Dewberry

ARCHITECTS ENGINEERS CONSULTANTS

Drainage Calculations

Regal Yacht Center Stormwater Modifications

City of Belle Isle, FL
Job# 50150413

July 2022 (Revised September 2022, December 2022)

PREPARED BY:

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PREPARED FOR:
Regal Marine Industries
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Orlando, FL 32809

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Staff Report Ex. Permit No ERP 48-01254-P 1

Excerpt from ERP 48-01254-P Stormwater Report 2

Section A: Project Description and General Information

Regal Yacht Center
Stormwater Modifications
City of Belle Isle, FL

INTRODUCTION
Regal Yacht Center is an existing industrial complex located in the City of Belle Isle, Florida. The scope of the project is located within seven parcels, and currently contains five buildings, several parking areas, and two stormwater management ponds. The project is located at 2300 Jetport Drive, Orlando, Florida 32809 near the southwest corner of Jetport Drive and Boggy Creek Road. The subject property is located within Section 31; Township 23 South, and Range 30 East.

Overall Parcel IDs:
31-23-30-0000-00-012
31-23-30-0000-00-013
31-23-30-0000-00-017

OVERALL PROJECT DESCRIPTION
The proposed project consists of and approximate 42,400 SF building addition and parking spaces. The existing Pond 100 will be modified and the size increased (Prop. Pond 100 Mod). The existing pipe network will be rerouted around the proposed building to the new Pond 100, a new outfall structure is proposed for the new Prop. Pond 100. Additionally, a concrete drive isle and parking area will be added on the east side of the Commodere building and some parking spaces will be added on the east side of the Administrative building. The altered drainage system will retain the difference between the pre and post development 25-year, 24-hour storm event and not negatively affect off-site properties. In addition the project proposed to remove 4 septic filed and septic tanks and connect the proposed and existing buildings to the City of Orlando sanitary sewer collection system.

EXISTING CONDITIONS
Existing Basin Descriptions
The Regal Yacht Center was constructed in 1971 with several modifications in the following years and permitted under ex. South Florida Water Management District Permit ERP No. 48-01254-P (approved May 2, 2006). The project area is within three drainage basins (Basin 50, Basin 100 and Basin 110) and two existing ponds (Ex. Ponds 50 and Pond 100) see Section F for the overall Basin Map as per ERP No. 48-01254-P. The Pre-Developed Conditions were obtained for these recreated basins by utilizing current existing site conditions.

Basin 50 drains to Ex. Pond 50 and discharges to an existing swale on the south side of Jetport Drive via a control structure and travels southwest via the existing swale. Basin 100 drains to Ex. Pond 100 which drains offsite to the south to an existing ditch along the north side of the CSX railroad via an existing Double 18" CMP Outfall. Basin 110 currently drains to a basin depression which overflows directly overland offsite to the same ditch.

Existing Soils, Groundwater, and Topography
The site is a developed. Grades vary from 99' (NAVD 88) at the northern area of the project to 94' at Ex. Pond 100. The overall site topography is higher than the surrounding area. Per FEMA flood panel 12095C0430F (Sep. 25, 2009), the site is located within Zone 'X'. Based on the USDA Soil Conservation Service Soils Survey of Orange County, Florida the existing onsite soils are as follows:

Soils		
Soil #	Soil Name	Hydrologic Soil Group
#3	Bassinger Fine Sand	A/D
#26	Ona Fine Sand	B/D
#34	Pomello Fine Sand	A
#37	St. Johns Fine Sand	B/D
#42	Sanibel Muck	A/D
#44	Smyrna-Smyrna Wet, Fine Sand	A/D
#45	Smyrna-Smyrna Fine Sand	A/D
#46	Tavares Fine Sand	A

PROPOSED DEVELOPMENT AND DESIGN CONSIDERATIONS
Proposed Basin and Structure Descriptions
In the post-developed condition, Basin 100 and Basin 110 will be combined into a single basin: Basin 100. The addition of the proposed 42,400 square foot building will require Ex. Pond 100 to be modified by both moving the boundaries of and increasing the area of the proposed wet detention pond (Pond 100 Mod). The 13.35-acre Basin 100 contains the Prop. Building and drain to Prop. Pond 100 Mod. Basin 115 contains the additional surface pavement east of the Commodore building and will discharge to pond 115, where runoff from basin 115 will be pre-treated before being discharged to Pond 100 Mod. The existing control structure will be replaced with

a Type H inlet new control structure. The additional proposed 16,144 sf concrete surface pavement west and south of the proposed building expansion will be directed to Pond 30 via an existing stormwater inlet to be pre-treated within pond 30. Pond 30 was designed to handle the pre-treatment of 0.60-acres (26,136 square feet) of impervious area from Basin 10 (0.98 ac). However, since Basin 10 was never developed, this allocation will be used by the proposed impervious parking area in Basin 100. See the table below for a comparison between the permitted, pre-development, and post-development curve numbers of the project area.

Curve Number Comparison			
Basin	Curve Number (CN)		
	Permitted	Pre-Develop.	Post-Develop.
50	94.4	93.4	94.0
100	95.5	96.1	97.1
110	82.9	81.2	

Additionally, the table below shows a comparison between the permitted, pre-development, and post-development impervious areas of the project area.

Impervious Area Comparison			
Basin	Curve Number (CN)		
	Permitted	Pre-Develop.	Post-Develop.
50	75.2%	66.9%	71.2%
100	85.4%	85.8%	87.5%
110	36.9%	30.2%	

Pond 50 proposed CN is lower than the designed and permitted CN therefore no additional stormwater analysis is required.

The allowable discharge rates for the proposed Pond 100 Mod are the sum of the discharge rates from Pond 100 and 110 into the rail road ditch RRditch as per ERP 48-01254-P (see Section F) for the design storms. The table below summaries the proposed discharges from Pond 100 Mod. The proposed discharges are less than the pre-developed discharges, per South Florida Water Management District requirements.

Proposed Discharge		
Storm Event	Permitted	Post-Develop.
	Discharge (cfs)	Discharge (cfs)
100-yr, 72-hr	77.67	76.01
25-yr, 72-hr	59.51	59.28

The seasonal high water table elevations were obtained based on the initial stages listed in Previously Permitted Model Input Data in South Florida Water Management District Permit No. 48-01254-P (see Staff Retort in Section F):

- Ex. Pond TL= 94 NGVD = 94-0.937= 93.063 NAVD
- Prop. Pond 100 Mod = 93.35' NAVD

WATER QUALITY

Per South Florida Water Management District's Permit Information Manual, Section 5.2: Treatment Volume:

Treatment required (whatever is largest):

- 1" over drainage area over drainage area or
- 2.5' x % imp x area w.o. pond
- 0.5" x Basin area dry pre-treatment (*)

(*) pre-treatment volume only for the additional pavement area, per pre-application meeting with SFWMD on 03/21/2022.

All the required treatment for post Basin 100 will be provided within the proposed Pond 100 Mod.

Pre-Treatment for the additional new pavement area will be provided by existing Pond 30 and proposed dry Pond 115. In particular, the runoff from additional pavement area west of the proposed building addition will be conveyed and pre-treated in Pond 30 and runoff from Basin 115 will be conveyed and pre-treated in dry Pond 115.

Treatment Volume		
Pond	Treatment Volume Required (Cu-Ft)	Treatment Volume Provided (Ac-Ft)
100 Mod	2.31	2.31

Pre-Treatment Volume		
Pond	Treatment Volume Required (Cu-Ft)	Treatment Volume Provided (Ac-Ft)
115	0.017	0.053
30	0.47	0.47

Impaired Water

This project discharges into Boggy Creek which is an impaired water body (WBID No. 3168B). A net improvement pollutant loading analysis was performed using BMP Trains on Basin 100, where the proposed improvements occur.

The BMP Trains calculations shows that Pond 100 Mod provides the treatment efficiency for both Nitrogen and Phosphorus.

The project proposed to remove 4 septic filed and septic tanks and connect the proposed and existing buildings to the City of Orlando sanitary sewer collection system. This will result in a reduction of pollutant to the soil from the existing septic system and as result improving water quality.

See Section D for BMP Trains Calculations.

RECOVERY

Per South Florida Water Management District's Permit Information Manual: Recovery Time, maximum of one-half inch of the detention volume in 24 hours.

NOTE:

Seasonal high water table elevations taken from ex. South Florida Water Management District Permit No. 48-01254-P have been converted from NGVD29 to NAVD88 with a conversion factor of -0.937 feet in the ICPR Inputs.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	3.4	1.8%
26	Ona fine sand, 0 to 2 percent slopes	16.0	8.5%
33	Pits	0.4	0.2%
34	Pomello fine sand, 0 to 5 percent slopes	36.7	19.5%
37	St. Johns fine sand	16.4	8.7%
42	Sanibel muck	21.0	11.1%
44	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	75.8	40.2%
45	Smyrna fine sand-Urban land complex, 0 to 2 percent slopes	0.7	0.4%
46	Tavares fine sand, 0 to 5 percent slopes	2.3	1.2%
50	Urban land, 0 to 2 percent slopes	15.0	8.0%
99	Water	1.0	0.5%
Totals for Area of Interest		**188.7**	**100.0%**

Regal Yacht Center Stormwater Modifications

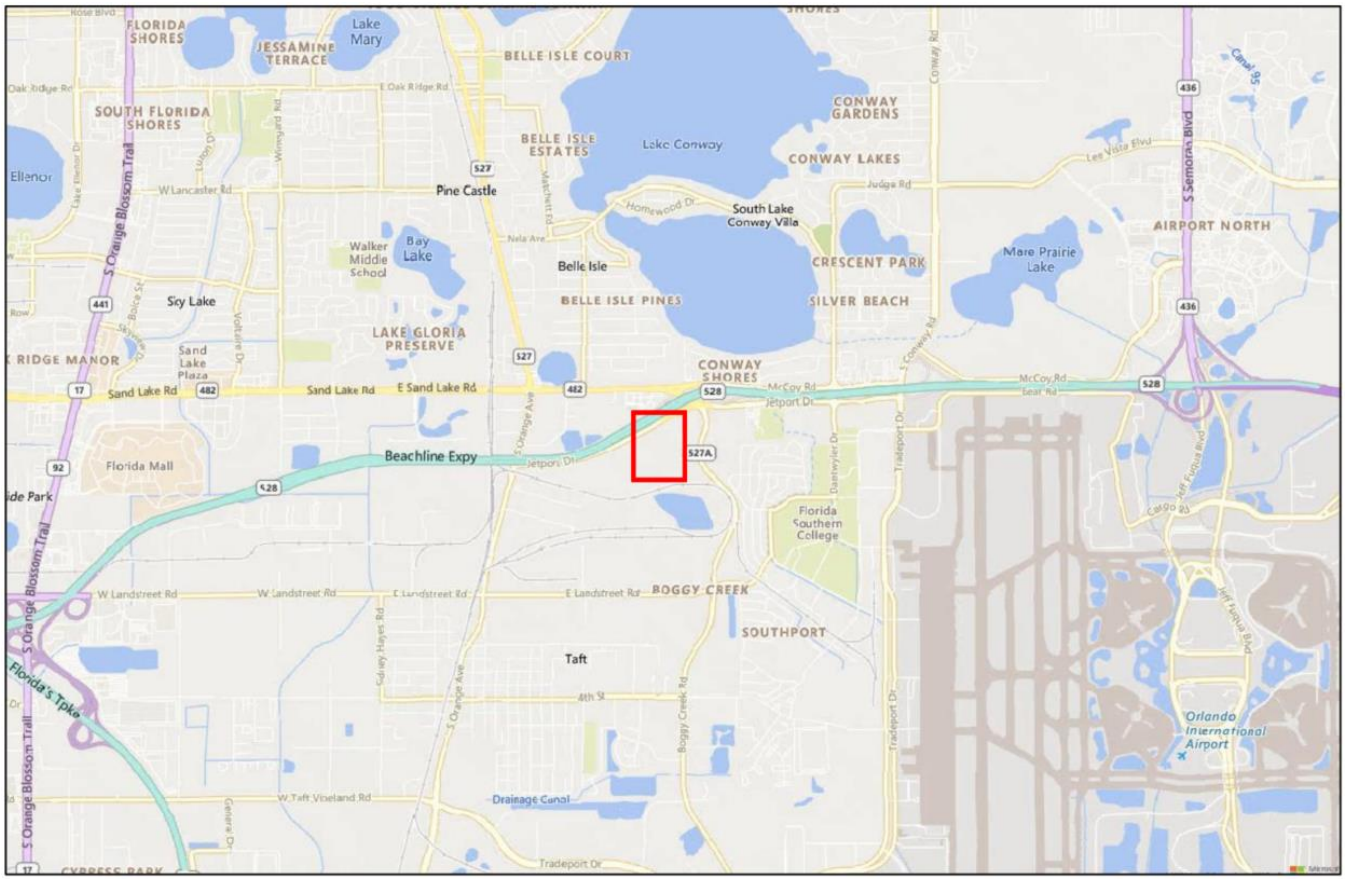
City of Belle Isle, Florida

SOILS MAP

Regal Yacht Center Stormwater Modifications

City of Belle Isle, Florida

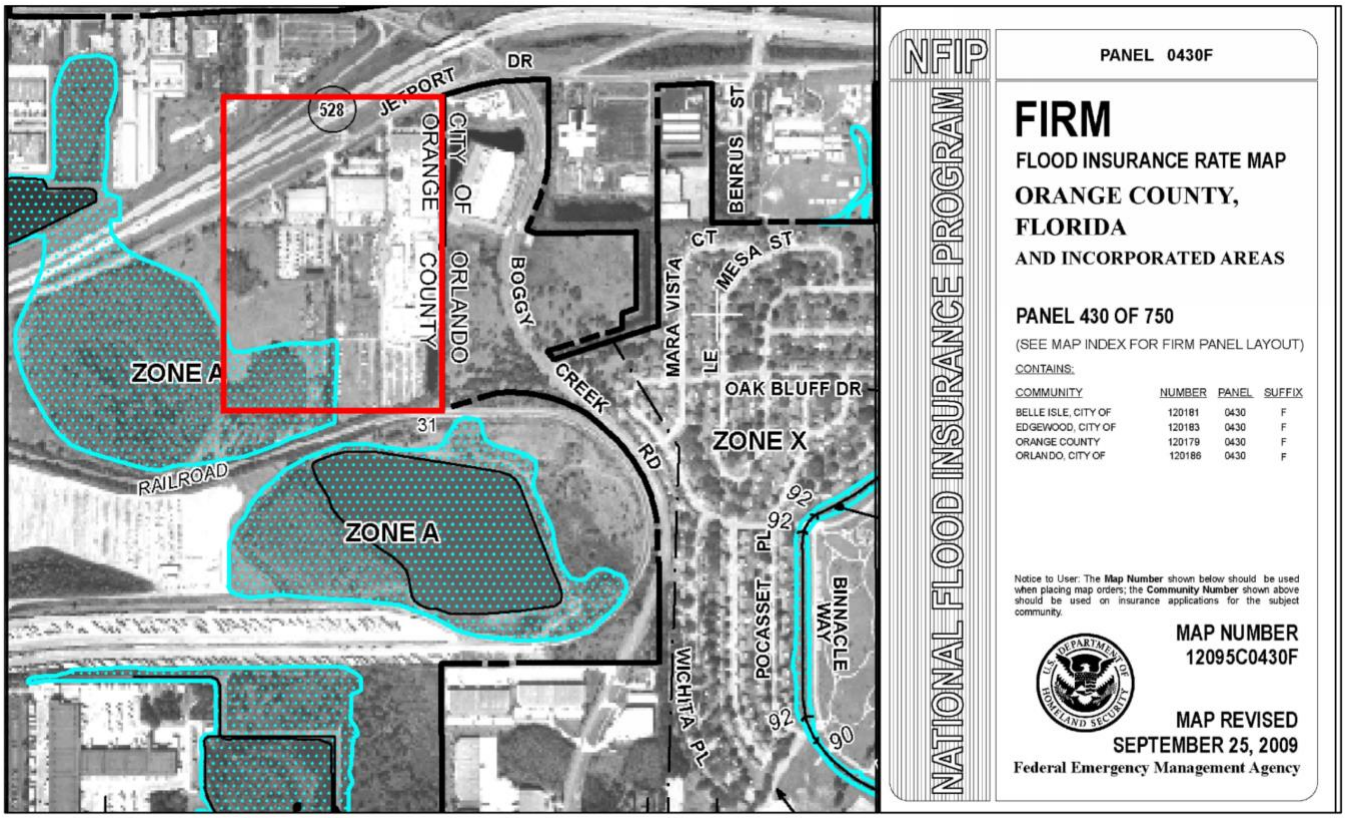
AERIAL



Regal Yacht Center Stormwater Modifications

City of Belle Isle, Florida

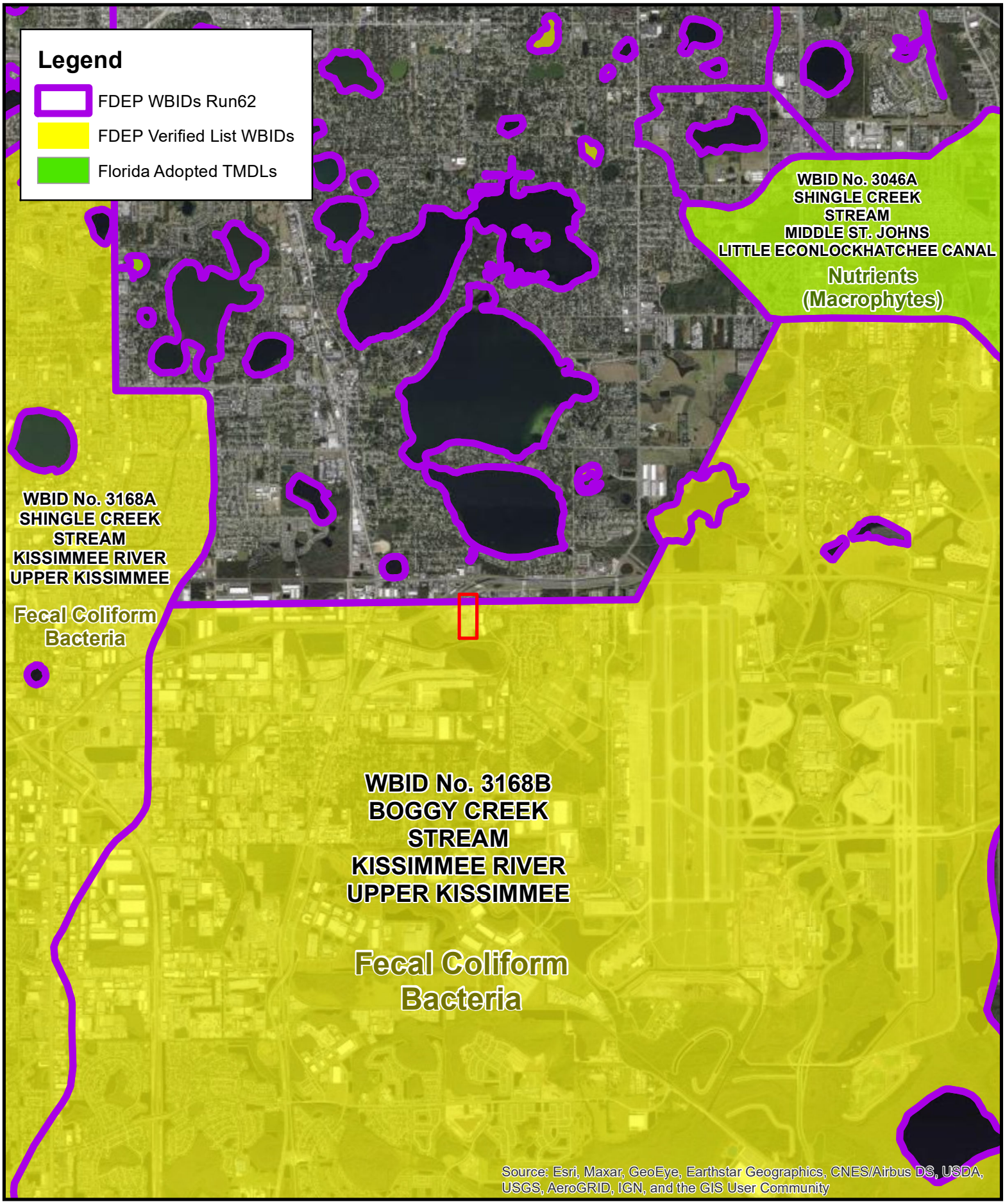
LOCATION



Regal Yacht Center Stormwater Modifications

City of Belle Isle, Florida

FEMA



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Regal Yacht Center

Orange County, FL
WBID Exhibit

N

0 2,500 5,000 Feet

Data Source:
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Section B: Pre & Post-Development Drainage Calculations

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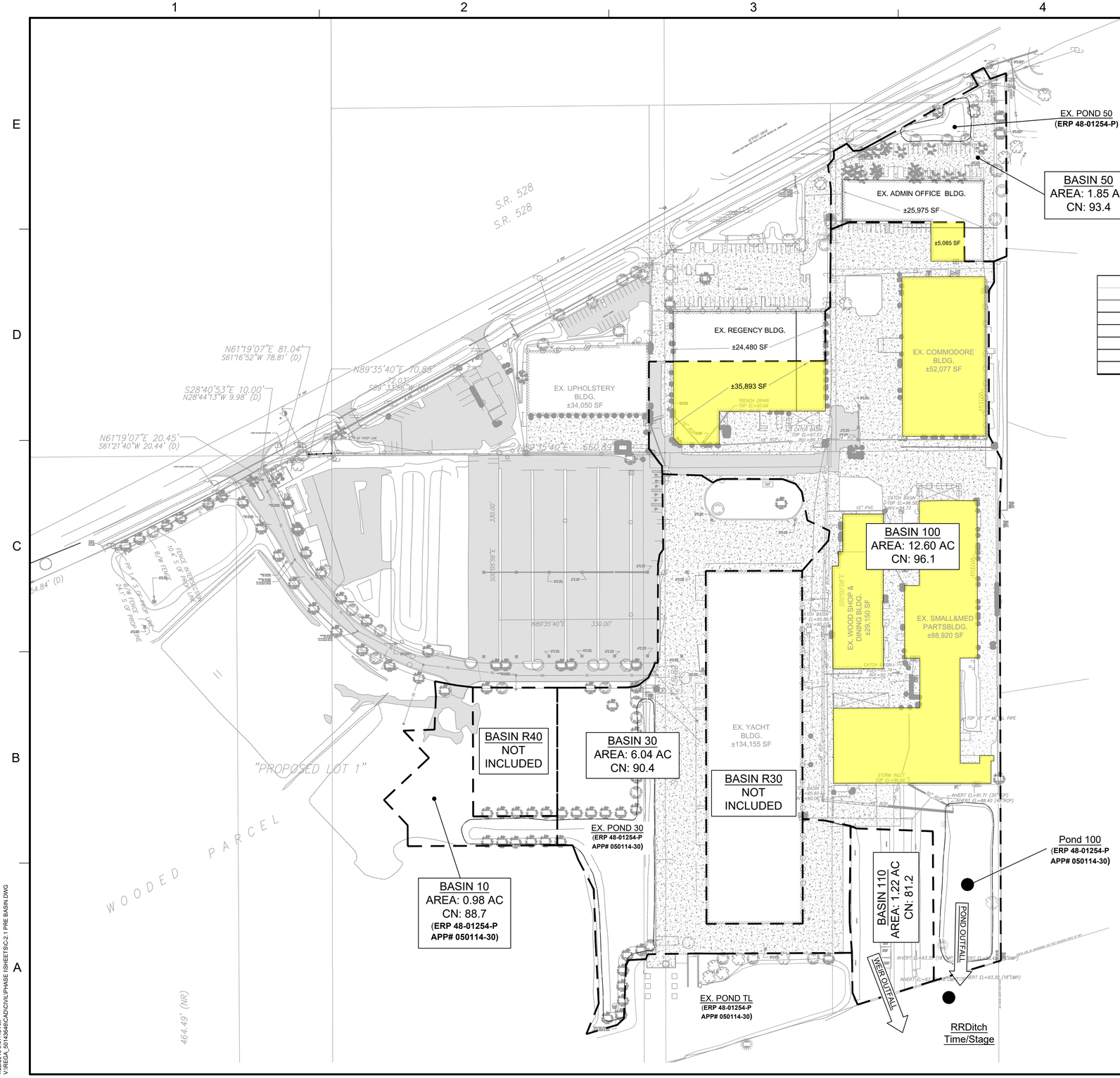

Basin #	Pavement (ac)	Building (ac)	Pond (ac)	Pervious (ac)	Total (ac)
10	0.60	0.00	0.22	0.16	0.98
30	4.12	0.00	1.12	0.80	6.04
50	0.64	0.60	0.17	0.44	1.85
100	5.97	4.85	0.71	1.07	12.60
110	0.37	0.37	0.00	0.48	1.22

PERMIT NO. 48-01254-P APP. NO. 050114-30			
CONTROL ELEVATION (1)			
Basin	**Area** (ac)	**Control Elev.** (ft)	**WSWT Control Elev.** (ft)
100	12.60	93.25 (NGVD) 92.31 (NAVD)(2)	93.25 (NGVD) 92.31 (NAVD)(2)

(1) Peak Stage and control elevation depicted from approved Stormwater Report (ERP# 48-01254-P, APP.# 050114-30)
(2) NAVD = NGVD - 0.937'

PARKING LOT DESIGN(1) (Storm Frequency: 25YR/24HR)		
Basin	**Peak Stage** (ft)	**Min. Parking Lot Elev.** (ft)
100	95.84 (NGVD) 94.90 (NAVD)(2)	95.84 (NGVD) 94.90 (NAVD)(2)

(1) Peak Stage and control elevation depicted from approved Stormwater Report (ERP# 48-01254-P, APP.# 050114-30)
(2) NAVD = NGVD - 0.937'

Building Finish Floor(1) (Storm Frequency: 100YR/72HR)		
Basin	**Peak Stage** (ft)	**Min. Finish Floor.** (ft)
100	97.44 (NGVD) 96.50 (NAVD)(2)	97.44 (NGVD) 96.50 (NAVD)(2)

(1) Peak Stage and control elevation depicted from approved Stormwater Report (ERP# 48-01254-P, APP.# 050114-30)
(2) NAVD = NGVD - 0.937'

Additional Peak Stages (1)		
Pond	**Peak Stage** 5YR/24HR (ft)	**Peak Stage** 25YR/72HR (ft)
100	95.43 (NGVD) 94.49 (NAVD)(2)	96.87 (NGVD) 95.93 (NAVD)(2)

(1) Peak Stage Elevations obtained from original stormwater model for ERP# 48-01254-P, APP.# 050114-30, with the additional storm frequencies)
(2) NAVD = NGVD - 0.937'

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REGAL MARINE INDUSTRIES
BOAT PRODUCTION
EXPANSION
BELLE ISLE
2300 JETPORT DRIVE BELLE
CITY OF BELLE ISLE, FLORIDA

CONSTRUCTION PLANS

SEAL

Reinaldo Malave
FL P.E. # 73586
Jan 31, 2023

SCALE

0' 50' 100' 200'
SCALE: 1" = 100'

REVISIONS

NO.	DESCRIPTION	DATE

DRAWN BY GL
APPROVED BY RM
CHECKED BY GL
DATE 9 / 6 / 2022

TITLE

PRE-DEVELOPMENT BASIN MAP

PROJECT NO. 50150413

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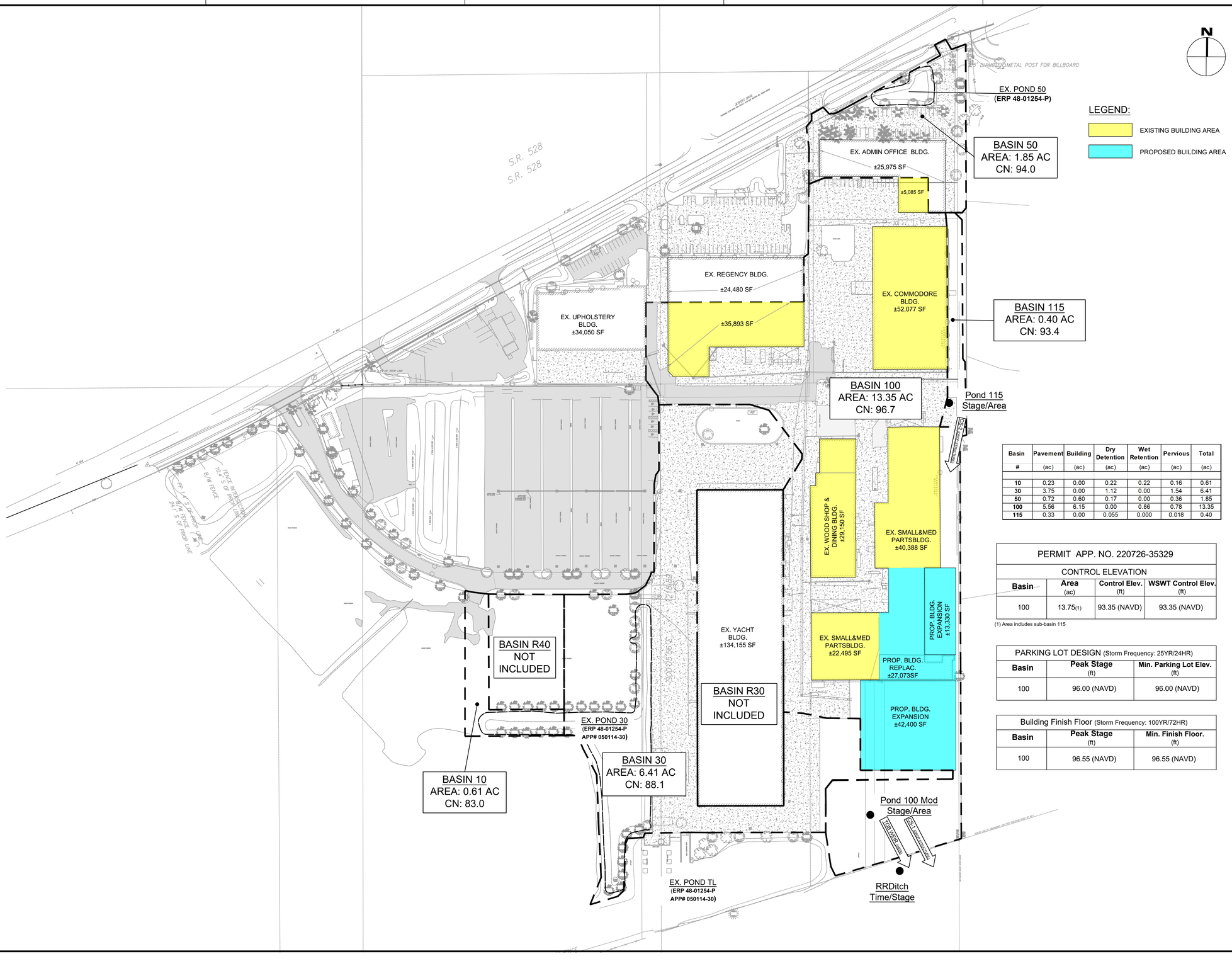

Basin	Pavement	Building	Dry Detention	Wet Retention	Pervious	Total
#	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)
10	0.23	0.00	0.22	0.22	0.16	0.61
30	3.75	0.00	1.12	0.00	1.54	6.41
50	0.72	0.60	0.17	0.00	0.36	1.85
100	5.56	6.15	0.00	0.86	0.78	13.35
115	0.33	0.00	0.055	0.000	0.018	0.40

PERMIT APP. NO. 220726-35329			
CONTROL ELEVATION			
Basin	**Area** (ac)	**Control Elev.** (ft)	**WSWT Control Elev.** (ft)
100	13.75(1)	93.35 (NAVD)	93.35 (NAVD)

(1) Area includes sub-basin 115

PARKING LOT DESIGN (Storm Frequency: 25YR/24HR)		
Basin	**Peak Stage** (ft)	**Min. Parking Lot Elev.** (ft)
100	96.00 (NAVD)	96.00 (NAVD)

Building Finish Floor (Storm Frequency: 100YR/72HR)		
Basin	**Peak Stage** (ft)	**Min. Finish Floor.** (ft)
100	96.55 (NAVD)	96.55 (NAVD)

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BELLE ISLE
2300 JETPORT DRIVE BELLE
CITY OF BELLE ISLE, FLORIDA

CONSTRUCTION PLANS

SEAL

Reinardo Malave
FL PE # 74366
Jan 31, 2023

SCALE

0' 50' 100' 200'
SCALE: 1" = 100'

REVISIONS

NO.	DESCRIPTION	DATE

DRAWN BY GL
APPROVED BY RM
CHECKED BY GL
DATE 9 / 6 / 2022

TITLE

POST-DEVELOPMENT BASIN MAP

PROJECT NO. 50150413

C-2.2

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REGAL MARINE
City of Belle Isle
Pre and Post Development

Permitted (ERP 48-01254-P)

Basin #	CN 98 Impervious (ac)	Impervious (% of Total)	CN 100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN 87 Wetland (ac)	Wetland (% of Tot.)	Total (ac)	Composite CN
10	0.60	61.2%	0.00	0%	0.38	39%	74	0.00	0%	**0.98**	**88.7**
30	4.12	68.2%	0.00	0%	1.92	32%	74	0.00	0%	**6.04**	**90.4**
50	1.39	75.2%	0.00	0%	0.46	25%	84	0.00	0%	**1.85**	**94.5**
100	10.76	85.4%	0.51	4%	1.33	11%	74	0.00	0%	**12.60**	**95.5**
110	0.45	36.9%	0.00	0%	0.77	63%	74	0.00	0%	**1.22**	**82.9**
110+110	**11.21**	81.1%			**2.10**					**13.82**	**94.4**

Pre-Development

Basin #	CN 98 Impervious (ac)	Impervious (% of Total)	CN 100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN 87 Wetland (ac)	Wetland (% of Tot.)	Total (ac)	Composite CN
10 [(1)]	0.60	61.2%	0.00	0%	0.38	39%	74	0.00	0%	**0.98**	**88.7**
30 [(1)]	4.12	68.2%	0.00	0%	1.92	32%	74	0.00	0%	**6.04**	**90.4**
50	1.24	66.9%	0.00	0%	0.61	33%	84	0.00	0%	**1.85**	**93.4**
100	10.82	85.8%	0.71	6%	1.07	8%	74	0.00	0%	**12.60**	**96.1**
110	0.368	30.2%	0.00	0%	0.852	70%	74	0.00	0%	**1.22**	**81.2**
110+110	**11.18**	80.9%			**1.92**					**13.82**	**94.8**

Post-Development

Basin #	CN 98 Impervious (ac)	Impervious (% of Total)	CN 100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN 87 Wetland (ac)	Wetland (% of Tot.)	Total (ac)	Composite CN
10	0.23	37.7%	0.00	0%	0.38	62%	74	0.00	0%	**0.61**	**83.0**
30	3.74	58.4%	0.00	0%	2.66	42%	74	0.00	0%	**6.41**	**88.0**
50	1.32	71.2%	0.00	0%	0.53	29%	84	0.00	0%	**1.85**	**94.0**
100 [(2)]	11.71	87.7%	0.86	6%	0.78	6%	74	0.00	0%	**13.35**	**96.7**
115	0.33	80.7%	0.00	0%	0.08	19%	74	0.00	0%	**0.4**	**93.4**

(1) CN and Impervious area as per ERP 48-01254-P
(2) Post Basin 100 includes Pre Basin 110 area

REGAL MARINE
City of Belle Isle
BASIN AREA COMPARISON

BASIN NAME	PERMITTED AREA (AC)	EXISTING AREA (AC)	PROPOSED AREA (AC)
10	0.98	0.98	0.61
30	6.04	6.04	6.41
50	1.85	1.85	1.85
100	12.6	12.6	13.35
110	1.41	1.22	0
115	0	0	0.40
TOTAL	**22.88**	**22.69**	**22.62**

REGAL MARINE

STAGE - STORAGE CALCULATIONS

DATUM: NAVD88

POND: 100 Mod

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	CUM STORAGE (ac-ft)	
93.35	0.86				0.00	NWL
		0.88	0.65	0.57		
94.00	0.90				0.57	
		0.94	1.00	0.94		
95.00	0.98				1.51	
		1.04	0.20	0.21		
95.20	1.09				1.72	(*)
		1.14	1.00	1.14		
96.20	1.18				2.86	T.O.B. (*)

NWL Elevation:	**93.35 feet**		
Required Treatment Volume =		2.31	Ac-ft
Set Weir at or above =		95.72	feet
Weir Set at =		95.72	feet
Provided Treatment Volume =		2.31	Ac-ft
Drawdown Volume		0.52	Ac-ft

(*) Includes Swale area along the east property boundary

REGAL MARINE

STAGE - STORAGE CALCULATIONS

DATUM: NAVD88

POND: 115

ELEVATION (feet)	AREA (acres)	AVG AREA (acres)	DEPTH (feet)	STORAGE (ac-ft)	CUM STORAGE (ac-ft)
94.50	0.004				0.00
		0.03	2.00	0.06	
96.50	0.055				0.06

Required Treatment Volume =	0.017	Ac-ft
Set Weir at or above =	95.07	feet
Weir Set at =	96.30	feet
Provided Treatment Volume =	0.053	Ac-ft

REGAL MARINE
WATER QUALITY CALCULATIONS - SFWMD

SFWMD Wet Detention Criteria

Basin #	Pond #	Site Area (ac)	Pond Area (ac)	Site Area w.o. Pond (ac)	Building Area (ac)	Pavement Area (ac)	Pervious Area (ac)	W.Q. Area (ac)	Imp. for W.Q. (ac)	% Imp. for W.Q. (%)	Water Quality 1.0 in x area (ac-ft)	2.5 in x % imp x area w.o. pond (ac-ft)	W.Q. Volume (ac-ft)	W.Q. Provided (ac-ft)	W.Q. Pre-Treat. (ac-ft)
100	100	13.35	0.86	12.49	5.89	5.82	0.78	6.60	5.82	88.2%	1.11	2.29	2.29	2.31	0.00
115	115	0.40	0.00	0.40	0.00	0.33	0.08	0.40	0.33	80.7%	0.03	0.068	0.07	0.00	0.017
											1.15	2.36	2.36		

10	30	0.61	0.23	0.00	0.03
30 (1)	30	6.41	3.74	0.00	0.27
30P	TL	4.16	3.56	0.00	0.17
					0.47

Treatment provided in Pond TL (ERP 48-01254-P)

Dry Pre-Treatment Required in Pond 30 (2):	0.47	0.47
Dry Pre-Treatment Required in Pond 115 (3):	0.017	0.053
Wet-Detention Required in Pond 100 Mod (Total - Pre-treatment) (4):	2.31	2.31

(1) Approved Impervius area for Basin 30= 4.12 ac (ERP 48-01254-P)
(2) Required Dry Pre-Treatment volume does not increase the allowable volume per ERP 48-01254-P
(3) Pre-Treatment within Pond 115 only from additional pavement in Basin 115
(4) Treatment Volume includes Basin 115; the pre-treatment volume subtracted from the total is for Pond 115 only

ERP 48-01254-P

Regal Marine
WATER QUALITY CALCULATIONS

Basin #	Pond #	Area (ac)	Impervious Area (ac)	Pre-Treatment 0.5 in x area (ac-ft)	Water Quality 1 in x area (ac-ft)	Water Quality 2.5 in x imp (ac-ft)	W.Q. Required (ac-ft)	W.Q. Provided (ac-ft)
20A	20A	1.70	0.51	0.07	0.14	0.11	0.14	
20	20	1.98	1.20	0.08	0.17	0.25	0.25	
		3.68		0.15			0.39	
						Dry Pre-Treatment Required in Pond 20:	0.15	0.16
						Wet-Detention Required in Pond 10 (Total - Pre-treatment):	0.24	0.26
10	30	0.98	0.60	0.04	0.08	0.13	0.13	
30	30	6.04	4.12	0.25	0.50	0.86	0.86	
30P	TL	4.16	3.56	0.17	0.35	0.74	0.74	
				0.47			1.73	
						Dry Pre-Treatment Required in Pond 30:	0.47	0.47
						Wet-Detention Required in Pond TL (Total - Pre-treatment):	1.26	1.29

Existing Basins (Water Quality Already Provided)

Basin #	Pond #	Area (ac)	Impervious Area (ac)
50	50	1.85	1.39
60	60	2.43	1.82
70	70	1.87	1.41
80	80	1.19	0.89
100	100	12.60	10.76
110	110	1.41	0.45

WET DETENTION TREATMENT
CONSERVATION DESIGN POOL BELOW SHWL WITH DISCHARGE

Lake: **Pond 100 Mod**

I. REQUIRED TREATMENT VOLUME (Q)

Basin Area Requiring Full Treatment	13.75	Ac.
On-site Runoff	1.00	in.
Required Treatment Volume (Q) =	**1.15**	**Ac-Ft**

II. PERMANENT WET POOL VOLUME (Vb)

Calculate the 14 day Residence Volume and the minimum runoff of 0.667 inches, and define the larger of the two as the Permanent Wet Pool Volume.

a) 14 DAY RESIDENCE VOLUME (Vr)

Vr = (A) (C) (P) (R) (1FT/12IN)

where,

A = Project site + Immediate Upstream Basin, Drainage area

C = Composite Rational Runoff Coefficient

P = Historic average wet season rainfall rate for the project area

R = Residence Time = 14 days

A =	13.75	Ac.			
C =	0.95				
P =	32	in.	/	122	days
R =	14	days			
Vr =	4.00	Ac-Ft			

b) 0.667 INCHES MINIMUM RUNOFF VOLUME (Vmin)

A =	13.75	Ac.
p =	0.667	in.
Vmin =	0.76	Ac-Ft

Compare Vr to Vmin , the Permanent Wet Pool Volume (Vb) is the larger of the two:

Vb = **4.00** **Ac-Ft**

WET DETENTION TREATMENT
CONSERVATION DESIGN POOL BELOW SHWL WITH DISCHARGE

Lake: **Pond 100 Mod**

III. WET DETENTION SYSTEM DESIGN POOL VOLUME REQUIRED (Vt)

The Wet Detention Design Pool Volume (Vt) is the sum of the Treatment Volume (Q) and the Permanent Wet Pool Volume (Vb)

Vt =Q+Vb

Q =	1.15	Ac-Ft
Vb =	4.00	Ac-Ft
Vt =	**5.14**	**Ac-Ft**

IV. DESIGN POOL VOLUME PROVIDED (Vp)

Volume provided = Vp = Vp1 + Vp2

Vp1 =	1.81	Ac-Ft	(Vol. between Control Elev. and Grade Break *)
Vp2 =	4.05	Ac-Ft	(Vol. between Grade Break and Pond Bottom *)
Vp =	**5.86**	**Ac-Ft**	* See Stage/Area/Volume Calculation Table

Vp > Vt, therefore Lake meets volume requirements.

IV. MINIMUM POND AREA (As)

Minimum pond area for alternative 3, based on treatment volume below control elevation of "v"-notch weir, is 0.5 inch of runoff (+ 50% for Evers Reservoir Rule) and 10 inch maximum head or based on storing the wet detention design pool volume from shwl to a maximum depth of 8 feet.

a) Calculate Storage volume for 0.5 inch of runoff + 50% (Vw)

Drainage Area =	13.75	Ac.
1/2" Runoff =	0.5	in.
Vw =	**0.57**	**Ac-Ft**

b) Calculate min. pond area based on 10" max. head fluctuation for a 0.5" runoff

As = Vw / (10 in * 1 Ft/ 12 in)

As =	**0.69**	**Ac.**

c) Calculate min. pond area based on design pool volume at a max. depth (8 ft.)

As = (Vt) / 8

As =	**0.64**	**Ac.**

Therefore, the correct minimum pond area, is the larger of the two As values computed above.

Minimum pond area, As = **0.69** **Ac.**

Compare actual pond area at NWL (Anwl) to minimum pond area (As):

Anwl = **0.86** **Ac.**

Anwl > As; pond size is acceptable

WET DETENTION TREATMENT
CONSERVATION DESIGN POOL BELOW SHWL WITH DISCHARGE

Lake: **Pond 100 Mod**

V. WATER QUALITY DRAWDOWN CALCULATIONS

The outfall weir shall be designed to discharge 1/2" of runoff volume in no less than 24 hours.

Lake Area (at NWL) = 0.86 Ac.
1/2" of runoff volume + 50% (Evers Res. Rule) =
0.573 Ac-Ft = 24,956 Cu-Ft
Fluctuation Depth = 2.370 ft
Trial weir width = 0.25 ft = 3 in

Time (hrs.)	Head (ft.)	Volume Remaining (ft.3)	Q (cfs.)	Incr. Volume (cfs.)	
0	2.370	24,956	2.901	10,442	
1	0.390	14,514	0.193	696	
2	0.371	13,818	0.180	646	
3	0.354	13,172	0.167	602	
4	0.337	12,570	0.156	561	
5	0.322	12,009	0.145	524	
6	0.308	11,486	0.136	490	
7	0.295	10,996	0.127	459	
8	0.283	10,537	0.120	430	
9	0.271	10,106	0.112	404	
10	0.260	9,702	0.106	380	
11	0.250	9,322	0.099	358	
12	0.241	8,964	0.094	338	
13	0.232	8,626	0.089	319	
14	0.223	8,307	0.084	301	
15	0.215	8,006	0.079	285	
16	0.207	7,721	0.075	270	
17	0.200	7,451	0.071	256	
18	0.193	7,195	0.067	243	
19	0.187	6,952	0.064	231	
20	0.180	6,721	0.061	219	
21	0.175	6,502	0.058	209	
22	0.169	6,293	0.055	199	
23	0.164	6,095	0.053	189	
24	0.158	5,905	0.050	181	0.041667
25					

Percent Discharged in 24 Hours 76.3%
*Remaining Head at Hour 24 Added to Initial Stage of Lake

Section C: Post-Development ICPR Input and Results

Scenario	Sim	Node Name	Warning Stage [ft]	Maximum Stage [ft]	Time to Maximum Stage [hrs]	Maximum Total Inflow Rate [cfs]	Time to Maximum Total Inflow Rate [hrs]	Maximum Total Outflow Rate [cfs]	Time to Maximum Total Outflow Rate [hrs]
Scenario1	100Y24	Pond 100 Mod	96.20	96.03	9.0414	29.72	8.9997	29.64	9.0497
Scenario1	100Y24	Pond 115	96.50	96.39	9.0331	0.86	8.9997	0.85	9.0164
Scenario1	100Y24	RRDitch	95.00	95.44	22.5081	29.64	9.0497	0.00	0.0000
Scenario1	100y72	Pond 100 Mod	96.20	96.55	71.7638	77.85	60.0525	76.01	60.1012
Scenario1	100y72	Pond 115	96.50	96.55	71.8638	2.26	60.0525	2.20	60.0978
Scenario1	100y72	RRDitch	95.00	96.54	71.7555	76.01	60.1050	0.00	0.0000
Scenario1	25Y24H	Pond 100 Mod	96.20	96.00	9.0480	24.06	8.9980	23.99	9.0480
Scenario1	25Y24H	Pond 115	96.50	96.38	9.0397	0.69	9.0063	0.69	9.0397
Scenario1	25Y24H	RRDitch	95.00	94.90	22.0063	23.99	9.0480	0.00	0.0000
Scenario1	25y72	Pond 100 Mod	96.20	96.18	60.1044	60.89	60.0514	59.28	60.1085
Scenario1	25y72	Pond 115	96.50	96.44	60.0859	1.76	60.0514	1.75	60.0859
Scenario1	25y72	RRDitch	95.00	95.93	70.0022	59.28	60.1085	0.00	0.0000

Scenario	Sim	Link Name	From Node Name	To Node Name	Maximum Flow Rate [cfs]	Time to Maximum Flow Rate [hrs]
Scenario1	100Y24	CS-1	~~D~CS-1~N	RRDitch	7.36	9.0497
Scenario1	100Y24	CS-2	~~D~CS-2~N	Pond 100 Mod	0.85	9.0164
Scenario1	100Y24	TOB WEIR	Pond 100 Mod	RRDitch	22.28	9.0497
Scenario1	100y72	CS-1	~~D~CS-1~N	RRDitch	15.69	60.0944
Scenario1	100y72	CS-2	~~D~CS-2~N	Pond 100 Mod	2.20	60.1126
Scenario1	100y72	TOB WEIR	Pond 100 Mod	RRDitch	60.33	60.1050
Scenario1	25Y24H	CS-1	~~D~CS-1~N	RRDitch	6.28	9.0563
Scenario1	25Y24H	CS-2	~~D~CS-2~N	Pond 100 Mod	0.69	9.0397
Scenario1	25Y24H	TOB WEIR	Pond 100 Mod	RRDitch	17.72	9.0480
Scenario1	25y72	CS-1	~~D~CS-1~N	RRDitch	12.80	60.1085
Scenario1	25y72	CS-2	~~D~CS-2~N	Pond 100 Mod	1.75	60.0895
Scenario1	25y72	TOB WEIR	Pond 100 Mod	RRDitch	46.48	60.1085

Simple Basin: Basin 100

Scenario:	Scenario1
Node:	Pond 100 Mod
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	13.3500 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 115

Scenario:	Scenario1
Node:	Pond 115
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4000 ac
Curve Number:	93.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: Pond 100 Mod

Scenario:	Scenario1
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	93.35 ft
Warning Stage:	96.20 ft

Stage [ft]	Area [ac]	Area [ft2]
93.35	0.8600	37462
94.00	0.9000	39204
95.00	0.9800	42689
95.20	1.0900	47480
96.20	1.1800	51401

Comment:

Node: Pond 115

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 94.50 ft
Warning Stage: 96.50 ft

Stage [ft]	Area [ac]	Area [ft2]
94.50	0.0040	174
96.50	0.0550	2396

Comment:

Node: RRDitch

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 93.00 ft
Warning Stage: 95.00 ft
Boundary Stage: RRDitch

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	93.06
0	0	0	0.2500	93.06
0	0	0	0.5000	93.06
0	0	0	0.7500	93.06
0	0	0	1.0000	93.06
0	0	0	1.2500	93.06
0	0	0	1.5000	93.06
0	0	0	1.7500	93.06
0	0	0	2.0000	93.03
0	0	0	2.2500	93.03
0	0	0	2.5000	93.03
0	0	0	2.7500	93.03
0	0	0	3.0000	93.03
0	0	0	3.2500	93.03

Year	Month	Day	Hour	Stage [ft]
0	0	0	3.5000	93.04
0	0	0	3.7500	93.04
0	0	0	4.0000	93.05
0	0	0	4.2500	93.05
0	0	0	4.5000	93.06
0	0	0	4.7500	93.10
0	0	0	5.0000	93.11
0	0	0	5.2500	93.12
0	0	0	5.5000	93.13
0	0	0	5.7500	93.14
0	0	0	6.0000	93.16
0	0	0	6.2500	93.19
0	0	0	6.5000	93.22
0	0	0	6.7500	93.26
0	0	0	7.0000	93.29
0	0	0	7.2500	93.34
0	0	0	7.5000	93.40
0	0	0	7.7500	93.47
0	0	0	8.0000	93.55
0	0	0	8.2500	93.63
0	0	0	8.5000	93.73
0	0	0	8.7500	93.83
0	0	0	9.0000	93.93
0	0	0	9.2500	94.02
0	0	0	9.5000	94.11
0	0	0	9.7500	94.19
0	0	0	10.0000	94.27
0	0	0	10.2500	94.33
0	0	0	10.5000	94.38
0	0	0	10.7500	94.43
0	0	0	11.0000	94.47
0	0	0	11.2500	94.51
0	0	0	11.5000	94.54
0	0	0	11.7500	94.57
0	0	0	12.0000	94.60
0	0	0	12.2500	94.63
0	0	0	12.5000	94.65
0	0	0	12.7500	94.68
0	0	0	13.0000	94.70
0	0	0	13.2500	94.72
0	0	0	13.5000	94.74
0	0	0	13.7500	94.76
0	0	0	14.0000	94.77
0	0	0	14.2500	94.78
0	0	0	14.5000	94.79
0	0	0	14.7500	94.80
0	0	0	15.0000	94.81
0	0	0	15.2500	94.81
0	0	0	15.5000	94.82

Year	Month	Day	Hour	Stage [ft]
0	0	0	15.7500	94.82
0	0	0	16.0000	94.83
0	0	0	16.2500	94.83
0	0	0	16.5000	94.84
0	0	0	16.7500	94.84
0	0	0	17.0000	94.85
0	0	0	17.2500	94.85
0	0	0	17.5000	94.85
0	0	0	17.7500	94.86
0	0	0	18.0000	94.86
0	0	0	18.2500	94.86
0	0	0	18.5000	94.87
0	0	0	18.7500	94.87
0	0	0	19.0000	94.87
0	0	0	19.2500	94.88
0	0	0	19.5000	94.88
0	0	0	19.7500	94.88
0	0	0	20.0000	94.88
0	0	0	20.2500	94.89
0	0	0	20.5000	94.89
0	0	0	20.7500	94.89
0	0	0	21.0000	94.89
0	0	0	21.2500	94.89
0	0	0	21.5000	94.89
0	0	0	21.7500	94.89
0	0	0	22.0000	94.90
0	0	0	22.2500	94.90
0	0	0	22.5000	94.90
0	0	0	22.7500	94.90
0	0	0	23.0000	94.90
0	0	0	23.2500	94.90
0	0	0	23.5000	94.90
0	0	0	23.7500	94.90
0	0	0	24.0000	94.90
0	0	0	24.2500	94.90
0	0	0	24.5000	94.90
0	0	0	24.7500	94.89
0	0	0	25.0000	94.89
0	0	0	25.2500	94.89
0	0	0	25.5000	94.89
0	0	0	25.7500	94.88
0	0	0	26.0000	94.88
0	0	0	26.2500	94.88
0	0	0	26.5000	94.88
0	0	0	26.7500	94.88
0	0	0	27.0000	94.87
0	0	0	27.2500	94.87
0	0	0	27.5000	94.87
0	0	0	27.7500	94.86

Year	Month	Day	Hour	Stage [ft]
0	0	0	28.0000	94.86
0	0	0	28.2500	94.86
0	0	0	28.5000	94.86
0	0	0	28.7500	94.85
0	0	0	29.0000	94.85
0	0	0	29.2500	94.85
0	0	0	29.5000	94.84
0	0	0	29.7500	94.84
0	0	0	30.0000	94.84

Comment:

Drop Structure Link: CS-1		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	93.35 ft	Invert:	93.20 ft
From Node:	Pond 100 Mod	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	RRDitch	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	2	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	20.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	95.72 ft	Op Table:	
Control Elevation:	95.72 ft	Ref Node:	
Max Depth:	0.48 ft	Discharge Coefficients	
Max Width:	12.50 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	93.35 ft	Ref Node:	
Control Elevation:	93.35 ft	**Discharge Coefficients**	
Max Depth:	0.25 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	**Top Clip**	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	96.20 ft	Ref Node:	
Control Elevation:	96.20 ft	**Discharge Coefficients**	
Max Depth:	6.50 ft	Weir Default:	3.200
Max Width:	3.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: CS-2		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1	Invert:	93.50 ft	Invert:	93.30 ft
From Node:	Pond 115	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Pond 100 Mod	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	**Bottom Clip**			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	50.00 ft	**Top Clip**			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft

Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	96.30 ft
Control Elevation:	96.30 ft
Max Depth:	2.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

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

Weir Comment:

Drop Structure Comment:

Weir Link: TOB WEIR

Scenario:	Scenario1
From Node:	Pond 100 Mod
To Node:	RRDitch
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	95.80 ft
Control Elevation:	95.80 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection
Bottom Width:	70.00 ft
Left Slope:	0.250 (h:v)
Right Slope:	0.250 (h:v)

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

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

Comment:

Simulation: 100Y24

Scenario: Scenario1

Run Date/Time: 12/1/2022 4:29:53 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set: 100Y24
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~ORANGE
		Rainfall Amount:	10.60 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 100y72

Scenario:	Scenario1
Run Date/Time:	12/1/2022 4:30:21 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set: 100Y72H
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~SFWMD-72
Rainfall Amount: 14.70 in
Storm Duration: 72.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 10Y24H

Scenario: Scenario1
Run Date/Time: 12/1/2022 4:31:26 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set: 10Y24H
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~ORANGE
		Rainfall Amount:	6.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25Y24H

Scenario: Scenario1
Run Date/Time: 12/1/2022 4:31:56 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~ORANGE
		Rainfall Amount:	8.60 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25y72

Scenario: Scenario1
Run Date/Time: 12/1/2022 4:32:27 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	160.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set: 25Y72H
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	11.50 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Section D: Pollutant Loading Analysis

Complete Report (not including cost) Ver 4.3.3

Project: Regal Marine
Date: 12/1/2022 3:46:02 PM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Basin 115	Basin 110
Rainfall Zone	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	50.00	50.00

Pre-Condition Landuse Information

Landuse	High-Intensity Commercial: TN=2.40 TP=0.345	High-Intensity Commercial: TN=2.40 TP=0.345
Area (acres)	0.40	13.82
Rational Coefficient (0-1)	0.07	0.67
Non DCIA Curve Number	74.00	74.00
DCIA Percent (0-100)	0.00	80.90
Nitrogen EMC (mg/l)	2.400	2.400
Phosphorus EMC (mg/l)	0.345	0.345
Runoff Volume (ac-ft/yr)	0.124	38.517
Groundwater N (kg/yr)	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000
Nitrogen Loading (kg/yr)	0.368	113.980

Phosphorus Loading (kg/yr)	0.053	16.385

Post-Condition Landuse Information

Landuse	High-Intensity Commercial: TN=2.40 TP=0.345	High-Intensity Commercial: TN=2.40 TP=0.345
Area (acres)	0.40	13.35
Rational Coefficient (0-1)	0.67	0.72
Non DCIA Curve Number	74.00	74.00
DCIA Percent (0-100)	80.70	87.70
Wet Pond Area (ac)	0.00	0.86
Nitrogen EMC (mg/l)	2.400	2.400
Phosphorus EMC (mg/l)	0.345	0.345
Runoff Volume (ac-ft/yr)	1.112	37.415
Groundwater N (kg/yr)	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000
Nitrogen Loading (kg/yr)	3.292	110.719
Phosphorus Loading (kg/yr)	0.473	15.916

Catchment Number: 1 Name: Basin 115

Project: Regal Marine
Date: 12/1/2022

Retention Design

Retention Depth (in)	1.570
Retention Volume (ac-ft)	0.052

Watershed Characteristics

Catchment Area (acres)	0.40
Contributing Area (acres)	0.400
Non-DCIA Curve Number	74.00
DCIA Percent	80.70
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	89
Provided TN Treatment Efficiency (%)	86
Required TP Treatment Efficiency (%)	89
Provided TP Treatment Efficiency (%)	86

Media Mix Information

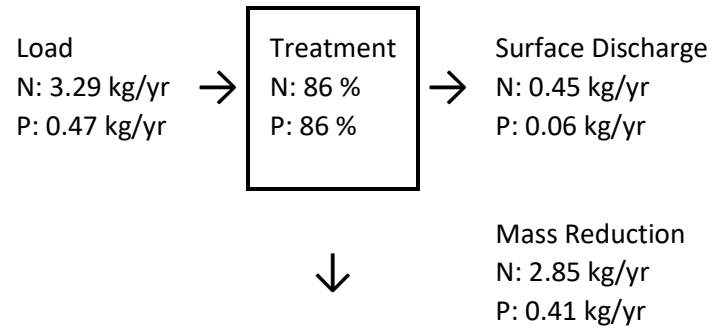
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

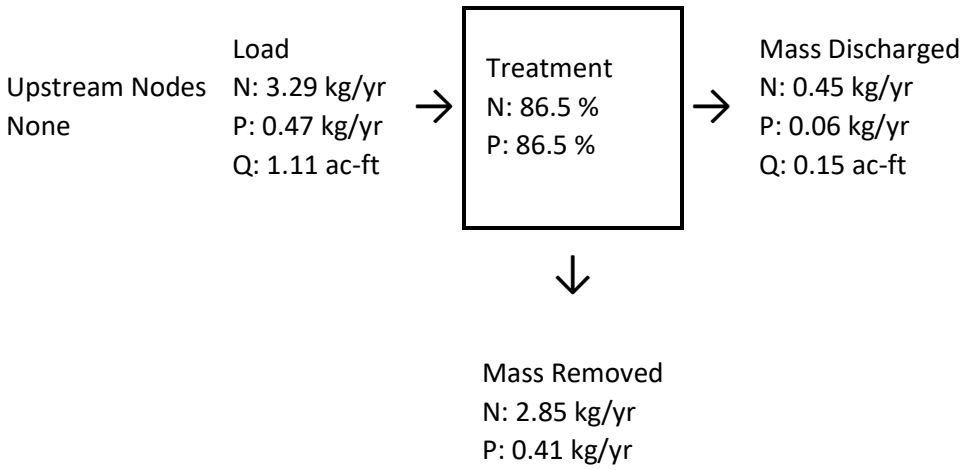
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.846
TN Concentration (mg/L)	0.000

TP Mass Load (kg/yr)	0.409
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Catchment Number: 2 Name: Basin 110

Project: Regal Marine
Date: 12/1/2022

Wet Detention Design

Permanent Pool Volume (ac-ft)	6.560
Permanent Pool Volume (ac-ft) for 31 days residence	3.178
Annual Residence Time (days)	64
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	13.35
Contributing Area (acres)	12.490
Non-DCIA Curve Number	74.00
DCIA Percent	87.70
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	41
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	70

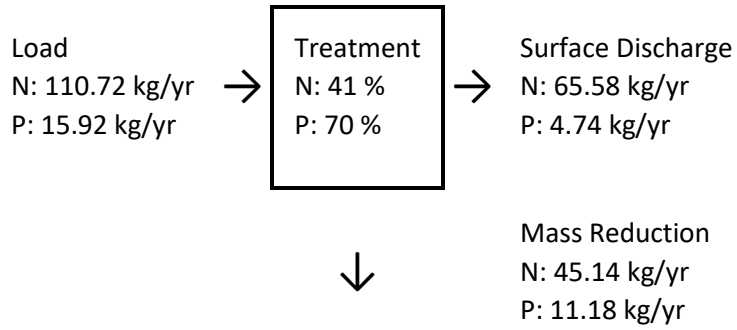
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

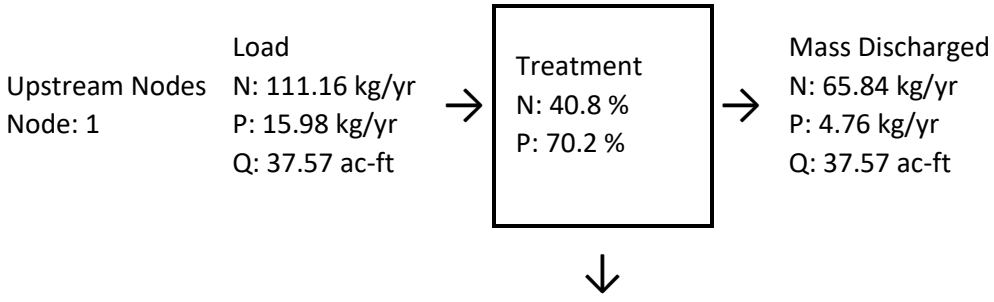
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Mass Removed
N: 45.32 kg/yr
P: 11.22 kg/yr

Summary Treatment Report Version: 4.3.3

Project: Regal Marine

Analysis Type: Net Improvement

Date:12/1/2022

BMP Types:

Catchment 1 - (Basin 115) Retention

Catchment 2 - (Basin 110) Wet Detention

Based on % removal values to the nearest percent

Routing Summary
Catchment 1 Routed to Catchment 2
Catchment 2 Routed to Outlet

Total nitrogen target removal met? **Yes**
Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	114.35 kg/yr	
Total N post load	114.01 kg/yr	
Target N load reduction	%	
Target N discharge load	114.35 kg/yr	
Percent N load reduction	42 %	
Provided N discharge load	65.84 kg/yr	145.18 lb/yr

Provided N load removed	48.17 kg/yr	106.22 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	16.438 kg/yr	
Total P post load	16.389 kg/yr	
Target P load reduction	%	
Target P discharge load	16.438 kg/yr	
Percent P load reduction	71 %	
Provided P discharge load	4.758 kg/yr	10.49 lb/yr
Provided P load removed	11.631 kg/yr	25.647 lb/yr

Section E: Recovery Analysis

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	0.0000	96.18
Recovery	no rain	Pond 100 Mod	0.2505	95.86
Recovery	no rain	Pond 100 Mod	0.5013	95.81
Recovery	no rain	Pond 100 Mod	0.7503	95.79
Recovery	no rain	Pond 100 Mod	1.0003	95.77
Recovery	no rain	Pond 100 Mod	1.2503	95.76
Recovery	no rain	Pond 100 Mod	1.5003	95.75
Recovery	no rain	Pond 100 Mod	1.7503	95.74
Recovery	no rain	Pond 100 Mod	2.0003	95.73
Recovery	no rain	Pond 100 Mod	2.2503	95.72
Recovery	no rain	Pond 100 Mod	2.5003	95.72
Recovery	no rain	Pond 100 Mod	2.7503	95.71
Recovery	no rain	Pond 100 Mod	3.0003	95.70
Recovery	no rain	Pond 100 Mod	3.2503	95.70
Recovery	no rain	Pond 100 Mod	3.5003	95.69
Recovery	no rain	Pond 100 Mod	3.7503	95.69
Recovery	no rain	Pond 100 Mod	4.0003	95.68
Recovery	no rain	Pond 100 Mod	4.2503	95.67
Recovery	no rain	Pond 100 Mod	4.5003	95.67
Recovery	no rain	Pond 100 Mod	4.7503	95.66
Recovery	no rain	Pond 100 Mod	5.0003	95.65
Recovery	no rain	Pond 100 Mod	5.2503	95.65
Recovery	no rain	Pond 100 Mod	5.5003	95.64
Recovery	no rain	Pond 100 Mod	5.7503	95.64
Recovery	no rain	Pond 100 Mod	6.0003	95.63
Recovery	no rain	Pond 100 Mod	6.2503	95.62
Recovery	no rain	Pond 100 Mod	6.5003	95.62
Recovery	no rain	Pond 100 Mod	6.7503	95.61
Recovery	no rain	Pond 100 Mod	7.0003	95.60
Recovery	no rain	Pond 100 Mod	7.2503	95.60
Recovery	no rain	Pond 100 Mod	7.5003	95.59
Recovery	no rain	Pond 100 Mod	7.7503	95.59
Recovery	no rain	Pond 100 Mod	8.0003	95.58
Recovery	no rain	Pond 100 Mod	8.2503	95.57
Recovery	no rain	Pond 100 Mod	8.5003	95.57
Recovery	no rain	Pond 100 Mod	8.7503	95.56
Recovery	no rain	Pond 100 Mod	9.0003	95.55
Recovery	no rain	Pond 100 Mod	9.2503	95.55
Recovery	no rain	Pond 100 Mod	9.5003	95.54
Recovery	no rain	Pond 100 Mod	9.7503	95.54
Recovery	no rain	Pond 100 Mod	10.0003	95.53
Recovery	no rain	Pond 100 Mod	10.2503	95.52

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	10.5003	95.52
Recovery	no rain	Pond 100 Mod	10.7503	95.51
Recovery	no rain	Pond 100 Mod	11.0003	95.51
Recovery	no rain	Pond 100 Mod	11.2503	95.50
Recovery	no rain	Pond 100 Mod	11.5003	95.49
Recovery	no rain	Pond 100 Mod	11.7503	95.49
Recovery	no rain	Pond 100 Mod	12.0003	95.48
Recovery	no rain	Pond 100 Mod	12.2503	95.48
Recovery	no rain	Pond 100 Mod	12.5003	95.47
Recovery	no rain	Pond 100 Mod	12.7503	95.46
Recovery	no rain	Pond 100 Mod	13.0003	95.46
Recovery	no rain	Pond 100 Mod	13.2503	95.45
Recovery	no rain	Pond 100 Mod	13.5003	95.45
Recovery	no rain	Pond 100 Mod	13.7503	95.44
Recovery	no rain	Pond 100 Mod	14.0003	95.43
Recovery	no rain	Pond 100 Mod	14.2503	95.43
Recovery	no rain	Pond 100 Mod	14.5003	95.42
Recovery	no rain	Pond 100 Mod	14.7503	95.41
Recovery	no rain	Pond 100 Mod	15.0003	95.41
Recovery	no rain	Pond 100 Mod	15.2503	95.40
Recovery	no rain	Pond 100 Mod	15.5003	95.40
Recovery	no rain	Pond 100 Mod	15.7503	95.39
Recovery	no rain	Pond 100 Mod	16.0003	95.38
Recovery	no rain	Pond 100 Mod	16.2503	95.38
Recovery	no rain	Pond 100 Mod	16.5003	95.37
Recovery	no rain	Pond 100 Mod	16.7503	95.37
Recovery	no rain	Pond 100 Mod	17.0003	95.36
Recovery	no rain	Pond 100 Mod	17.2503	95.36
Recovery	no rain	Pond 100 Mod	17.5003	95.35
Recovery	no rain	Pond 100 Mod	17.7503	95.34
Recovery	no rain	Pond 100 Mod	18.0003	95.34
Recovery	no rain	Pond 100 Mod	18.2503	95.33
Recovery	no rain	Pond 100 Mod	18.5003	95.33
Recovery	no rain	Pond 100 Mod	18.7503	95.32
Recovery	no rain	Pond 100 Mod	19.0003	95.31
Recovery	no rain	Pond 100 Mod	19.2503	95.31
Recovery	no rain	Pond 100 Mod	19.5003	95.30
Recovery	no rain	Pond 100 Mod	19.7503	95.30
Recovery	no rain	Pond 100 Mod	20.0003	95.29
Recovery	no rain	Pond 100 Mod	20.2503	95.28
Recovery	no rain	Pond 100 Mod	20.5003	95.28
Recovery	no rain	Pond 100 Mod	20.7503	95.27

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	21.0003	95.27
Recovery	no rain	Pond 100 Mod	21.2503	95.26
Recovery	no rain	Pond 100 Mod	21.5003	95.25
Recovery	no rain	Pond 100 Mod	21.7503	95.25
Recovery	no rain	Pond 100 Mod	22.0003	95.24
Recovery	no rain	Pond 100 Mod	22.2503	95.24
Recovery	no rain	Pond 100 Mod	22.5003	95.23
Recovery	no rain	Pond 100 Mod	22.7503	95.23
Recovery	no rain	Pond 100 Mod	23.0003	95.22
Recovery	no rain	Pond 100 Mod	23.2503	95.21
Recovery	no rain	Pond 100 Mod	23.5003	95.21
Recovery	no rain	Pond 100 Mod	23.7503	95.20
Recovery	no rain	Pond 100 Mod	24.0003	95.20
Recovery	no rain	Pond 100 Mod	24.2503	95.19
Recovery	no rain	Pond 100 Mod	24.5003	95.19
Recovery	no rain	Pond 100 Mod	24.7503	95.18
Recovery	no rain	Pond 100 Mod	25.0003	95.17
Recovery	no rain	Pond 100 Mod	25.2503	95.17
Recovery	no rain	Pond 100 Mod	25.5003	95.16
Recovery	no rain	Pond 100 Mod	25.7503	95.16
Recovery	no rain	Pond 100 Mod	26.0003	95.15
Recovery	no rain	Pond 100 Mod	26.2503	95.14
Recovery	no rain	Pond 100 Mod	26.5003	95.14
Recovery	no rain	Pond 100 Mod	26.7503	95.13
Recovery	no rain	Pond 100 Mod	27.0003	95.13
Recovery	no rain	Pond 100 Mod	27.2503	95.12
Recovery	no rain	Pond 100 Mod	27.5003	95.12
Recovery	no rain	Pond 100 Mod	27.7503	95.11
Recovery	no rain	Pond 100 Mod	28.0003	95.10
Recovery	no rain	Pond 100 Mod	28.2503	95.10
Recovery	no rain	Pond 100 Mod	28.5003	95.09
Recovery	no rain	Pond 100 Mod	28.7503	95.09
Recovery	no rain	Pond 100 Mod	29.0003	95.08
Recovery	no rain	Pond 100 Mod	29.2503	95.07
Recovery	no rain	Pond 100 Mod	29.5003	95.07
Recovery	no rain	Pond 100 Mod	29.7503	95.06
Recovery	no rain	Pond 100 Mod	30.0003	95.06
Recovery	no rain	Pond 100 Mod	30.2503	95.05
Recovery	no rain	Pond 100 Mod	30.5003	95.04
Recovery	no rain	Pond 100 Mod	30.7503	95.04
Recovery	no rain	Pond 100 Mod	31.0003	95.03
Recovery	no rain	Pond 100 Mod	31.2503	95.03

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	31.5003	95.02
Recovery	no rain	Pond 100 Mod	31.7503	95.01
Recovery	no rain	Pond 100 Mod	32.0003	95.01
Recovery	no rain	Pond 100 Mod	32.2503	95.00
Recovery	no rain	Pond 100 Mod	32.5003	95.00
Recovery	no rain	Pond 100 Mod	32.7503	94.99
Recovery	no rain	Pond 100 Mod	33.0003	94.98
Recovery	no rain	Pond 100 Mod	33.2503	94.98
Recovery	no rain	Pond 100 Mod	33.5003	94.97
Recovery	no rain	Pond 100 Mod	33.7503	94.97
Recovery	no rain	Pond 100 Mod	34.0003	94.96
Recovery	no rain	Pond 100 Mod	34.2503	94.95
Recovery	no rain	Pond 100 Mod	34.5003	94.95
Recovery	no rain	Pond 100 Mod	34.7503	94.94
Recovery	no rain	Pond 100 Mod	35.0003	94.94
Recovery	no rain	Pond 100 Mod	35.2503	94.93
Recovery	no rain	Pond 100 Mod	35.5003	94.92
Recovery	no rain	Pond 100 Mod	35.7503	94.92
Recovery	no rain	Pond 100 Mod	36.0003	94.91
Recovery	no rain	Pond 100 Mod	36.2503	94.91
Recovery	no rain	Pond 100 Mod	36.5003	94.90
Recovery	no rain	Pond 100 Mod	36.7503	94.89
Recovery	no rain	Pond 100 Mod	37.0003	94.89
Recovery	no rain	Pond 100 Mod	37.2503	94.88
Recovery	no rain	Pond 100 Mod	37.5003	94.88
Recovery	no rain	Pond 100 Mod	37.7503	94.87
Recovery	no rain	Pond 100 Mod	38.0003	94.87
Recovery	no rain	Pond 100 Mod	38.2503	94.86
Recovery	no rain	Pond 100 Mod	38.5003	94.85
Recovery	no rain	Pond 100 Mod	38.7503	94.85
Recovery	no rain	Pond 100 Mod	39.0003	94.84
Recovery	no rain	Pond 100 Mod	39.2503	94.84
Recovery	no rain	Pond 100 Mod	39.5003	94.83
Recovery	no rain	Pond 100 Mod	39.7503	94.83
Recovery	no rain	Pond 100 Mod	40.0003	94.82
Recovery	no rain	Pond 100 Mod	40.2503	94.81
Recovery	no rain	Pond 100 Mod	40.5003	94.81
Recovery	no rain	Pond 100 Mod	40.7503	94.80
Recovery	no rain	Pond 100 Mod	41.0003	94.80
Recovery	no rain	Pond 100 Mod	41.2503	94.79
Recovery	no rain	Pond 100 Mod	41.5003	94.79
Recovery	no rain	Pond 100 Mod	41.7503	94.78

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	42.0003	94.77
Recovery	no rain	Pond 100 Mod	42.2503	94.77
Recovery	no rain	Pond 100 Mod	42.5003	94.76
Recovery	no rain	Pond 100 Mod	42.7503	94.76
Recovery	no rain	Pond 100 Mod	43.0003	94.75
Recovery	no rain	Pond 100 Mod	43.2503	94.75
Recovery	no rain	Pond 100 Mod	43.5003	94.74
Recovery	no rain	Pond 100 Mod	43.7503	94.73
Recovery	no rain	Pond 100 Mod	44.0003	94.73
Recovery	no rain	Pond 100 Mod	44.2503	94.72
Recovery	no rain	Pond 100 Mod	44.5003	94.72
Recovery	no rain	Pond 100 Mod	44.7503	94.71
Recovery	no rain	Pond 100 Mod	45.0003	94.71
Recovery	no rain	Pond 100 Mod	45.2503	94.70
Recovery	no rain	Pond 100 Mod	45.5003	94.70
Recovery	no rain	Pond 100 Mod	45.7503	94.69
Recovery	no rain	Pond 100 Mod	46.0003	94.68
Recovery	no rain	Pond 100 Mod	46.2503	94.68
Recovery	no rain	Pond 100 Mod	46.5003	94.67
Recovery	no rain	Pond 100 Mod	46.7503	94.67
Recovery	no rain	Pond 100 Mod	47.0003	94.66
Recovery	no rain	Pond 100 Mod	47.2503	94.66
Recovery	no rain	Pond 100 Mod	47.5003	94.65
Recovery	no rain	Pond 100 Mod	47.7503	94.65
Recovery	no rain	Pond 100 Mod	48.0003	94.64
Recovery	no rain	Pond 100 Mod	48.2503	94.64
Recovery	no rain	Pond 100 Mod	48.5003	94.63
Recovery	no rain	Pond 100 Mod	48.7503	94.62
Recovery	no rain	Pond 100 Mod	49.0003	94.62
Recovery	no rain	Pond 100 Mod	49.2503	94.61
Recovery	no rain	Pond 100 Mod	49.5003	94.61
Recovery	no rain	Pond 100 Mod	49.7503	94.60
Recovery	no rain	Pond 100 Mod	50.0003	94.60
Recovery	no rain	Pond 100 Mod	50.2503	94.59
Recovery	no rain	Pond 100 Mod	50.5003	94.59
Recovery	no rain	Pond 100 Mod	50.7503	94.58
Recovery	no rain	Pond 100 Mod	51.0003	94.58
Recovery	no rain	Pond 100 Mod	51.2503	94.57
Recovery	no rain	Pond 100 Mod	51.5003	94.57
Recovery	no rain	Pond 100 Mod	51.7503	94.56
Recovery	no rain	Pond 100 Mod	52.0003	94.55
Recovery	no rain	Pond 100 Mod	52.2503	94.55

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	52.5003	94.54
Recovery	no rain	Pond 100 Mod	52.7503	94.54
Recovery	no rain	Pond 100 Mod	53.0003	94.53
Recovery	no rain	Pond 100 Mod	53.2503	94.53
Recovery	no rain	Pond 100 Mod	53.5003	94.52
Recovery	no rain	Pond 100 Mod	53.7503	94.52
Recovery	no rain	Pond 100 Mod	54.0003	94.51
Recovery	no rain	Pond 100 Mod	54.2503	94.51
Recovery	no rain	Pond 100 Mod	54.5003	94.50
Recovery	no rain	Pond 100 Mod	54.7503	94.50
Recovery	no rain	Pond 100 Mod	55.0003	94.49
Recovery	no rain	Pond 100 Mod	55.2503	94.49
Recovery	no rain	Pond 100 Mod	55.5003	94.48
Recovery	no rain	Pond 100 Mod	55.7503	94.48
Recovery	no rain	Pond 100 Mod	56.0003	94.47
Recovery	no rain	Pond 100 Mod	56.2503	94.47
Recovery	no rain	Pond 100 Mod	56.5003	94.46
Recovery	no rain	Pond 100 Mod	56.7503	94.46
Recovery	no rain	Pond 100 Mod	57.0003	94.45
Recovery	no rain	Pond 100 Mod	57.2503	94.45
Recovery	no rain	Pond 100 Mod	57.5003	94.44
Recovery	no rain	Pond 100 Mod	57.7503	94.44
Recovery	no rain	Pond 100 Mod	58.0003	94.43
Recovery	no rain	Pond 100 Mod	58.2503	94.43
Recovery	no rain	Pond 100 Mod	58.5003	94.42
Recovery	no rain	Pond 100 Mod	58.7503	94.42
Recovery	no rain	Pond 100 Mod	59.0003	94.41
Recovery	no rain	Pond 100 Mod	59.2503	94.41
Recovery	no rain	Pond 100 Mod	59.5003	94.40
Recovery	no rain	Pond 100 Mod	59.7503	94.40
Recovery	no rain	Pond 100 Mod	60.0003	94.39
Recovery	no rain	Pond 100 Mod	60.2503	94.39
Recovery	no rain	Pond 100 Mod	60.5003	94.38
Recovery	no rain	Pond 100 Mod	60.7503	94.38
Recovery	no rain	Pond 100 Mod	61.0003	94.37
Recovery	no rain	Pond 100 Mod	61.2503	94.37
Recovery	no rain	Pond 100 Mod	61.5003	94.36
Recovery	no rain	Pond 100 Mod	61.7503	94.36
Recovery	no rain	Pond 100 Mod	62.0003	94.35
Recovery	no rain	Pond 100 Mod	62.2503	94.35
Recovery	no rain	Pond 100 Mod	62.5003	94.34
Recovery	no rain	Pond 100 Mod	62.7503	94.34

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	63.0003	94.33
Recovery	no rain	Pond 100 Mod	63.2503	94.33
Recovery	no rain	Pond 100 Mod	63.5003	94.32
Recovery	no rain	Pond 100 Mod	63.7503	94.32
Recovery	no rain	Pond 100 Mod	64.0003	94.31
Recovery	no rain	Pond 100 Mod	64.2503	94.31
Recovery	no rain	Pond 100 Mod	64.5003	94.31
Recovery	no rain	Pond 100 Mod	64.7503	94.30
Recovery	no rain	Pond 100 Mod	65.0003	94.30
Recovery	no rain	Pond 100 Mod	65.2503	94.29
Recovery	no rain	Pond 100 Mod	65.5003	94.29
Recovery	no rain	Pond 100 Mod	65.7503	94.28
Recovery	no rain	Pond 100 Mod	66.0003	94.28
Recovery	no rain	Pond 100 Mod	66.2503	94.27
Recovery	no rain	Pond 100 Mod	66.5003	94.27
Recovery	no rain	Pond 100 Mod	66.7503	94.26
Recovery	no rain	Pond 100 Mod	67.0003	94.26
Recovery	no rain	Pond 100 Mod	67.2503	94.25
Recovery	no rain	Pond 100 Mod	67.5003	94.25
Recovery	no rain	Pond 100 Mod	67.7503	94.24
Recovery	no rain	Pond 100 Mod	68.0003	94.24
Recovery	no rain	Pond 100 Mod	68.2503	94.24
Recovery	no rain	Pond 100 Mod	68.5003	94.23
Recovery	no rain	Pond 100 Mod	68.7503	94.23
Recovery	no rain	Pond 100 Mod	69.0003	94.22
Recovery	no rain	Pond 100 Mod	69.2503	94.22
Recovery	no rain	Pond 100 Mod	69.5003	94.21
Recovery	no rain	Pond 100 Mod	69.7503	94.21
Recovery	no rain	Pond 100 Mod	70.0003	94.20
Recovery	no rain	Pond 100 Mod	70.2503	94.20
Recovery	no rain	Pond 100 Mod	70.5003	94.20
Recovery	no rain	Pond 100 Mod	70.7503	94.19
Recovery	no rain	Pond 100 Mod	71.0003	94.19
Recovery	no rain	Pond 100 Mod	71.2503	94.18
Recovery	no rain	Pond 100 Mod	71.5003	94.18
Recovery	no rain	Pond 100 Mod	71.7503	94.17
Recovery	no rain	Pond 100 Mod	72.0003	94.17
Recovery	no rain	Pond 100 Mod	72.2503	94.16
Recovery	no rain	Pond 100 Mod	72.5003	94.16
Recovery	no rain	Pond 100 Mod	72.7503	94.16
Recovery	no rain	Pond 100 Mod	73.0003	94.15
Recovery	no rain	Pond 100 Mod	73.2503	94.15

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	no rain	Pond 100 Mod	73.5003	94.14
Recovery	no rain	Pond 100 Mod	73.7503	94.14
Recovery	no rain	Pond 100 Mod	74.0003	94.13
Recovery	no rain	Pond 100 Mod	74.2503	94.13
Recovery	no rain	Pond 100 Mod	74.5003	94.13
Recovery	no rain	Pond 100 Mod	74.7503	94.12
Recovery	no rain	Pond 100 Mod	75.0003	94.12
Recovery	no rain	Pond 100 Mod	75.2503	94.11
Recovery	no rain	Pond 100 Mod	75.5003	94.11
Recovery	no rain	Pond 100 Mod	75.7503	94.10
Recovery	no rain	Pond 100 Mod	76.0003	94.10
Recovery	no rain	Pond 100 Mod	76.2503	94.10
Recovery	no rain	Pond 100 Mod	76.5003	94.09
Recovery	no rain	Pond 100 Mod	76.7503	94.09
Recovery	no rain	Pond 100 Mod	77.0003	94.08
Recovery	no rain	Pond 100 Mod	77.2503	94.08
Recovery	no rain	Pond 100 Mod	77.5003	94.08
Recovery	no rain	Pond 100 Mod	77.7503	94.07
Recovery	no rain	Pond 100 Mod	78.0003	94.07
Recovery	no rain	Pond 100 Mod	78.2503	94.06
Recovery	no rain	Pond 100 Mod	78.5003	94.06
Recovery	no rain	Pond 100 Mod	78.7503	94.05
Recovery	no rain	Pond 100 Mod	79.0003	94.05
Recovery	no rain	Pond 100 Mod	79.2503	94.05
Recovery	no rain	Pond 100 Mod	79.5003	94.04
Recovery	no rain	Pond 100 Mod	79.7503	94.04
Recovery	no rain	Pond 100 Mod	80.0003	94.03

Simple Basin: Basin 100

Scenario:	Recovery
Node:	Pond 100 Mod
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	13.3500 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 115

Scenario:	Recovery
Node:	Pond 115
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4000 ac
Curve Number:	93.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: Pond 100 Mod

Scenario:	Recovery
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	96.18 ft
Warning Stage:	96.20 ft

Stage [ft]	Area [ac]	Area [ft2]
93.35	0.8600	37462
94.00	0.9000	39204
95.00	0.9800	42689
95.20	1.0900	47480
96.20	1.1800	51401

Comment:

Node: Pond 115

Scenario: Recovery
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 96.44 ft
Warning Stage: 96.50 ft

Stage [ft]	Area [ac]	Area [ft2]
94.50	0.0040	174
96.50	0.0550	2396

Comment:

Node: RRDitch

Scenario: Recovery
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 93.00 ft
Warning Stage: 95.00 ft
Boundary Stage: RRDitch

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	93.35
0	0	0	90.0000	93.35

Comment:

Drop Structure Link: CS-1

Scenario: Recovery
From Node: Pond 100 Mod
To Node: RRDitch
Link Count: 1
Flow Direction: Both

Upstream Pipe	Downstream Pipe
Invert: 93.35 ft	Invert: 93.20 ft
Manning's N: 0.0120	Manning's N: 0.0120
Geometry: Circular	Geometry: Circular
Max Depth: 1.50 ft	Max Depth: 1.50 ft
Bottom Clip	

Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	2	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	20.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.00	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	95.72 ft	Ref Node:	
Control Elevation:	95.72 ft	Discharge Coefficients	
Max Depth:	0.48 ft	Weir Default:	3.200
Max Width:	12.50 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	93.35 ft	Ref Node:	
Control Elevation:	93.35 ft	Discharge Coefficients	
Max Depth:	0.25 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	3	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft		

Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	96.20 ft
Control Elevation:	96.20 ft
Max Depth:	6.50 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

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

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

Weir Comment:

Drop Structure Comment:

Drop Structure Link: CS-2	
Scenario:	Recovery
From Node:	Pond 115
To Node:	Pond 100 Mod
Link Count:	1
Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	1
Damping:	0.0000 ft
Length:	50.00 ft
FHWA Code:	1
Entr Loss Coef:	0.00
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream Pipe	
Invert:	93.50 ft
Manning's N:	0.0120
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream Pipe	
Invert:	93.30 ft
Manning's N:	0.0120
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	96.30 ft
Control Elevation:	96.30 ft
Max Depth:	2.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

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

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

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

Weir Comment:

Drop Structure Comment:

Weir Link: TOB WEIR

Scenario:	Recovery
From Node:	Pond 100 Mod
To Node:	RRDitch
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Trapezoidal
Invert:	95.80 ft
Control Elevation:	95.80 ft
Max Depth:	9999.00 ft
Extrapolation Method:	Normal Projection
Bottom Width:	70.00 ft
Left Slope:	0.250 (h:v)
Right Slope:	0.250 (h:v)

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

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

Comment:

Simulation: no rain

Scenario:	Recovery
Run Date/Time:	12/1/2022 4:51:32 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	No Rainfall
Max dZ:	1.0000 ft	OF Region Rain Opt:	No Rainfall
Link Optimizer Tol:	0.0001 ft		
Edge Length Option:	Automatic		
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Section F: Attachments and Exhibits

T. Waterhouse
4220

Last Date For Agency Action: 13-APR-2005

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: Regal Yacht Center

Permit No.: 48-01254-P

Application No.: 050114-30 **Associated File:** 050114-29 WU

Application Type: Environmental Resource (Construction/Operation Modification)

Location: Orange County, S31/T23S/R30E

Permittee : Regal Marine Industries Inc

Operating Entity : Regal Marine Industries Inc

Project Area: 83.6 acres

Project Land Use: Commercial

Drainage Basin: BOGGY CREEK

Receiving Body: Existing ditch and wetland **Class:** CLASS III

Special Drainage District: NA

DRAFT
Subject to Governing
Board Approval

Total Acres Wetland Onsite:	28.64	
Total Acres Wetland Preserved Onsite:	27.19	
Total Acres Impacted Onsite :	1.45	
Total Acres Presv/Mit Compensation Onsite:	27.19	
Offsite Mitigation Credits-Mit.Bank:	4.50	Florida Mitigation Bank

Conservation Easement To District : Yes
Sovereign Submerged Lands: No

PROJECT PURPOSE:

Modification of an Environmental Resource Permit to authorize construction and operation of a surface water management system to serve an 83.36 acre commercial project known as Regal Yacht Center. Staff recommends approval with conditions.

PROJECT EVALUATION:

PROJECT SITE DESCRIPTION:

The site is located south of Jetport Drive and west of Boggy Creek Road.

There are permitted surface water management facilities that have not been constructed to serve the 52.86 acre commercial/industrial subdivision. The permitted construction was limited to the water management system, entrance road, and mass grading. The site contains a large wetland in the center of the site surrounded by uplands. The central wetland (Wetland W-2) serves as conveyance for off-site contributing drainage area located north and east of the site. Approximately 221 acres of on-site and off-site contributing drainage area is currently routed through Wetland W-2. Wetland W-2 outfalls to the south to an off-site wetland system via 2-30" and 1-18" diameter culverts.

This site has received previous construction level approval.

The only resource considered under this application is the 28.64 acre remnant of Wetland 2. This is a contiguous cypress system which has been invaded extensively by exotic and nuisance species. (Most notably melaleuca and Downey rose-myrtle.) The wetland also reflects impacts resulting from previous agricultural practices and surrounding land uses.

PROPOSED PROJECT:

Construction proposed consists of the surface water management system serving the 83.6 acre modification for the Regal Yacht Center. The water management system consists of inlets and culverts directing runoff to dry pre-treatment and wet detention ponds discharging to existing Wetland W-2.

The previous permit for this site contained 52.86 acres for development of a commercial/industrial subdivision (Exhibit 1b). An adjacent 30.74 acres was owned but not included in the proposed developement because it pre-dated permitting criteria and had a separate water management system. This modification will now include the entire ownership, eliminates the commercial/industrial subdivision, brings an 11.1 acre portion of the existing property, both developed and undeveloped into the water management system, expands the boat manufacturing facilities, and revises the water management system to serve the revisions to the site and the additional area. This modification also proposes a recreational facility for employee use, with possible combined use with the YMCA.

Basins 10, 20, 20A, 30, 30P, R20, and R30 (18.53 acres) will drain to dry pre-treatment ponds and wet detention ponds prior to discharge. Basins R10 and R-40, roof area (2.31 acres), W-4 and W-5 the soccer field (3.22 acres) drain to Wetland W-2 (30.64 acres), prior to discharge off-site. The test lake along the south property line will provide water quality treatment for approximately 11.55 acres of the site. The test lake is 6.34 acres, but only 3.63 acres meet the District's minimum width requirement and are counted for providing water quality treatment.

There are two areas in Basins R10 and 30 and R40, reserved for future development that have been calculated at 75 percent impervious coverage for water quality treatment. No other design information is avialable for these areas at this time and the applicant has not requested a conceptual approval. Therefore, these areas will require a permit modification prior to any construction and will be subject to all District criteria in effect at that time. (See Special Conditions)

This modification also included in the 221 acre contributing drainage area that was previoiusly analyzed.

LAND USE:

LAND USE:

The land use information for the total project includes the existing development that pre-dates District permitting criteria.

Construction:
Project:

	Previously Permitted	This Phase	Total Project	
Building Coverage	.00	5.36	12.33	acres
Pavement	.91	10.00	18.85	acres
Pervious	15.21	12.04	15.05	acres
Preserved	29.68	28.64	28.64	acres
Water Mgnt Acreage	7.06	7.92	8.73	acres
Total:	**52.86**	**63.96**	**83.60**	

WATER QUANTITY :

Discharge Rate :

As shown in the table below, the proposed project discharge is within the allowable limit for the area. The applicant has submitted detailed stormwater routings for the 221 acre contributing drainage basin for on-site Wetland W-2. Based on the previous stormwater routings, the permitted and proposed peak discharge rates for Wetland W-2 are 32.5 cfs and 29.3 cfs respectively.

Discharge Storm Frequency : 25 YEAR-1 DAY Design Rainfall : 8.6 inches

Basin	Allow Disch (cfs)	Method Of Determination	Peak Disch (cfs)	Peak Stage (ft, NGVD)
Basin 20, 20A	4.3	Previously Permitted	4.3	95.9
Basin 10, 30, 30P	18.8	Previously Permitted	18.8	96.1
Test lake	33	Previously Permitted	29.3	95.9

Finished Floors :

As shown in the following table and the attached exhibits, minimum finished floor elevations have been set at or above the calculated design storm flood elevation.

Building Storm Frequency : 100 YEAR-3 DAY Design Rainfall : 14.4 inches

Basin	Peak Stage (ft, NGVD)	Proposed Min. Finished Floors (ft, NGVD)	FEMA Elevation (ft, NGVD)
Basin 20, 20A	97.7	97.7	N/A
Basin 10, 30, 30P	97.7	97.7	N/A
Test lake	97.5	97.5	N/A

Road Design :

As shown in the following table and the attached exhibits, minimum road center lines have been set at or above the calculated design storm flood elevation.

Road Storm Frequency : 25 YEAR-1 DAY Design Rainfall: 8.6 inches

Basin	Peak Stage (ft, NGVD)	Proposed Min. Road Crown (ft, NGVD)
Basin 20, 20A	95.9	96

Parking Lot Design :

As shown in the following table and the attached exhibits, minimum parking lot elevations have been set at or above the calculated design storm flood elevation.

Parking Lot Storm Frequency : 25 YEAR-1 DAY Design Rainfall 8.6 inches

Basin	Peak Stage (ft, NGVD)	Proposed Min.Parking Elev. (ft, NGVD)
Basin 20, 20A	95.9	95.9
Basin 10, 30, 30P	96.1	96.1
Test lake	95.9	95.9

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NGVD)	WSWT Ctrl Elev (ft, NGVD)	Method Of Determination
Basin 20, 20A	4.30	94	94.00	Previously Permitted
Wetland W-2	36.17	94	94.00	Previously Permitted
Basin 10, 30, 30P	11.18	94	94.00	Previously Permitted
Test lake	11.55	94	94.00	Previously Permitted

Receiving Body :

Basin	Str.#	Receiving Body
Basin 20, 20a	1	Pond 20
Basin 20, 20a	2	Wetland W-2
Wetland W-2	1	Test Lake
Wetland W-2	2	Existing ditch
Basin 10, 30, 30p	1	Test Lake
Test Lake	1	Existing ditch

Discharge Structures: Note: The units for all the elevation values of structures are (ft, NGVD)

Culverts:

Basin	Str#	Count	Type	Width	Length	Dia.
Basin 10, 30, 30P	1	1	Reinforced Concrete Pipe		50'	30"
Basin 20, 20A	1	1	Reinforced Concrete Pipe		490'	18"
Basin 20, 20A	2	1	Reinforced Concrete Pipe		50'	18"
Wetland W-2	2	2	Reinforced Concrete Pipe		130'	36"

Inlets:

Basin	Str#	Count	Type	Width	Length	Dia.	Crest Elev.
Basin 10, 30, 30P	1	1	Inlet	36"	54"		95.56
Basin 20, 20A	1	1	Inlet	24"	37"		95.55
Basin 20, 20A	2	1	Inlet	36"	54"		94.5
Wetland W-2	2	1	Inlet	36'	79'		94

Discharge Structures:

Weirs:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Elev.
Test lake	1	2	Broad Crested	10'				94.34 (crest)
Wetland W-2	1	2	Broad Crested	10'				94.34 (crest)

Water Quality Structures:

Note: The units for all the elevation values of structures are (ft, NGVD)

Bleeders:

Basin	Str#	Count	Type	Width	Height	Length	Dia.	Invert Angle	Invert Elev.
Basin 10, 30, 30P	1	1	Circular Orifice				3.5"		94
Basin 20, 20A	1	1	Circular Orifice				3"		94
Basin 20, 20A	2	1	Circular Orifice				3"		94
Test lake	1	2	Circular Orifice				4"		94

WATER QUALITY :

No adverse water quality impacts are anticipated as a result of the proposed project. Water quality treatment for the first inch of runoff from Basin 20A, and for 2.5 inches times the percentage of impervious coverage is provided for all other basins in wet detention ponds. One half inch of dry pre-treatment is also provided for Basins 20 and 30 upstream of the wet ponds. Existing off-site developed areas contributing to Wetland W-2 have water quality treatment provided prior to discharging to the wetland.

Basin		Treatment Method		Vol Req.d (ac-ft)	Vol Prov'd (ac-ft)
Basin 20, 20A	Treatment	Dry Detention	.27 acres	.15	.16
Basin 20, 20A	Treatment	Wet Detention	.54 acres	.25	.26
Basin 10, 30, 30P	Treatment	Dry Detention	.77 acres	.47	.47
Test lake	Treatment	Wet Detention	3.63 acres	1.26	1.29

WETLANDS:

Wetland Description:

The project site includes a contiguous cypress dominated system with an interior marsh area. (Wetland 2 was approved for 1.79 acres of impact to several areas around its perimeter.) The remaining wetland (28.64 acres) was preserved under a conservation easement. The mitigation approved to offset the impacts was the preservation of the 28.64 acres of remaining wetland #2 and the provision of 2.60 freshwater forested credits from the Florida Mitigation bank. (At this time the credits have been purchased and the bank ledger deducted, the conservation easement has not been recorded.)

Areas of Wetland #2 are in poor condition due to invasion of nuisance and exotic species, past agricultural management practices and surrounding development. Portions of the perimeter of the system contain significant amounts of Downey rose-myrtle (an exotic species) and melaleuca. Some of the invasives are the result of drainage alterations and intrusion of exotic grasses from the surrounding upland pasture areas.

In as much as impacts have been approved to the wetlands onsite, this approval will address only the

changes to wetland #2, most specifically, the new 1.45 acres of impacts and enhancement of the remainining 27.19 acres.

Wetland Impacts:

The subject application proposes a new project layout from the one previously approved. While the previous permit provided a layout for an industrial park, the new layout expands the current boat manufacturing facility to include yachts. Therefore the multiple lots of the industrial park are gone and the plan now includes a boat testing pond, a manufacturing facility, a life center and soccer field. The previous plan resulted in impacts to 1.79 acres of wetland #2. The current plan calls for 3.24 acres of direct wetland impacts to wetland #2 representing a 1.45 acre increase to impacts. In as much as the impacts previously permitted and now proposed were to the same wetland, habitat and equivalent quality of system, the location of the previously approved impacts is translatable to the present design without significant change in the resources being impacted. The new plan includes the preservation of a 1.50 acre area of wetland 2 which had been formerly proposed for impacts and the shifting of the impacts to the southern and eastern side of the wetland. The majority of the new impacts may be attributed to the stormwater treatment pond/test lake. The location of the test lake on the site eliminates the cumbersome, expensive and time consuming process of partially disassembling each boat, hauling it to the nearest lake, re-assembling it, testing it, disassembling it and hauling it back to the facility. In as much as the previous plan was for a multi-business industrial park, such a feature was not required. With the expansion of the facilities to incorporate the new yacht manufacturing facilities the test pond becomes critical to the success of the business. Because of the greater functional ecological value of the mitigation proposed, (compared to the functional losses), the applicant has not been required to implement further design modifications to reduce or eliminate impacts.

Mitigation Proposal:

As mitigation to offset the proposed 1.79 acres of new wetland impacts the following mitigation is proposed:
1. Enhancement of the remaining 27.19 acres of wetland #2. Enhancement is to be provided through aggressive removal of exotic and nuisance species under a formal mitigation, monitoring and maintenance plan (see exhibit attached).
2. Replanting of 0.15 acre buffer area, monitoring and maintenance for 5 years.
3. The purchase of 4.5 freshwater forested wetland mitigation bank credits from the Florida Mitigation Bank (DEP ERP 492924779).

Even with the addition of these new impacts, 86% of the original wetlands will remain on site. In addition the wetland areas remaining are being preserved, protected and, most importantly, enhanced. The wetland is being incorporated into the surface water management system to ensure continuation of the historic hydrology of the wetland and all of the exotic and nuisance species will be removed and then maintained to be no more than 5% exotic or 10% nuisance species coverage at any time. With these improvements and the addition of 4.5 freshwater forested mitigation bank credits (Shingle Creek and Reedy Creek Basins), the significance of the functional gains provided is such that no significant adverse cumulative impacts to the basin would occur should similarly situated projects in the basin be permitted.

Wetland Inventory:

Please note that functional assessment methodologies used under this application were based on those previously established for the onsite wetland enhancement and the mitigation bank permits. The wetland

inventory table reflects only the new activities of enhancement and impacts which require construction level permitting under this application.

Wetland Inventory :

CONSTRUCTION MOD -Regal Yacht Center

Site Id	Site Type	Pre-Development				Post-Development						
		Pre Flucfcs	AA Type	Acreage (Acres)	Current Wo Pres	With Project	Time Lag (Yrs)	Risk Factor	Pres. Adj. Factor	Post Fluccs	Adj Delta	Functional Gain / Loss
W2	ON	621	Enhancement	27.19								
w2	ON	621	Direct	1.45							.000	.000
			Total:	28.64								.00

Fluccs Code	Description
100	Urban And Residential
621	Cypress

MITBANK FLORIDA MITIGATION BANK

Type Of Credits	Number Of Credits
	Mitigation Bank Cr Used
Fresh Water Forested	4.50
Total:	**4.50**

Endangered Species:

The project site does not contain preferred habitat for wetland-dependent endangered or threatened wildlife species or species of special concern. No wetland-dependent endangered/threatened species or species of special concern were observed onsite, and submitted information indicates that potential use of the site by such species is minimal. This permit does not relieve the applicant from complying with all applicable rules and any other agencies' requirements if, in the future, endangered/threatened species or species of special concern are discovered on the site.

LEGAL ISSUES:

A Conservation easement in substantial conformance to the example attached as an exhibit will be recorded over the conservation areas in accordance with the attached work schedule. The easement will be dedicated to Orange county with third party enforcement rights granted to the District.

CERTIFICATION AND MAINTENANCE OF THE WATER MANAGEMENT SYSTEM:

It is suggested that the permittee retain the services of a Professional Engineer registered in the State of Florida for periodic observation of construction of the surface water management (SWM) system. This will facilitate the completion of construction completion certification Form #0881 which is required pursuant to

Section 10 of the Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District, and Rule 40E-4361(2), Florida Administrative Code (F.A.C.).

Pursuant to Chapter 40E-4 F.A.C., this permit may not be converted from the construction phase to the operation phase until certification of the SWM system is submitted to and accepted by this District. Rule 40E-4.321(7) F.A.C. states that failure to complete construction of the SWM system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization unless a permit extension is granted.

For SWM systems permitted with an operating entity who is different from the permittee, it should be noted that until the permit is transferred to the operating entity pursuant to Rule 40E-1.6107, F.A.C., the permittee is liable for compliance with the terms of this permit.

The permittee is advised that the efficiency of a SWM system will normally decrease over time unless the system is periodically maintained. A significant reduction in flow capacity can usually be attributed to partial blockages of the conveyance system. Once flow capacity is compromised, flooding of the project may result. Maintenance of the SWM system is required to protect the public health, safety and the natural resources of the state. Therefore, the permittee must have periodic inspections of the SWM system performed to ensure performance for flood protection and water quality purposes. If deficiencies are found, it is the responsibility of the permittee to correct these deficiencies in a timely manner.

RELATED CONCERNS:

Water Use Permit Status:

The applicant has indicated that public water supply will be used as a source for irrigation water for the project.

The applicant has indicated that dewatering is required for construction of this project. Application No. 050114-29 for construction dewatering has been submitted and is being processed.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation, unless the work qualifies for a No-Notice Short-Term Dewatering permit pursuant to Chapter 40E-20.302(3) or is exempt pursuant to Section 40E-2.051, FAC.

Potable Water Supplier:

Orlando Utilities Commission

Waste Water System/Supplier:

City of Orlando

Right-Of-Way Permit Status:

A Right-of-Way Permit is not required for this project.

DRI Status:

This project is not a DRI.

Historical/Archeological Resources:

No information has been received that indicates the presence of archaeological or historical resources or that the proposed activities could cause adverse impacts to archaeological or historical resources.

DCA/CZM Consistency Review:

The District has not received a finding of inconsistency from the Florida Department of Environmental Protection or other commenting agencies regarding the provisions of the federal Coastal Zone Management Plan.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION:

The Staff recommends that the following be issued :

Modification for construction and operation of a surface water management system to serve an 83.36 acre commercial project known as Regal Yacht Center.

Based on the information provided, District rules have been adhered to.

Staff recommendation is for approval subject to the attached General and Special Conditions.

DRAFT
Subject to Governing Board Approval

STAFF REVIEW:

NATURAL RESOURCE MANAGEMENT DIVISION APPROVAL

ENVIRONMENTAL EVALUATION

Susan C. Elfers

SUPERVISOR

Susan C Elfers (for) Marc S. Ady

DIVISION DIRECTOR :

Robert G. Robbins

DATE: 3-26-05

SURFACE WATER MANAGEMENT DIVISION APPROVAL

ENGINEERING EVALUATION

Alan L. Leavens

SUPERVISOR

Edward W. Yaun, P.E.

DIVISION DIRECTOR :

Anthony M. Waterhouse, P.E.

DATE: 3/30/05

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on April 13, 2010.
2. Operation of the surface water management system shall be the responsibility of REGAL MARINE INDUSTRIES INC.
3. Discharge Facilities:

Basin: Basin 20, 20A, Structure: 1

1-3" dia. CIRCULAR ORIFICE with invert at elev. 94' NGVD.
490 LF of 18" dia. REINFORCED CONCRETE PIPE culvert.
1-24" W X 37" L drop inlet with crest at elev. 95.55' NGVD.

Receiving body : Pond 20
Control elev : 94 feet NGVD.

Basin: Basin 20, 20A, Structure: 2

1-3" dia. CIRCULAR ORIFICE with invert at elev. 94' NGVD.
50 LF of 18" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 54" L drop inlet with crest at elev. 94.5' NGVD.

Receiving body : Wetland W-2
Control elev : 94 feet NGVD.

Basin: Wetland W-2, Structure: 1

2-10' WIDE BROAD CRESTED weirs with crest at elev. 94.34' NGVD.

Receiving body : Test Lake
Control elev : 94 feet NGVD.

Basin: Wetland W-2, Structure: 2

2-36" dia. REINFORCED CONCRETE PIPE culverts each 130' long.
1-36' W X 79' L drop inlet with crest at elev. 94' NGVD.

Receiving body : Existing ditch
Control elev : 94 feet NGVD.

Basin: Basin 10, 30, 30P, Structure: 1

1-3.5" dia. CIRCULAR ORIFICE with invert at elev. 94' NGVD.
50 LF of 30" dia. REINFORCED CONCRETE PIPE culvert.
1-36" W X 54" L drop inlet with crest at elev. 95.56' NGVD.

Receiving body : Test Lake
Control elev : 94 feet NGVD.

Basin: Test lake, Structure: 1

2-10' WIDE BROAD CRESTED weirs with crest at elev. 94.34' NGVD.
2-4" dia. CIRCULAR ORIFICEs with invert at elev. 94' NGVD.

SPECIAL CONDITIONS

Receiving body : Existing ditch
Control elev : 94 feet NGVD.

4. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.

5. Measures shall be taken during construction to insure that sedimentation and/or turbidity violations do not occur in the receiving water.

6. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

7. Lake side slopes shall be no steeper than 5:1 (horizontal:vertical) to a depth of two feet below the control elevation. Side slopes shall be nurtured or planted from 2 feet below to 1 foot above control elevation to insure vegetative growth, unless shown on the plans.

8. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.

9. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.

10. The permittee shall provide routine maintenance of all of the components of the surface water management system in order to remove all trapped sediments/debris. All materials shall be properly disposed of as required by law. Failure to properly maintain the system may result in adverse flooding conditions.

11. This permit is issued based on the applicant's submitted information which reasonably demonstrates that adverse water resource related impacts will not be caused by the completed permit activity. Should any adverse impacts caused by the completed surface water management system occur, the District will require the permittee to provide appropriate mitigation to the District or other impacted party. The District will require the permittee to modify the surface water management system, if necessary, to eliminate the cause of the adverse impacts.

12. Minimum building floor elevation: BASIN: Basin 20, 20A - 97.70 feet NGVD. BASIN: Basin 10, 30, 30P - 97.70 feet NGVD. BASIN: Test lake - 97.50 feet NGVD.

13. Minimum road crown elevation: Basin: Basin 20, 20A - 96.00 feet NGVD.

14. Prior to the commencement of construction resulting in wetland impacts and in accordance with the work schedule in the exhibitsattached, the permittee shall submit two certified copies of the recorded conservation easement for the mitigation area and associated buffers. The data should also be supplied in a digital CAD (.dxf) or GIS (ESRI Coverage) format. The files should be in the Florida State Plane coordinate system, East Zone (3601) with a data datum of NAD83, HARN with the map units in feet. This data should reside on a CD or floppy disk and be submitted to the District's Environmental Resource Compliance Division in the service area office where the application was submitted.

    The recorded easement shall be in substantial conformance with the attached exhibits. Any proposed modifications to the approved form must receive prior written consent from the District. The easement must be free of encumbrances or interests in the easement which the District determines are contrary to the intent of the easement. In the event it is later determined that there are encumbrances or interests in the easement which the District determines are contrary to the intent of the easement, the permittee shall be required to provide release or subordination of such encumbrances or interests.

15. Minimum parking lot elevation: Basin: Basin 20, 20A - 95.90 feet NGVD. Basin:

SPECIAL CONDITIONS

Basin 10, 30, 30P - 96.10 feet NGVD. Basin: Test lake - 95.90 feet NGVD.

16. Prior to to commencement of construction in wetlands and in accordance with the work schedule in the attached exhibits, the permittee shall submit documentation from the Florida Department of Environmental Protection that 4.5 freshwater forested mitigation bank credits have been deducted from the ledger for the Florida Mitigation Bank (ERP Permit # 492924779.

17. All commercial/industrial parcels shall provide a minimum dry pre-treatment volume of 1/2 inch of runoff prior to discharge into the master surface water management system.

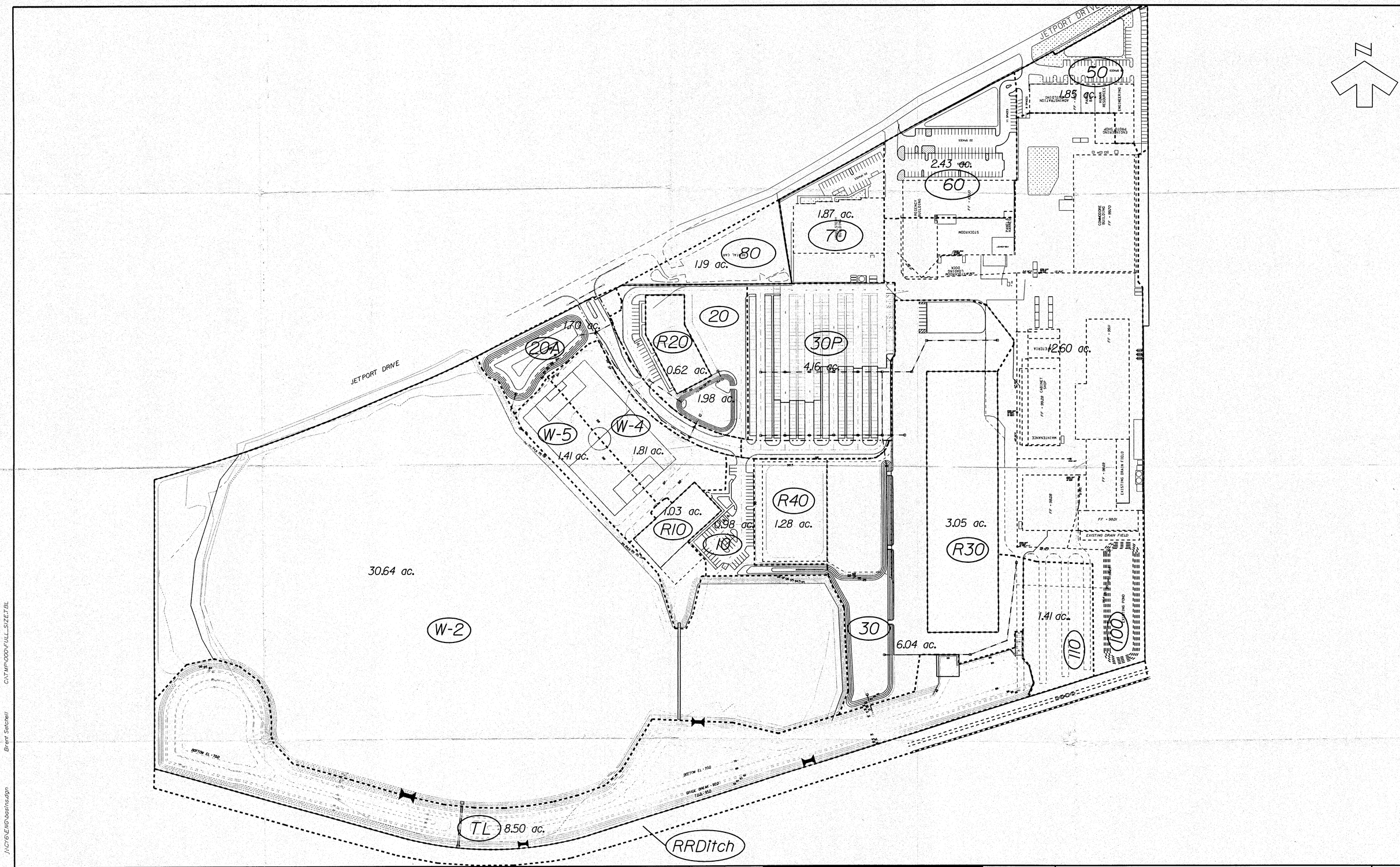
18. Silt fencing shall be installed at the limits of construction to protect all of the preserve areas from silt and sediment deposition during the construction of the project. A floating turbidity barrier shall be installed during the construction of the final discharge structure into the adjacent canal/water body. The silt fencing and the turbidity barrier shall be installed in accordance with "Florida Land Development Manual" Chapter 6 "Stormwater and Erosion and Sediment Control Best Management Practices for Developing Areas" and the attached exhibits. The sediment controls shall be installed prior to the commencement of any clearing or construction and the installation must be inspected by the District's Environmental Resource Compliance staff. The silt fencing and turbidity barriers shall remain in place and be maintained in good functional condition until all adjacent construction activities have been completed and all fill slopes have been stabilized. Upon completion of the project and the stabilization of the fill, the permittee shall contact the District's Environmental Resource Compliance staff to inspect the site and approve the removal of the silt fencing and turbidity barriers.

19. The District reserves the right to require remedial measures to be taken by the permittee if monitoring or other information demonstrates that adverse impacts to onsite or offsite wetlands, upland conservation areas or buffers, or other surface waters have occurred due to project related activities.

20. A maintenance program shall be implemented in accordance with the attached exhibits of the enhanced wetland areas and upland buffers on a regular basis to ensure the integrity and viability of those areas as permitted. Maintenance shall be conducted in perpetuity to ensure that the conservation area is maintained free from Category 1 exotic vegetation (as defined by the Florida Exotic Pest Plant Council at the time of permit issuance) immediately following a maintenance activity. Coverage of exotic plant species shall not exceed 5%of total cover between maintenance activities. Coverage of nuisance plant species shall not exceed 10% of total cover between maintenance activities. In addition, the permittee shall manage the conservation areas such that exotic/nuisance plant species do not dominate any one section of those areas.

21. Prior to any future construction, the permittee shall apply for and receive a permit modification. As part of the permit application, the applicant for that phase shall provide documentation verifying that the proposed construction is consistent with the design of the master surface water management system, including the land use and site grading assumptions.

22. A mitigation implementation, monitoring and maintenance program shall be implemented in accordance with the attached exhibits. The monitoring program shall extend for a period of 5 years with annual reports submited to District staff. Activities, reports, manitenance etc. shall be impelmented in accordance with the work schedule attached as as exhibit.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

CONTRACTOR "AS-BUILTS"

I hereby state that these "As-Builts" were furnished to me by the contractor listed below, I, or an employee under my direct supervision have reviewed these "As-Builts" and believe them to be in compliance with my knowledge of what was actually constructed. This statement is based upon site observations of the construction.

Contractor's Name _____ Engineer _____
Not valid without the signature and the original raised seal of a Florida Registered Engineer.

SUBMITTAL	DATE
CITY OR COUNTY	
W.M.D.	
FINAL APPROVAL	
BID SET	
AS-BUILT	

BOWYER SINGLETON & ASSOCIATES, INCORPORATED
520 SOUTH MAGNOLIA AVENUE · ORLANDO, FLORIDA 32801
407-843-5120 • ENGINEERING BUSINESS #1221
ENGINEERING PLANNING SURVEYING ENVIRONMENTAL

John A. Walsh II
Florida Reg. Number
57098

ORANGE COUNTY FLORIDA

POST-DEVELOPMENT BASIN MAP

REGAL MARINE EXPANSION

DATE	
DESIGNED	
CHECKED	
SCALE	
PROJECT NO.	
FILE NAME	
SHEET	

1/14/2005 08:04:10 J:\C16\ENG\basinsdgn Brent Satchell C:\TMP\000VFULL_SIZE1.TBL

ERP 48-01254-P

Regal Marine

BASIN CURVE NUMBER CALCULATIONS

Basin #	CN=98 Impervious (ac)	Impervious (% of Total)	CN=100 Pond (ac)	Pond (% of Total)	Pervious (ac)	Pervious (% of Total)	Pervious CN	CN=87 Wetland (ac)	Wetland (% of Total)	Total (ac)	Composite CN
10	**0.60**	61%	**0.00**	0%	**0.38**	39%	**74.0**	**0.00**	0%	**0.98**	**88.7**
20	**1.20**	61%	**0.03**	2%	**0.75**	38%	**74.0**	**0.00**	0%	**1.98**	**88.9**
20A	**0.51**	30%	**0.54**	32%	**0.65**	38%	**74.0**	**0.00**	0%	**1.70**	**89.5**
30	**4.12**	68%	**0.00**	0%	**1.92**	32%	**74.0**	**0.00**	0%	**6.04**	**90.4**
30P	**3.56**	86%	**0.00**	0%	**0.60**	14%	**74.0**	**0.00**	0%	**4.16**	**94.5**
50	**1.39**	75%	**0.00**	0%	**0.46**	25%	**84.0**	**0.00**	0%	**1.85**	**94.5**
60	**1.82**	75%	**0.00**	0%	**0.61**	25%	**84.0**	**0.00**	0%	**2.43**	**94.5**
70	**1.41**	75%	**0.00**	0%	**0.46**	25%	**84.0**	**0.00**	0%	**1.87**	**94.6**
80	**0.89**	75%	**0.00**	0%	**0.30**	25%	**84.0**	**0.00**	0%	**1.19**	**94.5**
100	**10.76**	85%	**0.51**	4%	**1.33**	11%	**74.0**	**0.00**	0%	**12.60**	**95.5**
110	**0.45**	32%	**0.00**	0%	**0.96**	68%	**74.0**	**0.00**	0%	**1.41**	**81.7**
R10	**0.71**	69%	**0.00**	0%	**0.32**	31%	**74.0**	**0.00**	0%	**1.03**	**90.5**
R20	**0.62**	100%	**0.00**	0%	**0.00**	0%	**74.0**	**0.00**	0%	**0.62**	**98.0**
R30	**3.05**	100%	**0.00**	0%	**0.00**	0%	**74.0**	**0.00**	0%	**3.05**	**98.0**
R40	**1.15**	90%	**0.00**	0%	**0.13**	10%	**74.0**	**0.00**	0%	**1.28**	**95.6**
W-4	**0.00**	0%	**0.00**	0%	**1.81**	100%	**74.0**	**0.00**	0%	**1.81**	**74.0**
W-5	**0.00**	0%	**0.00**	0%	**1.41**	100%	**74.0**	**0.00**	0%	**1.41**	**74.0**
W-2	**0.00**	0%	**0.00**	0%	**2.85**	9%	**74.0**	**27.79**	91%	**30.64**	**85.8**
TL	**0.09**	1%	**6.34**	75%	**2.07**	24%	**74.0**	**0.00**	0%	**8.50**	**93.6**
	32.33									84.55	

ERP# 48-01254-P
APP.# 050114-30

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
100	BASE	5Y24H	30.00	95.43	96.40	0.0021	22022	8.92	12.69	8.92	12.63
110	BASE	5Y24H	11.18	96.83	97.00	0.0007	16892	8.92	0.92	11.18	0.36
20	BASE	5Y24H	9.01	95.71	98.00	0.0013	12690	8.92	2.45	9.00	2.30
20A	BASE	5Y24H	30.00	95.43	98.00	0.0007	27698	8.92	3.83	9.16	3.26
30	BASE	5Y24H	8.97	95.91	98.00	0.0012	41429	8.92	10.78	8.97	10.43
50	BASE	5Y24H	10.10	98.86	99.00	0.0027	6414	8.92	1.84	10.10	0.95
60	BASE	5Y24H	10.08	97.94	98.00	0.0020	10403	8.92	2.42	10.08	1.27
70	BASE	5Y24H	8.92	96.93	98.00	0.0021	4298	8.92	1.86	8.92	1.86
BEELINEN	BASE	5Y24H	29.99	95.44	100.00	0.0014	47035	10.78	22.59	8.79	18.19
BEELINES	BASE	5Y24H	30.00	95.43	100.00	-0.0068	22323	8.79	24.99	8.80	24.46
DITCH	BASE	5Y24H	14.00	96.00	100.00	0.0028	0	10.00	14.96	0.00	0.00
MH	BASE	5Y24H	29.94	95.50	100.00	0.0500	324	14.09	8.40	17.83	19.42
RRDitch	BASE	5Y24H	30.00	95.43	98.00	-0.0036	42015	10.93	15.61	10.96	14.67
SMA-1	BASE	5Y24H	14.16	97.35	100.00	0.0011	429380	8.75	58.43	14.16	5.73
TL	BASE	5Y24H	30.00	95.43	97.00	0.0010	373236	8.92	41.15	10.98	8.71
W-1	BASE	5Y24H	13.90	96.54	100.00	0.0006	239580	8.75	19.28	13.90	2.67
W-2	BASE	5Y24H	30.00	95.43	97.00	0.0006	1232972	8.93	64.14	30.00	3.11
W-3	BASE	5Y24H	29.82	95.42	100.00	0.0004	1990606	8.75	89.38	10.00	14.96

Allowable 5YR/24HR discharge= 12.99 cfs

ERP 48-01254-P
APP# 050114-30

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
100	BASE	25yr72	71.76	96.87	96.40	0.0048	30184	59.75	61.78	59.96	55.40
110	BASE	25yr72	60.07	96.94	97.00	0.0004	20032	60.00	4.52	60.07	4.11
20	BASE	25yr72	60.41	97.10	98.00	0.0047	14554	59.75	12.55	60.20	4.05
20A	BASE	25yr72	71.83	96.91	98.00	0.0022	31961	60.00	11.58	60.05	3.45
30	BASE	25yr72	60.23	97.13	98.00	0.0046	52816	59.75	53.20	60.13	25.59
50	BASE	25yr72	60.00	99.47	99.00	0.0027	6941	59.75	9.05	60.00	8.52
60	BASE	25yr72	60.14	99.16	98.00	0.0047	11466	59.75	11.89	60.14	7.59
70	BASE	25yr72	59.92	97.41	98.00	0.0026	4714	59.75	9.15	59.92	8.81
BEELINEN	BASE	25yr72	71.75	96.96	100.00	0.0046	54427	59.75	98.21	60.02	66.84
BEELINES	BASE	25yr72	71.80	96.92	100.00	-0.0068	79187	60.00	95.92	60.04	82.38
DITCH	BASE	25yr72	60.00	96.20	100.00	-0.0006	0	72.00	49.99	0.00	0.00
MH	BASE	25yr72	69.94	97.15	100.00	-0.0500	131	62.17	21.59	62.22	21.45
RRDitch	BASE	25yr72	71.79	96.87	98.00	-0.0036	73481	60.01	36.42	75.76	30.78
SMA-1	BASE	25yr72	62.82	98.68	100.00	0.0034	451960	59.75	256.86	60.36	80.63
TL	BASE	25yr72	71.82	96.89	97.00	0.0023	412186	60.00	107.90	75.29	19.89
W-1	BASE	25yr72	62.88	98.67	100.00	0.0046	239580	60.06	121.40	62.17	10.28
W-2	BASE	25yr72	71.90	96.91	97.00	0.0020	1281487	60.00	253.48	73.63	26.31
W-3	BASE	25yr72	70.13	96.65	100.00	0.0015	2203510	59.75	426.56	72.00	49.99

Allowable 25YR/72HR discharge=
59.51 cfs

Regal Marine
Post-Development

Node Maximum Conditions Report

Name	Group	Sim.	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
100	BASE	100Y24	24.00	96.38	96.40	0.0025	8.75	27.35	8.71	26.27
110	BASE	100Y24	9.02	96.90	97.00	0.0012	9.00	2.57	9.02	2.55
20	BASE	100Y24	23.93	96.41	98.00	0.0014	8.75	5.52	8.13	4.05
20A	BASE	100Y24	23.96	96.41	98.00	0.0013	8.71	7.62	7.89	4.31
30	BASE	100Y24	23.95	96.40	98.00	0.0010	8.75	23.81	8.69	22.87
50	BASE	100Y24	8.77	99.19	99.00	0.0042	8.75	4.00	8.77	3.98
60	BASE	100Y24	9.12	98.70	98.00	0.0026	8.75	5.26	9.12	4.50
70	BASE	100Y24	8.76	97.13	98.00	0.0020	8.75	4.05	8.76	4.04
BEELINEN	BASE	100Y24	23.09	96.46	100.00	0.0028	8.68	78.79	8.80	54.47
BEELINES	BASE	100Y24	23.60	96.42	100.00	-0.0070	8.80	75.59	8.81	73.64
DITCH	BASE	100Y24	14.00	96.00	100.00	0.0028	10.00	31.38	0.00	0.00
MH	BASE	100Y24	19.70	96.65	100.00	-0.0499	13.60	24.12	13.34	24.02
RRDitch	BASE	100Y24	24.01	96.38	98.00	-0.0036	9.89	37.45	11.44	33.72
SMA-1	BASE	100Y24	13.81	98.77	100.00	0.0027	8.75	127.19	9.78	55.58
TL	BASE	100Y24	24.01	96.40	97.00	0.0015	8.81	44.03	11.79	18.88
W-1	BASE	100Y24	13.84	98.76	100.00	0.0028	9.67	75.22	13.60	11.50
W-2	BASE	100Y24	23.95	96.41	97.00	0.0015	8.81	179.10	11.82	31.36
W-3	BASE	100Y24	24.50	96.28	100.00	0.0011	8.75	231.84	10.00	31.38
100	BASE	25Y24H	23.16	95.84	96.40	0.0021	8.75	22.12	8.74	21.47
110	BASE	25Y24H	9.10	96.88	97.00	0.0012	9.00	2.01	9.10	1.93
20	BASE	25Y24H	9.15	95.89	98.00	0.0014	8.75	4.42	8.59	3.92
20A	BASE	25Y24H	23.17	95.87	98.00	0.0010	8.75	6.78	8.28	4.28
30	BASE	25Y24H	8.84	96.09	98.00	0.0014	8.75	19.12	8.83	18.79
50	BASE	25Y24H	8.88	99.12	99.00	0.0041	8.75	3.23	8.88	3.14
60	BASE	25Y24H	9.18	98.46	98.00	0.0025	8.75	4.25	9.18	3.46
70	BASE	25Y24H	8.76	97.07	98.00	0.0023	8.75	3.27	8.76	3.26
BEELINEN	BASE	25Y24H	22.84	95.90	100.00	0.0019	8.59	62.90	9.03	43.99
BEELINES	BASE	25Y24H	23.09	95.88	100.00	-0.0070	9.00	60.47	9.00	59.42
DITCH	BASE	25Y24H	14.00	95.40	100.00	0.0019	10.00	25.04	0.00	0.00
MH	BASE	25Y24H	22.41	96.02	100.00	0.0499	13.63	19.43	16.46	21.99
RRDitch	BASE	25Y24H	23.18	95.84	98.00	-0.0045	11.64	34.84	11.66	28.94
SMA-1	BASE	25Y24H	13.81	98.16	100.00	0.0023	8.75	102.74	10.49	37.79
TL	BASE	25Y24H	23.21	95.85	97.00	0.0011	9.00	35.33	11.63	14.98
W-1	BASE	25Y24H	13.86	98.14	100.00	0.0017	10.00	45.51	13.41	9.55
W-2	BASE	25Y24H	23.26	95.87	97.00	0.0013	9.00	143.23	11.63	24.97
W-3	BASE	25Y24H	23.86	95.75	100.00	0.0009	8.75	181.03	10.00	25.04

Allowable 25YR/24HR discharge= 23.40 cfs

Allowable 100YR/24HR discharge= 28.82 cfs

Regal Marine
Post-Development

Node Maximum Conditions Report

Name	Group	Sim.	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
100	BASE	100y72	71.89	97.44	96.40	0.0058	59.75	79.12	59.95	71.63
110	BASE	100y72	71.97	97.44	97.00	0.0007	60.00	6.57	60.07	6.04
20	BASE	100y72	60.48	97.74	98.00	0.0081	59.75	16.16	60.23	4.59
20A	BASE	100y72	71.93	97.47	98.00	0.0035	60.00	14.25	60.10	4.10
30	BASE	100y72	60.25	97.70	98.00	0.0076	59.75	67.75	60.16	29.90
50	BASE	100y72	59.98	99.58	99.00	0.0038	59.75	11.60	59.98	11.01
60	BASE	100y72	60.16	99.52	98.00	0.0072	59.75	15.24	60.16	9.21
70	BASE	100y72	59.90	97.52	98.00	0.0038	59.75	11.73	59.90	11.34
BEELINEN	BASE	100y72	60.69	97.67	100.00	0.0064	59.74	153.97	60.19	84.65
BEELINES	BASE	100y72	71.92	97.50	100.00	-0.0070	60.05	123.61	60.24	102.96
DITCH	BASE	100y72	60.00	96.20	100.00	0.0007	72.00	54.62	0.00	0.00
MH	BASE	100y72	60.82	97.90	100.00	-0.0500	62.92	27.10	62.92	27.10
RRDitch	BASE	100y72	71.96	97.44	98.00	-0.0036	61.96	35.73	72.00	35.14
SMA-1	BASE	100y72	62.89	99.52	100.00	0.0046	59.75	329.21	60.14	113.24
TL	BASE	100y72	72.00	97.45	97.00	0.0028	60.45	60.09	72.00	25.17
W-1	BASE	100y72	62.91	99.52	100.00	0.0076	60.00	188.69	62.93	12.53
W-2	BASE	100y72	72.00	97.47	97.00	0.0028	60.00	328.63	62.21	36.50
W-3	BASE	100y72	71.31	97.11	100.00	0.0024	59.75	546.48	72.00	54.62

Allowable 100YR/72HR discharge= 77.67 cfs

DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

Name: W-2 Node: W-2 Status: Onsite
Group: BASE Type: Santa Barbara

Rainfall File: ORANGE Storm Duration(hrs): 24.00
Rainfall Amount(in): 10.600 Time of Conc(min): 42.00
Area(ac): 30.640 Time Shift(hrs): 0.00
Curve Number: 85.80 Time Increment(min): 10.00
DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

Name: W-3 Node: W-3 Status: Onsite
Group: BASE Type: Santa Barbara

Rainfall File: ORANGE Storm Duration(hrs): 24.00
Rainfall Amount(in): 10.600 Time of Conc(min): 23.10
Area(ac): 11.100 Time Shift(hrs): 0.00
Curve Number: 90.00 Time Increment(min): 15.00
DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

Name: W-4 Node: W-2 Status: Onsite
Group: BASE Type: Santa Barbara

Rainfall File: Orange Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.600 Time of Conc(min): 27.00
Area(ac): 1.810 Time Shift(hrs): 0.00
Curve Number: 74.00 Time Increment(min): 5.00
DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

Name: W-5 Node: W-2 Status: Onsite
Group: BASE Type: Santa Barbara

Rainfall File: Orange Storm Duration(hrs): 24.00
Rainfall Amount(in): 8.600 Time of Conc(min): 15.00
Area(ac): 1.410 Time Shift(hrs): 0.00
Curve Number: 74.00 Time Increment(min): 5.00
DCIA(%): 0.00 Max Allowable Q(cfs): 999999.000

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==== Nodes ==========
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Name: 100 Base Flow(cfs): 0.000 Init Stage(ft): 93.25
Group: BASE Warn Stage(ft): 96.40
Type: Stage/Area

Stage(ft)	Area(ac)

93.25	0.3600
94.00	0.4200
95.00	0.4800
96.00	0.5400
96.40	0.6100

Control Elev.= 93.25 (NAVD)

Name: 110 Base Flow(cfs): 0.000 Init Stage(ft): 95.80
Group: BASE Warn Stage(ft): 97.00
Type: Stage/Area

Stage(ft)	Area(ac)
95.80	0.0400
96.80	0.3700
97.00	0.5000

Name: 20 Base Flow(cfs): 0.000 Init Stage(ft): 95.00
Group: BASE Warn Stage(ft): 98.00
Type: Stage/Area

Stage(ft)	Area(ac)
94.00	0.0200
95.00	0.2700
96.00	0.3000
97.00	0.3300
98.00	0.3700

Name: 20A Base Flow(cfs): 0.000 Init Stage(ft): 94.00
Group: BASE Warn Stage(ft): 98.00
Type: Stage/Area

Stage(ft)	Area(ac)
94.00	0.5400
95.00	0.6100
96.00	0.6700
97.00	0.7400
98.00	0.8100

Name: 30 Base Flow(cfs): 0.000 Init Stage(ft): 95.00
Group: BASE Warn Stage(ft): 98.00
Type: Stage/Area

Stage(ft)	Area(ac)
94.00	0.0001
95.00	0.7700
96.00	0.9100
97.00	1.1500
98.00	1.3400

ERP# 48-01254-P
APP.# 050114-30

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
5Y24H	RRDitch	BASE	0.00	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	0.25	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	0.50	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	0.75	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	1.00	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	1.25	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	1.50	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	1.75	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	2.00	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	2.25	94.00	98.00	11059	0.00	0.00	0.0	0.0
5Y24H	RRDitch	BASE	2.50	93.97	98.00	282	0.00	-4.36	0.0	-0.0
5Y24H	RRDitch	BASE	2.75	93.97	98.00	282	0.00	-4.35	0.0	-0.1
5Y24H	RRDitch	BASE	3.00	93.97	98.00	282	0.00	-4.36	0.0	-0.2
5Y24H	RRDitch	BASE	3.25	93.97	98.00	282	0.00	-4.40	0.0	-0.3
5Y24H	RRDitch	BASE	3.50	93.97	98.00	282	0.00	-4.38	0.0	-0.4
5Y24H	RRDitch	BASE	3.75	93.97	98.00	282	0.00	-4.42	0.0	-0.5
5Y24H	RRDitch	BASE	4.00	93.97	98.00	282	0.00	-4.42	0.0	-0.6
5Y24H	RRDitch	BASE	4.25	93.98	98.00	282	0.01	-4.41	0.0	-0.7
5Y24H	RRDitch	BASE	4.50	93.98	98.00	282	0.01	-4.43	0.0	-0.8
5Y24H	RRDitch	BASE	4.75	93.98	98.00	282	0.02	-4.49	0.0	-0.9
5Y24H	RRDitch	BASE	5.00	93.99	98.00	282	0.04	-4.56	0.0	-1.0
5Y24H	RRDitch	BASE	5.25	93.99	98.00	282	0.07	-4.64	0.0	-1.1
5Y24H	RRDitch	BASE	5.50	93.99	98.00	282	0.10	-4.72	0.0	-1.1
5Y24H	RRDitch	BASE	5.75	94.00	98.00	282	0.15	-4.81	0.0	-1.2
5Y24H	RRDitch	BASE	6.00	94.04	98.00	11940	-0.38	-0.48	0.0	-1.3
5Y24H	RRDitch	BASE	6.25	94.05	98.00	12138	-0.49	-0.63	-0.0	-1.3
5Y24H	RRDitch	BASE	6.50	94.06	98.00	12390	-0.63	-0.80	-0.0	-1.3
5Y24H	RRDitch	BASE	6.75	94.08	98.00	12730	1.52	1.26	-0.0	-1.3
5Y24H	RRDitch	BASE	7.00	94.10	98.00	13186	3.49	3.15	0.0	-1.3
5Y24H	RRDitch	BASE	7.25	94.12	98.00	13728	4.71	4.31	0.1	-1.2
5Y24H	RRDitch	BASE	7.50	94.15	98.00	14315	5.26	4.80	0.2	-1.1
5Y24H	RRDitch	BASE	7.75	94.18	98.00	15030	6.12	5.53	0.4	-1.0
5Y24H	RRDitch	BASE	8.00	94.22	98.00	15823	6.66	5.97	0.5	-0.9
5Y24H	RRDitch	BASE	8.25	94.26	98.00	16740	7.35	6.53	0.6	-0.8
5Y24H	RRDitch	BASE	8.50	94.31	98.00	17688	7.68	6.82	0.8	-0.6
5Y24H	RRDitch	BASE	8.75	94.35	98.00	18655	7.85	6.92	0.9	-0.5
5Y24H	RRDitch	BASE	9.00	94.39	98.00	19611	8.17	7.27	1.1	-0.3
5Y24H	RRDitch	BASE	9.25	94.43	98.00	20420	7.88	7.07	1.3	-0.2
5Y24H	RRDitch	BASE	9.50	94.47	98.00	21280	9.12	8.10	1.4	-0.0
5Y24H	RRDitch	BASE	9.75	94.52	98.00	22257	11.16	10.03	1.7	0.2
5Y24H	RRDitch	BASE	10.00	94.56	98.00	23238	13.22	12.11	1.9	0.4
5Y24H	RRDitch	BASE	10.25	94.60	98.00	24053	14.32	13.42	2.2	0.7
5Y24H	RRDitch	BASE	10.50	94.63	98.00	24753	15.06	14.18	2.5	0.9
5Y24H	RRDitch	BASE	10.75	94.66	98.00	25477	15.51	14.55	2.8	1.2
5Y24H	RRDitch	BASE	11.00	94.70	98.00	26192	15.57	14.66	3.1	1.5
5Y24H	RRDitch	BASE	11.25	94.72	98.00	26795	15.02	14.26	3.5	1.8
5Y24H	RRDitch	BASE	11.50	94.75	98.00	27330	14.32	13.60	3.8	2.1
5Y24H	RRDitch	BASE	11.75	94.77	98.00	27824	13.44	12.75	4.0	2.4
5Y24H	RRDitch	BASE	12.00	94.79	98.00	28317	12.54	11.81	4.3	2.7
5Y24H	RRDitch	BASE	12.25	94.82	98.00	28834	11.74	10.98	4.6	2.9
5Y24H	RRDitch	BASE	12.50	94.84	98.00	29354	10.92	10.15	4.8	3.1
5Y24H	RRDitch	BASE	12.75	94.87	98.00	29862	10.07	9.30	5.0	3.3
5Y24H	RRDitch	BASE	13.00	94.89	98.00	30357	9.25	8.50	5.2	3.5
5Y24H	RRDitch	BASE	13.25	94.91	98.00	30809	8.19	7.50	5.4	3.7
5Y24H	RRDitch	BASE	13.50	94.93	98.00	31241	7.20	6.51	5.6	3.8
5Y24H	RRDitch	BASE	13.75	94.95	98.00	31667	6.21	5.52	5.7	3.9
5Y24H	RRDitch	BASE	14.00	94.97	98.00	32075	5.20	4.57	5.8	4.0
5Y24H	RRDitch	BASE	14.25	94.98	98.00	32434	3.85	3.28	5.9	4.1
5Y24H	RRDitch	BASE	14.50	95.00	98.00	32772	2.72	2.16	6.0	4.2
5Y24H	RRDitch	BASE	14.75	95.01	98.00	33099	1.70	1.16	6.0	4.2
5Y24H	RRDitch	BASE	15.00	95.03	98.00	33416	0.48	0.00	6.0	4.2
5Y24H	RRDitch	BASE	15.25	95.04	98.00	33689	-1.00	-1.43	6.0	4.2
5Y24H	RRDitch	BASE	15.50	95.05	98.00	33924	-2.10	-2.51	6.0	4.2
5Y24H	RRDitch	BASE	15.75	95.06	98.00	34155	-2.66	-3.06	6.0	4.1
5Y24H	RRDitch	BASE	16.00	95.07	98.00	34383	-3.05	-3.44	5.9	4.0
5Y24H	RRDitch	BASE	16.25	95.08	98.00	34603	-3.38	-3.77	5.8	4.0
5Y24H	RRDitch	BASE	16.50	95.09	98.00	34817	-3.62	-4.01	5.8	3.9
5Y24H	RRDitch	BASE	16.75	95.10	98.00	35037	-3.76	-4.16	5.7	3.8
5Y24H	RRDitch	BASE	17.00	95.11	98.00	35257	-3.88	-4.27	5.6	3.7
5Y24H	RRDitch	BASE	17.25	95.12	98.00	35476	-3.98	-4.37	5.5	3.6
5Y24H	RRDitch	BASE	17.50	95.13	98.00	35692	-4.04	-4.43	5.4	3.5
5Y24H	RRDitch	BASE	17.75	95.14	98.00	35900	-4.12	-4.50	5.3	3.4
5Y24H	RRDitch	BASE	18.00	95.15	98.00	36107	-4.17	-4.55	5.3	3.3
5Y24H	RRDitch	BASE	18.25	95.16	98.00	36318	-4.16	-4.55	5.2	3.2
5Y24H	RRDitch	BASE	18.50	95.17	98.00	36528	-4.15	-4.54	5.1	3.2
5Y24H	RRDitch	BASE	18.75	95.18	98.00	36729	-4.17	-4.55	5.0	3.1
5Y24H	RRDitch	BASE	19.00	95.19	98.00	36928	-4.17	-4.54	4.9	3.0
5Y24H	RRDitch	BASE	19.25	95.20	98.00	37120	-4.19	-4.55	4.8	2.9
5Y24H	RRDitch	BASE	19.50	95.21	98.00	37307	-4.21	-4.57	4.7	2.8
5Y24H	RRDitch	BASE	19.75	95.22	98.00	37500	-4.16	-4.53	4.7	2.7
5Y24H	RRDitch	BASE	20.00	95.23	98.00	37690	-4.12	-4.47	4.6	2.6
5Y24H	RRDitch	BASE	20.25	95.23	98.00	37867	-4.16	-4.49	4.5	2.5
5Y24H	RRDitch	BASE	20.50	95.24	98.00	38038	-4.16	-4.50	4.4	2.4
5Y24H	RRDitch	BASE	20.75	95.25	98.00	38213	-4.12	-4.46	4.3	2.3
5Y24H	RRDitch	BASE	21.00	95.26	98.00	38385	-4.08	-4.42	4.2	2.2

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
5Y24H	RRDitch	BASE	21.25	95.27	98.00	38552	-4.08	-4.41	4.1	2.1
5Y24H	RRDitch	BASE	21.50	95.27	98.00	38716	-4.07	-4.39	4.1	2.0
5Y24H	RRDitch	BASE	21.75	95.28	98.00	38882	-4.00	-4.34	4.0	2.0
5Y24H	RRDitch	BASE	22.00	95.29	98.00	39047	-3.95	-4.28	3.9	1.9
5Y24H	RRDitch	BASE	22.25	95.30	98.00	39208	-3.93	-4.24	3.8	1.8
5Y24H	RRDitch	BASE	22.50	95.30	98.00	39363	-3.87	-4.19	3.7	1.7
5Y24H	RRDitch	BASE	22.75	95.31	98.00	39522	-3.76	-4.08	3.7	1.6
5Y24H	RRDitch	BASE	23.00	95.32	98.00	39679	-3.64	-3.95	3.6	1.5
5Y24H	RRDitch	BASE	23.25	95.32	98.00	39823	-3.60	-3.88	3.5	1.4
5Y24H	RRDitch	BASE	23.50	95.33	98.00	39961	-3.52	-3.79	3.4	1.4
5Y24H	RRDitch	BASE	23.75	95.34	98.00	40094	-3.42	-3.69	3.4	1.3
5Y24H	RRDitch	BASE	24.00	95.34	98.00	40222	-3.32	-3.58	3.3	1.2
5Y24H	RRDitch	BASE	24.25	95.35	98.00	40341	-3.26	-3.50	3.2	1.1
5Y24H	RRDitch	BASE	24.50	95.35	98.00	40455	-3.16	-3.40	3.2	1.1
5Y24H	RRDitch	BASE	24.75	95.36	98.00	40566	-3.06	-3.28	3.1	1.0
5Y24H	RRDitch	BASE	25.00	95.36	98.00	40672	-2.93	-3.15	3.0	0.9
5Y24H	RRDitch	BASE	25.25	95.37	98.00	40776	-2.80	-3.02	3.0	0.9
5Y24H	RRDitch	BASE	25.50	95.37	98.00	40876	-2.66	-2.86	2.9	0.8
5Y24H	RRDitch	BASE	25.75	95.38	98.00	40973	-2.50	-2.70	2.9	0.7
5Y24H	RRDitch	BASE	26.00	95.38	98.00	41067	-2.33	-2.53	2.8	0.7
5Y24H	RRDitch	BASE	26.25	95.39	98.00	41157	-2.16	-2.35	2.8	0.6
5Y24H	RRDitch	BASE	26.50	95.39	98.00	41245	-1.97	-2.15	2.7	0.6
5Y24H	RRDitch	BASE	26.75	95.39	98.00	41329	-1.77	-1.94	2.7	0.6
5Y24H	RRDitch	BASE	27.00	95.40	98.00	41410	-1.56	-1.73	2.7	0.5
5Y24H	RRDitch	BASE	27.25	95.40	98.00	41487	-1.33	-1.49	2.6	0.5
5Y24H	RRDitch	BASE	27.50	95.41	98.00	41561	-1.10	-1.25	2.6	0.5
5Y24H	RRDitch	BASE	27.75	95.41	98.00	41630	-0.84	-0.98	2.6	0.4
5Y24H	RRDitch	BASE	28.00	95.41	98.00	41696	-0.56	-0.70	2.6	0.4
5Y24H	RRDitch	BASE	28.25	95.41	98.00	41756	-0.26	-0.39	2.6	0.4
5Y24H	RRDitch	BASE	28.50	95.42	98.00	41811	0.07	0.00	2.6	0.4
5Y24H	RRDitch	BASE	28.75	95.42	98.00	41862	0.41	0.31	2.6	0.4
5Y24H	RRDitch	BASE	29.00	95.42	98.00	41908	0.75	0.66	2.6	0.4
5Y24H	RRDitch	BASE	29.25	95.42	98.00	41948	1.13	1.05	2.6	0.4
5Y24H	RRDitch	BASE	29.50	95.42	98.00	41980	1.57	1.51	2.6	0.5
5Y24H	RRDitch	BASE	29.75	95.43	98.00	42001	2.16	2.13	2.7	0.5
5Y24H	RRDitch	BASE	30.00	95.43	98.00	42015	2.71	2.69	2.7	0.5
5Y24H	RRDitch	BASE	30.00	95.43	98.00	42015	2.71	2.69	2.7	0.5

Turnpike Pond at Regal Yacht Center
Post-Development

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
25yr72	RRDitch	BASE	0.00	94.00	98.00	11059	0.00	0.00	0.0	0.0
25yr72	RRDitch	BASE	0.25	93.97	98.00	282	0.00	-4.39	0.0	-0.0
25yr72	RRDitch	BASE	0.50	93.97	98.00	282	0.00	-4.39	0.0	-0.1
25yr72	RRDitch	BASE	0.75	93.97	98.00	282	0.00	-4.36	0.0	-0.2
25yr72	RRDitch	BASE	1.00	93.97	98.00	282	0.00	-4.39	0.0	-0.3
25yr72	RRDitch	BASE	1.25	93.97	98.00	282	0.00	-4.36	0.0	-0.4
25yr72	RRDitch	BASE	1.50	93.97	98.00	282	0.00	-4.34	0.0	-0.5
25yr72	RRDitch	BASE	1.75	93.97	98.00	282	0.00	-4.41	0.0	-0.6
25yr72	RRDitch	BASE	2.00	93.97	98.00	282	0.00	-4.39	0.0	-0.7
25yr72	RRDitch	BASE	2.25	93.97	98.00	282	0.00	-4.39	0.0	-0.8
25yr72	RRDitch	BASE	2.50	93.98	98.00	282	0.00	-4.44	0.0	-0.9
25yr72	RRDitch	BASE	2.75	93.98	98.00	282	0.00	-4.44	0.0	-1.0
25yr72	RRDitch	BASE	3.00	93.98	98.00	282	0.00	-4.43	0.0	-1.0
25yr72	RRDitch	BASE	3.25	93.98	98.00	282	0.00	-4.46	0.0	-1.1
25yr72	RRDitch	BASE	3.50	93.98	98.00	282	0.00	-4.49	0.0	-1.2
25yr72	RRDitch	BASE	3.75	93.99	98.00	282	0.00	-4.52	0.0	-1.3
25yr72	RRDitch	BASE	4.00	93.99	98.00	282	0.00	-4.56	0.0	-1.4
25yr72	RRDitch	BASE	4.25	93.99	98.00	282	0.00	-4.60	0.0	-1.5
25yr72	RRDitch	BASE	4.50	93.99	98.00	282	0.01	-4.64	0.0	-1.6
25yr72	RRDitch	BASE	4.75	93.99	98.00	282	0.01	-4.68	0.0	-1.7
25yr72	RRDitch	BASE	5.00	94.00	98.00	282	0.01	-4.72	0.0	-1.8
25yr72	RRDitch	BASE	5.25	94.00	98.00	282	0.01	-4.77	0.0	-1.9
25yr72	RRDitch	BASE	5.50	94.04	98.00	11878	-0.44	-0.48	-0.0	-2.0
25yr72	RRDitch	BASE	5.75	94.04	98.00	11938	-0.49	-0.52	-0.0	-2.0
25yr72	RRDitch	BASE	6.00	94.04	98.00	12000	-0.54	-0.58	-0.0	-2.0
25yr72	RRDitch	BASE	6.25	94.05	98.00	12061	-0.59	-0.63	-0.0	-2.0
25yr72	RRDitch	BASE	6.50	94.05	98.00	12124	-0.64	-0.68	-0.0	-2.0
25yr72	RRDitch	BASE	6.75	94.05	98.00	12187	-0.70	-0.74	-0.1	-2.0
25yr72	RRDitch	BASE	7.00	94.05	98.00	12250	-0.76	-0.80	-0.1	-2.0
25yr72	RRDitch	BASE	7.25	94.06	98.00	12313	-0.81	-0.85	-0.1	-2.0
25yr72	RRDitch	BASE	7.50	94.06	98.00	12377	-0.87	-0.91	-0.1	-2.1
25yr72	RRDitch	BASE	7.75	94.06	98.00	12441	-0.93	-0.97	-0.1	-2.1
25yr72	RRDitch	BASE	8.00	94.07	98.00	12505	-0.99	-1.04	-0.1	-2.1
25yr72	RRDitch	BASE	8.25	94.07	98.00	12569	-1.06	-1.10	-0.2	-2.1
25yr72	RRDitch	BASE	8.50	94.07	98.00	12633	-1.12	-1.16	-0.2	-2.2
25yr72	RRDitch	BASE	8.75	94.08	98.00	12697	-1.18	-1.22	-0.2	-2.2
25yr72	RRDitch	BASE	9.00	94.08	98.00	12761	-1.25	-1.29	-0.2	-2.2
25yr72	RRDitch	BASE	9.25	94.08	98.00	12825	-1.31	-1.35	-0.3	-2.2
25yr72	RRDitch	BASE	9.50	94.08	98.00	12889	-1.37	-1.42	-0.3	-2.3
25yr72	RRDitch	BASE	9.75	94.09	98.00	12953	-1.44	-1.48	-0.3	-2.3
25yr72	RRDitch	BASE	10.00	94.09	98.00	13016	-1.50	-1.54	-0.4	-2.3
25yr72	RRDitch	BASE	10.25	94.09	98.00	13080	-1.56	-1.61	-0.4	-2.4
25yr72	RRDitch	BASE	10.50	94.10	98.00	13144	-1.63	-1.67	-0.4	-2.4
25yr72	RRDitch	BASE	10.75	94.10	98.00	13207	-1.69	-1.73	-0.5	-2.4
25yr72	RRDitch	BASE	11.00	94.10	98.00	13270	-1.75	-1.80	-0.5	-2.5
25yr72	RRDitch	BASE	11.25	94.10	98.00	13333	-1.82	-1.86	-0.5	-2.5
25yr72	RRDitch	BASE	11.50	94.11	98.00	13397	-1.88	-1.92	-0.6	-2.5
25yr72	RRDitch	BASE	11.75	94.11	98.00	13460	-1.94	-1.98	-0.6	-2.6
25yr72	RRDitch	BASE	12.00	94.11	98.00	13522	-2.00	-2.04	-0.6	-2.6
25yr72	RRDitch	BASE	12.25	94.12	98.00	13585	-2.06	-2.10	-0.7	-2.7
25yr72	RRDitch	BASE	12.50	94.12	98.00	13648	-2.12	-2.16	-0.7	-2.7
25yr72	RRDitch	BASE	12.75	94.12	98.00	13711	-2.18	-2.22	-0.8	-2.7
25yr72	RRDitch	BASE	13.00	94.12	98.00	13774	-2.23	-2.28	-0.8	-2.8
25yr72	RRDitch	BASE	13.25	94.13	98.00	13837	-2.29	-2.33	-0.9	-2.8
25yr72	RRDitch	BASE	13.50	94.13	98.00	13900	-2.34	-2.39	-0.9	-2.9
25yr72	RRDitch	BASE	13.75	94.13	98.00	13963	-2.40	-2.44	-1.0	-2.9
25yr72	RRDitch	BASE	14.00	94.14	98.00	14026	-2.45	-2.50	-1.0	-3.0
25yr72	RRDitch	BASE	14.25	94.14	98.00	14088	-2.50	-2.55	-1.1	-3.0
25yr72	RRDitch	BASE	14.50	94.14	98.00	14152	-2.56	-2.60	-1.1	-3.1
25yr72	RRDitch	BASE	14.75	94.15	98.00	14214	-2.61	-2.65	-1.2	-3.2
25yr72	RRDitch	BASE	15.00	94.15	98.00	14278	-2.66	-2.70	-1.2	-3.2
25yr72	RRDitch	BASE	15.25	94.15	98.00	14341	-2.70	-2.75	-1.3	-3.3
25yr72	RRDitch	BASE	15.50	94.15	98.00	14405	-2.75	-2.80	-1.3	-3.3
25yr72	RRDitch	BASE	15.75	94.16	98.00	14469	-2.80	-2.85	-1.4	-3.4
25yr72	RRDitch	BASE	16.00	94.16	98.00	14533	-2.84	-2.89	-1.5	-3.4
25yr72	RRDitch	BASE	16.25	94.16	98.00	14598	-2.89	-2.94	-1.5	-3.5
25yr72	RRDitch	BASE	16.50	94.17	98.00	14663	-2.93	-2.98	-1.6	-3.6
25yr72	RRDitch	BASE	16.75	94.17	98.00	14728	-2.97	-3.02	-1.6	-3.6
25yr72	RRDitch	BASE	17.00	94.17	98.00	14794	-3.01	-3.06	-1.7	-3.7
25yr72	RRDitch	BASE	17.25	94.18	98.00	14866	-3.00	-3.07	-1.8	-3.7
25yr72	RRDitch	BASE	17.50	94.18	98.00	14951	-2.93	-2.99	-1.8	-3.8
25yr72	RRDitch	BASE	17.75	94.18	98.00	15034	-2.86	-2.93	-1.9	-3.9
25yr72	RRDitch	BASE	18.00	94.19	98.00	15116	-2.83	-2.89	-1.9	-3.9
25yr72	RRDitch	BASE	18.25	94.19	98.00	15194	-2.82	-2.88	-2.0	-4.0
25yr72	RRDitch	BASE	18.50	94.19	98.00	15271	-2.83	-2.89	-2.1	-4.0
25yr72	RRDitch	BASE	18.75	94.20	98.00	15346	-2.85	-2.91	-2.1	-4.1
25yr72	RRDitch	BASE	19.00	94.20	98.00	15422	-2.87	-2.93	-2.2	-4.2
25yr72	RRDitch	BASE	19.25	94.20	98.00	15498	-2.89	-2.96	-2.2	-4.2
25yr72	RRDitch	BASE	19.50	94.21	98.00	15573	-2.92	-2.98	-2.3	-4.3
25yr72	RRDitch	BASE	19.75	94.21	98.00	15649	-2.94	-3.00	-2.4	-4.4
25yr72	RRDitch	BASE	20.00	94.22	98.00	15725	-2.96	-3.02	-2.4	-4.4
25yr72	RRDitch	BASE	20.25	94.22	98.00	15802	-2.97	-3.04	-2.5	-4.5
25yr72	RRDitch	BASE	20.50	94.22	98.00	15883	-2.98	-3.05	-2.5	-4.5
25yr72	RRDitch	BASE	20.75	94.23	98.00	15963	-2.99	-3.06	-2.6	-4.6
25yr72	RRDitch	BASE	21.00	94.23	98.00	16045	-3.00	-3.07	-2.7	-4.7

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
25yr72	RRDitch	BASE	21.25	94.23	98.00	16127	-3.00	-3.07	-2.7	-4.7
25yr72	RRDitch	BASE	21.50	94.24	98.00	16210	-3.00	-3.07	-2.8	-4.8
25yr72	RRDitch	BASE	21.75	94.24	98.00	16294	-3.00	-3.07	-2.8	-4.9
25yr72	RRDitch	BASE	22.00	94.25	98.00	16379	-2.99	-3.06	-2.9	-4.9
25yr72	RRDitch	BASE	22.25	94.25	98.00	16465	-2.98	-3.05	-3.0	-5.0
25yr72	RRDitch	BASE	22.50	94.25	98.00	16553	-2.97	-3.04	-3.0	-5.0
25yr72	RRDitch	BASE	22.75	94.26	98.00	16640	-2.95	-3.03	-3.1	-5.1
25yr72	RRDitch	BASE	23.00	94.26	98.00	16729	-2.93	-3.01	-3.2	-5.2
25yr72	RRDitch	BASE	23.25	94.27	98.00	16819	-2.91	-2.99	-3.2	-5.2
25yr72	RRDitch	BASE	23.50	94.27	98.00	16910	-2.89	-2.97	-3.3	-5.3
25yr72	RRDitch	BASE	23.75	94.27	98.00	17001	-2.87	-2.95	-3.3	-5.4
25yr72	RRDitch	BASE	24.00	94.28	98.00	17096	-2.84	-2.93	-3.4	-5.4
25yr72	RRDitch	BASE	24.25	94.28	98.00	17203	-2.78	-2.88	-3.4	-5.5
25yr72	RRDitch	BASE	24.50	94.29	98.00	17318	-2.71	-2.81	-3.5	-5.5
25yr72	RRDitch	BASE	24.75	94.29	98.00	17433	-2.65	-2.76	-3.6	-5.6
25yr72	RRDitch	BASE	25.00	94.30	98.00	17548	-2.60	-2.71	-3.6	-5.7
25yr72	RRDitch	BASE	25.25	94.30	98.00	17664	-2.57	-2.67	-3.7	-5.7
25yr72	RRDitch	BASE	25.50	94.31	98.00	17780	-2.53	-2.63	-3.7	-5.8
25yr72	RRDitch	BASE	25.75	94.31	98.00	17898	-2.48	-2.59	-3.8	-5.8
25yr72	RRDitch	BASE	26.00	94.32	98.00	18017	-2.43	-2.54	-3.8	-5.9
25yr72	RRDitch	BASE	26.25	94.33	98.00	18136	-2.38	-2.49	-3.9	-5.9
25yr72	RRDitch	BASE	26.50	94.33	98.00	18257	-2.32	-2.44	-3.9	-6.0
25yr72	RRDitch	BASE	26.75	94.34	98.00	18380	-2.24	-2.35	-4.0	-6.0
25yr72	RRDitch	BASE	27.00	94.34	98.00	18502	-2.19	-2.30	-4.0	-6.1
25yr72	RRDitch	BASE	27.25	94.35	98.00	18624	-2.13	-2.25	-4.1	-6.1
25yr72	RRDitch	BASE	27.50	94.35	98.00	18746	-2.08	-2.20	-4.1	-6.2
25yr72	RRDitch	BASE	27.75	94.36	98.00	18869	-2.03	-2.15	-4.1	-6.2
25yr72	RRDitch	BASE	28.00	94.37	98.00	18993	-1.97	-2.09	-4.2	-6.3
25yr72	RRDitch	BASE	28.25	94.37	98.00	19116	-1.92	-2.04	-4.2	-6.3
25yr72	RRDitch	BASE	28.50	94.38	98.00	19241	-1.86	-1.99	-4.3	-6.3
25yr72	RRDitch	BASE	28.75	94.38	98.00	19365	-1.81	-1.93	-4.3	-6.4
25yr72	RRDitch	BASE	29.00	94.39	98.00	19490	-1.75	-1.88	-4.3	-6.4
25yr72	RRDitch	BASE	29.25	94.39	98.00	19615	-1.69	-1.82	-4.4	-6.5
25yr72	RRDitch	BASE	29.50	94.40	98.00	19740	-1.64	-1.77	-4.4	-6.5
25yr72	RRDitch	BASE	29.75	94.41	98.00	19866	-1.58	-1.72	-4.4	-6.5
25yr72	RRDitch	BASE	30.00	94.41	98.00	19993	-1.53	-1.66	-4.5	-6.6
25yr72	RRDitch	BASE	30.25	94.42	98.00	20119	-1.48	-1.61	-4.5	-6.6
25yr72	RRDitch	BASE	30.50	94.42	98.00	20245	-1.43	-1.56	-4.5	-6.6
25yr72	RRDitch	BASE	30.75	94.43	98.00	20371	-1.37	-1.51	-4.6	-6.7
25yr72	RRDitch	BASE	31.00	94.43	98.00	20498	-1.32	-1.46	-4.6	-6.7
25yr72	RRDitch	BASE	31.25	94.44	98.00	20626	-1.27	-1.41	-4.6	-6.7
25yr72	RRDitch	BASE	31.50	94.45	98.00	20752	-1.23	-1.36	-4.6	-6.7
25yr72	RRDitch	BASE	31.75	94.45	98.00	20880	-1.18	-1.31	-4.7	-6.8
25yr72	RRDitch	BASE	32.00	94.46	98.00	21007	-1.13	-1.27	-4.7	-6.8
25yr72	RRDitch	BASE	32.25	94.46	98.00	21134	-1.08	-1.22	-4.7	-6.8
25yr72	RRDitch	BASE	32.50	94.47	98.00	21262	-1.03	-1.17	-4.7	-6.9
25yr72	RRDitch	BASE	32.75	94.48	98.00	21389	-0.98	-1.13	-4.8	-6.9
25yr72	RRDitch	BASE	33.00	94.48	98.00	21517	-0.93	-1.08	-4.8	-6.9
25yr72	RRDitch	BASE	33.25	94.49	98.00	21645	-0.88	-1.03	-4.8	-6.9
25yr72	RRDitch	BASE	33.50	94.49	98.00	21773	-0.83	-0.97	-4.8	-6.9
25yr72	RRDitch	BASE	33.75	94.50	98.00	21901	-0.77	-0.92	-4.8	-7.0
25yr72	RRDitch	BASE	34.00	94.50	98.00	22029	-0.72	-0.87	-4.8	-7.0
25yr72	RRDitch	BASE	34.25	94.51	98.00	22158	-0.68	-0.83	-4.9	-7.0
25yr72	RRDitch	BASE	34.50	94.52	98.00	22286	-0.63	-0.78	-4.9	-7.0
25yr72	RRDitch	BASE	34.75	94.52	98.00	22414	-0.59	-0.74	-4.9	-7.0
25yr72	RRDitch	BASE	35.00	94.53	98.00	22542	-0.55	-0.70	-4.9	-7.0
25yr72	RRDitch	BASE	35.25	94.53	98.00	22670	-0.51	-0.66	-4.9	-7.1
25yr72	RRDitch	BASE	35.50	94.54	98.00	22798	-0.48	-0.63	-4.9	-7.1
25yr72	RRDitch	BASE	35.75	94.55	98.00	22925	-0.44	-0.60	-4.9	-7.1
25yr72	RRDitch	BASE	36.00	94.55	98.00	23053	-0.41	-0.57	-4.9	-7.1
25yr72	RRDitch	BASE	36.25	94.56	98.00	23180	-0.38	-0.53	-4.9	-7.1
25yr72	RRDitch	BASE	36.50	94.56	98.00	23307	-0.34	-0.50	-5.0	-7.1
25yr72	RRDitch	BASE	36.75	94.57	98.00	23435	-0.31	-0.47	-5.0	-7.1
25yr72	RRDitch	BASE	37.00	94.58	98.00	23563	-0.27	-0.43	-5.0	-7.1
25yr72	RRDitch	BASE	37.25	94.58	98.00	23690	-0.24	-0.40	-5.0	-7.1
25yr72	RRDitch	BASE	37.50	94.59	98.00	23817	-0.20	-0.36	-5.0	-7.2
25yr72	RRDitch	BASE	37.75	94.59	98.00	23944	-0.17	-0.33	-5.0	-7.2
25yr72	RRDitch	BASE	38.00	94.60	98.00	24072	-0.13	-0.30	-5.0	-7.2
25yr72	RRDitch	BASE	38.25	94.60	98.00	24199	-0.10	-0.26	-5.0	-7.2
25yr72	RRDitch	BASE	38.50	94.61	98.00	24325	-0.06	-0.23	-5.0	-7.2
25yr72	RRDitch	BASE	38.75	94.62	98.00	24452	-0.03	-0.19	-5.0	-7.2
25yr72	RRDitch	BASE	39.00	94.62	98.00	24578	0.02	-0.14	-5.0	-7.2
25yr72	RRDitch	BASE	39.25	94.63	98.00	24704	0.05	-0.20	-5.0	-7.2
25yr72	RRDitch	BASE	39.50	94.63	98.00	24830	0.09	-0.16	-5.0	-7.2
25yr72	RRDitch	BASE	39.75	94.64	98.00	24956	0.12	-0.16	-5.0	-7.2
25yr72	RRDitch	BASE	40.00	94.65	98.00	25082	0.16	0.00	-5.0	-7.2
25yr72	RRDitch	BASE	40.25	94.65	98.00	25207	0.19	0.00	-5.0	-7.2
25yr72	RRDitch	BASE	40.50	94.66	98.00	25333	0.23	0.20	-5.0	-7.2
25yr72	RRDitch	BASE	40.75	94.66	98.00	25458	0.27	0.00	-5.0	-7.2
25yr72	RRDitch	BASE	41.00	94.67	98.00	25584	0.31	0.00	-5.0	-7.2
25yr72	RRDitch	BASE	41.25	94.67	98.00	25709	0.35	0.00	-5.0	-7.2
25yr72	RRDitch	BASE	41.50	94.68	98.00	25834	0.39	0.22	-4.9	-7.2
25yr72	RRDitch	BASE	41.75	94.69	98.00	25959	0.44	0.26	-4.9	-7.2
25yr72	RRDitch	BASE	42.00	94.69	98.00	26084	0.48	0.30	-4.9	-7.2
25yr72	RRDitch	BASE	42.25	94.70	98.00	26209	0.52	0.35	-4.9	-7.2

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
25yr72	RRDitch	BASE	42.50	94.70	98.00	26333	0.56	0.39	-4.9	-7.2
25yr72	RRDitch	BASE	42.75	94.71	98.00	26458	0.61	0.44	-4.9	-7.2
25yr72	RRDitch	BASE	43.00	94.71	98.00	26583	0.66	0.48	-4.9	-7.1
25yr72	RRDitch	BASE	43.25	94.72	98.00	26708	0.71	0.53	-4.9	-7.1
25yr72	RRDitch	BASE	43.50	94.73	98.00	26833	0.76	0.58	-4.9	-7.1
25yr72	RRDitch	BASE	43.75	94.73	98.00	26957	0.81	0.63	-4.8	-7.1
25yr72	RRDitch	BASE	44.00	94.74	98.00	27082	0.86	0.68	-4.8	-7.1
25yr72	RRDitch	BASE	44.25	94.74	98.00	27206	0.90	0.73	-4.8	-7.1
25yr72	RRDitch	BASE	44.50	94.75	98.00	27331	0.95	0.78	-4.8	-7.1
25yr72	RRDitch	BASE	44.75	94.75	98.00	27455	1.00	0.82	-4.8	-7.1
25yr72	RRDitch	BASE	45.00	94.76	98.00	27579	1.05	0.87	-4.7	-7.0
25yr72	RRDitch	BASE	45.25	94.77	98.00	27704	1.10	0.92	-4.7	-7.0
25yr72	RRDitch	BASE	45.50	94.77	98.00	27828	1.15	0.97	-4.7	-7.0
25yr72	RRDitch	BASE	45.75	94.78	98.00	27953	1.19	1.01	-4.7	-7.0
25yr72	RRDitch	BASE	46.00	94.78	98.00	28076	1.24	1.06	-4.6	-7.0
25yr72	RRDitch	BASE	46.25	94.79	98.00	28200	1.29	1.10	-4.6	-6.9
25yr72	RRDitch	BASE	46.50	94.79	98.00	28324	1.33	1.15	-4.6	-6.9
25yr72	RRDitch	BASE	46.75	94.80	98.00	28448	1.37	1.19	-4.6	-6.9
25yr72	RRDitch	BASE	47.00	94.81	98.00	28571	1.44	1.26	-4.5	-6.9
25yr72	RRDitch	BASE	47.25	94.81	98.00	28696	1.54	1.35	-4.5	-6.8
25yr72	RRDitch	BASE	47.50	94.82	98.00	28822	1.68	1.49	-4.5	-6.8
25yr72	RRDitch	BASE	47.75	94.82	98.00	28949	1.79	1.60	-4.4	-6.8
25yr72	RRDitch	BASE	48.00	94.83	98.00	29079	1.92	1.73	-4.4	-6.7
25yr72	RRDitch	BASE	48.25	94.84	98.00	29213	2.09	1.88	-4.4	-6.7
25yr72	RRDitch	BASE	48.50	94.84	98.00	29350	2.24	2.03	-4.3	-6.7
25yr72	RRDitch	BASE	48.75	94.85	98.00	29488	2.38	2.17	-4.3	-6.6
25yr72	RRDitch	BASE	49.00	94.85	98.00	29629	2.53	2.31	-4.2	-6.6
25yr72	RRDitch	BASE	49.25	94.86	98.00	29771	2.68	2.46	-4.2	-6.5
25yr72	RRDitch	BASE	49.50	94.87	98.00	29915	2.83	2.61	-4.1	-6.5
25yr72	RRDitch	BASE	49.75	94.87	98.00	30059	2.98	2.75	-4.0	-6.4
25yr72	RRDitch	BASE	50.00	94.88	98.00	30207	3.14	2.90	-4.0	-6.4
25yr72	RRDitch	BASE	50.25	94.89	98.00	30363	3.34	3.09	-3.9	-6.3
25yr72	RRDitch	BASE	50.50	94.90	98.00	30523	3.52	3.27	-3.8	-6.2
25yr72	RRDitch	BASE	50.75	94.90	98.00	30683	3.68	3.43	-3.8	-6.2
25yr72	RRDitch	BASE	51.00	94.91	98.00	30846	3.84	3.58	-3.7	-6.1
25yr72	RRDitch	BASE	51.25	94.92	98.00	31014	4.02	3.75	-3.6	-6.0
25yr72	RRDitch	BASE	51.50	94.93	98.00	31183	4.18	3.91	-3.5	-5.9
25yr72	RRDitch	BASE	51.75	94.93	98.00	31352	4.33	4.06	-3.4	-5.9
25yr72	RRDitch	BASE	52.00	94.94	98.00	31526	4.51	4.22	-3.3	-5.8
25yr72	RRDitch	BASE	52.25	94.95	98.00	31713	4.79	4.47	-3.3	-5.7
25yr72	RRDitch	BASE	52.50	94.96	98.00	31910	5.03	4.71	-3.1	-5.6
25yr72	RRDitch	BASE	52.75	94.97	98.00	32105	5.28	4.96	-3.0	-5.5
25yr72	RRDitch	BASE	53.00	94.98	98.00	32305	5.55	5.21	-2.9	-5.4
25yr72	RRDitch	BASE	53.25	94.99	98.00	32521	5.92	5.55	-2.8	-5.3
25yr72	RRDitch	BASE	53.50	95.00	98.00	32745	6.23	5.86	-2.7	-5.1
25yr72	RRDitch	BASE	53.75	95.01	98.00	32969	6.52	6.14	-2.6	-5.0
25yr72	RRDitch	BASE	54.00	95.02	98.00	33201	6.82	6.42	-2.4	-4.9
25yr72	RRDitch	BASE	54.25	95.03	98.00	33450	7.21	6.76	-2.3	-4.8
25yr72	RRDitch	BASE	54.50	95.04	98.00	33711	7.58	7.12	-2.1	-4.6
25yr72	RRDitch	BASE	54.75	95.06	98.00	33973	7.90	7.44	-2.0	-4.5
25yr72	RRDitch	BASE	55.00	95.07	98.00	34243	8.23	7.75	-1.8	-4.3
25yr72	RRDitch	BASE	55.25	95.08	98.00	34537	8.54	7.98	-1.6	-4.1
25yr72	RRDitch	BASE	55.50	95.10	98.00	34863	8.49	7.88	-1.4	-4.0
25yr72	RRDitch	BASE	55.75	95.11	98.00	35206	8.23	7.60	-1.3	-3.8
25yr72	RRDitch	BASE	56.00	95.13	98.00	35569	7.92	7.23	-1.1	-3.7
25yr72	RRDitch	BASE	56.25	95.15	98.00	35964	7.66	6.90	-0.9	-3.5
25yr72	RRDitch	BASE	56.50	95.17	98.00	36381	7.34	6.55	-0.8	-3.4
25yr72	RRDitch	BASE	56.75	95.19	98.00	36809	6.99	6.17	-0.6	-3.3
25yr72	RRDitch	BASE	57.00	95.21	98.00	37255	6.62	5.74	-0.5	-3.1
25yr72	RRDitch	BASE	57.25	95.23	98.00	37735	6.40	5.44	-0.4	-3.0
25yr72	RRDitch	BASE	57.50	95.25	98.00	38241	6.19	5.17	-0.2	-2.9
25yr72	RRDitch	BASE	57.75	95.28	98.00	38776	6.07	4.98	-0.1	-2.8
25yr72	RRDitch	BASE	58.00	95.30	98.00	39335	5.97	4.82	0.0	-2.7
25yr72	RRDitch	BASE	58.25	95.33	98.00	39926	6.00	4.76	0.1	-2.6
25yr72	RRDitch	BASE	58.50	95.36	98.00	40556	6.10	4.74	0.3	-2.5
25yr72	RRDitch	BASE	58.75	95.39	98.00	41259	6.60	5.01	0.4	-2.4
25yr72	RRDitch	BASE	59.00	95.43	98.00	42058	7.23	5.39	0.5	-2.3
25yr72	RRDitch	BASE	59.25	95.47	98.00	43007	8.40	6.12	0.7	-2.2
25yr72	RRDitch	BASE	59.50	95.55	98.00	44741	12.12	6.86	0.9	-2.0
25yr72	RRDitch	BASE	59.75	95.74	98.00	48827	28.30	13.26	1.3	-1.8
25yr72	RRDitch	BASE	60.00	96.00	98.00	54483	36.28	21.60	2.0	-1.5
25yr72	RRDitch	BASE	60.25	96.17	98.00	58083	29.77	23.72	2.7	-1.0
25yr72	RRDitch	BASE	60.50	96.26	98.00	60101	29.71	23.48	3.3	-0.5
25yr72	RRDitch	BASE	60.75	96.35	98.00	62070	30.28	24.88	3.9	-0.0
25yr72	RRDitch	BASE	61.00	96.42	98.00	63641	30.48	25.99	4.5	0.5
25yr72	RRDitch	BASE	61.25	96.48	98.00	64857	30.11	26.61	5.2	1.1
25yr72	RRDitch	BASE	61.50	96.52	98.00	65829	29.87	26.94	5.8	1.6
25yr72	RRDitch	BASE	61.75	96.56	98.00	66619	29.52	27.08	6.4	2.2
25yr72	RRDitch	BASE	62.00	96.59	98.00	67293	29.29	27.16	7.0	2.7
25yr72	RRDitch	BASE	62.25	96.61	98.00	67850	28.91	27.18	7.6	3.3
25yr72	RRDitch	BASE	62.50	96.64	98.00	68328	28.72	27.17	8.2	3.9
25yr72	RRDitch	BASE	62.75	96.66	98.00	68743	28.51	27.14	8.8	4.4
25yr72	RRDitch	BASE	63.00	96.67	98.00	69119	28.38	27.12	9.4	5.0
25yr72	RRDitch	BASE	63.25	96.69	98.00	69467	28.30	27.10	10.0	5.5
25yr72	RRDitch	BASE	63.50	96.70	98.00	69798	28.26	27.10	10.6	6.1

Turnpike Pond at Regal Yacht Center
Post-Development

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
25yr72	RRDitch	BASE	63.75	96.72	98.00	70117	28.24	27.12	11.1	6.7
25yr72	RRDitch	BASE	64.00	96.73	98.00	70413	28.17	27.15	11.7	7.2
25yr72	RRDitch	BASE	64.25	96.74	98.00	70654	27.90	27.15	12.3	7.8
25yr72	RRDitch	BASE	64.50	96.75	98.00	70856	27.82	27.14	12.9	8.3
25yr72	RRDitch	BASE	64.75	96.76	98.00	71038	27.76	27.12	13.4	8.9
25yr72	RRDitch	BASE	65.00	96.77	98.00	71209	27.72	27.11	14.0	9.5
25yr72	RRDitch	BASE	65.25	96.78	98.00	71372	27.70	27.12	14.6	10.0
25yr72	RRDitch	BASE	65.50	96.78	98.00	71528	27.70	27.14	15.2	10.6
25yr72	RRDitch	BASE	65.75	96.79	98.00	71680	27.71	27.17	15.7	11.1
25yr72	RRDitch	BASE	66.00	96.80	98.00	71825	27.75	27.22	16.3	11.7
25yr72	RRDitch	BASE	66.25	96.80	98.00	71968	27.79	27.27	16.9	12.3
25yr72	RRDitch	BASE	66.50	96.81	98.00	72108	27.85	27.34	17.5	12.8
25yr72	RRDitch	BASE	66.75	96.82	98.00	72244	27.91	27.42	18.0	13.4
25yr72	RRDitch	BASE	67.00	96.82	98.00	72376	27.99	27.50	18.6	14.0
25yr72	RRDitch	BASE	67.25	96.83	98.00	72505	28.07	27.59	19.2	14.5
25yr72	RRDitch	BASE	67.50	96.83	98.00	72633	28.16	27.70	19.8	15.1
25yr72	RRDitch	BASE	67.75	96.84	98.00	72758	28.26	27.80	20.4	15.7
25yr72	RRDitch	BASE	68.00	96.85	98.00	72874	28.32	27.92	20.9	16.2
25yr72	RRDitch	BASE	68.25	96.85	98.00	72962	28.28	28.01	21.5	16.8
25yr72	RRDitch	BASE	68.50	96.85	98.00	73031	28.33	28.10	22.1	17.4
25yr72	RRDitch	BASE	68.75	96.86	98.00	73091	28.39	28.18	22.7	18.0
25yr72	RRDitch	BASE	69.00	96.86	98.00	73143	28.45	28.27	23.3	18.6
25yr72	RRDitch	BASE	69.25	96.86	98.00	73191	28.52	28.35	23.9	19.2
25yr72	RRDitch	BASE	69.50	96.86	98.00	73234	28.60	28.45	24.5	19.7
25yr72	RRDitch	BASE	69.75	96.86	98.00	73273	28.68	28.54	25.1	20.3
25yr72	RRDitch	BASE	70.00	96.87	98.00	73309	28.76	28.63	25.6	20.9
25yr72	RRDitch	BASE	70.25	96.87	98.00	73343	28.85	28.73	26.2	21.5
25yr72	RRDitch	BASE	70.50	96.87	98.00	73374	28.95	28.84	26.8	22.1
25yr72	RRDitch	BASE	70.75	96.87	98.00	73402	29.05	28.95	27.4	22.7
25yr72	RRDitch	BASE	71.00	96.87	98.00	73427	29.17	29.08	28.0	23.3
25yr72	RRDitch	BASE	71.25	96.87	98.00	73448	29.31	29.23	28.6	23.9
25yr72	RRDitch	BASE	71.50	96.87	98.00	73466	29.47	29.41	29.3	24.5
25yr72	RRDitch	BASE	71.75	96.87	98.00	73480	29.66	29.62	29.9	25.1
25yr72	RRDitch	BASE	72.00	96.87	98.00	73462	29.50	29.80	30.5	25.7
25yr72	RRDitch	BASE	72.00	96.87	98.00	73462	29.50	29.80	30.5	25.7

Turnpike Pond at Regal Yacht Center
Post-Development

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
100y72	RRDitch	BASE	0.00	94.00	98.00	11059	0.00	0.00	0.0	0.0
100y72	RRDitch	BASE	0.25	93.97	98.00	282	0.00	-4.39	0.0	-0.0
100y72	RRDitch	BASE	0.50	93.97	98.00	282	0.00	-4.39	0.0	-0.1
100y72	RRDitch	BASE	0.75	93.97	98.00	282	0.00	-4.36	0.0	-0.2
100y72	RRDitch	BASE	1.00	93.97	98.00	282	0.00	-4.39	0.0	-0.3
100y72	RRDitch	BASE	1.25	93.97	98.00	282	0.00	-4.36	0.0	-0.4
100y72	RRDitch	BASE	1.50	93.97	98.00	282	0.00	-4.42	0.0	-0.5
100y72	RRDitch	BASE	1.75	93.97	98.00	282	0.00	-4.40	0.0	-0.6
100y72	RRDitch	BASE	2.00	93.97	98.00	282	0.00	-4.40	0.0	-0.7
100y72	RRDitch	BASE	2.25	93.97	98.00	282	0.00	-4.48	0.0	-0.8
100y72	RRDitch	BASE	2.50	93.98	98.00	282	0.00	-4.47	0.0	-0.9
100y72	RRDitch	BASE	2.75	93.98	98.00	282	0.00	-4.42	0.0	-1.0
100y72	RRDitch	BASE	3.00	93.98	98.00	282	0.00	-4.45	0.0	-1.0
100y72	RRDitch	BASE	3.25	93.98	98.00	282	0.00	-4.49	0.0	-1.1
100y72	RRDitch	BASE	3.50	93.99	98.00	282	0.00	-4.52	0.0	-1.2
100y72	RRDitch	BASE	3.75	93.99	98.00	282	0.00	-4.56	0.0	-1.3
100y72	RRDitch	BASE	4.00	93.99	98.00	282	0.01	-4.61	0.0	-1.4
100y72	RRDitch	BASE	4.25	93.99	98.00	282	0.01	-4.65	0.0	-1.5
100y72	RRDitch	BASE	4.50	94.00	98.00	282	0.01	-4.70	0.0	-1.6
100y72	RRDitch	BASE	4.75	94.00	98.00	282	0.02	-4.75	0.0	-1.7
100y72	RRDitch	BASE	5.00	94.04	98.00	11849	-0.41	-0.47	-0.0	-1.8
100y72	RRDitch	BASE	5.25	94.04	98.00	11914	-0.46	-0.50	-0.0	-1.8
100y72	RRDitch	BASE	5.50	94.04	98.00	11980	-0.52	-0.56	-0.0	-1.8
100y72	RRDitch	BASE	5.75	94.05	98.00	12047	-0.57	-0.61	-0.0	-1.8
100y72	RRDitch	BASE	6.00	94.05	98.00	12114	-0.63	-0.67	-0.0	-1.8
100y72	RRDitch	BASE	6.25	94.05	98.00	12182	-0.68	-0.73	-0.1	-1.8
100y72	RRDitch	BASE	6.50	94.05	98.00	12250	-0.74	-0.79	-0.1	-1.8
100y72	RRDitch	BASE	6.75	94.06	98.00	12319	-0.80	-0.85	-0.1	-1.9
100y72	RRDitch	BASE	7.00	94.06	98.00	12387	-0.86	-0.91	-0.1	-1.9
100y72	RRDitch	BASE	7.25	94.06	98.00	12456	-0.92	-0.97	-0.1	-1.9
100y72	RRDitch	BASE	7.50	94.07	98.00	12525	-0.99	-1.03	-0.1	-1.9
100y72	RRDitch	BASE	7.75	94.07	98.00	12594	-1.05	-1.09	-0.2	-1.9
100y72	RRDitch	BASE	8.00	94.07	98.00	12663	-1.11	-1.16	-0.2	-2.0
100y72	RRDitch	BASE	8.25	94.08	98.00	12732	-1.17	-1.22	-0.2	-2.0
100y72	RRDitch	BASE	8.50	94.08	98.00	12802	-1.24	-1.28	-0.2	-2.0
100y72	RRDitch	BASE	8.75	94.08	98.00	12871	-1.30	-1.35	-0.3	-2.0
100y72	RRDitch	BASE	9.00	94.09	98.00	12940	-1.36	-1.41	-0.3	-2.1
100y72	RRDitch	BASE	9.25	94.09	98.00	13008	-1.43	-1.47	-0.3	-2.1
100y72	RRDitch	BASE	9.50	94.09	98.00	13077	-1.49	-1.53	-0.4	-2.1
100y72	RRDitch	BASE	9.75	94.10	98.00	13146	-1.55	-1.60	-0.4	-2.2
100y72	RRDitch	BASE	10.00	94.10	98.00	13215	-1.61	-1.66	-0.4	-2.2
100y72	RRDitch	BASE	10.25	94.10	98.00	13284	-1.67	-1.72	-0.4	-2.2
100y72	RRDitch	BASE	10.50	94.11	98.00	13352	-1.73	-1.78	-0.5	-2.3
100y72	RRDitch	BASE	10.75	94.11	98.00	13420	-1.79	-1.84	-0.5	-2.3
100y72	RRDitch	BASE	11.00	94.11	98.00	13489	-1.85	-1.90	-0.6	-2.3
100y72	RRDitch	BASE	11.25	94.11	98.00	13557	-1.91	-1.96	-0.6	-2.4
100y72	RRDitch	BASE	11.50	94.12	98.00	13625	-1.97	-2.02	-0.6	-2.4
100y72	RRDitch	BASE	11.75	94.12	98.00	13694	-2.02	-2.07	-0.7	-2.5
100y72	RRDitch	BASE	12.00	94.12	98.00	13762	-2.08	-2.13	-0.7	-2.5
100y72	RRDitch	BASE	12.25	94.13	98.00	13832	-2.13	-2.18	-0.8	-2.6
100y72	RRDitch	BASE	12.50	94.13	98.00	13901	-2.19	-2.24	-0.8	-2.6
100y72	RRDitch	BASE	12.75	94.13	98.00	13971	-2.24	-2.29	-0.9	-2.6
100y72	RRDitch	BASE	13.00	94.14	98.00	14040	-2.29	-2.34	-0.9	-2.7
100y72	RRDitch	BASE	13.25	94.14	98.00	14111	-2.34	-2.39	-0.9	-2.7
100y72	RRDitch	BASE	13.50	94.14	98.00	14185	-2.35	-2.42	-1.0	-2.8
100y72	RRDitch	BASE	13.75	94.15	98.00	14277	-2.23	-2.30	-1.0	-2.8
100y72	RRDitch	BASE	14.00	94.15	98.00	14369	-2.13	-2.20	-1.1	-2.9
100y72	RRDitch	BASE	14.25	94.16	98.00	14458	-2.08	-2.14	-1.1	-2.9
100y72	RRDitch	BASE	14.50	94.16	98.00	14543	-2.06	-2.13	-1.2	-3.0
100y72	RRDitch	BASE	14.75	94.16	98.00	14627	-2.08	-2.14	-1.2	-3.0
100y72	RRDitch	BASE	15.00	94.17	98.00	14709	-2.11	-2.17	-1.3	-3.1
100y72	RRDitch	BASE	15.25	94.17	98.00	14791	-2.14	-2.20	-1.3	-3.1
100y72	RRDitch	BASE	15.50	94.18	98.00	14872	-2.18	-2.24	-1.4	-3.2
100y72	RRDitch	BASE	15.75	94.18	98.00	14955	-2.21	-2.28	-1.4	-3.2
100y72	RRDitch	BASE	16.00	94.18	98.00	15036	-2.25	-2.31	-1.4	-3.3
100y72	RRDitch	BASE	16.25	94.19	98.00	15119	-2.28	-2.35	-1.5	-3.3
100y72	RRDitch	BASE	16.50	94.19	98.00	15202	-2.31	-2.37	-1.5	-3.3
100y72	RRDitch	BASE	16.75	94.19	98.00	15286	-2.33	-2.40	-1.6	-3.4
100y72	RRDitch	BASE	17.00	94.20	98.00	15370	-2.36	-2.42	-1.6	-3.4
100y72	RRDitch	BASE	17.25	94.20	98.00	15456	-2.37	-2.44	-1.7	-3.5
100y72	RRDitch	BASE	17.50	94.21	98.00	15541	-2.38	-2.45	-1.7	-3.5
100y72	RRDitch	BASE	17.75	94.21	98.00	15627	-2.39	-2.46	-1.8	-3.6
100y72	RRDitch	BASE	18.00	94.21	98.00	15714	-2.40	-2.47	-1.8	-3.6
100y72	RRDitch	BASE	18.25	94.22	98.00	15802	-2.39	-2.47	-1.9	-3.7
100y72	RRDitch	BASE	18.50	94.22	98.00	15893	-2.39	-2.46	-1.9	-3.8
100y72	RRDitch	BASE	18.75	94.23	98.00	15985	-2.38	-2.45	-2.0	-3.8
100y72	RRDitch	BASE	19.00	94.23	98.00	16078	-2.36	-2.44	-2.0	-3.9
100y72	RRDitch	BASE	19.25	94.24	98.00	16172	-2.34	-2.42	-2.1	-3.9
100y72	RRDitch	BASE	19.50	94.24	98.00	16267	-2.31	-2.40	-2.1	-4.0
100y72	RRDitch	BASE	19.75	94.24	98.00	16363	-2.28	-2.37	-2.2	-4.0
100y72	RRDitch	BASE	20.00	94.25	98.00	16461	-2.25	-2.33	-2.2	-4.0
100y72	RRDitch	BASE	20.25	94.25	98.00	16560	-2.21	-2.30	-2.3	-4.1
100y72	RRDitch	BASE	20.50	94.26	98.00	16659	-2.17	-2.26	-2.3	-4.1
100y72	RRDitch	BASE	20.75	94.26	98.00	16760	-2.13	-2.22	-2.4	-4.2
100y72	RRDitch	BASE	21.00	94.27	98.00	16861	-2.08	-2.17	-2.4	-4.2

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
100y72	RRDitch	BASE	21.25	94.27	98.00	16964	-2.03	-2.12	-2.4	-4.3
100y72	RRDitch	BASE	21.50	94.28	98.00	17068	-1.98	-2.07	-2.5	-4.3
100y72	RRDitch	BASE	21.75	94.28	98.00	17172	-1.92	-2.02	-2.5	-4.4
100y72	RRDitch	BASE	22.00	94.29	98.00	17278	-1.87	-1.96	-2.6	-4.4
100y72	RRDitch	BASE	22.25	94.29	98.00	17384	-1.81	-1.91	-2.6	-4.4
100y72	RRDitch	BASE	22.50	94.30	98.00	17491	-1.75	-1.85	-2.6	-4.5
100y72	RRDitch	BASE	22.75	94.30	98.00	17599	-1.69	-1.79	-2.7	-4.5
100y72	RRDitch	BASE	23.00	94.31	98.00	17707	-1.64	-1.74	-2.7	-4.6
100y72	RRDitch	BASE	23.25	94.31	98.00	17816	-1.58	-1.68	-2.7	-4.6
100y72	RRDitch	BASE	23.50	94.32	98.00	17925	-1.52	-1.62	-2.8	-4.6
100y72	RRDitch	BASE	23.75	94.32	98.00	18035	-1.46	-1.56	-2.8	-4.7
100y72	RRDitch	BASE	24.00	94.33	98.00	18151	-1.39	-1.51	-2.8	-4.7
100y72	RRDitch	BASE	24.25	94.33	98.00	18278	-1.30	-1.43	-2.9	-4.7
100y72	RRDitch	BASE	24.50	94.34	98.00	18414	-1.19	-1.32	-2.9	-4.8
100y72	RRDitch	BASE	24.75	94.34	98.00	18552	-1.10	-1.24	-2.9	-4.8
100y72	RRDitch	BASE	25.00	94.35	98.00	18689	-1.03	-1.16	-2.9	-4.8
100y72	RRDitch	BASE	25.25	94.36	98.00	18828	-0.96	-1.10	-2.9	-4.8
100y72	RRDitch	BASE	25.50	94.36	98.00	18967	-0.90	-1.04	-3.0	-4.8
100y72	RRDitch	BASE	25.75	94.37	98.00	19107	-0.84	-0.98	-3.0	-4.9
100y72	RRDitch	BASE	26.00	94.38	98.00	19248	-0.78	-0.92	-3.0	-4.9
100y72	RRDitch	BASE	26.25	94.38	98.00	19388	-0.71	-0.85	-3.0	-4.9
100y72	RRDitch	BASE	26.50	94.39	98.00	19529	-0.64	-0.79	-3.0	-4.9
100y72	RRDitch	BASE	26.75	94.40	98.00	19670	-0.58	-0.72	-3.0	-4.9
100y72	RRDitch	BASE	27.00	94.40	98.00	19811	-0.51	-0.66	-3.1	-5.0
100y72	RRDitch	BASE	27.25	94.41	98.00	19952	-0.44	-0.59	-3.1	-5.0
100y72	RRDitch	BASE	27.50	94.42	98.00	20093	-0.37	-0.52	-3.1	-5.0
100y72	RRDitch	BASE	27.75	94.42	98.00	20235	-0.29	-0.44	-3.1	-5.0
100y72	RRDitch	BASE	28.00	94.43	98.00	20377	-0.21	-0.36	-3.1	-5.0
100y72	RRDitch	BASE	28.25	94.44	98.00	20518	-0.13	-0.29	-3.1	-5.0
100y72	RRDitch	BASE	28.50	94.44	98.00	20660	-0.05	-0.20	-3.1	-5.0
100y72	RRDitch	BASE	28.75	94.45	98.00	20802	0.04	-0.20	-3.1	-5.0
100y72	RRDitch	BASE	29.00	94.45	98.00	20944	0.12	0.00	-3.1	-5.0
100y72	RRDitch	BASE	29.25	94.46	98.00	21086	0.20	0.21	-3.1	-5.0
100y72	RRDitch	BASE	29.50	94.47	98.00	21228	0.28	0.24	-3.1	-5.0
100y72	RRDitch	BASE	29.75	94.47	98.00	21369	0.35	0.19	-3.1	-5.0
100y72	RRDitch	BASE	30.00	94.48	98.00	21511	0.42	0.26	-3.1	-5.0
100y72	RRDitch	BASE	30.25	94.49	98.00	21654	0.50	0.33	-3.1	-5.0
100y72	RRDitch	BASE	30.50	94.49	98.00	21796	0.56	0.40	-3.0	-5.0
100y72	RRDitch	BASE	30.75	94.50	98.00	21938	0.63	0.47	-3.0	-5.0
100y72	RRDitch	BASE	31.00	94.51	98.00	22080	0.69	0.53	-3.0	-5.0
100y72	RRDitch	BASE	31.25	94.51	98.00	22222	0.75	0.59	-3.0	-5.0
100y72	RRDitch	BASE	31.50	94.52	98.00	22364	0.81	0.64	-3.0	-4.9
100y72	RRDitch	BASE	31.75	94.53	98.00	22505	0.86	0.70	-3.0	-4.9
100y72	RRDitch	BASE	32.00	94.53	98.00	22646	0.92	0.75	-3.0	-4.9
100y72	RRDitch	BASE	32.25	94.54	98.00	22786	0.97	0.80	-2.9	-4.9
100y72	RRDitch	BASE	32.50	94.55	98.00	22926	1.01	0.84	-2.9	-4.9
100y72	RRDitch	BASE	32.75	94.55	98.00	23066	1.06	0.89	-2.9	-4.9
100y72	RRDitch	BASE	33.00	94.56	98.00	23205	1.11	0.95	-2.9	-4.8
100y72	RRDitch	BASE	33.25	94.57	98.00	23344	1.17	1.00	-2.8	-4.8
100y72	RRDitch	BASE	33.50	94.57	98.00	23483	1.23	1.06	-2.8	-4.8
100y72	RRDitch	BASE	33.75	94.58	98.00	23621	1.29	1.12	-2.8	-4.8
100y72	RRDitch	BASE	34.00	94.58	98.00	23759	1.35	1.18	-2.8	-4.8
100y72	RRDitch	BASE	34.25	94.59	98.00	23898	1.42	1.25	-2.7	-4.7
100y72	RRDitch	BASE	34.50	94.60	98.00	24036	1.49	1.31	-2.7	-4.7
100y72	RRDitch	BASE	34.75	94.60	98.00	24173	1.55	1.38	-2.7	-4.7
100y72	RRDitch	BASE	35.00	94.61	98.00	24310	1.62	1.44	-2.6	-4.6
100y72	RRDitch	BASE	35.25	94.62	98.00	24447	1.69	1.51	-2.6	-4.6
100y72	RRDitch	BASE	35.50	94.62	98.00	24584	1.77	1.59	-2.6	-4.6
100y72	RRDitch	BASE	35.75	94.63	98.00	24721	1.85	1.67	-2.5	-4.6
100y72	RRDitch	BASE	36.00	94.63	98.00	24856	1.90	1.73	-2.5	-4.5
100y72	RRDitch	BASE	36.25	94.64	98.00	24993	1.98	1.80	-2.5	-4.5
100y72	RRDitch	BASE	36.50	94.65	98.00	25129	2.06	1.88	-2.4	-4.4
100y72	RRDitch	BASE	36.75	94.65	98.00	25266	2.14	1.96	-2.4	-4.4
100y72	RRDitch	BASE	37.00	94.66	98.00	25401	2.22	2.04	-2.3	-4.4
100y72	RRDitch	BASE	37.25	94.67	98.00	25537	2.31	2.13	-2.3	-4.3
100y72	RRDitch	BASE	37.50	94.67	98.00	25673	2.38	2.21	-2.2	-4.3
100y72	RRDitch	BASE	37.75	94.68	98.00	25808	2.46	2.28	-2.2	-4.2
100y72	RRDitch	BASE	38.00	94.68	98.00	25942	2.55	2.37	-2.1	-4.2
100y72	RRDitch	BASE	38.25	94.69	98.00	26076	2.62	2.43	-2.1	-4.1
100y72	RRDitch	BASE	38.50	94.70	98.00	26210	2.69	2.51	-2.0	-4.1
100y72	RRDitch	BASE	38.75	94.70	98.00	26344	2.77	2.60	-2.0	-4.0
100y72	RRDitch	BASE	39.00	94.71	98.00	26479	2.90	2.72	-1.9	-4.0
100y72	RRDitch	BASE	39.25	94.72	98.00	26613	3.05	2.87	-1.8	-3.9
100y72	RRDitch	BASE	39.50	94.72	98.00	26750	3.23	3.04	-1.8	-3.9
100y72	RRDitch	BASE	39.75	94.73	98.00	26888	3.41	3.22	-1.7	-3.8
100y72	RRDitch	BASE	40.00	94.73	98.00	27028	3.60	3.41	-1.6	-3.7
100y72	RRDitch	BASE	40.25	94.74	98.00	27167	3.79	3.60	-1.6	-3.6
100y72	RRDitch	BASE	40.50	94.75	98.00	27309	3.99	3.79	-1.5	-3.6
100y72	RRDitch	BASE	40.75	94.75	98.00	27451	4.19	3.98	-1.4	-3.5
100y72	RRDitch	BASE	41.00	94.76	98.00	27595	4.37	4.17	-1.3	-3.4
100y72	RRDitch	BASE	41.25	94.77	98.00	27738	4.56	4.35	-1.2	-3.3
100y72	RRDitch	BASE	41.50	94.77	98.00	27882	4.74	4.53	-1.1	-3.2
100y72	RRDitch	BASE	41.75	94.78	98.00	28027	4.91	4.70	-1.0	-3.1
100y72	RRDitch	BASE	42.00	94.79	98.00	28172	5.07	4.86	-0.9	-3.0
100y72	RRDitch	BASE	42.25	94.79	98.00	28318	5.23	5.02	-0.8	-2.9

Turnpike Pond at Regal Yacht Center
Post-Development

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
100y72	RRDitch	BASE	42.50	94.80	98.00	28463	5.38	5.17	-0.7	-2.8
100y72	RRDitch	BASE	42.75	94.81	98.00	28608	5.51	5.30	-0.6	-2.7
100y72	RRDitch	BASE	43.00	94.81	98.00	28754	5.64	5.44	-0.5	-2.6
100y72	RRDitch	BASE	43.25	94.82	98.00	28899	5.78	5.56	-0.4	-2.5
100y72	RRDitch	BASE	43.50	94.83	98.00	29044	5.90	5.68	-0.2	-2.4
100y72	RRDitch	BASE	43.75	94.83	98.00	29189	6.02	5.80	-0.1	-2.3
100y72	RRDitch	BASE	44.00	94.84	98.00	29333	6.13	5.91	0.0	-2.1
100y72	RRDitch	BASE	44.25	94.85	98.00	29477	6.23	6.02	0.1	-2.0
100y72	RRDitch	BASE	44.50	94.85	98.00	29621	6.33	6.12	0.3	-1.9
100y72	RRDitch	BASE	44.75	94.86	98.00	29764	6.43	6.21	0.4	-1.8
100y72	RRDitch	BASE	45.00	94.87	98.00	29907	6.52	6.30	0.5	-1.6
100y72	RRDitch	BASE	45.25	94.87	98.00	30048	6.61	6.39	0.7	-1.5
100y72	RRDitch	BASE	45.50	94.88	98.00	30190	6.70	6.48	0.8	-1.4
100y72	RRDitch	BASE	45.75	94.89	98.00	30331	6.79	6.57	0.9	-1.2
100y72	RRDitch	BASE	46.00	94.89	98.00	30471	6.87	6.65	1.1	-1.1
100y72	RRDitch	BASE	46.25	94.90	98.00	30611	6.95	6.73	1.2	-1.0
100y72	RRDitch	BASE	46.50	94.91	98.00	30750	7.03	6.81	1.4	-0.8
100y72	RRDitch	BASE	46.75	94.91	98.00	30889	7.10	6.88	1.5	-0.7
100y72	RRDitch	BASE	47.00	94.92	98.00	31026	7.18	6.96	1.7	-0.5
100y72	RRDitch	BASE	47.25	94.93	98.00	31163	7.24	7.02	1.8	-0.4
100y72	RRDitch	BASE	47.50	94.93	98.00	31298	7.29	7.07	2.0	-0.2
100y72	RRDitch	BASE	47.75	94.94	98.00	31433	7.33	7.12	2.1	-0.1
100y72	RRDitch	BASE	48.00	94.94	98.00	31568	7.39	7.16	2.3	0.1
100y72	RRDitch	BASE	48.25	94.95	98.00	31707	7.47	7.23	2.4	0.2
100y72	RRDitch	BASE	48.50	94.96	98.00	31849	7.53	7.30	2.6	0.4
100y72	RRDitch	BASE	48.75	94.96	98.00	31991	7.58	7.35	2.7	0.5
100y72	RRDitch	BASE	49.00	94.97	98.00	32133	7.64	7.40	2.9	0.7
100y72	RRDitch	BASE	49.25	94.98	98.00	32275	7.70	7.46	3.0	0.8
100y72	RRDitch	BASE	49.50	94.98	98.00	32418	7.75	7.51	3.2	1.0
100y72	RRDitch	BASE	49.75	94.99	98.00	32560	7.79	7.56	3.4	1.1
100y72	RRDitch	BASE	50.00	95.00	98.00	32705	7.86	7.61	3.5	1.3
100y72	RRDitch	BASE	50.25	95.00	98.00	32858	7.97	7.70	3.7	1.4
100y72	RRDitch	BASE	50.50	95.01	98.00	33016	8.05	7.78	3.9	1.6
100y72	RRDitch	BASE	50.75	95.02	98.00	33175	8.13	7.86	4.0	1.8
100y72	RRDitch	BASE	51.00	95.03	98.00	33337	8.22	7.94	4.2	1.9
100y72	RRDitch	BASE	51.25	95.03	98.00	33505	8.34	8.04	4.4	2.1
100y72	RRDitch	BASE	51.50	95.04	98.00	33677	8.45	8.15	4.5	2.3
100y72	RRDitch	BASE	51.75	95.05	98.00	33849	8.55	8.25	4.7	2.4
100y72	RRDitch	BASE	52.00	95.06	98.00	34030	8.70	8.37	4.9	2.6
100y72	RRDitch	BASE	52.25	95.07	98.00	34234	8.95	8.57	5.1	2.8
100y72	RRDitch	BASE	52.50	95.08	98.00	34449	9.16	8.77	5.3	2.9
100y72	RRDitch	BASE	52.75	95.09	98.00	34667	9.35	8.96	5.5	3.1
100y72	RRDitch	BASE	53.00	95.10	98.00	34898	9.59	9.17	5.7	3.3
100y72	RRDitch	BASE	53.25	95.11	98.00	35152	9.94	9.45	5.9	3.5
100y72	RRDitch	BASE	53.50	95.12	98.00	35421	10.23	9.73	6.1	3.7
100y72	RRDitch	BASE	53.75	95.13	98.00	35694	10.51	10.00	6.3	3.9
100y72	RRDitch	BASE	54.00	95.15	98.00	35980	10.82	10.28	6.5	4.1
100y72	RRDitch	BASE	54.25	95.16	98.00	36291	11.23	10.63	6.7	4.3
100y72	RRDitch	BASE	54.50	95.18	98.00	36616	11.58	10.97	7.0	4.6
100y72	RRDitch	BASE	54.75	95.19	98.00	36947	11.92	11.29	7.2	4.8
100y72	RRDitch	BASE	55.00	95.21	98.00	37288	12.28	11.61	7.5	5.0
100y72	RRDitch	BASE	55.25	95.23	98.00	37658	12.69	11.94	7.7	5.3
100y72	RRDitch	BASE	55.50	95.24	98.00	38050	12.96	12.19	8.0	5.5
100y72	RRDitch	BASE	55.75	95.26	98.00	38452	13.13	12.32	8.2	5.8
100y72	RRDitch	BASE	56.00	95.28	98.00	38876	13.19	12.32	8.5	6.0
100y72	RRDitch	BASE	56.25	95.30	98.00	39344	13.15	12.16	8.8	6.3
100y72	RRDitch	BASE	56.50	95.33	98.00	39843	12.95	11.92	9.1	6.5
100y72	RRDitch	BASE	56.75	95.35	98.00	40358	12.69	11.62	9.3	6.8
100y72	RRDitch	BASE	57.00	95.37	98.00	40890	12.44	11.29	9.6	7.0
100y72	RRDitch	BASE	57.25	95.40	98.00	41469	12.31	11.03	9.8	7.2
100y72	RRDitch	BASE	57.50	95.43	98.00	42083	12.15	10.79	10.1	7.5
100y72	RRDitch	BASE	57.75	95.46	98.00	42727	12.06	10.61	10.3	7.7
100y72	RRDitch	BASE	58.00	95.49	98.00	43391	11.84	10.32	10.6	7.9
100y72	RRDitch	BASE	58.25	95.52	98.00	44125	12.02	10.39	10.8	8.1
100y72	RRDitch	BASE	58.50	95.56	98.00	44879	12.09	10.26	11.1	8.3
100y72	RRDitch	BASE	58.75	95.60	98.00	45734	12.50	10.35	11.3	8.5
100y72	RRDitch	BASE	59.00	95.64	98.00	46698	13.01	10.51	11.6	8.8
100y72	RRDitch	BASE	59.25	95.70	98.00	47880	14.31	11.11	11.9	9.0
100y72	RRDitch	BASE	59.50	95.79	98.00	49971	18.31	10.89	12.2	9.2
100y72	RRDitch	BASE	59.75	96.03	98.00	55137	37.62	17.03	12.8	9.5
100y72	RRDitch	BASE	60.00	96.34	98.00	61972	45.12	24.90	13.7	9.9
100y72	RRDitch	BASE	60.25	96.55	98.00	66362	36.13	27.41	14.5	10.5
100y72	RRDitch	BASE	60.50	96.67	98.00	69080	38.20	28.26	15.3	11.0
100y72	RRDitch	BASE	60.75	96.79	98.00	71701	38.60	30.43	16.1	11.7
100y72	RRDitch	BASE	61.00	96.89	98.00	73743	38.59	31.91	16.9	12.3
100y72	RRDitch	BASE	61.25	96.96	98.00	75308	38.06	32.76	17.6	13.0
100y72	RRDitch	BASE	61.50	97.02	98.00	76573	37.75	33.30	18.4	13.6
100y72	RRDitch	BASE	61.75	97.06	98.00	77599	37.25	33.60	19.2	14.3
100y72	RRDitch	BASE	62.00	97.10	98.00	78452	36.90	33.76	20.0	15.0
100y72	RRDitch	BASE	62.25	97.13	98.00	79156	36.38	33.84	20.7	15.7
100y72	RRDitch	BASE	62.50	97.16	98.00	79753	36.14	33.87	21.5	16.4
100y72	RRDitch	BASE	62.75	97.19	98.00	80276	35.87	33.87	22.2	17.1
100y72	RRDitch	BASE	63.00	97.21	98.00	80747	35.72	33.87	23.0	17.8
100y72	RRDitch	BASE	63.25	97.23	98.00	81183	35.61	33.86	23.7	18.5
100y72	RRDitch	BASE	63.50	97.25	98.00	81596	35.54	33.86	24.4	19.2

Turnpike Pond at Regal Yacht Center
Post-Development

Simulation	Node	Group	Time	Stage	Warning Stage	Surface Area	Total Inflow	Total Outflow	Total Vol In	Total Vol Out
			hrs	ft	ft	ft2	cfs	cfs	af	af
100y72	RRDitch	BASE	63.75	97.26	98.00	81993	35.50	33.87	25.2	19.9
100y72	RRDitch	BASE	64.00	97.28	98.00	82365	35.39	33.90	25.9	20.6
100y72	RRDitch	BASE	64.25	97.30	98.00	82672	35.02	33.90	26.6	21.3
100y72	RRDitch	BASE	64.50	97.31	98.00	82928	34.89	33.88	27.3	22.0
100y72	RRDitch	BASE	64.75	97.32	98.00	83160	34.79	33.85	28.1	22.7
100y72	RRDitch	BASE	65.00	97.33	98.00	83377	34.71	33.82	28.8	23.4
100y72	RRDitch	BASE	65.25	97.34	98.00	83583	34.66	33.80	29.5	24.1
100y72	RRDitch	BASE	65.50	97.35	98.00	83782	34.62	33.79	30.2	24.8
100y72	RRDitch	BASE	65.75	97.36	98.00	83975	34.60	33.78	30.9	25.5
100y72	RRDitch	BASE	66.00	97.36	98.00	84163	34.59	33.79	31.6	26.2
100y72	RRDitch	BASE	66.25	97.37	98.00	84347	34.60	33.81	32.4	26.9
100y72	RRDitch	BASE	66.50	97.38	98.00	84527	34.61	33.84	33.1	27.6
100y72	RRDitch	BASE	66.75	97.39	98.00	84707	34.63	33.87	33.8	28.3
100y72	RRDitch	BASE	67.00	97.40	98.00	84881	34.67	33.91	34.5	29.0
100y72	RRDitch	BASE	67.25	97.40	98.00	85053	34.71	33.96	35.2	29.7
100y72	RRDitch	BASE	67.50	97.41	98.00	85222	34.75	34.02	35.9	30.4
100y72	RRDitch	BASE	67.75	97.42	98.00	85391	34.80	34.08	36.7	31.1
100y72	RRDitch	BASE	68.00	97.43	98.00	85547	34.80	34.15	37.4	31.8
100y72	RRDitch	BASE	68.25	97.43	98.00	85675	34.67	34.20	38.1	32.5
100y72	RRDitch	BASE	68.50	97.44	98.00	85777	34.66	34.25	38.8	33.2
100y72	RRDitch	BASE	68.75	97.44	98.00	85868	34.66	34.28	39.5	34.0
100y72	RRDitch	BASE	69.00	97.45	98.00	85951	34.67	34.32	40.2	34.7
100y72	RRDitch	BASE	69.25	97.45	98.00	86027	34.69	34.36	41.0	35.4
100y72	RRDitch	BASE	69.50	97.45	98.00	86099	34.71	34.40	41.7	36.1
100y72	RRDitch	BASE	69.75	97.46	98.00	86166	34.74	34.45	42.4	36.8
100y72	RRDitch	BASE	70.00	97.46	98.00	86231	34.77	34.50	43.1	37.5
100y72	RRDitch	BASE	70.25	97.46	98.00	86293	34.82	34.55	43.8	38.2
100y72	RRDitch	BASE	70.50	97.46	98.00	86352	34.86	34.60	44.6	38.9
100y72	RRDitch	BASE	70.75	97.47	98.00	86409	34.91	34.67	45.3	39.7
100y72	RRDitch	BASE	71.00	97.47	98.00	86462	34.98	34.75	46.0	40.4
100y72	RRDitch	BASE	71.25	97.47	98.00	86513	35.07	34.85	46.7	41.1
100y72	RRDitch	BASE	71.50	97.47	98.00	86561	35.19	34.98	47.4	41.8
100y72	RRDitch	BASE	71.75	97.48	98.00	86605	35.32	35.14	48.2	42.5
100y72	RRDitch	BASE	72.00	97.48	98.00	86613	34.89	35.28	48.9	43.3
100y72	RRDitch	BASE	72.00	97.48	98.00	86613	34.89	35.28	48.9	43.3