Valencia Water
Control District

Agenda

January 9, 2024

AGENDA

AGENDA

January 9, 2024

VALENCIA WATER CONTROL DISTRICT
BOARD OF SUPERVISORS MEETING
1 P.M.

LAKE RIDGE VILLAGE CLUBHOUSE
10630 LARISSA STREET
WILLIAMSBURG, ORLANDO, FLORIDA 32821

Item

1. Call Meeting to Order

2. Public Comment Period

3. Approval of November 14, 2023 Monthly Meeting Minutes

4. General Fund Financial Reports

5. Engineer's Report
   A. Consideration of Permit #0530 – Aquatica Parking Lot
   B. Presentation of Sea World C-5 Canal Reconfiguration Study

6. Attorney's Report

7. Director's Report
   A. Customer Call Log
   B. Consideration of Proposals to Repair S-501 (*Under Separate Cover*)

8. Other Business

9. Adjournment

MINUTES

MINUTES OF THE MONTHLY MEETING
OF THE BOARD OF SUPERVISORS
OF VALENCIA WATER CONTROL DISTRICT

November 14, 2023

The monthly meeting of the Board of Supervisors of **VALENCIA WATER CONTROL DISTRICT** was held at 1:00 P.M. on Tuesday, November14, 2023, at the Lake Ridge Village Clubhouse, 10630 Larissa Street, Orlando, Florida. Physically present were Supervisors Debra Donton, Roy Miller, and Brian Andrelczyk. Also, in attendance were the following: George Flint, District Director, Stephen Broome, District Counsel; David Mahler, District Engineer; Stacie Vanderbilt, District Administrative Assistant; Dan Brown, Sthern Environmental; Carolina Matiz-Pardo, Atkins; Tom Burdeshaw, Ground LVL; and Jeff Schwartz, SeaWorld.

ITEM #1 **Call Meeting to Order**

Mr. Flint called the meeting to order at 1:02 P.M. A quorum of three Board members were present.

ITEM #2 **Public Comment Period**

No members of the public were present to provide public comment.

ITEM #3 **Approval of August 8, 2023 Annual Meeting Minutes**

Mr. Flint stated the next item was the minutes from the July 11, 2023 annual meeting. He asked if there were any corrections, deletions, or additions.

On MOTION by Ms. Donton, seconded by Mr. Andrelczyk with all in favor the Minutes from the August 8, 2023 Monthly Meeting were approved as presented.

ITEM #4 **Presentation by Sea World Orlando on C-5 Canal Design Concept**

Mr. Flint briefed the Board on the purpose of the presentation for the proposed project that would affect the C-5 Canal. District staff voiced concerns to Sea World, so the representatives wanted the opportunity to speak to the Board.

Mr. Burdeshaw was looking to the underground portion of the canal to expand the property and fully utilize it. Valencia's staff was concerned about the access and maintenance, so he studied bifurcating the site, but the best plan that they came up with was to completely underground it. This way there will not be any structures placed on it, only walkways and seating areas.

Mr. Flint pointed out on his map to the Board that the proposed area was.

Ms. Matiz-Pardo stated that they would be similar to the culverts under Central Florida Parkway. There will be several points of contact or box structures over it so the District could visually see the water and what was in it.

Mr. Schwartz stated we understand the concern of the Board and do not plan to sell the hotel property. We would continue to maintain and own the area. We're looking for the "nod" from the Board to continue with conceptual design, not construction, yet.

Mr. Flint stated the main reason for concern was that the culverts that run under Central Florida Parkway are owned and maintained by Orange County and the District has to deal with Orange County when there are failures. Entering into an agreement with a private entity like SeaWorld, is another area to make sure is properly maintained and failures are fixed. Worst case, if the economy were to go south and the property was abandoned, the burden would fall on the District to assume the cost of maintenance.

Mr. Mahler stated his concerns were the potential upstream flooding and tracking the maintenance and inspections. It would also require more NPDES obligations. Obstructions would also be harder to see to the naked eye because the box culverts cover up the open canal.

Mr. Miller asked where the box culverts are located, will there be manhole covers to go down and reach the water if need be? Where are the access roads?

Ms. Matiz-Pardo responded yes, there will be access and she pointed out the access roads on their plan.

Mr. Miller, Mr. Andrelczyk and Ms. Donton discussed the plan further.

Mr. Andrelczyk clarified with Mr. Flint that the Board is either recommending for Sea World to move forward with a conceptual design to cover and ground the C-5 Canal or telling them no, go back and provide a plan to leave the canal alone?

Mr. Flint responded yes, because District staff had enough concerns to have to bring them to the Board for discussion first and get direction.

Mr. Brown showed everyone on the map a way to go around and divert the flow of the C-5 to other canals. Dig up one their parking lot and save costs.

Discussion amongst everyone ensued.

Mr. Mahler stated that the Water Management District and Orange County would still have to approve any changes or permits. The District does not hold that power.

Mr. Flint stated the concern is that the District has to contract with an on-site entity to maintain the culverts. If anything goes wrong and the owner abandons the project, the burden will be shouldered on the District. Similar situations happened with Marriott when their culvert failed and landscaping was lost. They approved the District to either fix it or ask how to fix it.

Mr. Andrelczyk suggested a motion to give SeaWorld direction, the Board is not opposed to move forward with the design concept with the plan that they leave it open.

Mr. Schwartz wanted to hear Mr. Miller and Ms. Donton's opinions.

Ms. Donton said she's concerned mainly about the maintenance. If something goes wrong, it can be catastrophic.

Mr. Miller stated he has the same concerns. With everything covered up, it will be difficult to see issues uprising and can cause bigger problems for the whole District. He understood what they are trying to do, but he would rather stay away from the grounded concept.

On MOTION by Mr. Miller, seconded by Mrs. Donton, to discourage the closed option and explore an option that keeps the canal open and divert the water around, with Mr. Andrelczyk abstaining, Motion Passed 2-1.

Mr. Schwartz, Mr. Burdeshaw and Ms, Matiz-Pardo thanked the Board for their time and said they would come back with a new design plan leaving the canal open. They left the meeting at this time.

ITEM #5 General Fund Financial Reports

Mr. Flint stated it is the start of the new fiscal year so there are no collections yet, and the actuals are under prorations.

ITEM #6 Engineer's Report

A. Acknowledgement of Plans for Repairs at Discovery Cove – Pond 13 Outfall

Mr. Mahler wanted on record that they are fixing issues that they have at the site,

there is no new permit needed.

B. Consideration of Permit # 0529 – Discovery Cove Project Pink Lady

Mr. Mahler stated that Sea World was modifying the property, and there is no adverse affect to the District's system. He recommended approval.

> On MOTION by Mr. Miller, seconded by Mrs. Donton, with all in favor, Permit # 0529 – Discovery Cove Project Pink Lady, was approved.

Mr. Miller asked what is going on at the end of Central Florida Parkway by I-4?

Mr. Mahler responded they are changing the I-4 interchange, it is part of I-4 Ultimate project. It was taken out of the original plan and is now being worked on.

ITEM #7 Attorney's Report

Mr. Broome had nothing new to report to the Board.

Mr. Flint added depending on the SeaWorld C-5 Canal project, easements and agreements will need to be done.

ITEM #8 Director's Report

A. Customer Call Log

This log has a lot of callers because the Board hasn't met in a few months. We got a couple of calls regarding the C-6 in Deer Creek. Vegetation is coming in from Shingle Creek. In the past the area has been dredged and treated but it immediately comes back.

B. Consideration of Non-Ad Valorem Assessment Administration Agreement with Orange County Property Appraiser

> On MOTION by Mr. Miller, seconded by Mr. Andrelczyk, with all in favor, the Non-Ad Valorem Assessment Administration Agreement with Orange County Property Appraiser, was approved.

ITEM #9 Other Business

There being none,

ITEM #10 **Adjournment**

On MOTION by Mr. Andrelczyk, seconded by Debra Donton, with all in favor the meeting was adjourned at 1:59 pm.

_____
Stephen F. Broome, Secretary

_____
William Von Ingle

_____
Amanda Whitney

_____
Debra Donton

_____
Roy Miller

_____
Brian Andrelczyk

SECTION IV

Valencia

Water Control District

Unaudited Financial Reporting

December 31, 2023

Table of Contents

Valencia

Water Control District

Balance Sheet

December 31, 2023

	General Fund	Capital Reserve Fund	Totals Governmental Funds
Assets:			
Current Assets			
Cash - Truist Bank	$ 259,948	$ 233,824	$ 493,772
Petty Cash	$ 100	$ -	$ 100
Investment:			
State Board of Administration	$ 42,409	$ 802,153	$ 844,562
Total Current Assets	$ 302,457	$ 1,035,977	$ 1,338,434
Fixed Assets			
Land	$ 700,120	$ -	$ 700,120
Structures	$ 672,531	$ -	$ 672,531
Canals	$ 2,888,690	$ -	$ 2,888,690
Ponds	$ 1,245,537	$ -	$ 1,245,537
Equipment & Office Furniture	$ 6,703	$ -	$ 6,703
Accumulated Depreciation	$ (4,789,183)	$ -	$ (4,789,183)
Total Fixed Assets	$ 724,398	$ -	$ 724,398
Total Assets	**$ 1,026,856**	**$ 1,035,977**	**$ 2,062,832**
Liabilities:			
Accounts Payable	$ -	$ -	$ -
Total Liabilities	**$ -**	**$ -**	**$ -**
Fund Balances:			
Unassigned	$ 293,937	$ 1,035,977	$ 1,329,913
Net Assets Capitalized	$ 732,919	$ -	$ 732,919
Total Fund Balances	**$ 1,026,856**	**$ 1,035,977**	**$ 2,062,832**
Total Liabilities & Fund Equity	$ 1,026,856	$ 1,035,977	$ 2,062,832

Valencia

Water Control District

General Fund

Statement of Revenues, Expenditures, and Changes in Fund Balance

For The Period Ending December 31, 2023

	Adopted Budget	Prorated Budget Thru 12/31/23	Actual Thru 12/31/23	Variance
Revenues:				
Assessments - Tax Roll	$ 552,179	$ 208,709	$ 208,709	$ -
Interest	$ 2,000	$ 500	$ 598	$ 98
Total Revenues	**$ 554,179**	**$ 209,209**	**$ 209,307**	**$ 98**
Expenditures:				
Administrative:				
Supervisor Fees	$ 2,500	$ 625	$ 150	$ 475
Engineering Fees	$ 37,200	$ 9,300	$ 5,198	$ 4,103
Attorney Fees	$ 12,000	$ 3,000	$ 3,000	$ -
Annual Audit	$ 5,200	$ -	$ -	$ -
Assessment Roll Certification	$ 5,000	$ 5,000	$ 5,000	$ -
Management Fees	$ 53,280	$ 13,320	$ 13,320	$ -
Information Technology	$ 1,800	$ 450	$ 450	$ -
Website Maintenance	$ 1,200	$ 300	$ 300	$ -
Insurance	$ 14,400	$ 14,400	$ 13,614	$ 786
Report Preparation - NPDES	$ 15,000	$ 3,750	$ 420	$ 3,330
Office Lease/Storage	$ 3,000	$ 750	$ 648	$ 102
Printing & Binding	$ 500	$ 125	$ 24	$ 101
Postage	$ 600	$ 150	$ 173	$ (23)
Legal Advertising	$ 2,500	$ 625	$ -	$ 625
Bank Fees	$ 600	$ 150	$ 116	$ 34
Other Current Charges	$ 400	$ 100	$ -	$ 100
Office Supplies	$ 350	$ 88	$ 18	$ 70
Election Fees	$ 4,250	$ -	$ -	$ -
Meeting Rental Fee	$ 500	$ 125	$ 50	$ 75
Property Appraiser Fee	$ 5,417	$ -	$ -	$ -
Dues, Licenses & Subscriptions	$ 1,675	$ 419	$ 175	$ 244
Total Administrative:	**$ 167,372**	**$ 52,676**	**$ 42,655**	**$ 10,021**
Operations & Maintenance				
Contracts:				
Aquatic Weed Control	$ 40,000	$ 10,000	$ 6,966	$ 3,034
Mowing	$ 98,289	$ 24,572	$ 20,483	$ 4,090
Water Quality Monitoring	$ 19,746	$ 4,937	$ 3,291	$ 1,646
Repairs & Maintenance:				
Canal & Retention Pond Maintenance	$ 40,000	$ 10,000	$ 1,000	$ 9,000
Security Gates & Signs	$ 750	$ 188	$ -	$ 188
NPDES Inspection & Fees	$ 6,000	$ 1,500	$ 1,875	$ (375)
Operating Supplies	$ 500	$ 125	$ -	$ 125
Contingency	$ 2,500	$ 625	$ -	$ 625
Total Operations & Maintenance:	**$ 207,785**	**$ 51,946**	**$ 33,615**	**$ 18,331**

Valencia

Water Control District

General Fund

Statement of Revenues, Expenditures, and Changes in Fund Balance

For The Period Ending December 31, 2023

	Adopted Budget	Prorated Budget Thru 12/31/23	Actual Thru 12/31/23	Variance
Capital Improvements				
Transfer Out - Capital Reserve	$ 245,392	$ -	$ -	$ -
Total Reserves	**$ 245,392**	**$ -**	**$ -**	**$ -**
Total Expenditures	**$ 620,549**	**$ 104,623**	**$ 76,270**	**$ 28,353**
Excess Revenues (Expenditures)	$ (66,370)		$ 133,037	
Fund Balance - Beginning	$ 66,370		$ 160,900	
Fund Balance - Ending	$ -		$ 293,937	

Valencia

Water Control District

Capital Reserve

Statement of Revenues, Expenditures, and Changes in Fund Balance

For The Period Ending December 31, 2023

	Adopted Budget	Prorated Budget Thru 12/31/23	Actual Thru 12/31/23	Variance
Revenues:				
Transfer In	$ 245,392	$ -	$ -	$ -
Interest	$ 35,000	$ 8,750	$ 11,252	$ 2,502
Total Revenues	**$ 280,392**	**$ 8,750**	**$ 11,252**	**$ 2,502**
Expenditures:				
Contingency	$ 600	$ 150	$ 114	$ 36
Capital Outlay	$ 119,181	$ 29,795	$ 42,918	$ (13,123)
Total Expenditures	**$ 119,781**	**$ 29,945**	**$ 43,032**	**$ (13,087)**
Excess Revenues (Expenditures)	$ 160,611	$ (21,195)	$ (31,780)	
Fund Balance - Beginning	$ 1,066,244		$ 1,067,757	
Fund Balance - Ending	$ 1,226,855		$ 1,035,977	

Valencia

Water Control District

Month to Month

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total
Revenues:													
Assessments - Tax Roll	$ -	$ 24,725	$ 183,984	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 208,709
Interest	$ 200	$ 195	$ 202	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 598
													$ -
Total Revenues	**$ 200**	**$ 24,920**	**$ 184,186**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 209,307**
Expenditures:													
Administrative:													
Supervisor Fees	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150
Engineering Fees	$ 3,098	$ 2,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,198
Attorney Fees	$ 1,000	$ 1,000	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000
Annual Audit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Assessment Roll Certification	$ 5,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,000
Management Fees	$ 4,440	$ 4,440	$ 4,440	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,320
Information Technology	$ 150	$ 150	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 450
Website Maintenance	$ 100	$ 100	$ 100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300
Insurance	$ 13,614	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,614
Report Preparation - NPDES	$ -	$ 420	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 420
Office Lease/Storage	$ 216	$ 216	$ 216	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 648
Printing & Binding	$ -	$ -	$ 24	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 24
Postage	$ 4	$ 4	$ 165	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 173
Legal Advertising	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bank Fees	$ 39	$ 39	$ 39	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 116
Other Current Charges	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Office Supplies	$ 0	$ 0	$ 18	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18
Election Fees	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Meeting Rental Fee	$ -	$ 50	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50
Property Appraiser Fee	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Dues, Licenses & Subscriptions	$ 175	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175
Total Administrative:	**$ 27,836**	**$ 8,669**	**$ 6,150**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 42,655**
Operations & Maintenance													
Contracts:	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Aquatic Weed Control	$ 2,322	$ 2,322	$ 2,322	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,966
Mowing	$ 15,892	$ 4,590	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,483
Water Quality Monitoring	$ 1,646	$ 1,646	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,291
Repairs & Maintenance:													
Canal & Retention Pond Maintenance	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000
Security Gates & Signs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
NPDES Inspection & Fees	$ -	$ -	$ 1,875	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,875
Operating Supplies	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Contingency	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Field Operations:	**$ 20,860**	**$ 8,558**	**$ 4,197**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 33,615**
Capital Improvements													
Transfer Out - Capital Reserves	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Reserves	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenditures	**$ 48,696**	**$ 17,226**	**$ 10,348**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 76,270**
Excess Revenues (Expenditures)	$ (48,496)	$ 7,694	$ 173,839	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 133,037

Valencia

Water Control District

Special Assessment Receipts

Fiscal Year 2024

Gross Assessments	$ 581,240.96	$ 581,240.96
Net Assessments	$ 552,178.91	$ 546,366.50

ON ROLL ASSESSMENTS

							100.00%	100.00%
Date	*Distribution*	*Gross Amount*	*Commissions*	*Discount/Penalty*	*Interest*	*Net Receipts*	*O&M Portion*	*Total*
11/3/23	1	$2,181.53	$20.71	$110.34	$0.00	$2,050.48	$2,050.48	$2,050.48
11/14/23	2	$5,493.59	$52.76	$217.98	$0.00	$5,222.85	$5,222.85	$5,222.85
11/28/23	3	$18,361.18	$176.28	$733.42	$0.00	$17,451.48	$17,451.48	$17,451.48
12/05/23	4	$32,105.09	$308.21	$1,283.85	$0.00	$30,513.03	$30,513.03	$30,513.03
12/12/23	5	$115,214.90	$1,106.08	$4,607.27	$0.00	$109,501.55	$109,501.55	$109,501.55
12/19/23	6	$45,896.80	$440.61	$1,835.53	$348.58	$43,969.24	$43,969.24	$43,969.24
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
						$0.00	$0.00	$0.00
	TOTAL	**$ 219,253.09**	**$ 2,104.65**	**$ 8,788.39**	**$ 348.58**	**$ 208,708.63**	**$ 208,708.63**	**$ 208,708.63**

38.20%	**Net Percent Collected**
$ 337,657.87	**Balance Remaining to Collect**

SECTION V

SECTION A

VALENCIA WATER CONTROL DISTRICT
219 E. LIVINGSTON STREET, ORLANDO, FL 32801
PHONE: 407-841-5524 X 101 - FAX: 407-839-1526

January 9, 2024

Sea World of Florida, LLC
Attn: Carlos Varela, Director – Design & Engineering
9205 South Park Center Loop, Suite 400
Orlando, FL 32819

Subject: Permit #0530

Dear Mr. Varela:

Sea World of Florida, LLC is hereby granted a construction permit related to the Aquatica Parking Expansion project. Approval is granted in accordance with approved plans and hydraulic calculations and the following **GENERAL AND SPECIFIC CONDITIONS:**

GENERAL CONDITIONS:

1. That the District or their agents may at any time make such inspections as they may deem necessary to ensure that the construction or work is performed in accordance with the conditions of this permit.

2. That the permittee will maintain the work authorized herein during construction and thereafter in good condition in accordance with the approved plans.

3. That the permittee shall comply promptly with any lawful regulations, conditions, or instructions affecting the structure or work authorized herein if and when issued by the U.S. Environmental Protection Agency, the South Florida Water Management District and the Florida Department of Environmental Protection and/or any county or city environmental protection agency having jurisdiction to abate or prevent water pollution, including thermal or radiation pollution. Such regulations, conditions, or instructions in effect or hereafter prescribed by the federal, state, county and city agencies have hereby made a condition of this permit.

4. It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the District's right, title and interest in the land to be entered upon and used by the permittee, and the permittee will at all times, assume all risk and indemnify, defend and save harmless Valencia Water Control District from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by the permittee of the aforesaid rights and privileges.

5. The permittee and/or their agents will use every measure to prevent the run-off of turbid water into the District's facilities including, but not limited to, the use of temporary ponds, silt barriers, chemical additives and temporary grassing during construction.

6. If discharge of water by permittee should at any time raise the level of pollutants in the District's water management facility to the point where the District is in violation of a statute or regulation, permittee will either: (a) immediately cease such discharge, (b) remove pollutants from the water before discharging into District facilities, and pay all costs which the District must incur in order to reduce pollution in the District's facilities to acceptable levels.

7. That all the provisions of this permit shall be binding on any assignee or successor in interest of the permittee.

8. That any modification, suspension or revocation of this permit shall not be the basis for a claim for damages against Valencia Water Control District.

9. The Valencia Water Control District agrees that the issuance of this permit allows the passage of water through their canals but in so doing does not assume any responsibility for damage to any persons or property.

10. That the engineer of record certify that the facilities as constructed comply with the submitted hydraulic calculations and approved drawings.

11. That the permittee agrees not to modify or alter the constructed facilities at any future time without the express consent of the District.

12. This permit is valid for 3 years from date of approval or runs concurrently with the SFWMD permit, if required, whichever expires first.

13. That this permit must be executed within 30 days of Board approval or must be brought back to the Board for reconsideration.

END OF GENERAL CONDITIONS

SPECIFIC CONDITIONS

1. That the Construction Plans, sheets C02.000; C02.010; C02.020; C02.101; C02.201; C02.251; C02.261; C02.271; C02.281; C02.301; C02.500; C02.501; C02.502; C02.503; L01.100; L02.100; L02.101; L02.300; L02.301; L02.302; L02.591; L02.700; L02.701; L02.702; L02.791 titled Aquatica Orlando 2024 Parking Expansion as recommended for approval by the District Engineer on December 20, 2023, become part of this permit.

Attest: **Signature:**_____
Sea World of Florida, LLC

_____ **Title:**_____

Attest: **Granted by:**

_____ **Valencia Water Control District**

By:_____
Roy Miller, President

On this ____ day of _____, 2024

1117 East Robinson St.
Orlando, FL 32801
Phone: 407.425.0452
Fax: 407.648.1036

December 21, 2023

Board of Directors
Valencia Water Control District
219 E. Livingston Street
Orlando, Florida 32801

RE: SWO AQO 2024 – Aquatica Parking Lot
VWCD Permit No. 530
CPH Project No. 6816.07

Dear Honorable Board Members:

We have completed our review of the above referenced project submitted by Land Design on December 15, 2023. Based on our review, we have no objection to the Board approving this permit.

Sincerely,

CPH, LLC

David E. Mahler, P.E.
District Engineer

Cc: Jason Rostek, P.E., Land Design
file

Permit No._____
(Assigned by V.W.C.D.)

PERMIT APPLICATION
Valencia Water Control District
c/o CPH, Inc.
1117 E. Robinson Street
Orlando, FL 32801
VWCD Office: (407) 841-5524 X 101 CPH, Inc. (407) 425-0452

(1) PROPOSED USE: Aquatica Parking Expansion 2024

(2) LOCATION OF WORK: Block: _____ Lot: _____ Subdivision: _____
or Section: 7 Township: 24 Range: 29

(3) DISTRICT WORKS INVOLVED: Canal C-5 (Receiving Water Only)

(4) OWNER OF PROPOSED WORK OR STRUCTURE: Phone #: (407) 363-2127
Name: Carlos Varela, Sea World of Florida, LLC Title: Director, Design & Engineering
Address: 9205 South Park Center Loop, Suite 400 Orlando FL 32819-1
(Street) (City) (State) (Zip)

(5) APPLICATION OTHER THAN OWNER: (if any) Phone #: (407) 402-2913
Name: Jason Rostek / LandDesign Serving as: Civil Engineer
Address: 100 S. Orange Ave., Suite 200 Orlando FL 32801
(Street) (City) (State) (Zip)

(6) AREA PROPOSED TO BE SERVED: Give legal description and size in acres. Attach legal description if necessary. If land is platted, indicate Block, Lot and Subdivision. _____
The proposed project area is 5.89 acres. Tax Parcel ID Numbers 07-24-29-7959-00-010 & 07-24-29-7959-00-011

(7) CONSTRUCTION SCHEDULE: The proposed work, if permitted, will begin within 60 Calendar days of permit approval and be completed within 120 calendar days thereafter.

(8) This application, including sketches, drawings or plans and specifications attached contains a full and complete description of work proposed or use desired of the above described facilities of the District and for which permit is herewith applied. It shall be a part of any permit that may be issued. It is agreed that all work or the use of the District's facilities will be in accordance with the permit to be granted.

Submitted this 15TH day of DECEMBER, 2023
.

Signature of Property Owner (Officer of Corporation): _____

Print Name of Property Owner (Officer): Carlos Varela, R.A. - Director, Design & Engineering

AQUATICA ORLANDO 2024 PARKING EXPANSION

INFRASTRUCTURE IMPROVEMENTS - CONSTRUCTION PLAN

ORANGE COUNTY, FL

DATE: 12/19/2023

SHEET INDEX

VICINITY MAP

PROJECT TEAM

OWNER/DEVELOPER
SEA WORLD OF FLORIDA, LLC
9205 SOUTH PARK CENTER LOOP
SUITE 400
ORLANDO, FL 32819
407.363.2127

CIVIL ENGINEER
LANDDESIGN
100 SOUTH ORANGE AVE., SUITE 200
ORLANDO, FL 32801
407.270.7800
CONTACT NAME: JASON ROSTEK, P.E.

LANDSCAPE ARCHITECT
LANDDESIGN
100 SOUTH ORANGE AVE., SUITE 200
ORLANDO, FL 32801
407.270.7800
CONTACT NAME: ANDREW GARRELS, PLA

ARCHITECT
PGAV DESTINATIONS
200 NORTH BROADWAY, SUITE 1000
ST. LOUIS, MO 63102
314.231.7318
CONTACT NAME: EMILY PELCAK

LandDesign.

GENERAL NOTES:

1. COORDINATE CONSTRUCTION UNDER THIS CONTRACT WITH ALL OTHER SITE CONSTRUCTION AND/OR ADJACENT OFF SITE CONSTRUCTION.
2. FIELD SURVEY THE CLEARING LIMITS AND INSTALL STAKES WITH COLORED RIBBONS FOR OWNER'S REPRESENTATIVE'S REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. AFTER APPROVAL, INSTALL ALL REQUIRED EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO CLEARING.
3. VERTICAL DATUM AND HORIZONTAL DATUM ARE BASED ON THE SEA WORLD GRID COORDINATE SYSTEM.
4. PROTECT ANY SURVEY MONUMENTS LOCATED WITHIN THE LIMITS OF CONSTRUCTION.
5. PROTECT ANY PUBLIC LAND CORNER MONUMENT LOCATED WITHIN THE LIMITS OF CONSTRUCTION. IF IN DANGER OR IF DAMAGED, NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY.
6. THE LOCATION OF ALL EXISTING UTILITIES AND DRAINAGE STRUCTURES SHOWN ARE BASED ON AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, FIELD LOCATE ALL EXISTING FACILITIES WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION.
7. ALL FLORIDA DEPARTMENT OF TRANSPORTATION INDEXES REFER TO THE LATEST EDITION OF THE ROADWAY AND TRAFFIC STANDARD PLANS.
8. MAINTAIN DAILY RECORD DRAWINGS AT ALL TIMES DURING CONSTRUCTION. RECORD DRAWINGS INFORMATION SHALL INCLUDE (AT A MINIMUM) HORIZONTAL LOCATIONS AND INVERT ELEVATIONS (AND TOP ELEVATION IF APPLICABLE) OF ALL DRAINAGE AND UTILITY PIPE SYSTEMS INCLUDING ALL SLEEVES. INFORMATION SHALL BE LEGIBLY HAND WRITTEN ON THE MOST CURRENT SET OF CONSTRUCTION DRAWINGS, AS WELL AS TYPE WRITTEN IN TABULAR FORMAT. UPON COMPLETION OF THE PROJECT SUBMIT ONE COMPLETE SET OF RECORD DRAWINGS CERTIFIED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.
9. IF HISTORICAL OR ARCHEOLOGICAL ARTIFACTS, SUCH AS INDIAN CANOES, ARE DISCOVERED AT ANY TIME WITHIN THE PROJECT SITE, IMMEDIATE NOTIFICATION SHALL BE PROVIDED TO THE FOLLOWING:
   A. THE OWNER'S REPRESENTATIVE.
   B. THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT OFFICE (407-686-8800).
   C. THE BUREAU OF HISTORIC PRESERVATION, DIVISION OF HISTORICAL RESOURCES, R.A. GRAY BUILDING, 200 S BRONOUGH ST, TALLAHASSEE, FL 32399-0250.

EROSION CONTROL NOTES:

1. PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AS INDICATED ON THE DRAWINGS. PROVIDE ADDITIONAL MEASURES AS NECESSARY UTILIZING INDUSTRY STANDARD BEST MANAGEMENT PRACTICES TO AVOID ADVERSE IMPACTS TO JURISDICTIONAL AREAS (WETLANDS OR WATER BODIES) AND OFF SITE LANDS AND WATER BODIES. MAINTAIN THESE MEASURES DAILY UNTIL CONSTRUCTION ACCEPTANCE BY THE OWNER AND THEN REMOVE AND LEGALLY DISPOSE OF SAID MEASURES.
2. NO DISCHARGE OF CONTAMINANTS INTO SURFACE WATERS WILL BE PERMITTED AT ANY TIME.
3. DAMAGE TO SURFACE WATERS ADJACENT TO CONSTRUCTION AREAS SHALL BE PREVENTED BY DELINEATING THE LIMITS OF CONSTRUCTION, AND INSTALLING SILT FENCES AND SEDIMENT BARRIERS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, THEREBY RETAINING SEDIMENT WITHIN THE CONSTRUCTION AREA. CONTRACTORS WILL BE REQUIRED TO ADEQUATELY MAINTAIN THESE PROTECTION MEASURES AT ALL TIMES.
4. DURING CONSTRUCTION THE CONTRACTOR SHALL MODIFY OR RELOCATE THE SILT FENCE (WITH OWNER'S PRIOR APPROVAL) TO ALLOW FOR ITS ACCESS AND TO COMPLETE CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ADEQUATE EROSION CONTROL AT ALL TIMES.
5. ALL SURFACE WATER DISCHARGE FROM SITE, INCLUDING DEWATERING DISCHARGE SHALL MEET STATE WATER QUALITY STANDARDS (LESS THAN 29 NTU ABOVE BACKGROUND) PRIOR TO REACHING ANY WATERS ON THE STATE INCLUDING WETLANDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMAIN IN COMPLIANCE WITH THE FDEP GENERAL PERMIT TO DISCHARGE PRODUCED GROUNDWATER OFFSITE.
6. EROSION AND DUST CONTROL SHALL BE MAINTAINED WITHIN CONSTRUCTION AREAS BY QUICKLY STABILIZING DISTURBED AREAS TO PREVENT THE RELEASE OF SEDIMENT. THIS SHALL BE ACCOMPLISHED USING GRASS COVER, TURBIDITY FENCES, PERIODIC WATERING, AND OTHER BEST MANAGEMENT PRACTICES FOUND IN THE STORMWATER POLLUTION PREVENTION PLAN, WHICH ARE ACCEPTABLE TO THE OWNER OR OWNER'S REPRESENTATIVE, ENGINEER, AND REGULATORY AGENCIES.
7. ALL STORM DRAINAGE INLETS AND PIPES SHALL BE PROTECTED FROM SILT, SAND AND DEBRIS DURING CONSTRUCTION. ANY ACCUMULATION WITHIN THE STORM DRAINAGE PIPE SYSTEM SHALL BE REMOVED WITHOUT PUMPING OR FLUSHING INTO THE PONDS. STORM DRAINAGE SYSTEM SHALL BE CLEANED AND FREE OF DEBRIS PRIOR TO OWNER OR OWNER'S REPRESENTATIVE ACCEPTANCE.
8. PROVIDE SOCK DRAIN IN FRONT OF ALL DRAINAGE CURB INLETS AND PROVIDE FILTER FABRIC WRAPPED AROUND THE GRATE OF ALL HARDSCAPE INLETS. MAINTAIN THESE MEASURES DAILY (WHICH MAY INCLUDE FULL REPLACEMENT AT THE DISCRETION OF THE OWNER OR OWNER'S REPRESENTATIVE) TO MINIMIZE SILT ACCUMULATION IN THE STORM DRAINAGE SYSTEM.
9. DURING CONSTRUCTION THE CONTRACTOR SHALL PROVIDE TEMPORARY SEEDING AND MULCHING OR SOD FOR AREAS THAT HAVE BEEN CLEARED AND NOT REWORKED WITHIN 7 CALENDAR DAYS DURING THE WET SEASON (APRIL THROUGH SEPTEMBER) AND 14 CALENDAR DAYS DURING THE DRY SEASON (OCTOBER THROUGH MARCH). ALSO, ALL SIDE SLOPES SHALL BE SODDED OR SEEDED AND MULCHED WITHIN 7 DAYS DURING WET SEASON AND 14 DAYS DURING THE DRY SEASON.
10. CONTRACTOR SHALL PROVIDE BROOM TRUCK-SWEEPER TO CLEAN/REMOVE EXCESS DIRT/DEBRIS FROM ROADWAY INTERSECTIONS, OFF RAMPS, ETC. AS NECESSARY.

DEMOLITION NOTES:

1. CONTRACTOR SHALL PROTECT ADJACENT RIGHT-OF-WAYS AND ALL ADJACENT PROPERTIES FROM DAMAGE BY SEDIMENTATION OR OTHER POTENTIAL CONSTRUCTION RELATED CAUSES.
2. CONTRACTOR SHALL REMOVE ALL NON-REUSABLE WASTE MATERIAL, AT THE OWNER'S DIRECTION, FOR DISPOSAL OFF-SITE. DISPOSAL SHALL CONFORM TO ALL APPLICABLE REGULATIONS.
3. CONTRACTOR SHALL ACQUAINT THEMSELF WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE PERMITS AND BE RESPONSIBLE FOR PROTECTING ANY EXISTING FACILITY SO DESIGNATED OR INDICATED TO BE UTILIZED IN THE WORK.
4. CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR TREES WHICH ARE TO BE SAVED, WHETHER SHOWN IN THE DRAWINGS OR DESIGNATED IN THE FIELD. CONTRACTOR SHALL COORDINATE WITH THE OWNER REGARDING TREES AND OTHER LANDSCAPING TO BE SALVAGED. CONTRACTOR TO REFER TO LATEST APPROVED LANDSCAPE DRAWINGS FOR ALL TREE/PLANT PROTECTION DETAILS AND SPECIFICATIONS. CONTRACTOR TO NOTIFY ENGINEER OF RECORD AND LANDSCAPE ARCHITECT OF RECORD IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
5. CONTRACTOR TO MAINTAIN UTILITY SERVICES (WATER, SEWER, POWER, TELEPHONE, CABLE, GAS) TO EXISTING SITE. ANY DISRUPTIONS OF SERVICE ARE TO BE PREVIOUSLY COORDINATED WITH THE OWNER.
6. CONTRACTOR SHALL BE ADVISED THAT WHILE EXCAVATING AND WORKING WITHIN PROJECT LIMITS, PREVIOUSLY DEMOLISHED OR UNDEMOLISHED MATERIAL MAY BE ENCOUNTERED. CONTRACTOR SHALL COLLECT AND STOCKPILE ENCOUNTERED DEMOLISHED MATERIAL WITHIN AN AREA DESIGNATED ON-SITE BY THE OWNER.

DRAINAGE:

1. ALL STORM DRAINAGE PIPE GREATER THAN 12 INCHES IN DIAMETER SHALL BE AT A MINIMUM CLASS III, WALL B, REINFORCED CONCRETE PIPE (RCP), PER ASTM C-76.
2. ALL STORM DRAINAGE INLETS AND PIPES SHALL BE PROTECTED FROM SILT, SAND AND DEBRIS DURING CONSTRUCTION. ANY ACCUMULATION WITHIN THE STORM DRAINAGE PIPE SYSTEM SHALL BE REMOVED WITHOUT PUMPING OR FLUSHING INTO THE STORMWATER SYSTEM. STORM DRAINAGE SYSTEM SHALL BE CLEANED AND FREE OF DEBRIS PRIOR TO OWNER'S ACCEPTANCE.
3. PROVIDE SOCK DRAIN IN FRONT OF ALL DRAINAGE CURB INLETS AND PROVIDE FILTER FABRIC UNDER THE GRATE OF ALL DITCH BOTTOM INLETS AFTER INITIAL COMPLETION OF THE DRAINAGE STRUCTURES. MAINTAIN THESE MEASURES DAILY (WHICH MAY INCLUDE FULL REPLACEMENT AT THE DISCRETION OF THE OWNER OR OWNER'S REPRESENTATIVE) TO MINIMIZE SILT ACCUMULATION IN THE STORM DRAINAGE SYSTEM.
4. IN ADDITION TO THE REQUIREMENTS IN THE ENGINEER'S SPECIFICATIONS, ALL DRAINAGE SYSTEM CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH ORANGE COUNTY ROAD CONSTRUCTION SPECIFICATIONS.
5. ALL STORM DRAINAGE MANHOLE COVERS ARE TO BE THE STANDARD ORANGE COUNTY COVERS. CONTRACTOR TO PROTECT MANHOLE COVERS FROM DAMAGE THROUGHOUT PROJECT CONSTRUCTION.
6. SOD OR RE-SOD AREAS DISTURBED DURING CONSTRUCTION OF STORM DRAINAGE THROUGH EXISTING FACILITIES OR PONDS.
7. ALL DRAINAGE PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC CLOTH PER FDOT STANDARD PLANS 430-001.

ROADWAY:

1. SAWCUT EXISTING PAVEMENT AT THE CONNECTIONS TO THE EXISTING ROADWAYS TO FORM A SMOOTH TRANSITION.
2. HORIZONTAL GEOMETRY REFERS TO ROADWAY EDGE OF PAVEMENT.
3. ALL CURBS (EXISTING OR NEW) SHALL BE PROTECTED FROM CONSTRUCTION DAMAGE. ALL CHIPPED OR CRACKED PORTIONS OF CURB SHALL BE REPLACED. IN ADDITION, ANY MORTAR, CONCRETE, SOIL AND OTHER DEPOSITS OR STAINS SHALL BE CLEANED TO RETURN THE CURBS TO THEIR ORIGINAL CONDITION.
4. UPON COMPLETION OF FINAL ASPHALT PAVING, TOOL AND CLEAN ALL MANHOLE AND VALVE COVERS OF DIRT, DEBRIS AND ASPHALT. ALL MANHOLE AND VALVE COVERS SHALL BE CLEAN AND OPERABLE PRIOR TO OWNER'S ACCEPTANCE.
5. ALL TEMPORARY DEAD END ROADS SHALL HAVE FDOT CASE III SIGNS.
6. IN ADDITION TO THE REQUIREMENTS IN THESE PLANS, ALL ROADWAY CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH ORANGE COUNTY ROAD CONSTRUCTION SPECIFICATIONS AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. WHERE CONFLICTS EXIST BETWEEN REQUIREMENTS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
7. A LICENSE IS REQUIRED FOR INSTALLATION OF UNDERGROUND UTILITIES.
8. CONTRACTOR SHALL USE FDOT CERTIFIED FIELD PERSONNEL FOR MAINTENANCE OF TRAFFIC OPERATIONS.

SIGNING AND PAVEMENT MARKINGS:

1. ALL FINAL PAVEMENT MARKINGS SHALL BE ALKYD THERMOPLASTIC, UNLESS OTHERWISE NOTED. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE PAINT.
2. CONTRACTOR TO RELOCATE EXISTING SIGNAGE WHERE INDICATED ON THE DRAWINGS.
3. SIGNING AND PAVEMENT MARKINGS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE ROADWAY AND TRAFFIC DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND ORANGE COUNTY STANDARDS UNLESS OTHERWISE NOTED.
4. PAVEMENT MARKINGS AT ALL EXISTING/PROPOSED INTERFACE LOCATIONS ARE TO MATCH IN TERMS OR ALIGNMENT AND COLOR.
5. CAUTION SHOULD BE EXERCISED IN THE INSTALLATION OF POST MOUNTED SIGNS IN ORDER TO PREVENT POSSIBLE DAMAGE TO BURIED UTILITIES.
6. SIGN ASSEMBLY LOCATIONS SHOWN ON THE DRAWINGS WHICH ARE IN CONFLICT WITH LIGHTING, UTILITIES, DRIVEWAYS, CURB RAMPS, ETC., MAY BE ADJUSTED SLIGHTLY AS DIRECTED BY THE OWNER'S REPRESENTATIVE. EXTREME LOCATION CHANGES MUST BE APPROVED BY THE ENGINEER OF RECORD.
7. ALL EXISTING SIGNS ARE TO REMAIN UNLESS OTHERWISE NOTED. ANY SIGNS TO REMAIN THAT ARE DAMAGED DURING THE CONSTRUCTION PROCESS SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
8. ANY EXISTING PAVEMENT MARKINGS SCHEDULED TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTORS EXPENSE.

STORMWATER MANAGEMENT AND DRAINAGE SYSTEM NOTES:

1. ON-SITE STORMWATER MANAGEMENT AND DRAINAGE SYSTEM WILL BE PRIVATELY OWNED AND MAINTAINED.

CIVIL STANDARD ABBREVIATIONS

AASHO	AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABD	ABANDONED
AC	ACRE
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
ARVV	AIR RELEASE VACUUM VALVE
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
---	---
BFP	BACKFLOW PREVENTER
B/L	BASE LINE
BLDG	BUILDING
BLK	BLOCK
BM	BENCHMARK
BEND11	11.25° PIPE FITTING
BEND22	22.5° PIPE FITTING
BEND45	45° PIPE FITTING
BEND90	90° PIPE FITTING
BO	BLOW-OFF
BOC	BACK OF CURB
BRG	BEARING
BS	BOTTOM STEP ELEVATION
BV	BUTTERFLY VALVE
BW	BOTTOM OF WALL
---	---
C&G	CURB AND GUTTER
CB	CATCH BASIN
CD	CONDENSATE PIPE
CEM	CEMENT
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CV	CHECK VALVE
C/L	CENTER LINE
CL	CLEARANCE
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CMPA PIPE	CORRUGATED METAL ARCH
CND	CONDUIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCT
CONT	CONTINUOUS
CONTR	CONTRACTOR
COR	CORNER
CPLG	COUPLING
CTG	COATING
CTR	CENTER
CATV	CABLE TELEVISION
CULV	CULVERT
CY	CUBIC YARD
---	---
D	DEGREE OF CURVATURE
DA	DRAINAGE AREA
DBL	DOUBLE
DDCVA	DOUBLE DETECTOR CHECK VALVE ASSEMBLY
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRAIN
DWG	DRAWING
---	---
E	EAST
EA	EACH
ECC	ECCENTRIC
EL	ELEVATION
ELEC	ELECTRIC
ELLIP	ELLIPTICAL
EOP	EDGE OF PAVEMENT
EQ	EQUATION
ESMT	EASEMENT
EX ELEV	EXISTING ELEVATION
EXIST	EXISTING
---	---
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
F.F.	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIT	FITTING
FLG	FLANGE
FM	FORCEMAIN
FL	FLOW LINE
FT	FEET OR FOOT
---	---
GA	GUAGE
GAL	GALLON
GALV	GALVANIZED
GM	GAS MAIN
GPM	GALLONS PER MINUTE
GR	GRADE
GRT	GRATE
GRTG	GRATING
GV	GATE VALVE
GPH	GALLONS PER HOUR
---	---
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
HP	HORSEPOWER
HT	HEIGHT
HWL	HIGH WATER LEVEL
---	---
ID	INSIDE DIAMETER
IN	INCHES
INL	INLET
INSTL	INSTALL
INTR	INTERIOR
IP	IRON PIPE
INV	INVERT
IW	INDUSTRIAL WATER (FIRE)
---	---
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
---	---
L	LENGTH OF CURVE
LAT	LATERAL
LBS	POUNDS
LBR	LIMEROCK BEARING RATIO
LF	LINEAR FEET
LOW	LIMIT OF WORK
LP	LIGHT POLE
LT	LEFT
LWL	LOW WATER LEVEL
---	---
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEG	MATCH EXISTING GRADE
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT
---	---
N	NORTH
N&C	NAIL AND CAP
NE	NORTHEAST
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
NWE	NORMAL WATER ELEVATION
---	---
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
OVFL	OVERFLOW
OVHD	OVERHEAD
---	---
PVMT	PAVEMENT
PCC	POINT OF COMPOUND CURVE
PEP	POLYETHYLENE PIPE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
PC	POINT OF CURVE
POJ	PUSH ON JOINT
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PRM	PERMANENT REFERENCE MONUMENT
PROP	PROPOSED
PROJ	PROJECT
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PV	PLUG VALVE
PW	POTABLE WATER
---	---
Q	DISCHARGE (FLOW RATE)
---	---
R	RADIUS
RNG	RANGE
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
RD	ROOF DRAIN
RED	REDUCER
REINF	REINFORCED
REQD	REQUIRED
RP	RADIUS POINT
RPZBFP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
RT	RIGHT
R/W	RIGHT-OF-WAY
---	---
S	SOUTH
SCHED	SCHEDULE
SE	SOUTHEAST
SECT	SECTION
SGL	SINGLE
SHTG	SHEETING
SL	SLOPE
SPCG	SPACING
SPEC	SPECIFICATION
SF	SQUARE FOOT
SQ	SQUARE
SAN	SANITARY SEWER
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STS	STORM SEWER
SW	SOUTHWEST, SIDEWALK
SYM	SYMMETRICAL
STR	STRUCTURE
---	---
T	TANGENT
TBM	TEMPORARY BENCHMARK
TBR	TO BE REMOVED
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICKNESS
TOB	TOP OF BANK
TRANS	TRANSITION
TS	TOP STEP ELEVATION
TW	TOP OF WALL
TWP	TOWNSHIP
TYP	TYPICAL
---	---
UD	UNDERDRAIN W/SOCK
USC&GS	U.S. COASTAL & GEODETIC SURVEY (NOW NATIONAL GEODETIC SURVEY)
USGS	U.S. GEODETIC SURVEY
UTC	UNDERGROUND TELEPHONE CABLE
UTVC	UNDERGROUND TELEVISION CABLE
UELEC	UNDERGROUND ELECTRICAL CABLE
---	---
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VPC	VERTICAL POINT OF CURVE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
---	---
W	WEST
W/	WITH
WM	WATERMAIN
W/O	WITHOUT
WWF	WELDED WIRE FABRIC
WT	WEIGHT
---	---
X	COORDINATE DISTANCE (EAST-WEST)
XING	CROSSING
RD	ROAD
---	---
Y	COORDINATE DISTANCE (NORTH-SOUTH)
YDS	YARDS
---	---

PGAV DESTINATIONS
PECKHAM GUYTON ALBERS & VIETS, INC.
2001 North Broadway, Suite 1000, St. Louis, MO 63102
(314) 231-7318
WWW.PGAV.COM

LandDesign.
100 S. ORANGE AVE., SUITE 200
ORLANDO, FL 32801
407.270.7800
WWW.LANDDESIGN.COM
ENG. FIRM LICENSE # C-9520

Accessibility for Persons with Disabilities :
This drawing contains layouts and elements critical to providing Access for Disabled Persons. Contractor shall provide verification and certification of Compliance with the applicable accessibility regulations.

Design Intent :
Outlines, sketches, or references of possible theming, exhibits, and graphics on this drawing are for design intent; to show or describe the character, scope, relationships, forms, size and appearance of the Project, major materials and systems, in general, their quality levels, performance standards, requirements, or criteria. Engineered design, means, methods, manufacture, installation, code compliance and coordination of all trades/parties are being provided by the Contractor, including any engineering documents signed and sealed by a qualified Engineer licensed to practice by the authority having jurisdiction. The Architect/Designer's review of submittals is for the purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

GENERAL NOTES AND ABBREVIATIONS

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA
SHEET NUMBER: C02.010

811 Know what's below. Call before you dig.

EXISTING AQUATICA WATER PARK

EXISTING SURFACE PARKING

INTERNATIONAL DRIVE

10' SANITARY SEWER EASEMENT

10' SANITARY SEWER EASEMENT

EXIT

C02.101
C02.201
C02.251
C02.261
C02.271
C02.281
C02.301

PGAV DESTINATIONS
PECKHAM GUYTON ALBERS & VIETS, INC.
2001 North Broadway, Suite 1000, St. Louis, MO 63102
(314) 231-7318
WWW.PGAV.COM

LandDesign.
100 S. ORANGE AVE., SUITE 200
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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

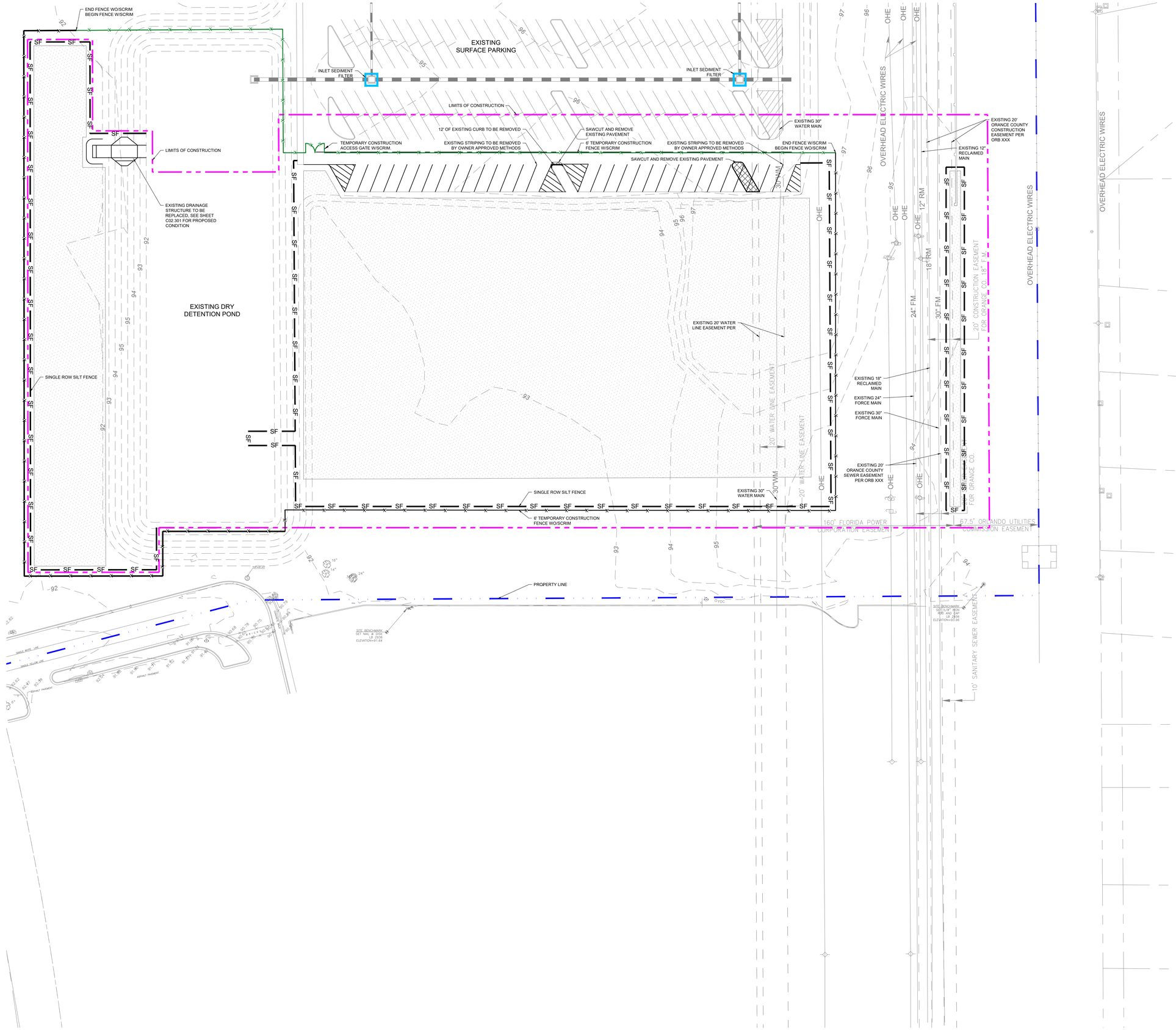
ISSUE FOR BID / ISSUE FOR PERMIT

DRAWING KEY MAP

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA

SHEET NUMBER
C02.020

1" = 60'
0 30 60 120



LEGEND

- LIMITS OF CONSTRUCTION.
- PROPERTY LINE
- SF — SINGLE ROW SILT FENCE.
- 6' HIGH TEMPORARY CONSTRUCTION FENCE W/SCRIM.
- 6' HIGH TEMPORARY CONSTRUCTION FENCE WO/SCRIM.
- ASPHALT PAVEMENT TO BE SAWCUT AND REMOVED
- LIMITS OF CLEARING
- INLET SEDIMENT FILTER

GENERAL NOTES

1. CONTRACTOR TO COORDINATE ALL UTILITY OUTAGES WITH PROPERTY OWNER PRIOR TO THE DEMOLITION AND CONSTRUCTION OF ALL UTILITY WORK.

PGAV DESTINATIONS
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2001 North Broadway, Suite 1000, St. Louis, MO 63102
(314) 231-7318
WWW.PGAV.COM

LandDesign.
100 S. ORANGE AVE., SUITE 200
ORLANDO, FL 32801
407.270.7800
WWW.LANDDESIGN.COM
ENG. FIRM LICENSE # C-0620

Accessibility for Persons with Disabilities :
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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

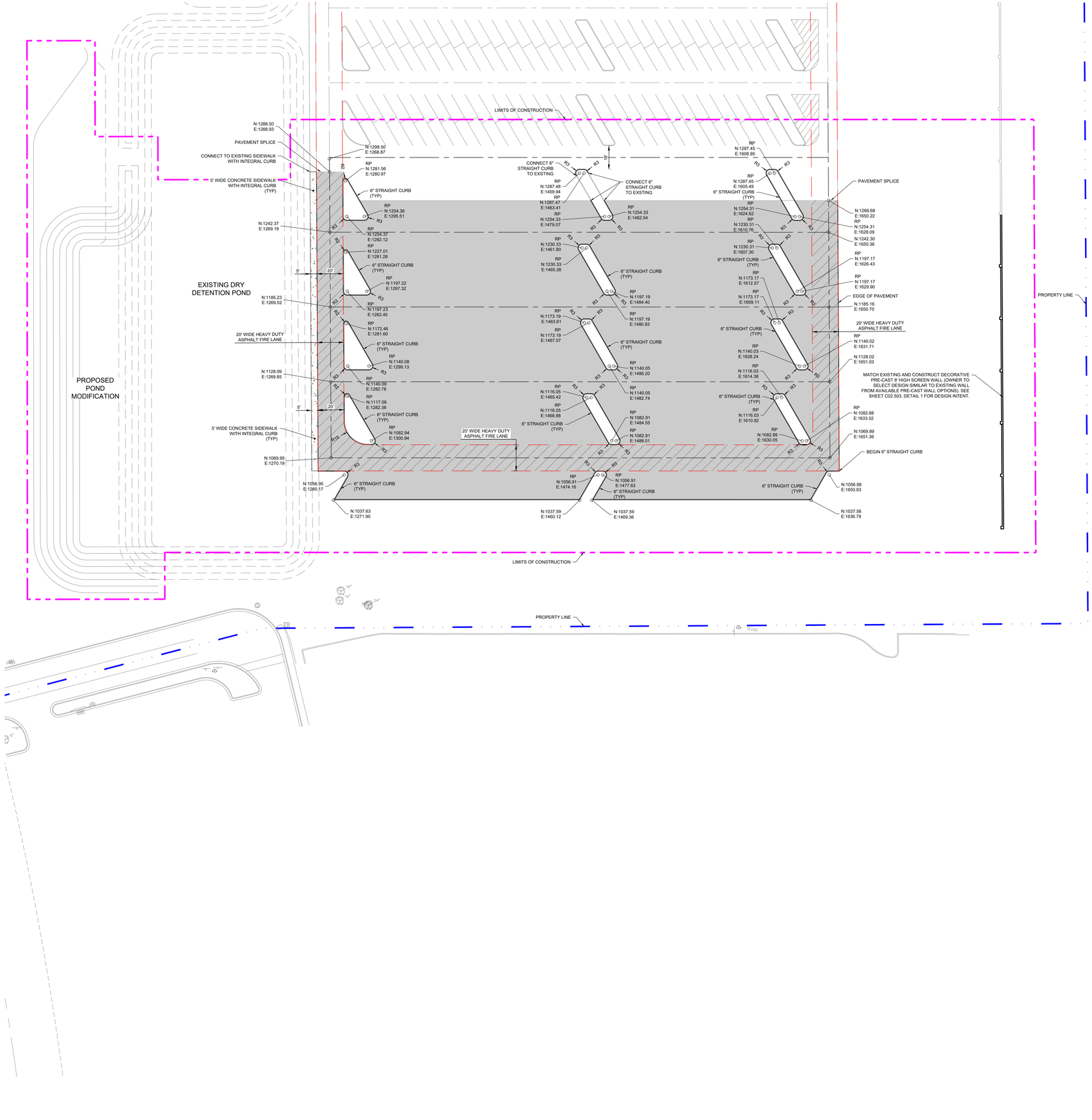
ISSUE FOR BID / ISSUE FOR PERMIT

DEMOLITION AND EROSION CONTROL PLAN

DATE	DECEMBER 19, 2023
DR	CK
PGAV 65009-10	CLIENT SEA

SHEET NUMBER
C02.101

1" = 30'
0 15 30 60



LEGEND

- LIMITS OF CONSTRUCTION.
- PROPERTY LINE.
- 20' WIDE FIRE LANE.
- PROPOSED CONSTRUCTION.
- EXISTING TO REMAIN.
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED 4" THICK CONCRETE, 3000 PSI.
- PROPOSED LIGHT POLE (LP) LOCATION.

NOTES:

1. CONTRACTOR SHALL OBTAIN CAD FILES FROM OWNER FOR LAYOUT, GEOMETRY AND CONSTRUCTION STAKING OF ALL PROPOSED IMPROVEMENTS.
2. ALL NON-PAVED DISTURBED AREAS WILL BE SODDED OR LANDSCAPED (SEE LANDSCAPE PLANS FOR DETAILS)
3. ALL DIMENSIONS AND COORDINATES ARE TO FACE OF CURB AND/OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
4. ALL CURB FACE RADII FOR LANDSCAPE ISLANDS SHALL BE 2' TYPICAL UNLESS OTHERWISE NOTED.
5. CONCRETE SIDEWALK RAMPS SHALL BE CONSTRUCTED W/ MAX 1:12 SLOPE & DETECTABLE WARNING SHALL BE TRUNCATED DOMES (COLOR TO BE PICKED BY PROPERTY OWNER) AS APPROVED BY APPLICABLE LOCAL, STATE & FEDERAL REQUIREMENTS & INSTALLED ACCORDING TO FDOT STD. INDEX NO. 522-02 OR A.D.A. STANDARDS, WHICHEVER IS MORE RESTRICTIVE. TAPER CURBS AS NEEDED WHERE APPLICABLE.
6. ALL SITE CONSTRUCTION MUST BE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT AND THE FLORIDA ACCESSIBILITY CODE.

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

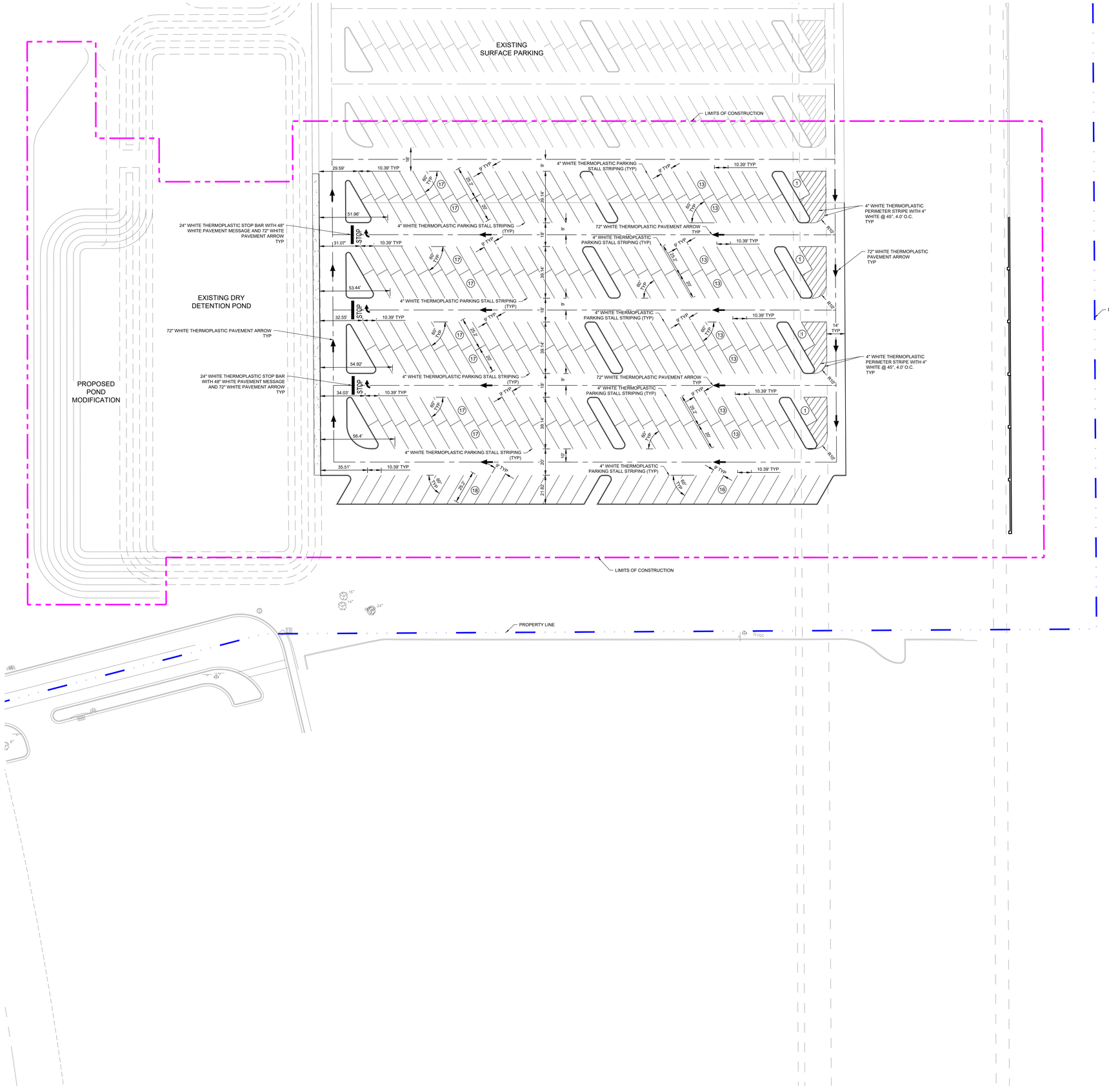
AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

SITE PLAN

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA
SHEET NUMBER: C02.201

1" = 30'
0 15 30 60



LEGEND

- LIMITS OF CONSTRUCTION.
- PROPERTY LINE.
- PROPOSED CONSTRUCTION.
- EXISTING TO REMAIN.
- (6) NUMBER OF PROPOSED PARKING SPACES.
- TRAFFIC SIGN.
- TRAFFIC SIGN WITH BOLLARD BASE.

NOTES:

1. CONTRACTOR SHALL OBTAIN CAD FILES FROM OWNER FOR LAYOUT, GEOMETRY AND CONSTRUCTION STAKING OF ALL PROPOSED IMPROVEMENTS.
2. ALL DIMENSIONS AND COORDINATES ARE TO FACE OF CURB AND/OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
3. ALL CURB FACE RADII FOR LANDSCAPE ISLANDS SHALL BE 2' TYPICAL UNLESS OTHERWISE NOTED.
4. ALL SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM CONTROL DEVICES.

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO
SEAWORLD PARKS & ENTERTAINMENT

AQO 2024 Expansion Parking
Orlando, FL

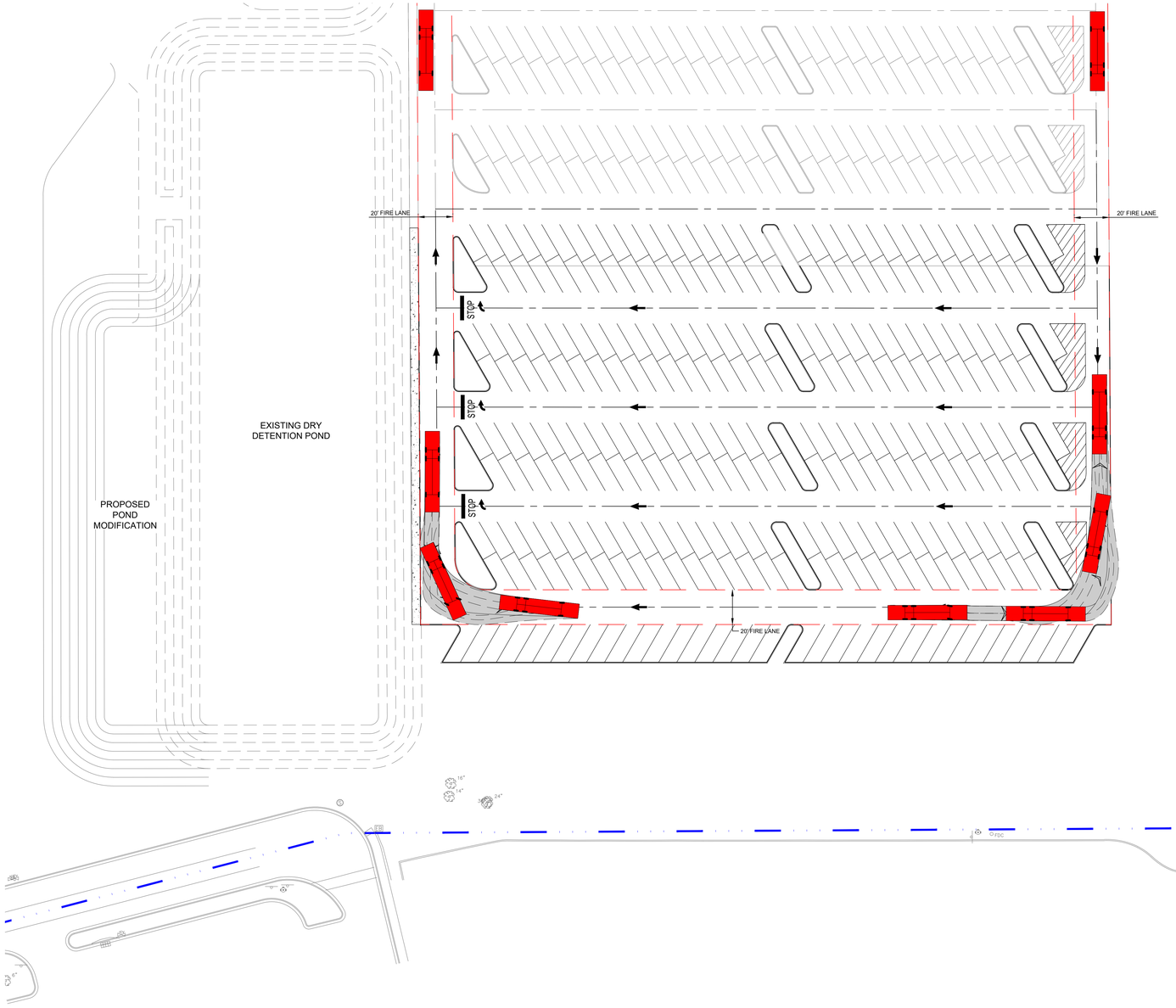
ISSUE FOR BID / ISSUE FOR PERMIT

SIGNAGE AND STRIPING PLAN

DATE	DECEMBER 19, 2023
DR	CK
PGAV	65009-10
CLIENT	SEA

SHEET NUMBER
C02.251

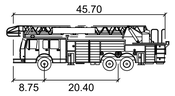
1" = 30'
0 15 30 60



LEGEND

FIRE LANE

PROPERTY LINE



Orange County 95-Platform

		feet
Width	:	8.33
Track	:	6.0
Lock to Lock Time	:	6.0
Steering Angle	:	44.2
Min Centerline Radius	:	29.0

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

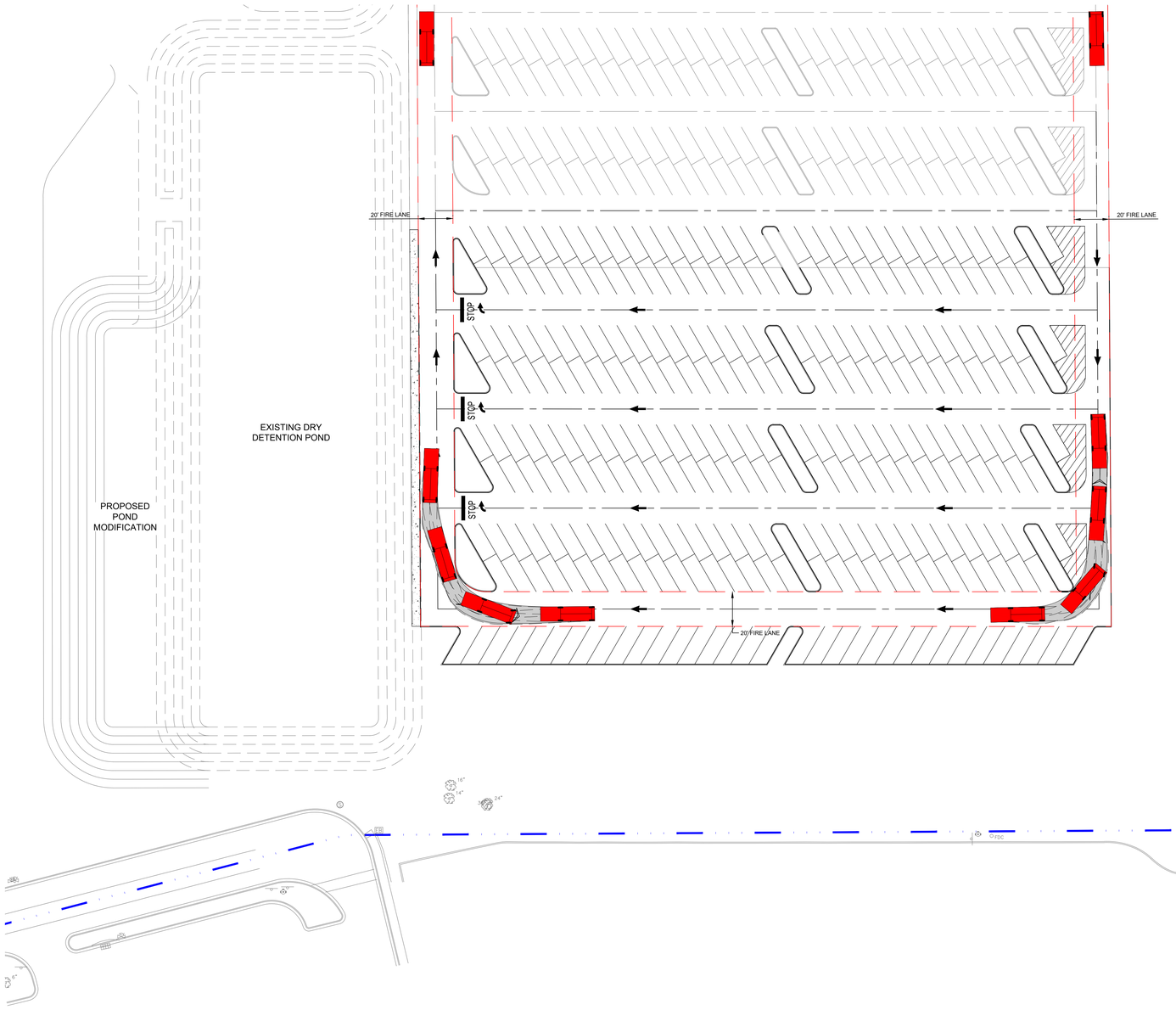
EMERGENCY ACCESS PLAN

DATE DECEMBER 19, 2023

BR	CK
PGAV 65009-10	CLIENT SEA

SHEET NUMBER
C02.261

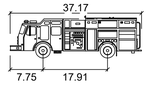
1" = 30'
0 15 30 60



LEGEND

FIRE LANE

PROPERTY LINE



Orange County HP75 Aerial Ladder

	feet
Width	: 8.33
Track	: 8.33
Lock to Lock Time	: 6.0
Steering Angle	: 31.8
Min Centerline Radius	: 34.0

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

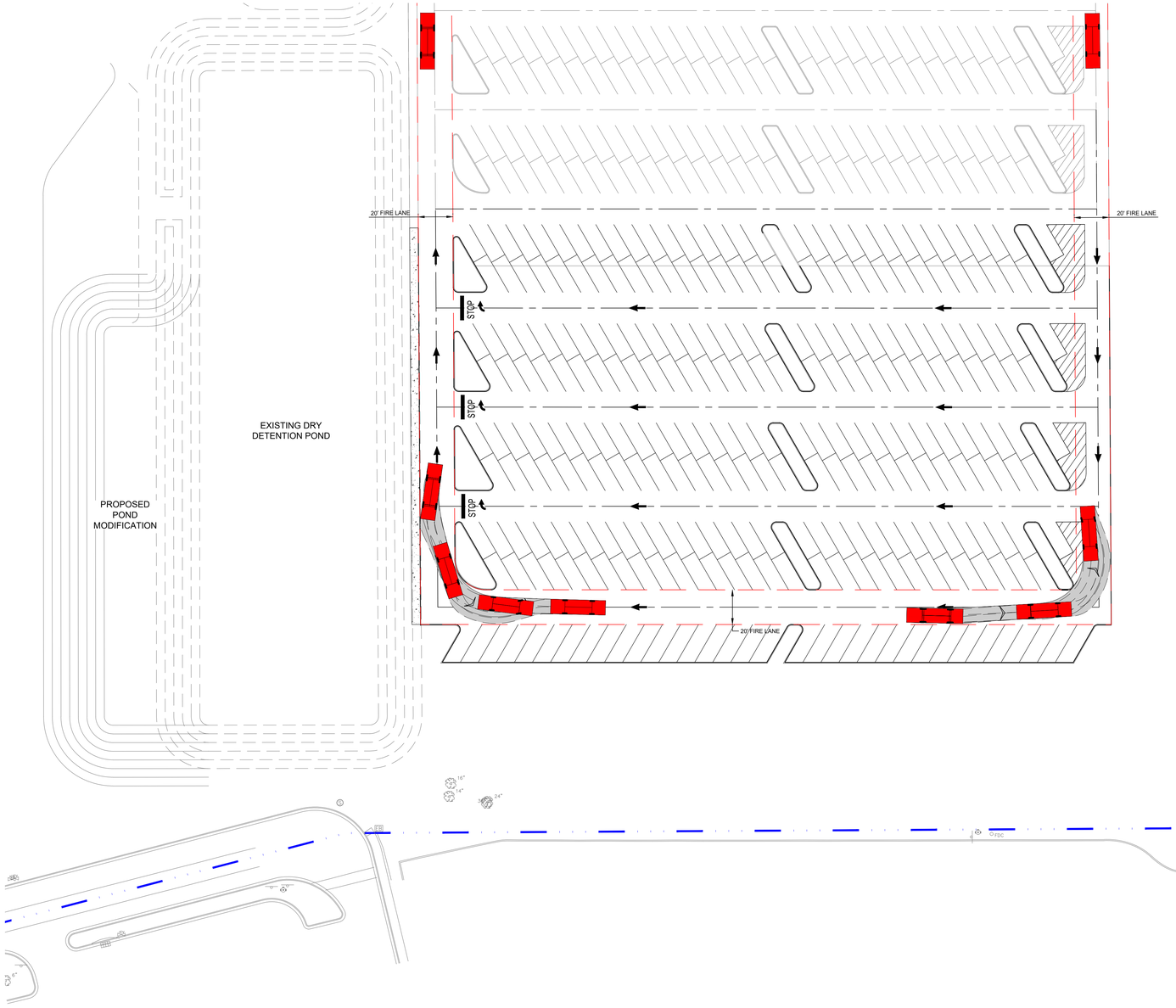
EMERGENCY ACCESS PLAN

DATE DECEMBER 19, 2023

BR	CK
PGAV 65009-10	CLIENT SEA

SHEET NUMBER
C02.271

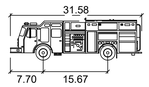
1" = 30'
0 15 30 60



LEGEND

FIRE LANE

PROPERTY LINE



Orange County Pumper

	feet
Width	: 8.33
Track	: 8.33
Lock to Lock Time	: 6.0
Steering Angle	: 31.8
Min Centerline Radius	: 30.0

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

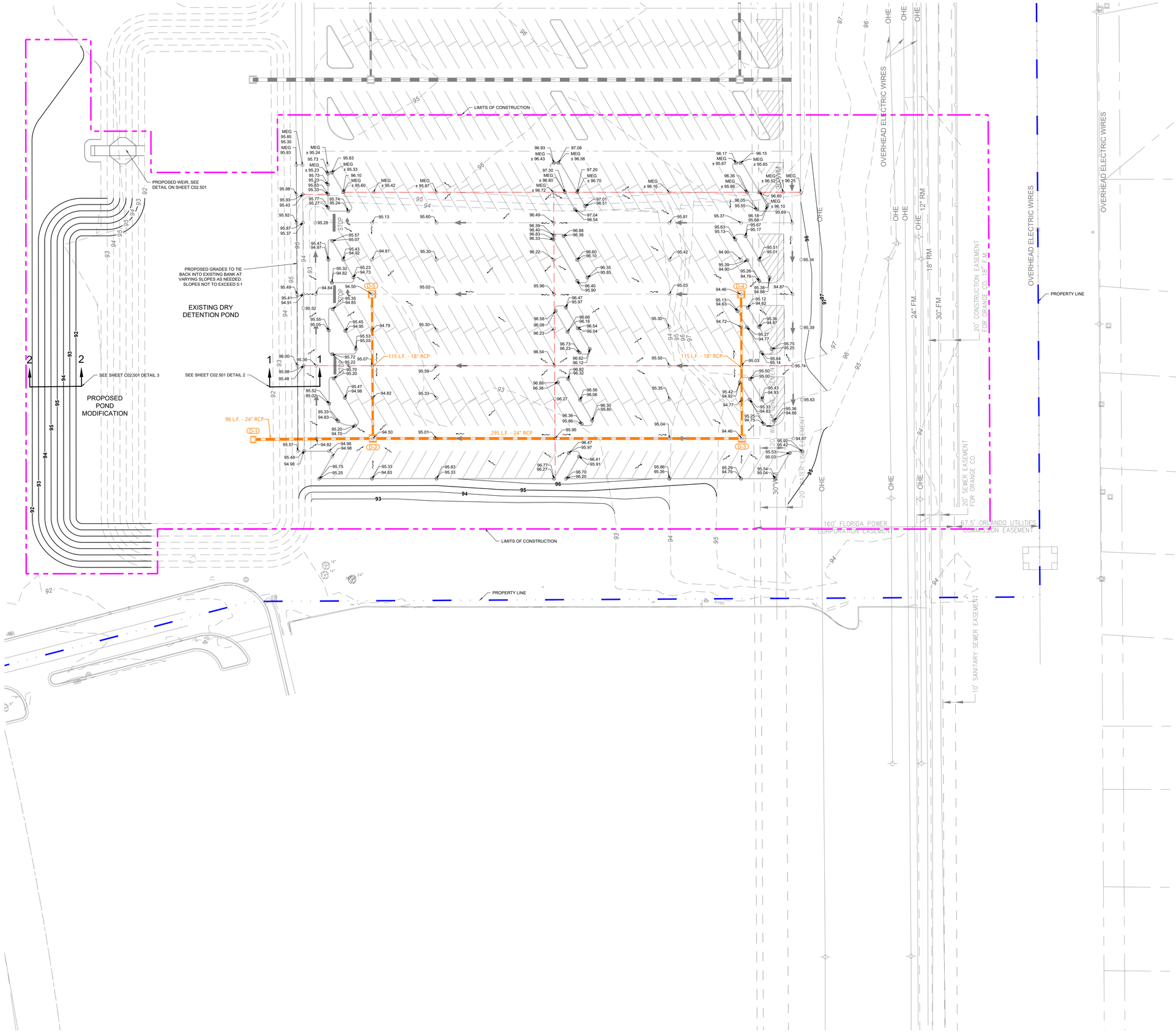
EMERGENCY ACCESS PLAN

DATE DECEMBER 19, 2023

BR	CK
PGAV 65009-10	CLIENT SEA

SHEET NUMBER
C02.281

1" = 30'
0 15 30 60



LEGEND

- LIMITS OF CONSTRUCTION.
- PROPERTY LINE.
- D-1 / 75 LF-24" RCP / D-2 — PROPOSED STORM SEWER SYSTEM.
- MEG — MATCH EXISTING GRADE.
- FLOW DIRECTION.
- PROPOSED GRADE BREAK.
- 90.80 — PROPOSED SPOT ELEVATION.
- EXISTING STORM SEWER SYSTEM.
- 8"PW — EXISTING WATER MAIN.
- 8"S — EXISTING SANITARY GRAVITY MAIN.
- 8"FM — EXISTING FORCE MAIN.
- ELEC — EXISTING ELECTRIC CONDUIT.
- 4"COMM — EXISTING COMMUNICATIONS CONDUIT.
- 2"MPG — EXISTING GAS MAIN.

NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS / INVERTS AND NOTIFY ENGINEER OF FINDINGS PRIOR TO BEGINNING OF WORK AND ORDERING MATERIALS.
2. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY UPON IDENTIFICATION OF UNKNOWN CONFLICTS.
3. DATUM NOTE: ELEVATIONS ARE BASED ON THE SWO VERTICAL DATUM.

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DRAINAGE STRUCTURE TABLE

D-1 (FDOT TYPE D INLET (BUBBLE UP))
RIM: 92.00
N:1069.1330
E:1219.4786
24" RCP IN (E) = 87.69'

D-2 (FDOT TYPE G INLET)
RIM: 94.50
N:1069.9404
E:1315.1914
18" RCP IN (N) = 88.07'
24" RCP IN (E) = 88.07'
24" RCP OUT (W) = 88.07'

D-3 (FDOT TYPE G INLET)
RIM: 94.46
N:1069.8887
E:1610.1966
18" RCP IN (N) = 89.25'
24" RCP OUT (W) = 89.25'

D-4 (FDOT TYPE G INLET)
RIM: 94.46
N:1185.1688
E:1609.5293
18" RCP OUT (S) = 89.71'

D-5 (FDOT TYPE G INLET)
RIM: 94.50
N:1185.2206
E:1314.5240
18" RCP OUT (S) = 88.53'

1" = 30'
0 15 30 60

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ORLANDO, FL 32801
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WWW.LANDDESIGN.COM
ENG. FIRM LICENSE # C-9520

REVISION NO.	REVISION DATE

AQUATICA ORLANDO — SEAWORLD WATERPARK

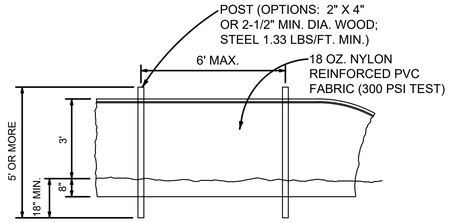
AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

GRADING AND DRAINAGE PLAN

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA

SHEET NUMBER
C02.301

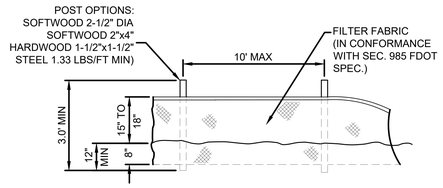


STAKED TURBIDITY BARRIER

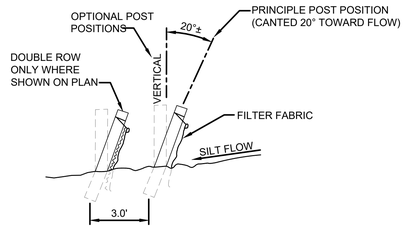
GENERAL NOTES

1. STAKED TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED TURBIDITY BARRIER, LF.

1 STAKED TURBIDITY BARRIER DETAIL

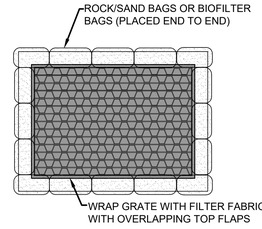


ELEVATION

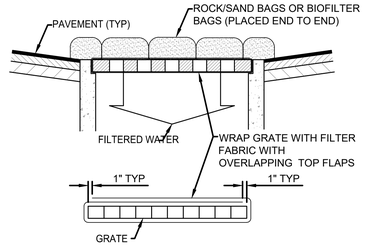


SECTION

2 SILT FENCE DETAIL

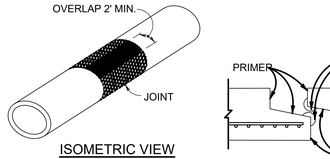


PLAN

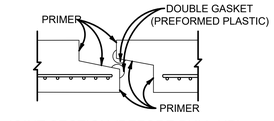


SECTION

3 INLET SEDIMENT FILTER DETAIL

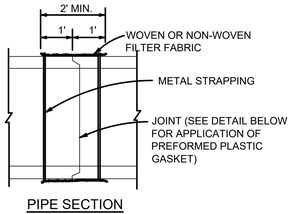


ISOMETRIC VIEW



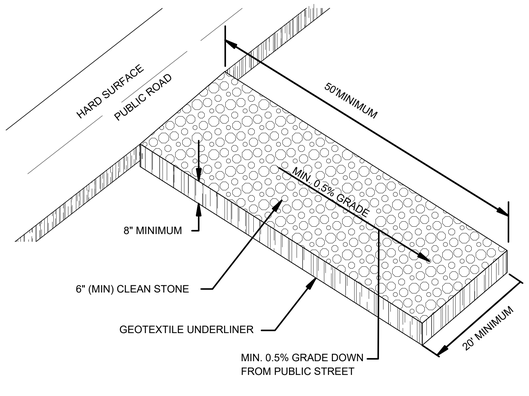
JOINT SECTION (BEFORE PULL-UP)

NOTE: DETAIL APPLIES FOR ALL PIPE TYPES, CONCRETE PIPE SHOWN.



PIPE SECTION

4 FILTER FABRIC JACKET DETAIL



5 TEMPORARY CONSTRUCTION ACCESS DETAIL

PGAV DESTINATIONS
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100 S. ORANGE AVE., SUITE 200
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WWW.LANDDESIGN.COM
ENG. FIRM LICENSE # C-9520

Accessibility for Persons with Disabilities :
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Design Intent :
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REVISION NO.	REVISION DATE

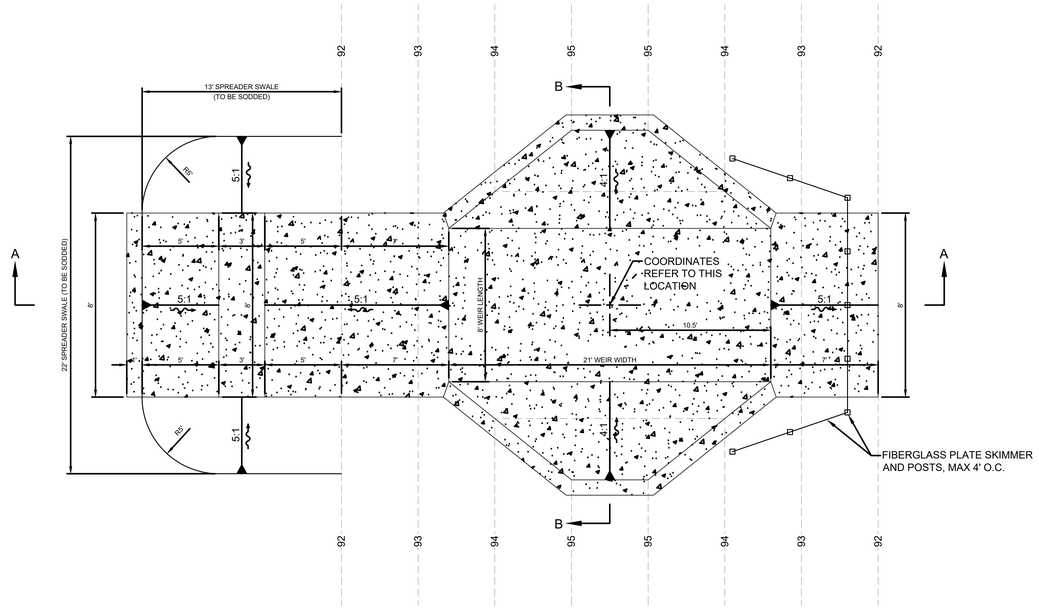
AQUATICA ORLANDO
SeaWorld Parks & Entertainment

AQO 2024 Expansion Parking
Orlando, FL

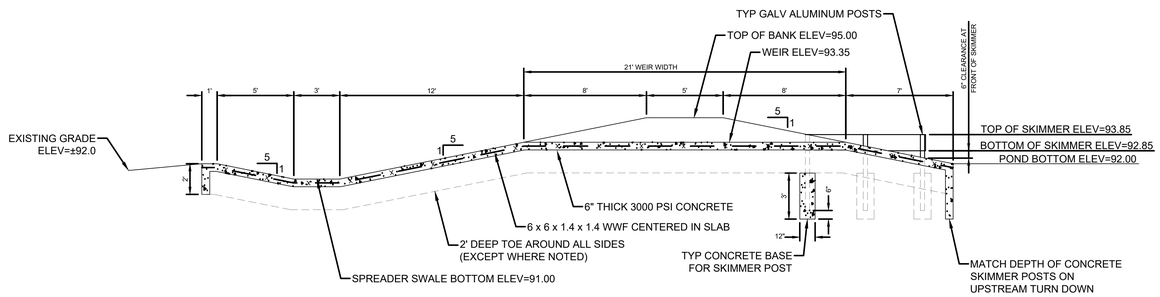
ISSUE FOR BID / ISSUE FOR PERMIT

EROSION CONTROL AND DRAINAGE DETAILS

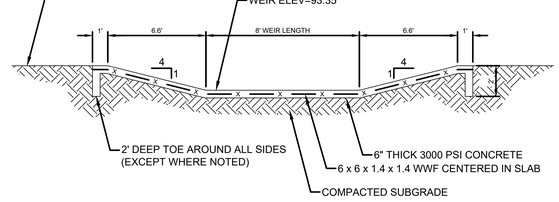
DATE: DECEMBER 19, 2023
DR: CK:
PGAV: 65009-10 CLIENT: SEA
SHEET NUMBER: C02.500



PLAN VIEW

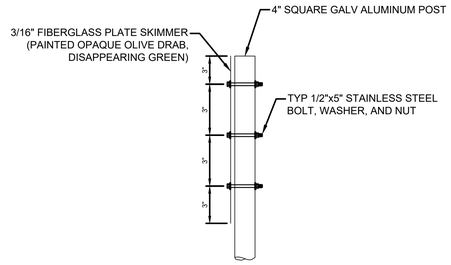


SECTION A-A

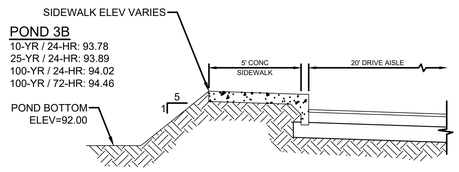


SECTION B-B

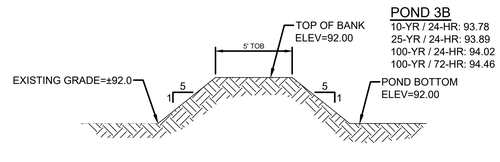
1 DRY POND BROAD CRESTED WEIR CONTROL STRUCTURE DETAIL
NTS



SKIMMER MOUNTING DETAIL



2 DRY SWALE SECTION 1
NTS



3 DRY SWALE SECTION 2
NTS

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407.270.7800
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REVISION NO.	REVISION DATE

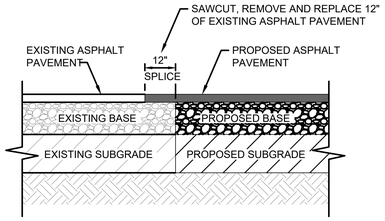
AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

EROSION CONTROL & DRAINAGE DETAILS

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV #: 65009-10 | CLIENT: SEA
SHEET NUMBER: C02.501



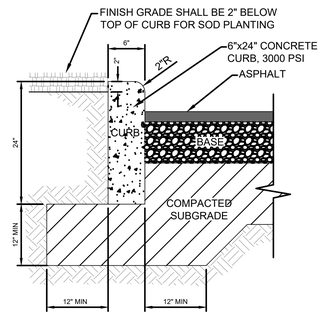
NOTES:

1. PROVIDE ASPHALT SPLICE AT ALL TRANSITIONS BETWEEN NEW AND EXISTING PAVEMENT SECTIONS.

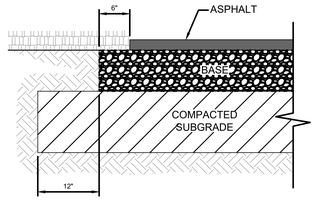
2. 12-INCH MINIMUM ASPHALT REMOVAL, MAY VARY AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. (MAYBE MORE BUT NOT LESS THAN 12 INCHES)

3. RESTORE EXISTING BASE TO ORIGINAL CONDITION OR BETTER.

4 ASPHALT PAVEMENT SPLICE DETAIL
NTS



1 PAVEMENT EDGE DETAIL WITH 6" STRAIGHT CURB
NTS



2 PAVEMENT EDGE DETAIL WITH NO CURB
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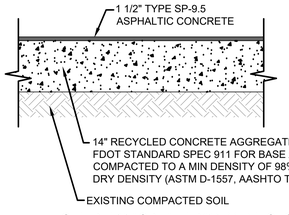

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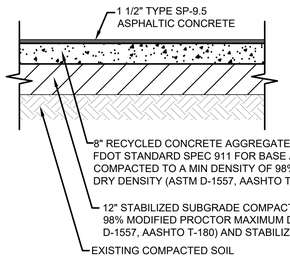
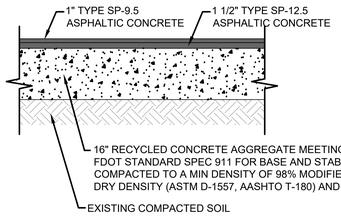
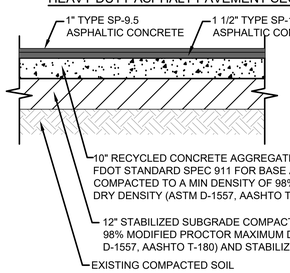


LIGHT DUTY ASPHALT PAVEMENT SECTION OPTION 2

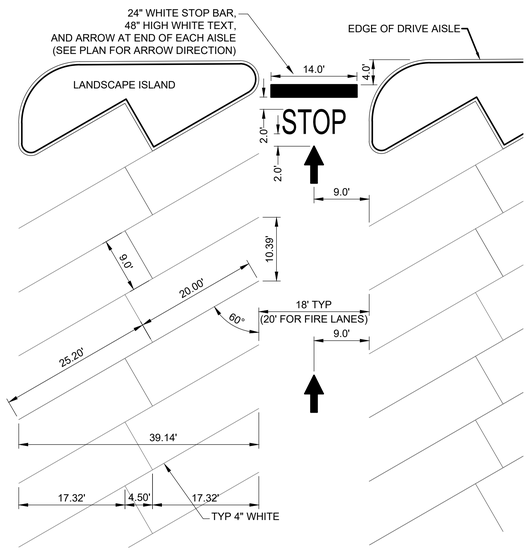


HEAVY DUTY ASPHALT PAVEMENT SECTION OPTION 1

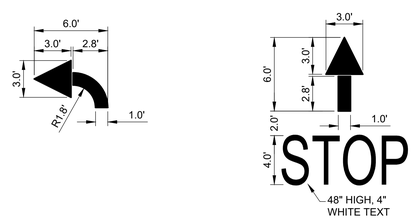


HEAVY DUTY ASPHALT PAVEMENT SECTION OPTION 2

3 PAVEMENT SECTION SPECIFICATIONS
NTS

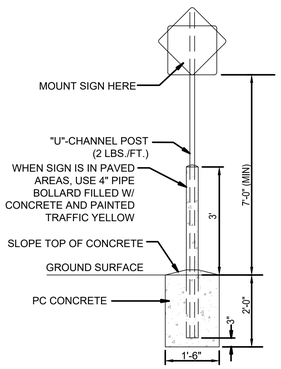


PARKING STALL AND AISLE PAVEMENT MARKINGS



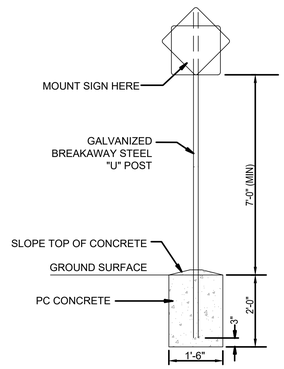
ONSITE PAVEMENT ARROWS AND TEXT

7 SIGNAGE AND PAVEMENT MARKING DETAILS
NTS



ALL REGULATORY SIGNS SHALL BE RETRO REFLECTIVE USING DG-CUBED REFLECTIVE MATERIAL AND SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

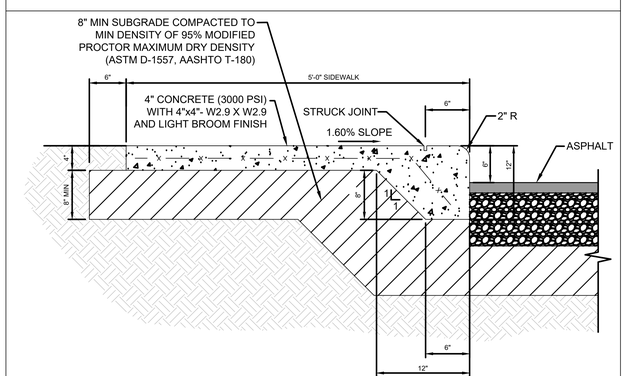
WITH BOLLARD PROTECTION



ALL REGULATORY SIGNS SHALL BE RETRO REFLECTIVE USING DG-CUBED REFLECTIVE MATERIAL AND SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

WITHOUT BOLLARD PROTECTION

5 SIGN AND STAND DETAIL
NTS



SAWCUT CONTROL JOINTS @ 5' O.C.
EXPANSION JOINTS @ 15' O.C.

6 4" CONCRETE RAISED SIDEWALK DETAIL
NTS

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PECKHAM GUYTON ALBERS & VIETS, INC.
2001 North Beneficial, Suite 1000, St. Louis, MO 63131
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ORLANDO, FL 32801
407.270.7800
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ENG. FIRM LICENSE # C-9520

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REVISION NO.	REVISION DATE

AQUATICA ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

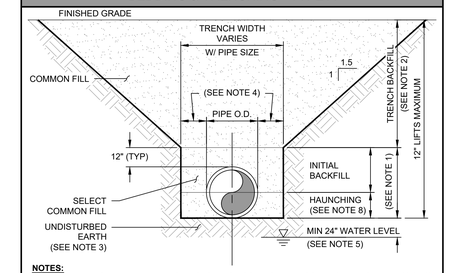
SITE DETAILS

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA

SHEET NUMBER
C02.502

APPENDIX A — STANDARD DRAWINGS

BEDDING & TRENCHIING - TYPE A



NOTES:

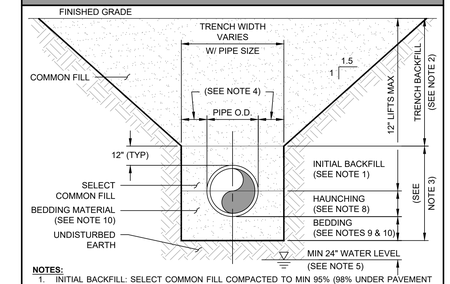
1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL IN ACCORDANCE WITH "TYPE B" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
4. 15-IN MAX. (12-IN MIN.) FOR PIPE DIAMETER LESS THAN 24-IN AND 24-IN MAX (12-IN MIN) FOR PIPE DIAMETER 24-IN AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATERING AS REQUIRED.
6. ALL PIPE SHALL BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.
8. FOR GRAVITY SEWER, THE FIRST LIFT SHALL BE PLACED TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND TAMP.
9. CONTRACTOR SHALL USE BEDDING AND TRENCHING - TYPE B DETAIL FOR OVER EXCAVATION AND WHEN UNSUITABLE MATERIALS ARE ENCOUNTERED IN THE EXCAVATION.

ORANGE COUNTY UTILITIES
STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

FIGURE A101
10/10/2021

APPENDIX A — STANDARD DRAWINGS

BEDDING & TRENCHING - TYPE B



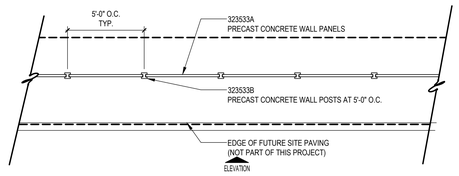
NOTES:

1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL IN ACCORDANCE WITH "TYPE B" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
4. 15-IN MAX. (12-IN MIN.) FOR PIPE DIAMETER LESS THAN 24-IN AND 24-IN MAX (12-IN MIN) FOR PIPE DIAMETER 24-IN AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATERING AS REQUIRED.
6. ALL PIPE SHALL BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.
8. FOR GRAVITY SEWER, THE FIRST LIFT SHALL BE PLACED TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND TAMP.
9. BEDDING DEPTH SHALL BE 4-IN MINIMUM FOR PIPE DIAMETER UP TO 12-IN AND 6-IN MINIMUM FOR PIPE DIAMETER 16-IN AND LARGER.
10. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF REQUIRED BEDDING MATERIAL BELOW THE PIPE. UTILITIES SHALL DETERMINE REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION IN THE FIELD.

ORANGE COUNTY UTILITIES
STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL

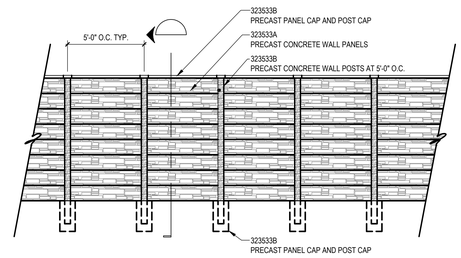
FIGURE A102
10/10/2021

2 BEDDING AND TRENCHING DETAILS
NTS

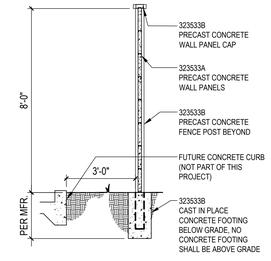


ELEVATION

PLAN VIEW
1/4" = 1'-0"



ELEVATION
1/4" = 1'-0"



SECTION
3/8" = 1'-0"

NOTE: DESIGN INTENT IS BASED UPON AVAILABLE INFORMATION OF THE EXISTING WALL KNOWN AT THE TIME OF THESE PLANS. WALL DESIGN SHALL BE UPDATED BASED UPON -PRE-CAST AVAILABILITY. THE OWNER SHALL SELECT AN 8' HIGH PRE-CAST WALL AS CLOSE TO THE EXISTING WALL AS POSSIBLE.

1 PRECAST CONCRETE WALL DESIGN INTENT
(FOR INFORMATION PURPOSES ONLY)

PGAV DESTINATIONS
PEKHAM GRIFTON ALBERS & VIETS, INC.
2901 North Broadway, Suite 1000, St. Louis, MO 63102
(314) 231-7318
WWW.PGAV.COM

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REVISION NO.	REVISION DATE

AQUATICA by SeaWorld Parks & Entertainment
ORLANDO

AQO 2024 Expansion Parking
Orlando, FL

ISSUE FOR BID / ISSUE FOR PERMIT

PRE-CAST WALL AND UTILITY DETAILS

DATE: DECEMBER 19, 2023
DR: | CK:
PGAV: 65009-10 | CLIENT: SEA
SHEET NUMBER: C02.503

SECTION B

AtkinsRéalis

Project Starboard

Canal C-5 Reconfiguration Study

SeaWorld Parks & Entertainment

13 December 2023

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WS Atkins, Inc. assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 56 pages including the cover.

Document history

Document title: Canal C-5 Reconfiguration Study

Document reference: DC-WP-SWMR

Revision	Purpose description	Originated	Checked	Reviewed	Authorized	Date
1.0	Valencia WCD	RAR				12/13/23

Client signoff

Client	SeaWorld Parks & Entertainment
Project	Project Starboard
Job number	100085256
Client signature/date	

Contents

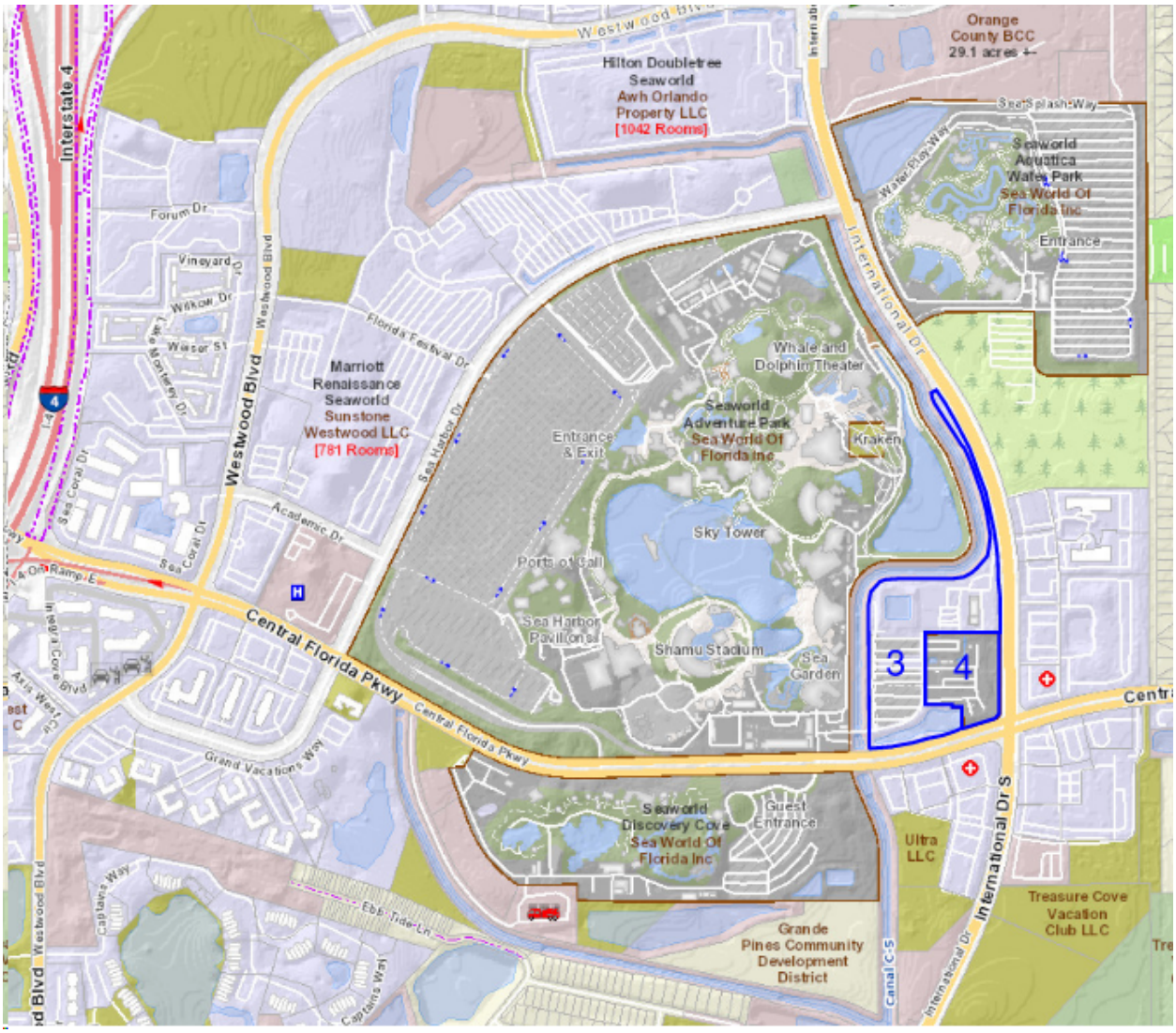
Executive Summary

SeaWorld Parks & Entertainment (Owner) would like to change the current use of parcels 12-24-28-7874-00-020 and 12-24-28-7874-00-021 (Parcels #3 and #4, respectively. See Figure 1: Parcels of Interest) and develop a hotel/resort with approximately 504 keys. To maximize land use, the Owner is proposing the following options for reconfiguration of the portion of existing Canal C-5 that runs adjacent to the west side of Parcel #3:

- Option #1: This option would capture Canal C-5 near the beginning of the turn to the west along the north side of Parcel #3. Canal C-5 would enter a 42 ft. wide x 15 ft. high rectangular channel section. The proposed storm system consisting of twin culverts at the road crossings and the rectangular channel would convey flows along the existing Canal C-5 path on the west side of Parcel #3 and direct the flows toward the existing twin 10 ft. x 5 ft. culverts that cross under Central Florida Parkway (CFP).
- Option #2: This option would capture Canal C-5 near the end of the turn to the west along the north side of Parcel #3. Canal C-5 would enter twin 12 ft. x 10 ft. box culverts. The proposed twin culvert system would convey flows along the existing Canal C-5 path on the west side of Parcel #3 and direct them toward the proposed twin 11 ft. x 6 ft. culverts that cross under the western entrance to Parcel #3 and continue toward the existing twin 10 ft. x 5 ft. culverts that cross under CFP.
- Option #3: This option would relocate the portion of Canal C-5 running along the west side of Parcel #3 to the east of said Parcel. This portion of Canal C-5 would enter twin 10 ft. x 6 ft. culverts that convey flow under the proposed entrance and connect to a 42 ft. wide x 15 ft. high rectangular channel section that continues to the south along International Drive (I-Drive) and turns west at the intersection of International Drive (I-Drive) and CFP. From here it would continue west along CFP and connect to the existing twin 10 ft. x 5 ft. box culverts that cross under CFP.

This study analyzes each option and compares it to the current configuration for Canal C-5. The goal is to achieve a near zero rise in water surface elevation while using the minimum rectangular canal cross section to reduce the drainage easement, without impacting the upstream systems discharging into Canal C-5. The following pages will describe the available data, the proposed options models, provide a comparison to the existing conditions model, and provide a conclusion.

Figure 1: Parcels of Interest



Source: Orange County Florida Property Appraiser web site.

ID	Parcel Number	Owner Name	Physical Address
3	12-24-28-7874-00-020	SeaWorld of Florida, Inc.	10700 International Dr., Orlando, FL 32821
4	12-24-28-7874-00-021	SeaWorld of Florida, Inc.	10890 International Dr., Orlando, FL 32821

1. Design Requirements

The Design Requirement of the following study is to achieve a near zero rise in the water surface elevations of Canal C-5 with the three (3) Options presented in the Executive Summary.

2. Stormwater Analysis

The stormwater modeling computer program Hydrologic Engineering Center River Analysis System (HEC-RAS) version 6.4.1 was used for analyzing the existing conditions and the different proposed options. The models use one-dimensional steady flow data extracted from the Water Control Plan (WCP) provided by the Valencia Water Control District (VWCD) and prepared by CPH Engineering on May 29, 1998 (Updated July 15, 2003). The VWCD also provided information on the Amil Gate S-501 (See Appendix A for Detail Sheet by Gee & Jenson Consulting Engineering, Inc. dated November 1972). This information was used to verify the Valencia Water Control Plan (Valencia WCP) and to establish the tailwater used. The VWCD also indicated that all elevations are in the National Geodetic Vertical Datum of 1929 (NGVD 29).

3. Existing Conditions

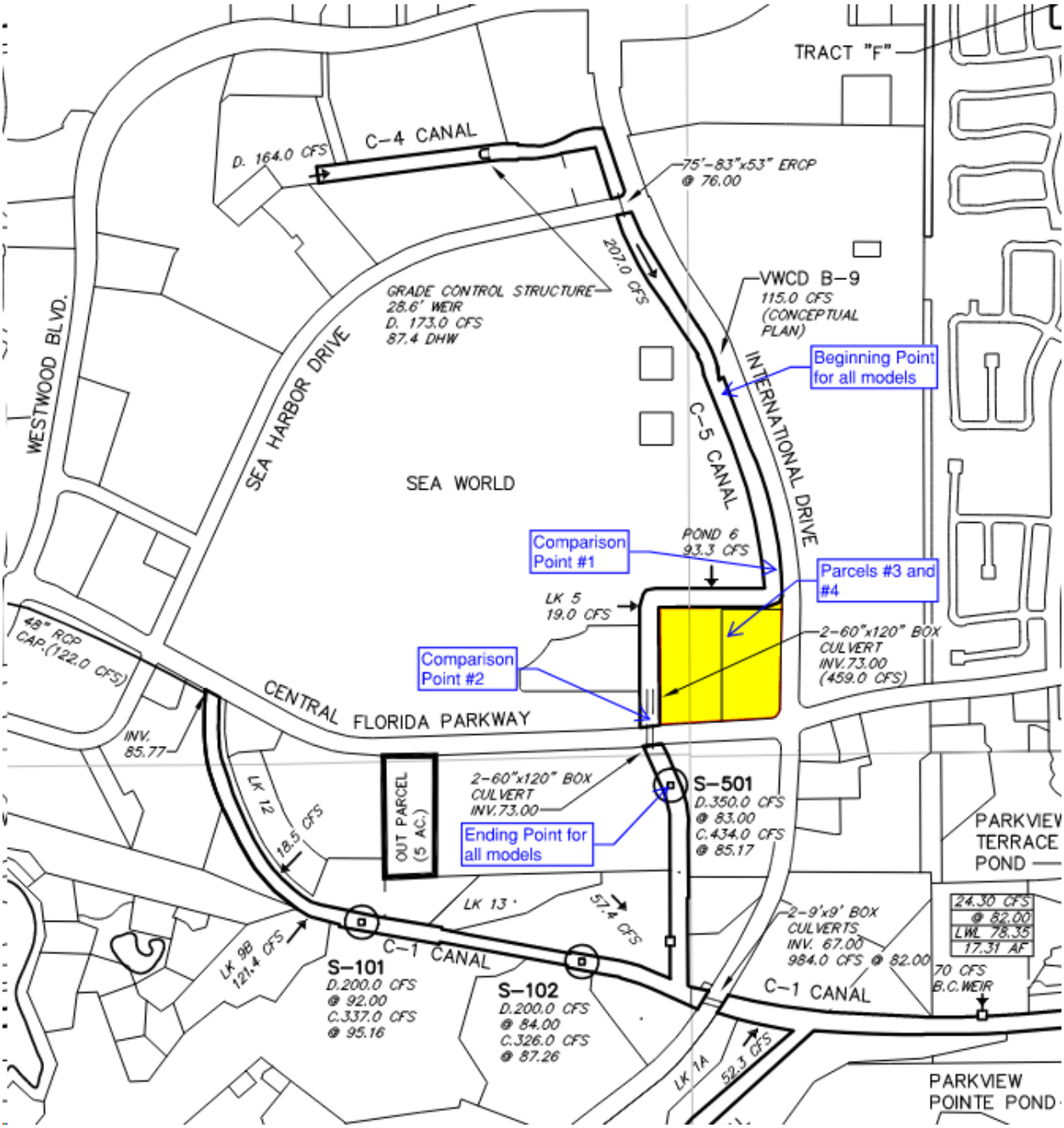
Canal C-5 currently runs south starting at an Elliptical Reinforced Concrete Pipe (ERCP) Culvert located at the intersection of Sea Harbor Drive and I-Drive. From this point, C-5 continues south along the western side of I-Drive until it reaches Parcel #3 (See Figure 1). At this point, Canal C-5 turns to the west along the north side of Parcel #3 and continues its flow toward the west side of said parcel. At the northwest corner of Parcel #3, Canal C-5 turns south and runs along the west side of said parcel, crossing under a set of twin 10 ft. x 5 ft. box culverts located at the western entrance to Parcel #3. Canal C-5 continues south until it reaches another set of twin 10 ft. x 5 ft. box culverts crossing under CFP. Canal C-5 continues south after CFP until it reaches Amil Gate S-501; this is where the water surface elevation and flows in Canal C-5 are controlled by the gate. After the S-501 gate, Canal C-5 continues south along the east side of the Discovery Cove property until it connects with Canal C-1.

For comparison purposes, this study is interested in the section of Canal C-5 that begins at a point approximately 200 feet north of the beginning of the bend to the west along the north side of Parcel #3 and ends at or after the existing twin 10 ft. x 5 ft. box culverts crossing under CFP. The tailwater assumed for the existing and all three (3) options is the elevation at the Amil Gate S-501 during a 25-year / 72-hour storm and indicated on the WCP to be **85.17 ft**. NGVD 29. The WCP indicates that a Total Flow of **459 cfs** is conveyed by the twin 10 ft. x 5 ft. box culverts crossing under CFP during a 25-year / 72-hour storm event. It is assumed that the studied section of Canal C-5 should convey the same flow. This information was used in creating the one-dimensional steady flow analysis for the existing conditions and the three (3) options. See Figure 2: Water Control Plan for more details.

The existing Canal C-5 alignment and profile information was gathered from available Survey Civil 3D data and a typical cross-section extracted from detail sheet C2.11 of Construction Plans for the SWF Pond ‘6’ Relocation as-builts dated 10/26/1996 (Application # 960806-5). See Appendix C for additional information.

The existing Canal C-5 is being considered as an excavated channel with “Dense weeds”. The Manning’s n Roughness Coefficient used in the existing channel model is **0.035**. See Appendix D for additional information.

Figure 2: Water Control Plan



Source: The Valencia Water Control Plan by CPH. Dated 05/29/1998.

3.1. Existing Conditions Model Results

All data previously described in the above section was used to create a HEC-RAS one-dimensional steady flow model. The following table shows the elevations at different points of interest along Canal C-5. See Appendix B for full table results, profile, and model layout.

Location	25-Year / 72-Hour Water Surface Elevation (ft.)
Comparison Point #1 (CP #1)	86.46
Comparison Point #2 (CP #2)	85.81

4. Canal C-5 Reconfiguration Options

4.1. Option #1: Place portion of Canal C-5 in rectangular section

As previously described, beginning at the northeast corner of Parcel #3, before the existing Canal C-5 turns to the west, the existing Canal C-5 will enter a 42 ft. wide x 15 ft. high rectangular channel section which will continue to convey the flow westward along the northern side of Parcel #3. The rectangular section of Canal C-5 through Parcel #3 will consist of a concrete bottom and vertical sheet piles on the sides. The sides are planned to be themed to enhance the look of Canal C-5 along the northern and western sides of Parcel #3. The rectangular channel will continue to the west until a proposed entrance to Parcel #3 which will be in the northwest corner of said parcel. At this point, twin 12 ft. x 10 ft. box culverts will convey the flow under the proposed entrance road. The Canal C-5 rectangular section will continue south along the western side of Parcel #3 until it reaches the existing twin 10 ft. x 5 ft. box culverts under the Western Entrance to the parcel. After this point, Canal C-5 will continue its existing path and configuration toward the existing twin 10 ft. x 5 ft. box culverts under CFP.

A HEC-RAS model was created using the same beginning and ending points indicated in the existing conditions (See Section 3). The same tailwater of **85.17 ft.**, assumed for the existing condition, was used for this option. The same Total Flow of **459 cfs** was also used to create the one-dimensional steady flow analysis used in HEC-RAS. The proposed rectangular section is considered as a “Concrete Bottom float finished with sides of Dry Rubble on Riprap” for possible theming sides. The Manning’s n Roughness Coefficient used in this Option model is **0.035**. See Appendix D for additional information.

4.1.1. Option #1 Model Results

All data previously described in the above section was used to create a HEC-RAS one-dimensional steady flow model. The following table shows the elevations at the beginning and end of the relocated portion of Canal C-5. See Appendix B for full table results, profile, and model layout.

Location	25-Year / 72-Hour Water Surface Elevation (ft.)
Comparison Point #1 (CP #1)	86.46
Comparison Point #2 (CP #2)	85.81

4.2. Option #2: Place portion of Canal C-5 in twin culverts

As previously described, beginning near the end of Canal C-5’s turn to the west along the north side of Parcel #3, a twin set of 12 ft. x 10 ft. box culverts will capture the flow and convey it along the existing Canal C-5 path on the west side of Parcel #3. The proposed storm system will connect to a point in the existing Canal C-5 located approximately 250 ft. north of the Box Culverts under the Western Entrance to Parcel

#3. It is recommended that the existing culverts be upsized to twin 12 ft. x 6 ft. box culverts. At this point, the flows will continue the same existing path toward the existing twin 10 ft. x 5 ft. box culverts located under CFP.

A HEC-RAS model was created using the same beginning and ending points indicated in the existing conditions (See Section 3). The same tailwater of **85.17 ft.**, assumed for the existing condition, was used for this option. The same Total Flow of **459 cfs** was also used to create the one-dimensional steady flow analysis used in HEC-RAS. The existing portions of Canal C-5 are being considered as excavated channel with "Dense weeds". The Manning's n Roughness Coefficient used in the existing portions of the channel model is **0.035**. See Appendix D for additional information.

4.2.1. Option #2 Model Results

All data previously described in the above section was used to create a HEC-RAS one-dimensional steady flow model. The following table shows the elevations at the beginning and end of the relocated portion of Canal C-5. See Appendix B for full table results, profile, and model layout.

Location	25-Year / 72-Hour Water Surface Elevation (ft.)
Comparison Point #1 (CP #1)	86.51
Comparison Point #2 (CP #2)	85.81

4.3. Option #3: Relocate portion of Canal C-5 to the east and place in rectangular section.

As previously described, beginning at the northeast corner of Parcel #3, before the existing Canal C-5 turns to the west, the existing Canal C-5 will enter twin 10 ft. x 6 ft. culverts that convey the flow under the proposed northeast entrance to Parcel #3 and convey flow toward the south where a 42 ft. wide x 15 ft. high rectangular channel section will continue to convey the flow southward along I-Drive. The rectangular section of Canal C-5 through Parcels #3 and #4 will consist of a concrete bottom and vertical sheet piles on the sides. The sides are planned to be themed to enhance the look of Canal C-5 along I-Drive. The rectangular section will continue until the southeast corner of Parcel #3. At this point, the rectangular section of Canal C-5 will begin to gradually turn toward the west (300 ft. radius) and continue along CFP until it reaches the existing twin 10 ft. x 5 ft. box culverts that cross under CFP.

A HEC-RAS model was created using the same beginning and ending points indicated in the existing conditions (See Section 3). The same tailwater of **85.17 ft.**, assumed for the existing condition, was used for this option. The same Total Flow of **459 cfs** was used to create the one-dimensional steady flow analysis used in HEC-RAS. The proposed rectangular section is considered as a "Concrete Bottom float finished with sides of Dry Rubble on Riprap" for possible theming sides. The Manning's n Roughness Coefficient used in this Option model is **0.035**. See Appendix D for additional information.

4.3.1. Option #3 Model Results

All data previously described in the above section was used to create a HEC-RAS one-dimensional steady flow model. The following table shows the elevations at the beginning and end of the relocated portion of Canal C-5. See Appendix B for full table results, profile, and model layout.

Location	25-Year / 72-Hour Water Surface Elevation (ft.)
Comparison Point #1 (CP #1)	86.38
Comparison Point #2 (CP #2 adjusted*)	85.82

* The location for CP #2 was adjusted to the headwall for the existing twin box culverts under CFP because Option #3 eliminates the need for box culverts under the existing Western Entrance to Parcel #3.

5. Summary

Below is a table summarizing the results of each of the models and comparing them to the existing conditions for the 25-year / 72-hour storm event.

Location	Water Surface Elevation (ft.) Existing	Water Surface Elevation (ft.) Option #1	Water Surface Elevation (ft.) Option #2	Water Surface Elevation (ft.) Option #3	Notes
Comparison Point #1 (CP #1)	86.46	86.46	86.51	86.38	Option #2 yielded an elevation slightly higher, but it is near negligible.
Comparison Point #2 (CP #2)	85.81	85.81	85.81	85.82	The location for this point on Option #3 was adjusted to the headwall for the existing twin box culverts under CFP because Option #3 eliminates the need for box culverts under the existing Western Entrance to Parcel #3

6. Conclusion

As indicated in the Summary, all Options yield water surface elevations very close to the elevations resulting from the existing conditions. Below are some key points taken into consideration when analyzing each option:

- Option #1: This option would capture Canal C-5 near the beginning of the turn to the west along the north side of Parcel #3. Canal C-5 would enter a 42 ft. wide x 15 ft. high rectangular channel section. This is a preferred option. This option provides additional area that the owner can use, while at the same time, maintaining a similar alignment for Canal C-5. This option also provides easy access for maintenance and inspection from the existing maintenance road on the west side of Canal C-5.
- Option #2: This option would capture Canal C-5 near the end of the turn to the west along the north side of Parcel #3 with twin 12 ft. x 10 ft. box culverts. This is not a preferred option due to placing Canal C-5 inside box culverts will make it difficult to inspect and provide regular maintenance.
- Option #3: This option would relocate the portion of Canal C-5 running along the west side of Parcel #3 to the east of said Parcel. This portion of Canal C-5 would enter twin 10 ft. x 6 ft. culverts that convey flow under the proposed entrance and connect to a 42 ft. wide x 15 ft. high rectangular channel section. This is not a preferred option. A large portion of Canal C-5 is being placed inside box culverts that will make it difficult to inspect and maintain. Also, while the rectangular section will make it easier to inspect, its proximity to I-Drive on the east side and future development on the west side, could pose maintenance accessibility problems.

Appendices

Appendix A. Exhibits

A.1. Location Map

A.2. Aerial Map

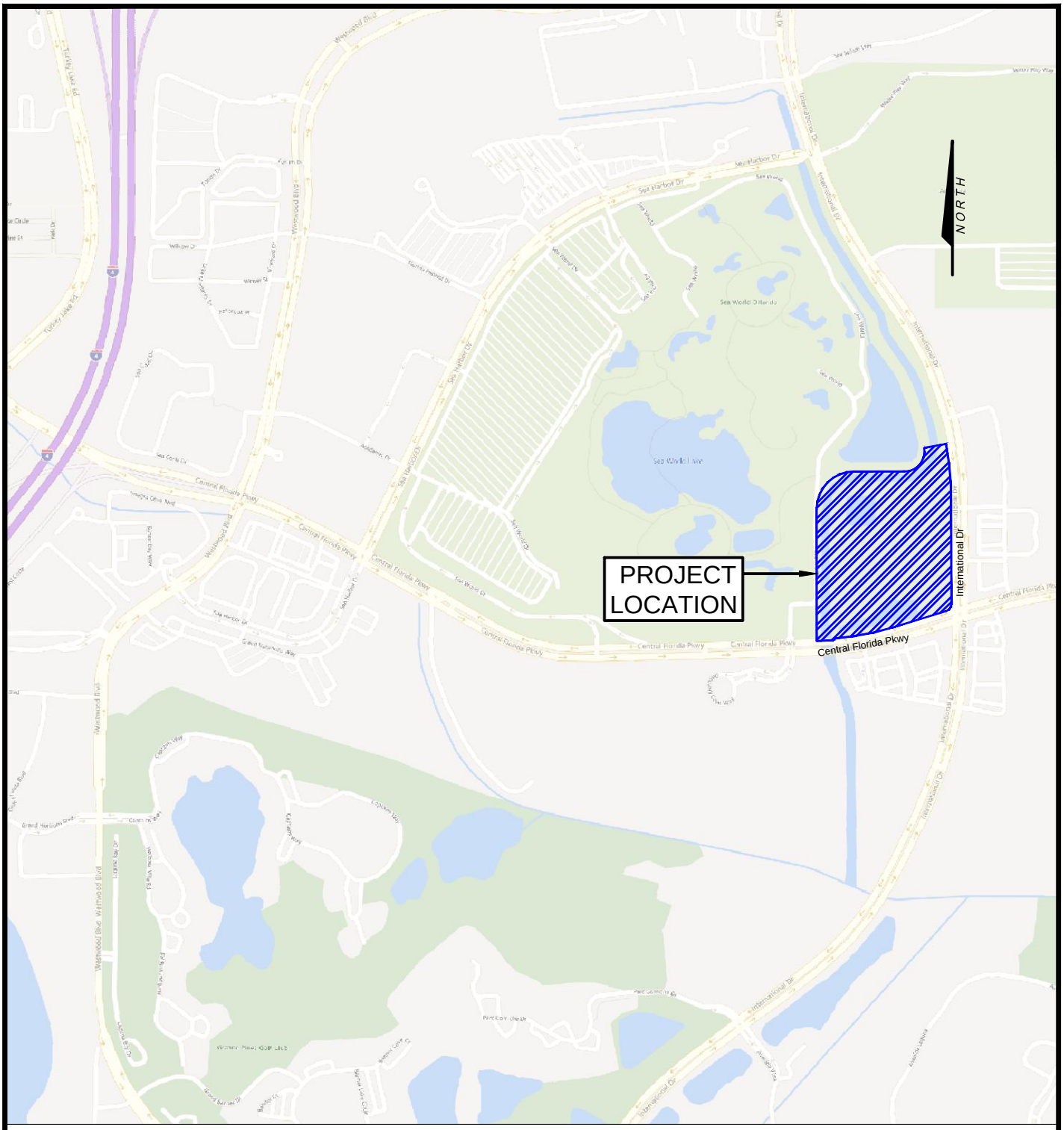
A.3. Valencia Water Control District Water Control Plan

A.4. Amil Gate S-501 Detail

A.5. Option #1 Exhibit

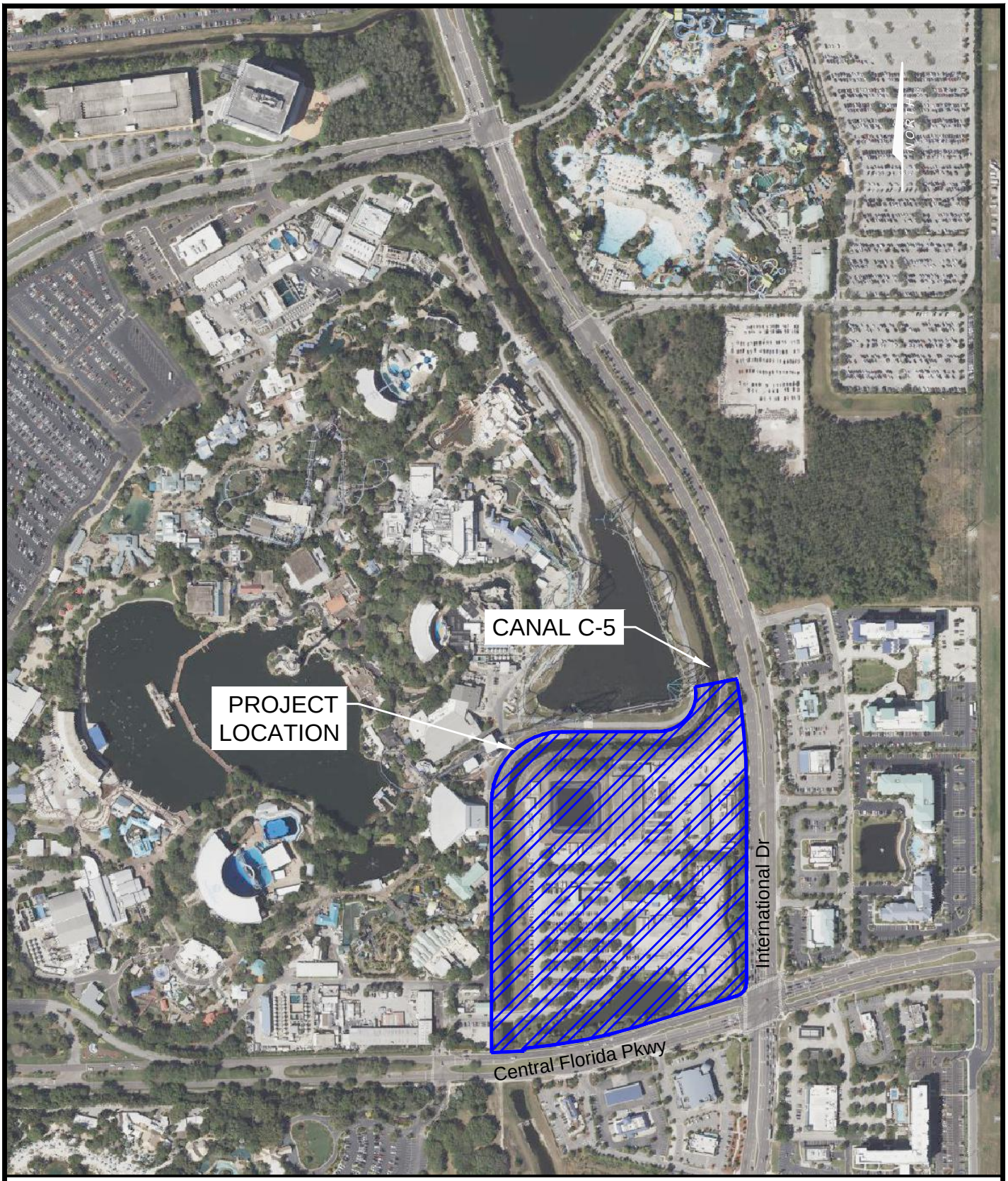
A.6. Option #2 Exhibit

A.7. Option #3 Exhibit



SOURCE: MICROSOFT CORPORATION 12/4/2023

AtkinsRéalis	EXHIBIT A.1. LOCATION MAP	Scale 1" = 1000'	Date 12/11/2023	
		Pg Size ANSI A (LETTER)	Dr RAR	Ck CMP



SOURCE: BING MAPS, 12/4/2023

AtkinsRéalis	EXHIBIT A.2. AERIAL MAP	Scale 1" = 500'	Date 12/11/2023	
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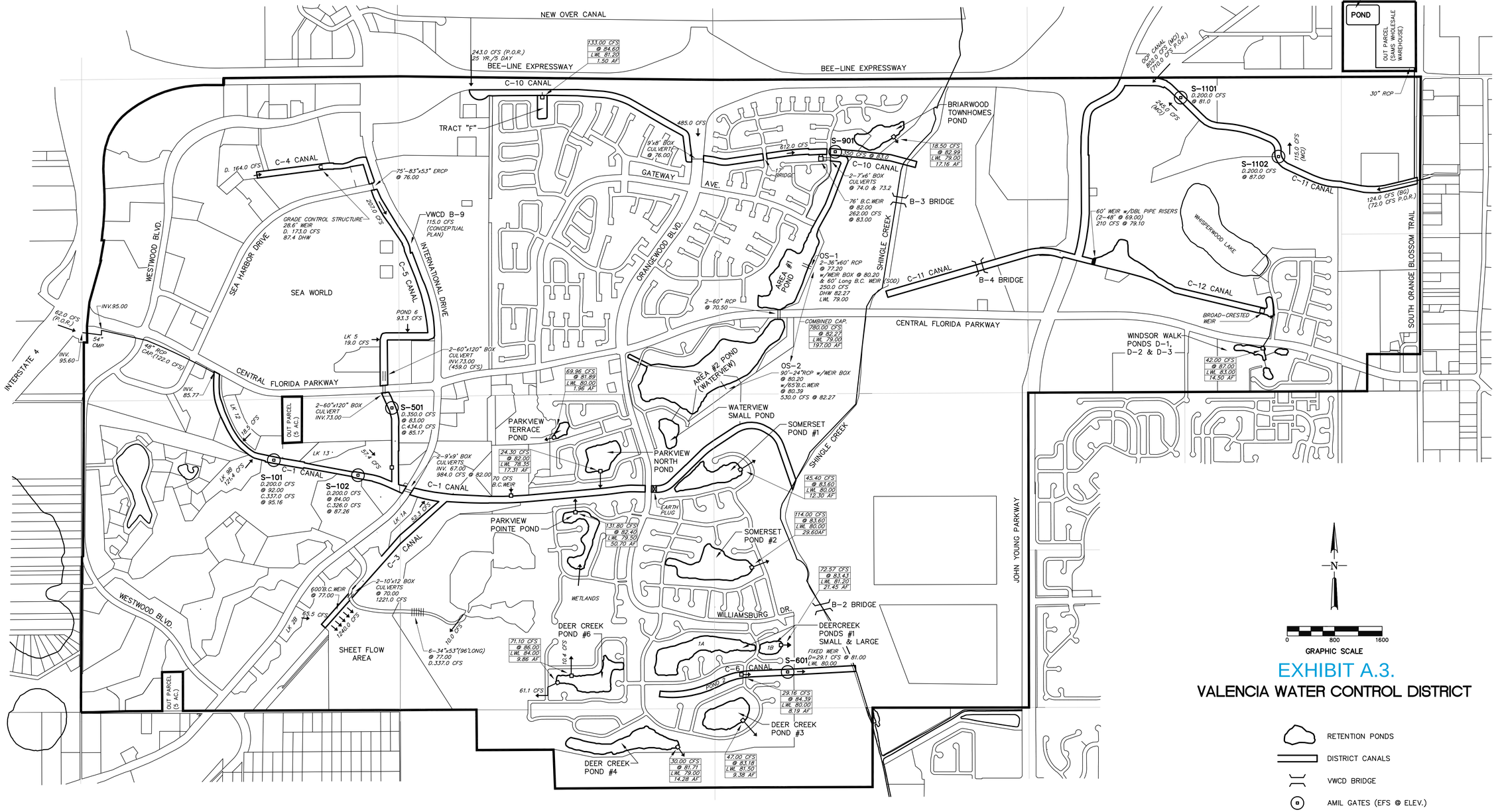
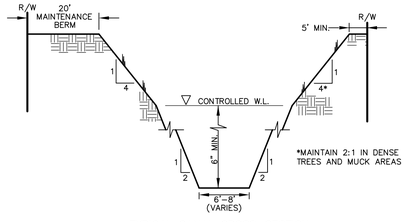
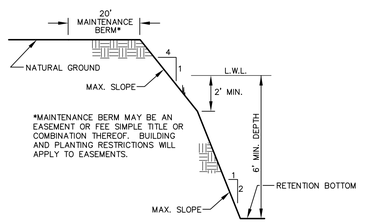




TYPICAL CANAL CROSS-SECTION
(FROM ORIGINAL CONSTRUCTION PLANS, DECEMBER 1971)



TYPICAL RETENTION POND BANK CROSS-SECTION

cph
Engineers
Planners
Landscape Architects
Surveyors
Construction Management
www.cphengineers.com
1117 East Robinson Street, Orlando, FL 32801
Phone: 407.425.0452 Fax: 407.648.1036
Certificate of Authorization No. 3215

CPH PROJECT No. 6816.05
CREATED: MAY 29, 1998

Revised Date: 7-15-03

N

0 800 1600

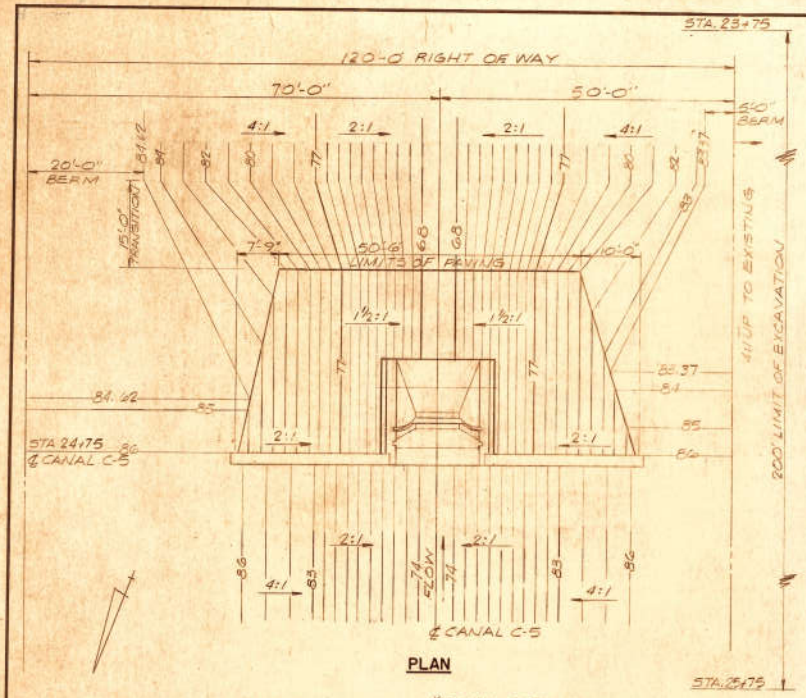
GRAPHIC SCALE

EXHIBIT A.3.

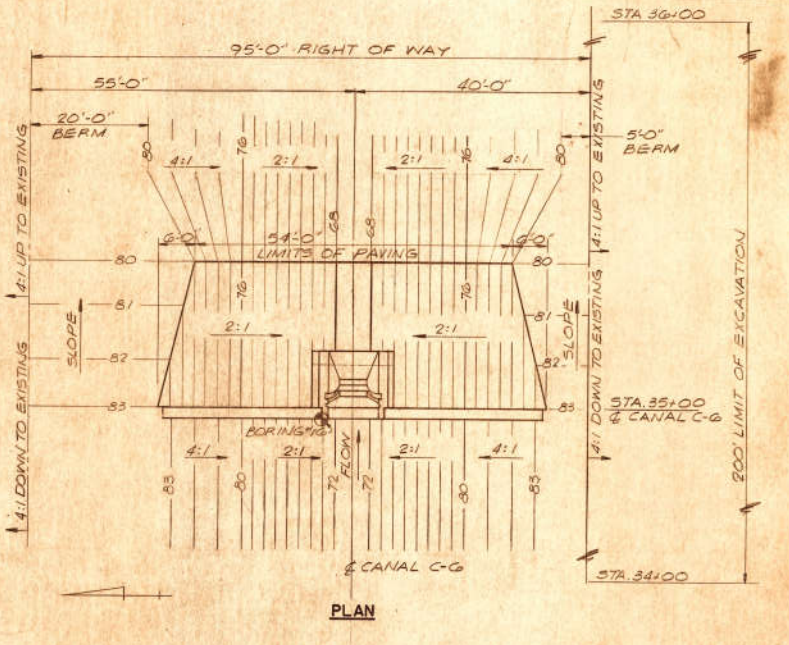
VALENCIA WATER CONTROL DISTRICT

- RETENTION PONDS
- DISTRICT CANALS
- VWCD BRIDGE
- AMIL GATES (EFS @ ELEV.)
- OUTFALL STRUCTURES
- XX.XX CFS / @ XX.XX / LWL XX.XX / XX.XX AF — RETENTION BASIN PARAMETERS (25 YR. / 72 HR. STORM)
- P.O.R. — PLAN OF RECLAMATION (Water Management Plan)
- M.C.I. — STUDY FOR PROJECT ABC BY: D.W. McINTOSH ASSOC., INC.
- B.G. — STUDY FOR ORANGEWOOD COMMERCIAL BY: B. GOLDING, P.E.

WATER CONTROL PLAN



PLAN



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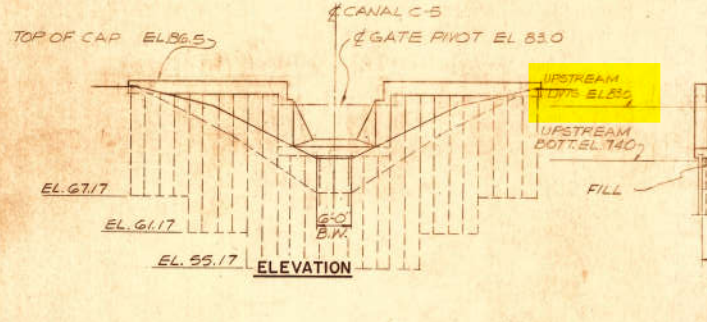
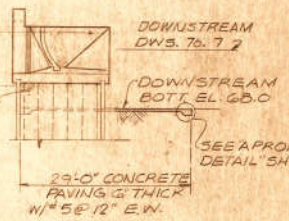


ELEVATION



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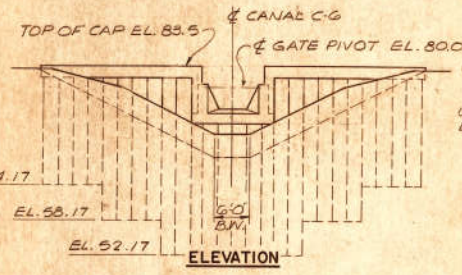

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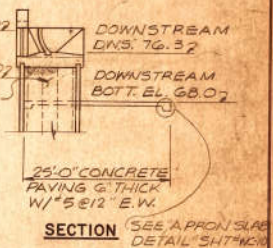


SECTION

SITE PLAN S-501

FOR STRUCTURE DETAILS SEE SHTS. WC-9 & WC-10.

APPROX. EXIST. GROUND EL. 85.0

NOTE:
LIMITS OF CONSTRUCTION ARE RIGHT OF WAY AND LIMITS OF EXCAVATION.

SITE PLAN S-601

FOR STRUCTURE DETAILS SEE SHT #WC-11

APPROX. EXIST. GROUND EL. 82.0

EXHIBIT A.4.

SITE PLAN

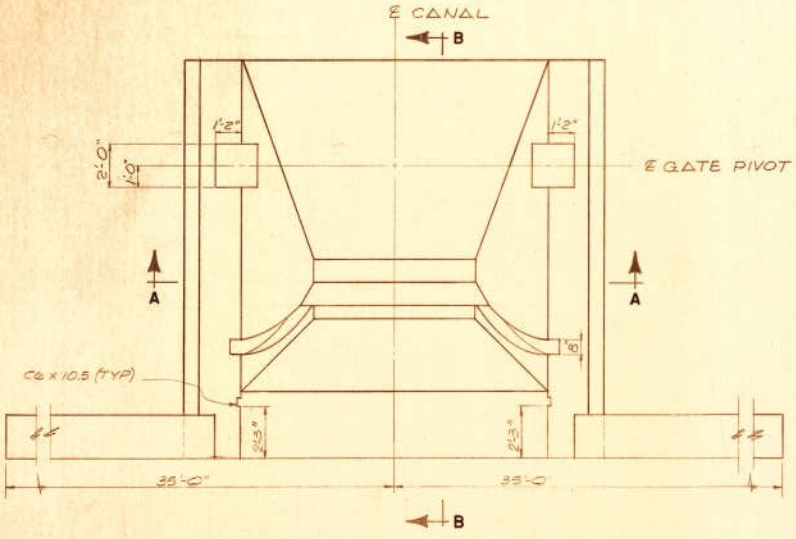
GEE & JENSON CONSULTING ENGINEERS, INC.
WEST PALM BEACH FLORIDA

S 501 & S 601

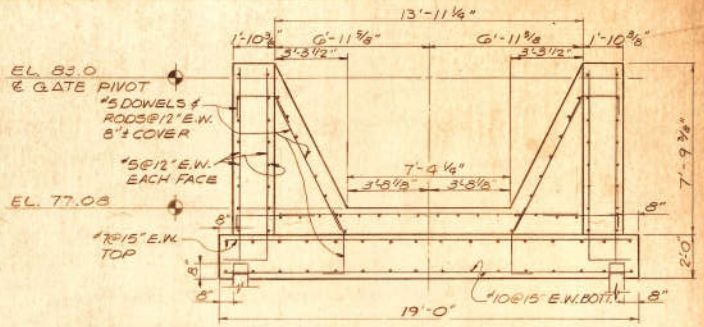
VALENCIA DRAINAGE DISTRICT
ORANGE COUNTY, FLORIDA

2	APR. 73	RELOCATED S-501	GEK	
1	NOV. 72	RELOCATED S501 & DELETED WALKWAYS	RSM	
REVISED	DATE	DESCRIPTION	BY	

DESIGNED HOPKINS | DRAWN KAUFMAN | CHECKED HARKINS | APPROVED HILLER
DATE APR '72 | SCALE 1"=10' | JOB NO. 71-183 | FILE NO. | DRAWING NO. | SHEET WC8 OF 46



PLAN



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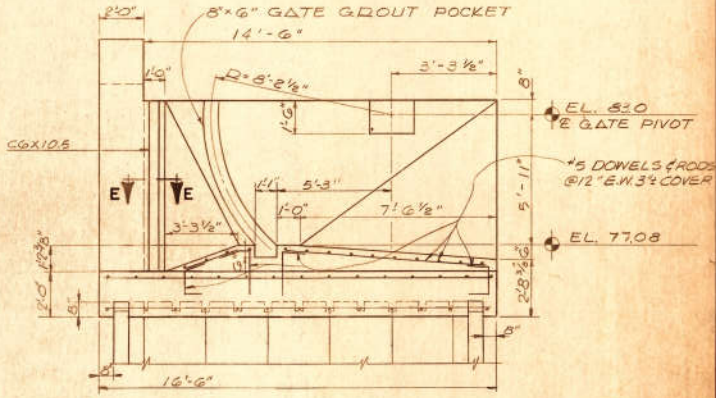

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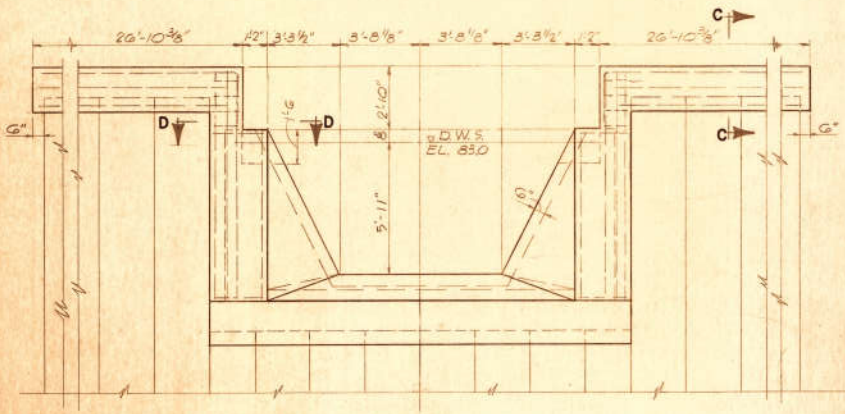
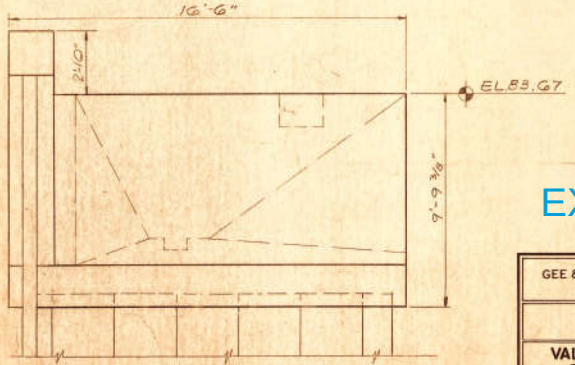


ELEVATION



SIDE ELEVATION

EXHIBIT A.4.

STRUCTURE DETAILS

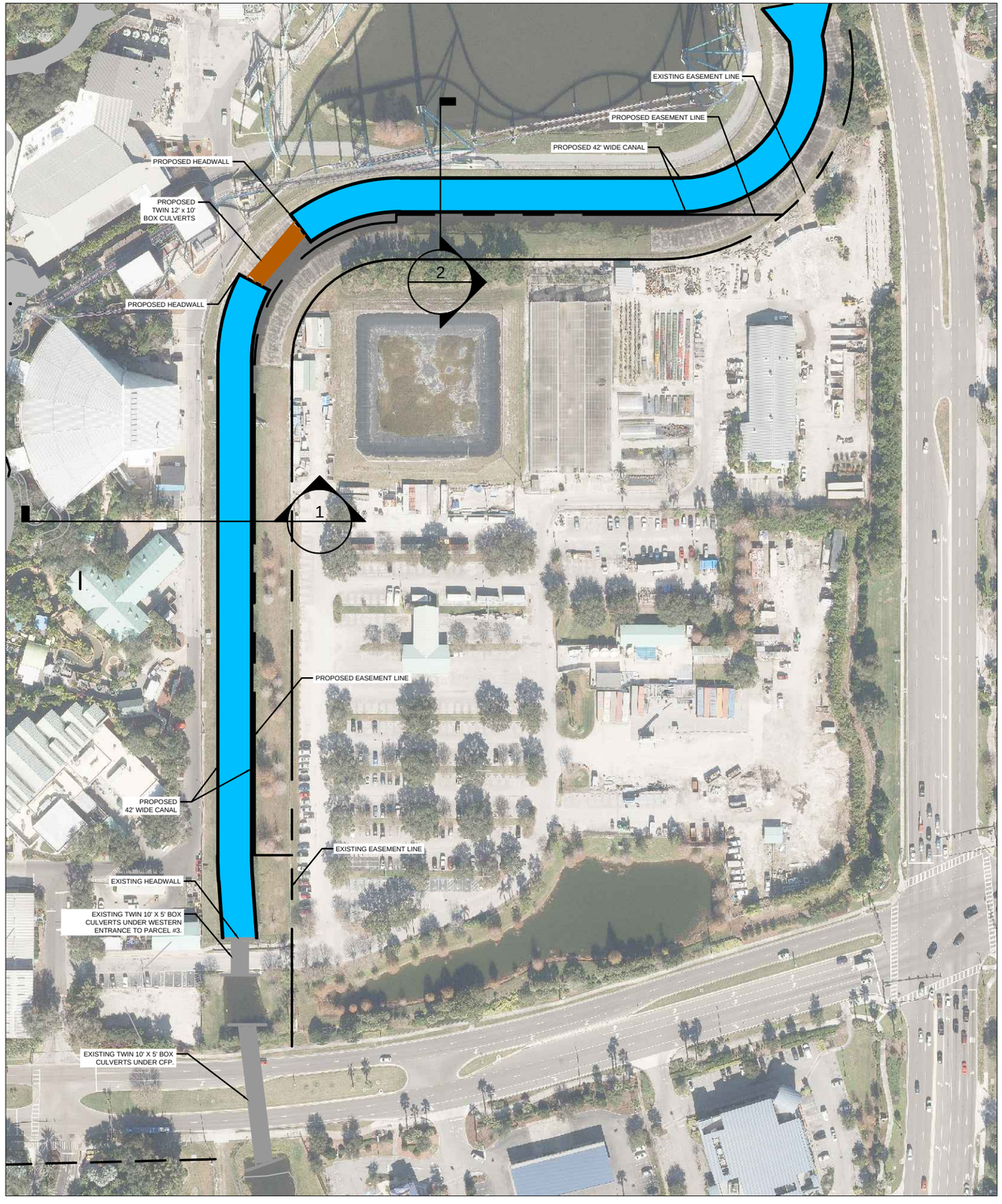
GEE & JENSON CONSULTING ENGINEERS, INC.
WEST PALM BEACH FLORIDA

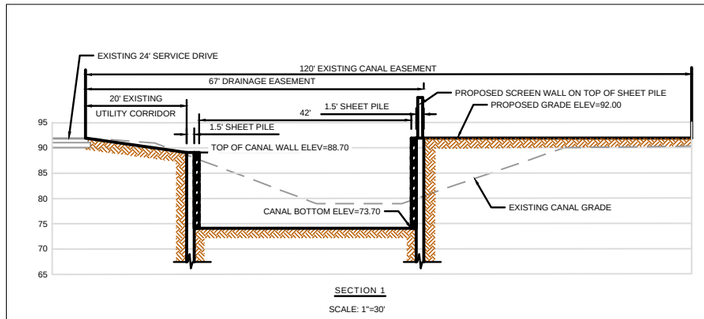
S 501

VALENCIA DRAINAGE DISTRICT
ORANGE COUNTY, FLORIDA

DESIGNED HARKINS	DRAWN HALLGAS	CHECKED HARKINS	JOB NO. 71-143	DRAWING NO.
DATE APR. 72	SCALE NONE	APPROVED MILLER	FILE NO.	SHEET NO. 19 OF 46

1	NOV. 72	RELOCATED S501 & DELETED WALKWAYS	RSH
REVISION	DATE	DESCRIPTION	BY





SECTION 1

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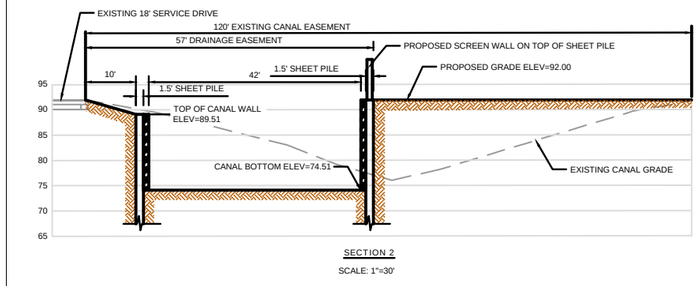


SECTION 2

SCALE: 1"=30'

0 80' 160'

SCALE: 1" = 160'

AtkinsRéalis
LOCAL OFFICE:
482 SOUTH KELLER RD
ORLANDO, FL 32810
TEL. 407.647.7275
FAX. 407.806.4500
www.atkinsrealis.com

PROJECT STARBOARD CANAL OPTIONS

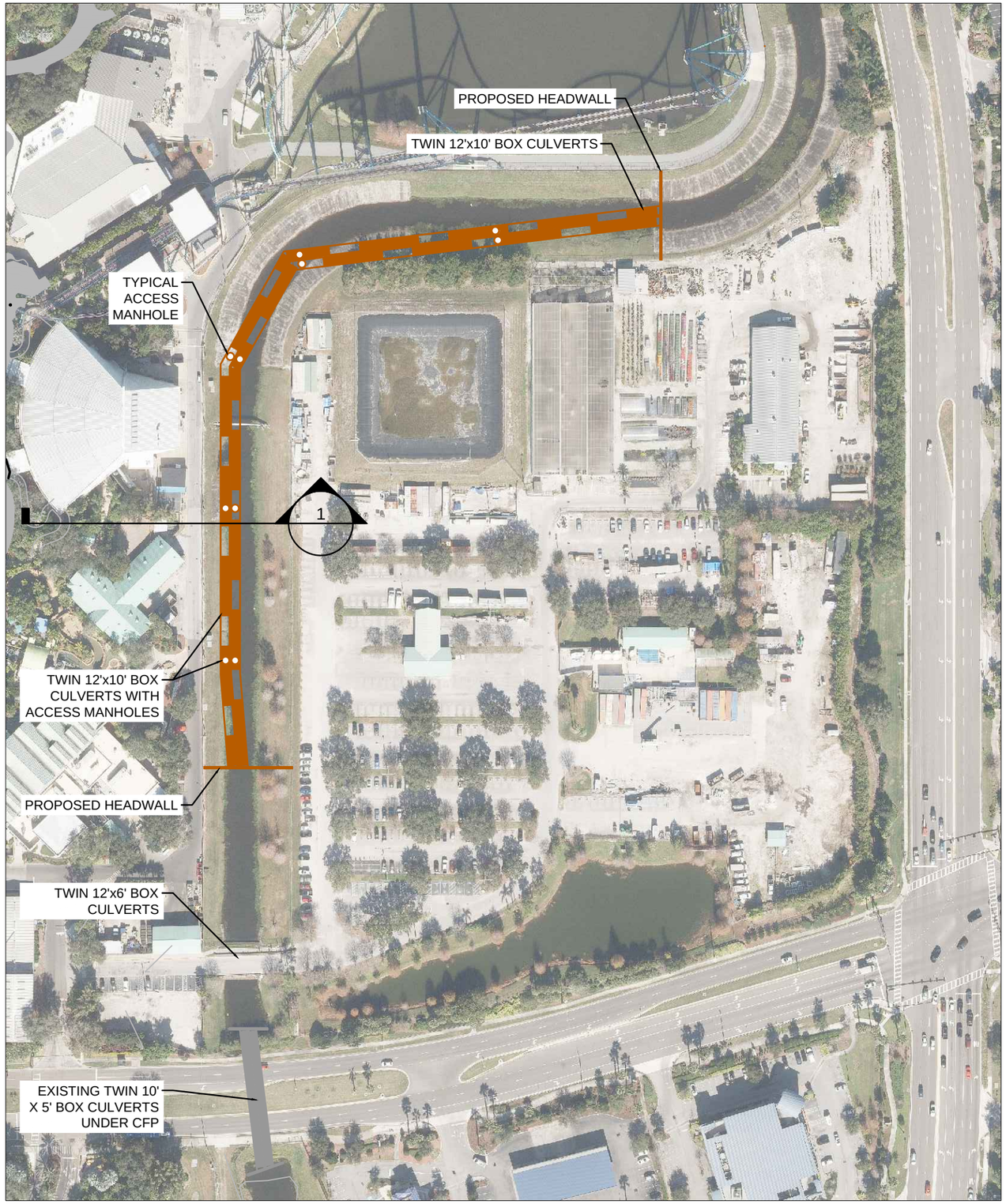
EXHBIT A.5.
CANAL C-5 OPTION 1:
Place portion of Canal C-5 in rectangular section.

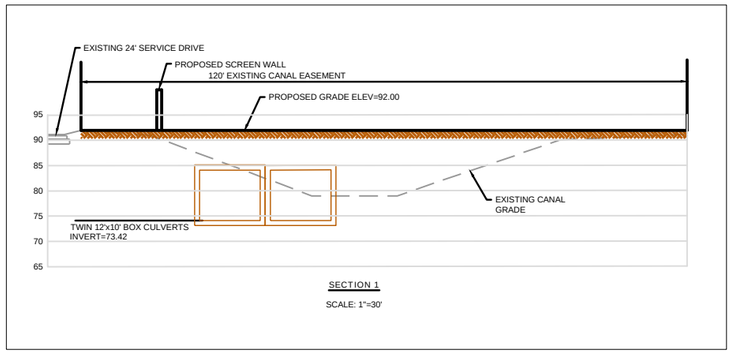
7007 SeaWorld Dr, Orlando, FL 32821

SEAWORLD

R. A. Rivera (Designed By:)	100085256 (Project No.)
C. Matiz Pardo (Approved By:)	11/07/2023 (Date)
J. P. Woods (Checked By:)	
B. E. Noyes (Drawn By:)	

EXHIBIT A.5.





SECTION 1

SCALE: 1"=30'

0 80' 160'

SCALE: 1" = 160'

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ORLANDO, FL 32810
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FAX. 407.806.4500
www.atkinsrealis.com

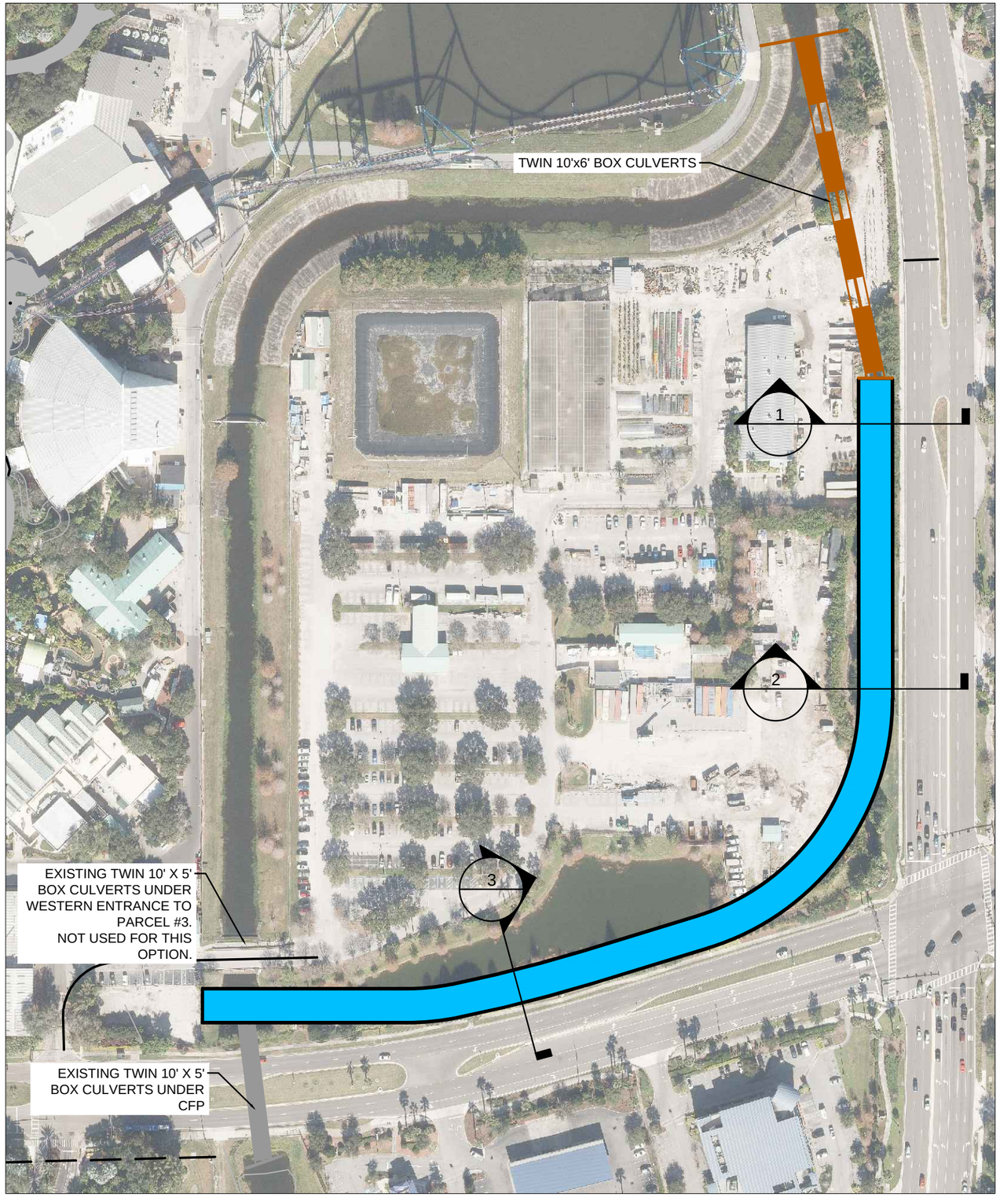
PROJECT STARBOARD
CANAL OPTIONS

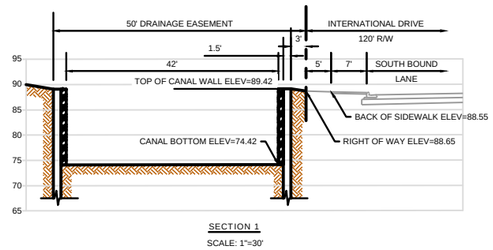
EXHIBIT A.6.
CANAL C-5 OPTION 2:
Place portion of Canal
C-5 in twin culverts.

7007 SeaWorld Dr, Orlando, FL 32821

SEAWORLD

R. A. Rivera (Designed By:)	100085256 (Project No.)
C. Matiz Pardo (Approved By:)	11/07/2023 (Date)
J. P. Woods (Checked By:)	
B. E. Noyes (Drawn By:)	EXHIBIT A.6.





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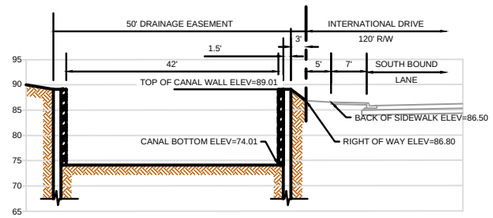

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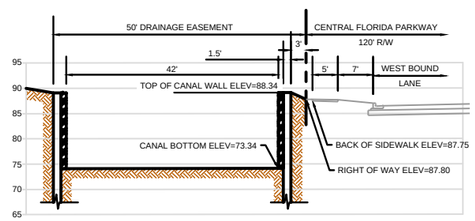

SECTION 3
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0 80' 160'
SCALE: 1" = 160'

AtkinsRéalis
LOCAL OFFICE:
482 SOUTH KELLER RD
ORLANDO, FL 32810
TEL. 407.647.7275
FAX. 407.806.4500
www.atkinsrealis.com

PROJECT STARBOARD
CANAL OPTIONS

EXHIBIT A.7.
CANAL C-5 OPTION 3:
Relocate portion of Canal C-5 to the east and place in rectangular section.

7007 SeaWorld Dr, Orlando, FL 32821
SEAWORLD

R. A. Rivera (Designed By:)	100085256 (Project No.)
C. Matiz Pardo (Approved By:)	11/07/2023 (Date)
J. P. Woods (Checked By:)	
B. E. Noyes (Drawn By:)	EXHIBIT A.7.

Appendix B. HEC-RAS Models

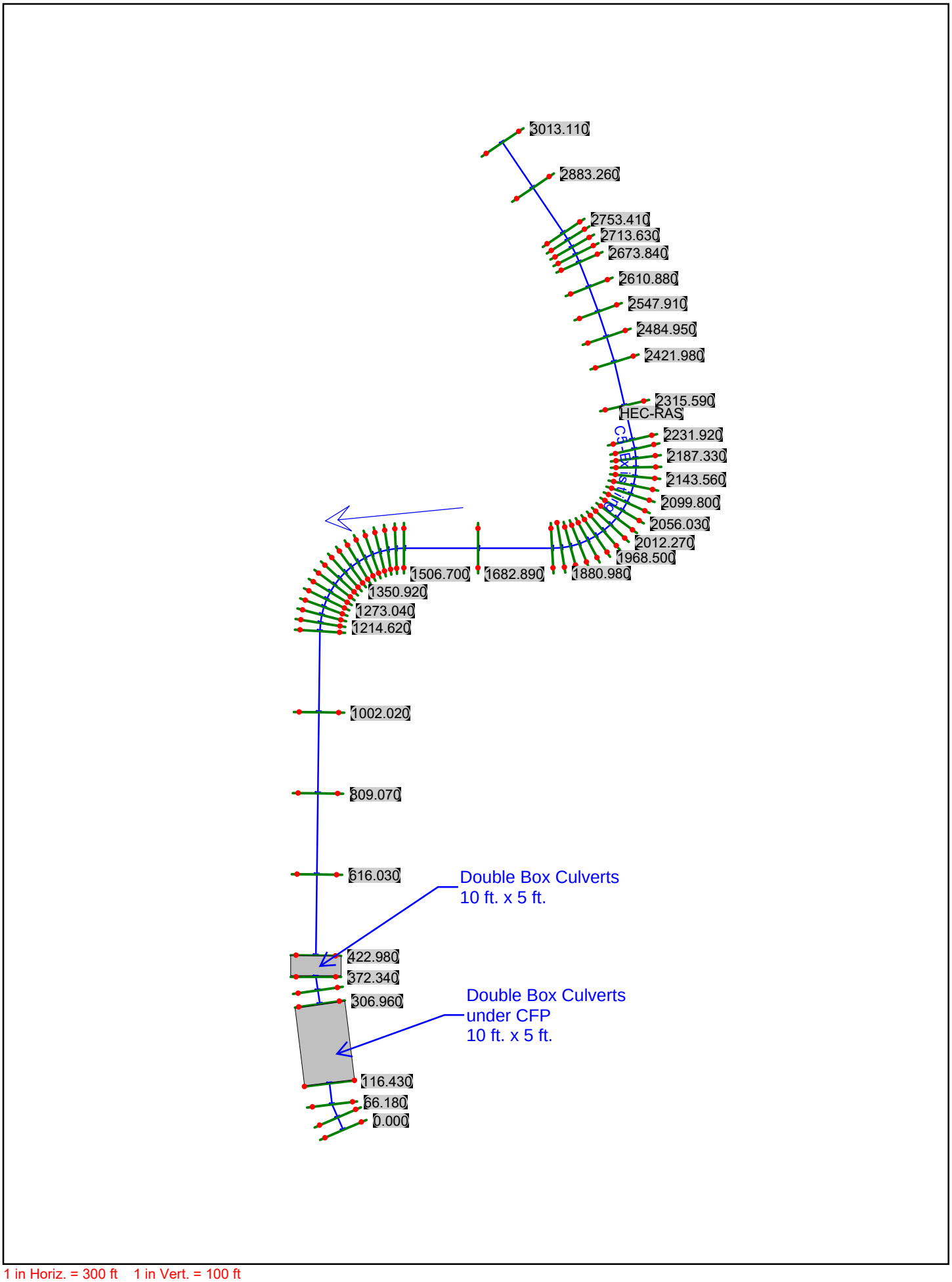
B.1. Existing HEC-RAS Model

B.2. Option #1 HEC-RAS Model

B.3. Option #2 HEC-RAS Model

B.4. Option #3 HEC-RAS Model

Existing HEC-RAS Model



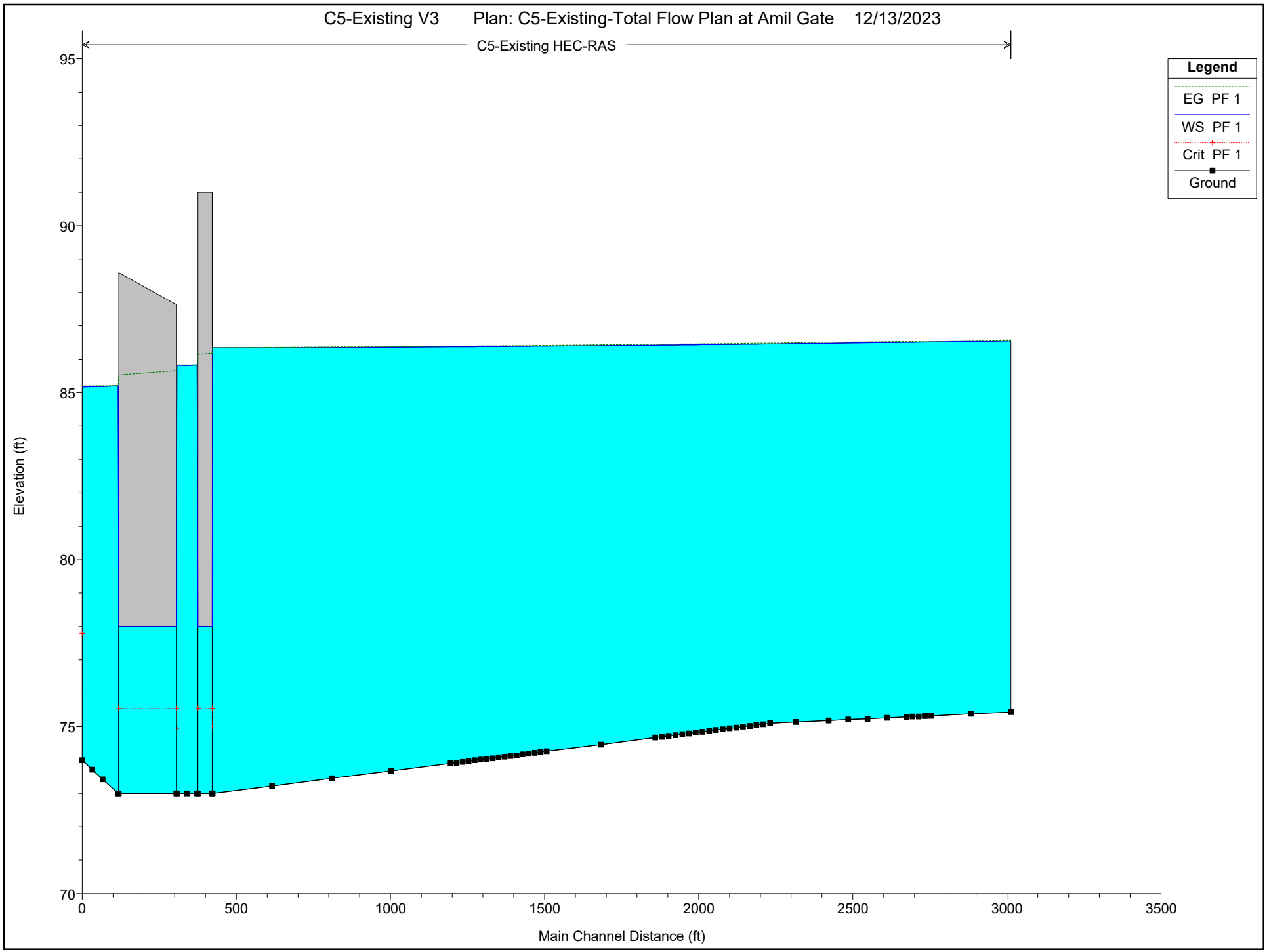
1 in Horiz. = 300 ft 1 in Vert. = 100 ft

Existing HEC-RAS Model

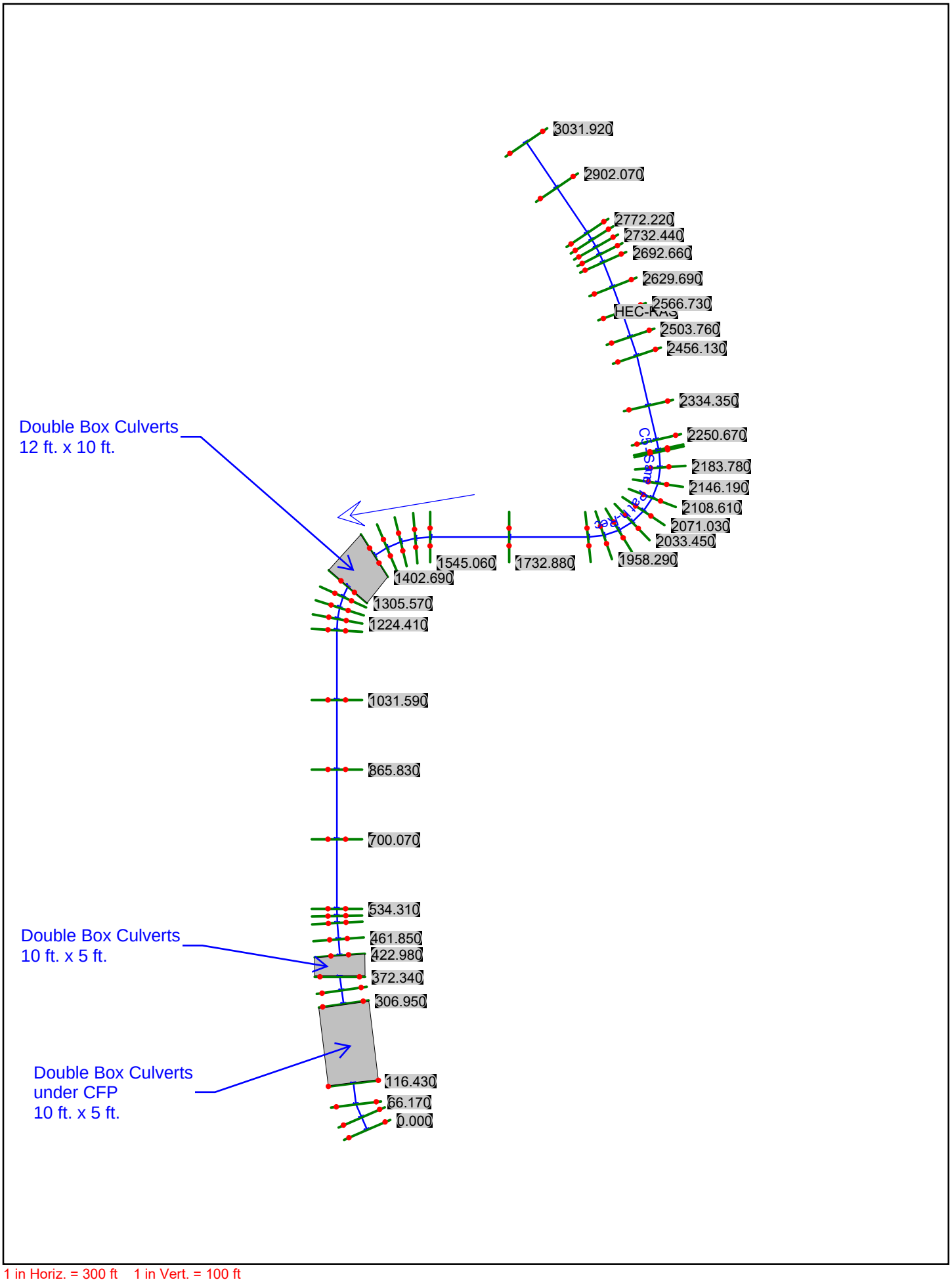
HEC-RAS Plan: Total at Gate River: C5-Existing Reach: HEC-RAS Profile: PF 1

	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
	HEC-RAS	3013.110	PF 1	459.00	75.43	86.55		86.58	0.000125	1.38	333.28	62.93	0.11
	HEC-RAS	2883.260	PF 1	459.00	75.38	86.53		86.56	0.000123	1.37	335.59	63.23	0.10
	HEC-RAS	2753.410	PF 1	459.00	75.32	86.52		86.54	0.000121	1.36	338.27	63.57	0.10
	HEC-RAS	2733.520	PF 1	459.00	75.31	86.51		86.54	0.000120	1.35	338.90	63.65	0.10
	HEC-RAS	2713.630	PF 1	459.00	75.30	86.51		86.54	0.000120	1.35	339.36	63.72	0.10
	HEC-RAS	2693.740	PF 1	459.00	75.30	86.51		86.54	0.000120	1.35	339.55	63.76	0.10
	HEC-RAS	2673.840	PF 1	459.00	75.29	86.51		86.53	0.000119	1.35	339.93	63.79	0.10
	HEC-RAS	2610.880	PF 1	459.00	75.26	86.50		86.53	0.000118	1.35	341.06	63.91	0.10
	HEC-RAS	2547.910	PF 1	459.00	75.23	86.49		86.52	0.000117	1.34	342.44	64.08	0.10
	HEC-RAS	2484.950	PF 1	459.00	75.21	86.48		86.51	0.000116	1.34	343.47	64.23	0.10
	HEC-RAS	2421.980	PF 1	459.00	75.18	86.48		86.50	0.000115	1.33	345.29	64.47	0.10
CP #1	HEC-RAS	2315.590	PF 1	459.00	75.14	86.46		86.49	0.000113	1.32	346.71	64.62	0.10
	HEC-RAS	2231.920	PF 1	459.00	75.10	86.46		86.48	0.000112	1.32	348.57	64.85	0.10
	HEC-RAS	2209.230	PF 1	459.00	75.07	86.45		86.48	0.000110	1.31	351.21	65.21	0.10
	HEC-RAS	2187.330	PF 1	459.00	75.05	86.45		86.48	0.000109	1.30	352.70	65.45	0.10
	HEC-RAS	2165.440	PF 1	459.00	75.02	86.45		86.47	0.000108	1.30	354.29	65.59	0.10
	HEC-RAS	2143.560	PF 1	459.00	75.00	86.45		86.47	0.000107	1.29	355.68	65.80	0.10
	HEC-RAS	2121.680	PF 1	459.00	74.97	86.44		86.47	0.000105	1.28	357.36	65.99	0.10
	HEC-RAS	2099.800	PF 1	459.00	74.95	86.44		86.47	0.000104	1.28	358.69	66.14	0.10
	HEC-RAS	2077.920	PF 1	459.00	74.92	86.44		86.47	0.000103	1.27	360.39	66.37	0.10
	HEC-RAS	2056.030	PF 1	459.00	74.90	86.44		86.46	0.000102	1.27	361.81	66.55	0.10
	HEC-RAS	2034.150	PF 1	459.00	74.87	86.44		86.46	0.000101	1.26	363.51	66.74	0.10
	HEC-RAS	2012.270	PF 1	459.00	74.84	86.43		86.46	0.000100	1.26	364.98	66.91	0.09
	HEC-RAS	1990.390	PF 1	459.00	74.82	86.43		86.46	0.000099	1.25	366.56	67.11	0.09
	HEC-RAS	1968.500	PF 1	459.00	74.79	86.43		86.45	0.000098	1.25	368.16	67.27	0.09
	HEC-RAS	1946.620	PF 1	459.00	74.77	86.43		86.45	0.000097	1.24	369.66	67.48	0.09
	HEC-RAS	1924.740	PF 1	459.00	74.74	86.43		86.45	0.000096	1.24	371.40	67.65	0.09
	HEC-RAS	1902.860	PF 1	459.00	74.72	86.42		86.45	0.000095	1.23	372.82	67.85	0.09
	HEC-RAS	1880.980	PF 1	459.00	74.69	86.42		86.45	0.000094	1.22	374.71	68.07	0.09
	HEC-RAS	1859.090	PF 1	459.00	74.67	86.42		86.44	0.000093	1.22	375.13	68.07	0.09
	HEC-RAS	1682.890	PF 1	459.00	74.46	86.41		86.43	0.000086	1.18	388.13	69.56	0.09
	HEC-RAS	1506.700	PF 1	459.00	74.26	86.39		86.41	0.000079	1.14	401.65	71.12	0.08
	HEC-RAS	1487.220	PF 1	459.00	74.24	86.39		86.41	0.000078	1.14	403.83	71.43	0.08
	HEC-RAS	1467.750	PF 1	459.00	74.21	86.39		86.41	0.000077	1.13	405.54	71.59	0.08
	HEC-RAS	1448.280	PF 1	459.00	74.19	86.39		86.41	0.000076	1.13	407.03	71.76	0.08
	HEC-RAS	1428.810	PF 1	459.00	74.17	86.39		86.41	0.000075	1.12	408.42	71.92	0.08
	HEC-RAS	1409.340	PF 1	459.00	74.14	86.39		86.40	0.000075	1.12	410.07	72.09	0.08
	HEC-RAS	1389.870	PF 1	459.00	74.12	86.38		86.40	0.000074	1.12	411.64	72.26	0.08
	HEC-RAS	1370.390	PF 1	459.00	74.10	86.38		86.40	0.000073	1.11	413.04	72.45	0.08
	HEC-RAS	1350.920	PF 1	459.00	74.08	86.38		86.40	0.000073	1.11	414.61	72.61	0.08
	HEC-RAS	1331.450	PF 1	459.00	74.05	86.38		86.40	0.000072	1.10	416.18	72.77	0.08
	HEC-RAS	1311.980	PF 1	459.00	74.03	86.38		86.40	0.000071	1.10	417.77	72.94	0.08
	HEC-RAS	1292.510	PF 1	459.00	74.01	86.38		86.40	0.000071	1.09	419.20	73.13	0.08
	HEC-RAS	1273.040	PF 1	459.00	73.99	86.38		86.39	0.000070	1.09	420.77	73.29	0.08
	HEC-RAS	1253.570	PF 1	459.00	73.96	86.37		86.39	0.000069	1.09	422.45	73.46	0.08
	HEC-RAS	1234.090	PF 1	459.00	73.94	86.37		86.39	0.000069	1.08	424.10	73.65	0.08
	HEC-RAS	1214.620	PF 1	459.00	73.92	86.37		86.39	0.000068	1.08	425.53	73.82	0.08
	HEC-RAS	1195.150	PF 1	459.00	73.90	86.37		86.39	0.000068	1.08	426.22	73.83	0.08
	HEC-RAS	1002.020	PF 1	459.00	73.67	86.36		86.38	0.000062	1.04	442.06	75.49	0.08
	HEC-RAS	809.070	PF 1	459.00	73.45	86.35		86.36	0.000056	1.00	458.25	77.19	0.07
	HEC-RAS	616.030	PF 1	459.00	73.22	86.34		86.35	0.000051	0.97	475.19	78.93	0.07
	HEC-RAS	422.980	PF 1	459.00	73.00	86.34	74.96	86.35	0.000013	0.61	749.36	85.34	0.04
	HEC-RAS	421.98		Culvert									
	HEC-RAS	372.340	PF 1	459.00	73.00	85.82		85.83	0.000015	0.65	707.48	83.34	0.04
CP #2	HEC-RAS	339.650	PF 1	459.00	73.00	85.81		85.83	0.000058	1.02	451.49	76.49	0.07
	HEC-RAS	306.960	PF 1	459.00	73.00	85.82	74.95	85.82	0.000014	0.63	724.61	86.06	0.04
	HEC-RAS	304.96		Culvert									
	HEC-RAS	116.430	PF 1	459.00	73.00	85.20		85.21	0.000015	0.63	732.80	93.10	0.04
	HEC-RAS	66.180	PF 1	459.00	73.42	85.18		85.21	0.000089	1.20	382.99	69.44	0.09
	HEC-RAS	32.590	PF 1	459.00	73.71	85.18		85.20	0.000106	1.29	355.67	65.71	0.10
	HEC-RAS	0.000	PF 1	459.00	73.99	85.17	77.79	85.20	0.000121	1.36	337.28	63.43	0.10

Existing HEC-RAS Model



Option #1 HEC-RAS Model



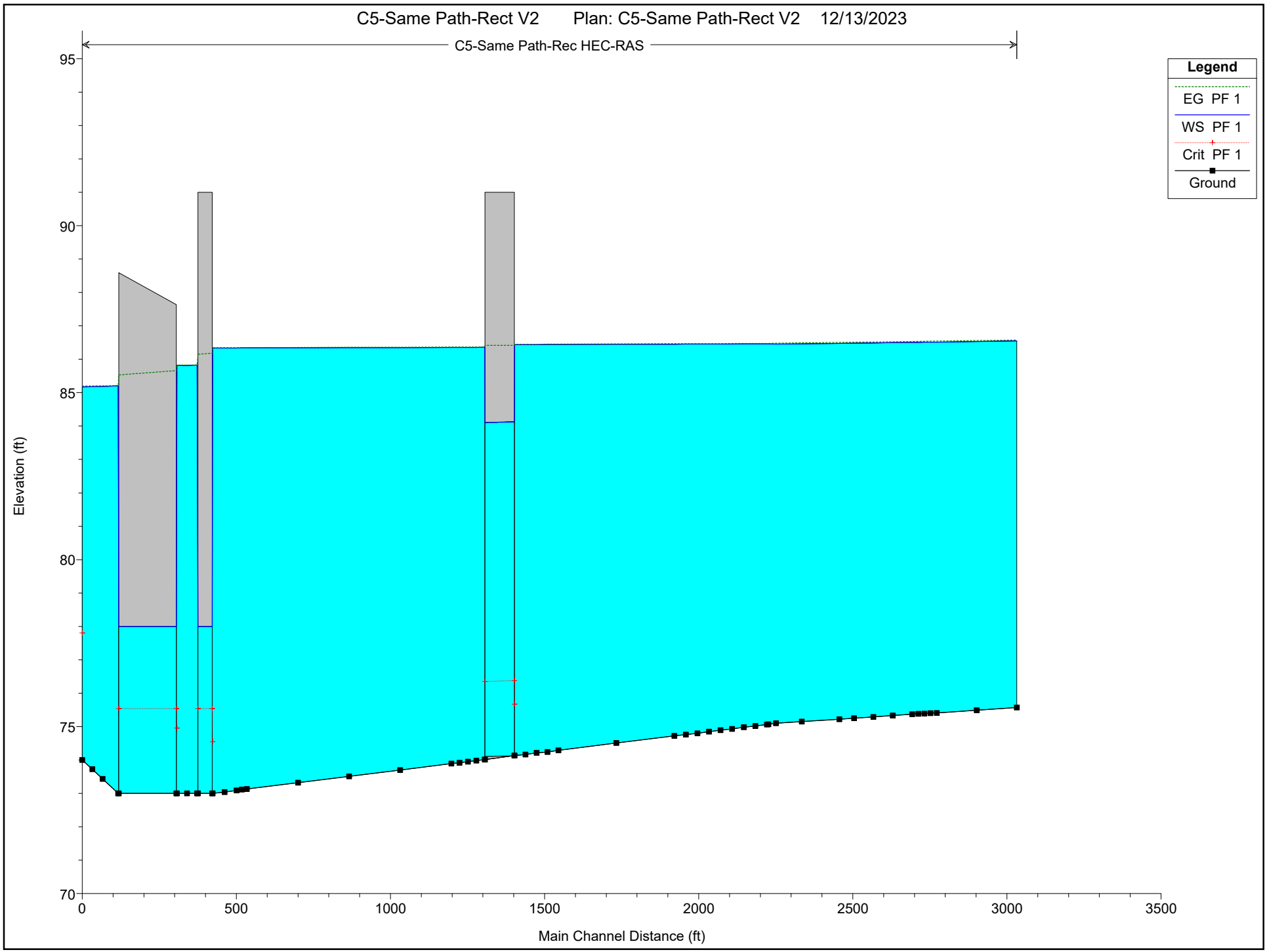
1 in Horiz. = 300 ft 1 in Vert. = 100 ft

Option #1 HEC-RAS Model

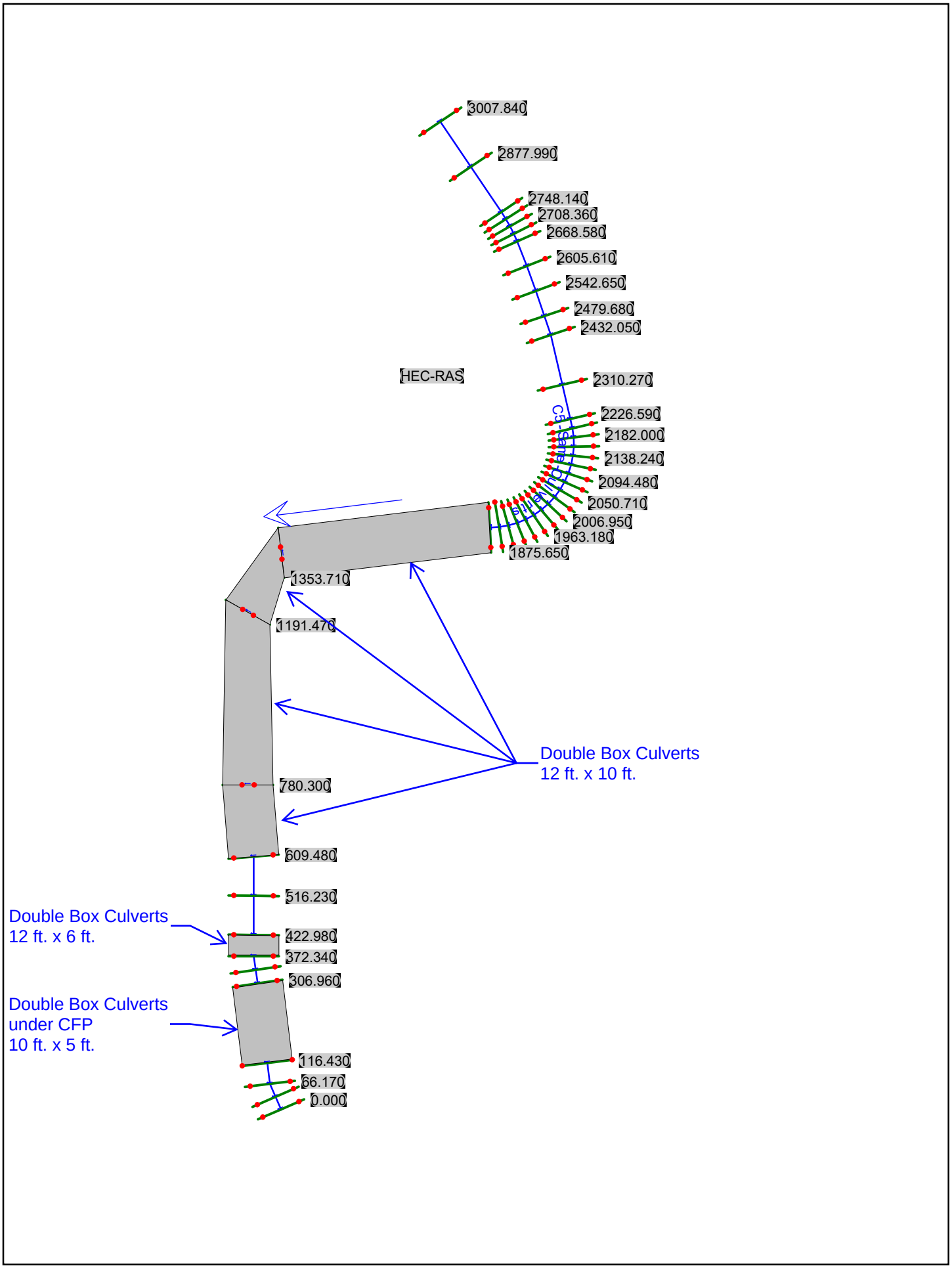
HEC-RAS Plan: Total at Gate River: C5-Same Path-Rec Reach: HEC-RAS Profile: PF 1

	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
	HEC-RAS	3031.920	PF 1	459.00	75.57	86.55		86.58	0.000134	1.41	324.53	61.81	0.11
	HEC-RAS	2902.070	PF 1	459.00	75.49	86.53		86.56	0.000130	1.40	328.45	62.32	0.11
	HEC-RAS	2772.220	PF 1	459.00	75.41	86.51		86.54	0.000126	1.38	332.46	62.82	0.11
	HEC-RAS	2752.330	PF 1	459.00	75.40	86.51		86.54	0.000125	1.38	333.12	62.92	0.11
	HEC-RAS	2732.440	PF 1	459.00	75.39	86.51		86.54	0.000125	1.38	333.57	62.98	0.11
	HEC-RAS	2712.550	PF 1	459.00	75.38	86.51		86.54	0.000124	1.37	334.10	63.05	0.11
	HEC-RAS	2692.660	PF 1	459.00	75.37	86.50		86.53	0.000124	1.37	334.62	63.12	0.11
	HEC-RAS	2629.690	PF 1	459.00	75.33	86.50		86.53	0.000122	1.36	336.53	63.34	0.10
	HEC-RAS	2566.730	PF 1	459.00	75.29	86.49		86.52	0.000120	1.36	338.56	63.61	0.10
	HEC-RAS	2503.760	PF 1	459.00	75.25	86.48		86.51	0.000119	1.35	340.51	63.83	0.10
	HEC-RAS	2456.130	PF 1	459.00	75.22	86.48		86.50	0.000117	1.34	342.93	64.18	0.10
CP #1	HEC-RAS	2334.350	PF 1	459.00	75.15	86.46		86.49	0.000114	1.33	345.79	64.51	0.10
	HEC-RAS	2250.670	PF 1	459.00	75.10	86.45		86.48	0.000112	1.32	348.11	64.72	0.10
	HEC-RAS	2226.300	PF 1	459.00	75.07	86.46		86.48	0.000035	0.96	479.54	42.20	0.05
	HEC-RAS	2221.360	PF 1	459.00	75.06	86.46		86.47	0.000035	0.95	482.23	42.42	0.05
	HEC-RAS	2183.780	PF 1	459.00	75.02	86.46		86.47	0.000034	0.94	488.27	42.81	0.05
	HEC-RAS	2146.190	PF 1	459.00	74.98	86.46		86.47	0.000033	0.94	490.70	42.89	0.05
	HEC-RAS	2108.610	PF 1	459.00	74.93	86.46		86.47	0.000033	0.93	491.82	42.81	0.05
	HEC-RAS	2071.030	PF 1	459.00	74.89	86.46		86.47	0.000033	0.93	494.36	42.90	0.05
	HEC-RAS	2033.450	PF 1	459.00	74.85	86.46		86.47	0.000032	0.93	495.46	42.81	0.05
	HEC-RAS	1995.870	PF 1	459.00	74.80	86.45		86.47	0.000032	0.92	497.90	42.89	0.05
	HEC-RAS	1958.290	PF 1	459.00	74.76	86.45		86.47	0.000032	0.92	499.11	42.81	0.05
	HEC-RAS	1920.710	PF 1	459.00	74.72	86.45		86.46	0.000032	0.93	495.43	42.33	0.05
	HEC-RAS	1732.880	PF 1	459.00	74.51	86.45		86.46	0.000031	0.91	502.57	42.21	0.05
	HEC-RAS	1545.060	PF 1	459.00	74.29	86.44		86.45	0.000029	0.90	512.45	42.28	0.05
	HEC-RAS	1509.470	PF 1	459.00	74.24	86.44		86.45	0.000028	0.89	517.38	42.56	0.04
	HEC-RAS	1473.880	PF 1	459.00	74.21	86.44		86.45	0.000028	0.89	518.21	42.49	0.04
	HEC-RAS	1438.290	PF 1	459.00	74.16	86.44		86.45	0.000028	0.88	520.82	42.57	0.04
	HEC-RAS	1402.690	PF 1	459.00	74.13	86.44	75.67	86.45	0.000028	0.89	518.19	42.21	0.04
	HEC-RAS	1401.69		Culvert									
	HEC-RAS	1305.570	PF 1	459.00	74.01	86.36		86.37	0.000028	0.88	519.92	42.21	0.04
	HEC-RAS	1278.520	PF 1	459.00	73.98	86.36		86.37	0.000028	0.88	523.16	42.37	0.04
	HEC-RAS	1251.460	PF 1	459.00	73.95	86.36		86.37	0.000027	0.88	524.34	42.37	0.04
	HEC-RAS	1224.410	PF 1	459.00	73.92	86.36		86.37	0.000027	0.87	525.63	42.38	0.04
	HEC-RAS	1197.350	PF 1	459.00	73.89	86.35		86.37	0.000027	0.87	525.36	42.25	0.04
	HEC-RAS	1031.590	PF 1	459.00	73.70	86.35		86.36	0.000026	0.86	532.71	42.22	0.04
	HEC-RAS	865.830	PF 1	459.00	73.51	86.35		86.36	0.000025	0.85	544.71	50.54	0.04
	HEC-RAS	700.070	PF 1	459.00	73.32	86.34		86.35	0.000024	0.84	554.39	52.14	0.04
	HEC-RAS	534.310	PF 1	459.00	73.13	86.34		86.35	0.000023	0.82	564.15	53.66	0.04
	HEC-RAS	517.510	PF 1	459.00	73.11	86.34		86.35	0.000023	0.82	564.98	53.56	0.04
	HEC-RAS	500.710	PF 1	459.00	73.09	86.34		86.35	0.000023	0.82	564.63	52.78	0.04
	HEC-RAS	461.850	PF 1	459.00	73.04	86.34		86.35	0.000023	0.82	563.92	50.18	0.04
	HEC-RAS	422.980	PF 1	459.00	73.00	86.34	74.54	86.35	0.000022	0.82	563.78	48.53	0.04
	HEC-RAS	421.98		Culvert									
	HEC-RAS	372.340	PF 1	459.00	73.00	85.82		85.83	0.000015	0.65	707.49	83.34	0.04
CP #2	HEC-RAS	339.650	PF 1	459.00	73.00	85.81		85.83	0.000058	1.02	451.50	76.49	0.07
	HEC-RAS	306.950	PF 1	459.00	73.00	85.82	74.95	85.82	0.000014	0.63	724.63	86.06	0.04
	HEC-RAS	304.95		Culvert									
	HEC-RAS	116.430	PF 1	459.00	73.00	85.20		85.21	0.000015	0.63	732.82	93.10	0.04
	HEC-RAS	66.170	PF 1	459.00	73.43	85.18		85.21	0.000089	1.20	382.52	69.26	0.09
	HEC-RAS	32.580	PF 1	459.00	73.72	85.18		85.20	0.000107	1.29	355.13	65.66	0.10
	HEC-RAS	0.000	PF 1	459.00	74.00	85.17	77.81	85.20	0.000122	1.36	336.68	63.38	0.10

Option #1 HEC-RAS Model



Option #2 HEC-RAS Model



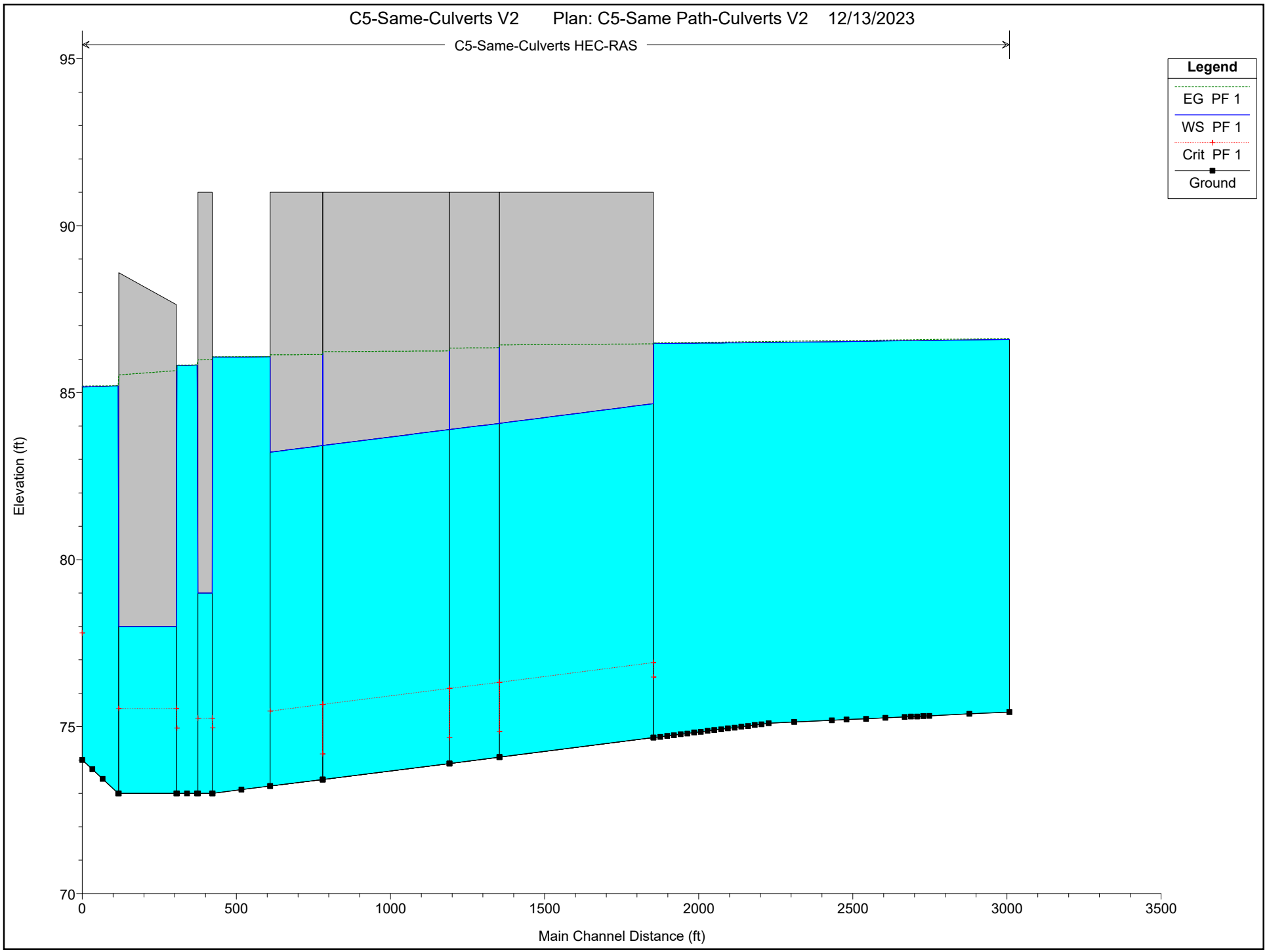
1 in Horiz. = 300 ft 1 in Vert. = 100 ft

Option #2 HEC-RAS Model

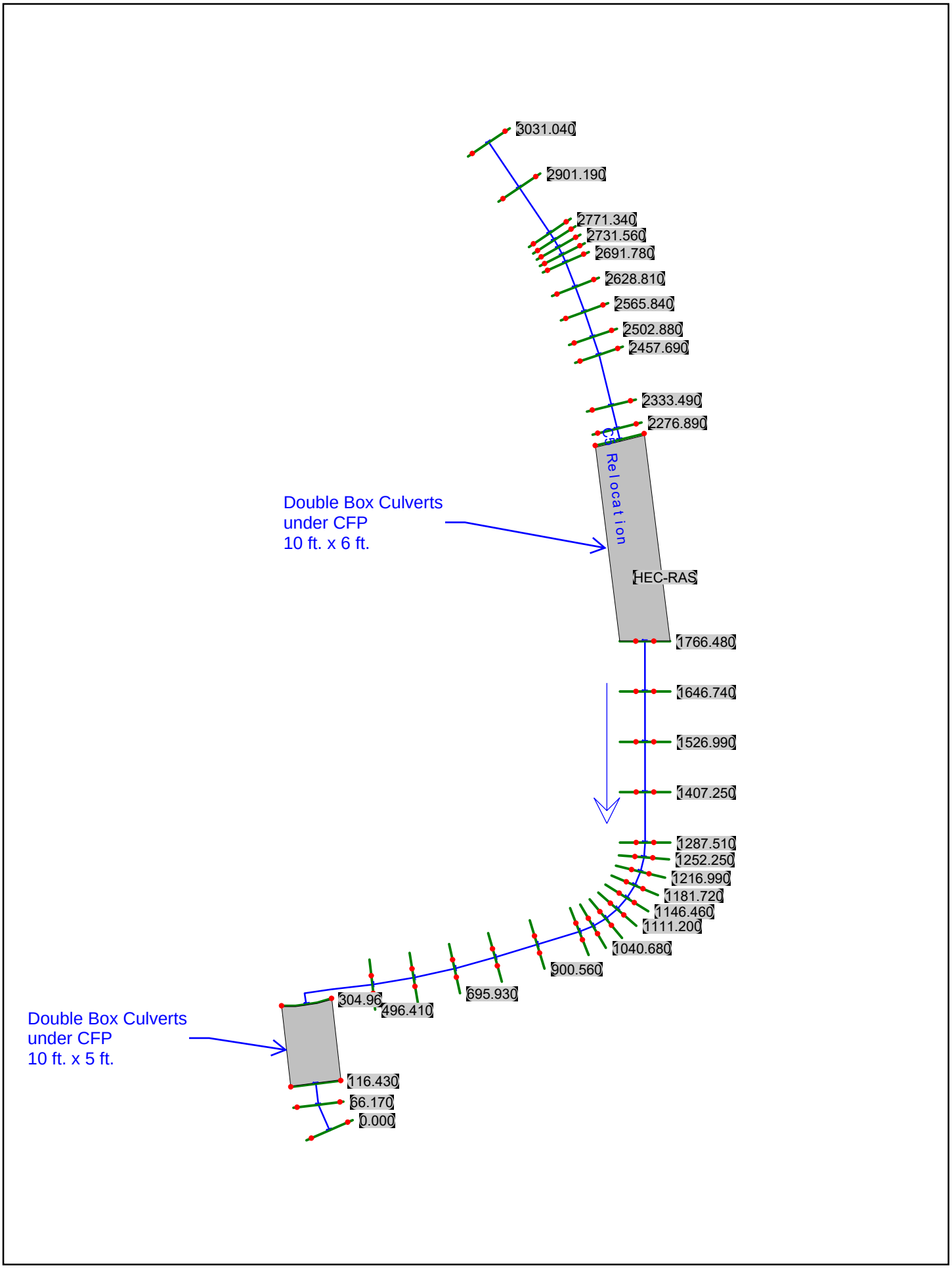
HEC-RAS Plan: Culverts V2 River: C5-Same-Culverts Reach: HEC-RAS Profile: PF 1

	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
	HEC-RAS	3007.840	PF 1	459.00	75.43	86.59		86.62	0.000122	1.37	336.23	63.31	0.10
	HEC-RAS	2877.990	PF 1	459.00	75.38	86.58		86.61	0.000120	1.36	338.57	63.61	0.10
	HEC-RAS	2748.140	PF 1	459.00	75.32	86.56		86.59	0.000118	1.34	341.30	63.95	0.10
	HEC-RAS	2728.250	PF 1	459.00	75.31	86.56		86.59	0.000117	1.34	341.96	64.03	0.10
	HEC-RAS	2708.360	PF 1	459.00	75.30	86.56		86.59	0.000117	1.34	342.35	64.08	0.10
	HEC-RAS	2688.470	PF 1	459.00	75.30	86.56		86.58	0.000117	1.34	342.55	64.13	0.10
	HEC-RAS	2668.580	PF 1	459.00	75.29	86.55		86.58	0.000117	1.34	342.87	64.16	0.10
	HEC-RAS	2605.610	PF 1	459.00	75.26	86.55		86.57	0.000116	1.33	344.08	64.29	0.10
	HEC-RAS	2542.650	PF 1	459.00	75.23	86.54		86.57	0.000114	1.33	345.53	64.47	0.10
	HEC-RAS	2479.680	PF 1	459.00	75.21	86.53		86.56	0.000114	1.32	346.44	64.60	0.10
	HEC-RAS	2432.050	PF 1	459.00	75.19	86.53		86.55	0.000112	1.32	348.21	64.88	0.10
CP #1	HEC-RAS	2310.270	PF 1	459.00	75.14	86.51		86.54	0.000111	1.31	349.81	64.99	0.10
	HEC-RAS	2226.590	PF 1	459.00	75.10	86.50		86.53	0.000109	1.30	351.76	65.24	0.10
	HEC-RAS	2203.910	PF 1	459.00	75.07	86.50		86.53	0.000108	1.30	354.31	65.59	0.10
	HEC-RAS	2182.000	PF 1	459.00	75.05	86.50		86.53	0.000106	1.29	355.95	65.84	0.10
	HEC-RAS	2160.120	PF 1	459.00	75.02	86.50		86.52	0.000105	1.28	357.44	65.98	0.10
	HEC-RAS	2138.240	PF 1	459.00	75.00	86.50		86.52	0.000104	1.28	358.91	66.20	0.10
	HEC-RAS	2116.360	PF 1	459.00	74.97	86.49		86.52	0.000103	1.27	360.60	66.37	0.10
	HEC-RAS	2094.480	PF 1	459.00	74.95	86.49		86.52	0.000102	1.27	362.06	66.57	0.10
	HEC-RAS	2072.590	PF 1	459.00	74.92	86.49		86.51	0.000101	1.26	363.57	66.75	0.10
	HEC-RAS	2050.710	PF 1	459.00	74.90	86.49		86.51	0.000100	1.26	365.11	66.93	0.09
	HEC-RAS	2028.830	PF 1	459.00	74.87	86.49		86.51	0.000099	1.25	366.84	67.14	0.09
	HEC-RAS	2006.950	PF 1	459.00	74.84	86.48		86.51	0.000098	1.25	368.48	67.32	0.09
	HEC-RAS	1985.060	PF 1	459.00	74.82	86.48		86.51	0.000097	1.24	369.93	67.52	0.09
	HEC-RAS	1963.180	PF 1	459.00	74.79	86.48		86.50	0.000096	1.24	371.55	67.67	0.09
	HEC-RAS	1941.300	PF 1	459.00	74.77	86.48		86.50	0.000095	1.23	373.13	67.89	0.09
	HEC-RAS	1919.420	PF 1	459.00	74.74	86.48		86.50	0.000094	1.22	374.76	68.07	0.09
	HEC-RAS	1897.540	PF 1	459.00	74.72	86.47		86.50	0.000093	1.22	376.26	68.25	0.09
	HEC-RAS	1875.650	PF 1	459.00	74.69	86.47		86.49	0.000092	1.21	377.95	68.45	0.09
	HEC-RAS	1853.770	PF 1	459.00	74.67	86.48	76.48	86.49	0.000018	0.70	658.73	80.54	0.04
	HEC-RAS	1852.77		Culvert									
	HEC-RAS	1353.710	PF 1	459.00	74.08	86.37	74.85	86.37	0.000002	0.35	1474.65	120.00	0.02
	HEC-RAS	1353.61		Culvert									
	HEC-RAS	1191.470	PF 1	459.00	73.90	86.28	74.66	86.28	0.000002	0.35	1486.06	120.00	0.02
	HEC-RAS	1191.37		Culvert									
	HEC-RAS	780.300	PF 1	459.00	73.42	86.17	74.18	86.17	0.000002	0.34	1530.40	120.00	0.02
	HEC-RAS	780.2		Culvert									
	HEC-RAS	609.480	PF 1	459.00	73.22	86.07		86.08	0.000013	0.62	745.87	85.02	0.04
	HEC-RAS	516.230	PF 1	459.00	73.11	86.06		86.08	0.000055	0.99	462.30	77.64	0.07
	HEC-RAS	422.980	PF 1	459.00	73.00	86.07	74.96	86.07	0.000014	0.63	726.09	84.14	0.04
	HEC-RAS	421.98		Culvert									
	HEC-RAS	372.340	PF 1	459.00	73.00	85.82		85.83	0.000015	0.65	707.49	83.34	0.04
CP #2	HEC-RAS	339.650	PF 1	459.00	73.00	85.81		85.83	0.000058	1.02	451.47	76.51	0.07
	HEC-RAS	306.960	PF 1	459.00	73.00	85.82	74.95	85.82	0.000014	0.63	724.63	86.06	0.04
	HEC-RAS	304.96		Culvert									
	HEC-RAS	116.430	PF 1	459.00	73.00	85.20		85.21	0.000015	0.63	732.82	93.10	0.04
	HEC-RAS	66.170	PF 1	459.00	73.43	85.18		85.21	0.000089	1.20	382.49	69.27	0.09
	HEC-RAS	32.580	PF 1	459.00	73.72	85.18		85.20	0.000107	1.29	355.18	65.66	0.10
	HEC-RAS	0.000	PF 1	459.00	74.00	85.17	77.80	85.20	0.000122	1.36	336.63	63.35	0.10

Option #2 HEC-RAS Model



Option #3 HEC-RAS Model



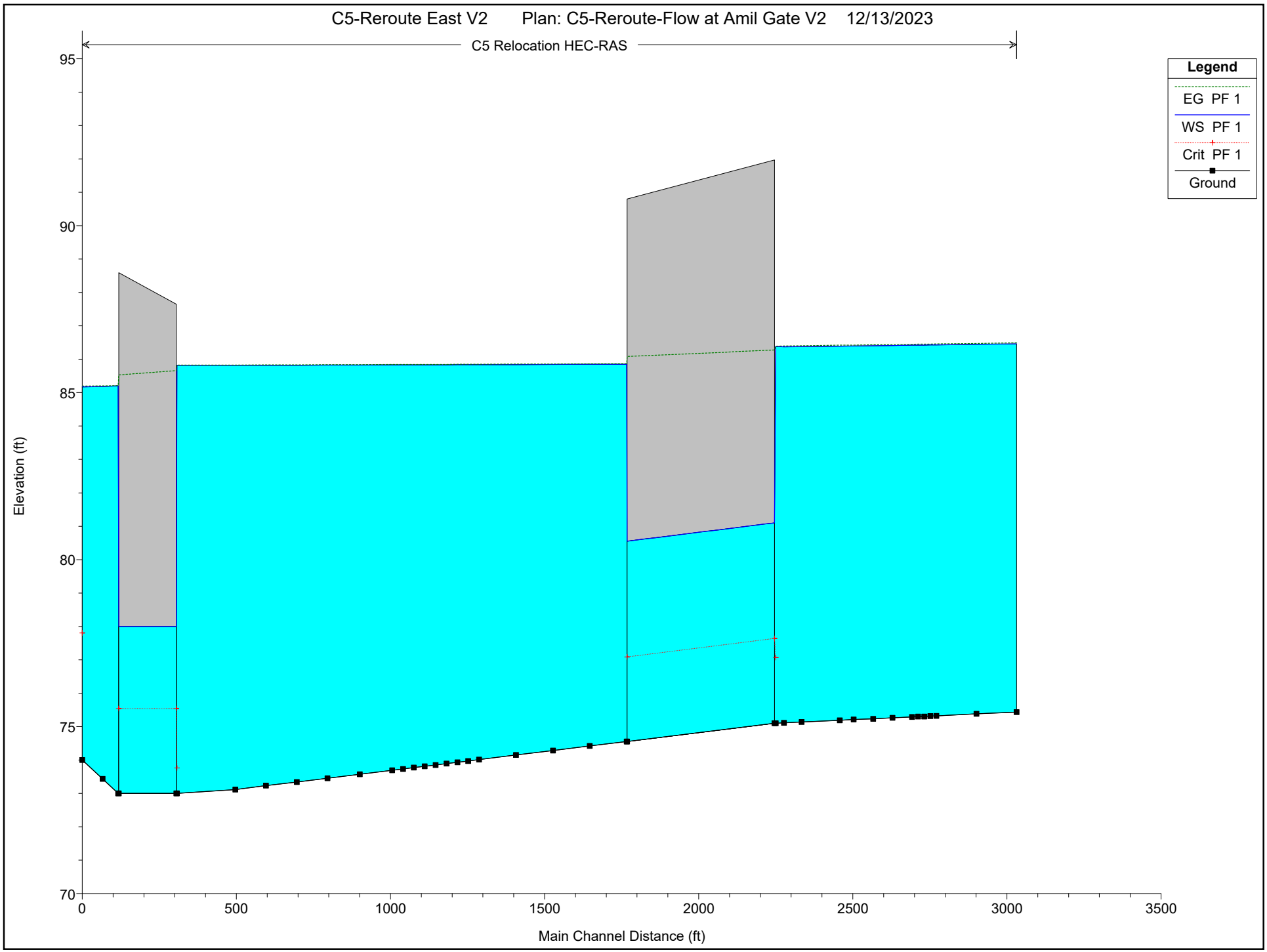
1 in Horiz. = 300 ft 1 in Vert. = 100 ft

Option #3 HEC-RAS Model

HEC-RAS Plan: Total at Gate River: C5 Relocation Reach: HEC-RAS Profile: PF 1

	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
	HEC-RAS	3031.040	PF 1	459.00	75.43	86.46		86.49	0.000130	1.40	328.05	62.26	0.11
	HEC-RAS	2901.190	PF 1	459.00	75.38	86.45		86.48	0.000128	1.39	330.31	62.57	0.11
	HEC-RAS	2771.340	PF 1	459.00	75.32	86.43		86.46	0.000125	1.38	332.99	62.90	0.11
	HEC-RAS	2751.450	PF 1	459.00	75.31	86.43		86.46	0.000125	1.38	333.45	62.95	0.11
	HEC-RAS	2731.560	PF 1	459.00	75.30	86.43		86.45	0.000124	1.37	334.02	63.04	0.11
	HEC-RAS	2711.670	PF 1	459.00	75.30	86.42		86.45	0.000124	1.37	334.05	63.06	0.11
	HEC-RAS	2691.780	PF 1	459.00	75.29	86.42		86.45	0.000124	1.37	334.41	63.10	0.11
	HEC-RAS	2628.810	PF 1	459.00	75.26	86.41		86.44	0.000123	1.37	335.63	63.24	0.10
	HEC-RAS	2565.840	PF 1	459.00	75.23	86.41		86.43	0.000122	1.36	336.98	63.40	0.10
	HEC-RAS	2502.880	PF 1	459.00	75.21	86.40		86.43	0.000121	1.36	337.89	63.52	0.10
	HEC-RAS	2457.690	PF 1	459.00	75.19	86.39		86.42	0.000120	1.35	339.54	63.77	0.10
CP #1	HEC-RAS	2333.490	PF 1	459.00	75.14	86.38		86.41	0.000118	1.35	341.12	63.93	0.10
	HEC-RAS	2276.890	PF 1	459.00	75.11	86.37		86.40	0.000117	1.34	342.50	64.09	0.10
	HEC-RAS	2249.800	PF 1	459.00	75.10	86.38	77.07	86.39	0.000020	0.70	657.70	90.57	0.05
	HEC-RAS	2245.8		Culvert									
	HEC-RAS	1766.480	PF 1	459.00	74.55	85.85		85.87	0.000035	0.96	479.42	42.56	0.05
	HEC-RAS	1646.740	PF 1	459.00	74.42	85.85		85.86	0.000035	0.95	481.17	42.20	0.05
	HEC-RAS	1526.990	PF 1	459.00	74.28	85.85		85.86	0.000034	0.94	486.91	42.20	0.05
	HEC-RAS	1407.250	PF 1	459.00	74.15	85.84		85.86	0.000033	0.93	492.25	42.20	0.05
	HEC-RAS	1287.510	PF 1	459.00	74.01	85.84		85.85	0.000031	0.92	498.81	42.26	0.05
	HEC-RAS	1252.250	PF 1	459.00	73.97	85.84		85.85	0.000031	0.91	502.85	42.48	0.05
	HEC-RAS	1216.990	PF 1	459.00	73.93	85.84		85.85	0.000030	0.91	505.63	42.59	0.05
	HEC-RAS	1181.720	PF 1	459.00	73.89	85.84		85.85	0.000030	0.91	506.94	43.53	0.05
	HEC-RAS	1146.460	PF 1	459.00	73.85	85.83		85.85	0.000030	0.90	507.85	42.48	0.05
	HEC-RAS	1111.200	PF 1	459.00	73.81	85.83		85.85	0.000030	0.90	510.37	42.56	0.05
	HEC-RAS	1075.940	PF 1	459.00	73.77	85.83		85.84	0.000029	0.90	511.13	42.48	0.05
	HEC-RAS	1040.680	PF 1	459.00	73.73	85.83		85.84	0.000029	0.89	513.82	42.58	0.05
	HEC-RAS	1005.420	PF 1	459.00	73.69	85.83		85.84	0.000029	0.90	512.02	42.28	0.05
	HEC-RAS	900.560	PF 1	459.00	73.57	85.83		85.84	0.000029	0.89	516.11	42.21	0.04
	HEC-RAS	795.690	PF 1	459.00	73.45	85.82		85.84	0.000028	0.88	521.14	42.22	0.04
	HEC-RAS	695.930	PF 1	459.00	73.34	85.82		85.83	0.000027	0.87	525.95	42.24	0.04
	HEC-RAS	596.170	PF 1	459.00	73.23	85.82		85.83	0.000026	0.87	530.49	42.25	0.04
	HEC-RAS	496.410	PF 1	459.00	73.11	85.82		85.83	0.000026	0.86	535.46	42.25	0.04
CP #2	HEC-RAS	306.960	PF 1	459.00	73.00	85.82	73.76	85.82	0.000002	0.30	1552.93	121.19	0.01
	HEC-RAS	304.96		Culvert									
	HEC-RAS	116.430	PF 1	459.00	73.00	85.20		85.21	0.000015	0.63	732.81	93.10	0.04
	HEC-RAS	66.170	PF 1	459.00	73.43	85.18		85.21	0.000089	1.20	382.59	69.27	0.09
	HEC-RAS	0.000	PF 1	459.00	74.00	85.17	77.80	85.20	0.000122	1.36	336.69	63.36	0.10

Option #3 HEC-RAS Model



Appendix C. Historic Data

C.1. Application 960806-5: VWCD Canal C-5 Relocation @ SeaWorld

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

CONSTRUCTION COMPLETION/CERTIFICATION

PERMIT NUMBER:

48-00052-S

APPLICATION NUMBER:

960806-5

VWCD Canal C-5 Relocation @ SeaWorld

South Florida Water Management District

Orlando Service Center • 7335 Lake Ellenor Drive • Orlando, FL 32809
(407) 858-6100 • Fax (407) 858-6121 • 1-800-250-4250 • Suncom 358-6100

CON 24-06
Regulation Department

March 2, 1999

Valencia Water Control District
10365 Orangewood Boulevard
Orlando, Florida 32821

Subject: **Construction Completion/Construction Certification**
Environmental Resource Standard General Permit
Permit No. 48-00052-S/Application No. 960806-5
VWCD CANAL C-5 RELOCATION @ SEA WORLD
Orange County, S12;7/T24;24S/R28;29E

Dear Sirs:

This letter is to acknowledge receipt of your consulting engineer's construction completion/ construction certification and the record drawings pertaining to the subject parcel's surface water management system. South Florida Water Management District (SFWMD) staff have reviewed the submitted information and it has been incorporated into the permit file.

By accepting the engineer's certification, SFWMD staff considers the surface water management system (permitted under the above listed application number) to be constructed in substantial conformance with the plans and specifications approved by the SFWMD. This satisfies your permit's conditions regarding submittal of an engineer's certification for construction completion of the permitted drainage facilities and the above referenced permit is hereby converted from the construction phase to the operation phase.

Should you have any questions, please contact Vickie Jones in the Orlando Service Center at (407) 858-6100.

Sincerely,

Jared Justesen
Regulatory Representative
Orlando Service Center

JJ/vj

c: Orange County Development Engineering Department
AR Miller Engineering, Inc.

vj0659

bc: Heidi Schloss
Backup File
Reader File

Final Inspection
Orlando Service Center
Regulation

Date:22 Dec 98

Project Name: SWF Pond "6" Relocation

Permit No: 48-00052-S/960806-5

Project Engineer: AR Milller Engineering Inc.

Certification Letter Received?Yes

Record Drawings Received ? Yes

Area Engineer: Jared Justesen

Date of Final Inspection:21 Dec 98

FINAL INSPECTION REPORT

This permit is for the realignment of VWD'S canal C-5 on the Sea World property to better the land use for future construction. The submitted engineers certification and record drawings indicate construction has been done within a reasonable tolerance of design. Valencia Drainage District will maintain the system.

C:h schloss
File

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Environmental Resource/Surface Water Management Permit Construction Completion/Construction Certification

FORM 0881
08/95

RECEIVED
OCT 27 1998
ORLANDO SERVICE CENTER

TO: SOUTH FLORIDA WATER MANAGEMENT DISTRICT
Field Engineering Division *Please see page 2 of 2

SUBJECT: PERMIT NO. 48-00052-S APPLICATION NO. 960806-5
PROJECT NAME: VWCD Canal C-5 Relocation PHASE: _____
LOCATION: COUNTY: Orange S ____ T ____ R ____

The subject surface water management system has been designed, constructed and completed as follows: (use additional sheets if needed):

Completion Date: April, 28, 1998
Month Day Year

Discharge Structure:		PERMITTED		EXISTING	
Weir N/A	Width	Crest	Width	Crest	
Bleeder N/A	Dimensions	Invert	Dimensions	Invert	
Type					

Retention/Detention Area: (if applicable) N/A

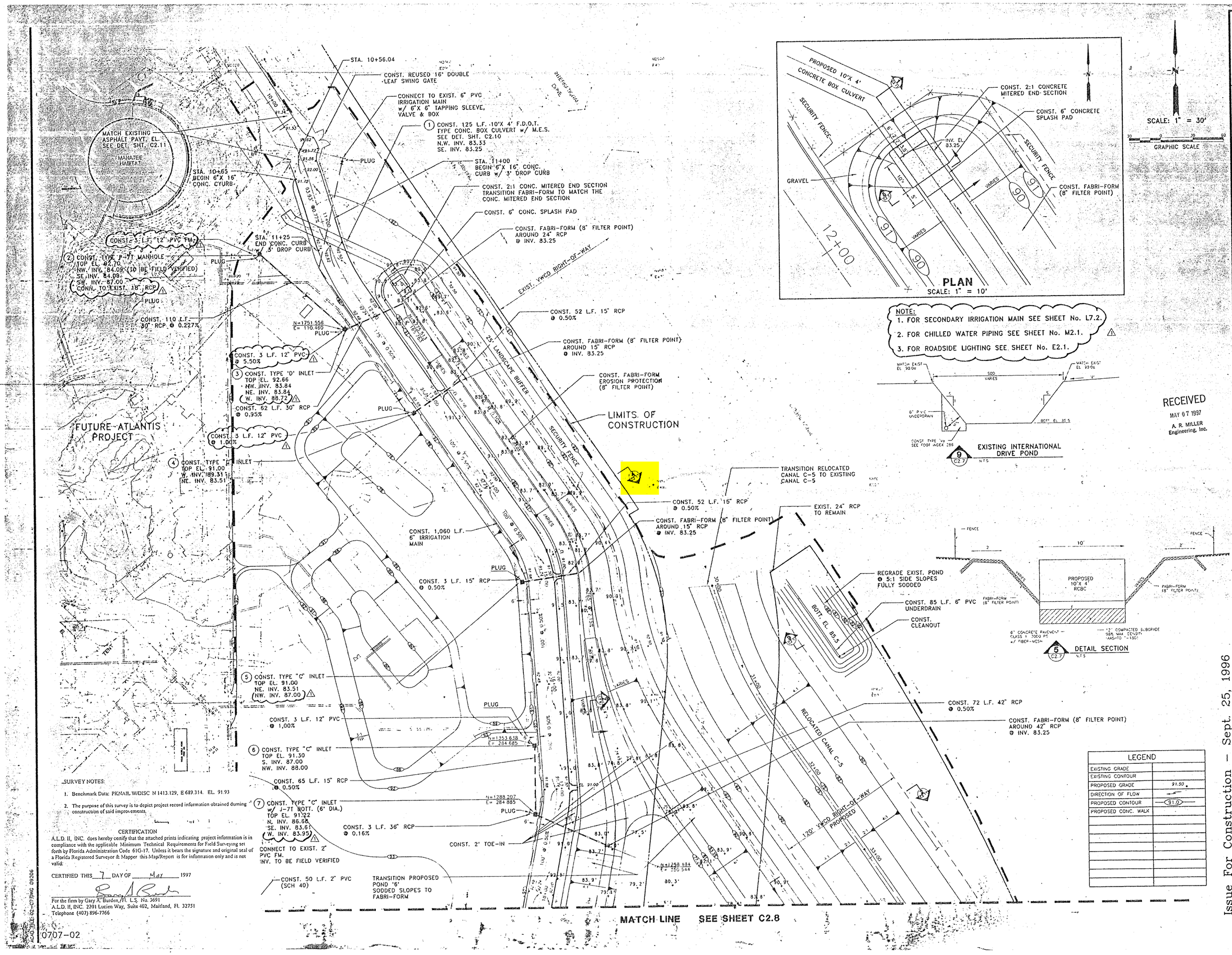
ID	ID	ID	ID
Size	Size	Size	Size
Side Slopes (H:V)	Side Slopes (H:V)	Side Slopes (H:V)	Side Slopes (H:V)

Please indicate the location of the appropriate bench mark(s) used to determine the above information on the record drawings (Reference 40E-4.381(1)(f), Florida Administrative Code). All elevations should be according to National Geodetic Vertical Datum (NGVD) (Reference 2.9 of the *Basis of Review for Environmental Resource Permit Applications within the South Florida Water Management District*).

I HEREBY NOTIFY THE DISTRICT OF THE COMPLETION OF CONSTRUCTION OF ALL THE COMPONENTS OF THE SURFACE WATER MANAGEMENT FACILITIES FOR THE ABOVE REFERENCED PROJECT AND CERTIFY THAT THEY HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS PERMITTED BY THE DISTRICT. (A COPY OF THE APPROVED PERMIT DRAWINGS IS ATTACHED WITH DEVIATIONS NOTED, IF APPLICABLE). I HEREBY AFFIX MY SEAL THIS 27 DAY OF October 1998.

10/27/98
Engineer's Signature and Seal

Arthur R. Miller, III, PE, PLS PE 0026259
Name (Please Print) FLA. Registration No.



SURVEY NOTES:

1. Benchmark Data: PKNAIL W/DISC N 1413.129, E 689.314. EL. 91.93
2. The purpose of this survey is to depict project record information obtained durning construction of said improvements.

CERTIFICATION

A.L.D. II, INC. does hereby certify that the attached prints indicating project information is in compliance with the applicable Minimum Technical Requirements for Field Surveying set forth by Florida Administration Code 61G-17. Unless it bears the signature and original seal of a Florida Registered Surveyor & Mapper this Map/Report is for information only and is not valid:

CERTIFIED THIS 7 DAY OF May 1997

For the firm by Gary A. Burden, Fl. L.S. No. 3691
A.L.D. II, INC. 2201 Lucien Way, Suite 402, Maitland, Fl. 32751
Telephone (407) 896-7766

0707-02

RECEIVED
MAY 07 1997
A. R. MILLER Engineering, Inc.

A.R. Miller Engineering, Inc.
201 North Parramore Avenue Orlando, Florida 32801 (407) 841-4004

Peckham Guyton Albers & Viets Inc.

Revisions	Date	By
Number		
1	9/25/96	A.R.M.

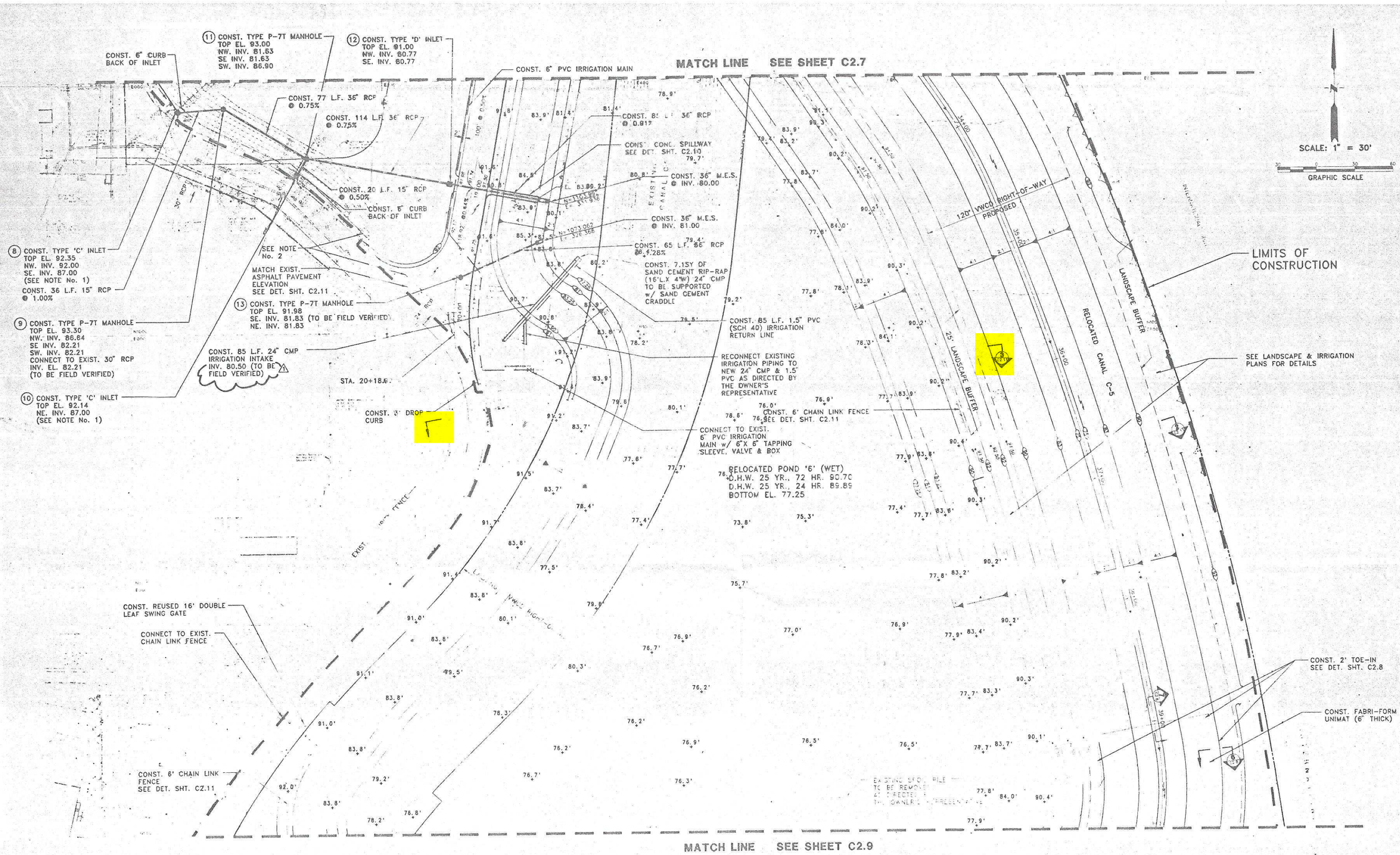
REVISED

Issue For Construction - Sept. 25, 1996

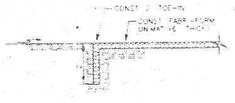
CIVIL SITE PAVING, GRADING, DRAINAGE & UTILITIES PLAN

SWF POND '6' RELOCATION
Sea World Of Florida
Busch Entertainment Corporation

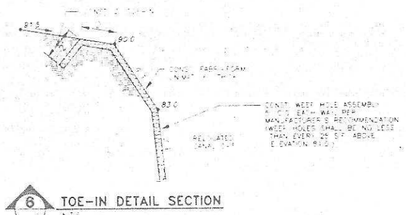
Date: Aug 15, 1996
Job No. 11062-00
Sheet No. C2.7



NOTE:
1. RECONSTRUCT EXISTING CONCRETE FLUME TO FIT TYPE 'C' INLET IF NEEDED @ PROPOSED GRADE. CONSTRUCT CURB BEHIND INLET.
2. CONTRACTOR TO LOCATE & UNCOVER EXISTING DUCTBANK BEFORE CONSTRUCTION. ADJUST EXISTING POWER BOX, TRANFORMER & TELEPHONE BOX IF NECESSARY. COORDINATE WITH THE OWNER'S REPRESENTATIVE.



7 TOE-IN DETAIL SECTION



6 TOE-IN DETAIL SECTION

LEGEND	
EXISTING GRADE	
EXISTING CONTOUR	
PROPOSED GRADE	91.50
DIRECTION OF FLOW	
PROPOSED CONTOUR	91.0
PROPOSED CONC. WALK	

Issue For Construction - Sept. 25, 1996

Peckham Guyton Albers & Viets Inc.

AR Miller Engineering, Inc.
201 North Palmetto Avenue
Orlando, Florida 32801
(407) 841-4600

Revisions			
Number	Date		
1	REVISED 9/25/96	Dr. P.A.C.	Dr. A.R.M.

SWF POND '6' RELOCATION
Sea World Of Florida
Busch Entertainment Corporation

Date: Aug 13, 1996
Job No. 11903-00
Sheet No. C2.8

ACAD FILE: 02-CB.DWG 09206
0707-02

MATCH LINE SEE SHEET C2.8

CONTROL STRUCTURE
SEE DET. SHT. C2.11
TOP EL. 90.00
INV. EL. 80.00
NOTCH EL. 83.25
WEIR EL. 86.50

RELOCATED POND '6'
SEE LANDSCAPE & IRRIGATION PLANS FOR DETAILS

CONST. 115 L.F. 30" RCP @ 1.33%

CONST. 5' CHAIN LINK FENCE
SEE DET. SHT. C2.11

25' LANDSCAPE BUFFER

CONST. 2' TOE-IN (TYP.)

EXISTING CANAL C-5

120' VWCD RIGHT-OF-WAY PROPOSED

RELOCATED CANAL C-5

CONST. FABRI-FORM UNIMAT (6" THICK)

CONST. 52 L.F. 18" RCP @ 0.96%

(14) CONST. TYPE 'C' INLET
TOP EL. 89.5
INV. EL. 83.5

CONST. FABRI-FORM UNIMAT (6" THICK) AROUND 60" RCP @ INV. 76.50

CONST. FABRI-FORM UNIMAT (6" THICK) AROUND 18" RCP @ INV. 83.00

CONST. FABRI-FORM UNIMAT (6" THICK)

TRANSITION RELOCATED CANAL C-5 TO EXISTING CANAL C-5

SALT WATER HOLDING POND

EXISTING SPOIL PILE TO BE REMOVED AS DIRECTED BY THE OWNER'S REPRESENTATIVE

LIMITS OF CONSTRUCTION

CONST. 2' TOE-IN (TYP.) SEE DET. SHT. C2.6

EXISTING VWCD RIGHT-OF-WAY

EXISTING CANAL C-5

SCALE: 1" = 30'
GRAPHIC SCALE

VARIES VARIES
92.0 91.5 89.44
RELOCATED CANAL C-5

8 C2.9 SWALE SECTION
NTS

LEGEND	
EXISTING GRADE	
EXISTING CONTOUR	
PROPOSED GRADE	91.50
DIRECTION OF FLOW	
PROPOSED CONTOUR	91.0
PROPOSED CONC. WALK	

Issue For Construction – Sept. 25, 1996

AR Miller Engineering, Inc.
201 North Palmetto Avenue
Daytona Beach, Florida 32011
(407) 947-4004

Peckham Guyton Albers & Viets Inc.

Revisions Number	Date	Dr. A.R.M.
		Dr. R.A.C.

CIVIL SITE PAVING, GRADING, DRAINAGE & UTILITIES PLAN

SWF POND '6' RELOCATION
Sea World of Florida
Busch Entertainment Corporation

Date Aug 13, 1996
Job No 11995-00
Sheet No C2.9

ACAD FILE: 02-C9.DWG 09206

0707-02

CONTROL STRUCTURE
SEE DET. SHT. C2.11
TOP EL. ~~90.00~~ 89.88
INV. EL. 80.00
NOTCH EL. ~~83.25~~ 83.38
WEIR EL. ~~86.50~~ 86.38

MATCH LINE SEE SHEET C2.8

RELOCATED POND '6'
SEE LANDSCAPE & IRRIGATION PLANS FOR DETAILS

CONST. 105 L.F. 60" RCP @ 3.33%

CONST. 6' CHAIN LINK FENCE SEE DET. SHT. C2.11

CONST. 2' TOE-IN (TYP.)

25' LANDSCAPE BUFFER

EXISTING CANAL C-5

120' VWCD RIGHT-OF-WAY PROPOSED

RELOCATED CANAL C-5

CONST. FABRI-FORM UNIMAT (6" THICK)

CONST. 52 L.F. 18" RCP @ 0.96%

CONST. TYPE 'C' INLET TOP EL. 89.5 INV. EL. 83.5

CONST. FABRI-FORM UNIMAT (6" THICK) AROUND 60" RCP @ INV. 76.50

CONST. FABRI-FORM UNIMAT (6" THICK) AROUND 18" RCP @ INV. 83.00

CONST. FABRI-FORM UNIMAT (6" THICK)

TRANSITION RELOCATED CANAL C-5 TO EXISTING CANAL C-5

SALT WATER HOLDING POND

EXISTING SPOIL PILE TO BE REMOVED AS DIRECTED BY THE OWNER'S REPRESENTATIVE

LIMITS OF CONSTRUCTION

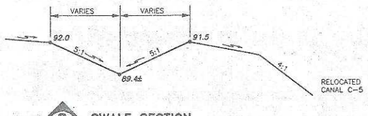
CONST. 2' TOE-IN (TYP.) SEE DET. SHT. C2.8

EXISTING VWCD RIGHT-OF-WAY

EXISTING CANAL C-5

DRIVE

SCALE: 1" = 30'
GRAPHIC SCALE



8 C2.9 SWALE SECTION N.T.S.

LEGEND	
EXISTING GRADE	91.5
EXISTING CONTOUR	55
PROPOSED GRADE	91.50
DIRECTION OF FLOW	
PROPOSED CONTOUR	91.0
PROPOSED CONC. WALK	

RECORD DRAWING

These RECORD DRAWINGS have been prepared, in part, on the basis of information compiled and furnished by others. The ENGINEER will not be responsible for any errors or omissions which have been incorporated into this document as a result.

Arthur R. Miller, III
Florida PE #26259
10/27/98

AR Miller Engineering, Inc.
201 North Palmetto Avenue
Orlando, Florida 32801
(407) 841-4004

Peckham Guyton Albers & Viets Inc. PGAV

Revisions		
Number	Date	By
AS-BUILTS	10-26-98	R.A.C.

Issue For Construction - Sept. 25, 1996

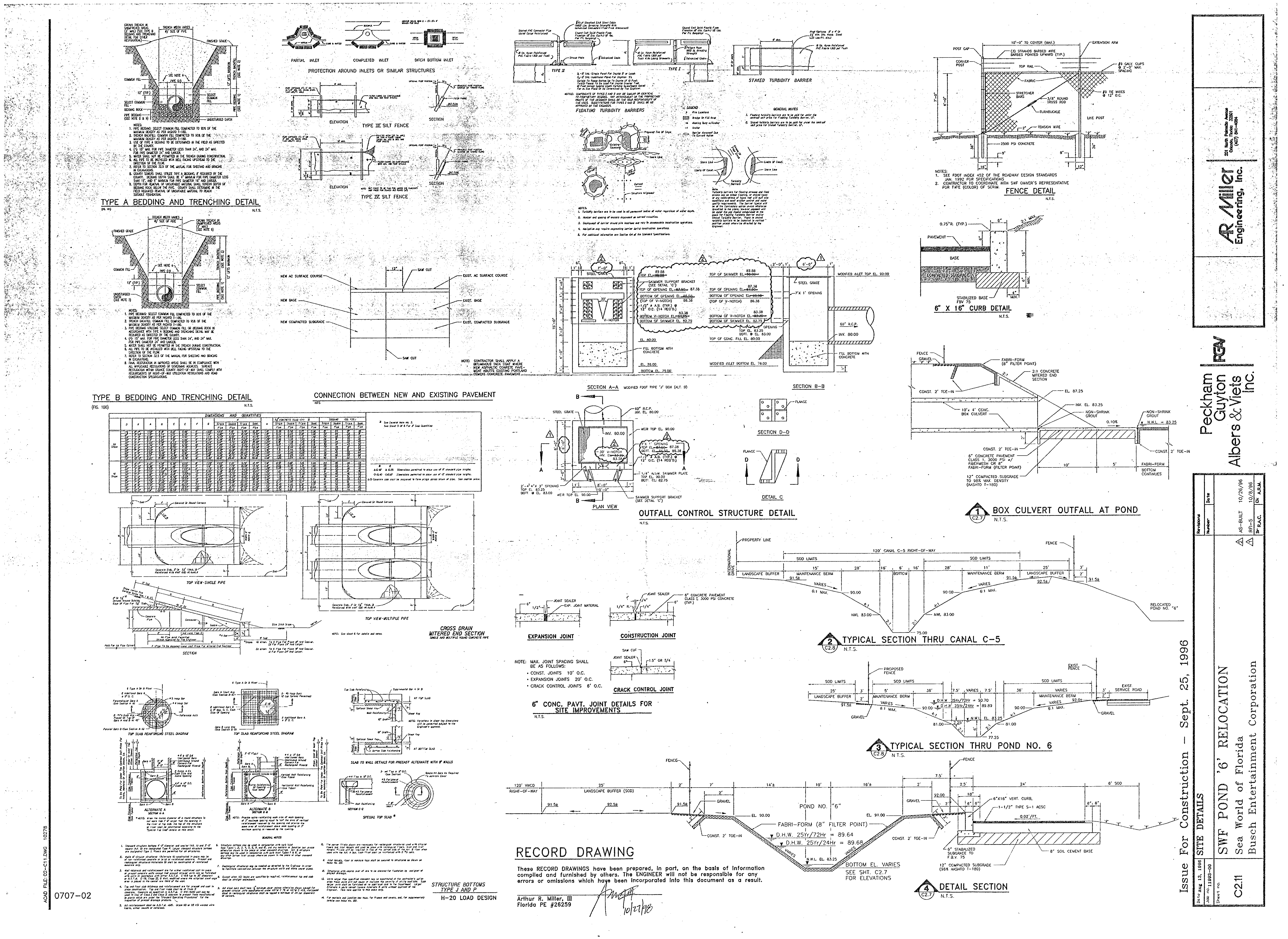
CIVIL SITE PAVING, GRADING, DRAINAGE & UTILITIES PLAN

SWF POND '6' RELOCATION
Sea World Of Florida
Busch Entertainment Corporation

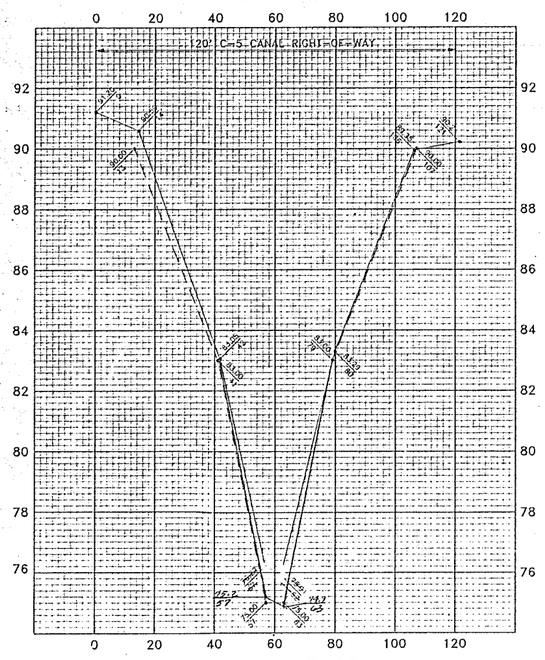
Date Aug 13, 1998
Job no. 11909-00
Sheet no. C2.9

ACAD FILE: 02-C9.DWG 10278

0707-02



TYPE A BEDDING AND TRENCHING DETAIL
TYPE B BEDDING AND TRENCHING DETAIL
PARTIAL INLET
COMPLETED INLET
DITCH BOTTOM INLET
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
TYPE III SILT FENCE
TYPE IV SILT FENCE
FLOATING TURBIDITY BARRIERS
STAKED TURBIDITY BARRIER
FENCE DETAIL
6" X 16" CURB DETAIL
CONNECTION BETWEEN NEW AND EXISTING PAVEMENT
SECTION A-A
SECTION B-B
SECTION D-D
DETAIL C
PLAN VIEW
OUTFALL CONTROL STRUCTURE DETAIL
BOX CULVERT OUTFALL AT POND
TOP VIEW-SINGLE PIPE
TOP VIEW-MULTIPLE PIPE
CROSS DRAIN MITERED END SECTION
EXPANSION JOINT
CONSTRUCTION JOINT
CRACK CONTROL JOINT
NOTE: MAX. JOINT SPACING SHALL BE AS FOLLOWS:
• CONST. JOINTS 10' O.C.
• EXPANSION JOINTS 20' O.C.
• CRACK CONTROL JOINTS 6' O.C.
6" CONC. PAVT. JOINT DETAILS FOR SITE IMPROVEMENTS
TYPICAL SECTION THRU CANAL C-5
TYPICAL SECTION THRU POND NO. 6
DETAIL SECTION
STRUCTURE BOTTOMS TYPE J AND P
H-20 LOAD DESIGN
RECORD DRAWING
These RECORD DRAWINGS have been prepared, in part, on the basis of information compiled and furnished by others. The ENGINEER will not be responsible for any errors or omissions which have been incorporated into this document as a result.
Arthur R. Miller, III
Florida PE #26259
10/27/98
0707-02
Issue For Construction – Sept. 25, 1996
SITE DETAILS
SWF POND '6' RELOCATION
Sea World of Florida
Busch Entertainment Corporation
C2.11
Peckham Guyton Albers & Viets Inc.
AR Miller Engineering, Inc.
AS-BUILT 10/26/96
RFI-5 10/8/96



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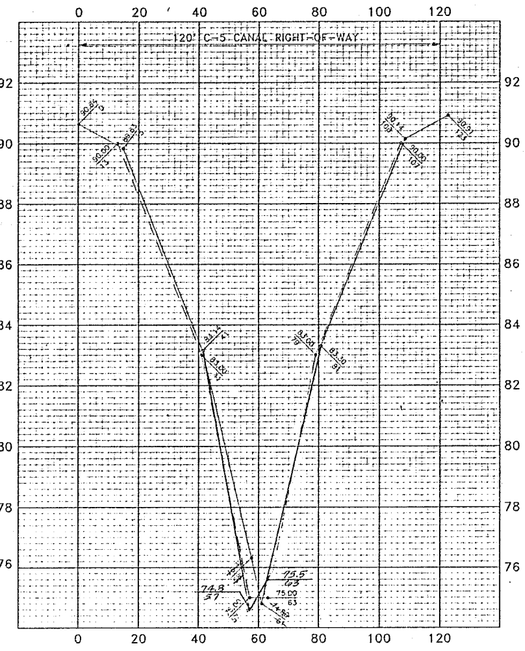

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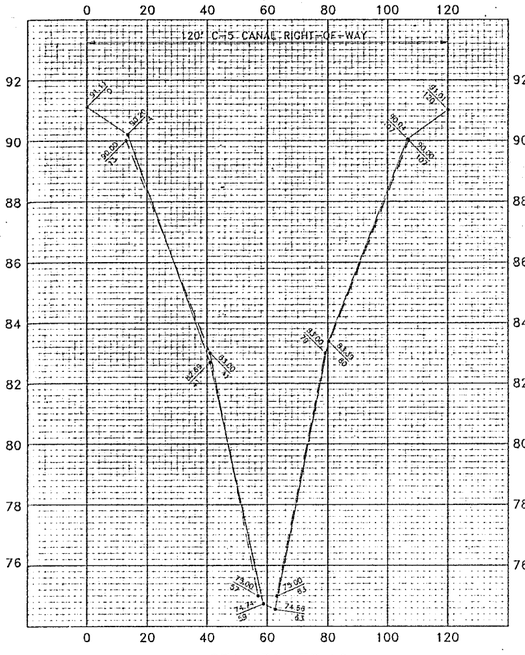

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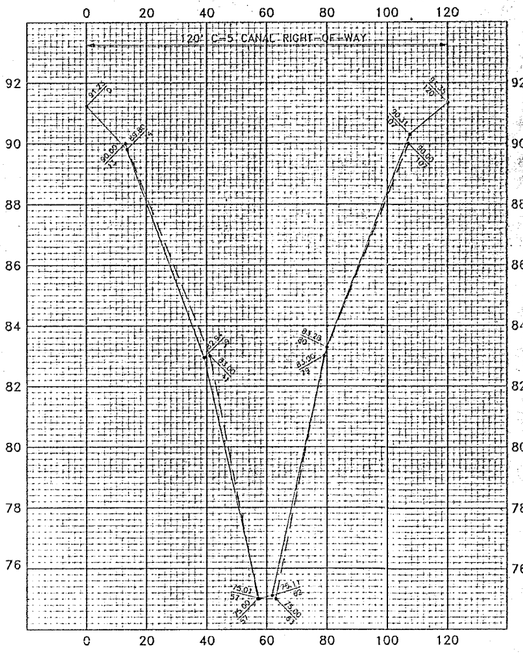

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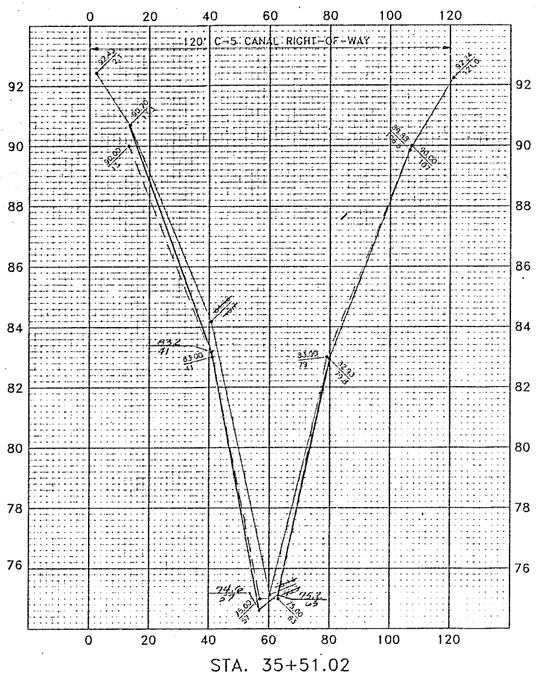

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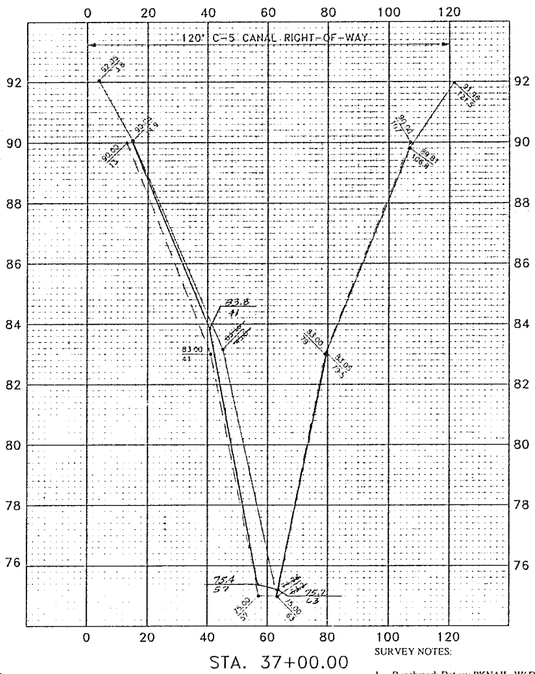

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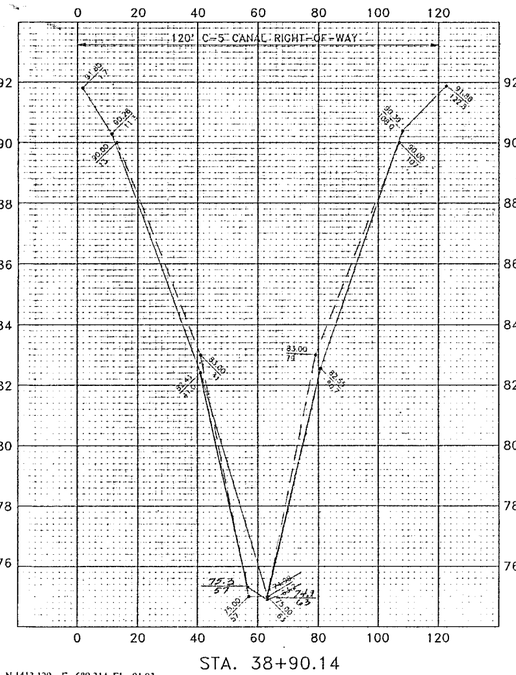

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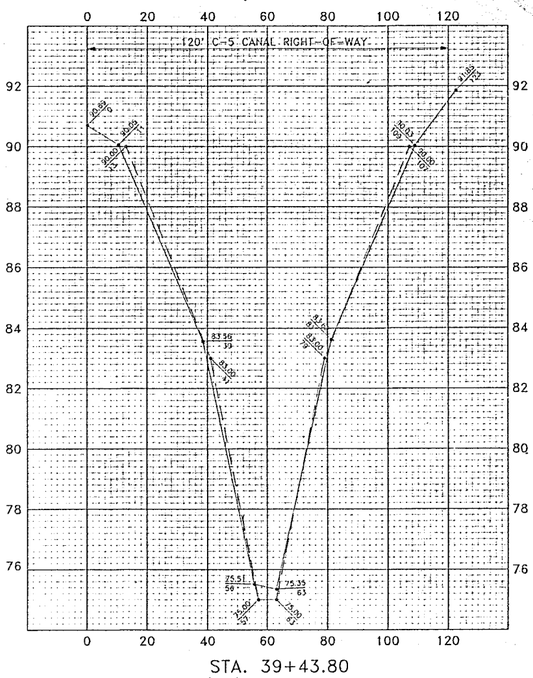


STA. 39+43.80

SURVEY NOTES:

1. Benchmark Datum: PKNAIL W/ DISC N 1413.129 , E. 689.314 EL. 91.93
2. The purpose of this survey is to depict project record information obtained during construction of said improvements.

LEGEND

— — —	DESIGN SECTION
———	AS-BUILT SECTION
83.00 / 41	AS-BUILT ELEVATION/OFFSET DISTANCE
77.30 / 61	DESIGN ELEVATION/OFFSET DISTANCE

HORIZONTAL. = 20'
VERTICAL = 2'

CERTIFICATION

A.L.D. II, INC. does hereby certify that the attached prints indicating project information is in compliance with the applicable Minimum Technical Requirements for Field Surveying set forth by Florida Administration Code 61G-17. Unless it bears the signature and original seal of a Florida Registered Surveyor & Mapper this Map/Report is for information only and is not valid.

CERTIFIED THIS 11 DAY OF May 1997

For the firm by Gary A. Burden, Fl. L.S. No. 3691
A.L.D. II, INC 2201 Lucien Way, Suite 402, Maitland, Fl. 32751
Telephone (407) 896-7766

RECEIVED
MAR 13 1997
A. R. MILLER
Engineering, Inc.

RECORD DRAWING

These RECORD DRAWINGS have been prepared, in part, on the basis of information compiled and furnished by others. The ENGINEER will not be responsible for any errors or omissions which have been incorporated into this document as a result.

Arthur R. Miller, III
Florida PE #26259

A.R. Miller Engineering, Inc.
2011 North Palmetto Avenue
Orlando, Florida 32801
(407) 841-4464

Peckham Guyton Albers & Viets Inc.

Revisions			
Number	Date	Dr. R.A.C.	Ck. A.R.M.

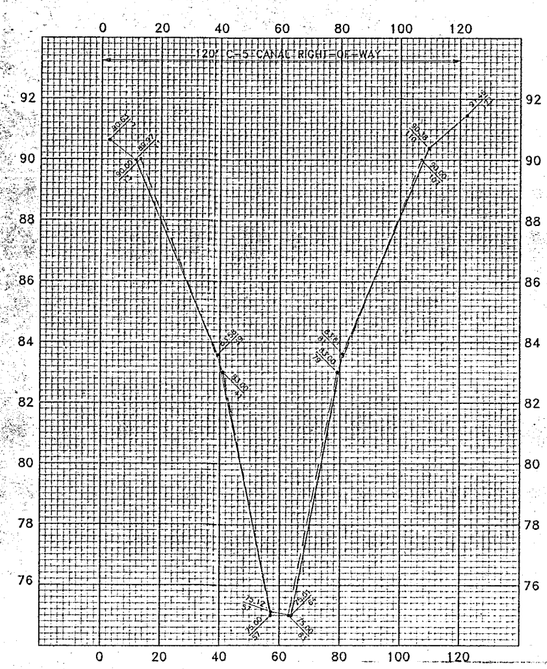
CIVIL SITE CANAL C-5 CROSS SECTIONS

SWF POND '6' RELOCATION
Sea World Of Florida
Busch Entertainment Corporation

Date Aug 13, 1996
Job No. 21605-00
Sheet no. C2.16

ACAD FILE: SEC DWG 03057

0707-02



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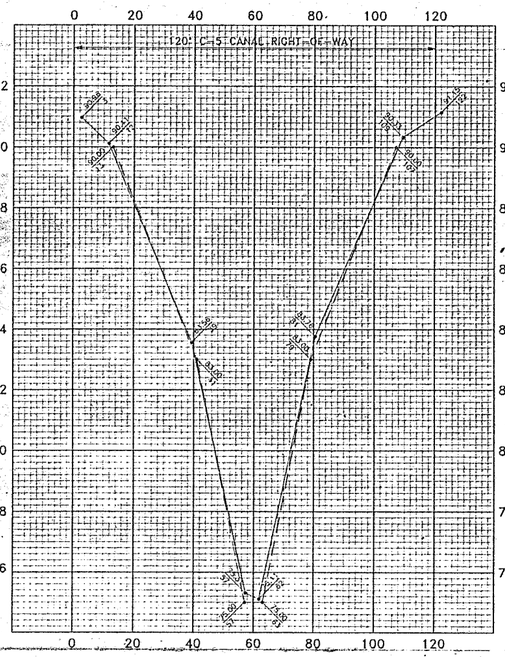

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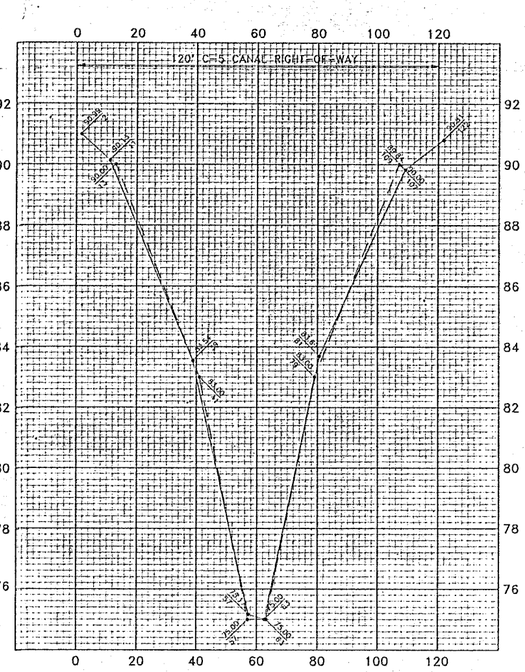

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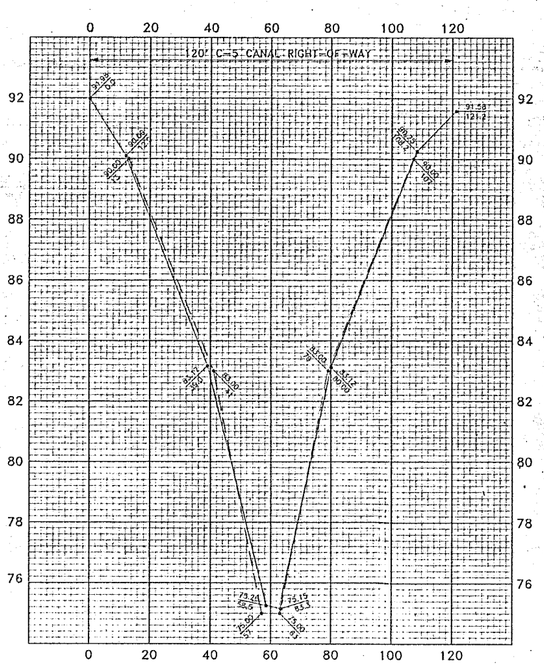

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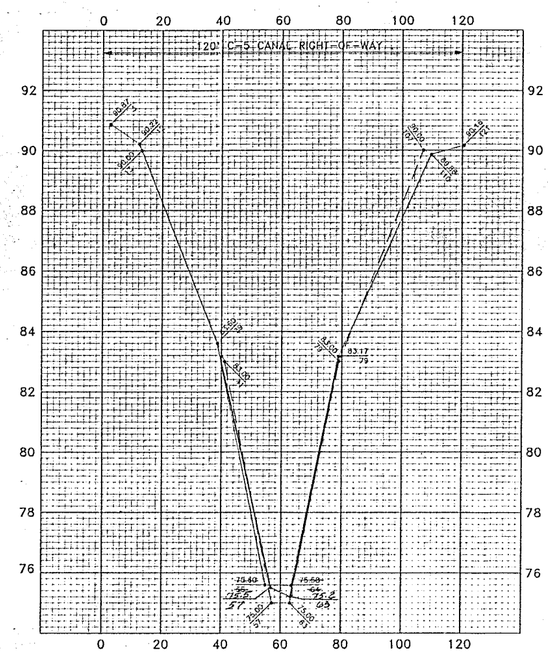

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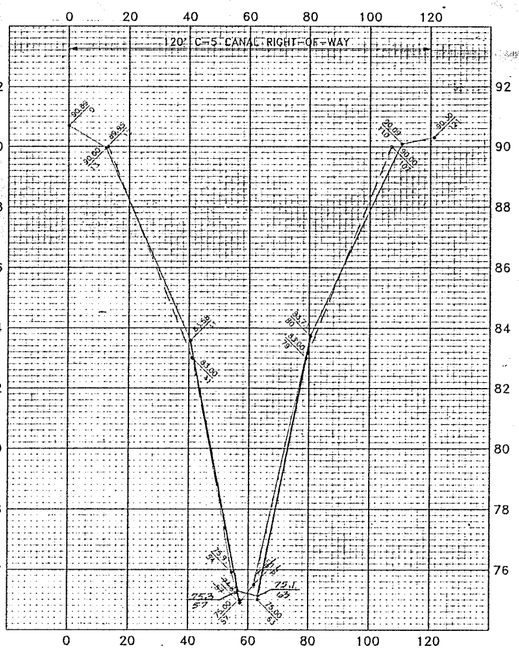

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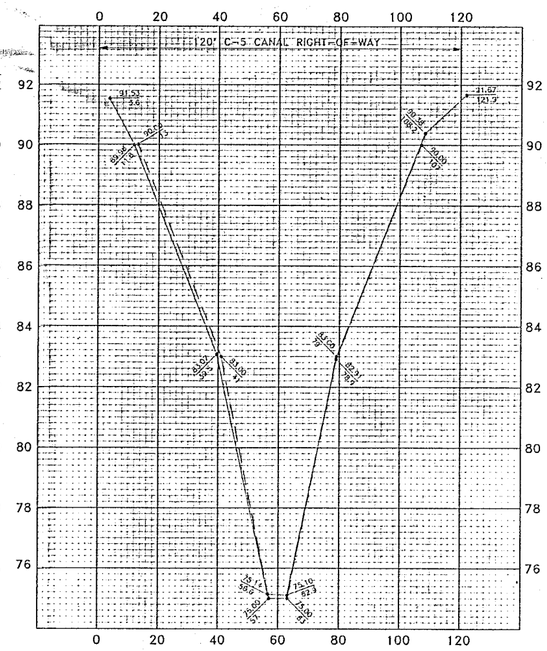

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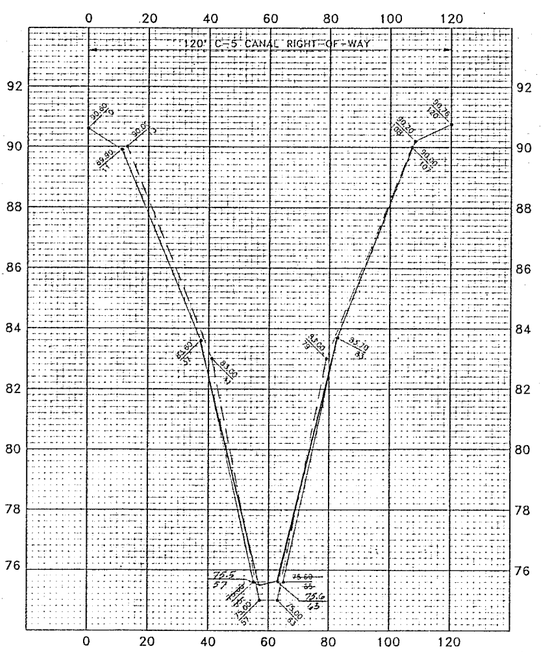

STA. 43+73.05

HORIZONTAL. = 20'
VERTICAL = 2'

LEGEND

— — —	DESIGN SECTION
———	AS-BUILT SECTION
83.00 / 41	AS-BUILT ELEVATION/OFFSET DISTANCE
77.30 / 87	DESIGN ELEVATION/OFFSET DISTANCE

RECORD DRAWING

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Arthur R. Miller, III
Florida PE #26259

AR Miller Engineering, Inc.
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Ortando, Florida 32801
(407) 841-4064

Peckham Guyton Albers & Viets Inc.

Revisions | Number | Date | Dr A.R.M. | Ck R.A.C.

CIVIL SITE CANAL C-5 CROSS SECTIONS

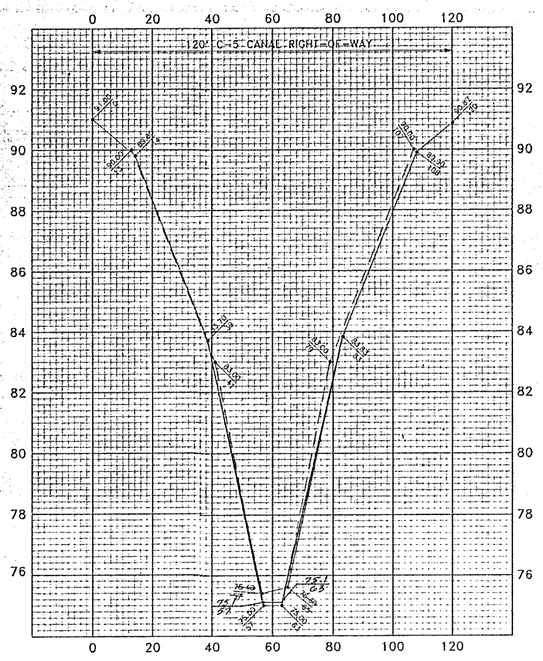
SWF POND '6' RELOCATION

Sea World Of Florida
Busch Entertainment Corporation

Date Aug 13, 1998
Job no. 11903-00
Sheet no. C2.17

ACAD FILE: SEC.DWG 03057

0707-02



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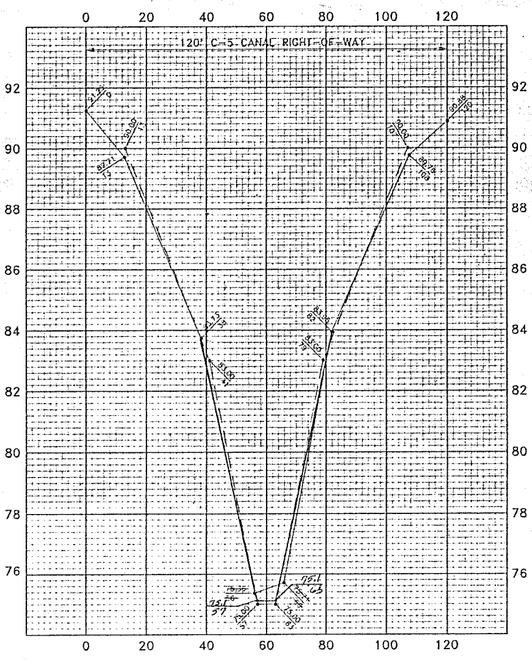

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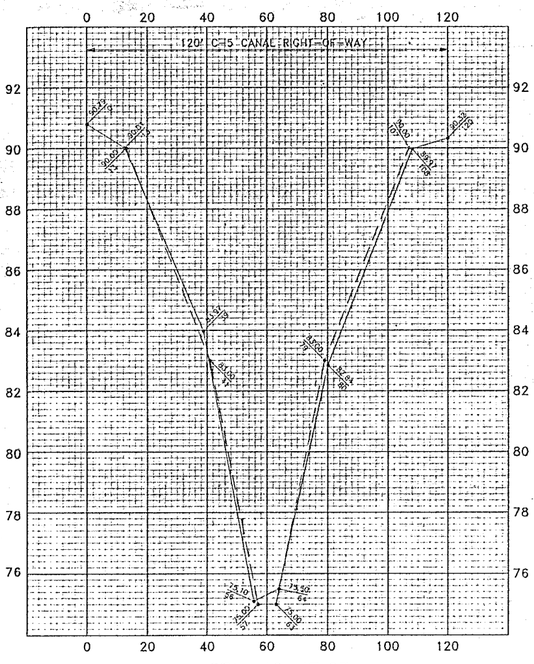

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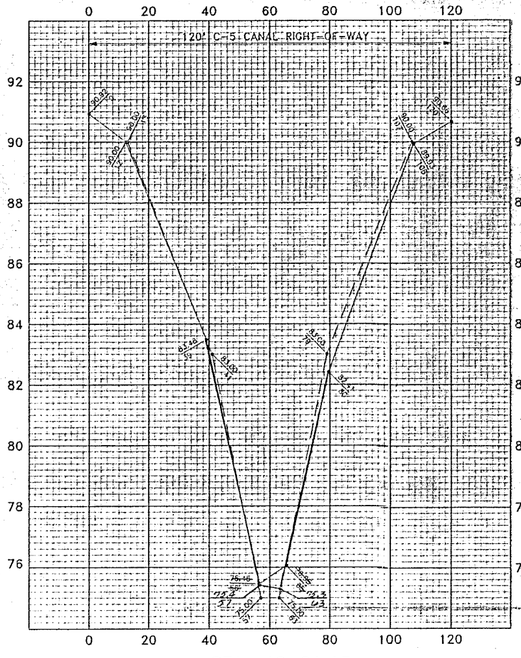

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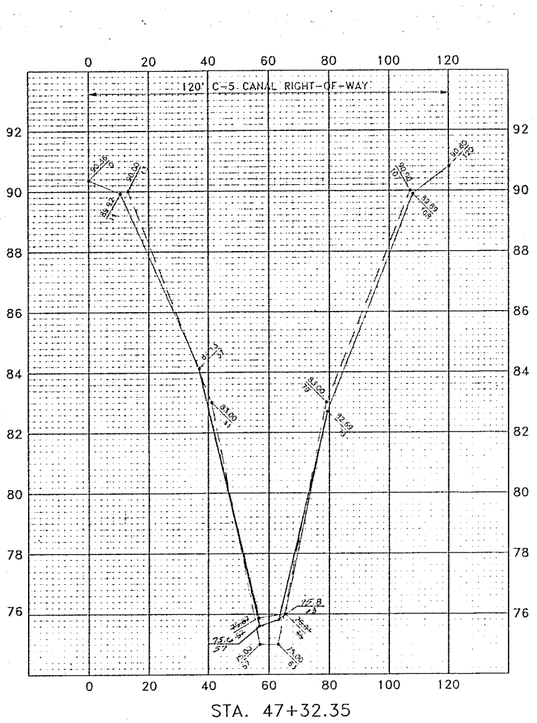

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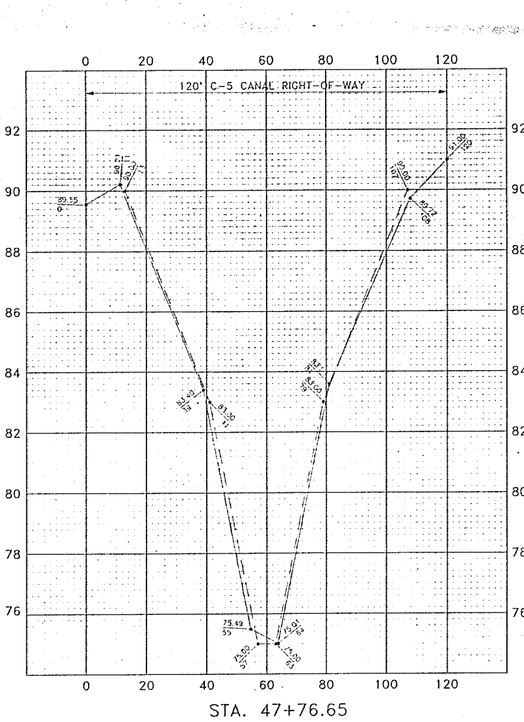

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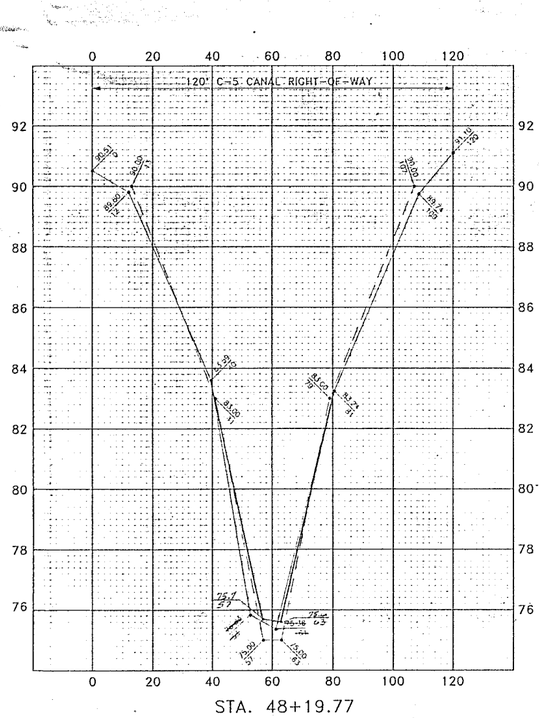

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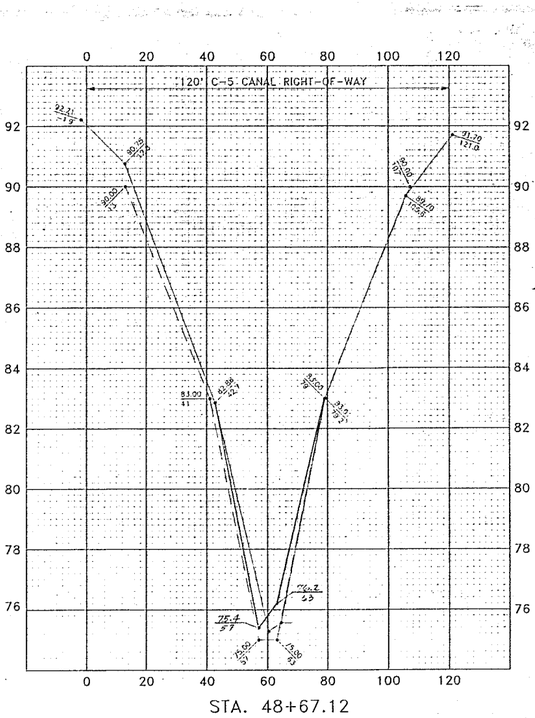

STA. 48+67.12

HORIZONTAL. = 20'
VERTICAL = 2'

LEGEND

— — —	DESIGN SECTION
———	AS-BUILT SECTION
83.00 / 41	AS-BUILT ELEVATION/OFFSET DISTANCE
77.50 / 61	DESIGN ELEVATION/OFFSET DISTANCE

RECORD DRAWING

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Arthur R. Miller, III
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(407) 841-4664

PEV
Peckham Guyton Albers & Viets Inc.

Revision	Date	Ch A.R.M.
Number		Dr R.A.C.

CIVIL SITE CANAL C-5 CROSS SECTIONS

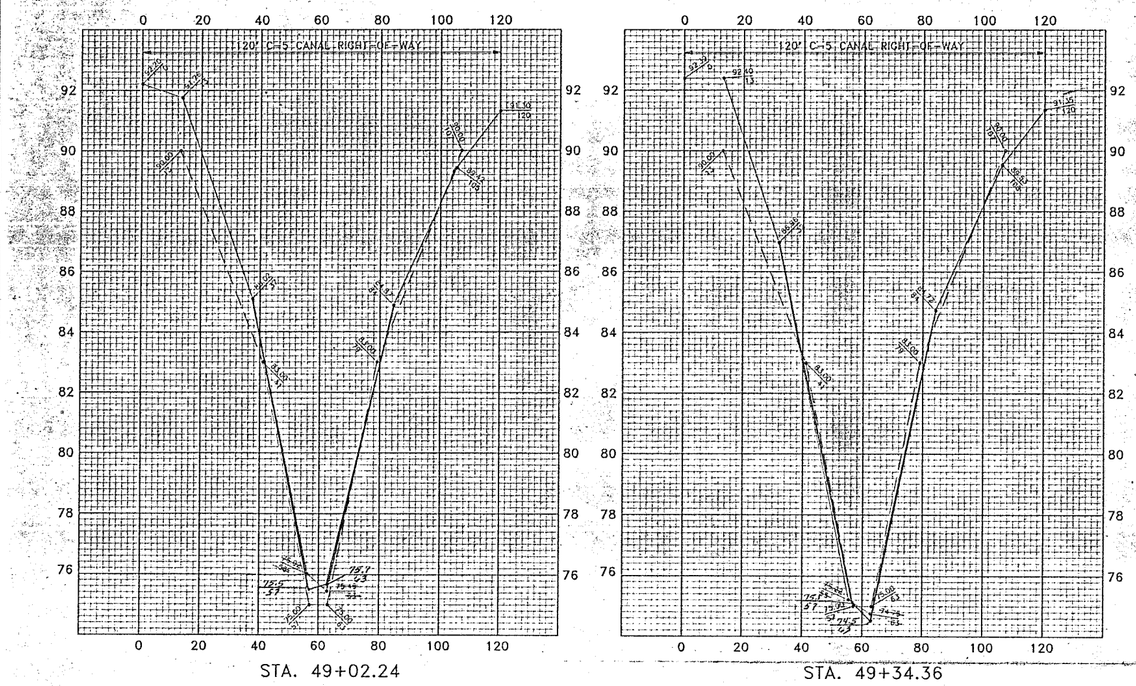
SWF POND '6' RELOCATION

Sea World of Florida
Busch Entertainment Corporation

Date Aug 13, 1998
Job No. 11993-00
Sheet no. C2.18

ACAD FILE: SEC.DWG 03057

0707-02



STA. 49+02.24

STA. 49+34.36

HORIZONTAL. = 20'
VERTICAL = 2'

LEGEND

— — —	DESIGN SECTION
———	AS-BUILT SECTION
83.00 / 81	AS-BUILT ELEVATION/OFFSET DISTANCE
77.19 / 91	DESIGN ELEVATION/OFFSET DISTANCE

RECORD DRAWING

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Arthur R. Miller, III
Florida PE #26259

AR Miller Engineering, Inc.
201 North Palmetto Avenue
Orlando, Florida 32801
(407) 841-4864

Peckham Guyton Albers & Viets Inc.

Revisions		
Number	Date	

Dr R.A.C. Ch A.R.M.

Date Aug 13, 1998
Job no. 11982-00
Sheet no. C2.19

CIVIL SITE CANAL C-5 CROSS SECTIONS

SWF POND '6' RELOCATION

Sea World Of Florida

Busch Entertainment Corporation

ACAD FILE: SECDWG 03057

0707-02

POND 6 BOTTOM AS-BUILT

SHEET TITLE: TOPOGRAPHIC SURVEY

PROJECT

LOCATION AREA: X,Z

REVISIONS

DATE: 03/28/98

SCALE: 1" = 30'

DRAWN: RGR

APPROVED: CRS

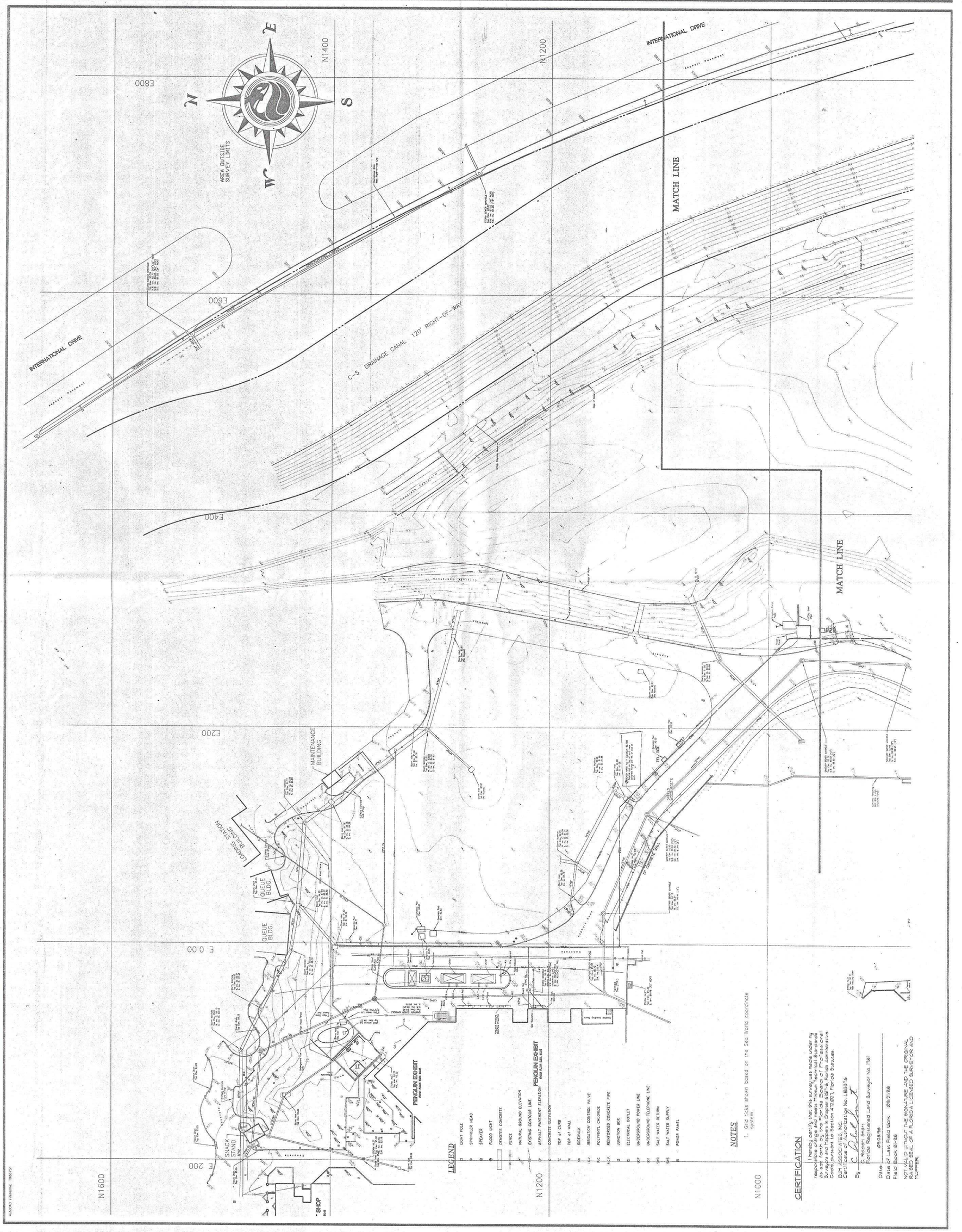
JOB NO: 9887

SHEET: 1 OF 2 SHEETS

BJM ASSOCIATES, INC.
ENGINEERS * LAND PLANNERS * SURVEYORS
506 Wymore Road Winter Park, Fla. 32789
TELEPHONE: (407)645-5566, FAX: (407)629-5389

Sea World of Florida
7007 Sea World Drive
Orlando, Florida 32821
Telephone: (407) 351-3600

AutoCAD Filename: 7985751



NOTES

1. Grid ticks shown based on the Sea World coordinate system.

CERTIFICATION

I hereby certify that this survey was made under my responsible charge and meets Minimum Technical Standards as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

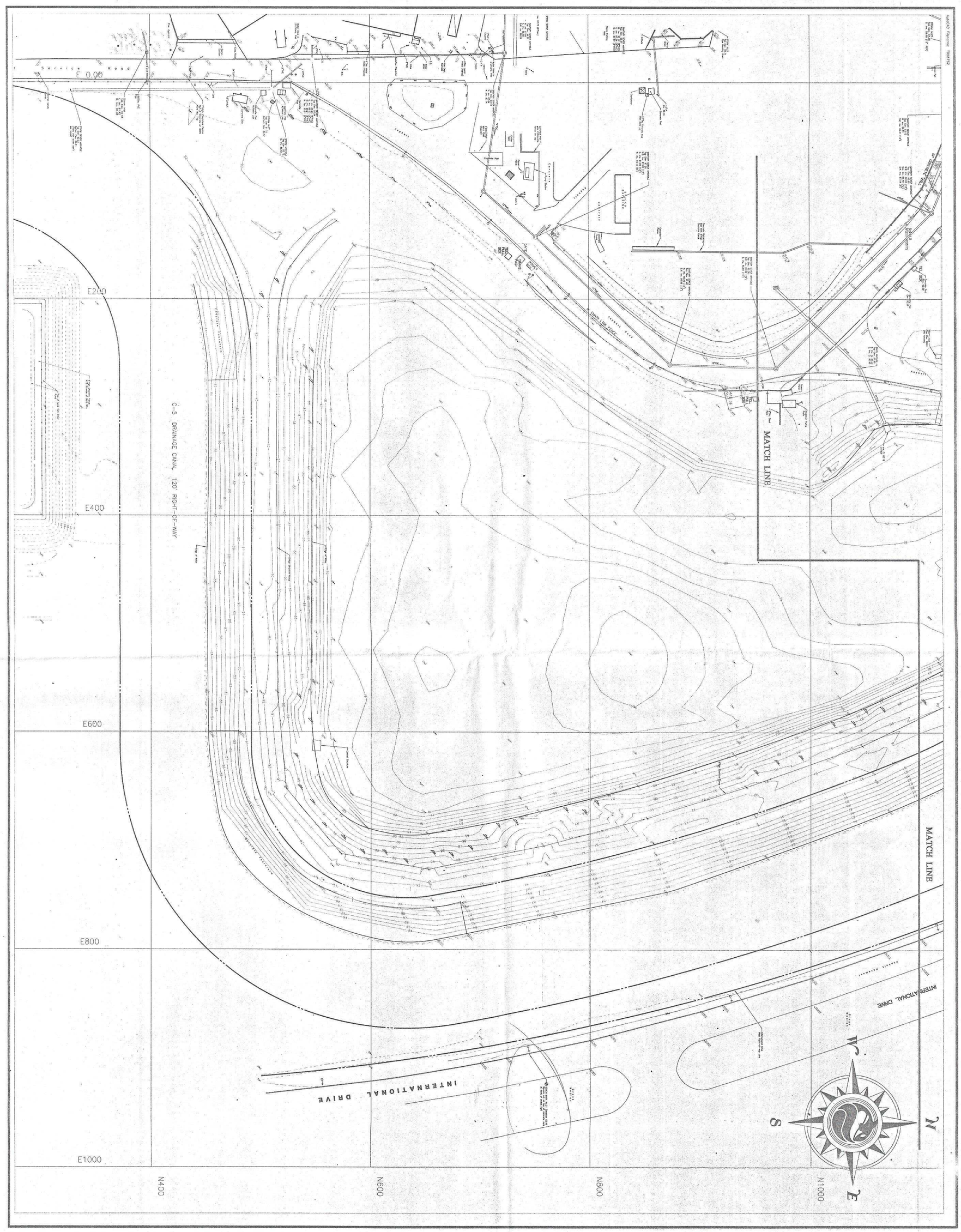
BJM ASSOCIATES, INC.
Certificate of Authorization No. LB3376

By: _____
E. Roger Sneed
Florida Registered Land Surveyor No. 1781

Date: 03/28/98

Date of Last Field Work: 03/01/98
Field Book 81-98

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.



SHEET	2
OF SHEETS	2
JOB NO.	9881
APPROVED	CRS
DRAWN	RGR
SCALE	1" = 30'
DATE	09/26/98
REVISIONS	
LOCATION MAP	X-Z

SHEET TITLE: TOPOGRAPHIC SURVEY

PROJECT: **POND 6 BOTTOM AS-BUILT**

BJM ASSOCIATES, INC.™
ENGINEERS * LAND PLANNERS * SURVEYORS
506 Wymore Road Winter Park, Fla. 32789
TELEPHONE: (407)645-5566, FAX: (407)629-5389

Sea World of Florida
7007 Sea World Drive
Orlando, Florida 32821
Telephone: (407) 351-3600

Appendix D. Additional Data

D.1. HEC-RAS Hydraulic Reference Manual Table 3-1: Manning's n Values

associated with bridges and culverts will be discussed in "Modeling Bridges"[28] and "Modeling Culverts"[29] of this manual.

Manning's n. Selection of an appropriate value for Manning's n is very significant to the accuracy of the computed water surface elevations. The value of Manning's n is highly variable and depends on a number of factors including: surface roughness; vegetation; channel irregularities; channel alignment; scour and deposition; obstructions; size and shape of the channel; stage and discharge; seasonal changes; temperature; and suspended material and bedload.

In general, Manning's n values should be calibrated whenever observed water surface elevation information (gaged data, as well as high water marks) is available. When gaged data are not available, values of n computed for similar stream conditions or values obtained from experimental data should be used as guides in selecting n values.

There are several references a user can access that show Manning's n values for typical channels. An extensive compilation of n values for streams and floodplains can be found in Chow's book "Open-Channel Hydraulics" [Chow, 1959]. Excerpts from Chow's book, for the most common types of channels, are shown in Table 3-1 below. Chow's book presents additional types of channels, as well as pictures of streams for which n values have been calibrated.

5.1.6.1 Table 3-1 Manning's *n* Values

Type of Channel and Description	**Minimum**	**Normal**	**Maximum**
A. *Natural Streams*			
1. **Main Channels**			
a. Clean, straight, full, no rifts or deep pools	0.025	0.030	0.033
b. Same as above, but more stones and weeds	0.030	0.035	0.040
c. Clean, winding, some pools and shoals	0.033	0.040	0.045
d. Same as above, but some weeds and stones	0.035	0.045	0.050
e. Same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
f. Same as "d" but more stones	0.045	0.050	0.060

28 https://www.hec.usace.army.mil/confluence/rasdocs/ras1dtechref/modeling-bridges
29 https://www.hec.usace.army.mil/confluence/rasdocs/ras1dtechref/modeling-culverts

g. Sluggish reaches, weedy. deep pools	0.050	0.070	0.080
h. Very weedy reaches, deep pools, or floodways with heavy stands of timber and brush	0.070	0.100	0.150
2. **Flood Plains**			
a. Pasture no brush			
1. Short grass	0.025	0.030	0.035
2. High grass	0.030	0.035	0.050
b. Cultivated areas			
1. No crop	0.020	0.030	0.040
2. Mature row crops	0.025	0.035	0.045
3. Mature field crops	0.030	0.040	0.050
c. Brush			
1. Scattered brush, heavy weeds	0.035	0.050	0.070
2. Light brush and trees, in winter	0.035	0.050	0.060
3. Light brush and trees, in summer	0.040	0.060	0.080
4. Medium to dense brush, in winter	0.045	0.070	0.110
5. Medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. Cleared land with tree stumps, no sprouts	0.030	0.040	0.050

2. Same as above, but heavy sprouts	0.050	0.060	0.080
3. Heavy stand of timber, few down trees, little undergrowth, flow below branches	0.080	0.100	0.120
4. Same as above, but with flow into branches	0.100	0.120	0.160
5. Dense willows, summer, straight	0.110	0.150	0.200
3. **Mountain Streams, no vegetation in channel, banks usually steep, with trees and brush on banks submerged**			
a. Bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
b. Bottom: cobbles with large boulders	0.040	0.050	0.070
B. *Lined or Built-Up Channels*			
1. **Concrete**			
a. Trowel finish	0.011	0.013	0.015
b. Float Finish	0.013	0.015	0.016
c. Finished, with gravel bottom	0.015	0.017	0.020
d. Unfinished	0.014	0.017	0.020
e. Gunite, good section	0.016	0.019	0.023
f. Gunite, wavy section	0.018	0.022	0.025
g. On good excavated rock	0.017	0.020	
h. On irregular excavated rock	0.022	0.027	

Use for Rectangular channel Condition.

2. **Concrete bottom float finished with sides of:**			
a. Dressed stone in mortar	0.015	0.017	0.020
b. Random stone in mortar	0.017	0.020	0.024
c. Cement rubble masonry, plastered	0.016	0.020	0.024
d. Cement rubble masonry	0.020	0.025	0.030
e. Dry rubble on riprap	0.020	0.030	0.035
3. **Gravel bottom with sides of:**			
a. Formed concrete	0.017	0.020	0.025
b. Random stone in mortar	0.020	0.023	0.026
c. Dry rubble or riprap	0.023	0.033	0.036
4. **Brick**			
a. Glazed	0.011	0.013	0.015
b. In cement mortar	0.012	0.015	0.018
5. **Metal**			
a. Smooth steel surfaces	0.011	0.012	0.014
b. Corrugated metal	0.021	0.025	0.030
6. **Asphalt**			
a. Smooth	0.013	0.013	
b. Rough	0.016	0.016	

Use for Existing Condition

7. **Vegetal lining**	0.030		0.500
C. *Excavated or Dredged Channels*			
1. **Earth, straight and uniform**			
a. Clean, recently completed	0.016	0.018	0.020
b. Clean, after weathering	0.018	0.022	0.025
c. Gravel, uniform section, clean	0.022	0.025	0.030
d. With short grass, few weeds	0.022	0.027	0.033
2. **Earth, winding and sluggish**			
a. No vegetation	0.023	0.025	0.030
b. Grass, some weeds	0.025	0.030	0.033
c. Dense weeds or aquatic plants in deep channels	0.030	0.035	0.040
d. Earth bottom and rubble side	0.028	0.030	0.035
e. Stony bottom and weedy banks	0.025	0.035	0.040
f. Cobble bottom and clean sides	0.030	0.040	0.050
3. **Dragline-excavated or dredged**			
a. No vegetation	0.025	0.028	0.033
b. Light brush on banks	0.035	0.050	0.060
4. **Rock cuts**			
a. Smooth and uniform	0.025	0.035	0.040

b. Jagged and irregular	0.035	0.040	0.050
5. **Channels not maintained, weeds and brush**			
a. Clean bottom, brush on sides	0.040	0.050	0.080
b. Same as above, highest stage of flow	0.045	0.070	0.110
c. Dense weeds, high as flow depth	0.050	0.080	0.120
d. Dense brush, high stage	0.080	0.100	0.140

Other sources that include pictures of selected streams as a guide to n value determination are available (Fasken, 1963; Barnes, 1967; and Hicks and Mason, 1991). In general, these references provide color photos with tables of calibrated n values for a range of flows.

Although there are many factors that affect the selection of the n value for the channel, some of the most important factors are the type and size of materials that compose the bed and banks of a channel, and the shape of the channel. Cowan (1956) developed a procedure for estimating the effects of these factors to determine the value of Manning's n of a channel. In **Cowan's procedure**, the value of n is computed by the following equation:

215)
$$n = (n_0 + n_1 + n_2 + n_3 + n_4)m$$

Symbol	Description	Units
n_b	Base value for n for a straight uniform, smooth channel in natural materials	
n_1	Value added to correct for surface irregularities	
n_2	Value for variations in shape and size of the channel	
n_3	Value for obstructions	
n_4	Value for vegetation and flow conditions	
m	Correction factor to account for meandering of the channel	

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SECTION VII

SECTION A

Customer Call Log - Valencia Water Control District							
Date	**Name**	**Subdivision**	**Address**	**Issue**	**Pond/Canal Name**	**Resolution**	**Date Resolved**
11/20/23	Dennis McGowan	Parkview Pointe North	5665 Parkview Lake Drive	Called to inquire about the proposed development project Toscana and asked for District's boundary map. Concerned about flooding impact of new development.	N/A	Stacie V. explained that the property in question was outside of the District's boundaries and was not approved or controlled by the District. Any questions regarding the status of the project were to be directed to Orange County and provided the case planner's information to him. E-mailed the District's boundary map to him for information.	11/21/23

SECTION B

This item will be provided under separate cover