



Bound Reports

1720

GENERAL PERMIT APPLICATION

FOR

**MANAGEMENT AND STORAGE
OF SURFACE WATERS**

HUNTINGTON BASIN



SUBMITTED TO:

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

August, 1996

BY:



**STOTTLER STARMER & ASSOCIATES
ARCHITECTS, ENGINEERS, PLANNERS, INC.**

Handwritten signature and date:
9-9-96

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**PERMIT APPLICATION
FOR
MANAGEMENT & STORAGE OF SURFACE WATERS
HUNTINGTON BASIN**

INTRODUCTION

Huntington basin consists of 425± acres, which is bounded on the west by US Highway 1 and on the east by the Indian River Lagoon. Huntington Avenue is centered within the basin and "connects" US Highway 1 to the Indian River Lagoon. The primary conveyance within the basin is a ditch along the north side of Huntington Avenue.

SSA was contracted to provide construction drawings for drainage improvements to Huntington Basin. The primary objectives were to reduce the historic flooding problems within the Basin and improve water quality. The primary problems within Huntington Basin are:

- Localized flooding.
- Lack of maintenance of the ditch systems.
- Lack of stormwater treatment facilities.

The Huntington Basin improvements will be built in three phases; construction of a detention pond first, upgrading pipes along the ditch system second, and widening the existing ditch between US-1 and the RR track third. The permit is being sought for the "full" condition, which, as explained in the next section, comprehend all three phases of construction phases.

STORMWATER MANAGEMENT

Currently there are no water treatment facilities within the basin. The existing stormwater runoff from Huntington Basin enters the ditch via sheet flow and/or shallow concentrated flow, from there it outfalls directly into the Indian River Lagoon. There are numerous driveway culverts along the route. Many of these culverts are undersized and will be upgraded as part of the proposed improvements.

The calculations are divided into 3 conditions:

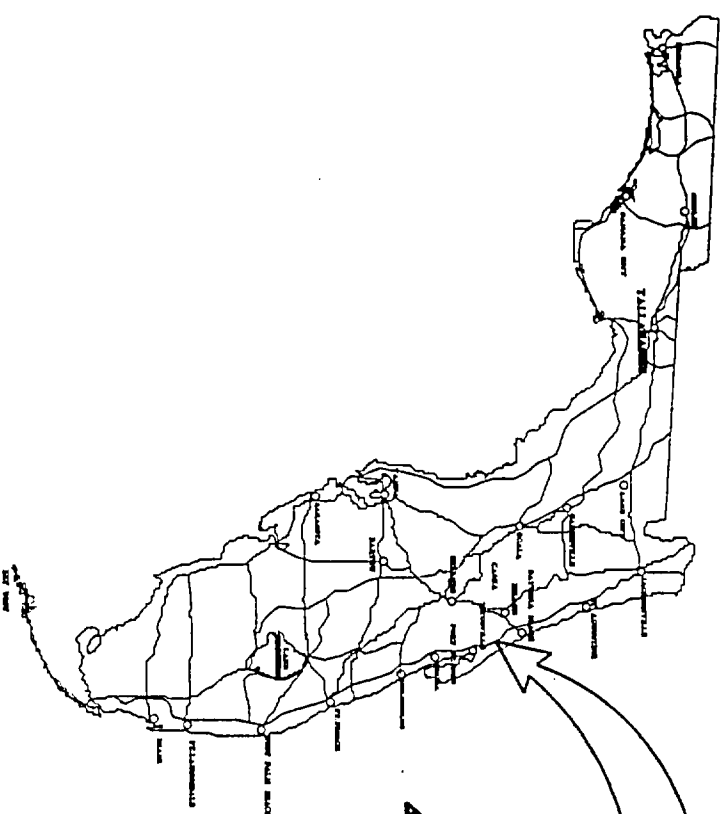
- Existing Condition, which is the current situation in the basin.
- Phased Condition, which is the condition achieved by adding a pond to the basin without making any other improvements to the drainage system.
- Full Condition, is the condition at which the basin would be, assuming all the improvements are already in place. These proposed improvements are: construction of a detention pond, upgrade culverts, and widen the ditch.

In order to reduce area flooding and improve water quality within Huntington Basin, construction of a wet detention pond with a maintenance access road is proposed. The pond location is on the north side of Huntington Avenue approximately 750' west of the Florida East Coast Railroad. The proposed improvements include upgrading culverts and improving the main ditch.

Since the Huntington basin project is a retrofit of an existing system, no additional water quality improvements would be necessary. However, a great amount of water quality treatment will be provided by constructing the wet detention pond.

To protect water quality during construction, provisions will be made as required to prevent potentially turbid runoff from leaving the site. This includes the use of a siltation fence and hay bales as noted on the plans.

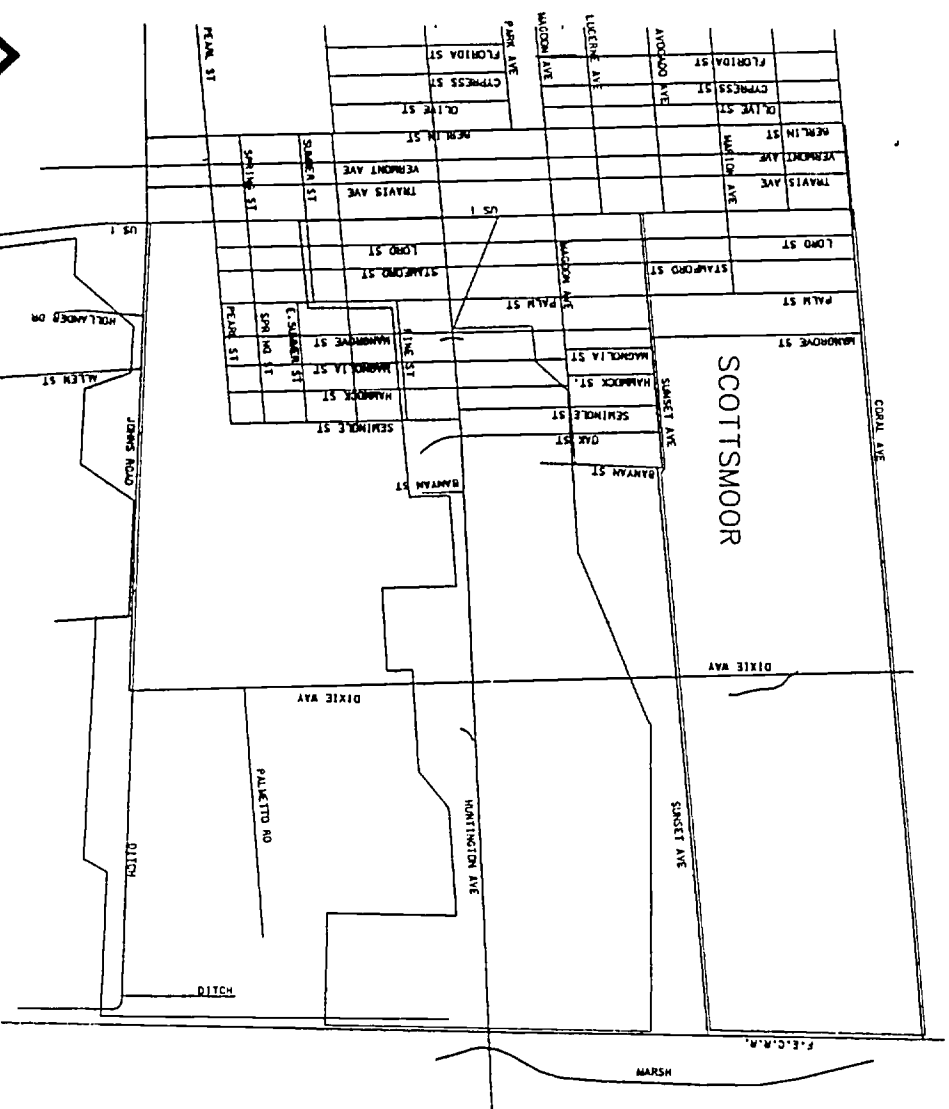
FIGURES



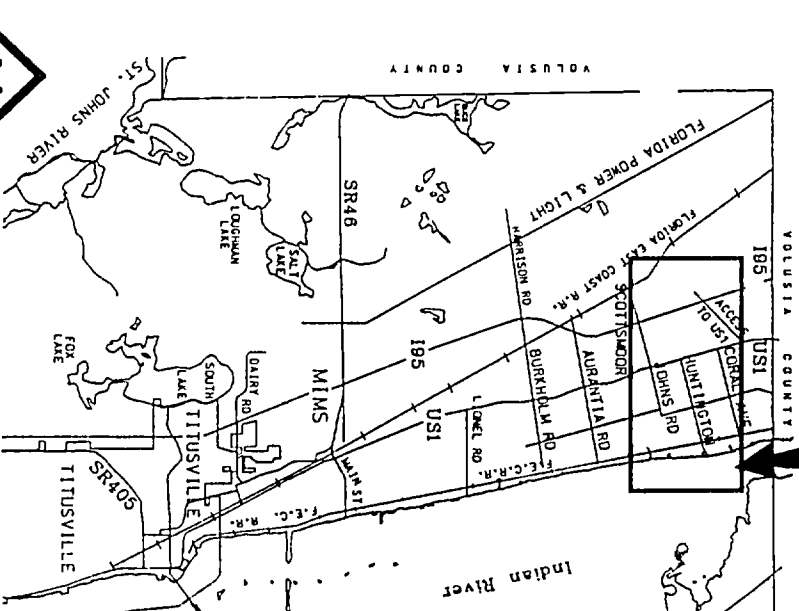
PROJECT
LOCATION



STATE OF FLORIDA
KEY MAP N.T.S.



BASIN AREA
KEY MAP N.T.S.



NORTH BREVARD COUNTY
KEY MAP N.T.S.

BASIN AREA



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BREVARD COUNTY
HUNTINGTON BASIN
MASTER DRAINAGE PLAN

DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 9315
SITE LOCATION PLAN			FIGURE 1



SOURCE: USDA - SOIL CONSERVATION SERVICE "Soil Survey of Brevard County, Florida"

FIGURE 2

Title		SCS SOILS MAP	
Proj.		HUNTINGTON AVENUE BASIN	
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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HUNTINGTON AVENUE BASIN SOIL TYPE		
Symbol	Soil Name	Type
Mk	Myakka sand	B/D
Mu	Myakka - Urban Land Complex	B/D
Pw	Pompano sand	B/D
An	Andote sand	B/D
Qr	Quartzipemments, smoothed	-
Cp	Copeland complex	B/D
Br	Brandenton fine sand, shallow varient	B/D
Fn	Floridana sand	B/D
Wa	Wabasso sand	B/D
Fa	Felda sand	B/D
Ch	Chobee sandy loam	B/D
Fd	Felda sand, bedded	B/D

FIGURE 3

Title	SCS SOILS LEGEND		
Proj.	HUNTINGTON AVENUE BASIN		
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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FLOOD ZONE RATING LEGEND:

ZONE AE BASE FLOOD ELEVATIONS DETERMINED

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) "FLOOD INSURANCE RATE MAP (FIRM)"

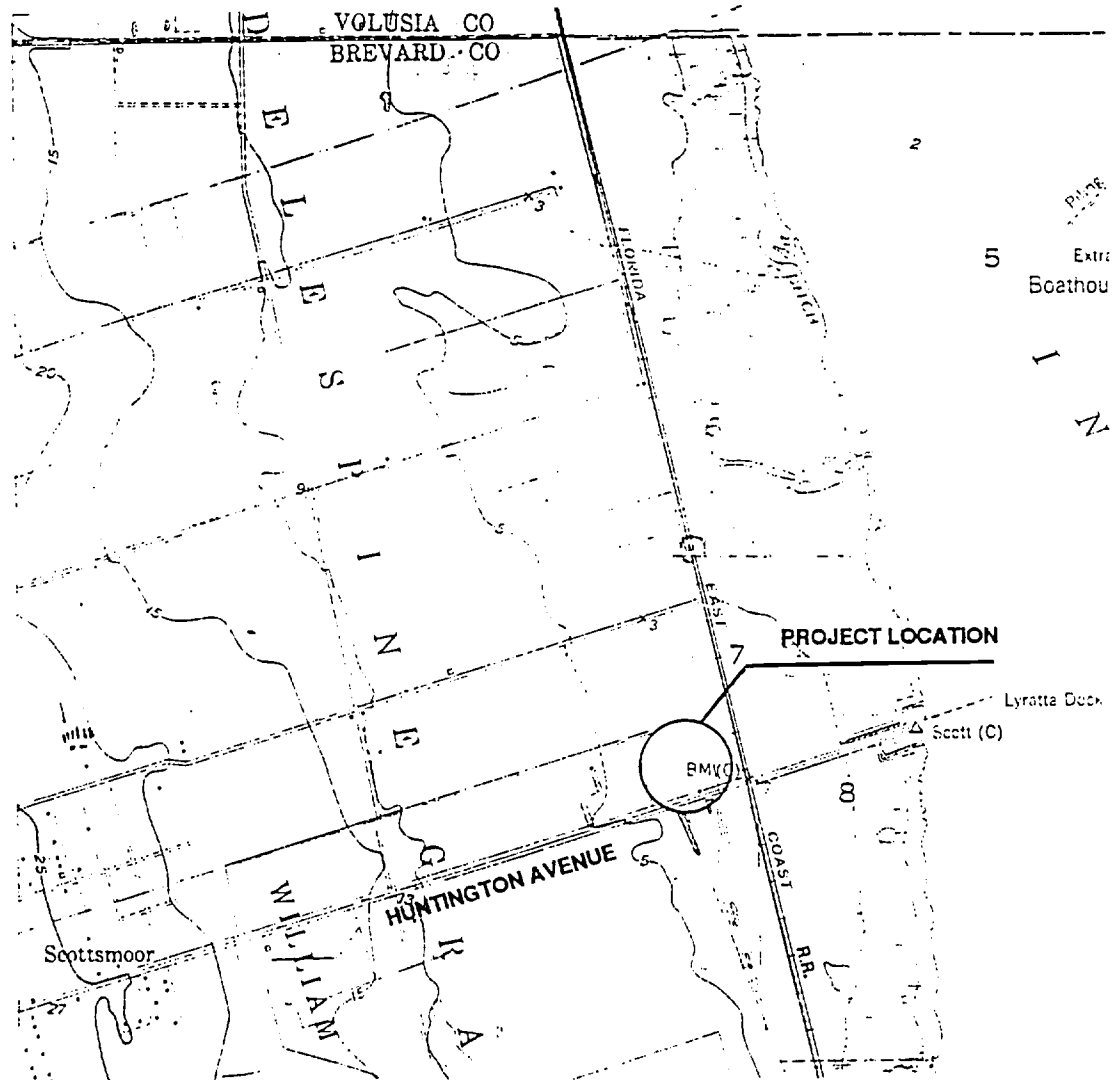
Brevard County, Florida and Incorporated Area Map Number 12009C0040 4/3/89

FIGURE 4

Title	FEMA FLOOD MAP
Proj.	HUNTINGTON AVENUE BASIN
No.	95115
Scale	NTS
By	MB
Date	2/29/96

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Mapped by the U. S. Coast & Geodetic Survey
 Edited and published by the Geological Survey

Control by USC&GS (C) and USCE (E)

Culture and drainage compiled from
 aerial photographs taken 1948

Topography by plane-table methods 1949 Field check 1949

Hydrography from surveys dated 1948

SCALE 1:24 000

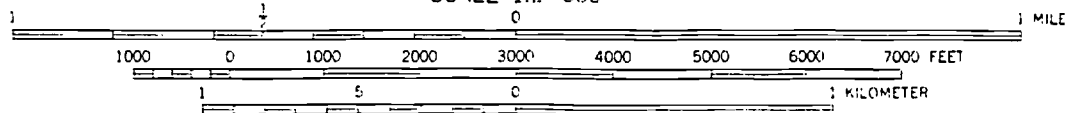


FIGURE 5

Title USGS QUADRANGLE MAP			
Proj. HUNTINGTON AVENUE BASIN			
No.	95115	Scale	NTS
By	MB	Date	2/29/96

Stottler Stagg & Associates

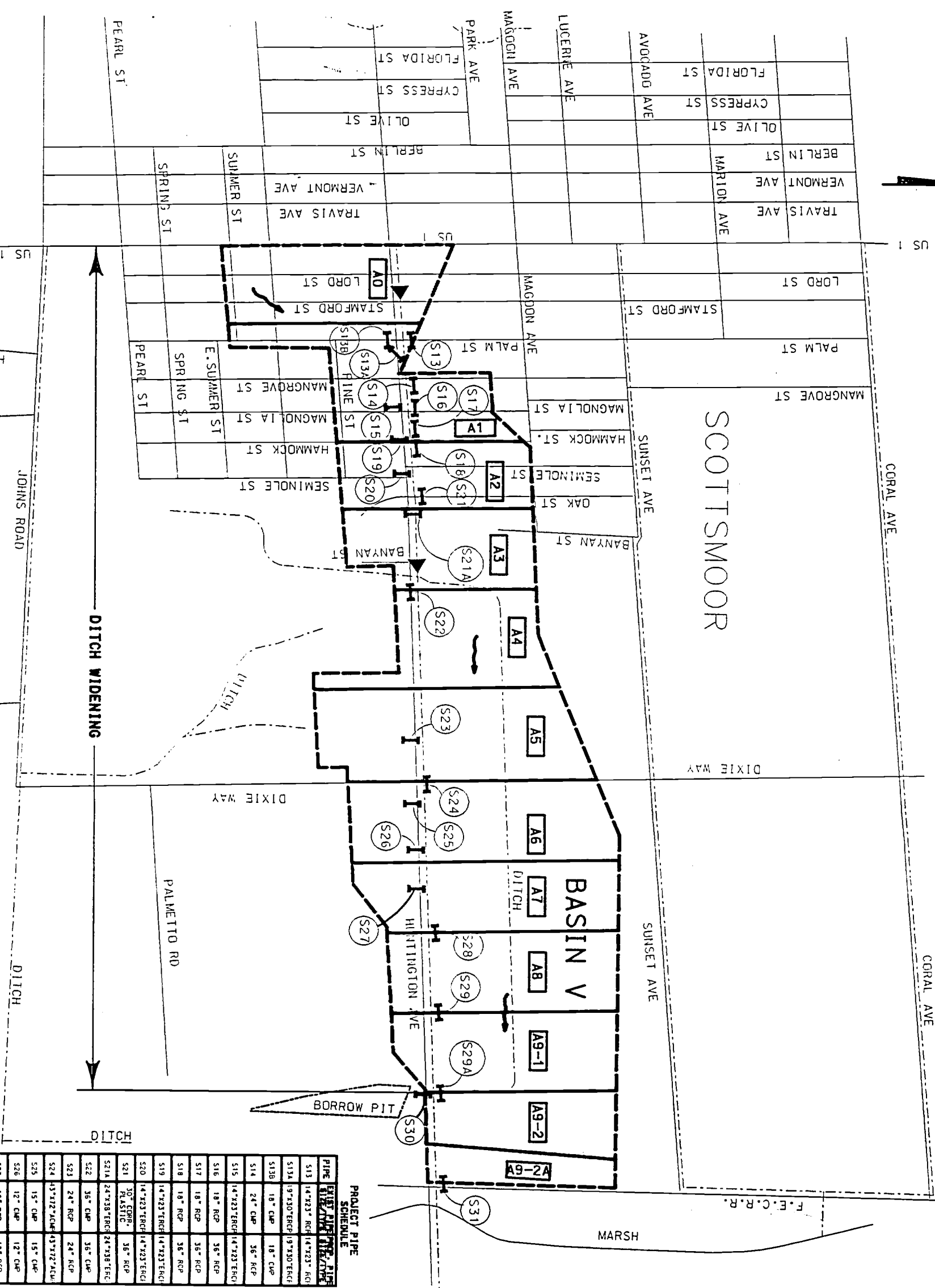
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 (407) 783-1320



SCALE: 1" = 1000'

500 0 1000



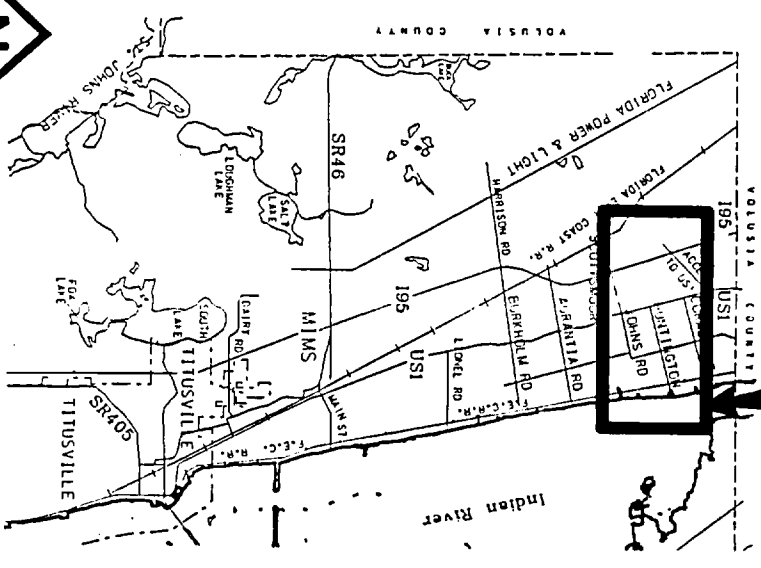
PROJECT PIPE SCHEDULE

PIPE	EXIST. PIPE	PROPOSED PIPE
S13	14" x 23" RCP	14" x 23" RCP
S13A	19" x 30" TRCP	19" x 30" TRCP
S13B	18" CWP	18" CWP
S14	24" CWP	36" RCP
S15	14" x 23" TRCP	14" x 23" TRCP
S16	18" RCP	36" RCP
S17	18" RCP	36" RCP
S18	18" RCP	36" RCP
S19	14" x 23" TRCP	14" x 23" TRCP
S20	14" x 23" TRCP	14" x 23" TRCP
S21	30" CORR. PLASTIC	36" RCP
S21A	24" x 38" TRCP	24" x 38" TRCP
S22	36" CWP	36" CWP
S23	24" RCP	24" RCP
S25	15" CWP	15" CWP
S26	12" CWP	12" CWP
S27	18" RCP	18" RCP
S28	18" x 60" CWP	54" RCP
S29	36" x 54" RCP	54" RCP
S29A	54" RCP	42" TRCP
S30	18" CWP	—
S31	60" RCP	60" RCP

FIGURE 6
BREVARD COUNTY
STORMWATER MANAGEMENT PROGRAM
HUNTINGTON BASIN
EXISTING AND PROPOSED
DRAINAGE SYSTEM

- LEGEND
- DRAINAGE BASIN BOUNDARY
 - DRAINAGE BASIN BOUNDARY
 - (S1) STRUCTURE NUMBER
 - I-1 CULVERT
 - DITCH FLOW DIRECTION
 - GENERAL FLOW DIRECTION
 - EXISTING DITCH
 - [A #] SUB-BASIN BOUNDARY

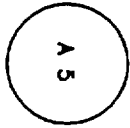
NORTH BREVARD COUNTY
KEY MAP N.T.S.



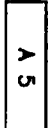
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LEGEND:



NODES



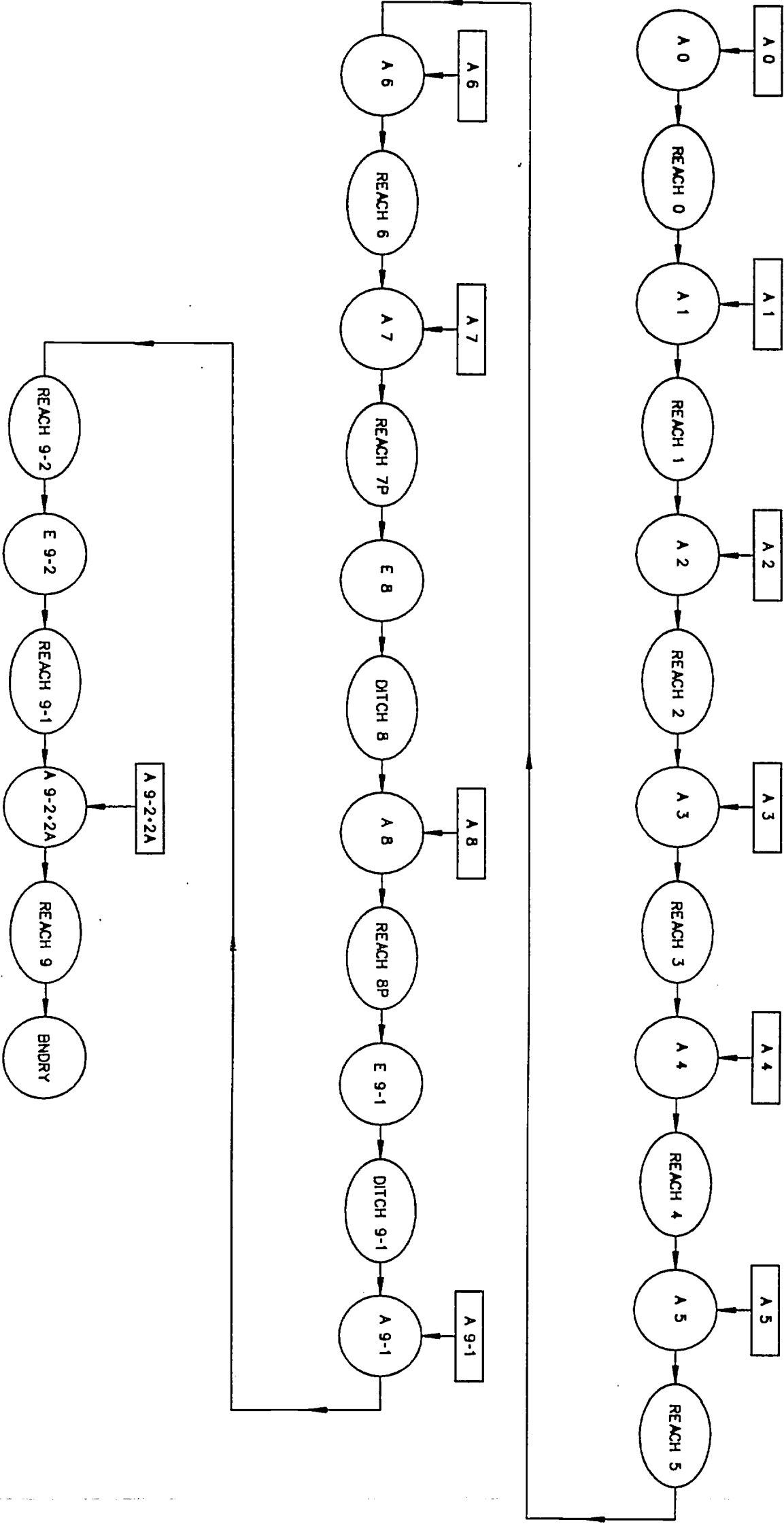
BASINS



REACHES



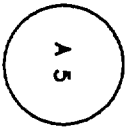
FLOW DIRECTION



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EXISTING NODAL DIAGRAM			FIGURE 7

LEGEND:



NODES



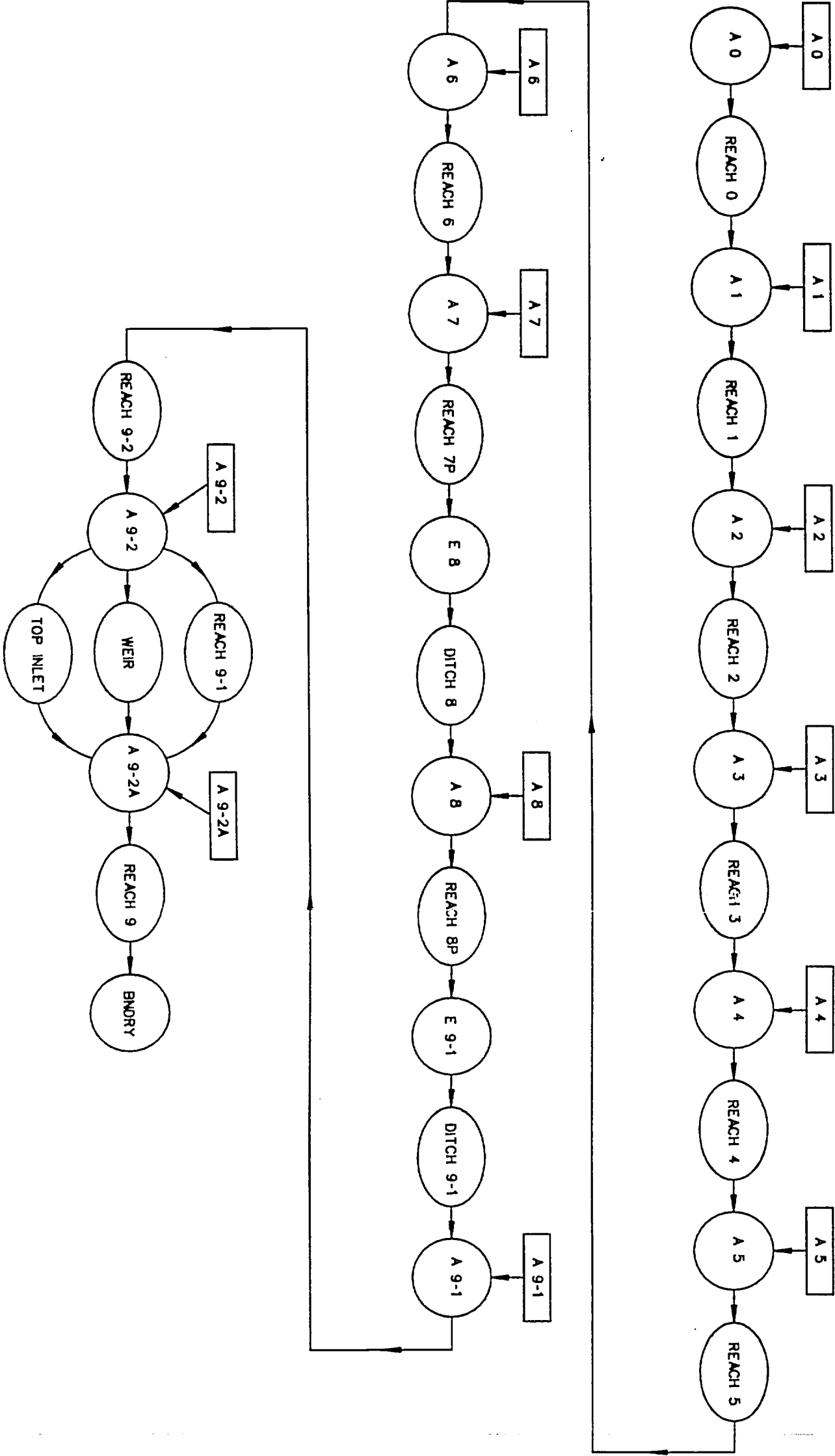
BASINS



REACHES



FLOW DIRECTION



BREVARD COUNTY

HUNTINGTON BASIN
MASTER DRAINAGE PLAN



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DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 95115
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PROPOSED NODAL DIAGRAM FIGURE 8

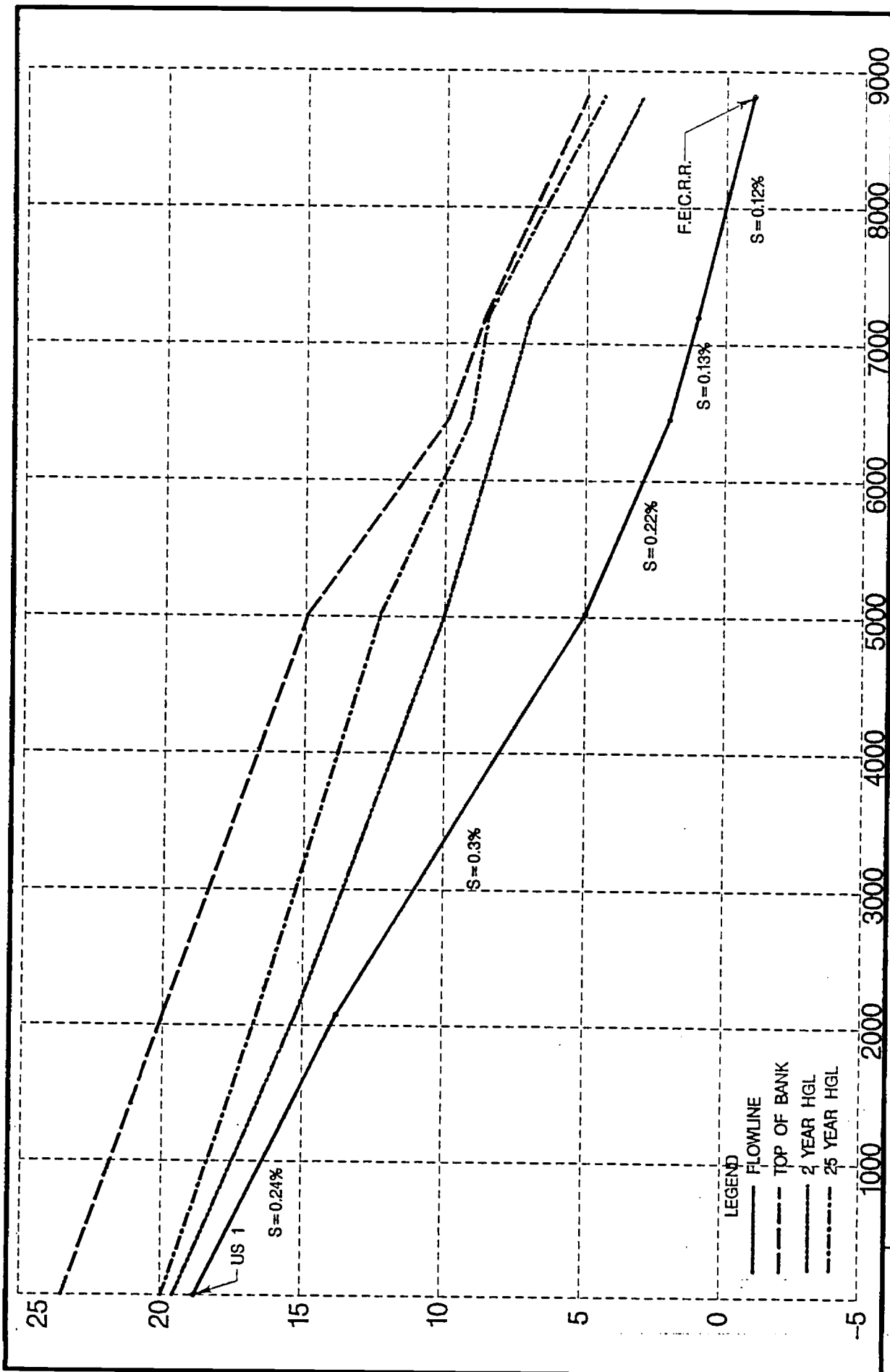


FIG. 3

DITCH PROFILE

DRAWN BY: DC

DATE: 5/31/98

CHECKED BY: MB

SCALE: VERT. 1" = 5'
HORIZ. 1" = 100'



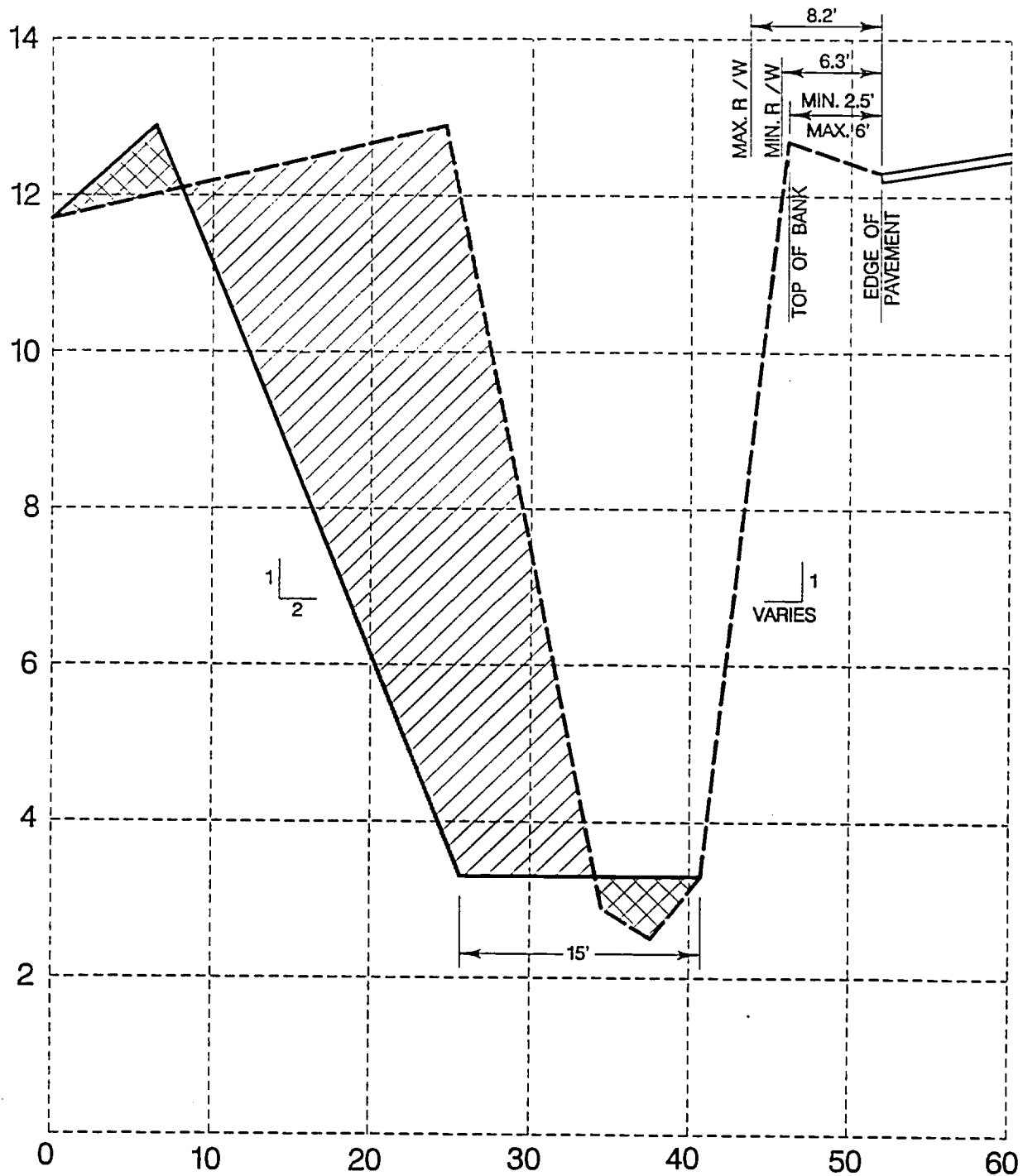
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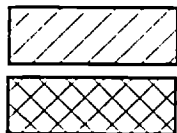
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LEGEND



EXCAVATION

FILL

FIG.
10

TYPICAL SECTION

DRAWN BY: DC

SCALE: VERT.-1"=2'
HORIZ.-1"=10'

CHECKED BY: MB

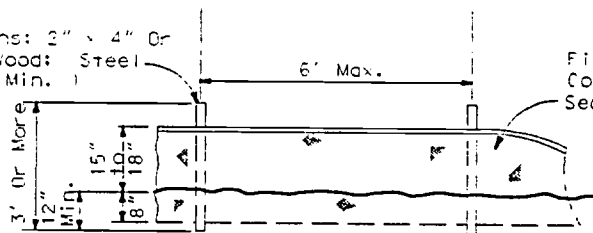
DATE: 5 /31 /96



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Post (Options: 2" x 4" Or
2 1/2" Min. Dia. Wood: Steel
1.33 Lbs/Ft. Min.)



ELEVATION

TYPE III SILT FENCE

N.T.S. FDOT INDEX 102

Principle Post Position
(Canted 20° Toward Flow)

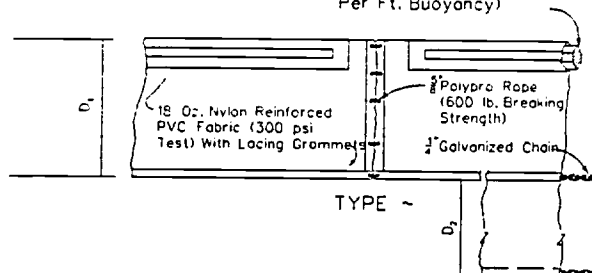
Optional Post
Positions

Filter Fabric (in
Conformance With
Sec. 985 FDOT Spec.)



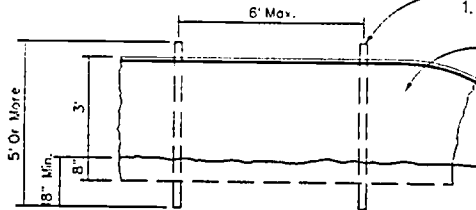
SECTION

Closed Cell Solid Plastic Foam
Flotation (6" Dia. Equiv.) (12 Lbs.
Per Ft. Buoyancy)



TYPE IV

Post (Options: 2" x 4" Or
2 1/2" Min. Dia. Wood: Steel
1.33 Lbs/Ft. Min.)



18 Oz. Nylon Reinforced
PVC Fabric (300 psi Test)

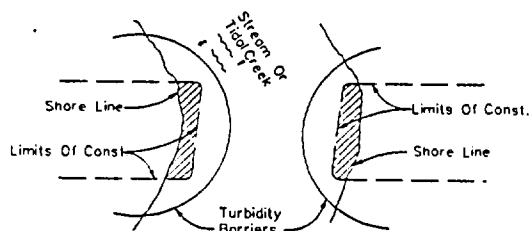
STAKED TURBIDITY BARRIER

D - 5' Std. (Single Panel For Depths 5' or Less).

D - 5' Std. (Additional Panel For Depths > 5').

Curtain To Reach Bottom Up To Depths Of 10 Feet.
Two(2) Panels To Be Used For Depths Greater Than
10 Feet Unless Special Depth Curtains Specifically Called
For In The Plans Or As Determined By The Engineer.

FLOATING TURBIDITY BARRIERS



Note:

Turbidity barriers for flowing streams and tidal
creeks may be either floating, or staked types
or any combinations of types that will suit site
conditions and meet erosion control and water
quality requirements. Posts in staked
turbidity barriers to be installed in vertical
position unless otherwise directed by the
Engineer.

NOTES:

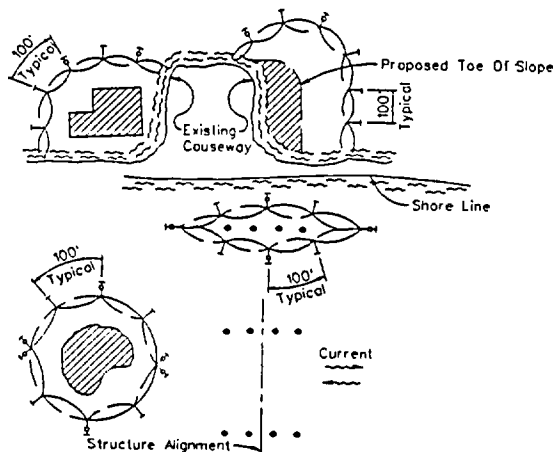
1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.

TURBIDITY BARRIER APPLICATIONS

F.D.O.T. TURBIDITY BARRIER DETAIL-INDEX #103

N.T.S.

NOTE: CONTRACTOR TO PLACE THE ABOVE EROSION CONTROL DEVICES
AS APPLICABLE PRIOR TO PIPE REPLACEMENT AND/OR DITCH WIDENING WORK.



LEGEND

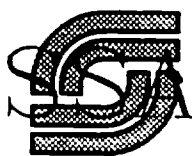
- Pile Locations
- ▨ Dredge Or Fill Area
- Anchor
- Barrier Movement Due To Current Action
- Mooring Buoy w/Anchor

EROSION CONTROL DEVICES

DATE: 8 /23 /96

SCALE: NONE

FIG. 10-A



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DETENTION POND

DATE: 6 /4 /96

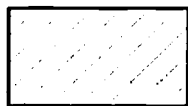
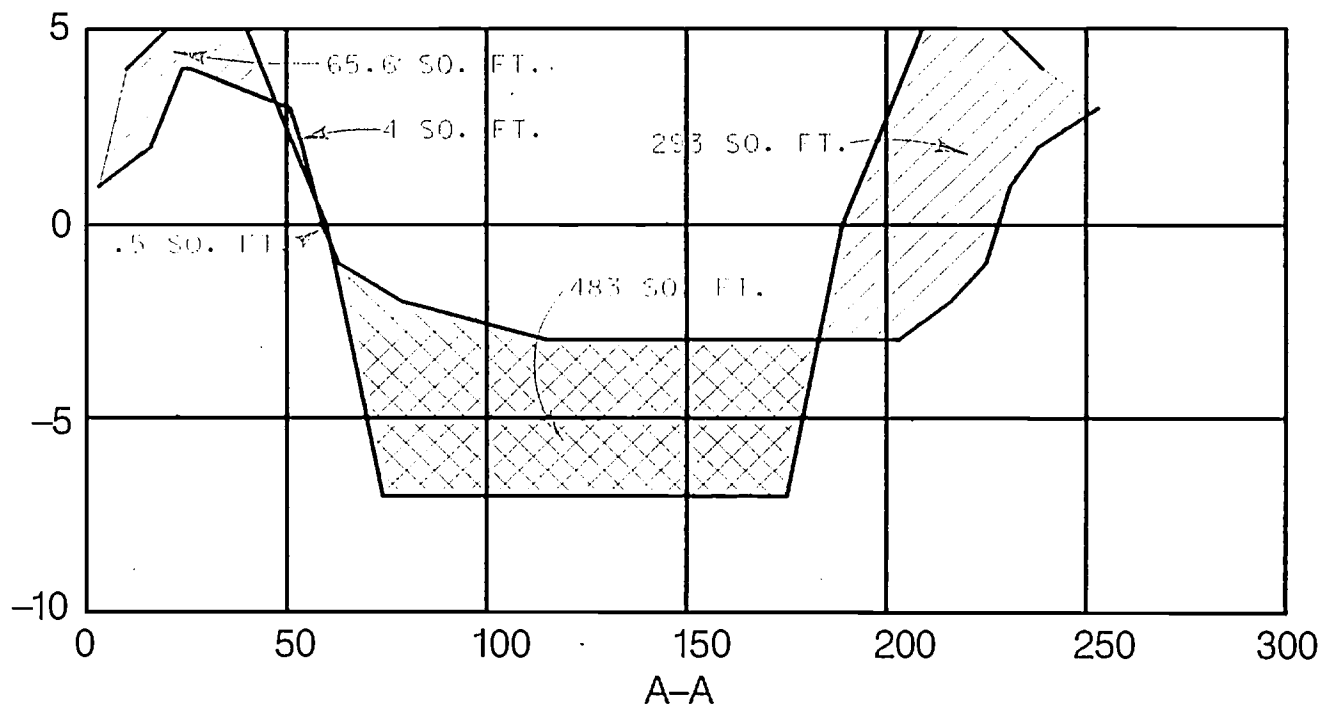
FIG. 11

SCALE: 1"=100'

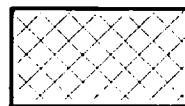


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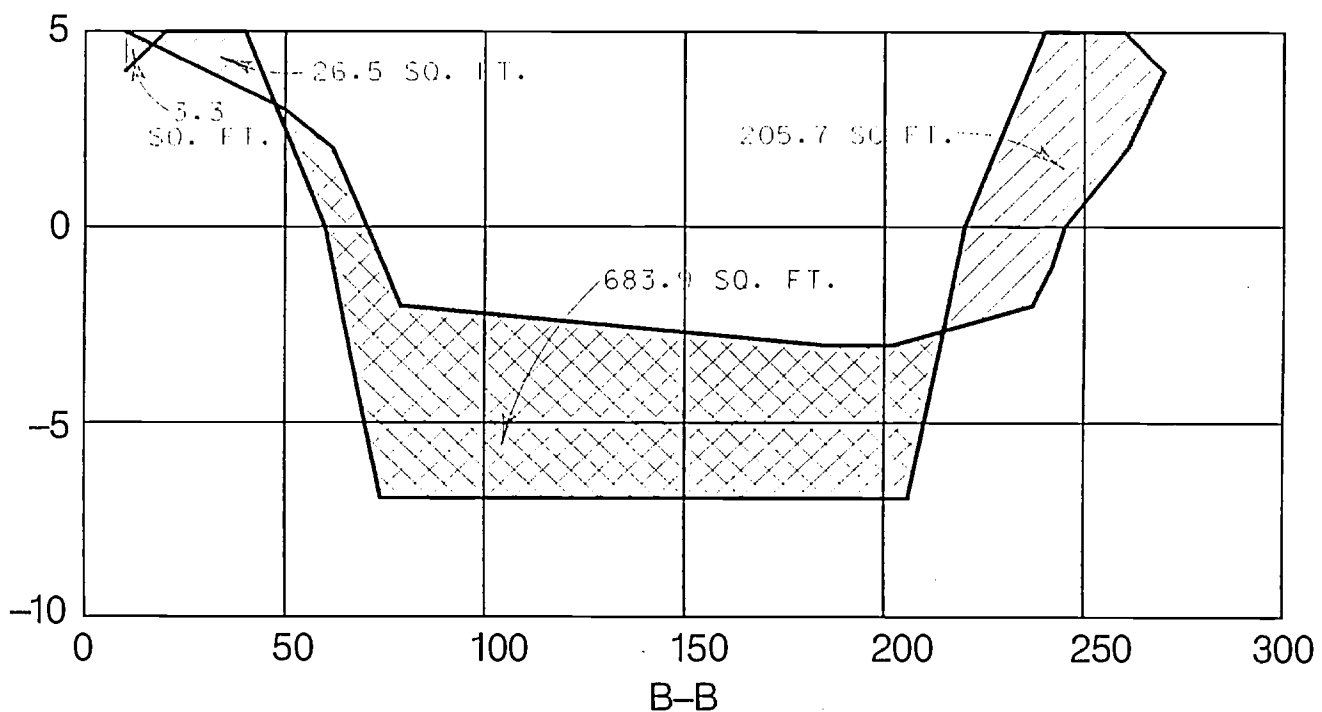
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DENOTES FILL



DENOTES CUT



DETENTION POND CROSS SECTIONS

DATE: 6 / 4 / 96 FIG. 12

SCALE: VERT. -1" = 5'
HORIZ. -1" = 50'



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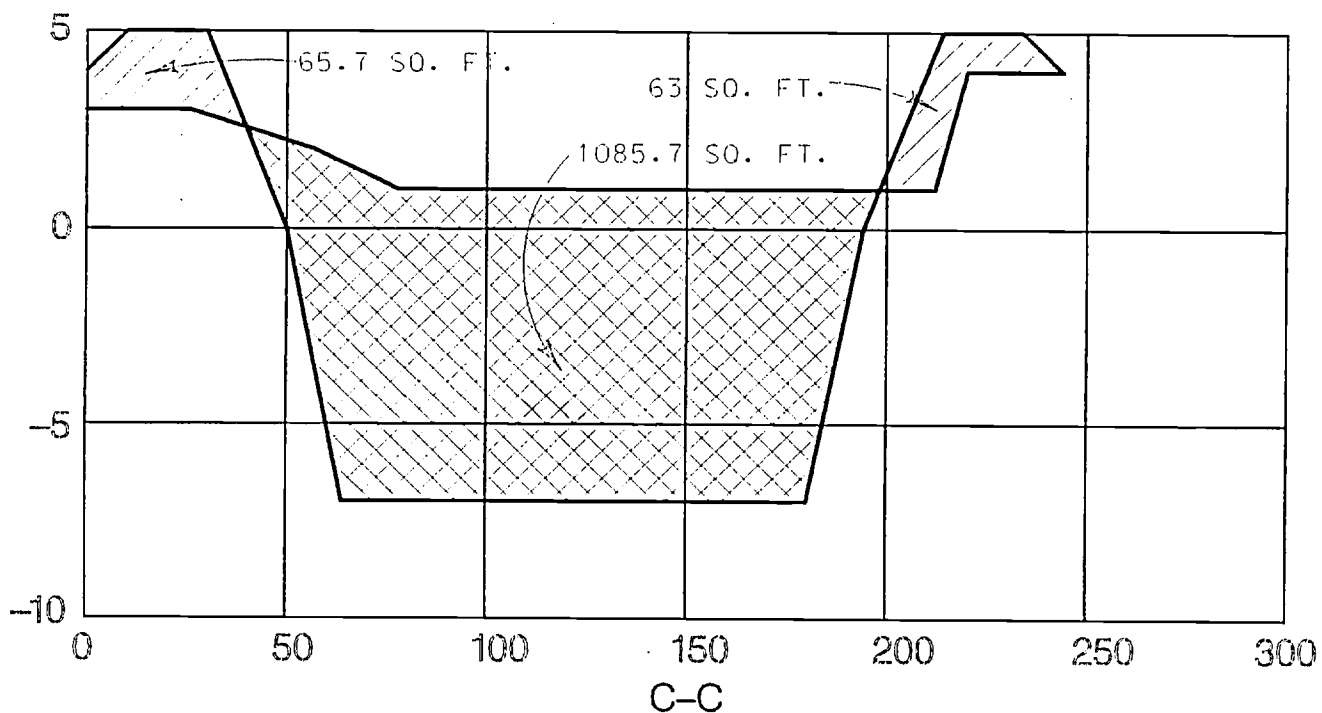
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 PHONE: (407) 783-1320 FAX: (407) 783-7065



DENOTES FILL



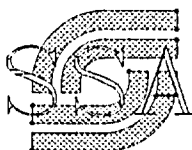
DENOTES CUT



DETENTION POND CROSS SECTIONS

DATE: 6 / 4 / 96 FIG. 13

SCALE: VERT. -1" = 5'
HORIZ. -1" = 50'



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APPENDIX

APPENDIX A

SOILS INFORMATION



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 13, 1995

File No. 95-5366

Page 1 of 3

Stottler Stagg & Associates
8680 N. Atlantic Avenue
Cape Canaveral, Florida 32920-1630

ATTENTION: Mr. John Pekar

SUBJECT: Geotechnical Services
Huntington Avenue Detention Pond
Scottsmoor, Florida

Gentlemen:

As you requested, we have completed a preliminary subsurface soil exploration consisting of eight auger borings within the proposed Huntington Avenue Detention Pond. This data report summarizes the testing procedures and presents their results.

FIELD EXPLORATION

The field exploration program consisted of performing 8 auger borings. The locations of the auger borings are schematically illustrated on a site plan shown on Figure 1. These locations were determined in the field by the client and our personnel where access was available. The locations shown on Figure 1 were based by visual points of reference and should be considered accurate only to the degree implied by the method of measurement used.

The auger borings were drilled using a truck mounted, 4-inch diameter, continuous flight auger to depths of 8 and 15 feet. A summary of this field procedure is included in the Appendix. Representative soil samples were also recovered from the auger borings and returned to our laboratory for further visual classification. The groundwater level at each of the boring locations was measured upon completion of drilling.

LABORATORY VISUAL CLASSIFICATION

The samples were reviewed in our laboratory and visually classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions (based on local practices) are shown in Figures 1A through 8A attached in the Appendix.

SUBSURFACE CONDITIONS

The results of the field exploration and laboratory visual classification programs are graphically summarized on the soil boring profiles attached in the Appendix. The stratification of the soil boring profiles represents our interpretation of the field boring logs and the results of visual classification of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

Soils encountered in the auger borings consisted primarily of sands with varying percentages of silt and clay. A plastic clay layer was also encountered (refer to AB-6). Of particular note are the "muck" soils encountered at the ground surface in auger borings AB-2 and AB-7 to depths of 1.5 and 2.5 feet respectively. Shell fragments were encountered as noted in many of the soil descriptions. Due to the variability of soils encountered at this site, a generalized soil profile is not applicable. We suggest referring to the individual soil profiles in the Appendix for soil profile details.

We understand that one of the purposes of this preliminary exploration was to determine the presence of coquina rock. Our auger borings did not encounter coquina rock or other rock-type layers. The only layer containing cemented sand particles was encountered in auger boring AB-7 between depths of 2.5 and 5.0 feet. It was not difficult for the auger drilling equipment to penetrate this layer. If deemed necessary, the excavability of this layer can be better evaluated by test pits excavated by a backhoe.

MEASURED GROUNDWATER LEVEL

The groundwater level was measured in the boreholes on the day drilled after stabilization of the downhole water level. As shown on Figures 1A through 8A in the Appendix, the measured groundwater level was encountered at depths between 0.7 feet to 1.0 feet below the existing ground surface on the dates drilled. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.



September 13, 1995

File No. 95-5366

Page 3 of 3

CLOSURE

This report does not include interpretation of the data included nor reflect any variations which may occur adjacent to or between the soil borings. The nature and extent of the variations between the soil borings may not become evident until during additional exploration, test pits or detention pond excavation. If variations then appear evident, it may be necessary to perform additional studies.

This report has been prepared for the exclusive use of Stottler Stagg & Associates in accordance with generally accepted soil drilling practices.

It is noted that this report does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

We are pleased to be of assistance to you on this phase of your project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

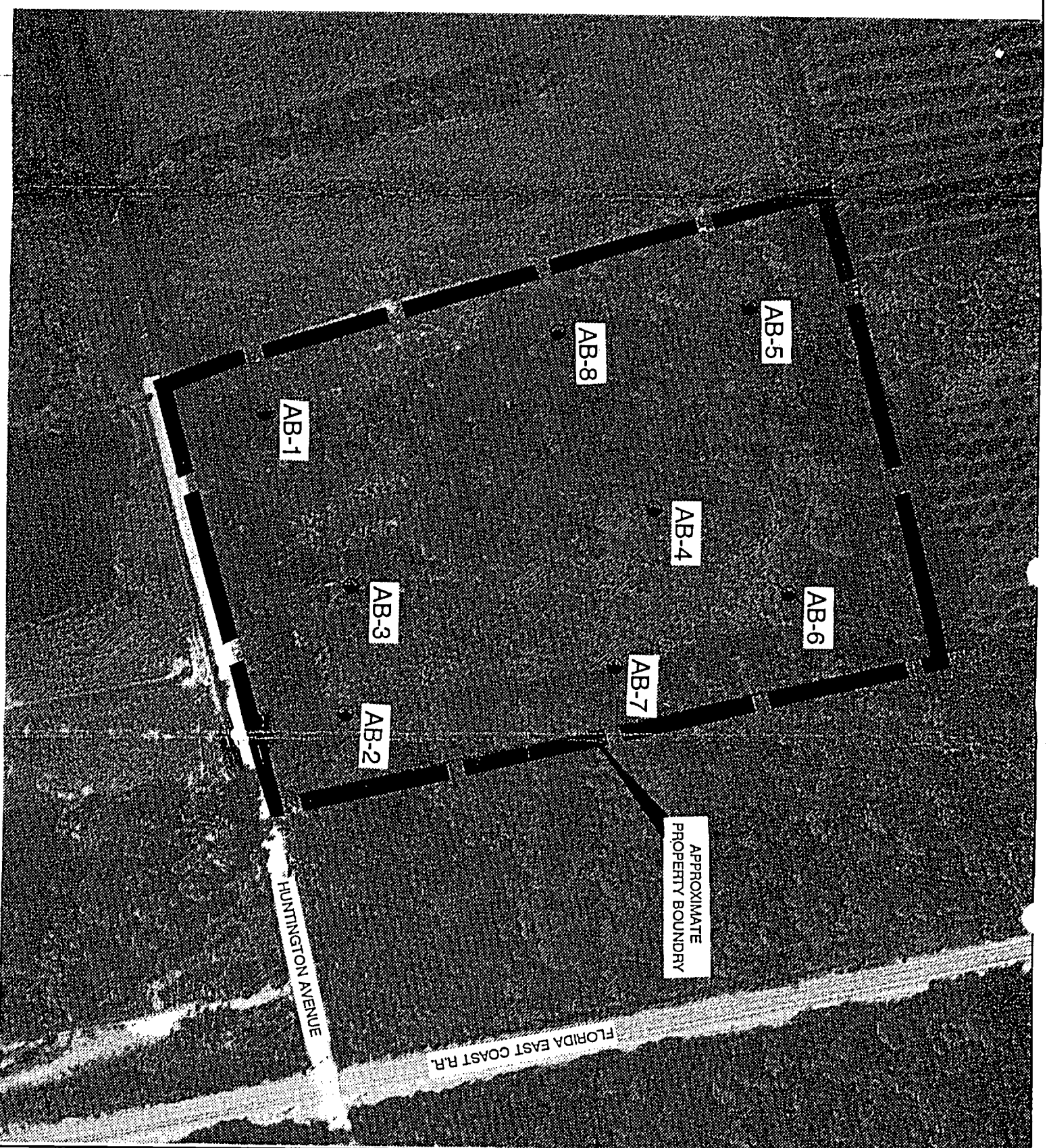
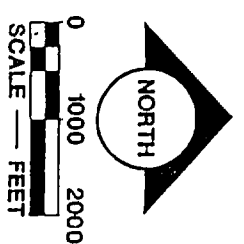

Thomas W. Nichols, P.E. 9-13-95
Manager
Florida Registration No. 38764

TWN/plm



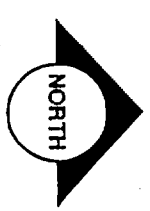
SITE LOCATION MAP

SECTION 7
TOWNSHIP 20 SOUTH
RANGE 35 EAST
OBTAINED FROM U.S.G.S. QUAD MAP: OAK HILL, FLORIDA 1949
PHOTO REVISED 1970



AUGER BORING LOCATION PLAN

LEGEND
● APPROXIMATE AUGER BORING TEST LOCATION



NOT TO SCALE

FIGURE 1

Ardaman & Associates, Inc. Consulting Engineers in Soil Mechanics, Foundations, and Materials Testing			
GEOTECHNICAL SERVICES HUNTINGTON AVENUE DETENTION POND SCOTTSMOORE, FLORIDA			
DRAWN BY: TAT	CHECKED BY:	DATE: 9-12-95	
FILE NO: 95-5366	APPROVED BY:		

APPENDIX 1

Soil Test Boring Symbolic Logs

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-1

BORING: AB-1

DATE: AUGUST 31, 1995

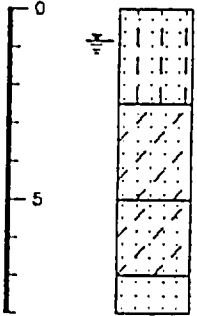
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SP-SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
5		SP-SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS. CALCAREOUS.		
		SP	GRAY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 1A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-2

BORING: AB-2

DATE: AUGUST 31, 1995

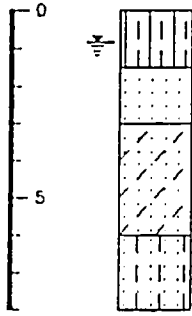
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SM-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND ROOTS, "MUCK".		
		SP	LIGHT BROWN FINE SAND.		
		SP-SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		
5		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 2A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-3

BORING: AB-3

DATE: AUGUST 31, 1995

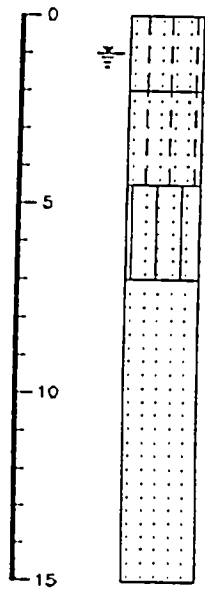
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
5		SM	GRAY SILTY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15					

 symbol shows the depth of water at completion

Figure Number 3A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-4

BORING: AB-4

DATE: AUGUST 31, 1995

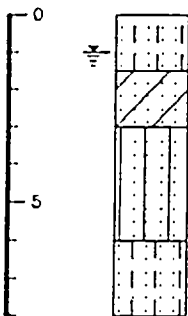
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
5		SM	YELLOW & GRAY SILTY FINE SAND.		
		SP-SM	GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		



symbol shows the depth of water at completion

Figure Number 4A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-5

BORING: AB-5

DATE: AUGUST 31, 1995

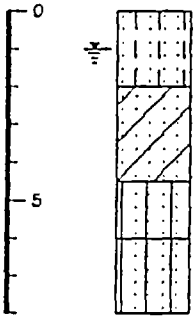
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
5		SM	YELLOW & GRAY SILTY FINE SAND. CALCAREOUS.		
		SP-SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND. CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 5A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-6

BORING: AB-6

DATE: AUGUST 31, 1995

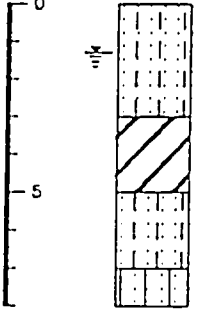
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.3'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		CH	YELLOW AND GRAY SANDY CLAY, CALCAREOUS.		
5		SP- SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS, CALCAREOUS.		
		SM	GRAY SILTY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 6A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-7

BORING: AB-7

DATE: AUGUST 31, 1995

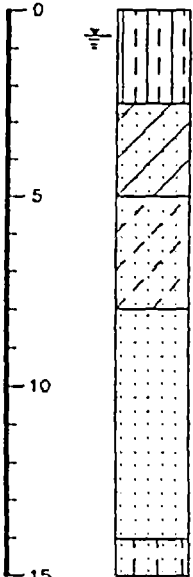
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.66'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SM-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND TRACE OF ROOTS, "MUCK".		
		SC	BROWN CLAYEY FINE SAND WITH TRACE OF CEMENTED SAND. CALCAREOUS.		
5		SP-SC	GRAY SLIGHTLY CLAYEY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		

 symbol shows the depth of water at completion

Figure Number 7A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-8

BORING: AB-8

DATE: AUGUST 31, 1995

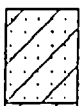
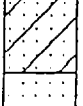
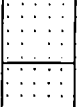
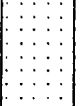
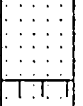
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.75'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SC	DARK BROWN CLAYEY FINE SAND.		
		SC	LIGHT GRAY CLAYEY FINE SAND AND SHELL. CALCAREOUS.		
5		SP	LIGHT GRAY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
		SP	LIGHT GRAY FINE SAND.		
10					
		SP-SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND. CALCAREOUS.		
15					

 symbol shows the depth of water at completion

Figure Number 8A

APPENDIX B

CURVE NUMBERS

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A0

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2_2	F i g. 2_3	F i g. 2_4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			22.75	0 1820 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.39	0 234.22 0
Totals =					25.14	2054.22

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total pr}} = \frac{2054}{25.14} = 81.71$$

Use CN = **81.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			14.99	0 1199.2 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.95	0 289.1 0
Totals =					17.94	1488.3

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1488}{17.94} = 82.96$$

Use CN = 83

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date: ⁴

Area: A2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			20.85	0 1668 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.64	0 62.72 0
Totals =					21.49	1730.72

$$\text{CN (weighted)} = \text{total product} / \text{total area} = \frac{1731}{21.49} = 80.54$$

Use CN = 80.5

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A3

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☐ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			5.14	0 390.64 0
c	Pasture fair condition	79			11.94	0 943.26 0
c	Residential	80			21.2	0 1696 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.98	0 96.04 0
Totals =					39.26	3125.94

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{3126}{39.26} = 79.62$$

Use CN = 79.6

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

6

Area:A4

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			5.51	0 418.76 0
c	Pasture fair condition	79			24.18	0 1910.22 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.44	0 43.12 0
Totals =					30.13	2372.1

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2372}{30.13} = 78.73$$

Use CN = **78.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A5

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected; impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			10.56	0 802.56 0
c	Pasture fair condition	79			33	0 2607 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.99	0 97.02 0
Totals =					44.55	3506.58

$$\text{CN (weighted)} = \text{total product/total area} = \frac{3507}{44.55} = 78.71$$

Use CN = 78.7

RUNOFF CURVE NUMBER

Project: Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A6

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte; impervious area ratio)	CN			Area X acres ml^2 %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
C	Agricultural	76			18.1	0 1375.6 0
C	Pasture fair condition	79			27.2	0 2148.8 0
	Residential					0 0 0
C	Wooded fair condition	73			6.75	0 492.75 0
	Impervious Area Wetland	98			1.02	0 99.96 0
Totals =					53.07	4117.11

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4117}{53.07} = 77.58$$

Use CN = **77.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A7

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area X acres mi² %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			18.18	0 1381.68 0
c	Pasture fair condition	79			9.13	0 721.27 0
	Residential					0 0 0
c	Wooded fair condition	73			3.75	0 273.75 0
	Impervious Area Wetland	98			0.05	0 4.9 0
Totals =					31.11	2381.6

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2382}{31.11} = 76.55$$

Use CN = 76.6

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A8

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			22.31	0 1695.56 0
c	Pasture fair condition	79			20.66	0 1632.14 0
	Residential					0 0 0
c	Wooded fair condition	73			14.1	0 1029.3 0
	Impervious Area Wetland	98			0.56	0 54.88 0
Totals =					57.63	4411.88

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4412}{57.63} = 76.56$$

Use CN = **76.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A9-1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area x acres mi^2 %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			3.8	0 288.8 0
c	Pasture fair condition	79			12.2	0 963.8 0
	Residential					0 0 0
c	Wooded fair condition	73			4	0 292 0
	Impervious Area Wetland	98			0.61	0 59.78 0
Totals =					20.61	1604.38

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1604}{20.61} = 77.84$$

Use CN = 77.8

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A9-2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte; impervious area ratio)	CN			Area ☒ acres ☐ mi ² ☐ %	Product of CN x area
		T a b. 2_2	F i g. 2_3	F i g. 2_4		
	Commercial					0 0 0
c	Agricultural	76			9	0 684 0
	Pasture fair condition					0 0 0
	Residential					0 0 0
c	Wooded fair condition	73			9	0 657 0
	Impervious Area Wetland					0 0 0
Totals =					18	1341

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1341}{18} = 74.50$$

Use CN = 75

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A9-2A

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			1	0 76 0
c	Pasture fair condition	79			1	0 79 0
	Residential					0 0 0
c	Wooded fair condition	73			10	0 730 0
	Impervious Area Wetland					0 0 0
Totals =					12	885

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{885}{12} = 73.75$$

Use CN = 73.8

APPENDIX C

TIMES OF CONCENTRATION

TIME OF CONCENTRATION

SUBAREA A0

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.04

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1300	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7078	0	= 0.71

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	1.50	0	
18. Flow length, L ft	300	0	
19. $T_t = L/(3600 \cdot V)$ hr	0.0555556	0	= 0.06

20. Watershed or subarea T_c or T_t hr 1.81

min 108.6

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1305	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.7105	0	= 0.7105

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	1.50	0	
18. Flow length, L ft	580	0	
19. $T_t = L / (3600 \cdot V)$ hr	0.1074074	0	= 0.1074

20. Watershed or subarea Tc or Tt hr **1.8606**

min **111.6**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	967	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.5265	0	= 0.5265

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.5692

min 94.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A3

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A	N/A	
1. Surface description (table 3-1)		0	0	
2. Manning's roughness coeff., n (table 3-1)		0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft		300	0	
4. Two-yr 24-hr rainfall, P2 in		5	0	
5. Land slope, s ft/ft		0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5}s^{0.4})$ hr		1.0428	0	= 1.0428

Shallow concentrated flow

		N/A	N/A	
7. Surface description (paved or unpaved)		unpaved	0	
8. Flow length, L ft		940	0	
9. Watercourse slope, s ft/ft		0.001	0	
10. Average velocity, V (figure 3-1) ft/s		0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr		0.5118	0	= 0.5118

Channel flow

		N/A	N/A	
12. Cross sectional flow area, a ft ²		0	0	
13. Wetted perimeter, Pw ft		0	0	
14. Hydraulic radius, r = a/Pw ft		0	0	
15. Channel slope, s ft/ft		0	0	
16. Manning's roughness coeff., n		0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s		1.50	0	
18. Flow length, L ft		350	0	
19. $T_t = L / (3600 \cdot V)$ hr		0.0648148	0	= 0.0648

20. Watershed or subarea Tc or Tt hr 1.6193

min 97.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A4

Project: Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1190	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.6479	0	= 0.6479

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, $r = a/Pw$ ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	1.50	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr 1.6906

min 101.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A5

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft)	300	0	
4. Two-yr 24-hr rainfall, P2	5	0	
5. Land slope, s	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L	1152	0	
9. Watercourse slope, s	0.001	0	
10. Average velocity, V (figure 3-1)	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$	0.6272	0	= 0.6272

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a	0.01	0	
13. Wetted perimeter, Pw	0.01	0	
14. Hydraulic radius, $r = a/Pw$	1	0	
15. Channel slope, s	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$	3.31	0	
18. Flow length, L	0	0	
19. $T_t = L/(3600 \cdot V)$	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr 1.6699

min 100.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A6

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft)	300	0	
4. Two-yr 24-hr rainfall, P2	5	0	
5. Land slope, s	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (P_2^{0.5} s^{0.4})$	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L	1647	0	
9. Watercourse slope, s	0.001	0	
10. Average velocity, V (figure 3-1)	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$	0.8967	0	= 0.8967

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a	0.01	0	
13. Wetted perimeter, Pw	0.01	0	
14. Hydraulic radius, $r = a / P_w$	1	0	
15. Channel slope, s	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$	3.31	0	
18. Flow length, L	0	0	
19. $T_t = L / (3600 \cdot V)$	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr 1.9394

min 116.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A7

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1355	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7377	0	= 0.7377

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr **1.7805**

min **106.8**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A8

Project: Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5}s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	485	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.2640	0	= 0.2640

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L / (3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.5494

min 153.0

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A		N/A	
1. Surface description (table 3-1)		0		0	
2. Manning's roughness coeff., n (table 3-1)		0.4		0	
3. Flow length, L (total L =< 300 ft)	ft	300		0	
4. Two-yr 24-hr rainfall, P2	in	5		0	
5. Land slope, s	ft/ft	0.001		0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$	hr	2.2854	+	0	= 2.2854

Shallow concentrated flow

		N/A		N/A	
7. Surface description (paved or unpaved)		unpaved		0	
8. Flow length, L	ft	560		0	
9. Watercourse slope, s	ft/ft	0.001		0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177		0	
11. $T_t = L/(3600 \cdot V)$	hr	0.3049	+	0	= 0.3049

Channel flow

		N/A		N/A	
12. Cross sectional flow area, a	ft ²	0.01		0	
13. Wetted perimeter, Pw	ft	0.01		0	
14. Hydraulic radius, r = a/Pw	ft	1		0	
15. Channel slope, s	ft/ft	0.01		0	
16. Manning's roughness coeff., n		0.045		0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$	ft/s	3.31		0	
18. Flow length, L	ft	0		0	
19. $T_t = L/(3600 \cdot V)$	hr	0	+	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.5903

min 155.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2A

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1091	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.5938	0	= 0.5938

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.8792

min 172.75

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

1. Surface description (table 3-1)	N/A	N/A	
2. Manning's roughness coeff., n (table 3-1)	0	0	
3. Flow length, L (total L ≤ 300 ft)	0.4	0	
4. Two-yr 24-hr rainfall, P2	300	0	
5. Land slope, s	5	0	
6. Tt = (0.007(nL) ^{0.8})/(p2 ^{0.5} s ^{0.4})	0.001	0	
	2.2854	0	= 2.2854

Shallow concentrated flow

7. Surface description (paved or unpaved)	N/A	N/A	
8. Flow length, L	unpaved	0	
9. Watercourse slope, s	650	0	
10. Average velocity, V (figure 3-1)	0.001	0	
11. Tt = L/(3600*V)	0.5102177	0	
	0.3539	0	= 0.3539

Channel flow

12. Cross sectional flow area, a	N/A	N/A	
13. Wetted perimeter, Pw	0.01	0	
14. Hydraulic radius, r = a/Pw	0.01	0	
15. Channel slope, s	1	0	
16. Manning's roughness coeff., n	0.01	0	
17. V = (1.49*r ^{2/3} s ^{1/2})/n	0.045	0	
18. Flow length, L	3.31	0	
19. Tt = L/(3600*V)	0	0	
	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.6393

min 158.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

APPENDIX D

STORMWATER CALCULATIONS EXISTING CONDITIONS

Existing Condition
2 Yr - 24 Hr

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

BASIN NAME A9-2+2A
NODE NAME A9-2+2A

UNIT HYDROGRAPH UH323
PEAKING FACTOR 323.

RAINFALL FILE SCSI
RAIN AMOUNT (in) 5.00
STORM DURATION (hrs) 24.00

AREA (ac) 30.00
CURVE NUMBER 74.50
DCIA (%) .00
TC (mins) 160.00
LAG TIME (hrs) .00
BASIN STATUS ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	11.77	14.00	2.40	

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 1.000 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.000 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000	.100
						2.000	5.000
						3.000	8.000
						4.000	13.000
						5.000	19.000
A9-2+2A	AREA	1.000	.000	.000	.000	1.000	.500
						3.000	2.000
						4.000	15.000
						5.000	25.000
E9-2	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E9-1	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E8	AREA	1.910	.000	.000	.000	1.910	.000
						3.000	.001
BNDRY	TIME	.600	.000	.000	.000	.600	.000
						.750	13.000
						.600	24.000
						.600	30.000

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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>>REACH NAME : DITCH
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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NODAL MAXIMUM CONDITIONS REPORT

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	20.34	.22	16.97	.00	.00	16.79
A1	19.46	3.76	12.28	.00	16.79	16.08
A2	15.87	.54	15.33	.00	16.08	24.85
A3	13.49	.61	26.41	.00	24.85	47.78
A4	11.84	.90	19.17	.00	47.78	64.70
A5	9.75	1.13	28.52	.00	64.70	89.30
A6	8.89	1.28	29.45	.00	89.30	116.74
A7	8.04	4.40	18.12	.00	116.74	114.87
A8	7.03	6.49	25.28	.00	114.39	100.61
A9-1	4.34	25.56	9.25	.00	100.52	73.53
A9-2+2A	3.26	5.16	11.77	.00	73.49	72.81
E9-2	3.80	.50	.00	.00	73.53	73.49
E9-1	4.72	.38	.00	.00	100.61	100.52
E8	7.19	.47	.00	.00	114.87	114.39
BNDRY	.75	58.28	.00	.00	72.81	.00

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	15.25	16.08	A1	19.46	A2	15.82
REACH3	13.75	47.78	A3	13.49	A4	11.84
REACH5	13.75	89.30	A5	9.75	A6	8.87
REACH7P	14.25	114.87	A7	8.03	E8	6.85
REACH8P	15.25	100.61	A8	7.00	E9-1	4.45
REACH9	21.00	72.81	A9-2+2A	3.26	BNDRY	.64
REACH9-2	20.00	73.53	A9-1	4.34	E9-2	3.79
REACH0	13.25	16.79	A0	20.34	A1	18.23
REACH2	13.75	24.85	A2	15.87	A3	13.49
REACH4	13.75	64.70	A4	11.84	A5	9.75
REACH6	13.50	116.74	A6	8.76	A7	7.62
DITCH	14.25	114.39	E8	6.85	A8	6.52
DITCH9-1	15.25	100.52	E9-1	4.45	A9-1	3.45
REACH9-1	20.00	73.49	E9-2	3.79	A9-2+2A	3.23

Existing Condition
25 Yr - 24 Hr

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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BASIN NAME	A9-2+2A
NODE NAME	A9-2+2A

UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.

RAINFALL FILE	SCSIII
RAIN AMOUNT (in)	9.00
STORM DURATION (hrs)	24.00

AREA (ac)	30.00
CURVE NUMBER	74.50
DCIA (%)	.00
TC (mins)	160.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	29.60	14.00	5.89	

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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CONTROL PARAMETERS
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START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 1.000 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.000 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000
A9-2+2A	AREA	1.000	.000	.000	.000	1.000 3.000 4.000 5.000	.500 2.000 15.000 25.000
E9-2	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E9-1	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600 .600	.000 13.000 24.000 30.000

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : DITCH
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
 4-96

REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
 4-96

NODAL MAXIMUM CONDITIONS REPORT
 =====

4			<-----	INFLOW	----->	
NODE	STAGE	VOLUME	RUNOFF	OFFSITE	OTHER	OUTFLOW
ID	(ft)	(af)	(cfs)	(cfs)	(cfs)	(cfs)
-----	-----	-----	-----	-----	-----	-----
A0	21.18	.31	37.74	.00	.00	37.51
A1	19.97	6.63	26.81	.00	37.51	44.98
A2	17.43	.87	34.89	.00	44.98	67.76
A3	16.73	10.32	60.97	.00	67.76	75.33
A4	13.47	1.30	44.60	.00	75.33	102.66
A5	12.89	1.72	66.28	.00	102.66	167.96
A6	10.38	1.65	70.62	.00	167.96	237.36
A7	9.36	15.38	43.90	.00	237.36	253.78
A8	9.27	46.20	61.65	.00	253.18	121.77
A9-1	5.64	46.53	22.02	.00	121.61	101.50
A9-2+2A	4.06	12.94	29.60	.00	101.49	99.56
E9-2	4.60	.60	.00	.00	101.50	101.49
E9-1	5.89	.48	.00	.00	121.77	121.61
E8	9.33	.64	.00	.00	253.78	253.18
BNDRY	1.00	81.56	.00	.00	99.56	.00

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
 4-96

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	14.50	44.98	A1	19.97	A2	17.43
REACH3	16.75	75.33	A3	16.66	A4	12.55
REACH5	13.25	167.96	A5	12.89	A6	10.36
REACH7P	13.75	253.78	A7	8.61	E8	8.22
REACH8P	17.50	121.77	A8	9.11	E9-1	5.38
REACH9	24.00	99.56	A9-2+2A	4.06	BNDRY	.60
REACH9-2	24.00	101.50	A9-1	5.64	E9-2	4.60
REACH0	13.25	37.51	A0	21.18	A1	19.68
REACH2	14.00	67.76	A2	17.41	A3	16.36
REACH4	13.50	102.66	A4	13.47	A5	12.89
REACH6	13.25	237.36	A6	10.36	A7	8.44
DITCH	13.75	253.18	E8	8.22	A8	7.44
DITCH9-1	17.50	121.61	E9-1	5.38	A9-1	4.81
REACH9-1	24.00	101.49	E9-2	4.60	A9-2+2A	4.06

APPENDIX E

STORMWATER CALCULATIONS PHASED CONDITIONS

WATER QUALITY

VOLUME OF WATER TO BE TREATED = 1" OF RUNOFF OVER
EXISTING ROADS.

$$\text{TOTAL ACRES} = 10.63$$

$$\frac{10.63 \text{ AC} \times 1 \text{ in}}{12 \text{ in/ft}} = 0.89 \text{ AC-Ft}$$

$$\text{REQUIRED} = 0.89 \text{ AC-Ft}$$

PROVIDED :

$$\frac{2.63 + 2.69}{2} = 2.65 \text{ AC}$$

$$(2.65 \text{ AC})(1.4 - 1) = 1.06 \text{ AC-Ft}$$

$$1.06 \geq 0.89 \therefore \text{OK}$$

STAGE STORAGE

<u>STAGE (FT)</u>	<u>AREA (FT²)</u>	<u>AREA (AC)</u>	<u>VOLUME (AC-FT)</u>
1	114,725.5	2.63	0
5	145,877.5	3.35	11.96

DETERMINE WEIR ELEVATION

NORMAL WATER LEVEL = 1.00 FT → STORAGE = 0 AC-FT

TOP OF BANK = 5 FT → STORAGE = 11.96

REQUIRED STORAGE = 0.89 AC-FT

$$\frac{5.00 \text{ FT} - 1.00 \text{ FT}}{11.96 \text{ AC-FT} - 0 \text{ AC-FT}} = 0.334$$

$$\frac{5.00 \text{ FT} - X}{11.96 - 0.89} = 0.334 \quad X = 1.3$$

ESTABLISH WEIR ELEVATION @ = 1.4 FT

STORAGE @ ELEVATION 1.4 FT = 1.06 AC-FT

DESIGN OUTFALL STRUCTURE

MAX ALLOWABLE DISCHARGE

* $\frac{1}{2}$ TREATMENT VOLUME WITHIN 48 HR

$$Q = \frac{(1.06 \text{ ac} \cdot \text{ft})(43,560 \text{ ft}^2/\text{ac})}{2 \times 48 \text{ hr} \times 3600 \text{ sec/hr}} = 0.134 \text{ cfs}$$

TRY 3" ORIFICE

$$Q = CA(2gh)^{1/2}$$

$$A = \pi r^2 (\pi)(0.125)^2 = 0.0491 \text{ ft}^2$$

$$H = \frac{.4 + .2}{2} = 0.3 \text{ ft}$$

$$h = H - \frac{d}{2} = (0.3) - \left(\frac{0.25}{2}\right) = 0.175 \text{ ft}$$

$$Q = (0.6)(0.0491) \left[2(32.2)(0.175) \right]^{1/2} = 0.099 \text{ cfs}$$

$$0.099 < 0.134 \quad \text{OK}$$

REQUIRED PERMANENT POOL VOLUME

$$PPV = (RT)(FR)$$

R_T = RESIDENCE TIME

FR = FLOW RATE

* NORTH BREVARD COUNTY WET SEASON RAINFALL PERIOD: JUNE-OCTOBER

* NORTH BREVARD COUNTY WET SEASON RAINFALL AMOUNT 36"

$$FR = \frac{(DA)(C)(R)}{WS}$$

DA = DRAINAGE AREA TO POND

C = RUNOFF COEFFICIENT

R = RAINFALL DEPTH

WS = RAINFALL SEASON DAYS

$$FR = \frac{(406.34 \text{ AC})(0.19)(36 \text{ IN})}{(153 \text{ DAYS})(12 \text{ IN/FT})} = 1.2 \frac{\text{AC} \cdot \text{FT}}{\text{DAY}}$$

$$PPV = (14 \text{ DAYS}) \left(1.2 \frac{\text{AC} \cdot \text{FT}}{\text{DAY}} \right) = 16.73 \text{ AC} \cdot \text{FT}$$

PERMANENT POOL VOLUME AVAILABLE

$$\textcircled{C} \text{ EL. 1 FT} \rightarrow 2.63 \text{ AC}$$

$$\textcircled{C} \text{ EL 0 FT} \rightarrow 2.49 \text{ AC}$$

$$\textcircled{C} \text{ EL -7 FT} \rightarrow 1.91 \text{ AC}$$

> 4:1 SLOPE
> 2:1 SLOPE

$$V = \left(\frac{2.63 + 2.49}{2} \right) (1 - 0) + \left(\frac{2.49 + 1.91}{2} \right) [0 - (-7)] = 17.96 \text{ AC} \cdot \text{FT}$$

$$17.96 \geq 16.73 \quad \therefore \text{OK}$$

Table 24-1. Runoff Coefficients (C) for a Design Storm Return Period of Ten Years or Less¹

Slope	Land Use	Sandy Soils		Clay Soils	
		Min.	Max.	Min.	Max.
Flat (0-2%)	Lawns	0.05	0.10	0.13	0.17
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.75	0.95	0.90	0.95
	Woodlands	0.10	0.15	0.15	0.20
	Pasture, grass, and farmland ³	0.15	0.20	0.20	0.25
	Residential				
	SFR: 1/2 acre lots and larger	0.30	0.35	0.35	0.45
	SFR: smaller lots and duplexes	0.35	0.45	0.40	0.50
	MFR: apartments, condominiums	0.45	0.60	0.50	0.70
	Commercial and Industrial	0.50	0.95	0.50	0.95
	r.				
Rolling (2-7%)	Lawns	0.10	0.15	0.18	0.22
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.80	0.95	0.90	0.95
	Woodlands	0.15	0.20	0.20	0.25
	Pasture, grass, and farmland ³	0.20	0.25	0.25	0.30
	Residential				
	SFR: 1/2 acre lots and larger	0.35	0.50	0.40	0.55
	SFR: smaller lots and duplexes	0.40	0.55	0.45	0.60
	MFR: apartments, condominiums	0.50	0.70	0.60	0.80
	Commercial and Industrial	0.50	0.95	0.60	0.95
Steep (>7%)	Lawns	0.15	0.20	0.25	0.35
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.85	0.95	0.90	0.95
	Woodlands	0.20	0.25	0.25	0.30
	Pasture, grass, and farmland ³	0.25	0.35	0.30	0.40
	Residential				
	SFR: 1/2 acre lots and larger	0.40	0.55	0.50	0.65
	SFR: smaller lots and duplexes	0.45	0.60	0.55	0.70
	MFR: apartments, condominiums	0.60	0.75	0.65	0.85
	Commercial and Industrial	0.60	0.95	0.65	0.95

Sources: Florida Department of Transportation, 1987; Wanielista, 1990

¹ For 25- to 100-yr recurrence intervals, multiply coefficient by 1.1 and 1.25, respectively, and the product cannot exceed 1.0.

² Coefficients assume good ground cover and conservation treatment.

³ Depends on depth and degree of permeability of underlying strata.

Note: SFR = Single Family Residential; MFR = Multi-Family Residential

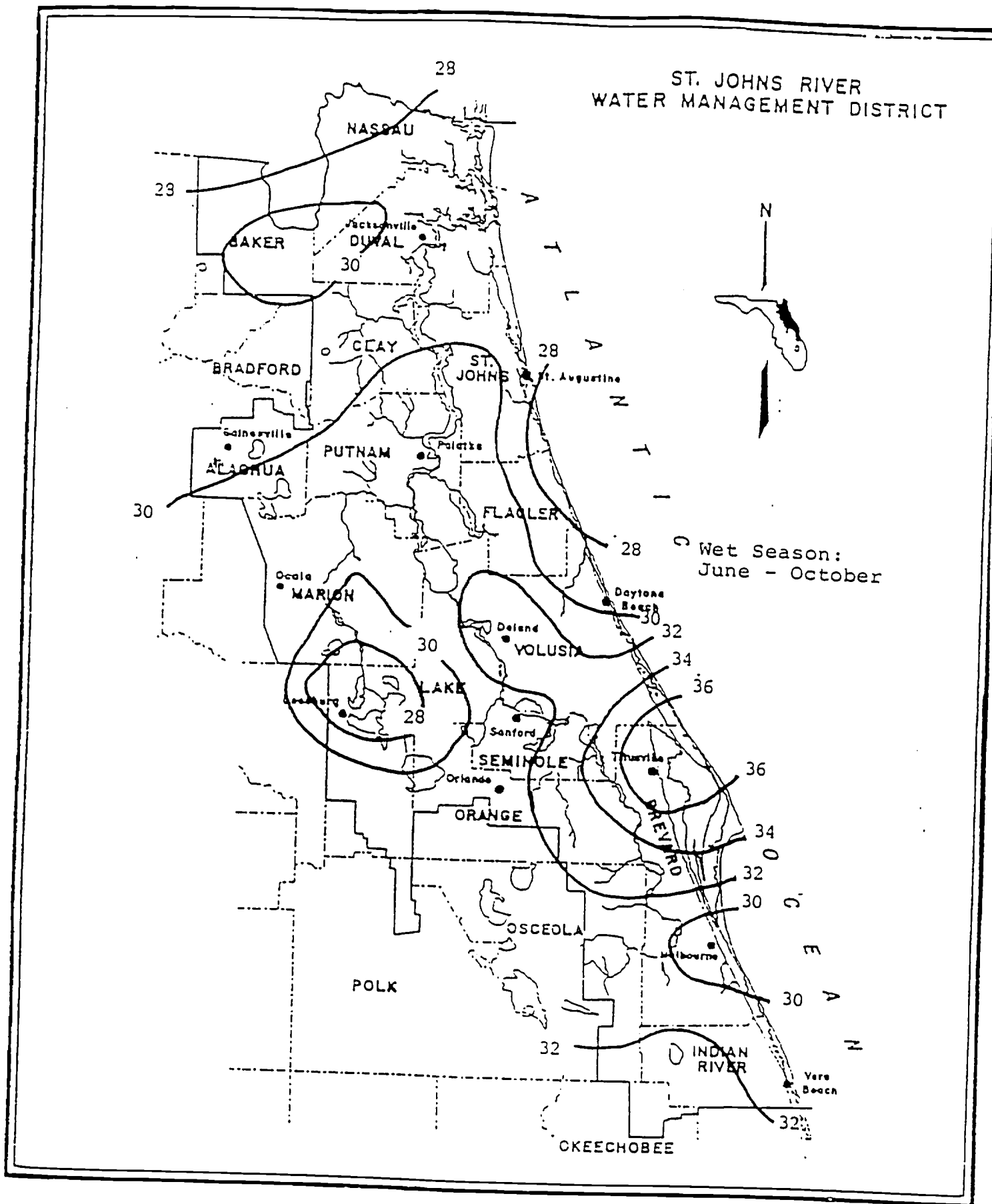


Figure 29-1 Wet Season Normal Rainfall, inches Source: Rao, et. al, 1990

Phased Condition
2 Yr - 24 Hr

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI11	SCSI11	SCSI11	SCSI11	SCSI11
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI11	SCSI11	SCSI11	SCSI11	SCSI11
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSIII	SCSIII
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	7.34 14.00	2.45
A9-2A	4.32 14.25	2.35

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.000 17.000 18.000	.001 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.000 12.500	.001 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.000 9.000	.001 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 7.000 8.000	.001 10.000 25.000
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 .750 .600 .600	.000 13.000 24.000 30.000

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIR-2
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 3.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 1.100 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED
POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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AUGUST 1996

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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AUGUST 1996

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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AUGUST 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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AUGUST 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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AUGUST 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ
3	WEIR-2	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	20.39	.23	16.97	.00	.00	16.75
A1	19.57	1.69	12.28	.00	16.75	20.53
A2	16.11	.59	15.33	.00	20.53	31.18
A3	12.19	8.97	26.41	.00	31.18	35.18
A4	11.24	.75	19.17	.00	35.18	44.08
A5	7.95	.80	28.52	.00	44.08	59.16
A6	7.57	6.67	29.45	.00	59.16	77.67
A7	5.68	11.55	18.12	.00	77.67	69.66
A8	4.56	13.81	25.28	.00	69.51	63.94
A9-1	2.63	6.94	9.25	.00	63.90	57.93
A9-2	2.34	13.83	7.34	.00	57.93	46.08
A9-2A	2.31	4.02	4.32	.00	46.08	45.63
E9-1	3.54	.28	.00	.00	63.94	63.90
E8	5.03	.29	.00	.00	69.66	69.51
BNDRY	.75	30.99	.00	.00	45.63	.00

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	.00	.00	A9-2	1.00	A9-2A	1.00
TOPINLET	.00	.00	A9-2	1.00	A9-2A	1.00
WEIR-2	24.00	2.85	A9-2	2.34	A9-2A	2.31
REACH1	14.50	20.53	A1	19.57	A2	16.08
REACH3	16.00	35.18	A3	12.19	A4	11.22
REACH5	14.75	59.16	A5	7.94	A6	7.55
REACH7P	16.75	69.66	A7	5.64	E8	4.91
REACH8P	19.25	63.94	A8	4.56	E9-1	3.53
REACH9	24.00	45.63	A9-2A	2.31	BNDRY	.60
REACH9-2	20.25	57.93	A9-1	2.49	A9-2	1.98
REACH9-1	23.25	4.24	A9-2	2.31	A9-2A	2.28
REACH0	13.25	16.75	A0	20.39	A1	19.43
REACH2	14.00	31.18	A2	16.11	A3	11.46
REACH4	15.50	44.08	A4	11.24	A5	7.92
REACH6	15.00	77.67	A6	7.57	A7	4.88
DITCH8	16.75	69.51	E8	4.91	A8	3.96
DITCH9-1	19.25	63.90	E9-1	3.53	A9-1	2.38
DITCH	23.75	39.01	A9-2	2.33	A9-2A	2.30

APPENDIX F

STORMWATER CALCULATIONS
FULL CONDITIONS

Full Condition
2 Yr - 24 Hr

Phased Condition
25 Yr - 24 Hr

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	18.38	13.75 5.95
A9-2A	11.05	14.00 5.80

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.000 17.000 18.000	.001 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.000 12.500	.001 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.000 9.000	.001 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 7.000 8.000	.001 10.000 25.000
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.680	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600	.000 13.000 24.000

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIR-2
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 3.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 1.100 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : AS-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED
POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIR-2	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	21.19	.31	37.74	.00	.00	37.59
A1	20.02	4.02	26.81	.00	37.59	48.56
A2	17.30	.84	34.89	.00	48.56	73.39
A3	16.16	20.54	60.97	.00	73.39	71.81
A4	12.76	1.13	44.60	.00	71.81	92.92
A5	11.81	1.52	66.28	.00	92.92	139.43
A6	9.78	10.55	70.62	.00	139.43	193.36
A7	8.35	21.87	43.90	.00	193.36	190.07
A8	8.15	46.74	61.65	.00	188.96	115.68
A9-1	4.46	27.50	22.02	.00	115.64	92.63
A9-2	3.66	27.24	18.38	.00	92.63	85.59
A9-2A	3.64	7.88	11.05	.00	85.59	84.95
E9-1	4.99	.41	.00	.00	115.68	115.64
E8	8.24	.55	.00	.00	190.07	188.96
BNDRY	1.00	55.45	.00	.00	84.95	.00

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	24.00	12.95	A9-2	3.66	A9-2A	3.64
TOPINLET	24.00	2.32	A9-2	3.66	A9-2A	3.64
WEIR-2	18.25	4.68	A9-2	2.79	A9-2A	2.76
REACH1	14.25	48.56	A1	20.02	A2	17.30
REACH3	17.00	71.81	A3	16.09	A4	12.35
REACH5	13.75	139.43	A5	11.73	A6	9.60
REACH7P	15.00	190.07	A7	8.32	E8	7.20
REACH8P	19.00	115.68	A8	8.13	E9-1	4.76
REACH9	24.00	84.95	A9-2A	3.64	BNDRY	.60
REACH9-2	18.25	92.63	A9-1	3.61	A9-2	2.79
REACH9-1	20.75	7.57	A9-2	3.33	A9-2A	3.31
REACH0	13.25	37.59	A0	21.19	A1	19.80
REACH2	13.75	73.39	A2	17.28	A3	14.28
REACH4	14.75	92.92	A4	12.75	A5	11.67
REACH6	13.75	193.36	A6	9.60	A7	6.85
DITCH8	15.00	188.96	E8	7.20	A8	6.32
DITCH9-1	19.00	115.64	E9-1	4.76	A9-1	3.79
DITCH	24.00	59.17	A9-2	3.66	A9-2A	3.64

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI	SCSI	SCSI	SCSI	SCSI
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI	SCSI	SCSI	SCSI	SCSI
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSI	SCSI
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	7.34	14.00 2.45
A9-2A	4.32	14.25 2.35

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000	.100
						2.000	5.000
						3.000	8.000
						4.000	13.000
						5.000	19.000
A9-2	AREA	1.000	.000	.000	.000	1.000	4.000
						5.000	16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000	.500
						4.000	5.000
						5.000	9.000
E9-1	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E8	AREA	1.910	.000	.000	.000	1.910	.000
						3.000	.001
BNDRY	TIME	.600	.000	.000	.000	.600	.000
						.750	13.000
						.600	24.000
						.600	30.000

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIRLOW
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 CREST LN. (ft): 3.000 OPENING (ft): 1.100
WEIR COEF.: 3.000 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

```
>>REACH NAME      : REACH1
FROM NODE         : A1
TO NODE           : A2
REACH TYPE        : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF

CULVERT DATA     :
  SPAN (in):      36.000      RISE (in):  36.000      LENGTH (ft):  40.000
  U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350      MANNING N:    .013
  ENTRNC LOSS:    .500      # OF CULVERTS:  1.000

POSITION A        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft): 19.300 CREST LN. (ft): 20.000      WEIR COEF.:  2.800
  RESERVED:*****      RESERVED:*****      RESERVED:*****

POSITION B        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft):***** CREST LN. (ft):*****      WEIR COEF.:*****
  RESERVED:*****      RESERVED:*****      RESERVED:*****
```

NOTE: PROPOSED 36" RCP

```
>>REACH NAME      : REACH3
FROM NODE         : A3
TO NODE           : A4
REACH TYPE        : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF

CULVERT DATA     :
  SPAN (in):      36.000      RISE (in):  36.000      LENGTH (ft):  40.000
  U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700      MANNING N:    .022
  ENTRNC LOSS:    .500      # OF CULVERTS:  1.000

POSITION A        : NOT USED
POSITION B        : NOT USED
```

NOTE: EXISTING 36" CMP

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AUGUST, 1996

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 54" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PROPOSED 54" PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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AUGUST, 1996

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE W/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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AUGUST, 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8 #
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

REACH SUMMARY
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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIRLOW	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODAL MAXIMUM CONDITIONS REPORT

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NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	19.54	.36	16.97	.00	.00	16.56
A1	19.31	.83	12.28	.00	16.56	27.29
A2	15.26	.93	15.33	.00	27.29	42.40
A3	14.40	1.64	26.41	.00	42.40	63.33
A4	10.56	1.26	19.17	.00	63.33	81.32
A5	9.05	2.05	28.52	.00	81.32	102.92
A6	8.00	1.92	29.45	.00	102.92	128.15
A7	7.73	4.12	18.12	.00	128.15	120.36
A8	6.29	2.88	25.28	.00	120.03	132.83
A9-1	3.72	17.43	9.25	.00	132.44	106.55
A9-2	3.03	20.86	7.34	.00	106.55	66.22
A9-2A	3.01	6.04	4.32	.00	66.22	65.34
E9-1	4.07	.65	.00	.00	132.83	132.44
E8	6.38	.84	.00	.00	120.36	120.03
BNDRY	.75	48.28	.00	.00	65.34	.00

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	19.50	8.22	A9-2	3.03	A9-2A	3.01
TOPINLET	.00	.00	A9-2	1.00	A9-2A	1.00
WEIRLOW	17.00	3.41	A9-2	2.54	A9-2A	2.50
WEIR-2	17.75	4.63	A9-2	2.79	A9-2A	2.76
REACH1	13.75	27.29	A1	19.31	A2	15.26
REACH3	13.75	63.33	A3	14.40	A4	10.56
REACH5	13.75	102.92	A5	9.00	A6	7.84
REACH7P	14.50	120.36	A7	7.72	E8	6.32
REACH8P	15.25	132.83	A8	6.29	E9-1	3.88
REACH9	19.75	65.38	A9-2A	3.01	BNDRY	.66
REACH9-2	16.75	106.58	A9-1	3.68	A9-2	2.44
REACH9-1	17.00	5.87	A9-2	2.54	A9-2A	2.50
REACH0	13.25	16.56	A0	19.54	A1	19.30
REACH2	13.50	42.40	A2	15.26	A3	14.32
REACH4	13.75	81.32	A4	10.56	A5	9.00
REACH6	13.75	128.15	A6	7.84	A7	7.40
DITCH8	14.50	120.03	E8	6.32	A8	6.21
DITCH9-1	15.25	132.44	E9-1	3.88	A9-1	3.29
DITCH	17.25	50.66	A9-2	2.63	A9-2A	2.60

Full Condition
25 Yr - 24 Hr

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSI	SCSI
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	18.38	13.75 5.95
A9-2A	11.05	14.00 5.80

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000	.100
						2.000	5.000
						3.000	8.000
						4.000	13.000
						5.000	19.000
A9-2	AREA	1.000	.000	.000	.000	1.000	4.000
						5.000	16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000	.500
						4.000	5.000
						5.000	9.000
E9-1	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E8	AREA	1.910	.000	.000	.000	1.910	.000
						3.000	.001
BNDRY	TIME	.600	.000	.000	.000	.600	.000
						1.000	13.000
						.600	24.000

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIRLOW
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 CREST LN. (ft): 3.000 OPENING (ft): 1.100
WEIR COEF.: 3.000 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 36" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

```
>>REACH NAME      : REACH5
FROM NODE         : A5
TO NODE           : A6
REACH TYPE        : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF

CULVERT DATA     :
  SPAN (in):      72.000      RISE (in):   43.000      LENGTH (ft):   52.000
  U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890      MANNING N:      .022
  ENTRNC LOSS:    .500      # OF CULVERTS: 1.000

POSITION A        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft): 12.800  CREST LN. (ft): 200.000      WEIR COEF.:    2.800
  RESERVED:*****      RESERVED:*****      RESERVED:*****

POSITION B        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft):*****  CREST LN. (ft):*****      WEIR COEF.:*****
  RESERVED:*****      RESERVED:*****      RESERVED:*****
```

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

```
>>REACH NAME      : REACH7P
FROM NODE         : A7
TO NODE           : E8
REACH TYPE        : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION    : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH      : OFF

CULVERT DATA     :
  SPAN (in):      54.000      RISE (in):   54.000      LENGTH (ft):   20.000
  U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910      MANNING N:      .012
  ENTRNC LOSS:    .500      # OF CULVERTS: 1.000

POSITION A        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft): 7.800  CREST LN. (ft): 100.000      WEIR COEF.:    2.800
  RESERVED:*****      RESERVED:*****      RESERVED:*****

POSITION B        : RECTANGULAR ROADWAY/BERM WEIR
  CREST EL. (ft):*****  CREST LN. (ft):*****      WEIR COEF.:*****
  RESERVED:*****      RESERVED:*****      RESERVED:*****
```

NOTE: PROPOSED 54" RCP

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PROPOSED 54" PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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AUGUST 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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AUGUST 1996

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

REACH SUMMARY
 =====

A

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ
3	WEIRLOW	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	19.99	.46	37.74	.00	.00	37.22
A1	19.73	3.03	26.81	.00	37.22	50.19
A2	16.67	1.55	34.89	.00	50.19	74.87
A3	16.55	10.10	60.97	.00	74.87	82.53
A4	12.39	2.14	44.60	.00	82.53	112.14
A5	12.21	3.25	66.28	.00	112.14	168.91
A6	9.08	2.39	70.62	.00	168.91	236.38
A7	8.50	9.32	43.90	.00	236.38	255.24
A8	8.38	31.24	61.65	.00	254.03	175.35
A9-1	5.73	48.59	22.02	.00	174.86	122.64
A9-2	4.44	35.17	18.38	.00	122.64	113.71
A9-2A	4.42	11.98	11.05	.00	113.71	112.11
E9-1	5.81	.94	.00	.00	175.35	174.86
E8	8.42	1.17	.00	.00	255.24	254.03
BNDRY	1.00	79.35	.00	.00	112.11	.00

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

REACH MAXIMUM FLOW REPORT

=====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	20.50	16.98	A9-2	4.16	A9-2A	4.14
TOPINLET	24.00	15.79	A9-2	4.44	A9-2A	4.42
WEIRLOW	15.25	3.54	A9-2	2.54	A9-2A	2.49
REACH1	14.25	50.19	A1	19.73	A2	16.58
REACH3	15.50	82.53	A3	16.55	A4	11.42
REACH5	13.75	168.91	A5	12.21	A6	9.08
REACH7P	14.00	255.24	A7	8.49	E8	7.59
REACH8P	16.00	175.35	A8	8.24	E9-1	4.77
REACH9	24.00	112.11	A9-2A	4.42	BNDRY	.60
REACH9-2	15.50	122.64	A9-1	4.16	A9-2	2.68
REACH9-1	17.00	8.10	A9-2	3.36	A9-2A	3.34
REACH0	13.25	37.22	A0	19.98	A1	19.57
REACH2	13.75	74.87	A2	16.45	A3	16.18
REACH4	14.00	112.14	A4	12.29	A5	12.10
REACH6	13.50	236.38	A6	9.04	A7	8.37
DITCH8	14.00	254.03	E8	7.59	A8	7.35
DITCH9-1	16.00	174.86	E9-1	4.77	A9-1	4.33
DITCH	22.00	73.21	A9-2	4.32	A9-2A	4.30

GENERAL PERMIT APPLICATION

FOR

**MANAGEMENT AND STORAGE
OF SURFACE WATERS**

HUNTINGTON BASIN

SUBMITTED TO:

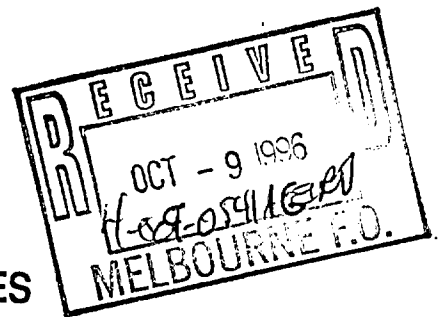
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

August, 1996

BY:



**STOTTLER STARMER & ASSOCIATES
ARCHITECTS, ENGINEERS, PLANNERS, INC.**



*M.P.M.
9.9.96*

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**PERMIT APPLICATION
FOR
MANAGEMENT & STORAGE OF SURFACE WATERS
HUNTINGTON BASIN**

INTRODUCTION

Huntington basin consists of 425± acres, which is bounded on the west by US Highway 1 and on the east by the Indian River Lagoon. Huntington Avenue is centered within the basin and "connects" US Highway 1 to the Indian River Lagoon. The primary conveyance within the basin is a ditch along the north side of Huntington Avenue.

SSA was contracted to provide construction drawings for drainage improvements to Huntington Basin. The primary objectives were to reduce the historic flooding problems within the Basin and improve water quality. The primary problems within Huntington Basin are:

- Localized flooding.
- Lack of maintenance of the ditch systems.
- Lack of stormwater treatment facilities.

The Huntington Basin improvements will be built in three phases; construction of a detention pond first, upgrading pipes along the ditch system second, and widening the existing ditch between US-1 and the RR track third. The permit is being sought for the "full" condition, which, as explained in the next section, comprehend all three phases of construction phases.

STORMWATER MANAGEMENT

Currently there are no water treatment facilities within the basin. The existing stormwater runoff from Huntington Basin enters the ditch via sheet flow and/or shallow concentrated flow, from there it outfalls directly into the Indian River Lagoon. There are numerous driveway culverts along the route. Many of these culverts are undersized and will be upgraded as part of the proposed improvements.

The calculations are divided into 3 conditions:

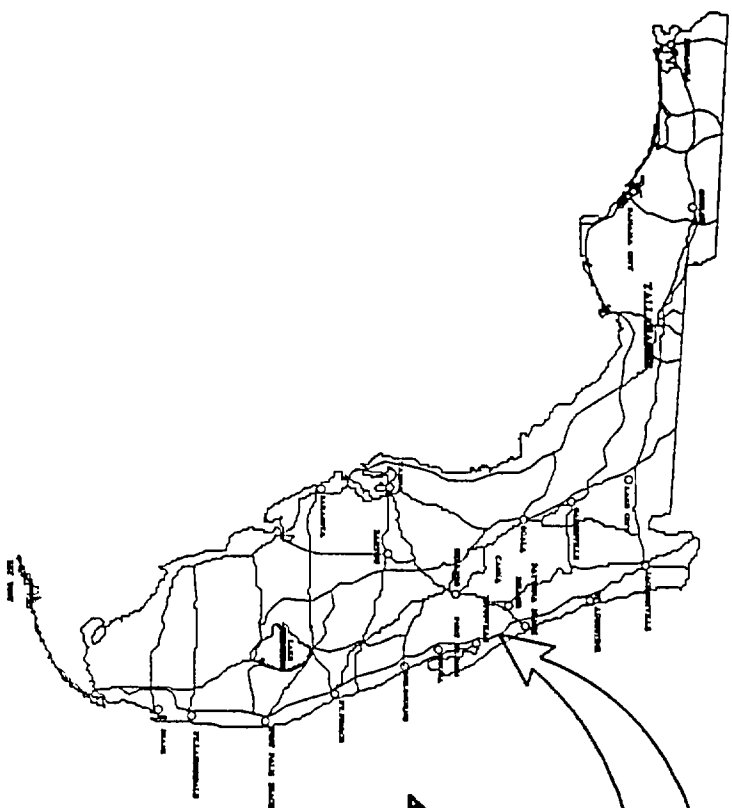
- Existing Condition, which is the current situation in the basin.
- Phased Condition, which is the condition achieved by adding a pond to the basin without making any other improvements to the drainage system.
- Full Condition, is the condition at which the basin would be, assuming all the improvements are already in place. These proposed improvements are: construction of a detention pond, upgrade culverts, and widen the ditch.

In order to reduce area flooding and improve water quality within Huntington Basin, construction of a wet detention pond with a maintenance access road is proposed. The pond location is on the north side of Huntington Avenue approximately 750' west of the Florida East Coast Railroad. The proposed improvements include upgrading culverts and improving the main ditch.

Since the Huntington basin project is a retrofit of an existing system, no additional water quality improvements would be necessary. However, a great amount of water quality treatment will be provided by constructing the wet detention pond.

To protect water quality during construction, provisions will be made as required to prevent potentially turbid runoff from leaving the site. This includes the use of a siltation fence and hay bales as noted on the plans.

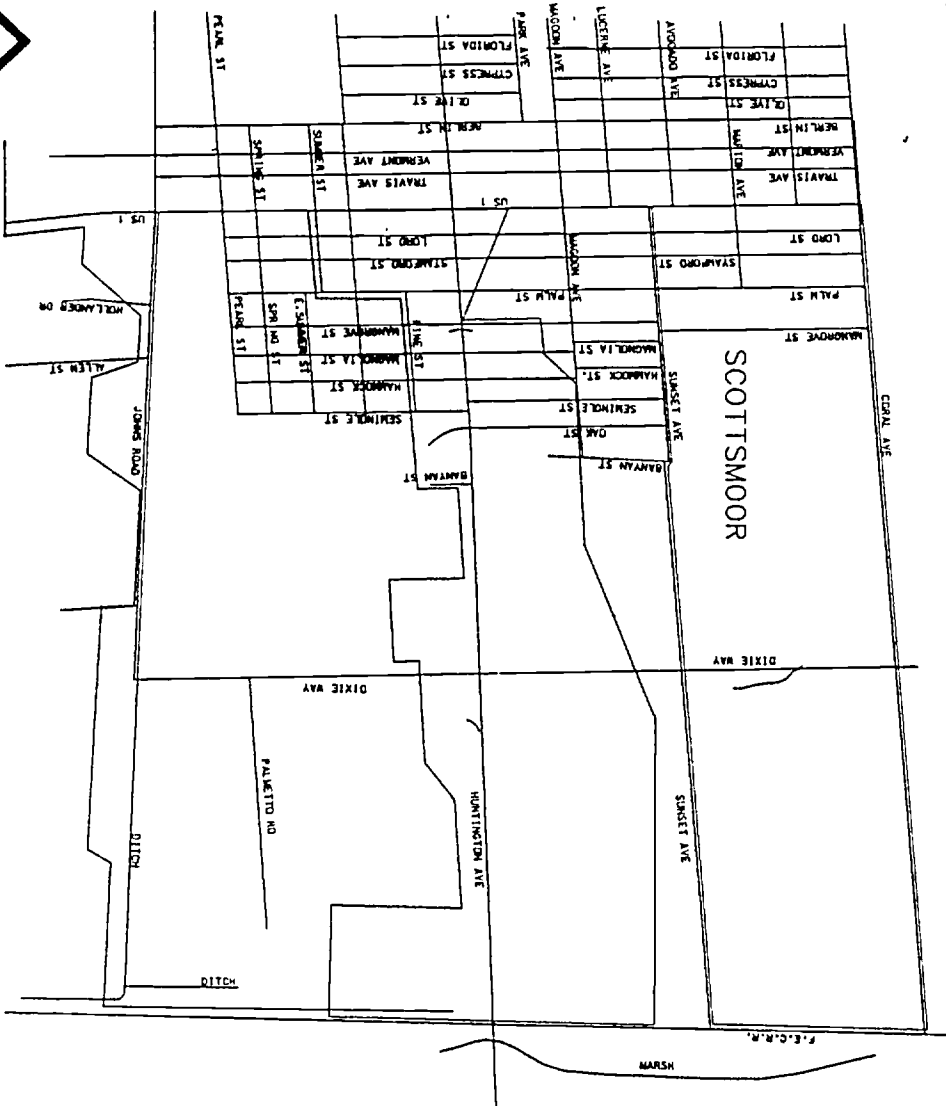
FIGURES



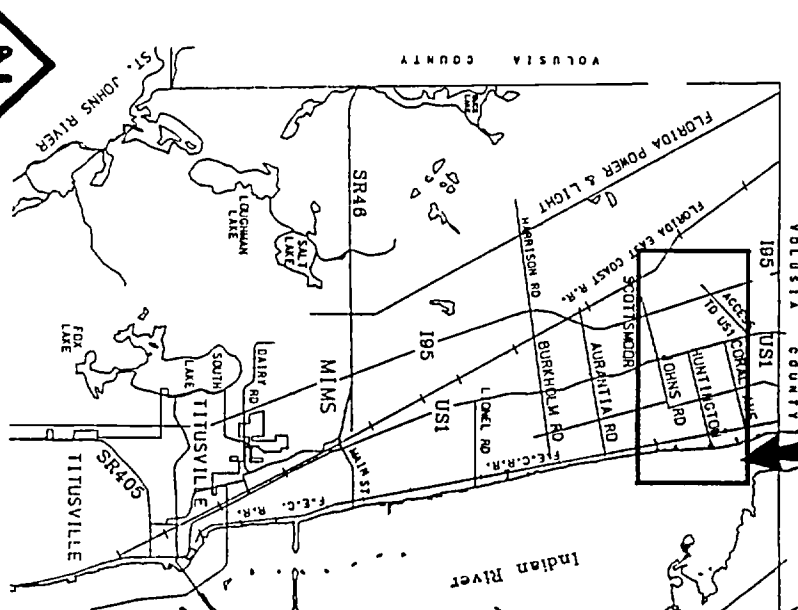
PROJECT
LOCATION



STATE OF FLORIDA
KEY MAP N.T.S.



BASIN AREA
KEY MAP N.T.S.



BASIN AREA



NORTH BREVARD COUNTY
KEY MAP N.T.S.



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BREVARD COUNTY
HUNTINGTON BASIN
MASTER DRAINAGE PLAN

DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 9315
SITE LOCATION PLAN		FIGURE 1	



SOURCE: USDA - SOIL CONSERVATION SERVICE "Soil Survey of Brevard County, Florida"

FIGURE 2

Title		SCS SOILS MAP	
Proj.		HUNTINGTON AVENUE BASIN	
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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HUNTINGTON AVENUE BASIN SOIL TYPE		
Symbol	Soil Name	Type
Mk	Myakka sand	B/D
Mu	Myakka - Urban Land Complex	B/D
Pw	Pompano sand	B/D
An	Andote sand	B/D
Qr	Quartzipemments, smoothed	-
Cp	Copeland complex	B/D
Br	Brandenton fine sand, shallow varient	B/D
Fn	Floridana sand	B/D
Wa	Wabasso sand	B/D
Fa	Felda sand	B/D
Ch	Chobee sandy loam	B/D
Fd	Felda sand, bedded	B/D

FIGURE 3

Title SCS SOILS LEGEND			
Proj. HUNTINGTON AVENUE BASIN			
No. 95115	Scale NTS		
By MB	Date 2/29/96		

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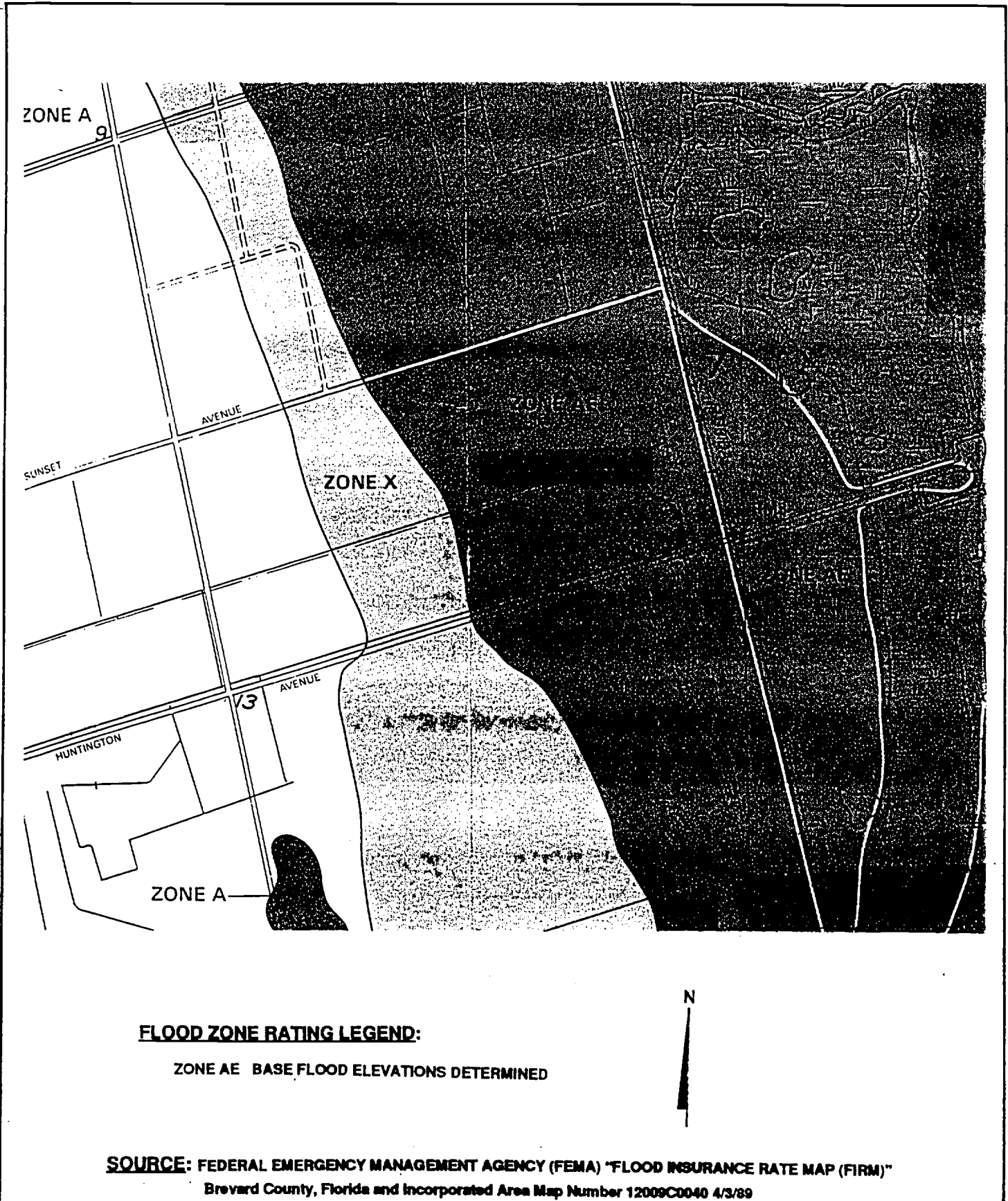


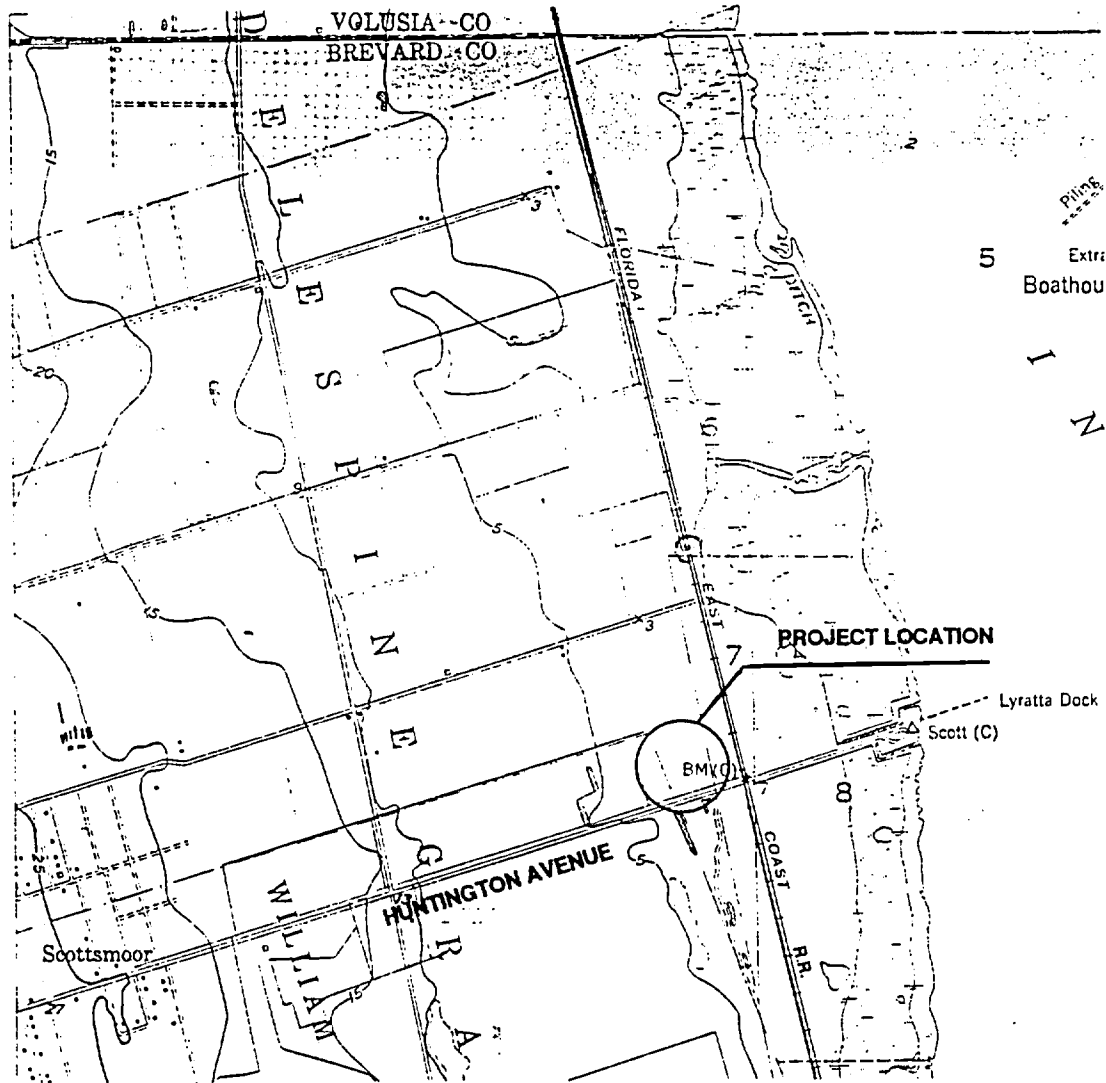
FIGURE 4

Title		FEMA FLOOD MAP	
Proj.		HUNTINGTON AVENUE BASIN	
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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Mapped by the U. S. Coast & Geodetic Survey
 Edited and published by the Geological Survey

Control by USC&GS (C) and USCE (E)

Culture and drainage compiled from
 aerial photographs taken 1948

Topography by plane-table methods 1949. Field check 1949

Hydrography from surveys dated 1948

SCALE 1:24 000

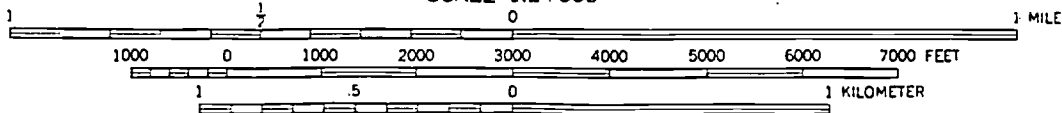


FIGURE 5

Title USGS QUADRANGLE MAP			
Proj. HUNTINGTON AVENUE BASIN			
No. 95115	Scale	NTS	
By MB	Date	2/29/96	

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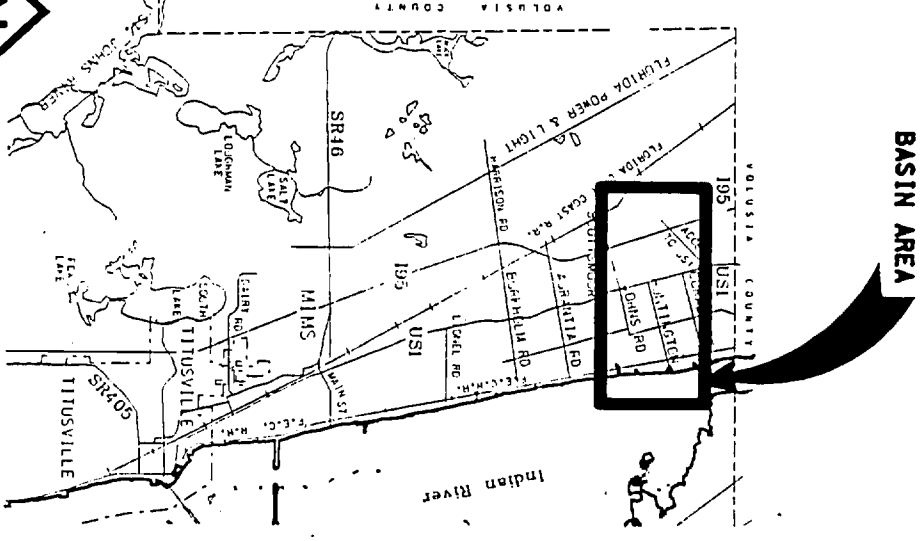
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FIGURE 6

BREVARD COUNTY
STORMWATER MANAGEMENT PROGRAM
HUNTINGTON BASIN
EXISTING AND PROPOSED
DRAINAGE SYSTEM

- LEGEND
- DRAINAGE BASIN BOUNDARY
 - DRAINAGE BASIN BOUNDARY
 - STRUCTURE NUMBER
 - CULVERT
 - DITCH FLOW DIRECTION
 - GENERAL FLOW DIRECTION
 - EXISTING DITCH
 - SUB-BASIN BOUNDARY

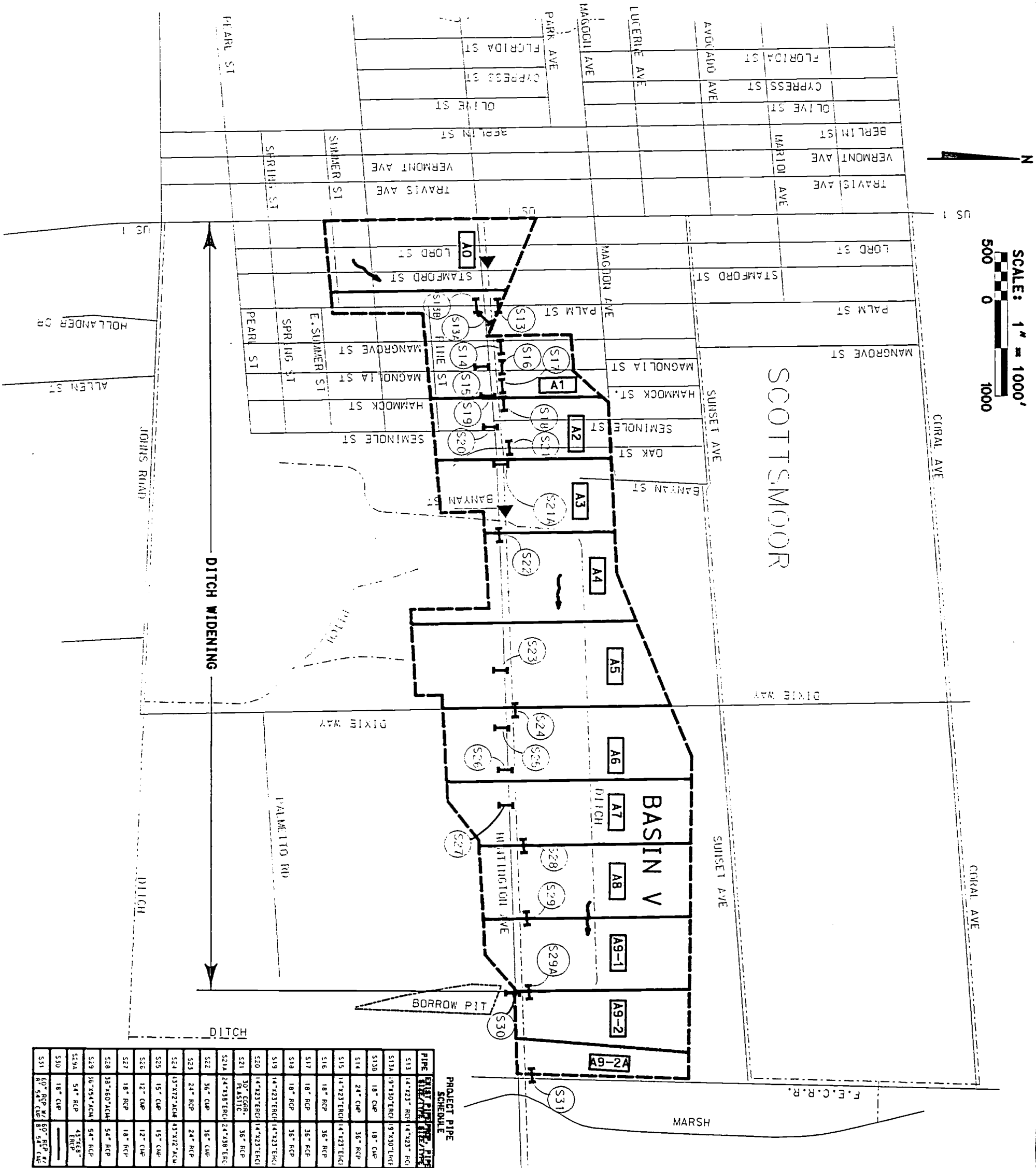


N
NORTH BREVARD COUNTY
KEY MAP N.T.S.

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PROJECT PIPE SCHEDULE	
PIPE	PIPE
S13	14" x 23" RCP 14' x 23" ENG
S13A	19" x 30" ERCP 19' x 30" ENG
S13B	18" CUP 18" CUP
S14	24" CUP 36" RCP
S15	14" x 23" ERCP 14' x 23" ENG
S16	18" RCP 36" RCP
S17	18" RCP 36" RCP
S18	18" RCP 36" RCP
S19	14" x 23" ERCP 14' x 23" ENG
S20	14" x 23" ERCP 14' x 23" ENG
S21	30" CUP 36" RCP
S21A	24" x 38" ERCP 24' x 38" ENG
S22	36" CUP 36" CUP
S23	24" RCP 24" RCP
S24	13" x 22" ACM 43' x 22" ACM
S25	15" CUP 15" CUP
S26	12" CUP 12" CUP
S27	18" RCP 18" RCP
S28	38" x 60" ACM 54" RCP
S29	36" x 54" ACM 54" RCP
S29A	54" RCP 43' x 68" ERCP
S30	18" CUP
S31	60" RCP w/ 80" RCP #7



LEGEND:



NODES



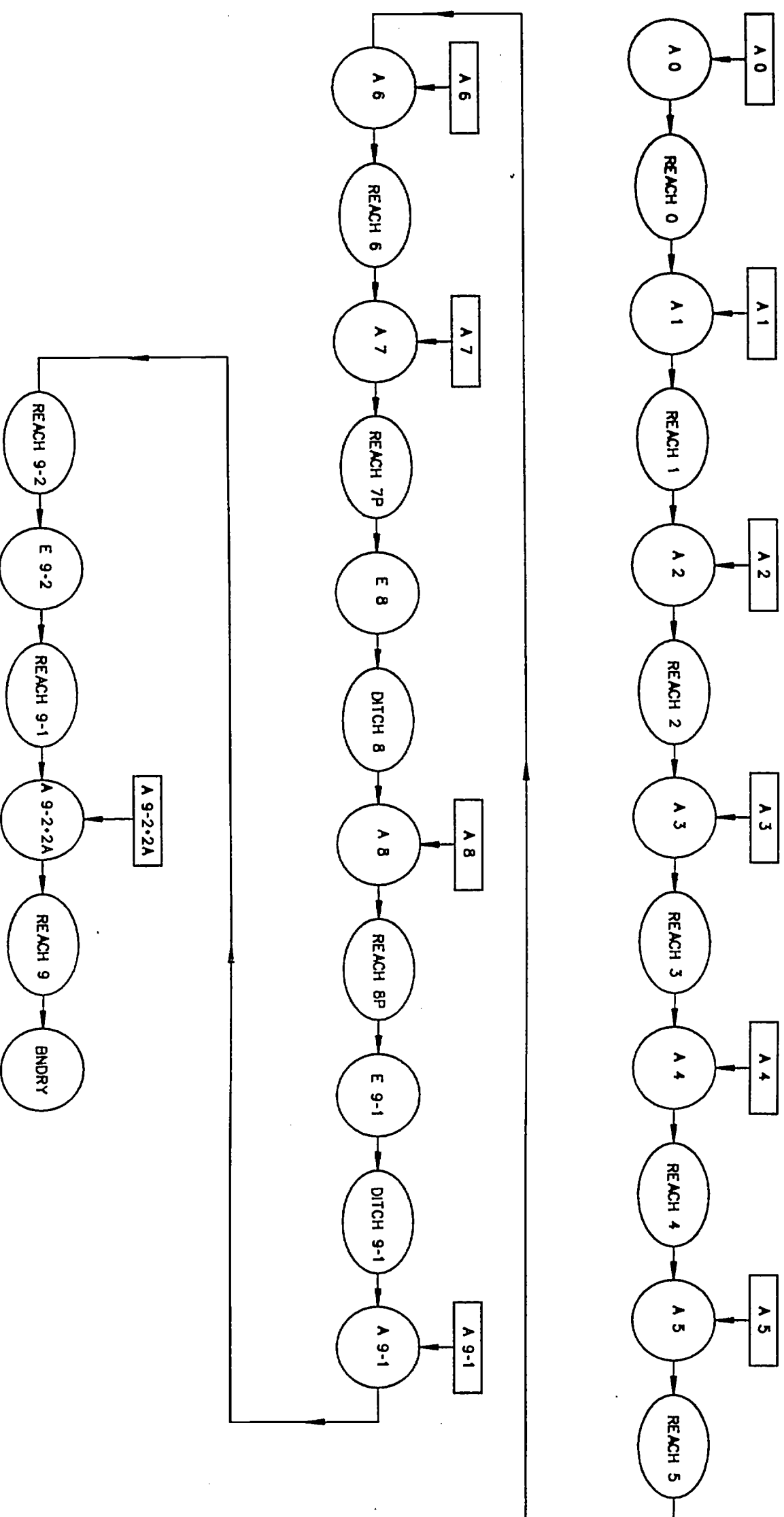
BASINS



REACHES



FLOW DIRECTION

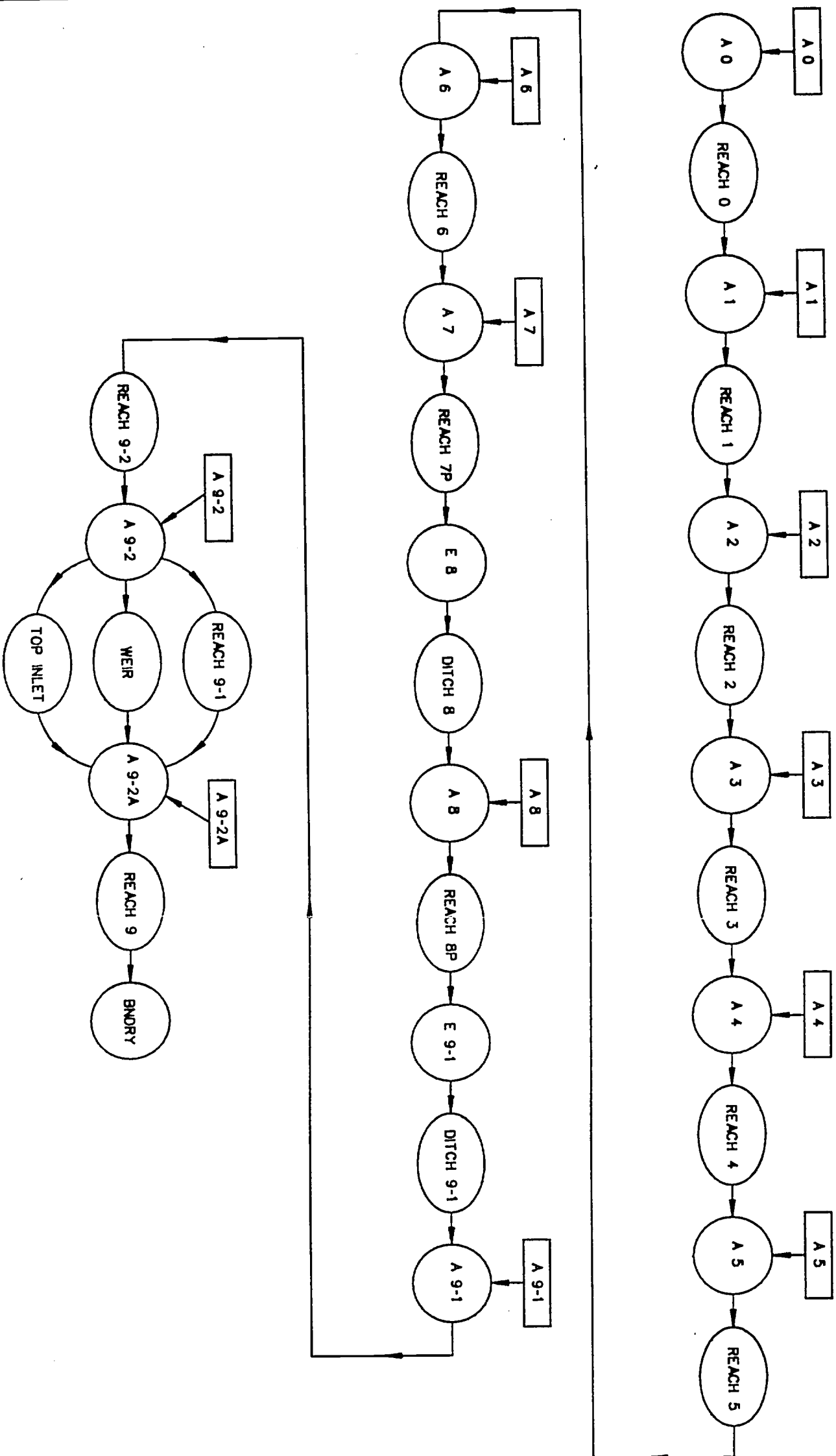


BREVARD COUNTY

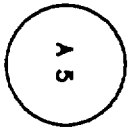
HUNTINGTON BASIN
MASTER DRAINAGE PLAN

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DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 95115
EXISTING NODAL DIAGRAM		FIGURE 7	



LEGEND:


 NODES


 BASINS

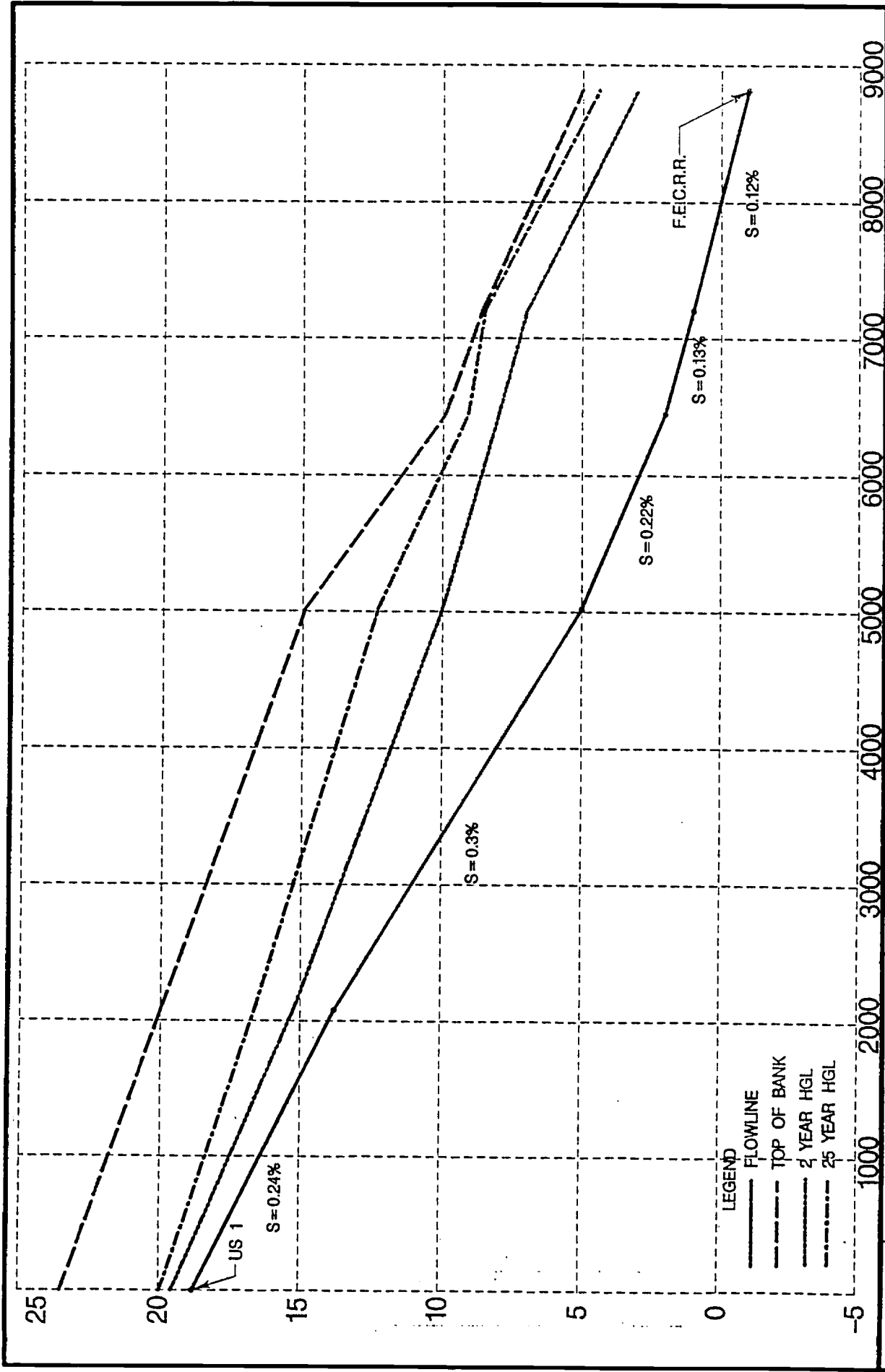

 REACHES


 FLOW DIRECTION

BREVARD COUNTY HUNTINGTON BASIN MASTER DRAINAGE PLAN


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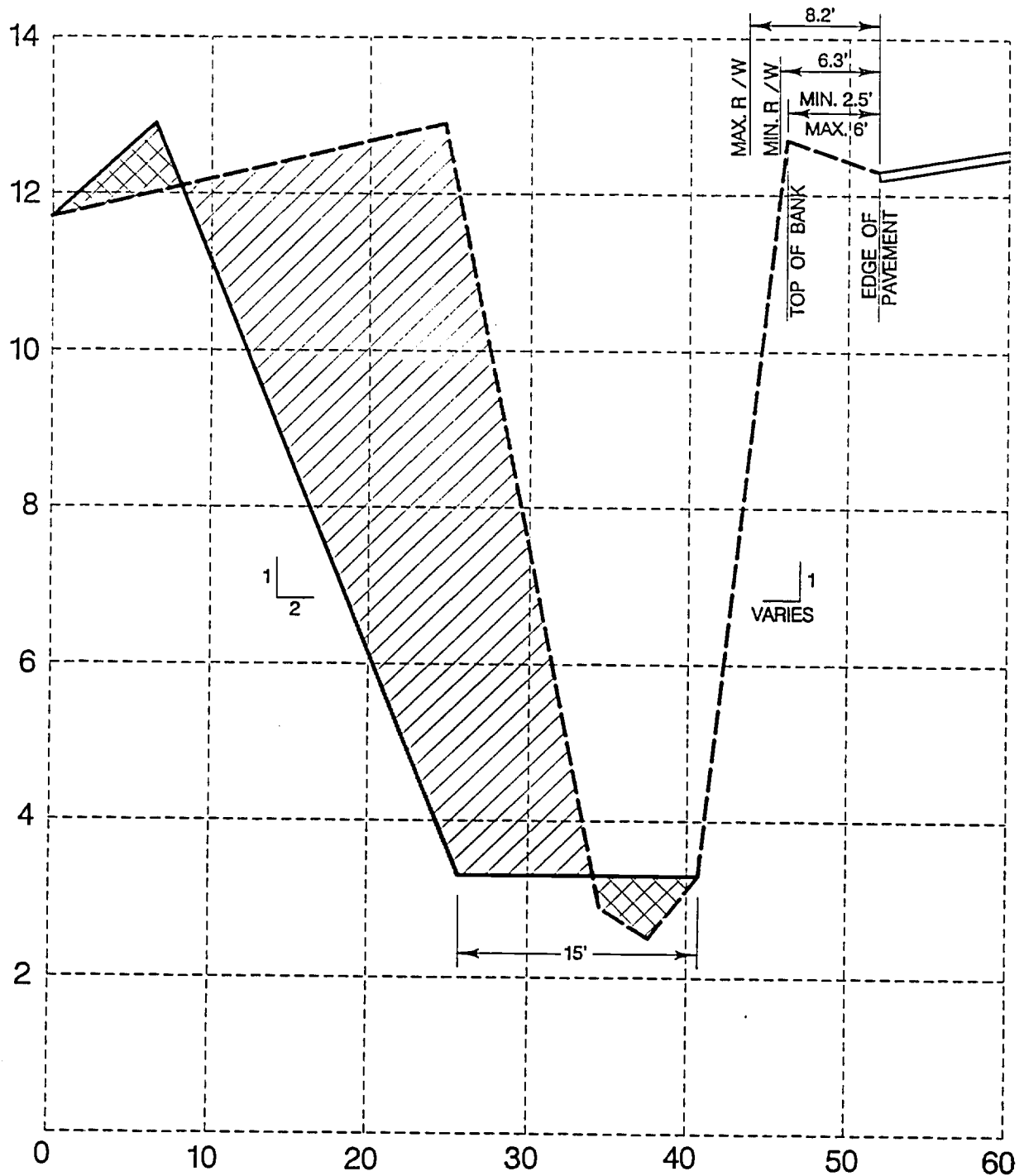
DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 9515
PROPOSED NODAL DIAGRAM			FIGURE 8



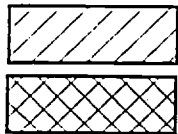
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FIG 9	DITCH PROFILE
DRAWN BY: DC	DATE: 5 /31 /96
CHECKED BY: MB	SCALE: VERT. -1" = 5' HORIZ. -1" = 100'



LEGEND



EXCAVATION

FILL

FIG.
10

TYPICAL SECTION

DRAWN BY: DC

SCALE: VERT. - 1" = 2'
HORIZ. - 1" = 10'

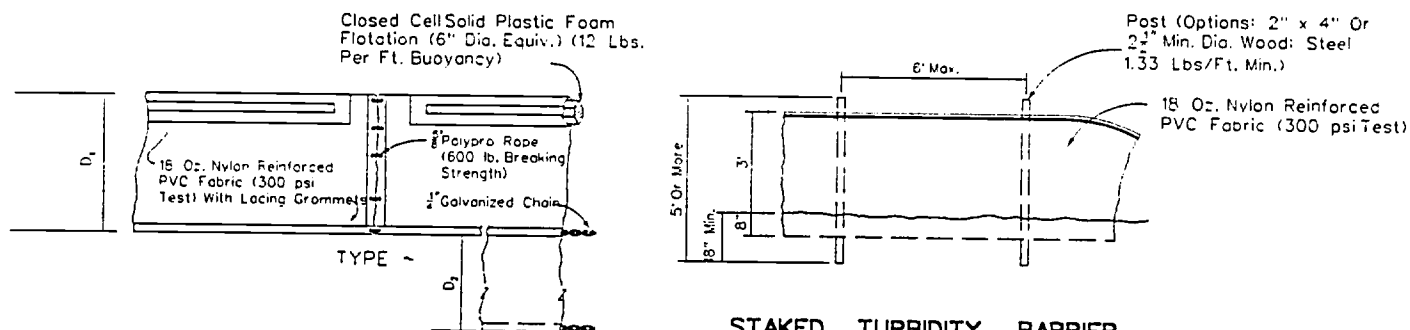
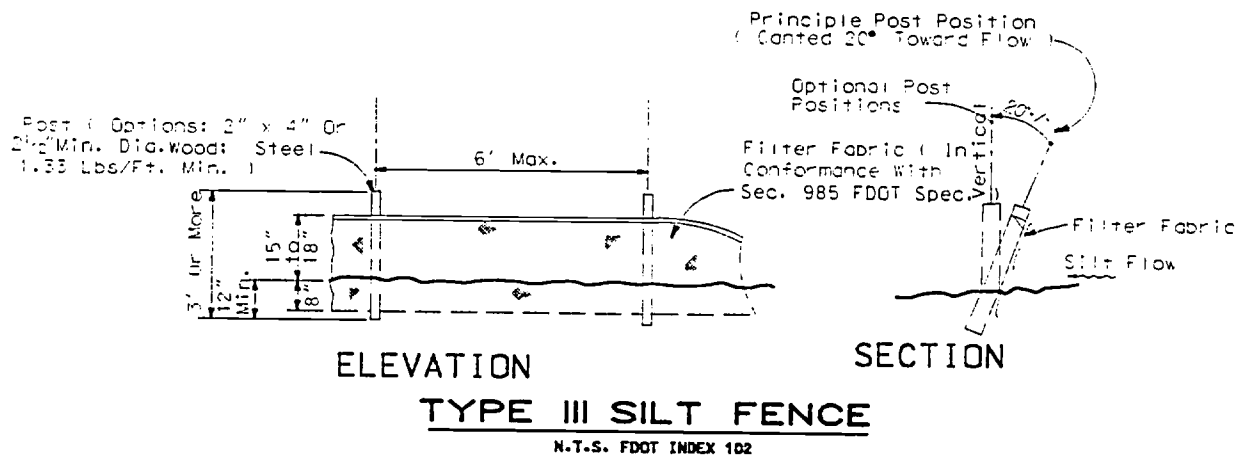
CHECKED BY: MB

DATE: 5 / 31 / 96



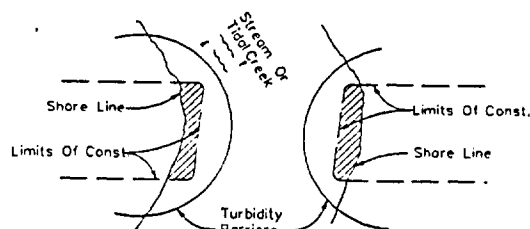
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D = 5' Std. (Single Panel For Depths 5' or Less).
 D = 5' Std. (Additional Panel For Depths > 5').
 Curtain To Reach Bottom Up To Depths Of 10 Feet.
 Two (2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.

FLOATING TURBIDITY BARRIERS



Note:
 Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.

TURBIDITY BARRIER APPLICATIONS

F.D.O.T. TURBIDITY BARRIER DETAIL-INDEX #103

N.T.S.

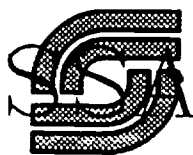
NOTE: CONTRACTOR TO PLACE THE ABOVE EROSION CONTROL DEVICES AS APPLICABLE PRIOR TO PIPE REPLACEMENT AND/OR DITCH WIDENING WORK.

EROSION CONTROL DEVICES

DATE: 8 /23 /96

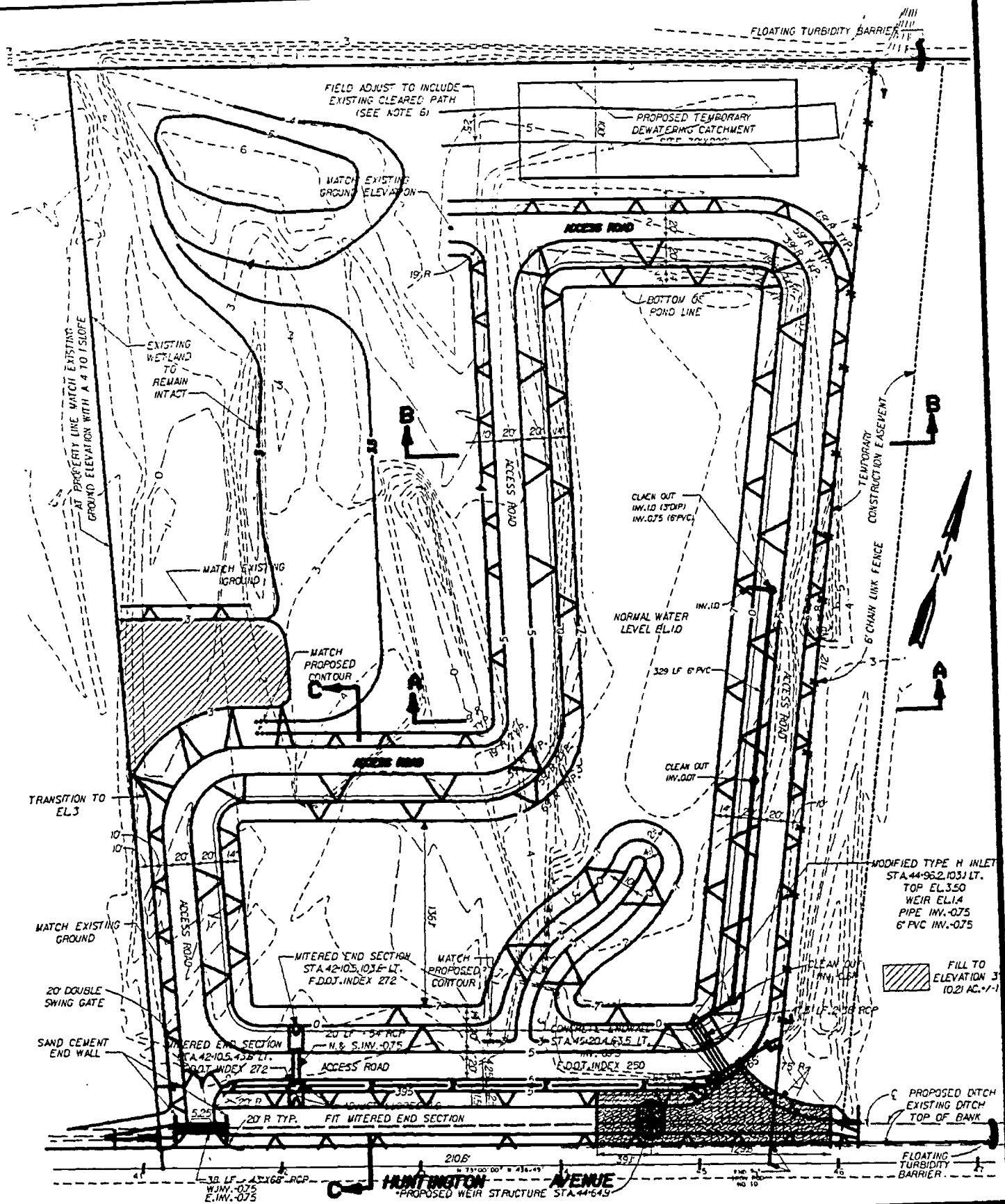
SCALE: NONE

FIG. 10-A



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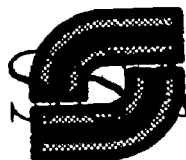


DETENTION POND

DATE: 6 / 4 / 96

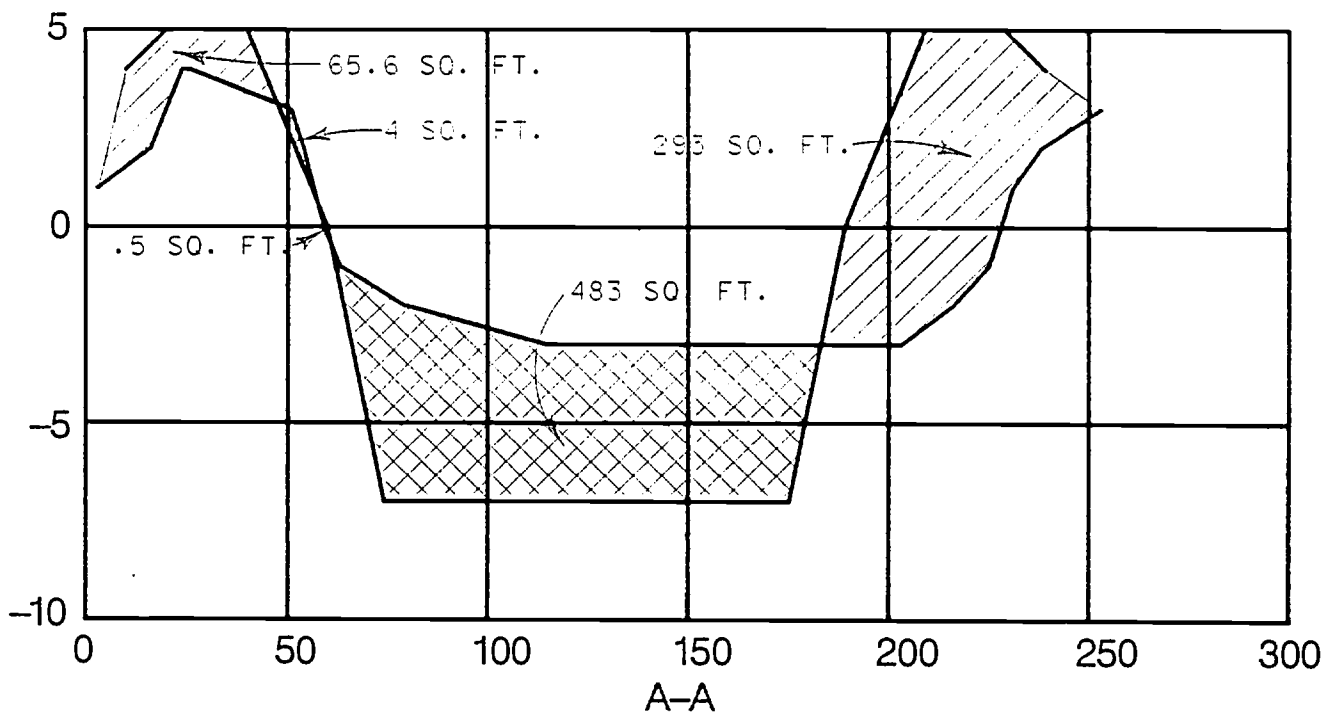
FIG. 11

SCALE: 1" = 100'

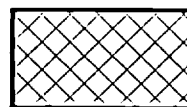


Stottler Starmer & Associates

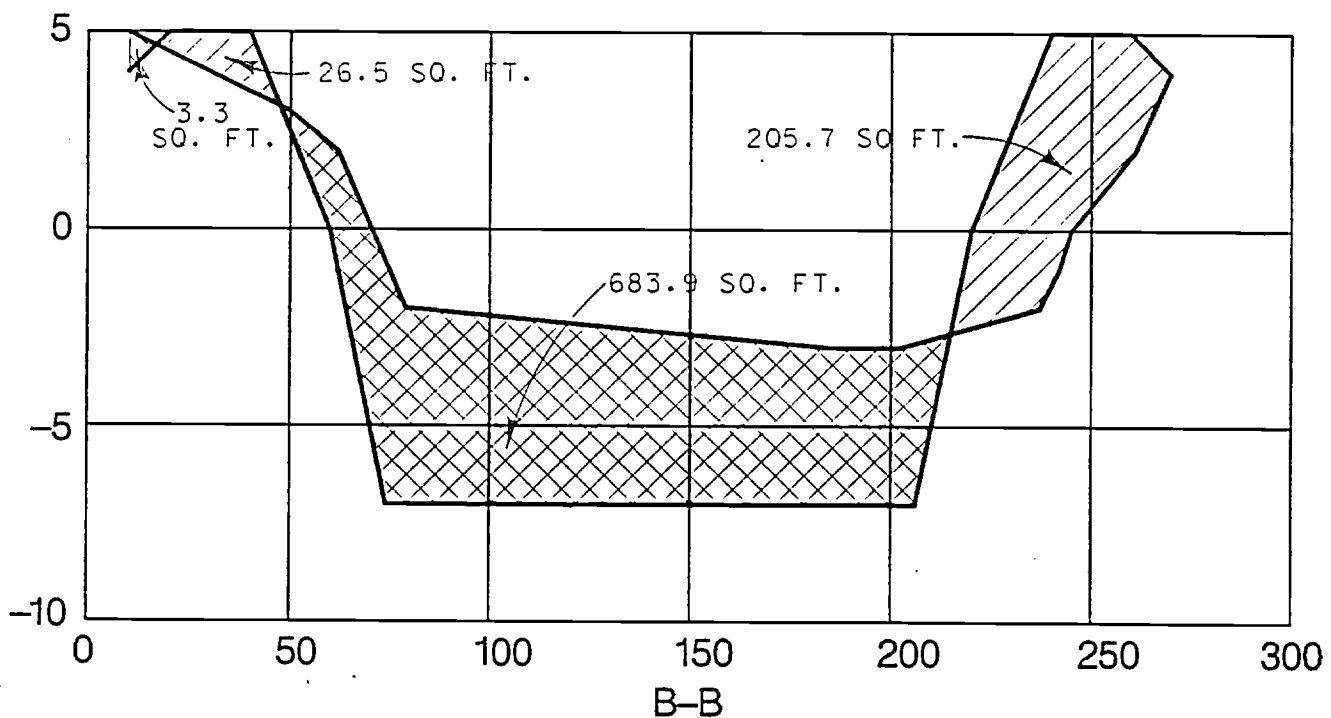
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DENOTES FILL



DENOTES CUT



DETENTION POND CROSS SECTIONS

DATE: 6 / 4 / 96 FIG. 12

SCALE: VERT. -1" = 5'
HORIZ. -1" = 50'

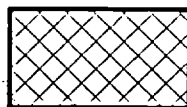


Stottler Starmer & Associates

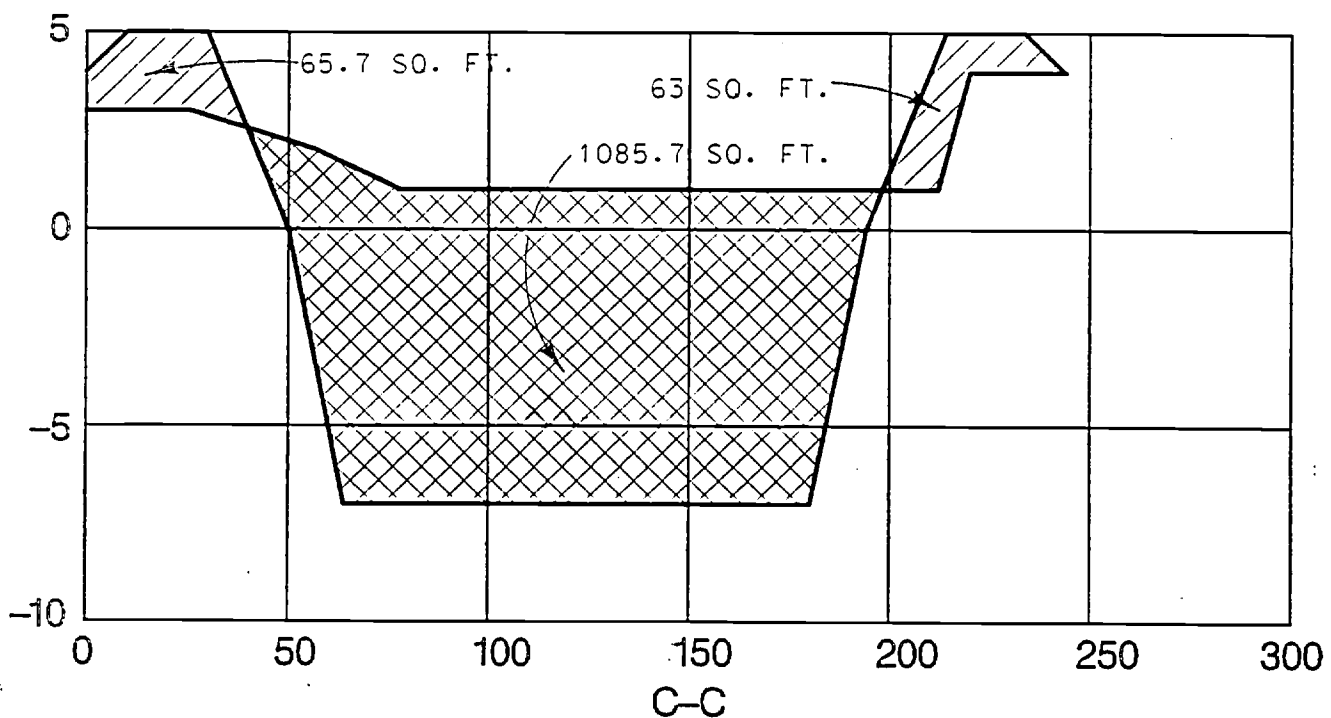
Architects Engineers Planners, Inc.
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DENOTES FILL



DENOTES CUT



DETENTION POND
CROSS SECTIONS

DATE: 6 / 4 / 96 FIG. 13

SCALE: VERT. -1" = 5'
HORIZ. -1" = 50'



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APPENDIX

APPENDIX A

SOILS INFORMATION



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 13, 1995

File No. 95-5366

Page 1 of 3

Stottler Stagg & Associates
8680 N. Atlantic Avenue
Cape Canaveral, Florida 32920-1630

ATTENTION: Mr. John Pekar

SUBJECT: Geotechnical Services
Huntington Avenue Detention Pond
Scottsmeer, Florida

Gentlemen:

As you requested, we have completed a preliminary subsurface soil exploration consisting of eight auger borings within the proposed Huntington Avenue Detention Pond. This data report summarizes the testing procedures and presents their results.

FIELD EXPLORATION

The field exploration program consisted of performing 8 auger borings. The locations of the auger borings are schematically illustrated on a site plan shown on Figure 1. These locations were determined in the field by the client and our personnel where access was available. The locations shown on Figure 1 were based by visual points of reference and should be considered accurate only to the degree implied by the method of measurement used.

The auger borings were drilled using a truck mounted, 4-inch diameter, continuous flight auger to depths of 8 and 15 feet. A summary of this field procedure is included in the Appendix. Representative soil samples were also recovered from the auger borings and returned to our laboratory for further visual classification. The groundwater level at each of the boring locations was measured upon completion of drilling.

LABORATORY VISUAL CLASSIFICATION

The samples were reviewed in our laboratory and visually classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions (based on local practices) are shown in Figures 1A through 8A attached in the Appendix.

SUBSURFACE CONDITIONS

The results of the field exploration and laboratory visual classification programs are graphically summarized on the soil boring profiles attached in the Appendix. The stratification of the soil boring profiles represents our interpretation of the field boring logs and the results of visual classification of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

Soils encountered in the auger borings consisted primarily of sands with varying percentages of silt and clay. A plastic clay layer was also encountered (refer to AB-6). Of particular note are the "muck" soils encountered at the ground surface in auger borings AB-2 and AB-7 to depths of 1.5 and 2.5 feet respectively. Shell fragments were encountered as noted in many of the soil descriptions. Due to the variability of soils encountered at this site, a generalized soil profile is not applicable. We suggest referring to the individual soil profiles in the Appendix for soil profile details.

We understand that one of the purposes of this preliminary exploration was to determine the presence of coquina rock. Our auger borings did not encounter coquina rock or other rock-type layers. The only layer containing cemented sand particles was encountered in auger boring AB-7 between depths of 2.5 and 5.0 feet. It was not difficult for the auger drilling equipment to penetrate this layer. If deemed necessary, the excavability of this layer can be better evaluated by test pits excavated by a backhoe.

MEASURED GROUNDWATER LEVEL

The groundwater level was measured in the boreholes on the day drilled after stabilization of the downhole water level. As shown on Figures 1A through 8A in the Appendix, the measured groundwater level was encountered at depths between 0.7 feet to 1.0 feet below the existing ground surface on the dates drilled. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.



September 13, 1995
File No. 95-5366
Page 3 of 3

CLOSURE

This report does not include interpretation of the data included nor reflect any variations which may occur adjacent to or between the soil borings. The nature and extent of the variations between the soil borings may not become evident until during additional exploration, test pits or detention pond excavation. If variations then appear evident, it may be necessary to perform additional studies.

This report has been prepared for the exclusive use of Stottler Staggs & Associates in accordance with generally accepted soil drilling practices.

It is noted that this report does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

We are pleased to be of assistance to you on this phase of your project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.


Thomas W. Nichols, P.E. 9-13-95
Manager
Florida Registration No. 38764

TWN/plm

APPENDIX 1

Soil Test Boring Symbolic Logs

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-1

BORING: AB-1

DATE: AUGUST 31, 1995

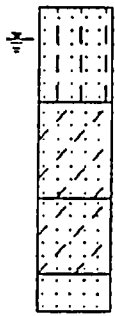
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SP- SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
5		SP- SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS. CALCAREOUS.		
		SP	GRAY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 1A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-2

BORING: AB-2

DATE: AUGUST 31, 1995

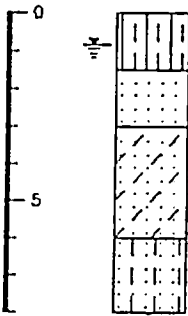
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SM-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND ROOTS, "MUCK".		
		SP	LIGHT BROWN FINE SAND.		
		SP-SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		
		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		

 symbol shows the depth of water at completion

Figure Number 2A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-3

BORING: AB-3

DATE: AUGUST 31, 1995

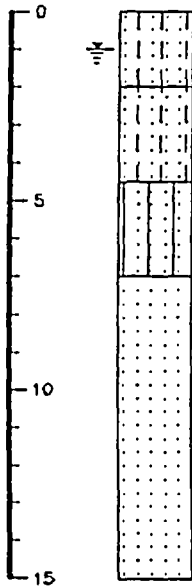
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		SP- SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
5		SM	GRAY SILTY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15					

 symbol shows the depth of water at completion

Figure Number 3A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-4

BORING: AB-4

DATE: AUGUST 31, 1995

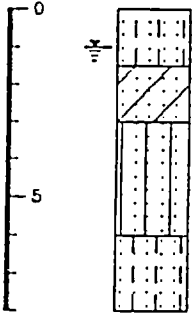
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
5		SM	YELLOW & GRAY SILTY FINE SAND.		
		SP- SM	GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		

 symbol shows the depth of water at completion

Figure Number 4A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-5

BORING: AB-5

DATE: AUGUST 31, 1995

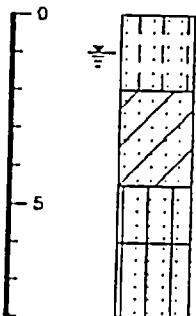
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
5		SM	YELLOW & GRAY SILTY FINE SAND. CALCAREOUS.		
		SP- SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND. CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 5A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-6

BORING: AB-6

DATE: AUGUST 31, 1995

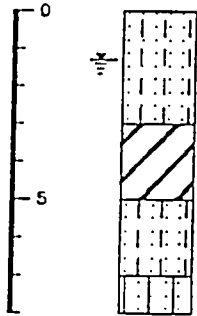
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.3'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		CH	YELLOW AND GRAY SANDY CLAY, CALCAREOUS.		
5		SP- SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS, CALCAREOUS.		
		SM	GRAY SILTY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 6A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-7

BORING: AB-7

DATE: AUGUST 31, 1995

FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.66'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SW-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND TRACE OF ROOTS, "MUCK".		
		SC	BROWN CLAYEY FINE SAND WITH TRACE OF CEMENTED SAND, CALCAREOUS.		
5		SP-SC	GRAY SLIGHTLY CLAYEY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		

 symbol shows the depth of water at completion

Figure Number 7A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-8

BORING: AB-8

DATE: AUGUST 31, 1995

FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.75'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SC	DARK BROWN CLAYEY FINE SAND.		
		SC	LIGHT GRAY CLAYEY FINE SAND AND SHELL. CALCAREOUS.		
5		SP	LIGHT GRAY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
		SP	LIGHT GRAY FINE SAND.		
10					
					
15		SP-SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND. CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 8A

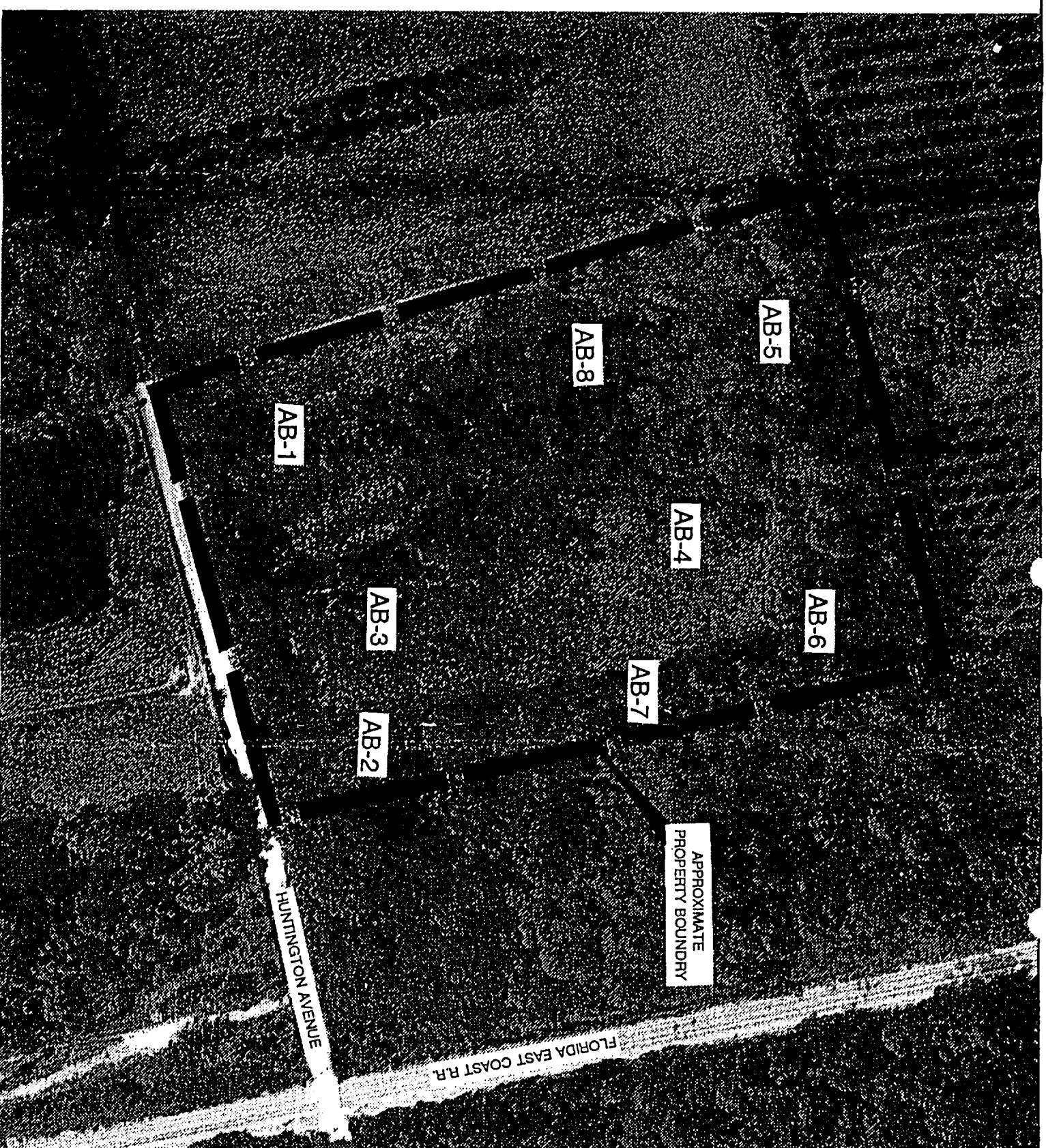
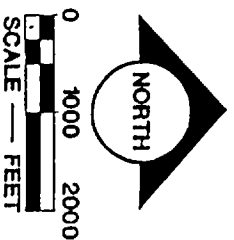
Ardaman & Associates, Inc.



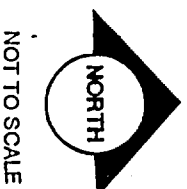
SITE LOCATION MAP

SECTION 7
TOWNSHIP 20 SOUTH
RANGE 35 EAST

OBTAINED FROM U.S.G.S. QUAD MAP: OAK HILL, FLORIDA 1949
PHOTO REVISED 1970



AUGER BORING LOCATION PLAN



LEGEND

- APPROXIMATE AUGER BORING TEST LOCATION

FIGURE 1

Ardaman & Associates, Inc.
Consulting Engineers in Soil Mechanics,
Foundations, and Materials Testing

GEOTECHNICAL SERVICES
HUNTINGTON AVENUE DETENTION POND
SCOTTSMOORE, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 9-12-95
FILE NO. 95-5366	APPROVED BY:	

APPENDIX B

CURVE NUMBERS

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A0

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte; impervious area ratio)	CN			Area ☐ acres ☐ mi ² ☐ %	Product of CN x area
		T a b. 2,2	F I g. 2,3	F I g. 2,4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			22.75	0 1820 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.39	0 234.22 0
Totals =					25.14	2054.22

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total pr}} = \frac{2054}{25.14} = 81.71$$

Use CN = **81.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi ² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			14.99	0 1199.2 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.95	0 289.1 0
Totals =					17.94	1488.3

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1488}{17.94} = 82.96$$

Use CN = **83**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
C	Residential	80			20.85	0 1668 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.64	0 62.72 0
Totals =					21.49	1730.72

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1731}{21.49} = 80.54$$

Use CN = **80.5**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A3

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, c hydrologic condition; percent impervious; unconnected/connecte impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			5.14	0 390.64 0
c	Pasture fair condition	79			11.94	0 943.26 0
c	Residential	80			21.2	0 1696 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.98	0 96.04 0
Totals =					39.26	3125.94

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{3126}{39.26} = 79.62$$

Use CN = **79.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A4

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			5.51	0 418.76 0
c	Pasture fair condition	79			24.18	0 1910.22 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.44	0 43.12 0
Totals =					30.13	2372.1

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2372}{30.13} = 78.73$$

Use CN = **78.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A5

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			10.56	0 802.56 0
c	Pasture fair condition	79			33	0 2607 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.99	0 97.02 0
Totals =					44.55	3506.58

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{3507}{44.55} = 78.71$$

Use CN = 78.7

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A6

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte; impervious area ratio)	CN			Area ☒ acres ☐ ml/^2 ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			18.1	0 1375.6 0
c	Pasture fair condition	79			27.2	0 2148.8 0
	Residential					0 0 0
c	Wooded fair condition	73			6.75	0 492.75 0
	Impervious Area Wetland	98			1.02	0 99.96 0
Totals =					53.07	4117.11

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4117}{53.07} = 77.58$$

Use CN = **77.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A7

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			18.18	0 1381.68 0
c	Pasture fair condition	79			9.13	0 721.27 0
	Residential					0 0 0
c	Wooded fair condition	73			3.75	0 273.75 0
	Impervious Area Wetland	98			0.05	0 4.9 0
Totals =					31.11	2381.6

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2382}{31.11} = 76.55$$

Use CN = **76.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A8

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connecting impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
C	Agricultural	76			22.31	0 1695.56 0
C	Pasture fair condition	79			20.66	0 1632.14 0
	Residential					0 0 0
C	Wooded fair condition	73			14.1	0 1029.3 0
	Impervious Area Wetland	98			0.56	0 54.88 0
Totals =					57.63	4411.88

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4412}{57.63} = 76.56$$

Use CN = **76.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A9-1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connecter; impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			3.8	0 288.8 0
c	Pasture fair condition	79			12.2	0 963.8 0
	Residential					0 0 0
c	Wooded fair condition	73			4	0 292 0
	Impervious Area Wetland	98			0.61	0 59.78 0
Totals =					20.61	1604.38

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1604}{20.61} = 77.84$$

Use CN = **77.8**

RUNOFF CURVE NUMBER

Project: Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A9-2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi ² ☐ %	Product of CN x area
		T a b. 2,2	F l g. 2,3	F l g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			9	0 684 0
	Pasture fair condition					0 0 0
	Residential					0 0 0
c	Wooded fair condition	73			9	0 657 0
	Impervious Area Wetland					0 0 0
Totals =					18	1341

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1341}{18} = 74.50$$

Use CN = 75

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A9-2A

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			1	0 76 0
c	Pasture fair condition	79			1	0 79 0
	Residential					0 0 0
c	Wooded fair condition	73			10	0 730 0
	Impervious Area Wetland					0 0 0
Totals =					12	885

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{885}{12} = 73.75$$

Use CN = **73.8**

APPENDIX C

TIMES OF CONCENTRATION

TIME OF CONCENTRATION

SUBAREA A0

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	1.04

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1300	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7078	0	0.71

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	1.50	0	
18. Flow length, L ft	300	0	
19. $T_t = L/(3600 \cdot V)$ hr	0.0555556	0	0.06

20. Watershed or subarea Tc or Tt hr 1.81

min 108.6

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1305	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7105	0	= 0.7105

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n ft/s	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	1.50	0	
18. Flow length, L ft	580	0	
19. $T_t = L/(3600 \cdot V)$ hr	0.1074074	0	= 0.1074

20. Watershed or subarea Tc or Tt hr 1.8606

min 111.6

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	967	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.5265	0	= 0.5265

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.5692

min 94.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A3

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A		N/A	
1. Surface description (table 3-1)		0		0	
2. Manning's roughness coeff., n (table 3-1)		0.15		0	
3. Flow length, L (total L =< 300 ft)	ft	300		0	
4. Two-yr 24-hr rainfall, P2	in	5		0	
5. Land slope, s	ft/ft	0.001		0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$	hr	1.0428	+	0	= 1.0428

Shallow concentrated flow

		N/A		N/A	
7. Surface description (paved or unpaved)		unpaved		0	
8. Flow length, L	ft	940		0	
9. Watercourse slope, s	ft/ft	0.001		0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177		0	
11. $T_t = L/(3600 \cdot V)$	hr	0.5118	+	0	= 0.5118

Channel flow

		N/A		N/A	
12. Cross sectional flow area, a	ft ²	0		0	
13. Wetted perimeter, Pw	ft	0		0	
14. Hydraulic radius, $r = a/Pw$	ft	0		0	
15. Channel slope, s	ft/ft	0		0	
16. Manning's roughness coeff., n		0		0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$	ft/s	1.50		0	
18. Flow length, L	ft	350		0	
19. $T_t = L/(3600 \cdot V)$	hr	0.0648148	+	0	= 0.0648

20. Watershed or subarea T_c or T_t hr 1.6193

min 97.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A4

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1190	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.6479	0	= 0.6479

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	1.50	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.6906

min 101.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A5

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

1. Surface description (table 3-1)	N/A	N/A	
2. Manning's roughness coeff., n (table 3-1)	0	0	
3. Flow length, L (total L =< 300 ft) ft	0.15	0	
4. Two-yr 24-hr rainfall, P2 in	300	0	
5. Land slope, s ft/ft	5	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	0.001	0	
	1.0428	0	= 1.0428

Shallow concentrated flow

7. Surface description (paved or unpaved)	N/A	N/A	
8. Flow length, L ft	unpaved	0	
9. Watercourse slope, s ft/ft	1152	0	
10. Average velocity, V (figure 3-1) ft/s	0.001	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.5102177	0	
	0.6272	0	= 0.6272

Channel flow

12. Cross sectional flow area, a ft ²	N/A	N/A	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, $r = a/Pw$ ft	0.01	0	
15. Channel slope, s ft/ft	1	0	
16. Manning's roughness coeff., n	0.01	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	0.045	0	
18. Flow length, L ft	3.31	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	
	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr 1.6699

min 100.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A6

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	- 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1647	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.8967	0	- 0.8967

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	- 0.0000

20. Watershed or subarea Tc or Tt hr 1.9394

min 116.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A7

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1355	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7377	0	= 0.7377

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.7805

min 106.8

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A8

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	485	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.2640	0	= 0.2640

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, $r = a/Pw$ ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr 2.5494

min 153.0

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A		N/A	
1. Surface description (table 3-1)		0		0	
2. Manning's roughness coeff., n (table 3-1)		0.4		0	
3. Flow length, L (total L ≤ 300 ft)	ft	300		0	
4. Two-yr 24-hr rainfall, P2	in	5		0	
5. Land slope, s	ft/ft	0.001		0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5}s^{0.4})$	hr	2.2854	+	0	= 2.2854

Shallow concentrated flow

		N/A		N/A	
7. Surface description (paved or unpaved)		unpaved		0	
8. Flow length, L	ft	560		0	
9. Watercourse slope, s	ft/ft	0.001		0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177		0	
11. $T_t = L / (3600 \cdot V)$	hr	0.3049	+	0	= 0.3049

Channel flow

		N/A		N/A	
12. Cross sectional flow area, a	ft ²	0.01		0	
13. Wetted perimeter, Pw	ft	0.01		0	
14. Hydraulic radius, r = a/Pw	ft	1		0	
15. Channel slope, s	ft/ft	0.01		0	
16. Manning's roughness coeff., n		0.045		0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$	ft/s	3.31		0	
18. Flow length, L	ft	0		0	
19. $T_t = L / (3600 \cdot V)$	hr	0	+	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.5903

min 155.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2A

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A		N/A	
1. Surface description (table 3-1)		0		0	
2. Manning's roughness coeff., n (table 3-1)		0.4		0	
3. Flow length, L (total L ≤ 300 ft)	ft	300		0	
4. Two-yr 24-hr rainfall, P2	in	5		0	
5. Land slope, s	ft/ft	0.001		0	
6. $T_t = (0.007(nL)^{0.8}) / (p^2 \cdot 0.5 \cdot s^{0.4})$	hr	2.2854	+	0	= 2.2854

Shallow concentrated flow

		N/A		N/A	
7. Surface description (paved or unpaved)		unpaved		0	
8. Flow length, L	ft	1091		0	
9. Watercourse slope, s	ft/ft	0.001		0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177		0	
11. $T_t = L / (3600 \cdot V)$	hr	0.5938	+	0	= 0.5938

Channel flow

		N/A		N/A	
12. Cross sectional flow area, a	ft ²	0.01		0	
13. Wetted perimeter, Pw	ft	0.01		0	
14. Hydraulic radius, r = a/Pw	ft	1		0	
15. Channel slope, s	ft/ft	0.01		0	
16. Manning's roughness coeff., n		0.045		0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$	ft/s	3.31		0	
18. Flow length, L	ft	0		0	
19. $T_t = L / (3600 \cdot V)$	hr	0	+	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.8792

min 172.75

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

1. Surface description (table 3-1)	N/A	N/A	
2. Manning's roughness coeff., n (table 3-1)	0	0	
3. Flow length, L (total L =< 300 ft)	0.4	0	
4. Two-yr 24-hr rainfall, P2	300	0	
5. Land slope, s	5	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$	0.001	0	
	2.2854	0	= 2.2854

Shallow concentrated flow

7. Surface description (paved or unpaved)	N/A	N/A	
8. Flow length, L	unpaved	0	
9. Watercourse slope, s	650	0	
10. Average velocity, V (figure 3-1)	0.001	0	
11. $T_t = L/(3600 \cdot V)$	0.5102177	0	
	0.3539	0	= 0.3539

Channel flow

12. Cross sectional flow area, a	N/A	N/A	
13. Wetted perimeter, Pw	0.01	0	
14. Hydraulic radius, r = a/Pw	0.01	0	
15. Channel slope, s	1	0	
16. Manning's roughness coeff., n	0.01	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$	0.045	0	
18. Flow length, L	3.31	0	
19. $T_t = L/(3600 \cdot V)$	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 2.6393

min 158.4

NOTE: All figures and tables are referred to the ones in the TR-55 manual

APPENDIX D

STORMWATER CALCULATIONS EXISTING CONDITIONS

Existing Condition
2 Yr - 24 Hr

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.40)
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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSIII	SCSIII	SCSIII	SCSIII	SCSIII
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

BASIN NAME	A9-2+2A
NODE NAME	A9-2+2A

UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.

RAINFALL FILE	SCSI
RAIN AMOUNT (in)	5.00
STORM DURATION (hrs)	24.00

AREA (ac)	30.00
CURVE NUMBER	74.50
DCIA (%)	.00
TC (mins)	160.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	11.77	14.00	2.40	

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 1.000 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.000 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNT. 2YR 24 HR EXISTING CONDITIONS
 4-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000	.100
						2.000	5.000
						3.000	8.000
						4.000	13.000
						5.000	19.000
A9-2+2A	AREA	1.000	.000	.000	.000	1.000	.500
						3.000	2.000
						4.000	15.000
						5.000	25.000
E9-2	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E9-1	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E8	AREA	1.910	.000	.000	.000	1.910	.000
						3.000	.001
BNDRY	TIME	.600	.000	.000	.000	.600	.000
						.750	13.000
						.600	24.000
						.600	30.000

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNT. 2YR 24 HR EXISTING CONDITIONS
4-96

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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>>REACH NAME : DITCH
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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REACH SUMMARY
=====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	20.34	.22	16.97	.00	.00	16.79
A1	19.46	3.76	12.28	.00	16.79	16.08
A2	15.87	.54	15.33	.00	16.08	24.85
A3	13.49	.61	26.41	.00	24.85	47.78
A4	11.84	.90	19.17	.00	47.78	64.70
A5	9.75	1.13	28.52	.00	64.70	89.30
A6	8.89	1.28	29.45	.00	89.30	116.74
A7	8.04	4.40	18.12	.00	116.74	114.87
A8	7.03	6.49	25.28	.00	114.39	100.61
A9-1	4.34	25.56	9.25	.00	100.52	73.53
A9-2+2A	3.26	5.16	11.77	.00	73.49	72.81
E9-2	3.80	.50	.00	.00	73.53	73.49
E9-1	4.72	.38	.00	.00	100.61	100.52
E8	7.19	.47	.00	.00	114.87	114.39
BNDRY	.75	58.28	.00	.00	72.81	.00

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HUNT. 2YR 24 HR EXISTING CONDITIONS
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REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	15.25	16.08	A1	19.46	A2	15.82
REACH3	13.75	47.78	A3	13.49	A4	11.84
REACH5	13.75	89.30	A5	9.75	A6	8.87
REACH7P	14.25	114.87	A7	8.03	E8	6.85
REACH8P	15.25	100.61	A8	7.00	E9-1	4.45
REACH9	21.00	72.81	A9-2+2A	3.26	BNDRY	.64
REACH9-2	20.00	73.53	A9-1	4.34	E9-2	3.79
REACH0	13.25	16.79	A0	20.34	A1	18.23
REACH2	13.75	24.85	A2	15.87	A3	13.49
REACH4	13.75	64.70	A4	11.84	A5	9.75
REACH6	13.50	116.74	A6	8.76	A7	7.62
DITCH	14.25	114.39	E8	6.85	A8	6.52
DITCH9-1	15.25	100.52	E9-1	4.45	A9-1	3.45
REACH9-1	20.00	73.49	E9-2	3.79	A9-2+2A	3.23

Existing Condition
25 Yr - 24 Hr

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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BASIN NAME	A9-2+2A
NODE NAME	A9-2+2A

UNIT HYDROGRAPH	UH323
PEAKING FACTOR	323.

RAINFALL FILE	SCSI III
RAIN AMOUNT (in)	9.00
STORM DURATION (hrs)	24.00

AREA (ac)	30.00
CURVE NUMBER	74.50
DCIA (%)	.00
TC (mins)	160.00
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	29.60	14.00	5.89	

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 1.000 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.000 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000	.100
						2.000	5.000
						3.000	8.000
						4.000	13.000
						5.000	19.000
A9-2+2A	AREA	1.000	.000	.000	.000	1.000	.500
						3.000	2.000
						4.000	15.000
						5.000	25.000
E9-2	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E9-1	AREA	.600	.000	.000	.000	.600	.000
						2.000	.001
E8	AREA	1.910	.000	.000	.000	1.910	.000
						3.000	.001
BNDRY	TIME	.600	.000	.000	.000	.600	.000
						1.000	13.000
						.600	24.000
						.600	30.000

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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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>>REACH NAME : DITCH
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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NODAL MAXIMUM CONDITIONS REPORT

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	21.18	.31	37.74	.00	.00	37.51
A1	19.97	6.63	26.81	.00	37.51	44.98
A2	17.43	.87	34.89	.00	44.98	67.76
A3	16.73	10.32	60.97	.00	67.76	75.33
A4	13.47	1.30	44.60	.00	75.33	102.66
A5	12.89	1.72	66.28	.00	102.66	167.96
A6	10.38	1.65	70.62	.00	167.96	237.36
A7	9.36	15.38	43.90	.00	237.36	253.78
A8	9.27	46.20	61.65	.00	253.18	121.77
A9-1	5.64	46.53	22.02	.00	121.61	101.50
A9-2+2A	4.06	12.94	29.60	.00	101.49	99.56
E9-2	4.60	.60	.00	.00	101.50	101.49
E9-1	5.89	.48	.00	.00	121.77	121.61
E8	9.33	.64	.00	.00	253.78	253.18
BNDRY	1.00	81.56	.00	.00	99.56	.00

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HUNTINGTON 25 YR. 24 HR EXISTING CONDITIONS
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REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	14.50	44.98	A1	19.97	A2	17.43
REACH3	16.75	75.33	A3	16.66	A4	12.55
REACH5	13.25	167.96	A5	12.89	A6	10.36
REACH7P	13.75	253.78	A7	8.61	E8	8.22
REACH8P	17.50	121.77	A8	9.11	E9-1	5.38
REACH9	24.00	99.56	A9-2+2A	4.06	BNDRY	.60
REACH9-2	24.00	101.50	A9-1	5.64	E9-2	4.60
REACH0	13.25	37.51	A0	21.18	A1	19.68
REACH2	14.00	67.76	A2	17.41	A3	16.36
REACH4	13.50	102.66	A4	13.47	A5	12.89
REACH6	13.25	237.36	A6	10.36	A7	8.44
DITCH	13.75	253.18	E8	8.22	A8	7.44
DITCH9-1	17.50	121.61	E9-1	5.38	A9-1	4.81
REACH9-1	24.00	101.49	E9-2	4.60	A9-2+2A	4.06

APPENDIX E

STORMWATER CALCULATIONS PHASED CONDITIONS

WATER QUALITY

VOLUME OF WATER TO BE TREATED = 1" OF RUNOFF OVER
EXISTING ROADS.

$$\text{TOTAL ACRES} = 10.63$$

$$\frac{10.63 \text{ AC} \times 1 \text{ IN}}{12 \text{ IN/FT}} = 0.89 \text{ AC-FT}$$

$$\text{REQUIRED} = 0.89 \text{ AC-FT}$$

PROVIDED :

$$\frac{2.63 + 2.69}{2} = 2.65 \text{ AC}$$

$$(2.65 \text{ AC})(1.4 - 1) = 1.06 \text{ AC-FT}$$

$$1.06 \geq 0.89 \therefore \text{OK}$$

STAGE STORAGE

STAGE (FT)	AREA (FT ²)	AREA (AC)	VOLUME (AC-FT)
1	114,725.5	2.63	0
5	145,877.5	3.35	11.96

DETERMINE WEIR ELEVATION

NORMAL WATER LEVEL = 1.00 FT → STORAGE = 0 AC-FT

TOP OF BANK = 5 FT → STORAGE = 11.96

REQUIRED STORAGE = 0.89 AC-FT

$$\frac{5.00 \text{ FT} - 1.00 \text{ FT}}{11.96 \text{ AC-FT} - 0 \text{ AC-FT}} = 0.334$$

$$\frac{5.00 \text{ FT} - X}{11.96 - 0.89} = 0.334 \quad X = 1.3$$

ESTABLISH WEIR ELEVATION @ = 1.4 FT

STORAGE @ ELEVATION 1.4 FT = 1.06 AC-FT

DESIGN OUTFALL STRUCTURE

MAX ALLOWABLE DISCHARGE

* $\frac{1}{2}$ TREATMENT VOLUME WITHIN 48 HR

$$Q = \frac{(1.06 \text{ ac} \cdot \text{ft})(43,560 \text{ ft}^2/\text{ac})}{2 \times 48 \text{ hr} \times 3600 \text{ sec/hr}} = 0.134 \text{ cfs}$$

TRY 3" ORIFICE

$$Q = CA(2gh)^{1/2}$$

$$A = \pi r^2 (\pi)(0.125)^2 = 0.0491 \text{ ft}^2$$

$$H = \frac{.4 + .2}{2} = 0.3 \text{ ft}$$

$$h = H - \frac{d}{2} = (0.3) - \left(\frac{0.25}{2}\right) = 0.175 \text{ ft}$$

$$Q = (0.6)(0.0491) \left[2(32.2)(0.175) \right]^{1/2} = 0.099 \text{ cfs}$$

$$0.099 < 0.134 \quad \blacksquare \quad \text{OK}$$

REQUIRED PERMANENT POOL VOLUME

$$PPV = (RT)(FR)$$

R_T = RESIDENCE TIME

FR = FLOW RATE

* NORTH BREVARD COUNTY WET SEASON RAINFALL PERIOD: JUNE-OCTOBER

* NORTH BREVARD COUNTY WET SEASON RAINFALL AMOUNT 36"

$$FR = \frac{(DA)(C)(R)}{WS}$$

DA = DRAINAGE AREA TO POND

C = RUNOFF COEFFICIENT

R = RAINFALL DEPTH

WS = RAINFALL SEASON DAYS

$$FR = \frac{(406.34 \text{ ac})(0.15)(36 \text{ in})}{(153 \text{ days})(12 \text{ in/ft})} = 1.2 \frac{\text{ac} \cdot \text{ft}}{\text{day}}$$

$$PPV = (14 \text{ days}) \left(1.2 \frac{\text{ac} \cdot \text{ft}}{\text{day}} \right) = 16.73 \text{ ac} \cdot \text{ft}$$

PERMANENT POOL VOLUME AVAILABLE

$$\textcircled{C} \text{ EL. 1 FT} \rightarrow 2.63 \text{ ac}$$

$$\textcircled{C} \text{ EL 0 FT} \rightarrow 2.49 \text{ ac}$$

$$\textcircled{C} \text{ EL -7 FT} \rightarrow 1.91 \text{ ac}$$

4:1 SLOPE
2:1 SLOPE

$$V = \left(\frac{2.63 + 2.49}{2} \right) (1 - 0) + \left(\frac{2.49 + 1.91}{2} \right) [0 - (-7)] = 17.96 \text{ ac} \cdot \text{ft}$$

$$17.96 \geq 16.73 \therefore \text{OK}$$

Table 24-1. Runoff Coefficients (C) for a Design Storm Return Period of Ten Years or Less¹

Slope	Land Use	Sandy Soils		Clay Soils	
		Min.	Max.	Min.	Max.
Flat (0-2%)	Lawns	0.05	0.10	0.13	0.17
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.75	0.95	0.90	0.95
	Woodlands	0.10	0.15	0.15	0.20
	Pasture, grass, and farmland ³	0.15	0.20	0.20	0.25
	Residential				
	SFR: 1/2 acre lots and larger	0.30	0.35	0.35	0.45
	SFR: smaller lots and duplexes	0.35	0.45	0.40	0.50
	MFR: apartments, condominiums	0.45	0.60	0.50	0.70
	Commercial and Industrial	0.50	0.95	0.50	0.95
	Commercial and Industrial	0.50	0.95	0.50	0.95
Rolling (2-7%)	Lawns	0.10	0.15	0.18	0.22
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.80	0.95	0.90	0.95
	Woodlands	0.15	0.20	0.20	0.25
	Pasture, grass, and farmland ³	0.20	0.25	0.25	0.30
	Residential				
	SFR: 1/2 acre lots and larger	0.35	0.50	0.40	0.55
	SFR: smaller lots and duplexes	0.40	0.55	0.45	0.60
	MFR: apartments, condominiums	0.50	0.70	0.60	0.80
	Commercial and Industrial	0.50	0.95	0.60	0.95
	Commercial and Industrial	0.50	0.95	0.60	0.95
Steep (>7%)	Lawns	0.15	0.20	0.25	0.35
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.85	0.95	0.90	0.95
	Woodlands	0.20	0.25	0.25	0.30
	Pasture, grass, and farmland ³	0.25	0.35	0.30	0.40
	Residential				
	SFR: 1/2 acre lots and larger	0.40	0.55	0.50	0.65
	SFR: smaller lots and duplexes	0.45	0.60	0.55	0.70
	MFR: apartments, condominiums	0.60	0.75	0.65	0.85
	Commercial and Industrial	0.60	0.95	0.65	0.95
	Commercial and Industrial	0.60	0.95	0.65	0.95

Sources: Florida Department of Transportation, 1987; Wanielista, 1990

¹ For 25- to 100-yr recurrence intervals, multiply coefficient by 1.1 and 1.25, respectively, and the product cannot exceed 1.0.

² Coefficients assume good ground cover and conservation treatment.

³ Depends on depth and degree of permeability of underlying strata.

Note: SFR = Single Family Residential; MFR = Multi-Family Residential

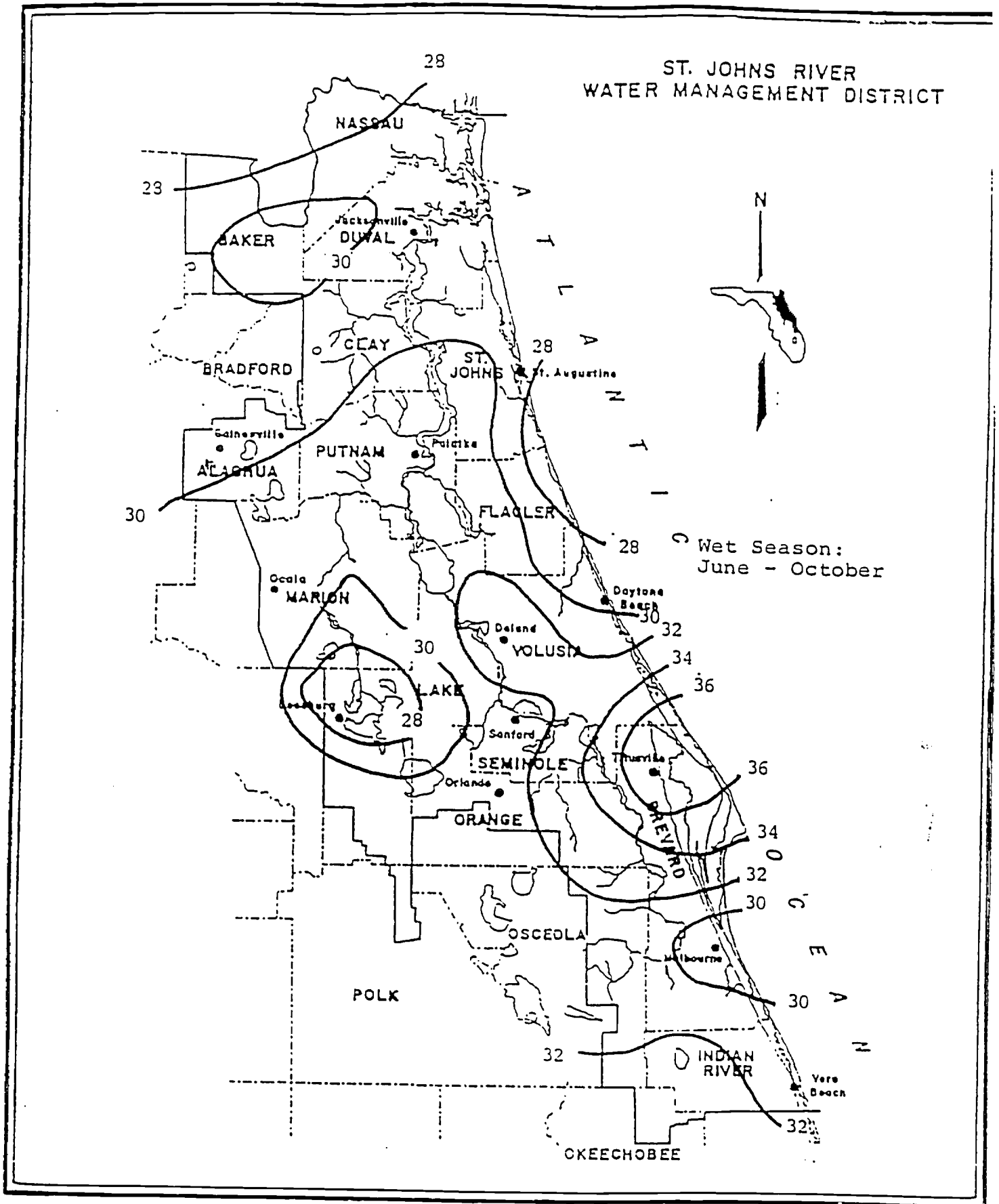


Figure 29-1 Wet Season Normal Rainfall, inches Source: Rao, et. al, 1990

Phased Condition
2 Yr - 24 Hr

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI11	SCSI11	SCSI11	SCSI11	SCSI11
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI11	SCSI11	SCSI11	SCSI11	SCSI11
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSIII	SCSIII
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	7.34 14.00	2.45
A9-2A	4.32 14.25	2.35

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.000 17.000 18.000	.001 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.000 12.500	.001 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.000 9.000	.001 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 7.000 8.000	.001 10.000 25.000
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 .750 .600 .600	.000 13.000 24.000 30.000

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTTE EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIR-2
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 3.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 1.100 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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AUGUST 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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AUGUST 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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AUGUST 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIR-2	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
 AUGUST 1996

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	20.39	.23	16.97	.00	.00	16.75
A1	19.57	1.69	12.28	.00	16.75	20.53
A2	16.11	.59	15.33	.00	20.53	31.18
A3	12.19	8.97	26.41	.00	31.18	35.18
A4	11.24	.75	19.17	.00	35.18	44.08
A5	7.95	.80	28.52	.00	44.08	59.16
A6	7.57	6.67	29.45	.00	59.16	77.67
A7	5.68	11.55	18.12	.00	77.67	69.66
A8	4.56	13.81	25.28	.00	69.51	63.94
A9-1	2.63	6.94	9.25	.00	63.90	57.93
A9-2	2.34	13.83	7.34	.00	57.93	46.08
A9-2A	2.31	4.02	4.32	.00	46.08	45.63
E9-1	3.54	.28	.00	.00	63.94	63.90
E8	5.03	.29	.00	.00	69.66	69.51
BNDRY	.75	30.99	.00	.00	45.63	.00

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HUNTINGTON BASIN PHASED CONDITION 2 YR 24 HR
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REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	.00	.00	A9-2	1.00	A9-2A	1.00
TOPINLET	.00	.00	A9-2	1.00	A9-2A	1.00
WEIR-2	24.00	2.85	A9-2	2.34	A9-2A	2.31
REACH1	14.50	20.53	A1	19.57	A2	16.08
REACH3	16.00	35.18	A3	12.19	A4	11.22
REACH5	14.75	59.16	A5	7.94	A6	7.55
REACH7P	16.75	69.66	A7	5.64	E8	4.91
REACH8P	19.25	63.94	A8	4.56	E9-1	3.53
REACH9	24.00	45.63	A9-2A	2.31	BNDRY	.60
REACH9-2	20.25	57.93	A9-1	2.49	A9-2	1.98
REACH9-1	23.25	4.24	A9-2	2.31	A9-2A	2.28
REACH0	13.25	16.75	A0	20.39	A1	19.43
REACH2	14.00	31.18	A2	16.11	A3	11.46
REACH4	15.50	44.08	A4	11.24	A5	7.92
REACH6	15.00	77.67	A6	7.57	A7	4.88
DITCH8	16.75	69.51	E8	4.91	A8	3.96
DITCH9-1	19.25	63.90	E9-1	3.53	A9-1	2.38
DITCH	23.75	39.01	A9-2	2.33	A9-2A	2.30

Phased Condition
25 Yr - 24 Hr

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSIII	SCSIII
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	18.38	13.75 5.95
A9-2A	11.05	14.00 5.80

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.000 17.000 18.000	.001 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.000 12.500	.001 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.000 9.000	.001 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 7.000 8.000	.001 10.000 25.000
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.680	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600	.000 13.000 24.000

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIR-2
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 3.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 1.100 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
5-96

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 60.000 RISE (in): 38.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
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REACH SUMMARY

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIR-2	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
A0	21.19	.31	37.74	.00	.00	37.59
A1	20.02	4.02	26.81	.00	37.59	48.56
A2	17.30	.84	34.89	.00	48.56	73.39
A3	16.16	20.54	60.97	.00	73.39	71.81
A4	12.76	1.13	44.60	.00	71.81	92.92
A5	11.81	1.52	66.28	.00	92.92	139.43
A6	9.78	10.55	70.62	.00	139.43	193.36
A7	8.35	21.87	43.90	.00	193.36	190.07
A8	8.15	46.74	61.65	.00	188.96	115.68
A9-1	4.46	27.50	22.02	.00	115.64	92.63
A9-2	3.66	27.24	18.38	.00	92.63	85.59
A9-2A	3.64	7.88	11.05	.00	85.59	84.95
E9-1	4.99	.41	.00	.00	115.68	115.64
E8	8.24	.55	.00	.00	190.07	188.96
BNDRY	1.00	55.45	.00	.00	84.95	.00

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HUNTINGTON BASIN PHASED CONDITION 25 YR 24 HR
 5-96

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME	FLOW	FR NODE	STAGE	TO NODE	STAGE
	(hrs)	(cfs)	NAME	(ft)	NAME	(ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	24.00	12.95	A9-2	3.66	A9-2A	3.64
TOPINLET	24.00	2.32	A9-2	3.66	A9-2A	3.64
WEIR-2	18.25	4.68	A9-2	2.79	A9-2A	2.76
REACH1	14.25	48.56	A1	20.02	A2	17.30
REACH3	17.00	71.81	A3	16.09	A4	12.35
REACH5	13.75	139.43	A5	11.73	A6	9.60
REACH7P	15.00	190.07	A7	8.32	E8	7.20
REACH8P	19.00	115.68	A8	8.13	E9-1	4.76
REACH9	24.00	84.95	A9-2A	3.64	BNDRY	.60
REACH9-2	18.25	92.63	A9-1	3.61	A9-2	2.79
REACH9-1	20.75	7.57	A9-2	3.33	A9-2A	3.31
REACH0	13.25	37.59	A0	21.19	A1	19.80
REACH2	13.75	73.39	A2	17.28	A3	14.28
REACH4	14.75	92.92	A4	12.75	A5	11.67
REACH6	13.75	193.36	A6	9.60	A7	6.85
DITCH8	15.00	188.96	E8	7.20	A8	6.32
DITCH9-1	19.00	115.64	E9-1	4.76	A9-1	3.79
DITCH	24.00	59.17	A9-2	3.66	A9-2A	3.64

APPENDIX F

STORMWATER CALCULATIONS

FULL CONDITIONS

Full Condition
2 Yr - 24 Hr

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	17.02	13.27	3.05
A1	12.31	13.39	3.17
A2	15.38	13.19	2.94
A3	26.77	13.18	2.86
A4	19.18	13.29	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	28.86	13.14	2.77
A6	29.45	13.25	2.68
A7	18.21	13.29	2.59
A8	25.28	13.75	2.59
A9-1	9.25	14.00	2.69

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSI	SCSI
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2	7.34	14.00	2.45	
A9-2A	4.32	14.25	2.35	

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 .750 .600 .600	.000 13.000 24.000 30.000

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIRLOW
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 CREST LN. (ft): 3.000 OPENING (ft): 1.100
WEIR COEF.: 3.000 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 36" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 54" RCP

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PROPOSED 54" PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
AUGUST, 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIRLOW	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

NODAL MAXIMUM CONDITIONS REPORT

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NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	19.54	.36	16.97	.00	.00	16.56
A1	19.31	.83	12.28	.00	16.56	27.29
A2	15.26	.93	15.33	.00	27.29	42.40
A3	14.40	1.64	26.41	.00	42.40	63.33
A4	10.56	1.26	19.17	.00	63.33	81.32
A5	9.05	2.05	28.52	.00	81.32	102.92
A6	8.00	1.92	29.45	.00	102.92	128.15
A7	7.73	4.12	18.12	.00	128.15	120.36
A8	6.29	2.88	25.28	.00	120.03	132.83
A9-1	3.72	17.43	9.25	.00	132.44	106.55
A9-2	3.03	20.86	7.34	.00	106.55	66.22
A9-2A	3.01	6.04	4.32	.00	66.22	65.34
E9-1	4.07	.65	.00	.00	132.83	132.44
E8	6.38	.84	.00	.00	120.36	120.03
BNDRY	.75	48.28	.00	.00	65.34	.00

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HUNTINGTON BASIN FUTURE CONDITION 2 YR 24 HR
 AUGUST, 1996

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	19.50	8.22	A9-2	3.03	A9-2A	3.01
TOPINLET	.00	.00	A9-2	1.00	A9-2A	1.00
WEIRLOW	17.00	3.41	A9-2	2.54	A9-2A	2.50
WEIR-2	17.75	4.63	A9-2	2.79	A9-2A	2.76
REACH1	13.75	27.29	A1	19.31	A2	15.26
REACH3	13.75	63.33	A3	14.40	A4	10.56
REACH5	13.75	102.92	A5	9.00	A6	7.84
REACH7P	14.50	120.36	A7	7.72	E8	6.32
REACH8P	15.25	132.83	A8	6.29	E9-1	3.88
REACH9	19.75	65.38	A9-2A	3.01	BNDRY	.66
REACH9-2	16.75	106.58	A9-1	3.68	A9-2	2.44
REACH9-1	17.00	5.87	A9-2	2.54	A9-2A	2.50
REACH0	13.25	16.56	A0	19.54	A1	19.30
REACH2	13.50	42.40	A2	15.26	A3	14.32
REACH4	13.75	81.32	A4	10.56	A5	9.00
REACH6	13.75	128.15	A6	7.84	A7	7.40
DITCH8	14.50	120.03	E8	6.32	A8	6.21
DITCH9-1	15.25	132.44	E9-1	3.88	A9-1	3.29
DITCH	17.25	50.66	A9-2	2.63	A9-2A	2.60

Full Condition
25 Yr - 24 Hr

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	37.81	13.27	6.77
A1	26.89	13.14	6.93
A2	34.92	12.98	6.62
A3	61.35	13.18	6.52
A4	45.01	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSI III	SCSI III	SCSI III	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	67.47	13.14	6.40
A6	70.62	13.25	6.27
A7	43.99	13.29	6.15
A8	61.65	13.75	6.14
A9-1	22.02	13.75	6.29

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSI III	SCSI III
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	18.38	13.75 5.95
A9-2A	11.05	14.00 5.80

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

CONTROL PARAMETERS
=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 10.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 15.000 16.000 17.000 18.000	.001 .010 5.000 13.000 21.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 11.000 12.000 12.500	.001 .010 3.000 17.000
A7	AREA	2.040	.000	.000	.000	2.040 7.000 8.000 9.000	.001 .010 6.000 10.000
A8	AREA	1.910	.000	.000	.000	1.910 6.000 7.000 8.000	.001 .010 10.000 25.000

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000 2.000 3.000 4.000 5.000	.100 5.000 8.000 13.000 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 5.000	4.000 16.000
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.500 5.000 9.000
E9-1	AREA	.600	.000	.000	.000	.600 2.000	.000 .001
E8	AREA	1.910	.000	.000	.000	1.910 3.000	.000 .001
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600	.000 13.000 24.000

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 2.500 BTM. WIDTH (ft): 30.000 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 3.500 CREST LN. (ft): 21.833 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : WEIRLOW
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 CREST LN. (ft): 3.000 OPENING (ft): 1.100
WEIR COEF.: 3.000 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 36" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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AUGUST 1996

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .012
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 54" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PROPOSED 54" PIPE

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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AUGUST 1996

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 68.000 RISE (in): 43.000 LENGTH (ft): 38.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE ELLIPTICAL

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AUGUST 1996

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 3.000 RISE (in): 3.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 8.917 OPENING (ft): 1.600
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
AUGUST 1996

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 15.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 20.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 400.000 U/S INVERT (ft): -.750 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: DITCH NEXT TO POND

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AUGUST 1996

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	WEIRLOW	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
4	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
5	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
6	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
8	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-2	A9-1	A9-2	CULVERT, ELLIPTICAL w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
18	DITCH	A9-2	A9-2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

NODAL MAXIMUM CONDITIONS REPORT

=====

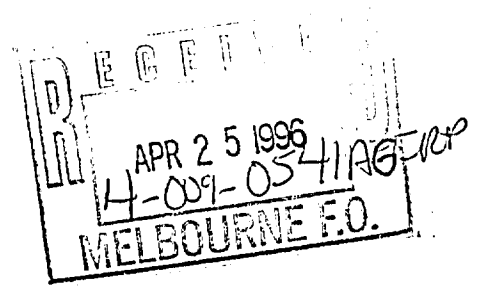
NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	19.99	.46	37.74	.00	.00	37.22
A1	19.73	3.03	26.81	.00	37.22	50.19
A2	16.67	1.55	34.89	.00	50.19	74.87
A3	16.55	10.10	60.97	.00	74.87	82.53
A4	12.39	2.14	44.60	.00	82.53	112.14
A5	12.21	3.25	66.28	.00	112.14	168.91
A6	9.08	2.39	70.62	.00	168.91	236.38
A7	8.50	9.32	43.90	.00	236.38	255.24
A8	8.38	31.24	61.65	.00	254.03	175.35
A9-1	5.73	48.59	22.02	.00	174.86	122.64
A9-2	4.44	35.17	18.38	.00	122.64	113.71
A9-2A	4.42	11.98	11.05	.00	113.71	112.11
E9-1	5.81	.94	.00	.00	175.35	174.86
E8	8.42	1.17	.00	.00	255.24	254.03
BNDRY	1.00	79.35	.00	.00	112.11	.00

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HUNTINGTON BASIN FUTURE CONDITION 25 YR 24 HR
 AUGUST 1996

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME	FLOW	FR NODE	STAGE	TO NODE	STAGE
	(hrs)	(cfs)	NAME	(ft)	NAME	(ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	20.50	16.98	A9-2	4.16	A9-2A	4.14
TOPINLET	24.00	15.79	A9-2	4.44	A9-2A	4.42
WEIRLOW	15.25	3.54	A9-2	2.54	A9-2A	2.49
REACH1	14.25	50.19	A1	19.73	A2	16.58
REACH3	15.50	82.53	A3	16.55	A4	11.42
REACH5	13.75	168.91	A5	12.21	A6	9.08
REACH7P	14.00	255.24	A7	8.49	E8	7.59
REACH8P	16.00	175.35	A8	8.24	E9-1	4.77
REACH9	24.00	112.11	A9-2A	4.42	BNDRY	.60
REACH9-2	15.50	122.64	A9-1	4.16	A9-2	2.68
REACH9-1	17.00	8.10	A9-2	3.36	A9-2A	3.34
REACH0	13.25	37.22	A0	19.98	A1	19.57
REACH2	13.75	74.87	A2	16.45	A3	16.18
REACH4	14.00	112.14	A4	12.29	A5	12.10
REACH6	13.50	236.38	A6	9.04	A7	8.37
DITCH8	14.00	254.03	E8	7.59	A8	7.35
DITCH9-1	16.00	174.86	E9-1	4.77	A9-1	4.33
DITCH	22.00	73.21	A9-2	4.32	A9-2A	4.30



GENERAL PERMIT APPLICATION

FOR

**MANAGEMENT AND STORAGE
OF SURFACE WATERS**

HUNTINGTON BASIN

SUBMITTED TO:

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

MARCH, 1996

BY:



**STOTTLER STARMER & ASSOCIATES
ARCHITECTS, ENGINEERS, PLANNERS, INC.**

*del
4-9-96*

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**PERMIT APPLICATION
FOR
MANAGEMENT & STORAGE OF SURFACE WATERS
HUNTINGTON BASIN**

INTRODUCTION

Huntington basin consists of 425± acres, which is bounded on the west by US Highway 1 and on the east by the Indian River Lagoon. Huntington Avenue is centered within the basin and "connects" US Highway 1 to the Indian River Lagoon. The primary conveyance within the basin is a ditch along the north side of Huntington Avenue.

SSA was contracted to provide construction drawings for drainage improvements to Huntington Basin. The primary objectives were to reduce the historic flooding problems within the Basin and improve water quality. The primary problems within Huntington Basin are:

- Localized flooding.
- Lack of maintenance of the ditch systems.
- Lack of stormwater treatment facilities.

The Huntington Basin improvements consist of regrading and widening the existing ditch, upgrading neighborhood culverts and construct a detention pond .

STORMWATER MANAGEMENT

Currently there are no water treatment facilities within the basin. The existing stormwater runoff from Huntington Basin enters the ditch via sheet flow and/or shallow concentrated flow, from there it outfalls directly into the Indian River Lagoon. There are numerous driveway culverts along the route. Many of these culverts are undersized and will be upgraded as part of the proposed improvements.

The calculations are divided into 3 conditions:

- Existing Condition, which is the current situation in the basin.

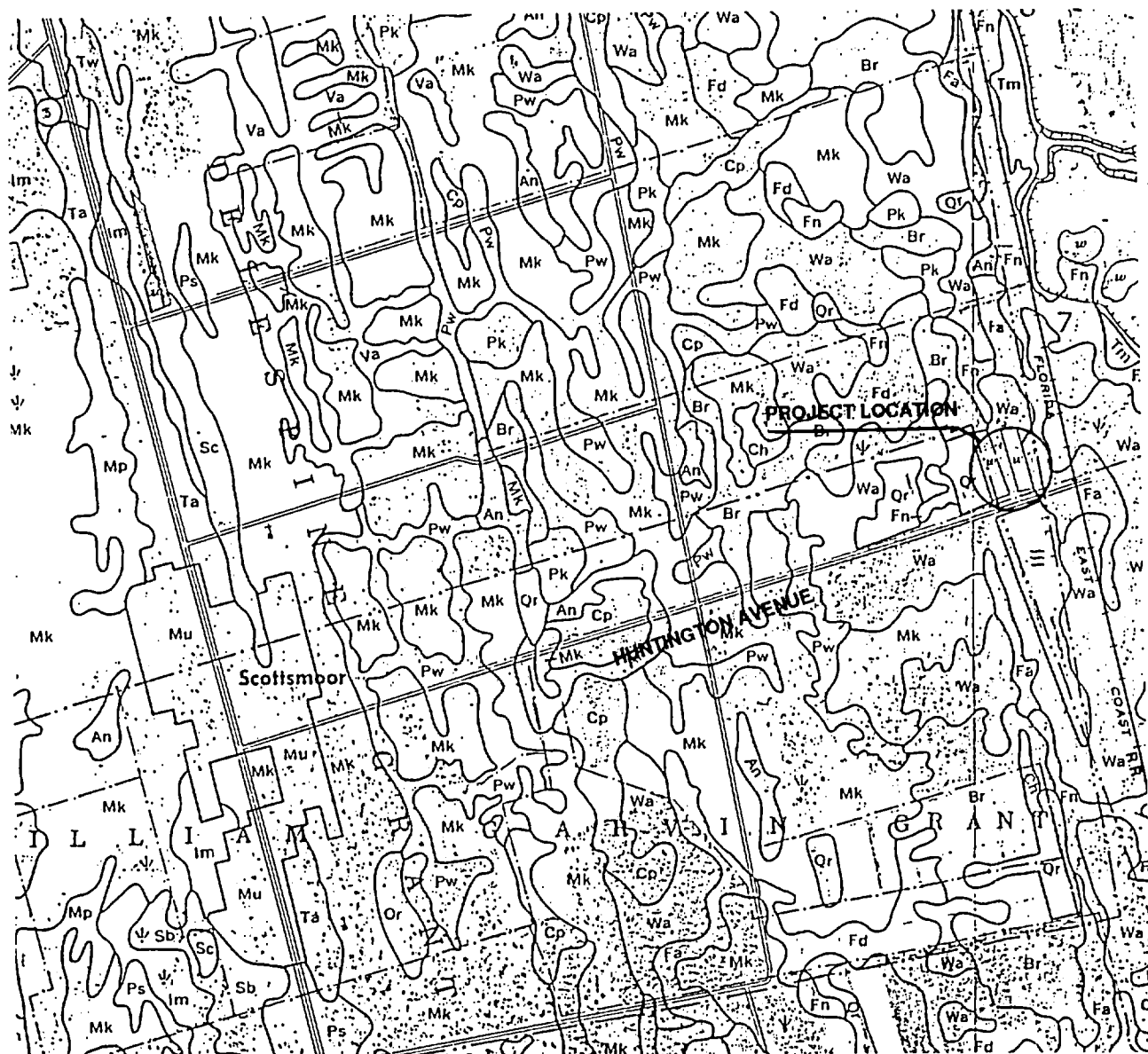
- ▶ Phased Condition, which is the condition achieved by adding a pond to the basin without making any other improvements to the drainage system.
- ▶ Full Condition, is the condition at which the basin would be, assuming all the improvements are already in place. These proposed improvements are: construction of a detention pond, upgrade culverts, and widen the ditch.

In order to reduce area flooding and improve water quality within Huntington Basin, construction of a wet detention pond with a maintenance access road is proposed. The pond location is on the north side of Huntington Avenue approximately 750' west of the Florida East Coast Railroad. The proposed improvements include upgrading culverts and improving the main ditch.

Since the Huntington basin project is a retrofit of an existing system, no additional water quality improvements would be necessary. However, a great amount of water quality treatment will be provided by constructing the wet detention pond.

To protect water quality during construction, provisions will be made as required to prevent potentially turbid runoff from leaving the site. This includes the use of a siltation fence and hay bales as noted on the plans.

FIGURES



SOURCE: USDA - SOIL CONSERVATION SERVICE "Soil Survey of Brevard County, Florida"

FIGURE 2

Title		SCS SOILS MAP	
Proj. HUNTINGTON AVENUE BASIN			
No.	95115	Scale	NTS
By	MB	Date	2/29/96

Stottler Stagg & Associates
 Architects Engineers Planners Inc
 8680 n. atlantic ave.
 cape canaveral, fla. 32920
 (407) 783-1320



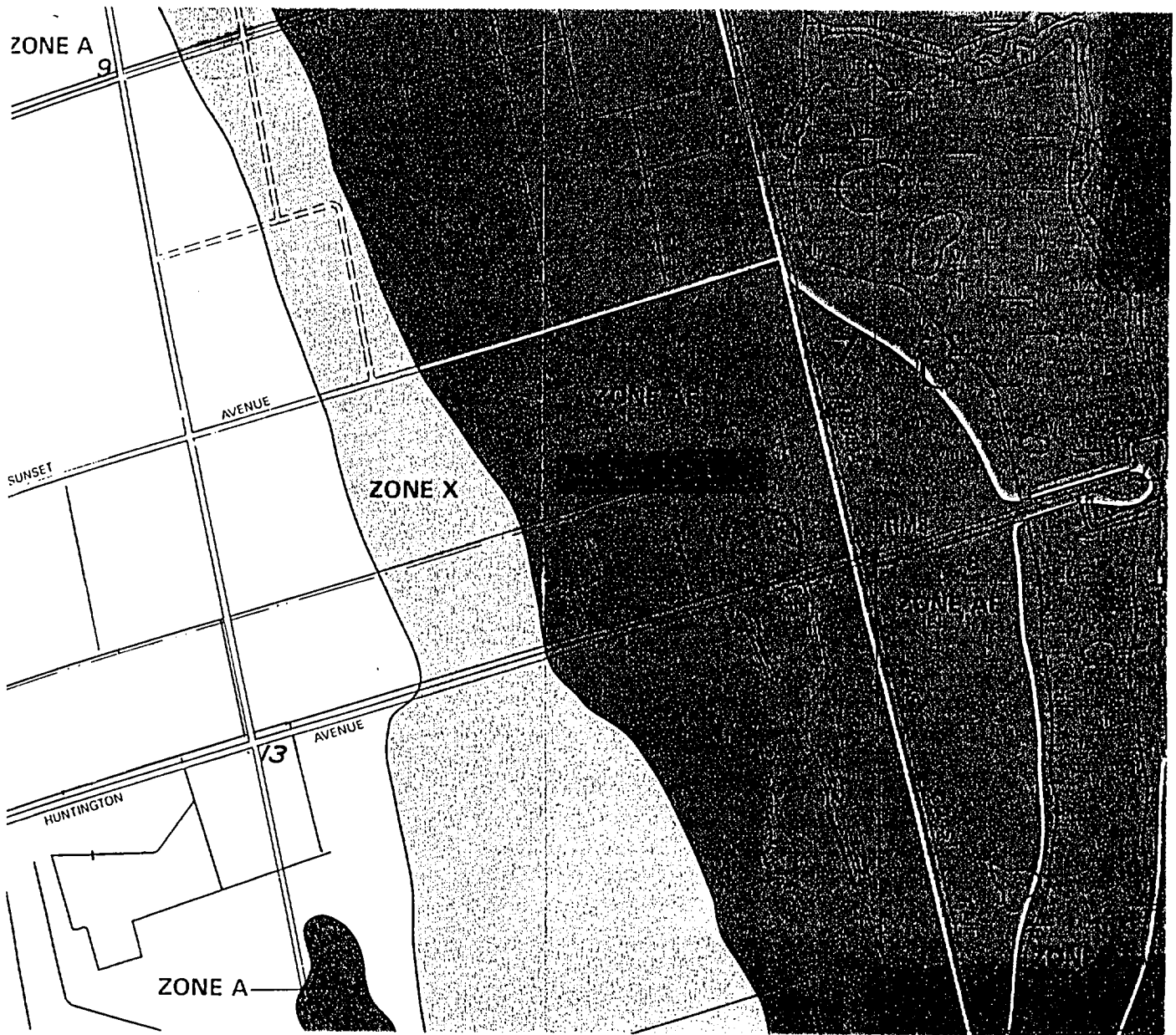
HUNTINGTON AVENUE BASIN SOIL TYPE		
Symbol	Soil Name	Type
Mk	Myakka sand	B/D
Mu	Myakka - Urban Land Complex	B/D
Pw	Pompano sand	B/D
An	Andote sand	B/D
Qr	Quartzipemments, smoothed	-
Cp	Copeland complex	B/D
Br	Brandenton fine sand, shallow varient	B/D
Fn	Floridana sand	B/D
Wa	Wabasso sand	B/D
Fa	Felda sand	B/D
Ch	Chobee sandy loam	B/D
Fd	Felda sand, bedded	B/D

FIGURE 3

Title	SCS SOILS LEGEND		
Proj.	HUNTINGTON AVENUE BASIN		
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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cape canoveral,fla. 32920
(407) 783-1320





FLOOD ZONE RATING LEGEND:

ZONE AE BASE FLOOD ELEVATIONS DETERMINED

N

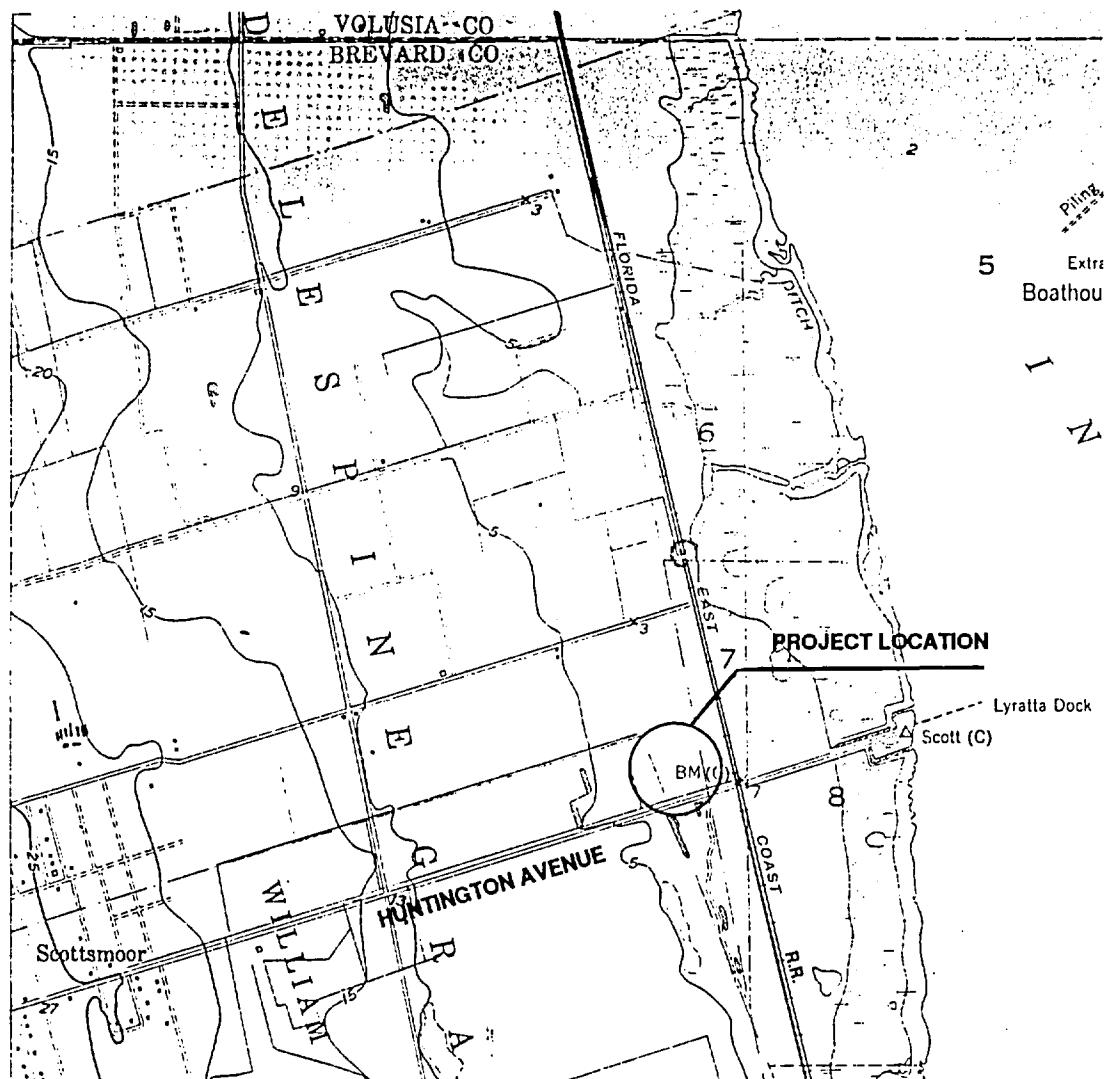
SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) "FLOOD INSURANCE RATE MAP (FIRM)"
Brevard County, Florida and Incorporated Area Map Number 12009C0040 4/3/89

FIGURE 4

Title	FEMA FLOOD MAP		
Proj.	HUNTINGTON AVENUE BASIN		
No.	95115	Scale	NTS
By	MB	Date	2/29/96

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QUADRANGLE LOCATION



Mapped by the U. S. Coast & Geodetic Survey
 Edited and published by the Geological Survey

Control by USC&GS (C) and USCE (E)

Culture and drainage compiled from
 aerial photographs taken 1948

Topography by plane-table methods 1949. Field check 1949
 Hydrography from surveys dated 1948

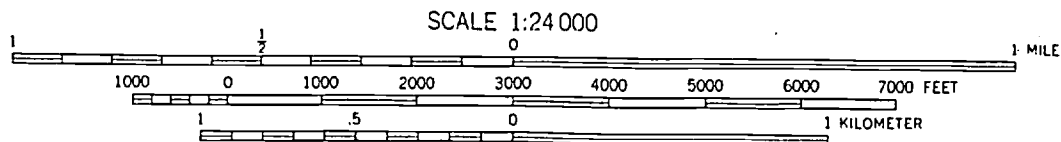


FIGURE 5

Title USGS QUADRANGLE MAP			
Proj. HUNTINGTON AVENUE BASIN			
No. 95115	Scale	NTS	
By MB	Date	2/29/96	

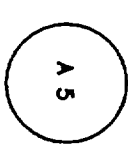
Stottler Stagg & Associates

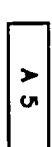
Architects Engineers Planners Inc

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 cape canoveral, fl. 32920
 (407) 783-1320



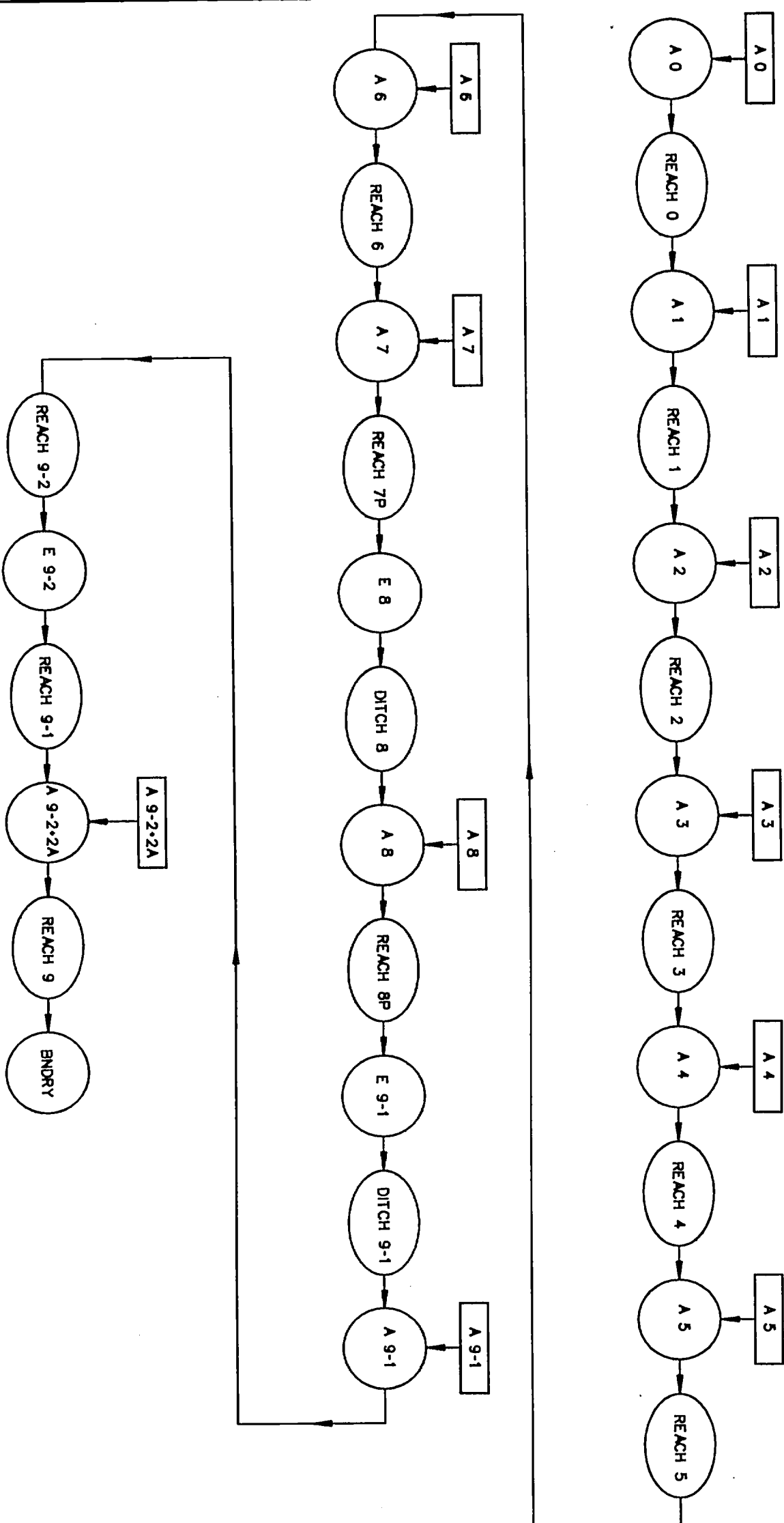
LEGEND:

 NODES

 BASINS

 REACHES

 FLOW DIRECTION



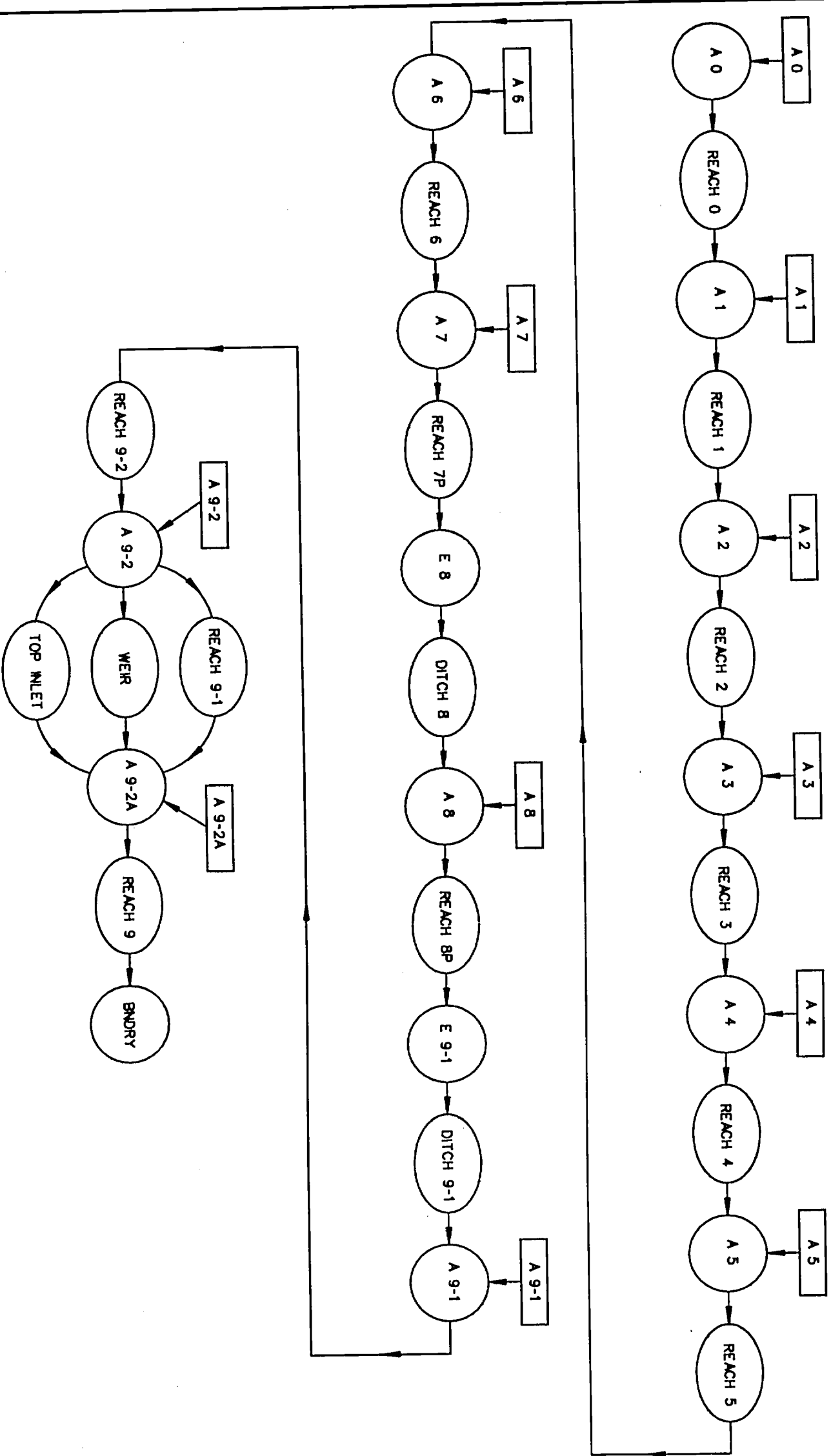
BREVARD COUNTY

HUNTINGTON BASIN
MASTER DRAINAGE PLAN

 **Stottler Starmer & Associates**
Architects Engineers Planners, Inc.
8680 N. Atlantic Ave., Cape Canaveral, FL 32920
PHONE: (407) 763-1320 FAX: (407) 763-7065

DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 95115
EXISTING NODAL DIAGRAM		FIGURE 7	

LEGEND:



BREVARD COUNTY
HUNTINGTON BASIN
MASTER DRAINAGE PLAN

Stottler Starmer & Associates
Architects Engineers Planners, Inc.
8680 N. Atlantic Ave., Cape Canaveral, FL 32920
PHONE: (407) 783-1320 FAX: (407) 783-7065

DRAWN DC	CHECKED JAP	DATE 2-26-96	JOB NO. 95115
PROPOSED NODAL DIAGRAM		FIGURE 8	

APPENDIX

APPENDIX A

SOILS INFORMATION



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 13, 1995

File No. 95-5366

Page 1 of 3

Stottler Stagg & Associates
8680 N. Atlantic Avenue
Cape Canaveral, Florida 32920-1630

ATTENTION: Mr. John Pekar

SUBJECT: Geotechnical Services
Huntington Avenue Detention Pond
Scottsmoor, Florida

Gentlemen:

As you requested, we have completed a preliminary subsurface soil exploration consisting of eight auger borings within the proposed Huntington Avenue Detention Pond. This data report summarizes the testing procedures and presents their results.

FIELD EXPLORATION

The field exploration program consisted of performing 8 auger borings. The locations of the auger borings are schematically illustrated on a site plan shown on Figure 1. These locations were determined in the field by the client and our personnel where access was available. The locations shown on Figure 1 were based by visual points of reference and should be considered accurate only to the degree implied by the method of measurement used.

The auger borings were drilled using a truck mounted, 4-inch diameter, continuous flight auger to depths of 8 and 15 feet. A summary of this field procedure is included in the Appendix. Representative soil samples were also recovered from the auger borings and returned to our laboratory for further visual classification. The groundwater level at each of the boring locations was measured upon completion of drilling.

LABORATORY VISUAL CLASSIFICATION

The samples were reviewed in our laboratory and visually classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions (based on local practices) are shown in Figures 1A through 8A attached in the Appendix.

SUBSURFACE CONDITIONS

The results of the field exploration and laboratory visual classification programs are graphically summarized on the soil boring profiles attached in the Appendix. The stratification of the soil boring profiles represents our interpretation of the field boring logs and the results of visual classification of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

Soils encountered in the auger borings consisted primarily of sands with varying percentages of silt and clay. A plastic clay layer was also encountered (refer to AB-6). Of particular note are the "muck" soils encountered at the ground surface in auger borings AB-2 and AB-7 to depths of 1.5 and 2.5 feet respectively. Shell fragments were encountered as noted in many of the soil descriptions. Due to the variability of soils encountered at this site, a generalized soil profile is not applicable. We suggest referring to the individual soil profiles in the Appendix for soil profile details.

We understand that one of the purposes of this preliminary exploration was to determine the presence of coquina rock. Our auger borings did not encounter coquina rock or other rock-type layers. The only layer containing cemented sand particles was encountered in auger boring AB-7 between depths of 2.5 and 5.0 feet. It was not difficult for the auger drilling equipment to penetrate this layer. If deemed necessary, the excavability of this layer can be better evaluated by test pits excavated by a backhoe.

MEASURED GROUNDWATER LEVEL

The groundwater level was measured in the boreholes on the day drilled after stabilization of the downhole water level. As shown on Figures 1A through 8A in the Appendix, the measured groundwater level was encountered at depths between 0.7 feet to 1.0 feet below the existing ground surface on the dates drilled. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

September 13, 1995
File No. 95-5366
Page 3 of 3

CLOSURE

This report does not include interpretation of the data included nor reflect any variations which may occur adjacent to or between the soil borings. The nature and extent of the variations between the soil borings may not become evident until during additional exploration, test pits or detention pond excavation. If variations then appear evident, it may be necessary to perform additional studies.

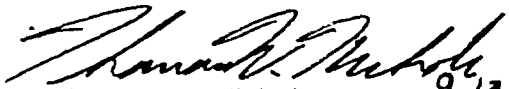
This report has been prepared for the exclusive use of Stottler Stagg & Associates in accordance with generally accepted soil drilling practices.

It is noted that this report does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

We are pleased to be of assistance to you on this phase of your project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.


Thomas W. Nichols, P.E. 9-13-95
Manager
Florida Registration No. 38764

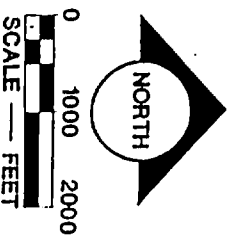
TWN/plm



SITE LOCATION MAP

SECTION 7
TOWNSHIP 20 SOUTH
RANGE 35 EAST

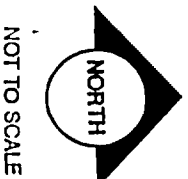
OBTAINED FROM U.S.G.S. QUAD MAP: OAK HILL, FLORIDA 1949
PHOTO REVISED 1970



N24568



AUGER BORING LOCATION PLAN



LEGEND

- APPROXIMATE AUGER BORING TEST LOCATION

FIGURE 1

Ardaman & Associates, Inc.
Consulting Engineers in Soil Mechanics,
Foundations, and Materials Testing

GEOTECHNICAL SERVICES
HUNTINGTON AVENUE DETENTION POND
SCOTTSMOORE, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 9-12-95
FILE NO: 95-5366	APPROVED BY:	

APPENDIX 1

Soil Test Boring Symbolic Logs

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-1

BORING: AB-1

DATE: AUGUST 31, 1995

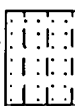
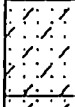
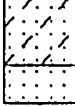
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SP- SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
-5		SP- SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH TRACE OF SHELL FRAGMENTS, CALCAREOUS.		
		SP	GRAY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 1A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-2

BORING: AB-2

DATE: AUGUST 31, 1995

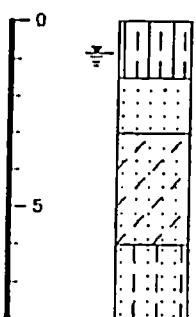
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.83'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SM-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND ROOTS, "MUCK".		
		SP	LIGHT BROWN FINE SAND.		
		SP-SC	LIGHT GRAY SLIGHTLY CLAYEY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		
		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 2A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-3

BORING: AB-3

DATE: AUGUST 31, 1995

FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
5		SM	GRAY SILTY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15					



symbol shows the depth of water at completion

Figure Number 3A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-4

BORING: AB-4

DATE: AUGUST 31, 1995

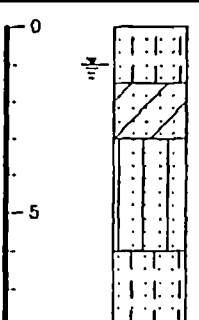
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP-SM	DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
		SM	YELLOW & GRAY SILTY FINE SAND.		
		SP-SM	GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		



symbol shows the depth of water at completion

Figure Number 4A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-5

BORING: AB-5

DATE: AUGUST 31, 1995

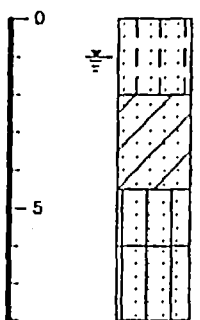
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.0'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND.		
		SC	BROWN CLAYEY FINE SAND.		
5		SM	YELLOW & GRAY SILTY FINE SAND, CALCAREOUS.		
		SP- SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND, CALCAREOUS.		



symbol shows the depth of water at completion

Figure Number 5A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-6

BORING: AB-6

DATE: AUGUST 31, 1995

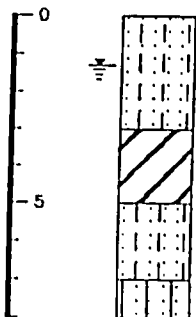
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 1.3'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SP- SM	VERY DARK BROWN SLIGHTLY SILTY FINE SAND WITH TRACE OF ROOTS.		
		CH	YELLOW AND GRAY SANDY CLAY. CALCAREOUS.		
-5		SP- SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND WITH TRACE OF SHELL FRAGMENTS. CALCAREOUS.		
		SM	GRAY SILTY FINE SAND WITH SHELL FRAGMENTS, CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 6A

Ardaman & Associates, Inc.

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-7

BORING: AB-7

DATE: AUGUST 31, 1995

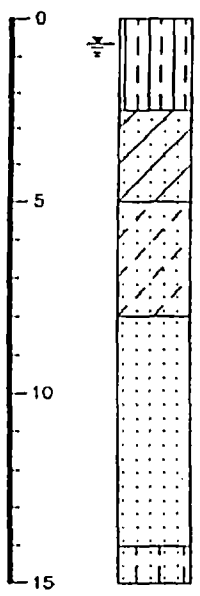
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.66'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SH-OL	VERY DARK BROWN SILTY FINE SAND WITH ORGANIC SILT AND TRACE OF ROOTS, "MUCK".		
		SC	BROWN CLAYEY FINE SAND WITH TRACE OF CEMENTED SAND, CALCAREOUS.		
5		SPL-SC	GRAY SLIGHTLY CLAYEY FINE SAND.		
		SP	GRAY FINE SAND.		
10					
15		SP-SM	GRAY SLIGHTLY SILTY FINE SAND.		



symbol shows the depth of water at completion

Figure Number 7A

SOIL TEST BORING SYMBOLIC LOGS

BORING AB-8

BORING: AB-8

DATE: AUGUST 31, 1995

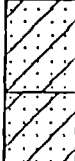
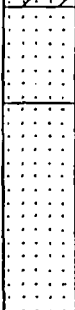
FILE NO. 95-5366

DEPTH OF WATER ON DATE DRILLED: 0.75'

DRILLER: R. PRATHER

TYPE OF BORING: AUGER BORING

SUBJECT: HUNTINGTON AVENUE DETENTION POND

DEPTH FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	SOIL DESCRIPTION	REMARKS	BLOW COUNT
0		SC	DARK BROWN CLAYEY FINE SAND.		
		SC	LIGHT GRAY CLAYEY FINE SAND AND SHELL. CALCAREOUS.		
5		SP	LIGHT GRAY FINE SAND WITH TRACE OF SHELL FRAGMENTS.		
		SP	LIGHT GRAY FINE SAND.		
10					
15		SP-SM	LIGHT GRAY SLIGHTLY SILTY FINE SAND, CALCAREOUS.		

 symbol shows the depth of water at completion

Figure Number 8A

Ardaman & Associates, Inc.

APPENDIX B

CURVE NUMBERS

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A0

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi ² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			22.75	0 1820 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.39	0 234.22 0
Totals =					25.14	2054.22

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2054}{25.14} = 81.71$$

Use CN = **81.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area X acres mi^2 %	Product of CN x area
		T a b.	F i g.	F i g.		
		2.2	2.3	2.4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			14.99	0 1199.2 0
	Wooded					0 0 0
	Impervious Area Wetland	98			2.95	0 289.1 0
Totals =					17.94	1488.3

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1488}{17.94} = 82.96$$

Use CN = **83**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connecte Impervious area ratio)	CN			Area ☒ acres ☐ mi^2 ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
	Agricultural					0 0 0
	Pasture					0 0 0
c	Residential	80			20.85	0 1668 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.64	0 62.72 0
Totals =					21.49	1730.72

$$\text{CN (weighted)} = \text{total product/total area} = \frac{1731}{21.49} = 80.54$$

Use CN = **80.5**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A3

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected; impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			5.14	0 390.64 0
c	Pasture fair condition	79			11.94	0 943.26 0
c	Residential	80			21.2	0 1696 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.98	0 96.04 0
Totals =					39.26	3125.94

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{3126}{39.26} = 79.62$$

Use CN = **79.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A4

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected; impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T	F	F		
		a	i	i		
		b.	g.	g.		
		2.2	2.3	2.4		
	Commercial					0 0 0
c	Agricultural	76			5.51	0 418.76 0
c	Pasture fair condition	79			24.18	0 1910.22 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.44	0 43.12 0
Totals =					30.13	2372.1

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2372}{30.13} = 78.73$$

Use CN = **78.7**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A5

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			10.56	0 802.56 0
c	Pasture fair condition	79			33	0 2607 0
	Residential					0 0 0
	Wooded					0 0 0
	Impervious Area Wetland	98			0.99	0 97.02 0
Totals =					44.55	3506.58

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{3507}{44.55} = 78.71$$

Use CN = 78.7

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A6

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected; impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
C	Agricultural	76			18.1	0 1375.6 0
C	Pasture fair condition	79			27.2	0 2148.8 0
	Residential					0 0 0
C	Wooded fair condition	73			6.75	0 492.75 0
	Impervious Area Wetland	98			1.02	0 99.96 0
Totals =					53.07	4117.11

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4117}{53.07} = 77.58$$

Use CN = **77.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A7

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2.2	F i g. 2.3	F i g. 2.4		
	Commercial					0 0 0
c	Agricultural	76			18.18	0 1381.68 0
c	Pasture fair condition	79			9.13	0 721.27 0
	Residential					0 0 0
c	Wooded fair condition	73			3.75	0 273.75 0
	Impervious Area Wetland	98			0.05	0 4.9 0
Totals =					31.11	2381.6

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{2382}{31.11} = 76.55$$

Use CN = **76.6**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A8

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			22.31	0 1695.56 0
c	Pasture fair condition	79			20.66	0 1632.14 0
	Residential					0 0 0
c	Wooded fair condition	73			14.1	0 1029.3 0
	Impervious Area Wetland	98			0.56	0 54.88 0
Totals =					57.63	4411.88

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{4412}{57.63} = 76.56$$

Use CN = 76.6

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A9-1

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent Impervious; unconnected/connected; Impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T	F	F		
		a	i	i		
		b.	g.	g.		
		2,2	2,3	2,4		
	Commercial					0 0 0
c	Agricultural	76			3.8	0 288.8 0
c	Pasture fair condition	79			12.2	0 963.8 0
	Residential					0 0 0
c	Wooded fair condition	73			4	0 292 0
	Impervious Area Wetland	98			0.61	0 59.78 0
Totals =					20.61	1604.38

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1604}{20.61} = 77.84$$

Use CN = **77.8**

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area:A9-2

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, condition; hydrologic condition; percent impervious; unconnected/connected; impervious area ratio)	CN			Area ☐ acres ☐ mi² ☐ %	Product of CN x area
		T a b. 2,2	F i g. 2,3	F i g. 2,4		
	Commercial					0 0 0
c	Agricultural	76			9	0 684 0
	Pasture fair condition					0 0 0
	Residential					0 0 0
c	Wooded fair condition	73			9	0 657 0
	Impervious Area Wetland					0 0 0
Totals =					18	1341

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{1341}{18} = 74.50$$

Use CN = 75

RUNOFF CURVE NUMBER

Project : Huntington Basin
 Location: Brevard County
 Land Use: Existing-Future
 From: TR-55

By: M. B.
 Checked:

Date: 12-13-95
 Date:

Area: A9-2A

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (cover type, treatment, hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN			Area ☒ acres ☐ mi² ☐ %	Product of CN x area
		T a b.	F i g.	F i g.		
	Commercial	2,2	2,3	2,4		0 0 0
c	Agricultural	76			1	0 76 0
c	Pasture fair condition	79			1	0 79 0
	Residential					0 0 0
c	Wooded fair condition	73			10	0 730 0
	Impervious Area Wetland					0 0 0
Totals =					12	885

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{885}{12} = 73.75$$

Use CN = **73.8**

APPENDIX C

TIMES OF CONCENTRATION

Sheet flow

Sheet flow is flow over plane surfaces. It usually occurs in the headwater of streams. With sheet flow, the friction value (Manning's n) is an effective roughness coefficient that includes the effect of raindrop impact; drag over the plane surface; obstacles such as litter, crop ridges, and rocks; and erosion and transportation of sediment. These n values are for very shallow flow depths of about 0.1 foot or so. Table 3-1 gives Manning's n values for sheet flow for various surface conditions.

For sheet flow of less than 300 feet, use Manning's kinematic solution (Overton and Meadows 1976) to compute T_t :

$$T_t = \frac{0.007 (nL)^{0.8}}{(P_2)^{0.5} s^{0.4}} \quad [\text{Eq. 3-3}]$$

Table 3-1.—Roughness coefficients (Manning's n) for sheet flow

Surface description	n^1
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover $\leq 20\%$	0.06
Residue cover $> 20\%$	0.17
Grass:	
Short grass prairie	0.15
Dense grasses ²	0.24
Bermudagrass	0.41
Range (natural)	0.13
Woods: ³	
Light underbrush	0.40
Dense underbrush	0.80

¹The n values are a composite of information compiled by Engman (1986).

²Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.

³When selecting n , consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

where

T_t = travel time (hr),

n = Manning's roughness coefficient (table 3-1),

L = flow length (ft),

P_2 = 2-year, 24-hour rainfall (in), and

s = slope of hydraulic grade line (land slope, ft/ft).

This simplified form of the Manning's kinematic solution is based on the following: (1) shallow steady uniform flow, (2) constant intensity of rainfall excess (that part of a rain available for runoff), (3) rainfall duration of 24 hours, and (4) minor effect of infiltration on travel time. Rainfall depth can be obtained from appendix B.

Shallow concentrated flow

After a maximum of 300 feet, sheet flow usually becomes shallow concentrated flow. The average velocity for this flow can be determined from figure 3-1, in which average velocity is a function of watercourse slope and type of channel. For slopes less than 0.005 ft/ft, use equations given in appendix F for figure 3-1. Tillage can affect the direction of shallow concentrated flow. Flow may not always be directly down the watershed slope if tillage runs across the slope.

After determining average velocity in figure 3-1, use equation 3-1 to estimate travel time for the shallow concentrated flow segment.

Open channels

Open channels are assumed to begin where surveyed cross section information has been obtained, where channels are visible on aerial photographs, or where blue lines (indicating streams) appear on United States Geological Survey (USGS) quadrangle sheets. Manning's equation or water surface profile information can be used to estimate average flow velocity. Average flow velocity is usually determined for bank-full elevation.

TIME OF CONCENTRATION

SUBAREA A0

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5} s^{0.4})$ hr	1.0428	0	= 1.04

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1300	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.7078	0	= 0.71

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	1.50	0	
18. Flow length, L ft	300	0	
19. $T_t = L / (3600 \cdot V)$ hr	0.0555556	0	= 0.06

20. Watershed or subarea Tc or Tt hr **1.81**

min **108.6**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L ≤ 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5} s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1305	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.7105	0	= 0.7105

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, $r = a/Pw$ ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	1.50	0	
18. Flow length, L ft	580	0	
19. $T_t = L / (3600 \cdot V)$ hr	0.1074074	0	= 0.1074

20. Watershed or subarea T_c or T_t hr 1.8606

min 111.6

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	967	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.5265	0	= 0.5265

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.5692

min 94.2

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A3

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5} s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	940	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.5118	0	= 0.5118

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0	0	
13. Wetted perimeter, Pw ft	0	0	
14. Hydraulic radius, r = a/Pw ft	0	0	
15. Channel slope, s ft/ft	0	0	
16. Manning's roughness coeff., n	0	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	1.50	0	
18. Flow length, L ft	350	0	
19. $T_t = L / (3600 \cdot V)$ hr	0.0648148	0	= 0.0648

20. Watershed or subarea Tc or Tt hr **1.6193**

min **97.2**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A4

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A		N/A	
1. Surface description (table 3-1)		0		0	
2. Manning's roughness coeff., n (table 3-1)		0.15		0	
3. Flow length, L (total L =< 300 ft)	ft	300		0	
4. Two-yr 24-hr rainfall, P2	in	5		0	
5. Land slope, s	ft/ft	0.001		0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$	hr	1.0428	+	0	= 1.0428

Shallow concentrated flow

		N/A		N/A	
7. Surface description (paved or unpaved)		unpaved		0	
8. Flow length, L	ft	1190		0	
9. Watercourse slope, s	ft/ft	0.001		0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177		0	
11. $T_t = L/(3600 \cdot V)$	hr	0.6479	+	0	= 0.6479

Channel flow

		N/A		N/A	
12. Cross sectional flow area, a	ft^2	0		0	
13. Wetted perimeter, Pw	ft	0		0	
14. Hydraulic radius, $r = a/Pw$	ft	0		0	
15. Channel slope, s	ft/ft	0		0	
16. Manning's roughness coeff., n		0		0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$	ft/s	1.50		0	
18. Flow length, L	ft	0		0	
19. $T_t = L/(3600 \cdot V)$	hr	0	+	0	= 0.0000

20. Watershed or subarea T_c or T_t hr **1.6906**

min **101.4**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A5

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1152	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.6272	0	= 0.6272

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr **1.6699**

min **100.2**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A6

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1647	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.8967	0	= 0.8967

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr **1.9394**

min **116.4**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A7

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.15	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	1.0428	0	= 1.0428

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1355	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.7377	0	= 0.7377

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr 1.7805

min 106.8

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A8

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	485	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.2640	0	= 0.2640

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, $r = a/Pw$ ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr **2.5494**

min **153.0**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8})/(p2^{0.5}s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	560	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L/(3600 \cdot V)$ hr	0.3049	0	= 0.3049

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, r = a/Pw ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2})/n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L/(3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea Tc or Tt hr **2.5903**

min **155.4**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-2A

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

	N/A	N/A	
1. Surface description (table 3-1)	0	0	
2. Manning's roughness coeff., n (table 3-1)	0.4	0	
3. Flow length, L (total L =< 300 ft) ft	300	0	
4. Two-yr 24-hr rainfall, P2 in	5	0	
5. Land slope, s ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5} s^{0.4})$ hr	2.2854	0	= 2.2854

Shallow concentrated flow

	N/A	N/A	
7. Surface description (paved or unpaved)	unpaved	0	
8. Flow length, L ft	1091	0	
9. Watercourse slope, s ft/ft	0.001	0	
10. Average velocity, V (figure 3-1) ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$ hr	0.5938	0	= 0.5938

Channel flow

	N/A	N/A	
12. Cross sectional flow area, a ft ²	0.01	0	
13. Wetted perimeter, Pw ft	0.01	0	
14. Hydraulic radius, $r = a/Pw$ ft	1	0	
15. Channel slope, s ft/ft	0.01	0	
16. Manning's roughness coeff., n	0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$ ft/s	3.31	0	
18. Flow length, L ft	0	0	
19. $T_t = L / (3600 \cdot V)$ hr	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr **2.8792**

min **172.75**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

TIME OF CONCENTRATION

SUBAREA A9-1

Project : Huntington Avenue
Location: Brevard County
Pre/Post: Present-post

By: M. B.
Checked:

Date: 12-13-95
Date:

Notes: Spaces for as many as two segments per flow type can be used

Sheet flow

		N/A	N/A	
1. Surface description (table 3-1)		0	0	
2. Manning's roughness coeff., n (table 3-1)		0.4	0	
3. Flow length, L (total L ≤ 300 ft)	ft	300	0	
4. Two-yr 24-hr rainfall, P2	in	5	0	
5. Land slope, s	ft/ft	0.001	0	
6. $T_t = (0.007(nL)^{0.8}) / (p2^{0.5} s^{0.4})$	hr	2.2854	0	= 2.2854

Shallow concentrated flow

		N/A	N/A	
7. Surface description (paved or unpaved)		unpaved	0	
8. Flow length, L	ft	650	0	
9. Watercourse slope, s	ft/ft	0.001	0	
10. Average velocity, V (figure 3-1)	ft/s	0.5102177	0	
11. $T_t = L / (3600 \cdot V)$	hr	0.3539	0	= 0.3539

Channel flow

		N/A	N/A	
12. Cross sectional flow area, a	ft ²	0.01	0	
13. Wetted perimeter, Pw	ft	0.01	0	
14. Hydraulic radius, $r = a / Pw$	ft	1	0	
15. Channel slope, s	ft/ft	0.01	0	
16. Manning's roughness coeff., n		0.045	0	
17. $V = (1.49 \cdot r^{2/3} \cdot s^{1/2}) / n$	ft/s	3.31	0	
18. Flow length, L	ft	0	0	
19. $T_t = L / (3600 \cdot V)$	hr	0	0	= 0.0000

20. Watershed or subarea T_c or T_t hr **2.6393**

min **158.4**

NOTE: All figures and tables are referred to the ones in the TR-55 manual

APPENDIX D

STORMWATER CALCULATIONS
EXISTING CONDITIONS

Existing Condition
2 Yr - 24 Hr

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
 DECEMBER 1995

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	18.19	13.03	3.05
A1	13.23	13.14	3.17
A2	16.63	12.98	2.94
A3	28.81	12.96	2.86
A4	20.69	13.07	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	30.88	12.91	2.77
A6	31.53	13.25	2.68
A7	19.45	13.05	2.59
A8	26.63	13.75	2.59
A9-1	9.74	13.75	2.69

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

BASIN NAME A9-2+2A
NODE NAME A9-2+2A

UNIT HYDROGRAPH UH323
PEAKING FACTOR 323.

RAINFALL FILE SCSII-24
RAIN AMOUNT (in) 5.00
STORM DURATION (hrs) 24.00

AREA (ac) 30.00
CURVE NUMBER 74.50
DCIA (%) .00
TC (mins) 160.00
LAG TIME (hrs) .00
BASIN STATUS ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	12.36	13.75	2.40	

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

CONTROL PARAMETERS

=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
 DECEMBER 1995

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
 DECEMBER 1995

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
E9-2	AREA	-.670	.000	.000	.000	-.670 .000 .500	.001 .010 .100
A9-2+2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 15.000
BNDRY	TIME	.600	.000	.000	.000	.600 .750 .600	.000 13.000 24.000

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 43.000 RISE (in): 72.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP(FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 38.000 RISE (in): 60.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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DECEMBER 1995

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PER SURVEY

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: PER SURVEY

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
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>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : ON

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 9999.000 CREST LN. (ft): .000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): .410
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
DECEMBER 1995

REACH SUMMARY

=====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
 DECEMBER 1995

NODAL MAXIMUM CONDITIONS REPORT

=====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	20.45	.23	18.05	.00	.00	17.74
A1	19.65	1.41	13.03	.00	17.74	24.62
A2	16.36	.64	16.55	.00	24.62	36.97
A3	14.93	.92	28.63	.00	36.97	60.87
A4	12.24	1.00	20.58	.00	60.87	79.23
A5	10.60	1.29	30.73	.00	79.23	106.34
A6	9.35	1.58	31.53	.00	106.34	136.09
A7	8.66	4.37	19.23	.00	136.09	131.26
A8	8.53	5.68	26.63	.00	130.63	113.15
E8	8.62	.89	.00	.00	131.26	130.63
E9-1	5.70	.69	.00	.00	113.15	112.76
A9-1	5.45	14.63	9.74	.00	112.76	95.71
E9-2	4.53	.73	.00	.00	95.71	95.70
A9-2+2A	4.04	1.00	12.36	.00	95.70	98.56
BNDRY	.75	77.78	.00	.00	98.56	.00

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HUNTINGTON BASIN EXISTING CONDITIONS (2 YR 24 HR - 5")
 DECEMBER 1995

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	14.00	24.62	A1	19.65	A2	16.32
REACH3	13.50	60.87	A3	14.93	A4	12.24
REACH5	13.50	106.34	A5	10.60	A6	9.35
REACH7P	13.50	131.26	A7	8.44	E8	8.36
REACH8P	14.25	113.15	A8	8.41	E9-1	5.18
REACH9-2	18.50	95.71	A9-1	5.45	E9-2	4.53
REACH9	18.75	98.56	A9-2+2A	4.04	BNDRY	.67
REACH0	13.25	17.74	A0	20.45	A1	19.57
REACH2	13.75	36.97	A2	16.36	A3	14.83
REACH4	13.50	79.23	A4	12.24	A5	10.60
REACH6	13.50	136.09	A6	9.35	A7	8.44
DITCH8	13.50	130.63	E8	8.36	A8	8.15
DITCH9-1	14.25	112.76	E9-1	5.18	A9-1	4.61
REACH9-1	18.50	95.70	E9-2	4.53	A9-2+2A	4.03

**Existing Condition
25 Yr - 24 Hr**

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
 DECEMBER 1995

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	40.61	13.03	6.77
A1	28.86	13.14	6.93
A2	37.64	12.98	6.62
A3	66.37	12.96	6.52
A4	48.28	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	72.57	12.91	6.40
A6	75.09	13.25	6.27
A7	47.31	13.05	6.15
A8	64.82	13.50	6.14
A9-1	23.20	13.75	6.29

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DECEMBER 1995

BASIN NAME A9-2+2A
NODE NAME A9-2+2A

UNIT HYDROGRAPH UH323
PEAKING FACTOR 323.

RAINFALL FILE SCSII-24
RAIN AMOUNT (in) 9.00
STORM DURATION (hrs) 24.00

AREA (ac) 30.00
CURVE NUMBER 74.50
DCIA (%) .00
TC (mins) 160.00
LAG TIME (hrs) .00
BASIN STATUS ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A9-2+2A	31.25	13.75	5.89	

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CONTROL PARAMETERS

=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
A9-2+2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 15.000

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
E9-2	AREA	-.670	.000	.000	.000	-.670 .000 .500	.001 .010 .100
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600	.000 13.000 24.000

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 43.000 RISE (in): 72.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 38.000 RISE (in): 60.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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DECEMBER 1995

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2+2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : E9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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DECEMBER 1995

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : DITCH
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

>>REACH NAME : REACH9-1
FROM NODE : E9-2
TO NODE : A9-2+2A
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 900.000 U/S INVERT (ft): -.670 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
 DECEMBER 1995

REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
2	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
3	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
4	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
5	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH9	A9-2+2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
7	REACH9-2	A9-1	E9-2	CULVERT, CIRCULAR w/ ROADWAY
8	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
9	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
10	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
11	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	DITCH	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH9-1	E9-2	A9-2+2A	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
 DECEMBER 1995

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	21.27	.32	40.39	.00	.00	39.85
A1	20.16	3.00	28.60	.00	39.85	58.50
A2	18.04	.99	37.41	.00	58.50	87.60
A3	17.73	12.18	65.82	.00	87.60	77.52
A4	13.59	1.33	48.22	.00	77.52	111.62
A5	12.95	2.06	71.89	.00	111.62	174.95
A6	11.59	2.20	75.09	.00	174.95	248.61
A7	11.47	19.32	46.96	.00	248.61	221.66
A8	11.42	34.09	64.82	.00	219.67	137.04
A9-1	6.93	28.99	23.20	.00	136.64	125.24
A9-2+2A	4.92	7.85	31.25	.00	125.18	128.68
E9-2	5.37	.85	.00	.00	125.24	125.18
E9-1	7.09	.87	.00	.00	137.04	136.64
E8	11.45	1.35	.00	.00	221.66	219.67
BNDRY	1.00	117.21	.00	.00	128.68	.00

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HUNTINGTON BASIN EXISTING CONDITIONS (25 YR 24 HR - 9")
 DECEMBER 1995

REACH MAXIMUM FLOW REPORT

=====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
REACH1	13.75	58.50	A1	20.16	A2	18.01
REACH3	15.75	77.52	A3	17.71	A4	13.36
REACH5	13.25	174.95	A5	12.94	A6	10.71
REACH7P	13.25	221.66	A7	9.22	E8	9.14
REACH8P	16.25	137.04	A8	11.12	E9-1	6.39
REACH9	22.75	128.68	A9-2+2A	4.92	BNDRY	.65
REACH9-2	21.00	125.24	A9-1	6.92	E9-2	5.34
REACH0	13.00	39.85	A0	21.27	A1	19.95
REACH2	13.50	87.60	A2	17.96	A3	16.96
REACH4	13.25	111.62	A4	13.59	A5	12.94
REACH6	13.25	248.61	A6	10.71	A7	9.22
DITCH	13.25	219.67	E8	9.14	A8	8.84
DITCH9-1	16.50	136.64	E9-1	6.46	A9-1	6.16
REACH9-1	21.00	125.18	E9-2	5.34	A9-2+2A	4.88

APPENDIX E

STORMWATER CALCULATIONS PHASED CONDITIONS

WATER QUALITY

VOLUME OF WATER TO BE TREATED = 1" OF RUNOFF OVER
EXISTING ROADS.

$$\text{TOTAL ACRES} = 10.63$$

$$\frac{10.63 \text{ AC} \times 1 \text{ IN}}{12 \text{ IN/FT}} = 0.89 \text{ AC-FT}$$

$$\text{REQUIRED} = 0.89 \text{ AC-FT}$$

PROVIDED :

$$\frac{2.63 + 2.69}{2} = 2.65 \text{ AC}$$

$$(2.65 \text{ AC})(1.4 - 1) = 1.06 \text{ AC-FT}$$

$$1.06 \geq 0.89 \therefore \text{OK}$$

STAGE STORAGE

<u>STAGE (FT)</u>	<u>AREA (FT²)</u>	<u>AREA (AC)</u>	<u>VOLUME (AC-FT)</u>
1	114,725.5	2.63	0
5	145,877.5	3.35	11.96

DETERMINE WEIR ELEVATION

NORMAL WATER LEVEL = 1.00 FT → STORAGE = 0 AC-FT

TOP OF BANK = 5 FT → STORAGE = 11.96

REQUIRED STORAGE = 0.89 AC-FT

$$\frac{5.00 \text{ FT} - 1.00 \text{ FT}}{11.96 \text{ AC-FT} - 0 \text{ AC-FT}} = 0.334$$

$$\frac{5.00 \text{ FT} - X}{11.96 - 0.89} = 0.334 \quad X = 1.3$$

ESTABLISH WEIR ELEVATION @ = 1.4 FT

STORAGE @ ELEVATION 1.4 FT = 1.06 AC-FT

DESIGN OUTFALL STRUCTURE

MAX ALLOWABLE DISCHARGE

* $\frac{1}{2}$ TREATMENT VOLUME WITHIN 48 HR

$$Q = \frac{(1.06 \text{ ac-ft})(43,560 \text{ ft}^2/\text{ac})}{2 \times 48 \text{ hr} \times 3600 \frac{\text{sec}}{\text{hr}}} = 0.134 \text{ cfs}$$

TRY 3" ORIFICE

$$Q = CA(2gh)^{1/2}$$

$$A = \pi r^2 (\pi)(0.125)^2 = 0.0491 \text{ ft}^2$$

$$H = \frac{.4 + .2}{2} = 0.3 \text{ ft}$$

$$h = H - \frac{d}{2} = (0.3) - \left(\frac{0.25}{2}\right) = 0.175 \text{ ft}$$

$$Q = (0.6)(0.0491) \left[2(32.2)(0.175) \right]^{1/2} = 0.099 \text{ cfs}$$

$$0.099 < 0.134 \quad \text{NOT OK}$$

TRY 4" ORIFICE

$$A = (\pi)(0.17)^2 = 0.0873 \text{ ft}^2$$

$$H = \frac{.4 + .2}{2} = 0.3 \text{ ft}$$

$$h = H - \frac{d}{2} = (0.3) - \left(\frac{0.33}{2}\right) = 0.135$$

$$Q = CA(2gh)^{1/2} = (0.6)(0.0873) \left[2(32.2)(0.135) \right]^{1/2} = 0.154 \text{ cfs}$$

$$0.154 > 0.134 \quad \therefore \text{OK}$$

REQUIRED PERMANENT POOL VOLUME

$$PPV = (RT)(FR)$$

R_T = RESIDENCE TIME

F_R = FLOW RATE

* NORTH BREVARD COUNTY WET SEASON RAINFALL PERIOD: JUNE-OCTOBER

* NORTH BREVARD COUNTY WET SEASON RAINFALL AMOUNT 36"

$$FR = \frac{(DA)(C)(R)}{WS}$$

DA = DRAINAGE AREA TO POND

C = RUNOFF COEFFICIENT

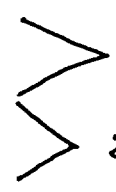
R = RAINFALL DEPTH

WS = RAINFALL SEASON DAYS

$$FR = \frac{(406.34 \text{ AC})(0.15)(36 \text{ IN})}{(153 \text{ DAYS})(12 \text{ IN/FT})} = 1.2 \frac{\text{AC} \cdot \text{FT}}{\text{DAY}}$$

$$PPV = (14 \text{ DAYS}) \left(1.2 \frac{\text{AC} \cdot \text{FT}}{\text{DAY}} \right) = 16.73 \text{ AC} \cdot \text{FT}$$

PERMANENT POOL VOLUME AVAILABLE

@ EL. 1 FT $\rightarrow$ 2.63 AC		4:1 SLOPE
@ EL 0 FT $\rightarrow$ 2.49 AC		2:1 SLOPE
@ EL -7 FT $\rightarrow$ 1.91 AC		

$$V = \left(\frac{2.63 + 2.49}{2} \right) (1 - 0) + \left(\frac{2.49 + 1.91}{2} \right) [0 - (-7)] = 17.96 \text{ AC} \cdot \text{FT}$$

$$17.96 \geq 16.73 \quad \therefore \text{OK}$$

Table 24-1. Runoff Coefficients (C) for a Design Storm Return Period of Ten Years or Less¹

Slope	Land Use	Sandy Soils		Clay Soils	
		Min.	Max.	Min.	Max.
Flat (0-2%)	Lawns	0.05	0.10	0.13	0.17
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.75	0.95	0.90	0.95
	Woodlands	0.10	0.15	0.15	0.20
	Pasture, grass, and farmland ³	0.15	0.20	0.20	0.25
	Residential				
	SFR: 1/2 acre lots and larger	0.30	0.35	0.35	0.45
	SFR: smaller lots and duplexes	0.35	0.45	0.40	0.50
	MFR: apartments, condominiums	0.45	0.60	0.50	0.70
	Commercial and Industrial	0.50	0.95	0.50	0.95
Rolling (2-7%)	Lawns	0.10	0.15	0.18	0.22
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.80	0.95	0.90	0.95
	Woodlands	0.15	0.20	0.20	0.25
	Pasture, grass, and farmland ³	0.20	0.25	0.25	0.30
	Residential				
	SFR: 1/2 acre lots and larger	0.35	0.50	0.40	0.55
	SFR: smaller lots and duplexes	0.40	0.55	0.45	0.60
	MFR: apartments, condominiums	0.50	0.70	0.60	0.80
	Commercial and Industrial	0.50	0.95	0.60	0.95
Steep (>7%)	Lawns	0.15	0.20	0.25	0.35
	Rooftops and pavements	0.95	0.95	0.95	0.95
	Pervious pavements ²	0.85	0.95	0.90	0.95
	Woodlands	0.20	0.25	0.25	0.30
	Pasture, grass, and farmland ³	0.25	0.35	0.30	0.40
	Residential				
	SFR: 1/2 acre lots and larger	0.40	0.55	0.50	0.65
	SFR: smaller lots and duplexes	0.45	0.60	0.55	0.70
	MFR: apartments, condominiums	0.60	0.75	0.65	0.85
	Commercial and Industrial	0.60	0.95	0.65	0.95

Sources: Florida Department of Transportation, 1987; Wanielista, 1990

¹ For 25- to 100-yr recurrence intervals, multiply coefficient by 1.1 and 1.25, respectively, and the product cannot exceed 1.0.

² Coefficients assume good ground cover and conservation treatment.

³ Depends on depth and degree of permeability of underlying strata.

Note: SFR = Single Family Residential; MFR = Multi-Family Residential

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

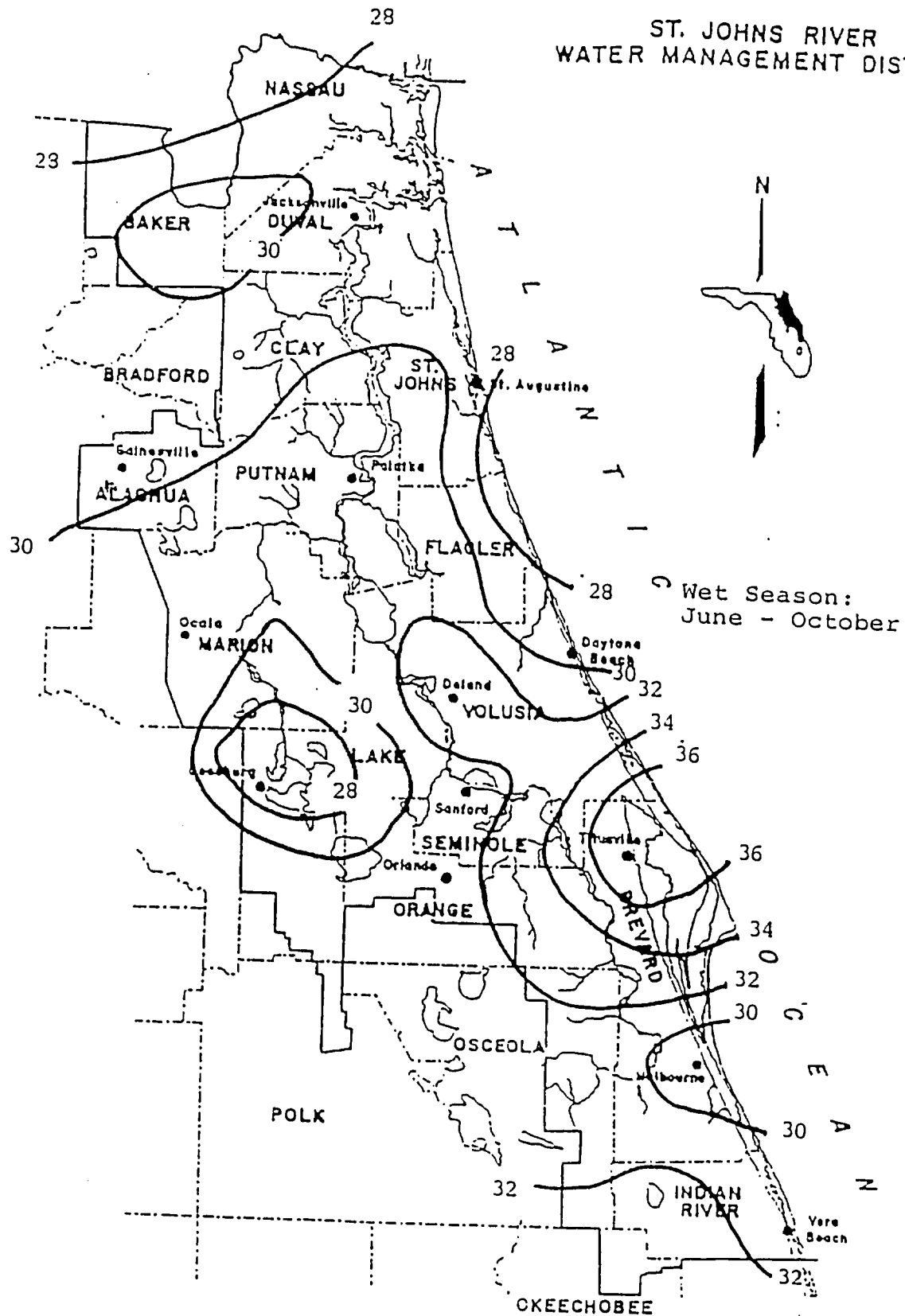


Figure 29-1 Wet Season Normal Rainfall, inches Source: Rao, et. al, 1990

Phased Condition

2 Yr - 24 Hr

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BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	18.19	13.03	3.05
A1	13.23	13.14	3.17
A2	16.63	12.98	2.94
A3	28.81	12.96	2.86
A4	20.69	13.07	2.77

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	30.88	12.91	2.77
A6	31.53	13.25	2.68
A7	19.45	13.05	2.59
A8	26.63	13.75	2.59
A9-1	9.74	13.75	2.69

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BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	7.73 13.75	2.45
A9-2A	4.52 14.00	2.35

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DECEMBER 1995

CONTROL PARAMETERS

=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 16.000

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 DECEMBER 1995

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 11.000
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
BNDRY	TIME	.600	.000	.000	.000	.600 .750 .600	.000 13.000 24.000

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>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 25.600 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 4.000 CREST LN. (ft): 19.167 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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DECEMBER 1995

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED
POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 43.000 RISE (in): 72.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 38.000 RISE (in): 60.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :

SPAN (in):	54.000	RISE (in):	54.000	LENGTH (ft):	33.000
U/S INVERT (ft):	-.590	D/S INVERT (ft):	-.670	MANNING N:	.013
ENTRNC LOSS:	.500	# OF CULVERTS:	1.000		

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 4.000 RISE (in): 4.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 9.580 OPENING (ft): 2.390
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ
3	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
4	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
5	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9-2	A9-1	A9-2	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
11	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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NODAL MAXIMUM CONDITIONS REPORT

=====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	20.45	.23	18.05	.00	.00	17.74
A1	19.65	1.41	13.03	.00	17.74	24.62
A2	16.36	.64	16.55	.00	24.62	36.96
A3	14.93	.92	28.63	.00	36.96	60.87
A4	12.24	1.00	20.58	.00	60.87	79.24
A5	10.59	1.29	30.73	.00	79.24	106.40
A6	9.34	1.58	31.53	.00	106.40	136.27
A7	8.64	4.23	19.23	.00	136.27	133.36
A8	8.53	5.84	26.63	.00	132.69	113.82
A9-1	5.20	12.19	9.74	.00	113.47	100.90
A9-2	4.19	1.60	7.73	.00	100.90	100.53
A9-2A	4.09	.64	4.52	.00	100.53	100.58
E9-1	5.51	.67	.00	.00	113.82	113.47
E8	8.60	.95	.00	.00	133.36	132.69
BNDRY	.75	78.24	.00	.00	100.58	.00

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HUNT. BASIN PROP. COND.: PHASED (2 YR 24 HR - 5")
 DECEMBER 1995

REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	18.00	88.85	A9-2	4.17	A9-2A	4.07
TOPINLET	18.75	4.16	A9-2	4.19	A9-2A	4.09
REACH1	14.00	24.62	A1	19.65	A2	16.32
REACH3	13.50	60.87	A3	14.93	A4	12.24
REACH5	13.50	106.40	A5	10.59	A6	9.34
REACH7P	13.50	133.36	A7	8.41	E8	8.32
REACH8P	14.25	113.82	A8	8.41	E9-1	5.15
REACH9	18.75	100.58	A9-2A	4.09	BNDRY	.67
REACH9-2	18.00	100.90	A9-1	5.19	A9-2	4.17
REACH9-1	21.00	14.03	A9-2	3.72	A9-2A	3.64
REACH0	13.25	17.74	A0	20.45	A1	19.57
REACH2	13.75	36.96	A2	16.36	A3	14.83
REACH4	13.50	79.24	A4	12.24	A5	10.59
REACH6	13.50	136.27	A6	9.34	A7	8.41
DITCH8	13.50	132.69	E8	8.32	A8	8.16
DITCH9-1	14.25	113.47	E9-1	5.15	A9-1	4.55

Phased Condition

25 Yr - 24 Hr

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	40.61	13.03	6.77
A1	28.86	13.14	6.93
A2	37.64	12.98	6.62
A3	66.37	12.96	6.52
A4	48.28	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	72.57	12.91	6.40
A6	75.09	13.25	6.27
A7	47.31	13.05	6.15
A8	64.82	13.50	6.14
A9-1	23.20	13.75	6.29

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	19.32	13.75 5.95
A9-2A	11.55	13.75 5.80

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

CONTROL PARAMETERS

=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 16.000

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 11.000
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
BNDRY	TIME	.600	.000	.000	.000	.600 1.000 .600	.000 13.000 24.000

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 25.600 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 4.000 CREST LN. (ft): 19.167 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 18.000 RISE (in): 18.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 18" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 43.000 RISE (in): 72.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 38.000 RISE (in): 60.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 38"X60" RCP

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 36.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 12' OF 54" AND 46' OF 60"

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 33.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 4.000 RISE (in): 4.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 9.580 OPENING (ft): 2.390
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 3.000 LEFT SS (h/v): 1.250 RGHT SS (h/v): 1.250
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 4.000 LEFT SS (h/v): 1.020 RGHT SS (h/v): 1.400
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: EXISTING DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 5.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: EXISTING DITCH SECTION

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
DECEMBER 1995

>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.000 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: EXISTING DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 6.500 LEFT SS (h/v): 1.230 RGHT SS (h/v): 1.350
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE:

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

REACH SUMMARY
 =====

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTTE EQ
3	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
4	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
5	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH7P	A7	E8	CULVERT, ELLIPTICAL w/ ROADWAY
7	REACH8P	A8	E9-1	CULVERT, ELLIPTICAL w/ ROADWAY
8	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9-2	A9-1	A9-2	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
11	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
12	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW -----> OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	21.27	.32	40.39	.00	.00	39.85
A1	20.16	3.00	28.60	.00	39.85	58.50
A2	18.04	.99	37.41	.00	58.50	87.59
A3	17.73	12.18	65.82	.00	87.59	77.53
A4	13.59	1.33	48.22	.00	77.53	111.63
A5	12.95	2.06	71.89	.00	111.63	174.96
A6	11.54	2.19	75.09	.00	174.96	248.60
A7	11.42	19.04	46.96	.00	248.60	221.76
A8	11.37	33.56	64.82	.00	219.75	139.50
A9-1	6.60	25.70	23.20	.00	139.19	128.56
A9-2	4.98	8.00	19.32	.00	128.56	127.47
A9-2A	4.91	5.18	11.55	.00	127.47	128.43
E9-1	6.79	.83	.00	.00	139.50	139.19
E8	11.40	1.34	.00	.00	221.76	219.75
BNDRY	1.00	117.87	.00	.00	128.43	.00

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HUNTINGTON BASIN PROPOSED PHASED (25 YR 24 HR - 9")
 DECEMBER 1995

REACH MAXIMUM FLOW REPORT

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REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	15.00	90.70	A9-2	4.27	A9-2A	4.17
TOPINLET	23.25	24.79	A9-2	4.98	A9-2A	4.91
REACH1	13.75	58.50	A1	20.16	A2	18.01
REACH3	15.75	77.53	A3	17.71	A4	13.35
REACH5	13.25	174.96	A5	12.94	A6	10.71
REACH7P	13.25	221.76	A7	9.22	E8	9.14
REACH8P	16.75	139.50	A8	11.22	E9-1	6.31
REACH9	23.50	128.43	A9-2A	4.91	BNDRY	.62
REACH9-2	20.50	128.56	A9-1	6.56	A9-2	4.89
REACH9-1	15.25	17.95	A9-2	4.30	A9-2A	4.22
REACH0	13.00	39.85	A0	21.27	A1	19.95
REACH2	13.50	87.59	A2	17.96	A3	16.96
REACH4	13.25	111.63	A4	13.59	A5	12.94
REACH6	13.25	248.60	A6	10.71	A7	9.22
DITCH8	13.25	219.75	E8	9.14	A8	8.84
DITCH9-1	16.75	139.19	E9-1	6.31	A9-1	5.96

Full Condition
2 Yr - 24 Hr

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HUNT. BASIN 2YR 24HR FULL COND. WITH ALL PIPES IN REPORT
 MARCH 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	18.19	13.03	3.05	
A1	13.23	13.14	3.17	
A2	16.63	12.98	2.94	
A3	28.81	12.96	2.86	
A4	20.69	13.07	2.77	

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00	5.00	5.00	5.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	30.88	12.91	2.77	
A6	31.53	13.25	2.68	
A7	19.45	13.05	2.59	
A8	26.63	13.75	2.59	
A9-1	9.74	13.75	2.69	

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BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24
RAIN AMOUNT (in)	5.00	5.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	7.73 13.75	2.45
A9-2A	4.52 14.00	2.35

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CONTROL PARAMETERS

=====

START TIME: .00

END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 16.000

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 11.000
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
BNDRY	TIME	1.000	.000	.000	.000	1.000 1.000 1.000	.000 13.000 24.000

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>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 25.600 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 4.000 CREST LN. (ft): 19.167 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 36" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, ELLIPTICAL w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43"X72" CMP (FROM SURVEY)

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 54" RCP

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXIST. 12' OF 54" & 46' OF 60" CMP

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 25.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9-B
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 24.000 RISE (in): 24.000 LENGTH (ft): 58.000
U/S INVERT (ft): 1.400 D/S INVERT (ft): 1.400 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE FOR OVERFLOW

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>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 4.000 RISE (in): 4.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 9.580 OPENING (ft): 2.390
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

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REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTTE EQ
3	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
4	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
5	REACH5	A5	A6	CULVERT, ELLIPTICAL w/ ROADWAY
6	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
7	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
8	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9-2	A9-1	A9-2	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-B	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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NODAL MAXIMUM CONDITIONS REPORT

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NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	19.72	.34	18.05	.00	.00	17.86
A1	19.34	.79	13.03	.00	17.86	28.23
A2	15.60	.94	16.55	.00	28.23	42.70
A3	14.70	1.69	28.63	.00	42.70	66.19
A4	11.04	1.34	20.58	.00	66.19	84.02
A5	9.82	2.14	30.73	.00	84.02	107.58
A6	8.55	2.20	31.53	.00	107.58	135.19
A7	8.18	2.53	19.23	.00	135.19	137.42
A8	7.62	1.77	26.63	.00	136.24	160.26
A9-1	5.28	13.36	9.74	.00	159.31	110.44
A9-2	4.11	.96	7.73	.00	110.44	110.63
A9-2A	3.99	.12	4.52	.00	110.63	113.13
E9-1	5.42	.86	.00	.00	160.26	159.31
E8	7.71	1.15	.00	.00	137.42	136.24
BNDRY	1.00	77.43	.00	.00	113.13	.00

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REACH MAXIMUM FLOW REPORT
 =====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	17.00	99.45	A9-2	4.10	A9-2A	3.99
TOPINLET	16.75	2.14	A9-2	4.11	A9-2A	3.99
REACH1	13.50	28.23	A1	19.34	A2	15.60
REACH3	13.50	66.19	A3	14.70	A4	11.04
REACH5	13.75	107.58	A5	9.82	A6	8.55
REACH7P	14.00	137.42	A7	8.17	E8	7.63
REACH8P	14.00	160.26	A8	7.55	E9-1	5.04
REACH9	16.75	97.10	A9-2A	3.99	BNDRY	1.00
REACH9-2	15.75	110.44	A9-1	5.28	A9-2	4.08
REACH9-B	16.75	16.03	A9-2A	3.99	BNDRY	1.00
REACH9-1	19.00	15.82	A9-2	3.75	A9-2A	3.64
REACH0	13.25	17.86	A0	19.72	A1	19.33
REACH2	13.00	42.70	A2	15.55	A3	13.86
REACH4	13.50	84.02	A4	11.04	A5	9.77
REACH6	13.50	135.19	A6	8.51	A7	8.07
DITCH8	14.00	136.24	E8	7.63	A8	7.55
DITCH9-1	14.00	159.31	E9-1	5.04	A9-1	4.59

**Full Condition
25 Yr - 24 Hr**

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HUNT. BASIN 25YR 24HR FULL COND. WITH ALL PIPES IN REPORT
 MARCH 1996

BASIN NAME	A0	A1	A2	A3	A4
NODE NAME	A0	A1	A2	A3	A4
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	25.14	17.94	21.49	39.26	30.13
CURVE NUMBER	81.70	83.00	80.50	79.60	78.70
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	108.60	111.60	94.20	97.20	101.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A0	40.61	13.03	6.77
A1	28.86	13.14	6.93
A2	37.64	12.98	6.62
A3	66.37	12.96	6.52
A4	48.28	13.07	6.40

BASIN NAME	A5	A6	A7	A8	A9-1
NODE NAME	A5	A6	A7	A8	A9-1
UNIT HYDROGRAPH	UH323	UH323	UH323	UH323	UH323
PEAKING FACTOR	323.	323.	323.	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24	SCSII-24	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00	9.00	9.00	9.00
STORM DURATION (hrs)	24.00	24.00	24.00	24.00	24.00
AREA (ac)	44.55	53.07	31.88	57.63	20.65
CURVE NUMBER	78.70	77.60	76.60	76.60	77.80
DCIA (%)	.00	.00	.00	.00	.00
TC (mins)	100.20	116.40	106.80	153.00	158.40
LAG TIME (hrs)	.00	.00	.00	.00	.00
BASIN STATUS	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

BASIN QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
A5	72.57	12.91	6.40
A6	75.09	13.25	6.27
A7	47.31	13.05	6.15
A8	64.82	13.50	6.14
A9-1	23.20	13.75	6.29

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BASIN NAME	A9-2	A9-2A
NODE NAME	A9-2	A9-2A
UNIT HYDROGRAPH	UH323	UH323
PEAKING FACTOR	323.	323.
RAINFALL FILE	SCSII-24	SCSII-24
RAIN AMOUNT (in)	9.00	9.00
STORM DURATION (hrs)	24.00	24.00
AREA (ac)	18.00	12.00
CURVE NUMBER	75.00	73.80
DCIA (%)	.00	.00
TC (mins)	155.40	172.75
LAG TIME (hrs)	.00	.00
BASIN STATUS	ONSITE	ONSITE
BASIN QMX (cfs)	TMX (hrs)	VOL (in) NOTES
A9-2	19.32	13.75 5.95
A9-2A	11.55	13.75 5.80

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CONTROL PARAMETERS

=====

START TIME: .00
END TIME: 24.00

TO TIME (hours)	SIMULATION INC (secs)	PRINT INC (mins)
-----	-----	-----
100.00	1.00	15.00

RUNOFF HYDROGRAPH FILE: DEFAULT
OFFSITE HYDROGRAPH FILE: DEFAULT
BOUNDARY DATABASE FILE: NONE

NOTE:

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A0	AREA	18.800	.000	.000	.000	18.800 23.500 24.500	.001 .010 8.000
A1	AREA	14.200	.000	.000	.000	14.200 19.300 20.300	.001 .010 6.000
A2	AREA	14.000	.000	.000	.000	14.000 19.300 20.300	.001 .010 7.000
A3	AREA	8.800	.000	.000	.000	8.800 16.100 17.100	.001 .010 13.000
A4	AREA	8.700	.000	.000	.000	8.700 16.100 17.100	.001 .010 10.000
A5	AREA	3.650	.000	.000	.000	3.650 12.900 13.900	.001 .010 14.000
A6	AREA	3.800	.000	.000	.000	3.800 12.700 13.700	.001 .010 17.000
A7	AREA	2.040	.000	.000	.000	2.040 8.050 9.050	.001 .010 10.000
A8	AREA	1.940	.000	.000	.000	1.940 8.050 9.050	.001 .010 19.000
A9-1	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 19.000
A9-2	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 16.000

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NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AR/TM/STR (ac/hr/af)
A9-2A	AREA	1.000	.000	.000	.000	1.000 4.000 5.000	.010 .050 11.000
E9-1	AREA	.280	.000	.000	.000	.280 .500 1.000	.001 .010 .100
E8	AREA	1.910	.000	.000	.000	1.910 2.500 3.000	.001 .010 .100
BNDRY	TIME	1.000	.000	.000	.000	1.000 1.000 1.000	.000 13.000 24.000

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>>REACH NAME : WEIR
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 1.400 BTM. WIDTH (ft): 25.600 LEFT SS (h/v): 2.000
RGHT SS (h/v): 2.000 OPENING (ft): 999.000 WEIR COEF.: 3.000
GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

>>REACH NAME : TOPINLET
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONTÉ EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
CREST EL. (ft): 4.000 CREST LN. (ft): 19.167 OPENING (ft): 999.000
WEIR COEF.: 3.160 GATE COEF.: .600 NUMBER OF ELEM.: 1.000
NOTE:

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>>REACH NAME : REACH1
FROM NODE : A1
TO NODE : A2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 16.590 D/S INVERT (ft): 16.350 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 19.300 CREST LN. (ft): 20.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: PROPOSED 36" RCP

>>REACH NAME : REACH3
FROM NODE : A3
TO NODE : A4
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 40.000
U/S INVERT (ft): 8.800 D/S INVERT (ft): 8.700 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: EXISTING 36" CMP

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>>REACH NAME : REACH5
FROM NODE : A5
TO NODE : A6
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 72.000 RISE (in): 43.000 LENGTH (ft): 52.000
U/S INVERT (ft): 3.950 D/S INVERT (ft): 3.890 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 12.800 CREST LN. (ft): 200.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXISTING 43" X 72" CMP FROM SURVEY

>>REACH NAME : REACH7P
FROM NODE : A7
TO NODE : E8
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): 2.030 D/S INVERT (ft): 1.910 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 7.800 CREST LN. (ft): 100.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE:

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>>REACH NAME : REACH8P
FROM NODE : A8
TO NODE : E9-1
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 20.000
U/S INVERT (ft): .410 D/S INVERT (ft): .280 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 58.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -1.430 MANNING N: .022
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft): 8.100 CREST LN. (ft): 500.000 WEIR COEF.: 2.800
RESERVED:***** RESERVED:***** RESERVED:*****

POSITION B : RECTANGULAR ROADWAY/BERM WEIR
CREST EL. (ft):***** CREST LN. (ft):***** WEIR COEF.:*****
RESERVED:***** RESERVED:***** RESERVED:*****

NOTE: EXIST. 12' OF 54" & 46' OF 60" CMP

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>>REACH NAME : REACH9-2
FROM NODE : A9-1
TO NODE : A9-2
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 54.000 RISE (in): 54.000 LENGTH (ft): 25.000
U/S INVERT (ft): -.590 D/S INVERT (ft): -.670 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE:

>>REACH NAME : REACH9-B
FROM NODE : A9-2A
TO NODE : BNDRY
REACH TYPE : CULVERT, CIRCULAR w/ ROADWAY
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 24.000 RISE (in): 24.000 LENGTH (ft): 58.000
U/S INVERT (ft): 1.400 D/S INVERT (ft): 1.400 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : NOT USED

POSITION B : NOT USED

NOTE: NEW PIPE FOR OVERFLOW

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>>REACH NAME : REACH9-1
FROM NODE : A9-2
TO NODE : A9-2A
REACH TYPE : DROP STRUCTURE w/ CIRC. CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 36.000 RISE (in): 36.000 LENGTH (ft): 104.000
U/S INVERT (ft): -.750 D/S INVERT (ft): -.750 MANNING N: .013
ENTRNC LOSS: .500 # OF CULVERTS: 2.000

POSITION A : CIRCULAR RISER SLOT
INVERT EL. (ft): 1.000 SPAN (in): 4.000 RISE (in): 4.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 1.400 CREST LN. (ft): 9.580 OPENING (ft): 2.390
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

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>>REACH NAME : REACH0
FROM NODE : A0
TO NODE : A1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): 18.800 D/S INVERT (ft): 14.200
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 4.700

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH2
FROM NODE : A2
TO NODE : A3
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1320.000 U/S INVERT (ft): 14.000 D/S INVERT (ft): 8.800
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.300

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH4
FROM NODE : A4
TO NODE : A5
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1300.000 U/S INVERT (ft): 8.700 D/S INVERT (ft): 3.650
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 7.400

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : REACH6
FROM NODE : A6
TO NODE : A7
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 1313.000 U/S INVERT (ft): 3.890 D/S INVERT (ft): 2.030
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.960

NOTE: PROPOSED DITCH SECTION

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>>REACH NAME : DITCH8
FROM NODE : E8
TO NODE : A8
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): 1.910 D/S INVERT (ft): -.750
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 5.000

NOTE: PROPOSED DITCH SECTION

>>REACH NAME : DITCH9-1
FROM NODE : E9-1
TO NODE : A9-1
REACH TYPE : TRAPEZOIDAL CHANNEL, ENERGY EQ.
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF
BOT. WIDTH (ft): 10.000 LEFT SS (h/v): 2.000 RGHT SS (h/v): 2.000
LENGTH (ft): 750.000 U/S INVERT (ft): .280 D/S INVERT (ft): -.590
MANNING N: .045 ENTRNC COEF.: .100 MAX. DEPTH (ft): 99.000

NOTE: PROPOSED DITCH SECTION

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REACH SUMMARY

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INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
-----	-----	-----	-----	-----
1	WEIR	A9-2	A9-2A	TRAPEZOIDAL WEIR/GATE/ORIFICE, MAVIS EQ.
2	TOPINLET	A9-2	A9-2A	RECTANGULAR WEIR/GATE/ORIFICE, VILLEMONT EQ
3	REACH1	A1	A2	CULVERT, CIRCULAR w/ ROADWAY
4	REACH3	A3	A4	CULVERT, CIRCULAR w/ ROADWAY
5	REACH5	A5	A6	CULVERT, CIRCULAR w/ ROADWAY
6	REACH7P	A7	E8	CULVERT, CIRCULAR w/ ROADWAY
7	REACH8P	A8	E9-1	CULVERT, CIRCULAR w/ ROADWAY
8	REACH9	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
9	REACH9-2	A9-1	A9-2	CULVERT, CIRCULAR w/ ROADWAY
10	REACH9-B	A9-2A	BNDRY	CULVERT, CIRCULAR w/ ROADWAY
11	REACH9-1	A9-2	A9-2A	DROP STRUCTURE w/ CIRC. CULVERT
12	REACH0	A0	A1	TRAPEZOIDAL CHANNEL, ENERGY EQ.
13	REACH2	A2	A3	TRAPEZOIDAL CHANNEL, ENERGY EQ.
14	REACH4	A4	A5	TRAPEZOIDAL CHANNEL, ENERGY EQ.
15	REACH6	A6	A7	TRAPEZOIDAL CHANNEL, ENERGY EQ.
16	DITCH8	E8	A8	TRAPEZOIDAL CHANNEL, ENERGY EQ.
17	DITCH9-1	E9-1	A9-1	TRAPEZOIDAL CHANNEL, ENERGY EQ.

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NODAL MAXIMUM CONDITIONS REPORT
 =====

NODE ID	STAGE (ft)	VOLUME (af)	<----- RUNOFF (cfs)	INFLOW OFFSITE (cfs)	-----> OTHER (cfs)	OUTFLOW (cfs)
-----	-----	-----	-----	-----	-----	-----
A0	20.27	.46	40.39	.00	.00	39.44
A1	19.85	2.43	28.60	.00	39.44	59.09
A2	17.52	1.70	37.41	.00	59.09	86.50
A3	17.44	11.51	65.82	.00	86.50	84.40
A4	13.03	2.24	48.22	.00	84.40	114.72
A5	12.86	3.19	71.89	.00	114.72	181.36
A6	10.16	2.92	75.09	.00	181.36	252.42
A7	10.03	12.74	46.96	.00	252.42	248.01
A8	9.97	20.84	64.82	.00	245.79	186.43
A9-1	7.34	33.49	23.20	.00	185.23	154.00
A9-2	5.08	8.73	19.32	.00	154.00	152.15
A9-2A	4.99	5.61	11.55	.00	152.15	153.19
E9-1	7.41	1.19	.00	.00	186.43	185.23
E8	10.00	1.60	.00	.00	248.01	245.79
BNDRY	1.00	138.27	.00	.00	153.19	.00

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REACH MAXIMUM FLOW REPORT

=====

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
-----	-----	-----	-----	-----	-----	-----
WEIR	14.50	106.33	A9-2	4.24	A9-2A	4.12
TOPINLET	21.50	29.45	A9-2	5.08	A9-2A	4.99
REACH1	13.75	59.09	A1	19.85	A2	17.24
REACH3	16.00	84.40	A3	17.33	A4	12.18
REACH5	13.25	181.36	A5	12.86	A6	9.55
REACH7P	13.25	248.01	A7	8.73	E8	8.59
REACH8P	14.25	186.43	A8	9.28	E9-1	5.90
REACH9	21.75	130.90	A9-2A	4.99	BNDRY	1.00
REACH9-2	19.25	154.00	A9-1	7.31	A9-2	4.97
REACH9-B	21.75	22.29	A9-2A	4.99	BNDRY	1.00
REACH9-1	14.75	20.16	A9-2	4.28	A9-2A	4.18
REACH0	13.00	39.44	A0	20.24	A1	19.67
REACH2	13.50	86.50	A2	17.11	A3	16.80
REACH4	13.50	114.72	A4	13.02	A5	12.85
REACH6	13.25	252.42	A6	9.55	A7	8.73
DITCH8	13.25	245.79	E8	8.59	A8	8.43
DITCH9-1	14.25	185.23	E9-1	5.90	A9-1	5.59