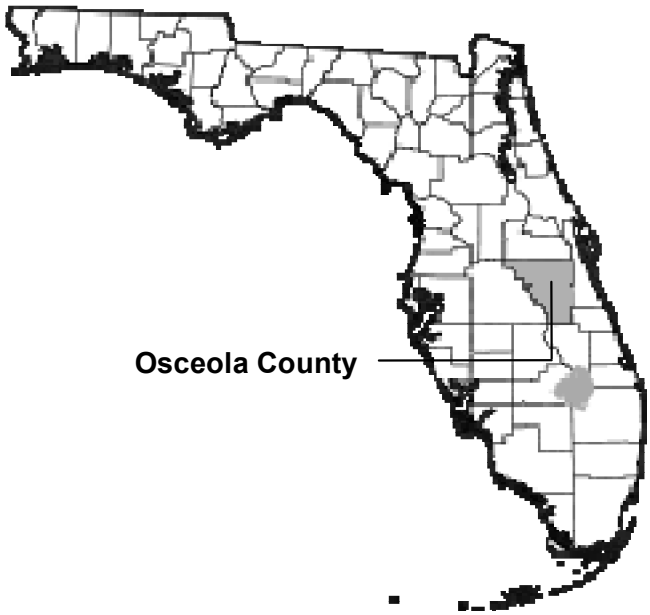
Roadway Surface: Paved

Roadway Top Width: 24.00 ft

FLOOD INSURANCE STUDY

OSCEOLA COUNTY, FLORIDA
AND INCORPORATED AREAS

Community Name	Community Number
KISSIMMEE, CITY OF	120190
OSCEOLA COUNTY (UNINCORPORATED AREAS)	120189
REEDY CREEK IMPROVEMENT DISTRICT	120577
ST. CLOUD, CITY OF	120191



REVISED
June 18, 2013

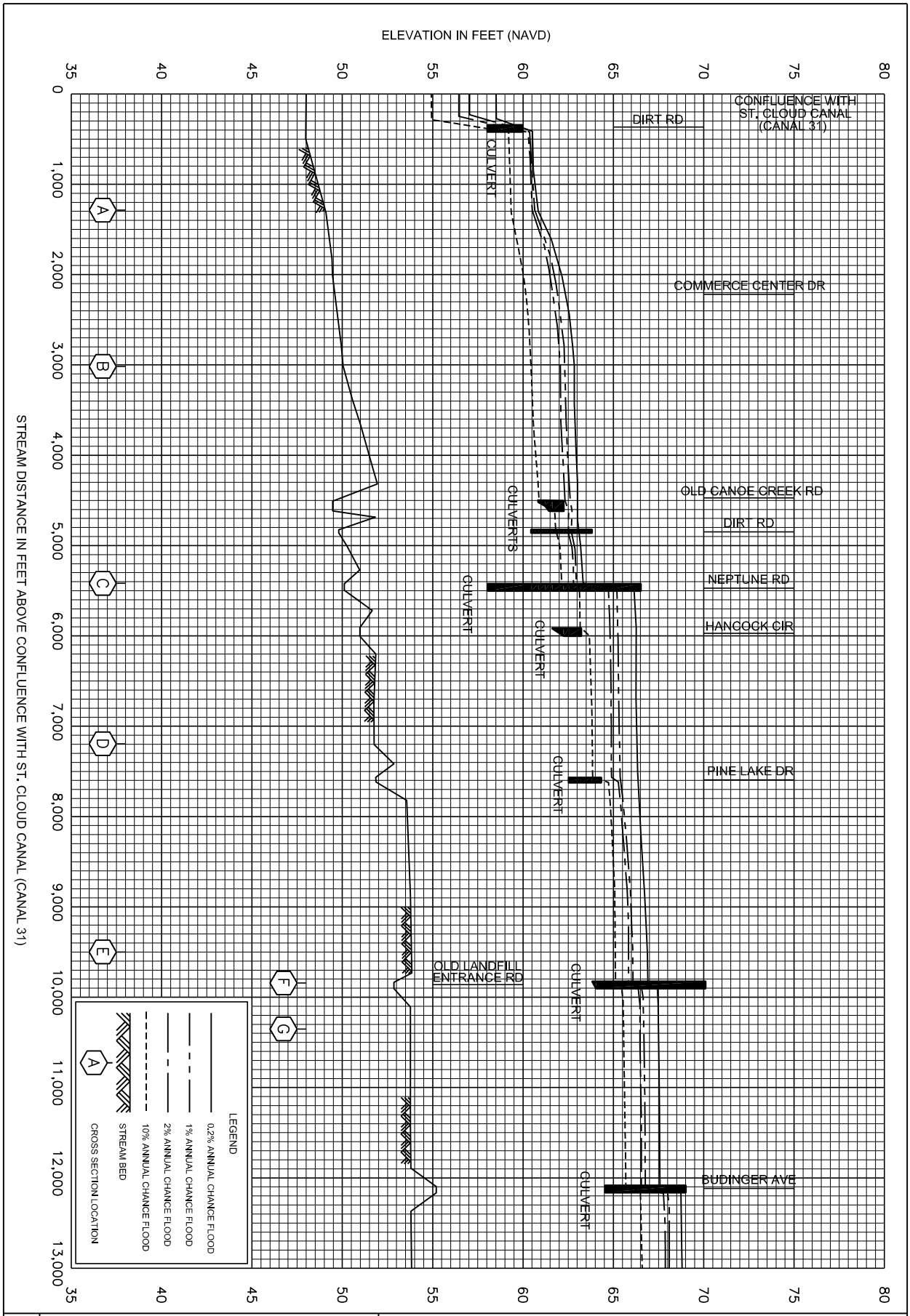
Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
12097CV000A

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharge (Cubic Feet per Second)			
		10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
DAVENPORT CREEK TRIBUTARY NO. 2					
Approximately 0.9 mile upstream of mouth	1.56	679	1,066	1,239	1,626
EAST CITY CANAL[1]					
At mouth	6.37	1,128	1,531	1,661	2,018
EAST CITY CANAL TRIBUTARY 1					
At confluence with East City Canal	0.9	375	575	687	932
MILL SLOUGH					
At U.S. Route 441	11.6	710	1,040	1,360	2,050
At Mill Slough Road	10.7	660	970	1,300	1,900
PEG HORN SLOUGH					
At mouth	2.28	714	1,003	1,090	1,258
At Neptune Road	2.01	612	840	896	1,008
At Old Landfill entrance road	1.19	351	416	420	427
At Canoe Creek Road	0.46	209	398	465	508
REEDY CREEK					
At Cypress Lake	282.0	3,300	5,000	5,700	6,350
At Lake Russell	264.0	2,700	4,000	4,500	5,100
At U.S. Route 92 bridge	209.0	800	1,100	1,100	1,100

[1]Peak discharges computed with UNET (Reference 25)



FEDERAL EMERGENCY MANAGEMENT AGENCY

OSCEOLA COUNTY, FL

AND INCORPORATED AREAS

FLOOD PROFILES

PEG HORN SLOUGH

21P

75

70

65

60

CONFLUEN
ST. CLOU
(CANA

DIRT RD

COMMERCE CENTER

OLD CANOE CREEK

DIRT RD

NEPTUNE RD

HANCOCK CIR

500yr 63.45 - 66.2

100yr 63.0 - 65.3

50yr 62.75 - 64.7

CULVERT

CULVERTS

CULVERT

CULV

HY-8 Culvert Analysis Report

Peghorn 50 year - Proposed Conditions

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 840 cfs

Maximum Flow: 1500 cfs

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Proposed

Headwater Elevation (ft)	Total Discharge (cfs)	Peg Horn Proposed Discharge (cfs)	Roadway Discharge (cfs)	Iterations
62.75	0.00	0.00	0.00	1
62.81	150.00	150.00	0.00	1
62.98	300.00	300.00	0.00	1
63.28	450.00	450.00	0.00	1
63.68	600.00	600.00	0.00	1
64.21	750.00	750.00	0.00	1
64.58	840.00	840.00	0.00	1
65.61	1050.00	1050.00	0.00	1
66.49	1200.00	1200.00	0.00	1
67.48	1350.00	1350.00	0.00	1
67.89	1500.00	1406.78	92.49	7
67.76	1351.38	1351.38	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Proposed

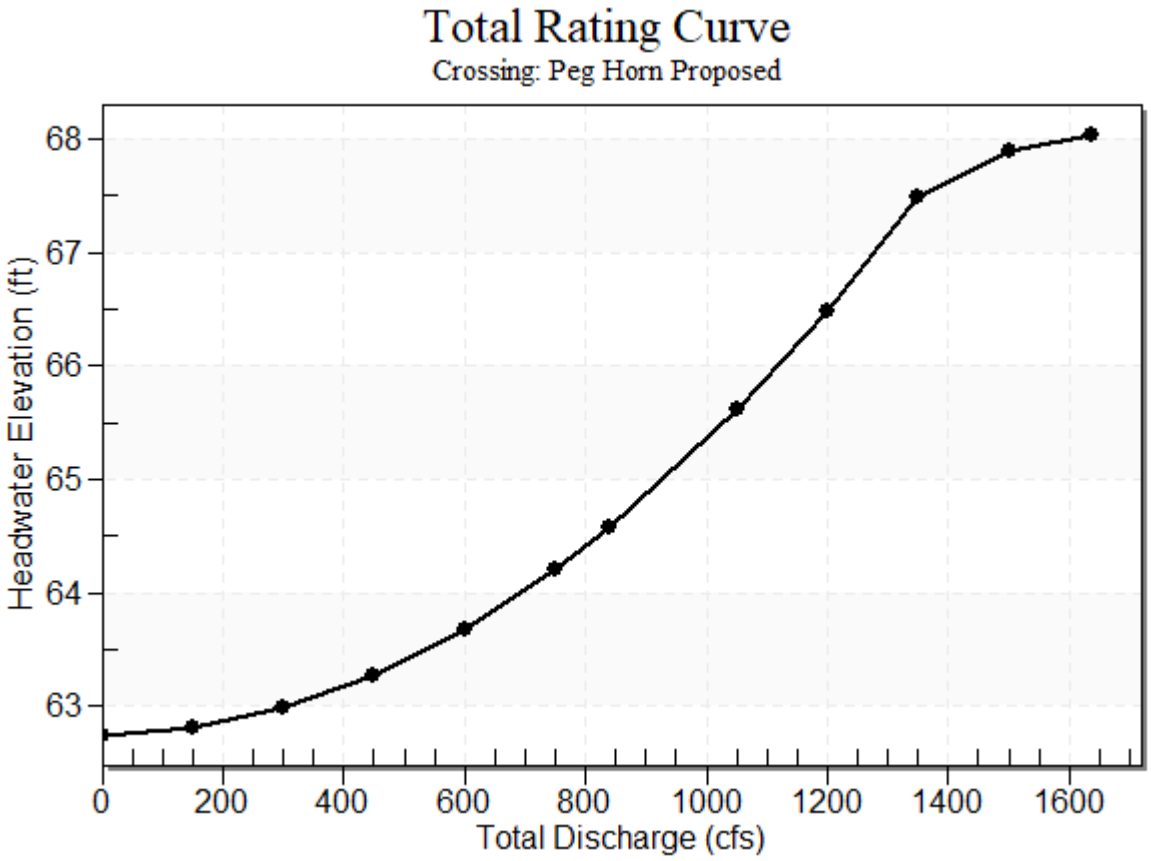


Table 2 - Culvert Summary Table: Peg Horn Proposed

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	62.75	0.000	11.860	0-NF	0.000	0.000	8.000	9.750	0.000	0.000
150.00	150.00	62.81	2.605	11.918	4-FFf	-1.000	1.693	8.000	9.750	1.563	0.000
300.00	300.00	62.98	4.141	12.094	4-FFf	-1.000	2.687	8.000	9.750	3.125	0.000
450.00	450.00	63.28	5.447	12.386	4-FFf	-1.000	3.522	8.000	9.750	4.688	0.000
600.00	600.00	63.68	6.605	12.794	4-FFf	-1.000	4.266	8.000	9.750	6.250	0.000
750.00	750.00	64.21	7.712	13.320	4-FFf	-1.000	4.950	8.000	9.750	7.813	0.000
840.00	840.00	64.58	8.385	13.691	4-FFf	-1.000	5.339	8.000	9.750	8.750	0.000
1050.00	1050.00	65.61	10.072	14.721	4-FFf	-1.000	6.195	8.000	9.750	10.938	0.000
1200.00	1200.00	66.49	11.433	15.597	4-FFf	-1.000	6.772	8.000	9.750	12.500	0.000
1350.00	1350.00	67.48	12.962	16.590	4-FFf	-1.000	7.325	8.000	9.750	14.063	0.000
1500.00	1406.78	67.89	13.590	16.996	4-FFf	-1.000	7.529	8.000	9.750	14.654	0.000

****

Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

Culvert Length: 108.00 ft, Culvert Slope: -0.0010

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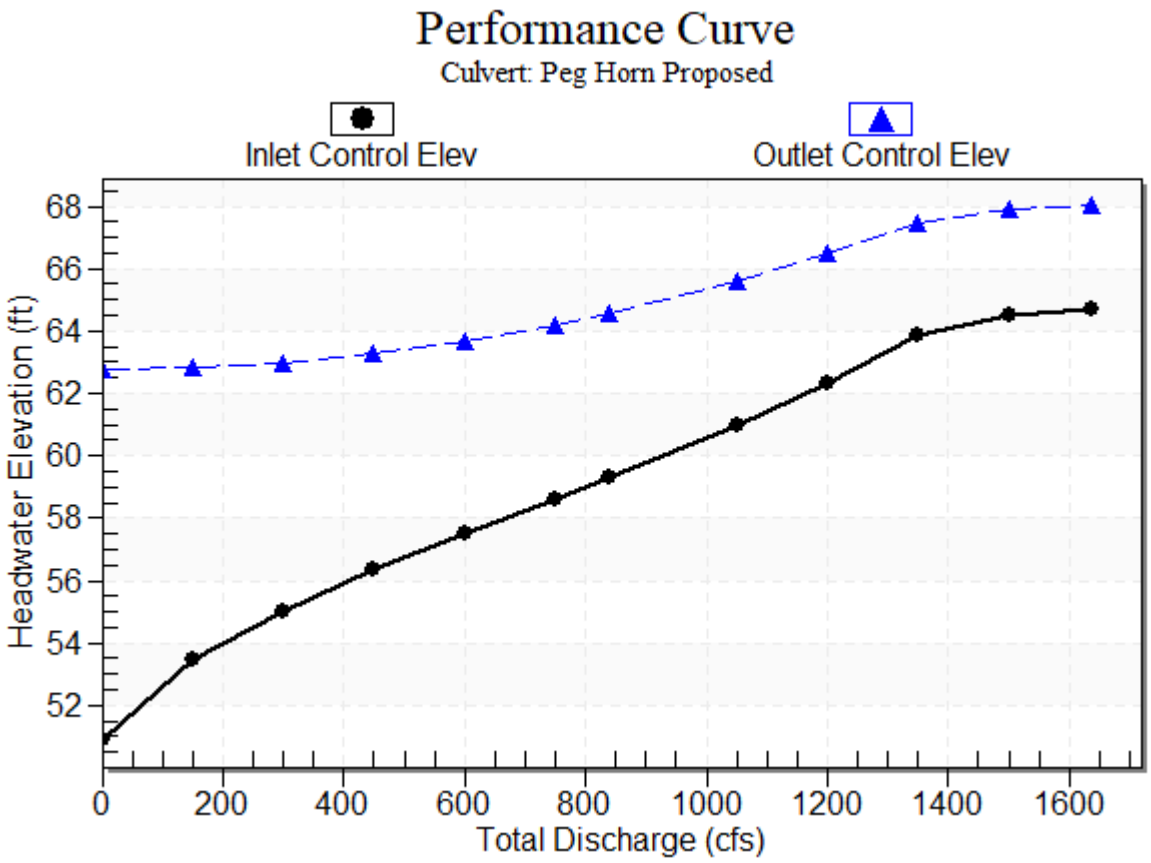
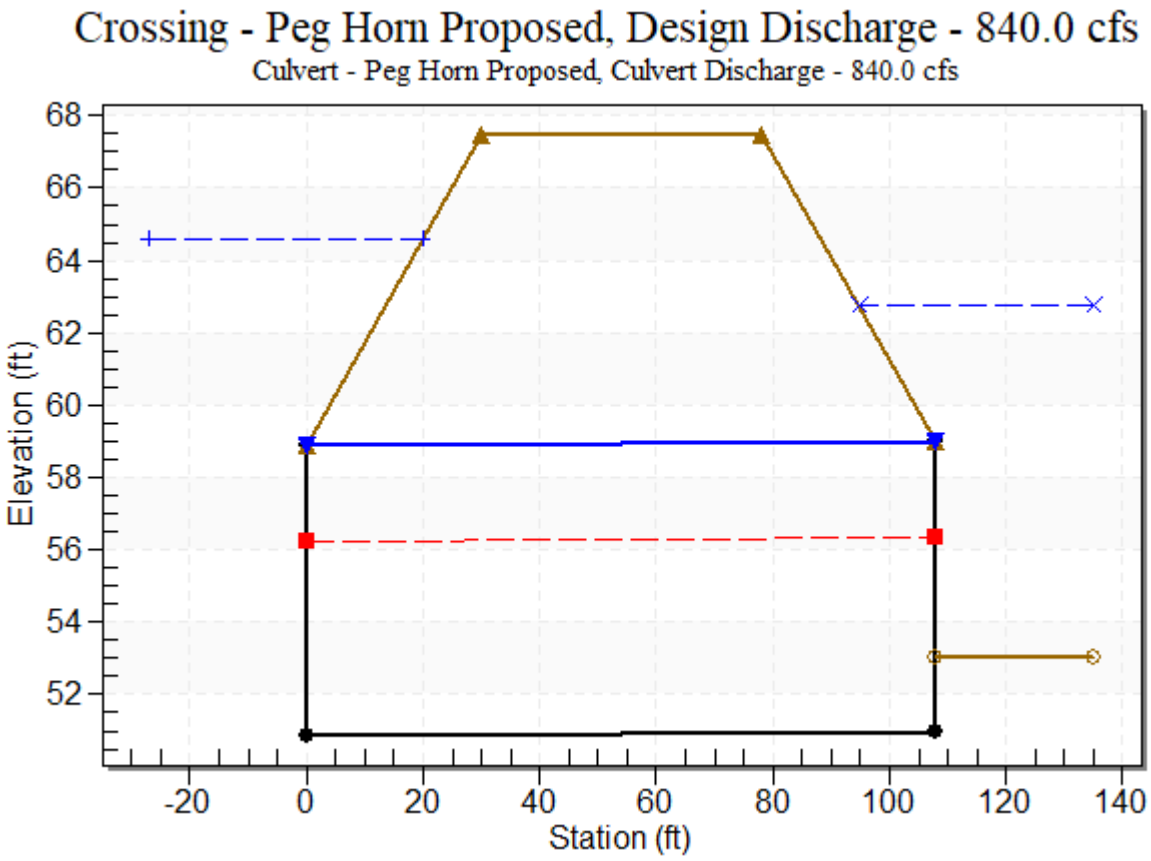
Culvert Performance Curve Plot: Peg Horn Proposed



Water Surface Profile Plot for Culvert: Peg Horn Proposed



Site Data - Peg Horn Proposed

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 108.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peg Horn Proposed

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (30-75º flare) Wingwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Proposed)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	62.75	9.75
150.00	62.75	9.75
300.00	62.75	9.75
450.00	62.75	9.75
600.00	62.75	9.75
750.00	62.75	9.75
840.00	62.75	9.75
1050.00	62.75	9.75
1200.00	62.75	9.75
1350.00	62.75	9.75
1500.00	62.75	9.75

Tailwater Channel Data - Peg Horn Proposed

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 62.75 ft

Roadway Data for Crossing: Peg Horn Proposed

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Roadway Surface: Paved

Roadway Top Width: 48.00 ft

HY-8 Culvert Analysis Report

Peghorn 100 year - Proposed Conditions

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 896 cfs

Maximum Flow: 1500 cfs

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Proposed

Headwater Elevation (ft)	Total Discharge (cfs)	Peg Horn Proposed Discharge (cfs)	Roadway Discharge (cfs)	Iterations
63.00	0.00	0.00	0.00	1
63.06	150.00	150.00	0.00	1
63.23	300.00	300.00	0.00	1
63.53	450.00	450.00	0.00	1
63.93	600.00	600.00	0.00	1
64.46	750.00	750.00	0.00	1
65.08	896.00	896.00	0.00	1
65.86	1050.00	1050.00	0.00	1
66.74	1200.00	1200.00	0.00	1
67.68	1350.00	1342.91	6.92	5
67.93	1500.00	1378.11	120.90	6
67.76	1315.30	1315.30	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Proposed

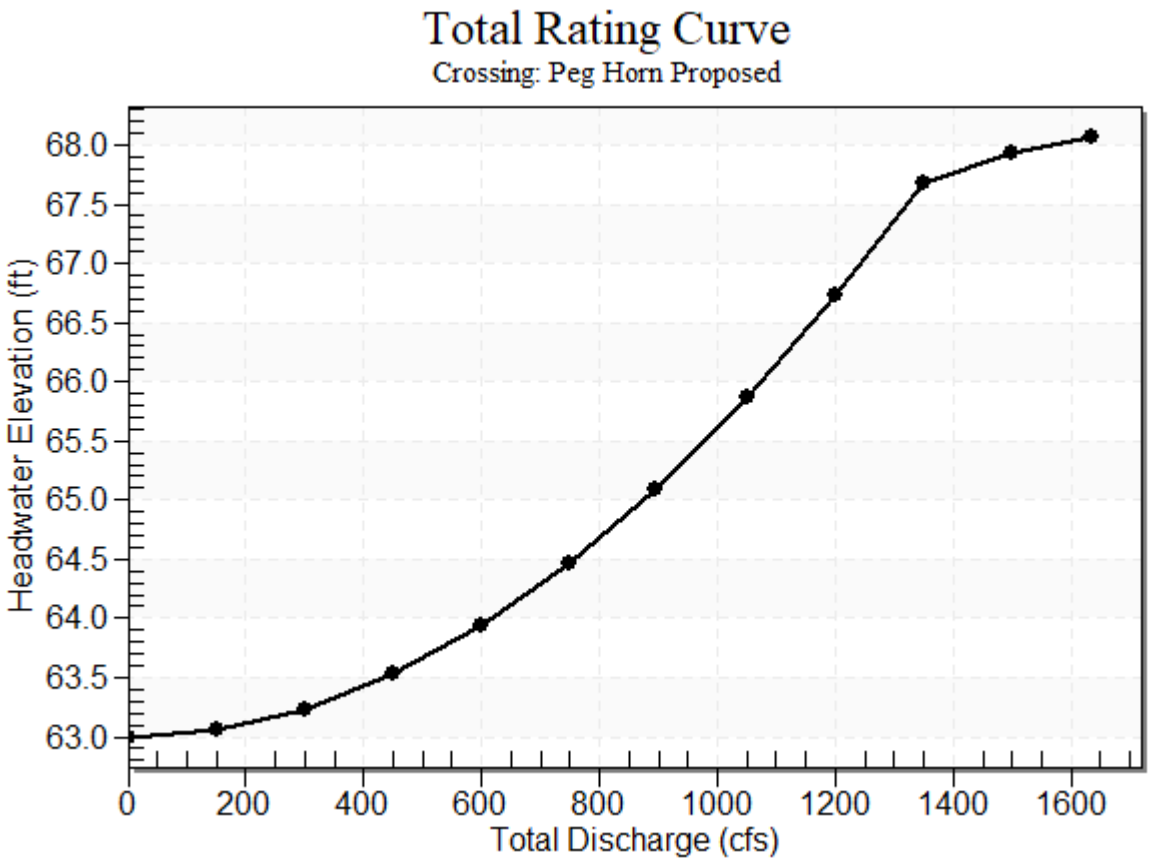


Table 2 - Culvert Summary Table: Peg Horn Proposed

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	63.00	0.000	12.110	0-NF	0.000	0.000	8.000	10.000	0.000	0.000
150.00	150.00	63.06	2.605	12.168	4-FFf	-1.000	1.693	8.000	10.000	1.563	0.000
300.00	300.00	63.23	4.141	12.344	4-FFf	-1.000	2.687	8.000	10.000	3.125	0.000
450.00	450.00	63.53	5.447	12.636	4-FFf	-1.000	3.522	8.000	10.000	4.688	0.000
600.00	600.00	63.93	6.605	13.044	4-FFf	-1.000	4.266	8.000	10.000	6.250	0.000
750.00	750.00	64.46	7.712	13.570	4-FFf	-1.000	4.950	8.000	10.000	7.813	0.000
896.00	896.00	65.08	8.816	14.194	4-FFf	-1.000	5.574	8.000	10.000	9.333	0.000
1050.00	1050.00	65.86	10.072	14.971	4-FFf	-1.000	6.195	8.000	10.000	10.938	0.000
1200.00	1200.00	66.74	11.433	15.847	4-FFf	-1.000	6.772	8.000	10.000	12.500	0.000
1350.00	1342.91	67.68	12.886	16.790	4-FFf	-1.000	7.299	8.000	10.000	13.989	0.000
1500.00	1378.11	67.93	13.269	17.039	4-FFf	-1.000	7.426	8.000	10.000	14.355	0.000

****

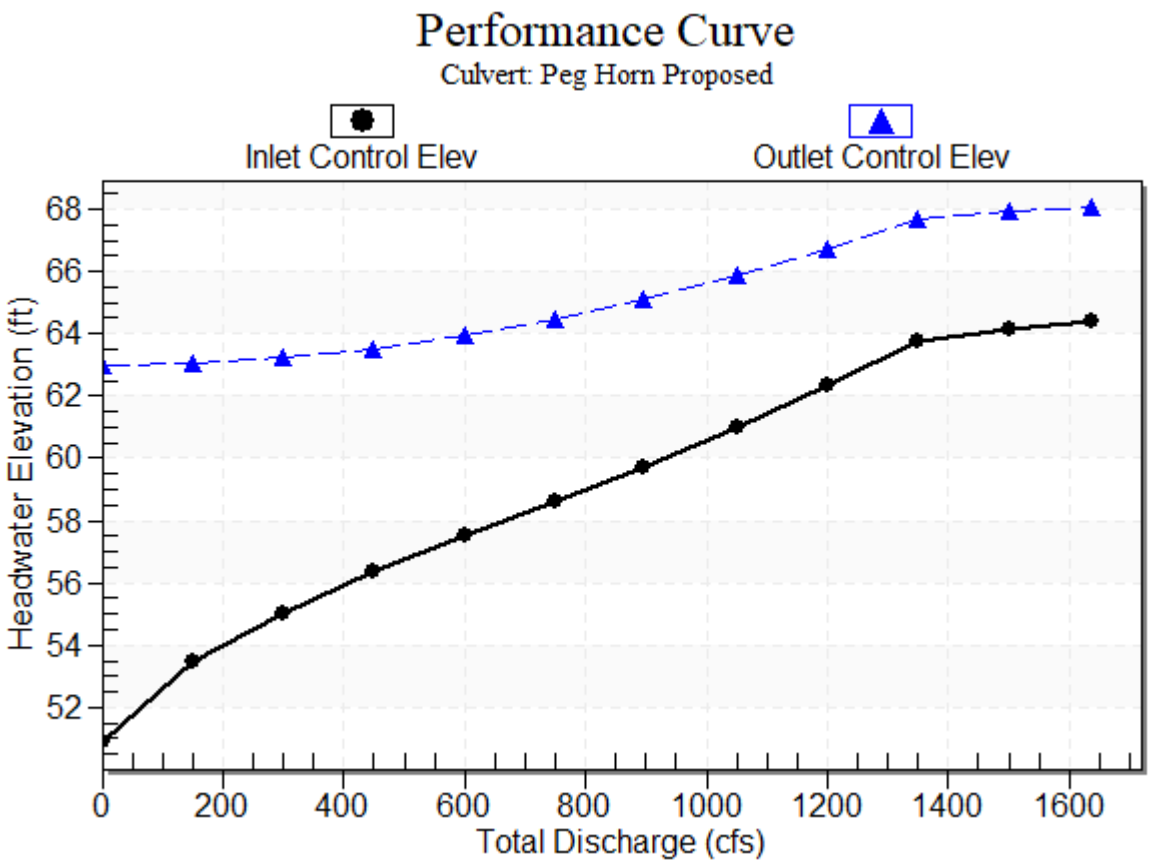
Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

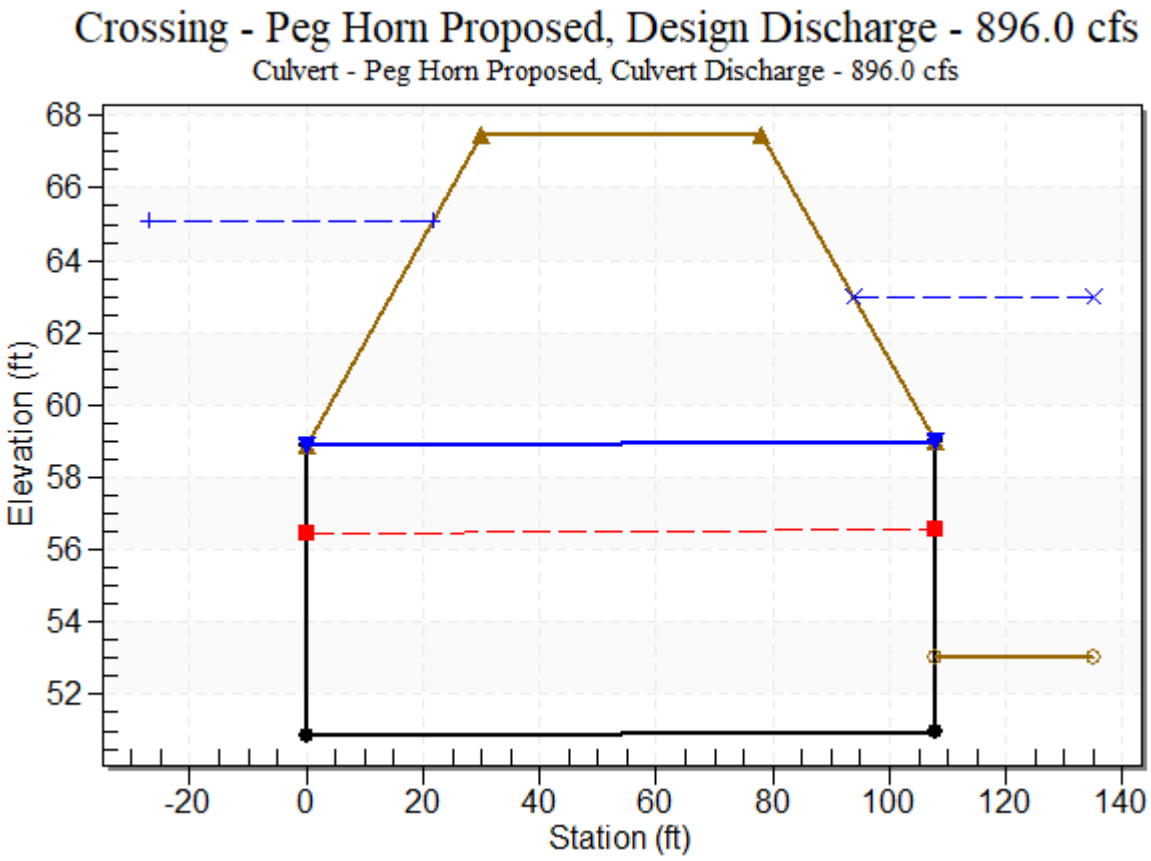
Culvert Length: 108.00 ft, Culvert Slope: -0.0010

****

Culvert Performance Curve Plot: Peg Horn Proposed



Water Surface Profile Plot for Culvert: Peg Horn Proposed



Site Data - Peg Horn Proposed

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 108.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peg Horn Proposed

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (30-75º flare) Wingwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Proposed)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	63.00	10.00
150.00	63.00	10.00
300.00	63.00	10.00
450.00	63.00	10.00
600.00	63.00	10.00
750.00	63.00	10.00
896.00	63.00	10.00
1050.00	63.00	10.00
1200.00	63.00	10.00
1350.00	63.00	10.00
1500.00	63.00	10.00

Tailwater Channel Data - Peg Horn Proposed

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 63.00 ft

Roadway Data for Crossing: Peg Horn Proposed

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Roadway Surface: Paved

Roadway Top Width: 48.00 ft

HY-8 Culvert Analysis Report

Peghorn 500 year - Proposed Conditions

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 1008 cfs

Maximum Flow: 1500 cfs

Table 1 - Summary of Culvert Flows at Crossing: Peg Horn Proposed

Headwater Elevation (ft)	Total Discharge (cfs)	Peg Horn Proposed Discharge (cfs)	Roadway Discharge (cfs)	Iterations
63.45	0.00	0.00	0.00	1
63.51	150.00	150.00	0.00	1
63.68	300.00	300.00	0.00	1
63.98	450.00	450.00	0.00	1
64.38	600.00	600.00	0.00	1
64.91	750.00	750.00	0.00	1
65.55	900.00	900.00	0.00	1
66.09	1008.00	1008.00	0.00	1
67.19	1200.00	1200.00	0.00	1
67.82	1350.00	1297.15	52.47	8
68.00	1500.00	1324.38	175.24	6
67.76	1247.58	1247.58	0.00	Overtopping

Rating Curve Plot for Crossing: Peg Horn Proposed

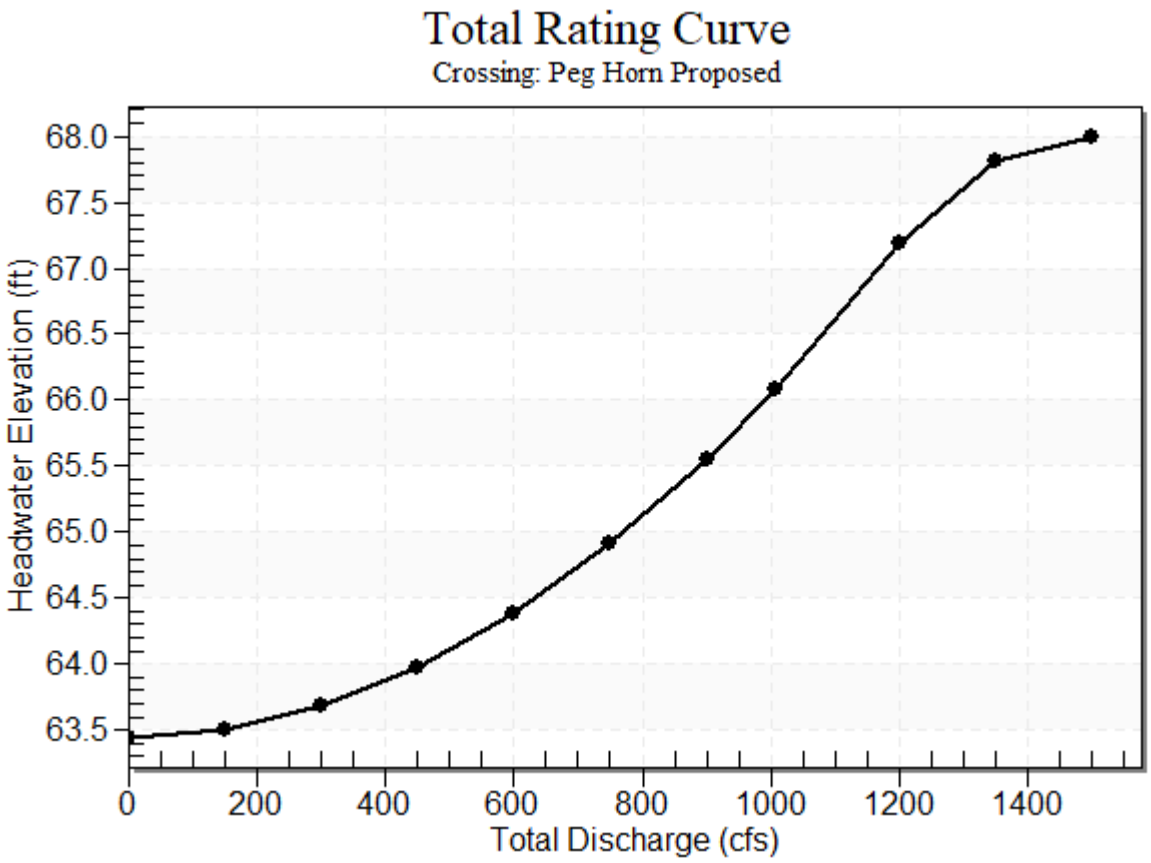


Table 2 - Culvert Summary Table: Peg Horn Proposed

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	63.45	0.000	12.560	0-NF	0.000	0.000	8.000	10.450	0.000	0.000
150.00	150.00	63.51	2.605	12.618	4-FFf	-1.000	1.693	8.000	10.450	1.563	0.000
300.00	300.00	63.68	4.141	12.794	4-FFf	-1.000	2.687	8.000	10.450	3.125	0.000
450.00	450.00	63.98	5.447	13.086	4-FFf	-1.000	3.522	8.000	10.450	4.688	0.000
600.00	600.00	64.38	6.605	13.494	4-FFf	-1.000	4.266	8.000	10.450	6.250	0.000
750.00	750.00	64.91	7.712	14.020	4-FFf	-1.000	4.950	8.000	10.450	7.813	0.000
900.00	900.00	65.55	8.847	14.662	4-FFf	-1.000	5.590	8.000	10.450	9.375	0.000
1008.00	1008.00	66.09	9.717	15.197	4-FFf	-1.000	6.029	8.000	10.450	10.500	0.000
1200.00	1200.00	67.19	11.433	16.297	4-FFf	-1.000	6.772	8.000	10.450	12.500	0.000
1350.00	1297.15	67.82	12.403	16.927	4-FFf	-1.000	7.133	8.000	10.450	13.512	0.000
1500.00	1324.38	68.00	12.688	17.112	4-FFf	-1.000	7.232	8.000	10.450	13.796	0.000

****

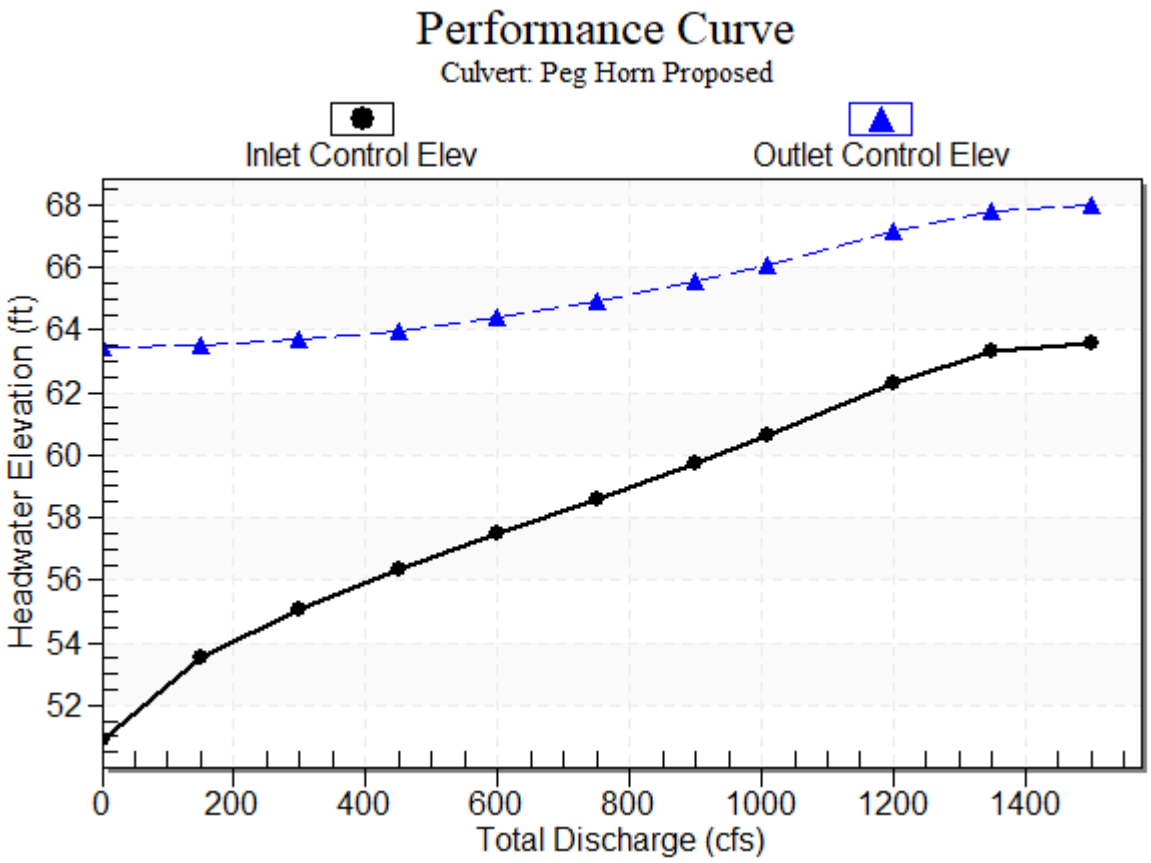
Straight Culvert

Inlet Elevation (invert): 50.89 ft, Outlet Elevation (invert): 51.00 ft

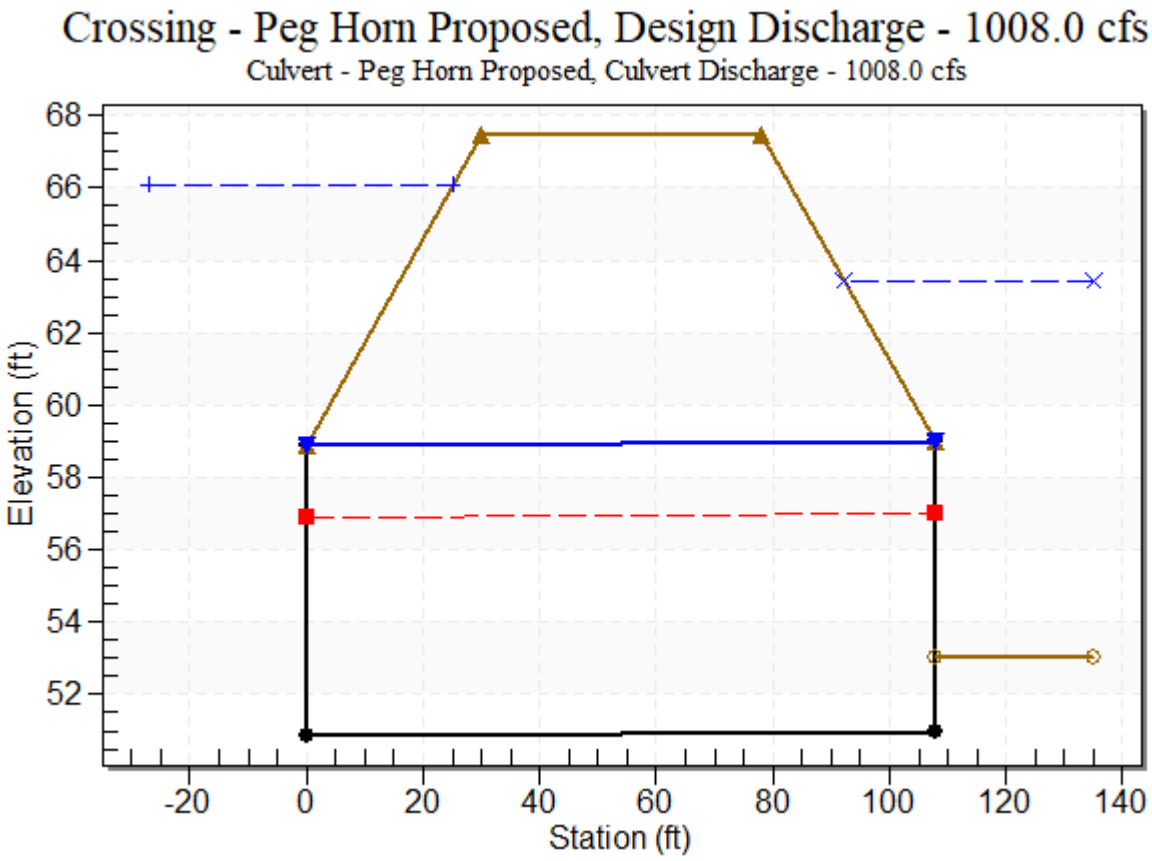
Culvert Length: 108.00 ft, Culvert Slope: -0.0010

****

Culvert Performance Curve Plot: Peg Horn Proposed



Water Surface Profile Plot for Culvert: Peg Horn Proposed



Site Data - Peg Horn Proposed

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 50.89 ft

Outlet Station: 108.00 ft

Outlet Elevation: 51.00 ft

Number of Barrels: 1

Culvert Data Summary - Peg Horn Proposed

Barrel Shape: Concrete Box

Barrel Span: 12.00 ft

Barrel Rise: 8.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (30-75º flare) Wingwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Peg Horn Proposed)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)
0.00	63.45	10.45
150.00	63.45	10.45
300.00	63.45	10.45
450.00	63.45	10.45
600.00	63.45	10.45
750.00	63.45	10.45
900.00	63.45	10.45
1008.00	63.45	10.45
1200.00	63.45	10.45
1350.00	63.45	10.45
1500.00	63.45	10.45

Tailwater Channel Data - Peg Horn Proposed

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 63.45 ft

Roadway Data for Crossing: Peg Horn Proposed

Roadway Profile Shape: Irregular Roadway Shape (coordinates)

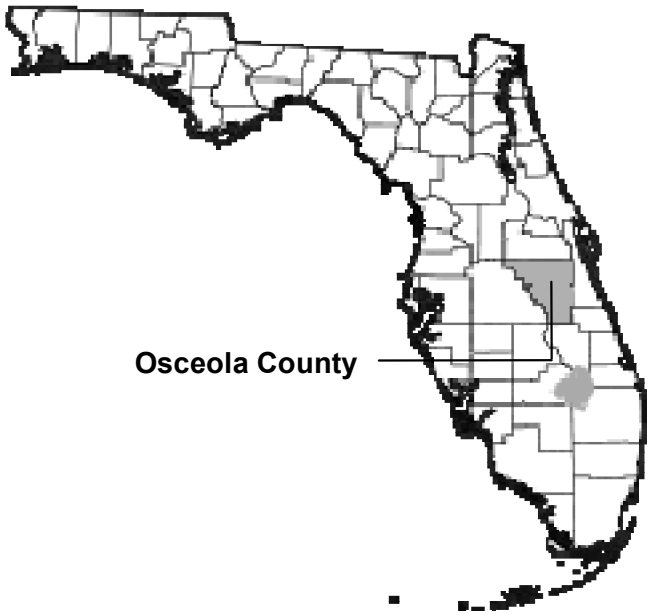
Roadway Surface: Paved

Roadway Top Width: 48.00 ft

FLOOD INSURANCE STUDY

OSCEOLA COUNTY, FLORIDA
AND INCORPORATED AREAS

Community Name	Community Number
KISSIMMEE, CITY OF	120190
OSCEOLA COUNTY (UNINCORPORATED AREAS)	120189
REEDY CREEK IMPROVEMENT DISTRICT	120577
ST. CLOUD, CITY OF	120191



REVISED
June 18, 2013

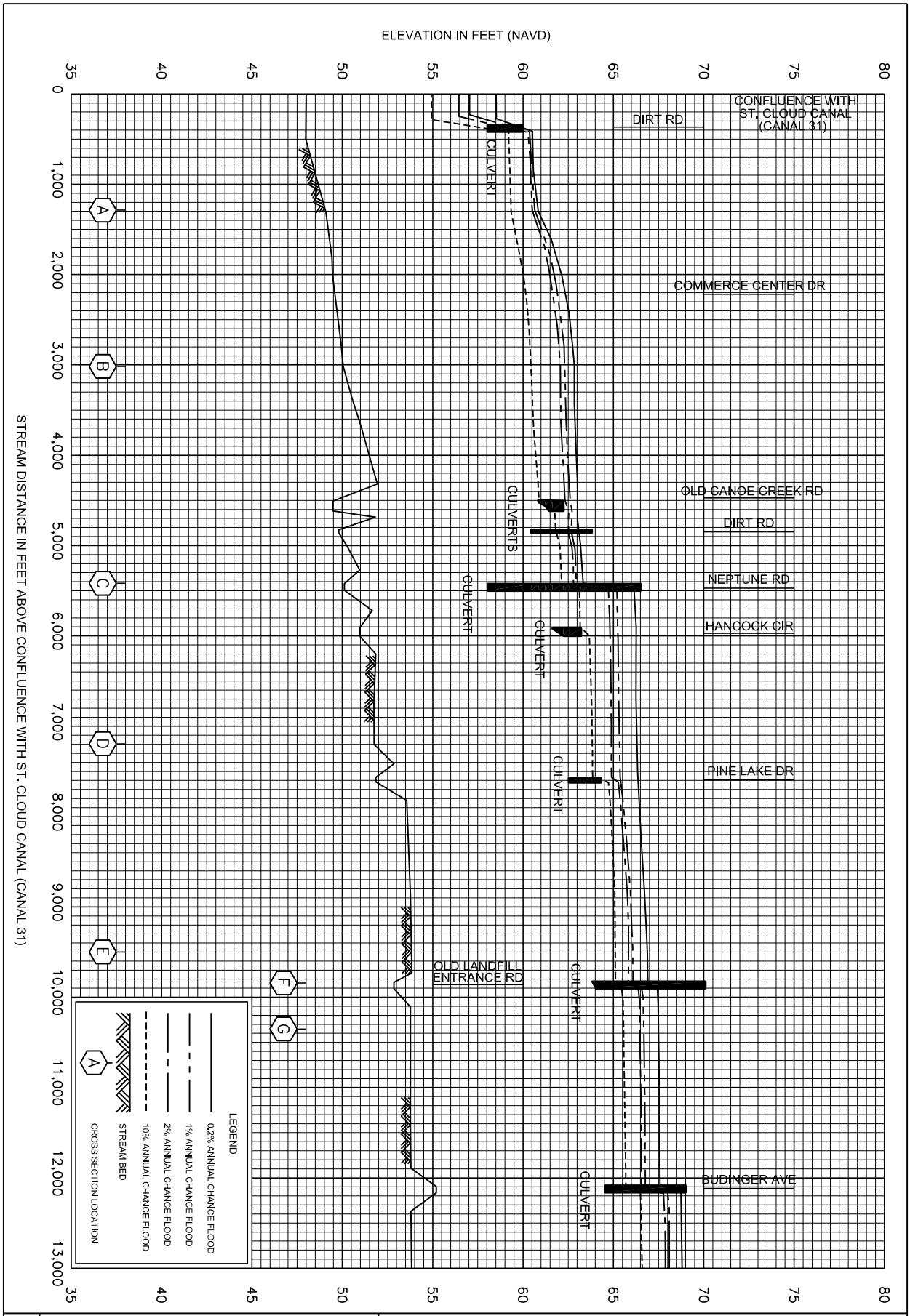
Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
12097CV000A

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharge (Cubic Feet per Second)			
		10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
DAVENPORT CREEK TRIBUTARY NO. 2					
Approximately 0.9 mile upstream of mouth	1.56	679	1,066	1,239	1,626
EAST CITY CANAL[1]					
At mouth	6.37	1,128	1,531	1,661	2,018
EAST CITY CANAL TRIBUTARY 1					
At confluence with East City Canal	0.9	375	575	687	932
MILL SLOUGH					
At U.S. Route 441	11.6	710	1,040	1,360	2,050
At Mill Slough Road	10.7	660	970	1,300	1,900
PEG HORN SLOUGH					
At mouth	2.28	714	1,003	1,090	1,258
At Neptune Road	2.01	612	840	896	1,008
At Old Landfill entrance road	1.19	351	416	420	427
At Canoe Creek Road	0.46	209	398	465	508
REEDY CREEK					
At Cypress Lake	282.0	3,300	5,000	5,700	6,350
At Lake Russell	264.0	2,700	4,000	4,500	5,100
At U.S. Route 92 bridge	209.0	800	1,100	1,100	1,100

[1]Peak discharges computed with UNET (Reference 25)



FEDERAL EMERGENCY MANAGEMENT AGENCY

OSCEOLA COUNTY, FL

AND INCORPORATED AREAS

FLOOD PROFILES

PEG HORN SLOUGH

21P

Copy of correspondence regarding FEMA Floodway impacts. Most correspondence with the community (Osceola County) was made outside of email corespondence but this thread shows evidence of coordination concerning the floodway

John Porter

From: John Porter
Sent: Wednesday, June 19, 2019 2:03 PM
To: Linette Matheny
Cc: John Moody; John Porter
Subject: RE: FEMA Data Request

10:4 I will do that

JOHN PORTER, P.E., CFM
OSCEOLA ENGINEERING, INC.
1003 FLORIDA AVENUE
ST. CLOUD, FL 34769
407-891-0452 OFFICE
407-433-0478 MOBILE
JPORTER@OSC-ENG.COM

From: Linette Matheny <Linette.Matheny@osceola.org>
Sent: Wednesday, June 19, 2019 1:51 PM
To: John Porter <jporter@osc-eng.com>
Cc: John Moody <jmoody@osc-eng.com>
Subject: RE: FEMA Data Request

I haven't received anything. Feel free to contact him on our behalf.

Thank you,
Linette R. Matheny, PE
407.742.0543

From: John Porter [mailto:jporter@osc-eng.com]
Sent: Friday, June 14, 2019 8:29 AM
To: Linette Matheny
Cc: John Moody; John Porter
Subject: RE: FEMA Data Request

Hi Linette,

Has Jeremy Tovar at FEMA provided a response to the data request for Neptune Road? (see highlighted below)

- Name(s) of flooding source(s) and specific location(s) for which data are needed (Attach FIRM panel showing subject area if available):

  Peg Horn Slough and St. Cloud Canal (Canal 31)

- Specific data needed (see list of available categories on page 1):

  Category 1 - We need the hydraulic and hydrologic models used to create the maps for Peg Horn Slough and for the St. Cloud Canal (Canal 31). We would also like to have any survey data or written reports or figures associated with these systems.

Sincerely,

JOHN PORTER, P.E., CFM
OSCEOLA ENGINEERING, INC.
1003 FLORIDA AVENUE
ST. CLOUD, FL 34769
407-891-0452 OFFICE
407-433-0478 MOBILE
JPORTER@OSC-ENG.COM

From: John Porter
Sent: Tuesday, March 26, 2019 2:10 PM
To: 'Linette Matheny' <Linette.Matheny@osceola.org>
Cc: John Porter <jporter@osc-eng.com>
Subject: RE: FEMA Data Request

Hi Linette,

Yes that is for me. That was the request for the FEMA models Neptune road. Thank you for the update
Sincerely,

JOHN PORTER, P.E., CFM
OSCEOLA ENGINEERING, INC.
1003 FLORIDA AVENUE
ST. CLOUD, FL 34769
407-891-0452 OFFICE
407-433-0478 MOBILE
407-891-9173 FAX
JPORTER@OSC-ENG.COM

From: Linette Matheny <Linette.Matheny@osceola.org>
Sent: Tuesday, March 26, 2019 2:01 PM
To: John Porter <jporter@osc-eng.com>
Subject: FW: FEMA Data Request

Is this for you? Can't remember who asked…

Thank you,
Linette R. Matheny, PE
407.742.0543

From: Greene, Susan [mailto:Susan.Greene@mbakerintl.com]
Sent: Tuesday, March 26, 2019 12:44 PM
To: Linette Matheny
Subject: FEMA Data Request

We have assigned your request for data case number B1904178. Jeremy Tovar will process your request. Please contact him directly at Jeremy.tovar@mbakerintl.com with any questions you may have.

Thank you,

Susan

Susan Greene | Document Control Supervisor
3601 Eisenhower Ave, Suite 600 | Alexandria, VA 22304 | [O] 571-357-6053

susan.greene@mbakerintl.com | www.mbakerintl.com |

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